Leicestershire County Council

A511 GROWTH CORRIDOR

Strategic Outline Business Case

SOBC002
JULY 2019

Leicestershire County Council

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Strategic Outline Business Case

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Environment and Transport Department

Leicestershire County Council
County Hall
Leicestershire
LE3 8RJ

Phone: +44 116 232 3232

www.leics.gov.uk @leicsCountyHall

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Prepared by	Karishma Khatri		Angie Dunn	
Signature				
Checked by	Kay Nyakpo		Lynne Stinson	
Signature				
Authorised by	Paul Byron			
Signature				
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CONTENTS

TABLES

FIGURES

APPENDICES

APPRAISAL SUMMARY TABLE

APPENDIX D

SCHEME COSTS

APPENDIX E

LOGIC MODEL

APPENDIX F

PROCUREMENT STRATEGY

APPENDIX G

QUANTIFIED RISK ASSESSMENT

APPENDIX H

CORPORATE RISK MANAGEMENT POLICY STATEMENT AND STRATEGY

APPENDIX I

PROJECT DELIVERY PROGRAMME

APPENDIX J

PROJECT CONTROL MATRIX

APPENDIX K

COMMUNICATIONS STRATEGY

APPENDIX L

SOBC PROFORMA PARTS 1 & 2

1 INTRODUCTION

1.1 BACKGROUND

1.1.1. This document represents the Strategic Outline Business Case (SOBC) for the A511 Growth Corridor Major Road Network Scheme.

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

1.1.3. This 15 km section of road located in North West Leicestershire provides a key resilient route for 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. 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.

1.1.5. 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.

1.1.6. 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 A511 construction period; currently programmed to commence in 2024, it is essential that the corridor improvements are delivered in advance of the HS2 works.

1.1.7. A short distance to the north, the M1 and A42 both provide access to Leicestershire's International Gateway – East Midlands Airport (EMA) and surrounding nationally significant development proposals 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. Both during construction and development phases and also operational phases to allow efficient access for the delivery of materials and also staff travelling from the wider area.

1.1.8. 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 address both safety and environmental concerns. As would be expected given the high traffic volumes on the corridor, the road currently experiences around 21 collisions a year, 2 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 and reduce accidents further along this corridor.

1.1.9. Air quality is an issue, with one section of the A511 identified as an Air Quality Management Area and this much-needed scheme will make it safer and healthier for users and non-users of the road alike.

1.2 PURPOSE OF DOCUMENT

1.2.1. The 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.

1.2.2. The SOBC presented in this document for the A511 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 focus of the SOBC is on the strategic case capturing the business strategy, problem identified, impacts of not changing, objectives, measurement of success and scope of the scheme. The Economic Case focusses on the approach, options appraised and assumptions leading to a high-level view of the value of the scheme. The remaining cases are developed to provide sufficient assurance for SOBC stage that the scheme is fundable, procurable and deliverable.

1.3 REPORT STRUCTURE

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

- Chapter 2: DfT Submission Checklist;
- Chapter 3: Executive Summary of Strategic Outline Business Case;
- Chapter 4: Scheme Description and Overview;
- Chapter 5: The Strategic Case;
- Chapter 6: The Economic Case;
- Chapter 7: The Financial Case;
- Chapter 8: The Commercial Case;
- Chapter 9: The Management Case; and
- Chapter 10: Summary and Conclusions

2 EXECUTIVE SUMMARY OF STRATEGIC OUTLINE BUSINESS CASE

2.1 SCHEME DESCRIPTION AND OVERVIEW

2.1.1. The A511 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 option consists of a package of nine junction improvements and localised road widening to overcome existing traffic congestion and traffic related problems in the corridor enabling future growth and improving the reliability and resilience of the route as a connection with the SRN. It also includes a section of new road to link the A511 to the Bardon Link Road creating a new north/south link across Coalville.

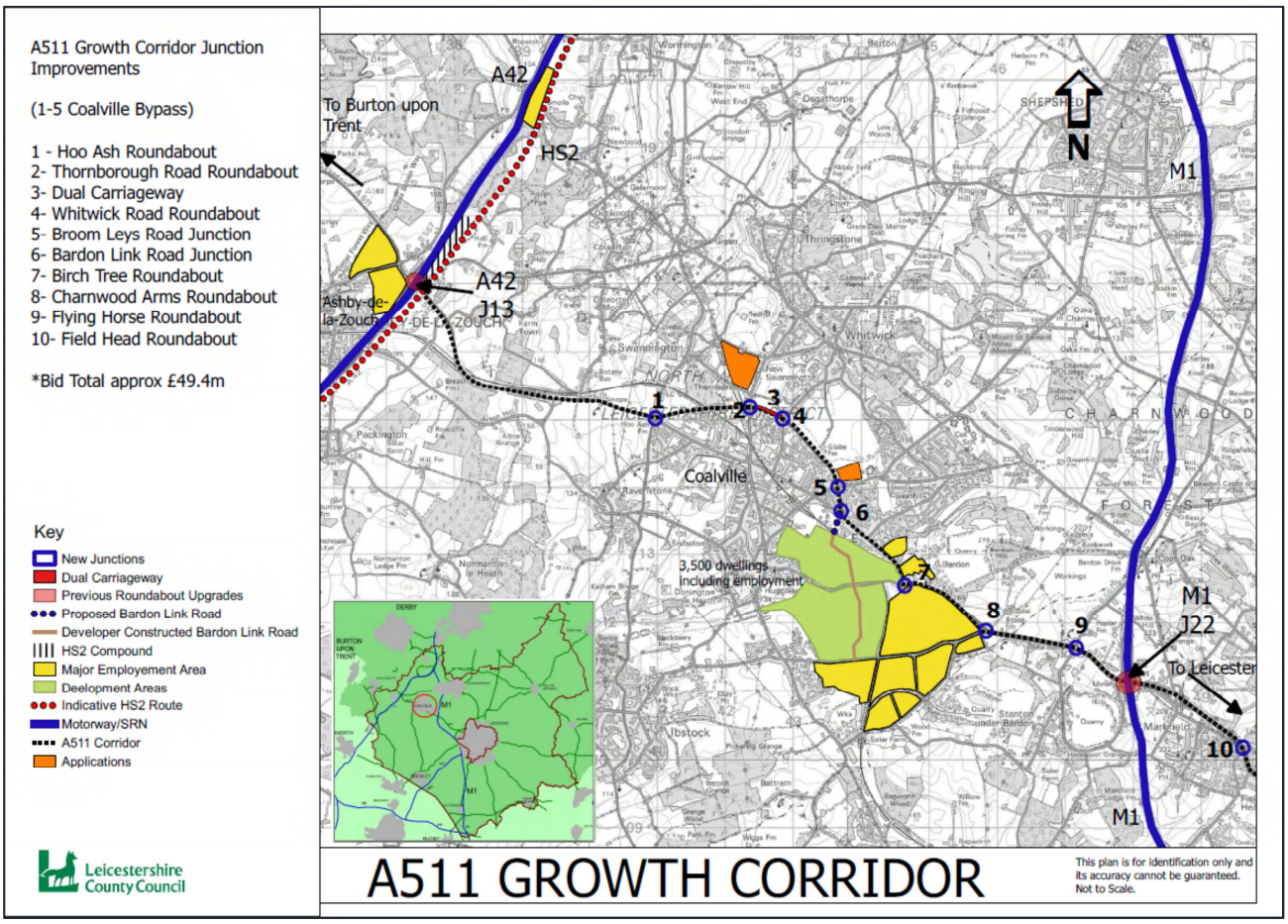
2.1.3. The scheme will provide additional accessibility to and from housing and employment sites planned to the south east of Coalville. This will be achieved through the delivery of the new section of highway extending southwards from the A511 Bardon Road, into the southeast Coalville SUE, where an 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. The latest proposals are shown on Figure 2-1.

Figure 2-1 - Scheme plan



2.1.7. 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.

2.1.8. These works could start mid-2023 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.

2.1.9. As a result of HS2, the A511 will 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.

2.2 BACKGROUND

2.2.1. Congestion on the A511 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 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. More importantly, 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 Growth Corridor. Accessibility to the compound will potentially have major traffic implications on the corridor. The HS2 Phase 2 work is programmed to start mid-2023 and during the duration of the construction phase, additional major works elsewhere on the A511 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 2023 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 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 that 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. Census analysis of the area shows low levels of walking and cycling trips, even on relatively short distance movements. Whilst Local Sustainable Transport Funding has provided interventions to address this, these journeys remain difficult, influenced by the current road layout and junction design being relatively hostile to people using these modes and this has subsequent impacts on the health of the local population.

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 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 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 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 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 delay trips between the A42 and M1 via the A511 and, in the worst case scenario, blocking back of traffic from a congested A511 Growth Corridor onto the SRN

with the corridor, this is currently the case for the M1 J22 which experiences blocking back traffic from the Flying Horse and Field Head Junctions.

2.3.17. Furthermore, if congestion continues and/or increases on the A511 then there is a risk that time-sensitive deliveries to the HS2 construction site and business along the corridor and further afield will be delayed.

4) Inability to support HS2 works in the area

2.3.18. One of the main HS2 construction compounds is to be located at A42 J13, due to this and the realignment of the A512 needed to facilitate the route of HS2, the A511 Growth Corridor will be used as a diversion route, in addition to the route being used for HS2 staff and materials. This will result in additional traffic on the A511 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.

SCHEME OBJECTIVES

2.3.19. 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 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 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.

ALTERNATIVE OPTIONS

2.3.20. The preferred option 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.

2.3.21. 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.

2.3.22. The results demonstrated that highway interventions along the A511 Growth Corridor itself were the highest-ranking performers with the ability to provide a material benefit to both users and non-road users and support the growth proposals in the Local Plan

2.3.23. The identified packages in the assessment performed better than individual highway interventions, with the largest package ranking highest. This package identified as the preferred option, 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.

2.3.24. The initial option assessment clearly shows that the preferred option 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.

2.3.25. If, based on this SOBC submission, funding for further development of the preferred option is secured, then an Outline Business Case (OBC) will be prepared during which further optioneering will be undertaken, using an updated model, and updated datasets. This will include optimising the scheme design taking further account of costs, any land ownership issues and environmental considerations.

KEY BENEFITS OF THE PREFERRED SCHEME

2.3.26. The preferred option is the most effective at tackling the following problems in the A511 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 Corridor suffers from poor air quality specifically area surrounding the A511 Stephenson Way / Bardon Road / Brooms Leys Road which has been recognised as an AQMA;
- Notable amount of shunt-type accidents;
- 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. 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.

2.3.27. The scheme is consistent with Local, Sub-Regional and National policies, with a particular benefit of the scheme being increasing accessibility for 3500 new dwellings and a large employment site south east of Coalville as detailed in the adopted Local Plan (2011-2011) for North West Leicestershire.

2.3.28. With HS2 Phase 2B construction to commence in the mid-2020s 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 both HS2 construction traffic and other users queue or use less suitable routes.

2.3.29. 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.

2.3.30. The Bardon Link Road in its entirety (i.e. with the new road connection at Junction 6) 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 Growth Corridor.

2.3.31. 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.

2.3.32. The SOBC and associated Options Assessment Report indicate that primarily on a qualitative basis the complete package of highway interventions is the preferred solution.

2.3.33. 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; and
- 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 the corridor through the provision of a less congested and reliable route, 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 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.
- 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.

2.3.34. 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 SRNs.

2.4 ECONOMIC CASE

2.4.1. 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 in the use of taxpayers' money.

2.4.2. As part of the SOBC the Economic Case focusses on the approach, options appraised and assumptions leading to a high-level view of the value of the scheme.

APPROACH

2.4.3. For the OBC the Economic Case will be driven by use of the latest version of the PRTM Model (2014 Base), supported by DfT and industry standard software usage. The model and appraisal approach will be built in accordance with the Department for Transport's modelling and appraisal guidance (WebTAG).

2.4.4. For the A511 Growth Corridor SOBC the economic appraisal has been tailored to reflect the tools and evidence available during Stage 1 Option Development defined by the DfT guidance on the Transport Appraisal Process. This makes best use of available evidence and where this cannot be quantified or monetised, the approach is fully qualitative.

SCHEME BENEFITS

2.4.5. The scheme is expected to deliver user benefits in terms of journey time savings and vehicle operating cost savings as a result of travelling at more fuel-efficient speeds. These benefits will be incurred by both business and non-business users alike including providers of public transport services along the corridor. Other benefits will come from improvements in emissions and reduced accidents. Importantly, there will be "higher level" benefits arising from improvements in journey time reliability and gains within the wider economy from agglomeration, accessibility to markets and more productive jobs. Less tangible environment and social benefits will be gained from reduced severance between communities and services, improvements to health and wellbeing arising from a more attractive environment for walking and cycling and prosperity arising from greater employment opportunities.

SCHEME COSTS FOR ECONOMIC APPRAISAL

2.4.6. Scheme costs used in the Economic Case are as per those developed in the Financial Case detailed in the next section, and built from construction, land, preparation and supervision costs.

2.4.7. The scheme's construction base costs are estimated as being £30.7m at current prices (2019 Q2).

2.4.8. A Quantified Risk Assessment (QRA) has also been undertaken amounting to £7.7m.

2.4.9. The costs have been adjusted for real construction price increases. In addition, and in line with DfT requirements, a further 44% optimism bias has been applied to the capital costs of the scheme.

2.4.10. Future costs of maintaining the new infrastructure have not been calculated at SOBC stage.

2.4.11. The calculated total discounted value of costs (PVC) for the preferred scheme in 2010 market prices is £37,9m.

BENEFIT COST RATIO (BCR)

2.4.12. The calculation of BCR is not a prerequisite at the SOBC stage, however an indicative value for the preferred scheme is expected to be between 1.00 and 2.00 this is based on work carried out by LCC on a preliminary corridor package which resulted in an indicative Benefit to Cost Ratio (BCR) of 1.604, suggesting a 'medium' value for money.

2.5 FINANCIAL CASE

2.5.1. 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.

2.5.2. As stated earlier the base scheme costs are £30.7m in 2019 Q2 prices and include land costs, preparation costs, construction costs and supervision costs.

2.5.3. To these base costs, risk allowances have been added (as determined through Quantified Risk Analysis), along with construction price inflation to deliver outturn 2023 prices. This raises the financial scheme cost to **£49.4m**.

2.5.4. Verification of the scheme cost will be undertaken by an independent surveyor's later in the appraisal process since this is not required at SOBC stage.

2.5.5. The total local contribution towards the risk adjusted scheme cost is 15 % (£7.4m in 2023 prices) comprised of local and cashflowed private sector contribution in advance of their receipt. The remaining £42.0m would be sought from the MRN Road Network Fund.

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

2.6 COMMERCIAL CASE

2.6.1. 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.

2.6.2. 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 Option for procurement and delivery is the Midlands Highways Alliance (MHA) Framework.

2.6.3. 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 NEC3 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.

2.6.4. 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.

2.6.5. 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

2.6.6. 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.

2.7 MANAGEMENT CASE

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

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

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

2.7.4. 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 – with Assistant Director (Transport and Growth) as Senior Responsible Owner (SRO), provides governance for Leicestershire County Council's overall capital programme via a Programme Board with escalation to the Departmental Management Team and Corporate Management Team as necessary.
- The A511 Growth Corridor Project Board – with Assistant Director (Highways Delivery) as Senior Responsible Owner this provides governance for the project including development of the OBC and escalates to the Programme Board where necessary.

- Delivery Teams – with Team leads from within the County Council and appointed consultants, provides a large collaborative team that reports to Project Board on the risks, issues and progress of the project through the Project Manager who has day to day responsibility to manage delivery.

2.7.5. To ensure the successful delivery of the schemes within its jurisdiction LCC has established a governance structure for the A511 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.

2.7.6. LCC recognises that effective risk management is vital, and a continual process involving the identification and assessment of risks. A risk and opportunity register has been started 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.

2.7.7. A contractor will be 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 scheme. Invested knowledge will be retained to support detailed design, prior to full procurement.

2.7.8. A Benefits Realisation Plan will be 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 can be planned, tracked, managed, and realised (or mitigated).

2.7.9. An Outline Monitoring and Evaluation Plan will be prepared, and this plan 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.

2.7.10. 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 Growth Corridor in particular has the adequate project management, governance and assurance systems in place, alongside resources required, to deliver the Project.

2.7.11. The considerable amount of experience LCC has with mobilising and delivering highway schemes like the A511 Growth Corridor, together with the fact that a fair amount of work has already been undertaken in designing shovel ready schemes, costing, risk mitigation and supplier engagement adds greater certainty around the deliverability of the scheme within the timescales and to budget.

3 SCHEME DESCRIPTION & OVERVIEW

3.1 SCHEME DESCRIPTION

3.1.1. The scheme identified consists of two primary elements. Firstly, capacity improvements at the following junctions between the A511 and the following roads:

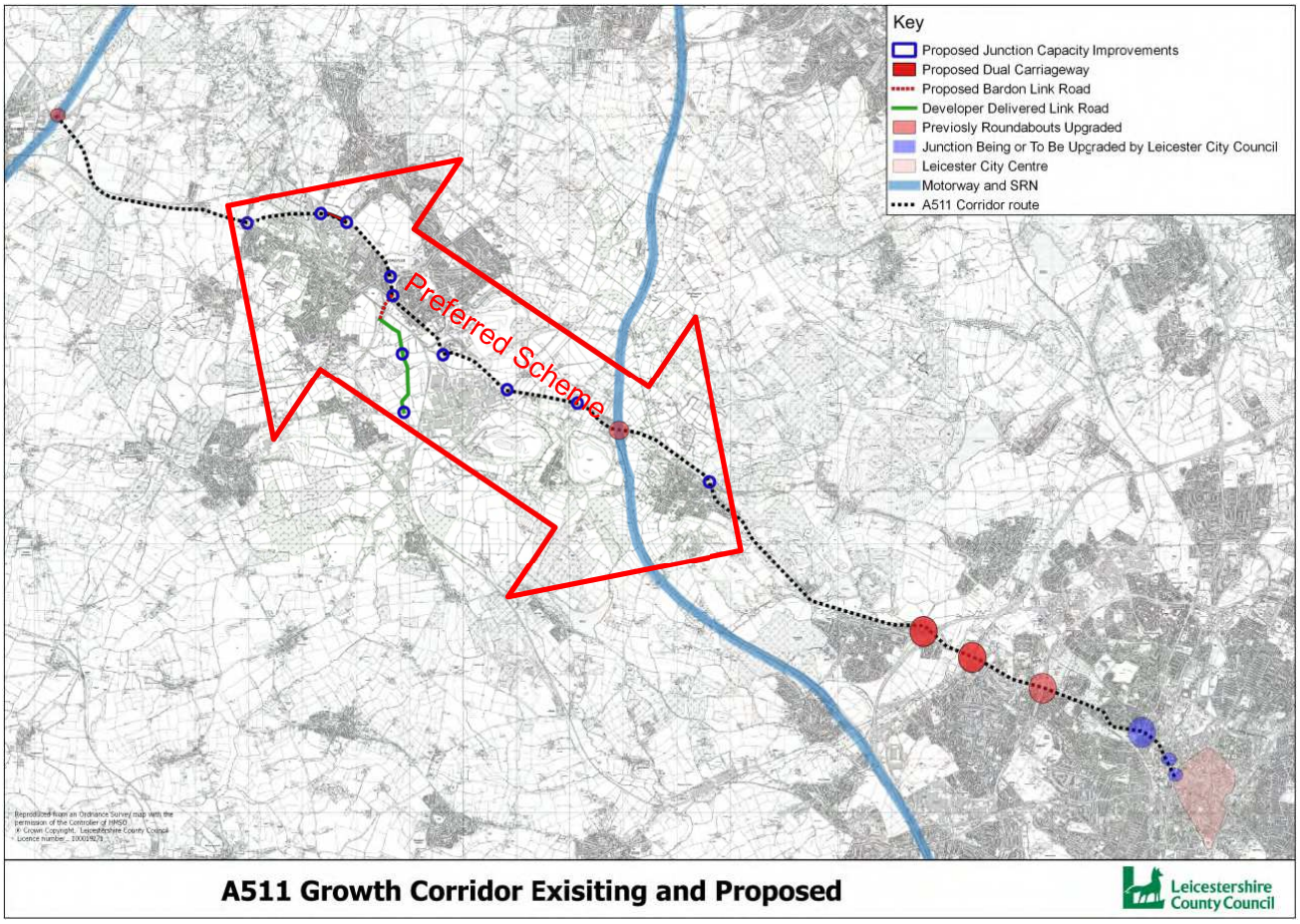
- A511/Hough Hill/Ashby Road/A447 (Hoo Ash Roundabout);
- A511 Thornborough Road Roundabout;
- A511/Whitwick Road/Hermitage Road (Whitwick Road Roundabout);
- A511 Broom Leys Road junction;
- A511 Bardon Road/Stephenson Way junction;
- A511/Regs Way/Grange Road (Birch Tree Roundabout);
- A511/B585 (Charnwood Arms Roundabout);
- A511/Copt Oak Road/Stanton Lane (Flying Horse Roundabout); and
- A50/Markfield Road/Leicester Road (Field Head Roundabout).

3.1.2. Secondly, a link road between the A511 Bardon Road/Stephenson Way junction and the South East Coalville development. From there, the developer will provide a link through the development onto Beveridge Lane. This road provides additional access to the development and therefore relieves the A511 between Stephenson Way and Charnwood Arms Roundabout including the Birch Tree Roundabout.

3.1.3. There are also supporting measures proposed to the east of the M1. This includes junction capacity improvements at three junctions on the corridor within the city boundaries.

3.1.4. 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 3-1**.

