Leicestershire County Council

A511 MRN GROWTH CORRIDOR

Option Assessment Report

OAR002
DECEMBER 2019

CONFIDENTIAL

Leicestershire County Council

A511 MRN GROWTH CORRIDOR

Option Assessment Report

CONFIDENTIAL

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1. WSP have been appointed by Leicestershire County Council (LCC) to update the Option Assessment Report (OAR) submitted to the DfT as part of the Strategic Outline Business Case (SOBC) submission for the A511 MRN Growth Corridor scheme in July 2019. This updated OAR has been developed to specifically support the Outline Business Case (OBC) submission to DfT, as well as future statutory procedures.

1.1.2. The A511 MRN Growth Corridor is part of the Major Road Network (MRN) and is a key east–west road link in Leicestershire. It links the A42 (Junction 13, Ashby de la Zouch) to the M1 (Junction 22 north-west of Leicester) and therefore acts a connecting route to and between the Strategic Road Network (SRN).

1.1.3. A substantial amount of work has previously been carried out as part of the OAR submitted with the SOBC in reviewing current and future issues relating to the A511 MRN Growth Corridor to assess the need for an intervention and in identifying a long list of potential scheme options aimed at addressing the identified issues. This long list of potential scheme options was then taken through an initial sifting process to arrive at a short list of options by discarding options that were not fully meeting the identified scheme objectives.

1.1.4. The short list of options were further appraised using the DfT's Option Assessment Framework Five Cases Model (i.e. Strategic Case, Value for Money Case, Delivery Case Financial Case and Commercial Case) to arrive at a preferred scheme for A511 MRN Growth Corridor which included improvements to ten locations between the A42 Junction 13 at Ashby to the Field Head roundabout to the east of Junction 22 of the M1, including upgrading a section of Stephenson Way from a single to a dual carriageway. The proposal also included plans to connect the A511 to Bardon Link Road and create a new north-south link across Coalville.

1.1.5. Following submission of the SOBC to DfT and recalibration of the transport model built in support of the A511 MRN Growth Corridor scheme, the preferred scheme was subjected to optioneering considering the value contributions of each element of the preferred scheme. This led to refinement of the preferred scheme package with the most significant step being the removal of the Charnwood Arms Roundabout improvements. The refined preferred scheme has also been tested in a recalibrated transport model.

1.1.6. This report therefore consolidates the previous work carried out as part of the July 2019 SOBC and the most recent modelling work undertaken in support of the development of a preferred scheme for the A511 MRN Growth Corridor. As part of this update, the outcomes of the modelling work were used to redevelop the scheme further so that its associated benefits are optimised.

1.1.7. In summary, this report updates the previous OAR submitted to DfT in July 2019, and provides the following additions and updates;

- presents refreshed evidence on problems and issues, congestion levels, through traffic levels and scheme option user benefits analysis, using the recalibrated 2014 PRTM (Pan Regional Transport Model) base model and future year model scenarios derived from it; and

- presents the optioneering work carried out to refine the preferred scheme identified at SOBC stage of the appraisal process.

1.1.8. The refined preferred scheme under consideration are aimed at freeing up capacity on the A511 and in so doing secure the accelerated delivery of housing and employment land currently constrained by the lack of transport infrastructure in the area. Furthermore, the scheme will provide an alternative route for existing users, relieving existing congestion hot-spots along the corridor.

1.1.9. This Option Assessment Report (OAR) has been developed to present the outcomes of the first stage of the TAG scheme appraisal process. The Stage 1 appraisal process, known as 'Option Development', involves identifying the need for intervention and developing options to address a clear set of locally developed objectives. It involves generating a broad range of options, which reflect a range of modes, approaches and scales of intervention. These options are then sifted and assessed against criteria from the Department for Transport's (DfT) Transport Business Case 'Five Case Model' to identify the better performing options for further appraisal in Stage 2 ('Further Appraisal'). The focus of the assessment is to develop a transparent and appropriate view of the relative merits and disadvantages of different options[1].

1.2 SCHEME BACKGROUND

1.2.1. In 2011 the Coalville Transport Study was commissioned to look at what was needed a to support two Sustainable Urban Extensions (SUEs), along with several smaller sites totalling 1000 houses being promoted through the Local Development Framework (LDF) Core Strategy in and around the area of Coalville, North West Leicestershire.

1.2.2. The study set out several improvements along the A511 which would alleviate forecast congestion with expected and committed development over the next decade. It formed the basis of the prioritisation of transport schemes for the Coalville Transport Strategy.

1.2.3. Following successful funding bids for M1 Junction 22 and A42 Junction 13 highway improvements, LCC commissioned in 2016 a report by SYSTRA to "provide a robust evidence base to support the series of transport schemes for the A511 MRN Growth Corridor to enable economic regeneration of the area…"

1.2.4. This work has supported the view that the ongoing effective functioning of the A511 corridor is key to supporting housing and job growth in (at least) Coalville and Ashby as a key aspect of the Local Plan. This approach has stood the test of scrutiny by an independent Planning Inspector. North West Leicestershire District Council (NWLDC) have just begun work to review their Local Plan, and the A511 corridor is expected to remain a key part of it.

1.3 A511 MRN GROWTH CORRIDOR LOCATION AND CONTEXT

1.3.1. The A511 MRN Growth Corridor is in the district of North West Leicestershire and relates to the section of the road between the A42 Junction 13 and the Field Head interchange on the A50 east of the M1 Junction 22. This section of road centres on the town of Coalville which, in turn, sits north-west of the

[1] DfT's Transport Analysis Guidance: The Transport Appraisal Process (May 2018)

city of Leicester. The location of the corridor and its relationship with key locations can be seen in Figure 1-1.

1.3.2. Work undertaken by North West Leicestershire District Council as part of its Core Strategy[2] identified that there was a need for improvements to all junctions along the A511 between Junction 22 of the M1 and Junction 13 of the A42. It is therefore important that improvements are carried out to ensure that the necessary development can take place.

1.3.3. The A511 MRN Growth Corridor is a wide single carriageway between the A42 to the immediate north of the access for the Bardon Hill Industrial Park. From this point to the M1 the A511 is dual carriageway. A notable feature of the road is the bypass around Coalville, which also provides access to a range of industrial estates to the north of the town.

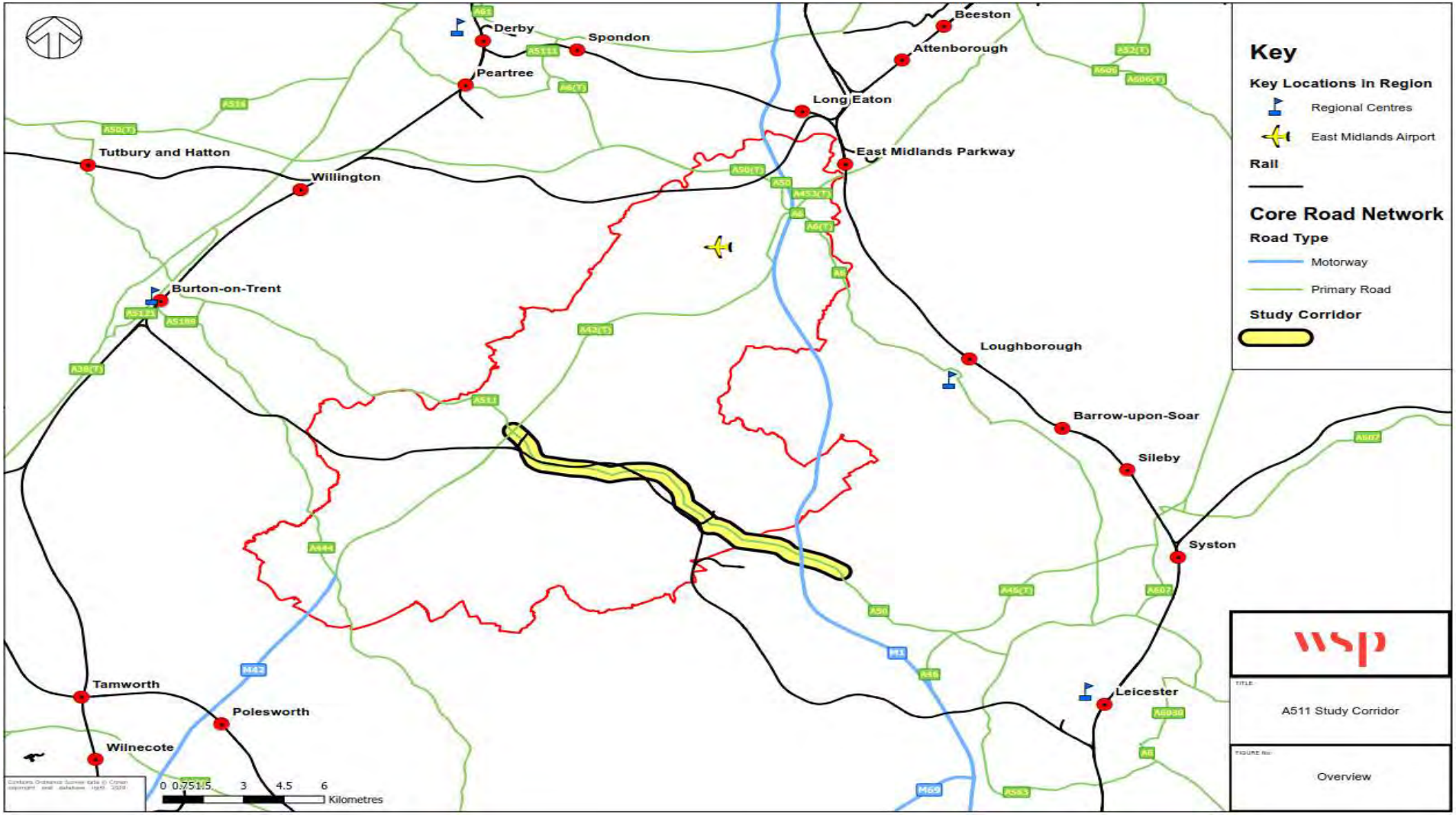
1.3.4. The corridor is regionally important following its identification as one of the five growth areas identified in the Leicester and Leicestershire Local Enterprise Partnership's (L&L LEP) Strategic Economic Plan (SEP). The area surrounding the corridor has been identified as having the potential to deliver circa 5000 additional houses and 25ha of employment land, should infrastructure investment be provided[3].

1.3.5. In addition to the above, one of the main HS2 Phase 2b construction compounds is to be located near the A42 Junction 13, which forms the westernmost end the A511 MRN Growth Corridor. Accessibility to the compound will potentially have major traffic implications on the corridor. The HS2 Phase 2 work is programmed to start mid-2023 and during the duration of the construction phase, additional major works elsewhere on the A511 MRN Growth Corridor could be intolerable to both road users and non-users alike. Furthermore, if improvements are not made to the road by 2023 then it will not be able to support the HS2 works acting in a resilient role to accommodate the impacts of construction traffic and the effects of associated traffic management.

1.3.6. Finally, but not least, the economic growth within the area, which is heavily dependent on the efficient movement of freight along the A511 MRN Growth Corridor may stall if the corridor is not improved before the commencement of HS2 works. Traffic in the corridor includes an average of 12% Heavy Goods Vehicles (HGVs). This is more than double the national average of HGV traffic at 5%. The absolute number of HGVs using the corridor daily has also increased year-on-year since 2013, the number of HGV trips have risen by 21% in this period.

[2] North West Leicestershire District Council: Infrastructure Deliver Plan – June 2016
[3] North West Leicestershire District Council: Infrastructure Deliver Plan – June 2016

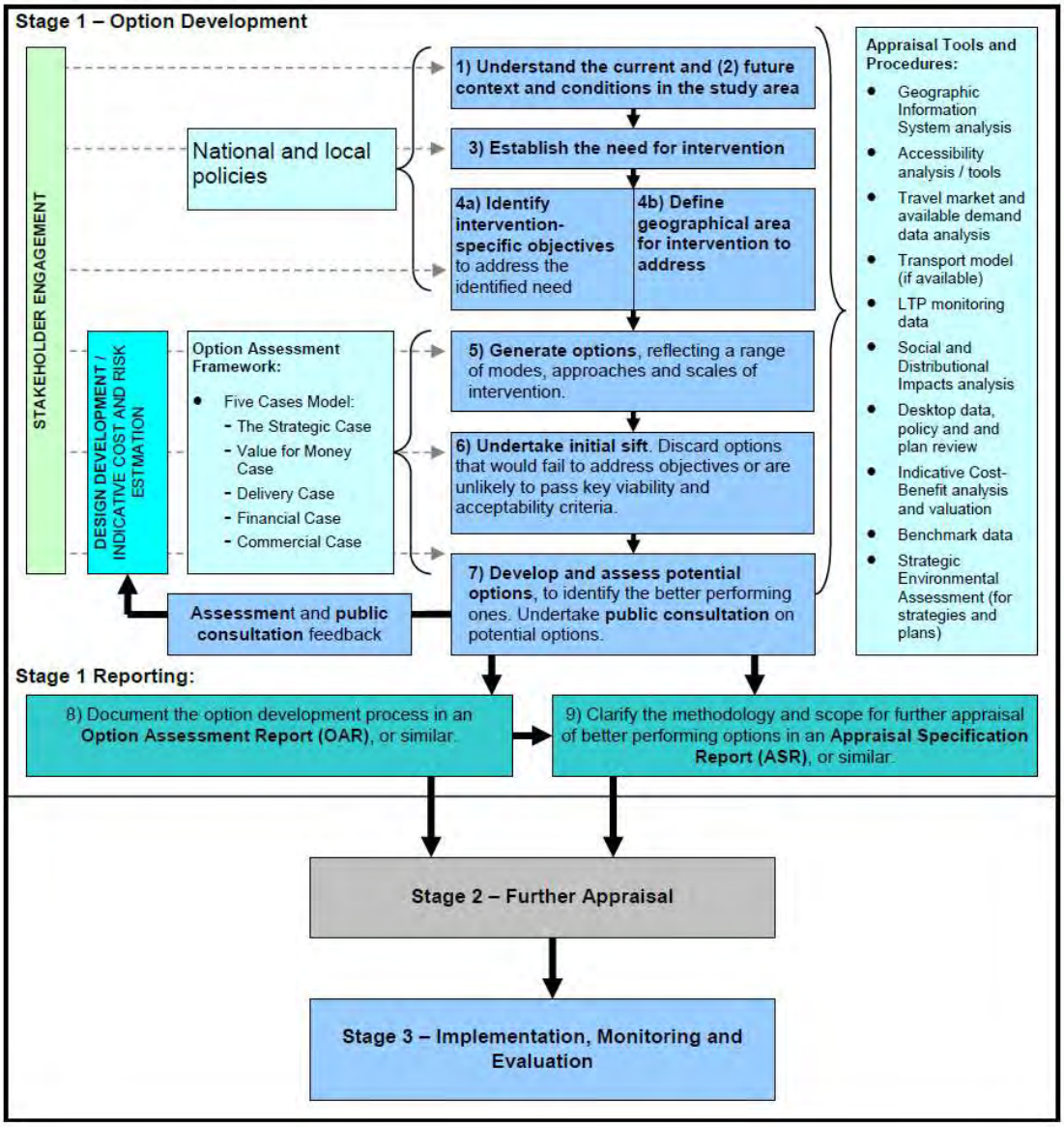
Figure 1-1 – A511 MRN Growth Corridor location



1.4 OVERVIEW OF ASSESSMENT

1.4.1. Section 2.11.1 of the DfT's Transport Appraisal Guidance (TAG), recently updated in May 2018, states that an OAR should document the process that identifies the need for intervention and the process adopted to develop and select options. This process is depicted in Figure 1-2.

Figure 1-2 - Steps in the Stage 1 process



1.4.2. In line with the above, this report presents the outcomes, in the form of an Option Assessment Report, (OAR) of the first stage of a TAG scheme appraisal process in relation to proposals for the A511. It identifies the need for a transport intervention and describes the process of option development and selection that has been undertaken.

1.4.3. The key aims of the OAR are as follows:

- Present evidence of the problems and challenges;
- To state the study objectives and intended outcomes;
- To define the future 'without intervention 'scenario;

- To document the process of option generation, sifting and assessment;
- Identify the option(s) to be taken forward for more detailed appraisal at Stage 2; and
- Refresh the OAR submitted at SOBC stage with modelling outputs from the recalibrated Transport Model.

1.4.4. As mentioned earlier, this updated OAR forms part of a suite of documents which will inform the preparation the Outline Business Case in support of the A511 MRN Growth Corridor scheme. These documents will be used to assist decision makers, inform the public, and ultimately support the delivery of the study

1.5 REPORTS FROM PREVIOUS WORK

1.5.1. As mentioned earlier, an extensive amount of work has already been carried out collecting the evidence base in support of the scheme and to underpin its development to date.

1.5.2. This work is documented in the following reports which are referred to in this OAR:

- Coalville Transport Study - prepared by Colin Buchanan in June 2011;
- Coalville Growth Corridor Scheme Assessment - Stage 2A – Growth and Regeneration Impact and Gap Assessment prepared by SYSTRA in 2016; and
- Option Assessment Report submitted with the SOBC in July 2019.

1.5.3. This OAR summaries the key points in the development of the preferred scheme for the A511 MRN Growth Corridor scheme and analyses the latest evidence from the latest transport modelling work undertaken by AECOM in support of the scheme using the using the Pan-Regional Transport Model (PRTM), which is an extension of the Leicester and Leicestershire Integrated Transport Model (LLITM 2014).

1.6 REPORT STRUCTURE

1.6.1. The remainder of the report is structured as follows:

- **Section 2** - Understanding the Current Situation;
- **Section 3** - Understanding the Future Situation;
- **Section 4** - Establishing the Need for Intervention;
- **Section 5** - Scheme Objectives;
- **Section 6** - Area of Influence;
- **Section 7** - Options Generation;
- **Section 8 –** Option Appraisal and Selection of Proffered Scheme; and
- **Section 9 –** Summary.

2 UNDERSTANDING THE CURRENT SITUATION

2.1 INTRODUCTION

2.1.1. This chapter provides information on the current and near future situation in relation to the corridor. This is established through a review of national, regional and local policy documents, followed by a review of key local statistics relating to transport and development.

2.2 NATIONAL, REGIONAL AND LOCAL POLICY AND STRATEGY

2.2.1. As part of establishing an understanding of the need for an intervention, a review of relevant national, regional and local policy and strategy for the area has been undertaken. This is presented in Table 2-1.

Table 2-1 - National, Regional and Local Policy & Strategy

No	Policy and Strategy Document	Details of Policy and Strategy
		National Policy and Strategy
N1	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.

No	Policy and Strategy Document	Details of Policy and Strategy
		• 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.
N2	Road Investment Strategy 2015/16 – 2019/20 (published by Department for Transport (DfT) and updated on 12 March 2015)	▪ This document considers the development of the Strategic Road Network (SRN). Whilst the A511 is part of the MRN, this is relevant to the A511 MRN Growth Corridor study due to it linking two SRN routes. ▪ With regards to the SRN in proximity to the A511 MRN Growth Corridor: • M1 J24: to be improved to support access to the forthcoming HS2 Toton station. • Support of airport access (e.g. East Midlands Airport) is identified as a key outcome. • Support of East-West Connectivity. The OAR is considering an MRN which supports this objective. ▪ Sets SRN objectives of being: • Smoother; • Smarter; and • Sustainable.
N3	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		

No	Policy and Strategy Document	Details of Policy and Strategy
R1	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.
R2	Midlands Connect International Gateways Summary published in April 2017	▪ This document sets out the importance of East Midlands Airport to the region. It sets out an ambition that roads to the airport should be free of accident blackspots, as well as suggesting the site should benefit from improved public transport access.
	Local Policy and Strategy	
L1	Leicestershire Local Transport Plan 3 (LTP3) (2011-2026)	▪ Identifies Coalville as the potential site of a Sustainable Urban Extension (SUE). ▪ Coalville is identified as a location which is currently experiencing congestion. ▪ Identifies Coalville as being a regionally important employment centre with over 1,600 existing jobs (in 2011). ▪ Highlights North West Leicestershire as the most deprived district in the county, with severely deprived neighbourhoods in Coalville. The town also has one of the county's highest crime rates. ▪ Identifies the A511 (Bardon Road) through Coalville as an AQMA. ▪ Identifies the A511 as one of the district's key corridors for logistics and distribution. As a key lorry corridor, it will be utilised to concentrate goods vehicles and remove them from less suitable roads. Roads in the lorry route network will be prioritised to mitigate the high levels of HGV movements. ▪ Coalville is identified as a core location for investment, to encourage active and sustainable travel.

No	Policy and Strategy Document	Details of Policy and Strategy
		▪ Identifies the following challenges relating to the transport for the region: • Attempt to provide a transport system delivering equality of access, particularly for deprived areas such as Coalville. • Continuing to reduce the number of people killed and injured on Leicestershire's road. • Continue to reduce the impact of traffic on individuals, communities and settlements. • Maintain transport assets. ▪ Which are then converted into the following transport goals: • Goal 1: A transport system that supports a prosperous economy and provides successfully for population growth. • Goal 2: An efficient, resilient and sustainable transport system that is well managed and maintained. • Goal 3: A transport system that helps to reduce the carbon footprint of Leicestershire. • Goal 4: An accessible and integrated transport system that helps promote equality of opportunity for all our residents. • Goal 5: A transport system that improves the safety, health and security of our residents. • Goal 6: A transport system that helps to improve the quality of life for residents and makes Leicestershire a more attractive place to live, work and visit.
L2	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 & Leicestershire Strategic Growth Plan	▪ This document, produced in support of the preceding, raised additional key issues that the County should adhere to: • Given the proposed concentration of growth at a series of large-scale developments (which ought to be more viable for

No	Policy and Strategy Document	Details of Policy and Strategy
	Sustainability Appraisal (published in September 2018)	decentralised energy schemes), the Plan could set out a commitment to achieving low carbon development and explore how separate developments can be linked together to create better opportunities for sustainable developments. • Increase the number of homes in walking distance of public services and public transport. • Reduce or maintain current annual traffic flows despite growth. • Monitor journey time impacts of new developments.
L3	North West Leicestershire Adopted Local Plan 2011-2031	▪ This document sets out the key issues facing North West Leicestershire. Of relevance to the A511 MRN Growth Corridor are: • Ensure provision of housing to meet the needs of all; • Need to ensure that communities have access to services and facilities; • Ensure that the growth of housing and the economy complement each other in terms of scale; and • Need to improve air quality in the 5 AQMAs in the district, which are largely related to transport issues. ▪ The document also identifies the following proposed development policies of relevance to the corridor: • Coalville Urban Area, consisting of Coalville and the surrounding towns will take 4,248 dwellings across the town. • Identifies the Coalville Growth Corridor as a key development area. • EC2- 16Ha Employment site at Ashby de la Zouch, to the north west on the A511. • EC3- Employment site in Coalville for B1, B2 and B8 land uses. • East Midlands Airport is marked as being important for development and supported by further sustainable transport links. • Improvements made to Coalville Town Centre to improve its viability, as well as 1,000sqm gross of new space. • Improve tourism access to the National Forest, that 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:

No	Policy and Strategy Document	Details of Policy and Strategy
		• 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 Zouche, 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.'
L4	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 freight, with slowly recovering. passenger numbers, following a post-recession decline. ▪ Identifies a considerable number of housing developments in the district, particularly in Coalville and to its south east. – "The A511 is recognised by the Leicester and Leicestershire Local Enterprise Partnership (L&L LEP) as the Coalville Growth Corridor and has the potential to deliver 5,275 houses, 25 hectares of committed employment land and growth in the logistics sector but is currently constrained by poor infrastructure." ▪ Mentions the potential for a new freight interchange to the north east of the district, in proximity to East Midlands Airport. ▪ Marks the A511 as the responsibility of Leicestershire County Council. ▪ Sets out that the key highway infrastructure improvements in the district to support the Local Plan are related to the A511 and the M1 J22 and A42 J13 junctions. ▪ There is also a priority list of A511 improvements, which are below: • Capacity enhancements including localised widening works; • The restriction of selected turning movements; • The introduction of signal control; • The delivery of a Bardon Link Road between Bardon Road and Beveridge Lane; • Capacity improvements at Flying Horse (Stanton Lane) Roundabout; • Capacity improvements at Beveridge Lane Roundabout; • Capacity improvements at Birch Tree (Reg's Way) Roundabout; • Capacity improvements at Bardon Road Roundabout; • Capacity improvements at Broom Leys Road Cross Roads; • Capacity improvements at Whitwick Road Roundabout; • Capacity improvements at Thornborough Road Roundabout; • Capacity improvements at Hoo Ash Roundabout; and

No	Policy and Strategy Document	Details of Policy and Strategy
		• Capacity improvements at Hugglescote Cross Roads. ■ M1 J22 received a set of priority improvements in 2016. ■ An A42 J13 junction capacity improvement package was implemented in 2017 following this report. ■ States support for a Leicester-Burton railway line reopening.
L5	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.
L6	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 growth in the town. “The project will identify

No	Policy and Strategy Document	Details of Policy and Strategy
		suitable improvements at key junctions along this transport link, as well as delivering a local link road, a key element of the North-West Leicestershire Local Plan (2011-2031), to provide an alternative route for drivers to limit the impact of growth." The scheme will do this by improving local connectivity and improving access to Leicester, EMA and the SRFI. ■ Sets out a desire for improvements on the A42, which will form the western boundary of the A511 development corridor. The plan is to upgrade it to 'expressway' standards, though scheme development is at an early stage.

2.2.2. The following matrix in **Table 2-2** summarises the key strategic themes running through the national, regional and local strategy and policy context.

Table 2-2 – Strategic theme occurrences in policy and strategy documentation

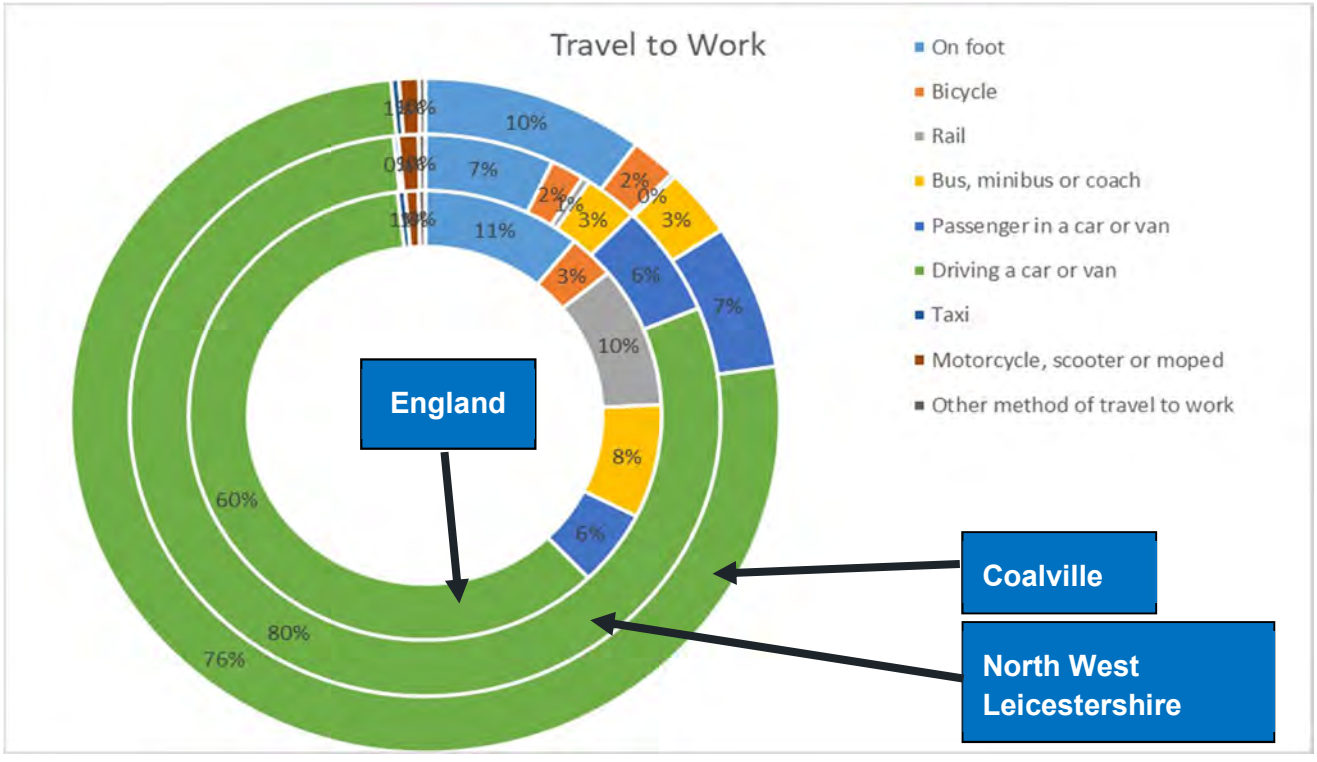
Key Themes	N1	N2	N3	R1	R2	L1	L2	L3	L4	L5	L6	Occurrences
Reduce Congestion	✓		✓				✓	✓	✓	✓	✓	7
Support Local Economic Growth	✓		✓	✓		✓	✓	✓	✓	✓		8
Support Housing Development	✓					✓	✓	✓	✓	✓	✓	7
Create a Better Environment / Promote Sustainability		✓	✓			✓	✓	✓		✓	✓	7
Improve Access to Local Employment Sites (e.g. Leicester or EMA)		✓		✓	✓	✓			✓	✓		6
Support All Road Users (Including Walking, Cycling	✓		✓		✓	✓	✓		✓		✓	7

Key Themes	N1	N2	N3	R1	R2	L1	L2	L3	L4	L5	L6	Occurrences
and Public Transport)												
Improve Links between SRN Roads and/or East-West Connectivity	✓	✓		✓			✓	✓	✓	✓	✓	8
Improve Road Safety			✓		✓	✓			✓			4

2.3 CHARACTERISTICS OF AREA

2.3.1. 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 2-1, below.

