Leicestershire County Council

A511 MRN GROWTH CORRIDOR

Outline Business Case

OBC002
JULY 2020

Leicestershire County Council

Leicestershire County Council

Mr G Shapps
Department for Transport
Great Minster House
33 Horseferry Rd
Westminster
London SW1P 4DR

Date: 10th January 2020
My Ref:
Your Ref:
Contact: Chris Tambini
Phone: 0116 3056199
Fax:
Email: Chris.tambini@leics.gov.uk

Dear Mr Shapps,

As Section 151 Officer for Leicestershire County Council I am writing to provide financial assurances in respect of the Outline Business Case (OBC) that the authority has submitted for further Major Road Network (MRN) funding for the A511 Growth Corridor.

Specifically, I confirm that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Leicestershire County Council has allocated sufficient budget to deliver the scheme on the basis of its proposed funding contribution. I also confirm the authority's future budgetary commitment to maintaining the road.

Leicestershire County Council also accepts responsibility for meeting any costs of delivering the scheme over and above the Department for Transport (DfT) contribution requested, including potential cost overruns, and the underwriting of any third-party contributions. It also accepts that no further increases in DfT funding will be considered beyond the maximum contribution requested.

I also confirm that the OBC includes a total local contribution from private sector developer contributions of £6.79m. This includes a £4m commitment by the County council to forward fund the ongoing development of the scheme post OBC submission, such that it would be possible to commence construction of the A511 Growth Corridor in spring 2022 (subject to successful award of MRN funding and completion of all necessary Statutory procedures). This is a major commitment by the Council given the outcome of the bid will not be known until summer 2020.

The County Council and North West Leicestershire District Council are proactively working to conclude an agreement to cash-flow developer contributions in advance of their receipt.

Continued/

Corporate Resources

Leicestershire County Council, County Hall, Glenfield, Leicestershire LE3 8RB
Email: resources@leics.gov.uk

Chris Tambini, Director of Corporate Resources

www.leics.gov.uk

Leicestershire County Council

Leicestershire County council is fully committed to this scheme given its benefits to the wider economy including significant housing growth.

Yours sincerely

Chris Tambini
Director of Corporate Resources

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Leicestershire County Council, County Hall, Glenfield, Leicestershire LE3 8RB
Email: resources@leics.gov.uk

Chris Tambini, Director of Corporate Resources

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Outline Business Case

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DATE: JULY 2020

Environment and Transport Department

Leicestershire County Council
County Hall
Leicestershire
LE3 8RJ

Phone: +44 116 232 3232

www.leicestershire.gov.uk @leicsCountyHall

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Signature				
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1 INTRODUCTION

1.1 BACKGROUND

1.1.1. This document represents the Outline Business Case (OBC) for improvements to the A511 Growth Corridor Major Road Network (MRN) Scheme referred to as the A511 MRN Growth Corridor scheme from hereinafter.

1.1.2. The scheme is designed to tackle longstanding congestion and traffic related problems on the A511 between Leicester and the A42 via the M1 Junction 22, which will only be made worse by the level of housing and employment growth in North West Leicestershire and adjacent counties.

1.1.3. This 15km section of road located in North West Leicestershire provides a key resilient routefor both strategic and local traffic movements particularly freight including access to the Bardon Hill Quarry for construction materials and the logistics sector, including the new Amazon distribution centre.

1.1.4. With links to the north and south of England via the M1, the west coast via the A42, as well as East Midlands Airport (EMA) being a short distance to the north, it is clear to see why the logistics sector see this as a prime area to locate.

1.1.5. The road passes the town of Coalville and provides much needed accessibility to jobs and services both within the local area and at larger centres such as Leicester. The demand from both local and through traffic combined with capacity limitations along the route are a significant cause of congestion.

1.1.6. The cost to the local economy of congestion will be exacerbated by the level of traffic growth resulting from the many residential and employment developments currently committed. Coalville has pockets of some of the lowest economic deprivation in the country and efforts to address this will be hampered by the performance of the road. In addition, there are planning applications for 3,500 new dwellings and employment concentrated to the south of the town, which, whilst not dependent on the A511 being improved, will benefit from the journey time and reliability improvements of the scheme and supporting the local economy.

1.1.7. With a HS2 construction compound proposed at A42 Junction 13, alongside the new strategic railhead near the western end of the Growth Corridor, ensuring the resilience of the A511 will be critical to the delivery of Phase 2B of HS2. Given the need for traffic to be diverted onto the A511 during the HS2 construction period; anticipated to commence in mid-2025, it is essential that the corridor improvements are delivered in advance of the HS2 works.

1.1.8. A short distance to the north, the M1 and A42 both provide access to Leicestershire's International Gateway –EMA and surrounding nationally significant development proposals including East Midlands Gateway. Located on a key link between the M1 and A42, the A511 MRN Growth Corridor improvements have the potential to support these strategically important development sites. Both during construction and also operation the scheme will allow efficient access for the delivery of materials and also staff travelling from the wider area.

1.1.9. As a key strategic and logistic route carrying in excess of 25,000 vehicles with HGVs forming up to 22% of that total, there is a need for any intervention to consider both safety and environmental concerns. As would be expected given the high traffic volumes on the corridor, this route currently experiences around 21 collisions a year, two of which on average result in a serious or fatal casualty.

Schemes carried out at M1 Junction 22 and A42 Junction 13 have resulted in a noticeable decline in accidents and this package of improvements aims to build on this trend.

1.1.10. Air quality and Noise is an issue, with one section of the A511 identified as an Air Quality Management Area and a number of sections as Noise Important Areas. This much-needed scheme will help alleviate these issues and make it healthier for users and non-users of the road alike.

1.2 PURPOSE OF DOCUMENT

1.2.1. This document has been developed to support the scheme's submission to Department of Transport (DfT) as part of the Major Road Network Fund via Midlands Connect; for which the DfT confirmed development funding in September 2019 towards the production of the OBC.

1.2.2. The OBC presented in this document for the A511 MRN Growth Corridor scheme has been developed in accordance with DfT's Transport Business Case guidance and therefore sets out how the scheme is:

- Supported by a robust case for change that fits with wider policy objectives (the **Strategic Case**);
- Demonstrates value for money (the **Economic Case**);
- Financially affordable (the **Financial Case** – accounting analysis);
- Commercially viable (the **Commercial Case** – procurement issues); and
- Achievable (the **Management Case** – deliverability assessment).

1.2.3. In line with this guidance the OBC reconfirms the strategic fit and need for intervention, while ensuring that progress of the proposed scheme continually aligns with the DfT's MRN objectives. It focuses on detailed assessment of the scheme options to find the best solution and sets a full economic and financial appraisal of the preferred scheme, building up the economic and financial cases of the OBC. The remaining cases (commercial and management cases) are developed to provide sufficient assurance for OBC stage that the scheme is procurable and deliverable.

1.3 REPORT STRUCTURE

1.3.1. The remainder of this document is structured as follows:

- Chapter 2: Executive Summary of Outline Business Case;
- Chapter 3: Scheme Description and Overview;
- Chapter 4: The Strategic Case;
- Chapter 5: The Economic Case;
- Chapter 6: The Financial Case;
- Chapter 7: The Commercial Case; and
- Chapter 8: The Management Case.

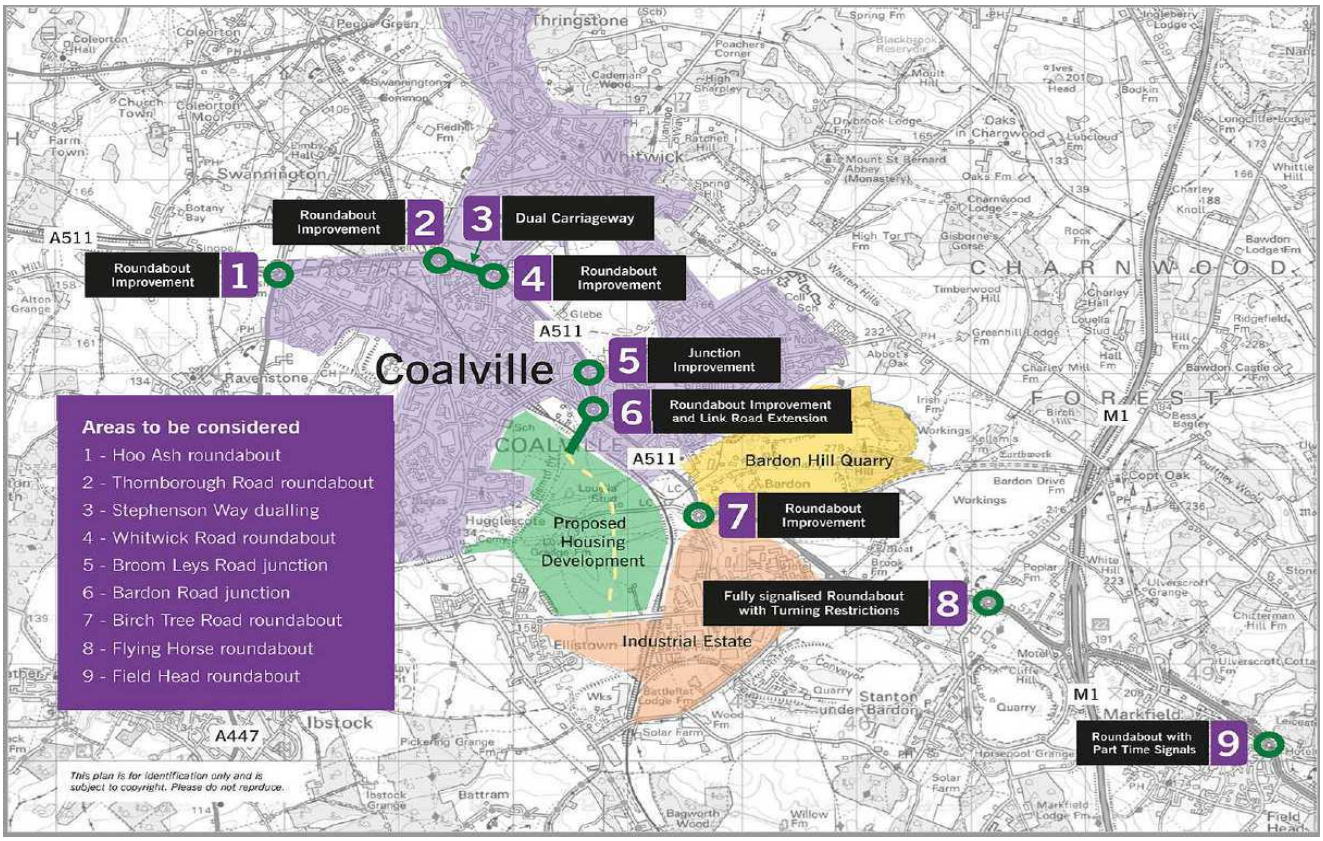
2 EXECUTIVE SUMMARY OF OUTLINE BUSINESS CASE

2.1 SCHEME DESCRIPTION AND OVERVIEW

2.1.1. The A511 MRN Growth Corridor is a 15km, mainly single carriageway road that extends from the A50 Field Head junction (just west of the M1 Junction 22) to the A42 Junction 13 near Ashby-de-la-Zouch. The current road forms a bypass round the north of the town of Coalville in North West Leicestershire.

2.1.2. The preferred scheme for the A511 MRN Growth Corridor scheme will see improvements made to nine locations between the A42 Junction 13 at Ashby to the Field Head roundabout to the east of Junction 22 of the M1, including upgrading a section of Stephenson Way from a single to a dual carriageway. The preferred scheme aims to overcome existing traffic congestion and traffic related problems in the corridor whilst enabling future growth and improving the reliability and resilience of the route as a connection with the Strategic Road Network (SRN). The locations of the junction improvements which are the preferred scheme for the A511 MRN Growth Corridor scheme are shown on **Figure 2-1-** Location of Junction Improvements**.**

Figure 2-1- Location of Junction Improvements



2.1.3. The scheme will provide additional accessibility to and from housing and employment sites planned to the south east of Coalville. This will be achieved through the delivery of the new section of highway extending southwards from the A511 Bardon Road, into the southeast Coalville Sustainable Urban Extension (SUE), where an internal spine road will provide a continuous connection towards Grange Road.

2.1.4. In addition to improving access to local employment and residential sites, improvements along the A511 will enhance connectivity to the A42 and M1, both of which provide access to Leicestershire's Internal Gateway – East Midlands Airport.

2.1.5. The airport and the surrounding area are currently undergoing extensive redevelopment, with the delivery of East Midlands Gateway (EMG) one of the UK's largest Strategic Rail Freight Interchange and the potential for a significant mixed-use development at the Ratcliffe on Soar Power Station, which is due to be decommissioned in 2025. These schemes have been identified as part of plans to develop an East Midlands Development Corporation which aims to make the region an economic powerhouse.

2.1.6. LCC are looking to deliver these improvements in advance of HS2's proposals to introduce one of their main construction compounds adjacent to the A42 Junction 13. A temporary railhead is also proposed close to A42 Junction 13, with access to and from the A511.

2.1.7. Current indications are that these works could start mid-2025 and when underway will significantly increase freight movement along the A511. Furthermore, in June 2019 consultation on HS2 provided further details on the proposal to realign part of the A512 on the approach to A42 Junction 13, as well as some accommodation works on the A511 approach onto the A42 Junction 13 to facilitate the route of HS2. The A512 runs parallel to the A511 providing a secondary link between the A42 Junction 13 and the M1. During the realignment works, the A511 will form one of the main diversion routes for the A512 unless this realignment can be carried out offline.

2.1.8. As a result of these proposals, the A511 could be required to accommodate traffic associated with the construction compound, proposed temporary railhead and diverted movements from the A512. Delivery of the A511 Corridor Improvements seeks to ensure this route remains resilient during this period and provide opportunities for HS2 to provide some social value to the area, offsetting some of the disruption it will bring. However, failure to deliver the works in advance of HS2 Phase 2b will sterilise the network for a 10-year period, with the Coalville Transport Strategy being undeliverable until circa 2035.

2.2 BACKGROUND

2.2.1. Congestion on the A511 MRN Growth Corridor has been a long-standing issue recognised by both North West Leicestershire District Council and Leicestershire County Council; this can be dated back to 2008 when the Coalville Transport Strategy (CTS) was developed and investigated junctions on the corridor requiring improvement to facilitate housing growth in Coalville and Ashby.

2.2.2. An outcome of the CTS was the implementation of the Coalville Contribution Strategy (CCS) to help facilitate the delivery of improvements along the corridor, however insufficient funding has currently been received from the CCS to deliver the necessary improvements required for the corridor. Due to this, issues along the corridor have become increasingly pronounced and are likely to be exacerbated further by growth in background traffic and the significant levels of growth planned for the town as part of the local plan.

2.2.3. The A511 MRN Growth Corridor is recognised by Leicester and Leicestershire Enterprise Partnership (LLEP) in its Strategic Economic Plan (SEP) as one of five Growth Areas. The SEP states through

appropriate investment and improvements along the corridor, there is the potential to deliver at least 5,275 houses and 25ha of employment land. Importantly, a significant number of the committed dwellings (3,500) are on sites which are collectively referred to as south-east Coalville.

2.2.4. As outlined above, one of the main HS2 Phase 2b construction compounds is to be located near the A42 Junction 13, which forms the westernmost end the A511 MRN Growth Corridor. Accessibility to the compound will potentially have major traffic implications on the corridor. The HS2 Phase 2 work is anticipated to start mid-2025 and during the duration of the construction phase, additional major works elsewhere on the A511 MRN Growth Corridor could be intolerable to both road users and non- users alike.

2.2.5. It is the current levels of congestion along the A511, the need to lock in the local benefit of housing and employment growth and the need to be ready for HS2 construction by 2025 that makes this scheme a priority for the Major Road Network.

2.2.6. Implementation of the scheme will provide the breathing space to implement a wider transport strategy for Coalville and the surrounding area to address localised traffic issues, public transport improvements and walking and cycling connectivity; building on the work done as part of the Local Sustainable Transport Fund.

2.3 STRATEGIC CASE

EXISTING ISSUES

Issue 1 – Significant levels of congestion resulting in slow and unreliable journey times

2.3.1. The A511 MRN Growth Corridor currently experiences notable levels of congestion and peak hour delay at several of its key junctions, this results in journey time delay upwards of forty seconds at each junction and leading in tailbacks that disrupt the flow of traffic along the approaching links, resulting in speeds of less than 10mph on sections of road designed for 60mph. This lack of journey time reliability reduces people's ability to utilise the network freely, reducing their choice of amenities which they can access.

Issue 2 – Personal injury collision clusters

2.3.2. A review of Personal Injury Collision statistics for the District highlights considerable clustering of accidents around the junctions on the A511 corridor. This is potentially influenced by the volume of traffic using the junctions being above what they were designed for, increasing driver frustration and the risk of accidents.

Issue 3 – Supporting freight and logistics use of the corridor

2.3.3. The A511 acts as a key north west to south east corridor, with its eastern end connecting to Leicester and the M1. Additionally, there are currently a wide number of transport & logistics and industrial firms on the corridor, including Amazon, as well the Bardon Hill Quarry (a nationally significant quarry and aggregate business), which is reflected in the high levels of employment in these sectors in local demographics. The existing levels of congestion on the corridor make freight movement slower, less reliable and subsequently more expensive.

Issue 4 – Need to support local growth

2.3.4. The North West Leicestershire Local Plan, supported by their Local Development Scheme 2018 – 2021 and the LLEP Strategic Economic Plan, all identify Coalville as a potential centre for residential and commercial development. However, current issues with junction capacity and journey time reliability constrain the volume of development that can be delivered without causing gridlock on the

network.

Issue 5 – Lack of accessibility for vulnerable road users

2.3.5. Although the A511 MRN Growth Corridor already benefits from adequate shared pavements over majority of its length, census analysis of the area shows low levels of walking and cycling trips, compared to the national average, even on relatively short distance movements. Local Sustainable Transport Funding has been used to provide interventions to address these issues.

2.3.6. Additionally, the levels of congestion on the road impact the journey times of residents reliant on public transport who are often in more vulnerable categories of individual. As such, the current congestion issues result in a reduction in their ability to access amenities, employment/training or to meet with friends or family, thus again adversely impacting health.

Issue 6 – Lack of journey time reliability for traffic to and from the SRN

2.3.7. As aforementioned, the A511 acts as a key artery for commuter and freight movements. This is, in part, due to it connecting two elements of the Strategic Road Network, the A42 and the M1. At present, delays to traffic on the A511 mean that the benefits of the ongoing capacity and reliability investments on the SRN by Highways England aren't fully realised as the delays on the A511 affect access and egress on the SRN.

Issue 7 – Air quality and noise impacts experienced by community on corridor

2.3.8. Due to the traffic delay and congestion at existing junctions on the A511 corridor, traffic moves in a stop-start fashion at several locations, particularly in the peak hours. This, in turn, results in increased fuel usage and greater production of emissions hazardous to human health, as well as the environment. This issue has already resulted in the imposition of an Air Quality Management Area (AQMA) on a section of the corridor.

2.3.9. Additionally, the disrupted traffic flow results in increased noise being generated by engines stopping and starting.

2.3.10. These conditions will only worsen with natural growth in background traffic and additional traffic from planned developments for the area if nothing is done.

IMPACTS OF DOING NOTHING

1) Continuation of current transport problems

2.3.11. The A511 currently experiences congestion and delay in the peak periods relating to a lack of capacity at key junctions along its length. This, in turn, leads to journey time unreliability and subsequent reductions in accessibility to and from the corridor. These issues will continue and likely worsen without intervention to handle increased traffic growth. Without the scheme, the problems and issues identified will continue and likely worsen. This means that roads will remain congested, impacting on both residents, and those from a wider catchment seeking to make longer distance movements to/from Leicester, Burton Upon Trent, Loughborough and further afield. Exacerbation of the traffic issues along the corridor would also lead to the worsening of air quality along the corridor, and potentially an extension of the identified AQMA.

2.3.12. In addition to this the resilience of the network will remain poor with corresponding impacts on journey time reliability along the corridor. Traffic would be diverted onto less suitable routes (i.e. through Coalville) which currently suffer from high numbers of injury collisions.

2) Delivery of housing, jobs and economic growth

2.3.13. The A511 MRN Growth Corridor is planned for high levels of residential and employment development.

Both the Leicester and Leicestershire Enterprise Partnership (LLEP)'s Strategic Economic Plan (SEP) and Leicester & Leicestershire 2050 'Our Vision for Growth' identify the need to improve this corridor, with the SEP identifying the A511 MRN Growth Corridor as is one of five Growth Areas that could potentially deliver at least 5,275 houses and 25ha of employment land.

2.3.14. Whilst recently completed improvements to M1 Junction 22 and A42 Junction 13 have unlocked growth in North West Leicestershire, without further appropriate intervention, the resulting congestion and lack of journey time reliability could delay or stall the delivery of housing and reduce the attractiveness for businesses to locate within Coalville and surrounding area leading to a sterilisation in future development. In addition to this, existing developments will be undesirable to prospective buyers.

2.3.15. A failure to address the issues posed by underperforming junctions will increase delays to traffic accessing the SRN at M1 J22 and A42 J13, and impact on the economic output and productivity of existing businesses along the corridor.

3) Adverse impact on the SRN junctions

2.3.16. The A511 MRN Growth Corridor links the A42 at Junction 13 to the M1 at Junction 22 and is one of the two key east-west links in Leicestershire. The A511 MRN Growth Corridor acts as a feeder route to the two SRNs and it also performs a resilience function for the SRN by acting as a diversion route. Without intervention on the A511 corridor, there will be potential adverse impacts on trips using the Strategic Road Network. This will be in the form of trips originating from the SRN becoming delayed on reaching the MRN, in the form of delayed trips between the A42 and M1 via the A511 and, in the worst-case scenario, blocking back of traffic from a congested A511 MRN Growth Corridor onto the SRN, this is currently the case for the M1 J22 which experiences blocking back traffic from the Flying Horse and Field Head Junctions.

4) Inability to support HS2 works in the area

2.3.17. One of the main HS2 construction compounds is to be located at A42 J13, due to this, the proposed temporary railhead and the realignment of the A512 needed to facilitate the route of HS2, the A511 MRN Growth Corridor will be used as a diversion route unless this work can be carried out offline, in addition to the route being used for HS2 staff and materials. This will result in additional traffic on the A511 MRN Growth Corridor, and without the appropriate intervention this will have adverse traffic implications for the corridor and the strategic junctions located at either end of the corridor. In addition to this, there is a risk of HS2 construction traffic and freight traffic on the corridor experiencing severe delays and journey time instability, risking construction and operational issues for HS2 activities and the business along the corridor.

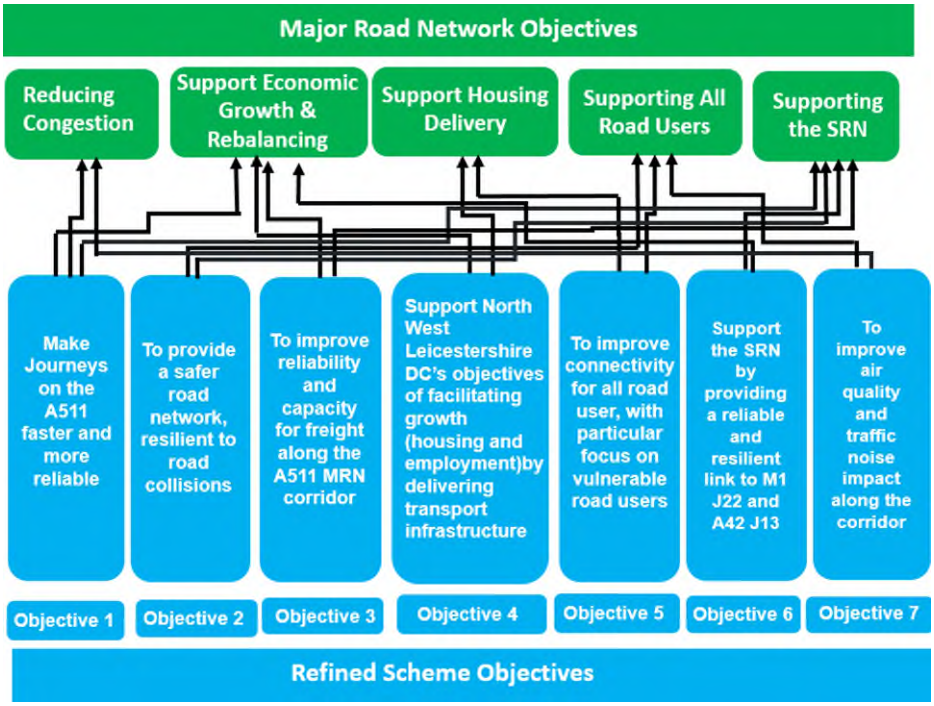
2.4 SCHEME OBJECTIVES

2.4.1. Based on the appreciation of the constraints and issues scheme objectives have been identified which align with national, regional and sub-regional policy and strategy including MRN objectives. These scheme objectives were used in option assessment and are listed below:

- **Objective 1** - Make journeys on the A511 faster and more reliable.
- **Objective 2** - Provide a resilient and safer road network, resilient to road collisions.
- **Objective 3** - Improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.
- **Objective 4** - Support North West Leicestershire District Council's objectives of facilitating growth by delivering transport infrastructure; and potentially deliver at least 25ha of employment land and unlock at least 3,500 new dwellings.
- **Objective 5** - Improve connectivity for all road users, with particular focus on vulnerable road users with the implementation of controlled crossings.
- **Objective 6** - Support the SRN by providing a reliable and resilient link to the M1 and the A42.
- **Objective 7** - Improve air quality and traffic noise impact along the corridor.

2.4.2. **Figure 2-2** below shows that the objectives of the preferred scheme for the A511 MRN Growth Corridor align with the MRN objectives.

Figure 2-2 - A511 MRN Growth Corridor Scheme Objectives Alignment with MRN Objectives



2.5. ALTERNATIVE OPTIONS

2.5.1. The preferred scheme is the best performing option to overcome existing traffic congestion and traffic related problems and tackle future issues to enable growth and network resilience. It has been developed from an evidence and objective led optioneering process, assessing a range of options across modes, and different scales of highway intervention.

2.5.2. In all, 28 different potential interventions were assessed against the scheme objectives, wider objectives and criteria relating to feasibility, acceptability and affordability to identify the better performing options. This assessment was derived from the evidence base with stakeholders engaged in the decision-making process.

2.5.3. The results demonstrated that highway interventions along the A511 MRN Growth Corridor itself were the highest-ranking performers due to their potential for providing a material benefit to both road users and other residents, as well as supporting the growth proposals in the Local Plan

2.5.4. The identified packages in the assessment performed better than individual highway interventions, with the largest package ranking highest. This package identified as the preferred scheme, has the added benefit of providing a continuity of standard for the A511 with one hit. In addition to economies of scale, this provides a greater certainty of benefit and achievement of outcomes compared with an alternative approach of incremental implementation over a longer duration. Implementing the interventions individually adds uncertainty that the scheme will be fully delivered and that the full benefit will be realised.

2.5.5. The initial option assessment clearly shows that the preferred scheme has the greatest potential of contributing to outcomes as indicated by its anticipated impact on congestion problems along the whole of the Growth Corridor, improving access to housing and employment and providing user and wider economic benefits.

2.5.6. The preferred scheme was amended slightly at an Optioneering Workshop held in July 2019 following submission of the Strategic Outline Business Case (SOBC) to DfT and in light of the outcomes of the modelling work undertaken in support of the scheme. At the workshop, the benefits offered by each component of the preferred scheme were discussed and it was agreed that the proposed A511 / Charnwood Arms Roundabout improvements be discarded due to the high negative benefits indicated from the modelling outputs. The assessment followed further optioneering using additional modelling and data taking further account of design, costs, any land ownership issues and environmental considerations.

2.5.7. The preferred scheme supported by this OBC is there as follows:

- Junction improvements at A511 / Hoo Ash Roundabout;
- Junction improvements at A511 / Thornborough Road Roundabout;
- Upgrade of the A511 Stephenson Way link between Thornborough Road Roundabout and Whitwick Road Roundabout from a single to a dual carriageway;
- Junction improvements at A511 / Whitwick Road Roundabout;
- Junction improvements at A511 / Broom Leys Road Junction;
- Junction improvements and link extension at A511 Bardon Road / Stephenson Way Junction;
  - Proposals for this junction includes plans to connect the A511 to the developer delivered Bardon Link Road and create a new north-south link across Coalville.
- Junction improvements at A511 / Birch Tree Roundabout;
- Junction improvements at A511 / Flying Horse Roundabout; and
- Junction improvements at A50 / Field Head Roundabout.

2.6 KEY BENEFITS OF THE PREFERRED SCHEME

2.6.1. The preferred option was identified as the most effective at tackling the following problems in the A511 MRN Growth Corridor, both now and in the future:

- The corridor currently experiences congestion and delays;
- The corridor is regionally important as the A511 acts as a feeder route to the SRN and performs a resilience function when acting as a diversion route;
- Congestion at the Flying Horse and Field Head junctions causes queues to tailback all the way to the M1 J22, and in so doing affecting the operation of that SRN junction;
- The corridor has been identified as one of the five growth areas identified in the Leicester and Leicestershire Enterprise Partnership's (LLEP) Strategic Economic Plan (SEP);
- Corridor improvements have the potential improve connectivity to the Leicestershire's International Gateway and the neighbouring significant development proposals including EMG, which have been identified by the emerging East Midlands Development Corporation.
- The area surrounding the corridor has been identified with the SEP as having the potential to deliver approximately 5,275 additional houses and 25ha of employment land, but remain constrained by poor transport infrastructure;
- The A511 MRN Growth Corridor suffers from poor air quality specifically the area surrounding the A511 Stephenson Way / Bardon Road / Brooms Leys Road which has been recognised as an AQMA;
- Notable amount of shunt-type accidents, indicative of slow moving and/or stop-start traffic;
- Nationally significant logistics and quarry businesses along the corridor are vitally important to the location, and these are reliant on the efficient movement of freight along the A511 corridor from key sites along the corridor to the motorway network;
- One of the main HS2 Phase 2b construction compounds is to be located at A42 Junction 13 which forms the westernmost end the A511 MRN Growth Corridor. The A511 will serve as a route for materials and diverted traffic during HS2 construction;
- Support public transport operations along the corridor through the provision of a less congested and reliable route, and in so doing encouraging the use of sustainable transport; and
- Opportunities for improving safety of corridor users, especially non-motorised road user by providing better and safer crossing facilities at the key junctions along the corridor;

2.6.2. The scheme is consistent with Local, Sub-Regional and National policies, with a particular benefit of the scheme being increasing accessibility for 3,500 new dwellings and a large employment site south east of Coalville as detailed in the adopted Local Plan (2011-2011) for North West Leicestershire.

2.6.3. With HS2 Phase 2B construction anticipated to commence in 2025 it is imperative that its construction impact on the road network is mitigated and that the site is not impeded by poor connectivity to sources of both labour and materials. Implementing the full package of works in one go ahead of HS2 Phase 2B construction provides the most resilient solution. Partial implementation or no scheme at all will mean congestion impacts could result in economic and environmental damage as traffic, including HS2 construction traffic, queues or uses less suitable routes.

2.6.4. Moreover, isolated junction improvements will only increase delays at neighbouring junctions, since traffic will be able to go through the improved junction quicker only to get stop at an adjoining junction already struggling from congestion and in so doing increasing delays and queuing along the corridor.

2.6.5. The Bardon Link Road (Junction 6) in its entirety (i.e. with the new road connection at A511 Bardon Road / Stephenson Way roundabout) provides further resilience to the package. The road provides an alternative to the A511 for traffic east of Coalville. It therefore provides relief for the currently congested Birch Tree Roundabout (Junction 7), as well as reducing conflict with vehicle and rail movements accessing the Bardon Hill Quarry, and in so doing increasing capacity along the A511 MRN Growth Corridor.

2.6.6. The scheme will also allow LCC the opportunity to liaise with statutory undertakers to upgrade water, wastewater, energy and telecommunications along the A511 corridor during the construction period to minimise any future disruptions and future proof the resilience of the road.

2.6.7. The SOBC and associated Options Assessment Report previously submitted to DfT indicated that primarily on a qualitative basis a complete package of highway interventions for the corridor is the preferred solution. This is now confirmed from the results of the modelling work undertaken in support of the scheme.

2.6.8. The preferred scheme offers:

- The highest level of benefits relative to other options, and it is best suited to support the corridor's function as a key east to west link;
- Provides the greatest benefit for through traffic and trips connecting to jobs in Coalville, Ashby, and the wider area including Leicester City, the Leicestershire's International Gateway, and Castle Donington via the corridor;
- The greatest ability to provide for the full extent of housing and employment growth proposed in the North West Leicestershire District Council Local Plan;
- Scored more highly on almost all qualitative scheme objectives than alternative options;
- Provides the greatest opportunity to support walking, cycling and public realm improvements in Coalville as part of a wider transport strategy;
- Support public transport services along neighbouring local roads through the provision of a less congested and reliable local highway network, and in so doing encouraging the use of sustainable transport;
- It will provide the highest journey time savings across the entire corridor, providing a faster and more reliable connections to the SRN for all vehicles (including freight);
- It is best suited to support the construction impacts of HS2 in the North West Leicestershire area;
- Improves access to EMA, EMG and Ratcliffe on Soar Power Station, which has been identified as a major development site for a mixed-use scheme to be facilitated by the emerging East Midlands Development Corporation; and
- It will offer the most accident savings along the entire corridor and in so doing improve journey time reliability for all users especially businesses along the corridor who heavily depended on the efficient movement of freight along the corridor.

2.6.9. In addition, the preferred scheme ensures that all the major issues along the corridor are addressed at one go providing a better value for money through economy of scale and less destructive periods along the corridor due to construction activities spread over an extended duration of years, which will have an adverse impact on the resilient role played by the corridor in supporting the SRN.

2.7 ECONOMIC CASE

2.7.1. The Economic Case identifies a scheme's impacts, and the resulting value for money, to fulfil HM

Treasury's requirements for appraisal and to demonstrate value for money for the taxpayer.

2.7.2. The Economic Case has been driven by use of the latest version of Pan-Regional Transport Model (PRTM) developed from the existing Leicester and Leicestershire Integrated Transport Model (LLITM 2014 Base), by DfT and industry standard software usage. The model and appraisal approach have been built in accordance with the Department for Transport's modelling and appraisal guidance (TAG) and has been independently assured in terms of its development and usage.

2.7.3. The economic appraisal has been tailored to reflect the needs of the A511 MRN Growth Corridor Outline Business Case, and has specifically monetised: as part of the Benefit Cost Calculation:

- Transport User and Provider benefits (including travel time and vehicle operating cost savings);
- Safety benefits;
- Noise output;
- Air Quality emission changes; and
- Greenhouse Gases emission changes.

2.7.4. These form the initial Benefit Cost Ratio (BCR) for the scheme.

2.7.5. Additional valuations of other objectives have also been monetised as part of the Economic Case, and these are included in the scheme's adjusted BCR.

2.7.6. These additional benefits include:

- Journey Time Reliability Benefits; and
- Wider Economic Impacts,

2.7.7. Also, in line with HM Treasury's appraisal requirements, the impacts considered are not limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of the proposal have been examined, using qualitative, quantitative information in the Economic Case. These include impacts on:

- Landscape;
- Townscape;
- Water;
- Biodiversity;
- Historic Environment;
- Security; and
- Severance.

SCHEME BENEFITS

2.7.8. The Economic Case reports the sum of the above calculations. The total unadjusted present value of scheme benefits is estimated at **£52.3m** (in DfT's 2010 values and prices). The adjusted present value of scheme benefits is estimated at **£70.7m** (in DfT's 2010 values and prices) which includes journey reliability and wider economic benefits of **£18.4m**.

SCHEME COSTS FOR ECONOMIC APPRAISAL

2.7.9. Scheme costs used in the Economic Case are as per those developed in the Financial Case detailed in the next section, and built up from detailed construction, land (inc Part 1 claims), preparation and supervision costs associated with the scheme's design supported by ECI involvement. Monitoring and evaluation costs are also included.

2.7.10. Risk allowances of **£7.72m** have been determined through a detailed Quantified Risk Analysis (QRA), and along with inflation to the year of forecast expenditure are both included in the appraisal.

2.7.11. In addition, and as per DfT requirements, a further 15% Optimism Bias has been applied to the risk adjusted capital costs of the scheme.

2.7.12. Commuted sums covering the costs of maintenance and renewal of structures and equipment have also been calculated and added to the costs used in the Economic Case.

2.7.13. These calculations lead to a present value of scheme cost to Central Government (PVC) of **£28.2m** (in 2010 values and prices). This takes into account the private sector contribution of **£6.9m**.in 2010 market prices which offsets the local government contribution.

2.8 BENEFIT COST RATIO (BCR)

2.8.1. The initial Benefit Cost Ratio for the scheme has been calculated on the basis of the scheme benefits and scheme costs above.

2.8.2. This results in the outturn BCR for the scheme being **1.84**.

2.8.3. The scheme will also generate an additional **£18.4m** of journey time reliability and wider economic benefits not incorporated in the initial BCR. With these included, the adjusted BCR is **2.49**.

2.8.4. A Value for Money Statement is included in the Economic Case, as required by DfT, and which confirms the A511 MRN Growth Corridor is **Medium to High Value for Money** in the most likely, core scenario.

2.8.5. As expected, the majority of the benefits generated by the A511 MRN Growth Corridor scheme are associated with travel time savings for business and non-business road users, which is in line with scheme objectives. Improvements in Local Air Quality, and journey reliability also provide contributions to the total monetised benefits. These are key objectives of the scheme.

2.8.6. Negative benefits are expected from indirect tax revenues, greenhouse gas emissions, noise, road accidents and delay to traffic during construction. However, these changes are minor compared to the total value of benefit. It is anticipated that the scheme will have a slight adverse effect on the local landscape and its tranquillity in the short term and neutral in the long term.

2.8.7. The scheme will also have the potential for a slight adverse effect on historic environment and biodiversity sub-objectives; with journey quality being slight beneficial. As a result of the above assessments it is considered that these non-monetised impacts lead to an overall slight reduction in the value for money of the scheme, although the scale of these will not significantly impact the VFM category.

2.8.8. Sensitivity tests have been carried out to understand the impact of alternative growth forecasts. All tests show the scheme will be Medium to High value for money.

2.8.9. All results are reported in the AST for the scheme, and include detailed distributional analysis as required by guidance.

2.9 FINANCIAL CASE

2.9.1. Scheme costs for the Financial Case have been built up from detailed construction, land, preparation and supervision costs associated with the scheme's design; supported by ECI involvement.

2.9.2. The OBC includes a detailed breakdown of the base scheme costs into these spend areas, including an anticipated profile by year for each spend area. To these base costs, risk allowances have been added (as determined through a detailed Quantified Risk Analysis), along with inflation to the year of forecast expenditure.

2.9.3. The base scheme costs are **£37m** in 2020 Q2 prices and include land costs, preparation costs, construction costs and supervision costs. This excludes any costs prior to completion of the OBC, Part 1 claims and monitoring and evaluation cost.

2.9.4. To these base costs, risk allowances have been added (as determined through Quantified Risk Analysis), along with construction price inflation to deliver outturn 2019 prices. This raises the financial scheme cost to **£47.57m**.

2.9.5. An independent surveyor's report verifying cost estimates has been submitted as part of the OBC.

2.9.6. The funding package of the scheme is made up of:

- **£40.43m** of DfT MRN funding; and
- **£7.14m** of Third-Party Funding (15% of Scheme Cost) comprised of local and cashflowed private sector contribution in advance of their receipt.

2.9.7. A signed declaration from LCC's Section 151 Officer has been included as part of the OBC submission confirming the above.

2.10 COMMERCIAL CASE

2.10.1. The Commercial Case provides evidence on the commercial viability of a proposal and the procurement strategy that will be used to engage the market. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the LCC team delivering the project.

2.10.2. LCC have considered a full range of procurement options to secure best value through ensuring a strong, fair and open competition, in line with best practice for managing public money. The preferred scheme for procurement and delivery is the Midlands Highways Alliance (MHA) Framework.

2.10.3. The benefits of this route for both LCC and ensuring taxpayer value have been made clear in the Commercial Case. These benefits are as follows:

- Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable. This thereby reduces risks to a level that is 'as low as reasonably practicable'.
- Allow mobilisation quickly and allows greatest time and opportunity for ECI to achieve lowest outturn cost.
- Use of an NEC4 Option C contract, with mature and well-established risk allocation and transfer between parties; along with established tolerances to provide greater cost and programme certainty, along with a pain/gain mechanism to incentivise delivery against both programme and target cost.
- The ability to measure performance through the MHA framework and management tools, with significant previous experience and demonstrable best value of this procurement route.

2.10.4. The Commercial Case, using existing details from the MHA framework, describes how LCC, and named and resourced personnel will set-up, run and manage the procurement activities, and will place

risk with the party best placed to manage or mitigate that risk, or manage the consequences should they transpire.

2.10.5. Through to procurement and as part of scheme delivery, the contractor will produce a priced risk register. This will be reviewed as part of the process of target setting and decisions made on the mechanism for sharing risk between the contractor and LCC, ensuring that the proposed allocation provides the best value for money for the project for both LCC and DfT.

2.10.6. The above approach builds on LCC's strong track record with such delivery mechanisms on recently and successfully delivered schemes, with a clear understanding between contractor and authority of how they work and what their processes are. This is not just in terms of roles, but also agreed standards, mechanisms and clarity over risk and risk allocation and transfer through the design and construction phases.

2.11 MANAGEMENT CASE

2.11.1. The Management Case demonstrates that LCC has successfully procured and delivered a number of similar projects of varying sizes and complexity.

2.11.2. The knowledge gained, and the strategic procedures developed/adopted during the delivery of these schemes will be used for the delivery of the A511 MRN Growth Corridor scheme, using similar team structures and experienced personnel, who are confirmed as available and committed to the project.

2.11.3. Opportunities will be taken, wherever possible, to improve delivery processes by acting upon the lessons learnt from recent schemes.

2.11.4. The Project Governance Structure for this scheme will be as any other undertaken by LCC and will consist of a three-tier structure as follows:

- The Programme Board – Provides governance at the overall programme level via a Programme Board.
- The A511 MRN Growth Corridor Project Board – Provides governance for the specific delivery project.
- Delivery Teams – Responsible for issues, topic areas or activities spanning two or more of the component projects via a series of Working Groups.

2.11.5. To ensure the successful delivery of the schemes within its jurisdiction LCC has established a governance structure for the A511 MRN Growth Corridor project as above. This will also include both internal audit, and external project assurance, with the SRO, having direct responsibility for these for the Project.

2.11.6. LCC recognises that effective risk management is vital, and a continual process involving the identification and assessment of risks. A risk and opportunity register have been prepared and will continue to be reviewed and updated monthly to consider risks associated with the preferred scheme, and to provide up-to-date input in line with the Project Governance.

2.11.7. Morgan Sindall were appointed through the Midlands Highways Alliance Medium Schemes Framework contract to work with Leicestershire County Council (LCC) and their designers, to deliver an Early Contractor Involvement (ECI) service for the A511 MRN Growth Corridor scheme. Invested knowledge will be retained to support detailed design prior to full procurement.

2.11.8. A Benefits Realisation Plan has been prepared, linked to the scheme objectives and desired outcomes. This will be used by LCC to ensure that the benefits and dis-benefits from the project to can be planned, tracked, managed, and realised (or mitigated).

2.11.9. An Outline Monitoring and Evaluation Plan has been prepared and will be used to help demonstrate whether the scheme objectives identified in the Strategic Case are being achieved in terms of the desired "measures for success". In addition, the Management Case also highlights the ongoing stakeholder management plans and the future communication strategy plans and programme.

2.11.10. The Management Case concludes that LCC has a strong track record of successfully procuring and delivering projects of varied size and complexity, and in relation to the A511 MRN Growth Corridor in particular, has the adequate project management, governance and assurance systems in place, alongside resources required, to deliver the Project.

3 SCHEME DESCRIPTION & OVERVIEW

3.1 SCHEME DESCRIPTION

3.1.1. The A511 MRN Growth Corridor is a 15km, mainly single carriageway road that extends from the A50 Field Head junction (just west of the M1 Junction 22) to the A42 Junction 13 near Ashby-de-la-Zouch. The current road forms a bypass round the north of the town of Coalville in North West Leicestershire.

3.1.2. It's intersections with the M1 and A42 provides a link from Stoke on Trent and the North West of England as well as to the south as far as London via the M1 and Devon by the accessing the M5 via the A42.

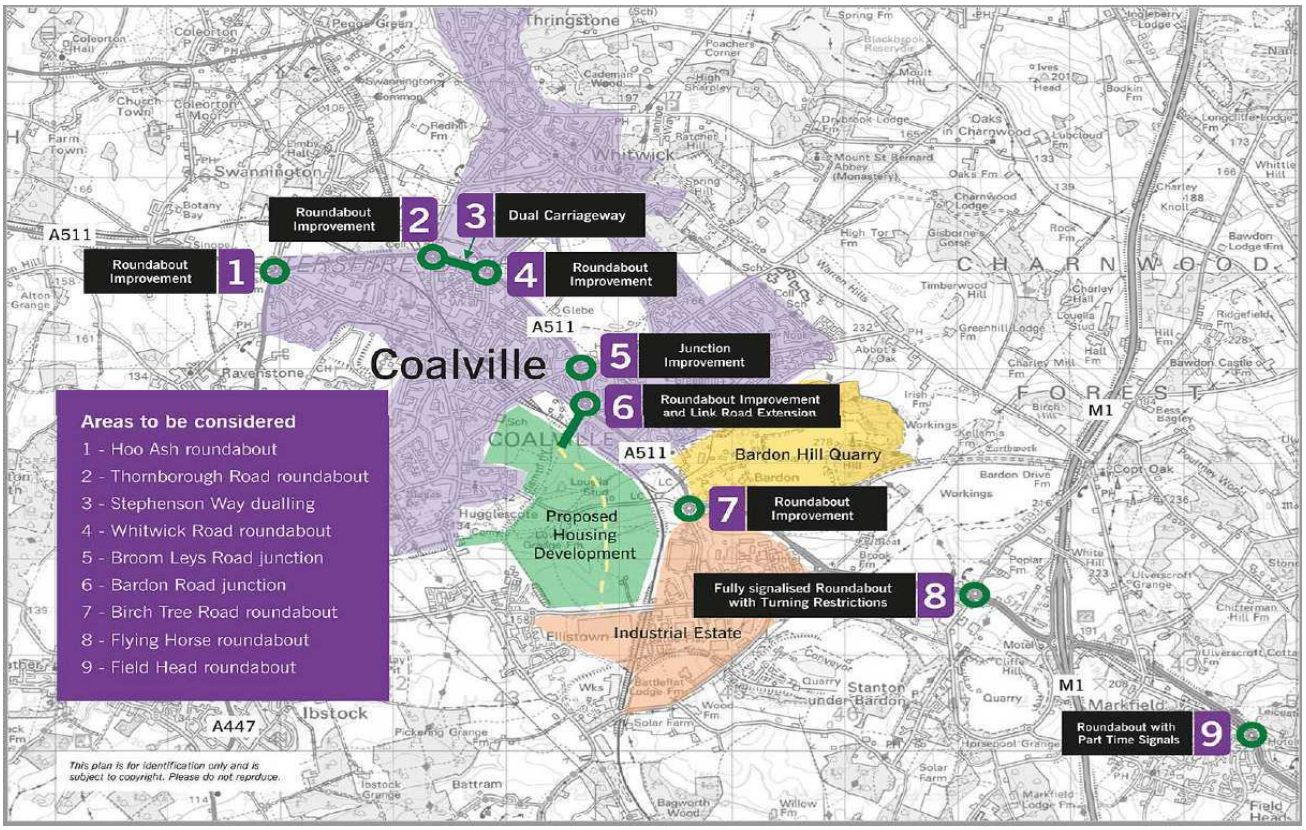
3.1.3. The preferred scheme identified for the A511 MRN Growth Corridor involves improvements to the following nine locations between the A42 Junction 13 at Ashby to the Field Head roundabout near Junction 22 of the M1 set out in **Table 3.1** and shown in **Figure 3-1 – Scheme Plan**:

Table 3-1 – Description of Improvements

Location	Description of Improvements
A511 / Hoo Ash Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions.
A511 / Thornborough Road Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions. The existing crossing on the western (McDonalds) side of the A511 will be retained.
A511 Stephenson Way Dualling	Alter the existing single lane road to a dual carriageway on Stephenson Way between the Thornborough Road and Whitwick Road roundabouts.
A511 / Whitwick Road Roundabout	Widened approaches and exits allowing two ahead lanes for A511 in both directions, with proposal for a signalised pedestrian crossing on the junction's eastern side (Morrisons). This will aid walking and cycling movements between Whitwick and Coalville.
A511 / Broom Leys Road Junction	Modify the existing traffic signal junction by altering the existing left turn lane on Stephenson Way into Broom Leys Lane (Eastbound) to enable ahead and left traffic. Removing some of the verge and footway to provide two ahead lanes for traffic travelling northbound on Stephenson Way. This will require the existing right turn onto Broom Leys Road (Westbound) to be banned. This should enable improved vehicle throughput, reduced queuing and thus reduced pollution within the AQMA that contains this junction.
A511 Bardon Road Roundabout	This scheme upgrades the existing roundabout at the A511 Stephenson Way / Bardon Road Junction (i.e. Junction 6 on **Figure 3.1**) to allow a new southern arm and road connection to the Bardon Link Road being provided by developers as shown by the yellow dotted section of the Bardon Link Road provided in **Figure 3.1**.
A511 / Birch Tree Roundabout	This scheme will see the delivery of widened entry and exit lanes allowing three lanes and keeping the two lanes on the exit towards Coalville, supporting better traffic flow and reducing the risk of collision, as well as providing signalisation on the A511 approaches to the junction, supporting easier movement to and from the Bardon

Location	Description of Improvements
	Lane industrial estates.
A511 / Flying Horse Roundabout	This scheme will see the current partially signalised roundabout altered so that traffic from Stanton Road and traffic from Copt Oak Road can only turn left onto the A511. Traffic travelling on the A511 will not be able to turn right into Stanton Lane. This signalisation aids in regulating traffic flow and thus reducing the potential for accident at this location which currently shows a large number of PICs. The scheme will also see the existing pedestrian crossings kept with an additional crossing provided on Stanton Lane.
A50 / Field Head Roundabout	It is proposed to introduce part time signals on the A50 approaches to the roundabout. A two-lane exit is proposed on Launde Road. This adjustment enables regulation of the traffic flow across the roundabout, as well as improving traffic control at a junction that shows a considerable number of PICs over the last five years.

Figure 3-1 – Scheme Plan



3.1.4. As outlined in the table above, the scheme will provide additional accessibility to and from housing and employment sites planned to the south east of Coalville. This will be achieved through the delivery of the new section of highway extending southwards from the A511 Bardon Road, into the southeast Coalville Sustainable Urban Extension (SUE), where an internal spine road will provide a continuous connection towards Grange Road.

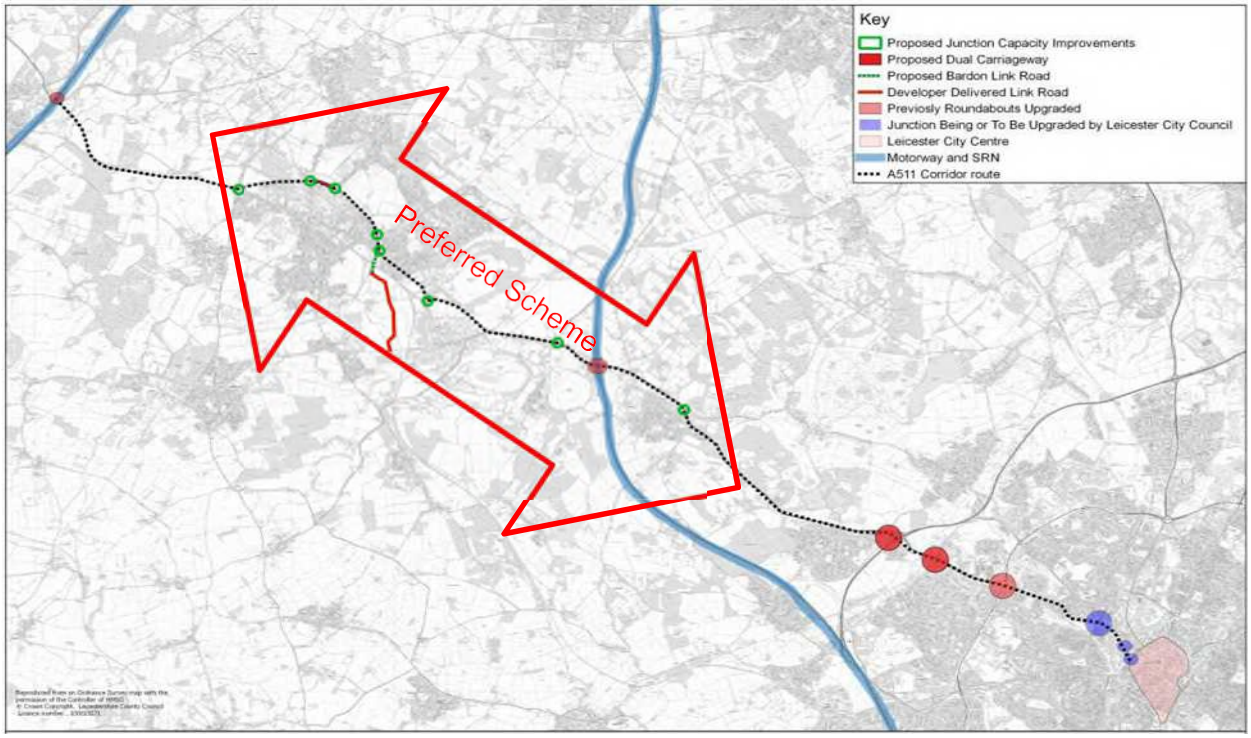
3.1.5. In addition to improving access to local employment and residential sites, improvements along the A511 will enhance connectivity to the A42 and M1, both of which provide access to Leicestershire's Internal Gateway – East Midlands Airport.

3.1.6. The airport and the surrounding area are currently undergoing extensive redevelopment, with the delivery of East Midlands Gateway (EMG) one of the UK's largest Strategic Rail Freight Interchange and the potential for a significant mixed-use development at the Ratcliffe on Soar Power Station, which is due to be decommissioned in 2025. These schemes have been identified as part of plans to develop an East Midlands Development Corporation which aims to make the region an economic powerhouse.

3.1.7. There are also supporting measures proposed to the east of the M1. The section of road between the M1 junction and Leicester City Centre is the A50. Three junctions along the A50 have already benefited from capacity improvements. To support Leicester City Council's aspirations to regenerate the Waterside area just outside the city centre further junction capacity improvements are proposed.

3.1.8. The location of the interventions proposed by the County Council, as well as the proposed City Council schemes complementary to this project, are shown in **Figure 3-2 – Preferred Scheme intervention locations**.

Figure 3-2– Preferred Scheme intervention locations

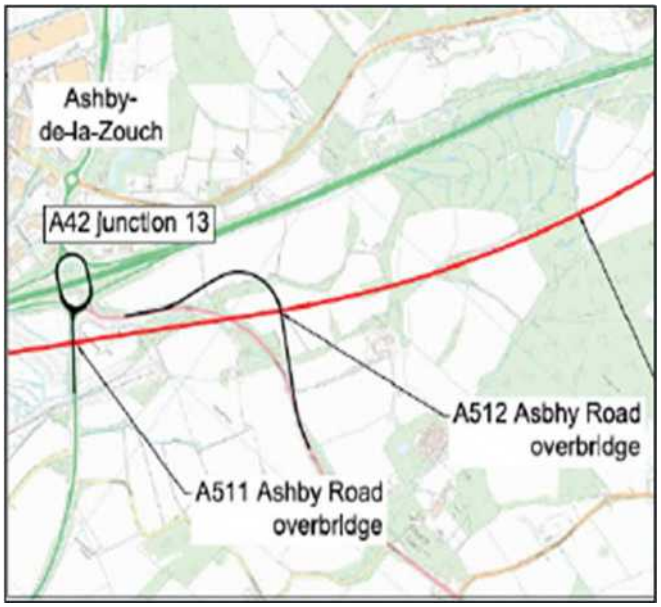


3.1.9. LCC are looking to deliver these improvements in advance of HS2's proposals to introduce one of their main construction compounds adjacent to the A42 Junction 13 as well as a temporary railhead is also proposed close to A42 Junction 13, with access to and from the A511.

3.1.10. These works could start mid-2025 and when underway will significantly increase freight movement along the A511. Furthermore, in June 2019 consultation on HS2 provided further details on the proposal to realign part of the A512 on the approach to A42 Junction 13, as well as some accommodation works on the A511 approach onto the A42 Junction 13 to facilitate the route of HS2, as shown in **Figure 3-3** below. The A512 runs parallel to the A511 providing a secondary link between

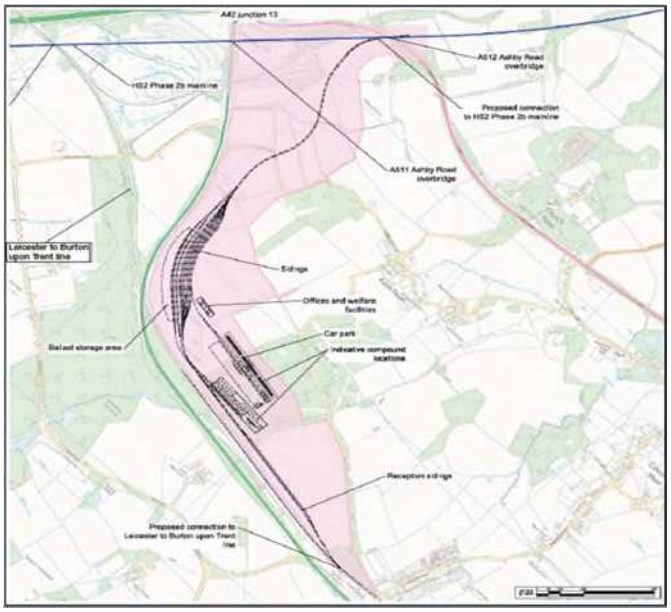
the A42 Junction 13 and the M1. During the realignment works, the A511 will form one of the main diversion routes for the A512.

Figure 3-3 - HS2 Proposals for A512 Realignment and A511 Accommodation Works



3.1.11. During the consultation in June 2019, HS2 also proposed the construction a temporary railhead near to the junction 13of the A42 and the existing Burton upon Trent rail line to support the construction of the HS2 railway. These proposals are shown in **Figure 3-4**.

Figure 3-4 - HS2 Proposals for Temporary Railhead near Ashby -de-la-Zouch

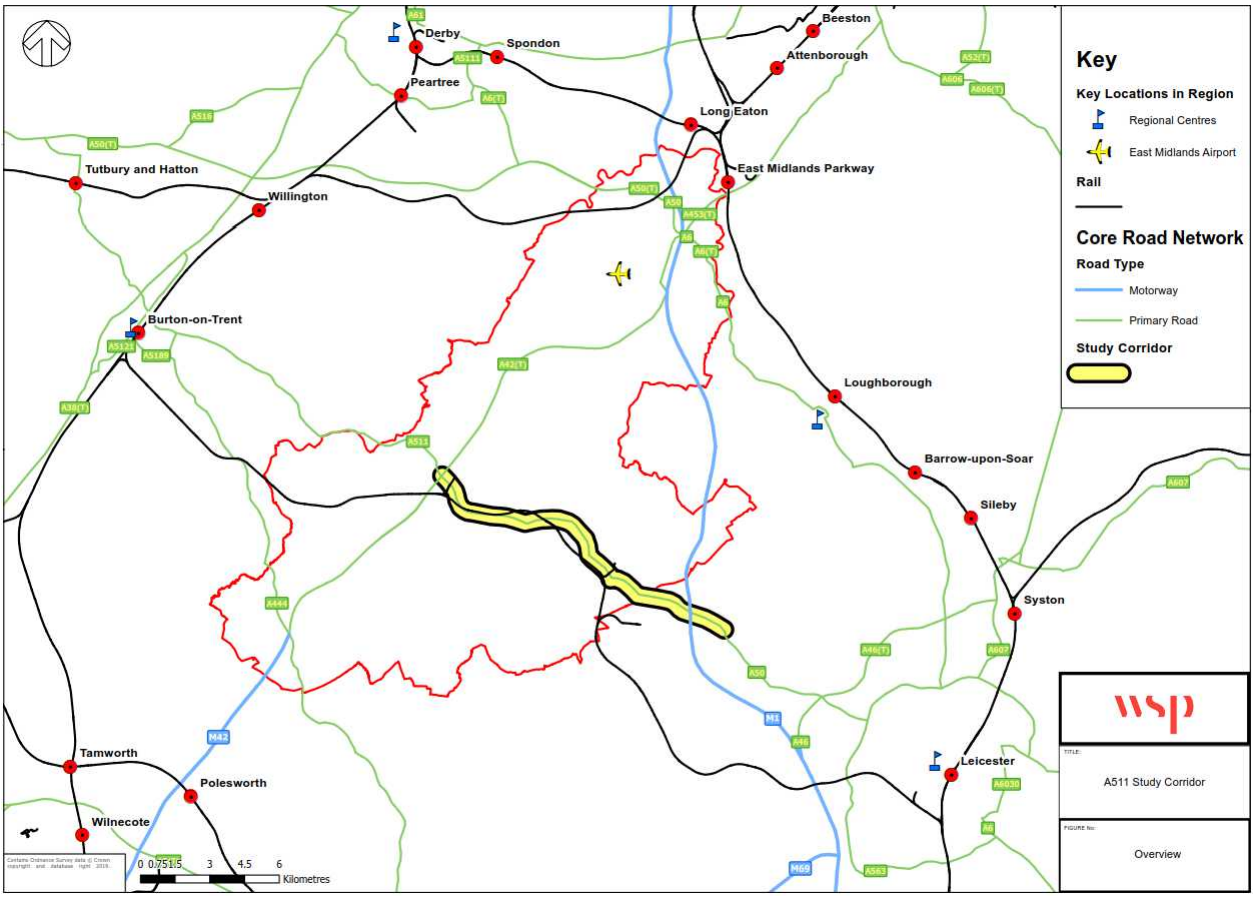


3.1.12. As a result of these proposals, the A511 will be required to accommodate traffic associated with both the construction compound, proposed temporary railhead and diverted movements from the A512. Delivery of the A511 Growth Corridor improvements seeks to ensure this route remains resilient during

this period. However, failure to deliver the works in advance of HS2 Phase 2b will sterilise the network for a 10-year period, with the Coalville Transport Strategy being undeliverable until 2035.

3.1.13. The A511 MRN Growth Corridor is mostly located in the district of North West Leicestershire and relates to the section of the road between the A42 Junction 13 and the Field Head Roundabout on the A50 via the M1 Junction 22. This section of the road centres on the town of Coalville which, in turn, sits north-west of the city of Leicester. The location of the corridor and its relationship with key locations can be seen in **Figure 3-5.**

Figure 3-5 - Corridor location and context



3.1.14. Congestion on the A511 MRN Growth Corridor has been a long-standing issue recognised by both North West Leicestershire District Council and Leicestershire County Council; this can be dated back to 2008 when the Coalville Transport Strategy (CTS) was developed and investigated junctions on the corridor requiring improvement to facilitate housing growth in Coalville and Ashby.

3.1.15. An outcome of the CTS was the implementation of the Coalville Contribution Strategy (CCS) to help facilitate the delivery of improvements along the corridor, however insufficient funding has currently been received from the CCS to deliver the necessary improvements required for the corridor. Due to this, issues along the corridor have become increasingly pronounced and are likely to be exacerbated further by growth in background traffic and the significant levels of growth planned for the town as part of the local plan.

3.1.16. Through consideration of local conditions as set out in census, indices of multiple deprivation and local policy guidance, the following objectives were identified as being a priority for delivery of the A511 Growth Corridor:

1. Make journeys on the A511 faster and more reliable;
2. Provide a safer road network, resilient to road collisions;
3. Improve reliability and capacity for freight;
4. Support North West Leicestershire District Council's objectives of facilitating growth by delivering; transport infrastructure;
5. To improve connectivity for all road users, particularly vulnerable road users;
6. Support the SRN by providing a reliable and resilient link to M1 J22; and
7. Improved Air Quality along the A511 corridor specifically, which has a section which has been identified as an AQMA in LLTP3.

3.1.17. Subsequently, a list of 28 schemes or packages of schemes was written up and appraised for their ability to resolve the objectives set out above. More details on the sifting and scheme selection process leading to the identification of the Preferred Option can be found in the Options Assessment Report. The preferred scheme for the A511 aims to:

- Deliver increased capacity at key congested junctions across the corridor;
- Provide an alternative access to the proposed housing developments to the southeast of Coalville;
- Deliver improved connectivity to key destinations as well as international gateways, such as Leicester and East Midlands Airport by reducing delays onto and of the M1 and A42;
- Support Freight movements from East Midlands Gateway (strategic rail freight terminal) through the provision of a less congested and reliable route;
- Support public transport operations along corridor through the provision of a less congested and reliable route, and in so doing encouraging the use of sustainable transport;
- Offer opportunities for improving safety of corridor users, especially non-motorised road user by providing better and safer crossing facilities at key junctions along the corridor; and
- Offer utility companies, such as water and telecommunications the opportunity to upgrade their services along the A511 corridor at the same time works take place, to minimise any future disruptions.

3.1.18. It is the current levels of congestion along the A511, the need to lock in the local benefit of housing and employment growth and the need to be ready for HS2 construction by 2025 that makes this scheme a priority for the Major Road Network.

3.1.19. Implementation of the scheme will also provide the breathing space to implement a wider transport strategy for Coalville and the surrounding area to address localised traffic issues, public transport improvements and walking and cycling connectivity; building on the work done as part of the Local Sustainable Transport Fund.