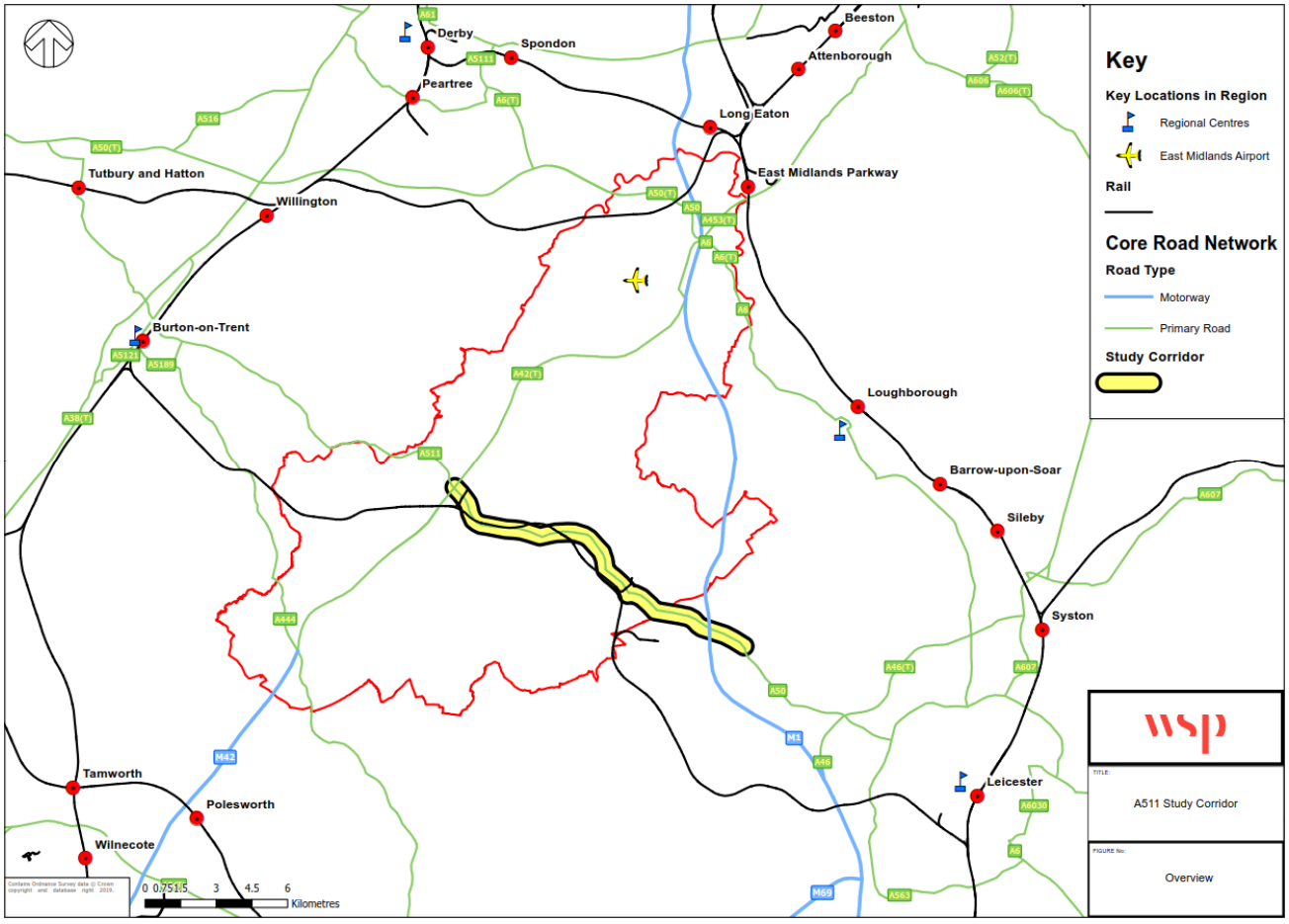
Figure 3-1 – Preferred scheme intevention locations



3.2 SCHEME BACKGROUND

3.2.1. The A511 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 3-2.**

Figure 3-2 - Corridor location and context



3.2.2. Further detail relating to the current conditions in proximity to the study corridor and within the wider region can be found in Section 4.2.

3.2.3. 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 A511 specifically, which is identified as an AQMA in LLTP3.

3.2.4. Subsequently, a list of 25 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.

4 STRATEGIC CASE

- The A511 Growth Corridor scheme has been identified as the preferred option to overcome existing

The scheme has been identified

- Coalville is the principal town in North West Leicestershire and it lies on the A511 trunk road

- 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.

[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 INTRODUCTION

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

4.1.2. The Strategic Case sets out how the need for an intervention on the A511 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 bridge over a closed railway spur, the A511 is predominantly wide single carriageway until immediately north of the access for the Bardon Hill Industrial Park. 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.

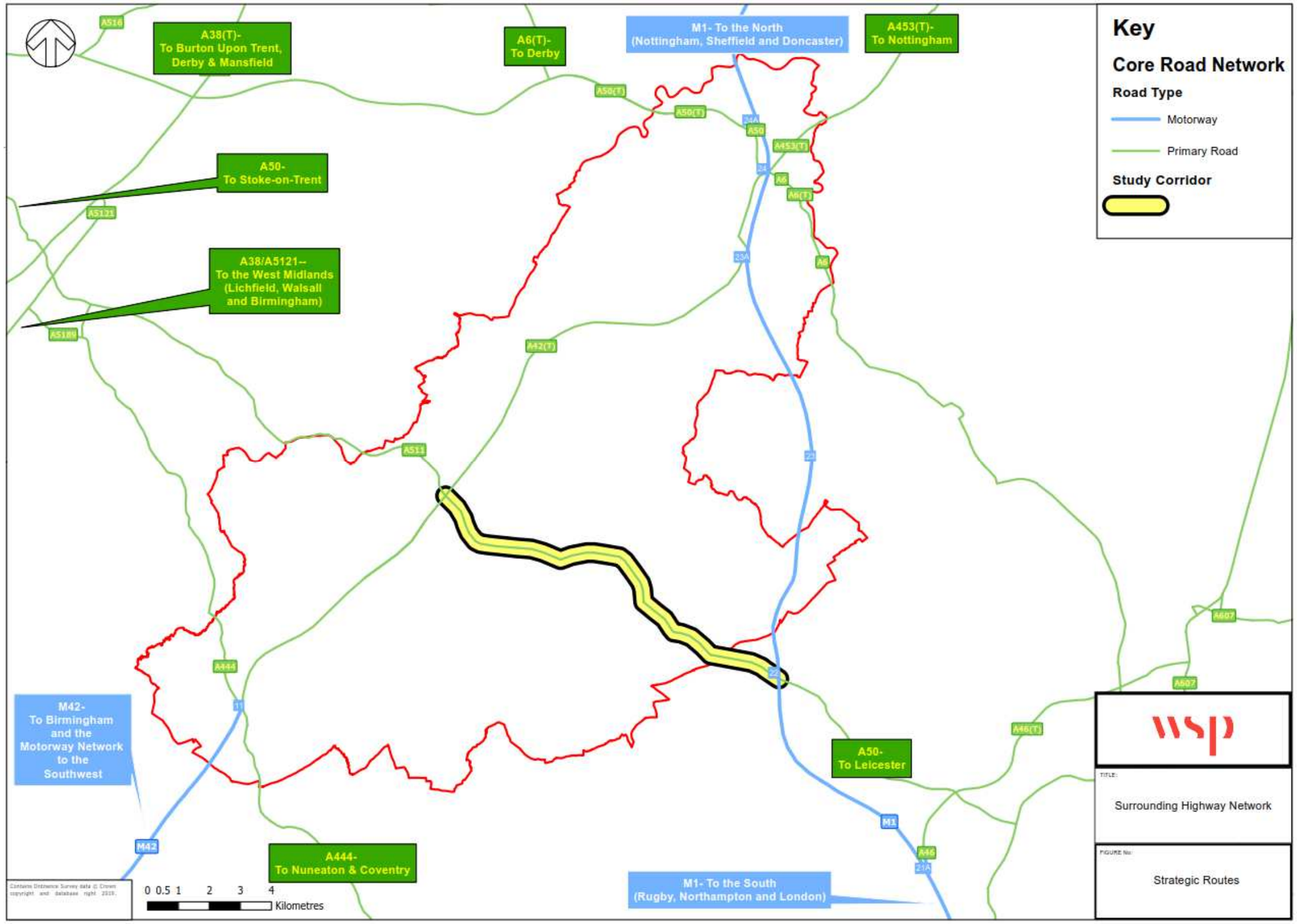
4.2.2. Beyond the Bardon Industrial Estate through M1 Junction 22 to the A50, the A511 is dual carriageway. On this section there are two further at grade roundabouts (Flying Horse and Field Head junctions) as well as the grade separated motorway junction.

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 4.5 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 northbound 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, travels south west 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 towards 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's 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.

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

4.2.7. This section of the SOBC considers data relating to the A511, extracted from DfT AADF traffic counts and LCC modelling outputs, the former collected between 2013 and 2018, the latter based in 2014.

4.2.8. 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.

4.2.9. 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.

4.2.10. 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.

4.2.11. Their study, undertaken in 2014, 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.

4.2.12. 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.

4.2.13. 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.

4.2.14. Finally, analysis was done of accident data obtained from Leicester City 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

4.2.15. 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. The airport itself 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.

4.2.16. 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.

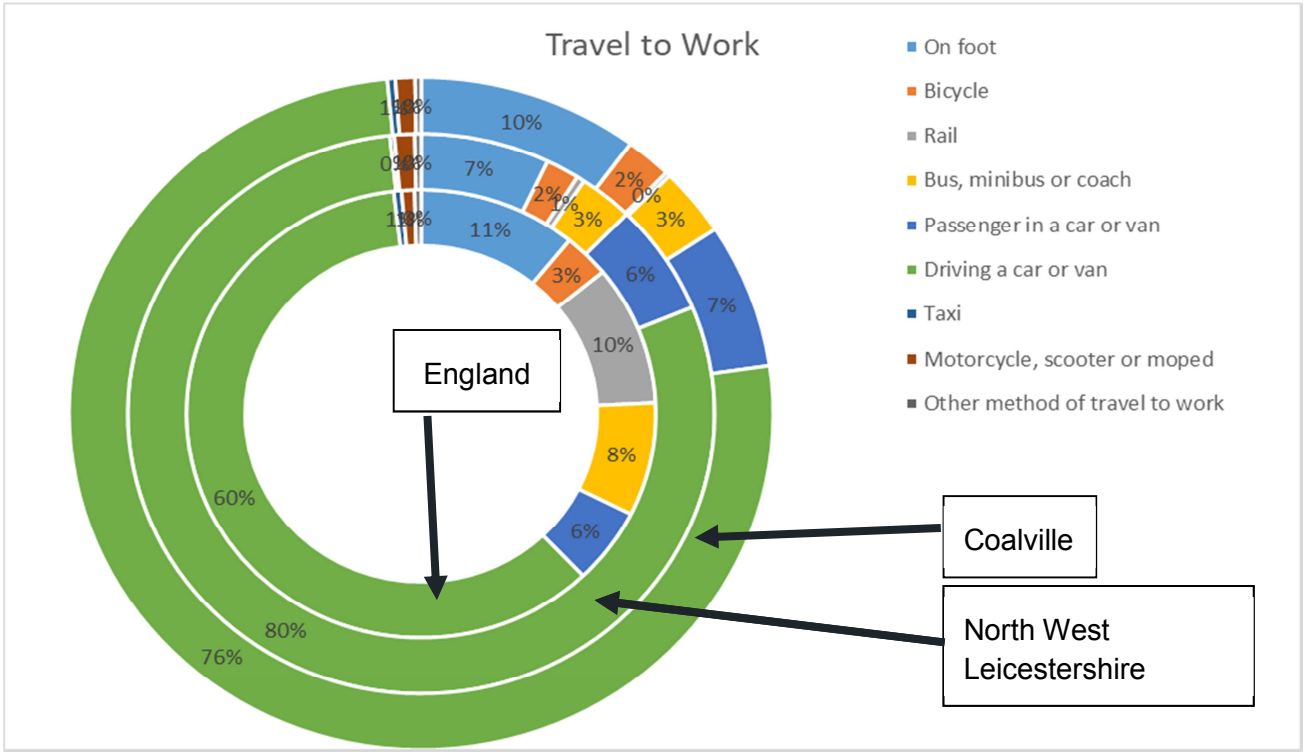
4.2.17. Active travel made up 9% of travel to work trips in the district at the 2011 census, with Coalville having a slightly higher rate of 12%. This is made up of 7% walking and 2% cycling at District level and 10% walking and 2% cycling at District level. In both cases, this is lower than the national averages for walking and cycling, which are 11% and 3%. 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 near Coalville, including the north-south National Cycle Route 52 towards Derby. However, the quality of these is very variable, with many of the greenways and routes little better than trails; impassable in wet weather and not practical for travel to work. This means that the condition of the road network is important for cycle trips. Mode shares are considered further below.

CENSUS CHARACTERISTICS OF AREA

4.2.18. 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 4-2, below.

Figure 4-2 - Travel to Work



4.2.19. 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%.

4.2.20. 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.

4.2.21. 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.

4.2.22. 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.

4.2.23. 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

4.2.24. 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 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 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 2036 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.

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

4.3.6. This evidence based work is detailed in the accompanying Options Assessment Report. 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 and their capacity improved.

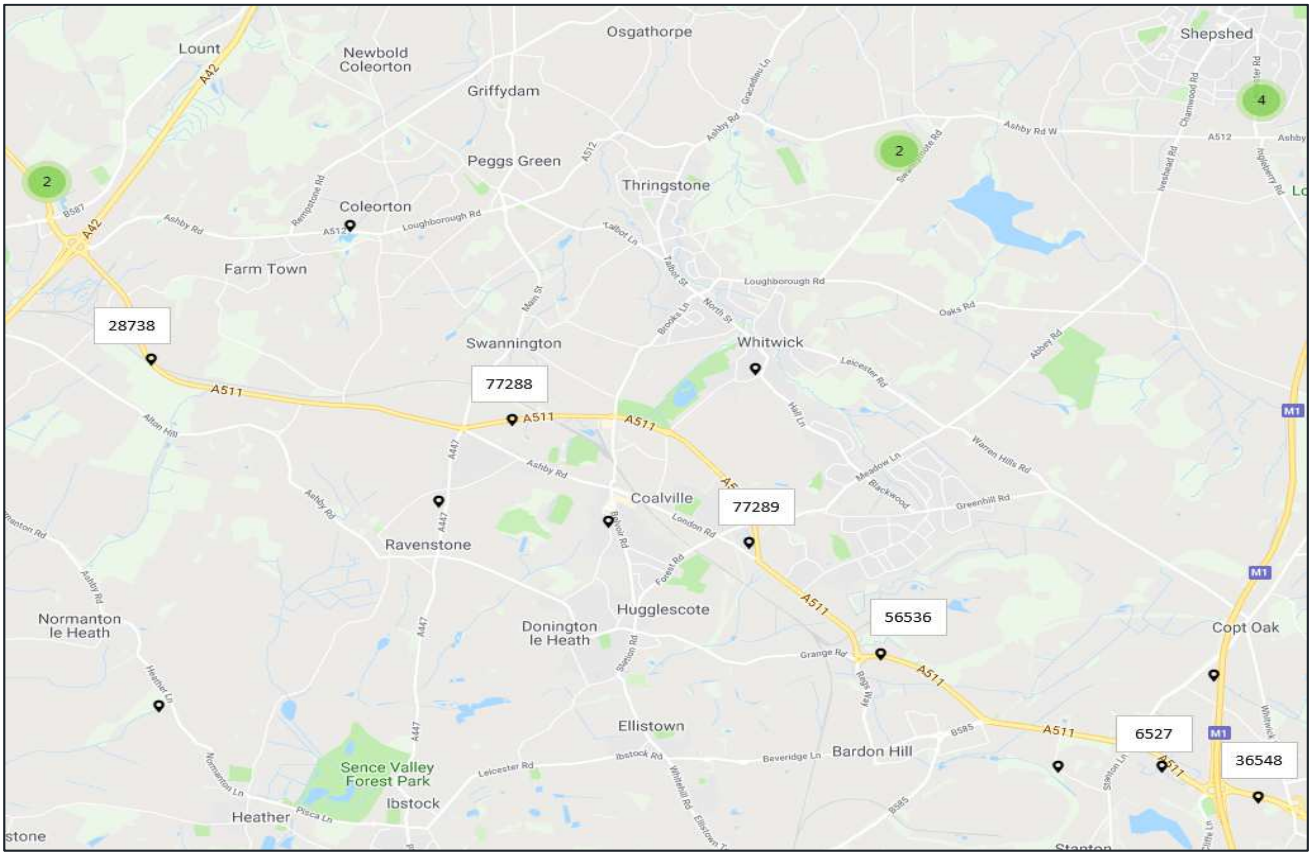
ISSUE 1 - SIGNIFICANT LEVELS OF CONGESTION

Observed and Future Traffic Flows

4.3.8. Traffic flow volume data for the A511 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 4-3**.

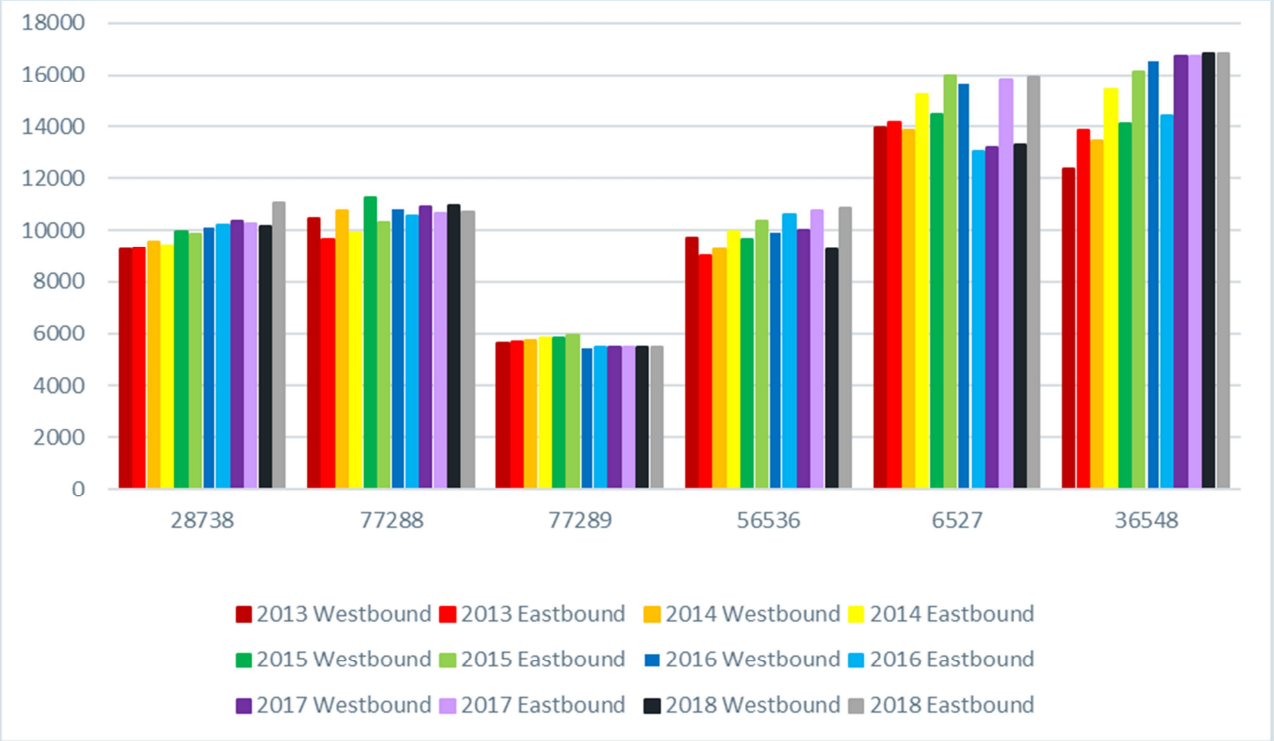
[3] https://roadtraffic.dft.gov.uk/#13/52.7216/-1.4723/basemap-countpoints

Figure 4-3 - DfT counts sites



4.3.9. **Figure 4-4** shows the changes in Average Annual 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 4-4 - A511 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 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 flow more 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 2026. The three locations are shown in **Figure 4-5**.

Figure 4-5 – Modelled traffic volume sites

4.3.12. **Table 5-1** provides the modelled flows in the AM, Inter and PM peaks for the 2014 Base and 2036 'Core' scenarios. A comparison of the flows shows an approximate increase in flows in 2036 'Core' from 2014 'Base' Scenarios of between 1% and 14 % in the AM peak, between 4%and 13% in the PM peak and between 15% and 33% 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 J22.

Table 4-1 – 2014 'Base' and 2036 'Core' hourly modelled flows along the A511 Growth Corridor

	Period	2014 Base	2036 Core	Growth (%)
Site 1 - Link between A42 J13 and	AM	1666	1736	4%
	IP	1151	1485	29%
	PM	1825	1970	8%
Site 2 - Link between Thornborough Rbt ad Whitwick Rbt	AM	1833	1859	1%
	IP	1316	1516	15%
	PM	1779	2002	13%
Site 3 – Link between Charnwood	AM	3124	3549	14%
	IP	1976	2624	33%

	PM	2988	3101	4%

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 4-6** and **Figure 4-7** 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 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);
- A511 / Birch Tree Junction (AM & PM);
- A11 / Flying Horse Junction (AM over 85% & PM over 100%); and
- A50 / Field Head Junction (AM only).

4.3.16. The model also shows A42 Junction 13 and M1 Junction 22 also operating with V/C ratios of over 85% but these junctions have been recently improved and therefore the 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 4-8** and **Figure 4-9** show the volume to capacity ratios (V/C) for junctions along the A511 Growth Corridor in 2036 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 of over 100%.