Figure 2-1 - Travel to Work



2.3.2. At the time of the 2011 Census, the dominant method of travelling to work by Coalville residents was driving by car (76% of commuting trips). This is higher than the national average of 60%, but lower than the wider North West Leicestershire rate of 80%.

2.3.3. This is followed by trips to work on foot, which make up 10% of Coalville commuting movements. This is greater than the district level (7%) but less than the national figure of 11%.

2.3.4. Third most prevalent mode is car passenger, forming 7% of Coalville resident commuting trips, compared to 6% in North West Leicestershire and 6% in England.

2.3.5. Commuting by bus makes up the fourth largest portion from Coalville at 3%. This is consistent with the district mode share, but considerably below the national figure of 8%.

2.3.6. Cycling makes up 2% of Coalville resident commuting trips, again, like the district level, but behind the national value of 3%.

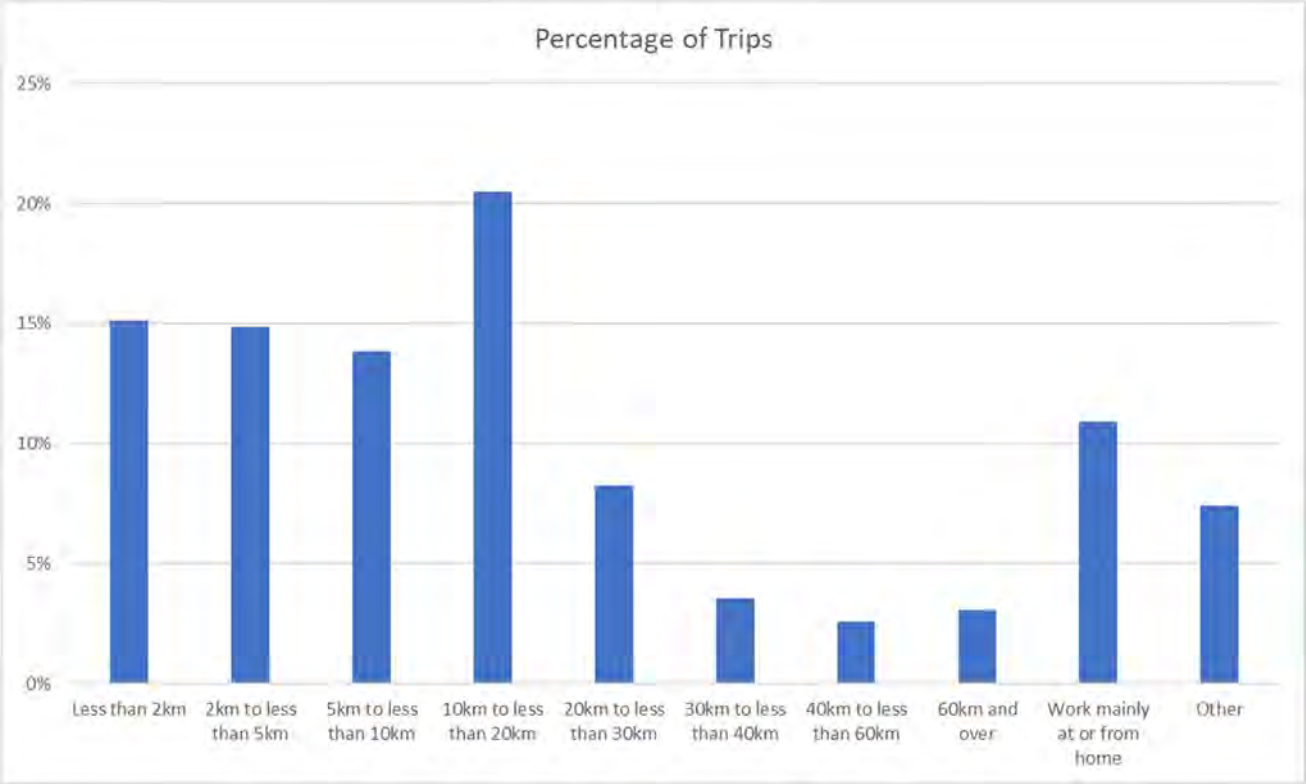
2.3.7. The travel to work mode shares of the remaining modes including rail are negligible making less than 2% of commuting trips combined.

2.3.8. Overall, the statistics are reflective of Coalville's degree of urbanisation. The combined 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 higher than the district average.

2.3.9. The town's size accounts for the lower levels of walking, cycling and public transport compared to the country which includes cities and conurbations. Rail is notably absent from the district but is not surprising given there are no current passenger services calling within the study area.

2.3.10. To further understand movements in the North West Leicestershire District, Figure 2-2 shows the distances people travel to work as of the 2011 census.

Figure 2-2 – North West Leicestershire journey to work trip length distribution (2011 Census)

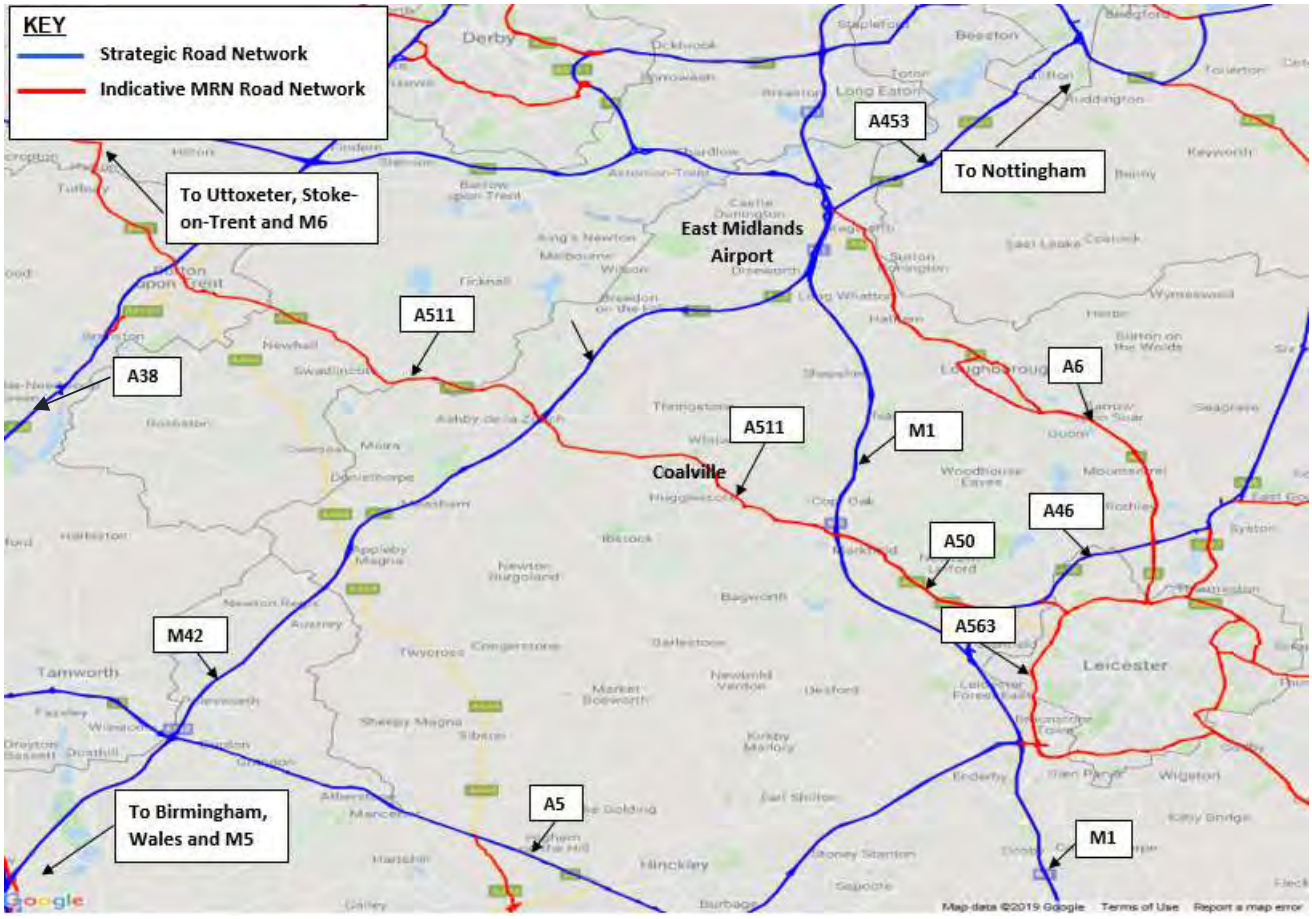


2.3.11. The figure shows that in 2011 around one third of commuting trips in the district were less than five kilometres, making them within limits of walking and cycling modes. Yet only nine percent of district commuters used these modes. Another third of commuters travelled between 5km and 10km, which is usually seen as the guideline travel distance for people using bus based public transport. Yet only 3% of district commuters used buses.

2.4 HIGHWAY NETWORK

2.4.1. The A511 is part of the UK Major Road network, connecting the A50 near Uttoxeter (for connections to M6 and Stoke-on-Trent) with A50 (Leicester) and M1 (Junction 22). As such, it forms a key cross-country route, as illustrated in **Figure 2-3**.

Figure 2-3 - Highway Network in relation to the A511 MRN Growth Corridor[4]



STRATEGIC ROAD NETWORK (SRN)

2.4.2. The key strategic routes connected to the A511 MRN Growth Corridor include:

[4] http://maps.dft.gov.uk/major-road-network-consultation/

- M1: Accessed from the A511 MRN Growth Corridor at Junction 22, the M1 provides connections northbound to Nottingham, Sheffield and Doncaster and Southbound towards Rugby, Northampton and London.
- A42/M42: Accessed from the A511 MRN Growth Corridor at Junction 13 (A42). Towards the north east the A42 continues provides a link to East Midlands Airport before connecting with the M1 at Junction 24. From this junction, the A453 towards Nottingham can also be accessed. Travelling south west from Junction 13, the M42 connects the corridor with Birmingham, South Midlands and South West.
- A50: This strategic road is accessed from the A511 MRN Growth Corridor at Junction 22 of the M1, providing access to Leicester and onwards towards Lincolnshire, Cambridgeshire, Northamptonshire and Norfolk. To the north west the A50 is also connected to the A511 near Uttoxeter providing onward connection with Stoke-on-Trent and the north west of England.

MAJOR ROAD NETWORK (MRN)

2.4.3. 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 MRN 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.

2.4.4. 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.

2.5 EXISTING TRAFFIC CONDITIONS

2.5.1. Applications of the Pan-Regional Transport Model (PRTM - an enhanced version of the Leicester and Leicestershire Integrated Transport Model – LLITM) highlight congestion problems at junctions along the A511 MRN Growth Corridor. The work presented in this section of the OAR has been refreshed using modelling outputs from the recalibrated PRTM.

2.5.2. Previous studies have shown that the A511 MRN Growth Corridor experiences congestion at numerous points along the approaches of its key junctions. The following sections refresh the evidence by presenting the results for the 2014 transport model Base Year relating to the extent of traffic issues along the A511 MRN Growth Corridor, as well as individual junction capacity assessments undertaken by LCC of the key junctions along the corridor and spatial traffic data derived from historic Google API.

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

2.5.4. Indicators derived from model output have been identified to capture the extent of these issues. These relate to slow journey times, congestion, through traffic and HGV movements – all of which are aligned with local and national government policy objectives in relation to transport policy, as well as removing barriers to accelerated housing delivery and industrial and economic growth. The indicators from the transport model are:

- Traffic Flow Volume
- Junction Volume to Capacity Ratio;
- Junction Capacity;
- Travel Speeds;
- Junction Delays; and
- HGV movements along the corridor.

2.5.5. Within the analysis in this section and the following sections of the OAR reference is made to locations in the along the A511 corridor which may not be familiar to the reader. These locations are therefore shown on **Figure 2-10**.

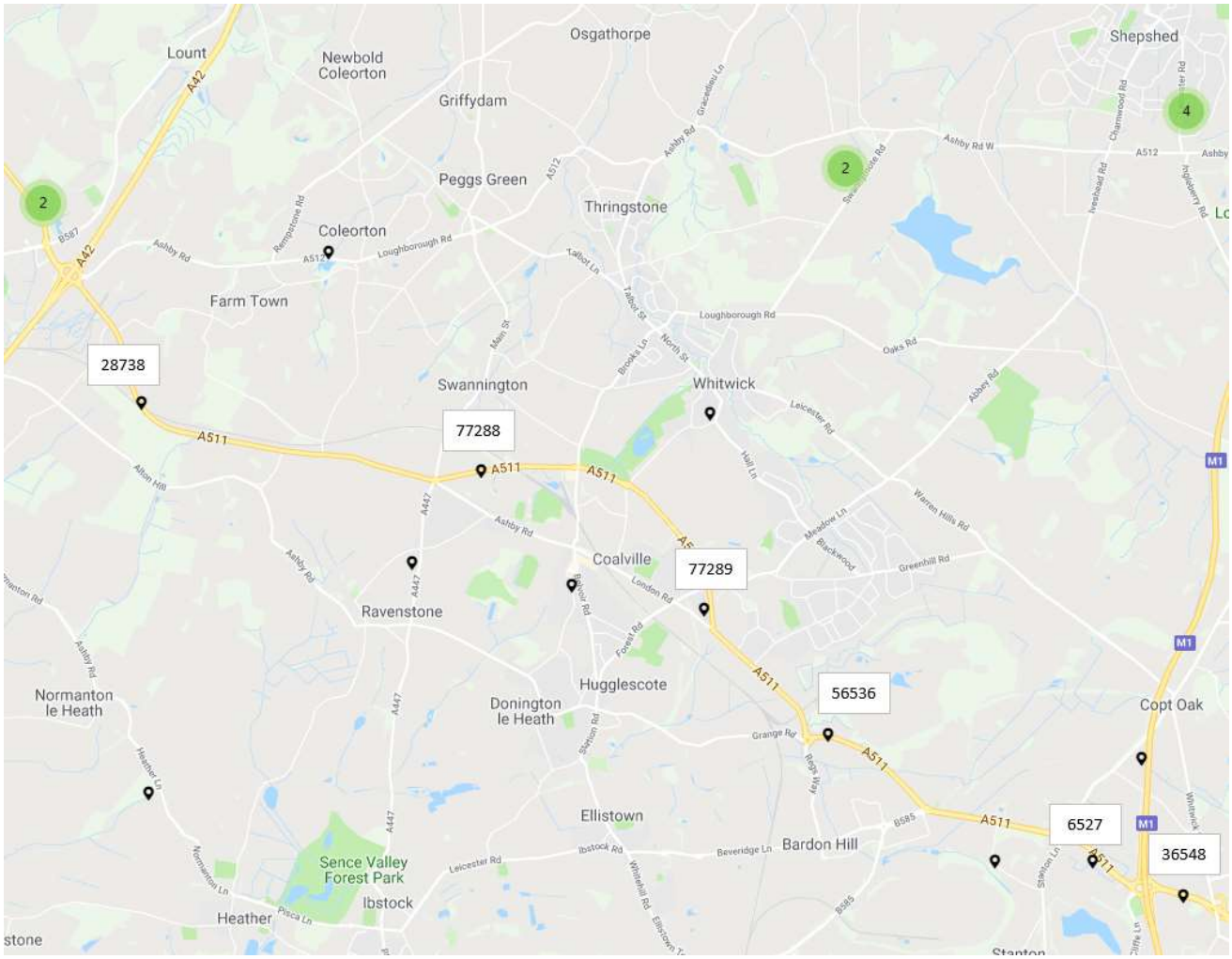
TRAFFIC FLOW VOLUME

Observed Traffic Flow

2.5.6. This section of the note considers traffic flow volume data for the A511 obtained from DfT Road Traffic Statistics5. There are six DfT traffic counts along the A511 in the study area, which are illustrated in Figure 2-4.

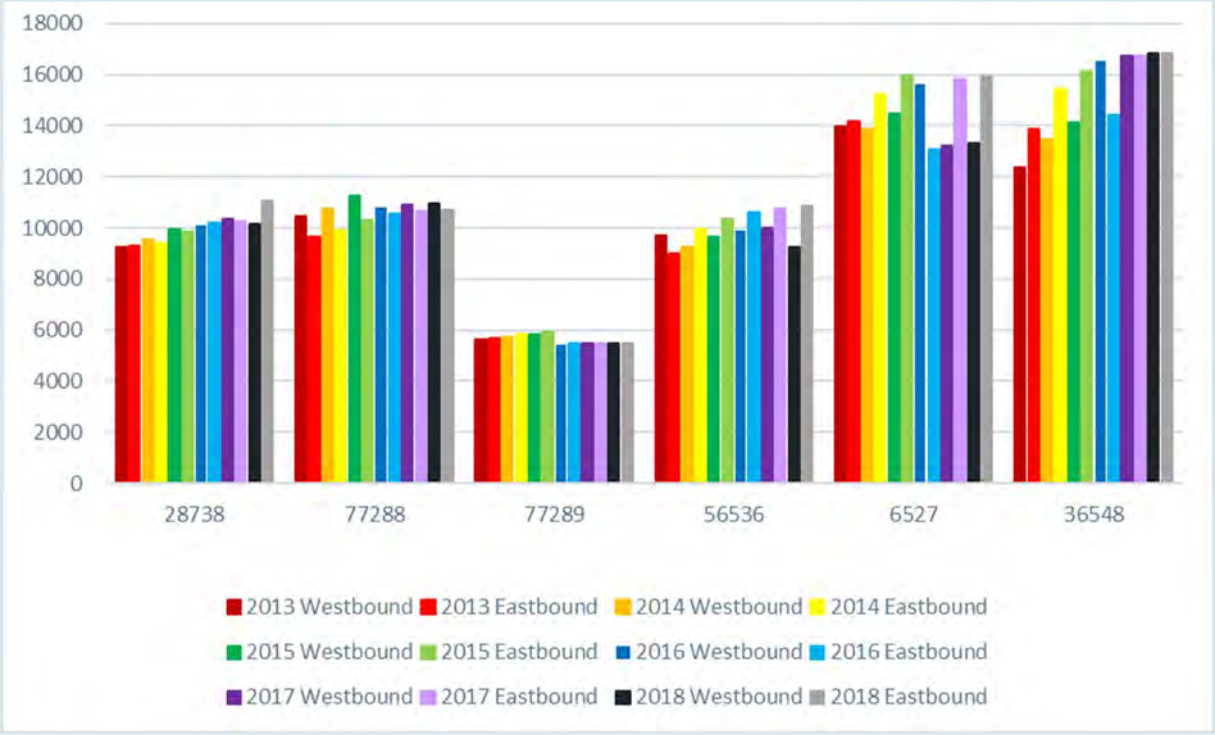
[5] https://roadtraffic.dft.gov.uk/#13/52.7216/-1.4723/basemap-countpoints

Figure 2-4 - DfT AADT count sites



2.5.7. The flow outputs from these locations are shown below in **Figure 2-5**.

Figure 2-5 - DfT AADF Count Results



2.5.8. **Figure 2-5** shows the changes in Average Annual Daily Flow (AADF) by direction between 2013 and 2018 at the five DfT maintained count locations shown in **Figure 2-4**. It can be observed that there is a general increase in traffic flows between 2013 and 2018 at all the sites, except for 77289, which is at the eastern end of the Coalville bypass. The number of trips at this site being lower than the others suggests that the volume of traffic approximates the volume of through traffic along the corridor once traffic travelling into Coalville and/or its northern industrial estates has been removed. Crudely speaking therefore, through traffic could be as high as half the total traffic on the corridor.

2.5.9. Another notable feature of the counts is that site 6527 and 36548, which are closest to the M1 are the busiest, with an additional 10,000-15000 AADF two-way compared to the next busiest site. This is most likely reflective of the traffic generated between Leicester, Bardon Industrial Estate and the M1, which would not be picked up on by the other counts.

2.5.10. 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 at the eastern end of the bypass over the last six years. Closer to the M1 daily traffic increases to between 25,000 and 35,000 AADF two-way.

Modelled Traffic Flow

2.5.11. Figure 2-6 and Figure 2-7 provides the modelled 2014 traffic flows along the A511 MRN Growth Corridor for the AM and PM peaks respectively. This shows that on average the flow along the corridor ranges between 500 to 2000 vehicles per hour by direction during the AM and PM peaks across the length of the corridor. With the highest modelled two-way flow in either peak period of around 3000 vph occurring between Beveridge Lane and the A50 /Field Head Roundabout.

Figure 2-6 - 2014 AM Peak Modelled Traffic Flow

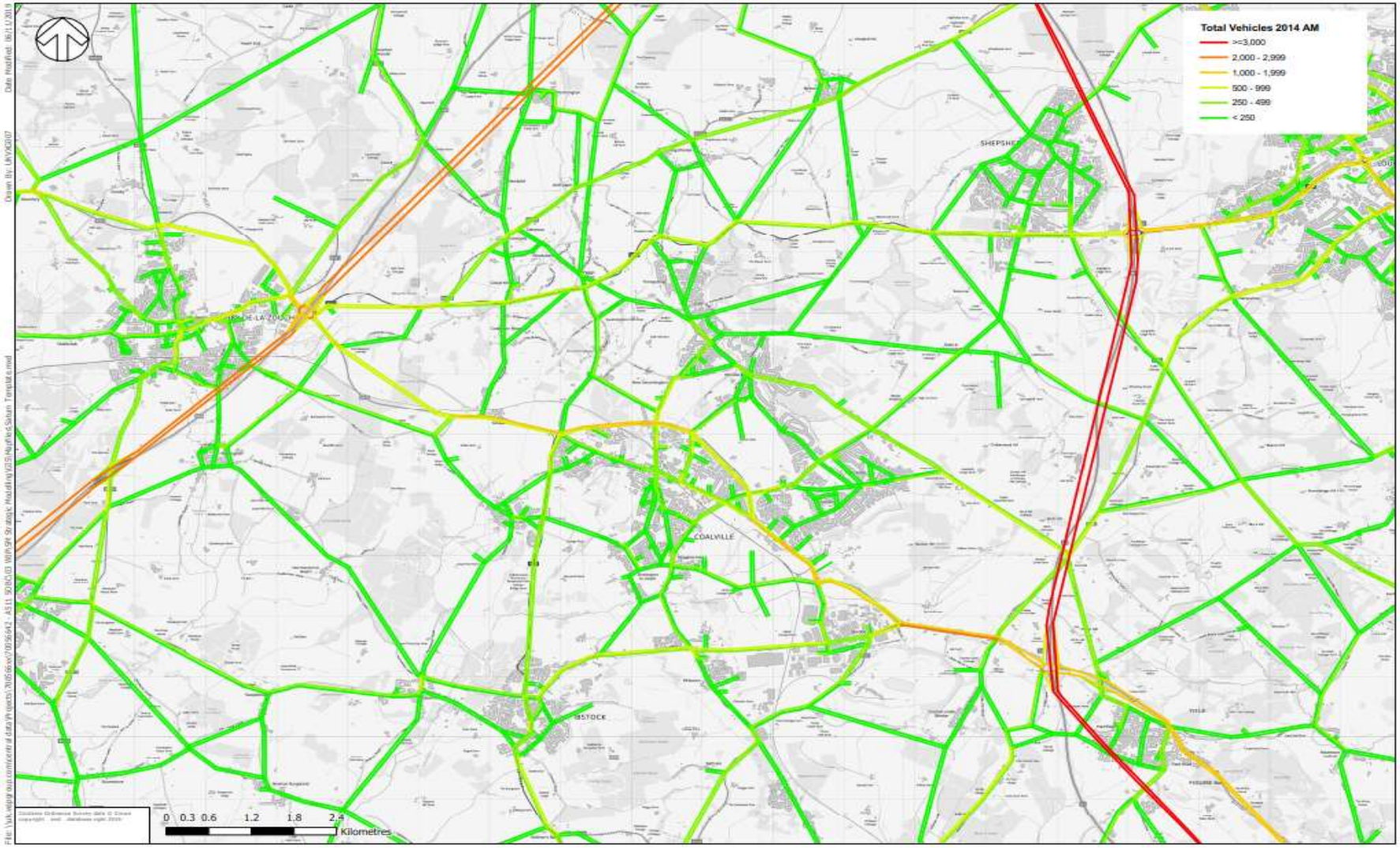
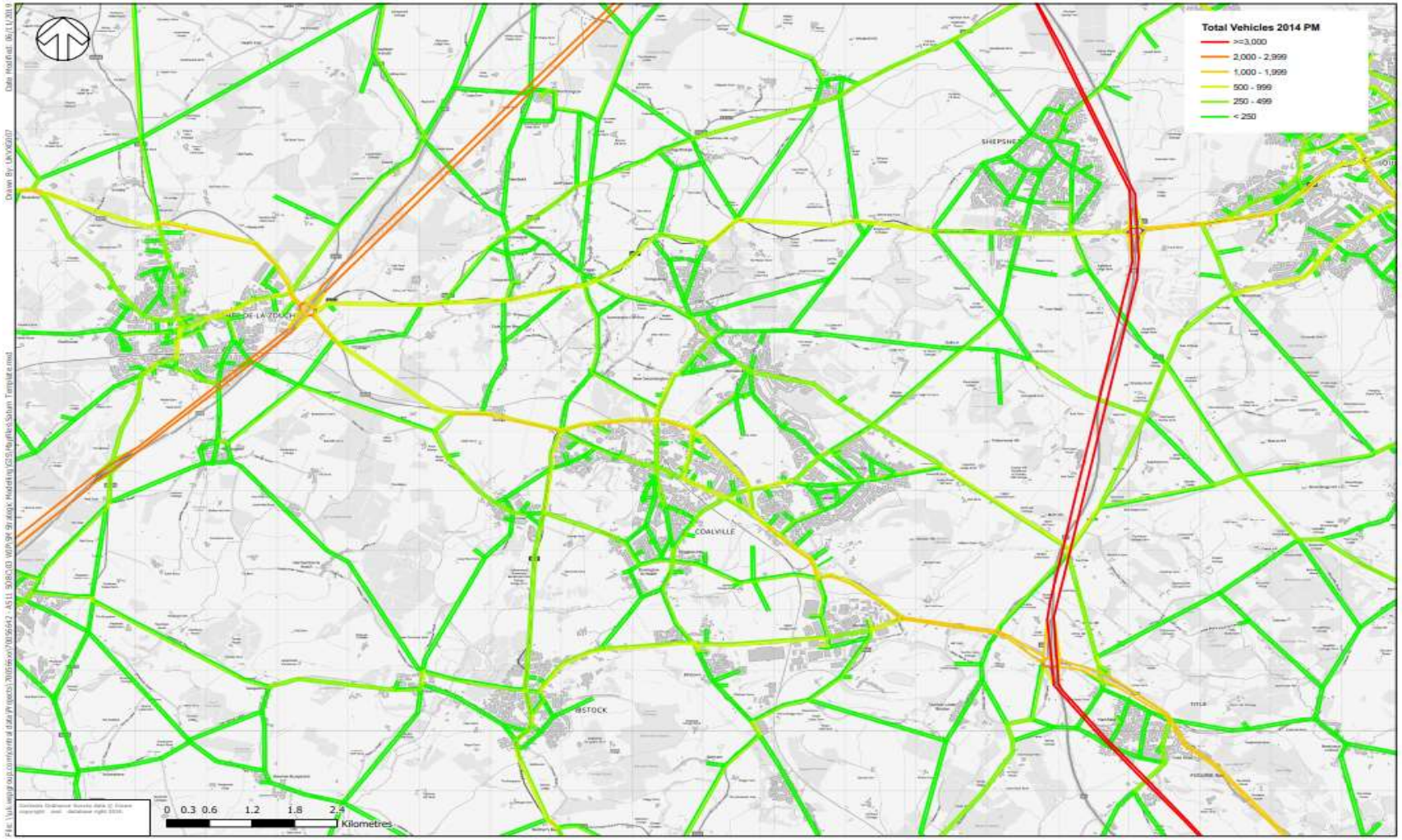


Figure 2-7 - 2014 PM Peak Modelled Traffic Flow



JUNCTION VOLUME TO CAPACITY RATIO

2.5.12. The V/C ratio (typically expressed as a percentage) defines the amount of road capacity (C) (i.e. the level of traffic per hour– above which traffic will be unable to use the road space and queuing will occur) taken up by the volume of traffic (V) using it. Typically values around 85% indicate that symptoms relating to congestion begin to dominate (e.g. declining speeds and uncleared queues after a green traffic signal). Close to or above 100% indicates the road will experience permanent queueing during the peak hour or peak period and may result in blocking back of upstream junctions.

2.5.13. Figure 2-8 and Figure 2-9 show the volume to capacity ratios (V/C) for junction approaches along the A511 MRN Growth Corridor in the 2014 base year AM and PM peak periods respectively.