4 STRATEGIC CASE

- The A511 MRN Growth Corridor scheme has been identified as the preferred option to overcome existing traffic congestion and traffic related problems along the A511 between Leicester and the A42 thereby supporting future growth (as set out in the Local Plan). The scheme has been identified from an evidence and objective-led optioneering process, assessing a range of options across modes, different scale and routes. Following the submission of the SOBC to DfT it was further refined taking into consideration the results of the transport modelling work being carried out in support of the A511 MRN Growth Corridor scheme.
- Coalville is the principal town in North West Leicestershire and it lies on the A511 trunk road between Leicester and Burton-upon-Trent, close to junction 22 of the M1 motorway where the A511 meets the A50 between Ashby-de-la-Zouch and Leicester. The A511 MRN Growth Corridor (A511) is one of five Growth Areas identified by the Leicester and Leicestershire Enterprise Partnership (LLEP) in its Strategic Economic Plan (SEP). Through appropriate investment and improvements along the corridor, there is the potential to deliver at least 5,275 houses and 25ha of employment land. The local distributor road provides a direct link to new employment developments providing more than 5000 jobs.
- North West Leicestershire is a broadly rural district, with a considerable part of the area covered by the National Forest. Coalville is the principal town in the area, located in the district's east, centred on the A511 corridor. The population of the district is aging, with increasing portions of the residents in the 40-69 age bands. Most of working age residents are located in Coalville. In the district, the primary employment sectors are manufacturing (20.1%) transport and logistics sector (14.1%), wholesale/retail (17.6%), construction (14.2%), professional and other private services (10.4%)[1]. This highlights the importance of the highway network to the region to enable these industries to function.
- The scheme supports the delivery of over 5000 dwellings through to 2035 as well as the ambitions of the Strategic Growth Plan for Leicester and Leicestershire through to 2050.
- Local unemployment in the district is 4.2%[2] and the scheme will help to facilitate business expansion, job creation and the delivery of 25ha of employment land expansion adjacent to Coalville as well as resolving current and future HGV issues along the road particularly associated with traffic between M1 and A42, local mineral extraction and future HS2 construction.
- The scheme is in line with National, Sub-Regional and Local policies with a particular benefit of the scheme being supportive of housing development and economic growth around Coalville, as well as supporting the Strategic Road Network.
- A short distance to the north, the M1 and A42 both provide access to Leicestershire's International Gateway – EMA and the national significant development proposals surrounding the airport including East Midlands Gateway. As a key link between the M1 and A42, the A511 corridor improvements have the potential to support these strategically important development sites.

4.1 INTRODUCTION

4.1.1. This Outline Business Case is being submitted for the DfT's Major Road Network pipeline and development funding.

[1] From North West Leicestershire Profiles: https://www.nwleics.gov.uk/files/documents/coalville_economic_profile/Coalville%20180418.pdf
[2] From Nomis Web: https://www.nomisweb.co.uk/reports/lmp/la/1946157146/report.aspx

4.1.2. The Strategic Case sets out how the need for an intervention on the A511 MRN Growth Corridor was identified, as well as how the specific objectives against which an intervention would be set were identified. Evidence has been drawn from Census data, Indices of Multiple Deprivation analysis and from national, regional and local planning guidance. The Case also considers current road conditions on the corridor and the route's place in relation to strategic transport movements, as well as public transport movements.

4.1.3. The Strategic Case is discussed in detail under the following sub-headings, which are derived from DfT guidelines as part of the recommended 5 cases:

- Existing arrangements;
- Identified problems and issues;
- Scheme objectives;
- Option Assessment Report;
- Strategic Fit;
- Political Support;
- Stakeholders;
- Internal or External Business Drivers;
- Synergy; and
- Conclusion

4.2 EXISTING ARRANGEMENTS: A511 LOCATION AND NETWORK CONNECTIVITY

NATURE OF A511 IN STUDY AREA

4.2.1. Between the A42 Junction 13 and the Bardon Hill Industrial Park the A511 is predominantly a wide single carriageway. On this section, there are twelve priority junctions, six roundabouts and one signalised junction. Many of the priority junctions are provided with wide 'ghost islands' to reduce the impact of right turning traffic on the primary flows.

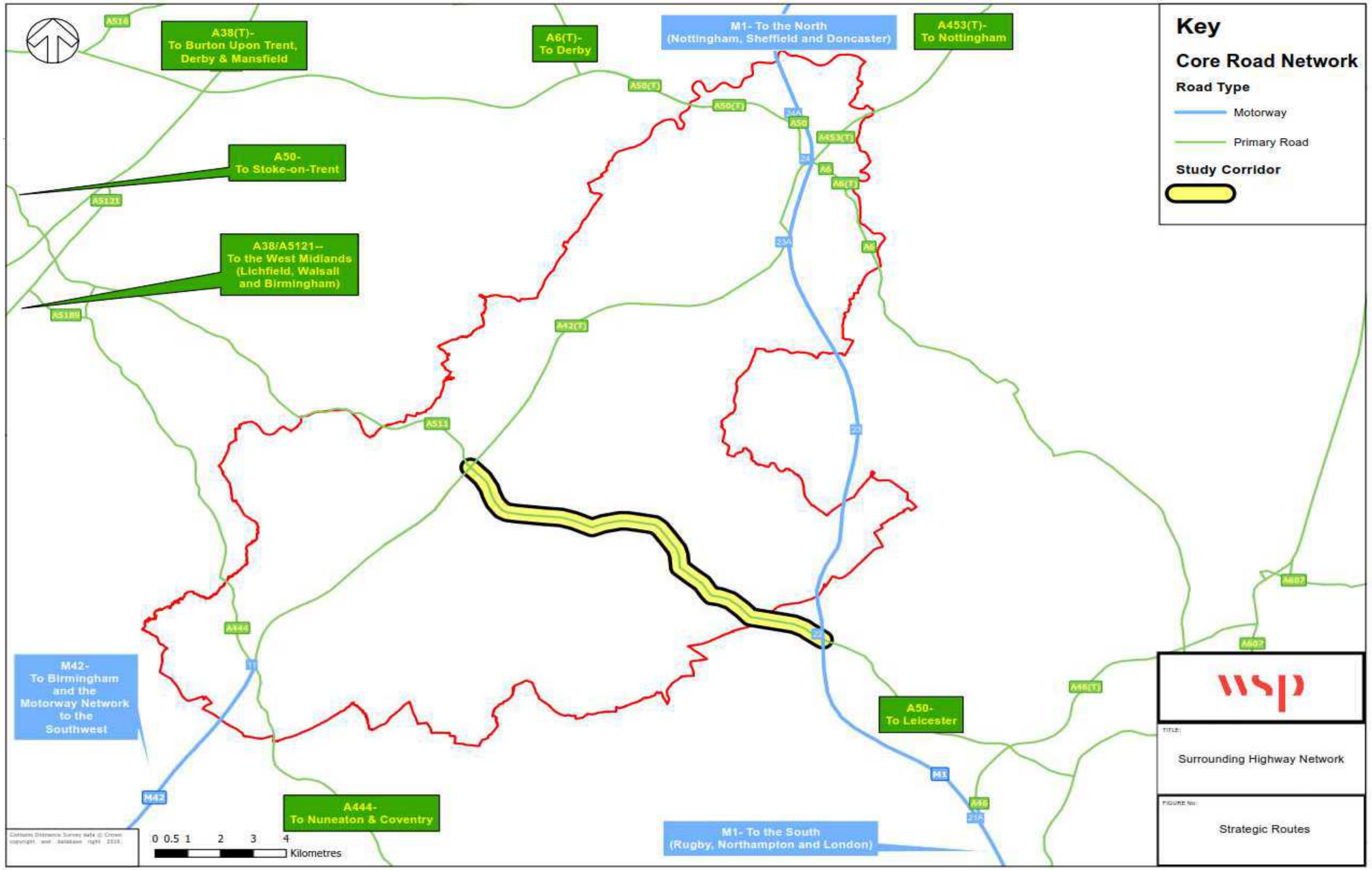
4.2.2. Beyond the Bardon Industrial Estate through M1 Junction 22 to the A50, the A511 is dual carriageway. On this section there are two further at grade roundabouts (Flying Horse and Field Head junctions) as well as the grade separated motorway junction.

4.2.3. A notable feature of the road is the single carriageway bypass around Coalville, which also provides access to a range of industrial estates.

WIDER HIGHWAY NETWORK

4.2.4. The A511 is part of the UK Major Road Network (MRN - see **Section 4.2.6** for more detail), connecting the A50 towards Stoke-on-Trent with M1 at Junction 22. As such, it forms a key cross-country route through Staffordshire and North West Leicestershire, as illustrated in **Figure 4-1**. These are subsequently appraised based on their place within the road network hierarchy.

Figure 4-1 - Highway Network in Relation to Study Corridor



Strategic Road Network

4.2.5. The key strategic routes shown in **Figure 4-1** include:

- M1: Accessed from the study corridor at J22, the M1 north provides connections to Nottingham, Sheffield and Doncaster and Southbound towards Rugby, Northampton and London.
- A42: Accessed from the study corridor at J13, the A42 continues north east, providing a link to East Midlands Airport before connecting with the M1 at Junction 24. From this junction, the A453 towards Nottingham can be accessed. Travelling south west from J13, the A42 leads towards Birmingham, tying in to the M42 (see below).
- A50: To the south west, this strategic road is accessed from the study corridor at J22 of the M1, the A50 travels towards Leicester. Via Leicester's A563 outer ring-road, it provides further connections onwards to Lincolnshire, Cambridgeshire, Northamptonshire and Norfolk. These are via the A607 and A6, both elements of the Major Road Network. The A50 is also connected to the A511 to the north west, providing onward connections from the corridor towards Stoke-on-Trent and the north west of England.
- M42: The M42 continues south west from the end of the A42 and provides connections to the Birmingham Motorway Box, with connections to the City as well as the M6 towards the north west of the UK, the M5 to the south west and the M6 towards the south east and Coventry.
- A46: The A46, accessed from the study corridor via either the M1 or the A50, provides links to the north-east Midlands, including Lincolnshire and Melton Mowbray.

Major Road Network

4.2.6. The A511 is part of the Major Road Network and forms a key network connection between roads in the SRN, as well as being a primary east-west arterial road through the district. Outside of the A511 Growth Corridor, it also provides connections to the wider MRN network:

- A511 north west of the study area towards Burton on Trent;
- A50 south east of the study area towards Leicester City;
- A563 which forms an orbital route round Leicester City via the A50; and
- A6 which provides a connection between East Midlands Airport and Leicester City.

4.2.7. In conclusion, the A511 forms a key part of North West Leicestershire's network, providing connections between the north west and south west of the Midlands, as well as providing access to the SRN AND OTHER KEY MRN ROADS.

EXISTING ARRANGEMENTS: TRAFFIC

4.2.8. This section of the OBC considers data relating to the A511, extracted from DfT Annual Average Daily Flow (AADF) traffic counts and LCC modelling outputs, the former collected between 2013 and 2018, the latter based in 2014.

4.2.9. The AADF data highlights the importance of the A511 as a MRN corridor, with an average of 11,000 vehicles per day utilising it in 2018. The AADF data also shows that traffic on the corridor has grown, year on year, since 2013. Between 2013 and 2018, traffic increased by 11% overall.

4.2.10. The AADF data also demonstrates the corridor's importance to strategic freight movements, with HGV traffic growth of 20% from 2013, faster then general traffic growth and resulting in the HGV percentage of overall traffic increasing from 11% to 12%. This traffic is generated from the transport and industrial sites located in the corridor itself, as well as representing the road's usage as a northwest to southeast corridor for freight.

4.2.11. The impact of this level of traffic on the corridor was analysed by LCC utilising their PRTM model in order to understand the junction volume to capacity ratios (a measure of congestion) at the key intersections on the corridor. This analysis considered locations where traffic volume is 85% of capacity as experiencing congestion with 100% of capacity indicating permanent queuing throughout the peak.

4.2.12. Their study, showed that the majority of junctions on the corridor were at 85% of capacity in both the AM and PM peaks, with all of the junctions east of Coalville except that at Charnwood Arms experiencing volumes approaching 100% of capacity.

4.2.13. The modelling work also enabled estimation of the amount of delay generated by traffic utilising the junctions. Similar to the capacity analysis, this highlighted the junctions in the vicinity of Coalville as being primary sources of delay, including Hoo Ash, Flying Horse and Broom Leys roundabouts, which cause over 40 seconds delay for traffic using them in both the AM and PM peaks.

4.2.14. The impact of congestion on road speeds was also analysed against observed data. As aforementioned, the A511 has a 50/60mph speed limit for the majority of its length. Despite this, traffic speeds recorded on the corridor in 2019 were between 10 and 25mph on average, for considerable sections of the road in the study area in the AM and PM peak, most notably in the vicinity of the Coalville Bypass, particularly its eastern end; including the approach/exit from the bypass at Broom Leys and Birch Tree junctions. Both periods also show traffic moving at less then 10mph on the approach to the Flying Horse Roundabout, again underlining the case for congestion relief measures.

4.2.15. Finally, analysis was done of accident data obtained from Leicestershire County Council for the period between 2013 and 2018. This showed that the overall number of accidents on the corridor has been in long-term decline but their spatal distribution is focused in clusters around the A511 junctions. This, again, reinforces the case for intervention at these junctions to improve safety and traffic flow on the corridor.

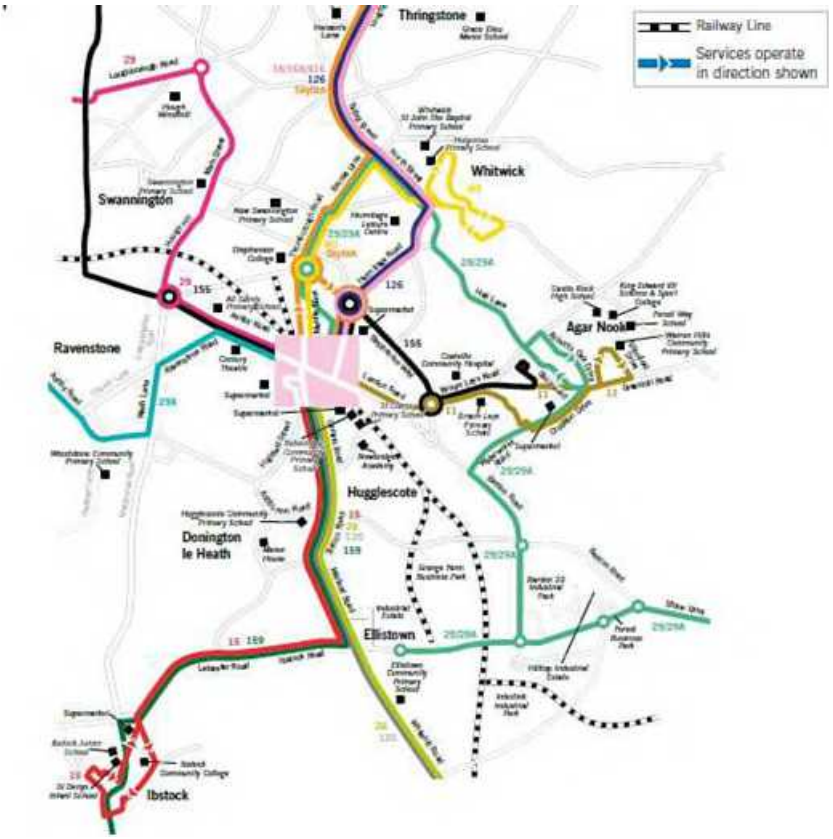
EXISTING ARRANGEMENTS: PUBLIC TRANSPORT & ACTIVE MODES

4.2.16. As previously cited, the study corridor is quite rural in nature, with Coalville acting as the local centre. As such, the town has a reasonable bus network, with services every twenty minutes to the major centres of Leicester and Burton-on-Trent, with hourly or better local services to much of the district and the key local employment site of East Midlands Airport.

4.2.17. In the 2011 Census, the mode share for bus travel to work in Coalville was 3%. This compares to 83% travelling by car or van and 13% for walking and cycling.

4.2.18. Whilst there are currently 14 bus services that serve Coalville, with many avoiding using the A511 as their primary route, due to current lack of journey time reliability. Bus services to Coalville are shown in **Figure 4-2**.

Figure 4-2 – Map of bus services in Coalville (Source: Leicestershire County Council)



4.2.19. The airport handled 4.9 million passenger flights in 2018, with the primary movements being domestic trips to Ireland and Scotland, followed by Europe. The airport also records a considerable amount of freight each year, with 328,000 being recorded in 2018.

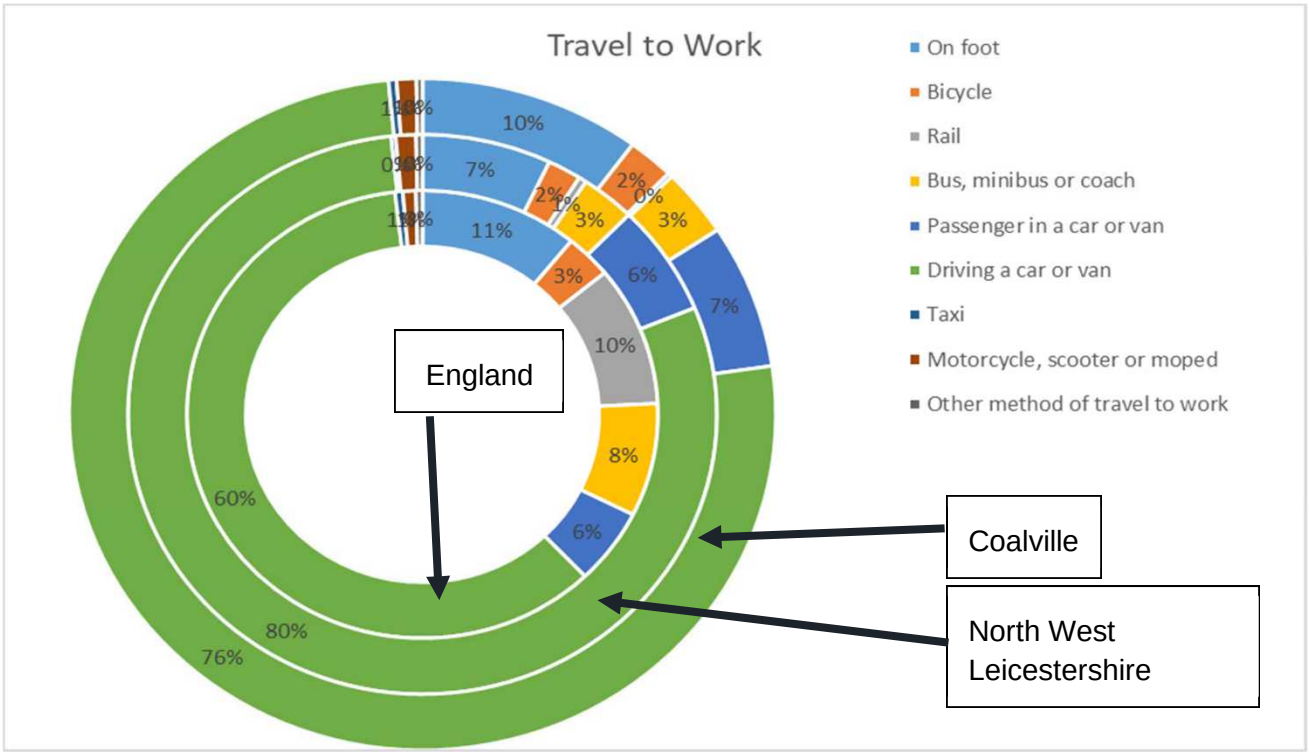
4.2.20. Whilst the Leicester to Burton on Trent railway line passes through the town east/west, the town's station closed in the 1960s, leaving the railway network freight only. As such, the nearest railway stations to the Corridor are in Leicester and Burton-Upon-Trent, from which a range of services can be accessed, providing connections, notably, to Birmingham, London, Nottingham, Derby and Sheffield.

4.2.21. Active travel (walking and cycling) made up 9% of travel to work trips in the district at the 2011 census, made up of 7% walking and 2% cycling. Coalville had a slightly higher rate of 12%. with 10% walking and 2% cycling. In both cases, this is lower than the national averages of 11% for walking and 3% for cycling. Census data analysis also shows that there are a large number of car trips being made for journeys of less than 1-5km, suggesting an opportunity for walking and cycling investment to encourage mode shift at this short distance. Regarding existing infrastructure, there are a notable number of off-road cycle routes identified along the A511, which intersect the north-south National Cycle Route 52 towards Derby. However, connectivity of these routes along the A511 is hampered by the lack of suitable crossing facilities. This has provided a barrier to these routes encouraging mode shift over short distances along this route. This means that the condition of the road network is important for cycle trips. Mode shares are considered further below.

CENSUS CHARACTERISTICS OF AREA

4.2.22. In this section of the report we consider current methods of travel to work in the region. The travel to work method used by Coalville's residents is set out in **Figure 4-3**, below.

Figure 4-3 - Travel to Work



4.2.23. In 2011, the dominant method of travelling to work employed by Coalville residents was by car with driving to work making up 76% of trips. This is higher than the national average of 60%, but lower than the wider North West Leicestershire rate of 80%.

4.2.24. This is followed by trips to work on foot, which make up 10% of movements in Coalville, greater than the wider district (7%) but less than the national figure of 11%. The third most prevalent mode is car passengers, forming just under 7% of trips, compared to 6% in North West Leicestershire and in England. Bus makes up the fourth largest mode share at just over 3%, similar to the wider district, but below the national figure of 8%. Cycling makes up 2% of trips, again, similar to the district value, but behind the national value of 3%. The travel to work mode share of other modes in Coalville and North West Leicestershire are negligible.

4.2.25. Overall, the statistics are reflective of Coalville's nature. The walking and cycling mode shares being higher than the district is to be expected as the town is the largest in the district, with more employment opportunities in walking or cycling distance compared to the wider district. Furthermore, the town is the district's centre for the bus network, which accounts for the bus mode share being marginally higher than the district average.

4.2.26. The town is, overall, quite rural, which accounts for the lower levels of walking, cycling and public transport compared to the country. Rail is notably absent from the district, due to their being no current passenger services calling within the area.

4.2.27. Analysis of the 2011 Census regarding the distances people travel to work in the North West Leicestershire district shows that one third of commuting trips are less than three miles, making them feasible for walking and cycling. Another third of trips are between three miles and six miles, which is usually seen as the guideline travel distance for people using public transport. Given that around 12% of district commuters were travelling by foot, cycle or bus there is clearly potential returns from encouraging more sustainable mode choices.

CURRENT TRANSPORT NETWORK CONCLUSIONS

4.2.28. Following the preceding review of the A511's strategic position, the current sustainable transport mode opportunities available in the area and the current transport utilisation by residents in the region and on the corridor, the following conclusions can be drawn:

- Whilst road safety on the corridor has been improving over the last five years, there is still scope for safety improvements, particularly around the junctions presented as accident 'hotspots';
- Should the delivery of the two proposed rail freight interchanges go ahead, there is potential for increasing road traffic movements to and from these sites, making a requirement for improved freight journey time reliability;
- East Midland's Airport, located to the northeast of the corridor is a key regional gateway for trade, freight and passenger movements;
- There is currently a poor sustainable transport mode share, despite a reasonably comprehensive bus network and the provision of a range of off-road or secondary-road cycling and walking routes. This suggests that there is scope for improved connectivity for non-car modes;
- The A511's position as a link with the M1 and A42 make its ongoing reliability important; and
- The existence of an AQMA on the A511 in the primarily residential east of Coalville is cause for concern for local health.

4.3 IDENTIFIED PROBLEMS AND ISSUES

INDICATORS

4.3.1. This section sets out the extent of the identified issues along the A511 MRN Growth Corridor using the following set of indicators for the existing and future situation:

- Significant levels of congestion indicated by;
  - Traffic flow volume.
  - Junction volume to capacity ratio.
  - Junction capacity assessment.
- Delays and unreliable journey times indicated by;
  - Travel speeds.
  - Junction delays.
  - Journey times.
- HGV movements;
- Accidents; and
- Air quality.

EVIDENCE SOURCES

4.3.2. As part of the process of developing the transport strategy for Coalville, extensive feasibility studies have been undertaken to evaluate the existing and future problems and issues prevailing within the town and to consider a range of potential transport measures as for the area as part of the adopted Local Plan for the area.

4.3.3. These previous studies have shown that the A511 MRN Growth Corridor experiences congestion at numerous points along the approaches of its key junctions, and are documented the following reports:

- Coalville Transport Study - prepared by Colin Buchanan in June 2011; and
- Coalville Growth Corridor Scheme Assessment - Stage 2A – Growth and Regeneration Impact and Gap Assessment prepared by SYSTRA in 2016

4.3.4. These documents have been used, together with recent modelling work using the Pan-Regional Transport Model (PRTM - an enhanced version of the Leicester and Leicestershire Integrated Transport Model – LLITM) to highlight and evidence the current traffic related problems and issues along the A511 Growth Corridor. It should be noted that the 2038 forecast includes committed and highly likely developments located within and outside the Coalville Area, as well as the southern part of the Bardon Link Road which is being funded by developers of the South East Coalville SUEs. The Base Model was validated and the preferred scheme refined further following the submission of the SOBC to DfT and therefore this OBC presents a refresh of the modelling outputs previously detailed the SOBC.

4.3.5. Also used to inform the current and future issues along the corridor, are individual junction capacity assessments undertaken by LCC and spatial traffic data derived from historic Google API.

4.3.6. This evidence-based work is detailed in the accompanying Options Assessment Report (OAR). This should be read in conjunction with the work presented in this section should more information be required on any of the identified issues along the corridor.

4.3.7. It is worth noting that, since 2014 the A42 Junction 13 and M1 Junction 22 have both been remodelled by Highways England and their capacity improved.

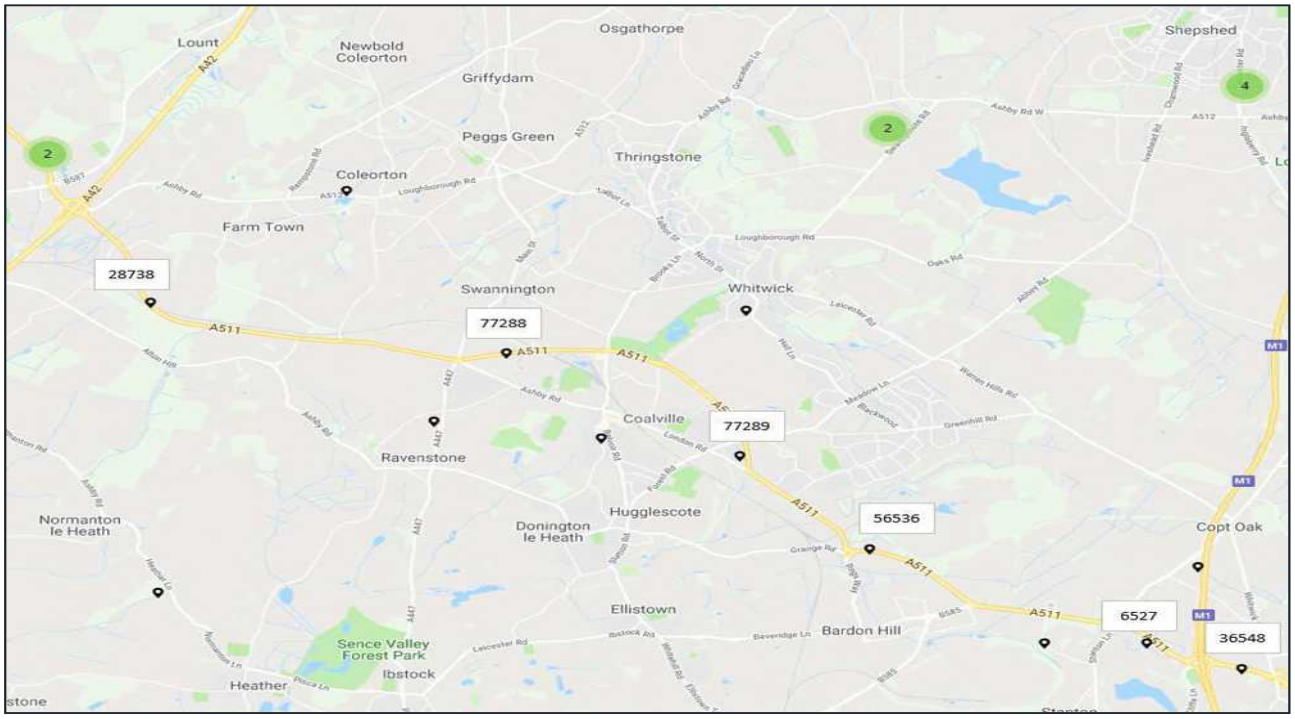
ISSUE 1 - SIGNIFICANT LEVELS OF CONGESTION

Observed and Future Traffic Flows

4.3.8. Traffic flow volume data for the A511 MRN Growth Corridor have been obtained from DfT's Road Traffic Statistics[3] to inform this section. There are six DfT traffic counters along the A511 in the study area. These are shown in **Figure 4-4**.

[3] https://roadtraffic.dft.gov.uk/#13/52.7216/-1.4723/basemap-countpoints

Figure 4-4 - DfT counts sites



4.3.9. **Figure 4-5** shows the changes in Annual Average Daily Flow (AADF) by direction between 2013 and 2018 at the six DfT maintained count locations. It can be observed that there is a general increase in traffic flows between 2013 and 2018 at almost all the sites.

Figure 4-5 - A511 MRN Growth Corridor – directional DfT AADF counts by site

4.3.10. In summary, the traffic counts show that the daily flow of traffic on the A511 corridor has been in the order of 20,000 AADF two-way either side of Coalville, slipping down to around 10,000 AADF (site 77289) at the eastern end of the bypass over the last six years. Closer to the M1 the A511 MRN Growth Corridor daily traffic increases to between 25,000 and 35,000 AADF two-way at sites 6527 and 36548 respectively. Directionality in AADT varies the most at the counters either side of the M1 which suggests congestion and reliability issues arising from junction capacity metering flows and potentially incidents on the wider network affecting a particular direction of flowmore than the other.

4.3.11. The level of traffic along the corridor is expected to increase with the significant growth planned for the area. To understand the scale of growth anticipated for the corridor, the level of traffic flow at the three locations has been obtained from the transport model for 2014 'and 2038. The three locations are shown in **Figure 4-6**.

Figure 4-6 – Modelled traffic volume sites

4.3.12. **Table 4-1** provides the modelled flows in the AM, Inter and PM peaks for the 2014 Base and 2038 'Core' scenarios. A comparison of the flows shows an approximate increase in flows in 2038 'Core' from 2014 'Base' Scenarios of between 5% and 13 % in the AM peak, between 9%and 13% in the PM peak and between 18% and 40% in the Interpeak hour on various sections of the corridor. The highest growth in any time period is experienced during the interpeak suggesting AM and PM peak growth is suppressed by congestion. Also, the highest growth along the corridor is experienced on the section of the A511 closest to the M1.

Table 4-1 – 2014 'Base' and 2038 'Core' hourly modelled flows along the A511 MRN Growth Corridor

Sites	Period	2014 Base	2038 Core	Growth (%)
Site 1 - Link between A42 J13 and Hoo Ash Rbt	AM	1674	1847	10.4%
	IP	1284	1620	26.2%
	PM	1750	1978	13.1%
Site 2 - Link between Thornborough Rbt ad Whitwick Rbt	AM	2007	2115	5.4%
	IP	1468	1727	17.6%
	PM	2006	2246	12.0%
Site 3 – Link between Charnwood Arms Rbt and Flying Horse Rbt	AM	3440	3874	12.6%
	IP	2279	3180	39.5%
	PM	2557	3875	9.0%

Junction volume to capacity ratios

4.3.13. Congestion at junctions is measured by determining the ratio of the volume of traffic using a junction, to the capacity of traffic that can be accommodated by the junction. A V/C (Volume/Capacity) ratio of 85% is when delays and queues are likely to be observed. At 100% or above there will be permanent queueing during the peaks and possible blocking back of upstream junctions.

4.3.14. **Figure 4-7** and **Figure 4-8** show the volume to capacity ratios (V/C) for junction which are operating with a V/C of over 85% and over 100% along the A511 MRN Growth Corridor in 2014 for AM and PM peak hours respectively.

4.3.15. The results show that several of the junctions along the A511 were operating with a V/C of over 85% either in the AM or PM peaks. These junctions include:

- A511 / Hoo Ash Junction (AM only);
- A511 / Brooms Leys Junction (AM & PM);
- A511 / Bardon Link Road Junction (PM only);
- A511 / Quarry Access Junction (AM & PM);
- A11 / Flying Horse Junction (AM & PM); and
- A50 / Field Head Junction (AM only).

4.3.16. The model also shows A42 Junction 13 (labelled Junction 1) and M1 Junction 22 (labelled Junction 10) also operating with V/C ratios of over 85% but these junctions have been recently improved and therefore the 2014 results are not reflective of the current situation at these two locations.

4.3.17. Off the A511 the following nearby junctions also experiences congestion with V/C ratios of over 85%

- Ashby Road / High Street Junction (AM & PM);
- Hugglescote Junction (AM & PM); and
- London Road / Forest Road / Brooms Leys Junction (AM & PM).

4.3.18. From local observations, it is evident that queuing at the Flying Horse and Field Head junctions due to congestion tailback all the way to the M1 Junction 22 causing delays at that junction, and thereby having adverse implication on the performance of the Strategic Road Network.

4.3.19. **Figure 4-9** and **Figure 4-10** show the volume to capacity ratios (V/C) for junctions along the A511 MRN Growth Corridor in 2038 for AM and PM peak hours respectively.

4.3.20. The results show that without intervention conditions at several of the junctions identified as congested in 2014 will continue to worsen, with more junctions operating with V/C ratios between 85% to100% and over 100%. The most affected junctions are detailed below:

- A511 / Hoo Ash Junction (AM (V/C >100%) and PM);
- A511 / Whitwick Road Roundabout (PM only)
- A511 / Brooms Leys Junction (AM & PM);
- A511 / Bardon Link Road Junction (PM only);
- A511 / Quarry Access Junction (AM(V/C >100%) & PM);
- A511 / Birch Tree Junction (AM (V/C >100%) & PM)
- A511 / Flying Horse Junction (AM (V/C >100%) & PM (V/C >100%) and
- A50 / Field Head Junction (AM & PM (V/C >100%)).

Figure 4-7 – 2014 AM peak hour junction volume/capacity ratios on A511 MRN Growth Corridor

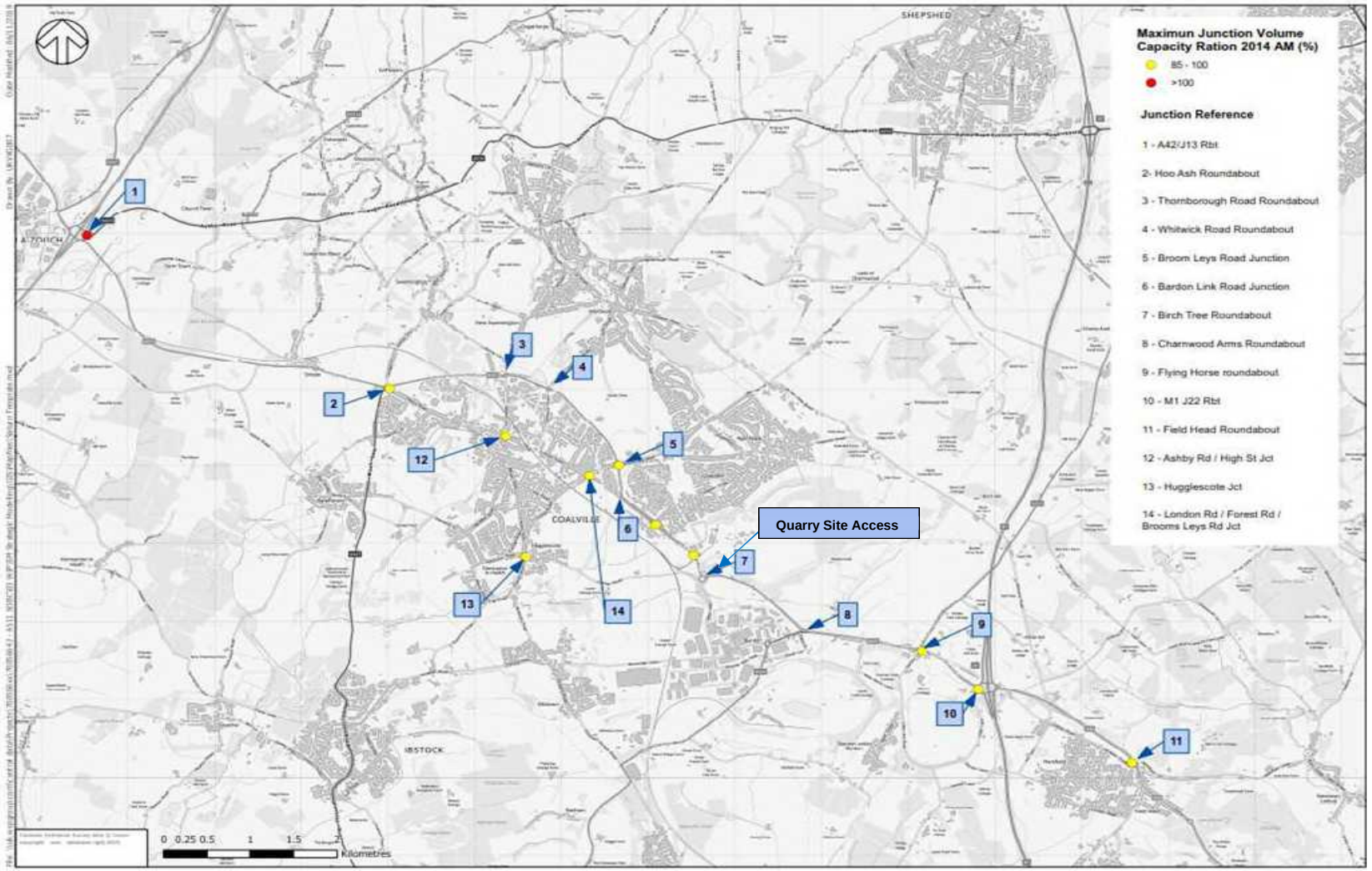


Figure 4-8 – 2014 PM peak hour junction volume/capacity ratios - A511 MRN Growth Corridor

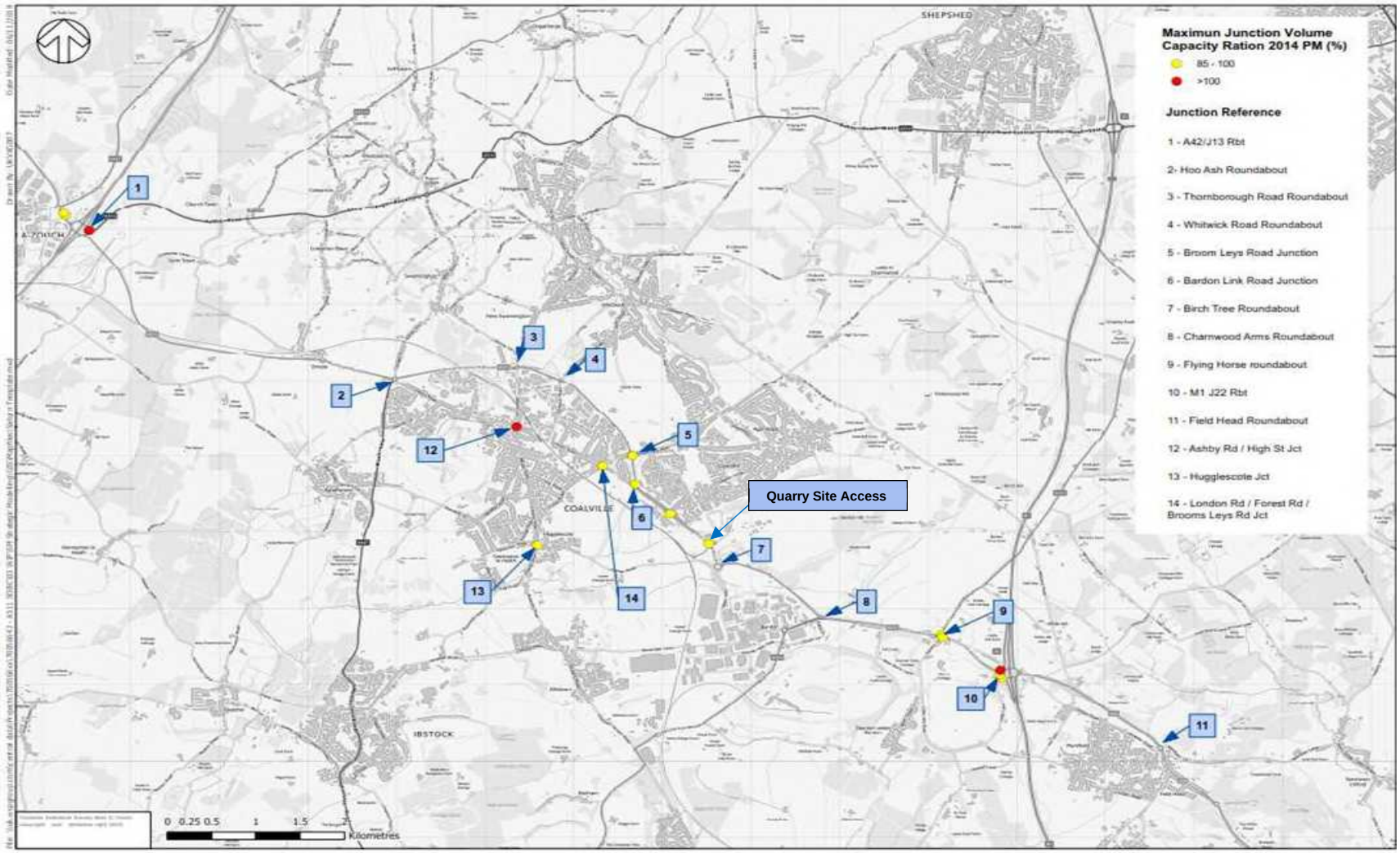


Figure 4-9 – 2038 AM peak hour junction volume/capacity ratios - A511 MRN Growth Corridor

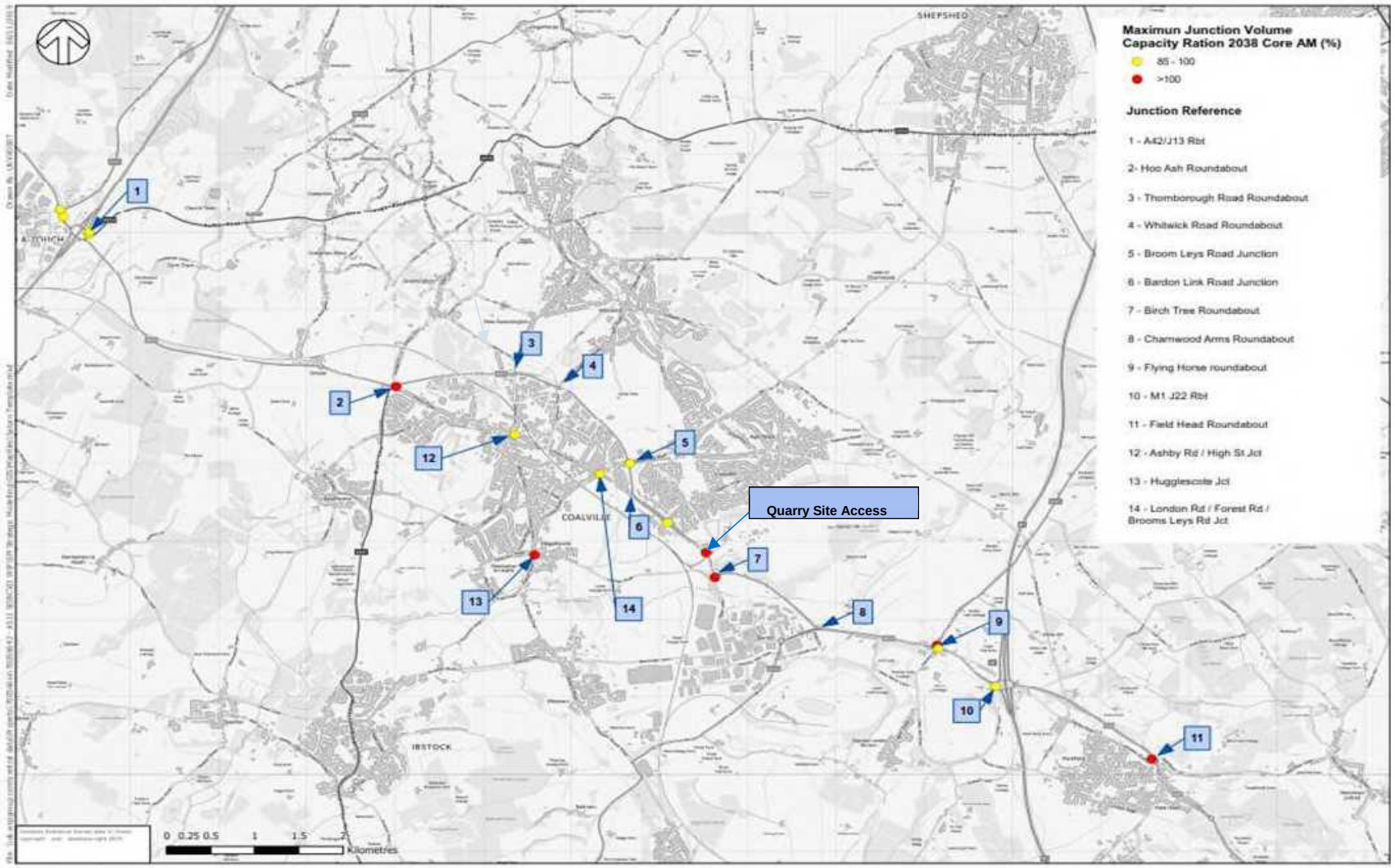
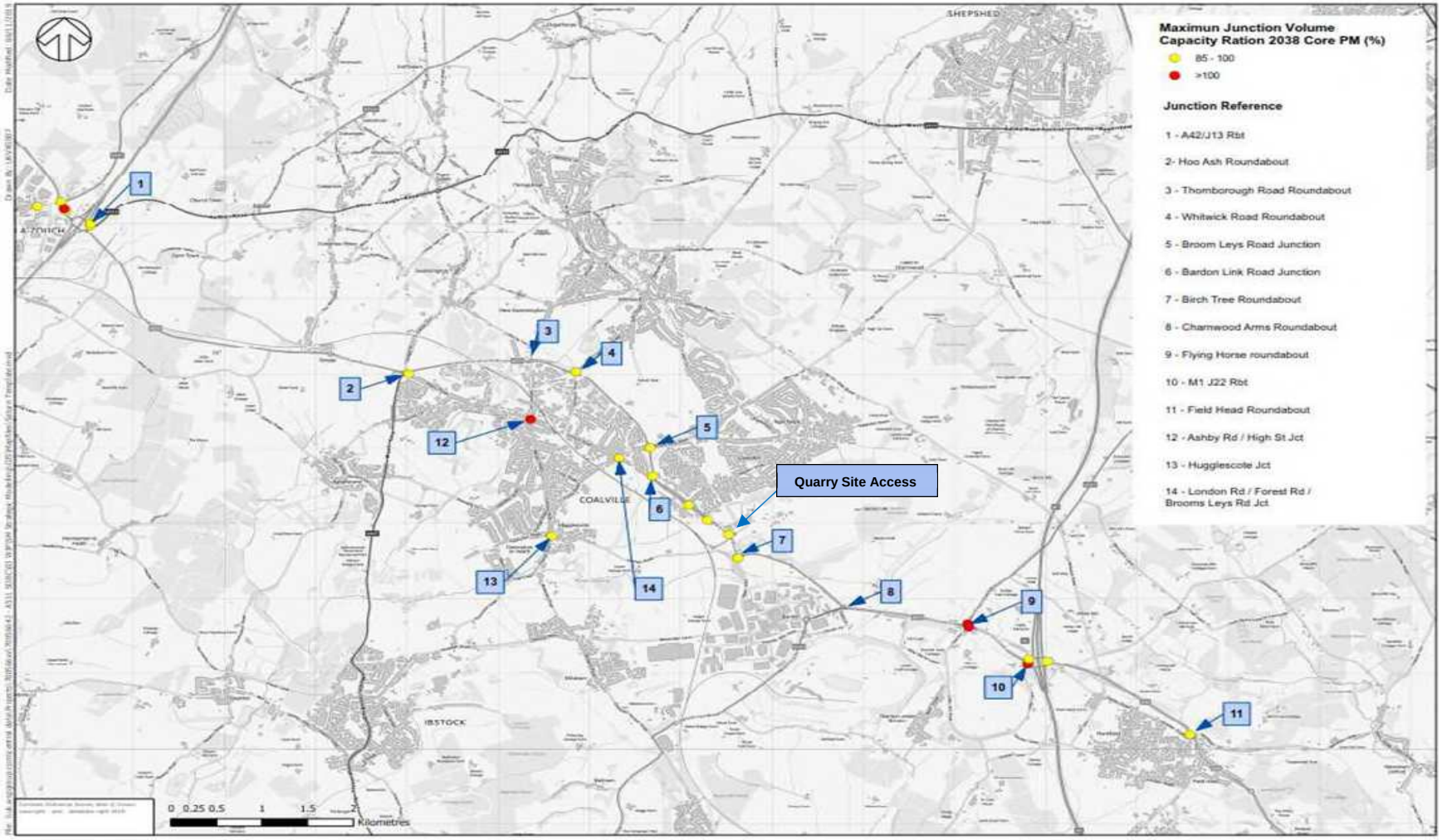


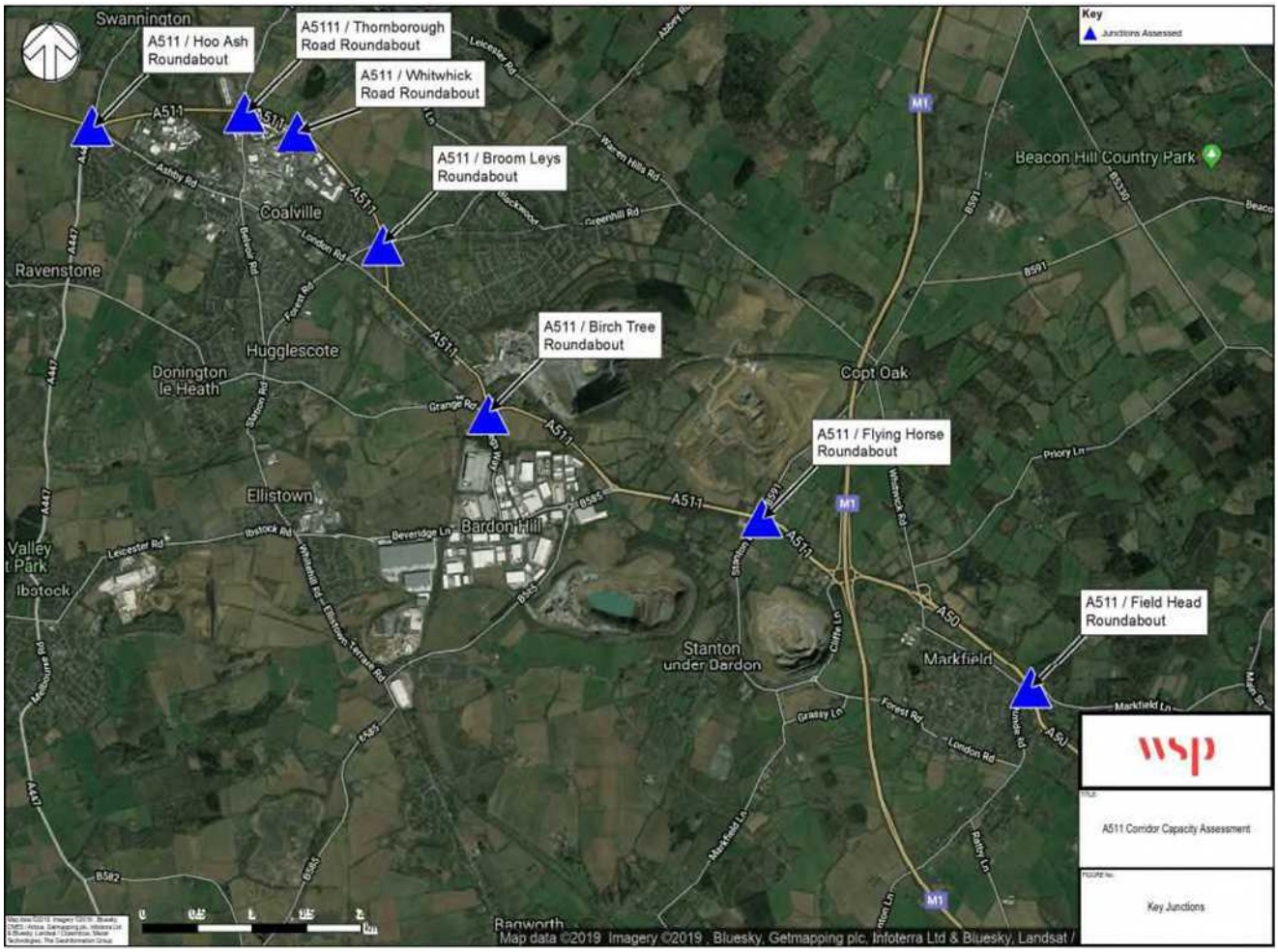
Figure 4-10 – 2038 PM peak hour junction volume/capacity ratios - A511 MRN Growth Corridor



Junction Capacity Assessments

4.3.21. The junction congestion along the corridor is also evident from junction capacity assessments undertaken by LCC at the key junctions along the A511 MRN Growth Corridor shown on **Figure 4-11**.

Figure 4-11 - A511 MRN Growth Corridor: LCC junction capacity assessment sites



4.3.22. **Table 4-2** compares the results of these capacity assessments undertaken for 2017 and 2031. The assessment considers practical reserve capacity (PRC). This is a measure of the available spare capacity at a junction, as a percentage of total capacity. Positive values mean there is spare capacity. Negative values mean the junction is operating at over capacity resulting in congestion. The PRC has been derived using the transport industry recognised ARCADY and LINSIG junction modelling software for standard roundabouts and signalised junctions respectively.

Table 4-2 - Practical Reserve Capacity (PRC) at existing junctions in 2017 & 2031

Junction Name	Existing Layout	Reserve Capacity (PRC)			
		2017		2031	
		AM	PM	AM	PM
A511/Hoo Ash Roundabout	Priority 5-arm Roundabout	-13%	-7%	-19%	-16%
A511/Thornborough Road	Priority 4-arm Roundabout	-7%	0%	-12%	-16%
A511/Whitwick Road	Priority 4-arm Roundabout	-7%	2%	-18%	-12%
A511/Broom Leys Road	Signal Controlled Crossroads	-2%	-12%	-11%	-20%
A511/Birch Tree Roundabout	Priority 4-arm Roundabout	-4%	1%	-14%	-6%
A511/Beveridge Lane Roundabout	Partially signalised four-arm Roundabout	9%	16%	-21%	-22%
A511/Flying Horse Roundabout	Partially signalised four-arm Roundabout	14%	11%	-6%	-16%
A50/Field Head Roundabout	Priority 5-arm Roundabout	-13%	-6%	-20%	-11%

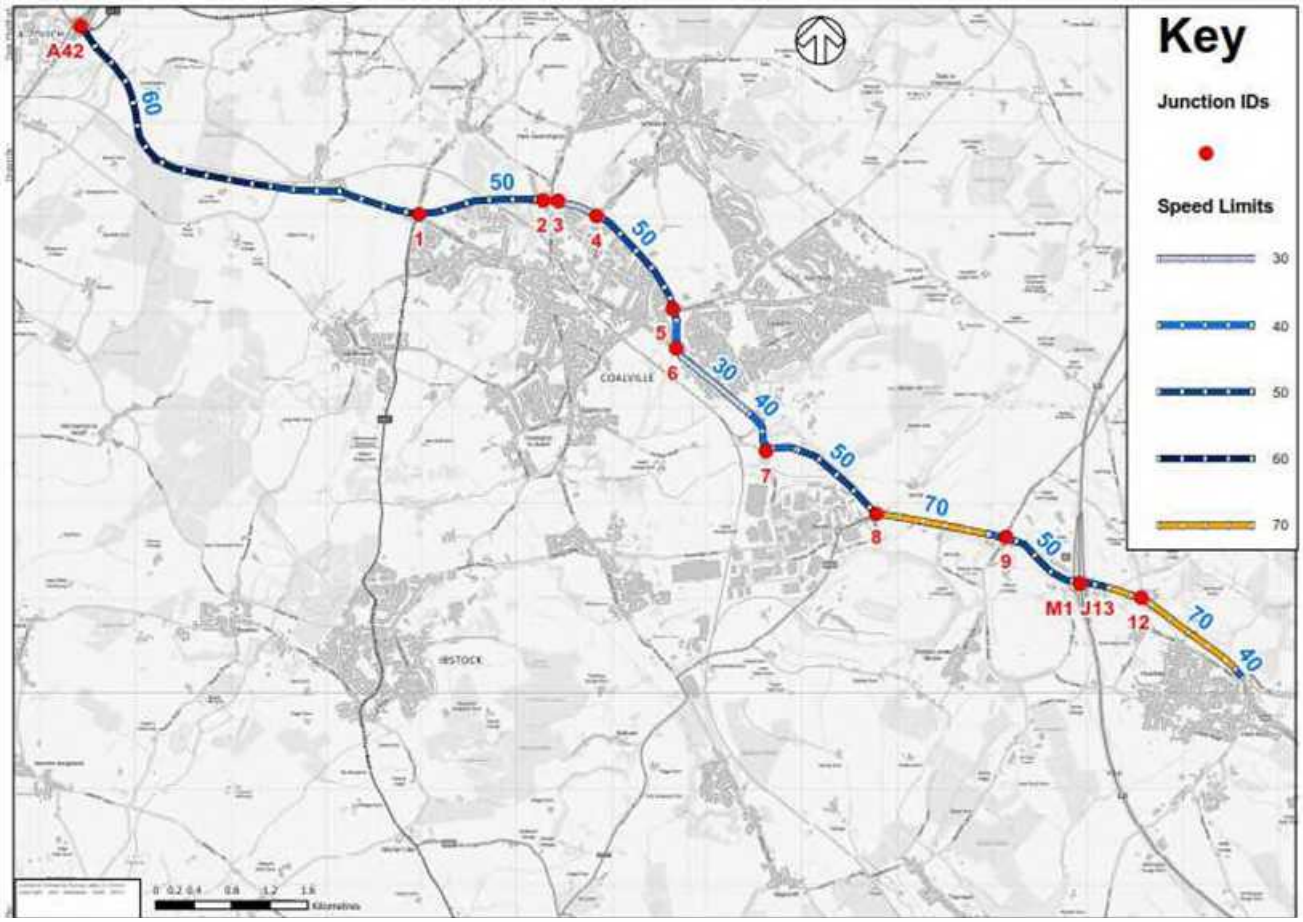
4.3.23. As shown in **Table 4-2** above, several of the junctions along the A511 MRN Growth Corridor are already operating above capacity or close to capacity in 2017, with the A511 / Hoo Ash Roundabout, A511 / Broom Leys Road and A50 / Field Head Roundabout experiencing the most congestion with negative PRC values. The situation is exacerbated by 2031 as all key junctions along the A511 corridor operate above capacity due to traffic growth with PRCs ranging from -6% to -22%.

ISSUE 2 - DELAYS AND UNRELIABLE JOURNEY TIMES

Travel Speeds

4.3.24. **Figure 4-12** provides the speed limits at various sections along the A511 MRN Growth Corridor, and the following sections presents the existing travel speeds experienced along the corridor using both Spatial Data from Google API and data from the transport model. It also presents the anticipated travel speeds along the corridor in the 2038 'Core' scenario (i.e. without the A511 MRN Growth Corridor scheme) using data from the transport model.

Figure 4-12 - Speed Limit along the A511 MRN Growth Corridor



Google API Spatial Traffic Data

4.3.25. Spatial traffic data derived from Google API, for the A511 MRN Growth Corridor for AM and PM weekday peak hours, shown in **Figure 4-13** to **Figure 4-14** reveals the extent of the current congestion problem in terms of traffic speeds. On these maps, red indicates slow-moving traffic (<10mph) while green indicates typically uncongested conditions.

4.3.26. These plots show that the A511 MRN Growth Corridor experiences pockets of traffic congestion at the majority of its key junctions on a typical AM and PM peak weekday. Vehicle movements are particularly slow on the westbound approaches to the A511 / Flying Horse and A50 / Field Head roundabouts in the AM peak, with slow moving traffic at the Field Head Roundabout extending all the way to the M1 Junction 22. The eastbound approach to the quarry access from Birch Tree Roundabout also experiences a notable level of congestion in the AM peak impacting on all approaches turning into the A511 (West) arm of the Birch Tree Roundabout.

4.3.27. Notably in the PM peak the Flying Horse Roundabout westbound approach and all the approaches to the Birch Tree Roundabout experience slow-moving traffic.

Figure 4-13 - Typical AM Peak Hour Speeds - A511 MRN Growth Corridor

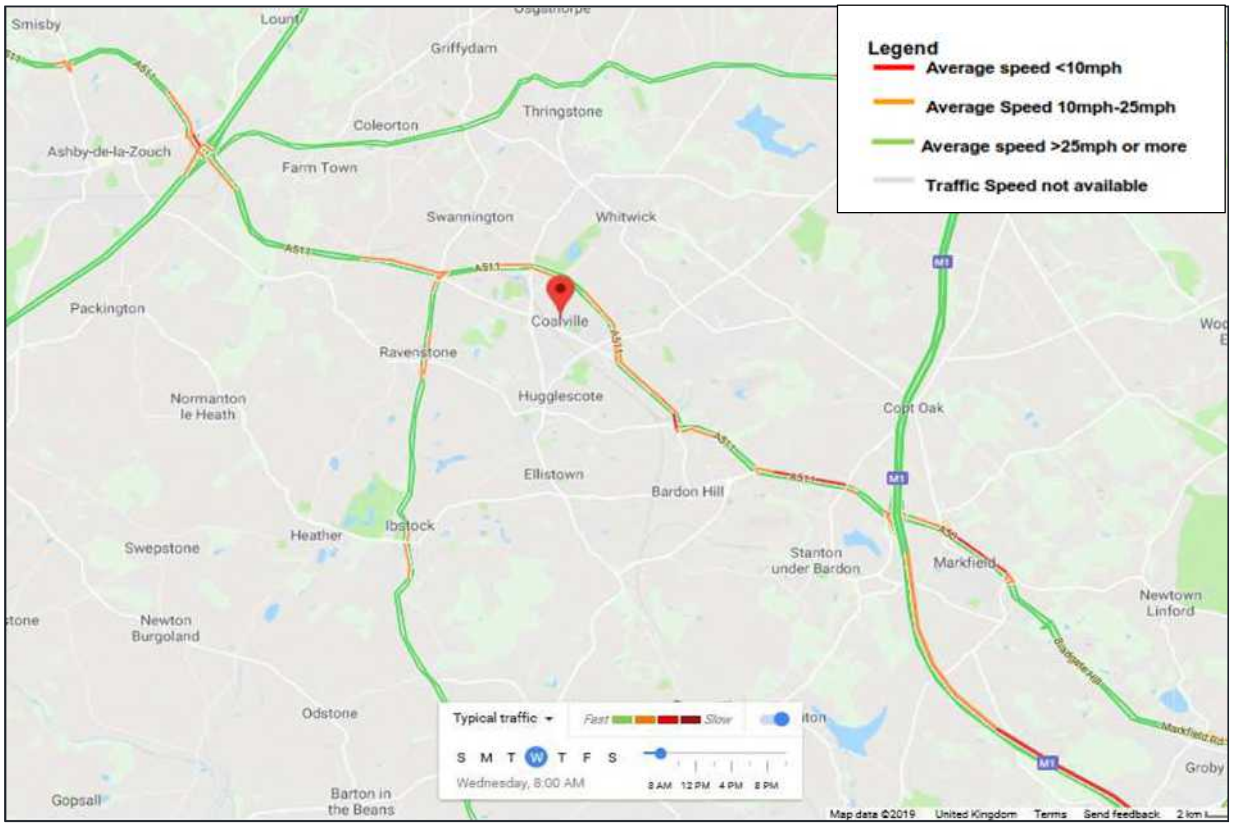
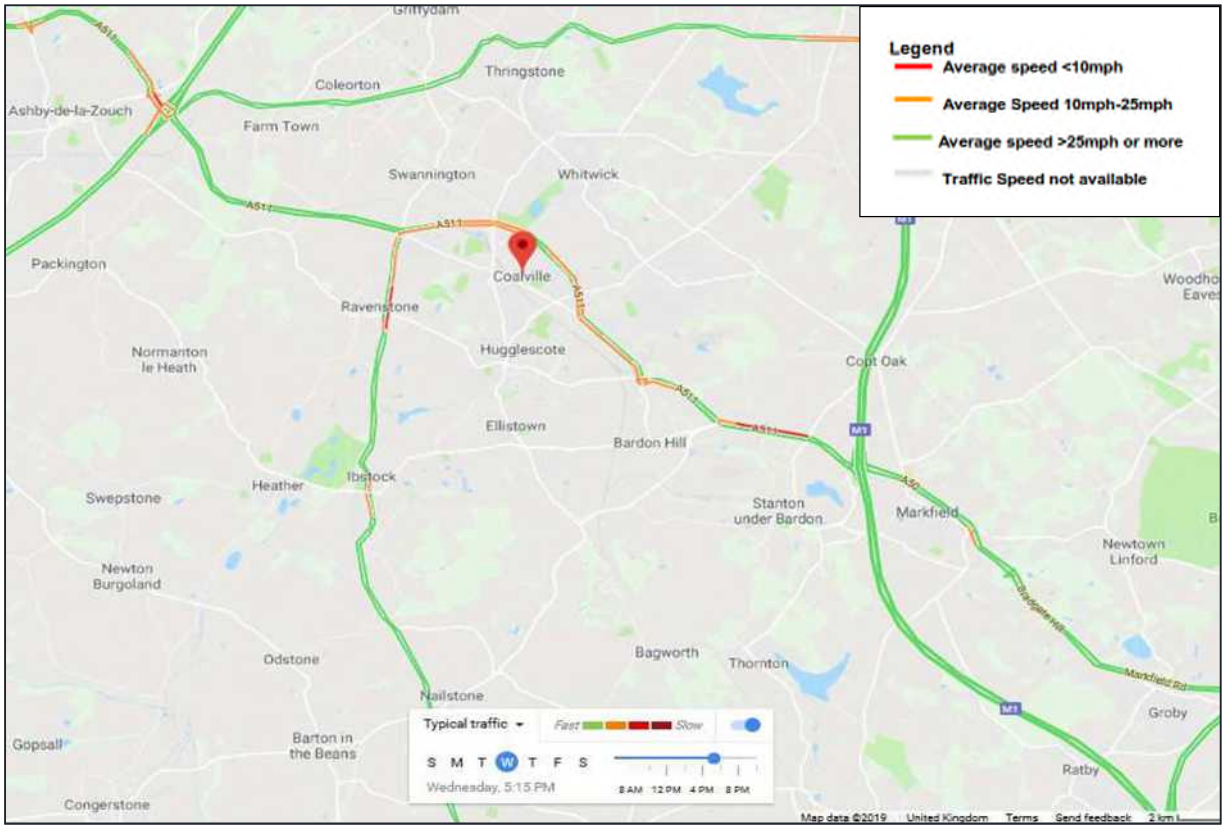


Figure 4-14 - Typical PM Peak Hour Speeds - A511 MRN Growth Corridor



Modelled Junction Delays

4.3.28. **Figure 4-15** and **Figure 4-16** show the average level of delay at key junctions along the A511 MRN Growth Corridor and surrounding network in 2014 AM and PM peaks respectively according to the SATURN PRTM model. These show similar delays to those observed using Google API on the A511 north of Coalville, with notable delays (greater than 20 seconds) experienced at the following A511 junctions:

- A511 / Brooms Leys Junction (AM & PM); and
- A11 / Flying Horse Junction (AM & PM).