Figure 4-6 – 2014 AM peak hour junction volume/capacity ratios on A511 Growth Corridor

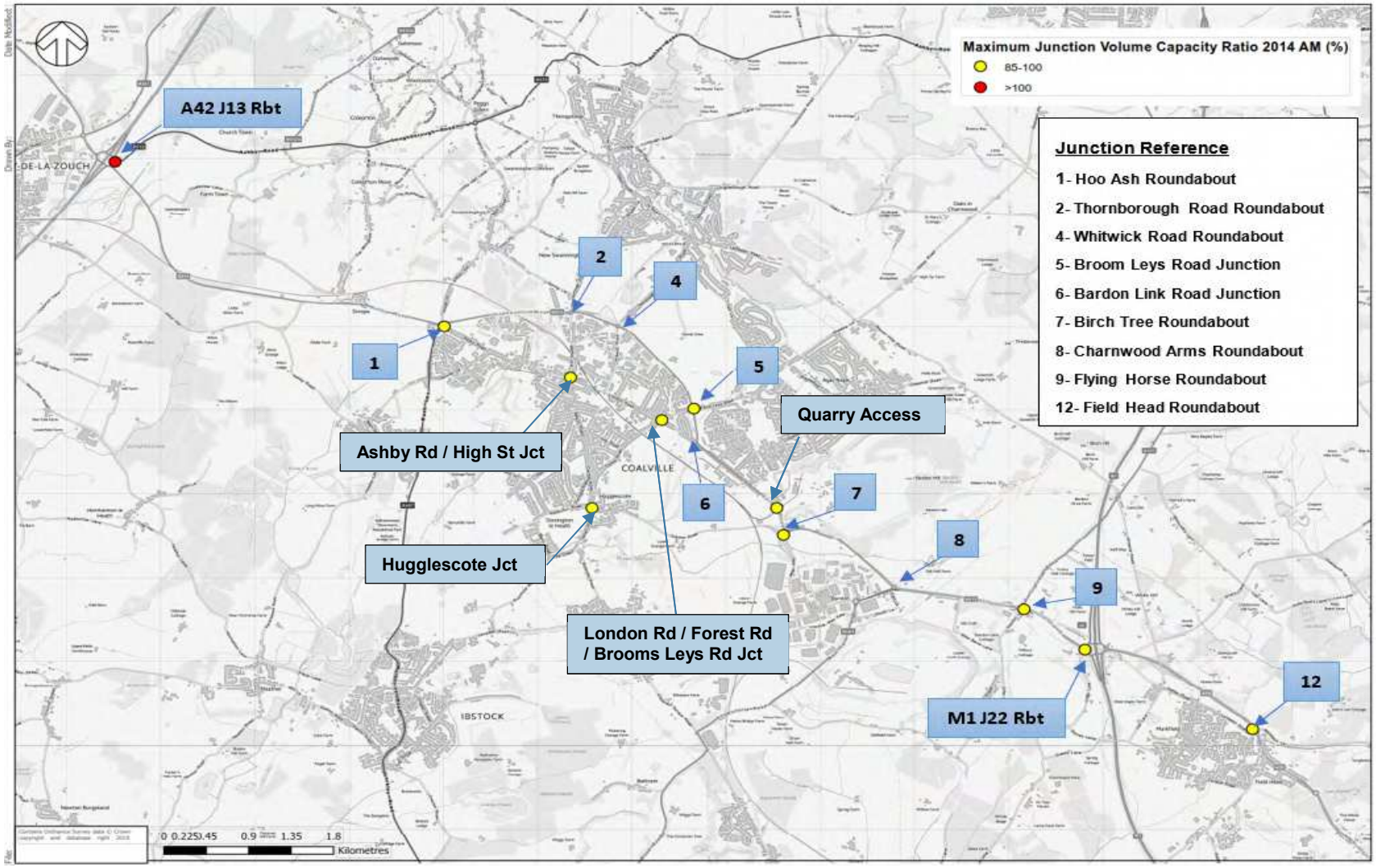


Figure 4-7 – 2014 PM peak hour junction volume/capacity ratios - A511 Growth Corridor

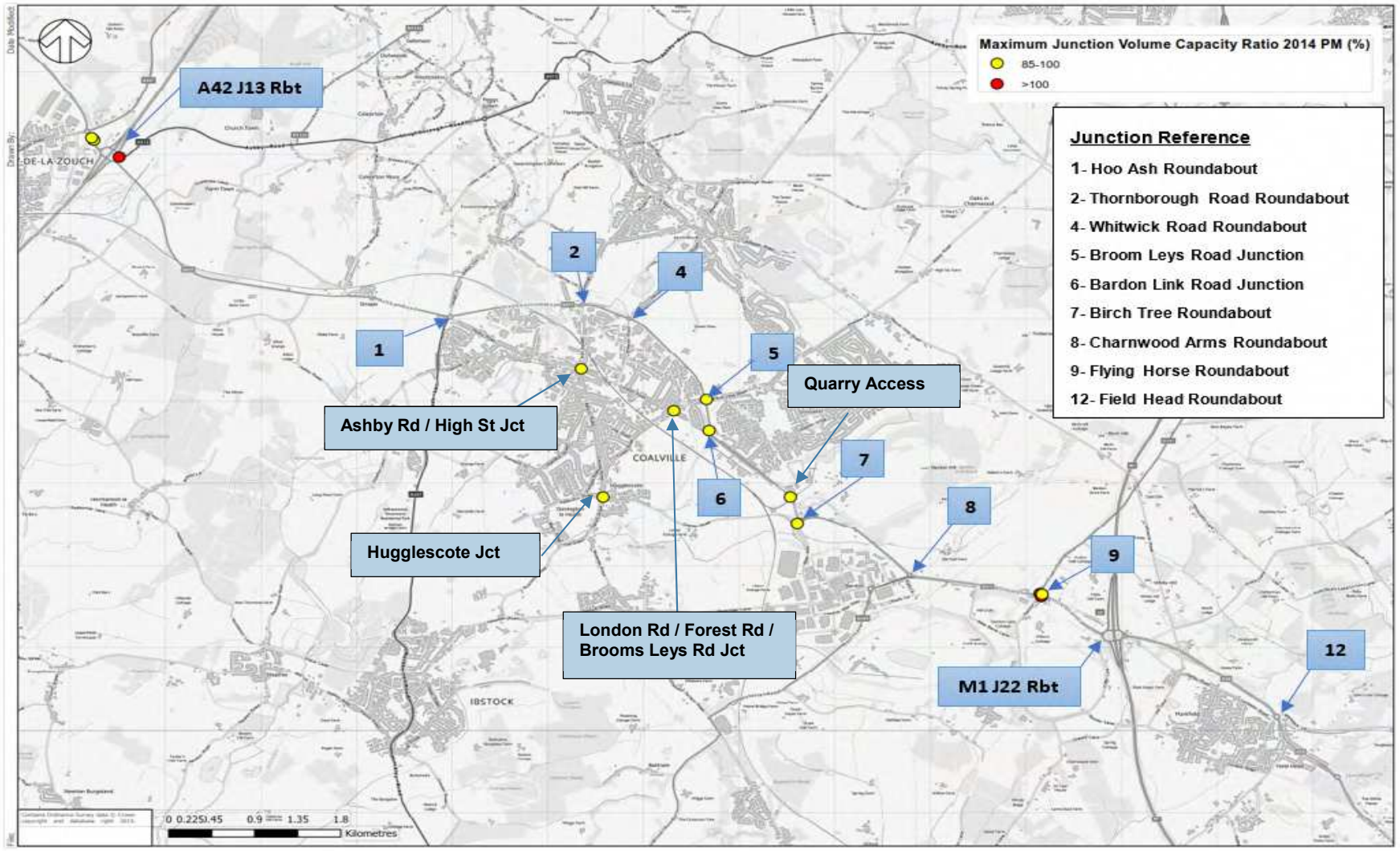


Figure 4-8 – 2036 AM peak hour junction volume/capacity ratios - A511 Growth Corridor

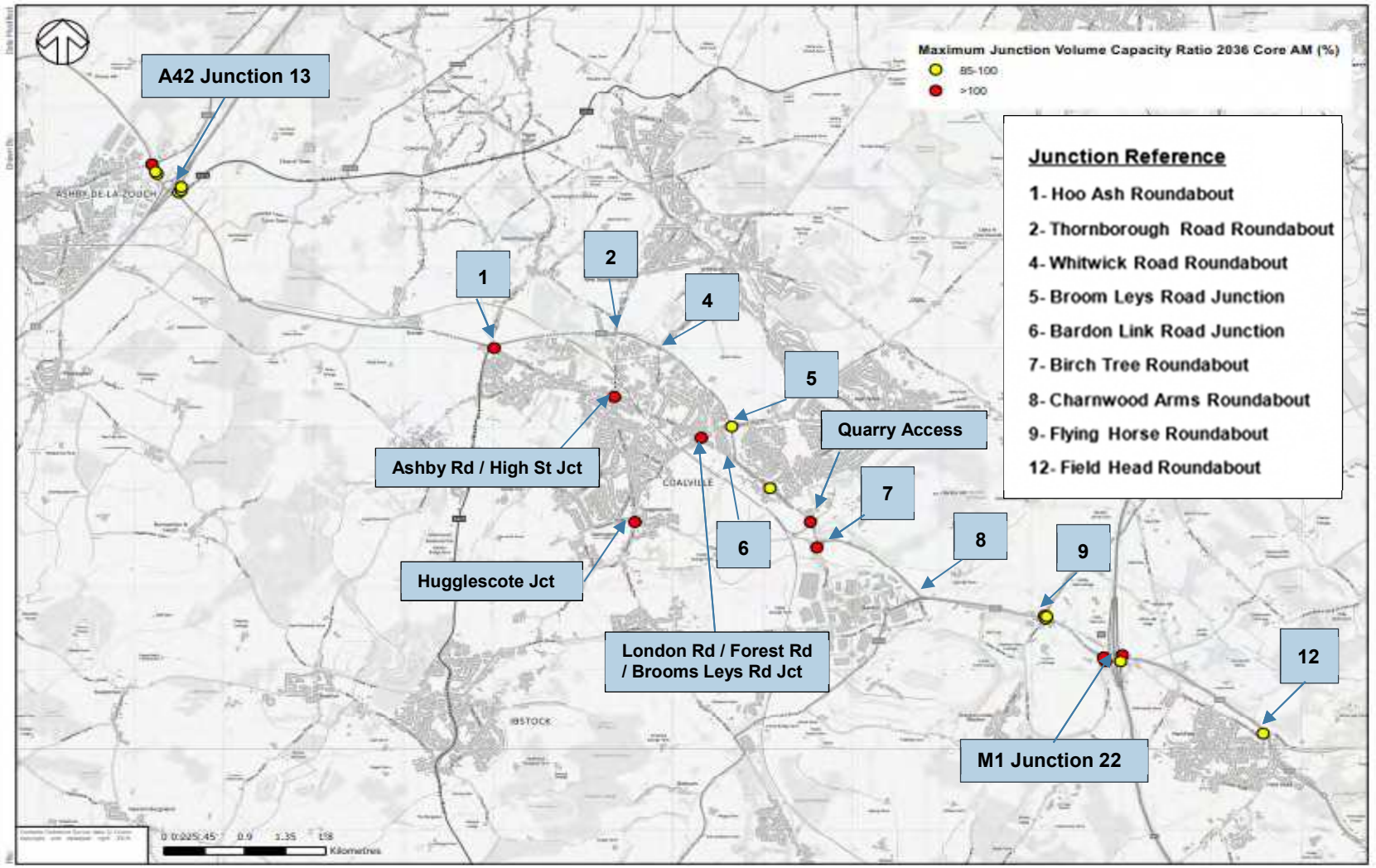
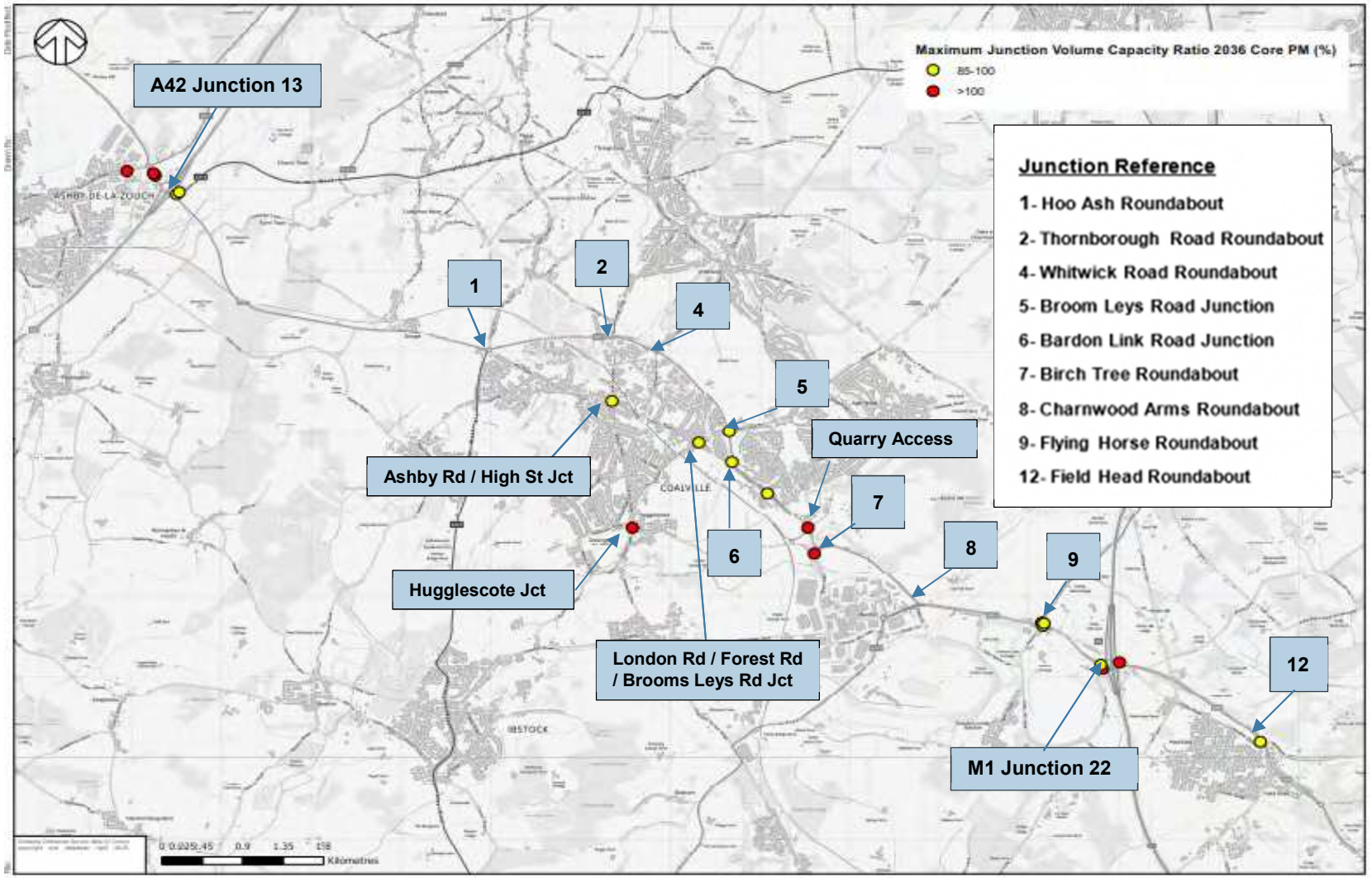


Figure 4-9 – 2036 PM peak hour junction volume/capacity ratios - A511 Growth Corridor



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 Growth Corridor shown on **Figure 4-10**.

Figure 4-10 - A511 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 PRC 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%

Junction Name	Existing Layout	Reserve Capacity(PRC)			
		2017		2031	
		AM	PM	AM	PM
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	Partially signalised four-arm	14%	11%	-6%	-16%
A50/Field Head Roundabout	Priority 5-arm Roundabout	-13%	-6%	-20%	-11%

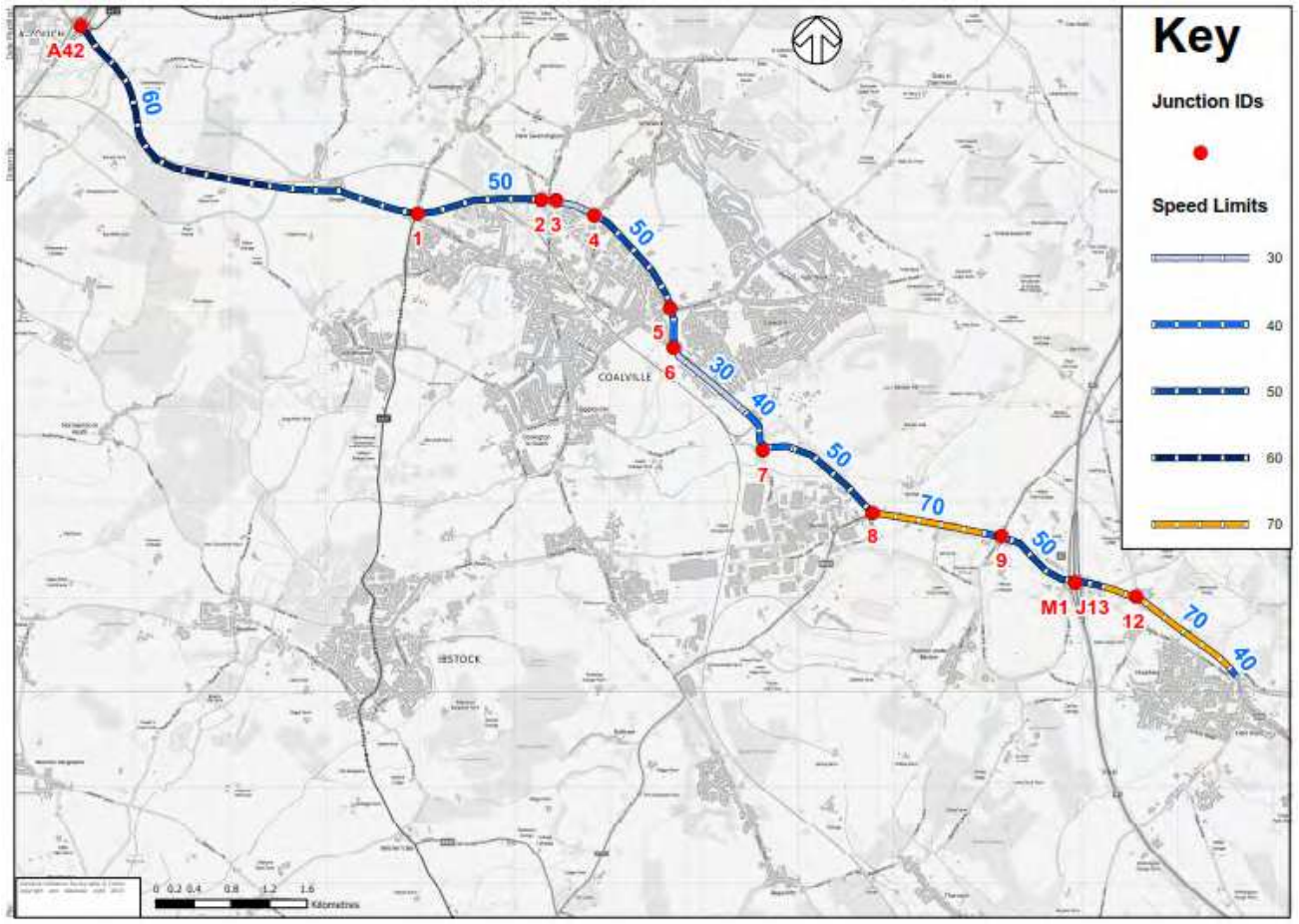
4.3.23. As shown in **Table 4-2** above, several of the junctions along the A511 Growth Corridor are already operating above capacity or close to capacity in 2017, with the A511 / Hoo Ash Roundabout, A511 / Broom Leys Road and A50 / Field Head Roundabout experiencing the most congestion with negative PRC values. The situation is exacerbated by 2031 as all key junctions along the A511 corridor operate above over 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 4-11** provides the speed limits at various sections along the A511 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 2036 'Core' scenario (i.e. without the A511 Growth Corridor scheme) using data from the transport model.

Figure 4-11 - Speed Limit along the A511 Gowth Corridor



Google API Spatial Traffic Data

4.3.25. Spatial traffic data derived from Google API, for the A511 Growth Corridor for AM and PM weekday peak hours, shown in **Figure 4-12** to **Figure 4-13** 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 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 A50/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 coming into the A511 (West) arm of the Birch Tree roundabout.

4.3.27. Notably in the PM peak the A511 / Flying Horse roundabout westbound approach and all the approaches to the A511 / Birch Tree roundabout experience slow-moving traffic.

Figure 4-12 - Typical AM Peak Hour Speeds - A511 Growth Corridor

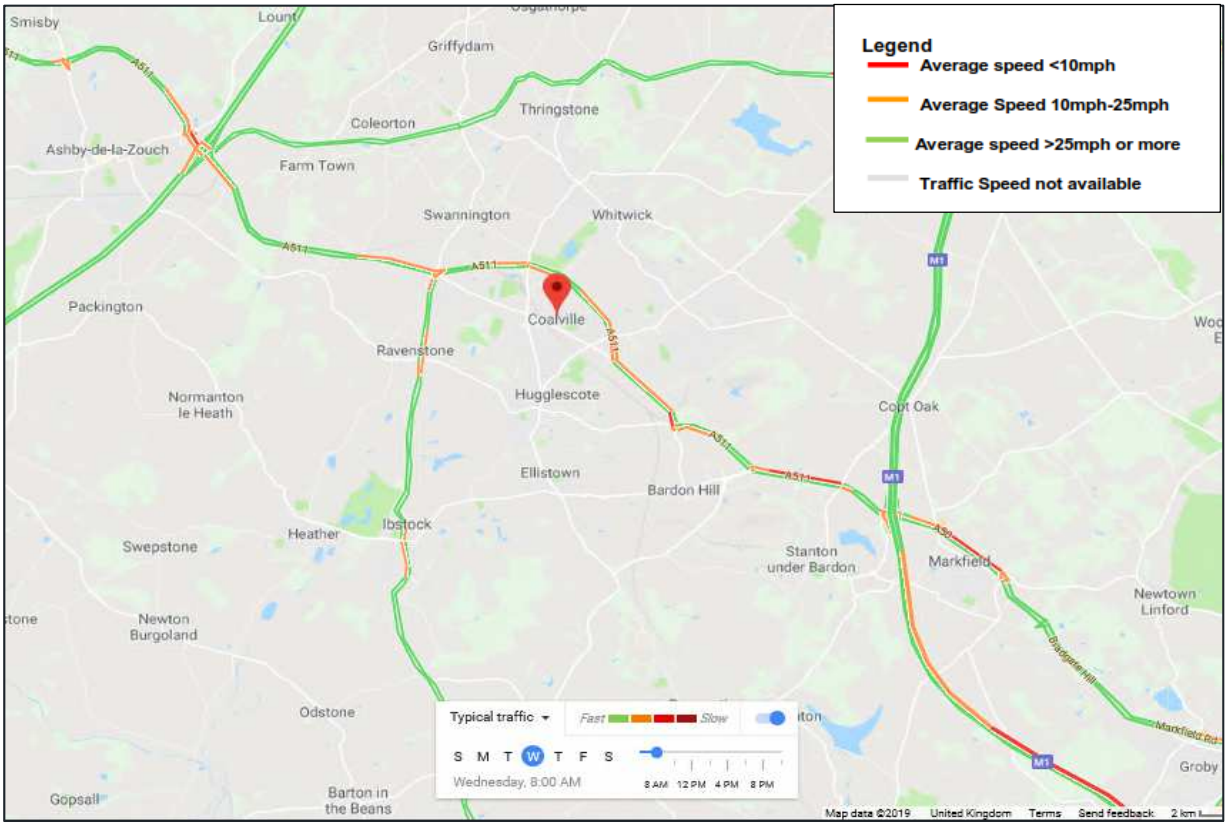
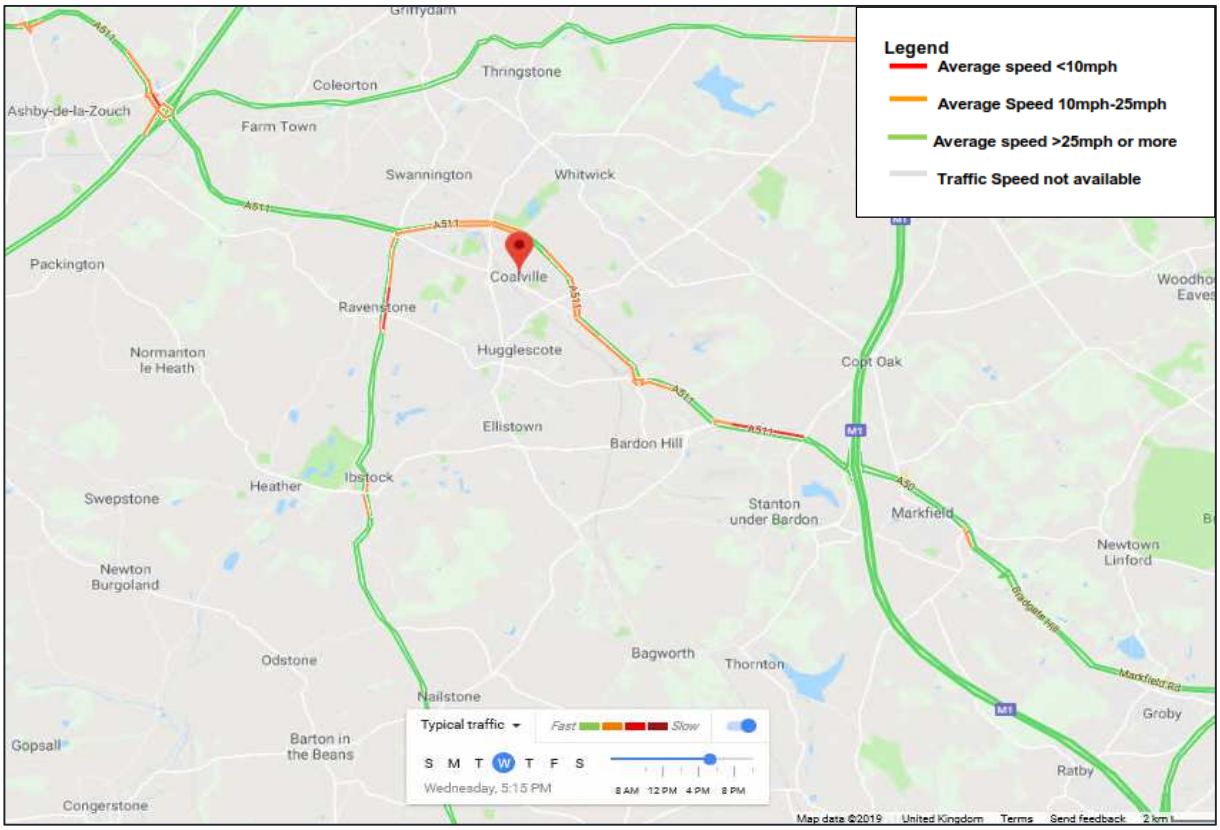


Figure 4-13 - Typical PM Peak Hour Speeds - A511 Growth Corridor



Modelled Junction Delays

4.3.28. **Figure 4-14** and **Figure 4-15** show the average level of delay at key junctions along the A511 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 (>40s) experienced at the following A511 junctions:

- Hoo Ash Junction;
- Whitwick Road Junction;
- Brooms Ley Junction;
- A511 / Quarry Access Junction; and
- Flying Horse Junction.