Figure 2-8 - 2014 AM Peak Hour Junction Volume/Capacity Ratios on A511 and adjacent road network

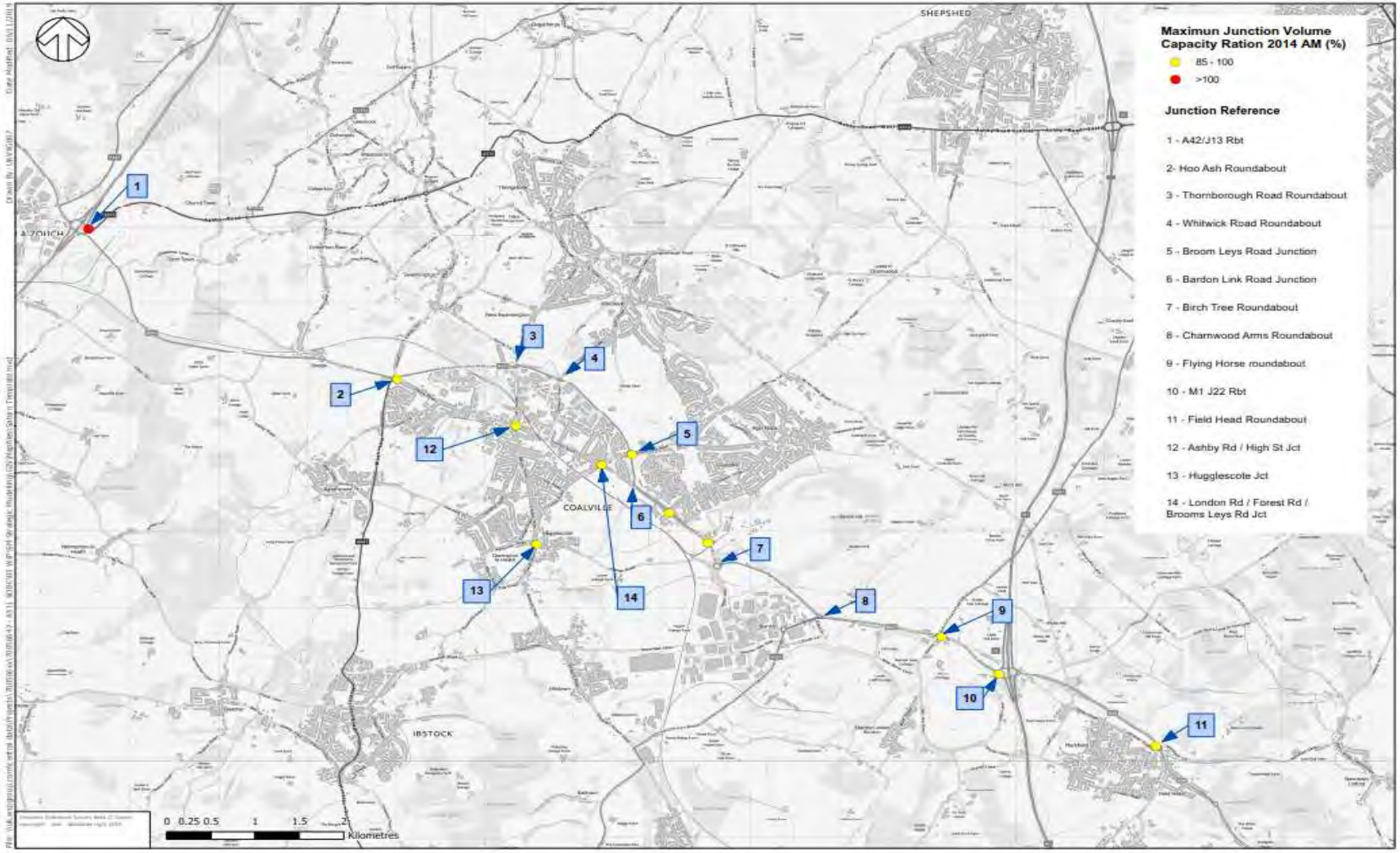
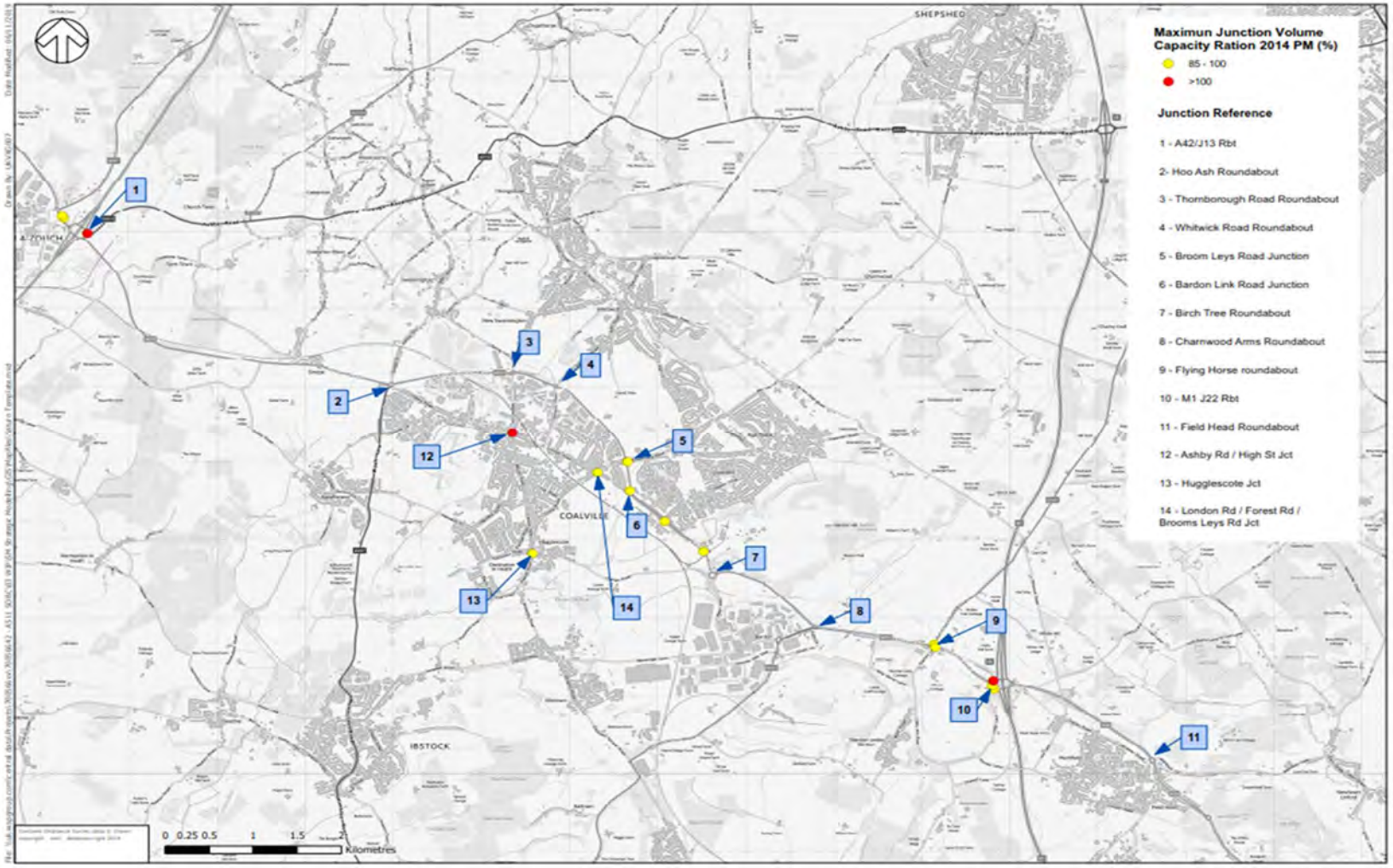


Figure 2-9 - 2014 PM Peak Hour Volume/Capacity Ratios on A511 and adjacent road network



2.5.14. Figure 2-8 and Figure 2-9 identify junctions on the A511 MRN Growth Corridor for which the traffic volume exceeds 85% of capacity in 2014 for the AM and PM peak periods respectively. When 85% of capacity is taken up by traffic volume then symptoms of congestion become apparent.

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

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

2.5.16. The model also shows A42 Junction 13 (labelled Junction 1) and M1 Junction 22 (labelled Junction 10) also operating with V/C ratios of over 85% but this assessment was undertaken in 2014 prior to improvement works A42 Junction 13 and M1 Junction 22 and therefore the 2014 results are not reflective of the current situation at these two locations.

2.5.17. 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).

2.5.18. 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.

2.5.19. In general, the V/C distribution shows that most congestion is concentrated between the Broom Leys Road Junction and A50 / Field Head Roundabout with conditions worsening at the easternmost junctions in the direction of Leicester.

2.5.20. In summary, over half of the roundabouts on the corridor are approaching capacity prior to any further developments occurring on the corridor. As such, capacity relief is required to enable it to continue to function both for trips over the corridor and for trips to and from locations on the corridor.

JUNCTION CAPACITY

2.5.21. Junction capacity assessments have been carried out by LCC at the key junctions shown on Figure 2-10 shows the key junctions along the A511 MRN Growth Corridor.

Figure 2-10 - A511 MRN Growth Corridor – Key Junctions

2.5.22. Table 2-3 provides the existing practical reserve capacity (PRC) in 2017 at these junctions along the A511 MRN Growth Corridor. Practical reserve capacity 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 software, which are used to model standard roundabouts and signalised junctions respectively

Table 2-3 –Practical Reserve Capacity (PRC) at existing junctions in 2017

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

2.5.23. The capacity analysis shows that several of the junctions along the A511 MRN Growth Corridor are already operating above capacity or close to capacity. The most congested are A511 / Hoo Ash Roundabout, A511 / Broom Leys Road and A50 / Field Head Roundabout.

TRAVEL SPEEDS

2.5.24. Spatial traffic data derived from Google API, for the A511 MRN Growth Corridor for a typical AM and PM weekday, shown in Figure 2-11 to Figure 2-12, reveals the extent of the congestion problem. On these maps, red indicates slow-moving traffic (<10mph) while green indicates typically uncongested conditions.

2.5.25. These plots show that the A511 MRN Growth Corridor experiences pockets of traffic congestion at most of its junctions in a typical AM and PM peak. Vehicle movements are particularly slow on the westbound approaches to the A511 / Flying Horse and A50 / Field Head Roundabouts in the AM peak, with the queues at the A50 / Field Head Roundabout feeding all the way to the M1 Junction 22. The

eastbound approach to the quarry site 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.

2.5.26. Also, notably in the PM peak the A511 / Flying Horse Roundabout westbound approach and the A511 / Birch Tree Roundabout approaches also experience pockets of slow-moving traffic.

Figure 2-11 - Typical AM Peak Hour Speeds - A511 MRN Growth Corridor

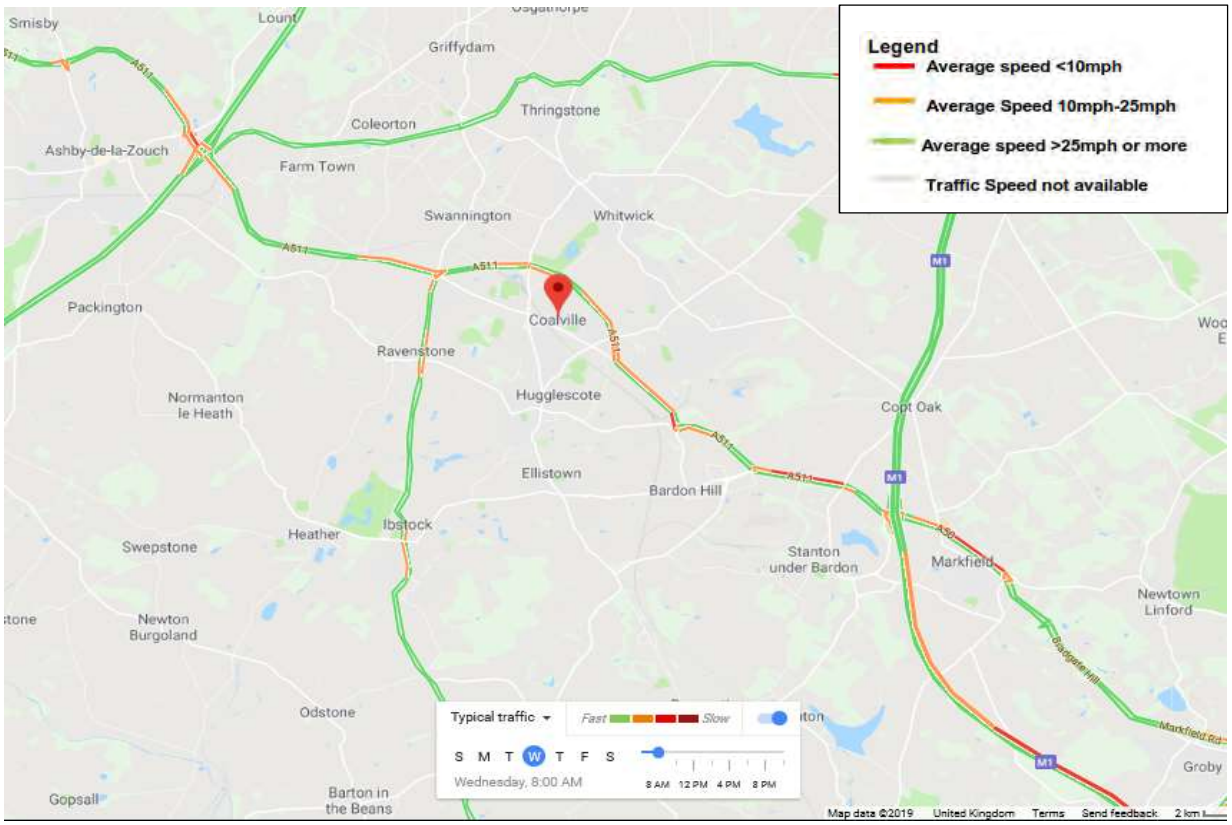
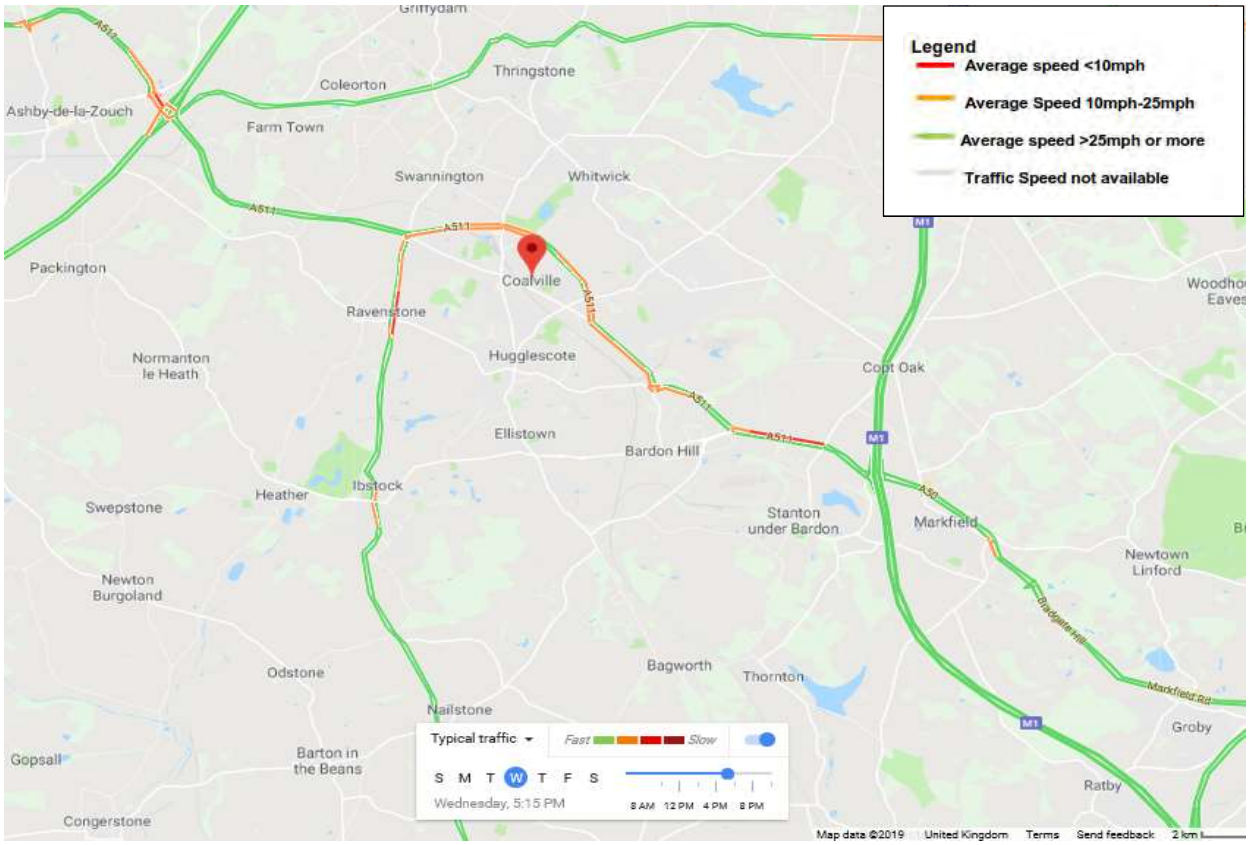


Figure 2-12 - Typical PM Peak Hour Speeds - A511 MRN Growth Corridor



JUNCTION DELAYS

2.5.27. Figure 2-13 and Figure 2-14 show the average level of delay along the A511 MRN Growth Corridor and surrounding network in the 2014 Base AM and PM peaks respectively according to the recalibrated SATURN PRTM model. These show similar delays to those observed using Google API on the A511 north of Coalville.

Figure 2-13 – Junction Delays in 2014 AM peak – A511 MRN Growth Corridor

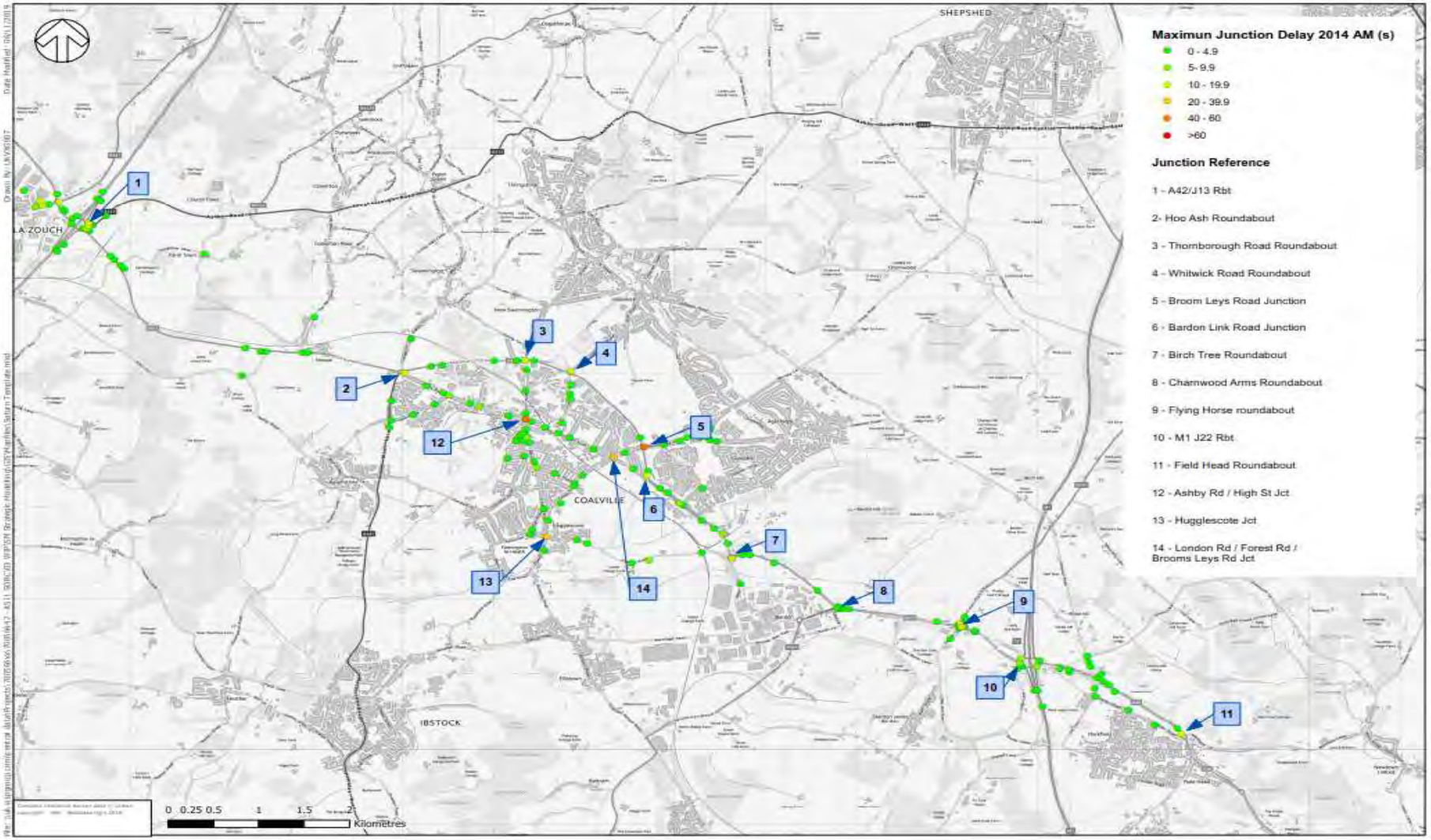
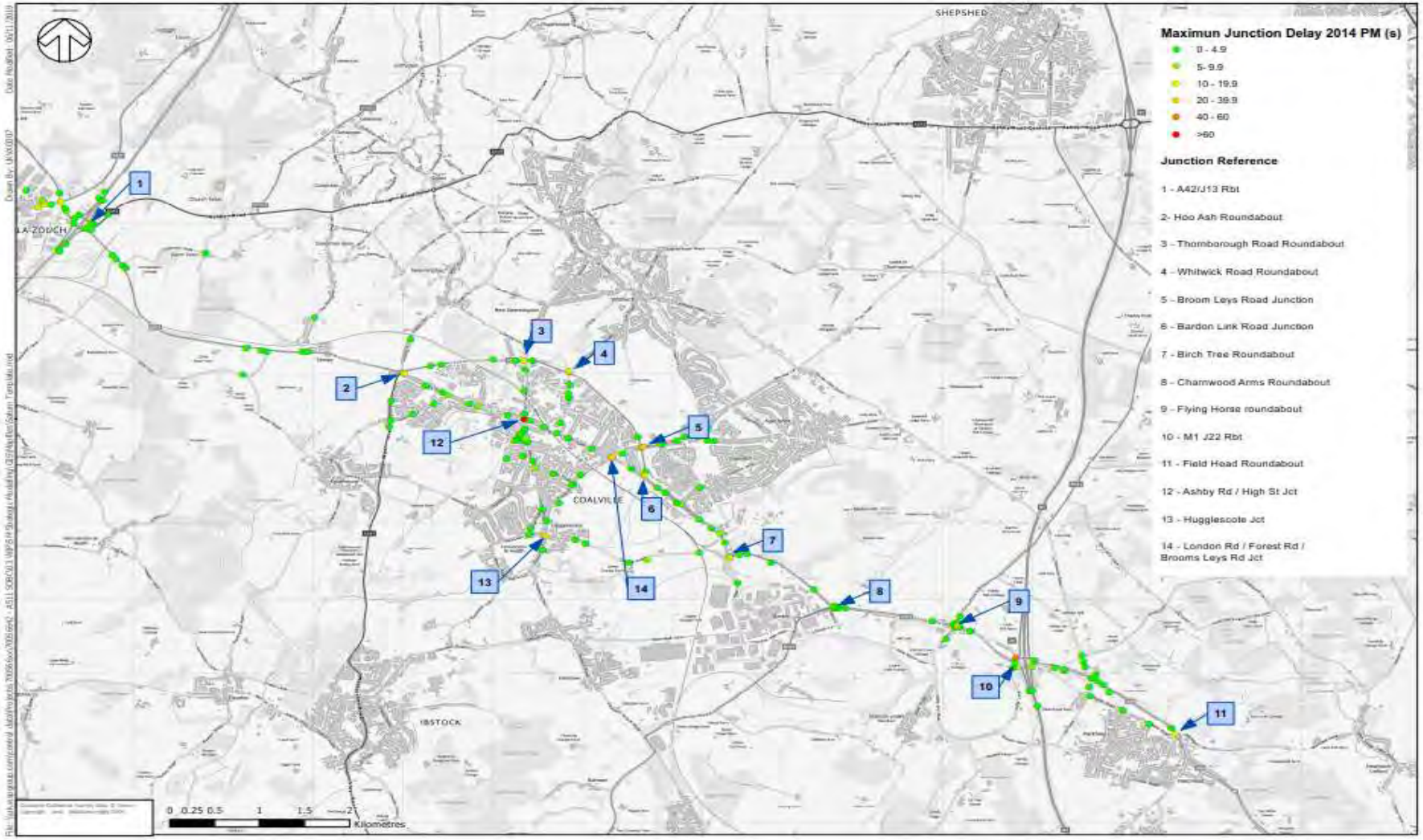


Figure 2-14 – Junction Delays in the 2014 PM peak - A511 MRN Growth Corridor



2.5.28. As shown above, the worst performing junctions on the A511 MRN Growth Corridor, with notable delays (greater than 20 seconds) experienced at the following A511 junctions:

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

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

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

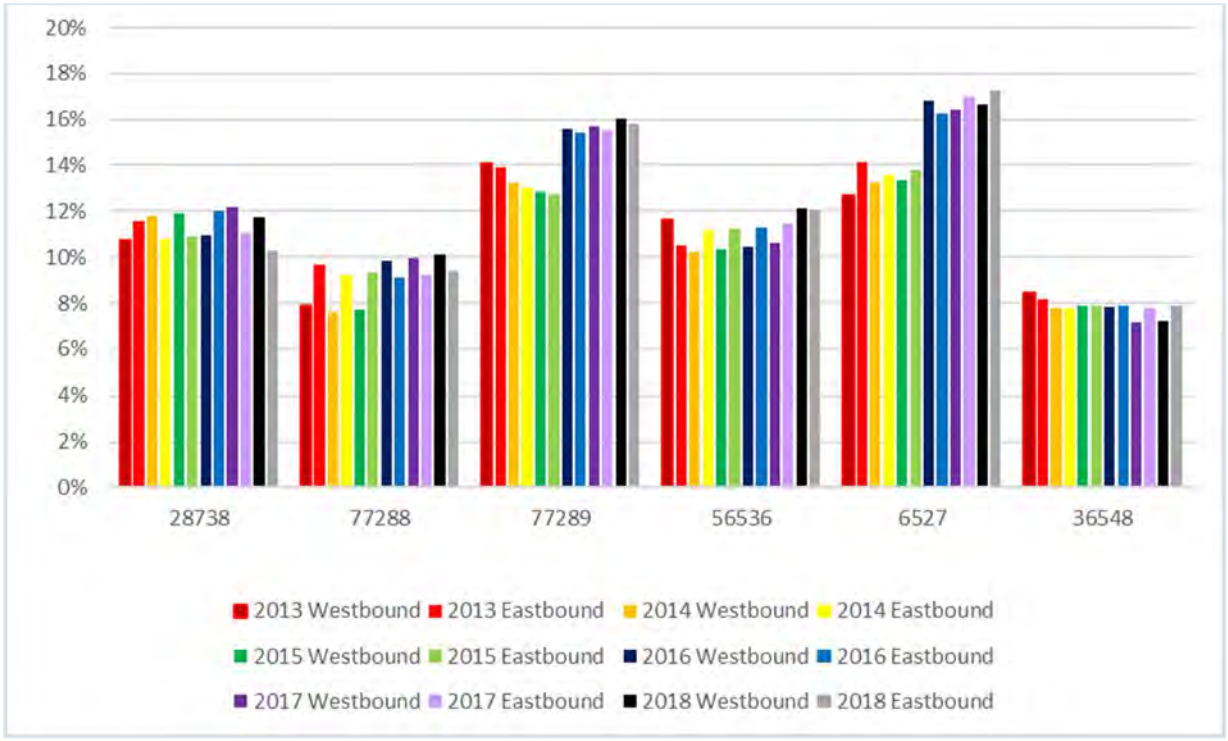
- Ashby Road / High Street Junction (AM & PM);
- Hugglescote Junction (AM & PM); and
- London Road / Forest Road / Brooms Leys Junction (AM & PM).

HGV TRAFFIC

Observed daily HGV flows

2.5.31. Figure 2-13 shows the percentage of observed traffic which is HGV at the five DfT maintained count locations shown in Figure 2-4. Data is reported on an AADF basis by direction from 2013 to 2018, sourced from the DfT Road Traffic Statistics6.

Figure 2-15 – Observed daily HGV proportions by direction– A511 MRN Growth Corridor



[6]Source: https://roadtraffic.dft.gov.uk/#14/52.7248/-1.4064/basemap-countpoints

2.5.32. This shows that over the last six years the proportion of HGVs along the route is around 12% on average. 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 the level of daily HGV through traffic. Between M1 Junction 22 and Flying Horse Roundabout the two-way flow of HGVs has increased from 3800 vpd in 2013 to almost 5000 vpd in 2018. On the A50 east of the M1 the HGV volume falls back to around 2300 vpd over the last six years. 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% just west of M1 Junction 22.

2.5.33. 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.

2.5.34. This trend reinforces the need for intervention on the A511 to allow efficient deliveries to strategic locations on the corridor or at either end, and further afield. It also highlights the importance of improving the corridor's functionality to improve safety. The above findings also reinforce the concept proposed earlier that traffic at site 6527 (i.e. site closest to M1 Junction 22) is driven by vehicles accessing Bardon Industrial Estate, which would naturally include a higher HGV percentage.