4.3.29. The model also shows M1 Junction 22 (labelled Junction 10) with delays of over 40 seconds. however, this junction has been recently improved and therefore the 2014 results are not reflective of the current situation at this location.

4.3.30. Off the A511 the following nearby junctions also experience delays over 20 seconds.

- Ashby Road / High Street Junction (AM & PM);
- Hugglescote Junction (AM & PM); and
- London Road / Forest Road / Brooms Leys Junction (AM & PM).

4.3.31. **Figure 4-17** and **Figure 4-18** show the average level of delay at key junctions along the A511 MRN Growth Corridor in 2038 AM and PM peaks respectively.

4.3.32. The results show that without intervention conditions at the junctions with notable delays identified in 2014 will continue to worsen, with more junctions experiencing delays. The most affected junctions are detailed below:

- A511 Hoo Ash Roundabout (AM only);
- A511 / Brooms Leys Junction (AM & PM)
- A511 / Quarry Access (AM & PM);
- A511 / Birch Tree Roundabout (AM only);
- AA11 / Flying Horse Junction (AM & PM); and
- A50 / Field Head Junction (AM only).

4.3.33. Away from the A511 the conditions on the following nearby junctions continue to worsen with delays of over 40 seconds.

- Ashby Road / High Street Junction (AM & PM);
- Hugglescote Junction (AM & PM); and
- London Road / Forest Road / Brooms Leys Junction (AM & PM).

Figure 4-15 – Junction delays in the AM peak in 2014 - A511 MRN Growth Corridor

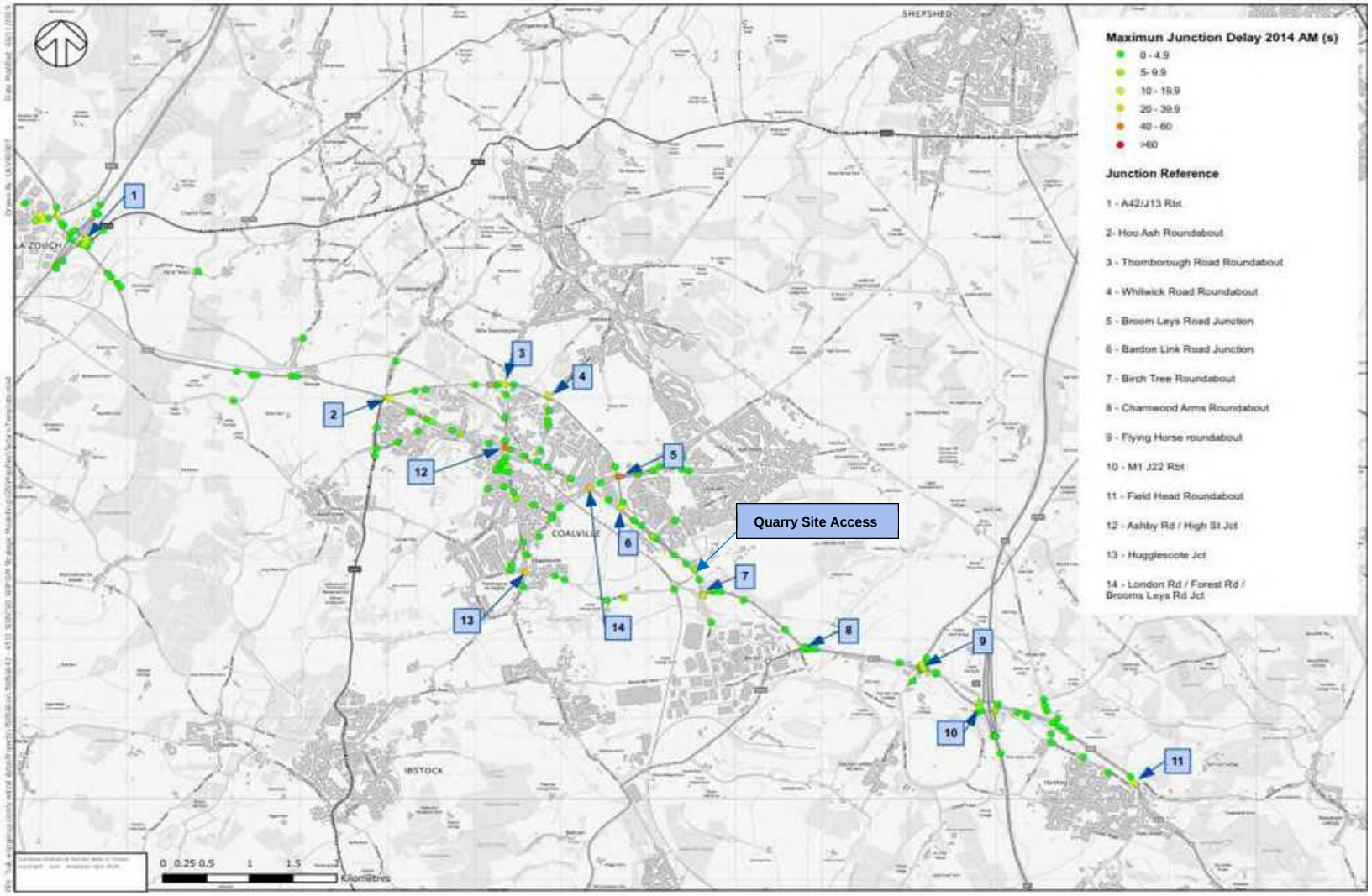


Figure 4-16 – Junction delays in the PM peak in 2014 - A511 MRN Growth Corridor

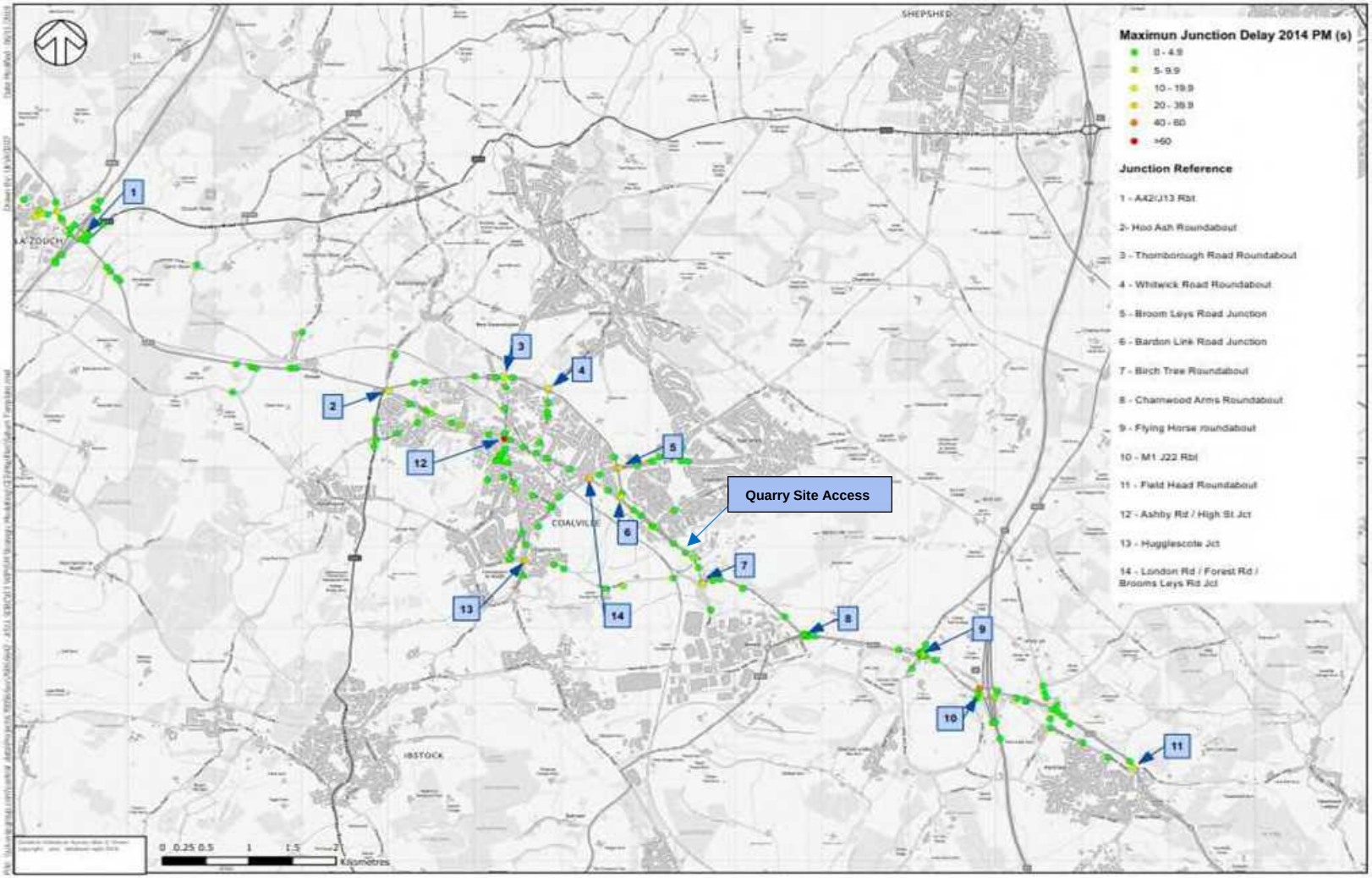


Figure 4-17 - Junction delays in the AM peak in 2038 - A511 MRN Growth Corridor

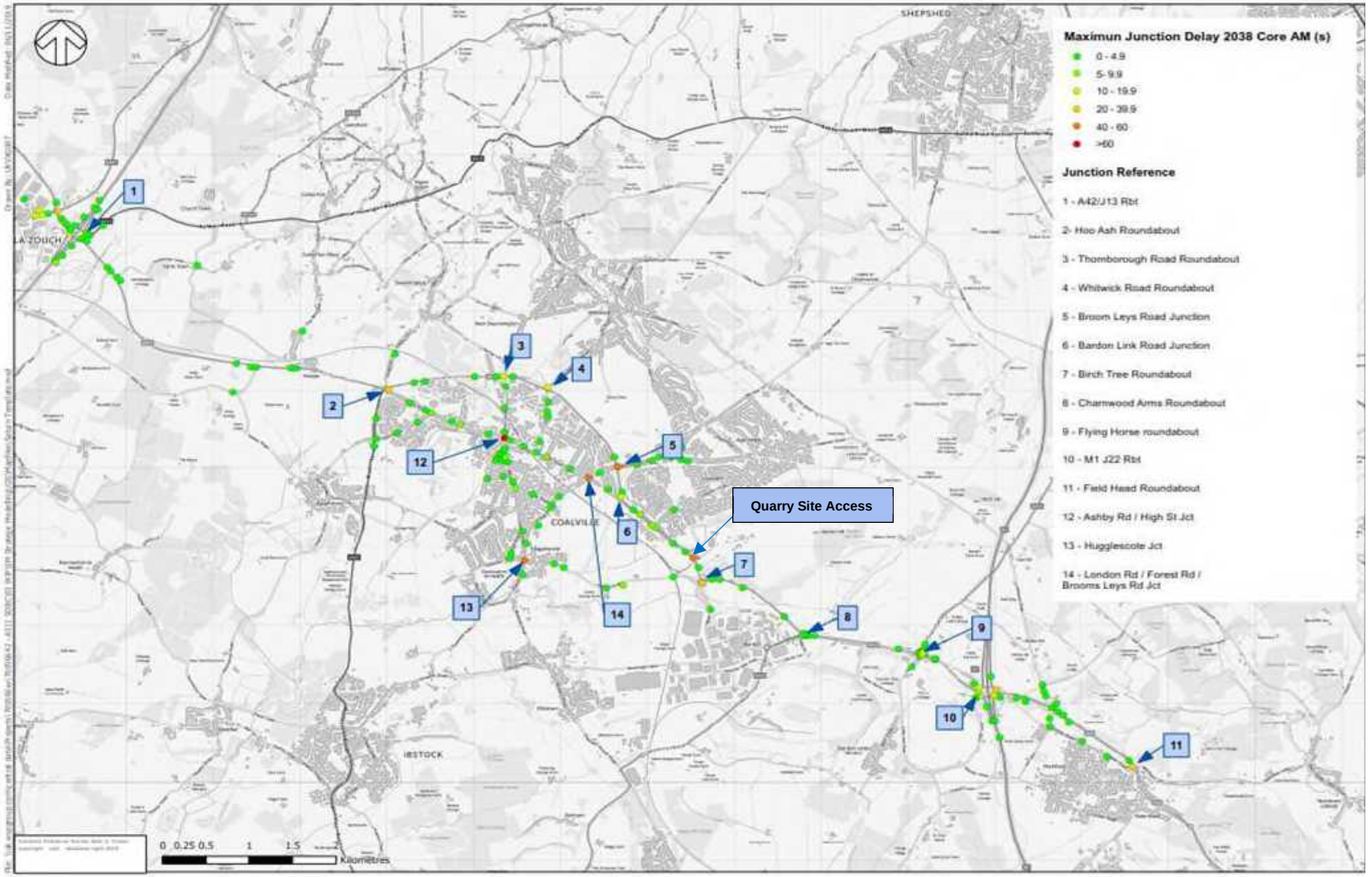
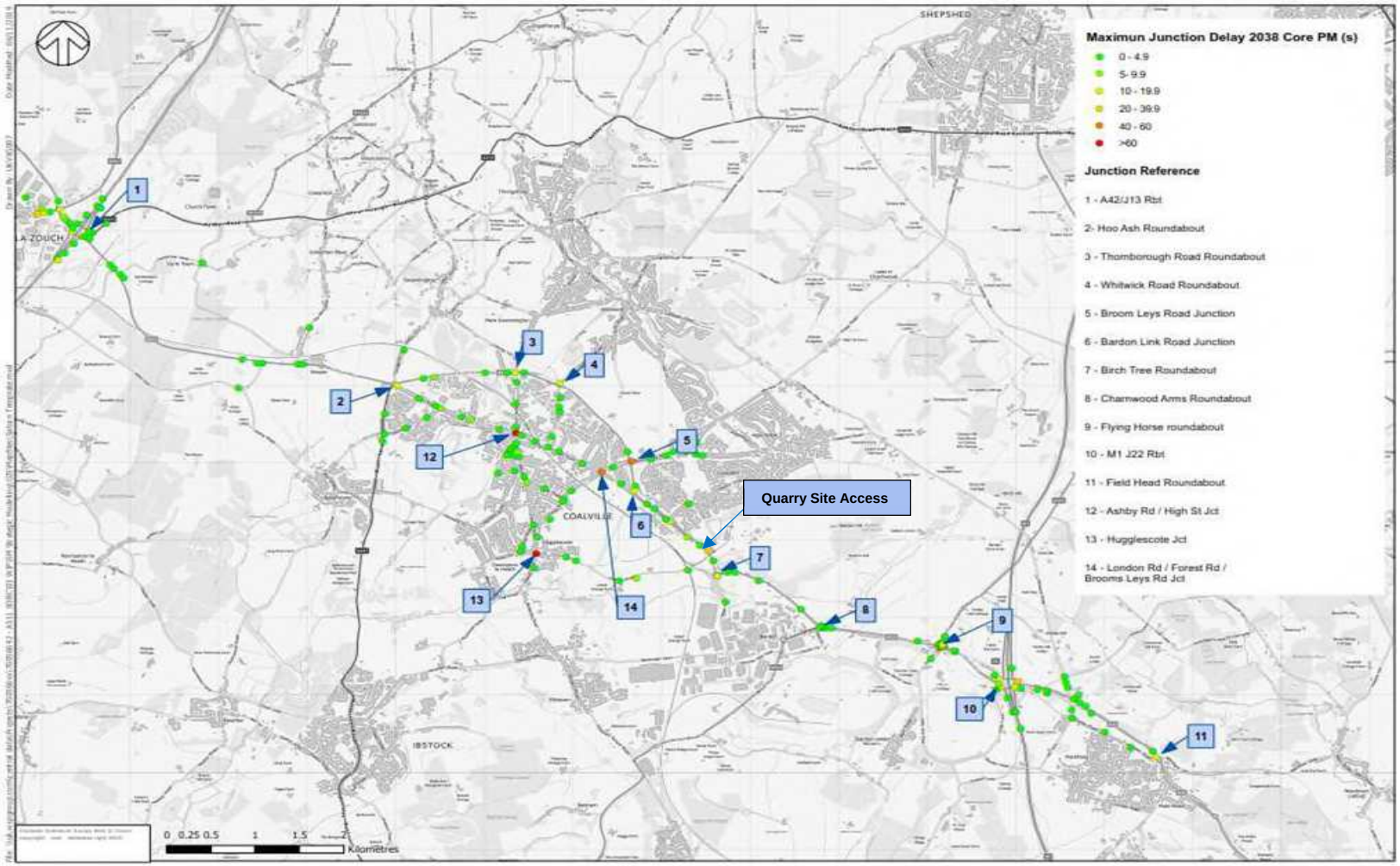


Figure 4-18 – Junction delays in the PM peak in 2038 - A511 MRN Growth Corridor

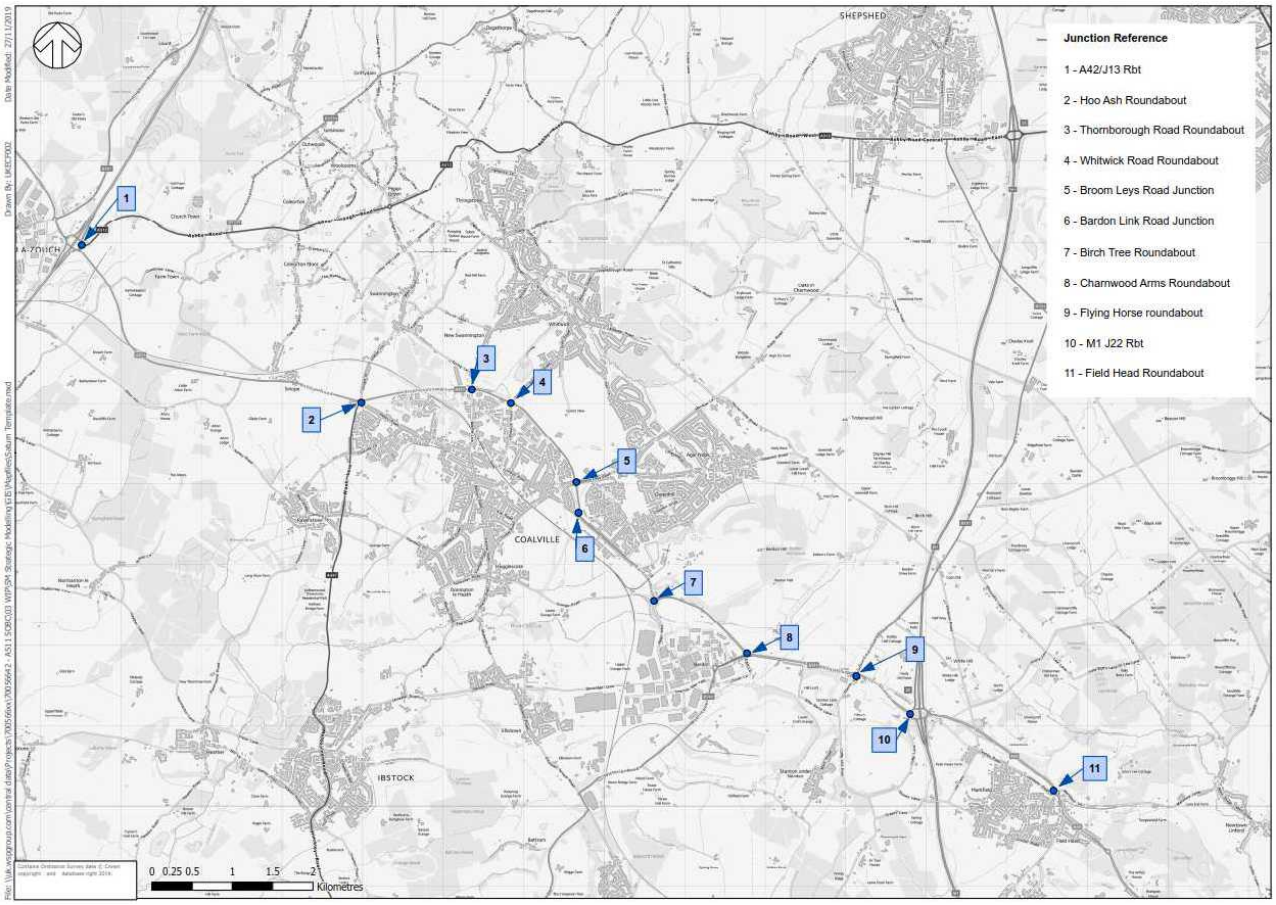


Journey Times

4.3.34. Alongside the scale of delay, journey time data has also been obtained from the Transport Model to highlight the networks resilience issues along the A511 MRN Growth Corridor.

4.3.35. Journey time, speed and delay information for the 2014 Base and 2038 Core scenarios (AM and PM peaks) have been obtained from the transport model for links between all key junctions along the A511 MRN Growth Corridor as shown in **Figure 4-19** using 'Joy Ride' in SATURN (Simulation and Assignment of Traffic to Urban Road Networks).

Figure 4-19 – A511 Key Junctions



4.3.36. The outputs from the above exercise are provided in **Table 4-3** and **Table 4-4** for the AM and PM peaks respectively.

Table 4-3 – Journey Times, Speed and Delays Data – AM Peak

Eastbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2038 Core		2014 Base	2038 Core	2014 Base	2038 Core	2014 Base	2038 Core
1	2	4330	4330	50-60	248	250	39	39	49	51
2	3	1270	1270	50	99	122	36	34	29	51
3	4	630	630	30	54	100	35	33	9	10
4	5	1290	1290	50	99	100	34	32	18	18
5	6	377	377	40	63	61	31	30	18	17
6	7	1490	1490	30-40	138	140	30	28	20	21
7	8	1123	1123	40-50	70	71	30	29	11	12
8	9	1625	1625	40-70	94	96	31	30	20	22
9	10	880	805	50	73	118	31	29	24	67
10	11	2061	2136	50-70	118	151	32	29	34	46
Total		**15076**	**15076**		**1056**	**1209**	**33**	**31**	**232**	**315**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2038 Core		2014 Base	2038 Core	2014 Base	2038 Core	2014 Base	2038 Core
11	10	1800	1740	50-70	95	93	43	42	18	16
10	9	1015	1075	50	66	78	39	37	17	13
9	8	1400	1400	40-70	111	117	35	33	46	52
8	7	1348	1348	40-50	80	78	35	34	13	12
7	6	1580	1580	30-40	169	234	31	27	44	108
6	5	377	377	40	40	40	30	26	7	7
5	4	1290	1290	50	126	124	29	26	34	32
4	3	530	530	30	50	54	28	26	11	14
3	2	1055	1055	50	76	78	29	26	11	13
2	1	4635	4635	50-60	262	253	31	29	39	43
Total		**15030**	**15030**		**1075**	**1160**	**33**	**30**	**240**	**310**

4.3.37. **Table 4-3** shows that in the AM peak for both the 2014 Base and 2038 Core scenarios, travel speeds along the corridor fall well below the assigned speed limits for all links between the key junctions highlighted in **Figure 4-19.** The average modelled speed along the corridor in both the eastbound and westbound directions is 33 miles per hour (mph) in the 2014 Base AM peak scenario, and these are expected to reduce further in the 2038 Core scenario with average speeds of 31mph in the eastbound direction and 30mph in the westbound direction. Journey times are expected to increase by approximately 2 minutes in both directions in the 2038 Core scenario and delays by approximately 90 seconds.

Table 4-4 - Journey Times, Speed and Delays Data – PM Peak

Eastbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2038 Core		2014 Base	2038 Core	2014 Base	2038 Core	2014 Base	2038 Core
1	2	4330	4330	50-60	235	241	41	40	36	42
2	3	1270	1270	50	80	85	40	38	10	15
3	4	630	630	30	51	53	38	37	6	7
4	5	1290	1290	50	97	100	36	35	15	18
5	6	377	377	40	57	59	34	33	10	13
6	7	1490	1490	30-40	137	141	32	31	19	22
7	8	1123	1123	40-50	71	71	32	31	11	11
8	9	1625	1625	40-70	95	95	33	32	22	22
9	10	880	805	50	110	224	31	27	60	170
10	11	2061	2136	50-70	180	143	30	28	95	46
Total		**15076**	**15076**		**1113**	**1212**	**35**	**33**	**284**	**366**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2038 Core		2014 Base	2038 Core	2014 Base	2038 Core	2014 Base	2038 Core
11	10	1800	1740	50-70	95	92	42	42	18	16
10	9	1015	1075	50	67	88	39	35	18	19
9	8	1400	1400	40-70	109	140	35	29	44	75
8	7	1348	1348	40-50	80	83	35	31	13	15
7	6	1580	1580	30-40	169	217	31	26	44	92
6	5	377	377	40	39	40	30	26	5	5
5	4	1290	1290	50	130	136	29	25	36	42
4	3	530	530	30	49	53	28	25	11	15
3	2	1055	1055	50	83	90	28	25	18	26
2	1	4635	4635	50-60	275	282	31	28	52	60
Total		**15030**	**15030**		**1096**	**1211**	**33**	**29**	**259**	**365**

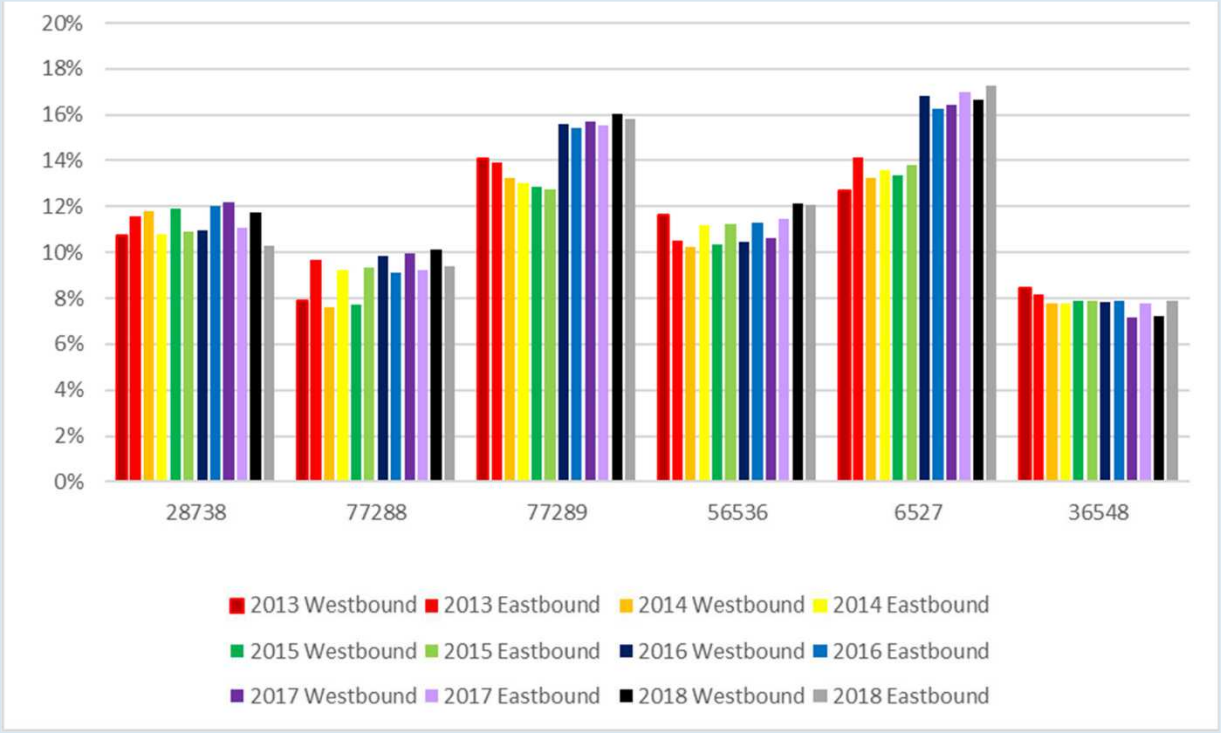
4.3.38. **Table 4-4** shows that in the PM peak conditions are worse than the AM peak, this is particularly in the westbound direction, with the average modelled speed along the corridor in the eastbound direction being 35mph and in the westbound direction 33mph in the 2014 and reducing to 33mph in the eastbound direction and 29mph in the westbound direction for the 2038 Core scenario. In the PM peak journey times are expected to increase by approximately 2 minutes in both directions in 2038 and delays by approximately 100 seconds.

4.3.39. The above assessment highlights the existing congestion issues along the corridor and shows that these issues will only worsen without any intervention.

ISSUE 3 - HGV MOVEMENTS

4.3.40. **Figure 4-20** shows the percentage of observed traffic which is HGV at the six DfT count locations shown in **Figure 4-4**. Data is reported on an AADF basis by direction from 2013 to 2018, sourced from the DfT Road Traffic Statistics.

Figure 4-20 - Observed daily HGV proportions by direction - A511 MRN Growth Corridor



4.3.41. **Figure 4-20** shows that over the last six years the proportion of HGVs has averaged around 12% of the total daily vehicular flow along the A511 Growth Corridor. To the west and east of Coalville the two-way flow of HGVs over the last six years is over 2200 vehicles per day (vpd). On the Coalville bypass (Stephenson Way - sites 77288 and 77289) the two-way flow of HGVs averages out at around 1800 vpd. This indicates that the level of daily HGV through traffic is around 2000 trucks per day.

4.3.42. Between M1 Junction 22 and Flying Horse Roundabout (6527) the two-way flow of HGVs has increased from 3800 vpd in 2013 to almost 5000 vpd in 2018 The importance of the corridor for freight is reflected in these numbers with an average growth of 22% in HGVs since 2013 over the entire corridor and 32% on the A511 just west of M1 Junction 22.

4.3.43. Given that AADF includes weekend and holiday traffic, both the percentage and absolute volume of HGV traffic on a typical weekday is expected to be higher.

4.3.44. The trend in increased HGV traffic reinforces the need for intervention on the A511 to allow efficient deliveries to locations in the corridor and further afield. It also highlights the importance of improving the corridor's functionality so that it can handle such HGV volumes safely. The above findings also highlight that higher HGV movements at site 6527 (i.e. just west of M1 Junction 22) is driven by vehicles accessing the Bardon Industrial Estate.

ISSUE 4 - ACCIDENTS

4.3.45. Data presented in **Figure 4-21** shows the locations of Personal Injury Collisions (PIC) that have occurred in the A511 MRN Growth Corridor between 2014 and 2018. This shows PIC clusters at the following junctions along the corridor which make up over 50% of incidents, with the remainder being relatively evenly distributed:

- M1 Junction 22;
- Hoo Ash Junction;
- Thornborough Road Junction;
- The Bardon Link Road Junction;
- The Flying Horse Junction; and
- The Field Head Junction.

4.3.46. PICs along the A511 are still prevalent with the majority of the accidents involving shunts at junctions - often a consequence of congestion.

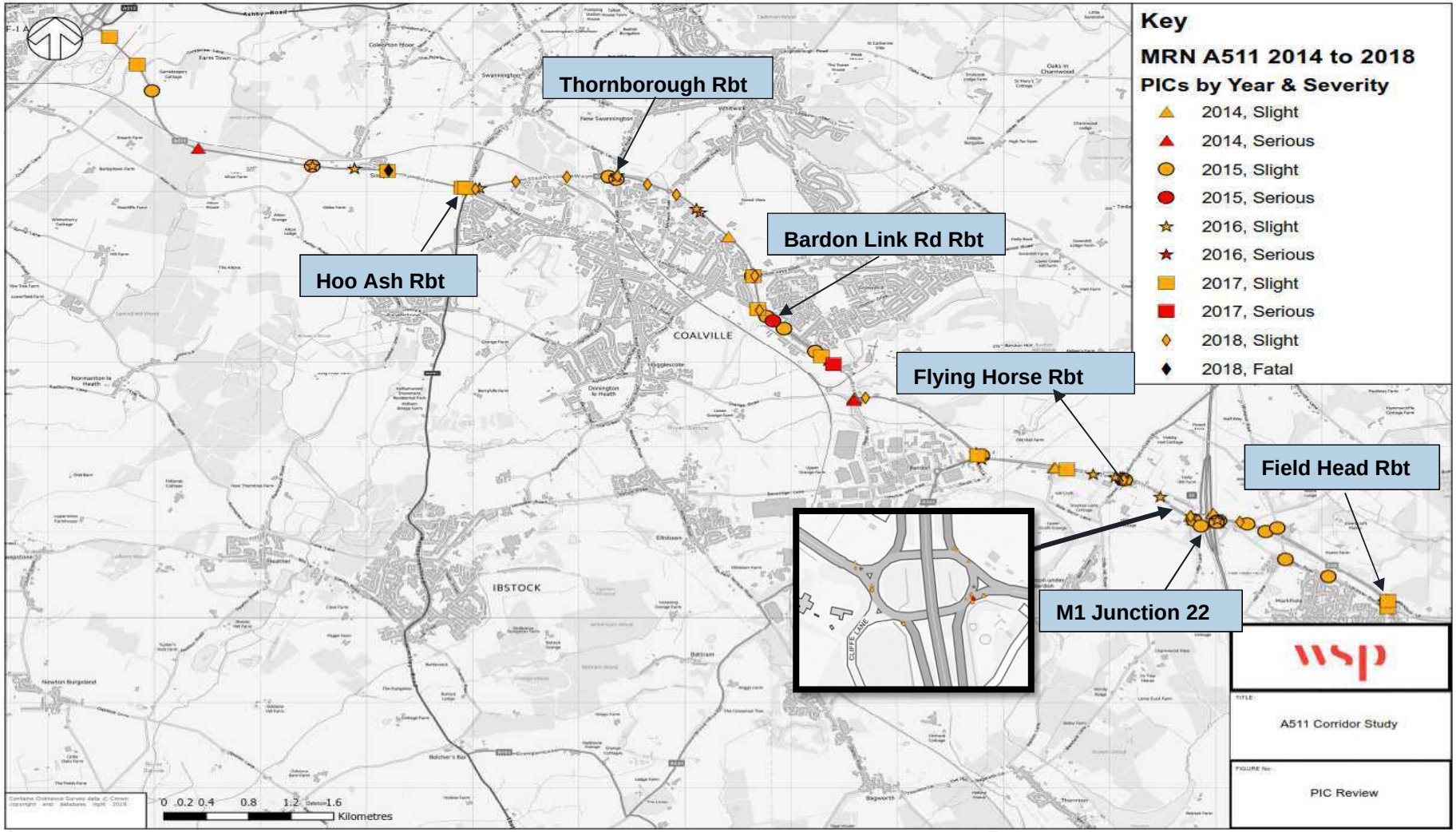
4.3.47. **Table 4-5** provides the number of accidents along the corridor by year of occurrence. These show that there has been a steady decline in the number of accidents along the A511 from the A41 Junction 13 through the M1 Junction 22 to the Field Head roundabout between 2014 and 2016, with a more notable decline in 2017 and 2018.

4.3.48. This notable decline can be attributed to the significant reduction in accidents at M1 Junction 22 following improvement works at the junction in 2017. As with the reduced accidents at M1 Junction 22 following improvement work, there is a possibility of reducing accidents along the A511 MRN Growth Corridor with the appropriate improvement works.

Table 4-5 – PICs by year and severity

Severity of injury	**2014**	**2015**	**2016**	**2017**	**2018**	**Total**
Slight	22	24	25	12	13	96
Serious	3	3	1	1	0	8
Fatal	0	0	0	0	1	1
Total	25	27	26	13	14	105

Figure 4-21 - Personal injury collision locations along the A511 Growth Corridor



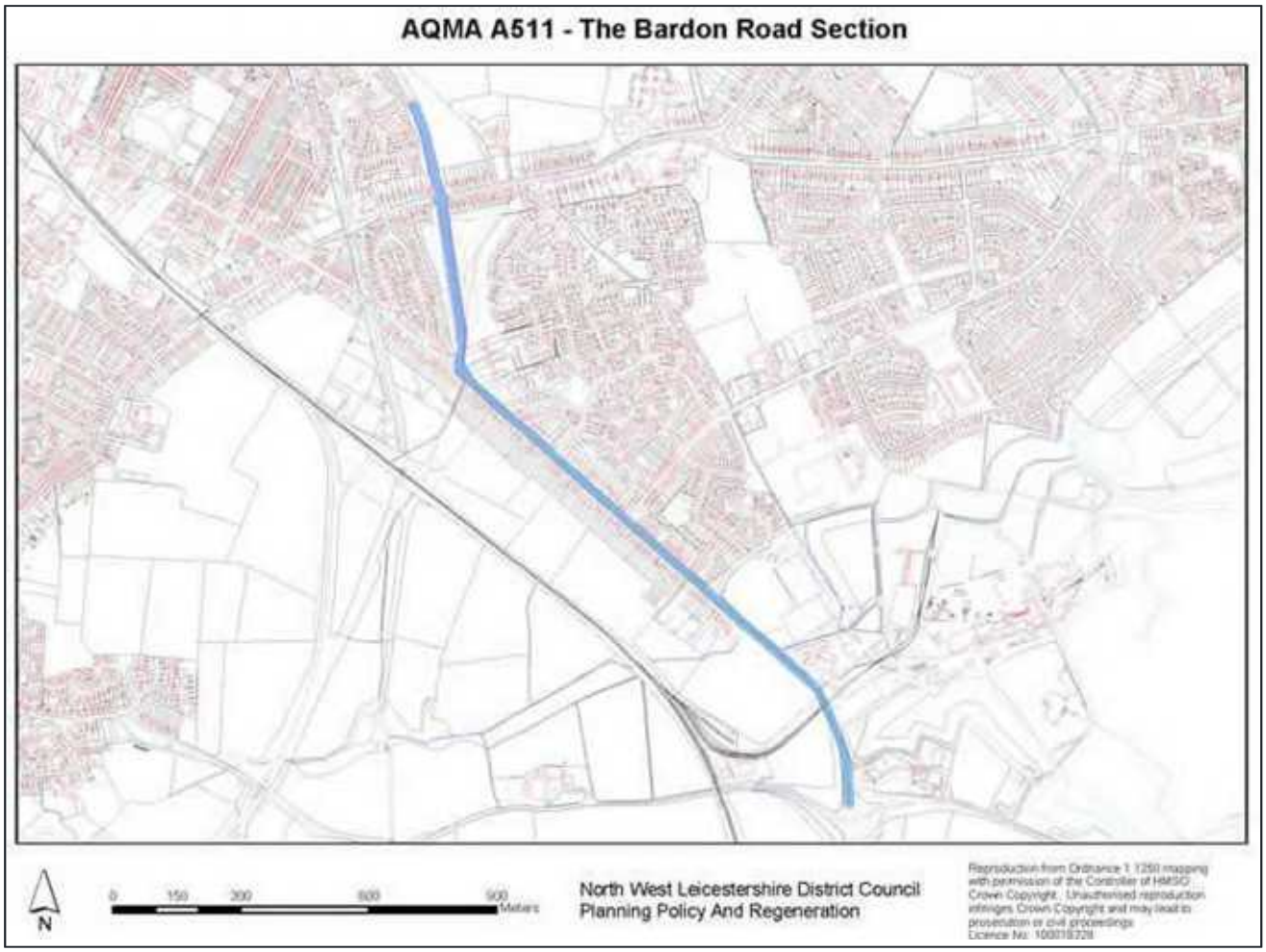
ISSUE 5 - AIR QUALITY

4.3.49. The North West Leicestershire Local Plan identifies the A511 Stephenson Way / Bardon Road / Brooms Leys Road (through Coalville) as an Air Quality Management Area (AQMA) for Nitrogen Dioxide (NO_2), caused by emissions from vehicles queuing at the approaches to the junction. AQMAs are areas designated by local authorities because they are not likely to achieve national air quality objectives by relevant deadlines. The boundaries of the AQMA is set out in **Figure 4-22.**

4.3.50. Improvements to the A511 through the AQMA to reduce the amount of queuing traffic would prevent air quality in the AQMA from deteriorating further and reduce the size of the existing AQMA.

4.3.51. During the work towards obtaining planning permission and awarding a construction contract, it is intended to build on the post-covid move towards increased cycling and walking by working with local and national walking and cycling groups to incorporate facilities which offer the best improvements for these groups within the current land constraints. It is also seeking to assist the developer in converting the existing disused railway line which runs from the heart of their housing development route into the heart of Coalville, making this an attractive alternative to car borne journeys.

Figure 4-22 - AQMA Boundary



4.4 EXISTING CONSTRAINTS ALONG THE A511 CORRIDOR

4.4.1. The lack of rail services and the variable provision of bus services mean that the majority of travel to and from the North West Leicestershire area is dominated by use of the car. This has led to increased levels of congestion, constraining the network at a number of key junction locations, through queuing traffic leading to delays.

Figure 4-23 – Traffic queues onto the Hoo Ash Roundabout

Figure 4-24 – Traffic queues along Stephenson Way on the approach to the Thornborough Road junction

Figure 4-25 – Traffic queues at the Broom Leys Road Junction

4.4.2. These junctions are currently constrained by the number of ahead lanes which vehicles can access, leading to delays and queueing. These delays have led to journey times on the A511 becoming unreliable, making it unattractive as a route for public transport operators.

4.4.3. The Flying Horse roundabout has particular issues with lorries queueing to access the services and garage close to the junction force vehicles to queue in the offside lane, further constraining the carriageway.

Figure 4-26 – Lorries queueing to access garage close to the Flying Horse Roundabout forcing traffic into the offside lane

4.4.4. The key employment which is access from the A511 has increased freight movements, further exacerbating the congestion on the network.

Figure 4-27 – Lorries queueing to access the Flying Horse Roundabout

Figure 4-28 – Freight vehicles along the A511.

4.5 IMPACTS OF DOING NOTHING

IMPACT 1 - A CONTINUATION OF CURRENT TRANSPORT PROBLEMS

4.5.1. Without the appropriate intervention, the problems and issues identified along the A511 MRN Growth Corridor will continue and worsen considering growth in background traffic and the planned growth for the area. This means that the corridor will remain congested, resulting in worsening journey time reliability for all users of the corridor.

4.5.2. Considering the high proportion of freight traffic, congestion has and will continue to have an impact on the logistics supply chains for industries both on and off the corridor.

4.5.3. Furthermore, it reduces the accessibility to opportunities for residents already identified as having issues with deprivation. This could potentially reduce attractiveness of the Coalville corridor to inward investments and could delay or prevent the delivery of housing.

4.5.4. Without intervention, there will continue to be stop-start traffic on the corridor, with subsequent implications for exacerbated air pollution impacts compared to free flowing traffic and increased risk of PICs. This will most severely impact the already congested eastern end of the Coalville bypass, where severe delay has already been identified and which forecasting suggests will continue to worsen. This area is of note due to being both subject to a standing AQMA and its location within a broadly residential area.

4.5.5. Finally, there is risk of impact on the national movement of people and goods. With this section of the MRN providing links and feeds into key SRN elements, delay here could compromise wider improvements elsewhere on the national network.

IMPACT 2 - DELIVERY OF HOUSING, JOBS AND ECONOMIC GROWTH

4.5.6. As discussed elsewhere in this document, the North West Leicestershire District Plan has identified Coalville as the site of considerable growth and development, including a mixture of new housing sites with enhancement and expansion of existing employment opportunities, as well as regeneration of the town centre.

4.5.7. [4]The LLEP identifies the A511 MRN Growth Corridor as one of five Growth Areas in the county. The SEP further states that through appropriate investment and improvements, it has the potential to deliver at least 5,275 houses, development that would otherwise remain constrained by poor transport infrastructure.

4.5.8. It is therefore imperative that the district's transport system is made accessible and reliable, in order to make investment in the area attractive to prospective developer or buyers, be they commercial or residential. Due to the nature of issues along the corridor, which mostly surround congestion at key junctions, a resilient network to support this planned growth can only be achieved with the appropriate scheme at all the key junctions.

4.5.9. Doing nothing will lead to the above problems and issues, slowing (and potentially actually curtailing) the significant levels of economic growth, job creation and housing delivery proposed as part of the North West Leicestershire Local Plan.

4.5.10. Other consequences will be lack of adequate connectivity to places of key economic importance, such East Midlands Airport, East Midlands Gateway (Strategic Rail Freight Terminal), and other destinations further afield.

Planned Housing and Employment

4.5.11. Considering existing network constraints, the Local Plan recognises that a strategic intervention by means of the A511 MRN Growth Corridor scheme is required to accelerate delivery of the planned growth for the area.

4.5.12. **Table 4-6** provide details of the key strategic development sites planned near the A511 MRN Growth Corridor according to the North West Leicestershire Local Plan[5] . The locations of these developments are shown in **Figure 4-29**.

4.5.13. It should be noted that the status of the planned developments is categorised into the following housing provisions:

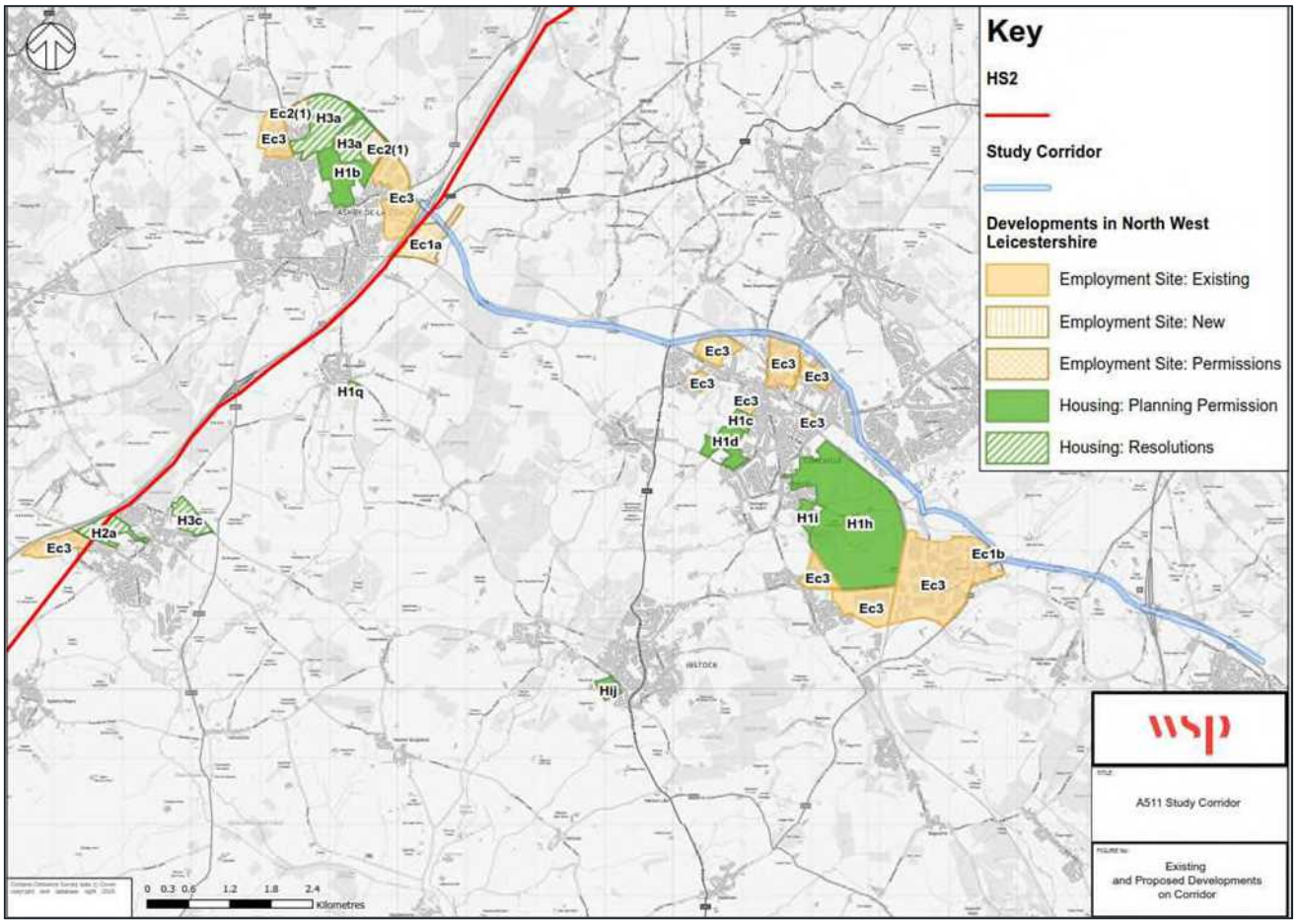
- **Planning Permission**: these are those sites where development has yet to start. The principle of development has already been established and it is not possible for the Council to reverse these decisions unless the permissions were to lapse.
- **Resolution**: The Council has resolved to grant planning permission, meaning that although the Council has agreed that the proposed development would be appropriate, changes in circumstances could mean that the Council should re-consider.
- **New Allocations**: These are new sites necessary to ensure the overall provision of housing is sufficient to meet the Council's housing requirement of 9,620 dwellings or employment needs.

[4]https://www.llep.org.uk/wp-content/uploads/2015/03/SEP_-_full_document.pdf
[5] North West Leicestershire Local Plan 2011 to 2031 (November 2017)

Table 4-6 – Key strategic planned land use sites

Site Ref	Development Type	Location	Quantum	Status
EC1a	Employment	Ashby-de-la Zouch	25.5 hectares	Planning Permission
EC1b	Employment	Coalville	1.2 hectares	Planning Permission
EC2(1)	Employment	Ashby-de-la Zouch	16 hectares	New Allocation
H1b	Housing	Ashby-de-la Zouch	605 dwellings	Planning Permission
H1c	Housing	Castle Donnington	895 dwellings	Planning Permission
H1d	Housing	Coalville	400 dwellings	Planning Permission
H1i	Housing	Coalville	105 dwellings	Planning Permission
H1q	Housing	Packington	30 dwellings	Planning Permission
H2a	Housing	Measham	450 dwellings	Resolution
H3a	Housing	Ashby-de-la Zouch	2,050 dwellings	Resolution
H3c	Housing	Measham	300 dwellings	New Allocation
Hih	Housing	Coalville	3,500 dwellings	Planning Permission

Figure 4-29 – Existing & proposed developments in A511 MRN Growth Corridor



4.5.14. As evident from **Table 4-6** there is significant provision for new housing and employment planned along the A511 MRN Growth Corridor, with approximately 42.7 hectares of employment land and 8,335 residential dwellings proposed. The planned residential developments represent 87% of North West Leicestershire's housing targets for the period 2011-2031.

4.5.15. In addition to the planned developments along the A511 MRN Growth Corridor, the North West Leicestershire Local Plan stipulates that many existing employment sites will be retained for employment generating B1, B2 and B8 land uses. These sites are contained within Policy Ec3. There are also significant opportunities for new distribution facilities to be supported by the corridor, if it continues to perform as part of the MRN, for existing businesses to expand, including G-Park to the east of the A42 close to Ashby.

4.5.16. Alongside the major housing developments identified in the local plan, there is also a plan in hand to redevelop the mining site south of Coalville Town Centre as a visitor attraction. This could attract further visitors and trips to the town.

4.5.17. In addition to this consultation has been ongoing with the two developers of South East Coalville SUEs (i.e. H1h on **Figure 4-29**) Davidsons Homes and Harworth Group who are collectively responsible for providing the southern part of the Bardon Link Road.

4.5.18. The impact of 'do nothing' is that a lack of transport infrastructure improvements will delay and possibly stall the delivery of future housing and employment developments in the area. The timely provision of the A511 MRN Growth Corridor scheme is therefore important to the realisation of all this planned growth.

IMPACT 3 - ADVERSE IMPACT ON THE SRN JUNCTIONS

4.5.19. The A511 MRN Growth Corridor is part of the Primary 'A' Road network and is one of the two key east–west road links in Leicestershire. It links the A42 to the M1 at junction 22 and therefore acts a feeder route to the SRN. It also performs a resilience function for the SRN acting as a diversion route for the M1 and A42.

4.5.20. In addition to a 'Do Nothing' outcome resulting in the continuation of the existing local transport problems, increasing congestion on the A511 MRN Growth Corridor might have adverse consequences on the M1 and the A42. This is due to delays in trips between the two SRN corridors incurred by delays on the A511, as well as the risk of traffic congestion at A511 junctions 'blocking back' onto the SRN in the worst case.

4.5.21. Furthermore, there is a risk that increased congestion on the A511 will negate improvements already undertaken on the M1 or A42. Considering that the corridor is important for freight movements, and likely to become more so should the developments identified in the local plan be bought to market, any increase in delay on the A511 will negate benefits elsewhere on the network. Therefore, to ensure that benefits to the SRN are fully realised, continuity of quality transport infrastructure must be continued through the A511 MRN Growth Corridor.

4.5.22. Finally, should the A511's traffic conditions degrade to an unreasonable degree, then it is feasible that traffic from this route might divert onto the SRN, despite the route being longer, thus increasing traffic congestion and delay along the SRN.

IMPACT 4 - INABILITY TO SUPPORT HS2 WORKS IN THE AREA

4.5.23. Current indications are that in 2025, work will commence on HS2, which is to pass through the corridor's western end immediately east of Junction 13 of the A42. During this work, the A512 will be closed for realignment and unless this can be carried out offline, traffic will need to be re-routed onto the A511.

4.5.24. As a result of the diverted traffic it will be even more important that the A511 has reserve capacity to handle the additional traffic during the construction of the HS2 line in the area, as well as any traffic generated by the projected growth in employment in the district.

4.5.25. Furthermore, the siting of the proposed construction compound to the north east of the A42 Junction 13 and the adjacent large rail head will generate a substantial number of additional trips including HGVs. This provides opportunities for HS2 to provide some social value to the area offsetting some of the disruption it will bring. Without this additional capacity, it will not be possibly for the A511 to handle the proposed growth in traffic as well as the additional traffic stemming from the HS2 work, leading to the exacerbation of the issues identified above as well social value it could bring.

4.5.26. It is therefore imperative that all issues along the corridor are addressed as a complete package to ensure the A511 is futureproofed for HS2, and thus the selection of the preferred option which is discussed in **Section 4.12.**

4.6 SCHEME OBJECTIVES

4.6.1. The scheme objectives have been derived from the comprehensive evidence base previously detailed that has been collected and agreed by Leicestershire County Council as the Highway Authority and North West Leicestershire District Council.

4.6.2. The schemes objectives are thus as follows:

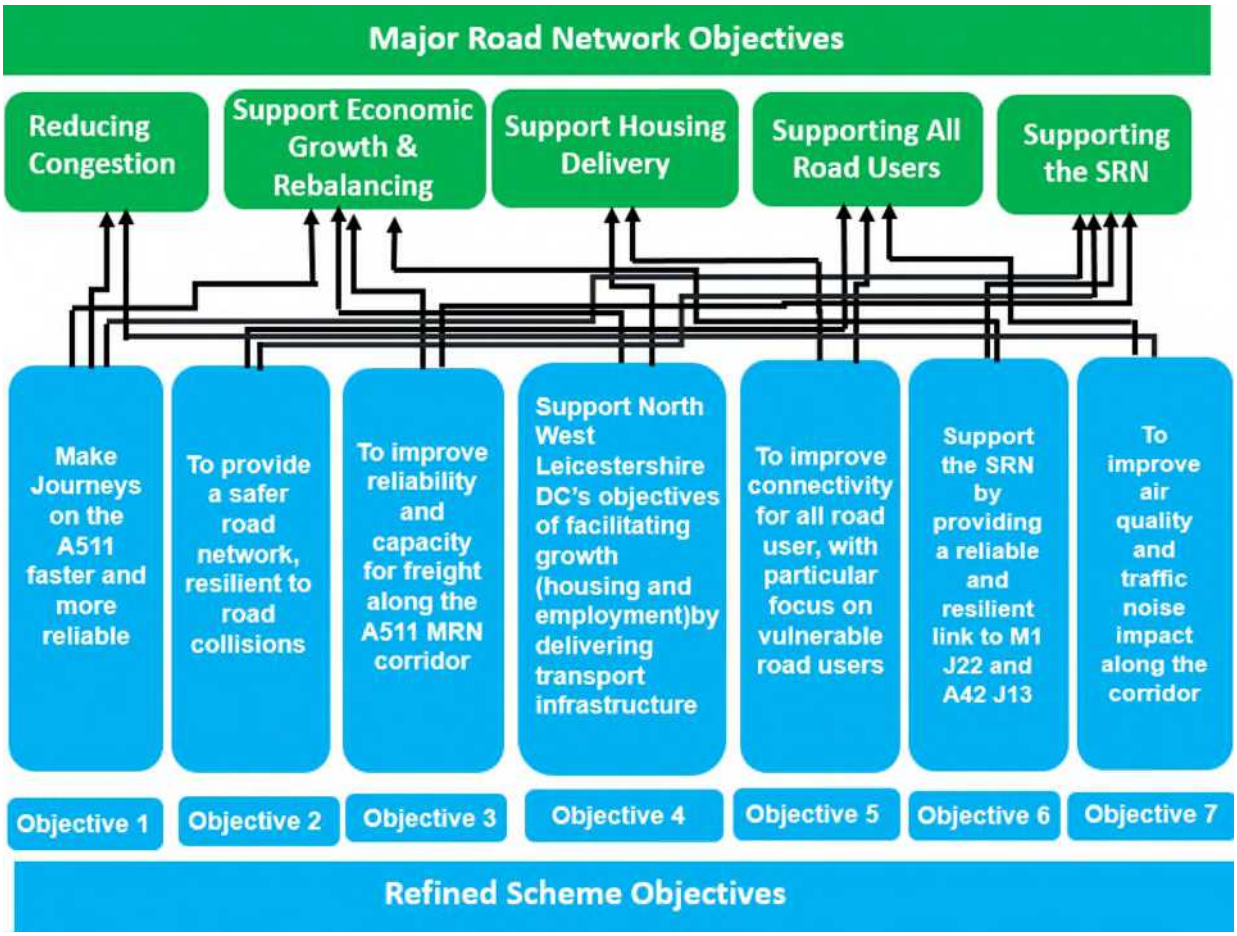
- **Objective 1** - Make journeys on the A511 faster and more reliable.
- **Objective 2** - Provide a resilient and safer road network, resilient to road collisions.
- **Objective 3** - Improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.
- **Objective 4** - Support North West Leicestershire DC's objectives of facilitating growth by delivering transport infrastructure; and potentially support the delivery of at least 25ha of employment land and at least 3,500 new dwellings.
- **Objective 5** - Improve connectivity for all road users, with particular focus on vulnerable road users.
- **Objective 6** - Support the SRN by providing a reliable and resilient link to the M1 and the A42.
- **Objective 7** - Improve air quality and traffic noise impact along the corridor.

4.6.3. These objectives were derived from an evidence-led process and were presented and agreed through several consultations undertaken between 2018 and 2019 with Leicestershire County Council, North West Leicestershire and other stakeholders. The process undertaken to arrive at these definitive scheme objectives are set out in more details in the supporting Options Assessment Report discussed in the following sections.

4.7 MRN OBJECTIVES

4.7.1. In addition to the above the performance of the preferred scheme has been assessed against DfT's MRN objectives. **Figure 4-30** shows how the identified scheme objectives align with the MRN objectives.

Figure 4-30 - A511 MRN Growth Corridor Scheme Objectives Alignment with MRN Objectives



4.7.2. In addition to the above a Red Amber Green (RAG) assessment has been undertaken to show the scale at which the proposed A511 MRN Growth Corridor scheme meets the MRN objectives andthis is summarised in **Table 4-7**. The table shows that the preferred scheme fully addresses all the MRN Objectives.

Table 4-7 – Preferred Scheme Performance against MRN Objectives

Preferred scheme performance against MRN Objective:

Fully addresses MRN Objectives **Partially addresses MRN Objectives** **Does not address MRN Objectives**

Objective	Criteria	Performance against MRN Objectives
Reduce congestion - alleviating local and regional congestion, reducing traffic jams and bottlenecks.	• Alleviate Congestion • Take account for impacts on air quality, biodiversity, noise, flood risk, water quality, landscape and cultural heritage sites	The A511 corridor currently experiences delays at several key junctions due to demand being at or near capacity. The proposed scheme provides capacity improvements at all key junctions will improve the reserve capacity at these junctions thus alleviating the current congestion on the corridor. It will also provide additional capacity at other junctions along the corridor to improve resilience for future growth on the corridor related to new developments. There is a present Air Quality Management Area (AQMA) at A511 Stephenson Way / Broom Leys Road Junction which is mainly caused by emissions from stationary vehicles queuing on the A511 on both approaches to the junction. This leads to excessive amounts of Nitrogen Dioxide (NO2). The proposals for the junction will provide more available 'green time' for A511 traffic and help reduce queuing and engine idling.
Support economic growth and rebalancing - supporting the delivery of the Industrial Strategy, contributing to a positive economic impact that is felt across the regions.	• Industrial Strategy: Supports regional strategic goals to boost economic growth • Economic Impact: Improve ability to access new or existing employment sites • Trade & Gateways Impact: Improve international connectivity, e.g. access to ports & airports	The A511 is a key arterial corridor that is linked with major planned growth opportunities. The proposed interventions will enable the unlocking of additional land for commercial development, as well as maintaining good accessibility to the strategic road network for existing and growing companies such as DHL, Amazon and Pall-Ex; all of whom operate distribution centres on the corridor. To retain and expand the use of the corridor by these logistics companies and others requires not just improvements in journey times, but also greater reliability on journey times to their destinations. The A511 MRN Growth Corridor is one of five Growth Areas identified by the LLEP. Through appropriate investment and improvements, it has the potential to deliver at least 25ha of employment land, development that would otherwise remain constrained by poor transport infrastructure. Accurate estimates of increased GVA have not been modelled but recent forecasting for the proposed 25Ha of development predicts that it will deliver 1,004 new jobs. At the East Midlands average GVA per workforce job would provide a total GVA of £35.3 million. Additionally, there are significant opportunities for new distribution facilities to be supported by the corridor; including G-Park to the west of the A42 close to Ashby-de-la-Zouch. Quarrying and minerals sector is also an important element of the local economy, with the Bardon Hill Quarry providing material for construction proposals across the county.

Objective	Criteria	Performance against MRN Objectives
		A failure to address the issues posed by underperforming junctions will increase delays to traffic accessing the SRN at M1 J22 and A42 J13, and impact on the economic output and productivity of the area. The development and delivery of the suggested package of measures will support the efficient operation of the logistics and quarry needs on the corridor and the continued sustainable economic and housing growth in North West Leicestershire. Finally, the corridor will be key to the delivery of materials to the HS2 construction compound for HS2 near to A42 Junction 13. The additional capacity proposed in the scheme will support the corridor in supporting this national scheme whilst still providing for its existing users.
Support housing delivery - unlocking land for new housing developments	• Support the creation of new housing developments by improving access to future development sites and boosting suitable land capacity	3,500 dwellings to the south east of Coalville are proposed as a key element of the adopted North West Leicestershire Local Plan 2011 to 2031, which identifies the Coalville Growth Corridor along the A511 as one of five growth areas identified by the LLEP. This bid will help to accelerate delivery of a link road through the site, enabling the accelerated delivery of these new houses. The programme of interventions will also aid in providing capacity across the corridor to mitigate traffic growth due to the new development. Without the package, increasing congestion on the corridor would risk making additional development unattractive, reducing future investment and jeopardising the growth targets set out in the Local Plan, which extend to 5,275 new homes across the corridor, including those previously mentioned. Additionally, the package of measures includes walking and cycling improvements across key junctions which will also aid in reducing the level of generated car trips from the new development.
Support all road users - recognising the needs of all users, including cyclists, pedestrians and disabled people.	• Delivering benefits for public transport and non-motorised users, including cyclists, pedestrians and disabled people • Safety Benefits: Ability to reduce the risk of deaths/serious injuries for all users of the MRN	At a local level residents and businesses will benefit from improved car, bus, cycle and pedestrian accessibility in the area, providing more opportunities to jobs in the Coalville, Ashby and the wider area. This includes access to Leicester, East Midlands Airport and the strategic rail freight interchange at Castle Donnington. Car and bus passengers will benefit from the increased journey time reliability on the corridor enabled by increased junction capacity, whilst pedestrians and cyclists will benefit from the new link road providing a shorter access to Bardon Hill from Coalville, as well as the signalised junction schemes providing safer crossing opportunities. The schemes of included in the package will also aid in improving safety of the corridor's users. Improving junction design and capacity will help alleviate pre-existing PIC clusters that centre on the intersections. Additionally, of the 88 recorded injury collisions along the corridor, 18 (20%) involved vulnerable road users (pedestrians / cyclists and motorcyclists). Schemes within the package, such as junction signalisation, could

Objective	Criteria	Performance against MRN Objectives
		assist the safety of vulnerable road users on the corridor. During detailed design of signalised junctions, the potential to introduce 'hurry calls' to prioritise public transport and improve reliability will be investigated. Furthermore, by improving journey times on the A511, the likelihood of 'rat-running' through less suitable routes, such as Coalville Town Centre, will be reduced and subsequently the likelihood of conflict with vulnerable users. Finally, reducing accident rates will also support the other MRN objectives of improved journey reliability and reduced congestion, on the basis that accident recovery operations can have severe impacts on the road's functioning. Therefore, reducing the number of incidents will deliver safety impacts and improve reliability at the same time.
Support the SRN	• Improved end to end journey times across both networks • Improved journey time reliability • Improved SRN resilience	The A511 form a part of the Primary 'A' Road network and is one of the two key east –west road links in Leicestershire. It also provides a key link between the A42 at Junction 13 and the M1 at Junction 22, thus forming a key feeder between these two SRN elements. The package of improvements will, therefore, benefit trips to and from the SRN and improve overall journey time reliability for trips using both networks, further realising benefits from investing in the SRN. Inclusion of the Field Head roundabout improvements is integral to ensuring benefits to the SRN are realised. Additionally, in the event of disruption on the SRN, an enhanced A511 could function as an alternative link between the A42 and M1 or other SRN elements, thus increasing SRN resilience.