4.3.29. Off the A511, the following junctions also experiences notable levels of delay:

- Ashby Road / High Street Junction;
- Hugglescote Junction; and
- London Road / Forest Road Junction.

4.3.30. **Figure 4-16** and **Figure 4-17** show the average level of delay at key junctions along the A511 Growth Corridor in 2036 AM and PM peaks respectively. The figures show that the delays increase compared to 2014.

Figure 4-14 – Junction delays in the AM peak in 2014 - A511 Growth Corridor

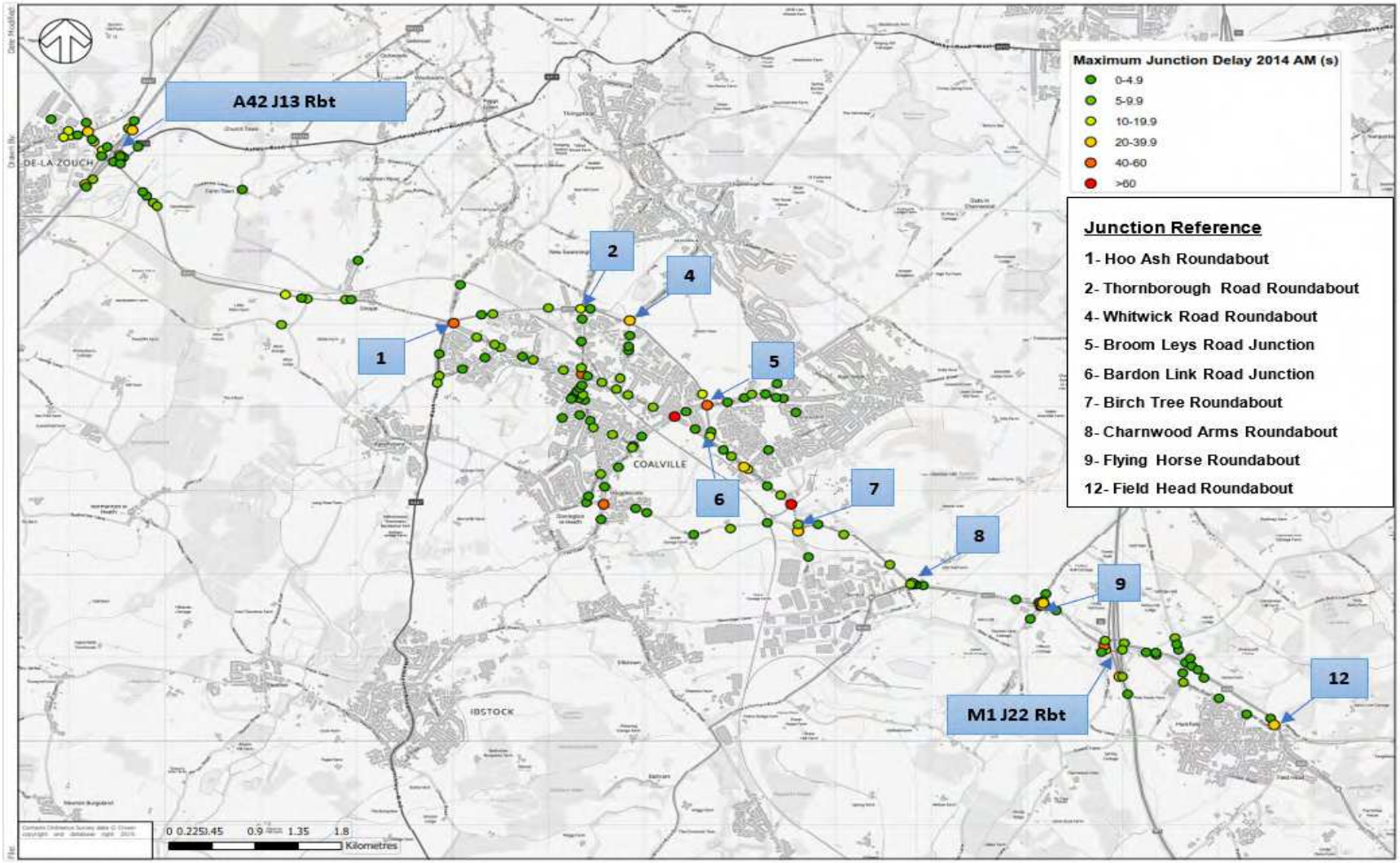


Figure 4-15 – Junction delays in the PM peak in 2014 - A511 Growth Corridor

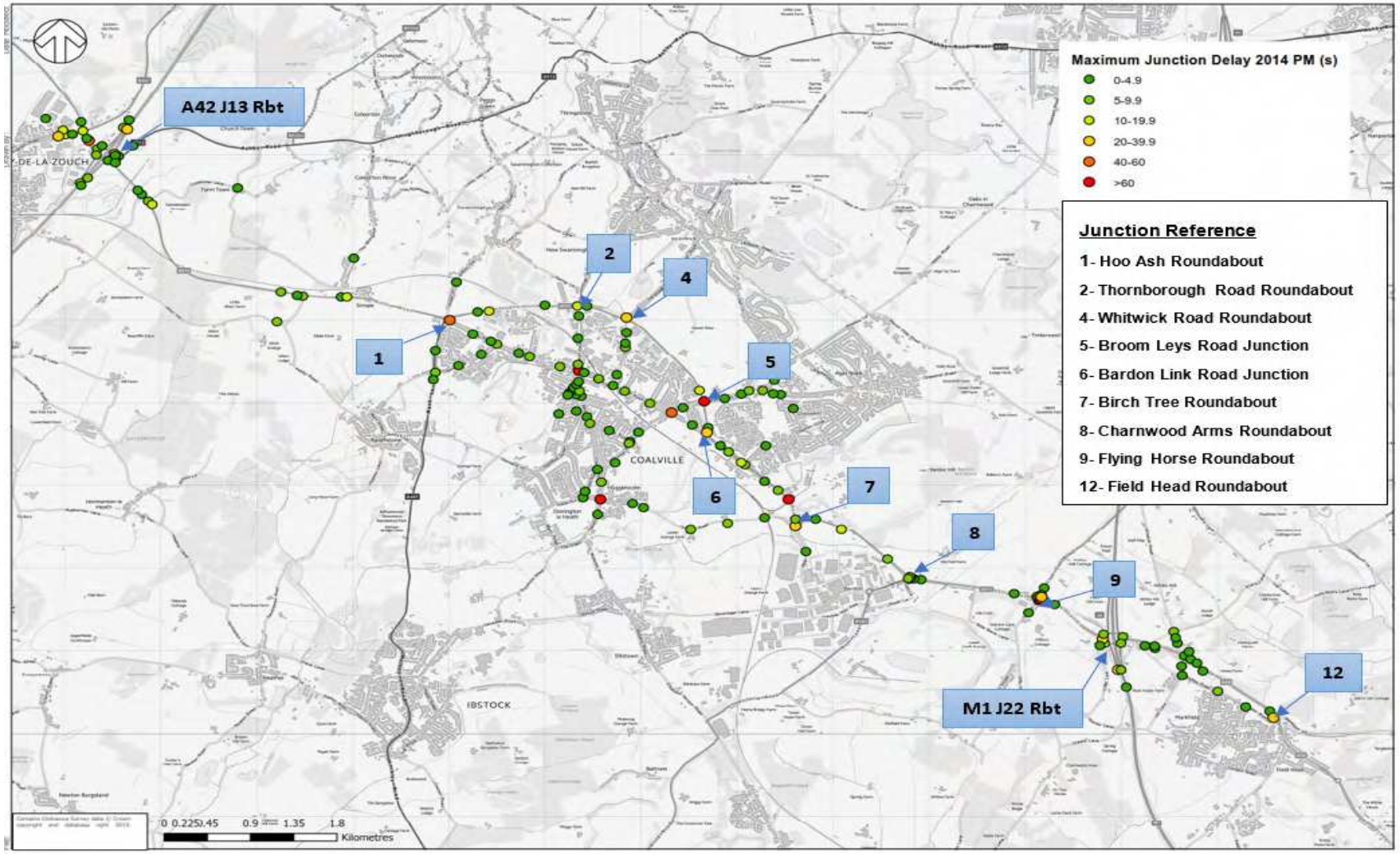


Figure 4-16 - Junction delays in the AM peak in 2036 - A511 Growth Corridor

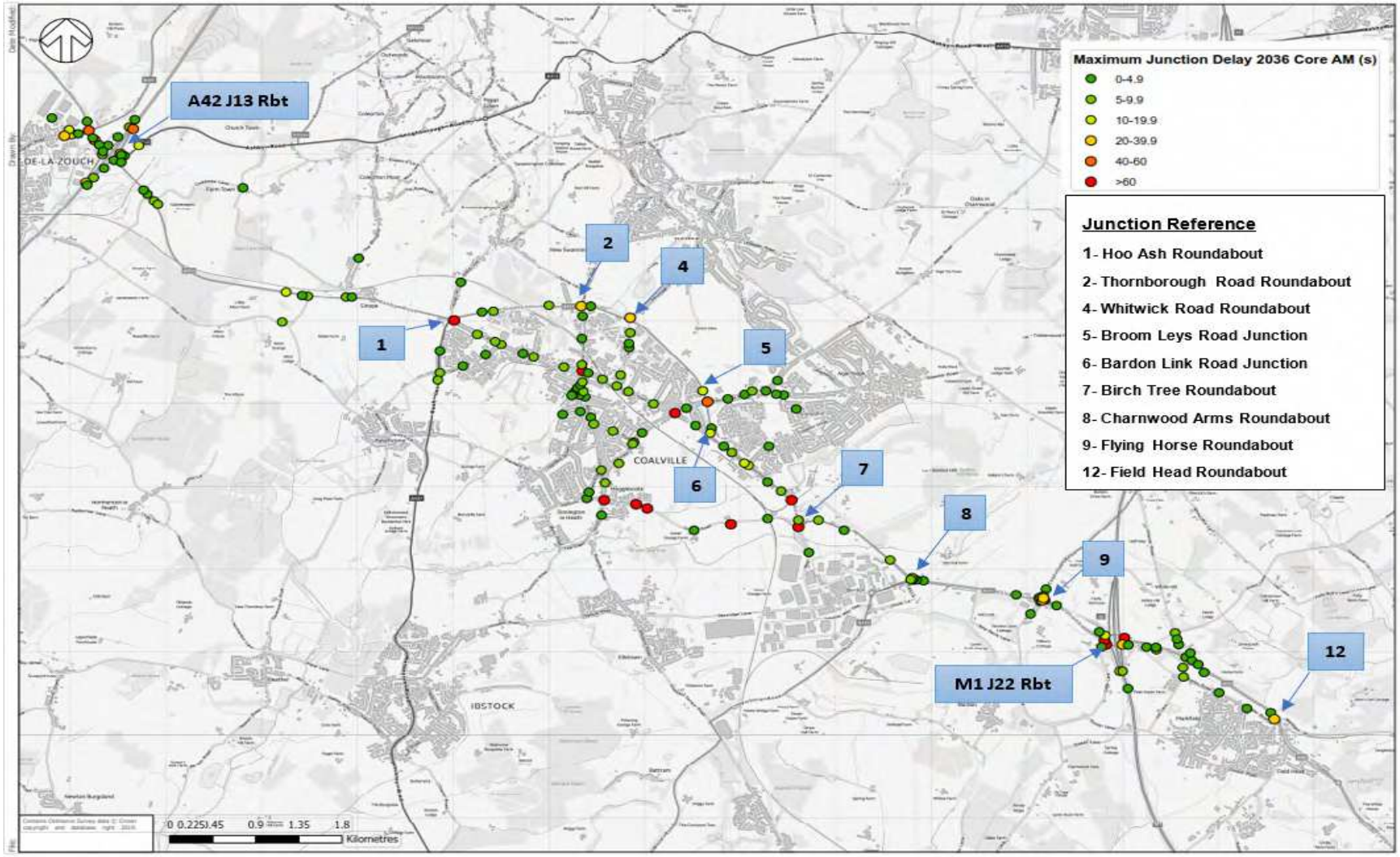
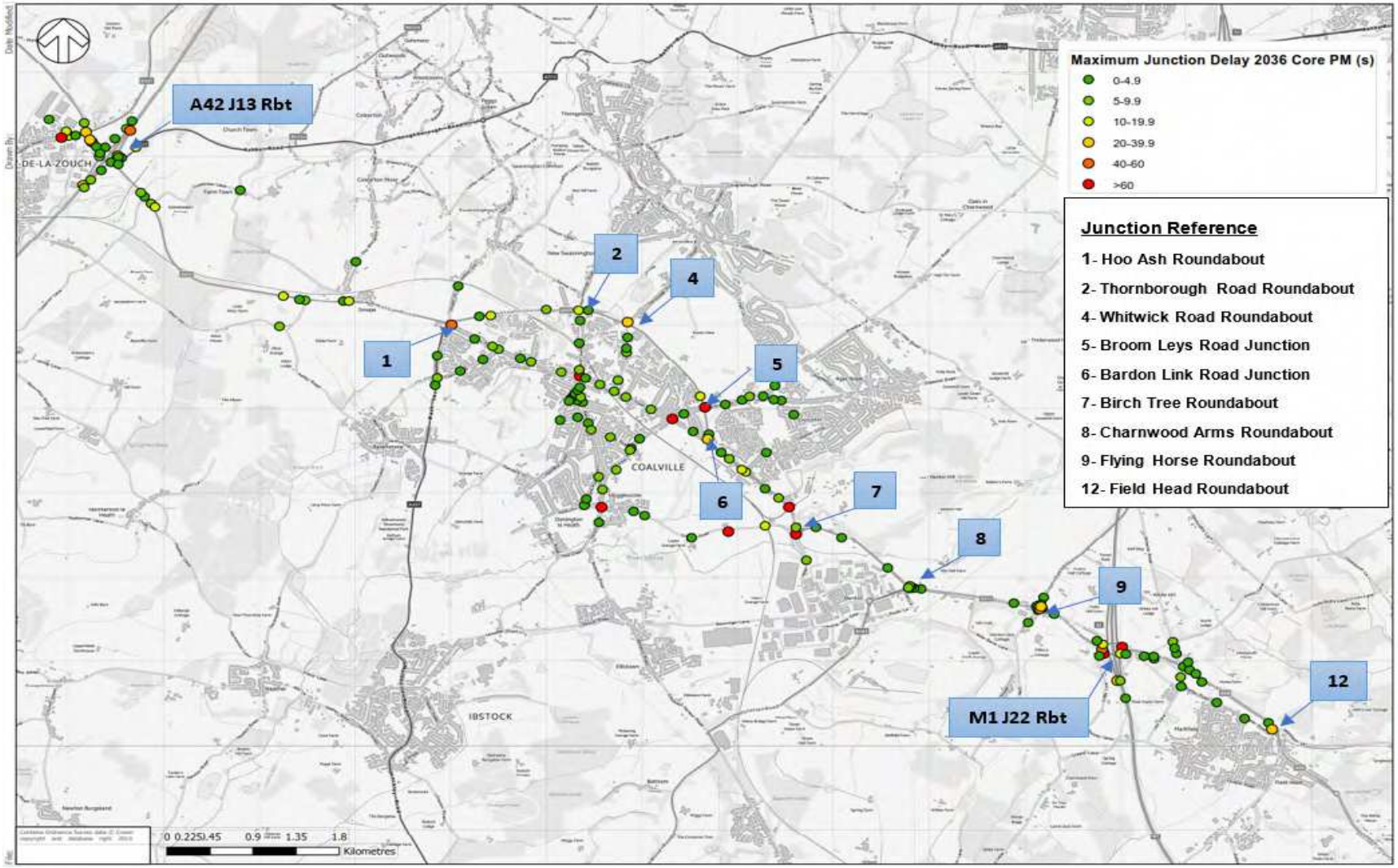


Figure 4-17 – Junction delays in the PM peak in 2036 - A511 Growth Corridor

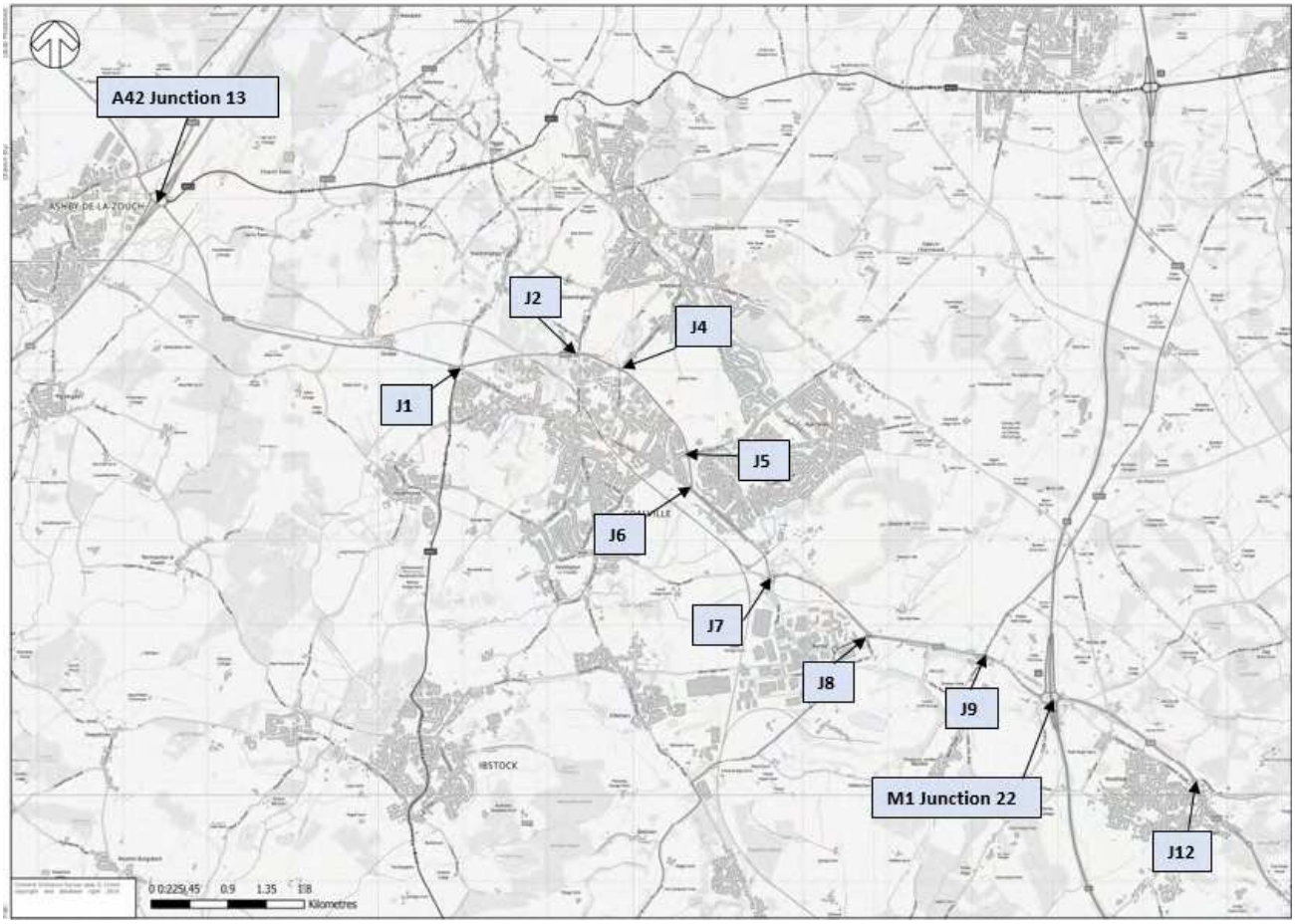


Journey Times

4.3.31. 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 Growth Corridor.