Modelled HGV Flows

2.5.35. Figure 2-16 to Figure 2-18 present the current volume of HGVs using the highway network in the 2014 AM, inter- and PM peak hours, respectively. The volume of HGVs using the A511 MRN Growth Corridor are higher in the AM and inter peak periods (up to 200 vph by direction adjacent to the M1 and A42) than in the PM peak (up to 100 vph by direction, also mostly experienced on the links closer to the A42 and M1).

Figure 2-16 – HGV hourly traffic volume in 2014 AM peak - A511 MRN Growth Corridor

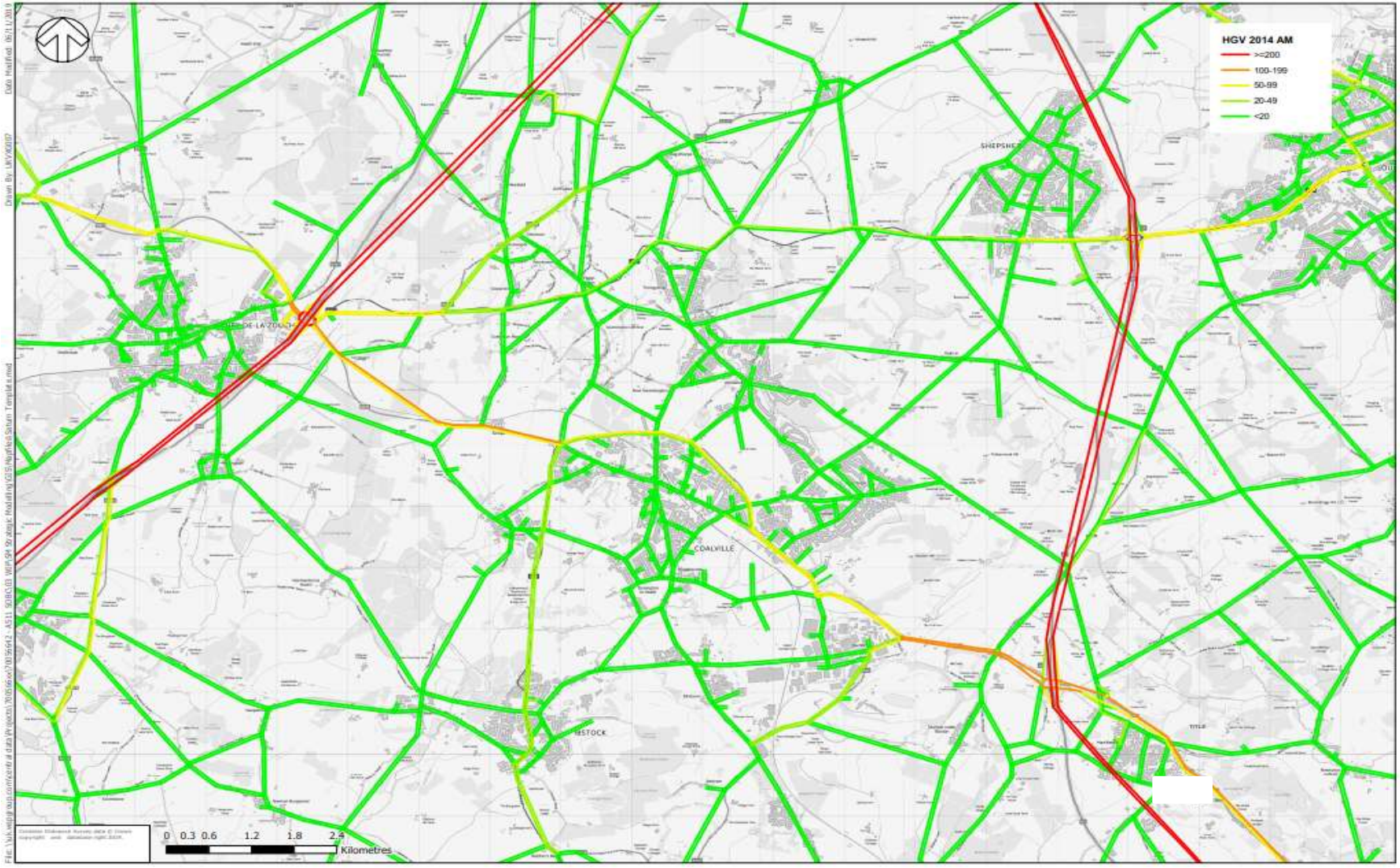


Figure 2-17 – HGV hourly traffic volume in 2014 Inter peak - A511 MRN Growth Corridor

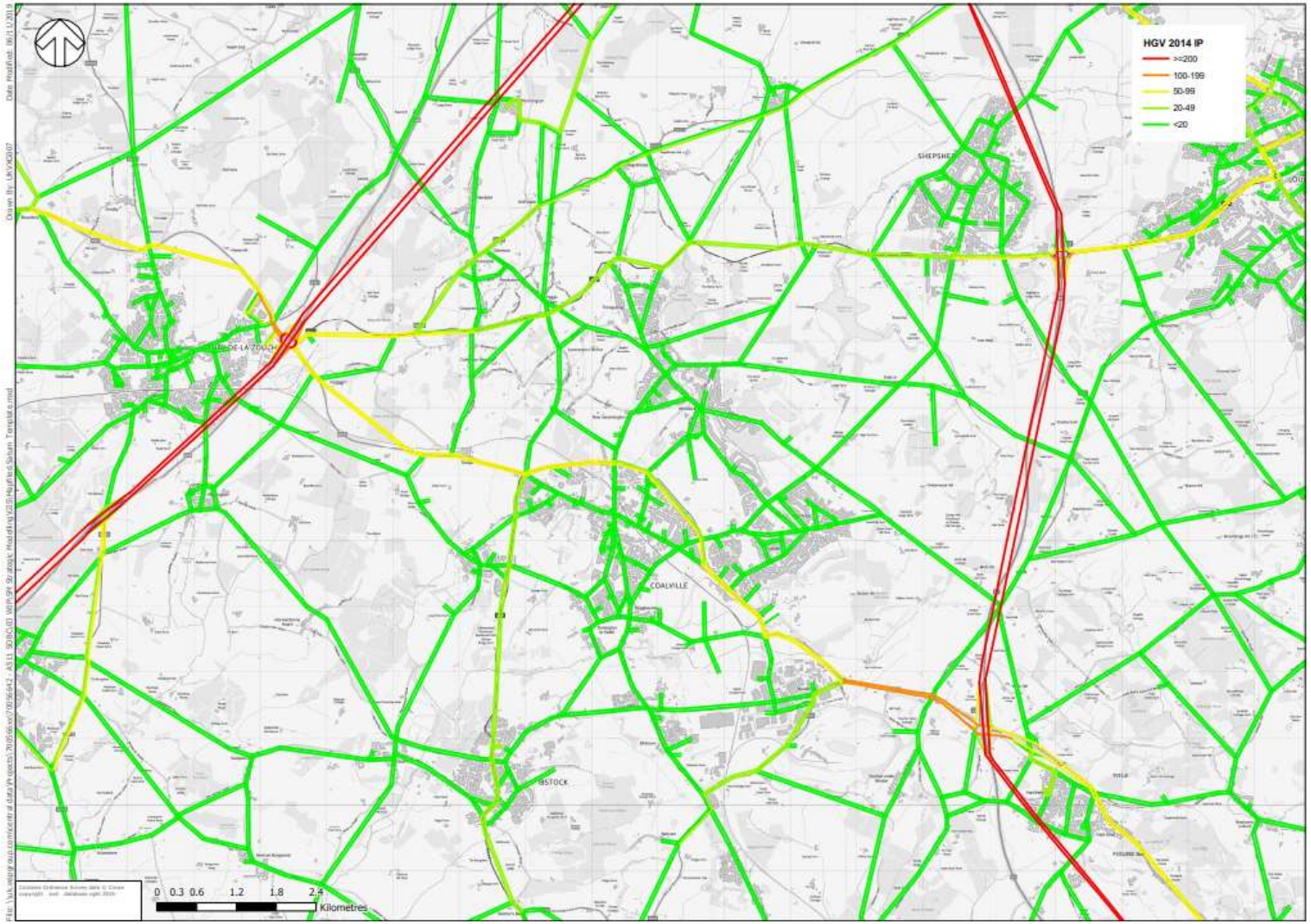
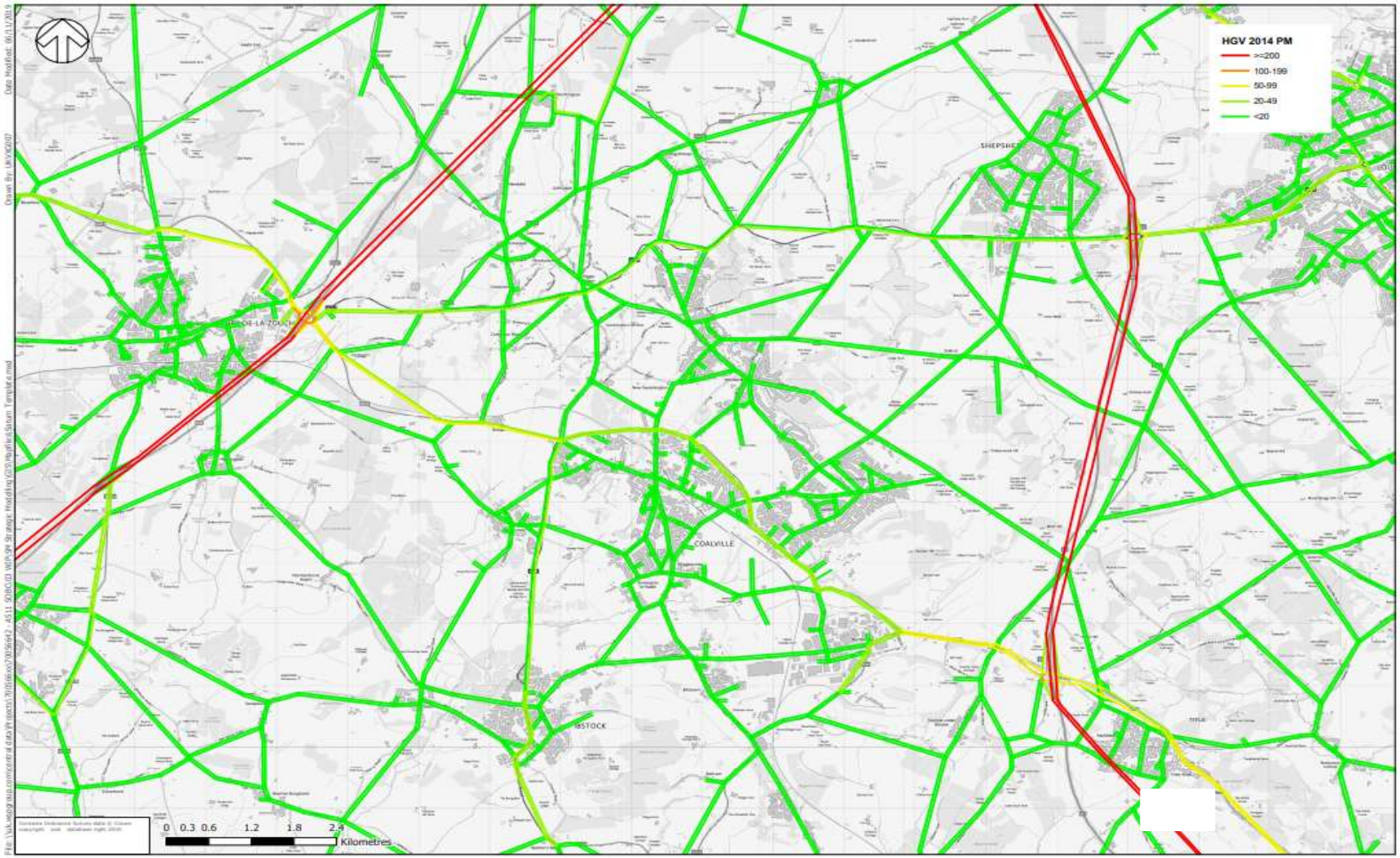


Figure 2-18 – HGV hourly traffic volume in 2014 PM peak - A511 MRN Growth Corridor



2.5.36. When it comes to proportions, on average HGVs account for around 9%, 12% and 5% of traffic along the route in the AM, inter- and PM peaks respectively.

ACCIDENTS

2.5.37. Data presented in Figure 2-19, below, shows the locations of Personal Injury Collisions (PIC) that have occurred in the A511 MRN Growth Corridor between 2014 and 2018.

Figure 2-19 – Personal injury collision locations along the A511 MRN Growth Corridor

2.5.38. As shown in Figure 2-19, there are five PIC clusters which make up almost 50% of incidents, with the remainder being relatively evenly distributed:

- M1 J22: 17 out of 105 PIC accidents occur here, including one serious incident. The serious incident involved a rear shunt from a vehicle that failed to stop to queue on approach to the roundabout. This form of collision makes up most of the collisions at this roundabout, primarily on the roundabout's south-eastern arm (entering the roundabout westbound from the A50). It is notable that a high proportion of these accidents occurred in 2016. This is possibly due to the junction having been remodelled during that period.
- Hough Hill / A511 Stephenson Way / Ashby Road / Swannington Road / A511 Ashby Road Roundabout. Nine of the 105 accidents are located here, including two severe accidents. Most of these accidents appear to occur on the approach arms to the roundabout, with moving vehicles colliding with vehicles queuing. Both serious accidents involve motorcycles, one involving an unexplained fall from the rider's bike, the other lacking detail.
- B591 Copt Oak Road / A511 Little Shaw Lane / Stanton Lane / A511 Shaw Lane Roundabout. Nine accidents occur at this location of which seven happened during the daytime. Most accidents at this location appear to consist of vehicles entering the roundabout and colliding with traffic already using it.
- A511 Bardon Road / A511 Shaw Lane / Bardon Industrial Estate Entrance Roundabout. Eight accidents occur here, including one serious. Two of these PICs, including the serious one, lack data, one is influenced by alcohol, a further four are predominantly due to vehicles cutting across lanes and colliding. One accident is due to a vehicle stopping to give way to traffic on the roundabout being shunted from behind.
- A50 / Markfield Lane / A50 Leicester Road / Leicester Road: Eight PICs occur at this location. The PICs at this location are split between vehicles colliding on the roundabout and shunts on the approaches.50% of accidents at this site occurred in 2016.

2.5.39. Figure 2-20 and Table 2-4 show the number and severity of PICs within the study period.

Figure 2-20 – A511 MRN Growth Corridor – PICs by year (2014-2018)

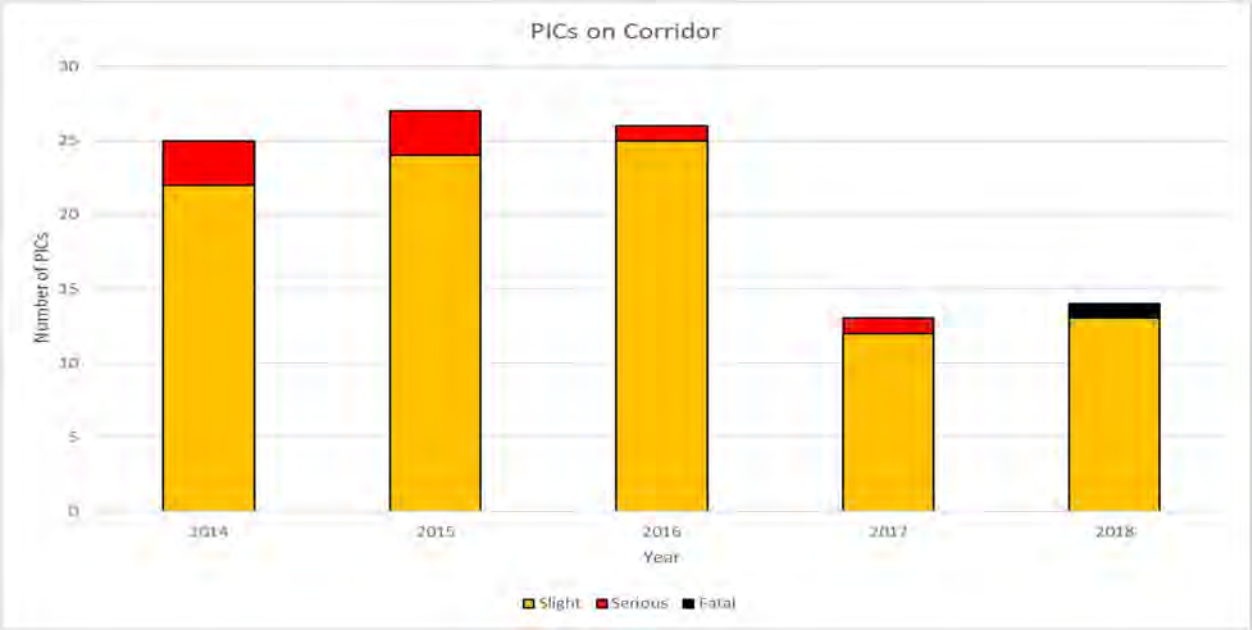


Table 2-4 – PICs by Year and Severity

Severity	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

2.5.40. These show that there has been a decline in the number of accidents along the A511 from the A41 J13 through the M1 J22 and to the Field Head roundabout between 2014 and 2018.

2.5.41. This notable decline in accidents can be attributed to the significant reduction in accidents at M1 J22 because of improvement works at the junction in 2017.

2.5.42. Table 2-5 show the number and severity of PICs at M1 J22 within the study period.

Table 2-5 - PICs on M1 Junction 22 by Year and Severity

Severity	2014	2015	2016	2017	2018	Total
Slight	9	4	2	1	1	16
Serious	0	1	0	0	0	1
Fatal	0	0	0	0	0	1
Total	9	5	2	1	0	17

2.5.43. Nonetheless, PICs along the A511 is still prevalent with majority of the accidents being junction shunt type accidents, which could be attributed to congestion at junctions along the corridor.

2.5.44. As evident from the reduced accidents at M1 J22 following improvement work, it can be deduced that there is a possibility of reducing accidents along the A511 MRN Growth Corridor with the appropriate improvement works.

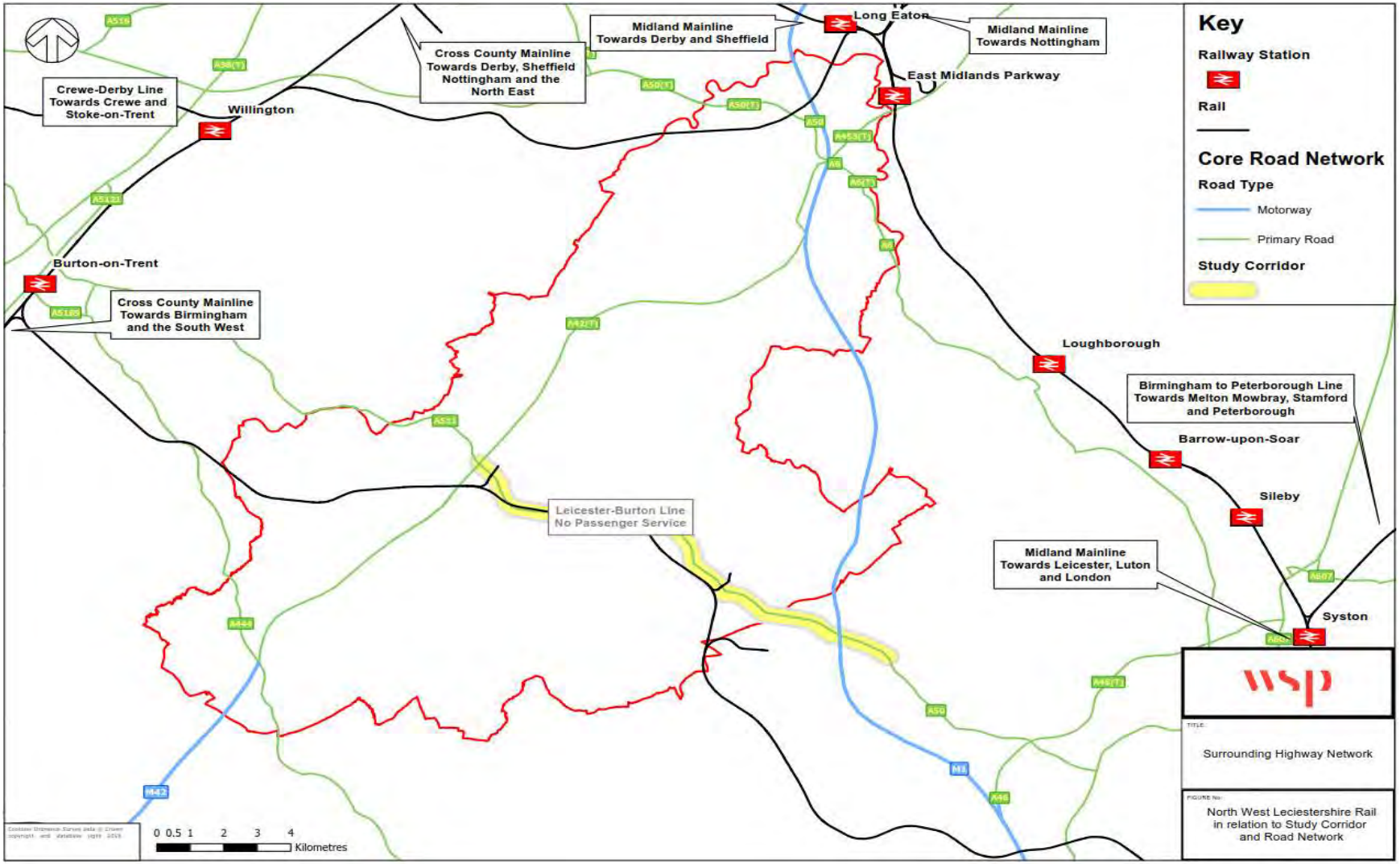
2.6 PUBLIC TRANSPORT NETWORK

2.6.1. This section of the report sets out the relationship between the study area and the public transport network.

RAIL

2.6.2. Figure 2-21 below shows the relationship of the A511 MRN Growth Corridor to the railway network, including station locations.

Figure 2-21 - Rail Network in relation to A511 MRN Growth Corridor



2.6.3. Figure 2-21 shows, there are presently no publicly accessible railway services within North West Leicestershire, and 10 miles from the centre of Coalville, despite the district being bisected by the west-east Leicester to Burton Line. This line closed to passenger traffic in the 1960s, though is still used by freight. Since the early 1990s, there has been talk of re-opening the line to passengers, however the most recent study in 2016, undertaken on behalf of Leicester City Council, concluded there wasn't a business case to support it.

2.6.4. Due to there being no services in the A511 MRN Growth Corridor, the nearest passenger railway station is Loughborough, approximately 8 miles northeast of Coalville. Other surrounding stations are Burton-on-Trent (accessed via the A511), Leicester (Accessed via the A511-A50) and East Midlands Parkway (accessed via the A42). Sileby and Syston might be closer to the primary road network and avoid travelling into city centres, however service levels from these locations are hourly at best.

2.6.5. Loughborough Railway Station is on the Midland Main Line which runs south to London and north to Derby, Nottingham and Sheffield. Services from Loughborough include:

- Hourly East Midlands Trains service to Sheffield via Derby and Chesterfield;
- Hourly East Midlands Trains service to Nottingham via Beeston;
- Hourly fast East Midlands Trains service to London St Pancras International via Leicester;
- Hourly semi-fast East Midlands Trains service to London St Pancras International via Kettering, Bedford and Luton Airport Parkway;
- Hourly local East Midlands Trains service to Lincoln via East Midlands Parkway, Nottingham and Newark with peak hour trains to Sleaford; and
- Hourly local East Midlands Trains service to Leicester via Syston.

2.6.6. Burton-on-Trent is on the Cross Country Mainline, which runs from Bristol towards Derby and Sheffield, via Birmingham. The station is in Burton's town centre, with some surface parking available. Rail services from Burton include:

- Nottingham-Cardiff services operating every 30 minutes. *Via Birmingham New Street and Derby; and*
- Edinburgh or York to Plymouth or Southampton services operating every 60 minutes. *Via Birmingham New Street and Bristol.*

2.6.7. Leicester is on the Midland Mainline, as well as forming the crossroads where that north-south corridor is crossed by the east-west Birmingham-Peterborough Line. The station is in Leicester's city centre, with some surface parking available. Service from Leicester include:

- Services to London St Pancras International:
  - Every 30 minutes calling at Kettering and Wellingborough;
  - Every 60 minutes calling at Market Harborough only;
  - Every 60 minutes calling at Market Harborough, Kettering and Wellingborough.
- Services every 30 minutes to Birmingham;
- Services hourly towards Stansted via Melton Mowbray and Peterborough;
- Services hourly towards Sheffield via Loughborough, East Midlands Parkway and Derby;
- Services hourly towards Nottingham via Loughborough, East Midlands Parkway and Beeston;
- Services hourly towards Lincoln via Syston, Sileby, Barrow Upon Soar and all stations to Nottingham; and
- Intermittent services towards Leeds and York.

2.6.8. East Midlands Parkway is on the Midland Mainline, close to the site of the historic Trent Junction Station. The station opened in 2009 to act as a park-and-ride for locations off the M1 motorway, as well as the local region around it. It also acts as a railhead for East Midlands Airport, via dedicated hourly shuttle bus services which take circa 15 minutes to travel between the station and the airport. This link is promoted on the National Rail website. Railway services from the station are similar to those from Leicester.

BUS

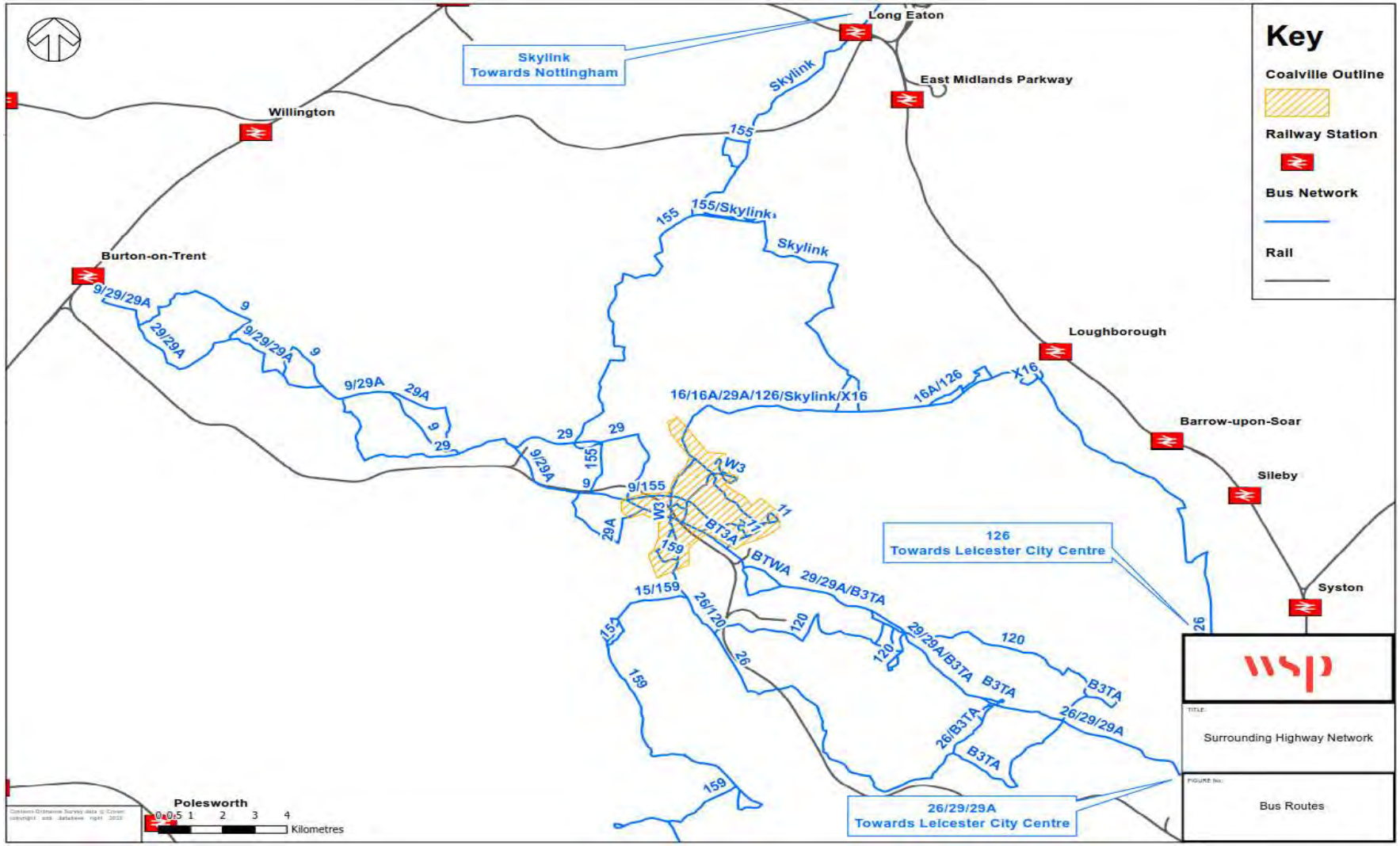
2.6.9. Figure 2-22 shows the bus network which utilises the A511. This network centres on Coalville, which is one of the reasons that bus based travel to work in the town is higher than in the surrounding district.