4.8 OPTION ASSESSMENT REPORT SUMMARY

4.8.1. A full Department for Transport (DfT) Transport Analysis Guidance (TAG)-compliant Options Assessment Report (OAR) has been developed and was submitted to the DfT in June 2019 alongside the Strategic Outline Business Case. The OAR has since been updated to include the latest modelling work carried out in support of the A511 MRN Growth Corridor scheme. This included the refinement of the preferred scheme for A511 MRN Growth Corridor scheme, which now excludes improvement at the Charnwood Road junction.

4.8.2. The updated Options Assessment Report is provided as a standalone document in Annex 1 and its content is summarised in this section.

4.8.3. The OAR started with the underlying Transport Strategy Evidence Base contained within the Coalville Transport Study and a review of local, regional and national policies. The assessment was informed by TAG focussing on an objective-led option sifting process to develop an options long list, sift it down to a short list and then select a preferred option.

4.8.4. The development of the OAR followed the recommended eight steps detailed in Section 2.11.1 of TAG - The Transport Appraisal Process, with the Option Assessment Report documenting the process of identifying the need for intervention and then the process of option development and selection.

4.8.5. A substantial amount of work has previously been carried out in identifying the key issues along the corridor, which were mainly surrounding congestion at junctions causing delays and journey time unreliability for users of the corridor.

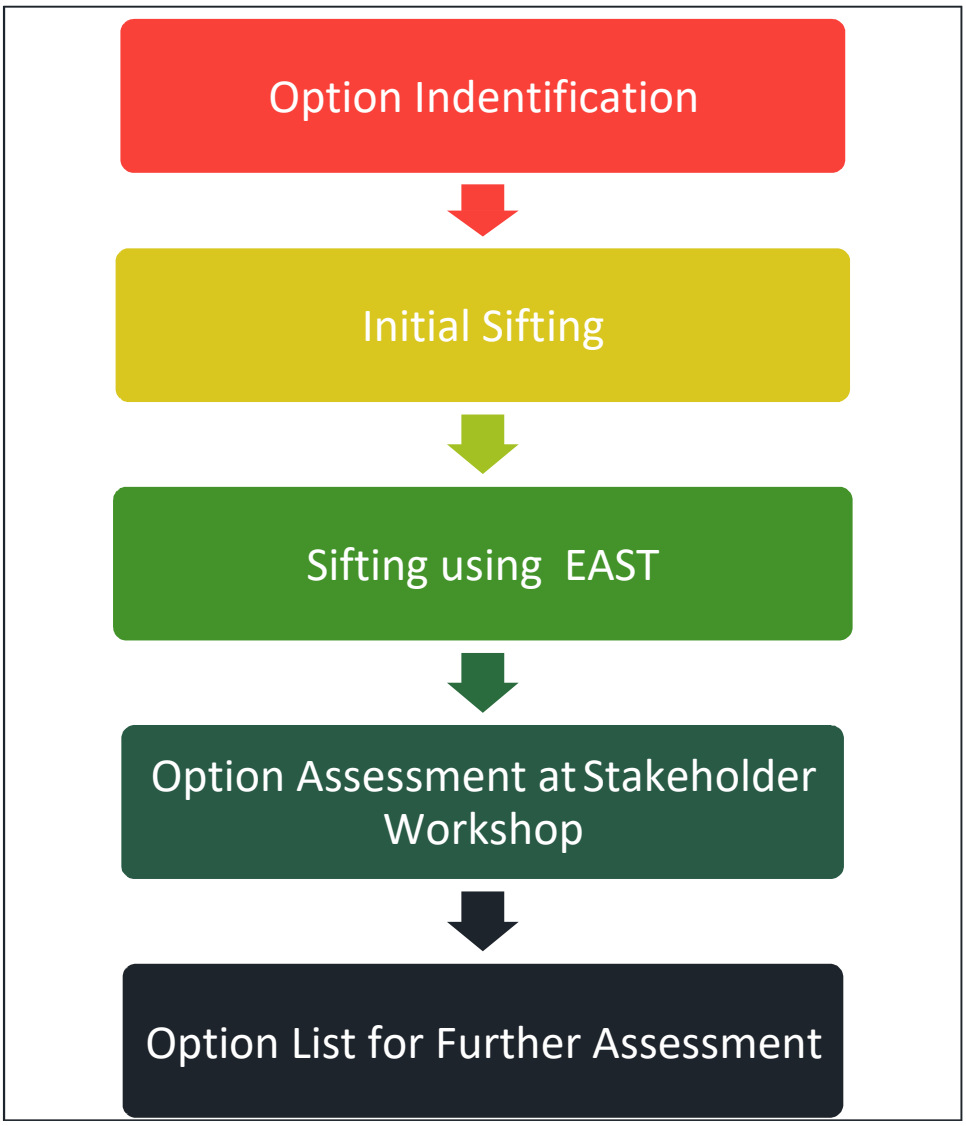
4.8.6. A range of schemes and improvements considered within the OAR were developed as part of the process of gathering evidence for North West Leicestershire District Council's local plan. The 2010/2011 Coalville Transport Study (undertaken by Colin Buchanan) assessed and tested options to mitigate the impact of growth. The results of this study informed the transport strategy.

4.8.7. The initial work undertaken by Colin Buchanan has been followed by a series of extensive in-house and external studies all aimed at identifying all necessary infrastructure needed to mitigate the cumulative impact of growth, the regeneration aspirations in Coalville and the same for the district as a whole. Of notable mention is the study undertaken by SYSTRA LTD in 2016 (documented in 'Stage 2A – Growth and Regeneration Impact and Gap Assessment') using the Leicester and Leicestershire Integrated Transport Model (LLITM) to provide a robust evidence base to support a series of transport schemes for the A511 Coalville Growth Corridor.

4.8.8. The OAR has therefore consolidated these previous evidence-based works and the latest evidence-based work from the new modelling work being undertaken by AECOM using the Pan-Regional Transport Model (PRTM), which is an extension of the Leicester and Leicestershire Integrated Transport Model (LLITM 2014).

4.8.9. The approach to generating options and eventual selection of the preferred option was led from the evidence base, following the steps indicated in, **Figure 4-31** as recommended in TAG - The Transport Appraisal Process.

Figure 4-31 - Option Assessment Process



LIST OF OPTIONS

4.8.10. A long list of potential options was generated with inputs from local stakeholders and consultants. In total twenty-eight options were developed and considered for reviewagainst the scheme objectives.

4.8.11. The long list was informed by the transport evidence base produced to date and a review of local, regional and national policy documents relating to the A511 Growth Corridor. This process identified the following key themes which were used in appraising the suitability of the identified long list of options:

- Reduce congestion;
- Support local economic growth;
- Support the delivery of housing development;
- Create a better environment and promote sustainability;
- Improve access to local employment sites and key destinations (e.g. Leicester or East Midlands Airport);

- Support all road users (Including walking, cycling and public transport);
- Support the SRN and/or east-west connectivity;
- Improve road safety; and
- Support the construction of the HS2 line in North West Leicestershire.

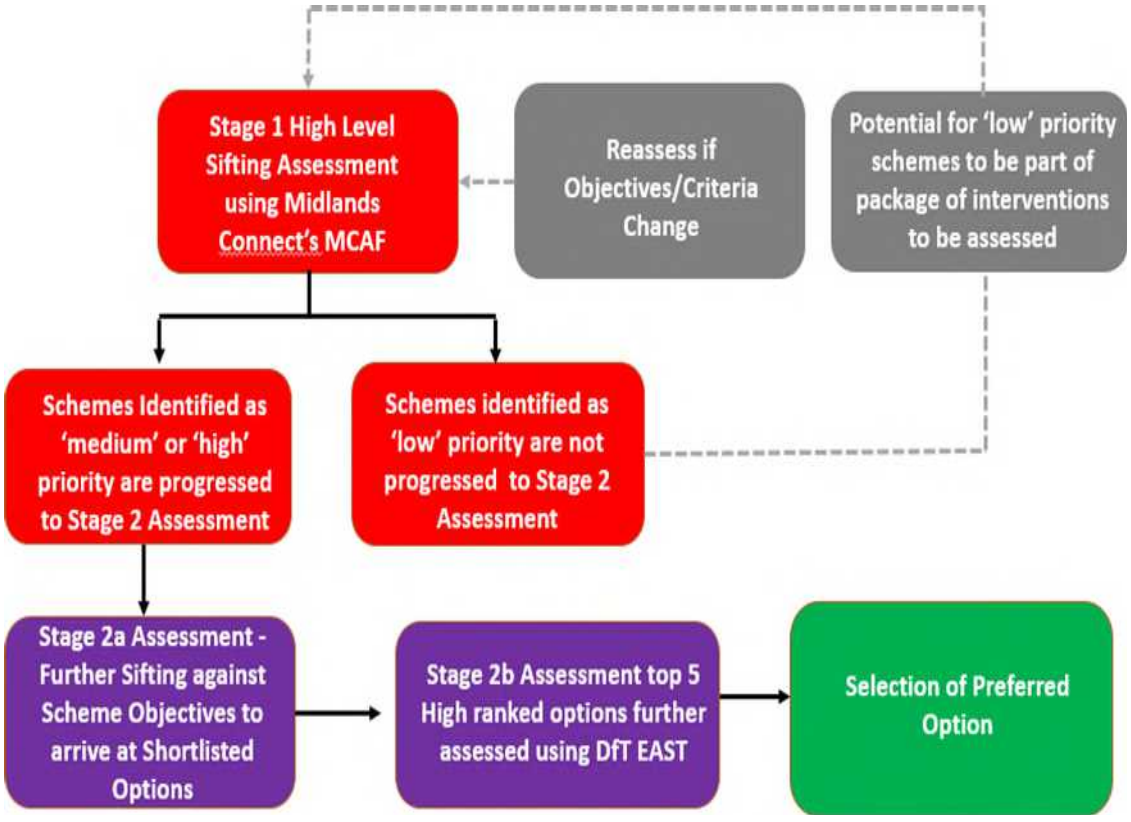
4.8.12. A wide range of options were identified at SOBC stage to specifically address the identified issues along the corridor, these included:

- Nine individual junction improvements schemes on the A511 / A50;
- Dualling of a section of the A511 Growth Corridor,
- A potential bypass for the A511;
- 5 packaged junction improvement schemes and
- 11 public transport options.

4.8.13. The long list of options is included in Appendix C of the OAR.

4.8.14. The following sections present the tailored option appraisal approach used in arriving at the preferred option as depicted in **Figure 4-32**.

Figure 4-32 – Tailored Option Appraisal Approach



STAGE 1 ASSESSMENT – INITIAL SIFTING

4.8.15. The Stage 1 Assessment has been informed by the Midlands Connects MCAF (Stage 1 – High Level Sifting Assessment) tool. The tool scores each option qualitatively against a set of criteria and then identifies the 'lowest priority' interventions (i.e. interventions that perform the poorest against the Stage 1 criteria) and not progress them to the next stage.

4.8.16. This allowed for the subsequent stages of the appraisal process to focus only on those interventions that have the most potential to support the objectives and conditional outcomes, as well as being deliverable and affordable.

4.8.17. More details of the Stage 1 Assessment are provided in Chapter 7 of the OAR.

4.8.18. The long list of options was ranked 'low', 'medium' and' high' priority based on their overall scores against the criteria of assessment. The ranking system is as follows:

- Low Priority – options scoring less than 40%;
- Medium Priority -Options coring between 40% and 80%; and
- High Priority – Options scoring over 80%.

Following initial sifting, 15 transport options identified as 'low priority' were discarded from the long list and 13 options were taken forward to the next stage of assessment. **Table 4-8** presents the results of the Stage 1 Assessment. As can be seen only the 8 individual junction improvement options and the 5 package options achieved the medium and high priority scores.

Table 4-8 – Stage 1 Assessment Results – Long List of Options

Needs Ranking	Intervention	Overall Weighted Score	Priority Needs Assessment
1	Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and J10, dualling of the A511 between J2 & J4 and provision of a new and road connection to the Bardon Link Road being provided by developers	82%	High Priority
2	Package 5 - Junction Improvements at at J2, J8,J9 and J10	74%	Medium Priority
3	Package 3 - Junction Improvements at three existing junctions J6,J7 and J8	70%	Medium Priority
4	Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualling of the A511 between J2 & J4	66%	Medium Priority
5	Package 4 - Junction Improvements at two existing junctions J9 and J10	62%	Medium Priority
6	Junction 9 - A511/Copt Oak Road Junction (Flying Horse)	57%	Medium Priority
7	Junction 7 - A511/Grange Road Roundabout (Birch Tree);	55%	Medium Priority
8	Junction 5 - A511/Broom Leys Junction	52%	Medium Priority
9	Junction 6 - A511/Bardon Road roundabout new road connection to the Bardon Link Road being provided by developers	51%	Medium Priority
10	Junction 8 - A511/Charnwood Road roundabout	50%	Medium Priority
11	Junction 10 - A511/Field Head Roundabout	49%	Medium Priority
12	Junction 2 - A511/Thornborough Road Roundabout	47%	Medium Priority
13	Junction 1 - A511/Swannington Roundabout (Hoo Ash);	46%	Low Priority
14	Junction 4 - A511/Whitwick Road Roundabout	40%	Low Priority
15	Increase Frequency if Bus Services Across Day	35%	Low Priority
16	Express Bus Service	34%	Low Priority
17	Re-opening of the Leicester to Burton Railway Line to passenger on currenet alignment	33%	Low Priority
18	Re-opening of the Leicester to Burton Railway Line to passenger using Tram Train	33%	Low Priority
19	Investment in enhanced routes between bus stops and residences	32%	Low Priority
20	A511 Bus Devlopment Plan	32%	Low Priority
21	Cross Town Bus Services	30%	Low Priority
22	Investment in Hybrid/Electric Buses	30%	Low Priority
23	Bus Priority Measures	29%	Low Priority
24	Bardon Road Bypass	29%	Low Priority
25	Re-route Buses in Leicester to Connect to Leicester Railway Station	27%	Low Priority
26	Upgrading of Bus Stop Facilities and Information	26%	Low Priority
27	Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout	23%	Low Priority

STAGE 2 ASSESSMENT

Stage 2a Assessment

4.8.19. To arrive at a short list of options for further assessment using DfT' EAST approach (i.e. Stage 2b Assessment), options from the initial sifting exercise were further assessed in detail against the scheme objectives to discard the least performing options and arrive at a shorter list of options. Of the 13 shortlist options only the five package options achieved higher than the minimum score against any of the seven scheme objectives. The eight individual junction options under achieve because

they are localised in impact and so cannot achieve more than the minimum against the objectives relative to the larger package options.

4.8.20. **Table 4-9** provides the assessment of the five shortlisted options against the scheme objectives. The table shows that Package 1 was likely to best complement the scheme-specific objectives; however, this does not include an assessment of deliverability risk.

4.8.21. The following options presented in descending order of ranking against the scheme objectives were identified for further assessment:

- Package 1 (Full set of interventions);
- Package 2 - Junction improvements at four existing junctions J1, J2, J4 & J5, and dualling of the A511 between J2 & J4;
- Package 5 – Junction improvements at J2, J8, J9 and J12
- Package 4 - Junction Improvements at two existing junctions J9 and 12; and
- Package 3 - Junction improvements at three existing junctions J6, J7 and J8.

4.8.22. More details of the Stage 2a Assessment can be found in Chapter 7 of the OAR.

Table 4-9 - Performance of Shortlisted Options against Scheme Objectives

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Objective 1 - Make journeys on the A511 faster and more reliable	This option provides journey time savings along the whole A511 MRN corridor as opposed to individual junction improvements. This option provides faster/more reliable connections to the SRN (A42/M1).	This option is likely to provide journey time savings on a portion of the A511 MRN corridor (north-west of Coalville), especially at individual junctions. However, the other junctions on the corridor remain over-capacity, constraining the level of journey time benefit across the A511 corridor overall.	This option provides journey time savings on the A511 at individual junctions (between Coalville and Bardon). However, the other junctions on the corridor remain over-capacity, constraining the level of journey time benefit across the A511 corridor overall.	This option provides journey time savings on the A511 at the Flying Horse Roundabout and the Field Head Roundabout. However, the other junctions on the corridor remain over-capacity, constraining the level of journey time benefit across the A511 corridor overall.	This option provides journey time savings on the A511 at individual junctions between Coalville (Thornborough Roundabout) and Markfield (Field Head Roundabout). However, the other junctions on the corridor remain over-capacity, constraining the level of journey time benefit across the A511 corridor overall.
Score	+++	+	+	+	+
Objective 2 - To provide a resilient and safer road network, resilient to road collisions	This option is more likely to reduce the number of collisions along the whole corridor as there are concentrations of PIC's across several junctions (namely J1, J2, J5, J6, J7, J8 & J9). This option includes improvements schemes at all junctions mentioned above, therefore its implementation will contribute to providing a safer road network for all road users.	This option is likely to reduce collisions on J1, J2 and J4 and J5, but not provide a resilient and safer road network along the length of the A511 MRN corridor.	This option is likely to reduce collisions on J6, J7 and J8, but doesn't provide a resilient and safer road network along the length of the A511 MRN corridor.	This option is likely to reduce collisions at both junctions but not provide a resilient and safer road network along the length of the A511 MRN corridor.	This option is likely to reduce collisions on J2, J8 and J9, but not provide a resilient and safer road network along the length of the A511 MRN corridor.
Score	+++	+	+	+	+
Objective 3 - To improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	This option provides better reliability along the corridor with multiple junction improvements and dualling of the A511 between J2 and J4, increasing capacity for freight vehicles. This option also includes the Bardon Link Road which routes through the town of Coalville where freight is likely to travel and therefore provides a better connection.	This option is likely to improve reliability and capacity for freight vehicles along the A511 MRN corridor by dualling the A511 between junctions 2 and 4.	This option is unlikely to improve reliability and capacity for freight vehicles along the length of the A511 MRN corridor, although it is likely to increase capacity at individual junctions.	This option is unlikely to improve reliability and capacity for freight vehicles along the length of the A511 MRN corridor, although it is likely to increase capacity at individual junctions.	This option is unlikely to improve reliability and capacity for freight vehicles along the A511 MRN corridor, although it is likely to increase capacity at individual junctions.

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Score	+++	++	+	+	+
Objective 4 - Support North West Leicestershire DC's objectives of facilitating growth by delivering transport infrastructure; and Potentially deliver at least 25ha of employment land and unlock at least 3,500 new dwellings	This option supports housing development, as well as employment sites by unlocking opportunities for development located along the A511 with improved transport infrastructure along the length of the corridor. The Bardon Link Road will facilitate housing developments in Coalville and Bardon (3,500 dwellings)	Due to the focus of this package on only some of the junctions on the corridor, the access improvement to employment and housing opportunities won't be realised evenly as some locations will remain congested.	Due to the focus of this package on only some of the junctions on the corridor, the access improvement to employment and housing opportunities won't be realised evenly as some locations will remain congested.	Due to the focus of this package on only some of the junctions on the corridor, the access improvement to employment and housing opportunities won't be realised evenly as some locations will remain congested.	Due to the focus of this package on only some of the junctions on the corridor, the access improvement to employment and housing opportunities won't be realised evenly as some locations will remain congested.
Score	+++	+	+	+	+
Objective 5 - To improve connectivity for all road user, with particular focus on vulnerable road users	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users, however does include some improvements to crossing facilities.	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.
Score	+	/	/	/	/
Objective 6 - Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13.	This option improves connectivity to the SRN by implementing corridor wide improvements, as well as multiple junction improvements which aims to create a more resilient and reliable network.	This option is unlikely to improve connectivity to the SRN as the scheme involves only improving a small number of junctions on the corridor, rather than the corridor. Congestion/queueing is thus likely to continue to still occur elsewhere on the A511 MRN corridor, reducing the benefits from the junctions improved.	This option is unlikely to improve connectivity to the SRN as the scheme involves doesn't include the most congested junctions in immediate proximity to SRN Congestion/queueing is thus likely to continue to still occur elsewhere on the A511 MRN corridor, reducing the benefits from the junctions improved.	This option is unlikely to improve connectivity to the SRN as the scheme involves only improving a small number of junctions on the corridor, rather than the corridor. Congestion/queueing is thus likely to continue to still occur elsewhere on the A511 MRN corridor, reducing the benefits from the junctions improved.	This option will somewhat improve connectivity to the SRN as the scheme but only to/from the eastern side of Coalville, rather than the whole corridor.

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Score	+++	+	+	+	++
Objective 7 - To improve air quality and traffic noise impact along the corridor	This option will improve air quality across the A511 corridor by improving traffic flow and reducing stop-start traffic, however noise impact will likely change little from current levels.	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.
Score	++	+	+	+	+
Overall Score	+++	+	+	+	+

Stage 2b Assessment

4.8.23. For the Stage 2b Assessment, a largely qualitative sift of the short list of options was undertaken using a tailored version of the Department for Transport's (DfT's) Early Appraisal Sifting Tool (EAST). The EAST tool has been developed by the DfT to provide an approach to the early assessment of a range of options which seek to address a known problem or meet an agreed set of objectives and present the analysis consistent with the five-case model for business cases (Strategic, Economic, Management, Financial and Commercial).

4.8.24. The performance of the five shortlisted options against the five-case model is summarised using a Red Amber Green (RAG) assessment in **Table 4-10**.

Table 4-10 – East Assessment of Shortlisted Options

Option	Strategic Case	Economic Case	Management Case	Financial Case	Commercial Case
Package 1					
Package 2					
Package 3					
Package 4					
Package 5					

4.8.25. More details of the Stage 2b Assessment can be found in Chapter 7 of the OAR

4.9 SELECTION OF A PREFERRED OPTION

4.9.1. To arrive at a preferred option for the A511 MRN Growth Corridor, the performance of the various options against the scheme objectives and the five-case model (Strategic, Economic, Management, Financial and Commercial) were assessed, following which it was decided that only Package 1 would be taken forward to the next stage of appraisal.

4.9.2. The following text provides a summary of the findings from the assessment of the shortlisted options against the scheme objectives and the five-case model.

PERFORMANCE AGAINST SCHEME OBJECTIVES

4.9.3. The option appraisal outlined in **Section 4.8** identified that Package 1 is best suited to meet the scheme objectives. Package 1 would provide the highest journey time savings across the entire corridor, providing faster and more reliable connections to the SRN for all vehicles (including freight). The scheme is also more likely to reduce the number of collisions along the entire corridor, providing a safer road network for all road users.

4.9.4. Packages 2, 3, 4 and 5 are focused on offering improvements at fewer locations along the corridor compared to Package 1. As a result, there will still be pinch points along the corridor, which will impact on journey time and reliability. With the corridor located between two strategic motorway junctions and the fact that it is a key east - west connection to Leicester, it is imperative that the whole corridor is

improved in one go to achieve the full benefit of connection to the SRN and economic growth in the area

4.9.5. Package 1 is the best suited option in terms of supporting development, as the improvements are likely to unlock further employment opportunities along the corridor. The Bardon Link Road will also support housing developments in Coalville and Bardon, contributing to meeting the regions housing needs, as well as increase economic activities along the corridor. Packages 2, 3, 4 and 5 do not support fully North West Leicestershire's objectives in terms of facilitating growth and supporting residential and employment development as the packages are focussed on addressing only a proportion of the intervention needs in the corridor.

4.9.6. Finally, Package 1 is the best option in terms of improving air quality and safety across the whole corridor as the improvements will reduce congestion, reducing stop/start movements and therefore reduce the amount of emissions released into the atmosphere at more locations than packages 2, 3, 4 and 5.

STRATEGIC CASE APPRAISAL

4.9.7. Package 1 is the best suited of the five packages for addressing the identified problems. Packages 2 and 5 are deemed to have a moderate impact on addressing the identified problem, whilst packages 3 and 4 will only deliver minor impacts on the issues identified, due to their small scope.

4.9.8. Package 1 has a good fit with the government objectives considered in this assessment. Packages 2 and 5 are deemed to be of a reasonable fit with this objective, whilst packages 3 and 4 will have a dominantly local impact and thus are a low fit with MRN objectives.

ECONOMIC APPRAISAL

4.9.9. Package 1 is deemed to have the greatest potential for delivering "Strong Economic Growth", whilst Package 5 is likely to support "Positive Economic Growth". Packages 2, 3 and 4 are predicted to deliver "Weak Economic Growth".

4.9.10. Due to their potential for improving traffic flows, Packages 1, 2, 3 and 5 are predicted to deliver "High Positive Impacts". Package 4 is predicted to deliver a "Minor Positive Impact".

4.9.11. The packages socio-distributional impact within Coalville are assumed "Neutral", as are the impacts on the local environment.

4.9.12. Package 1 is predicted to deliver a "High Positive Impact" on resident's wellbeing, due to it improving accessibility for residents along the corridor. Package 5, meanwhile, is deemed to deliver a "Minor Positive Impact" due to it benefitting the key traffic flows east of Coalville, but at the expense of improving conditions across the whole of the corridor. Packages 2, 3 and 4 are deemed to have "Neutral Impacts" as they only consider locational improvement rather than allowing access to broader strategic opportunities across the corridor.

4.9.13. At the time the assessment was undertaken the transport model to support the study was being updated, and for this reason it was not been possible to develop an accurate assessment of the Value for Money (VfM) for any of the shortlisted options.

4.9.14. Nonetheless an initial assessment undertaken of a scheme similar to Package 1 valued the VfM as medium (i.e. BCR of 1.6). This has been used in evaluating qualitatively the anticipated VfM for the

various shortlisted options detailed in this section. It should be noted that the BCR for the scheme was not informed by any quantitative benefits associated with the scheme,

MANAGEMENT APPRAISAL

4.9.15. None of the packages presented had an implementation timetable developed, this being something that would be generated at a future stage.

4.9.16. Likewise, broad consultation hadn't occurred so public acceptability wasn't known. Therefore, responses were assumed to be neutral for the purposes of the early appraisal.

4.9.17. The barriers to the delivery of Packages 1 and 2 are graded as 'Some Barriers' for the purposes of the early appraisal. This was due to a requirement to purchase land, as well as issues surrounding flood plains and a cattle creep under a railway line that needs addressing to facilitate these packages Work to establish the scheme's risks and conversations with landowners regarding scheme delivery have advanced somewhat since the early appraisal.

4.9.18. Supporting evidence for Package 1 is "Excellent" in nature, whilst packages 2, 3 and 5 are deemed to have "Good" quality of evidence supporting them. Finally, Package 4 is deemed to be supported by a "Reasonable Quality of Evidence".

4.9.19. Risk analysis was undertaken for all the schemes included in the packages and methods by which risk might be mitigated identified. Key risks which might impact the schemes and the packages containing them included:

- The potential for delay due to the package becoming the subject of Public Inquiry;
- The existing highway infrastructure needing greater than expected levels of investment to support the improvements identified in the package;
- Network Rail requiring additional design work at locations where the A511 and/or proposed schemes interact with the Leicester-Burton line; and
- Structural survey for agricultural bridges crossing the corridor.

4.9.20. Whilst these risks may occur, their early identification means measures can be put in place to aid in the mitigation of their impacts, meaning that the packages overall risks remain at Medium. Furthermore, the packages' highway nature means that considerable experience is available to aid in their delivery, further helping reduce risks.

FINANCIAL APPRAISAL

4.9.21. Of the schemes, Package 1 has the best affordability relative to meeting the MRN funding criteria, achieving an 'Average' rating. This is due to it being within the target cost range for DfT MRN funding package and is therefore the most likely to attract support. Packages 2 and 3 have a 'below average' affordability rating due their outturn cost of around £16m each, whilst being outside of the £20m-£50m value identified for MRN funding, the cost is close enough that the DfT might be amenable to making an exception.

4.9.22. Packages 4 and 5 are considerably below the £20m MRN funding baseline and, as such, are less likely to attract DfT MRN Funding. Without access to additional funding only Package 4 (£3.4m) could have the potential to be locally funded as it lies within the 15% required local contribution amount for Package 1 (£7.4m).

4.9.23. Due to the packages comprising public road projects, no revenue will be delivered by them.

4.9.24. The cost risks for the scheme are reflective of the scheme risks, with Package 1 being Very High Risk, Package 2 being High Risk and Packages 3, 4 and 5 being Medium Risk. This is due to the increasing interfaces required for the two large packages introduce more potential for delay and thus cost over-runs.

4.9.25. At the time how, the scheme would be delivered remained to be confirmed and as such the cost profile could not be commented upon in detail during the early appraisal. Given the scheme is needed ahead of works on HS2 Phase 2B then construction would commence as soon as possible.

COMMERCIAL APPRAISAL

4.9.26. Scheme flexibility has been considered in terms of the scalability to a range of requirements and the scheme's likely adaptability to future changes in movement patterns and requirements.

4.9.27. Package 1 is identified as being "Very Flexible", as the comprehensive nature of the interventions identified will grant the A511 capacity and flexibility to respond to future growth needs. Package 2 is identified as "Slightly Flexible" as it will aid the corridor in being responsive to through traffic, as well as benefitting movements from the Coalville area to destinations in the north such as East Midlands Airport. Package 5 is also identified as "Slightly Flexible" due its ability to improve conditions for through traffic to a degree as well as provide additional capacity for the crucial journeys from Coalville/Bardon to M1/Leicester flows. The remainder of the schemes, due to their small scopes and limited regional impacts, are deemed to be "Slightly Inflexible".

4.9.28. Funding for the packages will be provided by a combination of DfT MRN Funding and Local contributions. As previously mentioned, no direct income will be generated by any of the packages.

4.10 PREFERRED OPTION AT SOBC STAGE

4.10.1. Based on the range of objectives and the option appraisal assessment undertaken, it is apparent that Package 1 was the preferable option. Package 1 meets the full set of objectives, including those set by LCC and the MRN. Additionally, Package 1 has best matched the criteria set out within the evidence base and is therefore most likely to offer the greatest levels of benefits compared to the other short list of options.

4.10.2. The preferred option will provide a faster and more reliable network, improving connectivity to the SRN and support residential and employment development benefiting the population and economy of North West Leicestershire.

4.10.3. Packaging road improvements together overcomes the issue that individual junction improvements will only increase delays at neighbouring junctions, since traffic will be able to go through the improved junction quicker only to stop at an adjoining junction already struggling from congestion and in so doing increasing delays and queuing along the corridor.

4.10.4. In addition, the preferred scheme ensures that all the major issues along the corridor are addressed at one go providing better value for money through economy of scale and less destructive periods along the corridor due to extended or sporadic construction activities, which will have an adverse impact on the resilient role played by the corridor in supporting the SRN.

4.10.5. This preferred option – Package 1 involves junction improvements at eight existing junctions along the A511 between the A42 J13 and the M1 J22, improvements at A50 / Field Head Junction east of M1 J22, dualling a proportion of the A511 between Thornborough Road Roundabout and Whitwick

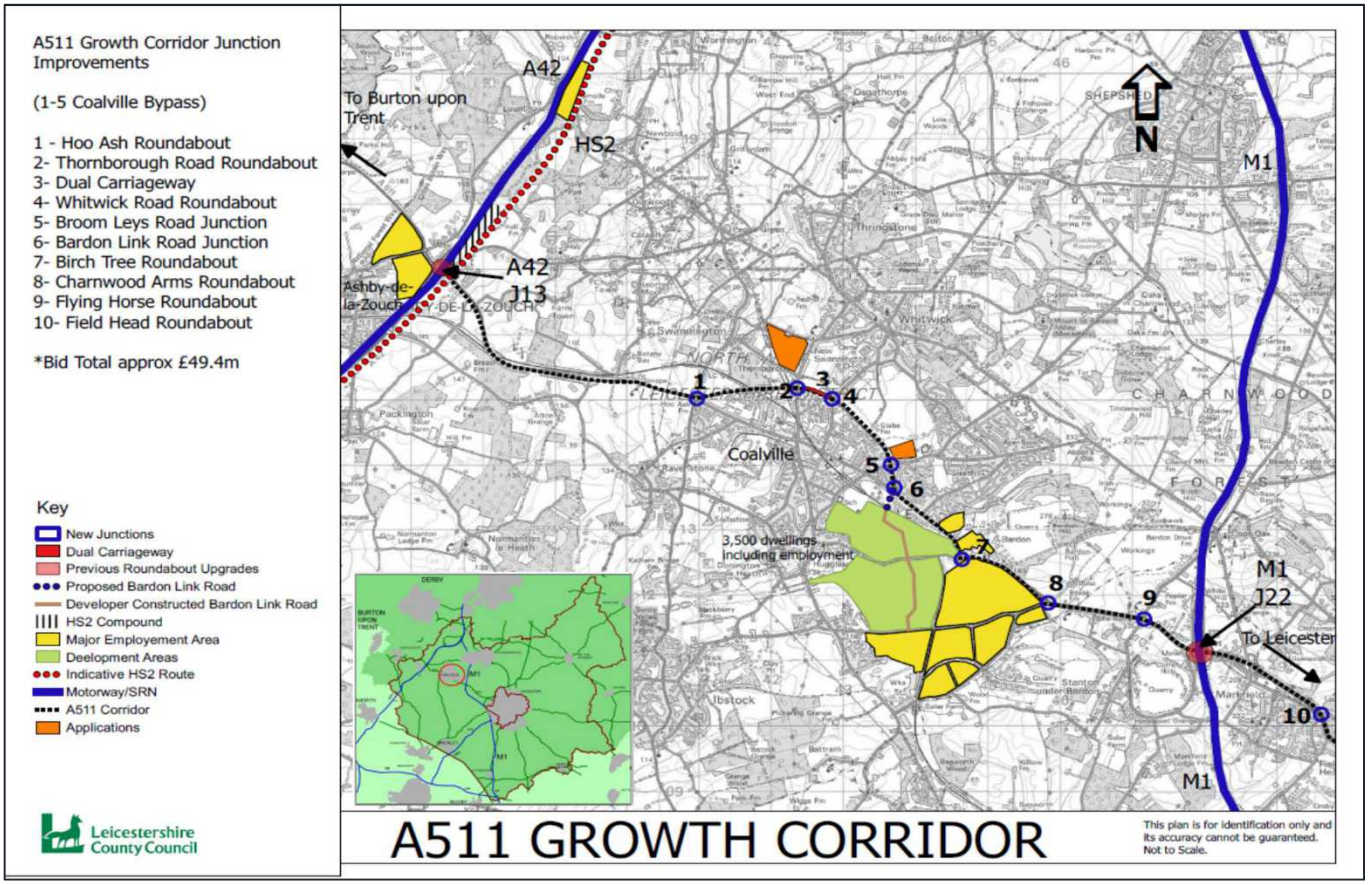
Road Roundabout, as well as the provision of the Bardon Link Road with two new associated junctions.

4.10.6. The extensive evidence-based transport work collected to inform the proposed scheme showed the operation of Junction 22 of the M1 is affected by the existing evidence of traffic delays at the A50 / Field Head roundabout. Since the work to improve Junction 22 of the M1 this junction has provided a bottleneck for vehicles travelling to and from Leicester at peak hours, which has impacted on the resilience of the SRN.

4.10.7. From this evidence there is a compelling case to include this junction in the package of interventions which form Package 1. Without this junction the ability to provide resilience to the SRN is compromised and would impede the reliability of the route to and from Leicester and beyond. The inclusion of the A50 / Field Head roundabout therefore supports the MRN objectives of improving SRN resilience and connectivity.

4.10.8. The 10 components of Package 1 are shown in **Figure 4-343**.

Figure 4-33 - Package 1 - Improvement Proposal at SOBC



4.10.9. The recommendation therefore from the short list options sift presented in Chapter 7 of the OAR is that the preferred option to be taken forward to the next stage of appraisal was Package 1.

4.10.10. Following submission of the SOBC to DfT the Package 1 scheme was subjected to optioneering considering the value contributions of each element of the package. This led to refinement of the package with most significant step to remove the Charnwood Arms Roundabout. The refined package has also been tested in a recalibrated transport model. Details of the updated scheme are provided in **Section 4.12** of the OBC.

4.11 RECALIBRATED TRANSPORT MODEL

4.11.1. The transport model used to inform the SOBC has been recalibrated following the submission of the SOBC to DfT, and therefore the work presented in the **Section 4.3** is a refresh from what was presented in the SOBC using the latest modelling outputs.

4.11.2. More details about the recalibrated transport model can be found in **Section 5.2** of this OBC and the accompanying Highway Model Local Model Validation Report (LMVR) included in **Annex 4.**

4.11.3. The OAR for the scheme has also been refreshed with the latest modelling work and is presented in **Annex 1** of the OBC. As part of this update, the outcomes of the modelling work were used to redevelop the scheme further so that its associated benefits are optimised. Details of the process are provided in **Section 4.12** of this OBC.

4.12 PREFERRED OPTION AT OBC STAGE

4.12.1. Following the submission of the SOBC to DfT and the recalibration of the PRTM, the preferred option for the A511 MRN Growth Corridor scheme at SOBC stage (i.e. Package 1) has been further developed to take into account the outcomes of the modelling work carried out in support of the proposed scheme. The following text discusses the process and presents the refined scheme.

OPTIONEERING

4.12.2. An optioneering workshop was held on the 29th July 2019 attended by the project team, where the benefits afforded by each individual component of the preferred scheme (i.e. Package 1) was present to the project delivery team for discussion on which schemes should be taken forward and how some of the schemes showing neutral to slight benefits can be improved further to provide better results.

4.12.3. **Table 4-11** presents the outcome of the optioneering workshop and a copy of the presentation slides and notes from the optioneering workshop are provided in **Appendix A**.

Table 4-11 – Optioneering Workshop Outcome

Scheme Component Ref.	Scheme Location/Description	Optioneering Outcome	Scheme taken forward
1	Hoo Ash Roundabout – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓
2	Thornborough Road Roundabout – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓
3	Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout – Dualling	Indicated some benefits - further recommendations were made to improve benefits	✓
4	Whitwick Roundabout – Junction Improvement	Indicated neutral benefits – further recommendations were made to improve benefits	✓
5	Broom Leys Junction – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓
6	Bardon Link Road – Junction Improvement & New Road	Indicated high benefits	✓
7	Birch Tree Roundabout	Indicated high benefits	✓
8	Charnwood Arms Roundabout	Indicated high dis-benefits	X
9	Flying Horse Roundabout	Indicated neutral benefits – further recommendations were made to improve benefits	✓
10	Field Head Roundabout	Indicated high benefits	✓

4.12.4. Following the Optioneering Workshop it was decided that proposed improvements to the Charnwood Arms Roundabout would be excluded from the preferred scheme package, mainly because it was providing a significant dis-benefit.

4.12.5. Therefore, for this OBC, the preferred scheme for the A511 MRN Growth Corridor includes:

- Junction improvements at seven existing junctions along the A511 between the A42 and the M1;
- Junction improvement at the Field Head Junction on the A50 east of the M1;
- Dualling a proportion of the A511 between Thornborough Road Roundabout and Whitwick Road Roundabout; and
- Provision of the northern part of the Bardon Link Road connecting it with the A511.

4.12.6. **Table 4-12** provides a brief description of the nine components forming the preferred A511 MRN Scheme. The supporting scheme drawings are provided in **Appendix B** of this OBC.

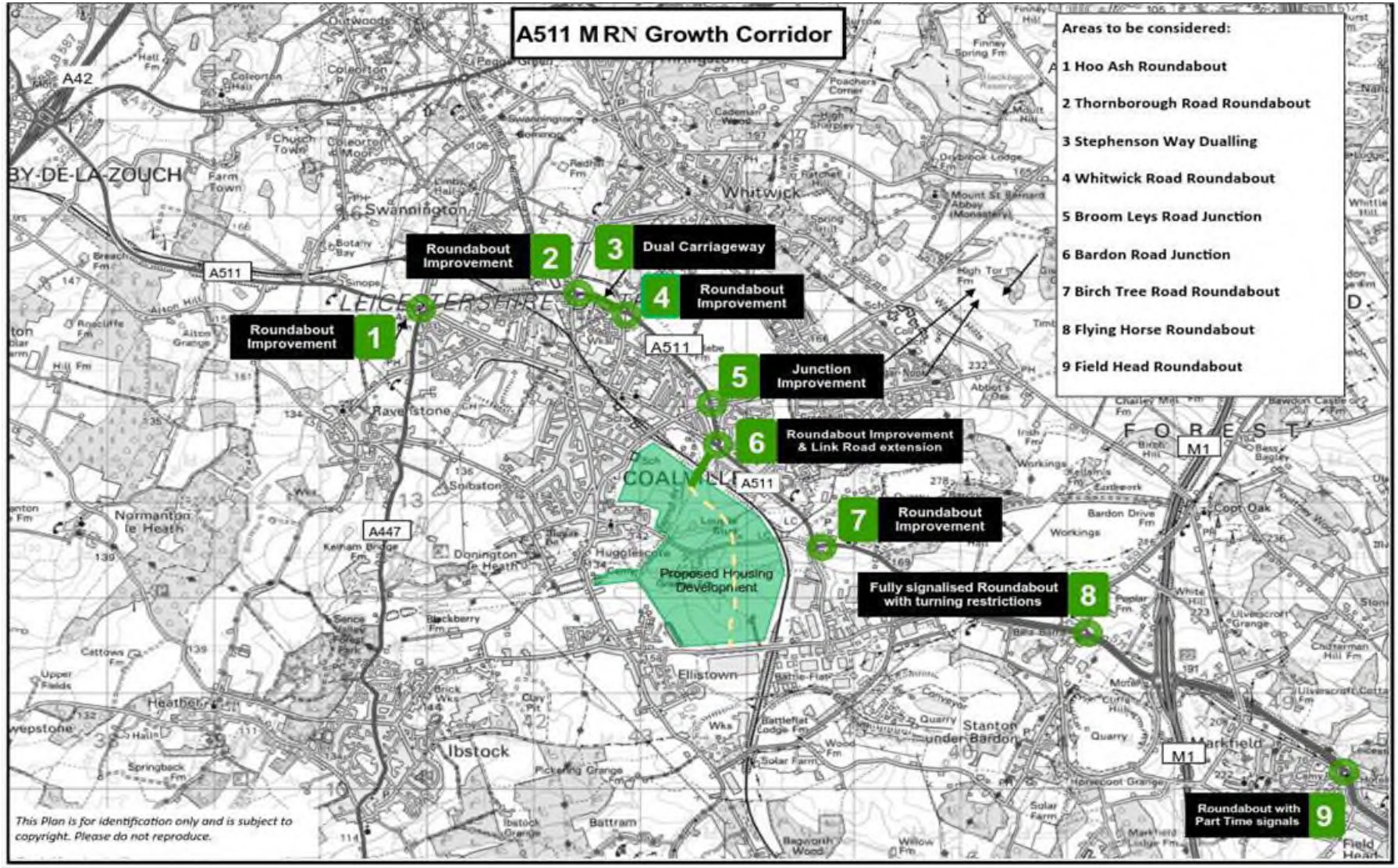
Table 4-12 – Package 1 Scheme Details

Potential Scheme	Scheme Details	Stage of Development
Scheme 1. Hoo Ash Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions.	General Arrangement/ Costed scheme/ Option appraisal
Scheme 2. Thornborough Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions. The existing crossing on the western (McDonalds) side of the A511 will be retained.	General Arrangement/ Costed scheme/ Option appraisal
Scheme 3. Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout	Alter the existing single lane road to a dual carriageway on Stephenson Way between the Thornborough Road and Whitwick Road roundabouts.	General Arrangement/ Costed scheme/
Scheme 4. Whitwick Road Roundabout	Widened approaches and exits allowing two ahead lanes for A511 in both directions, with proposal for a signalised pedestrian crossing on the junction's eastern side (Morrisons). This will aid in supporting sustainable transport, particularly walking and cycling, movements between Whitwick and Coalville.	General Arrangement/ Costed scheme/ Option appraisal
Scheme 5. Broom Leys Junction	Modify the existing traffic signal junction by altering the existing left turn lane on Stephenson Way into Broom Leys Lane (Eastbound) to enable ahead and left traffic. Removing some of the verge and footway to provide two ahead lanes for traffic travelling northbound on Stephenson Way. This will require the existing right turn onto Broom Leys Road (Westbound) to be banned. This should enable improved vehicle throughput, reduced queuing and thus reduced pollution within the AQMA that contains this junction.	General Arrangement/ Costed scheme/
Scheme 6. Bardon Road Roundabout including New Road Connection	This scheme upgrades the existing roundabout at the A511 Stephenson Way / Bardon Road Junction (i.e. Junction 6 on **Figure 4-25**) to allow a new southern arm and road connection to the	General Arrangement/ Costed scheme/

Potential Scheme	Scheme Details	Stage of Development
	Bardon Link Road being provided by developers as shown by the blue dotted section of the Bardon Link Road provided in **Figure 4-25**. Improvement of this roundabout will enable improved traffic flow, helping to alleviate congestion.	
Scheme 7. Birch Tree/Reg's Way Roundabout	This scheme will see the delivery of widened entry and exit lanes allowing three lanes and keeping the two lanes on the exit towards Coalville, supporting better traffic flow and reducing the risk of collision, as well as providing signalisation on the A511 approaches to the junction, supporting easier movement to and from the Bardon Lane industrial estates	General Arrangement/ Costed scheme/
Scheme 8. Flying Horse Roundabout	This scheme will see the current partially signalised roundabout altered so that traffic from Stanton Road and traffic from Copt Oak Road can only turn left onto the A511. Traffic travelling on the A511 will not be able to turn right into Stanton Lane. This signalisation aids in regulating traffic flow and thus reducing the potential for accident at this location which currently shows a large number of PICs. The scheme will also see the existing pedestrian crossings kept with an additional crossing provided on Stanton Lane.	General Arrangement/ Costed scheme/
Scheme 9. Field Head Roundabout	It is proposed to introduce part time signals on the A50 approaches to the roundabout. A two-lane exit is proposed on Launde Road. This adjustment would enable regulation of the traffic flow across the roundabout, as well as improving traffic control at a junction that shows a considerable number of PICs over the last five years.	General Arrangement/ Costed scheme/

4.12.7. The nine components of preferred scheme (Package 1) at OBC are shown in Figure 4-34.

Figure 4-34 - Package 1 - Improvement Proposals at OBC Stage



BARDON LINK ROAD AND JUNCTION IMPROVEMENTS

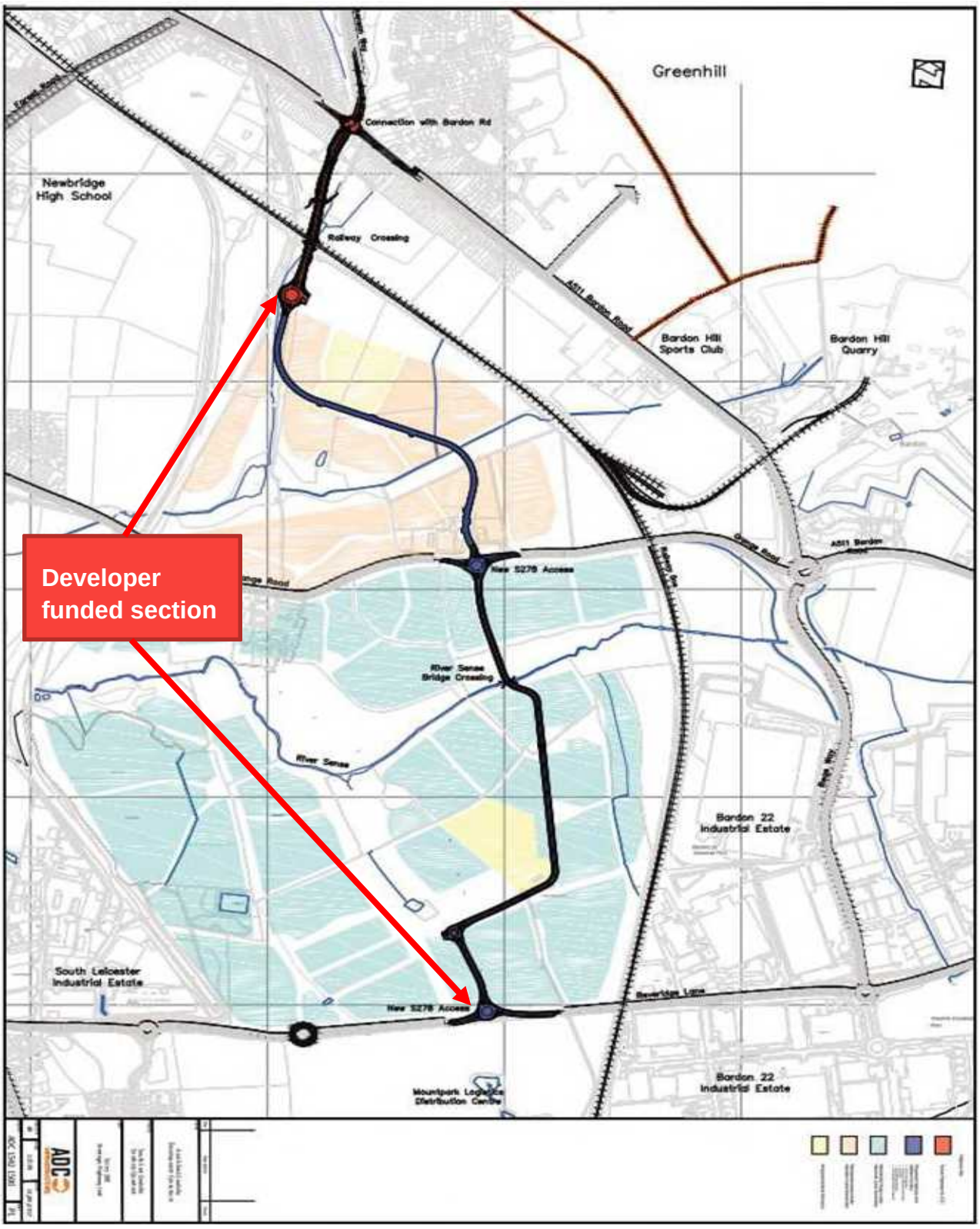
4.12.8. The Bardon Link Road shown in **Figure 4-35** will leave the A511 at the Stephenson Way / Bardon Road junction (i.e. Junction 6 on **Figure 4-34**), before crossing under the Burton-on-Trent to Leicester railway line via an upgrade to the existing underpass. It then continues south to Beveridge Lane via an intersection with Grange Road where a new roundabout will be provided. The section south of the railway crossing is being fully funded by developers of the South East Coalville SUEs. The section containing the railway crossing and the link to Junction 6 is part of the Preferred Scheme MRN submission.

4.12.9. The Bardon Link Road in its entirety (i.e. with the link under the railway line to Junction 6 delivers several benefits. Firstly, and important to this OBC submission, the link road will provide relief for the currently congested Birch Tree Roundabout, as well as reducing conflict with vehicle and rail movements accessing the Bardon Hill Quarry, and in so doing increasing capacity along the A511 Growth Corridor.

4.12.10. Secondly, although the delivery of the south east SUEs are not dependent on a link under the railway line to Junction 6, it will support the proposed residential developments by providing a northern access which connects to the A511 and Coalville town centre in the north and Bardon Hill Industrial estate in the south. For the primary accesses to and from the residential estate, the link road will have traffic calming measures and high quality urban realm.

4.12.11. Finally, it will also provide a more direct route for residents of Coalville's eastern estates to access the Bardon industrial area, independent of the A511 MRN route. This combination of factors might encourage increased walking and cycling usage on short trips, something that was previously identified as lacking in the area.

Figure 4-35 - Bardon Link Road alignment showing developer funded section



4.13 FUTURE TRAFFIC IMPACTS OF THE A511 MRN GROWTH CORRIDOR SCHEME

4.13.1. This section discusses the impact of the A511 MRN Growth Corridor scheme on the surrounding highway network, including its impact on the SRN.

FLOW DIFFERENCE (2038 CORE AND WITH SCHEME)

4.13.2. **Figure 4-36, Figure 4-37** and **Figure 4-38** provides the flows difference between the 2038 'Core' and 'With Scheme' scenarios of traffic along the A511 MRN Growth Corridor for the AM, IP and PM peak periods respectively.

4.13.3. In all three peak periods, it is demonstrated that total traffic along the A511 is forecast to increase with the introduction of the scheme. This illustrates that the A511 MRN Growth Corridor scheme would help provide additional capacity along the corridor and in so doing alleviate congestion on surrounding roads. Increases in traffic flow vary throughout the A511, with the highest flow difference being over 250 PCUs in the AM and PM peaks at certain locations along the corridor.

4.13.4. In addition, the flow difference plots for the time periods assessed shows a reduction in traffic flows on the surrounding highway network to the A511 MRN Growth Corridor, mainly east-west routes that are parallel to the corridor. The flow difference plots also show reduction in traffic volumes along the M1, notably north of Junction 22, meaning vehicle traveling east to west and vice versa are likely to use the A511 MRN Growth Corridor instead of carrying-on on the M1 or A42 to their destinations.

Figure 4-36 - Flows Difference Plot - 2038 'Core' and 'With Scheme' - AM Peak

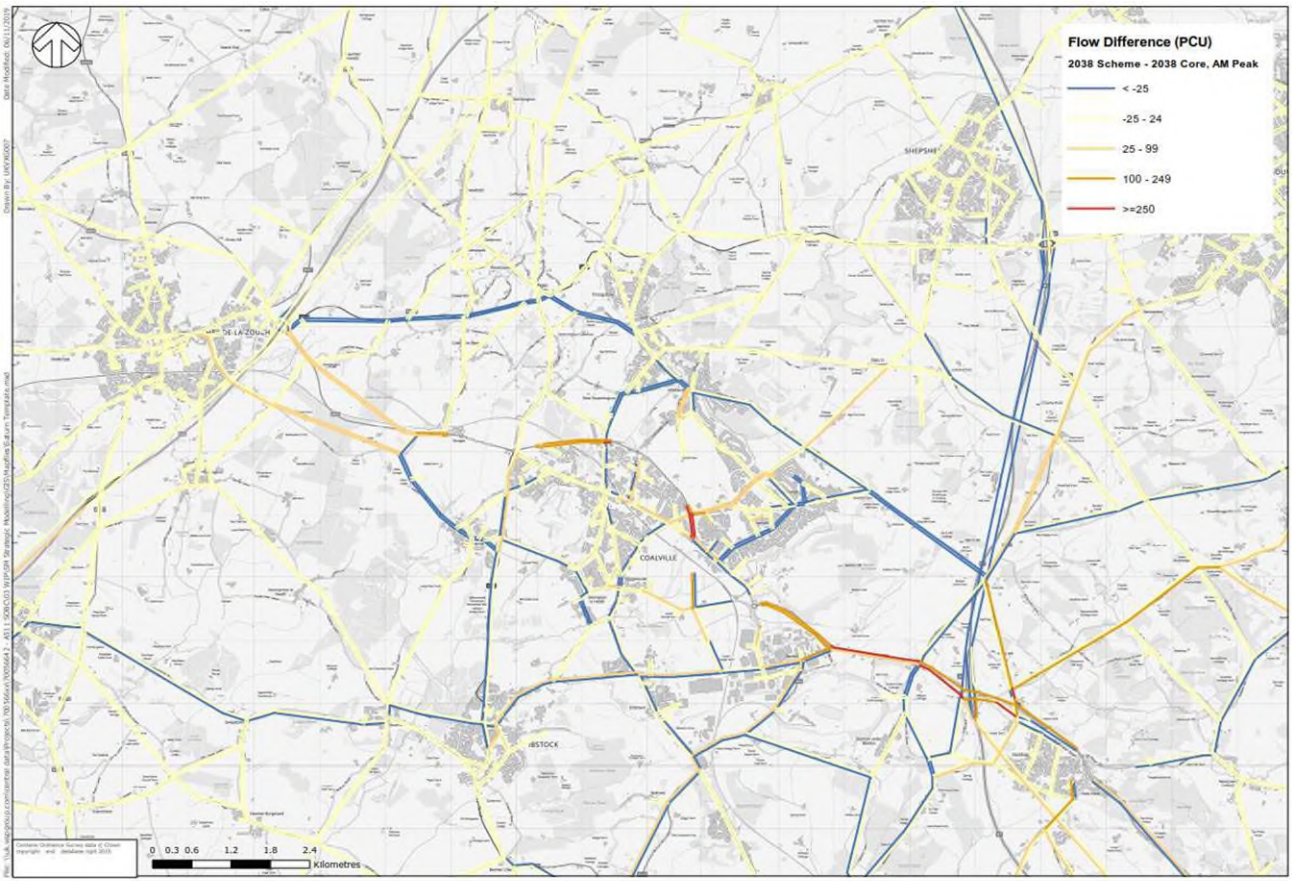


Figure 4-37 – Flow Difference Plot - 2038 'Core' and 'With Scheme' - IP Peak

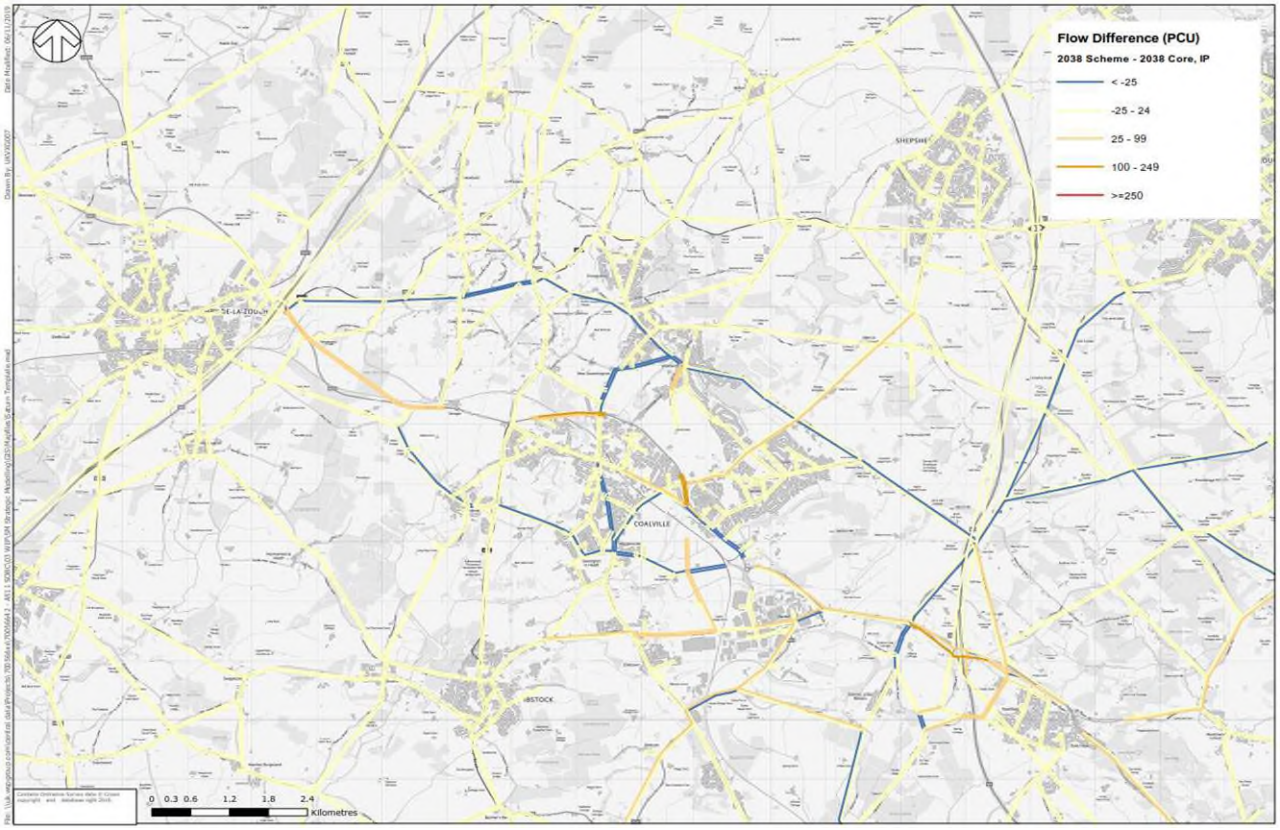
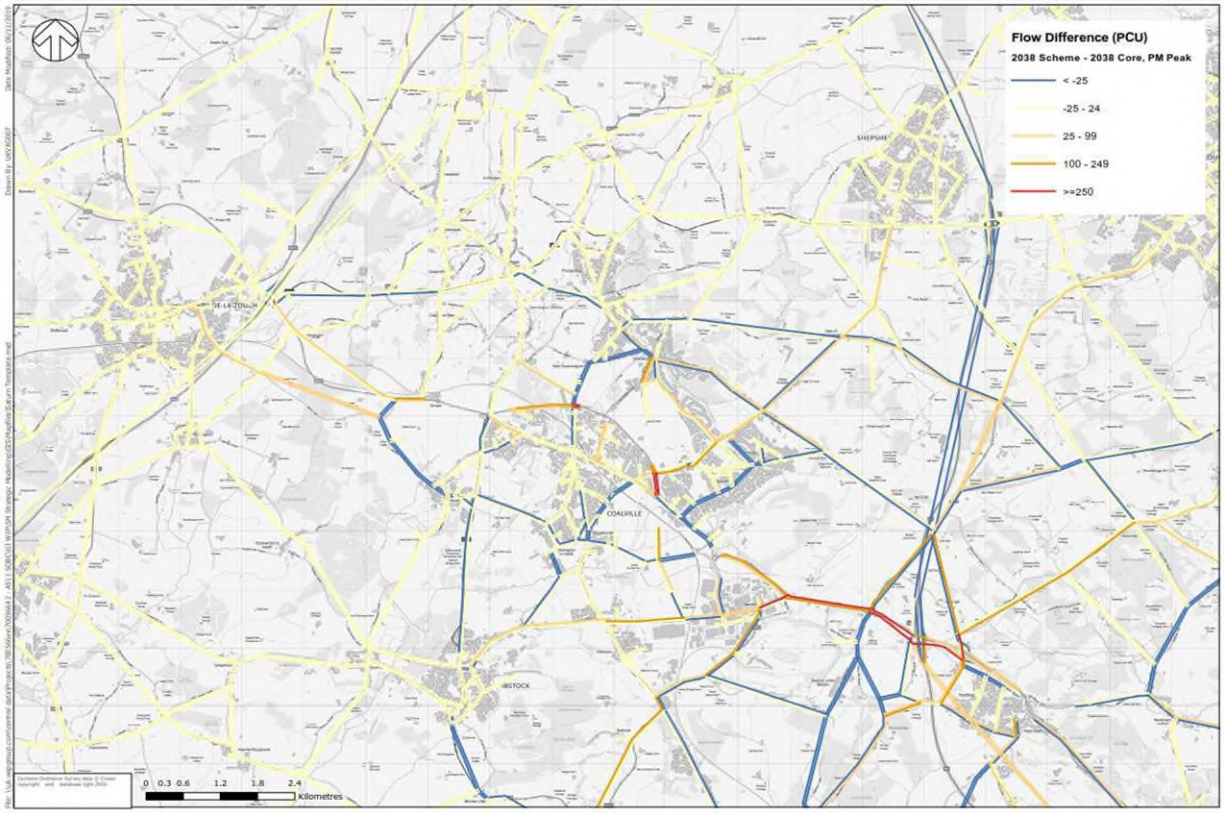


Figure 4-38 - Flow Difference Plot - 2038 'Core' and 'With Scheme' - PM Peak



STRATEGIC ROAD NETWORK

4.13.5. The A511 MRN Growth Corridor scheme is also forecast to have positive impacts on the SRN. **Figure 4-39** and **Figure 4-40** demonstrate the forecast traffic flow change resulting from the A511 MRN Growth Corridor scheme in 2038 for the AM and PM peaks respectively.

4.13.6. In both peak periods, the modelling outputs demonstrate an increase in forecast trips along the A511, with the subsequent effect of reducing forecast trips on surrounding and parallel roads in North West Leicestershire.

4.13.7. The modelling outputs also demonstrates a forecast reduction in trips on the M1 north of Junction 22, and a slight increase in forecast trips on the M1 south of Junction 22, suggesting that vehicles likely to use the M1 to travel east to west and vice versa, travel on the A511 corridor instead due to improved traffic conditions afforded by the scheme.