4.3.32. Journey time, speed and delay information for the 2014 Base and 2036 Core scenarios (AM and PM peaks) have been obtained from the transport model for links between all key junctions along the A511 Growth Corridor as shown in **Figure 4-18** using 'Joy Ride' in SATURN (Simulation and Assignment of Traffic to Urban Road Networks).

Figure 4-18 – A511 Key Junctions



4.3.33. 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		Distance (m)		Speed	Time (s)		Average Speed		Delay (s)	
From	To	2014	2036		2014	2036	2014	2036	2014	2036
A42 J13	1	4330	4330	50-60	248	246	38.19	38.22	50	47
1	2	1370	1370	50	110	138	35.08	32.45	35	62
2	4	530	530	30	49	49	34.12	31.96	8	9
4	5	1290	1290	50	100	101	33.20	31.45	18	19
5	6	377	377	40	71	66	30.53	29.40	27	21
6	7	1515	1515	30-40	148	146	29.58	28.65	31	28
7	8	1403	1403	40-50	88	92	29.11	28.26	12	17
8	9	1345	1345	40-70	78	80	29.83	28.95	19	21
9	M1 J22	880	805	50	70	110	30.02	28.18	16	64
M1 J22	12	2061	2136	50-70	114	153	30.71	27.96	30	49
Total		**15101**	**15101**		**1076**	**1181**	**32.04**	**30.55**	**246**	**337**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2036 Core		2014 Base	2036 Core	2014 Base	2036 Core	2014 Base	2036 Core
12	M1 J22	1800	1740	50-70	95	93	43.43	43.20	19	19
M1 J22	9	1015	1075	50	66	101	38.89	34.91	10	37
9	8	1400	1400	40-70	107	100	34.76	30.79	41	35
8	7	1438	1438	40-50	111	108	33.50	31.10	31	28
7	6	1515	1515	30-40	163	257	30.40	25.36	42	135
6	5	377	377	40	38	39	28.96	23.95	5	6
5	4	1290	1290	50	124	122	27.66	23.40	31	29
4	2	530	530	30	47	48	27.85	24.03	8	8
2	1	1370	1370	50	90	90	28.03	24.49	11	11
1	A42 J13	4320	4320	50-60	246	246	29.97	26.81	37	38
Total		**15055**	**15055**		**1087**	**1204**	**32.34**	**28.80**	**235**	**346**

4.3.34. **Table 4-3** shows that in the AM peak for both the 2014 Base and 2036 Core scenarios, travel speeds along the corridor falls well below the assigned speed limits for all links between the key junctions highlighted in **Figure 4-18**. The average modelled speed along the corridor in the eastbound direction is 32.04mph and in the westbound direction 32.34mph in the 2014 Base AM peak scenario, and these are expected to reduce further in the 2036 Core scenario with average speeds of 30.55mph in the eastbound direction and 28.80mph in the westbound direction. Journey times are expected to increase by approximately 2 minutes in both directions in the 2036 Core scenario and delays by approximately 100 seconds.

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

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

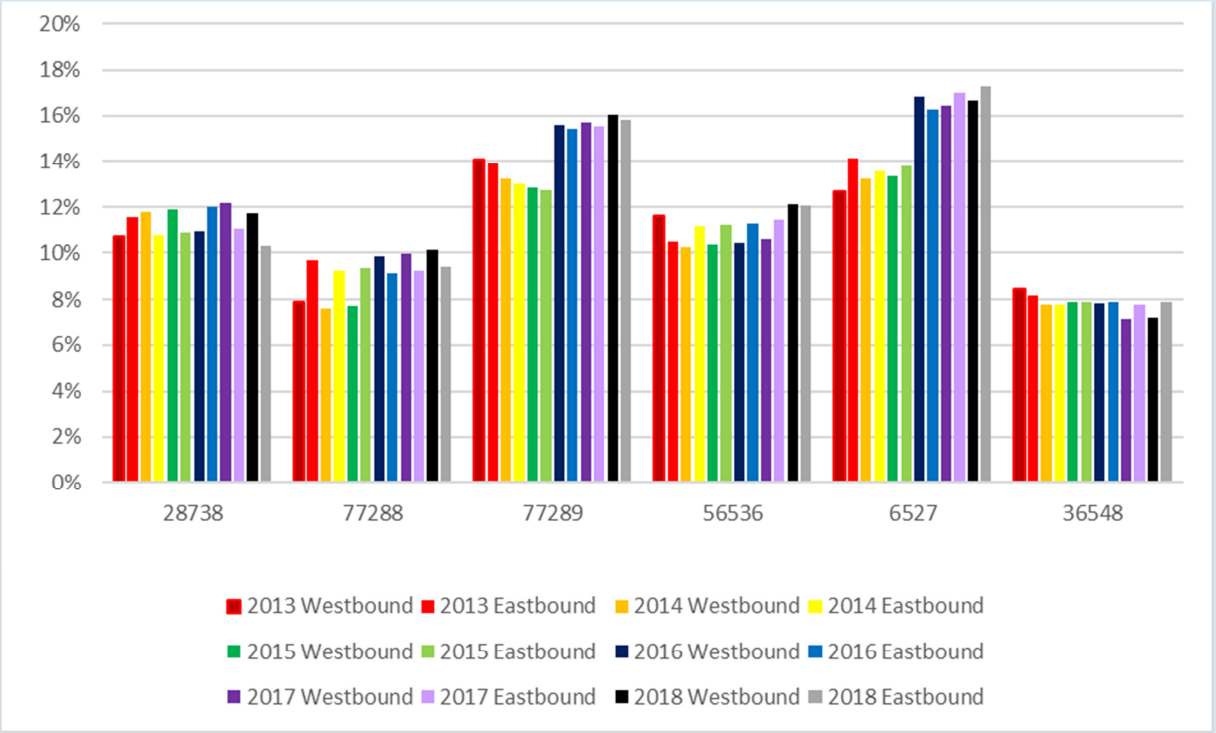
Eastbound										
Junction		Distance (m)		Speed	Time (s)		Average Speed		Delay (s)	
From	To	2014	2036		2014	2036	2014	2036	2014	2036
A42 J13	1	4330	4330	50-60	236	241	38.74	37.99	37	42
1	2	1370	1370	50	84	88	39.55	38.40	9	14
2	4	530	530	30	45	48	38.10	36.90	5	7
4	5	1290	1290	50	98	102	36.57	35.32	15	19
5	6	377	377	40	58	62	33.94	32.65	12	16
6	7	1515	1515	30-40	140	149	32.51	31.28	22	31
7	8	1403	1403	40-50	86	90	31.84	30.43	12	15
8	9	1345	1345	40-70	79	78	32.38	31.07	19	18
9	M1 J22	880	805	50	168	264	29.81	26.74	108	209
M1 J22	12	2061	2136	50-70	116	139	29.72	26.00	32	41
Total		**15101**	**15101**		**1110**	**1261**	**34.32**	**32.68**	**271**	**412**
Westbound										
Junction Reference		Distance (m)		Speed Limit mph	Time (s)		Average Speed mph		Delay (s)	
From	To	2014 Base	2036 Core		2014 Base	2036 Core	2014 Base	2036 Core	2014 Base	2036 Core
12	M1 J22	1800	1740	50-70	95	92	43.48	43.37	18	18
M1 J22	9	1015	1075	50	64	105	39.54	34.32	8	39
9	8	1400	1400	40-70	160	134	29.35	27.29	89	64
8	7	1438	1438	40-50	116	101	28.82	28.38	36	21
7	6	1515	1515	30-40	161	271	27.22	23.22	40	148
6	5	377	377	40	38	38	26.44	22.52	5	5
5	4	1290	1290	50	124	124	25.46	22.07	30	29
4	2	530	530	30	46	48	26.00	22.86	8	10
2	1	1370	1370	50	99	102	26.13	23.16	19	22
1	A42 J13	4320	4320	50-60	260	262	27.91	25.18	52	56
Total		**15055**	**15055**		**1163**	**1277**	**30.03**	**27.24**	**305**	**412**

4.3.36. **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 is 34.32mph and in the westbound direction 30.03mph in the 2014 Base PM peak scenario, and reducing to 32.68mph in the eastbound direction and 27.24mph in the westbound direction for the 2036 Core scenario. In the PM peak journey times are expected to increase from by approximately 2 1/2 minutes in both directions in the 2036 Core scenario and delays by approximately 100 to 140 seconds.

ISSUE 3 - HGV MOVEMENTS

4.3.37. **Figure 4-19** shows the percentage of observed traffic which is HGV at the six DfT count locations shown in **Figure 4-3**. Data is reported on an AADF basis by direction from 2013 to 2018, sourced from the DfT Road Traffic Statistics.

Figure 4-19 - Observed daily HGV proportions by direction - A511 Growth Corridor



4.3.38. Figure 4-19 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.

4.3.39. 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.

4.3.40. 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.

4.3.41. 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

4.3.42. Data presented in **Figure 4-20,** shows the locations of Personal Injury Collisions (PIC) that have occurred in the A511 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.

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

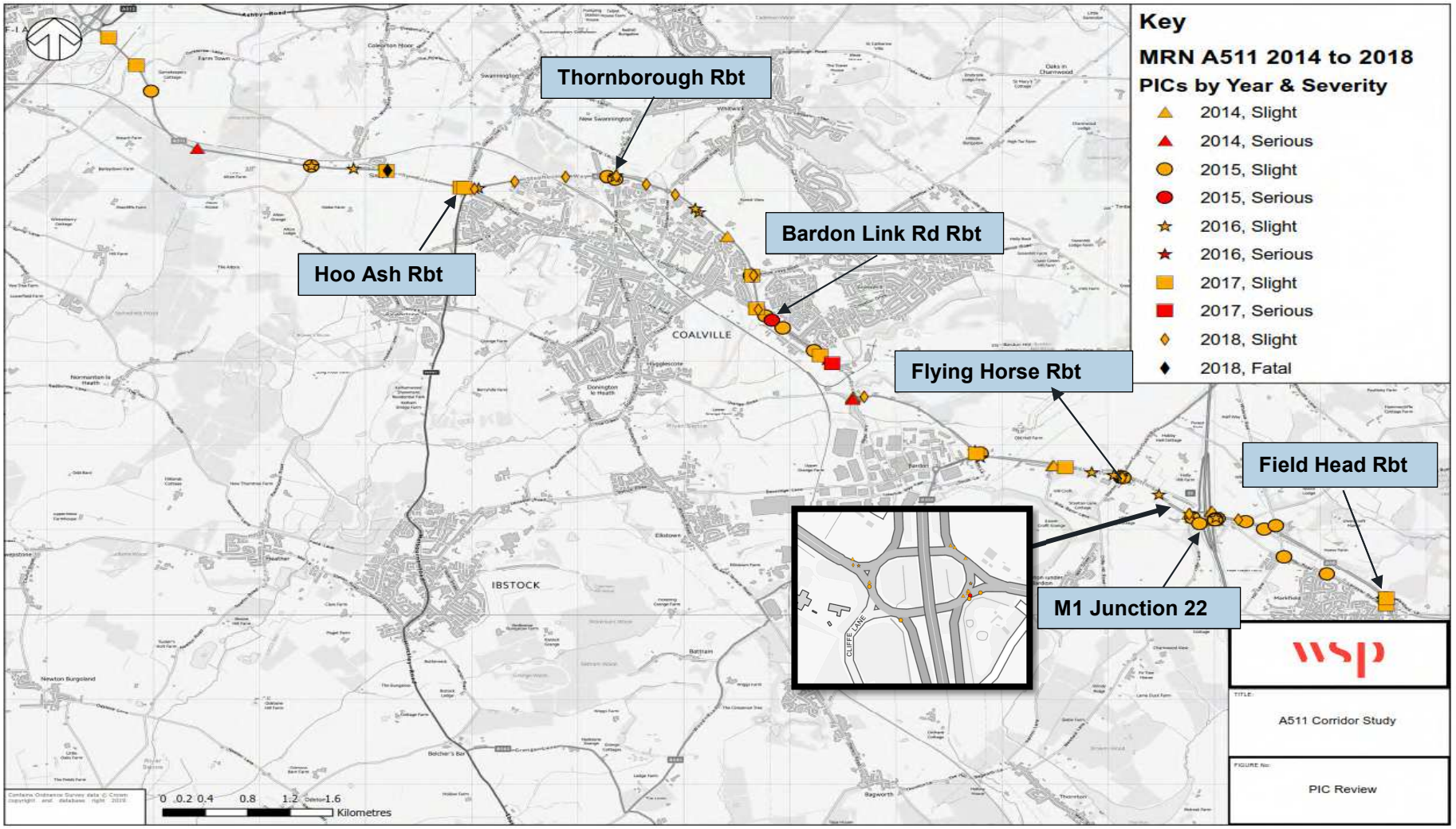
4.3.44. **Table 4-5** provides the number of accidents along the corridor by year of occurrence. These show that there has been a decline in the number of accidents along the A511 from the A41 Junction 13 through the M1 Junction 22 to the Field Head roundabout between 2014 and 2018.

4.3.45. 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 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 4-20 - Personal injury collision locations along the A511 Growth Corridor

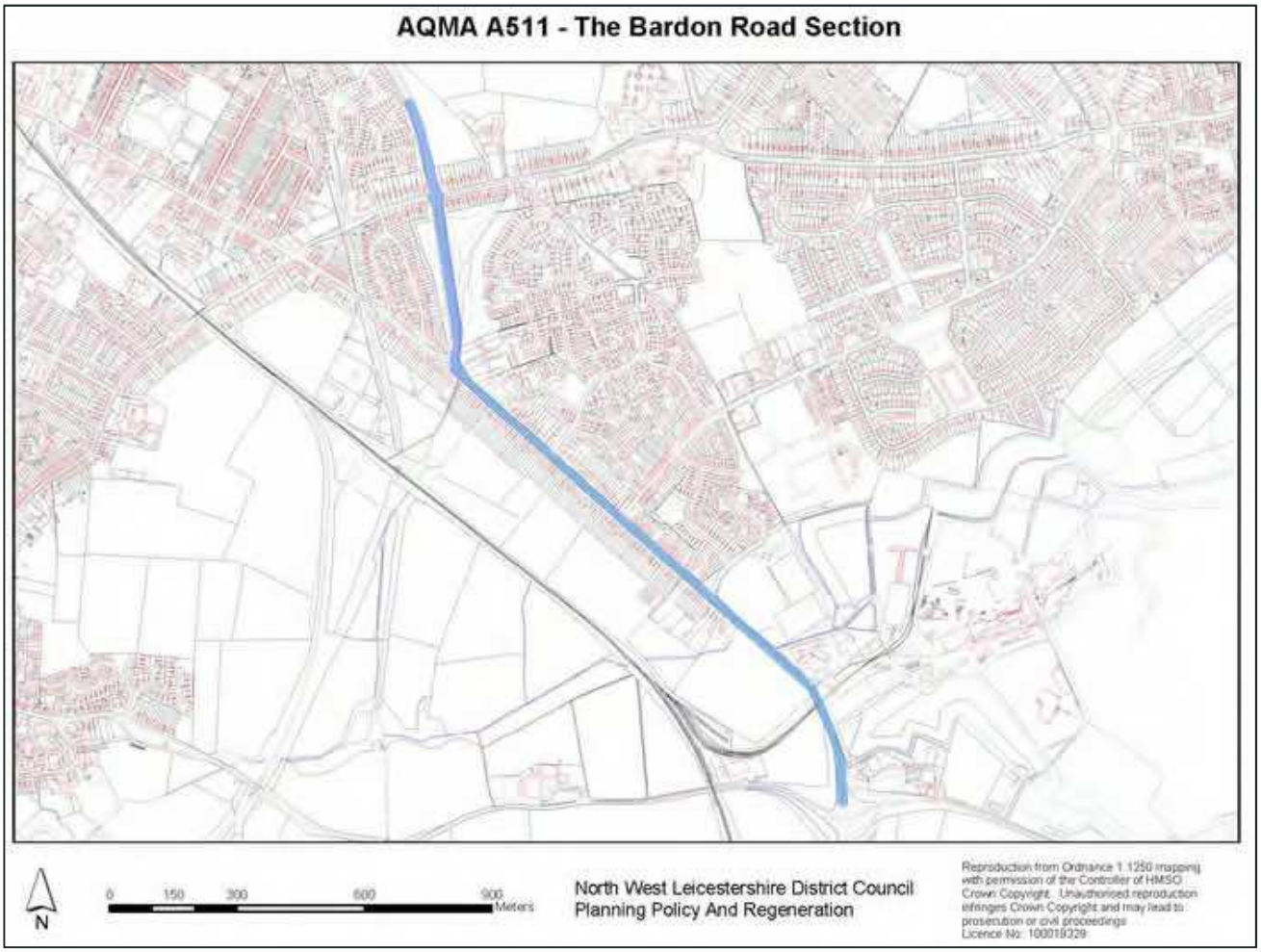


ISSUE 5 - AIR QUALITY

4.3.46. 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 4-21.**

4.3.47. Improvements to the A511 through the AQMA to reduce the amount of queuing traffic would improve the air quality in the AQMA.

Figure 4-21 - AQMA Boundary



4.4 IMPACTS OF DOING NOTHING

IMPACT 1 - A CONTINUATION OF CURRENT TRANSPORT PROBLEMS

4.4.1. Without the appropriate intervention, the problems and issues identified along the A511 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.

4.4.2. Considering the high proportion of freight traffic, this could have an impact on the logistics supply chains for industries both on and off the corridor.

4.4.3. 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.

4.4.4. 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.

4.4.5. 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

4.4.6. 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.

4.4.7. [4]The LLEP identifies the A511 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.

4.4.8. 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.

4.4.9. 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.

4.4.10. 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.

[4]https://www.llep.org.uk/wp-content/uploads/2015/03/SEP_-_full_document.pdf

Planned Housing and Employment

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

4.4.12. **Table 4-6** provide details of the key strategic development sites planned near the A511 Growth Corridor according to the North West Leicestershire Local Plan[5] . The location of these developments are shown in **Figure 4-22**

4.4.13. 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.

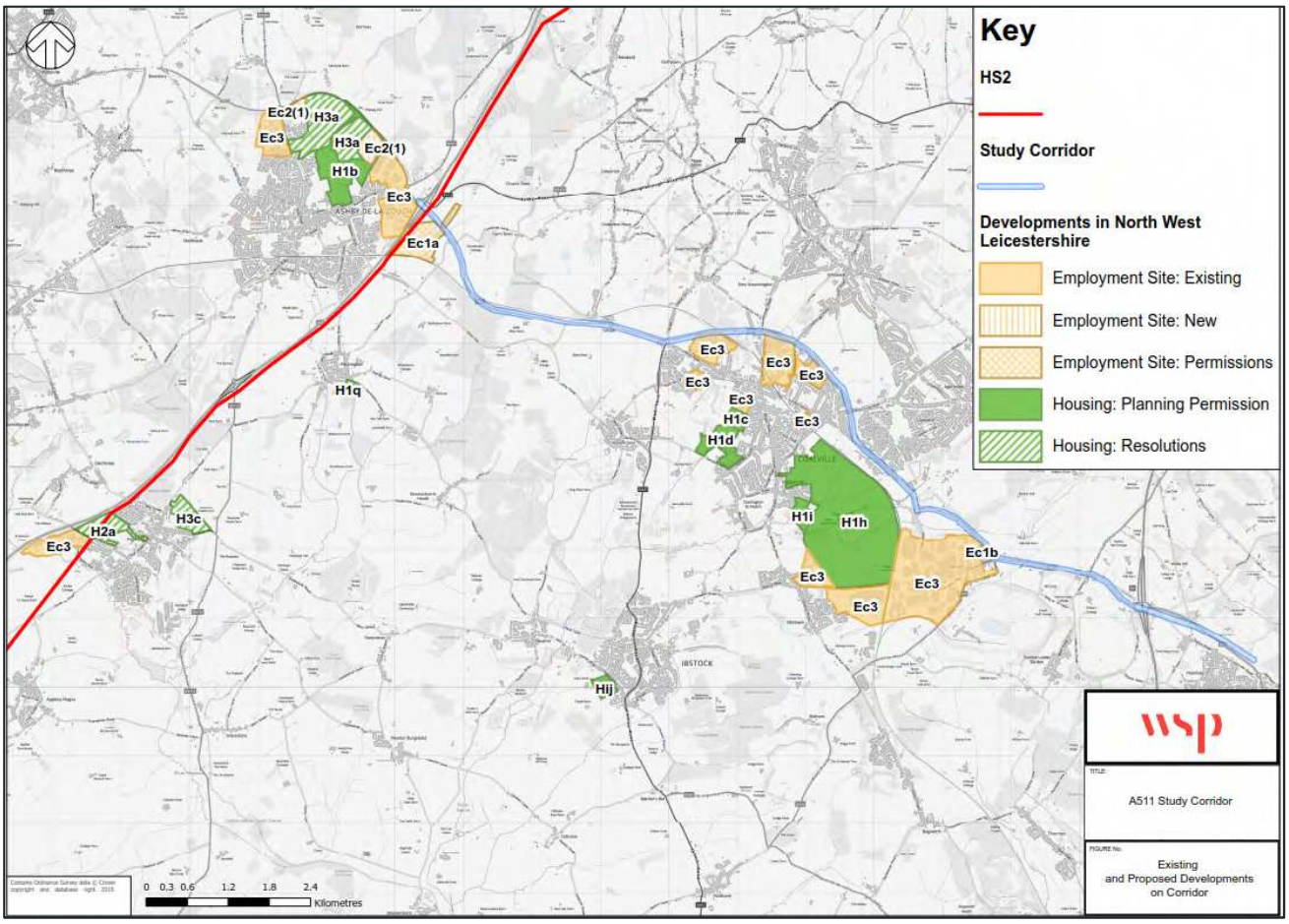
Table 4-6 – Key strategic planned land use sites

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

[5] North West Leicestershire Local Plan 2011 to 2031 (November 2017)

Site Ref	Development Type	Location	Quantum	Status
H3c	Housing	Measham	300 dwellings	New Allocation
Hih	Housing	Coalville	3,500 dwellings	Planning Permission

Figure 4-22 – Existing & proposed developments in A511 Growth Corridor



4.4.14. As evident from Table 4-6, there is significant provision for new housing and employment planned along the A511 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.

4.4.15. In addition to the planned developments along the A511 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.

4.4.16. 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.