2.6.10. Key service groups operating in the district include:

- Coalville to Leicester via the A511- these buses operate every 20 minutes and take approximately 70 minutes to reach Leicester.
- Coalville to Burton on Trent via A511- these buses operate every 20 minutes, taking approximately 70 minutes.
- Coalville to Loughborough via the A512- these buses operate hourly, taking approximately an hour.
- *Skylink*- Coalville to Nottingham via East Midlands Airport these buses operate approximately hourly, taking circa 45 minutes to reach the airport and 2 hours to reach Nottingham.
- *Airlink*- Coalville to East Midlands Airport- these buses operate hourly and take approximately 40 minutes to reach the airport.

2.6.11. The above indicate that Coalville has accessibility to public transport, as well as illustrating the importance of the A511 MRN Growth Corridor as a core transport artery in the district.

Figure 2-22 - Bus Network in relation to the A511 MRN Growth Corridor



2.7 AIR TRAVEL

2.7.1. East Midlands Airport (EMA) is located circa 10 miles to the north of the corridor, accessed by the A42, M1 or local roads depending on the starting point in the corridor. It is also connected to Coalville by the dedicated *Skylink* and *Airlink* buses and accessed from East Midlands Parkway railway station by a dedicated shuttle bus. East Midlands Airport is recognised by Midlands Connect as a key regional asset[7], with plans in hand for its further development, such as additional destinations and enhanced connections to existing locations.

2.7.2. The airport handled almost 4.9 million passengers in 2018, an increase from 2017 by 2.6% but still below the airport's highest usage of 5.6 million in 2008[8]. Most passenger flights from EMA are to locations in Europe, however there are regional flights to UK destinations and long-distance flights to locations such as the Canary Islands.

2.7.3. EMA handles over 328,000 tonnes of cargo each year, and it is the UK's leading airport for dedicated freight services. EMA is the hub of air parcels traffic for all the global express operators such as DHL, TNT and UPS, as well as the Royal Mail. The EMA hub also provides direct long-haul freight services to major freight hubs in Cincinnati, Louisville, New York, Philadelphia, Dubai and Hong Kong, and substantial tonnage to Sub-Saharan Africa, Asia and North America. The airport also has cargo handling facilities, primarily offering transport to locations within Europe. These facilities handled 334,536 tonnes of cargo in 2018.

2.7.4. The Airport has potential to grow further and would require a resilient road network to support this growth. Figure 2-23 shows the nearest airports to the main Midlands Business origin and Figure 2-24 shows the destinations of passengers from EMA are set out in Midlands Connects International Gateways – Strategy Overview (published in April 2017).

[7] https://www.midlandsconnect.uk/media/1212/mc-international-gateways-summary.pdf
[8] Source: https://mediacentre.magairports.com/mag-airports-are-now-serving-18million-more-passengers-than-five-years-ago/

Figure 2-23 - Nearest Airport to the main Midlands Business Origins

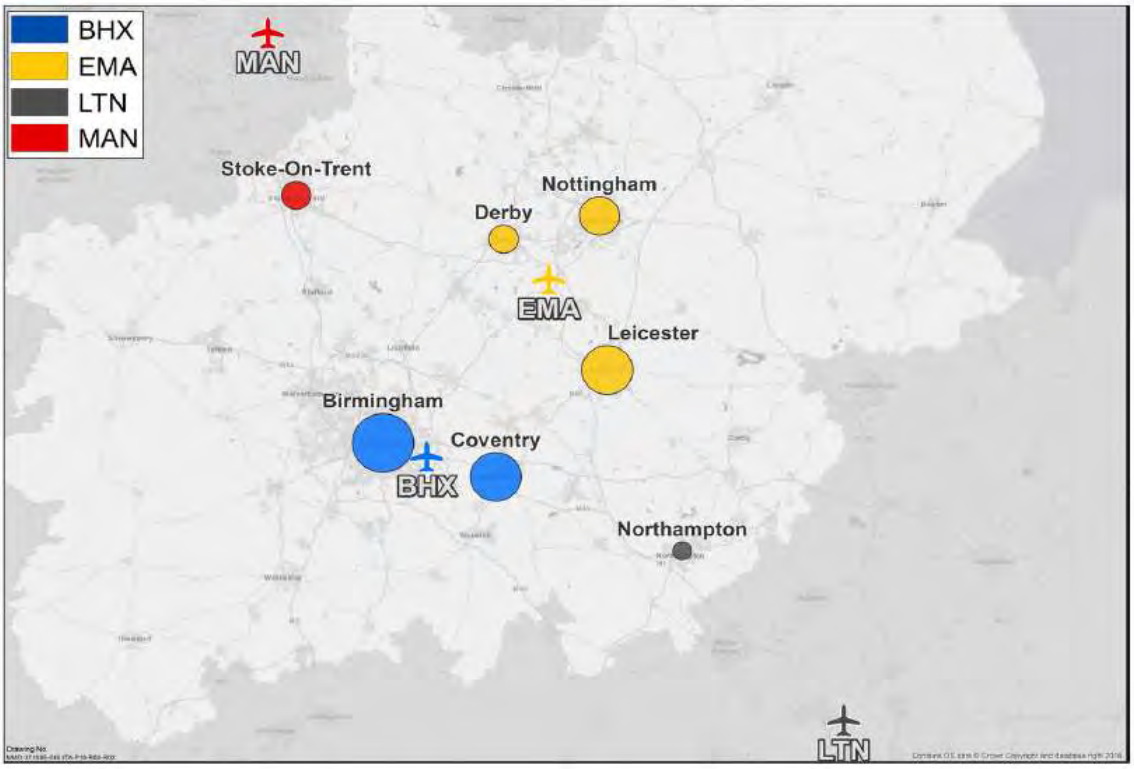
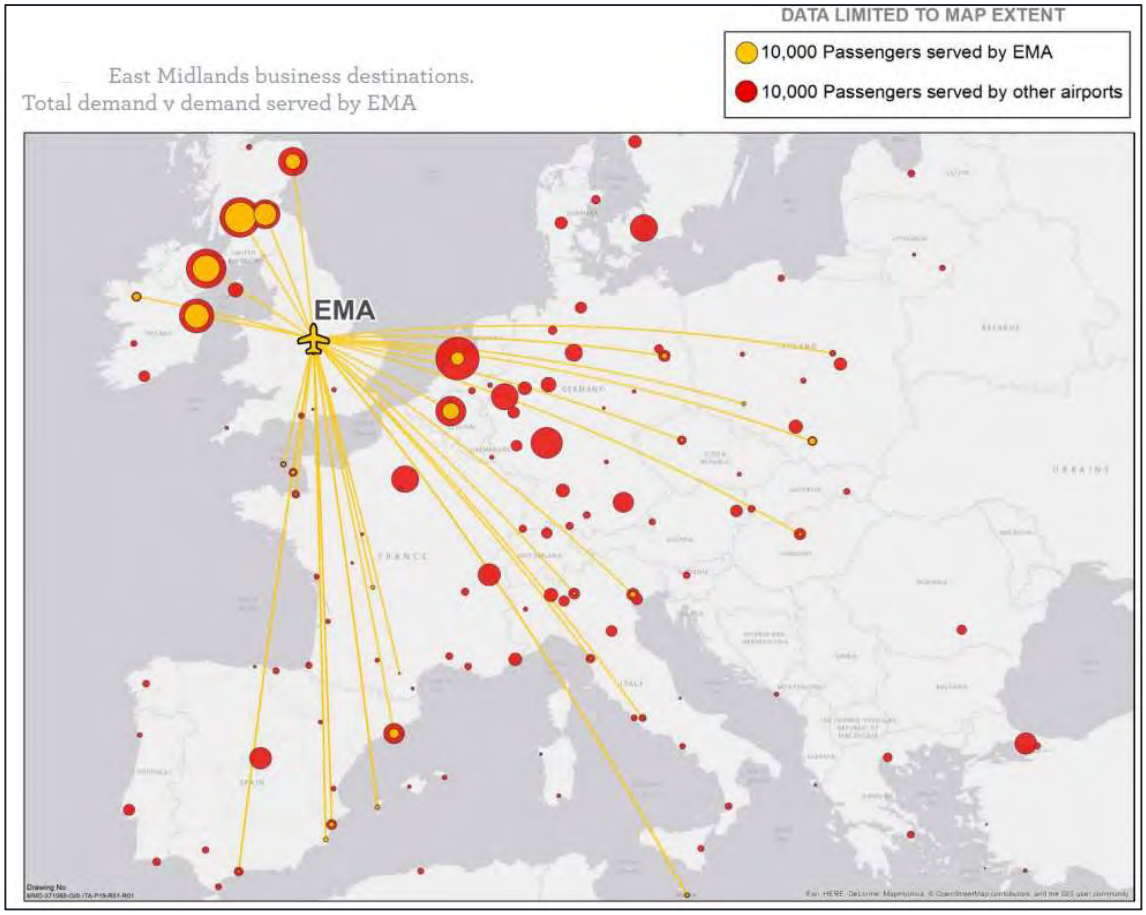


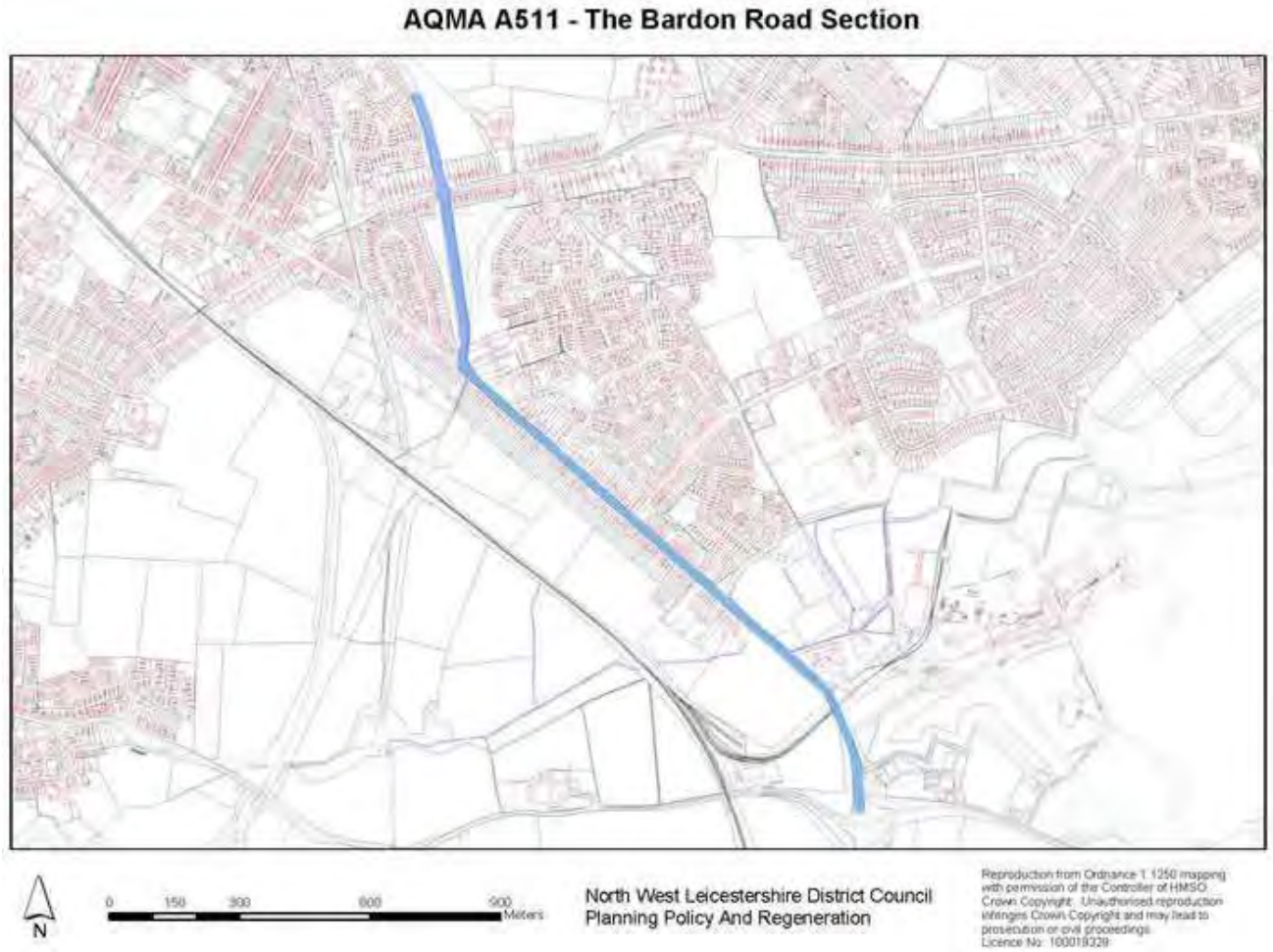
Figure 2-24 - EMA Airport Destinations in 2017



2.8 AIR QUALITY

2.8.1. 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 (NO2), caused by emission from stationary 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 2-25**.

Figure 2-25 – AQMA A511 Boundary

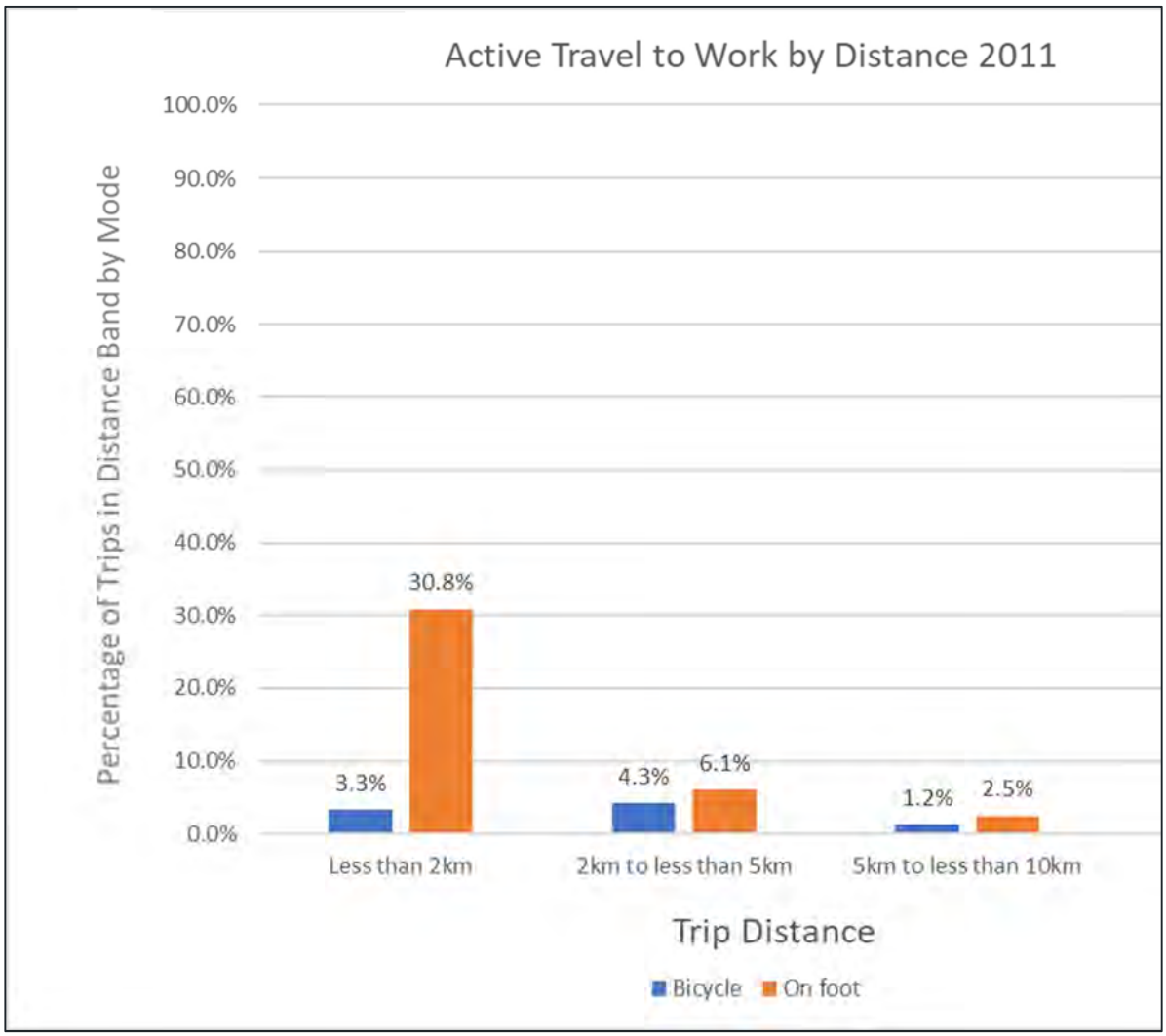


2.9 ACTIVE TRAVEL NETWORK

2.9.1. 2011 Census Data for the District shows that 7% of travel to work trips for the district is made by walking and 2% by cycling. This is compared to UK rates of 11% on foot and 3% cycling. Coalville (by selecting MSOAs E02005406: North West Leicestershire 010 & E02005407: North West Leicestershire 011 in 2011 Census database) itself demonstrates higher walking rates then the wider district, due to its more urban nature, with 10% of travel to work made by walking and 2% by cycling.

2.9.2. Data in Figure 2-26 shows the distance travelled to work by those respondents travelling by bicycle or on foot for the 2011 Census for Coalville (by selecting MSOAs E02005406: North West Leicestershire 010 & E02005407: North West Leicestershire 011 in 2011 Census database). It shows the proportions of active journeys made relative to all journeys in each distance band.

Figure 2-26 – Active travel to work by distance for Coalvile (2011 Census)



2.9.3. For trips less than 2km, which is the primary market for walking and cycling trips, walking makes up 30.8% of all travel to work trips, whilst cycling forms 3.3%. In the 2km-5km distance, on the edge of walking and cycling guidelines, the walking share declines to 6.1%. Beyond the 5km range any data suggesting walking as a main mode for commuting purposes needs to be questioned.

2.9.4. Data presented in Figure 2-27 shows the travel to work mode share for active travel (walking and cycling) by residents of North West Leicestershire using Census data between 1981 and 2011. Whilst there was an increase in active travel mode usage between 1981 and 1991, mode share has subsequently declined steadily to the present.

2.9.5. Figure 2-28 shows the National and Local Cycle Routes near the corridor.

Figure 2-27 – Travel to work mode share by foot and cycle for North West Leicestershire 1981-2011

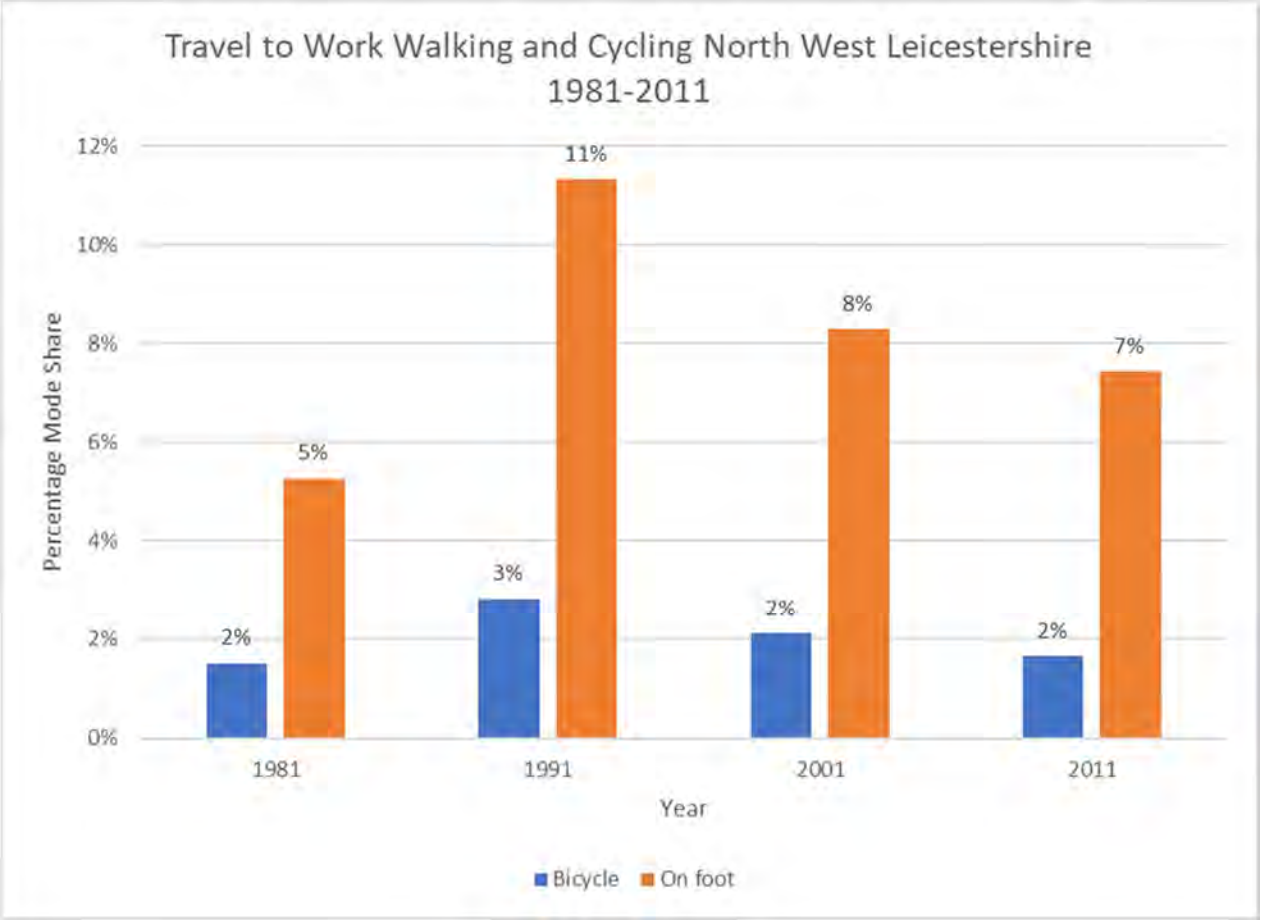


Figure 2-28 – North West Leicestershire Cycle Routes

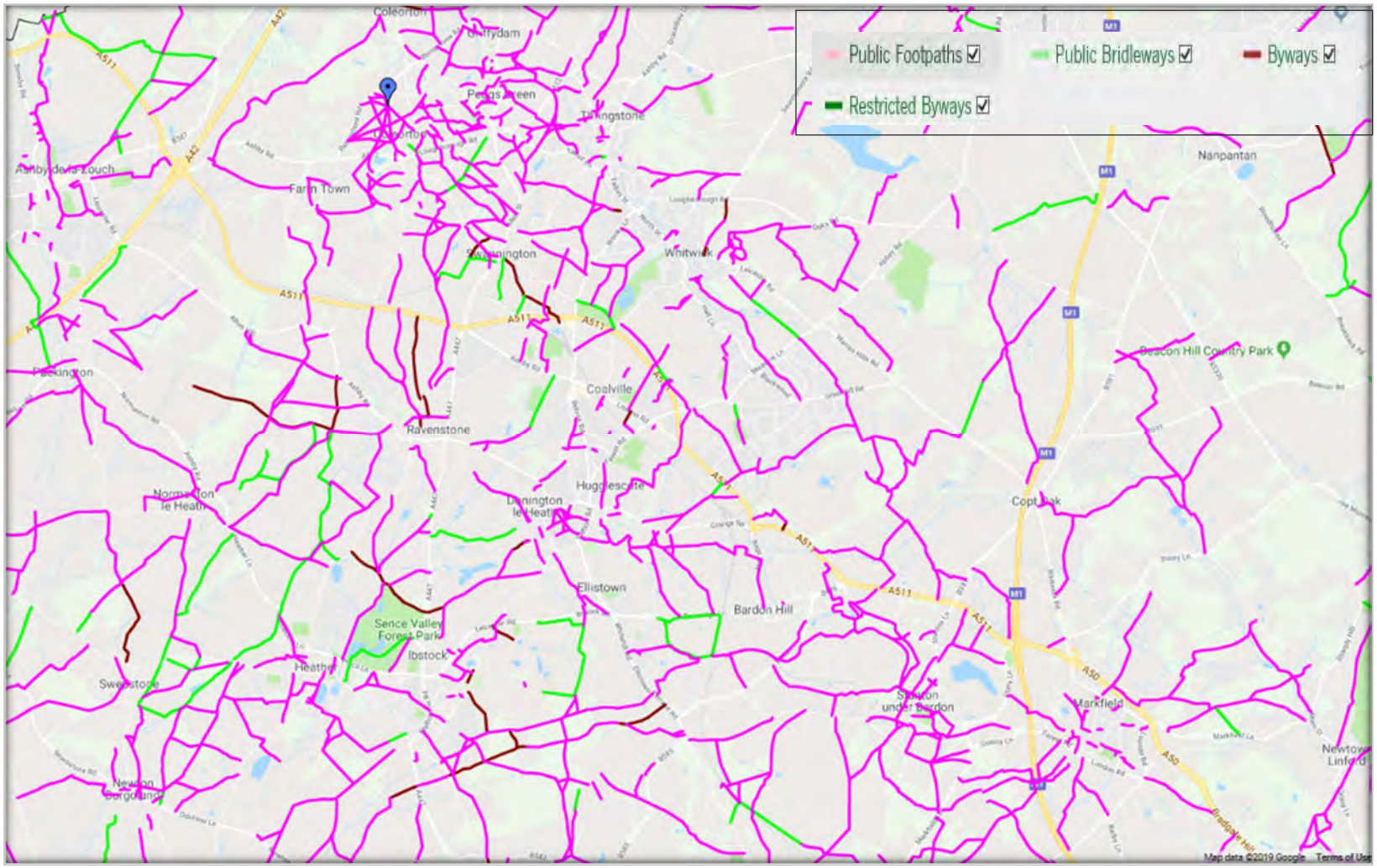
Source: https://www.nwleics.gov.uk/files/documents/nwl_cycling_map/NWL-cyclingmap-2015-rur%20%282%29.pdf
Note: https://www.nwleics.gov.uk/files/documents/coalville_cycle_routes/coalville_urban.pdf

2.9.6. Coalville sits astride National Cycle Route 52, which passes through the town on a north-south axis. This route is primarily on-road in nature and connects with National Cycle Route 6 north of Coalville to provide connections to Loughborough and Derby. Travelling south, Route 52 provides access with Nuneaton and Bedworth. It also connects with National Route 63. National Route 63 runs east-west through the district in parallel to the A511, but to the south, connecting several small towns and villages such as Thornton, Bagworth and Ibstock. At its eastern extent it becomes a primarily off-road route into Leicester City Centre, using the track of the Leicester West Bridge railway, whilst to the west it travels to Burton-Upon-Trent, albeit with a gap between Swadlincote and the larger town.

2.9.7. In addition to the National Cycle Network Corridors maintained by Sustrans, Figure 2-28 shows the network of on-road routes and off-road routes which Leicestershire County Council recommends providing additional cycling access, primarily formed of secondary roads away from the primary A-Road corridors. These provide quite a comprehensive number of opportunities for cycle access between the towns and villages of the district, including a link to the Barton industrial estate. This is particularly important when Figure 2-2 is taken into consideration, identifying 30% of trips as being within the guideline travel distance for cycling to employment.

2.9.8. Figure 2-29 shows the walking routes and Public Rights of Way (PROWs) in Leicestershire.

Figure 2-29 – Walking Routes and Other Rights of Way



Source: https://www.leicestershire.gov.uk/leisure-and-community/parks-and-outdoor-activities/where-to-walk-in-leicestershire

2.9.9. These rights of way provide a comprehensive network of routes between the district's towns and villages which are broadly free of traffic. However, the quality of these PROWs varies considerably, with the majority being little more than farmers tracks or routes cleared by dog-walkers across fields. This limits their viability as commuter routes but doesn't preclude their usage for leisure and recreational uses.

2.9.10. With reference to the A511 MRN Growth Corridor, there is limited pedestrian provision along the A511 between A42 Junction 13 and Hoo Ash Roundabout. There is a small stretch of footway along the southbound carriageway of the A511 which spans approximately 130m located near a layby, approximately 250m west of the A42 J13. Thereafter, a footway is present on the westbound carriageway of the A511 Ashby Road from Sinope to Hoo Ash Roundabout which connects to existing footways on Hough Hill. A small section of footway is also present on the eastbound carriageway of the A511 approaching Hoo Ash Roundabout which connects to the A447 Swannington Road. Uncontrolled crossing points are provided on all arms of Hoo Ash Roundabout, equipped with dropped kerbs, tactile paving and pedestrian refuse islands.

2.9.11. A continuous footway is provided along the eastbound carriageway of the A511 Stephenson Way through to Thornborough Roundabout, with an uncontrolled pedestrian crossing provided at Telford Way. A signalised crossing point is also provided on the A511 on the approach to the roundabout. Uncontrolled crossing facilities are provided on all other arms of Thornborough Roundabout which are equipped with dropped kerbs, tactile paving, light reflective bollards and pedestrian refuse islands. Thereafter, continuous footways are provided on both sides of the A511 through to the Whitwick Road Roundabout. The roundabout is equipped with a signalised crossing facility on its western arm (the A511 Stephenson Way) and uncontrolled crossings points on all other arms.

2.9.12. Footways continue along the southbound carriageway of the A511 between Whitwick Road Roundabout and the A511 / Broom Leys Road signalised junction. Signalised crossing facilities, equipped with dropped kerbs, tactile paving and refuse islands are provided on all arms of the junction. From the junction, continuous footways are present on both sides of the A511 until the Shell Petrol Station, approximately 100m to the south-west of Bardon Close. This section of footway bypasses the A511 Bardon Road / A511 Stephenson Way Roundabout which is also equipped with uncontrolled crossing points on all arms on the junction. From the Shell Petrol Station, a joint foot/cycleway is present along the southbound carriageway of the A511 to the Birch Tree Roundabout. A signalised crossing point is provided on the A511 (the eastern arm of the roundabout) which connects the north and eastern sections of the A511 via an off-road footpath.