Figure 4-39 – Forecast Flow Change in Trips 2038 AM

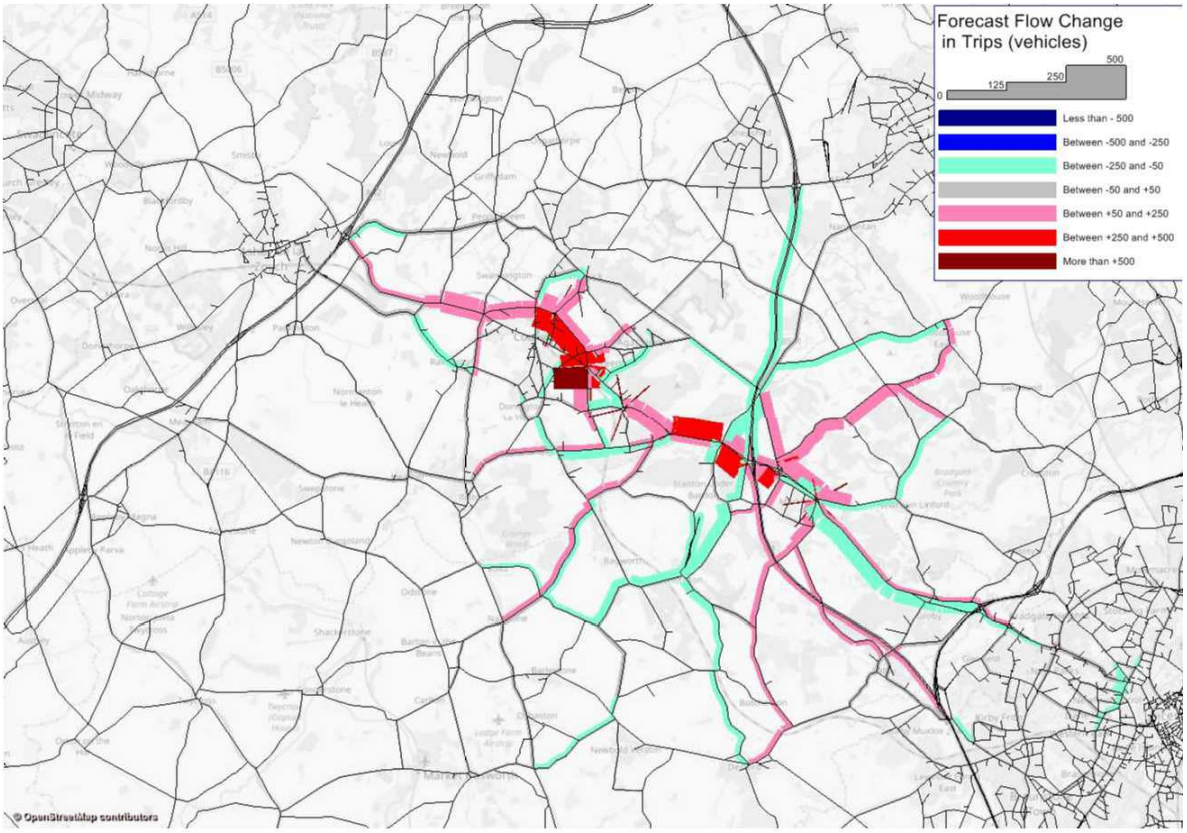
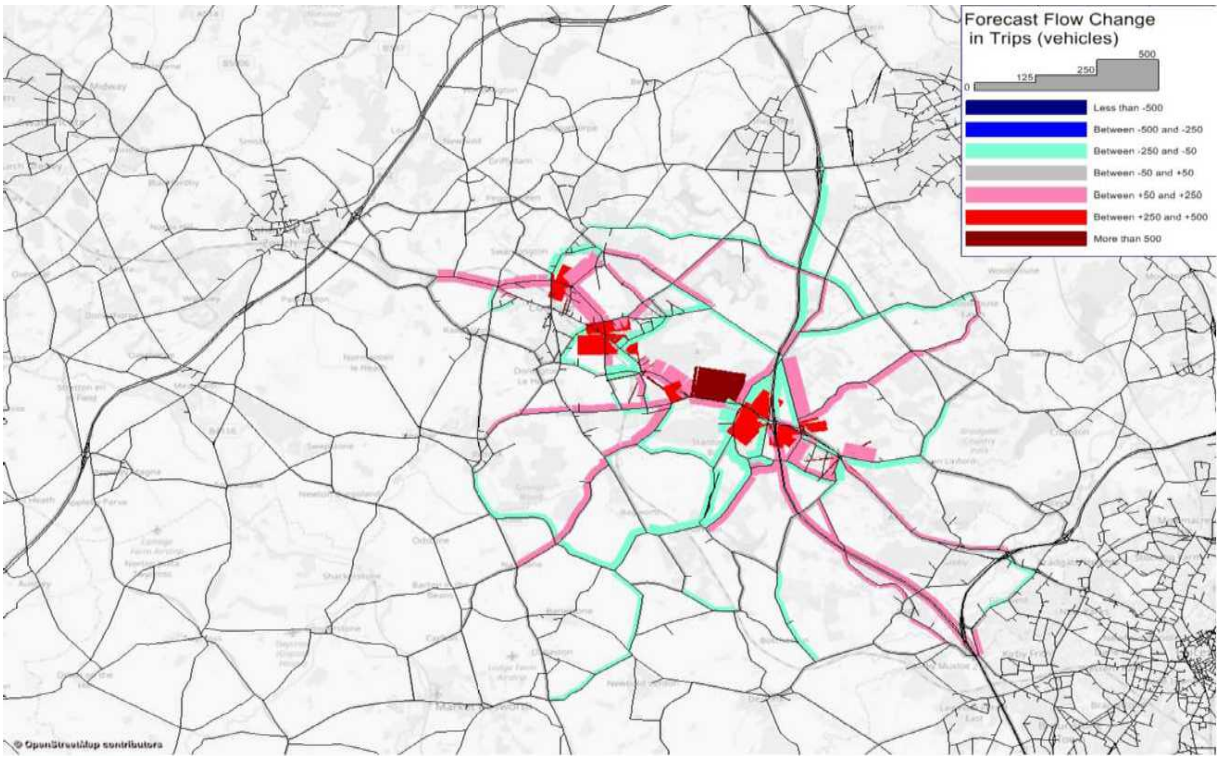


Figure 4-40 – Forecast Flow Change in Trips 2038 PM



JOURNEY TIME AND DELAY - 2038 ' CORE' AND ' WITH SCHEME'

4.13.8. Table **4-13** demonstrates journey time, speed and delay information for the 2038 Core and 2038 Scheme scenarios in the AM Peak.

Table 4-13 - Journey Times, Speed and Delays – 2038 'Core' and 'without scheme' AM Peak

Eastbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2038 Core	2038 Scheme		2038 Core	2038 Scheme	2038 Core	2038 Scheme	2038 Core	2038 Scheme
1	2	4330	4330	50-60	250	259	39	37	51	60
2	3	1270	1370	50	122	96	34	36	51	23
3	4	630	470	30	100	39	33	35	10	4
4	5	1290	1250	50	100	96	32	34	18	19
5	6	377	377	40	61	57	30	32	17	12
6	7	1490	1490	30-40	140	138	28	30	21	21
7	8	1123	1133	40-50	71	68	29	31	12	11
8	9	1625	1625	40-70	96	98	30	32	22	24
9	10	805	880	50	118	68	29	31	67	18
10	11	2136	2061	50-70	151	153	29	31	46	53
Total		**15076**	**14986**		**1209**	**1072**	**31**	**33**	**315**	**245**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2038 Core	2038 Scheme		2038 Core	2038 Scheme	2038 Core	2038 Scheme	2038 Core	2038 Scheme
11	10	1740	1800	50-70	93	96	42	42	16	17
10	9	1075	1015	50	78	81	37	36	13	18
9	8	1400	1400	40-70	117	83	33	36	52	25
8	7	1348	1568	40-50	78	105	34	35	12	16
7	6	1580	1490	30-40	234	157	27	31	108	48
6	5	377	377	40	40	43	26	30	7	8
5	4	1290	1170	50	124	130	26	28	32	43
4	3	530	550	30	54	40	26	29	14	4
3	2	1055	1370	50	78	98	26	29	13	19
2	1	4635	4320	50-60	253	253	29	31	43	46
Total		**15030**	**15060**		**1160**	**1086**	**30**	**33**	**310**	**244**

4.13.9. **Table 4-13** shows that in the AM Peak, travel speeds along the corridor are slightly higher in the 2038 Scheme scenario when compared to the 2038 Core scenario. The average modelled speed along the corridor in the eastbound direction is 31mph and in the westbound direction is 30mph in the 2038 Core scenario; these average speeds increase in the 2038 Scheme scenario, to 33mph in both the eastbound and westbound directions. Journey times are also expected to reduce by approximately 1-1.5 minutes in both directions in the 2038 Scheme scenario when compared to the 2038 Core scenario; and delays reduced by approximately 70 seconds.

4.13.10. The above assessment shows that the A511 MRN Growth Corridor scheme offers improved traffic conditions for users of the corridor in 2038 when compared against the 'core' scenario in the AM Peak, despite more trips using the corridor in the 'with scheme' scenario.

4.13.11. **Table 4-14** presents journey time, speed and delay information for the 2038 Core and 2038 Scheme Scenarios in the PM Peak.

Table 4-14 - Journey Times, Speed and Delays – 2038 'Core' and 'without scheme' PM Peak

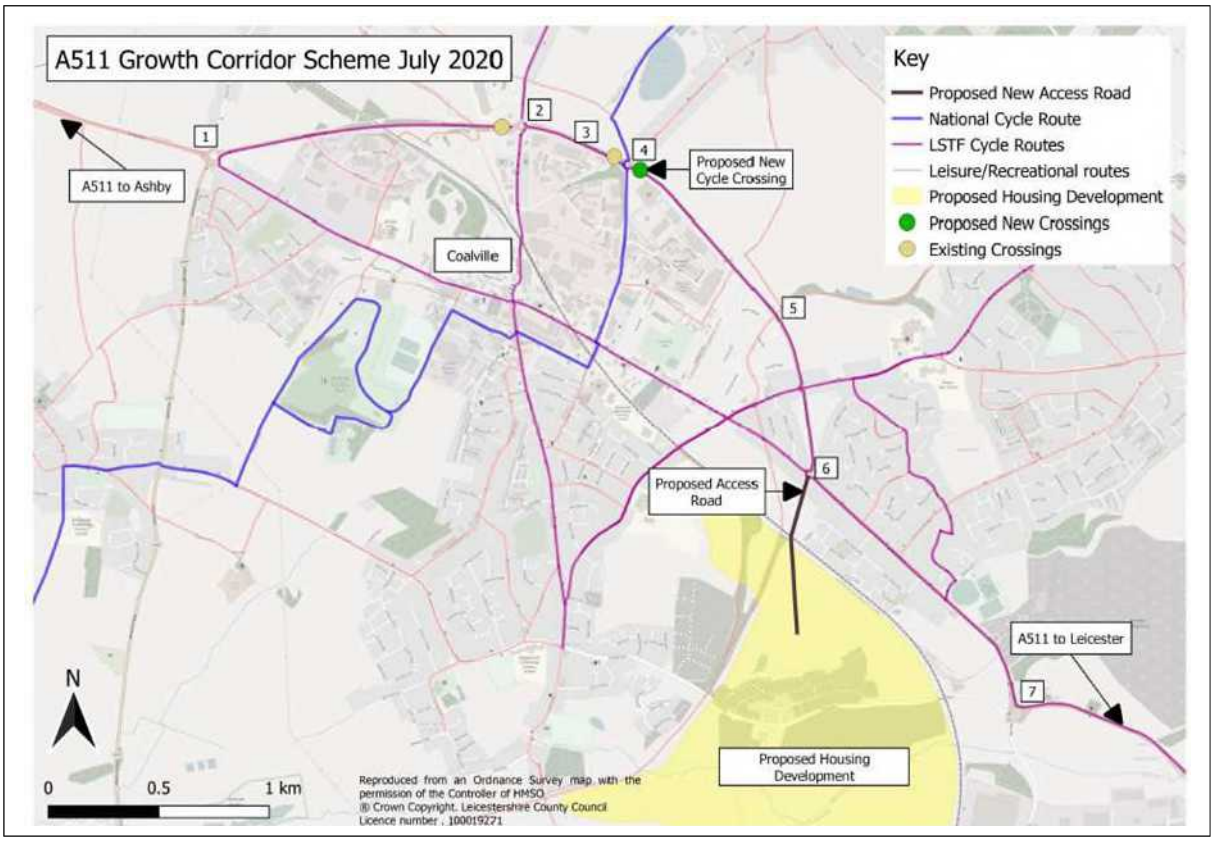
Eastbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2038 Core	2038 Scheme		2038 Core	2038 Scheme	2038 Core	2038 Scheme	2038 Core	2038 Scheme
1	2	4330	4330	50-60	241	245	40	40	42	46
2	3	1270	1370	50	85	88	38	38	15	15
3	4	630	470	30	53	40	37	37	7	4
4	5	1290	1250	50	100	95	35	35	18	18
5	6	377	377	40	59	73	33	32	13	25
6	7	1490	1490	30-40	141	139	31	31	22	22
7	8	1123	1133	40-50	71	68	31	31	11	10
8	9	1625	1625	40-70	95	101	32	32	22	27
9	10	805	880	50	224	96	27	31	170	48
10	11	2136	2061	50-70	143	159	28	30	46	68
Total		**15076**	**14986**		**1212**	**1104**	**33**	**34**	**366**	**283**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2038 Core	2038 Scheme		2038 Core	2038 Scheme	2038 Core	2038 Scheme	2038 Core	2038 Scheme
11	10	1740	1800	50-70	92	96	42	42	16	17
10	9	1075	1015	50	88	98	35	32	19	37
9	8	1400	1400	40-70	140	85	29	34	75	26
8	7	1348	1568	40-50	83	108	31	33	15	19
7	6	1580	1490	30-40	217	154	26	30	92	44
6	5	377	377	40	40	42	26	29	5	8
5	4	1290	1170	50	136	152	25	27	42	58
4	3	530	550	30	53	38	25	27	15	2
3	2	1055	1370	50	90	109	25	27	26	32
2	1	4635	4320	50-60	282	271	28	29	60	65
Total		**15030**	**15060**		**1211**	**1153**	**29**	**31**	**365**	**308**

4.13.12. **Table 4-14** shows that in the PM Peak, travel speeds along the corridor are slightly higher in the 2038 Scheme scenario when compared to the 2038 Core scenario. The average modelled speed along the corridor in the eastbound direction is 33mph and in the westbound direction is 29mph in the 2038 Core scenario; these average speeds increase in the 2038 Scheme scenario, to 34mph in the eastbound direction and 31mph in the westbound direction. Journey times are expected to reduce by approximately 1-2 minutes in both directions in the 2038 Scheme scenario when compared to the 2038 Core scenario; and delays reduced by approximately 60-80 seconds.

4.13.13. Similar to the AM Peak, the above assessment shows that the A511 MRN Growth Corridor scheme offers improved traffic conditions for users of the corridor in 2038 when compared against the 'core' scenario in the PM Peak, despite more trips using the corridor in the 'with scheme' scenario.

4.13.14. The whole length of the A511 MRN Growth Corridor already benefits from adequate shared-use pavement on one or both sides of the carriageway. Figure 4-41 shows an extract from the Coalville Cycle Network, which shows the entire length of the A511 MRN Growth Corridor as a designated cycle route.

Figure 4-41 - Coalville Cycle Network Route (Extract)



Source: https://www.nwleics.gov.uk/files/documents/coalville_cycle_routes/coalville_urban.pdf

4.13.15. During 2015 work was carried out as part of the Local Sustainable Transport Fund (LSTF) to carry out work in and around Coalville, to improve walking and cycling facilities. The scheme provides links to these as follows:

- Hoo Ash Roundabout – Cycle routes 1 and 3, which are shared use off-road routes, converge at this junction and these routes are to be maintained.
- Thornborough Road Roundabout– Cycle routes 3 and 4, which are shared use off-road routes, provide north/south (route 3) and east/west (Route 4) connectivity to the centre of Coalville. They converge at this junction and these routes are to be maintained, with a crossing to the west of the junction.
- Stephenson Way Dual Carriageway- there is off road provision on both sides and it is proposed that a crossing be provided close to the proposed Leisure Centre once the access location is finalised.
- Whitwick Road Roundabout - Cycle routes 3 and National Cycle Route 52 converge at this junction. These provide shared use off-road routes, giving north/south (NCR 52) and east/west (Route 3) connectivity to the centre of Coalville. These routes are to be maintained, with a crossing to the west of the junction.
- Broom Leys junction - Cycle routes 3 and 2 converge at this junction. These provide shared use

off-road routes, giving north/south (Route 3) and east/west (Route 2) connectivity to the centre of Coalville. These routes are to be maintained, with a crossing facility being maintained on all arms of the junction.

- Bardon Road Roundabout - Cycle routes 3 commences at this junction and provides off-road shared use facility to bypass the centre of Coalville. Route 1 provides an on-road route from this point, having provided an off-road facility to this point. Route 1 also provides connectivity to Route 2. These routes are to be maintained, with additional facilities being provided on the Link Road extension. The link road extension will also provide an ideal walking and cycling route to enable the new houses a direct route to Coalville.

4.13.16. As part of the Future High Street Fund bid, proposals are being put forward to improve the pedestrian and cycle connection from Memorial Square to the A511, making this an attractive route to proposed new leisure facilities which will be accessed from the A511. There are also proposals to widen the pavements along the High Street to encourage walking.

4.13.17. As a result of Covid 19 opportunities to install pop up cycle and pedestrian routes to capture the mood of change and promote safe cycling and walking. In the longer term the improved journey time reliability and reduction in congestion will attract through traffic away from unsuitable local roads onto the A511 corridor. This will make the town centre more attractive as a pedestrian and cycle route.

4.13.18. As part of the proposals for the A511 MRN Growth Corridor scheme, crossing facilities at the various junction proposed for improvements work would be upgraded to improve connectivity across the A511 MRN Growth Corridor for pedestrians and cyclist and in so doing encouraging the use of sustainable mode of travel for shorter journeys within the area and support improved pedestrian and cycle facilities within the town centre.

FUTURE TRAFFIC IMPACTS CONCLUSIONS

4.13.19. Overall, the Preferred Scheme will provide a substantial improvement to road capacity and journey time reliability across the whole corridor, with benefit to residents and employers located in the area; as well as traffic passing through the area between the SRN elements. It provides opportunities for use of sustainable modes of transport for shorter journeys within the area by providing safer and better connectivity for pedestrians.

4.13.20. Furthermore, the Bardon Link Road will aid in the unlocking of land for residential, commercial and industrial usage, as well as encouraging increased sustainable mode share usage. Finally, redesigning and enhancing the design of the junctions will contribute to improving the safety elements of their use, potentially reducing the accident hotspots observed around them as identified in the PIC appraisal.

4.14 KEY BENEFITS OF THE PREFERRED A511 MRN GROWTH CORRIDOR SCHEME

4.14.1. The above work shows that on a qualitative basis, an all-inclusive mitigation scheme for the A511 MRN Growth Corridor represents the preferred solution.

4.14.2. With A511 located between two motorway junctions, the full potential of the corridor will not be realised unless the whole corridor is improved in one go.

4.14.3. The preferred package of schemes will:

- Deliver increased capacity at congested junctions across the corridor;
- Ease traffic along the Strategic Road Network

- Provide an alternative access to the proposed housing development to the southeast of Coalville;
- Deliver improved connectivity to key destinations as well as international gateways, such as Leicester, East Midlands Airport;
- Support freight movements from East Midlands Gateway (Strategic Rail Freight Terminal);
- Provide links to the Ratcliffle on Soar Power Station, which has been identified as a major development site for a mixed-use scheme to be facilitated by the emerging East Midlands Development Corporation;
- Support public transport operations along the corridor through the provision of a less congested and reliable route, and in so doing encouraging the use of sustainable transport;
- Opportunities for improving safety of corridor users, especially non-motorised road user by providing better and safer crossing facilities at the key junctions along the corridor; and

4.14.4. In turn, these support the delivery of the scheme objectives of:

- Improved connectivity between Strategic Road Network elements;
- Improved access to proposed economic development in a deprived area;
- Supporting residential and employment growth in the area;
- Improved accessibility for residents and users of the corridor through decreased journey times and improved reliability;
- Support a more reliable and resilient logistics and freight network; and
- Improve safety for vulnerable road users by increased levels of signalisation.

4.14.5. In addition to the above the scheme will also allow LCC the opportunity to upgrade water, wastewater, energy and telecommunications along the A511 corridor to minimise any future disruptions and future proof the resilience of the road.

4.14.6. Also, although detailed assessments of increased GVA have not been undertaken at this stage, assuming 25ha brings 1,004 new jobs, at the East Midlands average GVA per workforce job would provide a total GVA of £35.3 million. As such, there is likely to be wider economic impacts of improve accessibility to employment centres both local and further afield

4.15 STRATEGIC AND POLICY FIT

4.15.1. A Red Amber Green (RAG) assessment summarises the strategic fit of the scheme with key national, regional and local policy documents.

4.15.2. **Table 4-15** below shows that the scheme has a good fit with local, sub-national and national policies in relation to housing delivery, transport and economic growth - as identified through the scheme objectives themselves:

Table 4-15 – Strategic Fit Assessment

Strategic Fit with Preferred Scheme:

Strong strategic fit with **Neutral / minimal strategic fit with policy** **Negative strategic fit with policy**

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
National Policy and Strategy		
Investment Planning Guidance for the Major Road Network and Large Local Majors Programmes, (published by Department for Transport (DfT) on 18 December 2018)	- Seeks to form a Major Road Network (MRN), a "middle tier of the country's busiest and most economically important local authority A-Roads, sitting between the National Strategic Network (SRN) and the rest of the local road network". - Identifies that this tier of roads will be prioritized when funding is allocated in 2020-2025, due to their importance. Funding allocations will be made to schemes between £20m and £50m. Schemes seeking a contribution of more than £50m should be dealt with as potential Large Local Majors (LLMs). - Set out the following objectives that need to be met to receive funding: • Reduce Congestion; • Support Economic Growth; • Support Housing Delivery; • Support All Road Users; and • Support the Strategic Road Network. - It also sets out examples of schemes that could potentially receive MRN funding: • Bypasses or new alignments which alleviate congestion and make through journeys quicker, safer and more reliable. • Missing Links – new roads that link existing stretches of the MRN or SRN. • Widening of existing MRN roads where there is a known congestion point or safety risks. • Major structural renewals on roads, bridges, tunnels and viaducts on MRN roads, where significant work needs to be done to renew the carriageway or prevent closure or weight restrictions. • Major junction improvements such as a grade separation that would improve the safety, performance or flow of an MRN road. • Variable message signs, traffic management and the use of smart technology and data to raise the performance of the network. • Packages of improvements which may include elements of safety, widening; and • junction improvements and new alignment. - Identifies A511 as part of the MRN network.	
Road Investment Strategy 2015/16 – 2019/20 (published by Department for Transport (DfT) and updated on 12 March 2015)	- This document considers the development of the Strategic Road Network (SRN). Whilst the A511 is part of the MRN, this is relevant to the A511 MRN Growth Corridor study due to it linking two SRN routes. - With regards to the SRN in proximity to the A511 MRN Growth Corridor: • M1 J24: to be improved to support access to the forthcoming HS2 Toton station. • Support of airport access (e.g. East Midlands Airport) is identified as a key outcome. • Support of East-West Connectivity. The OAR is considering an MRN which supports this objective. - Sets SRN objectives of being: • Smoother; • Smarter; and • Sustainable.	
Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen 2011 (published by Department for Transport (DfT) on 19 January 2011)	- Sets out the Government's vision for a: "Transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities." - The White Paper highlights the need to make transport choices that support society, as well as needing to reduce carbon emissions to meet national commitments. - Highlights the Government's commitment to more equal access to employment, education and healthcare by increasing social mobility. - Better design and management of the local network can improve traffic flow and the attractiveness of the local environment.	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
Regional Policy and Strategy		
Midlands Connect Strategy – March 2017	- The Midlands Connect strategy prioritises transport connectivity improvements to leverage long-term economic growth. - It acknowledges that east-west connectivity in the region is relatively weak and needs enhancing. - It sets out that greater access to international gateways, such as East Midlands Airport, will be important in the long term. - Identifies Leicester and Derby as key regional growth hubs; the former being directly connected to the A511 to the southeast of the investment corridor. - Reiterates the need to improve links to HS2 stations. - Sets out a priority for the delivery of the M1 (Junction 19 to 23a) Smart Motorway scheme, which anchors the eastern end of the A511. - Sets out a desire for schemes to improve clustering- bringing business together to share ideas. - Identifies Coalville as a growth area for Manufacturing, Logistics and Producer Services, with potentially over 1000 jobs in these sectors.	
Midlands Connect International Gateways Summary published in April 2017	- This document sets out the importance of East Midlands Airport to the region. It sets out an ambition that roads to the airport should be free of accident blackspots, as well as suggesting the site should benefit from improved public transport access.	
Local Policy and Strategy		
Leicestershire Local Transport Plan 3 (LTP3) (2011-2026)	- Identifies Coalville as the potential site of a Sustainable Urban Extension (SUE). - Coalville is identified as a location which is currently experiencing congestion. - Identifies Coalville as being a regionally important employment centre with over 1,600 existing jobs (in 2011). - Highlights North West Leicestershire as the most deprived district in the county, with severely deprived neighbourhoods in Coalville. The town also has one of the county's highest crime rates. - Identifies the A511 (Bardon Road) through Coalville as an AQMA. - Identifies the A511 as one of the district's key corridors for logistics and distribution. As a key lorry corridor, it will be utilised to concentrate goods vehicles and remove them from less suitable roads. Roads in the lorry route network will be prioritised to mitigate the high levels of HGV movements. - Coalville is identified as a core location for investment, to encourage active and sustainable travel. - Identifies the following challenges relating to the transport for the region: • Attempt to provide a transport system delivering equality of access, particularly for deprived areas such as Coalville. • Continuing to reduce the number of people killed and injured on Leicestershire's road. • Continue to reduce the impact of traffic on individuals, communities and settlements. • Maintain transport assets. - Which are then converted into the following transport goals: • Goal 1: A transport system that supports a prosperous economy and provides successfully for population growth. • Goal 2: An efficient, resilient and sustainable transport system that is well managed and maintained. • Goal 3: A transport system that helps to reduce the carbon footprint of Leicestershire. • Goal 4: An accessible and integrated transport system that helps promote equality of opportunity for all our residents. • Goal 5: A transport system that improves the safety, health and security of our residents. • Goal 6: A transport system that helps to improve the quality of life for residents and makes Leicestershire a more attractive place to live, work and visit.	
Leicester & Leicestershire Strategic	- This document identifies Leicestershire's strengths and weaknesses. Of note, it identifies the following as issues to overcome: • Congestion on roads and railways;	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
Growth Plan (2018-2050)	• Poor economic productivity per head; • High levels of commuting; and • Gaps in the road and rail network, particularly on the east-west axis. - The document also reinforces the importance of EMA as a strategic asset. - Identifies Coalville as the location for strategic housing development, with ties to the 'Leicestershire International Gateway' at East Midlands Airport. Across North West Leicestershire, this development aims to deliver 11,200 dwellings. - The document also sets out North West Leicestershire for the delivery of an additional 60 hectares of B1/B2 Land and 21 hectares of B8	
Leicester & Leicestershire Strategic Growth Plan Sustainability Appraisal (published in September 2018)	- This document, produced in support of the preceding, raised additional key issues that the County should adhere to: • Given the proposed concentration of growth at a series of large-scale developments (which ought to be more viable for decentralised energy schemes), the Plan could set out a commitment to achieving low carbon development and explore how separate developments can be linked together to create better opportunities for sustainable developments. • Increase the number of homes in walking distance of public services and public transport. • Reduce or maintain current annual traffic flows despite growth. • Monitor journey time impacts of new developments.	
North West Leicestershire Adopted Local Plan 2011-2031	- This document sets out the key issues facing North West Leicestershire. Of relevance to the A511 MRN Growth Corridor are: • Ensure provision of housing to meet the needs of all; • Need to ensure that communities have access to services and facilities; • Ensure that the growth of housing and the economy complement each other in terms of scale; and • Need to improve air quality in the 5 AQMAs in the district, which are largely related to transport issues. - The document also identifies the following proposed development policies of relevance to the corridor: • Coalville Urban Area, consisting of Coalville and the surrounding towns will take 4,248 dwellings across the town. • Identifies the Coalville Growth Corridor as a key development area. • EC2- 16Ha Employment site at Ashby de la Zouch, to the north west on the A511. • EC3- Employment site in Coalville for B1, B2 and B8 land uses. • East Midlands Airport is marked as being important for development and supported by further sustainable transport links. • Improvements made to Coalville Town Centre to improve its viability, as well as 1,000sqm gross of new space. • Improve tourism access to the National Forest, which borders the north of the A511. - Whilst key transport infrastructure identified in policy IF4 includes: • The previously described developments will take account of the impact on the highway network and the wider environment. • The provision of new public transport links or the enhancement of existing services, to serve new developments so that accessibility by non-car modes to essential services is maximised. • Strategic road improvements of the A42 J13, M1 J22 and the A511 connecting the two. - Policy IF5 states that the council will: • Support the restoration of the Leicester to Burton Rail line as a passenger route, with stations and ancillary facilities at Coalville and Ashby De La Zouch, both on the A511. Furthermore, developments should not be detrimental to this restoration. • This policy acknowledges the 2015 County Council which stated that the line could not reopen without considerable subsidy, but still sets out the North West District council's desire to see the area reconnected by rail or in 'some alternative form of public transport.'	
North West Leicestershire Infrastructure Delivery Plan 2016	- This document sets out what infrastructure will be required to support the North West Leicestershire Adopted Local Plan 2011-2031. - Identifies that there are excellent road links in the district, but that public transport system consists of just 'a variable bus service' with routes being "infrequent, indirect and suffering from uncompetitive timings."	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
	- Identifies that the East Midlands Airport is one of the UK's most important stations for freight, with slowly recovering. passenger numbers, following a post-recession decline. - Identifies a considerable number of housing developments in the district, particularly in Coalville and to its south east. – "The A511 is recognised by the Leicester and Leicestershire Local Enterprise Partnership (L&L LEP) as the Coalville Growth Corridor and has the potential to deliver 5,275 houses, 25 hectares of committed employment land and growth in the logistics sector but is currently constrained by poor infrastructure." - Mentions the potential for a new freight interchange to the north east of the district, in proximity to East Midlands Airport. - Marks the A511 as the responsibility of Leicestershire County Council. - Sets out that the key highway infrastructure improvements in the district to support the Local Plan are related to the A511 and the M1 J22 and A42 J13 junctions. - There is also a priority list of A511 improvements, which are below: • Capacity enhancements including localised widening works; • The restriction of selected turning movements; • The introduction of signal control; • The delivery of a Bardon Link Road between Bardon Road and Beveridge Lane; • Capacity improvements at Flying Horse (Stanton Lane) Roundabout; • Capacity improvements at Beveridge Lane Roundabout; • Capacity improvements at Birch Tree (Reg's Way) Roundabout; • Capacity improvements at Bardon Road Roundabout; • Capacity improvements at Broom Leys Road Cross Roads; • Capacity improvements at Whitwick Road Roundabout; • Capacity improvements at Thornborough Road Roundabout; • Capacity improvements at Hoo Ash Roundabout; and • Capacity improvements at Hugglescote Cross Roads. - M1 J22 received a set of priority improvements in 2016. - An A42 J13 junction capacity improvement package was implemented in 2017 following this report. - States support for a Leicester-Burton railway line reopening.	
Leicester and Leicestershire LEP Strategic Economic Plan (SEP) 2014-2020	- This document sets out the plans of the Leicester & Leicestershire Enterprise Partnership for supporting growth in the district. - It supports the concept of the East Midlands Gateway Strategic Rail Freight interchange in the north east of the district. - The document acknowledges the importance of supporting the Coalville Growth Corridor, which could deliver 25ha of employment land, 5,300 new homes and 80,000sqm of employment space. - The strengths of the corridor are identified as being the good road access afforded from it. - The threat to the corridor is identified as potential congestion should all the proposed growth be delivered too rapidly. - The SEP sets out a set or projects and programs that they believe will help deliver growth in the region. Of relevance to NW Leicestershire and the Coalville Growth Corridor: • M1/J22 & A42/J13 improvements (already delivered); and • Hugglescote Crossroads (Central Road/Grange Road/Station Road/Ashburton Road). - There is also a proposal for a rail served freight logistics park on an abandoned mining site close to the A42 J13. - Deliver a better environment for residents to live and work.	
Leicestershire Prospectus for Growth (published in February 2019)	- This document sets out how Leicester and Leicestershire will continue to grow, providing housing and jobs for future generations whilst boosting the economy. - It identifies a recent scheme near Ashby on the A511, funded by the NPIF, to support additional houses in the town. - It sets out that developers are funding the East Midlands Gateway Strategic Rail Freight Interchange (SRFI). - It sets out a desire for the Midland Mainline north of Leicester to be connected to HS2 at Nottingham, which will improve connections north towards Leeds and Sheffield. - It acknowledges the importance of the Major Road Network in: • Supporting economic growth; • Reducing congestion;	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
	• Supporting housing delivery; • Supporting the SRN; and • Supporting all road users. - It sets out the Coalville Transport Strategy, aimed at supporting the delivery of the planned growth in the town. "The project will identify suitable improvements at key junctions along this transport link, as well as delivering a local link road, a key element of the North-West Leicestershire Local Plan (2011-2031), to provide an alternative route for drivers to limit the impact of growth." The scheme will do this by improving local connectivity and improving access to Leicester, EMA and the SRFI. - Sets out a desire for improvements on the A42, which will form the western boundary of the A511 MRN Growth Corridor. The plan is to upgrade it to 'expressway' standards, though scheme development is at an early stage.	

4.16 MIDLANDS CONNECT SUPPORT

4.16.1. As part of DfT's MRN agenda and to ensure that funding for the MRN is targeted where the potential benefits are greatest, the DfT empowered Sub-national Transport Bodies (STBs) including Midlands Connect to submit ten priority MRN schemes for their areas.

4.16.2. Following detailed consultation and assessment, Midlands Connect submitted seven MRN schemes to the DfT in July 2019 for funding consideration, which included the A511 scheme. Whilst government guidance states that STBs can submit up to 10 schemes for MRN funding, Midlands Connect only submitted seven schemes they believed are ready for investment, emphasising on the importance of putting forward a credible programme with strong potential for completion by 2025.

4.16.3. All schemes were scored according to Midlands Connect eligibility criteria, moderated by an independent external advisor; reviewed by Local Highways Authorities and signed off by the Midlands Connect Steering Group and Strategic Board. As such, highlighting that the A511 MRN Growth Corridor scheme went through a vigorous and practical process.

4.16.4. The A511 is forecast to have the highest estimated capital cost of the seven MRN schemes put forward by Midlands Connect. The seven schemes range in geographical distance from Telford in the West to Worcestershire in the South.

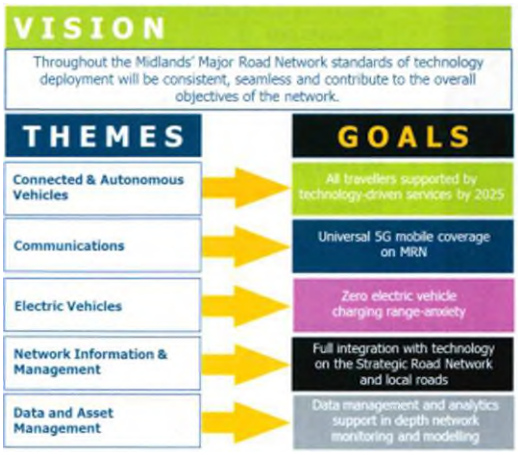
4.16.5. Midlands Connect summarises the benefits of the A511 MRN Growth Corridor scheme to support economic growth, freight traffic, HS2 proposals and housing growth. In addition, the scheme will support all road users and support the reduction in emissions and improve air quality along the corridor.

4.16.6. Also, in support of the DfT's MRN initiative and in light of increasing connectivity, autonomy of vehicles and growth in alternative fuels that is expected to occur, Midlands Connect is in the process of developing a Technology Strategy for the Midlands MRN, which has the following objectives:

- Identifying technology and how it can be used on the Midlands MRN in ways that will assist in delivering DfT objectives for the MRN;
- Showing Midlands Connect delivering on one of its core connected outcome objectives: to be 'Intelligently connected; Leading the technology revolution';
- Being grounded in robust analysis that sets priorities that will be positive for the prosperity of the region and the growth of the Midlands Engine; and
- Setting direction, identifying priorities and proposing actions likely to secure funding and that will result in positive return on investment.

4.16.7. **Figure 4-42** sets out Midlands Connect's vision and five key goals to be achieved by 2025, aligned with five strategic themes.

Figure 4-42 - Midlands Connect MRN Technology Vision



4.16.8. The types of technology aligned to capture the five themes detailed above include autonomous vehicles, 5G communications, CCTV analysis, electric charging on the MRN and digital roads.

4.17 POLITICAL SUPPORT

4.17.1. Congestion on the A511 MRN Growth Corridor has been a long-standing issue recognised by both North West Leicestershire District Council and Leicestershire County Council; this can be dated back 2008 when the Coalville Transport Strategy (CTS) was developed and investigated junctions on the corridor requiring improvement to facilitate housing growth in Coalville and Ashby.

4.17.2. North West Leicestershire District Council and Leicestershire County Council have undertaken a number of transport studies to assess current and future pattern of traffic within Coalville as well as the extent to which the existing transport system can absorb existing and future demand from growth envisaged in the emerging Local Plan.

4.17.3. In the case of North West Leicestershire District Council, the need for a strategic intervention has been strongly recognised and has become an integral element of the emerging Local Plan as a key measure to enable and deliver economic and housing growth. The Plan was adopted by North West Leicestershire District Council's Full Council on 21 November 2018.

4.17.4. The scheme enjoys LCC Cabinet support, with the following resolutions agreed at each stage of the development process:

- March 2014 the Cabinet approved the principles set out in the Leicester and Leicestershire Enterprise Partnership's (LLEP) Strategic Economic Plan, which prioritises support for the economy of Market Towns and rural Leicestershire.
- The County Council's Enabling Growth Action Plan (approved in March 2015) supports the development of Market Towns for employment land as a priority and includes a specific action to work with North West Leicestershire District Council to plan for the future growth of Coalville.
- In September 2015 the Cabinet considered a report on the review of the Medium Term Financial Strategy and Investment Proposals. It agreed areas for investment, including £2 million to enable the modelling and advanced design of highways infrastructure schemes, including in and around Coalville.
- In March 2019 the Cabinet approved funding from reserves to fund the A511/A50 Growth Corridor as the Council's Major Road Network (MRN) priority for delivery in the first MRN period 2020 to 2025.

4.17.5. The MRN A511 MRN Growth Corridor scheme is strongly supported by LCC and its Executive Team, North West Leicestershire District Council and its Executive Team, and the Leicester and Leicestershire LLEP.

4.17.6. Andrew Bridgen, MP for North West Leicestershire has previously expressed strong support for the scheme, as detailed in his letter of support in **Appendix C** He demonstrated this support by attended one the public consultation events on 5th October 2019, tackling questions from constituents.

4.17.7. The scheme is also viewed very favourably by the LLEP, Leicester City Council and other key project stakeholders as detailed in their letters of support in **Appendix C**.

4.17.8. The scheme is also supported by private developers, particularly those for the Coalville South East SUEs. As part of the Coalville Contribution Strategy these developers will be required to pay a defined contribution based on the number of homes or employment delivered.

4.17.9. Strong letters of support for the scheme from the developers of the Coalville South East SUEs, are included in **Appendix C**, and that emphasise both the need for the scheme and housing delivery benefits that the MRN A511 MRN Growth Corridor scheme will bring.

4.18 STAKEHOLDERS

4.18.1. Stakeholders for the project include Leicestershire County Council, North West Leicestershire District Council, Leicester and Leicestershire Enterprise Partnership, the developers of the Coalville South East SUEs (i.e. Harworth Group and Davidsons Homes), Midlands Connect, Highways England and the DfT.

4.18.2. This is alongside key businesses situated near the A511 Growth Corridor, as well as bus operators, schools, ward members, parish councils, small landowners and local residents themselves.

4.18.3. Consultations are currently ongoing with the identified stakeholders, as well as statutory consultees and in addition to this LCC has prepared a Communication Action Plan detailing how and when various stakeholders would be consulted throughout the project life. The Communication Strategy is included in **Appendix D** of the OBC.

4.19 CONSULTATION AND STRENGTH OF SUPPORT FOR THE SCHEME

4.19.1. Extensive consultation on the North West Leicestershire Local Plan 2011 – 2031 took place between 2016 and its final approval in 2018. Objections raised were in relation to the possible negative impact of development on local infrastructure than on the proposed mitigation measure.

4.19.2. The formal consultation for the A511 MRN Growth Corridor scheme was held by LCC between the 26th September 2019 and the 23rd of October, this included three public exhibitions at various locations around Coalville.

4.19.3. The aim of the consultation was to present the recommended package of measures and request feedback on the scheme, primarily from local residents, businesses and developers

4.19.4. A separate consultation exercise organised during the planning application process.

4.19.5. A Statement of Community Engagement was prepared by LCC detailing the findings of the consultation and this is included in **Appendix E** of the OBC.

4.19.6. The key engagement methods used as part of the consultation are listed below:

- Public Exhibitions;
- Press Coverage;
- Reports (Publicly available);

- Letters;
- Leaflet/Flyer Drop; and
- Questionnaire.

4.19.7. The purpose of the three public exhibitions was to ensure that members of the public and stakeholders had reasonable opportunity to attend a staffed event detailing the proposals. A total of 2,000 letters were also delivered, including all properties within 200m of the corridor affected with details of the exhibition dates and details of the consultation process. Press released have been frequent throughout the scheme development and has acted as a key vehicle for engagement, as well as regular information updates being made publicly available on a dedicated scheme website. A questionnaire to gather opinions about the scheme was also produced for use as part of the formal consultation period and was the key method for people to comment on the scheme.

4.19.8. In total, 224 responses were received on the consultation response form (questionnaire), with a further 10 emails and letters received. Responses were received from across the scheme area and beyond.

4.19.9. Responses were received from a broad range of residents, based on analysis of the demographic questions on the consultation questionnaire. Most responses were from local residents (90%) travel along the A511 on most days (67%). The majority of respondents (92%) were car drivers and reside in the local area.

4.19.10. Based on the responses from the questionnaire, most respondents (80%) agreed that the A511 already suffers from congestion and delays, with 11% disagreeing and 9% neither agreeing nor disagreeing. 66% of respondents agreed that improvements needed to be made to support future growth in the area (25% disagreed, 8% neither agreed nor disagreed, 1% did not know).

4.19.11. With regards to the stated objectives of the scheme, 45% of respondents either strongly agreed or tended to agree, (44% disagreed, 11% neither agreed not disagreed, and 1% did not know).

4.19.12. Based on the responses from the questionnaire, whilst 49% of respondents either strongly disagreed or tended to disagree (39% either strongly agreed or tended to agree, 12% neither agreed or disagreed and 1% did not know) with the recommended proposals for the A511 MRN Growth Corridor. When asked to elaborate respondents highlighted the point that they believe the scheme would adversely affect them at the Flying Horse Roundabout (9 mentions); a bypass is needed (12 mentions); the right turn at the Broom Leys Junction should remain; and won't solve the problems experienced in the town (9 mentions). However, the need for the scheme was mentioned by 15 respondents and one of the perceived benefits was the reduction of congestion in the town (14 mentions).

4.19.13. Proposed options for junction locations and the type of junctions were also presented to respondents:

- Hoo Ash Roundabout – 54% agreed with proposals for this junction (20% disagreed, 19% neither agreed nor disagreed, and 7% did not know);
- Thornborough Road Roundabout – 54% agreed with proposals for this junction (21% disagreed, 19% neither agreed nor disagreed and 7% did not know);
- Dualling between Thornborough Road and Whitwick Road – 54% agreed with proposals (29% disagreed, 12% neither agreed not disagreed and 4% did not know);
- Broom Leys Road Junction – 42% agreed with proposals for this junction (41% disagreed, 12% neither agreed nor disagreed and 5% did not know);
- Bardon Road Junction and Link Road Extension – 42% agreed with proposals for this junction (37% disagreed, 15% neither agreed nor disagreed and 6% did not know);
- Birch Tree Road Roundabout – 49% agreed with proposals for this junction (32% disagreed, 14% neither agreed not disagreed and 5% did not know);

- Flying Horse Roundabout – 36% agreed with proposals for this junction (54% disagreed, 8% neither agreed nor disagreed and 3% did not know); and
- Field Head Roundabout – 49% agreed with proposals for the junction (34% disagreed, 13% neither agreed nor disagreed and 5% did not know).

4.19.14. Of the 224 responses to the consultation, the proportions that agreed with the following factors should be taken into account were:

- 85% agreed that minimising the impact on the environment should be taken into account;
- 90% agreed that minimising the impact on residents (including noise and air quality) should be taken into account; and
- 70% agreed that reducing congestion along the A511 should be taken into account.

4.19.15. Other key themes arising from the responses received included that money should be used to provide the Bardon Road bypass scheme; too many lorries use the road in both daytime and at night; and that individual junction improvements did not go far enough.

4.19.16. Following the consultation period, it was confirmed that further engagement would take place with key landowners, businesses and stakeholder groups, including statutory consultees in order to understand any remaining issues in the development of the Preferred package.

4.19.17. LCC are working towards submission of a planning application in early August 2020. Following the submission of the planning application, a further consultation event will be held over three days within the 30 day consultation period.

4.19.18. Overall, there has been consultation and stakeholder input to the A511 MRN Growth Corridor scheme from the earliest stages and throughout the design process. This has resulted in some important changes to the design of the scheme and helped to shape the eventual Preferred scheme. Going forwards, LCC intend to continue to fully engage with the public at every opportunity, ensuring that the views of the local community and stakeholders are taken on board and continue to influence the design and delivery of this scheme.

4.19.19. As a result of the negative response to the proposals for the Flying Horse Roundabout, a meeting was held on 27th November 2019 with the County Councillor, Mr Bedford, Chair of Stanton under Bardon Parish Council, Mr Bridges, and a community representative. At the meeting evidence of the existing issues was presented along with the potential impact of doing nothing at this junction, as well as options that were considered as part of the option appraisal. Having familiarised themselves with the reasons behind the current proposals, they agreed that a similar presentation to Stanton under Bardon Parish Council would be helpful in gaining acceptance of the proposals.

4.20 STATUTORY CONSULTEE

4.20.1. Alongside local engagement, LCC have identified, and where possible, undertaken early and proactive engagement with statutory consultees as set out in **Table 4-16**. This has been developed through regular dialogue and specific meetings on key items, with outcomes from these meetings summarised in **Table 4-16**.

Table 4-16 – Early Engagement with Statutory Consultees

Consultee	Key Remarks
Environment Agency	Engagement with the Environment Agency following submission of the SOBC has been limited. Specialists in LCC have assessed the impact of the possible adverse effects on protected habitats and species, and any flood risks and these will form the basis of further discussions.
Highways England	Highways England has expressed support for the scheme and recognise the importance for the scheme in relation to the impact that increased congestion will have on the adjoining Strategic Road Network (SRN). Informal discussions with Highways England have recognised the importance of robust modelling to show how the proposed improvements will benefit the SRN. It also accepts that there will be some benefits to the SRN from some of the proposed improvements once complete.
Historic England	Engagement with Historic England is not planned to commence until details of the potential impact on the any areas of historic interest will then be known and mitigation measures put forward for discussion.
Natural England	Engagement with Natural England is not planned details of the potential impact on the integrity of any areas of Significant Special Scientific Interest will then be known and mitigation measures put forward for discussion.
Network Rail	Early discussions are taking place with Network Rail to establish the extent of disruption that the scheme is likely to cause them, what their requirements will be for their GRIP stages and to establish what timescales we need to allow for within the Network Rail planning process which allows them to manage safety of their assets by coordinating access and gaining assurance through design and construction planning. Negotiations on the Basic Asset Protection Agreement have been productive and both sides are close to finalising this agreement.

4.21 CONSULTATION & ENGAGEMENT WITH DEVELOPERS – SOUTH EAST COALVILLE SUES

4.21.1. As part of the development of the Coalville Growth Strategy, LCC and representatives of the developers have worked together to progress a delivery programme that satisfies the need to accommodate and accelerate housing and the requirement for the roads within the developments to link to the existing road network.

4.21.2. As part of the development of potential measures during the review of the MRN, meetingstook place in order to discuss the potential timescales and impact on the delivery of the Coalville Growth Strategy.

4.21.3. The developers are strongly supportive of the scheme and are appreciative of its role in accelerating the delivery of growth in Coalville. Communications throughout this period have enabled both parties to gain an understanding of requirements in terms of the practicalities around design and environmental constraints.

4.21.4. Their support is documented in their letter of support, in **Appendix C**.

4.21.5. The A511 MRN Growth Corridor scheme will help to provide further market confidence to private sector housing delivery because it will result key infrastructure in the Local Plan being delivered as a

whole in one phase, rather than in staggered phases. This is important because the full benefits will only be realised once the entire route is delivered.

4.22 HIGH SPEED 2

4.22.1. One of the main HS2 construction compounds is to be located adjacent to A42 Junction 13, which forms the western extent of the A511 Growth Corridor. A temporary railhead is also proposed close to A42 Junction 13, with access to and from the A511. These works are anticipated to start mid-2025 and when underway will significantly increase freight movement along the A511. Furthermore, HS2 are also planning to realign part of the A512 on the approach to A42 Junction 13, as well as some accommodation works on the A511 approach onto the A42 Junction 13 to facilitate the route of HS2. The A512 runs parallel to the A511 providing a secondary link between the A42 Junction 13 and the M1. During the realignment works, the A511 will form one of the main diversion routes for the A512.

4.22.2. As a result of HS2, the A511 could be required to accommodate traffic associated with both the construction compound and diverted movements from the A512. Delivery of the A511 Corridor Improvements seeks to ensure this route remains resilient during this period. However, failure to deliver the works in advance of HS2 Phase 2b will sterilise the network for a 10 year period, with the Coalville Transport Strategy being undeliverable until 2035.

4.22.3. Initial discussions have been held with LCC's HS2 Programme Manager to outline the importance of delivering the A511 improvements in advance of the HS2 works to ensure this route operates at an acceptable level during these disruptive periods.

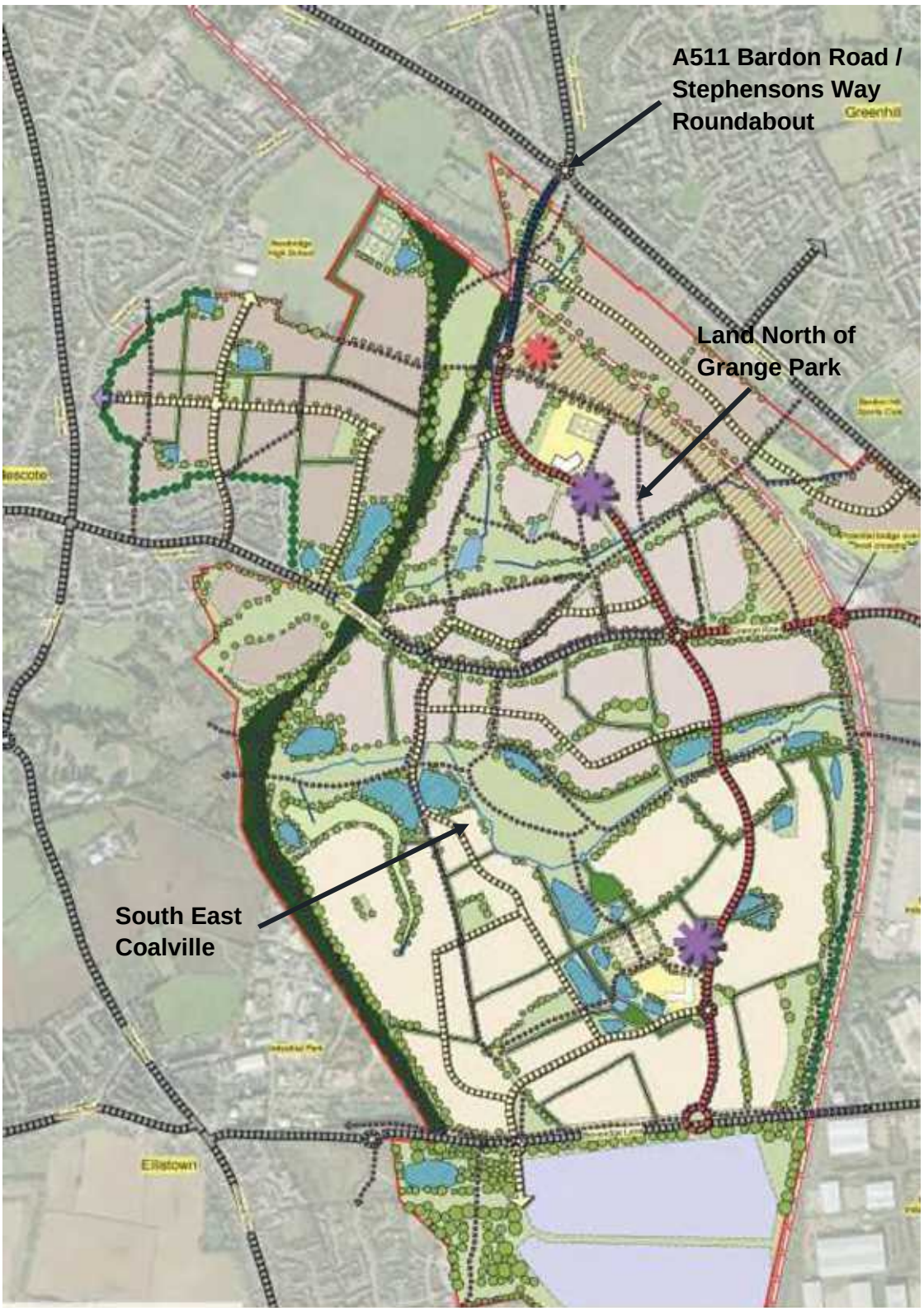
4.23 SYNERGY

4.23.1. There is synergy between the A511 MRN Growth Corridor scheme and the planned Bardon Link Road which will serve the two Sustainable Urban Extensions (SUE) proposed to the south east of Coalville The Bardon Link Road will be partly funded and delivered by private developers, will connect with the A511 MRN Growth Corridor at the A511 Bardon Road/Stephenson Way roundabout.

4.23.2. Planning permission has already been granted to Harworth Group (developers of South East Coalville for up to around 2700 dwellings, including a local centre and a primary school) and to Davidsons Developments (developer of Land North of Grange Road for up to 800 dwellings)

4.23.3. The diagram provided in **Figure 4-43** shows the South East Coalville developers proposals (including supporting transport infrastructure). This has also been marked up to show the location of the Land North of Grange Road development.

Figure 4-43 - Developments South East of Coalville



4.24 SUMMARY OF STRATEGIC CASE

4.24.1. The Strategic Case has demonstrated the range and extent of traffic-related problems and issues on the A511 MRN Growth Corridor as well as accelerate and support the significant level of housing and economic growth in the North West Leicestershire Local Plan. In addition to this due to its location between two strategic junctions (i.e. M1 J22 and A41 J13), the A511 MRN Growth Corridor plays an important role in supporting the Strategic Road Network.

4.24.2. The option assessment results have identified a preferred A511 MRN Growth Corridor scheme which would be most effective at tackling the following problems along the route, both now and in the future:

- The corridor throughout experiences congestion and delays due to capacity issues particularly at junctions:
- The corridor is regionally important as the A511 acts as a feeder route to the SRN and performs a resilience function when acting as a diversion route;
- Congestion at the Flying Horse and Field Head junctions causes queues to tailback all the way to the M1 Junction 22, and in so doing affecting the operation of the SRN;
- The corridor has been identified as one of the five growth areas identified in the Leicester and Leicestershire Enterprise Partnership's (LLEP) Strategic Economic Plan (SEP);
- The area surrounding the corridor has been identified within the SEP as having the potential to deliver approximately 5,275 additional houses and 25ha of employment land, but remains constrained by poor transport infrastructure;
- The A511 MRN Growth Corridor suffers from poor air quality specifically the area surrounding the A511 Stephenson Way / Bardon Road / Brooms Leys Road which has been recognised as an AQMA, failure to address congestion along the corridor will increase congestion through the AQMA and in so doing extending to other areas;
- Logistics and mining businesses along the corridor are vitally important to the location, and these are reliant on the efficient movement of freight along the A511 corridor from key sites along the corridor to the motorway network; and
- One of the main HS2 Phase 2b construction compounds is to be located at A42 Junction 13 which forms the westernmost end the A511 Growth Corridor. The A511 will serve as a route for materials and diverted traffic during HS2 construction and needs to be ready for this role.

4.24.3. Without intervention, localised congestion along the A511 will remain and continue to worsen, impacting adversely on the AQMA along the corridor, limiting future capacity on this vital east-west link, discouraging new development and economic growth.

4.24.4. By providing capacity improvements along the corridor, the scheme will reduce traffic congestion and in so doing provide the following benefits:

- Increased capacity on the A511 Growth Corridor, resulting from online improvements along the corridor in addition to the provision of the Bardon Link Road;
- Accelerated delivery of housing and employment land which would otherwise remain constrained by lack of transport infrastructure;
- More reliable journey times for motorists using the A511 corridor, particularly with regards to through traffic between the M1 and A42 and logistics traffic from the Coalville and Bardon Hill area and Junction 22 of the M1;

- Improved cycle and pedestrian connectivity in the area, providing more opportunities to access jobs in the Coalville, Ashby and the wider area. This includes access to Leicester, East Midlands Airport and the East Midlands Gateway (Strategic Rail Freight Terminal) at Castle Donington;
- Wider safety benefits for the adjacent local road network in terms of lower collision and casualty rates;
- Prevent rerouting of traffic onto less suitable roads in the area;
- Improved connectivity between Strategic Road Network elements;
- Provide a resilient road network, adequate to support the construction impacts of HS2 in the North West Leicestershire Area;
- Support a more reliable and resilient logistics and freight network; and
- Prevent rerouting of traffic onto less suitable roads in the area

5 ECONOMIC CASE

5.1 INTRODUCTION

5.1.1. The Economic Case assesses the impacts of the preferred scheme to fulfil HM Treasury's requirements for demonstrating value for money.

5.1.2. In line with HM Treasury's appraisal requirements, the impacts considered are not limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of a proposal are all examined, using qualitative, quantitative and monetised information. In assessing value for money these are consolidated to determine the extent to which a proposal's benefits outweigh its costs.

5.1.3. The subject of this Economic Case is the A511 MRN Growth Corridor scheme. In summary, this scheme consists of three components:

- improvements to seven existing junctions along the A511;
  - A511/Hoo Ash roundabout;
  - A511/Thornborough Road;
  - A511/Whitwick Road;
  - A511/Broom Leys Road;
  - A511/Birch Tree roundabout;
  - A511/Flying Horse roundabout; and
  - A511/Fieldhead roundabout
- dualling of a section of the A511 north of Coalville; and
  - The section of the A511 proposed to be dualled is the 500metres long link between the roundabouts at Thornborough Road and Whitwick Road/Hermitage Road: and
- a link between the Bardon Road A511 roundabout and the northern edge of the SUE development to complete the Bardon Link Road.
  - The new link road (Bardon Link Road) is proposed as the main access to the SUE, eventually linking the A511/Bardon Road roundabout south-east of Coalville to Grange Road and Beveridge Lane (between Ellistown and Bardon Hill). The developer-funded sections of the link road connect the SUE to Grange Road and Beveridge Lane only and are assumed to be complete by 2026. The northernmost section of the link road between the edge of the SUE and the Bardon Road A511 roundabout forms part of the scheme.

5.1.4. The economic appraisal has been tailored to reflect the needs of the Outline Business Case and is discussed under the following headings:

- Overview of Transport Modelling Approach;
- Scheme Cost and Public Accounts;
- Key Assumptions made as part of the Value for Money appraisal of the scheme;
- Scheme Benefits and Impacts;
- Appraisal Summary Table (AST);
- Value for Money Statement; and
- Summary.

5.2 OVERVIEW OF TRANSPORT MODELLING APPROACH

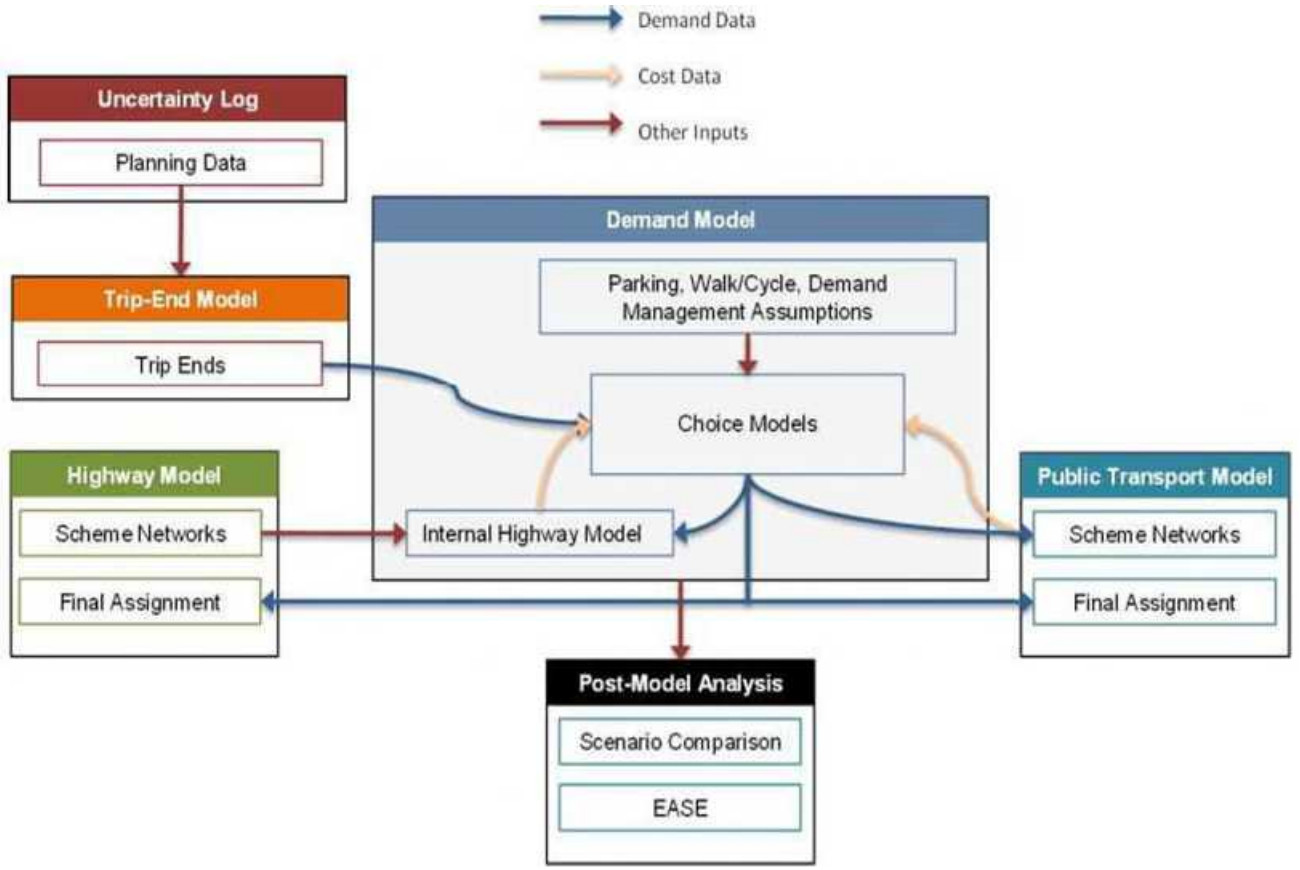
5.2.1. The economic assessment of the preferred scheme is based on detailed modelling of traffic in Coalville and the wider area, using the latest Pan-Regional Transport Model (PRTM), with and without the preferred A511 MRN Growth Corridor scheme. The modelling methodology has been set out in detail in the Appraisal Specification Report (ASR).

5.2.2. The PRTM is an enhancement of the Leicester and Leicestershire Integrated Transport Model (LLITM). It was deemed that the PRTM was a suitable tool for assessing the proposed A511 MRN Growth Corridor scheme because of its greater modelling detail outside of Leicestershire.

5.2.3. PRTM was initially developed during 2017, derived from the established LLITM model, to assess the A46 Expressway Concept which had substantial parts of its highway scheme outside Leicestershire. Subsequently, the model has been recalibrated to improve performance and used for a number of applications where strategic routeing outside Leicestershire may be a factor. The model has undergone further specific calibration for the A511 MRN Growth Corridor Outline Business Case (OBC) which is detailed in a separate highway Local Model Validation Report (LMVR) included in **Annex 4**

5.2.4. **Figure 5-1** outlines the flow of information and data within the PRTM.

Figure 5-1 - Overview of Data Flow within PRTM (Source: AECOM)



5.2.5. The development, validation and use of the latest PRTM are described in the following reports, provided as supporting Annex documents to the OBC:

- **Annex 2 - A511 MRN OBC Model Specification Report**
- **Annex 3 - A511 MRN OBC Data Collection Report**
- **Annex 4 - A511 MRN OBC Highway Local Model Validation Report**
- **Annex 5 - A511 MRN OBC Public Transport Model LMVR**
- **Annex 6 - A511 MRN OBC Demand Model Development Report**
- **Annex 7 - A511 MRN OBC Forecasting Report**
- **Annex 8 – A511 MRN OBC Economic Assessment Report**

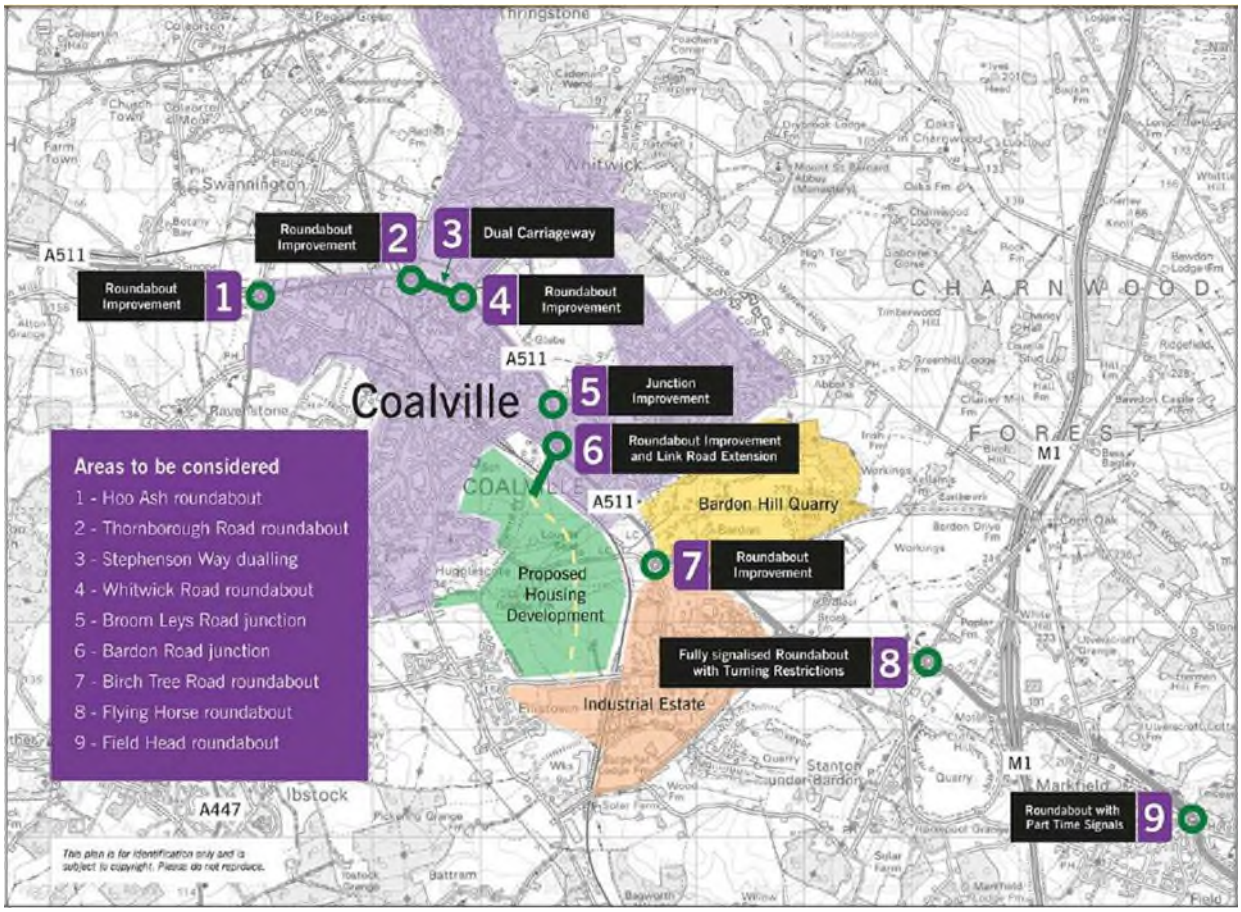
5.2.6. Outputs from the transport model in conjunction with DfT's Transport User Benefits Appraisal (TUBA) software has been used to assess the economic benefits associated with the preferred scheme. TUBA is the Department for Transport's (DfT) appraisal software was used to estimate the transport user benefits (changes in time and vehicle operating costs), changes in tax revenue and greenhouse gases as the result of a proposed scheme.