4.4.17. In addition to this consultation has been ongoing with the two developers of South East Coalville SUEs (i.e. H1h on Figure 4-22) Davidsons Homes and Harworth Group who are collectively responsible for providing the southern part of the Bardon Link Road.

4.4.18. The impact of 'do nothing' is that the 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 Corridor scheme is therefore important to the realisation of all this planned growth.

IMPACT 3 - ADVERSE IMPACT ON THE SRN JUNCTIONS

4.4.19. The A511 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.

4.4.20. In addition to a 'Do Nothing' outcome resulting in the continuation of the existing local transport problems, increasing congestion on the A511 MRN route 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 congestions at A511 junctions 'blocking back' onto the SRN in the worst case scenarios.

4.4.21. 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, then 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 Growth Corridor.

4.4.22. 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

4.4.23. In 2024, 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 traffic will need to be re-routed onto the A511.

4.4.24. 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.

4.4.25. 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. 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.

4.4.26. It is therefore imperative that all issues along the entire corridor is 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 4.8 Preferred Option.

4.5 SCHEME OBJECTIVES

4.5.1. 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.

4.5.2. 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 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.

4.5.3. 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.

4.6 OPTION ASSESSMENT REPORT SUMMARY

A full WebTAG-compliant Options Assessment Report (OAR) has been developed prior to the SOBC being developed. This is provided as a standalone report, and summarised in this section.

4.6.1. The OAR started from 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 WebTAG 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.

4.6.2. The development of the OAR followed the recommended 8 steps detailed in Section 2.11.1 of Department for Transport (DfT)'s Transport Appraisal Guidance (TAG), with the Option Assessment Report documenting the process of identifying the need for intervention and then process of option development and selection.

4.6.3. 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.

4.6.4. 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.

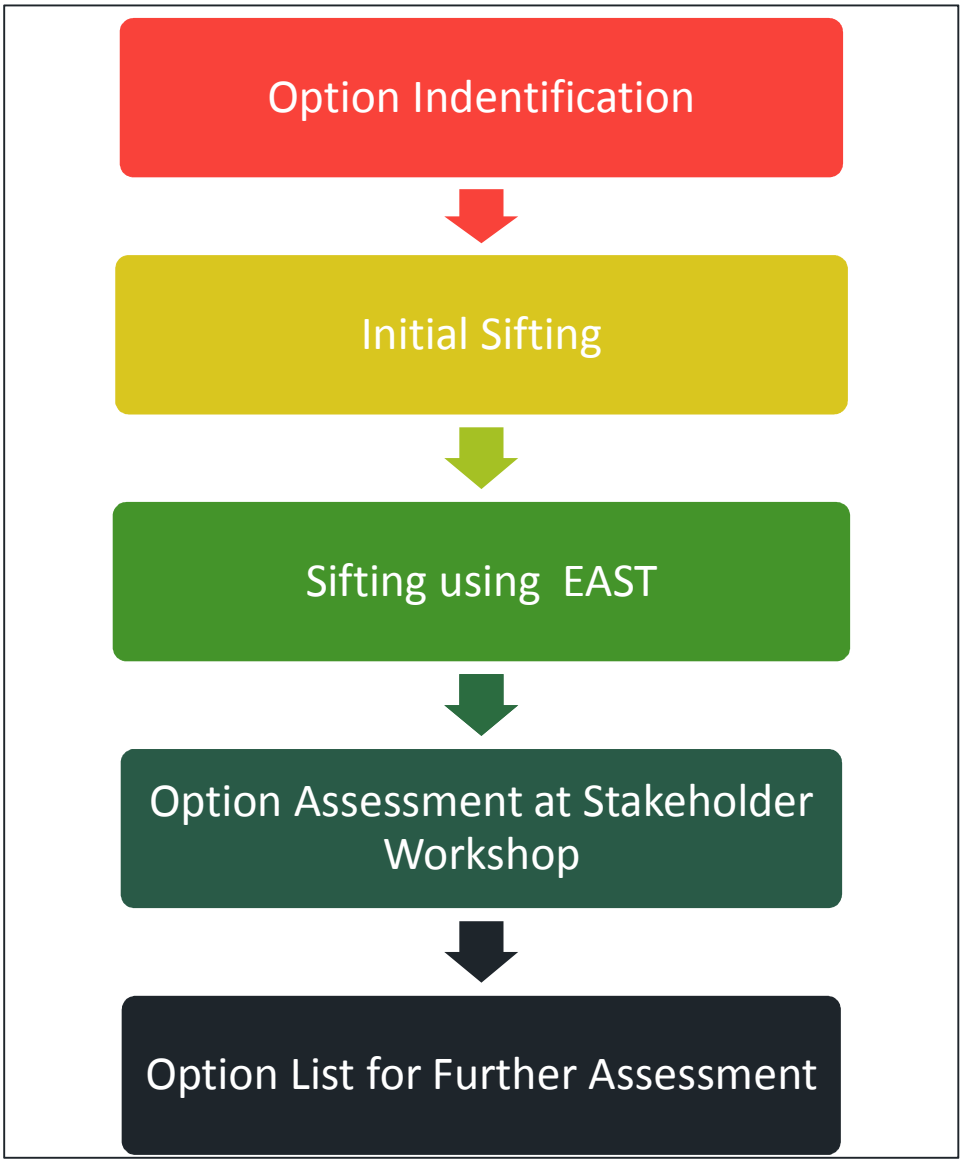
4.6.5. The initial work undertaken by Colin Buchanan has been followed by a series of extensive in-house and external studies all aimed at identifying all necessary infrastructure needed to mitigate the

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.

4.6.6. 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).

4.6.7. The approach to generating options and eventual selection of the preferred option was led from the evidence base, following the steps indicated in **Figure 4-23**, as recommended in DfT's WebTAG guidance.

Figure 4-23 - Option Assessment Process



LIST OF OPTIONS

4.6.8. 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 review against the scheme objectives.

4.6.9. 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.

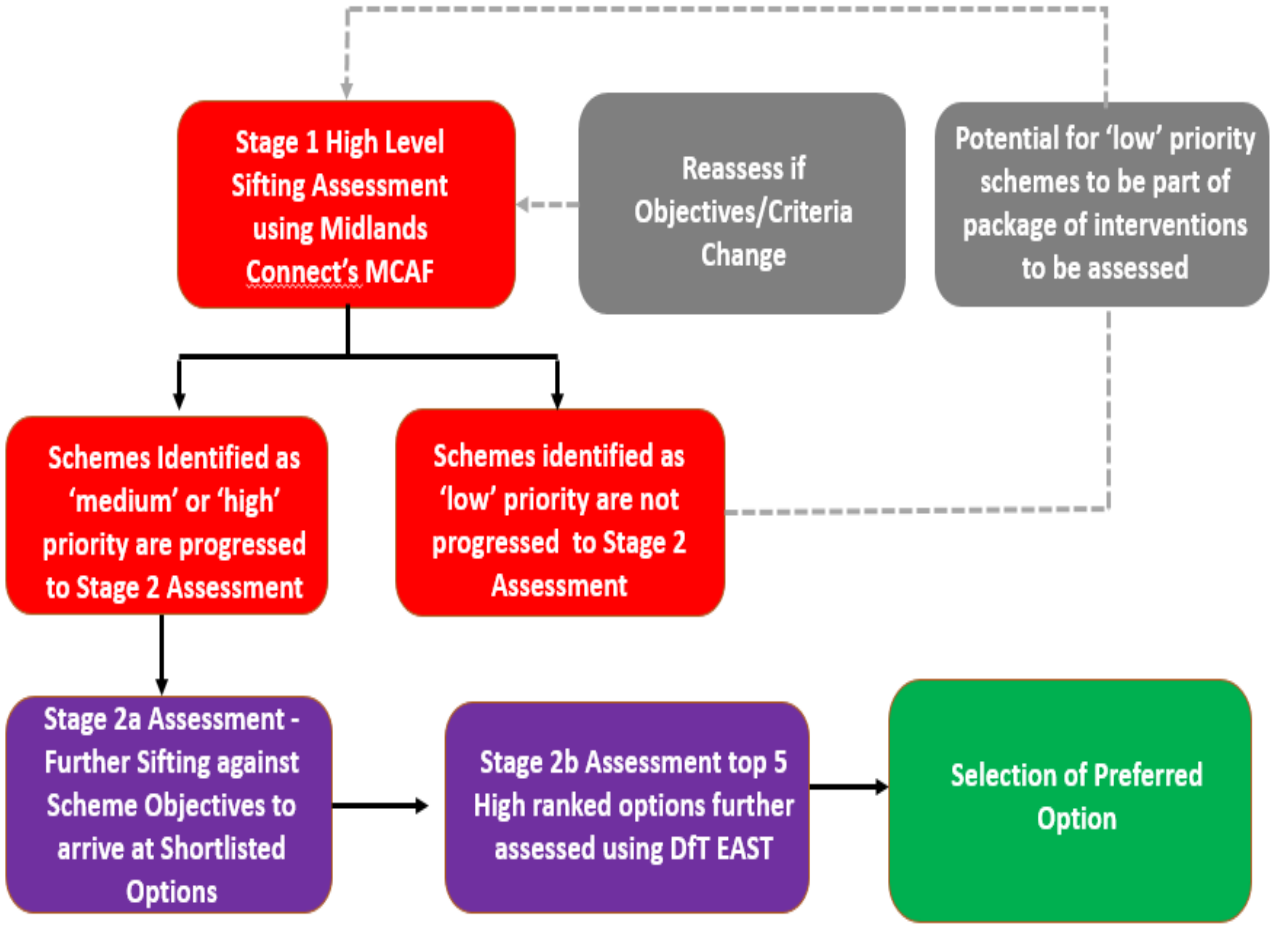
4.6.10. A wide range of options were identified to specifically address the identified issues along the corridor, these included:

- 10 individual junction improvements schemes;
- 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.

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

4.6.12. The following sections present the tailored option appraisal approach used in arriving at the preferred option as depicted in **Figure 4-24**.

Figure 4-24 – Tailored Option Appraisal Approach



STAGE 1 ASSESSMENT – INITIAL SIFTING

4.6.13. 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.

4.6.14. 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.

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

4.6.16. The long list of options were 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%.

4.6.17. 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 4-7** presents the results of the Stage 1 Assessment. As can be seen only the 8 individual junction improvement options and the 5 package options achieve the medium and high priority scores.

Table 4-7 – 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

4.6.18. 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.

4.6.19. **Table 4-8** provides the assessment of the five shortlisted options against the scheme objectives. Table 4-8 shows that Package 1 is likely to best complement the scheme-specific objectives; however, this does not include an assessment of deliverability risk.

4.6.20. 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.

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

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Table 4-8 - 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 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

4.6.22. 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).

4.6.23. The performance of the five shortlisted against the five case model is summarised using a Red Amber Green (RAG) assessment in **Table 4-9**.

Table 4-9 – 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					

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

4.7 SELECTION OF PREFERRED OPTION

4.7.1. To arrive at the preferred option for the A511 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.

4.7.2. 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.

SCHEME OBJECTIVES

4.7.3. The option appraisal outlined in **Table 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.

4.7.4. 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

4.7.5. 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.

4.7.6. 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

4.7.7. 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.

4.7.8. 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

4.7.9. 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".

4.7.10. 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".

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

4.7.12. 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.

4.7.13. The transport model to support the study is currently being updated, and for this reason it has not been possible to develop an accurate assessment of the Value for Money (VfM) for any of the shortlisted options. This will be a key area of development as the study progresses.

4.7.14. 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, and therefore the BCR is expected to improve as the study progresses.

MANAGEMENT APPRAISAL

4.7.15. None of the packages presently have an implementation timetable developed, this being something that will be generated at a future stage.

4.7.16. Likewise, broad consultation hasn't occurred yet so public acceptability isn't known, so responses are assumed to be neutral for the purposes of this review.

4.7.17. The barriers to the delivery of Packages 1 and 2 are graded as 'Some Barriers' for the purposes of this review. This is 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. Initial work has commenced to establish the scheme's risks and initial conversations commenced with landowners regarding scheme delivery.

4.7.18. 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".

4.7.19. Risk analysis has been 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 include:

- 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.

4.7.20. 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

4.7.21. 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.

4.7.22. 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).

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

4.7.24. 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.

4.7.25. How the scheme will be delivered remains to be confirmed and as such the cost profile can't be commented upon in detail. Given the scheme is needed ahead of works on HS2 Phase 2B then construction should commence as soon as possible.

COMMERCIAL APPRAISAL

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

4.7.27. 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 over-corridor 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 over-corridor traffic to a degree as well as provide additional capacity for the crucial Coalville/Bardon to M1/Leicester flows identified in the AADF data. The remainder of the schemes, due to their small scopes and limited regional impacts, are deemed to be "Slightly Inflexible".

4.7.28. Funding for the packages will be provided by a combination of DfT MRN Funding and Local Authority (LCC/NWLDR) contributions. As aforementioned, no direct income will be generated by any of the packages.

4.8 PREFERRED OPTION

4.8.1. Based on the range of objectives and the option appraisal assessment undertaken, it is apparent that Package 1 is 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.

4.8.2. Following the short list options sift presented in Chapter 7 of the OAR, the preferred option to be taken forward to the next stage of appraisal is Package 1.

4.8.3. 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.

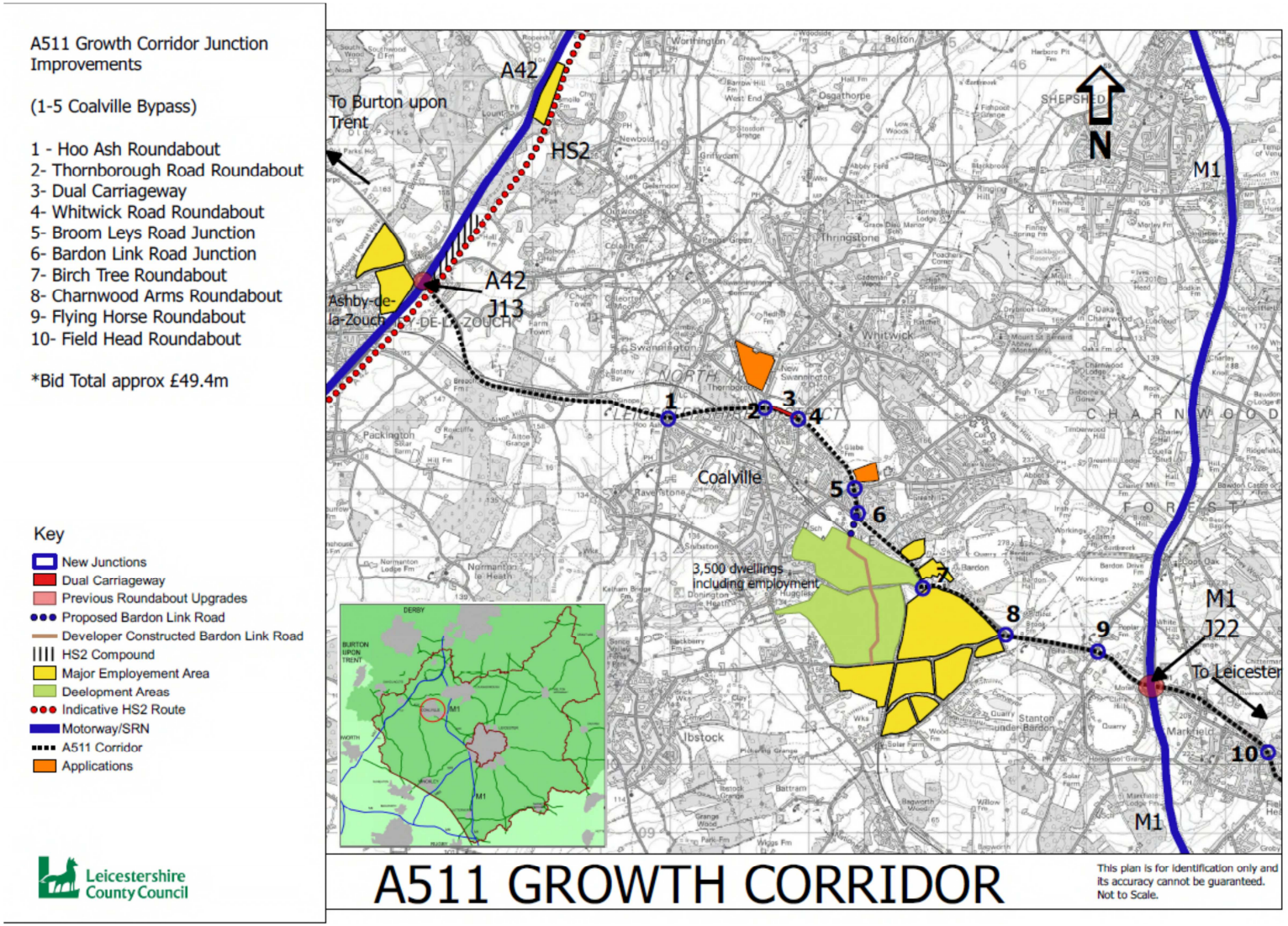
4.8.4. Moreover, isolated junction improvements will only increase delays at neighbouring junctions, since traffic will be able to go through the improved junction quicker only to get stop at an adjoining junction already struggling from congestion and in so doing increasing delays and queuing along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

4.8.5. 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, which will have an adverse impact on the resilient role played by the corridor in supporting the SRNs.

4.8.6. This preferred option – Package 1 involves junction improvements at nine existing junctions along the A511 between the A42 J13 and the 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

4.8.7. The 12 components of Package 1 are shown in **Figure 4-25.**

Figure 4-25 - Package 1 - Improvement Proposals



4.8.8. The proposed 'Package 1' scheme includes the following 12 improvements detailed in **Table 4-10** and the supporting scheme drawings provided in Appendix A of this SOBC.

Table 4-10 – Package 1 Scheme Details

Potential Scheme	Scheme Details	Stage of Development
Junction 1. Hoo	Widening on entry and exits to the roundabout	General
Junction 2. Thornborough Roundabout	Widening on entry and exits to the roundabout	General Arrangement/ Costed scheme/ Option appraisal
3. Dual	Dualling	General
Junction 4. Whitwick Road Roundabout	This scheme will include widening of the approaches to the junction and the adjustment of the junction to signal control. This will aid in future proofing capacity of the junction for future development, as well as managing traffic flow across the junction, supporting sustainable transport, particularly walking and cycling, movements between Whitwick and Coalville.	General Arrangement/ Costed scheme/ Option appraisal
Junction 5. Broom	This scheme extends existing approach lanes and	General
Junction 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 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.	General Arrangement/ Costed scheme/
Junction 7. Birch	This scheme will see the delivery of widened entry and	General
Junction 8.	This scheme will see the delivery of widened entry and exit lanes, supporting better traffic flow and reducing the	General Arrangement/ Costed

Charnwood Arms Roundabout	risk of collision, as well as providing signalisation on all approaches to the junction.	scheme/
Junction 9. Flying Horse Roundabout	This scheme will see the full signalisation of the current partially signalised roundabout, along with some restriction to left turn movements. This signalisation might	General Arrangement/ Costed scheme/
Junction 10. Field Head Roundabout	This scheme will see the full signalisation of the current partially signalised roundabout, along with some restriction to left turn movements. This adjustment might	General Arrangement/ Costed scheme/

BARDON LINK ROAD AND JUNCTION IMPROVEMENTS

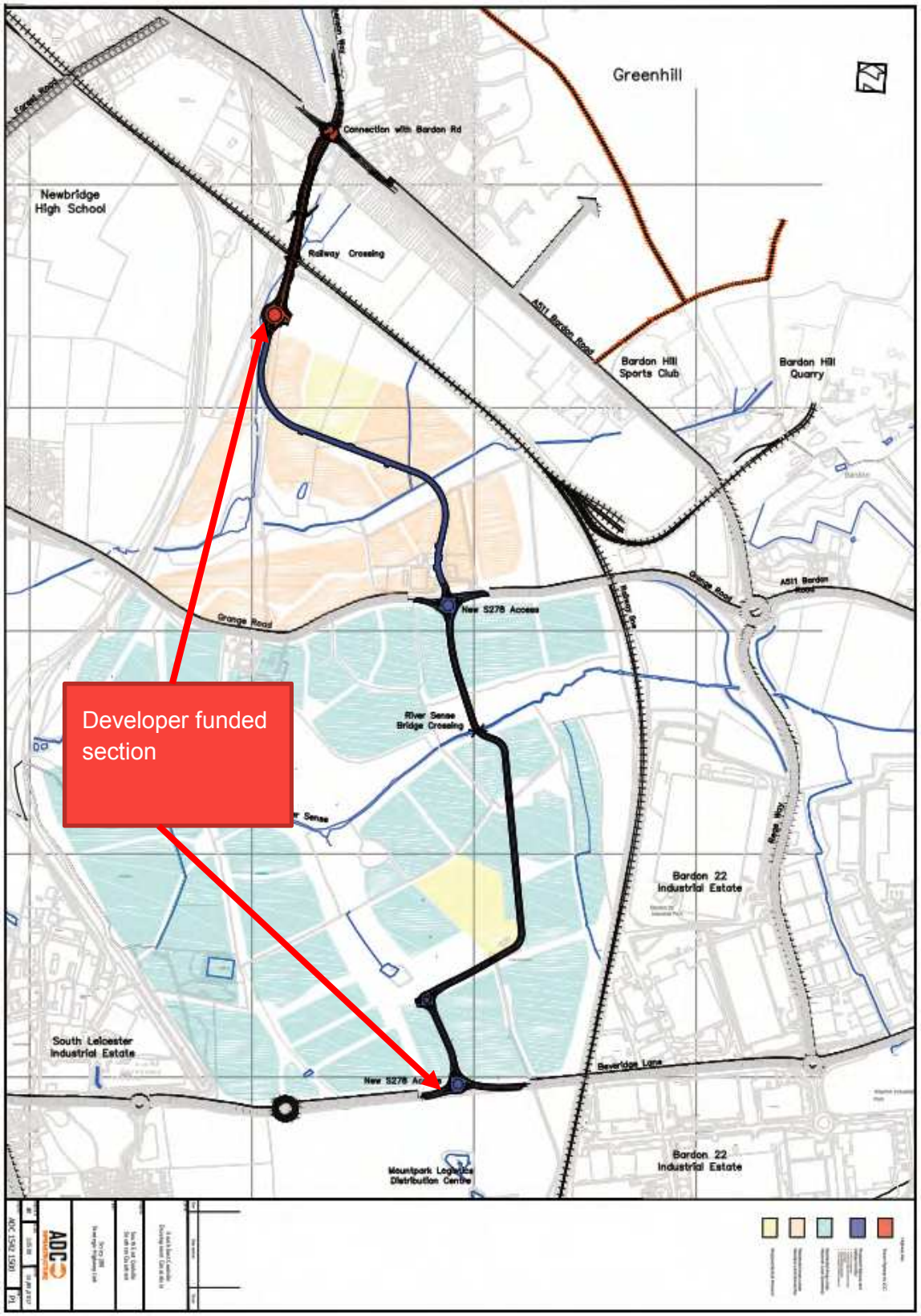
4.8.9. The Bardon Link Road shown in Figure 4-26 will leave the A511 at the Stephenson Way / Bardon Road junction (i.e. Junction 6 on Figure 4-25), before crossing under the Burton-on-Trent to Leicester railway line via an upgrade to the existing underpass. It then continues south to Beveridge Lane via 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.