2.9.13. From Birch Tree Roundabout, a narrow footway is provided along the southbound carriageway of the A511 which continues to the A511 Shaw Lane via Charnwood Arms Roundabout, uncontrolled pedestrian crossing facilities are also provided on all arms of the roundabout. Thereafter, continuous footways on both sides of the A511 provide pedestrian connections to the Flying Horse Roundabout where a signalised crossing is provided on the western arm. From there, the footway on the northern side of the A511 continues to the bus shelter, located approximately 100m to the west of the Flying Horse Roundabout but then is suspended.

2.9.14. There are no formal footways on the A511 between the Flying Horse Roundabout and Junction 22 of the M1 apart from small portions of footways provided where bus shelters are located. A footpath runs from the bus layby on the A511 Little Shaw Lane to the A50 to allow pedestrians connectivity to the east of the M1

2.10 INDUSTRY

2.10.1. **Table 2-6** provides the 2011 Census key employment sector for the Coalville area (by selecting MSOAs E02005406: North West Leicestershire 010 & E02005407: North West Leicestershire 011 in 2011 Census database) alongside those for North West Leicestershire and the Leicester and Leicestershire LEP area.

Table 2-6 – Key Employment Sectors

Industry	Coalville		North West Leicestershire		Leicester and Leicestershire LEP	
	No.	%	No.	%	No.	%
A Agriculture, forestry and fishing	24	0.2%	477	0.9%	3,378	0.7%
B Mining and quarrying	272	2.6%	493	0.9%	1,173	0.3%
C Manufacturing	1,866	17.8%	8,196	15.3%	63,821	13.7%
D Electricity, gas, steam and air conditioning supply	32	0.3%	836	1.6%	5,967	1.3%
E Water supply; sewerage, waste management and remediation activities	96	0.9%	302	0.6%	2,740	0.6%
F Construction	1,223	11.7%	4,676	8.7%	34,186	7.4%
G Wholesale and retail trade; repair of motor vehicles and motor cycles	2,284	21.8%	9,650	18.0%	87,406	18.8%
H Transport and storage	627	6.0%	8,268	15.4%	26,684	5.7%
I Accommodation and food service activities	346	3.3%	2,594	4.8%	23,139	5.0%
J Information and communication	158	1.5%	1,000	1.9%	10,246	2.2%
K Financial and insurance activities	187	1.8%	966	1.8%	12,918	2.8%
L Real estate activities	269	2.6%	499	0.9%	4,735	1.0%
M Professional, scientific and technical activities	407	3.9%	2,811	5.2%	23,590	5.1%

Industry	Coalville		North West Leicestershire		Leicester and Leicestershire LEP	
	No.	%	No.	%	No.	%
N Administrative and support service activities	454	4.3%	2,671	5.0%	21,156	4.6%
O Public administration and defence; compulsory social security	515	4.9%	1,334	2.5%	21,849	4.7%
P Education	538	5.1%	3,783	7.0%	49,971	10.8%
Q Human health and social work activities	778	7.4%	3,260	6.1%	51,766	11.1%
R, S Arts, entertainment and recreation; other service activities	399	3.8%	1,871	3.5%	19,747	4.2%
T Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use	1	0.0%	17	0.0%	188	0.0%
U Activities of extraterritorial organisations and bodies	1	0.0%	7	0.0%	24	0.0%
All Industries	10,477	100.0%	53,711	100.0%	464,684	100.0%

2.10.2. According to 2011 Census the highest employment for Coalville residents was in:

- Wholesale and Retail Trade;
- Manufacturing; and
- Construction.

2.10.3. Logistics is a key sector in the corridor and current employers include major operators such as Pall-Ex and Amazon. The quarrying and minerals sector is also an important element of the local economy, with the Bardon Hill quarry providing material for construction across the county.

2.10.4. The share of employment in the Coalville area when compared with North West Leicestershire shows that Coalville accounted for over 50% of the employment in mining, quarrying and real estate within the district, and over 20% of employment within the L&L LEP area.

2.11 INDEX OF MULTIPLE DEPRIVATION (IMD)

2.11.1. Indices of Multiple Deprivation (IMD) data provides a measure of deprivation of areas across the UK, based upon a range of indicators including:

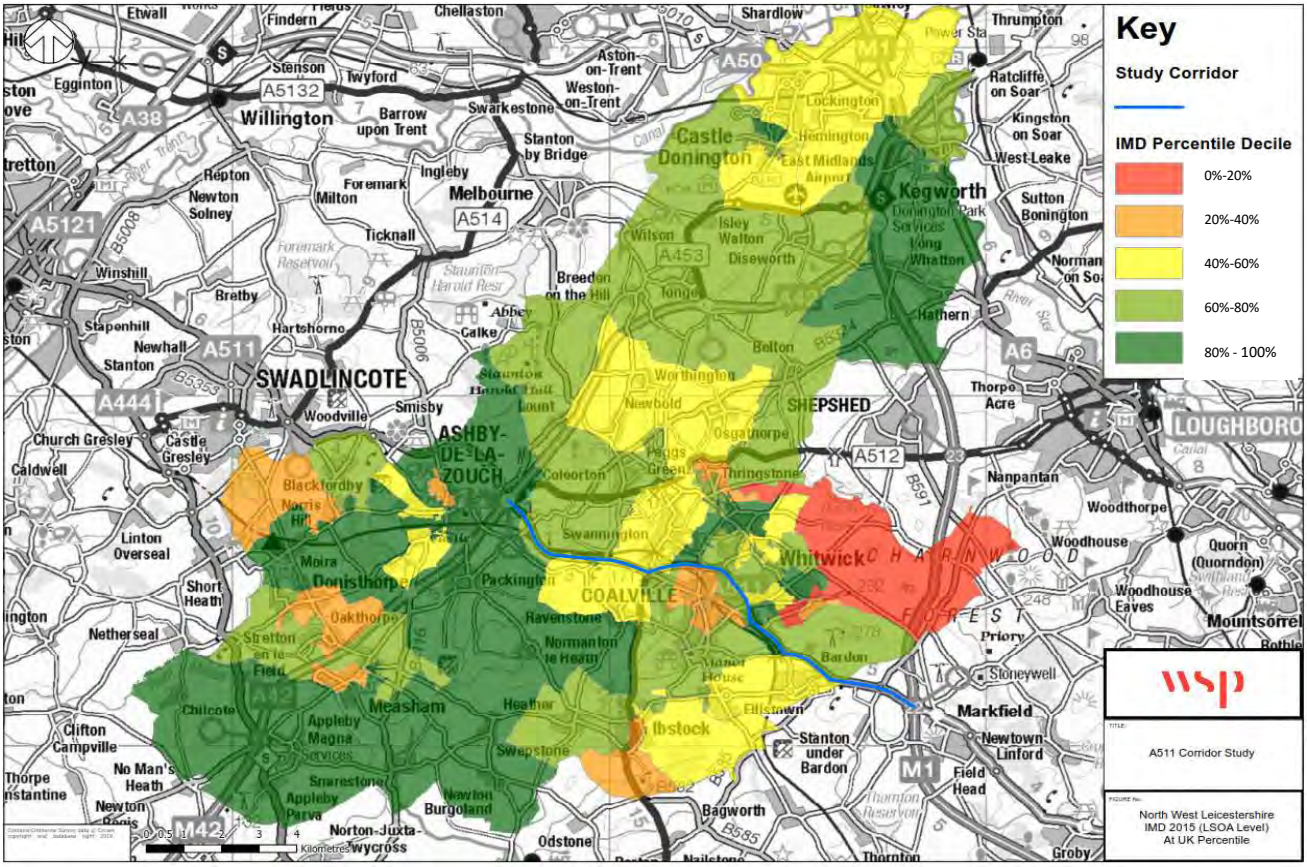
- Income;

- Employment;
- Health;
- Education;
- Crime;
- Access to Services; and
- Living Environment.

2.11.2. The IMD is used to target programmes and resources to tackle inequality and deprivation and helps overseeing authorities to target funding to the most deprived areas and to focus it on specific problem areas as indicated by the IMD indicators.

2.11.3. Data presented in **Figure 2-30** shows the IMD for North West Leicestershire at Mid-Level Census Output Area level.

Figure 2-30 – Index of Multiple Deprivation 2015 – North West Leicestershire



2.11.4. The level of deprivation varies across the District. Whitwick, in the north east of the district and Greenhill in east Coalville are in 20% of the most deprived areas in the UK. Coalville town centre, northwest Ashby-De-La-Zouch, Oakthorpe, South Ibstock and Thringstone are all in 40% most deprived decile.

2.11.5. The more rural areas of the district are generally less deprived than the towns.

2.11.6. To place the area in a national and county context, “The district is the 200th most deprived local authority in England (out of 354) but it is the most deprived in Leicestershire (excluding Leicester City)

with pockets of deprivation concentrated in Coalville, Greenhill, Ibstock, Measham, Moira, Ashby and Castle Donnington."[9]

2.11.7. Improving transport accessibility to key locations is a key method of reducing employment related deprivation and improving access to facilities.

2.12 SUMMARY

2.12.1. The A511 MRN Growth Corridor links the A42 to the M1 at Junction 22 and runs between Ashby, Coalville and Bardon. It is one of two key east-west links in Leicestershire and benefits from good road connectivity to Leicester and further afield

2.12.2. It acts as a feeder route to the SRN via its junctions with the A42 and the M1 and performs a resilience function for the SRN acting as a diversion route for the M1 and A42.

2.12.3. There are several businesses along the corridor, with manufacturing and logistics sector being heavily represented in the area Also, minerals /quarrying activities important in the corrido, with Coalville accounting for over 50% of the mining activities in the district. These three sectors rely heavily on high quality links to the A42 and motorway network, which supports the frequent freight activities associated with the manufacturing, logistics and mining sectors.

2.12.4. Considering the analysis above, it is apparent that the A511 MRN Growth Corridor currently has considerable issues with road capacity and network congestion, most likely driven by the high (80%) car and van travel to work mode share in the district. The high levels of car dependency are somewhat attributable to the lack of public transport provision such as no accessible railways stations and slow and indirect bus routes between key employment centres within North West Leicestershire.

2.12.5. Active travel trips (via walking and cycling) has seen a decline in recent years, despite the district possessing network coverage and several long-distance off-road cycle routes, albeit they vary in quality. This coupled with the high proportion (30%) of trips being within the guideline travel distance for cycling to employment suggests that there is untapped potential for modal shift that could help reduce the issues of congestion.

2.12.6. With regards to the socio-economic factors, the district is the most deprived in Leicestershire (excluding Leicester City), therefore improving transport accessibility to key locations is significant to business investment, reducing employment deprivation and improving access to facilities and housing.

[9] Source: https://www.nwleics.gov.uk/files/documents/nwl_infrastructure_delivery_plan_2016/NWLDC%20IDP%20Final%20Version.pdf

3 UNDERSTANDING THE FUTURE SITUATION

3.1 INTRODUCTION

3.1.1. This chapter sets out the future 'without intervention' transport implications for the A511 MRN Growth Corridor. It provides evidence of planned national, regional and local developments that will be of relevance to the corridor and the implications of these developments for transport provision.

3.2 FUTURE PLANNED GROWTH

EXISTING & PROPOSED DEVELOPMENTS

3.2.1. As outlined in Section 2.2, considerable additional growth is proposed to take place along the A511 MRN Growth Corridor which could have a noticeable impact upon the corridor in terms of increasing traffic volume and direction of flows. This section considers the locations and quantum of planned developments and identifies the transport measures currently proposed to manage the traffic.

3.2.2. Table 3-1 below sets out the key strategic development sites planned along the A511 according to the North West Leicestershire Local Plan10.

3.2.3. 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 has to 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.

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

Table 3-1 - Key Strategic Planned Land Use Sites

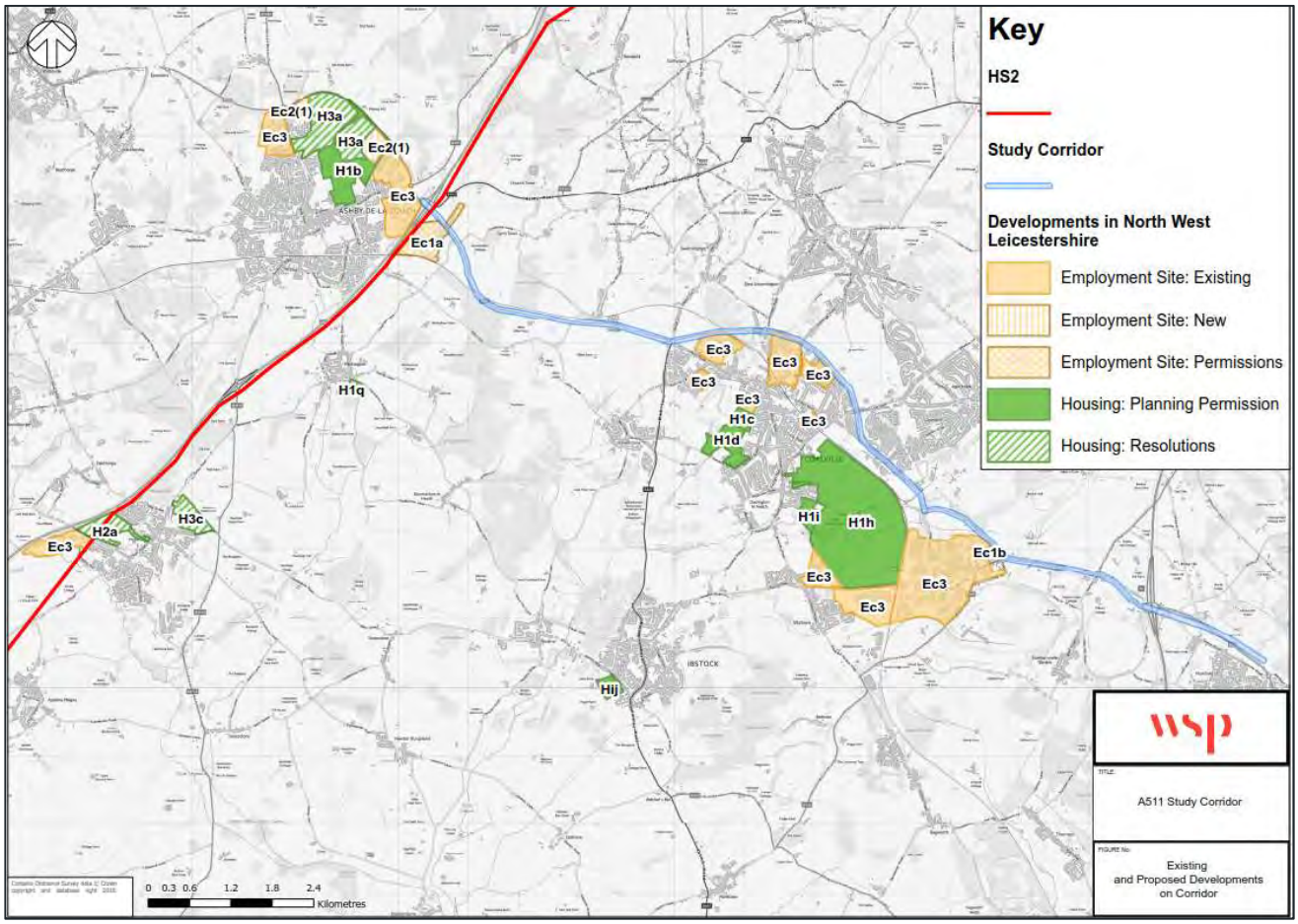
Key Strategic Site Ref	Development Type	Location	Quantum	Status
EC1a	Employment	Ashby-de-la Zouch	25.5 hectares	Planning Permission
EC1b	Employment	Coalville	1.2 hectares	Planning Permission
EC2(1)	Employment	Ashby-de-la Zouch	16 hectares	New Allocation
H1b	Housing	Ashby-de-la Zouch	605 dwellings	Planning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

3.2.4. As shown in Table 3-1 above, there is significant provision for new housing and employment planned along the A511 MRN Growth Corridor, with approximately 42.7 hectares of employment land and 8,335 residential dwellings proposed. The planned residential developments represent 87% of North West Leicestershire's housing targets for the period between 2011-2031.

3.2.5. In addition to the planned developments along the A511 MRN Growth Corridor, the North West Leicestershire Local Plan stipulates that many existing employment sites will be retained for employment generating B1, B2 and B8 land uses. These sites are contained within Policy Ec3.

3.2.6. The existing and proposed developments which are located along the A511 MRN Growth Corridor are shown in Figure 3-1 below.

Figure 3-1 - Existing & Proposed Developments in A511 MRN Growth Corridor



3.2.7. 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.[11]

3.3 FUTURE TRAFFIC CONDITIONS

3.3.1. Applications of the Pan-Regional Transport Model (PRTM - an enhanced version of the Leicester and Leicestershire Integrated Transport Model – LLITM) also highlight congestion problems at junctions along the A511 MRN Growth Corridor.

[11] https://www.leicestershire.gov.uk/news/have-your-say-on-%C2%A314m-snibston-revamp

3.3.2. This section presents the PRTM modelled future 'without scheme' situation for a 2038 assessment year (i.e. 2038 Core Scenario), with the aim of establishing the future traffic conditions along the A511 MRN Growth Corridor.

3.3.3. The following traffic indicators used in defining the existing traffic situation in Section 2.5 of this report have been used to define the future traffic situation along the corridor in the 2038 Core scenario:

- Future Traffic Flow Volume;
- Junction Volume to Capacity Ratio;
- Junction Capacity;
- Junction Delays; and
- HGV movements along the corridor.

FUTURE TRAFFIC FLOW VOLUME

3.3.4. Figure 3-2 and Figure 3-3 provide the forecast 2038 without intervention traffic flows along the A511 MRN Growth Corridor for the AM and PM peaks respectively. This shows that on average the directional flow along the corridor ranges between 500 to 2000 vph by direction during the AM and PM peaks across the length of the corridor. As in 2014 the highest modelled two-way flow in either peak period of around 3000 vph occur on the eastern part of the A511 but extend further westwards from Beveridge Lane to Waterworks Road.

Figure 3-2 - 2038 without intervention modelled AM peak hourly traffic

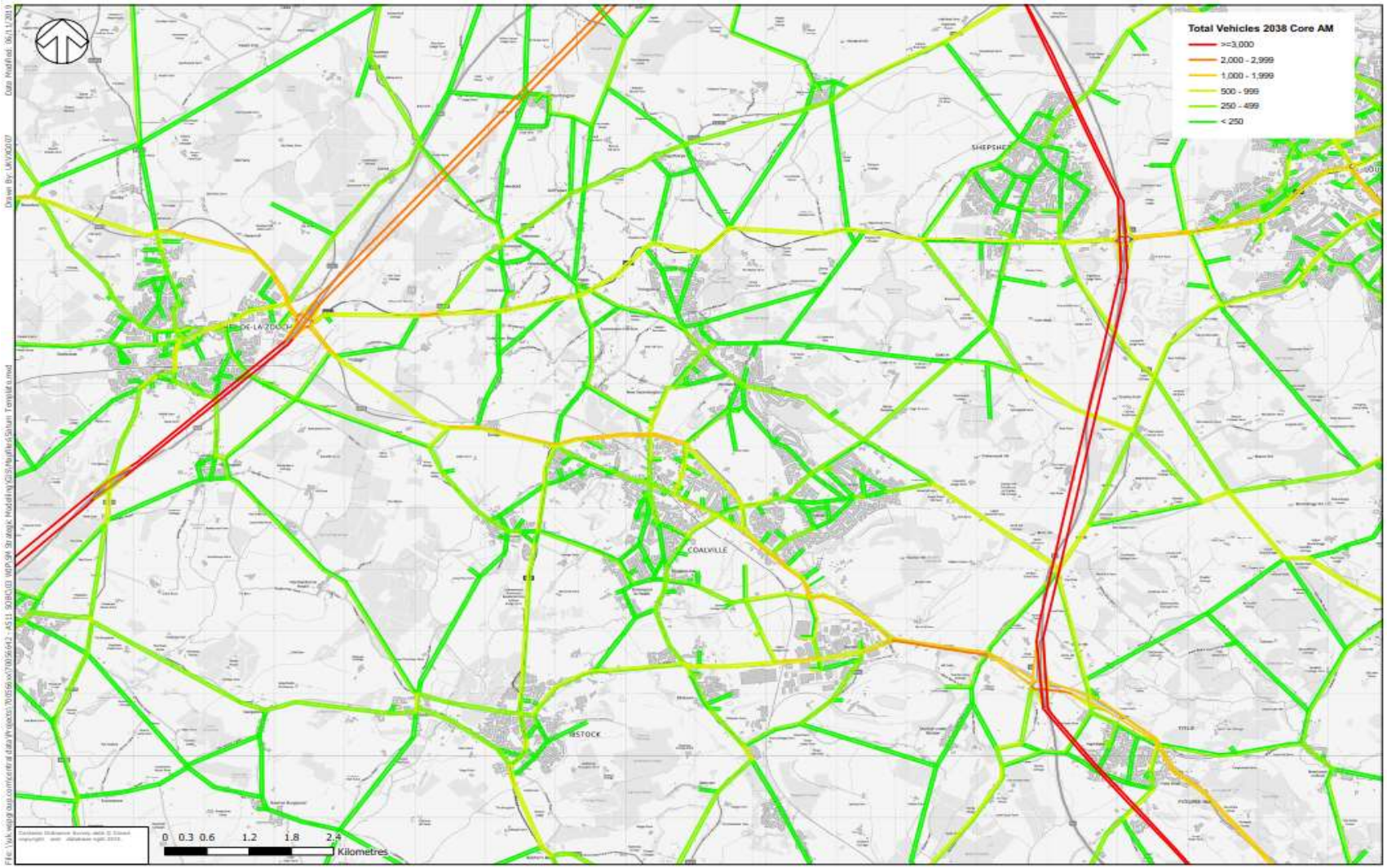
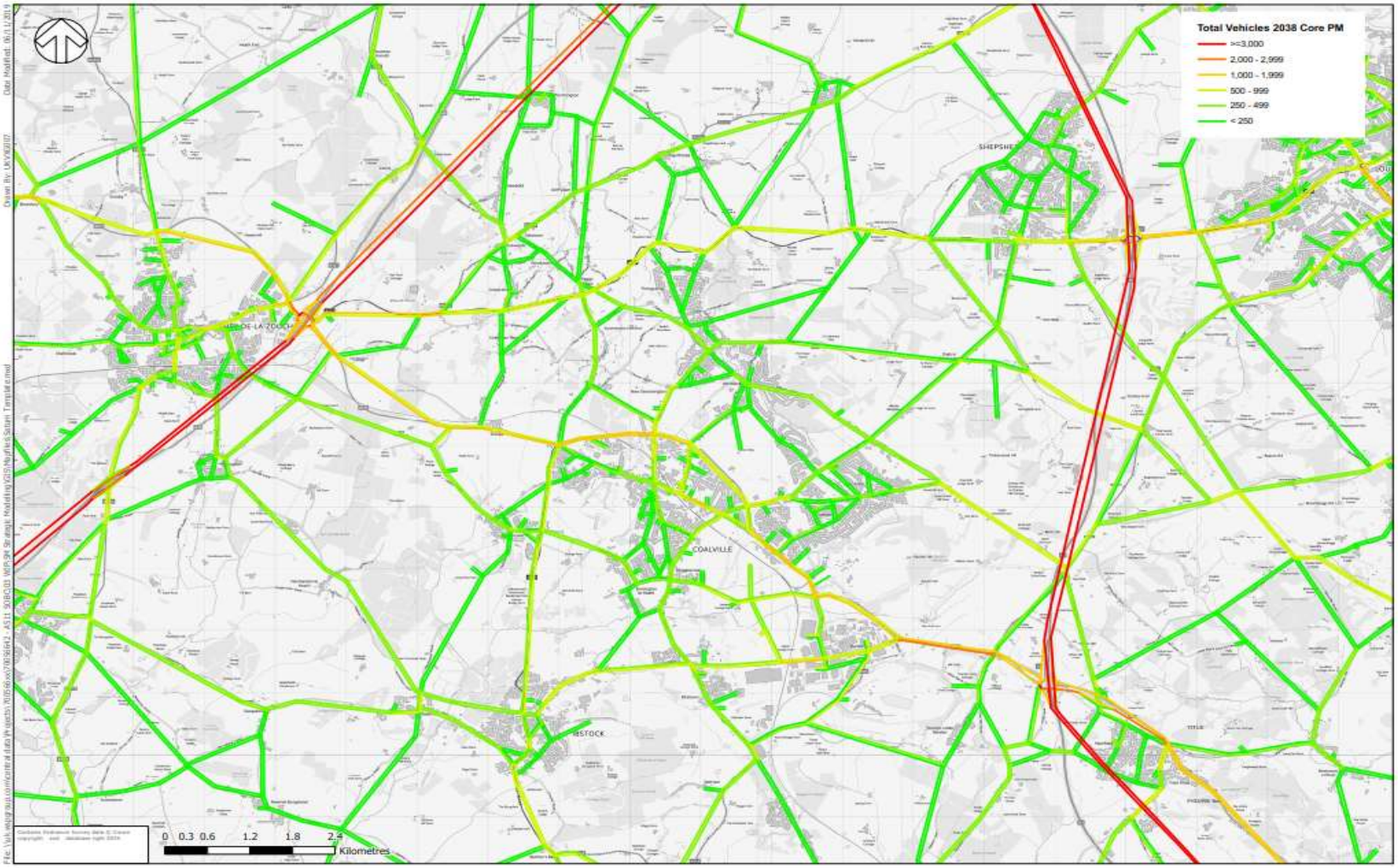
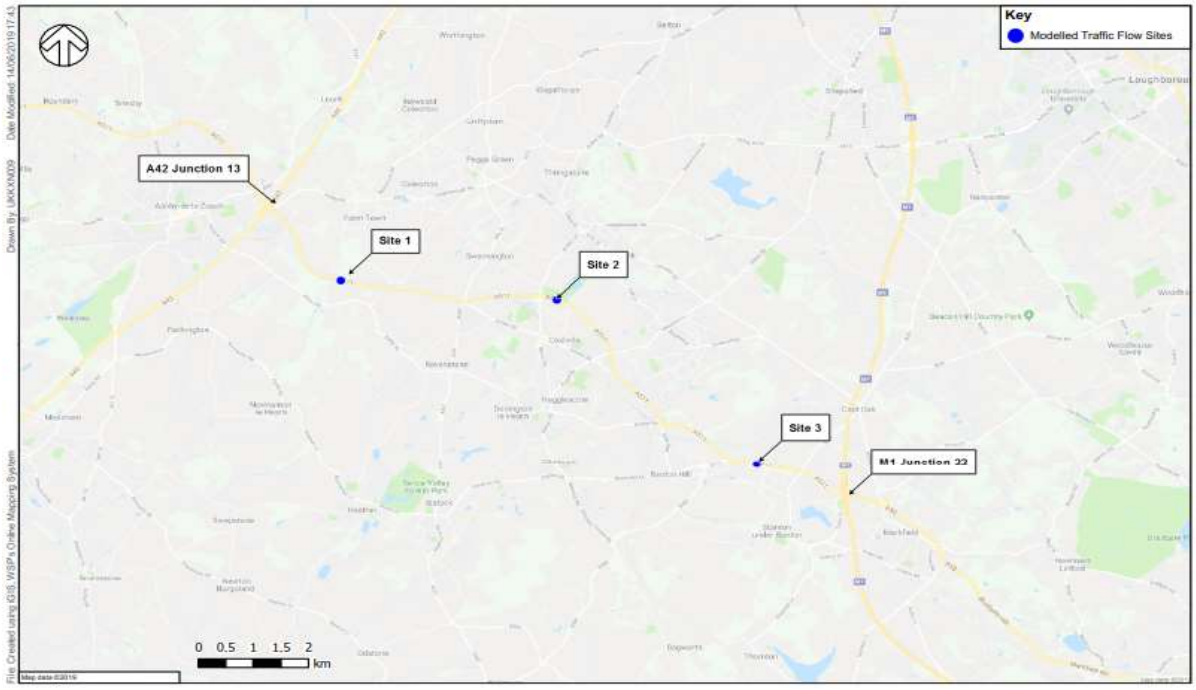


Figure 3-3 - 2038 without intervention modelled PM peak hourly traffic



3.3.5. To understand the scale of growth anticipated for the corridor, the level of traffic flow at three locations has been compared between 2014 and 2038. The three locations are shown in Figure 3-4.

Figure 3-4 - Modelled Traffic Volume Sites



3.3.6. Table 3-2 shows the modelled flows in the AM, inter- and PM peaks in 2014 and 2038 without intervention (Core) scenario. A comparison of the flows shows an approximate increase in from 2014 of between 5% and 13% in the AM peak, between 9%and 13% in the PM peak and between 18% and 40% in the interpeak hours on various sections of the corridor. The highest growth in any 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 3-2 - 2014 and 2038 Core hourly modelled flows along the A511 MRN Growth Corridor

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

JUNCTION VOLUME TO CAPACITY RATIO

3.3.7. The following section focuses on congestion defined in terms of volume / capacity ratios (V/C) on junction approaches along the A511 MRN Growth Corridor in 2038 without intervention. Figure 3-5 and Figure 3-6 show the volume to capacity ratios (V/C) for junction approaches along the A511 MRN Growth Corridor in the 2038 Core Scenario AM and PM peak periods respectively.