5.2.7. The economic situation for the following 'without' and 'with' scheme scenarios has been assessed with the aim of establishing the scale of benefits associated with the preferred scheme:

- **'Without Scheme' (Core) scenario**: referred to as the 'Core', this includes additional demand from committed developments, as well as any planned transport infrastructure associated with these developments for forecast years 2026 and 2038, including the standard PRTM schemes; and
- **'With Scheme' (Scheme) Scenario**: referred to as Package 1. This includes new demand from the proposed development for forecast years 2026 to 2038, as well as the refined Package 1 suite of interventions (i.e. the junction improvements on the A511 corridor and the Bardon Link Road through the development linking with Beveridge Lane, Grange Road and Bardon Road.

5.2.8. **Figure 5-2** shows the scheme location and its components.

Figure 5-2 – Proposed A511 MRN Growth Corridor scheme



OVERVIEW OF ECONOMIC APPRAISAL METHODOLOGY AND ASSUMPTIONS

5.2.9. The Value for Money assessment is a staged process which includes appraisal of the scheme's economic, environmental, social, distributional and fiscal impacts using qualitative, quantitative and monetised information.

5.2.10. It starts with analysis of monetised costs and benefits and calculation of the initial Benefit Cost Ratio (BCR) of the Scheme.

5.2.11. An adjusted BCR is then calculated by adding the monetised benefits from those aspects with lower levels of assurance, including wider economic benefits and journey time reliability. The next stage is to capture and analyse those impacts which cannot be monetised but can be presented as qualitative information.

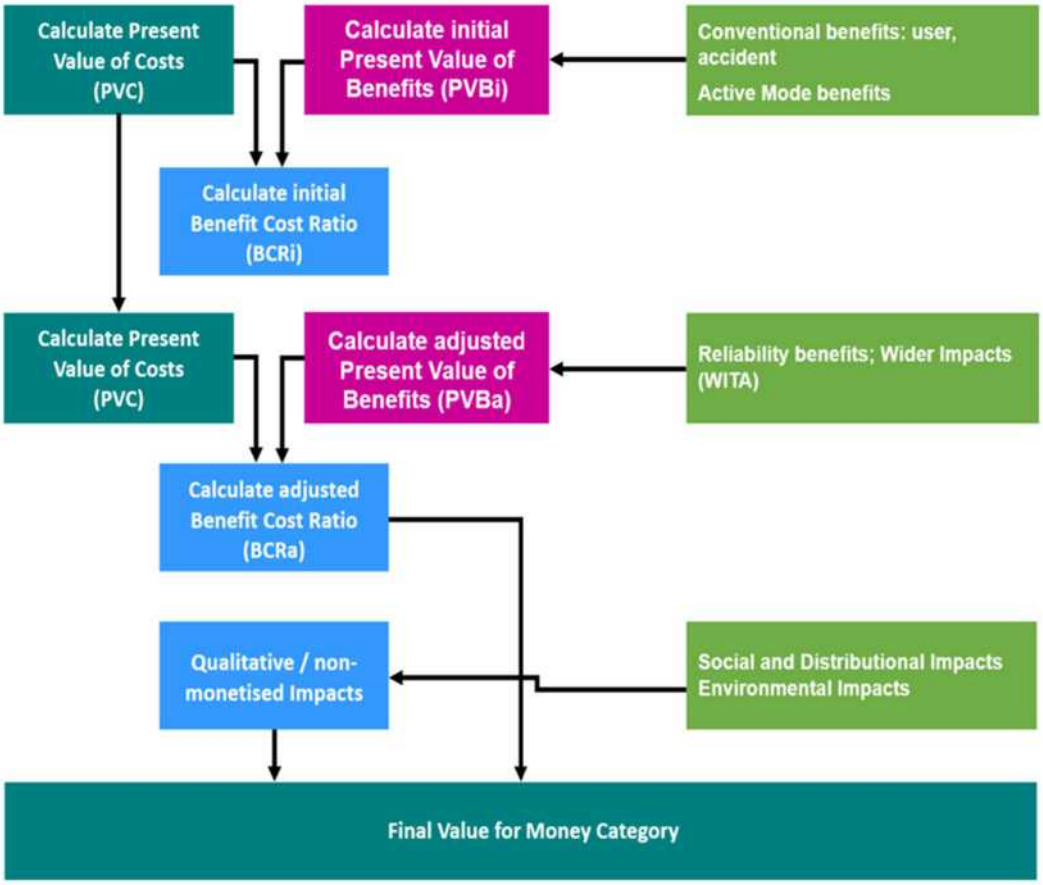
5.2.12. Finally, it looks at how the impacts of the scheme are distributed across different social groups within society.

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

- TAG Unit A1 cost-benefit analysis;
- TAG Unit A2 economic impacts;
- TAG Unit A4 social and distributional impacts; and
- TAG Unit A5-1 Active Mode Appraisal.

5.2.14. The methodology is based on the DfT Value for Money Framework (July 2017) and is illustrated in **Figure 5-3**.

Figure 5-3 - Summary of Economic Appraisal Methodology



5.2.15. The basic steps for calculating an **initial benefit-cost ratio (BCR)** are summarised below:

- The present value of cost (PVC) is calculated using the discounted whole life costs of the scheme incorporating future maintenance and developer contributions to costs.
- TUBA (Transport User Benefit Analysis) is used to calculate the user benefits from time and vehicle operating cost savings, and reductions in greenhouse gas emissions.
- QUADRO (Queues and Delays at Roadworks) is used to calculate and value the delays experienced by road users during the construction of the scheme.
- COBA-LT (Cost and Benefit to Accidents – Light Touch) is used to assess benefits arising from savings in accidents.
- Air Quality Worksheet from TAG Unit A3 is used to calculate the change in Air Quality for the life of the scheme and associated monetary value.
- Noise Spreadsheet from TAG Unit A3 is used to calculate the change in noise levels during the life of the scheme, the change in numbers of people “annoyed” and the monetary value of those changes.
- An active mode appraisal is undertaken to determine the economic benefits of increases in **active travel**, specifically cycling, likely as a result of improvements provided as part of the scheme.

5.2.16. Other monetised benefits are then taken into consideration, producing an adjusted present value of benefit (PVB), which is used to calculate an **adjusted BCR**. These are as listed below:

- Journey Time Reliability assessed using the method as described in TAG Unit A1.3.
- Analysis assessing the contribution of the scheme on the Wider Economy.

5.2.17. The scheme cost includes a local contribution of **£7.4m** from the Coalville Growth Corridor in 2020 Q2 prices of which £247,200 covers monitoring and evaluation and Part 1 claims. This will be sourced from private sector developer contributions as noted through LCC's and NWLDC's formal agreement to cashflow these in advance of receipt in the Financial Case and supporting signed Officer letter submitted to confirm this as part of the Bid.

5.2.18. This is supported, in a practical sense, by recent approved planning applications in the town also making significant developer contributions. This establishes proof of viability, and that these are sufficiently certains (from both private sector and public sector agreement) to include within the scheme's BCR calculation.

5.2.19. This is supported, in a practical sense, by recent approved planning applications in the town also making significant developer contributions. This establishes proof of viability, and that these are sufficiently certains (from both private sector and public sector agreement) to include within the scheme's BCR calculation.

5.3 SCHEME COST AND PUBLIC ACCOUNTS

5.3.1. In line with DfT guidance, Value for Money assessment starts with the calculation of those impacts that can be expressed in monetary terms. These monetised impacts are summed to construct an Initial Benefit Cost Ratio (Initial BCR) – that is the amount of benefit being realised for every £1.00 of cost.

5.3.2. The summary of the monetised information along with the BCR is presented in the standard Analysis of Monetised Costs and Benefits (AMCB) Table, detailed in the Economic Assessment Report **(Annex 8).**

5.3.3. Estimation of the scheme costs include both the actual cost of the scheme during its construction, as well as the capital cost of maintenance in future years.

5.3.4. Base costs for land, construction, preparation and supervision, including adjustment for risk following a quantified risk assessment, and inflation have been estimated by LCC based on the latest scheme design.

5.3.5. A breakdown of the scheme costs (excluding expenditure to date, Part 1 claims and monitoring and evaluation cots) in outturn prices is provided in **Table 5-1.**

Table 5-1 – Summary of Scheme Costs (factor costs, including inflation)

Year	Land	Construction	Preparation	Supervision	Total
2020	£-	£-	£2,410,439	£-	**£2,410,439**
2021	£1,132,536	£-	£1,733,328	£-	**£2,865,864**
2022	£319,104	£21,697,379	£-	£1,434,911	**£23,451,395**
2023	£-	£14,619,929	£-	£744,510	**£15,364,439**
2024	£-	£1,565,108	£-	£1,578,089	**£3,143,197**
2025	£-	£-	£-	£331,806	**£331,806**
Total	**£1,226,884**	**£32,293,610**	**£3,286,854**	**£2,828,489**	**£47,567,139**

Notes: Excludes any costs prior to completion of the OBC, Part 1 claims and monitoring and evaluation costs

5.3.6. For the Economic Case, these costs should also include monitoring and evaluation and Part 1 claims with respect to land.

5.3.7. For monitoring and evaluation, a budget of **£47,200** (in 2020 Q3factor prices) has been assumed to be spent between 2020 and 2025.

5.3.8. For Part 1 claims a value of **£200,000** (in 2020 Q2 factor prices has been assumed. This will be spent in 2022.

5.3.9. Owing to the scheme's relative age and design its lifetime maintenance cost is expected to be no higher than the existing road over the same duration. As with the existing road the cost of maintenance would therefore be covered by Leicestershire County Council highway maintenance budget. However, a provisional value of **£1,586,513** (200 Q2factor prices) has been included in the scheme construction costs to cover commuted sums for the maintenance and renewal of structures and installations such as traffic signals.

5.3.10. Risks have been assessed for preparation, construction and supervision costs. A comprehensive risk register has been created and risk modelling has been undertaken following the methodology based in TAG Unit A1.2.

5.3.11. This risk register has been developed in association with LCC's Engineering Design Team and Morgan Sindall, the ECI contractor for the proposed scheme.

5.3.12. The early involvement of Morgan Sindall has combined the complementary expertise of client, designer and contractor, and facilitated the early identification of project risks. This process has used the knowledge gained by the organisations and the individuals on the ECI team during the development and construction of schemes such as A6 Manchester Airport Relief Road, M5 Oldbury viaduct, Stratford City Bridges, and the M74 completion Project. Morgan Sindall has also drawn on the experienced gained from Leicestershire's M1 Junction 23 scheme.

5.3.13. Cost risk and uncertainty has been assessed using a Quantified Risk Assessment (QRA) which is then used to produce a risk-adjusted cost estimate, following TAG Unit A1.2 guidance. The outturn Base Cost includes the quantified risk of **£7,720,300** derived deterministically from the costed risk register. Stochastic analysis using Monte Carlo simulations demonstrate that this cost is very similar

to the mean outcome of **£6,419,474.**

5.3.14. In addition, and as defined within Table 8 of TAG Unit 1.2, optimism bias of 15% has been assumed for the scheme, with independent cost review having been undertaken.

5.3.15. Finally, the price base has been deflated to 2010 real prices, then discounted to 2010 and adjusted from factor to market prices using a factor of 1.19.

5.3.16. **Table 5-2** provides a summary of the scheme costs, incorporating these adjustments to produce the fully adjusted Base Cost. This provides an overall present value of costs of **£35,163,988** in 2010 market prices and values.

Table 5-2 - Summary of derivation of scheme present value costs

	Cost	Cumulative Cost
Scheme costs 2019 Q3 prices	37,199,917	£37,199,917
Part 1 claims and monitoring and evaluation 2019 Q3 prices	£247,200	£37,447,117
Quantified Risk 2019 Q3 prices	£7,720,300	£45,167,417
Construction price inflation to outturn prices	£3,496,011	£48,663,428
Real price adjustment	-£2,855,886	£45,807,543
Optimism Bias	£6,871,131.41	£52,678,674
Deflation to 2010 prices	-£7,562,117	£45,116,557
Discounting to 2010 prices	-£15,566,986.94	£29,549,570
Conversion to market prices	**£5,614,418.29**	**£35,163,988**

5.3.17. The summary of scheme construction costs and profile at 2010 prices and values is shown in **Table 5-3.**

Table 5-3 – Summary of Discounted Scheme Costs, 2010 prices and values

Year	Cost
2020	£1,771,674
2021	£2,106,411
2022	£17,236,704
2023	£11,292,867
2024	£2,309,825
2025	£244,381
Total	**£35,163,988**

5.3.18. **Table 5-4** presents the Public Accounts (PA) table for the scheme used in the Value for Money assessment. The table shows how the **£35.2 million** investment cost is split between Local Government and Central Government funding. The table shows that **£28.3 million** of the investment cost would be provided by Central Government. This is equivalent to the Broad Transport Budget since Local Government investment costs would be fully covered by **£6.9 million** of developer contributions.

5.3.19. **Table 5-4** also shows a small increase of **£34,000** in indirect tax revenues linked to increases in vehicle operating costs as a result of improved travel conditions. The number is quoted as negative as it is revenue as opposed to expenditure on the public accounts.

Table 5-4 – Public Accounts (PA) Table, 2010 Prices and Values

	ALL MODES TOTAL		ROAD INFRASTRUCTURE	BUS and COACH	RAIL	OTHER
Local Government Funding						
Revenue						
Operating Costs						
Investment Costs	6,893,547		6,893,547			
Developer and Other Contributions	-6,893,547		-6,893,547			
Grant/Subsidy Payments						
NET IMPACT	0	*(7)*				
Central Government Funding: Transport						
Revenue						
Operating costs						
Investment Costs	28,270,441		35,163,988			
Developer and Other Contributions						
Grant/Subsidy Payments						
NET IMPACT	28,270,441	*(8)*				
Central Government Funding: Non-Transport						
Indirect Tax Revenues	-34,000	*(9)*				
TOTALS						
Broad Transport Budget	28,270,441	*(10) = (7) + (8)*				
Wider Public Finances	-34,000	*(11) = (9)*				

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

5.4 KEY ASSUMPTIONS MADE AS PART OF THE VALUE FOR MONEY APPRAISAL OF THE SCHEME

The appraisal of the scheme has been based on a Core Scenario, with detailed use of a locally specific and up-to-date uncertainty log, as defined by TAG and detailed within the Forecasting Report (**Annex 7**).

5.4.1. Levels of optimism bias have been applied as defined by Table 8 of TAG Unit A1.2. A 15% uplift has been applied to the scheme costs. Prior to application of optimism bias the results of a quantified risk assessment have been applied to the base scheme costs. Costs have taken into account inflation of these costs over time, as well as on-going future maintenance costs and scheme monitoring and evaluation costs.

5.4.2. The standard economics file within TUBA v1.9.13 has been amended to be consistent with the user classes in the PRTM highway assignment. LLITM 2014 user classes. Within PRTM, the highway model includes a single HGV user class, a single LGV user class, and seven car user classes representing business travel, commuting for three income bands, and other travel for three income bands.

5.4.3. The highway model contained within PRTM represents an AM Peak hour (08:00 to 09:00), an average interpeak hour (between 10:00 and 16:00), and a PM Peak hour (17:00 to 18:00). Annualisation factors determined using modelled and applied to the three modelled hours to estimate benefits for a year.

5.4.4. A 60-year appraisal period has been adopted, in-line with TAG, from the assumed scheme opening year of late 2023 to a horizon year of 2083. The current year assumed within the assessment is 2019, with the benefits and costs given in 2010 prices and values.

5.4.5. High and low growth sensitivity tests have been undertaken using the methodology detailed within TAG Unit M4, Section 4. Using these alternative growth scenarios, TUBA assessments of the scheme benefits have been undertaken using high and low growth forecasts.

5.4.6. The estimated accident impact of the proposed scheme has been determined over 60 year period using CoBA-LT.

5.5 TRANSPORT ECONOMIC EFFICIENCY

5.5.1. The Economic Efficiency of the Transport System (TEE) consists of the following benefits:

- Travel time;
- Vehicle operating costs;
- User charges;
- User benefits during Construction & Maintenance;
- Private sector provider impacts (revenue, operating costs, investment costs and grant/subsidy); and
- Other business impacts (developer contributions)

5.5.2. These benefits have been taken into account to calculate the total present value of Transport Economic Efficiency Benefits (TEE), which is shown in **Table 5-5** split by non-business users and business users and providers.

5.5.3. **Table 5-5** shows a total of:

- £18.3 million in non-business commuting user benefits resulting from journey time savings offset by a small increase in vehicle operating costs due to higher speed;
- £23.9 million in non-business other purpose (such as recreation or shopping) user benefits again down to reduced journey times and higher speed; and
- £23.8 million business user benefits of which £9.8 million are journey time savings for heavy goods vehicles and £1.9 million are operating cost savings for heavy goods vehicles.

5.5.4. There are no road user charges as part of the scheme or in the area of influence of the scheme so there is no benefit from changes in these.

5.5.5. Delays during construction works have not been quantified. Plans for construction will focus on minimising delays to motorists and maintaining traffic movements through the site at busiest times of the day. Equally, delays due to maintenance are assumed to be kept to a minimum but are likely to be similar or lower than those needed in the without scheme scenario.

5.5.6. As this is not a public transport scheme private sector provider impacts have not been calculated. This is not to say that bus services using the A511 or roads relieved of traffic as a result of the scheme will benefit from faster and more reliable journey times.

5.5.7. Other business impacts include the payment of developer contributions towards the scheme. This amounts to £6.9 million in 2010 prices and values.

5.5.8. The total TEE benefits therefore amount to £60.8 million

Table 5-5 – Transport Economic Efficiency (TEE) Table, 2010 prices and values

Non-business: Commuting	ALL MODES		ROAD		BUS and COACH	RAIL	OTHER
User benefits	TOTAL		Private Cars and LGVs		Passengers	Passengers	
Travel time	18,979,000		18,979,000				
Vehicle operating costs	-694,000		-694,000				
User charges	0		0				
During Construction & Maintenance	0		0				
COMMUTING	18,285,000	*(1a)*	18,285,000				
Non-business: Other	**ALL MODES**		**ROAD**		**BUS and COACH**	**RAIL**	**OTHER**
User benefits	TOTAL		Private Cars and LGVs		Passengers	Passengers	
Travel time	24,086,000		24,086,000				
Vehicle operating costs	-142,000		-142,000				
User charges	0		0				
During Construction & Maintenance	0		0				
NET NON-BUSINESS BENEFITS: OTHER	23,944,000	*(1b)*	23,944,000				
Business							
User benefits			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
Travel time	21,785,000		9,826,000	11,959,000			
Vehicle operating costs	2,031,000		1,881,000	150,000			
User charges	0		0	0			
During Construction & Maintenance	0		0	0			
Subtotal	23,816,000	*(2)*	11,707,000	12,109,000			
						Freight	Passengers
Private sector provider impacts							
Revenue	0						
Operating costs	0						
Investment costs	0						
Grant/subsidy	0						
Subtotal	0	*(3)*					
Other business impacts							
Developer contributions	-6,893,547	*(4)*					
NET BUSINESS IMPACT	16,922,453	*(5) = (2) + (3) + (4)*					
TOTAL							
Present Value of Transport Economic Efficiency Benefits (TEE)	59,151,453	*(6) = (1a) + (1b) + (5)*					

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

5.6 SAFETY IMPACTS

5.6.1. CoBA-LT was used to appraise the scheme over a 60 year period in terms of accident cost savings. The appraisal covers an area of influence around the scheme determined on the basis of its impact on traffic flows. The programme uses default accident rates defined as the number of Personal Injury Accidents (PIAs) per million vehicle kilometres. This rate varies by road type and speed limit. So, if the road is new or if it is widened the accident rate will differ from the one used in the without scheme scenario. If the road is unaltered in standard or speed limit then the accident rate will not change. Further details on the CoBA-LT assessment can be found in the EAR (**Annex 8**).

5.6.2. With the scheme the forecast number of personal injury accidents is expected to increase by 64over 60 years. In terms of casualties this would mean one more fatality, nine more serious casualties and 84 more slight casualties. The economic cost of these accidents is an increase of £3.2 million in 2010 prices and values.

5.6.3. With the introduction of the scheme traffic levels across the area of influence are forecast to increase slightly (by around 4.5% in 2051). Higher traffic levels on roads where the accident rate does not change inevitably means a higher number of accidents even though the accident risk per trip does not change. Further analysis carried out in Annex 11 indicates that this is due to the traffic induced onto the A511. However, linking the spine road to the A511 is important in mitigating the negative impacts of induced traffic.

5.6.4. **Table 5-6** shows that the increase in accident costs is focussed on the new link roads and the A511 itself, whilst accident cost savings are found in Coalville and the rural network to the south of the town. This distribution reflects the distribution of increases and decreases in traffic.

Table 5-6 – Breakdown of accident benefits (£000s in 2010 prices and values)

Area	Benefits
Northern Bardon Link Road (A511 to Grange Road)	-£1,401
Southern Bardon Link Road (Grange Road to Beverage Lane	-£173
A511 (A42 to A447)	-£850
A511 (A447 to Bardon Road)	-£2,259
A511 (Bardon Road to M1)	-£1,895
A511 (M1 to Groby)	-£1,421
Coalville Urban Area	£1,250
Rural network south of Coalville	£2,319
Rest of Area of Influence	£1,229
Total	**-£3,201**

5.6.5. The valuation of accident benefits does not capture the benefits the scheme will have on the safety of non-road users. Vulnerable road users such as pedestrians will benefit from improved pedestrian crossing facilities on the A511 and from quieter and safer roads in Coalville and the surrounding rural network.

5.7 ACTIVE MODE BENEFITS – CYCLING BENEFITS

5.7.1. This section presents the expected economic benefits of walking and cycling due to delivery of the proposed A511 MRN Growth Corridor scheme.

5.7.2. Given the nature and location of the scheme it is anticipated the only impact will be on cycle users as a result of constructing 460 metres of new carriageway, which will incorporate 3-metre-wide footway and cycleway on both sides (i.e. 920 metres of new cycle infrastructure).

5.7.3. For this scheme appraisal, an elasticity approach linked to the sketch plan method in TAG has been considered. This is one of the Department for Transport's TAG (Unit A5.1) suggested approaches to estimating the impact of a scheme on cycling demand.

5.7.4. The scheme's potential trip generation for cyclists is determined through a cycle elasticity estimate for the change in demand for cycling in an area, based on a change in the proportion of routes in the district that have dedicated facilities for cycle traffic. According to TAG Unit A5.1 §2.4.4, the approximate elasticity estimate for the change in demand for cycling in a district, based on a change in the proportion of route that has facilities for cycle traffic (cycle lanes, bus lanes and traffic free route), is +0.05.

5.7.5. A detailed map of cycle routes within the North West Leicestershire district, was used to calculate the combined length of cycle routes. This was compared with the proposed new cycle routes as part of the scheme to estimate the expected increase in cycle trips. The results suggest a negligible increase (i.e. 0.33%) in proportion of cycle facilities in the district as a result of the new cycling facilities.

5.7.6. On this basis, the overall monetised benefits from the increase in demand for cycling as a result of the scheme are expected to be relatively small; therefore a detailed assessment of these benefits has not been undertaken as part of the overall economic assessment of the scheme.

5.7.7. However, it should be noted that the proposed cycling facilities are expected to provide a much improved and quicker route towards Coalville for residents at the Grange Road and South East Coalville developments.

5.8 ENVIRONMENTAL IMPACTS – MONETISED

ENVIRONMENT AIR QUALITY

5.8.1. There are two Air Quality Management Areas (AQMAs) within 200m of the DMRB Affected Road Network (ARN): one in Coalville (Coalville AQMA) which the ARN travels through; and one adjacent to the ARN at Copt Oak (Copt Oak AQMA). Both were declared for annual mean NO2.

5.8.2. At all receptors considered within these AQMAs changes are imperceptible or small, and concentrations remain well below the objective value in the opening year. As a result of the proposed scheme, no receptors are predicted to experience an increase of more than 0.4 µg/m3 in NO2 concentration where concentrations of NO2 are above the objective value of 40 µg/m3.

5.8.3. Regional emissions of PM2.5 are predicted to increase by <0.1 tonnes/year in the proposed scheme opening year. Regional emissions of NOx are predicted to decrease by 0.4 tonnes/year in the opening year due to reductions in the distance travelled by Heavy Diesel Vehicle (HDV) on regionally affected roads within the Area of Influence, which have offset the overall increase in distance travelled by all vehicles.

5.8.4. The TAG air quality valuation spreadsheet (dated July 2019) uses the findings from the plan level calculations for PM2.5 and NO2 to calculate a monetary air quality valuation for the scheme. The air quality valuation is presented in **Table 5-7**.

Table 5-7 - Air Quality Valuation

Description	Present Value of Change (£)
NO_2 Concentrations	+£183,865
$PM_{2.5}$ Concentrations	+£94,494
Total value of change in local air quality	**+£278,359**

5.8.5. The overall positive total value of change in local air quality represents a net benefit to air quality.

ENVIRONMENT NOISE

5.8.6. The net present value of the change in traffic noise calculated by the TAG workbook is -£1,297,798 in 2010 prices and values, where the negative sign represents a net disbenefit.

5.8.7. No households are forecast to experience daytime traffic noise levels in excess of 80dB LAeq,16h (façade) in the opening year (2023) or the forecast year (2038).

5.8.8. 8,121 residential households are located in the DMRB noise study area. Based on the façade of the property which experiences the worst-case change in the short-term (opening year), 22 are predicted to experience a major increase in traffic noise. These properties are all in the vicinity of the northern end of the proposed Bardon Link Road.

5.8.9. 38 households (0.5%) experience a moderate increase in traffic noise in the short-term, primarily from traffic associated with the northern end of the proposed Bardon Link Road. 45% of households experience a minor or negligible increase in traffic noise in the short-term, 30% no change and 24% a negligible or minor reduction.

5.8.10. 51 non-residential sensitive receptors have been identified in the study area. Based on the façade that experiences the worst-case change in the short-term, 33 experience a negligible or minor increase, 14 no change and 4 a negligible or minor reduction.

5.8.11. **Table 5-8** summarises the number of residential and non-residential sensitive receptors which change 3 dB band with the proposed developments in place, in both the opening and future year. A significant proportion of the buildings remaining in the same band, especially at night, result from the absolute noise level being below 45dB both with and without the proposed developments.

Table 5-8 - Summary of Noise Impacts

Change in 3 dB noise level band		Residential	
		Day	Night
2023	Increase	571	147
	Decrease	112	42
	No Change	7438	7932
2038	Increase	544	172
	Decrease	216	63
	No Change	7361	7886

5.8.12. A total of 8,121 residential buildings within the study side were assessed in the DMRB detailed noise assessment.

5.8.13. The assessment concluded that out of the 8,121, 7,361 properties would not be impacted by the Proposed Scheme during the daytime and 7,886 properties would not be impacted by the Proposed Scheme at night.

ENVIRONMENT GREENHOUSE GASES

5.8.14. The results of the GHG emissions assessment are presented within **Table 5-9**.

Table 5-9 - GHG Emissions Assessment

Description	Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):	Change in carbon dioxide equivalent emissions in opening year (tonnes):	Net Present Value of carbon dioxide equivalent emissions of proposal (£):
CO_2	+63,600	+572	-2,843,507

5.8.15. Calculations indicate that there would be an increase of 63,600 tonnes of carbon over 60 years, with a proposed scheme opening year increase of 572 tonnes.

5.9 NON-MONETISED ENVIRONMENTAL & SOCIAL IMPACTS

5.9.1. This section considered non-monetised impacts on the environment (Landscape, Townscape, Historic Environment, Biodiversity and Water Environment). The full Environmental Constraints Report can be found in **Appendix E.**

ENVIRONMENT LANDSCAPE

5.9.2. Located within National Character Area (NCA) Profile 73: Charnwood and 71: Leicestershire and South Derbyshire Coalfield, the urban fringe and rural landscape of the study area is of good quality where the features and elements present in the landscape are typical of the locality and within the national and regional landscape character areas.

5.9.3. Regional character areas affected include Charnwood Forest, where land use is a distinctive mix of woodland, farmland, heathland and parkland in an upland landscape with distinctive rocky outcrops and a high proportion of woodland, and The Coalfield where there are visible effects of past and present coal and clay workings with a dense settlement pattern of former mining towns and villages following main roads.

5.9.4. The junction improvements have the greatest potential to change the way in which the local landscape character is perceived within and directly adjacent to the highway corridor due to vegetation removal and significant additional highway infrastructure and alignments, particularly with the Bardon Link Road junction.

5.9.5. There are no statutory or non-statutory landscape designations within the study area, however the western extent lies within the National Forest. When considering visual amenity, there are a number of recreational (users of close proximity PRoW) and residential receptors who would be considered highly sensitive to changes in views.

5.9.6. Mitigation measures in the form of new planting areas will result in improvements in the screening and landscape integration function over time, as new trees and vegetation mature. Mitigation measures in more urban fringe areas, where space constraints exist, will be limited to consideration of materials and design of highway infrastructure in relation to local built form character.

ENVIRONMENT TOWNSCAPE

5.9.7. Not applicable for this assessment.

ENVIRONMENT HISTORIC ENVIRONMENT

5.9.8. Heritage assets within the study area include one scheduled monument, 12 listed buildings and various non-designated assets. The scheduled monument is a 19th century colliery which survives almost in entirety. Associated with the colliery are the listed powder magazine, locomotive shed and office building. Other listed buildings in the study area consist of post-medieval houses, churches and a hotel, as well as two modern war memorials.

5.9.9. The non-designated assets vary from prehistoric find spots and Roman occupation sites to medieval deer parks and post-medieval industrial sites. There may be changes to the setting of listed buildings during the construction phase of the proposed scheme.

ENVIRONMENT BIODIVERSITY

5.9.10. No direct or indirect impacts are anticipated on International/ European statutory designated sites (comprising Special Protection Areas (SPAs); Ramsar; or Special Areas of Conservation (SAC) and National statutory designated sites (comprising Sites of Special Scientific Interest (SSSI) There are likely to be some limited direct and indirect effects on Regionally important statutory designated sites, including Local Nature Reserves (LNR). There are also likely to be highly localised direct and indirect effects on Regionally and Locally important non-statutory designated sites.

5.9.11. There is potential for localised loss and disturbance to Habitats of Principle Importance, including broadleaved woodland, standing eutrophic water and lowland fens at several of the proposed junction improvements. The proposals will likely result in a direct loss and disturbance of features supporting legally protected or notable species requiring further assessment and mitigation / compensation (including bats, great crested newts and breeding birds).

ENVIRONMENT WATER ENVIRONMENT

5.9.12. This is a scheme where 9 roundabouts and incoming lanes will be upgraded with an associated increase in impermeable area. Increased surface water from the new impermeable areas would be attenuated to ensure no detrimental increase in flooding for receiving watercourses and would include measures to treat road runoff and contain spillages where quantitative assessment shows this is necessary.

5.9.13. Some development within Flood Zone 2 may require flood compensation areas to be constructed, requirements for this would be determined within the FRA. It is assumed adverse impacts are identified at the next stage and can be mitigated through design to result in no significant operational effects. Natural England will be consulted to ensure no adverse impacts on the SSSI between Junction 7 and 8.

SOCIAL JOURNEY QUALITY

5.9.14. The proposed scheme reduces traffic congestion and therefore driver stress. The reduction in driver stress is due to reduced queuing and delays for vehicle traffic.

5.9.15. Various pedestrian crossings are due to be introduced in different locations which are likely to introduce safety benefits mainly to pedestrians.

5.9.16. The scheme proposals include just under 1km of new cycle infrastructure which, using TAG Unit A5.1, is not forecast to significantly alter active mode travel in the area. Proposed cycling facilities provide an improved and quicker route towards Coalville for residents at the Grange Road and South-East Coalville developments, also introducing physical fitness and safety benefits.

SOCIAL SEVERANCE

5.9.17. The overall assessment is a neutral impact, with the slight beneficial impacts in the densely populated areas affected by flow changes in Forest Road and Central Road balanced by slight negative impacts in other areas and a neutral impact in most of the roads in Coalville. There is also a beneficial severance impact in the proposed tunnel under the rail line to the south of Bardon Road, needed to link the Coalville SUE with the A511.

5.10 ANALYSIS OF DISTRIBUTIONAL IMPACTS

5.10.1. To understand the impacts of the scheme on different social groups, including those which are potentially more vulnerable to the effects of transport the Distributional Impacts (DI) appraisal has been undertaken. The following section summaries the Distributional Impacts of the A511 MRN Growth Corridor scheme, the full Social and Distributional Impacts Assessment Report can be found is provide in **Annex 9**.

5.10.2. As defined by Department for Transport's (DfT) Transport Analysis Guidance (TAG) Unit A4.2, distributional impacts consider the variance of transport intervention impacts across different social groups. Both the beneficial and / or adverse impacts should be taken into consideration as well as the

socio-economic groups affected. Consideration of the DIs of transport schemes is a mandatory requirement of the DfT's TAG.

5.10.3. As per TAG Unit A4.2 the DI Appraisal requires the consideration of the following eight DI Indicators: User Benefits (journey times and vehicle operating costs);

- Noise;
- Air Quality;
- Accidents;
- Security;
- Severance;
- Accessibility; and
- Personal affordability.

5.10.4. Only some socio-economic groups are particularly sensitive to each indicator and therefore it is only necessary to investigate these groups. They are set out in TAG Unit A4.2 and are reproduced in **Table 5-10.**

Table 5-10 – Group of People to be Assessed for Each Indicator

Social Group	User	Noise	Air Quality	Accidents	Security	Severance	Accessibility	Affordability
Income distribution	✓	✓	✓				✓	✓
Children: Proportion of population <16		✓	✓	✓	✓	✓	✓	
Young adults: Proportion of population aged 16-25				✓			✓	
Older people: Proportion of population aged >70		✓		✓	✓	✓	✓	
Proportion of population with a disability					✓	✓	✓	
Proportion of population of Black and Minority Ethnic (BME) origin					✓		✓	
Proportion of households without access to a car						✓	✓	
Carers: Proportion of households with dependent children							✓	

5.10.5. For each indicator a three-step approach has been used according to TAG:

- **Step 1 – Screening process**: Identify the likely impacts for each indicator in the different scenarios.
- **Step 2 – Assessment**: Determine the area of impact by the transport intervention; identify the distribution of the socio-economic groups in the area and identify the local amenities in the area.
- **Step 3 – Appraisal of Impacts**: Core analysis of the impacts.

5.10.6. According to TAG Unit A4.2, "analysis of the characteristics of people in the area likely to be affected by the intervention should be undertaken through mapping social characteristics of interest at a suitably disaggregate level". Data regarding socio-demographic characteristics can all be found in the

Census data from 2011 at an Output Area level. This is supplemented in this study by local planning data incorporated in the inputs compiled for the PRTM land-use model.

5.10.7. In line with TAG the identification of social groups within the affected area is initially limited to identifying the groups of people with different level of income within the scheme impact area

5.10.8. PRTM has been used to provide inputs to the appraisal for this scheme. This includes data from the land-use model, based ultimately on 2011 Census data, with population estimates by household and person type. The 33 household types in the PRTM land-use model have been grouped into three income bands, as for the transport model, as shown in **Table 5-11**.

Table 5-11 – Income Bands Modelled in PRTM, 2010 Prices

Income Band	Gross Household Income
1	£0 to £25,000
2	£25,000 to £50,000
3	Above £50,000

5.10.9. These data allow geographic data such as air quality and noise levels to be mapped to income levels. In addition, with the existence of a transport model, travel data (such as user benefits) can be mapped to income levels of travellers. The production of estimates of base year travel demand in PRTM by income took into consideration both trip productions (home end of trip) and trip length (with higher income individuals typically making longer trips).

5.10.10. In the following tables the assessments rate the impact on each income band as per Table 5 from TAG Unit A4.2, reproduced in **Table 5-12**.

Table 5-12 – General System for Grading of Dis for each identified Social Groups

Impact	Assessment
Beneficial and the population impacted is significantly greater than the proportion of the group in the total population	Large Beneficial ✓✓✓
Beneficial and the population impacted is broadly in line with the proportion of the group in the total population	Moderate Beneficial ✓✓
Beneficial and the population impacted is smaller than the proportion of the group in the total population	Slight Beneficial ✓
There are no significant benefits or disbenefits experienced by the group for the specified impact	Neutral
Adverse and the population impacted is smaller than the proportion of the population of the group in the total population	Slight Adverse ×
Adverse and the population impacted is broadly in line with the proportion of the population of the group in the total population	Moderate Adverse ××
Adverse and the population impacted is significantly greater than the proportion of the group in the total population	Large Adverse ×××

Source: Extract from WebTAG A4.2 Table 5

5.11 DISTRIBUTIONAL IMPACTS – USER BENEFITS

5.11.1. The results of the assessment for user benefits are presented in **Table 5-13**.

Table 5-13 – Distributional Impacts of User Benefits

	Income Band			Total
	Low	Medium	High	
Total Benefits	7.1	16.8	13.5	37.4
Total Disbenefits	-1.17	-2.40	-2.20	-5.76
Net Benefits	5.9	14.4	11.3	31.7
Share of Benefits	19%	45%	36%	100%
Share of Disbenefits	20%	42%	38%	100%
Share of Net Benefits	**19%**	**46%**	**36%**	**100%**
Share of Population	**21%**	**44%**	**35%**	**100%**
Assessment	✓✓	✓✓	✓✓	

5.11.2. The scheme is forecast to moderately benefit all income bands, though slightly more favourable to 'medium' and 'high' income band users.

5.11.3. This is generally to be expected for Major Road Networks (MRN) such as the A511 MRN Growth Corridor, due to their proximity to the Strategic Road Network (SRN). Users of strategic roads (and car vehicles) tend to have average to high incomes.

5.12 DISTRIBUTIONAL IMPACTS – NOISE

5.12.1. The results of the assessment for noise by income band are presented in **Table 5-14** and **Table 5-15**.

Table 5-14 – Distributional Impacts of Noise on the Population by Income Band (2023)

	Income Band			Total
	Low	Medium	High	
Population with increased noise	297	648	478	1422
Population with decreased noise	61	127	85	272
Population with no change in noise	3946	8031	5932	17910
Net winners/losers	-236	-521	-393	-1150
Percentage of net winners/losers	21%	45%	34%	100%
Percentage of Population	21%	46%	33%	**100%**
Assessment	××	××	××	

Table 5-15 - Distributional Impacts of Noise on the Population by Income Band (2038)

	Income Band			Total
	Low	Medium	High	
Population with increased noise	286	614	434	1334
Population with decreased noise	114	236	174	524
Population with no change in noise	3903	7956	5887	17746
Net winners/losers	-172	-378	-260	-810
Percentage of net winners/losers	21%	47%	32%	100%
Percentage of Population	22%	46%	33%	**100%**
Assessment	××	××	××	

5.12.2. TAG Unit A4.2 §3.4.10 states that *"the analyst should also take into account changes in noise levels that could occur at night"*. In order to identify the distributional impacts of changes in night-time noise levels, a distributional impacts assessment by income group has also been carried out using night-time noise levels ($L_{Aeq,8\ hour}$, façade) for the two forecast years. The results of this assessment are shown in **Table 5-16** and **Table 5-17**.

Table 5-16 - Distributional Impacts of Night -Time Noise on the Population by Income Band (2023)

	Income Band			Total
	Low	Medium	High	
Population with increased noise	79	161	111	351
Population with decreased noise	22	42	32	97
Population with no change in noise	4202	8602	6352	19157
Net winners/losers	-57	-119	-79	-254
Percentage of net winners/losers	22%	47%	31%	100%
Percentage of Population	23%	45%	32%	**100%**
Assessment	××	××	××	

Table 5-17 - Distributional Impacts of Night -Time Noise on the Population by Income Band (2038)

	Income Band			Total
	Low	Medium	High	
Population with increased noise	93	190	129	412
Population with decreased noise	33	66	51	151
Population with no change in noise	4177	8549	6315	19041
Net winners/losers	-60	-124	-78	-262
Percentage of net winners/losers	23%	47%	30%	100%
Percentage of Population	22%	46%	32%	**100%**
Assessment	××	××	××	

5.12.3. The results show that very few people experience a change in night-time noise levels. Of those that do, more experience an increase in noise than a decrease, but across all income groups, the population impacted is broadly in-line with the proportion of the population of the income group in the total population.

5.12.4. TAG Unit A4.2 3.3.3 states that "the DI analyst should consider social groups living in the area that are vulnerable to changes in noise levels, including children and older people". The outcome of the assessment for vulnerable groups presented in Section 6 of the EAR (**Annex 8**) shows that the numbers experiencing a change in noise levels are relatively small, and of those that do there are more that experience an increase in noise than a decrease. These are in-line with the proportion of the population of the group (children and older people respectively) in the total population

5.12.5. At the non- residential sensitive receptors in the study area, noise impacts in both the opening year and design year are forecast to be negligible (i.e. less than 3dB change). The assessment for noise impacts at sensitive locations is considered neutral.

5.12.6. On the basis of the assessments of magnitude of impacts on local amenities, and in particular on schools, the overall assessment score for impact on children and older people is considered to be neutral for the scheme.

5.13 DISTRIBUTIONAL IMPACTS – AIR QUALITY

5.13.1. As recommended in TAG Unit A4.2 §4.4.11, the air quality distributional impacts analysis was carried out separately for particulate matter and NO2, as there are different speed-emission relationships for these pollutants. Modelled PM_{10} results, using the methodology of TAG Unit A3, were converted to $PM_{2.5}$ by applying a conversion factor for road transport schemes (0.673) from the TAG data book Table A3.2.4

5.13.2. The results of the assessment of local air quality in terms of $PM_{2.5}$ emissions are shown in **Table 5-18** and **Table 5-19.**

Table 5-18 - Distributional Impacts of $PM_{2.5}$ by Income Band (2023)

	Income Band			Total
	Low	Medium	High	
Population with increased $PM_{2.5}$	52	95	73	220
Population with decreased $PM_{2.5}$	159	332	240	730
Population with no change in $PM_{2.5}$	1541	3058	2290	6889
Net winners	106	237	166	510
Percentage of net winners/losers	21%	47%	33%	100%
Percentage of Population	22%	45%	33%	**100%**
Assessment	✓✓	✓✓	✓✓	

Table 5-19 - Distributional Impacts of $PM_{2.5}$ by Income Band (2038)

	Income Band			Total
	Low	Medium	High	
Population with increased $PM_{2.5}$	109	233	144	486
Population with decreased $PM_{2.5}$	130	240	195	565
Population with no change in $PM_{2.5}$	2635	5332	3957	11923
Net winners	21	7	51	79
Percentage of net winners/losers	26%	9%	64%	100%
Percentage of Population	23%	45%	32%	**100%**
Assessment	✓✓	✓	✓✓✓	

5.13.3. As shown above, the assessment for 2023 is for a moderate positive impact broadly in-line with the population split between income bands. The assessment for 2038 shows greater variation by income group. The number of losers increase, and winners decrease, with the absolute number of net winners in 2038 close to zero, producing percentages of net winners that vary significantly from the population proportions for each income band. However, the percentage of all losers and the percentage of all winners is more comparable with the population proportions for each income band when looking at losers and winners separately.

5.13.4. The results of the assessment of local air quality in terms of NO_2 emissions are shown in **Table** 5-20 and **Table 5-21**.

Table 5-20 - Distributional Impacts of NO_2 by Income Base (2023)

	Income Band			Total
	Low	Medium	High	
Population with increased NO_2	199	388	277	864
Population with decreased NO_2	602	1164	909	2675
Population with no change in NO_2	950	1932	1417	4300
Net winners	403	776	632	1811
Percentage of net winners/losers	22%	43%	35%	100%
Percentage of Population	23%	44%	33%	**100%**
Assessment	✓✓	✓✓	✓✓	

Table 5-21 - Distributional Impacts of NO_2 by Income Base (2038)

	Income Band			Total
	Low	Medium	High	
Population with increased NO_2	291	607	414	1311
Population with decreased NO_2	803	1583	1206	3591
Population with no change in NO_2	1781	3614	2677	8072
Net winners	512	976	792	2279
Percentage of net winners/losers	22%	43%	35%	100%
Percentage of Population	22%	45%	33%	**100%**
Assessment	✓✓	✓✓	✓✓	

5.13.5. As shown above, the assessment for 2023 is for a moderate beneficial impact broadly in-line with the population split between income bands. The assessment for 2038 is also for a moderate beneficial impact. There are increases in both losers and winners from 2023 to 2038, and overall the absolute number of net winners in 2038 is slightly higher than in 2023.

5.13.6. Overall, the forecast air quality distributional impact of the proposed scheme is positive, and disproportionally more positive for the most vulnerable groups.

5.14 DISTRIBUTIONAL IMPACTS – ACCIDENTS

5.14.1. The accident distributional impact assessment focused on accident hotspots along the A511, between the Fieldhead Roundabout on the A50 north-east of Markfield to where the A511 meets the A42 at Ashby-de-la-Zouch.

5.14.2. STATS 19 accident data were used to analyse the distributional impacts of accidents for a five-year period between 2014 to 2018, the most recent full five-year period available at the time of analysis. Accident hotspots were identified using the methodology of eight or more accidents within a 150m radius.

5.14.3. The hotspot locations identified were all junctions as follows:

- A511/A42 Ashby-de-la-Zouch;
- Stephenson Way/Thornborough Road Roundabout;
- Charnwood Arms Roundabout;
- Flying Horse Roundabout;
- A511/ M1 Junction 22; and
- Fieldhead Roundabout.

5.14.4. For each hotspot, each accident between 2014 and 2018 was evaluated against STATS19 data to identify the ones involving vulnerable social groups. Following this step, each accident involving a vulnerable group was assigned to a CoBA-LT link and for each link the accident rates with and without the scheme were compared.

5.14.5. **Table 5-22** summarises the distributional impact of accidents for the hotspots along the A511. Blank cells imply an absence of vulnerable group information for that hotspot and therefore no conclusion can be made. Changes of less than 5% between the Core and With Scheme scenarios have been assessed as 'no significant change'. Changes less than 30% have been assessed as 'slightly positive' or 'slightly negative'; greater than 30% are 'significantly positive' or 'significantly negative'. The significantly positive results on Fieldhead Roundabout are attributed to CoBA-LT forecasting a large decrease in accident rates for this hotspot.

Table 5-22 – Distributional Impact of Accidents

Hotspot Location	Vulnerable Social Group			Vulnerable Network Users		
	Children (<16)	Seniors (>70)	Young Male Drivers (17-24)	Pedestrian	Cyclists	M/cyclists
A511/A42 Ashby-de-la-Zouch	No Significant Change		No Significant Change			No Significant Change
Stephenson Way/ Thornborough Road	No Significant Change	No Significant Change	Slightly Negative			
Charnwood Arms			No Significant Change			
Flying Horse			No Significant Change			
A511/M1 Junction 22			No Significant Change			Slightly Negative
Fieldhead			Significantly Positive		Significantly Positive	

5.14.6. Overall, the impact of the interventions along the A511 according to the analysis performed for the hotspot accident locations indicates that there will be no significant changes in accident rates for the vulnerable groups. Male drivers and motorcyclists will be impacted in a slightly negative manner on Stephenson Way/Thornborough Road roundabout and A511/M1 Junction 22 respectively. The

improvements at Fieldhead Roundabout will impact young male drivers and cyclists in a significantly positive way.

5.15 INITIAL BENEFIT-COST RATIO (BCR)

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

5.15.2. The initial BCR is based on the appraisal of elements which contain the highest level of assurance. It includes monetised benefits of transport economic efficiency, Noise, Local Air Quality, greenhouse gases, physical activity, accident savings and indirect taxation impacts, but excludes adjusted benefits (journey time reliability and wider impacts)

5.15.3. It also includes third party contributions and the full scheme costs.

5.15.4. Based on the AMCB shown in **Table 5-23** the Net Present Value of the A511 MRN Growth Corridor scheme is **£24.0m.** The initial BCR of the scheme is **1.84** and means that the initial value for money category is **Medium**.

Table 5-23 – Analysis of Monetised Costs and Benefits (AMCB), 2010 Prices and Values - Initial BCR

Noise	-£1,297,798
Local Air Quality	£278,359
Greenhouse Gases	-£2,843,507
Journey Quality	-
Physical Activity	-
Accidents	-£3,201,500
Economic Efficiency: Consumer Users (Commuting)	£18,285,000
Economic Efficiency: Consumer Users (Other)	£23,944,000
Economic Efficiency: Business Users and Providers	£16,922,453
Wider Public Finances (Indirect Taxation Revenues)	£34,000
Present Value of Benefits (PVB)	**£52,121,007**
Broad Transport Budget	£28,270,441
Present Value of Costs (PVC)	**£28,270,441**
Overall Impacts	
Net Present Value (NPV)	**£23,850,566**
Benefit to Cost Ratio (BCR)	**1.84**

5.16 ADJUSTED BENEFITS COMPONENTS

5.16.1. For the adjusted benefits, two further components have been monetised for the A511 MRN Growth Corridor scheme covering journey time reliability and wider economic impacts.

JOURNEY TIME RELIABILITY

5.16.2. The change in journey time reliability has been estimated based on the guidance contained within TAG Unit A1.3, Section 6.3 for urban roads.

5.16.3. This approach considers the ratio of the assigned time within the highway model to the free-flow time as a measure of the standard deviation in journey times and monetises this using the same assumptions as adopted within the TUBA assessment of the forecast scheme impacts. This is described in detail within section 5 of the EAR (**Annex 8**).

5.16.4. The assessment of impacts upon journey time reliability predict benefits of **£3.05 million** over the 60 year appraisal period in 2010 prices and values. Around a third of the reliability benefits (£0.98 million) is attributable to business trips including freight.

WIDER ECONOMIC BENEFITS

5.16.5. In accordance with guidance set out in TAG Unit A2.1, the wider economic benefit of the A511 MRN Growth Corridor scheme has been assessed.

5.16.6. To assess the wider impacts of the scheme, the DfT's WITA software has been used. WITA implements the calculations of wider impacts as described in the TAG Unit A2.1 and associated Unit A2.2 to A2.4 (May 2018). In all cases the WITA methodology seeks only to capture the part of the above impacts that is not already captured in conventional transport user benefit calculations.

5.16.7. The approach to wider impacts has covered the following areas:

- Calculation of Agglomeration. The approach to calculating this is set out in TAG unit A2.4 Section 2.3;
- A calculation of the tax revenue from labour market impacts. This requires calculating the labour supply impact and the move to more productive jobs impact. The approach to calculating this is set out in TAG unit A2.3; and
- A calculation of the effect of output change in imperfectly competitive markets. This required the Transport Economic Efficiency (TEE) analysis undertaken by the transport consultants. The approach to calculating this is set out in TAG unit A2.2 Section 4.

5.16.8. This is described in detail within Section 9 of the Economic Appraisal Report (**Annex 8**).

5.16.9. The wider economic benefits from the elements above are shown in **Table 5-24** as a 60 year present value of benefit (PVB). This assessment shows that the scheme is forecast to provide approximately **£15.4m** of wider economic benefits through increased productivity and output. Most of the benefits (approximately **£13.6m**) are forecast to be realised through increased economies of agglomeration with the scheme improving accessibility between firms and their suppliers, markets and workers

5.16.10. There is a small gain in tax revenues from the labour market as a result of the reduced transport costs arising from the scheme creating new opportunities for employment and incentivising individuals to take on work.

5.16.11. With the improvements in travel time and reliability that the scheme provides, the lower costs of production and distribution will induce investment and hence output. This is seen as a benefit to business and is valued at £1.5 million over 60 years.

Table 5-24 – Summary of Wider Economic Benefits (£m, 2010 prices and values)

Benefit	60 year value
Agglomeration	£13,639,171
Tax revenues from the labour market impact of additional workers	£228,663
Output change in imperfectly competitive markets	£1,485,800
Total	**£15,353,634**

5.17 ADJUSTED BENEFIT COST RATIO (BCR)

5.17.1. In order to calculate an adjusted BCR for the scheme, the calculation of benefits from improved journey time reliability and the impact on the wider economy have been undertaken and added to the benefits of the scheme.

5.17.2. An adjusted AMCB table incorporating the journey time reliability and wider economic benefits is shown in **Table 5-25**. The adjusted Net Present Value of the A511 MRN Growth Corridor scheme is **£42.3 million** and the adjusted BCR of the scheme is **2.49.**

Table 5-25 - Analysis of Monetised Costs and Benefits (AMCB), 2010 Prices and Values – Adjusted BCR

Noise	-£1,297,798
Local Air Quality	£278,359
Greenhouse Gases	-£2,843,507
Journey Quality	-
Physical Activity	-
Accidents	-£3,201,500
Economic Efficiency: Consumer Users (Commuting)	£18,285,000
Economic Efficiency: Consumer Users (Other)	£23,944,000
Economic Efficiency: Business Users and Providers	£16,922,453
Wider Public Finances (Indirect Taxation Revenues)	£34,000
Journey time Reliability	£3,048,611
Wider Impacts	£15,353,634
Present Value of Benefits (PVB)	**£70,523,252**
Broad Transport Budget	£28,270,441
Present Value of Costs (PVC)	**£28,270,441**
Overall Impacts	
Net Present Value (NPV)	**£42,252,811**
Benefit to Cost Ratio (BCR)	**2.49**

5.18 ALTERNATIVE GROWTH SCENARIOS TESTS

5.18.1. The EAR includes a central case appraisal of user benefits, including the TAG high/low growth sensitivity tests around the central case using the methodology detailed within TAG Unit M4, Section 4.

5.18.2. The low and high growth scenarios are detailed within the 'A511 MRN Growth Corridor OBC Forecasting Report' – **Annex 7** and Section 3 of the Economic Appraisal Report – **Annex 8**.

5.18.3. Using these alternative growth scenarios, TUBA assessments of the scheme benefits have been undertaken using high and low growth forecast for 2023, 2026, 2038 and 2051. The results of these sensitivity tests are detailed in Table 3.6 and Table 3.7 for the high and low growth scenarios respectively.

5.18.4. The Central Case forecasts TUBA benefits of around £66m and this is forecast to increase to around £86m in the high growth scenario, an increase of around 30%. In the low growth scenario, the forecast scheme benefits reduce to around £49m, a reduction of around 25%. TUBA input/ output files are also provided as text files accompanying the EAR for the OBC submission.

5.18.5. **Table 5-26** provides a summary of the forecast scheme benefits in the three scheme assessments (Central Case, high growth and low growth) by modelled year.

Table 5-26 - Summary of Discounted TUBA Benefits (excluding greenhouse gases) by Modelled Year, 2010 Prices and Values

Year	Central Case	High Growth	Low Growth
2023	£592,000	£808,000	£462,000
2026	£952,000	£1,031,000	£742,000
2038	£1,120,000	£1,947,000	£1,081,000
2051	£1,278,000	£1,539,000	£841,000
60 year Total	**£66,045,000**	**£86,407,000**	**£48,860,000**

5.19. APPRAISAL SUMMARY TABLE

5.19.1. The Appraisal Summary Table (AST) presents evidence from the analysis that is undertaken to inform the Economic Case of an intervention.

5.19.2. Applying the principles of HM Treasury Green Book, the AST has been designed to record all impacts - Economic, Environmental, Social, Public Accounts and Distributional - at the national level.

5.19.3. The Scheme AST detailing the above monetised values or qualitative scores, is included in **Appendix G**.

ECONOMY IMPACTS

Business users and transport providers

5.19.4. The proposed scheme improves journey times for through-traffic along the A511 and improves access to the large new sustainable urban extension (SUE) to the east of Coalville via a northern link. Overall direct user benefits for the scheme is valued at **£16.9m** (Highway User Benefits **£23.8m** and Developer Contributions **-£6.9m**) in 2010 prices and values.

Reliability impacts on business users

5.19.5. The addition of the proposed scheme reduces traffic congestion, and therefore improves overall journey time reliability. Reliability benefits for the scheme is valued at **£0.9m** in 2010 prices and values.

Regeneration

5.19.6. Regeneration impacts are considered to be low.

Wider Economic Benefits

5.19.7. The scheme will lead to agglomeration benefits, labour supply and imperfect competition benefits for existing businesses and residents as a function of enhanced accessibility promoted by the scheme. These have been valued at **£15.4m** in 2010 prices and values.

ENVIRONMENTAL IMPACTS

Noise

5.19.8. A total of 8,121 residential buildings were assessed in the DMRB detailed noise assessment. The assessment concluded that out of the 8,121, 7,361 properties would not be impacted by the Proposed Scheme during the daytime and 7,886 properties would not be impacted by the Proposed Scheme at night. Noise disbenefits for the scheme are valued at **-£1.3m** in 2010 prices and values

Air Quality

5.19.9. There are two Air Quality Management Areas (AQMAs) within 200m of the DMRB Affected Road Network (ARN): one in Coalville (Coalville AQMA) which the ARN travels through; and one adjacent to the ARN at Copt Oak (Copt Oak AQMA). Both were declared for annual mean NO2. At all receptors considered within these AQMAs changes are imperceptible or small, and concentrations remain well below the objective value in the opening year.

5.19.10. As a result of the proposed scheme, no receptors are predicted to experience an increase of more than 0.4 µg/m3 in NO2 concentration where concentrations of NO2 are above the objective value of 40 µg/m3. Regional emissions of PM2.5 are predicted to increase by <0.1 tonnes/year in the proposed scheme opening year. Regional emissions of NOx are predicted to decrease by 0.4 tonnes/year in the opening year due to reductions in the distance travelled by HDV on regionally affected roads within the Area of Influence, which have offset the overall increase in distance travelled by all vehicles. Air quality benefits for the scheme are valued at **£0.3m** in 2010 prices and values.

Greenhouse Gases

5.19.11. Calculations indicate that there would be an increase of 63,600 tonnes of carbon over 60 years, with a proposed scheme opening year increase of 572 tonnes. Greenhouse Gases disbenefits for the scheme are valued at **-£2.8m** in 2010 prices and values.

Landscape

5.19.12. Located within National Character Area (NCA) Profile 73: Charnwood and 71: Leicestershire and South Derbyshire Coalfield, the urban fringe and rural landscape of the study area is of good quality where the features and elements present in the landscape are typical of the locality and within the national and regional landscape character areas. Regional character areas affected include Charnwood Forest, where land use is a distinctive mix of woodland, farmland, heathland and parkland in an upland landscape with distinctive rocky outcrops and a high proportion of woodland, and The Coalfield where there are visible effects of past and present coal and clay workings with a dense settlement pattern of former mining towns and villages following main roads.

5.19.13. The junction improvements have the greatest potential to change the way in which the local landscape character is perceived within and directly adjacent to the highway corridor due to vegetation removal and significant additional highway infrastructure and alignments, particularly with the Bardon Link Road junction. There are no statutory or non-statutory landscape designations within the study area, however the western extent lies within the National Forest. When considering visual amenity, there are a number of recreational (users of close proximity PRoW) and residential receptors who would be considered highly sensitive to changes in views. Mitigation measures in the form of new planting areas will result in improvements in the screening and landscape integration function over time, as new trees and vegetation mature. Mitigation measures in more urban fringe areas, where space constraints exist, will be limited to consideration of materials and design of highway infrastructure in relation to local built form character. The landscape impact of the scheme in the short term is considered slight adverse and in the long term neutral.

Townscape

5.19.14. Not applicable for this assessment.

Historic Environment

5.19.15. Heritage assets within the study area include one scheduled monument, 12 listed buildings and various non-designated assets. The scheduled monument is a 19th century colliery which survives almost in entirety. Associated with the colliery are the listed powder magazine, locomotive shed and office building. Other listed buildings in the study area consist of post-medieval houses, churches and a hotel, as well as two modern war memorials. The non-designated assets vary from prehistoric find spots and Roman occupation sites to medieval deer parks and post-medieval industrial sites. There may be changes to the setting of listed buildings during the construction phase of the proposed scheme. The historic environment impact is therefore considered to be slight adverse.

Biodiversity

5.19.16. No direct or indirect impacts are anticipated on International/ European statutory designated sites (comprising Special Protection Areas (SPAs); Ramsar; or Special Areas of Conservation (SAC)) and National statutory designated sites (comprising Sites of Special Scientific Interest (SSSI)). There are likely to be some limited direct and indirect effects on Regionally important statutory designated sites, including Local Nature Reserves (LNR). There are also likely to be highly localised direct and indirect effects on Regionally and Locally important non-statutory designated sites.

5.19.17. There is potential for localised loss and disturbance to Habitats of Principle Importance, including broadleaved woodland, standing eutrophic water and lowland fens at several of the proposed junction improvements. The proposals will likely result in a direct loss and disturbance of features supporting

legally protected or notable species requiring further assessment and mitigation / compensation (including bats, great crested newts and breeding birds). The biodiversity impact is therefore considered to be slight adverse.

Water Environment

5.19.18. This is a scheme where 9 roundabouts and incoming lanes will be upgraded with an associated increase in impermeable area. Increased surface water from the new impermeable areas would be attenuated to ensure no detrimental increase in flooding for receiving watercourses and would include measures to treat road runoff and contain spillages where quantitative assessment shows this is necessary. Some development within Flood Zone 2 may require flood compensation areas to be constructed, requirements for this would be determined within the FRA. It is assumed adverse impacts are identified at the next stage and can be mitigated through design to result in no significant operational effects. Natural England will be consulted to ensure no adverse impacts on the SSSI between Junction 7 and 8. The water environment impact is therefore considered to be neutral.

SOCIAL IMPACTS

Commuting and Other users

5.19.19. The proposed scheme improves journey times for through-traffic along the A511 and improves access to the large new sustainable urban extension (SUE) to the east of Coalville via a northern link. Commuting and Other Users benefits are valued at **£42.2m.**

Reliability impact on Commuting and Other users

5.19.20. The addition of the proposed scheme reduces traffic congestion, and therefore improves overall journey time reliability. Reliability impact on Commuting and Other user benefits are valued at **£2.1m.**

Physical Activity

5.19.21. The scheme proposals include just under 1km of new cycle infrastructure which, using TAG Unit A5.1, is not forecast to significantly alter active mode travel in the area. Proposed cycling facilities provide an improved and quicker route towards Coalville for residents at the Grange Road and South East Coalville developments, also introducing physical fitness and safety benefits.

Journey Quality

5.19.22. The proposed scheme reduces traffic congestion and therefore driver stress. Reduction in traveller stress due to reduced queuing and delays for vehicle traffic. The access to journey quality is therefore considered to be slightly beneficial.

Accidents

5.19.23. The proposals are forecast to generate accident disbenefits. Traffic levels across the Area of Influence increase slightly with the introduction of the scheme and a disbenefit is forecast due to the higher traffic levels in the Area of Influence. The scheme's accidents disbenefits are valued at **-£3.2m** in 2010 prices and values

Security

5.19.24. There a no changes in public transport waiting facilities, pedestrian access, provision of lighting and visibility, landscaping or surveillance. The security impact is therefore considered to be neutral.

Access to Services

5.19.25. There are no material changes in services, routeing or timings of current public transport services or change to waiting facilities, although one bus service is rerouted through the SUE. The access to service impact is therefore considered to be neutral.

Affordability

5.19.26. There are no changes in parking charges, road user charges or public transport concession availability. There are minor changes in car fuel and non-fuel operating costs. The affordability impact is therefore considered to be neutral.

Severance

5.19.27. The overall assessment is a neutral impact, with the slight beneficial impacts in the densely populated areas affected by flow changes in Forest Road and Central Road balanced by slight negative impacts in other areas and a neutral impact in most of the roads in Coalville. There is also a beneficial severance impact in the proposed tunnel under the rail line to the south of Bardon Road, needed to link the Coalville SUE with the A511. The severance impact is therefore considered to be neutral.

Options and non-use values

5.19.28. The scheme will not substantially change the availability of transport services within the study area. The option values impact is therefore considered to be neutral.

PUBLIC ACCOUNTS

Cost to Broad Transport Budget

5.19.29. Scheme costs, including QRA assessment, optimism bias, monitoring and evaluation, and maintenance have been calculated in 2010 prices and values following TAG. Cost to Broad Transport Budget is valued at **£28.9m** in 2010 prices and values.

Indirect Tax Revenues

5.19.30. The forecast change in travel speeds and distances with the proposed scheme leads to a limited change in fuel consumption resulting in a small increase in tax revenues. The impact on Central Government funding requirement is therefore valued at **-£34,000** in 2010 prices and values

5.20 VALUE FOR MONEY STATEMENT

5.20.1. The Value for Money assessment of the A511 MRN Growth Corridor scheme has been undertaken in line with TAG to support the Business Case of the scheme. As part of the assessment the economic, environmental, social, distributional and fiscal impacts of the proposed scheme have been appraised using qualitative, quantitative and monetised information.