4.8.10. 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 SOBC 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.

4.8.11. 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.

4.8.12. 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 4-26 - Bardon Link Road alignment showing developer funded section



CONCLUSIONS

4.8.13. Overall, Package 1 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. 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 in the PIC appraisal.

4.9 KEY BENEFITS OF THE PREFERRED A511 GROWTH CORRIDOR SCHEME

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

4.9.2. 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.

4.9.3. The preferred package of schemes will:

- Deliver increased capacity at congested junctions across the corridor;
- 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

4.9.4. 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.

4.9.5. 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.

4.9.6.

4.9.7. 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

4.10 STRATEGIC AND POLICY FIT

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

4.10.2. Table 4-11 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 4-11 – Strategic Fit Assessment

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.	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
Road Investment Strategy 2015/16 – 2019/20 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 Growth Corridor study due to it linking two SRN routes. ▪ With regards to the SRN in proximity to the A511 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.	
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 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		

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
Leicestershire	▪ 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 ▪ Highlights North West Leicestershire as the most deprived district in the county, with ▪ 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 ▪ Coalville is identified as a core location for investment, to encourage active and ▪ Identifies the following challenges relating to the transport for the region: • Attempt to provide a transport system delivering equality of access, particularly for • 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 • Goal 2: An efficient, resilient and sustainable transport system that is well managed • 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 • Goal 5: A transport system that improves the safety, health and security of our • Goal 6: A transport system that helps to improve the quality of life for residents and	
Leicester & Leicestershire Strategic Growth Plan (2018-2050)	▪ This document identifies Leicestershire's strengths and weaknesses. Of note, it identifies the following as issues to overcome: • Congestion on roads and railways; • 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 &	▪ This document, produced in support of the preceding, raised additional key issues that the • Given the proposed concentration of growth at a series of large-scale developments • Increase the number of homes in walking distance of public services and public • Reduce or maintain current annual traffic flows despite growth. • Monitor journey time impacts of new developments.	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
North West Leicestershire Adopted Local Plan 2011-2031	▪ This document sets out the key issues facing North West Leicestershire. Of relevance to the A511 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.'	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
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." ▪ Identifies that the East Midlands Airport is one of the UK's most important stations for ▪ 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 ▪ Mentions the potential for a new freight interchange to the north east of the district, in ▪ 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 ▪ 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.	

Policy and Strategy Document	Details of Policy and Strategy	Strategic Fit
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; • 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 Leicestershire Local Plan (2011-2031), to provide an alternative route for drivers to limit ▪ Sets out a desire for improvements on the A42, which will form the western boundary of	

Strategic Fit with Preferred Scheme

Strong strategic fit with policy

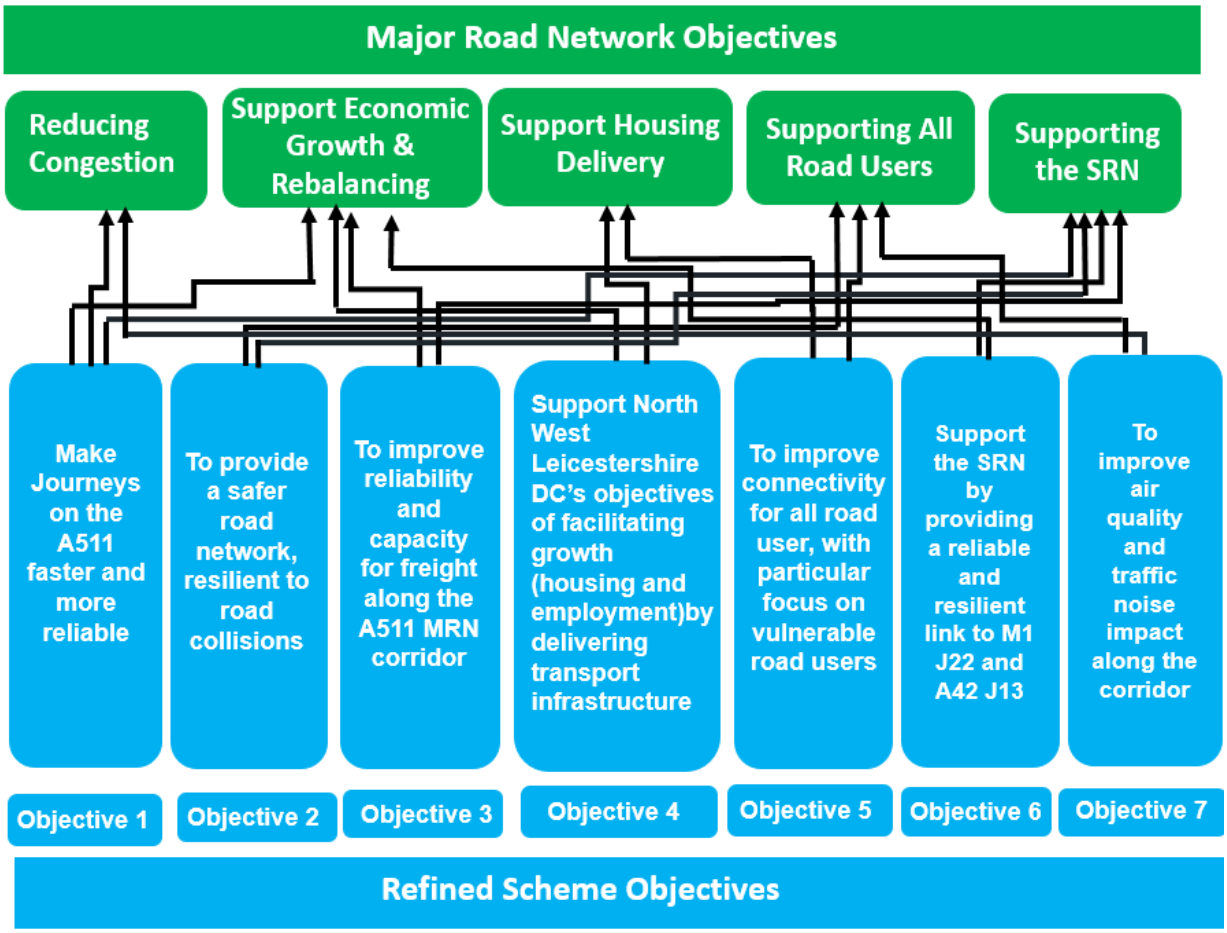
Neutral / minimal strategic fit with policy

Negative strategic fit with policy

4.11 MRN OBJECTIVES

4.11.1. In addition to the above the performance of the preferred scheme has been assessed against DfT's MRN objectives. Figure 2-1 shows how the identified scheme objectives align with the MRN objectives.

Figure 4-27 - A511 Growth Corrior Scheme Objectives Alignment with MRN Objectives



4.11.2. In addition to the above a Red Amber Green (RAG) assessment has been undertaken to show the scale at which the proposed A511 Growth Corridor scheme meets the MRN objectives and this is summarised in **Table 4-12**. The table shows that the preferred scheme fully addresses all the MRN Objectives.

Table 4-12 – Preferred Scheme Performance against 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 It will also provide additional capacity at other junctions along the corridor to improve There is a present Air Quality Management Area (AQMA) at A511 Stephenson Way / Broom Leys
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, The A511 Growth Corridor is one of five Growth Areas identified by the LLEP. Through appropriate Additionally, there are significant opportunities for new distribution facilities to be supported by the

Objective	Criteria	Performance against MRN Objectives
		Quarrying and minerals sector is also an important element of the local economy, with the Bardon A failure to address the issues posed by underperforming junctions will increase delays to traffic The development and delivery of the suggested package of measures will support the efficient Finally, the corridor will be key to the delivery of materials to the HS2 construction compound for
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 The programme of interventions will also aid in providing capacity across the corridor to mitigate Additionally, the package of measures includes walking and cycling improvements across key
Support all road users - recognising the needs of all users, including cyclists, pedestrians and disabled	• Delivering benefits for public transport and non-motorised users, including cyclists, pedestrians and disabled	At a local level residents and businesses will benefit from improved car, bus, cycle and pedestrian

Objective	Criteria	Performance against MRN Objectives
people.	people • Safety Benefits: Ability to reduce the risk of deaths/serious injuries for all users of the MRN	time reliability on the corridor enabled by increased junction capacity, whilst pedestrians and cyclists 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 Schemes within the package, such Furthermore, by improving journey times on the A511, the likelihood of 'rat-running' through less Finally, reducing accident rates will also support the other MRN objectives of improved journey
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 SRN. Additionally, in the event of disruption on the SRN, an enhanced A511 could function as an

Objective	Criteria	Performance against MRN Objectives
Preferred Scheme performance against MRN Objectives Fully addresses MRN Objectives Partially addresses MRN Objectives Does not address MRN Objective		

4.12 POLITICAL SUPPORT

4.12.1. Congestion on the A511 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.

4.12.2. 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.

4.12.3. 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.

4.12.4. 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.
- In March 2017 the Cabinet approved funding from reserves to fund

4.12.5. The MRN A511 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.

4.12.6. Andrew Bridgen, MP for North West Leicestershire has also expressed strong support for the scheme, as detailed in his letter of support in Appendix B.

4.12.7. 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 B.

4.12.8. 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.

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

4.13 STAKEHOLDERS

4.13.1. 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.

4.13.2. 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.

4.13.3. Consultations are currently ongoing with the identified stakeholders, as well as statutory consultees and more details will be provided later in the submission process as part of the OBC submission.

4.14 CONSULTATION AND STRENGTH OF SUPPORT FOR THE SCHEME

4.14.1. 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.

4.14.2. As the SOBC will identify the preferred package of measures for the Scheme, LCC plan to hold a public consultation in September 2019 to present the recommended package of measures and request feedback on the scheme.

4.15 STATUTORY CONSULTEE

4.15.1. Alongside local engagement, LCC have identified, and where possible, undertaken early and proactive engagement with statutory consultees as set out in **Table 4.13**. This has been developed through regular dialogue and specific meetings on key items, with outcomes from these meetings summarised below.

Table 4-13 – Early Engagement with Statutory Consultees

Consultee	Key Remarks
Environment Agency	Engagement with the Environment Agency is not planned to commence until the SOBC is accepted and thus the preferred package is agreed. The impact of the possible adverse effects on protected habitats and species, and any flood risks will then be known and mitigation measures can be put forward for discussion.
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 may be some benefits to the SRN from some of the proposed improvements once complete and assume this will become clearer as the OBC develops.

Historic England	Engagement with Historic England is not planned to commence until the SOBC is accepted and thus the preferred package is agreed. 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 to commence until the SOBC is accepted and thus the preferred package is agreed. 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.

4.16 CONSULTATION & ENGAGEMENT WITH DEVELOPERS – SOUTH EAST COALVILLE SUES

4.16.1. 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.

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

4.16.3. 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.

4.16.4. Their support is documented in their letter of support, in Appendix B.

4.16.5. The MRN A511 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.

4.17 HIGH SPEED 2

4.17.1. 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 could start mid-2023 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.

4.17.2. As a result of HS2, the A511 will 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.

4.17.3. Initial discussion 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. HS2's support for the improvements is documented in their letter of support, in Appendix B.

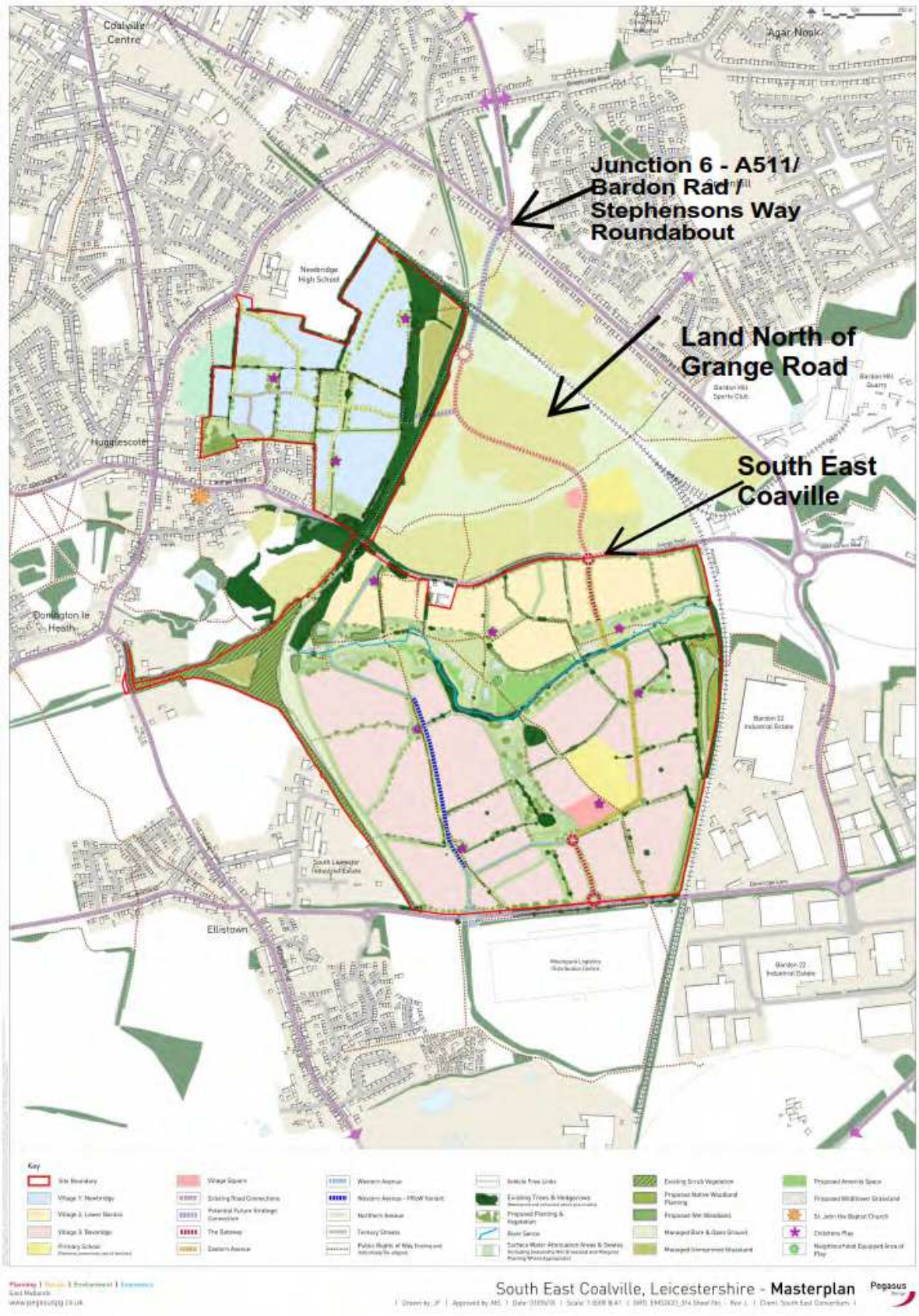
4.18 SYNERGY

4.18.1. There is synergy between the A511 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 Growth Corridor at the A511 Bardon Road/Stephenson Way roundabout.

4.18.2. 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)

4.18.3. The diagram provided in Figure 4-28 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 4-28 - Developments South East of Coalville



4.19 SUMMARY OF STRATEGIC CASE

4.19.1. The Strategic Case has demonstrated the range and extent of traffic-related problems and issues on the A511 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 Growth Corridor plays an important role in supporting the Strategic Road Network.

4.19.2. The option assessment results have identified a preferred A511 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 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.

4.19.3. 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.

4.19.4. 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. As stated in the Strategic Case there is an expectation that the A511 Growth Corridor scheme will boost economic activity, making locations connected by the scheme more attractive for private sector investment and thereby provide significant productivity, agglomeration and dependent development benefits. These wider economic benefits have not been quantified as part of this Economic Case and will be subject to detailed analysis and quantification at a later stage if required.

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

- Modelling Approach;
- Scheme Cost;
- Initial Scheme Benefits;
- 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 options will be based on detailed modelling of traffic in Coalville and wider area, using the latest Pan-Regional Transport Model (PRTM).

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 Growth Corridor development because of its greater modelling detail outside of Leicestershire.

5.2.3. The transport modelling of the preferred A511 is currently ongoing and will be reported in detail at a later stage in business case process for the scheme. Outputs from the transport model in conjunction with DfT's Transport User Benefits Appraisal (TUBA) software will be used to assess the economic benefits associated with the proposed scheme. TUBA is the Department for Transport's (DfT) appraisal software 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.

5.2.4. This section aims to build an economic case for the preferred option for the A511 Growth Corridor scheme which includes junction improvements at nine existing junctions between the A42 and Leicester (J1, J2, J4, J5, J6, J7, J8, J9 and J12), dualling of a small section of the A511 west of

Coalville (between J2 & J4) and the provision of Bardon Link Road including two new junctions (J10 and J11) connecting it to the existing road network east of Coalville, as detailed in **Figure 4-25**.

5.2.5. The economic situation for the following 'without' and 'with' scheme scenarios will be assessed with the aim of establishing the scale of benefits associated with the preferred scheme:

- **'Without Scheme' (Core) scenario**: referred to as the 'Core' network, this includes additional demand from committed developments, as well as any planned transport infrastructure associated with these developments for forecast years 2026 and 2036, 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 2036, as well as the Package 1 suite 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, **Figure 4-25**.

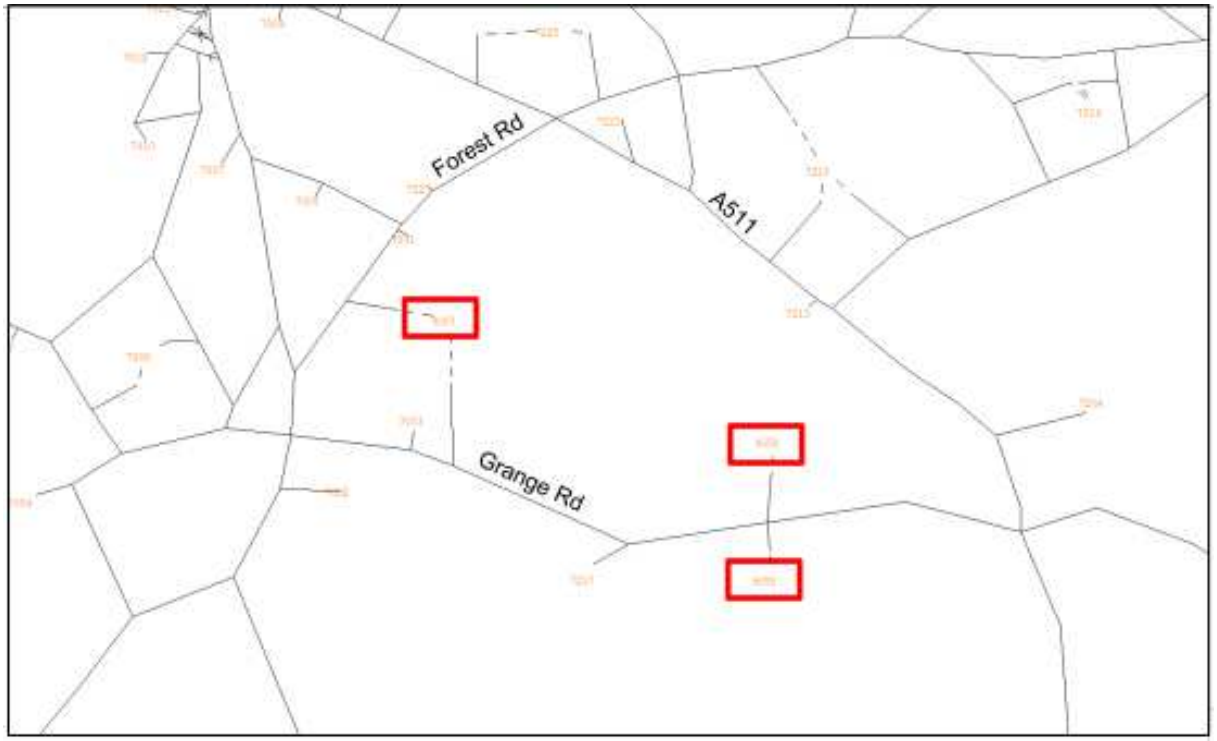
DEVELOPMENT ZONES

5.2.6. The Core Scenario assumptions include all future year schemes which are considered to be near certain and more than likely to come forward.

5.2.7. To isolate the additional trips generated by the development, three 'development zones' were used in the model runs. These development zones were required to load the development traffic onto the network more realistically to enable bespoke trip rates to be applied to the new development demand, and to isolate this development demand for analysis.

5.2.8. The three zones are shown Figure 5-1 below.

Figure 5-1 - Location of Development Zones



5.2.9. To forecast an appropriate number of trips to and from the development zones, bespoke trip rates have been used for the development. LCC provided the number of trips estimated for external movements (i.e. excluding trips within the development site). The development trips are summarised in **Table 5-1** below.

Table 5-1 - Development Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arrivals	Departures	Two - Way	Arrivals	Departures	Two - Way
Driver Trips	520	1,254	1,733	1,231	832	2,064
Passenger	169	411	580	433	299	732

5.3 SCHEME COST

5.3.1. The estimation of scheme costs is a crucial part of economic assessment of the scheme. The scheme costs used in the assessment are based on design considerations and are subject to revision as the scheme assessment progresses.

5.3.2. The scheme costs used in scheme appraisal were prepared in 2019 Q2 prices providing an initial base cost of £30.7m. This is adjusted for real price increases from 2019 to the end of the construction period assuming a cost profile of:

- 2019 0.01%;
- 2020 3.94%;
- 2021 5.13%;
- 2022 9.06%;
- 2023 31.03%; and
- 2024 50.82%.

5.3.3. The increases are based on the annual difference between the Department for Business Innovation & Skills (BIS) Resource Cost Index of Road Construction (ROCOS) inflation rates and forecast GDP deflator from the WebTAG databook. This adjustment increases base cost to £32.2m. A quantified risk assessment has been undertaken amounting to £7.7m and despite this the full optimism bias consistent with the SOBC stage (44%) has been added (£17.7m). Thus, the fully adjusted base cost in 2019 prices for use in economic assessment is £58.0m.