3.3.8. Figure **3-5** and **Figure 3-6** identify junctions on the A511 MRN Growth Corridor for which the traffic volume exceeds 85% of capacity in 2038 'without intervention' for the AM and PM peak periods respectively. When 85% of capacity is taken up by traffic volume then symptoms of congestion become apparent.

3.3.9. With background traffic growth and anticipated development traffic in 2038, the level of congestion along the A511 MRN Growth Corridor worsens, particularly at the junctions identified with V/C ratios over 85% in the 2014 scenario.

3.3.10. By 2038 several more junctions become congested when compared to 2014. The Broom Leys Junction operates above practical capacity with a V/C ratio over 85% in the AM peak in 2038. Furthermore; Hoo Ash Roundabout, the Birch Tree Roundabout and Field Head Roundabout is over 100% of practical capacity.

3.3.11. In the PM peak, Whitwick Road Roundabout, Broom Leys Road Junction, Birch Tree Roundabout and Field Head Roundabout operate above practical capacity with a V/C ratio over 85% in the PM peak in 2038. Also, the Flying Horse Roundabout is over 100% V/C.

3.3.12. In general, the V/C distribution shows that much of the congestion is concentrated between the A511 / Hoo Ash Roundabout and A50 / Field Head Roundabout with conditions worsening at the easternmost junctions in the direction of Leicester. The extent of congestion is critical to the efficient operation of the A511 and the M1 Junction 22, which is impacted on by queuing at the A50 / Field Head and A511 / Flying Horse junctions.

Figure 3-5 - 2038 AM peak Volume to Capacity Ratios on A511 and adjacent network

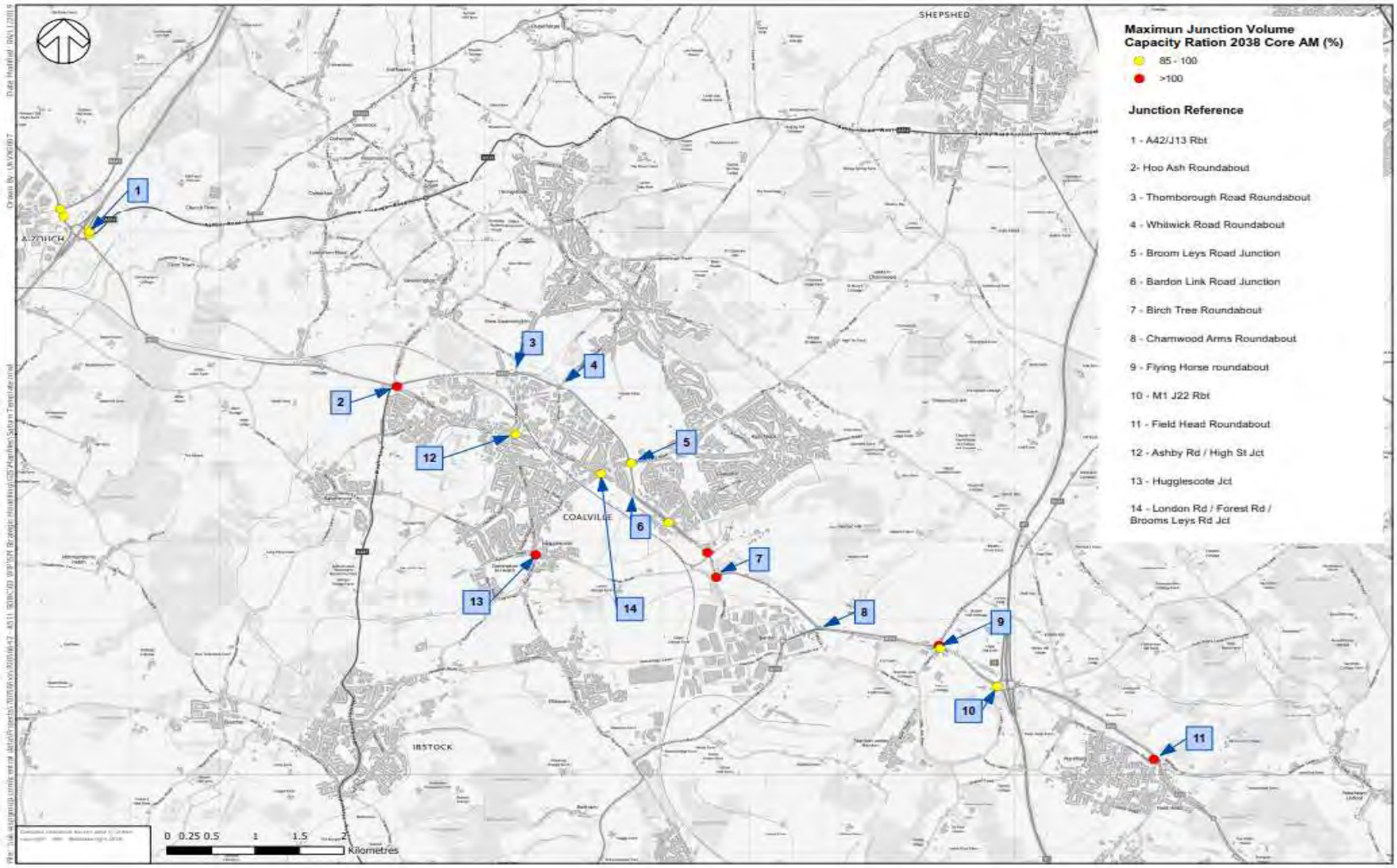
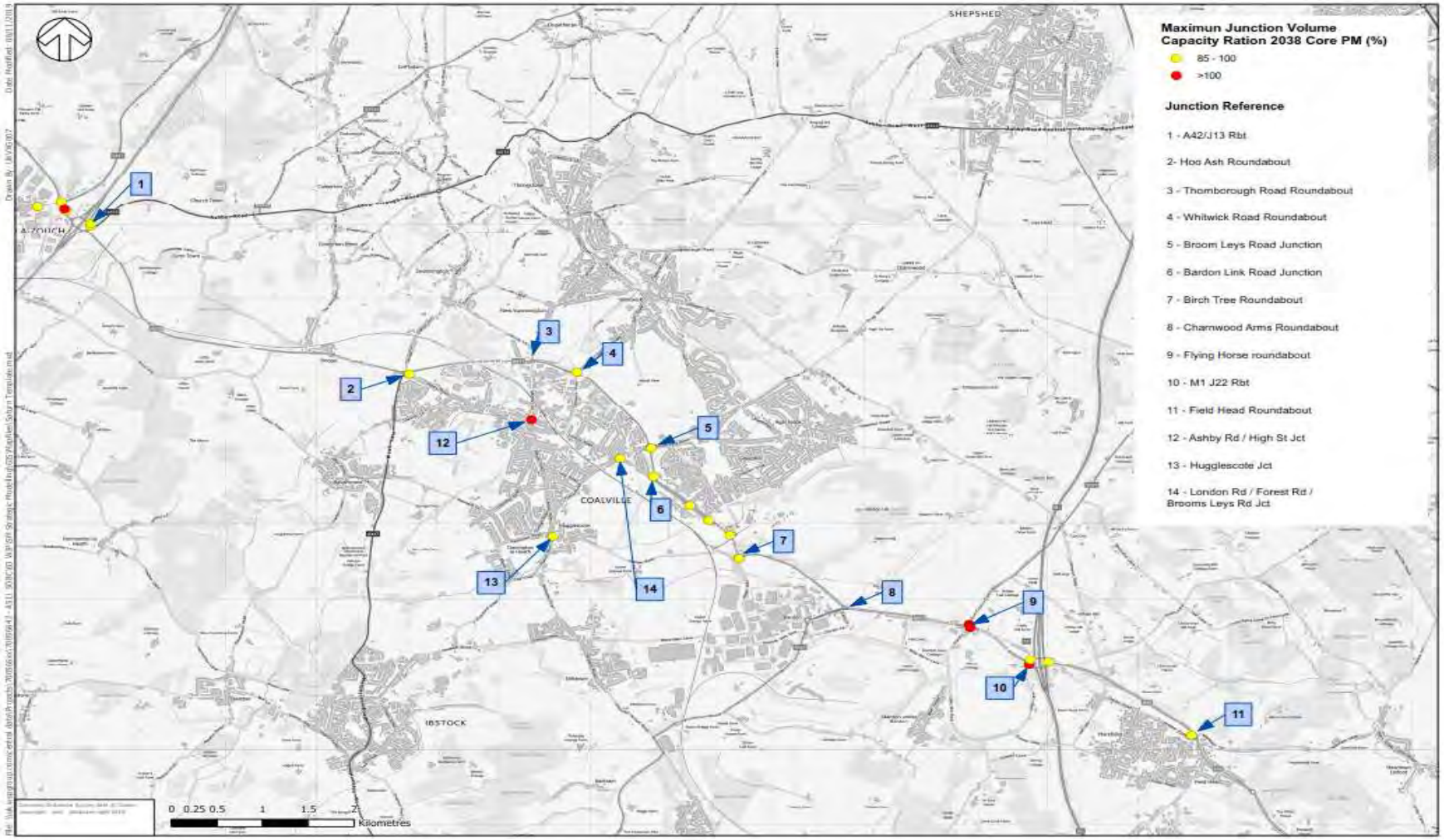


Figure 3-6 - 2038 PM Peak Volume to Capacity Ratios on A511 and adjacent network



JUNCTION CAPACITY

3.3.13. Junction capacity assessments for a 2031 Forecast Year (without intervention) have been carried out by LCC at the key junctions shown on Figure 2-10 shows the key junctions along the A511 MRN Growth Corridor.

3.3.14. Table 3-3 provides the forecast practical reserve capacity (PRC) in 2031 at the junctions along the A511 MRN Growth Corridor identified in Figure 2-10. The PRC have been derived using the transport industry recognised ARCADY and LINSIG software, which are used in modelling standard roundabouts and signalised junctions respectively

Table 3-3 –Practical Reserve Capacity (PRC) at existing junctions in 2031

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

*Practical reserve capacity 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.

3.3.15. The capacity analysis in Table 3-3 shows that with growth in background traffic and anticipated development traffic, all key junctions along the A511 MRN Growth Corridor will operate above capacity with PRCs ranging from -6% to -22%.

JUNCTION DELAYS

3.3.16. Figure 3-7 and Figure 3-8 from the PRTM SATURN model show the average level of delay along key junctions on the A511 MRN Growth Corridor in 2038 Core (i.e. 'without scheme') AM and PM peaks respectively.

3.3.17. As shown in Figure 3-7 and Figure 3-8 delays along the A511 corridor in the 2038 scenario are similar to those experienced in 2014, with conditions worsening without intervention. The most affected junctions are Hoo Ash Roundabout, Broom Leys Junction, Birch Tree Roundabout, Flying Horse Roundabout and Field Head Junction.

Figure 3-7 - Junction Delays in the AM Peak in 2038 Core - A511 MRN Growth Corridor

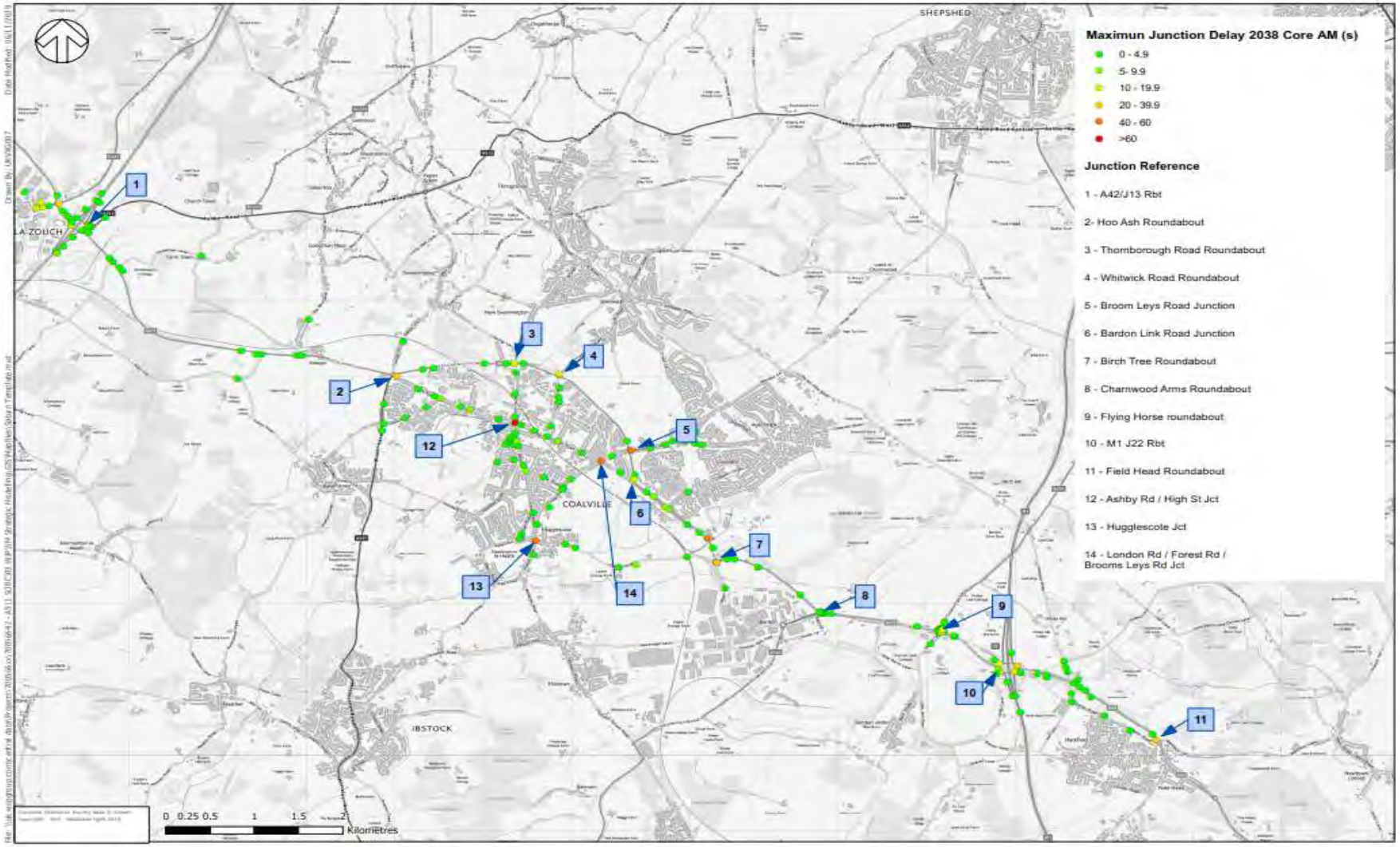
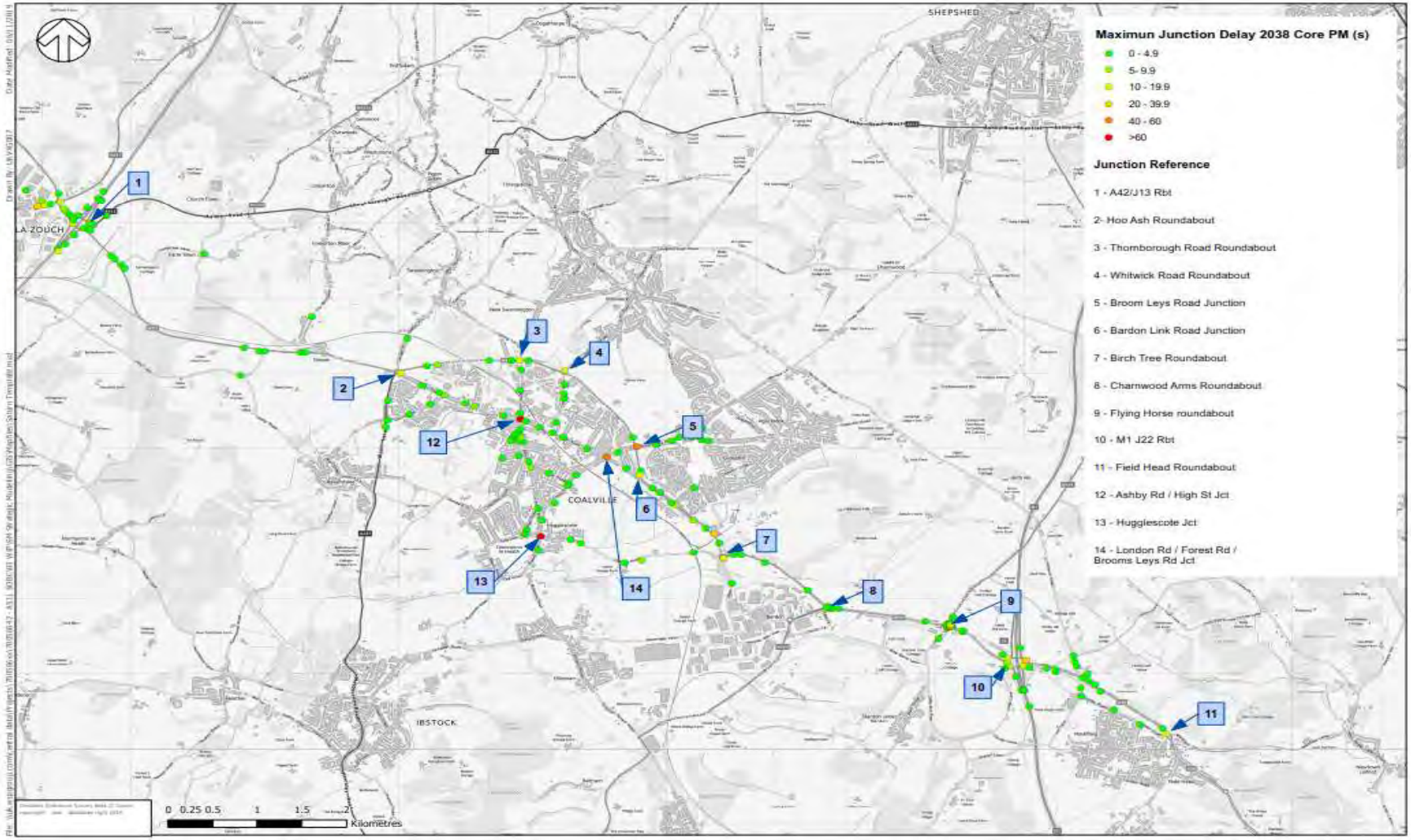


Figure 3-8 - Junction Delays in the PM Peak in 2038 Core - A511 MRN Growth Corridor

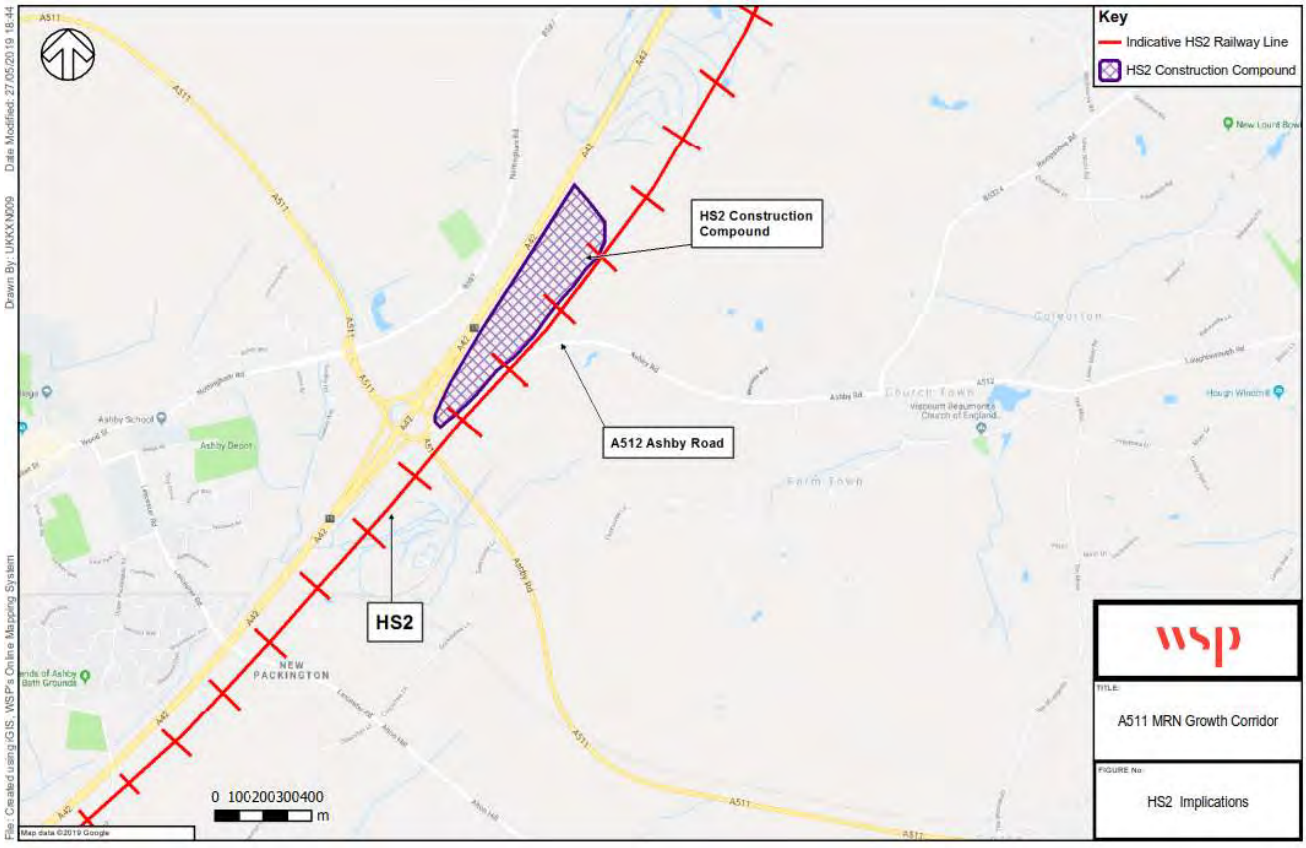


3.4 HS2 IMPLICATIONS

3.4.1. The eastern leg of HS2 (phase 2), West Midlands to Leeds, will result in the construction of a new high-speed railway through North West Leicestershire, connecting to the HS2 East Midlands station stop in Toton, Nottinghamshire.

3.4.2. As a result, one of the main HS2 construction compounds is to be located at A42 J13, in the north-eastern corner of the junction. In addition to this the A512 Ashby Road would have to be realigned to facilitate the route of HS2. Figure 3-9 shows planned HS2 activities near the A511 MRN Growth Corridor.

Figure 3-9 - HS2 Implications - A511 MRN Growth Corridor



3.4.3. The HS2 Phase 2b work is programmed to commence mid-2023 and would require the use of the A511 as a diversion route, in addition to this the route will be used by HS2 staff and for the transportation of materials to the HS2 construction compound.

3.4.4. It is therefore necessary that the A511 MRN Growth Corridor is upgraded in enough time to accommodate additional traffic resulting from the HS2 construction.

3.5 MRN IMPLICATION

3.5.1. As stated previously, the A511 MRN Growth Corridor links the A42 to the M1 and therefore acts as a connecting route to the SRN. It also performs a resilience function for the SRN acting as an alternative route for traffic between theM1 and A42.

In addition to this it supports the prevalent freight activities arising because of logistics, manufacturing and mining activities along the corridor. There are significant opportunities for new distribution facilities

to be supported by the corridor if it continues to perform as part of the MRN and for existing businesses to expand, including G-Park to the east of the A42 close to Ashby.

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

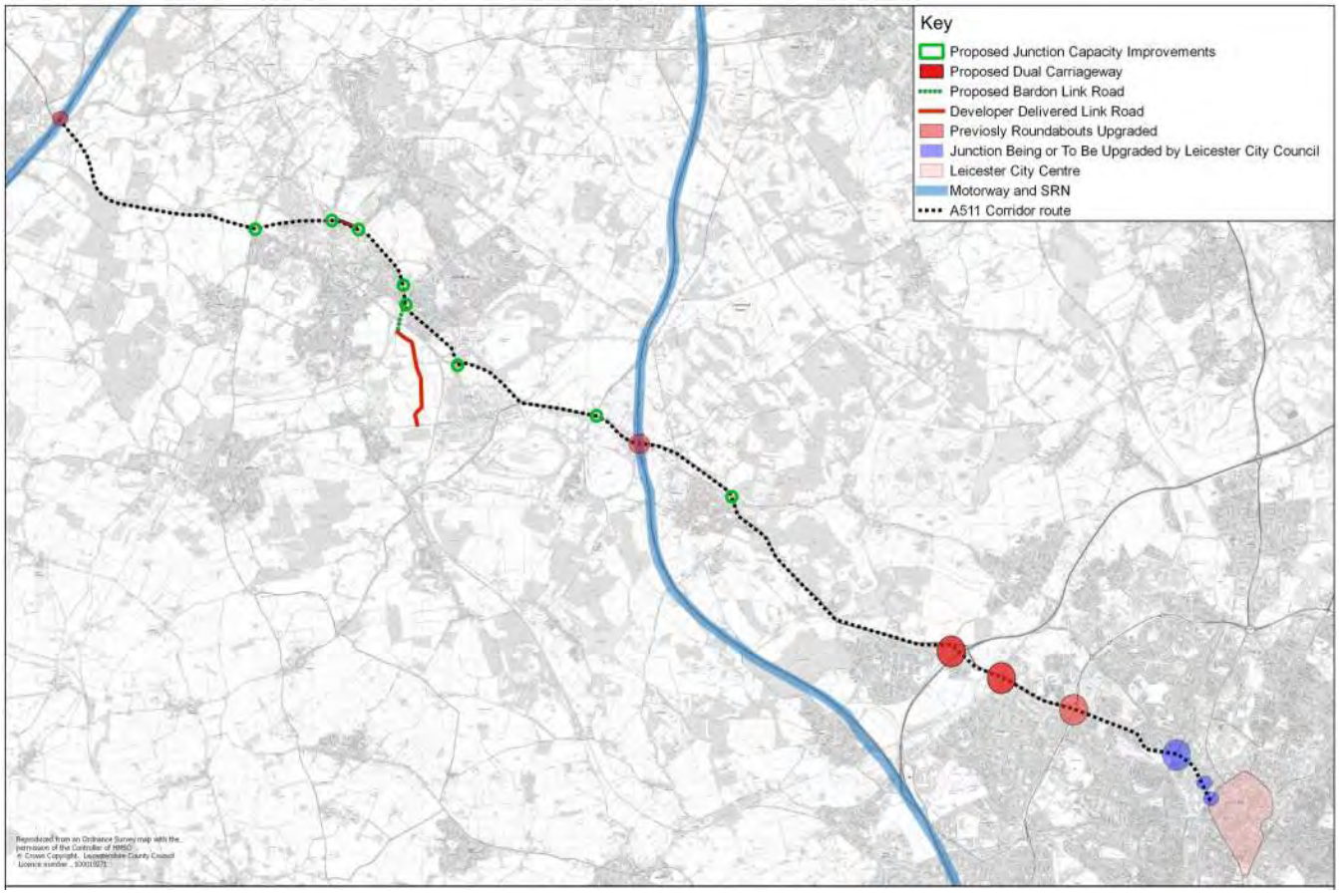
3.6 PLANNED AND PROPOSED TRANSPORT SCHEMES

3.6.1. LCC has been successful in delivering the M1 J22 and the A42 J13 schemes in partnership with North West Leicestershire District Council, Highways England, Midlands Highway Alliance and their contractors. These were secured with over £4.5m of Growth Deal funding for the improvements at M1 Junction 22 and about £1.7m of National Productivity Investment Fund (NPIF) for improvements at A42 Junction 13.

3.6.2. Notwithstanding this, the corridor requires additional investment to ensure pinch-points can be addressed and continued growth sustained. Figure 3-10 shows existing and proposed improvement schemes along the A511 MRN Growth Corridor, identified from various evidence-based studies undertaken for the corridor.

3.6.3. The 2010/2011 Coalville Transport Study assessed and tested options to mitigate the impact of growth. The results of this study informed the contribution strategy. The schemes are currently being tested and sifted in order that they can be prioritised for delivery in context of the development and growth ambitions across Coalville.

Figure 3-10 - A511 MRN Growth Corridor existing and proposed Schemes



3.6.4. The following improvements were identified for the A511/A50 route from A42 J13 to Leicester as part of the Coalville Transport Study:

- Previously improved SRN Junctions (delivered in 2017);
  - M1 Junction 22.
  - A42 Junction 13.
- Junction improvements/new junctions at the following locations.;
  - Hoo Ash Roundabout.
  - Thornborough Road Roundabout.
  - Whitwick Road Roundabout.
  - Broom Leys Road Junction.
  - Bardon Link Road Junction.
  - Birch Tree Roundabout.
  - Flying Horse Roundabout.
  - New Grange Road Roundabout (Developer funded).
  - New Beveridge Lane Roundabout (Developer funded).
  - Field Head Roundabout.
- Dualling of link between Thornborough Road and Whitwick Road; and
- Bardon Link Road (Developer funded).