5.20.2. TAG guidance recommends Benefit Cost Ratio (BCR) metrics to define the Value for Money category of a scheme, these are set out in

5.20.3.

5.20.4.

5.20.5. Table 5-27.

Table 5-27 - Value for money classifications

VfM Category	Implied by……*
Very High	BCR greater than or equal to 4
High	BCR between 2 and 4
Medium	BCR between 1.5 and 2
Low	BCR between 1 and 1.5
Poor	BCR between 0 and 1
Very Poor	BCR less than or equal to 0

5.20.6. The initial BCR for the scheme is 1.84 (Medium), with an adjusted BCR of 2.49 (High). This indicates the scheme offers a **Medium to High** value for money based on DfT guidance.

5.20.7. As expected, the majority of the benefits generated by the A511 MRN Growth Corridor scheme are associated with travel time savings for business and non-business road users. Improvements in Local Air Quality and journey reliability for business and non-business users also provide a small contribution to the total monetised benefits of the scheme.

5.20.8. The scheme is also expected to have a slight beneficial impact on journey quality due to reduction in driver frustration.

5.20.9. The scheme is expected to have neutral impact on severance, security, access to services, water environment and landscape in the long term.

5.20.10. Negative benefits are expected from indirect tax revenues, greenhouse gas emissions, noise, accidents and delays during construction. However, these changes are minor compared to the total value of benefit.

5.20.11. It is anticipated that the scheme will have a slight adverse effect on the local landscape in the short term and its tranquillity.

5.20.12. The impact Biodiversity is expected to also be slight adverse resulting from direct loss and disturbance of features supporting legally protected or notable species requiring further assessment and mitigation / compensation (including bats, great crested newts and breeding birds).

5.20.13. The scheme will also have the potential for a moderate adverse effect on Historic Environment, due to potential changes to the setting of listed buildings during the construction phase of the proposed scheme.

5.20.14. As a result of the above assessments, it is considered that the non-monetised impacts above lead to an overall slight reduction in the value for money of the scheme overall, although it is not considered that the scale of the impacts would affect the VFM category.

5.20.15. Also, the scheme would will lead to agglomeration benefits, labour supply and imperfect competition benefits for existing businesses and residents as a function of enhanced accessibility promoted by the scheme. Resulting in significant wider economic benefits

5.20.16. A number of sensitivity tests have also been carried out to provide further assurance around the value

for money of the scheme. The results show that the low and high traffic growth forecasts result in a reduction of scheme benefits of 25% and increase in scheme benefits of 30% respectively.

5.20.17. To drop the initial value for money from a Medium to a Low category would require an increase in the PVC of 28% or a reduction in the PVB of 22%. On the other hand, it would only require a 5% reduction in the PVC or 5% increase in the PVB for the initial value for money category to become High. This reflects the BCR being close to the upper limit of the Medium value for money category.

5.20.18. To drop the adjusted value for money from a High to a Medium category would require an increase in the PVC of 29% or a reduction in the PVB of 23%. On the other hand, it would require a 35% reduction in the PVC or 55% increase in the PVB for the adjusted value for money category to become Very High. This reflects the BCR being closer to the lower limit of the High value for money category.

5.21 SUMMARY

5.21.1. Analysis of the monetised impacts shows that the A511 MRN Growth Corridor scheme offers 'Medium to High Value' for Money.

5.21.2. Sensitivity testing has shown that even with lower levels of future growth of the economy and traffic the scheme is expected to continue to have high value for money including all usually monetised impacts.

5.21.3. As expected, the majority of the benefits generated by the A511 MRN Growth Corridor scheme are associated with travel time savings for business and non-business road users, and which is in line with scheme objectives.

5.21.4. Improvements in Local Air Quality, and journey reliability also provide contributions to the total monetised benefits; again, these are key objectives of the scheme. More importantly the latter, with the route resilience function in support of the Strategic Road Network.

5.21.5. Whilst accidents in the Area of Influence are forecast to increase slightly overall (as a result of more car travel and demand in the area of interest), on a per trip basis a journey on the road is no more dangerous and arguably less dangerous due to the proposed improvements, but there are more trips on the road due to reduced congestion hence the likelihood of more accidents and therefore negative accident benefits.

5.21.6. There is a small increase in accidents with the scheme. This is down to an increase in traffic on the road. This quantitative analysis is limited to road vehicle accidents. The safety benefits for non-motorists such as pedestrians is not captured but would be positive given the enhancement of pedestrian crossing facilities as part of the scheme

5.21.7. It is anticipated that the scheme will have a slight adverse effect on the local landscape and its tranquillity in the short term, and the impact on Biodiversity is expected to also be slightly adverse.

5.21.8. The scheme will also have the potential for a moderate adverse effect on Historic Environment. This is due to potential changes to the setting of listed buildings during the construction phase of the proposed scheme.

6 FINANCIAL CASE

6.1 INTRODUCTION

6.1.1. The Financial Case concentrates on the affordability of the proposal through an assessment of scheme costs and funding arrangements.

6.1.2. Prior to the Covid pandemic the cost of delivering the A511 MRN Growth Corridor scheme was reported as £46.96m at out-turn prices. This allows for inflation and quantified risk.

6.1.3. Following work carried out during the pandemic and a reappraisal of the costs delivering the A511 MRN Growth Corridor scheme will be **£47.57m** at out-turn prices. This allows for inflation and quantified risk. The main area of increases has been in Fees and Risks. Construction costs have not been revised as it is too early to assess the impact the pandemic will have on construction contracts. The assumption has been taken that, with government intervention, the economy will recover within the lifetime of the scheme.

6.1.4. The above excludes any cost prior to completion of the OBC, Part 1 claims, monitoring costs and evaluation costs.

6.1.5. Owing to the scheme's relative age and design its lifetime maintenance cost is expected to be no higher than the existing road over the same duration. As with the existing road the cost of maintenance would therefore be covered by Leicestershire County Council highway maintenance budget. However, a provisional value of **£1,586,513** (2020 Q2 factor prices) has been included in the scheme construction costs to cover commuted sums for the maintenance and renewal of structures and installations such as traffic signals

6.1.6. LCC has approached the assessment of affordability by employing an appraisal of scheme costs which have been built up from detailed construction, land, preparation and supervision costs associated with the scheme's design; supported by ECI involvement.

6.1.7. The costs of delivering the A511 MRN Growth Corridor scheme are presented in this chapter step by step with base costs discussed in **Section 6.3**, adding risk in **Section 6.4**, and inflation in **Section 6.5**.

6.2 METHODOLOGY

6.2.1. The Financial Case for the A511 MRN Growth Corridor scheme is based on scheme design, development and Early Contractor Involvement (ECI) relating to the costing of the preferred scheme option, by LCC and Morgan Sindall.

6.2.2. Morgan Sindall were appointed through the Midlands Highways Alliance Medium Schemes Framework contract to work with Leicestershire County Council (LCC) to deliver an ECI service for the proposed A511 MRN Growth Corridor Scheme. This has focussed on the deliverability and refinement of approach and costs associated with key cost items (and subsequent risks) associated with structures

6.2.3. The scheme drawings are provided in **Appendix B,** and detailed cost breakdown in **Appendix H**.

6.2.4. The scheme costs have been independently reviewed by Waterman Aspen as part of the OBC submission. Their report is provided in **Appendix I** of the OBC, as well as being considered in this chapter.

6.3 BASE COSTS

6.3.1. The estimated base costs for the scheme are set out in Table 6-1**.**

6.3.2. In line with guidance, these include preparatory costs associated with the scheme design, full business case development, land acquisition, construction preliminaries and scheme construction and supervision.

BASE COST OF SCHEME DEVELOPMENT AND CONSTRUCTION

6.3.3. The estimated base cost of the scheme, in 2020 Q2 prices, excluding Part 1 claims, monitoring and evaluation, future inflation, risk and non-recoverable VAT, is **£36,999,918**.

6.3.4. A full and detailed breakdown of the costs is provided in **Appendix H** and are summarised in Table 6-1 below.

Table 6-1 - Base Cost

Category	Estimated Base Cost July 2020 Q23 prices (£,000)
Preparation Costs	£3,323
Land Costs	£1,162
Construction Costs	£32,515
Total Base Cost	**£37,000**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost.

6.3.6. As can be seen from the table above the majority (>85%) of the overall scheme base cost can be attributed to construction costs. With the other expenditures of land, preparation and supervision making up the remainder of the base cost total.

6.3.7. All construction costs have been calculated from the date of publication of the original OBC and include expected expenditure from the end of December 2019. Any costs previous to this have not been included. These costs have been reappraised up to mid July 2020.

6.3.8. Preparation costs include all costs which will be incurred beyond July 2020 for detailed design, EIA and planning, along with future expected CPO. Despite the pandemic work has continued as safely as possible during the pandemic.

6.3.9. Cost estimates have been prepared by LCC's in-house experienced quantity surveying team, together with ECI contractor Morgan Sindall to provide particular advice on higher risk items. Land costs have been calculated from LCC's dedicated in-house land and valuation team.

6.3.10. A full independent check of the scheme costs has been undertaken by Waterman Aspen and is included in **Appendix I**.

6.4 ESTIMATE UNCERTAINTY

6.4.1. The estimate of the scheme cost at its current stage of delivery includes an allowance for risk and

uncertainty. There are multiple elements that could affect the final cost, and for this reason, the scheme cost estimate includes allowances for both estimating uncertainty and events-driven uncertainty, or risk[6].

6.4.2. An allowance for estimating uncertainty is included in the base costs for each element of the scheme, based on experience with similar schemes at this stage of development.

6.4.3. The treatment of risk, and the calculation of quantified risk – the Quantified Risk Assessment (QRA) - is described below.

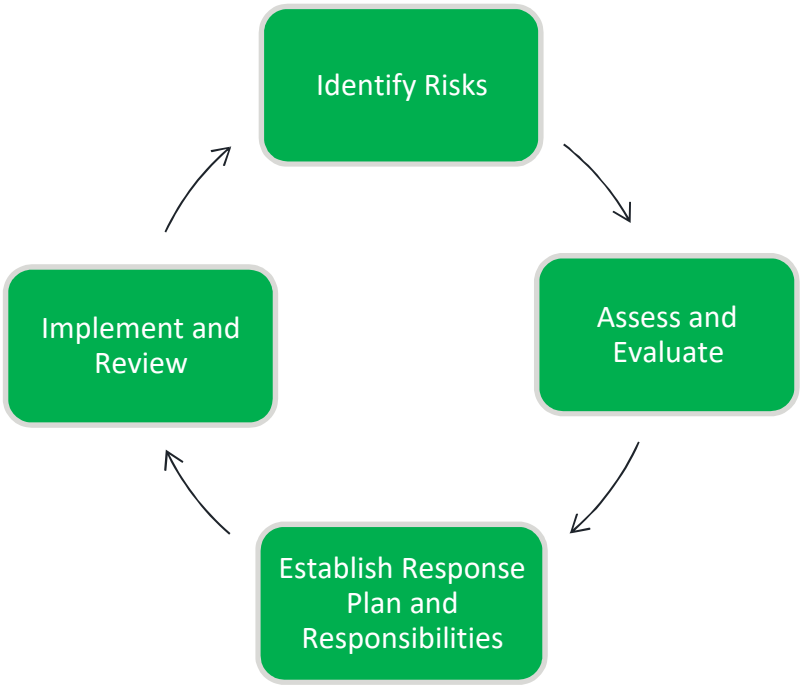
MANAGING RISK

6.4.4. The Treasury Green Book states that *"effective risk management helps the achievement of wider aims, such as effective change management, the efficient use of resources, better project management, minimising waste and fraud, and supporting innovation".*

6.4.5. The process of managing and reviewing a wide range of project risks and ensuring an appropriate transfer of risk to the contractor, is described more fully in the Management and Commercial Cases.

6.4.6. A four-stage risk management process has been followed, as illustrated in **Figure 6-1** below.

Figure 6-1 - The Four-Stage Risk Management Process

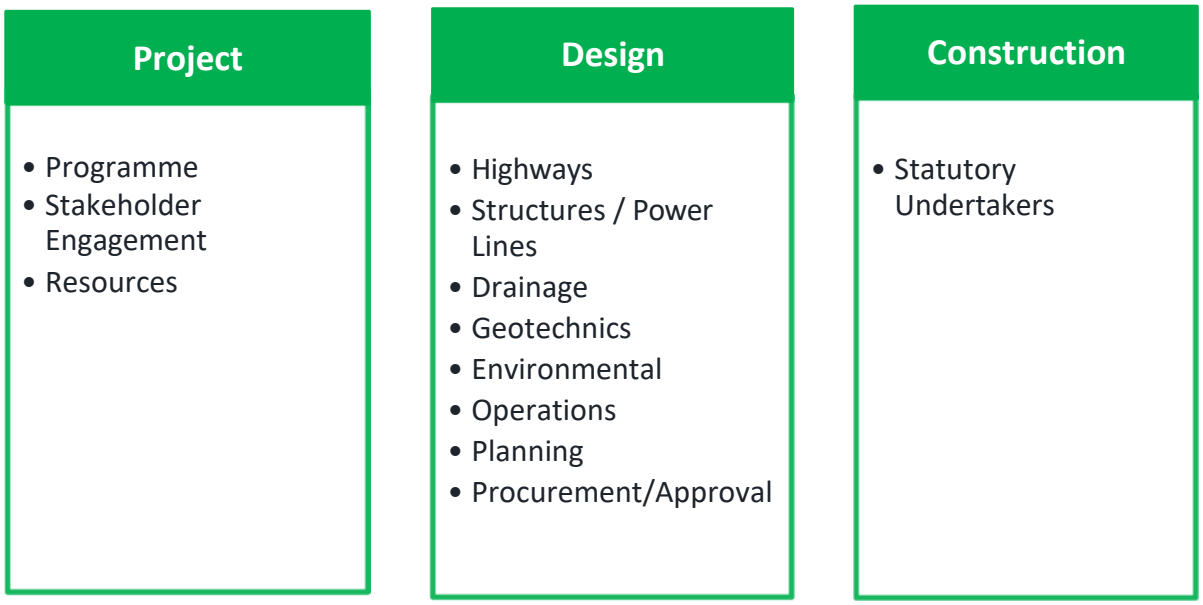


[6] Risk allowance is a factor applied to project costs to act as a contingency for unforeseen circumstances.

IDENTIFYING RISK

6.4.7. Risks have been identified through the development of a full and detailed risk register for the scheme's development, planning and construction. Key, specific risks for the development of the A511 MRN scheme have been included in this section, with the full Quantified Risk Register included in **Appendix J.**

6.4.8. The Risk Register covers project, design and construction, and cover risks under the following categories:



6.4.9. Headline risk identified for the A511 MRN Growth Corridor scheme include:

- Revisions to NWL contribution strategy not agreed leading to a reduction in S106 money
- Change of government changes emphasis on capital funding, putting funding source at risk
- Lack of clarity over OBC submission delays decision on funding from DfT
- Network Rail's property team may impose a charge for changes to agricultural bridge. This is considered case-by-case, taking account of the purpose of the crossing. It can be a significant sum. Significant additional project cost.
- Insufficient time to obtain planning approval prior to submitting FBC
- Adverse camber at roundabouts require junction regrading
- Lack of political support for the scheme which delays scheme approvals
- Availability of suitable hydraulic models from the EA. Could impact programme by delaying confirmation of the proposed design of new structures, earthworks and highway alignment.
- Uncertainty over Brexit leads to increase in materials and costs
- Current issues regarding insufficient drainage capacity exacerbated by the scheme

6.4.10. The impact of these has been rated using a risk score matrix combining probability and impact factors and are shown within the risk register provided in **Appendix J**, and Appendix A of the Economic Assessment Report (Annex 8).

6.4.11. QUANTIFIED RISK ASSESSMENT

6.4.12. TAG Unit A1.2 requires that all project related risks that may impact on the scheme costs should be identified and quantified in a Quantified Risk Assessment (QRA), in order to produce a risk-adjusted cost estimate.

6.4.13. This has been undertaken for the A511 MRN Growth Corridor scheme based upon the risk register, and probability and impact factors. The range of possible costs associated with each risk was estimated, and each risk was assigned a high, medium or low value.

6.4.14. Cost risk and uncertainty has been assessed using a Quantified Risk Assessment (QRA) which is then used to produce a risk-adjusted cost estimate, following TAG Unit A1.2 guidance.

6.4.15. Risks have been assessed for preparation, construction and supervision costs using the following methodology, based on TAG Unit A1.2 §3.2.

6.4.16. A collaborative planning workshop held on 9th September, which was attended by a number of specialists. This workshop was used to further develop the QRA, ensuring that risk were not only identified but ownership was assured.

RISK IDENTIFICATION

6.4.17. A comprehensive risk register has been developed to identify potential risks (and their most likely costs) that are likely to affect the delivery of the scheme. The risk register has been developed with contributions from the appointed ECI contractor (Morgan Sindall). The detailed risk registers are shown in **Appendix J**.

6.4.18. Overall, 74 risks have been identified, consisting of 16 project risks, 54 preparation (design) risks and 4 construction risks. For each, a 'most likely' cost has been estimated together with a 'likelihood' chance of it occurring, using empirical evidence and previous experience on similar projects or common sense. These two variables form inputs to the risk model.

ASSESSING IMPACTS OF RISK TO DETERMINE POSSIBLE OUTCOMES

6.4.19. For each risk, the minimum and maximum likely impacts have been monetised, using empirical evidence, previous experience on similar projects, or common-sense approximations as appropriate. Risk costs have been derived pre- and post-risk mitigation. The post-mitigation impacts have been used for the QRA assessment. These are the residual risks following mitigation spending, which has been treated as a fixed cost within the QRA.

6.4.20. For each risk identified in the risk register, a cost is associated with a likelihood of occurrence, expressed as a percentage. A risk rating system has been devised that rates the severity of the risk into 'very low', 'low', 'moderate', 'high' and 'very high' based on a combined cost and likelihood measure. Design and construction cost impact has been calculated by multiplying costs with their associated likelihood of occurrence.

6.4.21. The use of this process allows the client to identify areas of more significant risk and their associated mitigation opportunities, enabling an informed decision to be made on the value of allocating upfront funds to provide options for alternative design or construction solutions. The overall benefit of ECI engagement in the risk management process is the lowering of the potential outturn cost and/or budget uncertainty.

6.4.22. The established process used by the project team, provides a realistic assessment of risks at this stage in the scheme's development. The risk profile naturally alters as project scope, design details, and constraints change over time.

6.4.23. The Risk Register undergoes periodic review and will be continually updated as the scheme develops to incorporate any new, mitigated, or revised risks, as also detailed in the Management Case. As a first step to this, a collaborative planning event at which all the specialist, the client, designers and contractor considered the risks identified and contributed to identifying those additional risks which had not been identified.

ESTIMATING THE LIKELIHOOD OF THE OUTCOMES OCCURRING

6.4.24. The likelihood of each outcome occurring has been derived based on past experience; there is inevitably an element of uncertainty in doing this, as recognised in TAG Unit A1.2.

6.4.25. For each risk, a lower bound and an upper bound of the associated risk cost have been calculated. For the purposes of this QRA, it is based on the assumption that the probability distribution of the likely outturn cost is distributed around the mean in a symmetrical triangular distribution, where lower and upper values occur at a fixed interval of 0.5 either side of the mean. The assumptions made in the risk register are shown in Appendix A of the Economic Assessment Report (Annex 8).

DERIVING THE PROBABILITY DISTRIBUTION FOR THE COSTS OF THE SCHEME

6.4.26. QRA allows a probability distribution around the costs of the scheme to be derived and enables the expected risk-adjusted cost estimate to be obtained. This expected outcome, also known as the 'mean' or 'unbiased' outcome is the weighted average of all potential outcomes and associated probabilities. This is the (risk-adjusted) mean estimate of the cost of the scheme.

6.4.27. The risk assessment software @Risk has been used as an add-in feature in MS Excel using Monte Carlo simulation to estimate all possible outcomes and their associated risks. The model runs for a pre-defined number of iterations to create a probability distribution around the costs of the scheme. Potential correlations between the individual risks were considered and it was concluded that there were none which would have an impact on the analysis.

6.4.28. Sensitivity tests have been performed to assess the impact of some of the assumptions on the final outcome; these are discussed following a summary of the QRA outputs.

QRA OUTPUTS

6.4.29. The Monte Carlo simulation has been run for 10,000 iterations in order to build the probability distribution for the QRA. The total cost is represented by the mean of the outturn probability distribution.

6.4.30. The mean, P50 and P80 are the output probabilities required by TAG in a QRA, needed for the economic assessment of the scheme. These are outlined in **Table 6-2**.

Table 6-2 – Mean, P50 and P80 Values from the QRA

	Mean	P50	P80
QRA Assessment	£7,750,954	£7,7765964	£10,982,822

6.4.31. The values for the QRA are those used to adjust the base cost for the proposed scheme. The risk register has not considered phasing, so the QRA outputs will be applied with the same profile as the assumed spend profile for the scheme costs discussed in **Section 6.6.**

Sensitivity Analysis

6.4.32. In order to test the assumptions made in the risk model, a sensitivity analysis was performed. A 'Tornado Analysis' was used to identify the individual risks that had the highest impact on overall cost. The risks with highest impact and their descriptions are set out in **Paragraph 6.4.9**.

6.4.33. Services found to be in location different to that expected requiring diversion / protection.

6.4.34. The next step was to change the lower bound from 0.50 to 0.75 only for the risks which have the highest impact on total cost. This allows us to examine the sensitivity of our assumption and quantify its impact on the total cost. The output probabilities from the sensitivity analysis are shown in **Table 6-3**. Small variations can be seen in the mean of around 5.5% from the original set of assumptions which is as would be expected.

Table 6-3 - Mean, P50 and P80 Values from the QRA – Sensitivity Test

	Mean	P50	P80
Total Design Cost	£7,811,110	£7,800,490	£9,460,668

Risk Adjusted Cost

6.4.35. The risk adjusted total cost is set out in **Table 6-4** below. The risk value of £7,720,300 is the 'deterministic' costs from the project risk register. The cost differs slightly from the mean value in **Table 6-2** which is the outturn cost of the QRA Monte Carlo simulation.

Table 6-4 – Scheme Cost Adjusted for Risk

	2020 Q2 Prices (£)
Base Cost	£36,999,918.
Quantified Risk	£7,720,300
Total Risk-Adjusted Base Cost	**£44,720,218**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost**.**

Established Risk Response Plan & Responsibilities

6.4.36. Having identified scheme risks, responsibilities will be allocated to the most appropriate party and response plans developed.

6.4.37. Design risks will rest with the Designers, supported by ECI involvement. Design and risk mitigation/ reduction work will continue straight after submission of the OBC to minimise timescales of detailed design and future statutory procedures. This will also help further reduce risks, prior to scheme construction procurement, at which point risks will become shared between the contractor and LCC.

6.4.38. This progression of more detailed early work around critical risk items, in particular around structures, potential power line diversions and ground investigation works is discussed further in the Commercial and Management Cases, on the basis of one of four possible strategies will be adopted for each risk:

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

6.5 OUT-TURN PRICE ADJUSTMENT (INFLATION)

6.5.1. Inflation will mean that the actual amount of money to be spent on the scheme will differ from the 2020 Q2 estimates, even when including additional risk.

6.5.2. An allowance for inflation has therefore been calculated for each future year.

6.5.3. Construction inflation has been derived from the ROCOS (Resource Cost Index of Road Construction) combined price index Q2 2020.

6.5.4. Between Q2 2020 and Q3 2025 the CAGR for this measure of inflation is 1.2%.

6.5.5. The same index has also been used for land cost inflation. Two years of inflation has been applied to the 2019 Q3 costings, but it is expected that all land purchase will be completed before the end of 2022.

6.5.6. The total inflation allowance for the scheme costs is therefore **£3.50m**.

6.5.7. Added to the previous total of **£44.72m**, provides an overall scheme cost of **£47.57m**, matching that presented in the introduction of this chapter in **Section 6.1**.

6.5.8. **Table 6-5** provides a breakdown of the scheme cost by key items.

Table 6-5 – Scheme Cost Outturn to Future Inflation

	Preparation costs (between OBC and construction)	Land purchase	Construction costs	TOTAL
Base Cost	£3,323,064	£1,162,000	£32,514,853	**£36,999,918**
Risk	£967,132	£213,430	£6,539,738	**£7,720,300**
Inflation	£75,307	£38,127	£2,733,488	**£2,846,923**
Total	**£4,365,504**	**£1,413,557**	**£41,788,079**	**£47,567,140**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost.

6.5.9. This is the amount of money actually needed to deliver the scheme and is the basis for the funding bid and future local/third party contributions.

6.6 SPEND PROFILE

6.6.1. In line with guidance, **Table 6-6** and **Figure 6-2** shows the costs broken down and profiled over the length of the scheme delivery period.

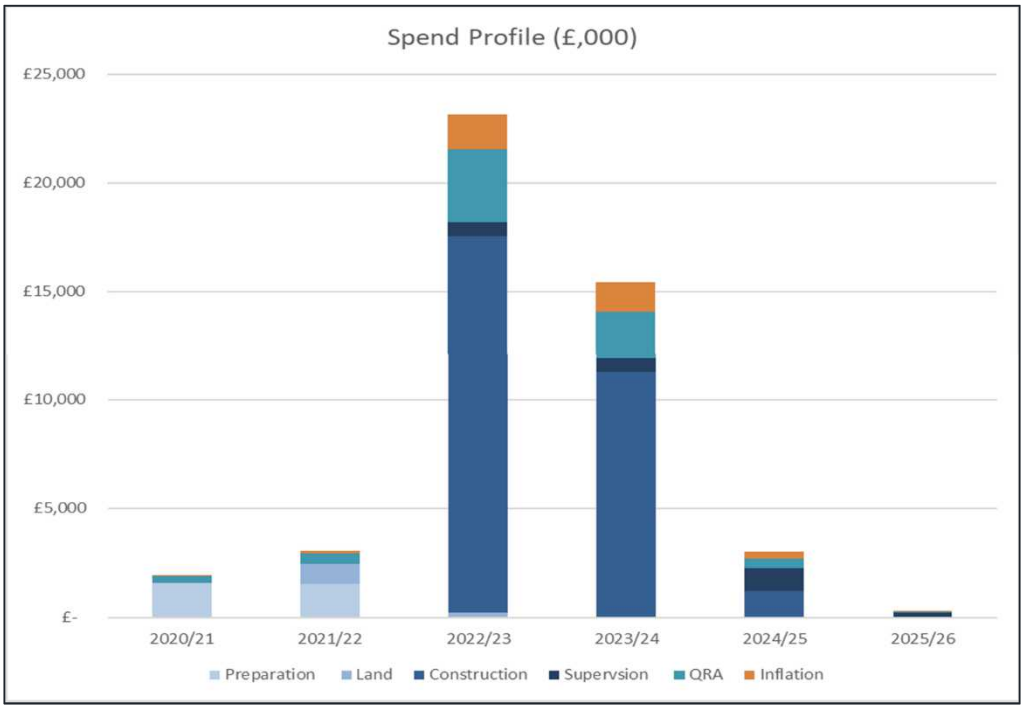
6.6.2. Subject to funding, construction of the scheme will start in mid-2022 and the scheme will be fully completed in mid-2025.

Table 6-6 – Risk Adjusted Forecast Expenditure (2020 Q2 prices except where stated)

(£,000 inc inflation)	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	TOTAL
Preparation Costs	£1,929	£1,394	£-	£-	£-	£-	**£3,323**
Land Costs	£-	£911	£251	£-	£-	£-	**£1,162**
Construction Costs	£-	£-	£17,080	£11,200	£1,142	£0	**£29,422**
Supervision Cost	£-	£-	£1,130	£570	£1,151	£241	**£3,093**
QRA	£481	£486	£3,789	£2,443	£476	£45	**£7,720**
Inflation	£0	£75	£1,201	£1,151	£374	£46	**£2,847**
Risk Adjusted Base Costs (outturn prices)	**£2,410**	**£2,866**	**£23,451**	**£15,364**	**£3,143**	**£332**	**£47,567**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost.

Figure 6-2 - Spend Profile Chart



6.7 WHOLE LIFE COSTS

6.7.1. Although the funding bid is for a contribution towards the capital costs only of delivering the scheme, the business case should also consider its whole-life costs.

6.7.2. These include the costs of maintaining the highway and associated infrastructure and the longer-term costs of infrastructure renewal.

6.7.3. Owing to the scheme's relative age and design its lifetime maintenance cost is expected to be no higher than the existing road over the same duration. As with the existing road the cost of maintenance would therefore be covered by Leicestershire County Council highway maintenance budget. However, a provisional value of **£1,586,513** (2019 Q3 factor prices) has been included in the scheme construction costs to cover commuted sums for the maintenance and renewal of structures and installations such as traffic signals

6.7.4. A commitment to the future costs of maintaining the road and assets is included in the S151 officer letter supporting the scheme.

6.7.5. The scheme is not expected to generate any direct income.

6.8 FUNDING STRATEGY

6.8.1. The A511 MRN Growth Corridor scheme will be funded from a combination of national government and local/ third party contributions.

LOCAL/THIRD PARTY CONTRIBUTION

6.8.2. The Coalville Growth Corridor is identified in the LLEP Strategic Economic Plan as an important east-west link that with sufficient transport investment would support significant housing and employment growth. 5,000 homes are planned around the Coalville corridor; the logistics sector (which is heavily represented in the area) relies on high quality links to the A46 and motorway network. North West Leicestershire District Council has implemented a 'Contribution Strategy' in Coalville in order to prioritise and fund infrastructure projects. The scheme requires developers to pay a defined contribution based on the number of homes or employment delivered. The District Council in conjunction with the Highways Authority then identify and prioritise schemes to support the growth in the town.

6.8.3. The total local contribution towards the risk adjusted scheme cost is 15%, comprised of local and cashflowed private sector contributions in advance of their receipt (secured through the Coalville Growth Corridor).

6.8.4. **£7.14m** of funding will be secured towards the risk adjusted Base Cost through the Coalville Growth Corridor. This excludes the contribution to monitoring and evaluation and Part 1 claims costs (£247,200).

6.8.5. A signed declaration from LCC's Section 151 Officer has been included as part of the OBC submission confirming the above.

FUNDING REQUEST AND PROFILING

6.8.6. **Table 6-7** provides a breakdown of contributions being sought from the various funding sources to cover the scheme costs:

Table 6-7 – Funding Sources (£000)

Funding Source	£m	%
Major Road Network Fund	£40,432	85%
Coalville Growth Corridor	£7,135	15%
TOTAL	**£47,567**	**100%**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost.

6.8.7. The amounts and profiling of funding arrangements from 2020 are set out on **Table 6-8** below. This does not include expenditure prior to completion of the OBC in December 2019.

Table 6-8 – Funding Request and Profiling (£000s)

	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Total	% Total
Requested funding from DfT	£2,410	£2,866	23,451	11,705	£-	£-	**£40,132**	**85%**
LA Contribution *(separate line for each authority)*	£-	£-	£-	£-	£-	£-	**£-**	**0%**
Third Party Contribution *(separate line for each body)*	£-	£-	£-	£3,660	£3,143	£332	**£7,135**	**15%**
Total	**£2,410**	**£2,866**	**23,451**	**15,364**	**£3,143**	**£332**	**£47,567**	**100%**

Notes: excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost.

6.9 SUMMARY OF THE FINANCIAL CASE

6.9.1. The cost of delivering the A511 MRN Growth Corridor scheme, including allowance for risk and inflation will be **£47.57m**.

6.9.2. The Coalville Growth Corridor is identified in the LLEP Strategic Economic Plan as an important east-west link that with sufficient transport investment would support significant economic growth for Coalville and the wider region. In recognition of the local and regional importance of the A511 MRN Growth Corridor, Leicestershire County Council (LCC) and North West Leicestershire District Council (NWLDC) commits to the required 15% local contribution towards the risk adjusted scheme cost, to be secured via local and cashflowed private sector contributions in advance of their receipt (secured through the Coalville Growth Corridor).

6.9.3. Monitoring and evaluation costs of **£47,200** together with Part 1 claims costs of **£200,000** will also be covered by local private sector contribution but they are not included in the risk adjusted base cost.

6.9.4. This amounts to a total local contribution of **£7,382,271** of which **£7,135,071** is 15% of the risk adjusted base cost at 2020 Q2 prices excluding monitoring and evaluation and Part 1 claims.

6.9.5. The availability of this amount is confirmed by a signed S151 officer letter, and that confirms cash-flowed use of local and private sector funding in advance of their receipt toward the scheme to secure a total local contribution of **£7.4m in outturn prices** (made up of the 15% required local contribution for MRN funding and Part 1 Claims and monitoring and evaluation fees).

6.9.6. A robust management strategy is in place to identify, quantify, manage and review risks that has been developed with design and ECI involvement, alongside use of a QRA. Details of the risks identified can be found in **Appendix J** and further details of risk and contract management are also included in the commercial and management Cases respectively.

7 COMMERCIAL CASE

7.1 INTRODUCTION

The Commercial Case provides evidence on the commercial viability of a proposal and the procurement strategy that will be used to engage the market. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the LCC team delivering the project.

7.2 COMMERCIAL VIABILITY

7.2.1. LCC has considered commercial viability on the project through an analysis of various key project drivers including deliverability, cost certainty, risk allocation / transfer, procurement strategy and commercial delivery.

7.2.2. The OBC focusses on understanding the output of the project with regards to the project specification, outlining the project procurement strategy and highlighting an initial identification of risk and proposed approach to resource allocation.

7.3 PROJECT SPECIFICATION

7.3.1. In this section of the Commercial Case the Output Based Specification for the project is presented.

7.3.2. The outcomes and outputs of the project are dealt with in Section 8.9 of this report. These outcomes and outputs have been developed through a process of Logic Mapping.

7.3.3. **Scheme Outcomes** for the project are summarised below:

- Make journeys on the A511 faster and more reliable.
- Provide a resilient and safer road network, resilient to road collisions.
- Improve reliability and capacity for freight along the A511 Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.
- Support North West Leicestershire DC's objectives of facilitating growth by delivering transport infrastructure; and potentially support the delivery of at least 25ha of employment land and at least 3,500 new dwellings.
- Improve connectivity for all road users, with particular focus on vulnerable road users.
- Support the SRN by providing a reliable and resilient link to the M1 and the A42.
- Improve air quality and traffic noise impact along the corridor.
    - Support public transport operations along the corridor through the provision of a less congested and reliable route, and in so doing encouraging the use of sustainable transport;
    - Opportunities for improving safety of corridor users, especially non-motorised road user by providing better and safer crossing facilities at the key junctions along the corridor

7.3.4. **Scheme Outputs** for the project are summarised below:

- Provision of a new section of road to link the A511 to the south east Coalville SUE;
- Dualling of a section of the A511 Stephenson Way;
- Capacity improvements at 8 key junctions along the A511.

7.4 PROCUREMENT STRATEGY

7.4.1. LCC have considered a full range of procurement options to secure best value through ensuring a strong, fair and open competition, in line with best practice for managing public money.

7.4.2. The Preferred Option for procurement and delivery is the Midlands Highways Alliance (MHA) Framework.

7.4.3. The benefits of this route for both LCC and ensuring taxpayer value have been made clear in the Procurement Strategy. These benefits are as follows:

- Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable. This thereby reduces risks to a level that is 'as low as reasonably practicable'.
- Allow mobilisation quickly and allows greatest time and opportunity for ECI to achieve lowest outturn cost.
- Use of an NEC4 Option C contract, with mature and well-established risk allocation and transfer between parties; along with established tolerances to provide greater cost and programme certainty, along with a pain/gain mechanism to incentivise delivery against both programme and target cost.
- The ability to measure performance through the MHA framework and management tools, with significant previous experience and demonstrable best value of this procurement route.

7.5 PROCUREMENT METHOD

7.5.1. LCC has developed the scheme through to preferred option stage during the production of this Outline Business Case.

7.5.2. The PSP3 framework will be used to procure resources to produce the Full Business Case and associated tasks and preparing the documents required for the Environmental Impact Assessment, Planning and anticipated Compulsory Purchase Order process.

7.5.3. This ensures continuity of approach and retains invested scheme knowledge to build a robust defence against any potential objections, before the procurement of the construction contract.

7.5.4. In order to accelerate the programme to a point where LCC could meet timescales for an application to Major Road Network funding in December 2019 and to be well placed to make further progress on scheme development in early 2020, the decision was taken to appoint AECOM through the existing Professional Services Partnership (PSP3) as part of the Midlands Highways Alliance to preparing the documents required for the Environmental Impact Assessment, Planning and anticipated Compulsory Purchase Order process.

7.5.5. Although, design and build is an option open to the authority through the Midlands Highways Alliance Framework, given the stage in the design process we will be at when this is in place, and critically the importance of continuity in delivery, it is not considered desirable to transfer the design role to an alternative supplier at a later stage.

7.6 PROCUREMENT OPTIONS

7.6.1. In determining the outcomes and outputs of the project identified at the start of this section, a number of routes to market are available to LCC for the construction of the A511 MRN Growth Corridor scheme.

7.6.2. These include:

- In House Delivery;
- Midlands Highways Alliance Framework;
- Full OJEU procurement (and sub-variations thereof); and
- National and Regional Frameworks.

7.6.3. The advantages/ disadvantages of each of these are discussed below.

IN HOUSE DELIVERY

7.6.4. LCC has no capacity to deliver a scheme of this size in house, and whilst considered this was dismissed at an early stage.

7.6.5. LCC does however retain design and procurement specialists, and an in house major projects delivery team that will be used to oversee the procurement exercise and manage the contract. This is detailed Section 7.8 under contract management.

MIDLAND HIGHWAYS ALLIANCE FRAMEWORK (MHA)

7.6.6. MHA is now in its twelfth year, and its key and over-riding original objective is to develop an effective procurement option for the delivery of highway schemes.

7.6.7. The MHA is developed and run with the support of the Regional Improvement and Efficiency Partnership, now working together with other similar regional construction frameworks. The current MSF3 framework closely follows the most recent National Construction Category Strategy for Local Government - Effective Construction Frameworks, January 2016.

7.6.8. The scope of both previous frameworks has been defined as being for the execution of highway, civil and municipal engineering, and that makes it suitable for procurement for the MRN A511 Growth Corridor scheme.

7.6.9. The latest version of this framework, MSF3 commenced in June 2018, run through an OJEU procurement exercise, and with no Lot restrictions on suppliers Under MSF3 selection is limited to four suppliers. LCC has significant and consistent experience in use of the framework. The maturity of the framework and contractual protocols provide a number of advantages in particular on management of risk and no upper ceiling on scheme cost. It also offers additional NEC contract options that can be selected as part of the procurement exercise and market testing.

7.6.10. The framework also allows for Early Contractor Involvement (ECI). The ability to mobilise quickly allows greatest time and opportunity for ECI to achieve lowest outturn cost. Case studies carried out by the MHA demonstrate that ECI has generated savings of over £16 million through MSF2 up to March 2017. These case studies are available on the MHA website.

FULL OJEU TENDER

7.6.11. OJEU Tender can take a number of forms; from fully open procedures, to more restricted procedure, with/without competitive dialogue and negation.

7.6.12. The following were considered by way of full OJEU procurement routes for the A511 MRN Growth Corridor scheme:

- Open Procedure
  - → This procedure allows an unlimited number of interested parties to tender against defined parameters. There are no restrictions (e.g. pre-qualification) on the parties who are permitted

to tender, meaning that some parties may not be suitable to carry out the work.

→ This procedure is straightforward and transparent but can attract a large number of potential bidders (which will require a greater degree of assessment and resource requirements).

→ However, and importantly, this route is not usually recommended for construction projects due to the high number of tenders that could be expected and the particular skills and experience that may be required of potential bidders.

→ It also takes considerable time and resource, as well as limiting time for ECI, and buildability input by the contractor.

- Restricted procedure

→ This would be a two-stage procedure. The first stage allows the contracting authority to set the minimum criteria relating to technical, economic and financial capabilities that the potential bidders must satisfy. Following evaluation of the responses to the first stage a minimum of five bidders (unless fewer qualify) are invited to tender in the second stage.

→ Whilst advantageous, this has already been recently undertaken with respect of the framework for MHA with a wide range of contractors in place under MSF3 to be used for the MRN A511 Growth Corridor scheme.

- Competitive Procedure with Negotiation

→ This relatively new procedure is intended to be used where minimum requirements can be specified but negotiations with bidders may be needed to improve the initial tenders. This is generally however used where needs cannot be met without adaptation of readily available solutions, or where the contract includes design or innovative solutions. This route is not considered appropriate for the MRN A511 Growth Corridor scheme as neither of the requirements apply based on design and ECI input to date.

OTHER NATIONAL AND REGIONAL FRAMEWORKS

7.6.13. Other routes to market also considered as part of the Commercial Case have included:

National

- SCAPE National Infrastructure Framework (sole provider);
- Highways England Collaborative Delivery Framework;

Regional (these all include various size lots and different forms of contract)

- YOR Civils;
- Southern Construction Framework; and
- Eastern Highway Alliance.

7.6.14. These routes generally take significant time to do the necessary internal audit checks, delaying procurement. In addition, on other regional frameworks it may not be possible to meet the criteria to join or make use of the framework in the scheme delivery timescales.

7.6.15. Whilst other available regional and national frameworks have been considered, internal workshops have established greater knowledge, operation and experience with contractors on the MSF3 pool.

7.6.16. In short, there are no perceived advantages of these options over other procurement routes and, in particular, the MHA.

7.7 PREFERRED PROCUREMENT ROUTE

7.7.1. As a result of the above considerations, the MHA framework is the preferred procurement route.

7.7.2. The MSF3 framework under the MHA has been specifically designed to build upon the current and evidenced added value of the existing MSF2 framework to local authorities in the Midlands (and beyond by way of the regional construction frameworks).

7.7.3. Alongside the advantages noted earlier, at a practical and managerial level, the benefits of this route also include:

- High levels of participation in the regular Framework Community Board (FWCB).
- The ability to measure performance through the Framework Community Board that is well attended by all partners.
- Benchmarking MSF projects against projects delivered through other routes.
- Collaboration and shared learning The FWCB hold meetings regularly, usually every two months. It provides a great opportunity to share information about:
    - target price;
    - outturn cost;
    - time predictability;
    - KPI Information;
    - Innovations;
    - near misses; and
    - lessons learnt.
- Performance management – two monthly reporting of performance shows high levels of client satisfaction including a number of regional awards.
- Investment in skills – every project has an Employment and Skills Plan in place to maximise and monitor job creation, learning and skill development for the industry. This is part of the MHA Skills Community, Construction Industry Training Board (CITB), and recognised by the Institution of Civil Engineers Training Ltd (ICE) to address the skills gap in our industry as the demand for infrastructure projects increases.

7.7.4. The above benefits make the MSF3 framework LCC's preferred route to engage the market and procure the MRN A511 Growth Corridor scheme. Indeed, MSF3 has been used to secure ECI involvement on the scheme to date, to maximise the length of time for these advantages to be delivered through the scheme's development and design.

7.7.5. The use of the framework also ensures long term relationship building, particularly in terms of well-known, recognised and understood processes, protocols and contractual terms between contractor.

7.7.6. This is particularly important in terms of risk, and risk allocation and transfer between parties. MHA has established contractual terms for these, and it is anticipated that the division of risk will be applied to maximise local input to the process, whilst also achieving and incentivising on-time, on-budget and most efficient delivery mechanisms; as detailed in the next section under contract management.

7.7.7. It is important to note that ECI involvement to date is time defined, and that a mini-competition across the full MSF3 widened pool is envisaged as part of procurement to ensure maximum value to LCC and the national taxpayer. The activities and parameters of this are detailed in the next section on procurement and contract management.

MSF1 and MSF2 have shown a steady increase in the amount of savings achieved by the investment in the development of the frameworks. **Savings in time and money** have been made, by removing the need for each authority to separately conduct EU compliant procurement procedures.

The development of **early contractor involvement** through the frameworks has led to very significant client savings now being reported by the majority of projects delivered through MSF2. It is proposed that measures to further develop this approach are included in MSF3.

Finally, **the pain/gain mechanism** has driven the use of value engineering throughout the construction phase. The regular performance reporting has ensured that the quality of the works and the service delivered remains satisfactory whilst further shared savings have been reported; with reported savings of **over £26million to date**. Whilst MSF2 is regarded as a leading framework in the local authority highway sector, it has been agreed that MSF3 has further improved, and now incorporates the following:

- Safety
  Ensure that CSCS cards are held by all local highway authority staff working on framework projects.
- Dependable
  Simplify contractor selection process.
  Abandon the Lot1/ Lot 2 split to widen the procurement pool.
- No delay, No surprise -
  Make further improvements to early contractor involvement including an option for making payments to the contractor during the ECI period.
- Good value
  Use shovel ready projects to develop prices for model schemes.
  Increase the use of the local supply chain to achieve additional value when possible.
- Customer focused
  Use the Social Value Act to quantify community benefits.
- Collaboration
  Improve information sharing within projects, consider the increased use of BIM.
  Make provision for design and build with associated risk transfer.
  Increase the use of back to back contracts in appropriate circumstances.
  Audit the provisions of the fair payment charter and link to performance measures.

7.8 PROCUREMENT & CONTRACT MANAGEMENT

7.8.1. Procurement will be managed and delivered by a dedicated and experienced LCC procurement manager: Jonathan McGuiness. Jonathan forms a key part of the project team detailed in the Management Case and will be supported by a dedicated Midlands Highways Alliance Framework advisor within the Council, John Hooper.

7.8.2. The Project Delivery Team has a proven track record of delivery with local and broader expertise to effectively deliver to the accelerated timescales, as shown in **8.4 - PROJECT GOVERNANCE / PROJECT PLAN.**

REQUIREMENTS

7.8.3. The suppliers who are on the MHA MSF3 framework will be invited to submit through mini-competition, open to all on the framework, against the following documents:

- Instructions and Guidance Notes;
- MHA Contract Data;
- Form of Agreement;
- Contract Drawings;
- Works Information;
- Bill of Quantities;
- Site Information; and
- Pre-Construction Information.

7.8.4. The suppliers will be expected to return the following information within their submission:

QUALITY STATEMENT

7.8.5. The following information will be required in the Quality Statement and will be considered by the Employer when determining relative mini-tenders' weightings and scores for all or any number of the quality performance measures (Q1 to Q10) listed above:

Measure: Q1 - Product

Purpose: To determine the overall level of Employer satisfaction with the completed product.

Factors: Construction of main works; handover, acceptance, inspections and as-built records; post-project review; risk register (now known as an Early Warning Register under NEC4); sustainable construction, minimising waste creation and maximising recycling and opportunities plan.

Measure: Q2 - Service

Purpose: To determine the overall level of Employer satisfaction with the service of the supplier during the project.

Factors: Organisation and management; procurement of specialists and suppliers; supply chain; management and improvement of Employer relationships; management and improvement of customer and third party relationships; innovation and value for money; management of change; collaborative working.

Measure: Q3 - Right First Time

Purpose: To assess the impact on the Employer of any defects and reworking.

Factors: Avoiding defective works; quality management system.

Measure: Q4 - Cost Management

Purpose: To measure the accuracy of cost prediction and reliability of cost control.

Factors: Ensuring accurate estimating and forecasting, predictability of cost, and accuracy of cost and payment records.

Measure: Q5 - Time

Purpose: To measure the reliability of time estimates for both design and construction.

Factors: Reliability of programming; predictability of time. Detailed programme including the pre-construction, construction and commissioning/handover phases of the project with critical path analysis.

Measure: Q6 - Safety

Purpose: To measure health and safety aspects on the project.

Factors: Health, welfare and development of the workforce; compliance with safety legislation and regulations; safety of the public.

Measure: Q7 - Learning and development

Purpose: To measure the success of skills development against the Employment and Skills Plan (ESP).

Factors: New entrants' skills development, existing workforce skills development, progression into employment.

Measure: Q8 - Community

Purpose: To measure how the impact of projects on the local community is minimised before, during and after completion.

Factors: Customer Care, working with the local community, Considerate Constructor.

Measure: Q9 - Traffic management

Purpose: To measure the success of minimising the impact of projects on highway users through appropriate traffic management.

Factors: Disruption and congestion, all highway users considered, appropriate and up to date information for highway users, safety of measures.

Measure: Q10 - Innovation and value for money (VFM)

Purpose: To measure the success of innovation through cashable and non-cashable efficiency savings and, demonstrate on-going value for money.

Factors: Continuous improvement through Contractor and supply chain, early Contractor and Supplier involvement, opportunities plan, innovation and value for money.

Weightings between quality criteria vary depending on the work package.

7.8.6. Other items, already submitted at a framework level, will also be required to evidence and support the quality scores:

- Key staff and contract management – details of key individuals, including CVs with their skills and experience.
- Stakeholder management and communication – description of the bidder's approach to stakeholder engagement and management, including the use of electronic and social media.
- Insurances – details of insurance policies, including a statement undertaking responsibility for dealing with claims, or parts of such claims, within the excess amount.

7.8.7. Suppliers will be given the opportunity to submit alternative designs (where improvements to quality, cost, or delivery can be identified) as variant bids. If they intend to do this, they will be requested to supply the following information:

- The revised plans, drawings and documentation;
- Schedule of changes from the original design;
- Report on the Environmental Impact of the alternative design, including mitigation measures;
- A statement on how the outline Health & Safety Plan would change resulting from the alternative design;
- Approval in Principle forms for each alternative structure;
- Addendum Approval in Principle Forms;
- Stage 1 Safety Audit Certificate.

FINANCIAL STATEMENT

7.8.8. The following information will be required in the Financial Statement:

- A priced bill of quantities based on drawings supplied;
- A statement setting out the cost savings; and
- All other information required to be submitted.

7.8.9. Each submission will be assessed by pre-determined weightings to the sections of information provided in the Quality and Financial Statements.

ASSESSMENT

7.8.10. The assessment will require the three top-scoring suppliers to make a presentation to a mini-competition assessment panel and answer questions, usually based on the quality aspect of their submission.

7.8.11. The MHA will meet with the selection of the highest scoring Contractors, to clarify their proposals prior to finalising the evaluation scores. The Contractor with the highest aggregate score (i.e. for price and quality) will be issued with an Instruction to enter into Part 1 of an X22 Contract.

PRICING FRAMEWORK AND CHARGING MECHANISMS

7.8.12. The proposed form of contract used will be the Engineering and Construction Contract (ECC), part of the New Engineering Contract (NEC4) family of contract documents, the standard form of construction contract in the UK and in widespread use across Europe.

7.8.13. There are six main payment options within the NEC ECC:

- A: Priced contract with activity schedule;
- B: Priced contract with Bill of Quantities;
- C: Target contract with activity schedule;
- D: Target contract with Bill of Quantities;
- E: Cost reimbursable contract; and
- F: Management Contract.

7.8.14. The contract options legally define the responsibilities and duties of Employers (who commission work) and Contractors.

7.8.15. The NEC/ECC is published in the form of a set of core clauses with a range of main and secondary option clauses enabling scheme specific contracts to be produced depending on individual requirements. The choice of option is a balance between risk, apportionment of risk and certainty of cost.

7.8.16. As discussed in the development of the MHA MSF2 and MSF3 framework, the contract will be used with Main Option C. From cross-authority experience under MHA, and feedback and shared lessons learned through the MHA Framework Board, Framework Option C has been judged to provide the greatest benefit to authorities.

7.8.17. Target cost provides the incentive to achieve best value through the pain/gain mechanism. Contractors are incentivised to reduce costs as they will take a share of the savings; the greater the saving the greater the contractor's share of the benefit. Conversely, if the contractor goes over budget they will have to accept a share of the "pain".

7.8.18. A Short Contract is also available under MHA MSF3, but is fixed price and has no pain/gain mechanism; and as a result, no incentive for the contractor to beat the price. Risk is built into the fixed price, so this could result in the authority and DfT paying for risks under a fixed price contract that subsequently don't materialise.

CONTRACT MANAGEMENT

7.8.19. The target cost will be managed by Jonathan McGuiness, an assigned NEC project manager, and project support from the Engineering Services Team and assigned Quantity Surveyor from LCC's Contract Services. Management of risk and cost will continue to be supported by LCC's assigned project manager, bringing consistency throughout the life of the project.

7.8.20. The contractor will therefore submit a target costs activity schedule for the works at submission stage which will be reviewed at each assessment date and payment made for completed activities.

7.8.21. Under Option C construction risk is included in the target cost – the risk budget identified through the QRA is allocated to either the Contractor or the Client. The QRA provides a level of funding needed to cover risks that may occur and, should risks materialise, the risk level reduces and the target cost increases through a compensation event. This ensures the project only pays for risks as they occur. Should the risk not materialise the saving will be taken care of by pain/gain share percentages.

7.8.22. Throughout the ECI period, the Early Warning Register will be reviewed by the contract management team through a series of regular workshops/meetings to assess if work to date has impacted on potential risk level and cost and what can be mitigated and who is responsible for the potential risk.

7.8.23. Pain/Gain share will therefore form part of the contract terms, to be gained/ levied against the contractor if the works run beyond the completion date shown in the accepted programme.

7.8.24. The MHA framework has established the pain/gain share as detailed below. This has been reviewed in establishing the business case for MSF3 it has been agreed that this provides a fair and effective incentive to both parties and has been used on nearly all package orders procured through the framework to date.

7.8.25. Contractors are incentivised to beat the target cost as they will benefit from the savings as follows:

The Contractor's share percentages and the share ranges are:

Share range	*Contractor's share percentage*
less than 80%	30%
from 80% to 110%	50%
greater than 110%	100%

7.8.26. Conversely if costs go over budget the contractor will have to bear their share of that cost.

7.8.27. LCC will use the MHA Performance Management Toolkit to assess scheme progress and contractor performance against KPIs. Scores against indicators will be continually reviewed throughout the life of the scheme.

7.8.28. Through the ECI period, risk will be reviewed by the contract management team through a series of workshops to assess if work to date has impacted on risk level and cost.

7.8.29. Throughout the construction period, risk will continue to be reviewed by the same team through regular progress meetings. During this phase, risk probability and cost impact will be reviewed and risks closed where appropriate. Progress meetings will also be utilised to raise opportunities to make savings on the target cost or identify further risk.

7.9 RISK ALLOCATION AND TRANSFER

7.9.1. At a project level, risks will be managed by the Project Board however the Commercial Case describes how the Midlands Highway Authority procurement strategy will seek to place risk with the party best placed to manage or mitigate that risk or manage the consequences should they transpire.

7.9.2. A strategic aim and objective of the MHA framework and LCC's management of the contract is that risk is appropriately proportioned through the careful management of relationships within, and throughout the project.

7.9.3. The contractor will be required to produce a priced Early Warning Register that also demonstrates mitigation measures and the anticipated prices post mitigation. This has already been developed to inform the QRA and will be updated on commencement of detailed design in Jan 2020 and regularly through to Early Contractor Involvement. Potential issues having been identified will be allocated a risk owner and appropriate resolutions sought to mitigate or eliminate the risk where possible.

7.9.4. Design risk will be retained by the contractor. Delivery and programme risk will be shared and incentivised through the MHA pain/gain mechanism detailed in the previous section as part of the construction contract.

7.9.5. The risk of costs being higher than currently predicted remains until the submission process is complete, which is the point that this risk can be shared and incentivised through the pain/gain mechanism under NEC4 Option C.

7.9.6. The indicative allocation of risks resulting from the contractual and procurement arrangements is summarised in **Table 7-1** below.

7.9.7. At this Outline Business Case stage, ticks have been provided to indicate where each risk type rests: with the public sector (the Council / Government Treasury) or the private sector (the consultants and contractors), or whether these risks are shared between the two.

7.9.8. At Full Business Case stage, once the procurement and contractual arrangements have been finalised, these ticks will be converted into percentages.

Table 7-1 – Risk Allocation and Transfer

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

7.10 PROCUREMENT PROGRAMME

7.10.1. **Table 7-2** shows the procurement programme, linked to the activities that LCC will undertake.

7.10.2. Invitation for submission will commence following submission of the OBC. Part One of the X22 contract will commence following submission of details of how the suppliers envisage the contract will be delivered. Being part of MHA allows for fairly compressed timescales compared to other routes enabling notifications to Preferred Supplier by October 2022. Part One of the contract will cease once the project is ready to enter into a contract to construct, which will be Part Two of the X22 contract. However, the contract can be terminated at the end of Part One. Only when the Full Business Case has been approved and funding is confirmed can Part Two of X22 be entered into. Part Two is expected to be entered into in March 2023. This in turn allows pre-construction and mobilisation activities to commence shortly after.

7.10.3. Parts One and Two of the X22 contract would run from March 2021 to April 2025.

Table 7-2 – Procurement Programme & Activities

Procurement Programme Activity	Start Date	End Date
MSF3 Framework Awarded		March 2021
ECI Submission Period	April 2021	October 2022
Notification to Peferred Supplier	October 2022	
Full approval submission to DfT	**November 2022**	**January 2023**
Award Contract	March 2023	
Pre-construction and mobilisation	March 2023	March 2023
Construction period	April 2023	April 2025
Scheme Opening	May 2025	

PAYMENT MECHANISMS

7.10.4. Payment would be made to the contractor by monthly valuation with a BACS payment within 28 days of issue of the initial valuation.

HUMAN RESOURCE ISSUES

7.10.5. No significant human resources issues have been identified that could affect the deliverability of the scheme. Further details of the required capabilities and assigned LCC and Senior Supplier resources are set out in the Management Case.

7.10.6. The skills required to deliver the scheme are already engaged and committed to the MRN A511 Growth corridor scheme.

7.11 PROCUREMENT CONCLUSION

7.11.1. As part of the Commercial Case a series of procurement options have been identified and assessed by LCC.

7.11.2. The Preferred Option for procurement and delivery is the Midlands Highways Alliance (MHA) Framework.

7.11.3. The scheme is commercially viable with a robust contracting and procurement strategy. It will use the Midlands Highways Alliance Framework (MSF3, starting in June 2018), previous versions of which have been utilised by the Council.

7.11.4. The benefits of this procurement route for both LCC and the taxpayer have been made clear in the Commercial Case. These benefits are as follows:

- Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable. This thereby reduces risks to a level that is ‘as low as reasonably practicable’.
- Allows mobilisation quickly and allows greatest time and opportunity for ECI to achieve lowest outturn cost.
- Use of an NEC4 Option C contract, with mature and well established risk allocation and transfer between parties and incentivised performance to provide greater cost and programme certainty.
- The ability to measure performance through the MHA framework and management tools, with significant previous experience and demonstrable best value as noted previously.

7.11.5. There is a well-developed market for the proposed procurement approach and it is anticipated, based on interest in MSF3 and previous evidence of procuring large infrastructure schemes in the County, that there will be a high demand and strong competition amongst engineering contractors to secure the contract for the construction of this scheme.

7.11.6. The procurement and contract management procedures have been developed in full accordance with the Council’s procurement systems and processes, with the Council’s Senior Procurement Officer consulted and agreeing the approach.

7.11.7. The procurement route includes risk management as a core principle, using strategies of risk allocation and pain/gain sharing with the contractor, including the use of incentives to achieve delivery on time to the required quality.

7.11.8. The Council have confidence that the contractual and commercial arrangements proposed are appropriate and workable, having applied the arrangements to previously delivered schemes in the County, and that have achieved programme and cost certainty; with lessons learned on the framework from other Midlands Highway Authorities also actively shared and implemented.

7.11.9. The information required from suppliers during the future submission stage will ensure that the objectives set out within the Strategic Case are achieved, particularly the timely completion of the works in order to realise the economic benefits arising from the MRN A511 Growth Corridor scheme.

7.11.10. The scheme is on programme for award of the construction contract in February 2023 with a March 2023 start on site. Resources are in place to oversee the construction contract. Risk is being minimised through the Pain/Gain mechanism in the Contract which provides LCC with a high degree of cost certainty and risk transfer.

8 MANAGEMENT CASE

8.1 INTRODUCTION

8.1.1. The Management Case assesses whether a proposal is deliverable by reviewing the project planning, governance structure, risk management plan, communications and stakeholder management, benefits realisation and assurance.

8.1.2. At OBC stage the Management Case looks to confirm the deliverability of the scheme alongside clear evidence of similar projects delivered by the scheme promoter. The Management Case also sets out key programme dates, project governance alongside the approach to communications and stakeholder management.

8.1.3. The considerable amount of experience LCC has with mobilising and delivering highway schemes like the A511 MRN Growth Corridor, together with the fact that a fair amount of work has already been undertaken in designing shovel ready plans, costing, risk mitigation and supplier engagement adds greater certainty around the deliverability of the scheme within the timescales and to budget.

8.1.4. LCC have put together a Benefits Realisation Plan to ensure that the benefits set out in the Economic Case are realised and will include measures to assess and evaluate them.

8.2 EVIDENCE OF SIMILAR PROJECTS

PROMOTOR EXPERIENCE

8.2.1. LCC has successfully procured and delivered several similar projects of varying sizes and complexity comparable with the A511 MRN Growth Corridor. These include:

- Melton Mowbray Distributor Road (MMDR);
- M1 Bridge to Growth;
- Loughborough Inner Relief Road & Town Centre Improvements; and
- Leicester North West Improvement Scheme.

8.2.2. These are described in turn in the following paragraphs.

8.2.3. Works are due to start late Spring 2021 on the 7km single carriageway Melton Mowbray Distributor Road (MMDR). This road will take traffic on a loop to the north and east of the town of Melton Mowbray, connecting the A606 Nottingham Road, Scalford Road, Melton Spinney Road and the A607 Thorpe Road (A607) before re-joining the A606 Burton Road. The scheme, part-funded by DfT has value of circa. £64m and will open in 2022. LCC has successfully developed this project, which has several key similarities to the A511 MRN Growth Corridor scheme, from concept to delivery. These include liaison with Network Rail to construct a new bridge under a Network Rail line, culvert works and constructing new road.

8.2.4. The M1 Bridge to Growth project was a £15.0m project that was jointly funded between a landowner at New Lubbesthorpe (£10.0m) and HCA Large Infrastructure Funding and Department for Transport Local Pinch Point Fund (£5.0m). The bridge over the M1 was built over a 19 month period and provided early access to development land to accelerate the delivery of the primary infrastructure and development of 4,250 homes. The project was completed in November 2016 and was tendered through the Midlands Highway Alliance MSF2 Framework.

8.2.5. The Loughborough Inner Relief Road & Town Centre Improvement Project focussed on the completion of the remaining section of the Loughborough Inner Relief Road and upgrading junctions on the existing relief road to carry traffic flow diverted from the closed A6. The scheme also featured Improvements to related junctions on the Loughborough A6004 Ring Road to help reduce traffic demand on the relief road and the town centre road network. The project also delivered the closure of A6 Swan Street/Market Place and an improved pedestrian environment to help combine the shopping and commerce areas in the heart of the town centre with the provision of new high quality bus waiting/interchange facilities both in High Street/Baxter Gate and The Rushes/Derby Square areas. The project had a value of £19.7m, was completed in May 2015, on time and within budget, and was tendered through the Midlands Highway Alliance MSF2 Framework.

8.2.6. The Leicester North West Improvement Scheme is a scheme to upgrade two junctions along the A50 and one junction on the A563. The project provided a number of facilities for non-motorised road users, as well as improving traffic flow along the A50. The project was completed in 2015 and has a project value of £9.53m

8.2.7. The specific experience of Leicestershire County Council in terms of contract management, and focused on the particular, key risk items of relevance to the A511 MRN Growth Corridor scheme is shown in **Table 8-1** for these more recent projects, along with other schemes that have been delivered over the past decade.

Table 8-1 – Contract Management Experience

MRN A511 Requirement/ LCC Contract and Risk Management Experience	MMDR	M1 bridge	Loughborough Inner Relief Road	Enderby Park and Ride and Birstall Park and Ride	A511 corridor	Syston Northern Bypass	Leicester North West Improvement Scheme
ECI	✔	✔	✔	✔	✔	✕	✔
New standard carriageway	✔	✔	✔	✔	✔	✔	✔
Roundabout junctions	✔	✕	✔	✕	✔	✔	✔
Culverts/bridge over water	✔	✔	✕	✕	✕	✔	✕
Rail bridge	✔	✕	✕	✕	✕	✔	✕
Major earthworks	✔	✔	✔	✔	✔	✔	✔
Benefit congestion	✔	✔	✔	✔	✔	✔	✔
Regeneration benefits		✔	✔	✔	✔	✔	✔

8.2.8. The knowledge gained and the strategic procedures developed/adopted during the delivery of these schemes will be used for the delivery of the A511 MRN Growth Corridor scheme, using similar team structures and experienced personnel, who are confirmed as available and committed to the project. Most of these are from within LCC, but others are external consultants who have worked on several of LCC's other projects.

8.2.9. Opportunities will be taken, wherever possible, to improve delivery processes by acting upon the lessons learnt from recent schemes. Lessons learned which have been fed into this project include the early development of a newsletter to ensure key stakeholders are kept informed of progress, as well as early liaison of landowners to ensure that they are aware of the impact on their land. Quarterly workshops have been set up to ensure that lessons learned can be shared amongst other projects.

8.3 PROGRAMME / PROJECT DEPENDENCIES

8.3.1. There are a number of key dependencies on the project which have been considered by the Project Team as the project progresses. An initial list of key project dependencies is noted below:

- Planning submission for the Bardon Link Road "punch through" being determined;
- CPO being approved;
- Timely arrangements for access to land along the proposed routes for survey work;
- Ecological surveys will be completed before submission of planning;
- Geotechnical surveys will be available to inform design;
- Early consideration of Legal orders for planning submission;
- Environmental Impact Assessment for planning submission;
- Gather satisfactory evidence to support the decision for the package of measures;
- Consultation and planning submission;
- Design speed and departures from standard; and
- NMU connectivity design rationale.

8.3.2. A detailed Project Delivery programme is included in **Appendix K**, along with a key milestone programme, from which key delivery dates are noted below:

- Submission of SOBC – July 2019;
- Submission of OBC – January 2020;
- Post Covid Revision to OBC – July 2020;
- Detailed Design Complete – March 2021;
- Planning Application Submission – July 2021;
- Submission of FBC – January 2023;
- Construction Start – May 2023; and
- Construction End – April 2025.