5.3.4. The scheme costs used in the economic assessment are the “Most Likely” cost estimate – see Chapter 7 - Financial Case for further detail.

PRESENT VALUE OF COST (PVC)

5.3.5. The fully adjusted base cost in 2019 prices was then deflated to 2010 prices to allow a direct comparison with monetised benefits and discounted to 2010 at an annual discount rate of 3.5% for the first 30 years after opening and 3% for years 31 to 60. This represents the assumption that costs (and benefits) incurred at a future date are less valuable than costs incurred in the present. The final adjustment was to convert to market prices using a factor of 1.19.

5.3.6. Thus, the total discounted value of costs (PVC) in 2010 market prices is **£37,9m**.

5.4 SCHEME BENEFITS

5.4.1. With modelling of the proposed scheme still underway, the associated benefits have not been fully quantified at this stage of the appraisal process.

5.4.2. The scheme benefits will be provided at a later stage of the appraisal, however an Appraisal Specification Report (ASR) has been prepared detailing how the scheme will be appraised. A broadly qualitative assessment of the scheme impact is presented below using DfT's Appraisal Summary Table (AST).

5.5 APPRAISAL SUMMARY TABLE

5.5.1. An outline Appraisal Summary Table (AST) is provided in Appendix C. At this stage the AST is largely a qualitative appraisal with further information to be provided as part of developing the next stages of the business case.

5.5.2. The following section summaries the outputs of the Appraisal Summary Table which is provided in Appendix C.

ECONOMIC IMPACTS

Direct User Benefits

5.5.3. Signalling improvements at key junctions alongside other infrastructure related improvements along the corridor will lead to reduced congestion, delay savings and smoother journeys for users of the corridor. This will provide journey time and travel cost savings for all road users (including freight, business and commenting users).

5.5.4. Initial results from modelling work suggests that in 2036 the preferred scheme would result in an average reduction in junction delays over its length of 42 seconds in the AM peak and 121 seconds in the PM peak when compared to conditions in the 2036 'Core' scenario.

Reliability

5.5.5. The scheme will provide a moderate beneficial impact on to journey reliability through improved journey time, improved capacity at key junction and reduction of the impact of incidents along the corridor.

Regeneration

5.5.6. There is a considerable amount of new development including retail development planned for Coalville, as part of its status as the principal town in North West Leicestershire. Also, the district council aims to revitalise Coalville Town Centre, as evident from it local plan objective 6 which states

"*Objective 6 - Enhance the vitality and viability of the districts town and local centres, with a particular focus on the regeneration of Coalville, in ways that help meet the consumer needs.*"

5.5.7. The proposed A511 Growth Corridor scheme will help realise this objective by providing reduced delays, improved journey times and better connectivity to jobs in the area. The A511 is a key arterial corridor that is linked with major planned growth opportunities, including[6] 25ha of employment land at Ashby-de-la Zouch. Also, improvements along the A511 corridor can facilitate commercial development, as well as maintaining good accessibility to the SRN for existing and growing industries.

Wider Economic Benefits

5.5.8. The scheme will help raise the standard of the A511 Growth Corridor and ensure the route serves both regional and local travel, as part of the MRN and in providing better connectivity to Leicester, East Midlands Airport and the strategic rail freight interchange at Castle Donington and further afield. It will also ensure the route can support the construction impacts of HS2 in North West Leicestershire.

5.5.9. Reduced congestion, improved journey time reliability and improved access to the SRN, as well as improved connectivity for all road users (including pedestrians and cyclist) could potentially result in increased employment and productivity rates, better connectivity to areas of educational and economic interest, as well as induced investment brought about by the area becoming more attractive to investors due to improved accessibility.

5.5.10. Considering the above the A511 Growth Corridor scheme is expected to have a moderate beneficial impact on Wider Economic Benefits.

ENVIRONMENTAL IMPACTS

Noise

5.5.11. Noise impacts have not been assessed in detail at this stage of appraisal.

Air Quality

5.5.12. The scheme is expected to have a slight beneficial impact on air quality. The scheme provides additional capacity to support the reduction of air quality issues at multiple junctions along the A511 Growth Corridor, including Birch Tree Roundabout and the Charnwood Arms Roundabout which are located along the A511 Stephenson Way / Bardon Road which are recognised as an Air Quality Management Area (AQMA).

5.5.13. The AQMA encompasses several properties in the vicinity of the Broom Leys junction. The main source of pollution is caused by emissions from vehicles queuing on the A511 on both approaches to the junction. The proposals for the junction will provide more available capacity for A511 traffic and so reduce queuing and engine idling. Providing additional capacity will support the increase of free flow movements and reduce stop/start movements, ultimately improving air quality.

[6] North West Leicestershire District Council Adopted Local Plan 2011-2031 (November 2017)

Greenhouse Gases

5.5.14. The scheme's impact on greenhouse gases, landscape, townscape, historic environment, biodiversity and water environment have not been assessed in detail at this stage of appraisal. This work has already been commissioned as part of the work to develop the Outline Business Case.

SOCIAL IMPACTS

Physical Activity

5.5.15. The scheme may generate additional Non-Motorised Users (NMUs) due to improved safety and severance. The scale of impact of the scheme on physical activity has not been assessed, it is therefore considered to be neutral at this stage.

Journey Quality

5.5.16. The schemes will have a moderate beneficial impact on journey quality. The scheme will be beneficial in terms of reducing road user stress as reduced delay and congestion will enable improved journey time reliability.

Accidents

5.5.17. The scheme will have a significant beneficial impact on accidents. The package of measures proposed (traffic signal improvements, new traffic signal installations and/or carriageway improvements) have the potential to provide major safety benefits along the corridor, which would in turn reduce the number of accidents along the corridor. It is estimated that the package could provide a 30% injury collision saving, equating to over £0.5m of monetary savings.

5.5.18. The scheme is also likely to provide wider safety benefits on the adjacent local road network in terms of collision and casualty rates. This is due to an upgraded A511 route attracting motorists from alternative, less suitable routes such as the A512 to the north and local rat runs through Coalville.

Security

5.5.19. The security impact of the scheme is neutral.

Access to Services

5.5.20. The scheme will have a neutral impact on access to services. The scheme is not designed to directly address accessibility and there is no change envisaged in the routes served by public transport.

Affordability

5.5.21. The proposed scheme is not designed to directly address affordability issues, however with reduced congestion, journeys along the corridor are expected to be smoother (i.e. less stop/start movements) for road users and this could provide fuel savings to road users and in so doing resulting in reduced travel cost. The scheme may therefore have a moderate beneficial impact on affordability.

Severance

5.5.22. The scheme is expected to have a moderate beneficial impact on severance. This will be due to improved walking and cycling conditions at key junctions along the corridor, which might result in increased patronage. Also, the scheme will increase capacity on the A511 Growth Corridor, discouraging traffic from diverting onto other less favourable local roads and thereby reducing severance over a wider area too.

Options and non-use values

5.5.23. At this stage, the scheme will not result in the provision of new public transport services. The option values impact is therefore assumed to be neutral.

PUBLIC ACCOUNTS

Cost to Broad Transport Budget

5.5.24. The scheme cost is £49.4m (including Quantified Risk Assessment) at 2023 Q3 prices, of which 15% will be secured through local contribution and the remaining £42m via MRN funding. The present value cost of construction including optimism bias is £37.9m in 2010 discounted market prices.

Indirect Tax Revenues

5.5.25. The scheme is expected to reduce congestion along the corridor which will in turn lead to fuel savings for road users, implying that the collection of indirect tax revenues will decrease overall as a result of the scheme.

5.5.26. The indirect tax revenue resulting from the scheme will be quantified later in the appraisal process using TUBA.

5.6 VALUE FOR MONEY STATEMENT

5.6.1. A full value for money (VfM) statement cannot be provided at this stage of the study, however evidence from an initial assessment undertaken by LCC estimated the scheme's BCR at 1.604 which represents a 'medium' value for money return based on the DfT' classification shown in **Table 5-2**.

Table 5-2 - 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

5.6.2. The initial VfM did not include valuation of benefits associated with accidents and environmental and social impacts. In addition to this the scheme has been further developed, and therefore the abovementioned VfM is expected to improve as the study progresses and will be undertaken in line with DfT Transport Appraisal Guidance.

5.7 SUMMARY

5.7.1. Modelling of the preferred option for the A511 Growth Corridor scheme using the approach set out in this section of the SOBC is currently underway, to inform the value for money assessment of the preferred scheme. However, an initial value for money assessment was undertaken in-house by LCC for a lesser scheme than what is currently proposed and it provided an indicative Benefit to Cost Ratio (BCR) of 1.604, suggesting a 'medium' VfM.

5.7.2. This previous assessment did not include valuation of benefits associated with accidents and environmental and social impacts. In addition to this the scheme has been further developed, and therefore the abovementioned VfM is expected to improve as the study progresses and will be undertaken in line with DfT Transport Appraisal Guidance.

5.7.3. The scheme's construction base costs were estimated as being £30.7m at current prices (2019 Q2). Adjusted for real price changes and risk the adjusted base cost increases to £40.30m

5.7.4. As part of the OBC submission the preferred scheme will be reconfirmed and assessed using refined traffic models in terms of environmental impacts, safety and economic benefits.

5.7.5. Wider economic impacts associated with the proposed is expected to further enhance the economic case for the 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. 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.

6.1.3. At SOBC stage the Financial Case presents an initial assessment of the overall scheme costs estimate and an analysis of the funding strategy for the project.

6.1.4. The SOBC also presents an estimated cost for developing the project up to Outline Business Case (OBC) stage in response to recent communication with Midlands Connect regarding Development Costs for OBC.

6.2 OVERALL SCHEME COST ESTIMATE

6.2.1. The base scheme costs are **£30.69m** in 2019 prices and include land costs, preparation costs, construction costs and supervision costs.

6.2.2. A copy of the scheme costs is included at Appendix D.

6.2.3. The Appendix includes a 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 of £7.7m have been added (as determined through Quantified Risk Analysis). Using the ROCOS materials price index an outturn price in 2023 prices is estimated at £49.4m. From 2019 Q2 to 2023 Q3 prices the ROCOS materials price index is 1.13 (+13%). This is higher than general price inflation measured by using the forecast GDP deflator index from 2019 to 2023 of 1.076 (+8%). Thus, there is a real price increase in the base costs of 5% from 2019 to 2023.

6.2.4. At SOBC an independent surveyor's report verifying cost estimates is not required.

6.3 FUNDING STRATEGY

6.3.1. The project will be funded through two funding sources as noted in the table below:

Table 7.1 – Funding sources

Funding Source	£m	%
Major Road Network Fund	42.02	85%
Coalville Growth Corridor	7.42	15%
TOTAL	49.44	

6.3.2. LCC is looking to secure **£42.02m** from the Department of Transport (DfT) as part of the Major Road Network Fund via Midlands Connect.

6.3.3. £7.42m of funding will be secured towards the project through the Coalville Growth Corridor.

6.3.4. 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.

6.3.5. The total local contribution towards the risk adjusted scheme cost is 15%, comprised of local and cashflowed private sector contribution in advance of their receipt (secured through the Coalville Growth Corridor).

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

6.4 COST OF DEVELOPING OUTLINE BUSINESS CASE

6.4.1. LCC have prepared an estimate of the costs associated with developing the project to OBC stage in response to recent dialogue with Midlands Connect. The total cost up to OBC is noted as **£1.93m**. A summary of costs is noted below:

Table 7.2 – Cost of Developing the OBC

MRN A511 Growth Corridor	Spend to date and expected spend to 5th July 2019 (date of Midlands Connect submission)	Further spend to OBC stage
Data Collection		£150,000
Geotechnical surveys		£100,000
Environmental surveys		£400,000
Strategic Business Case	£41,750	£138,000
Transport Modelling	£10,000	£97,056
Consultation		£50,000
Economic Assessment	£15,000	£85,000
Environmental Review and Assessment		£67,258
Option Appraisal Report	£10,000	£50,000
Operational Assessment		£50,000
Scheme cost development and Financial Case	£20,000	£300,000

Commercial Case	£50,000	£200,000
Management Case	£10,000	£83,000
TOTAL	£156,750	£1,770,314

6.4.2. Costs noted in the above table will be funded through local funding provided by LCC and funding currently sought from DfT. The funding split of the above costs is noted below:

Table 7.3 – Funding sources for Development of OBC

Funding Source	FY 2019/2020	TOTAL
Local Funding (LCC)	£482,000	£482,000
Funding sought from DfT	£1,445,000	£1,445,000
TOTAL	£1,927,000	£1,927,000

7 COMMERCIAL CASE

7.1 INTRODUCTION

7.1.1. 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.

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 SOBC 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 have been developed through a process of Logic Mapping. The Logic Model for the project is presented at Appendix E.

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.

7.3.4. **Scheme Outputs** for the project are summarised below:

- Traffic signal/capacity improvements to junctions at Whitwick Road, Broom Leys Road, Beveridge Lane, Flying Horse and Field Head;
- Roundabout and junction capacity improvements at Hoo Ash, Thornborough Road and Birch Tree;
- Provide new road and junction to link development to A511; and
- Convert current single lane carriageway to dual lane carriageway between Thornborough Road and Whitwick Road.

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. A detailed consideration of procurement options is contained in the accompanying Procurement Strategy for the project which can be found at Appendix F.

7.4.3. The Preferred Option for procurement and delivery is the Midlands Highways Alliance (MHA) Framework.

7.4.4. 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 NEC3 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 IDENTIFICATION OF RISK

7.5.1. 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 G.

7.5.2. The identification, management and transfer of risk is a continuous theme running as a key strand throughout the various elements of the overall Business Case documentation.

7.5.3. 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 H.

7.5.4. Key project risks, identified through the Project Risk Register, are noted below:

- HS2 realignment of A512 could accelerate and impact on A511 programme;
- Hermitage Leisure Centre development access will adversely affect the operation of the dual carriageway;
- Potential for Network Rail to require additional design work;
- Structural survey required for Agricultural bridge / Assessment may indicate more work required than previously considered;
- Design of punch-through could change due to the uncertainty of developer requirements;
- Little ground Investigation information for punch-through currently available;
- Utility diversion works not carried out in accordance with agreed programme; and
- Poor existing carriageway construction leading to more extensive reconstruction.

7.6 RISK ALLOCATION

7.6.1. There are various options available to the project team that promote the sharing of risk across the various parties involved in the construction project. As previously noted, the Procurement Strategy and contractual mechanisms through the proposed Form of Contract will ensure that all options for risk transfer are considered and applied where appropriate.

7.6.2. The Procurement Strategy, 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.

7.6.3. 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.

7.6.4. The above approach builds on LCC experience 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.

7.6.5. Cost and time over-runs could have a significant impact on the delivery of the project. The list below details the primary ways in which both cost and time over-runs can be avoided:

- Set objectives that are realistic and not changed during the project / Avoid changes in scope mid-way through the delivery process;
- Ensure that all cost estimates are realistic and the appropriate allocation of contingency and optimism bias is applied, reviewed and managed throughout the project's life;
- Ensure a realistic programme is agreed for the delivery of the project and all possible and foreseeable eventualities are proactivity considered;
- Provide an agreed project brief that is complete, clear and consistent and most critically understood and agreed by all parties to the project;
- Ensure that a design is progressed that meets planning and other statutory requirements;
- Ensure that the design is fully and robustly coordinated and takes account of buildability, maintainability, health and safety and sustainability;
- Ensure all risk is quantified and allocated to all parties of the contract in an unambiguous and clear manner;
- Provide clear leadership, excellent project governance, swift decision making and appropriate and proportionate management controls; and
- Subscribe to simple payment mechanisms that incentivise all parties to achieve the common and agreed goal relating to the delivery of a high quality project, on time and within budget.

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, communication and stakeholder management. At SOBC 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.

8.1.2. The considerable amount of experience LCC has with mobilising and delivering highway schemes like the A511 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.

8.2 EVIDENCE OF SIMILAR PROJECTS

8.2.1. The Management Case demonstrates that LCC has successfully procured and delivered several similar projects of varying sizes and complexity. These include:

- Melton Mowbray Distributor Road (MMDR);
- M1 Bridge to Growth;
- Loughborough Inner Relief Road & Town Centre Improvements; and
- Earl Shilton Bypass.

8.2.2. Works are due to start Spring 2020 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, 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 Growth Corridor MRN scheme, from concept to delivery.

8.2.3. The M1 Bridge to Growth project was a £15.0m project that was jointly funded by a landowner at New Lubbesthorpe (£10.0m) with 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.

8.2.4. 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.

8.2.5. The Earl Shilton Bypass is a 5km long, 7.3m wide single carriageway with one metre wide hard strips alongside. Quiet road surfacing material has been used throughout its length. A combined footway/ cycleway 2.5 metre wide has been provided along the length of the Bypass with connections to the existing cycle facilities along the Hinckley Northern Perimeter Road and to the side roads at each junction. The project was completed in 2009 and has a project value of £22.76m

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

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

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 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 Project Delivery programme is included at Appendix I. Key milestones from the Delivery Programme are noted below:

- Submission of SOBC – July 2019;
- Submission of OBC – December 2019;
- Detailed Design Complete – June 2020;
- Planning Application Submission – August 2020;
- Submission of FBC – November 2021;
- Construction Start – April 2022; and
- Construction End – December 2024.

8.4 PROJECT GOVERNANCE / PROJECT PLAN

8.4.1. 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 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.

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

8.4.3. Key milestones relating to the project are set out in the Management Case under 'Programme / Project Dependencies'.

8.5 ASSURANCE AND REPORTING

8.5.1. 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 J.

8.5.2. Progress reporting will be through the Project Board using Highlight Reports which can then be supplemented with additional information as and when required.

8.5.3. 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. The table below highlights approach to variation and tolerance:

Table 9.1 – 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 MRN A511 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.

8.5.4. 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 has developed a detailed Communications Strategy for the project which is included at Appendix K.

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.

8.6.3. 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.

8.6.4. The Strategy also sets out a detailed Work Plan of planned communications in relation to the key milestones on the project.

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 MRN A511 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. 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. Key aspects of the Project Risk Management Strategy can be found at **Section 8.5** of this document.

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

8.8.3. A contractor will be 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 scheme. Invested knowledge will be retained to support detailed design, prior to full procurement.

8.8.4. 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 G.

8.8.5. 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 H.

8.9 PROJECT MANAGEMENT

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

8.9.2. A Benefits Realisation Plan will be 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 can be planned, tracked, managed, and realised (or mitigated).

8.9.3. An Outline Monitoring and Evaluation Plan will be prepared, and this plan 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.

9 SUMMARY

9.1.1. The evidence contained within this SOBC shows that the existing A511 Growth Corridor route, despite its strategic, regional and local importance, suffers from congestion and delays, particularly during the peak travel periods. Prevalent congestion and variable road standards negatively affect the capacity, reliability, resilience, safety and attractiveness of the road to users.

9.1.2. The current transport conditions have resulted in low levels of interaction between the main economic areas and create a barrier to delivering future housing and economic growth. Transport problems are likely to be exacerbated by expected future increases in travel demand, housing supply issues are likely to worsen. This will make the area unattractive to businesses as employers will struggle to attract and retain skilled workers. The efficient operation of the A511 Growth Corridor is also important to the construction of the HS2 line through North West Leicestershire.

9.1.3. The proposed scheme will help connect skilled people with jobs, link employment clusters and create an efficient national transport network that enables housing and job growth to be delivered in a way that supports the efficient movement of goods and people.

9.1.4. A full WebTAG -compliant Options Assessment Report (OAR) following the 8 steps process detailed in Section of Department for Transport (DfT)'s Transport Appraisal Guidance (TAG), was developed for the proposed scheme to help establish the need for intervention, identify a wide range of options to solve identified issues and appraise the identified options with the aim of coming up with the option(s) that best address the identified need for intervention.

9.1.5. To advise this process a substantial amount of historic evidence has been reviewed. This includes the 2010/2011 Coalville Transport Study undertaken by Colin Buchanan to inform the North West Leicestershire District Council's local plan and a 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). These works identified the key issues along the corridor as mainly surrounding congestion at junctions causing delays and journey time unreliability for users of the corridor.

9.1.6. The evidence based work was combined with the latest evidence from 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), to assess a long list of options and arriving at the preferred option 'Package 1' which includes junction improvements at nine existing junctions along the A511 between the A42 J13 and the 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.

9.1.7. The appraisal process which was mostly qualitative showed that an all-inclusive mitigation scheme for the A511 Growth Corridor represents the preferred solution.

9.1.8. 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.

9.1.9. The preferred package of schemes will:

- Deliver increased capacity at congested junctions across the corridor;
- 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.

9.1.10. 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;
- Unlocking further residential and employment 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.

9.1.11. 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.

9.1.12. A proportionate economic assessment of the A511 Growth Corridor scheme demonstrates that the preferred option will generate significant direct travel time savings and will have a large positive impact on safety. An indicative BCR of 1.604 has been previously estimated for improvement of the corridor implying a medium VfM. This BCR should be regarded only as an initial indication of scheme value for money due to the early stage of the analysis and the high-level assumptions used in the calculation of scheme costs and benefits.

9.1.13. Wider economic benefits have not yet been assessed but are expected to be significant.

RECOMMENDATIONS AND NEXT STEP

9.1.14. As stated above an initial assessment of the scheme's BCR indicates a medium value for money with the potential for improvement, thus the scheme is promising enough to take forward to the next stages. However, this will need to be confirmed through further analysis of qualitative and quantitative impacts of each corridor option including an assessment of wider economic benefits.

9.1.15. As part of the subsequent stage of appraisal the preferred scheme will be reconfirmed and assessed in terms of environmental impacts, traffic forecasts, safety and economic benefits including refinement of the cost estimate.

Appendix A

SCHEME DRAWINGS

Appendix B

LETTERS OF SUPPORT

Appendix C

APPRAISAL SUMMARY TABLE

Leicestershire County Council

Appendix D

SCHEME COSTS

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Appendix E

LOGIC MODEL

Appendix F

PROCUREMENT STRATEGY

Appendix G

QUANTIFIED RISK ASSESSMENT

Project No.: 70056642 | Our Ref No.: SOBC002
Leicestershire County Council

JULY 2019

Appendix H

CORPORATE RISK MANAGEMENT POLICY STATEMENT AND STRATEGY

Project No.: 70056642 | Our Ref No.: SOBC002
Leicestershire County Council

JULY 2019

Appendix I

PROJECT DELIVERY PROGRAMME

Appendix J

PROJECT CONTROL MATRIX

Appendix K

COMMUNICATIONS STRATEGY

Appendix L

SOBC PROFORMA PARTS 1 & 2

Leicestershire County Council
County Hall
Leicestershire
LE3 8RJ

www.leics.gov.uk