8.4 PROJECT GOVERNANCE / PROJECT PLAN

8.4.1. This section of the OBC sets out the appropriate governance structure to ensure outcomes and objective of the proposed scheme are meet.

ORGANISATION STRUCTURE AND ROLES

Governance Approach

8.4.2. The governance structure established by LCC for the delivery of the A511 MRN Growth Corridor scheme is described below. This follows an established structure that has been used by LCC for successful delivery of previous schemes, including those identified in the previous local experience section (see **Table 8-1**). LCC also benefit from experience gained from other neighbouring authorities on local major schemes through hosting other MHA Framework Boards.

8.4.3. The Project Governance Structure for any scheme undertaken by LCC consists of a three-tier structure as follows:

- The Programme Board – Provides governance at the overall programme level via a Programme Board.
- The A511 MRN Growth Corridor Project Board – Provides governance for the specific delivery project.
- Delivery Teams – Responsible for issues, topic areas or activities spanning two or more of the component projects via a series of Working Groups.

8.4.4. The governance structure includes both internal audit and external project assurances with the Senior Responsible Officer (SRO), having direct responsibility for these on the Project. Each element of the governance structure is reviewed in further detail below:

The Programme Monitoring Board

8.4.5. The Programme Monitoring Board takes place every quarter. The Director for Environment & Transport, Ann Carruthers, undertakes the role of Chair and oversees a number of major projects.

8.4.6. The board has a group of named Senior Users, Senior Suppliers and Quality Assurance specialists which make up the implementation team and cover a range of stakeholder organisations.

8.4.7. The strategic management has been incorporated into the existing Highways and Transportation Capital Programme management structure. The Programme Board takes strategic decisions using PRINCE2 project management exception reporting methods.

8.4.8. The Programme Board has its own Terms of Reference developed in accordance with LCC in house project management procedures. This includes coverage of topics such as membership, responsibilities, tolerance management and reporting arrangements.

The Project Board

8.4.9. The Board represents a continuation of invested knowledge and ability to make key, important decisions quickly. Some changes in personnel are expected as the scheme transitions to contractor and scheme delivery compared to the current phase.

8.4.10. The Project Board supports the SRO for the project (Ian Vears) in providing overall direction and management for the project and by making key decisions including commitment of resources. This Board is already established and meets monthly to initially produce the Strategic Outline Business Case (SOBC) in July 2019 and then the Outline Business Case and will continue to meet monthly from January 2020 to progress scheme development, detailed design, planning, orders, procurement and Full Business Case stage for delivering the A511 MRN Growth Corridor scheme; and at later stages prepare for and undertake construction (subject to receipt of funding for the scheme).

8.4.11. The Project Manager for the A511 MRN Growth Corridor scheme is currently Angie Dunn. The Project Manager has the responsibility for delivering the objectives of the project as defined by the Project Board, including taking matters for Board approval in accordance with the 'Approval Protocol'.

8.4.12. The Project Board is responsible for, and has direct decision-making powers over:

- Managing progress against the Project plan;
- Agreeing/quality assuring key Project products - these are usually relatively process focused and are concerned with project level plans, communications and HR transition planning;
- Managing Project-level risks;
- Managing Project-level issues;
- Managing Project finance;
- Managing dependencies; and
- Committing / sourcing resources required by the Project to enable the activities to be successfully achieved.

8.4.13. Effective governance, challenge and review is critical as part of scheme delivery and is undertaken on a minimum monthly basis by LCC as part of Project Board, and then reported to external partners (typically on a quarterly basis).

8.4.14. This includes scrutinising plans, to optimise outcomes, and updates/representations to/from the following organisations, which LCC and its partners have extensive experience of working with:

- The Leicester and Leicestershire Enterprise Partnership (LLEP) Board;
- Leicester and Leicestershire Transport Board (LLTB);
- Leicestershire County Council Cabinet;
- LCC/District/Borough Council's Chief Executives;
- Private sector delivery heads and Senior Suppliers; and
- Department for Transport (DfT).

8.4.15. The Project Board ensures there is a reciprocal line of communication between the A511 MRN Project Board and the Programme Monitoring Board.

The Project Board Members and Roles

8.4.16. Representation on the Project Board reflects that the project is being led by a local authority team from LCC and supported by two districts. Project delivery will continue to be led by LCC being the local highway authority, as the investment is for highways improvements and draws from our existing expertise, experience, knowledge and capacity in delivering successful projects throughout the county.

8.4.17. The team has expertise to effectively deliver to the accelerated timescale. The capacity of the group, working cohesively with other LCC officers and developer partners, has been established and included as part of the forward workload of each member of the group.

8.4.18. As set out above, the project management structure is largely resourced through LCC structures. If funding is successfully secured, the scheme would represent a key priority project and thus will receive appropriate and sufficient internal resources and draw on the experience and expertise of our existing partners. We have prioritised continuity of resourcing to maintain a thorough level of scheme familiarity and consistency throughout the project lifecycle.

8.4.19. There is capacity, commitment and capability to deliver Leicester and Leicestershire's Strategic Growth ambitions.

8.4.20. **Ian Vears** is the **Senior Responsible Owner (SRO)** for the MMDR Project, he is a senior professional with over 28 years' highways and transportation experience, undertaking various managerial roles over 15 years, with the last 4 years at a senior level. He has a track record of successful commissioning or providing an extensive range of customer focused services, delivering major strategic, politically sensitive projects and transformational cultural change. Combined with over 12 years military engineering experience gained concurrently he has developed the abilities needed to form and maintain partnerships, resolve conflict and mobilise resources to deliver shared outcomes and targets. Ian's responsibilities will include:

- Project direction
- Monitor and control Project Plan
- Monitor financial expenditure
- Monitor and review Project controls
- Organise / Chair Project Board

8.4.21. **Angie Dunn** is the **Project Manager** and is Senior Engineer, Assets and Major Programmes (Leicestershire County Council). She is an Incorporated Engineer and has over 30 thirty years' experience in the fields of highway engineering, including over 10 years' experience of managing projects at Leicestershire County Council. Qualified in PRINCE2 she will continue to use PRINCE2 principles in the delivery of the A511 MRN Growth Corridor scheme. Angie has excellent partnership working skills; an excellent communicator she has worked with a huge range of stakeholders from landowners and community groups to statutory organisations such as Natural England and the Environment Agency. Having worked for local authorities and interest groups and closely with statutory organisations Angie is sensitive to the priorities and working practices of a range of organisations.

8.4.22. **Janna Walker** is the **Project Sponsor** and is the Head of Service for Highways and Transport Commissioning. She is a senior professional with over 10 years' highways and transportation experience, undertaking various managerial roles over 5 years, with the last 2 years at a senior level. Janna Walker has developed the abilities needed to own and champion the overall vision and strategy for the project. Educated to degree level, Janna has been involved in or responsible for the delivery of numerous projects and programmes including, each year accountable for the delivery of for £45.49 million capital programme and £4 million revenue spend.

8.4.23. **Alex Gray** is the **Senior Supplier** during the delivery of the SOBC and OBC and is the Team Manager for Network Data and Intelligence. He has secured supplier resources for a number of projects including the Leicester and Leicestershire Integrated Transport Model (LLITM) and the Pan Regional Transport Model (PRTM). With experience of developing and managing the Commissioning Framework Alex is able to facilitate the provision of specialist resources which are required for the successful delivery of the project. With 8 years of management experience he has extensive experience of working with projects to promote and maintain focus on the desired project outcome from the point of view of the Department.

8.4.24. **Jonathan McGuiness** is the **Senior Supplier** during the design and delivery of the project and is the Team Manager for Engineering Services. Jonathan is a Chartered Civil Engineer (MICE) with experience of delivering a variety of infrastructure projects over his 16-year career. Within his engineering group Jonathan manages a number of engineering teams that deliver projects from localised improvements through to major strategic infrastructure projects. He has managed a number of projects and with 4 years of senior management experience has experience of working with projects to promote and maintain focus on the desired project outcome from the point of view of the Department. Jonathan also acts as the Leicestershire framework manager for the Professional

Services Contract procured for the Midlands Highway Alliance. As described in the Commercial Case dedicated and experienced resource is allocated to contract management and that will be managed by Jonathan, a NEC project manager, with project support from the LCC Engineering Services Team and an assigned Quantity Surveyor from LCC's Contract Services.

8.4.25. **Charles Sampson** is one of two **Senior Users** and is the Principal Transport Planner for Policy and Strategy. Charles has 15 years of management experience and has been responsible for specifying the needs of those who will be using the project outcomes in a number of projects. He has a detailed understanding of the strategic outputs required to deliver the outcomes of the project, having developed strong relationships with Midlands Connect.

8.4.26. **Lynne Stinson** is one of two **Senior Users** and is the Team Manager for Assets and Major Programmes. Lynne Stinson has over 7 years of management experience, with experience of delivering a variety of infrastructure projects over her 15 year career. During this time Lynne has was involved in the strategic delivery of highway infrastructure alongside developers, district councils and central government bodies and has been responsible for specifying the needs of those who will be using the project outcomes in a number of projects. Lynne will use her experience of aligning programmes and projects with local and national strategic outcomes to ensure the project specific objectives are still achieved. Her skills in influencing and engaging with key partners and stakeholders to enable collaborative delivery of services, programmes and projects will enable her to provide a detailed understanding of the strategic outputs required to deliver the outcomes of the project.

8.4.27. External advisors that have been and/or are currently engaged on the project include:

- AECOM – Transport modelling;
- Morgan Sindall – Construction costs; and
- WSP –Business case.

Meeting Frequency

8.4.28. Board meetings will occur on a monthly basis. Where the need arises to discuss issues or exceptions, meetings may be called more regularly.

Project Reporting

8.4.29. There will be two key reporting lines (this relates to actual reporting of progress, risks, issues etc. rather than general provision of information to Board members) for this project as follows:

- The Project Manager will report to the Project Board formally at each Project Board meeting and on an as and when required basis to the Senior Responsible Owner, Pat Clarke.
- Delivery Team leads will report to the Project Manager, Angie Dunn, on a monthly basis in advance of the Project Board meeting while report exceptions will be made to the Programme Management Board on an as when required basis. The Project Delivery Team will report through Angie Dunn (Project Manager) to the Project Board with decisions made by the Senior Responsible Owner, Pat Clarke.

8.4.30. The same Project Manager, Angie Dunn, will be in place at both the ECI and construction stages to ensure a smooth transition between delivery stages.

Delivery Team

8.4.31. The A511 MRN Growth Corridor Project Delivery Team has a proven track record of previous delivery with the local and broader expertise to effectively deliver to the accelerated timescales.

8.4.32. Given the recent completion of the M1 Bridge and Lubbesthorpe SES schemes, the capacity of the group, along with links to other LCC officers, District Council officers and developer partners has been well established and can quickly mobilise. The A511 MRN Growth Corridor scheme will also benefit from the continuation of staff in roles they have undertaken on aforementioned projects, bringing a significant degree of expertise to the project.

8.4.33. The team includes:

- LCC 'Project Manager' (Angie Dunn);
- Key LCC officers from the Assets & Major Programmes Team;
- Midland Highway Alliance and LCC engineers specialising in highway design, structures, lighting, traffic signals and network management;
- LCC and AECOM environmental specialists covering flood risk, landscape, biodiversity, the historic environment and rights of way;
- The County Council's Term Consultants, providing additional independent specialist advice as required, including business case preparation, traffic modelling, risk analysis and noise and air quality appraisals;
- Developers' consultants providing additional support and advice as required;
- North West Leicestershire District Council and Hinckley Borough Council officers advising on Local Plan and Development Control issues; and
- LCC's S151 Officer.

8.4.34. These will be supported by LCC's internal Project Audit team, with further independent project health checks held at key Office of Government Commerce (OGC) gateways. This is discussed further under Project Assurance.

8.4.35. This is important as the team already understand the key risks, and need for definitive, programmed actions in the first part of 2020 to make clear decisions around the main risks. This includes the Network Rail bridge in particular to ensure that initial advice in relation to programme- which has been taken on board in the project plan- is firmed up through detailed investigative work prior to funding announcement, to enable agreement prior to this becoming a critical path activity. Network Rail (NR) has already been notified of the proposed scheme and the need to tunnel under the railway as part of project and initial design development. LCC, AECOM and the ECI Contractor met with NR to discuss what is proposed.

8.4.36. The Project Delivery Team will follow best practice in terms of structure, governance and the monitoring of programme and delivery - as embodied in LCC's project management procedures- founded on PRINCE2 methodologies, accountabilities and audit/ review.

8.4.37. The team has expertise to effectively deliver to the accelerated timescale. The capacity of the group, working cohesively with other LCC officers and developer partners, has been established and included as part of the forward workload of each member of the group. The Composition of the A511 MRN Project Board and delivery team are set out in **Figure 8-1**.

Delivery Partners

8.4.38. Leicestershire have been instrumental in a number of recent local projects that have been founded on close collaborative working with local authorities and private sector partners to ensure effective and timely delivery. Partnership working makes up a key part of LCC's approach to delivering its priorities efficiently and well.

8.4.39. These partnerships include three types of partnerships. Firstly, shared service arrangements which

increase capacity, resilience or deliver financial savings such as land charges and internal audit services. Strategic partnerships drive system wide transformation and operational efficiencies. This includes Housing Services Partnership involving all Leicestershire District Councils, the County Council, and third sector providers. Finally, Operational partnerships bring together public-sector organisations, and business partners to drive the delivery of growth. Examples include the Junction 21 Partnership involving the District, County, local businesses, the Chamber of Commerce, and the Leicester and Leicestershire Economic Partnership and Lubbesthorpe Strategic Consultative Committee including the council, developers and parish councils.

8.4.40. LCC has developed numerous partnerships and actively builds relationships to deliver better outcomes for residents. Examples of partnership working with delivery partners on other projects are:

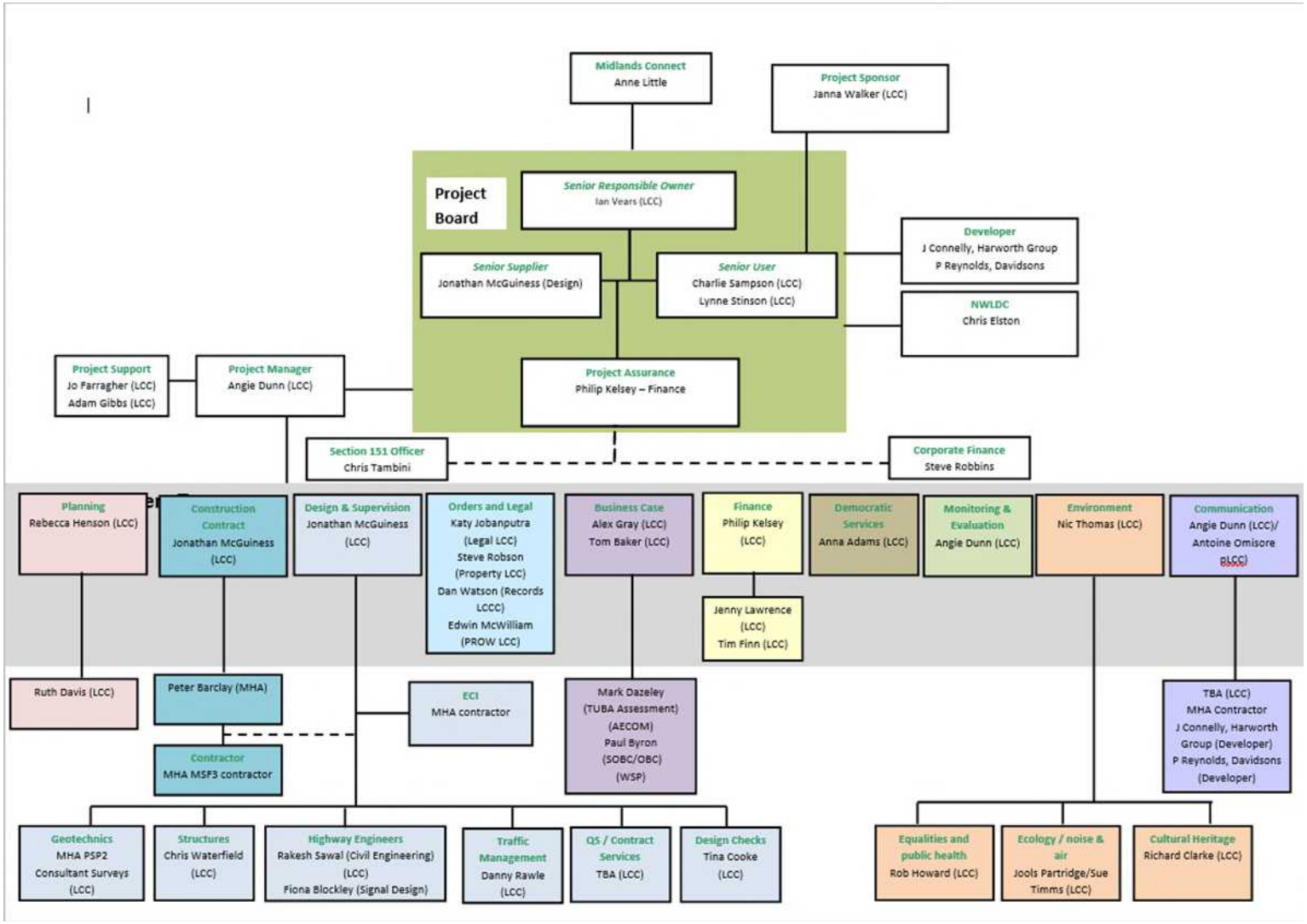
- Lubbesthorpe

Blaby District Council is delivering one of the largest and most complex new urban extensions to the west of Leicester at New Lubbesthorpe for 4,250 houses, two new motorway bridges, 3 new schools, district and local shopping centres, major new strategic employment opportunities along with extensive new parks across more than half of the site. It is an exemplar model of successful joint public-private sector delivery and thus Blaby District Council has been named as a finalist in the Housing Initiative category for the LGC Awards. The LGC Awards look at local authorities devising imaginative solutions to ease problems, including a shortage of both market and affordable housing, by accelerating house building and enabling home ownership.

- Melton Mowbray Distributor Road

This project governance structure is being successfully used for the management of the Melton Mowbray Distributor Road, overseeing the delivery of this ambitious project to tight timescales. This project is being part funded by £49.5m Department for Transport funding. The governance structure has been subject to independent gateway review by Local Partnerships who determined that the project was “well run with widespread public support and high levels of political support”. Local Partnerships consequently rated the project as GREEN indicating that “successful delivery of the project/programme to time, cost and quality appears highly likely and there are no major outstanding issues that at this stage appear to threaten delivery”.

Figure 8-1 - A511 MRN Growth Corridor Scheme Project Board and Delivery Team



8.5 ASSURANCE AND REPORTING

8.5.1. Assurance activity is defined in the PSIAS as 'An objective examination of evidence for the purpose of providing an independent assessment on governance, risk management and control processes for the organisation. Examples may include financial, performance, compliance, system security and due diligence engagements.

8.5.2. Internal LCC Project Audit will be provided through the LCC Internal Audit Charter (November 2016), which was adopted by Leicestershire County Council Internal Audit Service (LCCIAS). It is developed based on the Public Sector Internal Audit Standards (PSIAS). The PSIAS were revised in April 2016 and a Local Government Application Note (LGAN) developed by CIPFA produced setting out practical guidance on how to apply the PSIAS.

8.5.3. LCCIAS conducts a wide range of engagements (assignments) designed to evaluate the quality of risk management processes, systems of internal control and corporate governance processes, across all aspects of the Council's control environment (including working in partnership with and leading on behalf of others).

8.5.4. LCCIAS will act to provide 6-monthly project audits on project management, delivery, programme and overall critical success factors that lie behind successful project delivery, using the above guidance to undertake reviews, and with a particular focus on internal and external risk management.

8.5.5. LCCIAS aims to co-ordinate its assurance activity with other internal and external providers of assurance services to ensure sufficient and proper coverage over the control environment and minimise duplication of efforts.

INDEPENDENT ASSURANCE – GATEWAY REVIEWS

8.5.6. It is essential that large, complex and long running projects are monitored effectively. All major transport schemes have to demonstrate that a system for monitoring progress is part of the management structure and plan. The Gateway review process is proposed to be used by LCC for this project, as a Major Road Network scheme, and in recognition of this being an independent, and recognised best practice route to deliver the benefits of wider, and fully encompassing project assurance at key project milestones.

8.5.7. This will therefore represent a formal assessment of the progress of a project at key stages in its development and was established by the Office of Government and Commerce (OGC).

8.5.8. The OGC Gateway Review process offers a structure for projects following these procurement routes, based around a series of independent peer reviews carried out at key stages to verify that projects should be allowed to progress to the next stage.

8.5.9. The OGC Gateway Process (now part of the Efficiency and Reform Group) provides a snapshot view of progress, at a point in time and, therefore, is seen as complementary to the LCC internal processes described above, and not a replacement for them.

8.5.10. These peer reviews, or 'gateway reviews' will be commissioned on a confidential basis by the Senior Responsible Owner, Ian Vears.

8.5.11. These are anticipated to be undertaken by LCC at the following stages, with indicative dates provided against each below:

- OGC Gateway Review: Detailed Design (3a)- March 2021

- OGC Gateway Review: Investment decision (3b)- February 2023
- OGC Gateway Review: Readiness for service (4) – July 2025
- OGC Gateway Review: Operations review & benefits realisation (5) – July 2026

8.5.12. These Gateway review provides assurance and support to Pat Clarke as the SRO that:

- Suitable skills and experience are deployed on the project;
- All stakeholders understand the project status and issues;
- There is assurance that the project can progress to the next phase;
- Time and cost targets have a realistic basis;
- Lessons are learned; and
- The project team are gaining input from appropriate stakeholders.

8.5.13. This is shown in **Table 8-2**, as part of the process of managing stage boundaries.

8.5.14. It is recognised that formal OGC Gateway reviews, particularly for Stage 2 have not yet been undertaken (although both ECI design input and challenge, and independent cost assurance has been obtained by LCC and delivered as part of the OBC development.

8.5.15. LCC would be happy to consider a Stage 2 OGC review during early 2018, in terms of helping set a suitable platform for future stages to be undertaken.

Table 8-2 – Gateway Review Stages

Gateway		Major Project Phase / Stage
1	Business justification	Entry to the options phase (undertaken on behalf of DfT) (option identification stage)
2	Delivery strategy	Entry to the development phase (preliminary design stage)
3a	Investment decision	Entry to the statutory procedures and powers stage
3b	Investment decision	End of the construction preparation stage
4	Readiness for service	Prior to open for traffic or consent to operate
5a	Operational review and benefits realisation	Following handover into operations and before the end of the defects period
5b	Operational review and benefits realisation	A further operational benefits review may need to be undertaken. The timing is at the discretion of the SRO.

8.5.16. Stage 3a for the A511 MRN Growth Corridor scheme will define the delivery strategy and focus on establishing a clear definition of the project and a plan for its implementation. Outstanding assumptions from the business justification for the project will be verified at this stage.

8.5.17. The OGC Gateway will assess the project's viability, the value for money to be achieved, and the proposed approach for achieving delivery of the project's objectives. This approach will allow the review to assure the Project Board that the selected delivery approach is appropriate.

8.5.18. The project is delivered in line with LCC's corporate approach to Project Management and Assurance. A copy of the Project Control Matrix, which highlights the various background documents completed for the project against the overall assurance process, is included at **Appendix L**.

8.5.19. Progress reporting will be through the Project Board using Highlight Reports which can then be supplemented with additional information as and when required.

8.5.20. Project tolerances are to be approved by the Project Board and the Senior Responsible Officer. The Project Manager will administer the budget on behalf of the Project Board. If variations to the project move outside of the following tolerances, approval will be sought immediately from the Programme Board. **Table 8-3** below highlights approach to variation and tolerance.

Table 8-3 – Project Tolerances

Variation type	Tolerance
Budget	5% with respect to any HR costs. 10% with respect to technology, property and consultancy costs.
Timescale	Slippage of more than 2 weeks with respect to the key milestones set out in section 5 will be reported to the Board for approval with the exception of HR related milestones which will be reported after one week.
Resource Demand	If the requirement for additional staff resources cannot be negotiated and resolved by the project manager and the individual/team manager involved, the issues will be escalated to the Board.
Savings	All variations in estimated savings will be reported to the Project Board. Variations in estimated savings of greater than 10% will be reported directly to the A511 MRN Growth Corridor Programme Board.
Scope	All variations in project scope will be reported to the Project Board.
Benefits	All variation in estimated benefits will be reported to the Project Board.

8.5.21. Management of the project will be by exception. All work stream leads will be expected to report any exceptions to the agreed tolerances so that these can be reported to the Project Board along with any appropriate actions or mitigations.

8.6 COMMUNICATIONS & STAKEHOLDER MANAGEMENT

8.6.1. LCC have developed a Communications Strategy which defines and sets out the principles, objectives and approach for the engagement and consultation with stakeholders and interested parties on the proposed A511 MRN Growth Corridor scheme. The Communications Strategy sets out to ensure an inclusive approach during the ongoing dialogue throughout the scheme development and construction process, which is included in **Appendix D**.

8.6.2. The Communications Strategy sets out high level strategic and tactical objectives alongside key messages to be conveyed on the project. The Strategy also highlights key risks and mitigation from a communication perspective.

COMMUNICATION OBJECTIVES

8.6.3. The communications objectives will be owned by the LCC Project Manager, Angie Dunn. The Strategic objectives are:

- To be proactive and structured with our communication;
- To keep all stakeholders informed in an appropriate and timely way about the process and progress with the project, ensuring they are aware of the benefits associated with corridor improvements.
- To ensure accurate and timely information is provided to stakeholders and the wider public to ensure they understand the need for change.
- To maintain interest and enthusiasm in the project.
- To raise awareness of LCC's role and leadership as we take forward this and other projects to encourage inward investment.

8.6.4. The Tactical objectives are:

- provide clear contact details to enable effective and responsive feedback; and
- Be evaluated so that lessons learned will inform the Council's strategic approach to managing communications in a change environment.

COMMUNICATION SCHEDULE

8.6.5. The schedule of communication that LCC has currently prepared is outlined below and a further communication plan for the scheme delivery will be further updated and delivered following the outcomes of the investment decision for the scheme.

8.6.6. Public exhibitions/consultations on the scheme were held between the 26th September and the 23rd October 2019 at various locations.

8.6.7. The communication schedule for further events until the submission of the OBC and beyond is provided in **Table 8-4**

Table 8-4 – Schedule of Communication

Timing	What and Why	Who	How
September / October 19 Consultation Feedback	• Site meeting with DfT • Bulletin with executive summary of findings and response / next steps	All	Various - press release, email bulletin and update on LCC and MMDC website
November 19	• Overview & scrutiny Committee (07/11/18) • Report to Cabinet (22/11/19) • Submission of OBC to DfT 13/12/19	All	Press release of the Cabinet decision and next steps
July 20 – Oct 2022	• Continued engagement with landowners and stakeholders regarding the design and build process.	All	Face to face meetings Email/phone E-Bulletin
Mar – Jun 2022	• Public Inquiry	Public & Stakeholders Internal staff and members NWLDC	Members briefings Various – email; formal press release via LCC Press Officer etc.
May 2023	• Construction programme start date • Reactive and planned public communications on traffic and disruption	Public & Stakeholders Internal staff and members NWLDC	LCC web and social media Various – email; formal press release via LCC Press Officer etc.
May 2025	• Road opens	Public & Stakeholders Internal staff and members NWLDC	LCC web and social media Various – email; formal press release via LCC Press Officer etc. Opening ceremony

ENGAGEMENT CHANNELS

8.6.12. The Strategy also sets out an approach to communications and stakeholder management through:

- Monthly Board Meetings;
- Contractor Update Meetings;
- Collaborative Planning;
- Meetings and Briefings with Elected Members;
- Use of Intranet and Network Management Briefings;
- Letter Drops and Online Communications with Local Businesses;
- Scheme Website;
- Opportunities with Press: Radio, Social Media; and

- Public Liaison Officer for the Project.

8.6.13. The engagement channels will ensure that:

- All stakeholders are informed of the project objectives, current progress and key issues.
- Communications are reviewed to ensure the right messages are communicated through the correct channels in a timely way.
- Feedback is captured, recorded and appropriate responses given in a timely manner.
- Any design changes made in response to comments are captured i.e. "you said, we did" manner to demonstrate how consultation feedback has influenced modifications to the scheme.

8.6.14. The Strategy also sets out a detailed Work Plan of planned communications in relation to the key milestones on the project.

KEY MESSAGES

8.6.15. The proposed scheme's transport benefits of the A511 MRN Growth Corridor are to reduce congestion, remove through-traffic and rat-running through the town, significantly reduce HGV movements in the town centre, and improve air quality, noise, road safety and provide a more pleasant town centre environment.

8.6.16. Through delivering these transport objectives it will enable, accelerate and sustain housing delivery in Coalville to deliver the Local Plan, as well as enhance accessibility to/from Coalville for existing residents, businesses and visitors to the town to promote economic growth. The opportunities afforded to the town centre by the scheme are also vital, and in providing enhanced walking and cycling, public transport and town centre regeneration opportunities having removed significant through traffic.

8.6.17. The key high level messages for the communication strategy follow these benefits, and are:

- The junction improvements along the A511/A50 will reduce congestion and improve connection to strategic transport routes.
- The improvements are required to facilitate planned and committed developments along the A511, including the Phase 2B HS2 compound.
- The scheme is forecast to cost approximately **£47.57m** (excludes any costs prior to completion of the OBC, Part 1 claims and evaluation and monitoring cost).
- Funding for the improvements is being sought from the Department for Transport, along with contributions obtained from the private sector.
- Construction is expected to commence in March 2023 and last 27 months.
- Delivering a number of highway improvements at the same time will reduce the period of disruption and delay.

8.6.18. The key detailed messages for the communication strategy are:

- A comprehensive traffic modelling exercise has been undertaken to establish the best combination of highway improvements. This assessment has reviewed a number of highway schemes, including the Bardon Bypass, but found the schemes outlined in Figure 1 offered the greatest overall improvements along the A511.
- The improvement at A511 / Bardon Road Roundabout (Junction no. 6) will require the acquisition and demolition of five residential properties. LCC are working with the land owners and LCC's property and legal teams to acquire these properties.

STAKEHOLDERS

8.6.19. Stakeholder analysis has been undertaken by LCC and will be owned by the LCC PM, Angie Dunn. This has been undertaken to:

- Identify and map stakeholders, both individuals and groups to understand their interests and influence in the scheme to inform the communications approach;
- Enable the project team to plan on-going stakeholder engagement through the development of the MMDR scheme; and,
- Enable effective management of relationships and ensure comments and views received are properly captured, recorded, and used appropriately to inform the refinement of the scheme.

8.6.20. The stakeholders, their interest and influence were categorised into four tiers:

- Strong buy-in (high interest/high influence);
- Need to consult (high interest/low influence);
- Maintain interest (low interest/low influence); and
- Keep informed (low interest/low influence).

8.6.21. **Table** 8-5 lists these key external stakeholders by tier and demonstrates how and when LCC will communicate with them and the information they require. The tracker is a live document that will be updated and maintained by the stakeholder lead and project manager for the scheme throughout the consultation and scheme programme.

Table 8-5 – Stakeholder Categories, Requirements and Channels of Communication

Group	Organisations	Key Requirements	Communication and engagement channels	Frequency/ Times
Tier 1 Strong buy-in	• Political – Ward and parish councils affected by recommended route • Leicestershire CC and NWLDC- Members and respective Executives • Statutory consultees – directly influenced, Environment Agency, Natural England, Canal and River Trust, Highways England, Historic England • Emergency Services	Need to understand the scheme, key stage dates during design and construction, so that a response can be given to enquiries e.g. members of the public/constituents/senior leadership team.	• Written communication • Individual meetings • Invitations to public consultation • Invitation to complete questionnaire	Initial meeting, regular monthly written updates.
Tier 2 Need to consult	• Political – Ward and parish councils not directly affected by the recommended route, neighbourhood development team • Community – schools, charities, societies, associations and voluntary groups • Transport – buses • Statutory Bodies – Network Rail, DVSA • Specialist including woodland trust, forestry	To be knowledgeable at key stages of the scheme development and able to provide timely and relevant information to the project as necessary.	• Written communication • Request to complete questionnaire	Ad-hoc as and when required to meet overall scheme timeline and objectives.

Group	Organisations	Key Requirements	Communication and engagement channels	Frequency/ Times
	commissions, ramblers association, cycling UK. • Businesses directly affected			
Tier 3 Maintain interest	• Adjacent Local Authorities not directly involved • Influencers – Transport (national), Chambers of Commerce • Voluntary groups, sports societies • Specialist including Sport England, Federations of businesses etc.	To be informed about the scheme at key stages of design and construction.	• Written communication	Ad hoc - as and when required to meet overall scheme timeline and objectives.
Tier 4 Keep informed	• Media	To be informed about the scheme at key stages	• Press notices • Social media	At key stages (e.g. start of consultations, start of works, opening to traffic)

8.6.22. Stakeholders for the project include Leicestershire County Council, North West Leicestershire District Council, adjacent Leicestershire district councils, the Leicester and Leicestershire LEP, Leicester City Council, the Federation of Small Businesses, the Southern Developers (led by Harworth Group), the Northern Developers led by Davidsons), Midlands Connect, Highways England, and the DfT.

8.6.23. This is alongside key businesses in the town, bus operators, schools, ward members, parish councils, small landowners and local residents themselves.

8.7 PROJECT CONTROL PROCESS

8.7.1. The project is controlled through a **Project Board**, which is incorporated in a three-tier approach to project management as set out in the 'Project Governance / Project Plan' section of the Management Case. The Board will act as the key day-to-day decision making body for Project by:

- Monitoring progress - usually against a high-level Project plan;
- Agreeing/quality assuring key project products - these are usually relatively process focussed and are concerned with project level plans, communications and HR transition planning;
- Managing project-level risks;
- Managing project-level issues;
- Managing dependencies between the schemes that constitute the A511 MRN Growth Corridor Project;
- Committing (or sourcing from elsewhere) resources required by the Project to enable the activities to be successfully achieved; and
- Will make all of the key decisions for the project.

8.7.2. The Project Board is tasked with providing a rounded view of all stakeholders associated with the project. However, the Board is primarily a decision making unit headed by the Project Sponsor. In situations of differing opinion among the Board, it is the responsibility of the Project Sponsor to prescribe a decision on which action will be taken. The **Project Sponsor** is ultimately accountable for the success of the project and the decisions that are made. Responsibilities include:

- Owning the overall vision and strategy for the project;
- Acting as the project 'champion' providing clear leadership and direction for the duration of the project;
- Securing investment required to set up and run the project;
- Accountability for the governance arrangements of the project;
- Owning and ultimately delivering key information such as the project objectives and business case;
- Managing the interface with key senior stakeholders;
- Managing strategic risks;
- Ensuring the project remains aligned with the strategic direction of the Department and Council;
- Commissioning and ownership of reviews to establish the project's continued alignment to objectives, capability to deliver and realisation of benefits; and
- Managing and supporting the Project Manager.

8.7.3. The **Senior User** is accountable for ensuring that requirements are fully and accurately specified making sure that what is delivered is fit for purpose and that the solution meets user needs.

8.7.4. This role is responsible for specifying the needs of those who will use the final product(s), for user liaison with the project team and for monitoring products against requirements. They must have authority to commit or acquire user resources as required. Responsibilities include:

- Ensure desired outcome of the project is specified;
- Promote and maintain focus on the desired project outcome from the point of view of their Department;
- Ensure that the user resources required for the project are made available;
- Resolve user requirements and priority conflicts;
- Approve product descriptions for user products and sign-off once complete;
- Contribute to Project Board decision making as an SME from their specific area;
- Provide the user view on follow-on action recommendations; and
- Brief and advise user management on user aspects of the project.

8.7.5. The **Senior Supplier** has the authority to commit or acquire the necessary resources. This role is accountable for the quality of the products delivered by the project team. They must have authority to commit or acquire supplier resources as required. Responsibilities include:

- Agree objectives for work stream activities;
- Promote and maintain focus on the desired project outcome from the point of view of their Department;
- Ensure that the supplier resources required for the project are made available;
- Resolve supplier requirements and priority conflicts;
- Approve product descriptions for supplier products and sign-off once complete;
- Contribute to Project Board decision making as an SME from their specific area; and.
- Brief non-technical management on supplier aspects of the project.

8.7.6. The **Project Assurance** function provides the check that the project continues to meet its specification, the required standards and the business case.

8.7.7. The **Project Manager** will have the authority to run the project on a day-to-day basis on behalf of the Project Board and Project Sponsor. The prime responsibility is to ensure the project delivers the required deliverables to the required standard of quality and within the specified constraints of time and cost. Responsibilities are:

- Routinely engage with the Project Board (and Programme Manager as required) to provide an update of project progress, risks and issues;
- Ensure the successful execution of the project as defined in this document;
- Create and maintain a detailed work plan and project schedule including metrics and report variances to the project board;
- Assign responsibilities to each team member;
- Secure resources for the project as required to meet the overall timeline and scope of the project;
- Ensure change control procedure followed and communicate changes in project scope to the project board;
- Own project related documentation;
- Prepare status reports for presentation to the project board;
- Determine contingencies for key project components;
- Maintain issues & risks logs;
- Facilitate the review and resolution of key issues and risks;
- Sign off project deliverables; and
- Assist Workstream Leads to plan and arrange team training requirements

8.7.8. The Project Manager will provide project support as required. Additional support, if required, may be provided by the Change Management Unit.

8.8 RISK MANAGEMENT STRATEGY

8.8.1. LCC recognises that in order to successfully achieve its own fundamental transformation, effective risk management is vital. The Council has a dedicated Risk Management Policy where managers are encouraged and supported to be innovative whilst understanding the risk and implications, so they might make informed decisions in order to achieve objectives and deliver results. By being risk aware, reviewing its risk appetite and tolerance, the Council will be better placed to both take advantage of opportunities and manage threats.

8.8.2. LCC's risk management is based on the Association of Local Authority Risk Managers (ALARM) has developed and published a National Performance Model for Risk Management in Public Services to illustrate what good risk management looks like in a public service organisation. The management process is summarised in **Figure 8-2**.

Figure 8-2 - Project Risk Management Process

8.8.3. Risk management is a continual process involving the identification and assessment of risks, prioritisation of them and the implementation of actions to mitigate the likelihood of them occurring and impact if they did.

8.8.4. The A511 MRN Growth Corridor Project Board's approach to risk management will be proportionate to the decision being made or the impact of the risk, to enable the Council to manage risks in a consistent manner, at all levels.

IDENTIFYING RISKS

8.8.5. A Risk and Opportunity register was initially developed May 2018 and is kept up-to-date on a minimum monthly basis to consider risks associated with the preferred scheme, and to provide up-to-date input to the above process.

8.8.6. Risks are a specific item on the monthly Project Board agenda, with further and dedicated risk management workshops heled between these.

8.8.7. Risks have been identified by specialists in highways and structural engineering, geotechnics, transport planning, quantity surveying and the environmental disciplines and entered into the risk register. These include individuals with detailed understanding of requirements for planning, EIA, consents and orders in order to effectively identify risk upfront, as well as early requirements to mitigate and/or manage supporting activities required.

8.8.8. Key project risks have been identified through a detailed analysis and understanding of risk on the project. This ongoing process of risk identification and management has allowed for the production of a Quantified Risk Assessment (QRA) which is included at **Appendix J**.

QUANTIFIED RISK

8.8.9. TAG Unit A1.2 requires that all project related risks that may impact on the scheme costs should be identified and quantified in a Quantified Risk Assessment (QRA), in order to produce a risk-adjusted cost estimate.

8.8.10. The methodology used to quantify and monetise risk is described in the Financial Case.

MANAGEMENT OF RISK

8.8.11. At a project level, risks will be managed by the Project Board however the Commercial Case describes how the procurement strategy, will seek to place risk with the party best placed to manage or mitigate that risk, or manage the consequences should they transpire.

8.8.12. A strategic aim and objective of the MHA is the sharing of risk and that risk is appropriately proportioned through the careful management of relationships within, and throughout the project.

8.8.13. Early involvement with the contractor will include an assessment of the appropriate balance of risk. Design risk could be retained by the council or transferred to the contractor. Delivery and programme risk will substantially rest with the contractor and detailed through the pain/gain mechanism embedded into the MHA framework contracts.

8.8.14. Risks associated with the scheme will be managed in accordance with LCC's Corporate Risk Management Policy Statement and Strategy, which can be found at **Appendix M**.

8.9 BENEFIT REALISATION PLAN

8.9.1. The purpose of the Benefits Realisation Plan (BRP) for the A511 Growth Corridor scheme is to demonstrate how the objectives will be achieved by the proposed scheme. The plan enables the benefits that are expected to be derived from the scheme to be planned for, tracked, managed and realised. It demonstrates whether the scheme objectives outlined in the Strategic Case are achievable and measurable.

8.9.2. The plan also details the activities required to track the progress of the scheme, including project milestones and responsibilities. Benefits management is related specifically to project delivery and ensuring that benefits are on-track to be delivered, managed and reported.

8.9.3. The desired outputs are those tangible effects that are funded and produced directly as a result of the A511 MRN Growth Corridor scheme. The desired outcomes are resultant impacts of the scheme in the short, medium and long term.

8.9.4. The three main strategic objectives, which align to DfT's objectives for the MRN, for the A511 MRN Growth Corridor scheme are presented in **Table 8-6**, alongside their associated desired outputs and outcomes.

Table 8-6 – Strategic Objectives, Outputs and Outcomes

Strategic Objectives	Desired Outputs	Desired Outcomes
To support the SRN by reducing congestion along the A511.	Interventions that reduce congestion on the local network, in particular key pinch points in and around the town of Coalville; as well as strategic network with the A511 located between M1 Junction 22 and A42 Junction 13. Ensure a focus on both HGV and local traffic.	Reduced congestion and improved safety on the local and strategic road network. Improved operation of key junctions and routes within Coalville and the A511 Growth Corridor. Improved journey time reliability on the A511, M1 Junction 22 and A42 Junction 13. Improved SRN resilience.
To support economic growth and job creation opportunities and the delivery of new housing.	A scheme which helps to enable, accelerate and sustain housing and employment growth in North West Leicestershire and adjacent counties; also bringing forward more opportunities for affordable housing. A scheme that attracts new businesses to the area and supports economic growth through enhanced accessibility to and from Coalville and the SRN.	Identified new housing development (including new affordable housing) coming forward. Identified new employment development in Coalville coming forward. Improved access to existing and new development areas. Improved employment opportunities and wider labour market catchment.
To support all road users by reducing environmental and road safety problems.	A scheme that helps to improve the overall air quality and reduce noise impacts of traffic along the A511 Growth Corridor and in Coalville. Interventions that provide benefits for public transport and non-motorised users; as well as safety benefits.	Improved local air quality and noise levels in and around Coalville and the A511. Improved health and well-being. Increases in walking/cycling and public transport usage.

8.9.5. The Benefits Realisation Plan aligns closely with the Monitoring and Evaluation Plan presented in the subsequent section of the Management Case and will be owned by the **Project Manager** who will use it to guide decision making about the scheme and to demonstrate completed delivery.

8.9.6. The objectives and desired outcomes of the scheme are the starting point for the Benefits Realisation Plan. As the scheme is developed, the mechanism for delivering these is designed in and reviewed by the Project Manager and Project Board throughout to ensure it still fits with the objectives.

8.9.7. The method for determining the success of the A511 MRN Growth Corridor scheme will be by monitoring the delivery of the outputs to ensure they are delivered in such a way that meets the objectives and by finding a suitable measure for the direct and indirect outcomes.

8.9.8. In a number of instances, the measurement of benefits is time critical, such as where a scheme supports housing and economic development. In relation to the A511 MRN Growth Corridor scheme will provide journey time and reliability benefits which will support housing and economic growth, however these benefits will be realised over a significant period of time once the scheme is delivered.

8.9.9. This in turn helps drive the projects monitoring and evaluation strategy, and how often data needs to be collected (with much of the economic data proposed to be collected on an annual basis, in addition to monitoring prior to the scheme opening, 1-year post development and 5-year post development).

8.9.10. It is also essential to the scheme delivery that the risks around achieving the objectives are identified and mitigated where possible. As such, the Benefits Realisation Plan provides an indication of the key risks to achieving each objective.

8.9.11. The project specific metrics considered to have a measurable change as a result of the outcomes is shown in **Table 8-7**, alongside the strategic outcomes/ metrics.

Table 8-7 – Strategic Outcomes/Metrics versus Project Metrics

Outcomes	Strategic Metrics	Project Specific Metrics
Identified housing development in North West Leicestershire coming forward.	Housing unit starts and housing units completed.	N/A
Identified employment development in North West Leicestershire coming forward.	Jobs connected to the intervention and employment floor space constructed.	N/A
Reduced congestion and improved safety on the local network.	N/A	Average daily traffic by peak/ non-peak periods. Accident and casualty rates.
Improved journey time reliability on the A511, M1 Junction 22 and A42 Junction 13.	N/A	Average AM and PM peak journey times on key routes. Day to day travel time variability.
Increased walking/cycling and public transport usage.	N/A	Annual average daily and peak hour passenger data. Cycle/pedestrian counts on new/existing routes.
Improved local air quality and noise levels in and around Coalville and the A511.	N/A	Carbon emission levels. Noise impact assessment.

8.9.12. In summary, **Table 8-8** summaries the Benefits Realisation Plan as follows.

Table 8-8 – Benefits Realisation Plan

Outcomes	Strategic Metrics	Project Specific Metrics	Realisation	Risks to achieving Outcome
Identified housing development in North West Leicestershire coming forward.	Housing unit starts and housing units completed.	N/A	On completion of scheme, on a geographical basis as the scheme proceeds. Measurement from completion of the scheme – using quantitative indicators.	General economic slowdown.
Identified employment development in North West Leicestershire coming forward.	Jobs connected to the intervention and employment floor space constructed.	N/A		General economic slowdown.
Reduced congestion and improved safety on the local network.	N/A	Average daily traffic by peak/ non- peak periods. Accident and casualty rates.		Forecast traffic growth may not be as anticipated.
Improved journey time reliability on the A511, M1 Junction 22 and A42 Junction 13.	N/A	Average AM and PM peak journey times on key routes. Day to day travel time variability.		Forecast traffic growth may not be as anticipated.
Increased walking/cycling and public transport usage.	N/A	Annual average daily and peak hour passenger data. Cycle/pedestrian counts on new/existing routes/		Forecast growth may not be as anticipated

8.10 MONITORING AND EVALUATION

8.10.1. This section outlines the approach that is to be taken in the preparation of a Monitoring and Evaluation Plan for the A511 MRN Growth Corridor scheme. The full plan will form part of the Full Business Case.

8.10.2. The outline evaluation plan for the A511 MRN Growth Corridor follows the Department for Transport (DfT) guidelines set out in the Monitoring and Evaluation Framework for Local Authority Major Schemes (MEFLAMS) (September 2012 and is included as **Appendix N**.

8.10.3. Leicestershire County Council has successfully procured and delivered schemes of various sizes and complexity for which they have prepared the detailed Monitoring and Evaluation Plan, based on the DfT guidelines, submitted with the Full Business Case. Some of the schemes similar to the A511 MRN Growth Corridor include Loughborough Inner Relief Road & Town Centre Improvements, Earl Shilton

Bypass and M1 Bridge to Growth. Similar principles would be followed to develop the Monitoring and Evaluation Plan for the A511 MRN Growth Corridor scheme.

8.10.4. Monitoring involves checking progress against the targets set for the scheme. Evidence of expenditure and the delivery of outputs is formally reported.

8.10.5. Evaluation involves assessing the effectiveness and efficiency of the scheme both during and after implementation. It seeks to measure the success of the scheme in delivering the planned outcomes. It assesses whether, and how, the anticipated benefits have been achieved, or if any benefits have not been achieved, the reasons why.

8.10.6. Evaluation and monitoring of the desired project outcomes takes into consideration both the strategic objectives shown in **Table 8-7** and the scheme specific objectives shown within **Table 8-9** below.

Table 8-9 – Scheme Specific Objectives

Scheme Specific Objectives	Desired Outputs	Desired Outcomes
Make journeys on the A511 faster and more reliable.	Interventions that reduce congestion on the local network, in particular key pinch points in and around the town of Coalville; as well as strategic network with the A511 located between M1 Junction 22 and A42 Junction 13.	Reduced congestion and improved safety on the local and strategic road network. Improved operation of key junctions and routes within Coalville and the A511 Growth Corridor. Improved journey time reliability on the A511, M1 Junction 22 and A42 Junction 13. Improved SRN resilience.
Provide a resilient and safer road network, resilient to road collisions.	A scheme that reduces the disruption to journey times, the impact of HS2 construction and the number and severity of accidents.	Improved journey time reliability along the A511. Reduction in the number and severity of road accidents. Safer road network for all users.
Improve reliability and capacity for freight along the A511 Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	A scheme that improves capacity of the A511 to enable enhanced and more efficient journeys for freight vehicles.	Improvement in journey times and reduced delays for freight vehicles along the A511.
Support North West Leicestershire DC's objectives of facilitating growth by delivering transport infrastructure; and potentially deliver at least 25ha of	A scheme which helps to enable, accelerate and sustain housing and employment growth in North West Leicestershire and adjacent counties; also bringing forward more opportunities for affordable housing. A scheme that attracts new	Identified new housing development (including new affordable housing) coming forward. Identified new employment development in Coalville coming forward. Improved access to existing and new development areas.

Scheme Specific Objectives	Desired Outputs	Desired Outcomes
employment land and unlock at least 3,500 new dwellings.	businesses to the area and supports economic growth through enhanced accessibility to and from Coalville and the SRN.	Improved employment opportunities and wider labour market catchment.
Improve connectivity for all road users, with particular focus on vulnerable road users with the implementation of controlled crossings.	Interventions that provide benefits for public transport and non-motorised users; as well as safety benefits.	Improved health and well-being. Increases in walking/cycling and public transport usage.
Support the SRN by providing a reliable and resilient link to the M1 and A42.	A scheme that provides an efficient and resilient road link between the M1 and A42.	Improved journey time reliability on the A511, M1 Junction 22 and A42 Junction 13. Improved SRN resilience.
Improve air quality and traffic noise impact along the corridor.	A scheme that helps to improve the overall air quality and reduce noise impacts of traffic along the A511 Growth Corridor and in Coalville.	Improved local air quality and noise levels in and around Coalville and the A511.

8.10.7. The DfT Monitoring and Evaluation Framework guidance sets out three tiers of monitoring and evaluation:

- Standard monitoring;
- Enhanced monitoring; and
- Fuller evaluation.

8.10.8. The standard monitoring is required for all schemes, and schemes costing over £50 million, the DfT's enhancing monitoring guidance must be followed in addition to the standard measures. Therefore the

8.10.9. A511 MRN Growth Corridor scheme only requires standard monitoring and evaluation.

8.10.10. Before outlining the requirements for monitoring and evaluation, it is worth explaining four terms that are used, namely Inputs, Outputs, Outcomes and Impacts, as described below:

- **Inputs**: What is being invested in terms of resources, equipment, skills and activities undertaken;
- **Outputs**: What has been delivered and how it is being used;
- **Outcomes**: Short-term intermediate effects, such as changes in traffic flows, modal shifts; and
- **Impacts**: Longer-term effects on wider social and economic outcomes, such as supporting economic growth.

8.10.11. **Table 8-10** sets out the DfT's standard requirements for all Local Authority Major Schemes.

Table 8-10 – Standard Monitoring Requirements

Standard Measures	Stage	Data collection stage
Scheme build	Input	During delivery.
Delivered scheme	Output	During delivery/ post opening.
Scheme costs	Input	During delivery and post opening.
Scheme key objectives	Output/ outcome/ impact	Before or during delivery/ post opening (up to 5 years)
Travel demand	Outcome	Before or during delivery/ post opening (up to 5 years)
Travel times and reliability	Outcome	Before or during delivery/ post opening (up to 5 years)
Impacts of Economy	Impact	Before or during delivery/ post opening (up to 5 years)
Carbon impact	Impact	Before or during delivery/ post opening (up to 5 years)
	Reported within 'One Year after Report' (released 1-2 years post scheme)	
	Reported within both the 'One Year after Report' and 'Final Report' (5 years after scheme)	

8.10.12. Noise, local air quality and accidents are covered by enhanced monitoring and evaluation but can be included in standard monitoring and evaluation where the impacts were anticipated to be significant when the scheme was assessed.

8.10.13. **Figure 8-3** presents the evaluation components for standard monitoring of the scheme.

Figure 8-3 - Standard Monitoring - Evaluation Components

DATA REQUIREMENTS

8.10.14. The proposed measurements, data required and frequency of data collection are set out in **Table 8-11**. These measurements will provide an objective view in relation to the outcomes of the scheme.

Table 8-11 – Data Requirements (Outline)

Metric	Frequency	Data
Inputs		
Expenditure	Post opening	Financial monitoring of project.
Funding Breakdown	Post opening	Financial monitoring of project.
In kind resource provided	During delivery	Monitoring of resources delivering the project (use of project dairy).
Outputs		
Delivered scheme	Post opening	Full description of implemented scheme outputs including junction design changes post funding approval with reasons for such changes, post scheme as built drawings of works completed.
Outcomes		
Air quality	Before and post construction, Annual up to 5 years post opening	Environmental statement and noise assessment using ATC data. Councils review and assessment of Local Air Quality (statutory duty).
Average daily traffic and by peak/non-peak periods	Before and post construction, Years 1 and 5 post opening	Permanent ATCs that are already in place and temporary ATCs. The ATCs will be used to form two screenlines, these being North South and East West.
Average AM and PM peak journey time on key routes (journey time measurement)	Before and post construction, Years 1 and 5 post opening	Journey times and journey time reliability will be analysed using data obtained from TrafficMaster plc.
Cycling and walking usage	Before and post construction, Years 1 and 5 post opening	Pedestrian and cycle counts. Classified junction counts will include pedestrian and cycle counts.
Accident and casualty rates	Before and post construction, Years 1 and 5 post opening	Personal Injury Accident data logged and provided by LCC.
Average annual CO2 emissions	Before and post construction, Years 1 and 5 post opening	TAG Greenhouse Gases Workbook using ATC and TrafficMaster plc data.
Housing development	Post construction, 5 yearly periods over 20 years	Data from North West Leicestershire District Council.

Metric	Frequency	Data
		Councils Annual Monitoring and Development Department – number of new units.
Commercial development	Post construction, 5 yearly periods over 20 years	Data from North West Leicestershire District Council. Councils Development Department – GFA of new employment sites.

8.10.15. The Monitoring and Evaluation Plan, including associated funding requirements for evaluation will be developed further and included with the Full Business Case.

DATA SOURCES

8.10.16. The monitoring and evaluation for the A511 MRN Growth Corridor project will be undertaken by Leicestershire County Council and supported by North West Leicestershire DC.

8.10.17. North West Leicestershire DC will in particular, be responsible for the provision of housing delivery, jobs and employment take up rates of new development areas; achieved through quarterly and annual monitoring already undertaken.

8.10.18. The following additional surveys will be undertaken by the LCC team:

- Journey Times;
- Automatic Traffic Count;
- O-D data in relation to traffic movements (in particular through traffic); and
- Turning Counts.

8.10.19. Manual traffic count data will be collected by the Council on an annual basis including accidents, financial and planning data (from NWLDC).

8.10.20. The survey costs will be calculated at Full Business Case stage and will be funded through the County Council's monitoring budget. The Monitoring and Evaluation Plan will be included within the financial case and are also considered within the scheme costs.

TIMESCALE FOR EVALUATION

8.10.21. Data will be collected one year and five years after opening and will be compared against the baseline.

8.10.22. The results of the evaluation process will be summarised in two reports, these being the Post-Construction Interim Scheme Assessment Report (1 Year after Opening) and the Post Construction Final Report (5 Years after Opening). The One Year After Report is expected to be issued to DfT in 2026, followed by the Final Report in 2030.

8.10.23. It is anticipated that wider economic benefits may take longer time frames to take effect. The wider economic benefits are linked to growth in employment and housing which are impacted by externalities in the wider economy, this would impact on the timing of surveys and subsequent monitoring against delivery of the local plan on an annual basis will help evaluate the success of the delivery in relation to the more strategic goals of the scheme.

SETTING TARGETS

8.10.24. The Council recognises the importance of setting specific indicators and targets. These will be set at the Full Business Case stage and included in the Plan. It may be possible to involve stakeholders to take ownership of some parts of the monitoring and evaluation.

SUMMARY OF ANALYSIS

8.10.25. The monitoring and evaluation will be used to answer the following key questions:

- Have the anticipated outcomes and impacts been achieved?
  - To what extent are the observed changes additional to what would have happened in the absence of the intervention?
  - Were there any unanticipated impacts/ displacement effects?
  - Which elements of the scheme were particularly influential in achieving the overall goals?
  - What lessons can be learnt for future scheme/ policy development?
  - What is the contribution of the policy to the LEPs strategic goals?
- To what extent did the anticipated costs and benefits match the actual outcome?
- Has the scheme been successful? If not, why not?

8.10.26. Monitoring of the scheme will:

- Measure the level of traffic congestion on the existing network;
- Measure the level of traffic congestion on the improved network; and
- Measure the levels of accidents on the existing and improved network.

8.10.27. The initial one-year impact assessment will be used to understand the impact mainly on journey times and travel patterns. There may be some evidence at this stage of the scheme impact in terms of further planning approvals based on the scheme's delivery and approval.

8.10.28. The five-year assessment will look at longer term benefits including accidents, travel patterns and jobs/additional investment.

LINKING INDICATORS TO OUTCOMES

8.10.29. It is important to demonstrate how the proposed indicators relate to the desired outcomes.

8.10.30. **Figure 8-4** presents a Logic Map which will be used to aid the development of the monitoring and evaluation strategy for the scheme. The Logic Map supports the monitoring and evaluation process by presenting the schemes casual pathways, whereby the chain of connections shows how a scheme is expected to achieve desired results and anticipated benefits.

8.10.31. In general, it is easier to measure achievement of the objectives (e.g. changes in traffic volume or journey time) than the strategic outcomes (e.g. economic growth) because the latter often take time to achieve and can be influenced by external factors other than the A511 MRN Growth Corridor scheme.

8.10.32. In most cases, achievement of the specific objectives will be measured directly by:

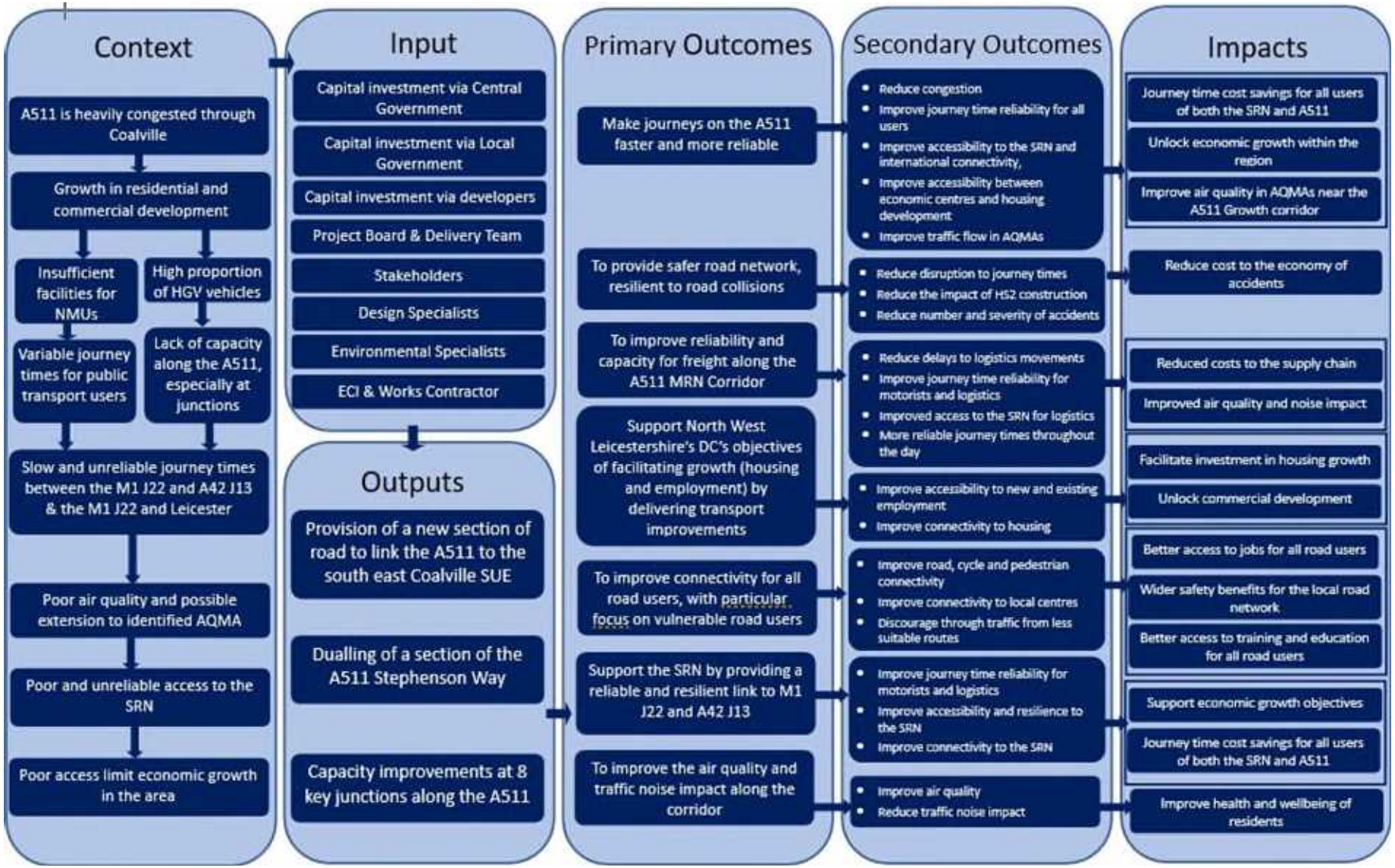
- Traffic counts;
- Journey time data;
- Accident statistics; and
- Review of housing completions and employment development.

8.10.33. Greenhouse gas emissions and improved reliability are difficult to measure directly but are predictable consequences of reduced congestion and delay.

8.10.34. Strategic outcomes are more challenging to measure directly but can be seen to be logical consequences of achieving specific outcomes. However, longer term monitoring of local development, business growth and relocations, employment air quality and economic growth/development will continue to take place and will contribute to an understanding of the success of the scheme. Anecdotal information, especially in relation to perceptions of congestion and resilience also has a supporting role in evidencing the success of the scheme.

8.10.35. A full Monitoring and Evaluation Plan will be developed and updated in the Full Business Case. It will consider attribution of outcomes to the intervention and whether a clear link between the delivery of the scheme and the wider economic benefits can be achieved.

Figure 8-4 - Logic Map for A511 MRN Growth Corridor Scheme



9 SUMMARY

9.1.1. Leicestershire County Council has successfully procured and delivered a number of projects varying in size and complexity in conjunction with the MHA and a range of suppliers.

9.1.2. The knowledge gained, and the strategic procedures adopted and developed during the procurement and delivery of these schemes will be used for the procurement and delivery of the A511 MRN Growth Corridor scheme.

9.1.3. Opportunities will be taken, wherever possible, to improve delivery processes by acting upon the lessons learnt from recent schemes; and that has already included ECI involvement and a thorough and early understanding of key risks, and future actions to eliminate/ mitigate consequential impacts of these risk on budgets, programme, or both.

9.1.4. From the legislative perspective, the A511 MRN Growth Corridor scheme is dependent on the following:

- Planning permission being granted; and
- Completion of other statutory duties such as Compulsory Purchase Orders where necessary.

9.1.5. To ensure successful the successful delivery of major schemes LCC has established a governance structure. The Project Governance Structure consists of dedicated SRO, Project Manager, Senior User and Senior Supplier Roles, alongside Internal Project Audit and a commitment to further Independent gateway reviews are also presented, with confirmed resource availability and suitable levels of experience established for each role.

9.1.6. The scheme delivery team will take a collaborative approach led by the Local Highway Authority (Leicestershire County Council) to maximise expertise and follow on from the recent successful delivery of the M1 Bridge to Growth and the Lubbesthorpe Strategic Employment Site.

9.1.7. A robust Communications Strategy has been developed to define and set out the principles, objectives and approach for the engagement with stakeholders and consultation throughout the delivery process.

9.1.8. LCC's risk management is based on the Association of Local Authority Risk Managers (ALARM) specific to public service organisations. Risk management has been developed as a continual process involving the identification and assessment of risks, their prioritisation, and the implementation of actions to mitigate the likelihood of their occurrence and impact. The project boards approach to risk management will be proportionate to the decision being made or the impact of the risk, to enable the Council to manage risks in a consistent manner, at all levels.

9.1.9. The Outline Benefits Realisation Plan prepared for the MMDR allows benefits and dis-benefits that are expected to derive from the project to be planned, tracked, managed, and realised. It will help demonstrate whether the scheme objectives identified in the Strategic Case are being achieved in terms of the desired "measures for success".

9.1.10. The Monitoring and Evaluation Plan for the scheme will be developed as a part of the Full Business Case. When prepared, this will follow the DfT guidelines set out in the Monitoring and Evaluation Framework for Local Authority Major Schemes (Sept 2012).

9.1.11. In summary, LCC has a strong track record of successfully procuring and delivering a number of projects of varied size and complexity and have the appropriate systems in place and resources available to successfully deliver the A511 MRN Growth Corridor.

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OPTIONEERING WORKSHOP REPORT

Appendix B

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STATEMENT OF COMMUNITY ENGAGEMENT

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ENVIRONMENTAL CONSTRAINTS REPORT

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INDEPENDENT REVIEW REPORT

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QUANTIFIED RISK REGISTER

Appendix K

DETAILED PROJECT DELIVERY AND MILESTONE PROGRAMME

Appendix L

PROJECT PRODUCT CONTROL FRAMEWORK MATRIX

Appendix M

CORPORATE MANAGEMENT RISK STRATEGY

Appendix N

OUTLINE MONITORING AND EVALUATION PLAN

Appendix O

OBC PROFORMA PARTS 1 & 2SOBC PROFORMA PARTS 1 & 2

Leicestershire County Council
County Hall
Leicestershire
LE3 8RJ

www.leicestershire.gov.uk