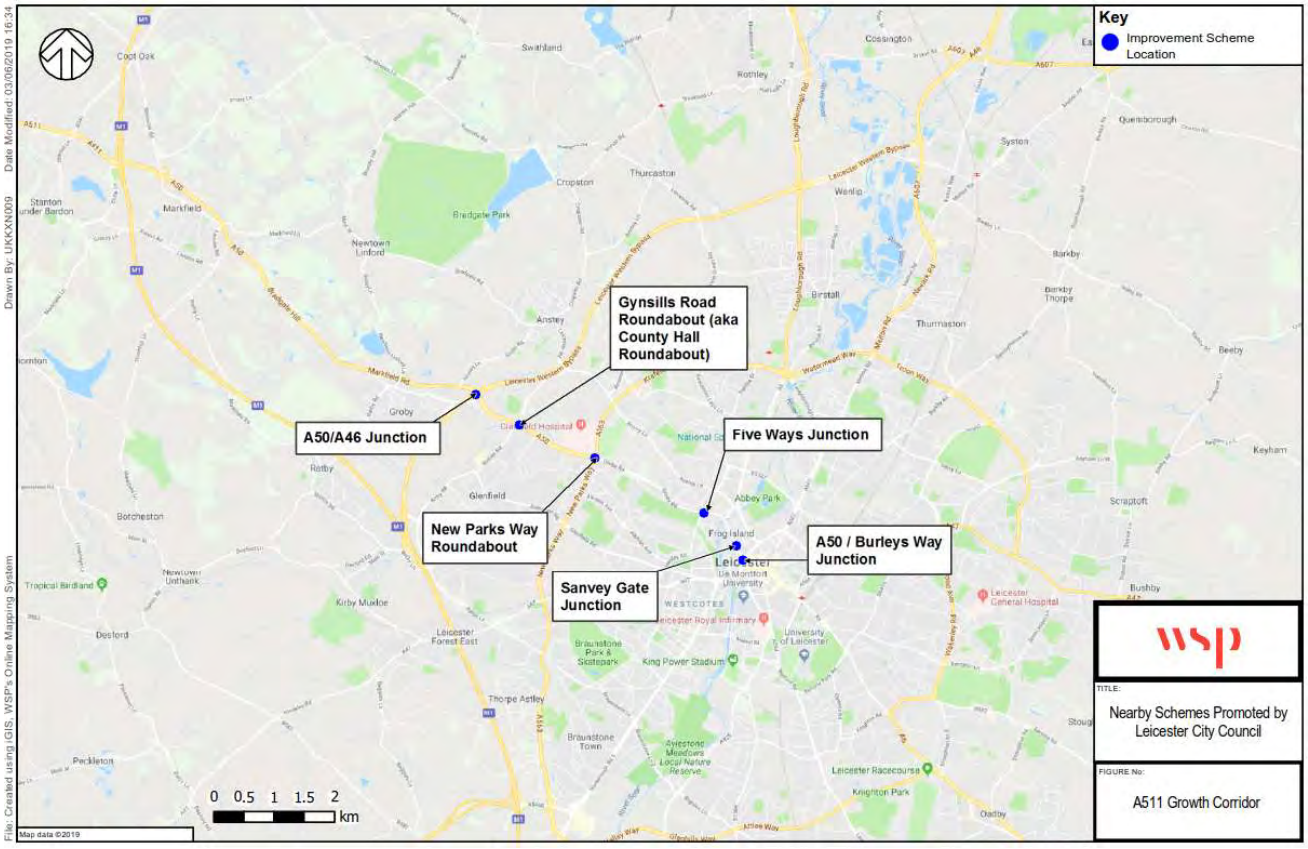
3.6.5. The proposed junction improvement schemes are provided in Appendix A of this OAR.

3.6.6. In addition to the above, the following junction improvements have been or are being implemented by Leicester City Council along the A50 corridor east of the A511 MRN Growth Corridor (see Figure 3-11 for location of schemes):

- Improvements to A50/A46 Junction – This was work to carried out in 2013/14. The work was to signalise 3 of the 5 arms of the junction and increase the number of lanes on the circulatory part of the roundabout as well as increase the number approach lanes. Some of the funding came from the Growing Places Fund.
- Improvements to Gynsills Road Roundabout (also known as County Hall Roundabout) – This was carried out in 2015/16 - The work was to signalise 2 of the 4 arms of the junction and increase the number of lanes on the circulatory part of the roundabout as well as increase the number of approach lanes. This was funded by the Local Growth Fund with equal match funding from both Leicester City Council and Leicestershire County Council.
- Improvements to New Parks Way Roundabout – This was carried out in 2015/16 - The work was to signalise 4 of the 5 arms of the junction and increase the number of lanes on the circulatory part of the roundabout as well as increase the number approach lanes. This was funded by the Local Growth Fund with equal match funding from both Leicester City Council and Leicestershire County Council. This was jointly delivered with Junction 2 and was delivered in collaboration with Leicester City Council.
- Proposed improvements to junction known as the Five Ways junction – this junction is in Leicester City and is linked to the Waterside development and is dependent upon the delivery of capacity changes at a nearby junction to allow the A50 to be diverted from this point. Construction works yet to commence.

- Proposed Improvements at the Sanvey Gate junction – This junction is in Leicester City and has been identified as a junction which will serve most of Waterside traffic. As the housing development in the Waterside area has only just started, it has not yet been improved.
- Proposed improvements at the A50 junction with Burleys Way – Improvement works are currently taking place to accommodate current development work to provide a leisure complex and an office complex. Work on this is expected to finish in 2019.

Figure 3-11 - Other Nearby Leicester City Council Schemes



3.7 IMPLICATIONS OF GROWTH ON THE EXISTING TRANSPORT NETWORK

3.7.1. Without an intervention, congestion on the A511 MRN Growth Corridor will remain and become exacerbated by future traffic growth, serving as a deterrent for new developments and investment inn Coalville.

3.7.2. There will also be adverse implications such as delays and longer and unreliable journeys times for journeys accessing the SRN, as well as the operational activities of the businesses along the corridor, which are heavily dependent on freight activities.

3.7.3. Negative environmental impacts of congestion, such as ongoing air quality issues on the A511 will be exacerbated without the mitigation afforded by intervention.

3.7.4. Constraints on the exiting transport network will act as an inhibitor to growth with private sector investment attracted to other areas with better accessibility.

3.7.5. The proximity of the route to the planned construction compound for HS2 near to A42 Junction 13, also emphasises the need to improve the route for logistics and provide greater reliability over journey times.

3.8 OPPORTUNITIES AND CONSTRAINTS

3.8.1. The SWOT analysis shown in Table 3-4 and Table 3-5 has been developed to extract the strengths and weaknesses, and opportunities and threats understood from this study so far. This analysis will help to inform an understanding of the need for intervention, as well as the development of the scheme-specific objectives and generation of options going forward.

Table 3-4 - SWOT Analysis: Strengths & Weaknesses

Strengths	Weaknesses
Excellent highway connectivity to the wider UK. Recent upgrades at the A Road and Motorway Junctions delineating the A511 MRN Growth Corridor to secure future capacity. Important freight and logistics hub, as well as key mineral/quarrying area. Identified by the Leicester and Leicestershire Enterprise Partnership (L&L LEP) as one of five Growth Areas in its Strategic Economic Plan (SEP) The A511 is a key arterial corridor that is linked with major planned growth opportunities. Feeder route to the SRN, performs a resilience function for the M1 by acting as a diversion route for the M1 and A42	High levels of car dependency. Pockets of high deprivation, particularly in comparison to the wider Leicestershire County. Limited public transport connectivity with no passenger rail services. Clusters of delay and accidents on the A511 around junctions. Slow and indirect bus routes between key population and employment centres. Poor air quality at points along its length Low/ active travel mode share Prevalent freight activities.

Table 3-5 - SWOT Analysis: Opportunities & Threats

Opportunities	Threats
The improved corridor will secure the accelerated delivery of housing and employment land which would otherwise remain constrained by lack of transport infrastructure there is the potential to deliver at least 5275 houses and 25ha of employment land. Improve road, cycle and pedestrian connectivity in the area, providing more opportunities to access jobs in the Coalville, Ashby and the wider area. As well as opportunity to improve air quality and safety issues along the corridor. Support wider economic growth for the area and region. There are 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. Support the role of the A511 as an MRN by reducing congestion, improved journey time reliability and access to the strategic road network. Also, support the construction impacts of HS2 in the North West Leicestershire Area. Support improvements at M1 J22 and A42 J13 to realise the benefits to local centres westwards along the A51 Growth Corridor. This will provide more reliable journey times for motorists using the A511, 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 Supports the creation of new housing developments by improving access to future sites and boosting suitable land capacity. The A511 MRN Growth Corridor can unlock commercial developments, as well as maintaining good accessibility to the strategic road network for existing and growing companies such as DHL, Amazon and Pall-Ex.	A failure to address the issues posed by underperforming junctions will increase delays to traffic accessing the SRN at M1 J22 and A42 J13, and impact on the economic output and productivity of the area. In addition, it is likely that the area will become less attractive to developers, who may be reluctant to invest in the area, reducing housing and economic growth in the area. Failing to address congestion will stifle growth, leave key sites along the corridor poorly connected and prevent economic growth opportunities from being exploited May not be able to handle additional traffic resulting from the HS2 Construction works in the area. Adverse impact on the efficient operation of logistics and mining activities which relies on high quality links to the SRN. Without intervention congestion will continue to worsen along the A511 Corridor may eventually lead to rat running on less busy local roads in Coalville, and in so doing increases the risk of accidents within the area, especially those involving vulnerable road users. Worsening of air quality and accidents issues along the corridor

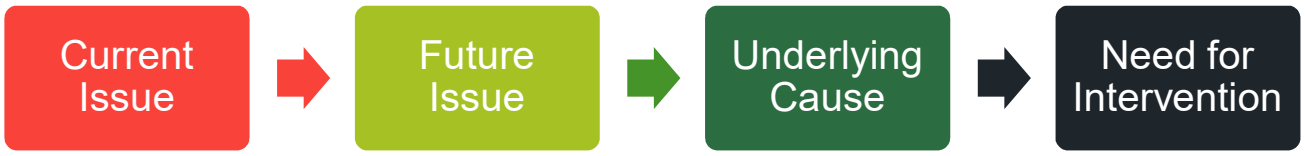
4 ESTABLISHING THE NEED FOR INTERVENTION

4.1 INTRODUCTION

4.1.1. In assessing the need for intervention, an analysis of the current and future transport problems has been undertaken. The need for intervention is based on the analysis of the existing network and the likely implications of future change to both the demand for travel, the performance of the network and the extent to which this supports relevant adopted policies and strategies.

4.1.2. The evidence gathered from Chapters 2 and 3 will be used to identify the transport problems in North West Leicestershire, from which the underlaying causes can be analysed. The following sections help to establish the need for intervention through the analysis of which the underlaying causes of the current and future problems can be understood. Once the issues have been understood, they can be captured to instigate the need for intervention. This process is shown in Figure 4-1 below.

Figure 4-1 - Process for Establishing Intervention



4.2 CURRENT & FUTURE TRANSPORT RELATED PROBLEMS AND UNDERLYING CAUSES

4.2.1. Table 4-1 highlights the current and future issues in line with the underlying causes and need for intervention based on Figure 4-1 above.

Table 4-1 - Current & Future Issues and Underlying Causes

Theme	Current Issue	Future Issues	Underlying Cause	Need for Intervention
Sustaining and supporting economic growth	Delays along the A511, creates network resilience issues with limited route choice. This has a knock-on impact on the performance of its strategic junctions with the M1 J22 and A42 J13. This also poses journey time reliability issues for the logistics and mining activities which is prevalent along the corridor. Pockets of deprivation.	A failure to address the issues posed by underperforming junctions will increase delays to traffic accessing the SRN at M1 J22 and A42 J13, and impact on the economic output and productivity of the area. There is potential to unlock 5000 jobs, and this would not be realised without the adequate infrastructure along the corridor.	80% of residents in North West Leicestershire and 76% of Coalville residents travel to work by car or van. This contributes to traffic congestion and air quality issues which ultimately has an increased cost on the local economy.	The addition of essential infrastructure to the existing highway network would enable it to operate more efficiently and support development within North West Leicestershire. The development and delivery of the suggested package of measures will support the efficient operation of the logistics and quarry needs on the corridor and the continued sustainable economic and housing growth in North West Leicestershire. The growth of these logistics companies requires not just improvements in journey times, but also greater reliability on journey times to their destinations.
Support all road users	Very high proportion of people travelling to work by non-sustainable transport modes. This is somewhat attributable to no publicly accessible railway services within North West Leicestershire and slow and indirect bus services available in Coalville. Increased congestion also contributes to air quality issues which has consequently led to the A511 (by Coalville) becoming an AQMA.	Continued growth in background traffic and freight related activities leading to poor air quality and safety issues for vulnerable road users.	There are limited sustainable interventions in place / proposed for North West Leicestershire. This, coupled with the lack of public transport opportunities in the area, creates a car culture which would require significant behavioural change for a mode shift.	At a local level residents and businesses will benefit from improved road, cycle and pedestrian connectivity in the area, providing more opportunities to access jobs in Coalville, Ashby and the wider area. This will help to alleviate air quality issues. In addition, route improvements would assist the safety of vulnerable road users on the A511.

Theme	Current Issue	Future Issues	Underlying Cause	Need for Intervention
Facilitating Housing Growth	Existing traffic data indicates that the A511 MRN Growth Corridor currently has considerable issues with road capacity and network congestion.	North West Leicestershire aims to deliver circa 8,300 houses within the vicinity of the A511 by 2031, including the delivery of 3,500 homes in Coalville. Housing growth will further contribute to increased congestion over capacity with an additional increase in traffic demand on the existing road network. This will ultimately limit the delivery of housing.	Development is constrained by lack of infrastructure.	Need to support the development of future housing including SUEs, as well as the visions from the LTP3 to support economic growth and more sustainable communities. The scheme will accelerate delivery of transport infrastructure necessary to facilitate housing growth. This will reduce the barrier to developers investing in Coalville by enabling sites to come forward where meeting the full cost of the infrastructure would make delivery unviable.
Support the Strategic Road Network	The A51 Growth Corridor is one of the key east-west road links in Leicestershire linking the A42 to the M1 at Junction 12 and therefore acts a connecting route to the SRN. It also performs a resilience function for the SRN by acting as an alternative route between the M1 and A42.	Continued growth in background traffic and freight related activities can lead to delays and journey time reliability issues for the corridor and in so doing affecting vehicles accessing the SRN. In addition to this the HS2 compound is located near the corridor and would result in additional traffic along the corridor during construction.	Inadequate infrastructure to support the SRN and future growth in the area, as well as HS2 activities. Lack of resilience - the A511 is vulnerable to collisions and incidents which can cause significant disruption over a wide area	The A511 MRN Growth Corridor performs a resilience function for the SRN. It is therefore paramount that is brought to suitable standard to support the SRN and prevalent freight activities along the corridor. It is also required to support the construction of the HS2 railway line through North West Leicestershire, which traffic implications for the area.
Environmental Impacts	North West Leicestershire District Council (NWLDC) has declared an Air Quality Management Area (AQMA) for Nitrogen Dioxide (NO2) exceedances at the junction of A511 Stephenson Way and Broom Leys Road.	Growth in background traffic and planned developments for the area will increase traffic along the corridor and in so exacerbate the exiting Air Quality Issues with the possibility of causing It to extend to other locations along the corridor.	The main source of pollution is caused by emissions from stationary vehicles queuing on the A511 on both approaches to the junction.	Need to reduce congestion along the corridor by providing more available ‘green time’ for A511 traffic and help reduce queuing and engine idling.

5 SCHEME OBJECTIVES

5.1 INTRODUCTION

5.1.1. This chapter outlines the intervention specific objectives established to address the previously identified current and future issues. The intervention will align with the strategic objectives of policy and guidance at the regional and local level.

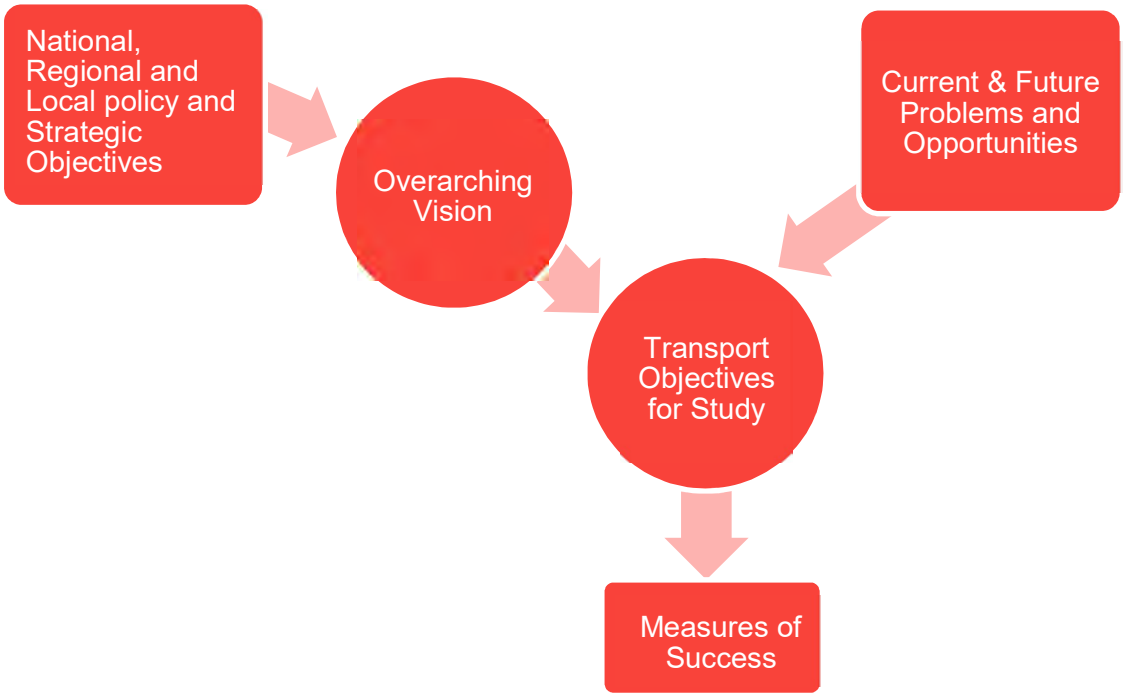
5.1.2. The scheme objectives have been informed by previously identified objectives developed by LCC, as well as those identified by Major Road Network (MRN) studies.

5.2 METHODOLOGY

5.2.1. A set of scheme-specific objectives have been developed which have tailored to the specific needs for the intervention, to support opportunities and mitigate issues identified in the previous chapter. The objectives will not only provide focus for the study, but they can provide clarity to all stakeholders on what is trying to be accomplished.

5.2.2. The scheme objectives have been developed based on the need for intervention, the overarching vision, current and future opportunities and constraints. This process is outlined in the earlier chapters of this report and shown in Figure 5-1 below.

Figure 5-1 - Scheme Specific Objectives Process



5.2.3. To ensure that the success of the objectives is measurable, they have been developed into SMART objectives, which are:

- **Specific**: say in precise terms what is sought;
- **Measurable**: how satisfaction of if the objective has been achieved can be assessed;
- **Attainable**: general agreement that the objective set can be reached;
- **Relevant**: the objective is a sensible indicator or proxy for the change which is sought; and

- **Time:** the objective will be associated with an agreed future point by which it will have been met.

5.3 STAKEHOLDER ENGAGEMENT

5.3.1. Key Stakeholder Identified for this scheme includes:

- Leicestershire County Council;
- Leicester City Council;
- Leicester and Leicestershire Enterprise Partnership (LLEP);
- North West Leicestershire District Council (NWLDC);
- Highways England;
- Midlands Connect;
- Hinckley and Bosworth Borough;
- Department for Transport (DfT)
- Harworth Group (Developer); and
- Davidsons (Developer).

5.3.2. A project board has been established to drive the A511 MRN Growth Corridor project forward. Representatives of Midlands Connect, North West Leicestershire District Council (NWLDC) and developers will join the board when the preferred option is established through the Strategic Outline Business Case (SOBC).

5.3.3. In addition to this a delivery team of experts have been set up to assist in preparation of the business case for the proposed scheme. This includes a team of experts from LCC, AECOM (Modelling) WSP (Transport Advisers)

5.3.4. In addition to the above, a workshop was held on the 11 April 2019 to discuss the scheme objectives and options assessment tool adopted for the study and to agree the list of options to take forward for assessment. This was attended by representatives from the Project Board and delivery team as detail above.

5.3.5. Letters of support from some of the abovementioned Stakeholders are provided in Appendix B.

5.4 MRN OBJECTIVES

5.4.1. The Transport Investment Strategy (TIS)12 report sets out the government's priorities and approach for future transport investment decisions. The creation of a Major Road Network (MRN) across England is a key step in the delivery of the government's strategy.

5.4.2. The TIS seeks to:

- **Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it;** The existing network face increasing demands, creating delays and undermining reliability. In places they don't provide the connections people and businesses need.

[12] Department for Transport: Transport Investment Strategy (July 2017)

- **Build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities;** National productivity lags other countries and prosperity hasn't been shared evenly between different places, leaving some communities feeling left behind.
- **Enhance our global competitiveness by making Britain a more attractive place to trade and invest;** Long-term success in a globalised world will depend on our ability to attract job creating investment in our industrial strengths and to trade as frictionless as possible with partners old and new.
- **Support the creation of new housing.** The challenge is to provide the houses that people need in the places they need them. As the Government's Housing White Paper recognises, transport infrastructure is one of the keys to unlocking development and delivering places people want to live.

5.4.3. The MRN has five central objectives which build on the commitments made in the TIS (outlined above). The DfT's Investment Planning Guidance[13] details the individual MRN objectives which are set out in **Table 5-1** below.

[13] Department for Transport: Investment Planning Guidance for the Major Road Network and Large Local Major Programmes (2018)

Table 5-1 - MRN Conditional Objectives

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

5.5 PRE-IDENTIFIED OBJECTIVES

5.5.1. Based on extensive evidence work undertaken and local aspiration for the corridor, as well as through stakeholder engagement the following pre-identified objectives were identified by Leicestershire County Council and key stakeholders.

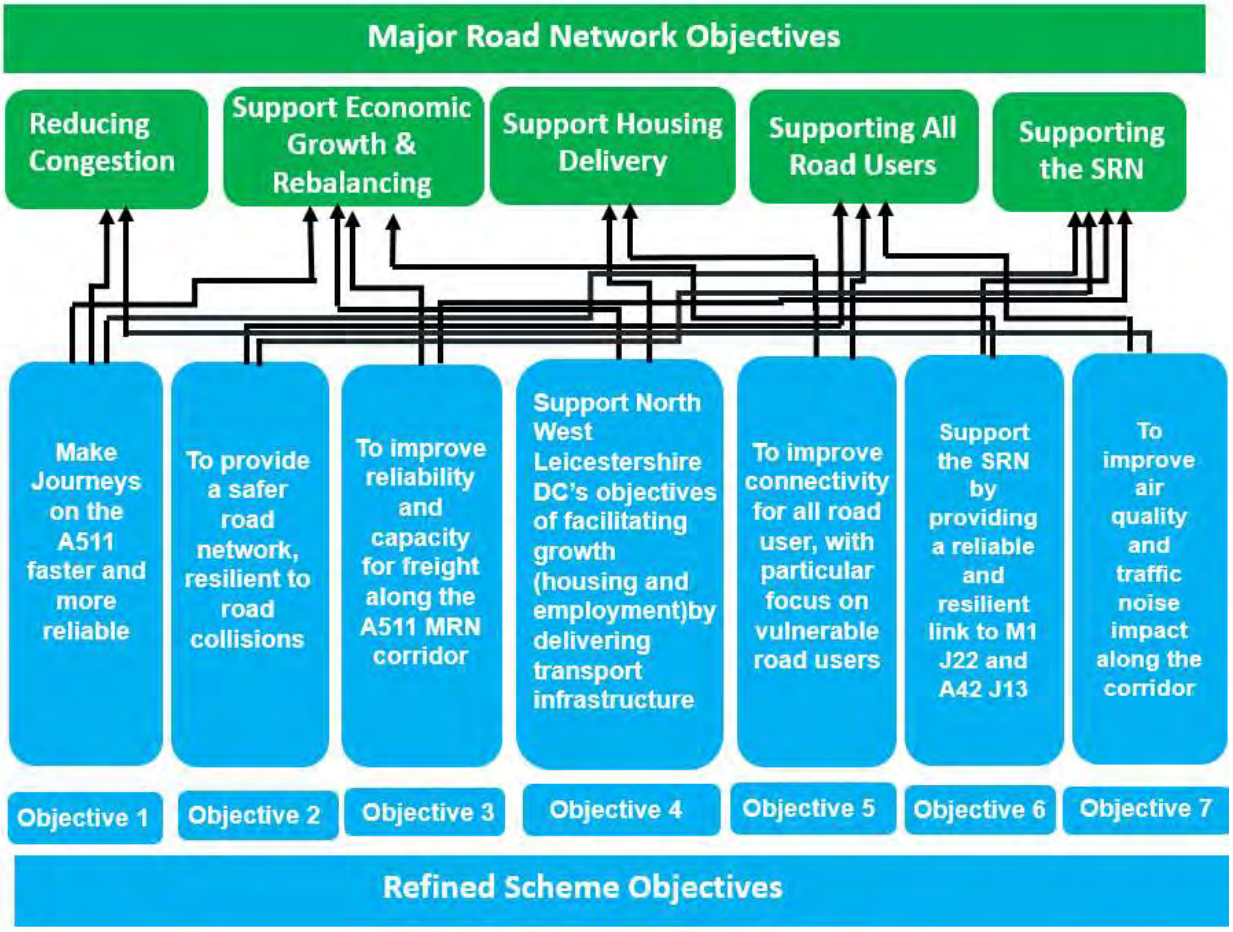
- Make journeys on the A511 faster and more reliable;
- Reduce injury collisions (currently estimated at 30% savings);
- Support the efficient operation of logistics and mineral extraction needs in the corridor;
- Potentially deliver at least 25ha of employment land;
- Support North West Leicestershire DC's objectives of facilitating growth by delivering transport
- infrastructure;
- Connection of a local distributor road unlocking 3,500 new dwellings, a key element of the North West Leicestershire Local Plan 2011-31 (and the opportunity of 5000 jobs according to the DfT MRN Summer Announcement Submission June 2018.); and

- Improved connectivity, particularly for vulnerable road users.

5.6 REFINED OBJECTIVES

5.6.1. The 'Pre-Identified' objectives were refined at a stakeholder/delivery team workshop held on 11 April 2019 to incorporate DfT's MRN objectives are shown in **Figure 5-2** below.

Figure 5-2 - A511 MRN Growth Corridor: Refined Objectives



5.6.2. Strategic outcomes and outputs have been identified for each of the refined scheme objectives based on the current and future transport related issues along the A511 MRN Growth Corridor as set out within Chapter 2 and 3. The objectives, outputs and conditional outcomes have been drafted to cover and incorporate the DfT's MRN objectives and conditional outputs, as well as local and regional objectives for the corridor as set out in Chapter 2. The resulting A511 MRN Growth Corridor conditional outcomes, outputs and objectives are provided in more detail in Error! Reference source not found. below.

Table 5-2 - A511 MRN Growth Corridor: Strategic Objectives Outputs & Conditional Outcomes

Objectives		Outputs	Conditional Outcomes
Objective 1	**Make journeys on the A511 faster and more reliable**	Reduced Congestion	Journey cost savings for all users of the A511 MRN Corridor and SRN
		Improved journey time reliability for all users	
		Improved accessibility to the SRN and international connectivity, specifically to the East Midlands Airport	Unlock economic growth within the region (i.e. Objectives 3 & 4)
		Improved accessibility between economic centres, employment areas and housing developments.	
		Improve traffic flow in AQMAs along the A511	Improved air quality in AQMAs near the A511 MRN Growth Corridor (Bardon Road) and the A511 Stephenson Way and Broom Leys Road Junction
Objective 2	**To provide a resilient and safer road network, resilient to road collisions**	Reduce disruption to journeys on the A511 because of road collisions	Reduced cost to humanity and to economy of accidents and other incidents on the A511 MRN Growth Corridor
		Support the construction impacts of the HS2 compound located at A42 J13 by serving as a diversion route during the realignment of the A512.	
		Reduced number and severity of collisions in hot spots in the A511 MRN Growth Corridor	
Objective 3	**To improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.**	Reduced delay to freight movements.	Improvements in productivity and reduced supply chain costs for local and regional businesses.
		Increased journey time reliability of freight movements.	
		Greater consistency in journey times for freight users throughout the day.	Improved air quality and noise impact along the A511 and local roads in general due to concentrating freight onto most suitable roads
		Improved accessibility to the SRN for freight.	

Objectives		Outputs	Conditional Outcomes
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**	Improved accessibility to new and existing employment sites	Unlock commercial development, support higher employment and higher value employment.
		Improved accessibility to future residential sites.	Facilitate investment in housing growth by boosting land value.
Objective 5	**To improve connectivity for all road user, with focus on vulnerable road users**	Improved road, cycle and pedestrian connectivity in the area.	Provide more opportunities to access jobs in the Coalville, Ashby and the wider area for all road users (includes access to Leicester, East Midlands Airport and the strategic rail freight interchange at Castle Donnington.)
			Better access for all road uses to training and further education (specifically better access to both Stephenson and Leicester Colleges) and to health, local retail and leisure centres
		Improved connectivity to local centres westwards along the A511 MRN Growth Corridor	Support economic growth objectives
		Quicker and more reliable through journeys discouraging through traffic from diverting onto less suitable routes with higher number of vulnerable road users (e.g. through Coalville town centre)	Wider safety benefits for the local road network and parallel (e.g. A512) support the needs of all road users, including non-motorised users, particularly through Coalville town centre.
Objective 6	**Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13.**	More reliable journey times for motorist using the A511, particularly with regards to through traffic between the M1 and the A42	Journey cost savings for all users of both the A511 MRN Growth Corridor and SRN
		Improved Journey times for logistic traffic from the Coalville and Bardon Hill area and Junction 22 of the M1	Support economic growth objectives

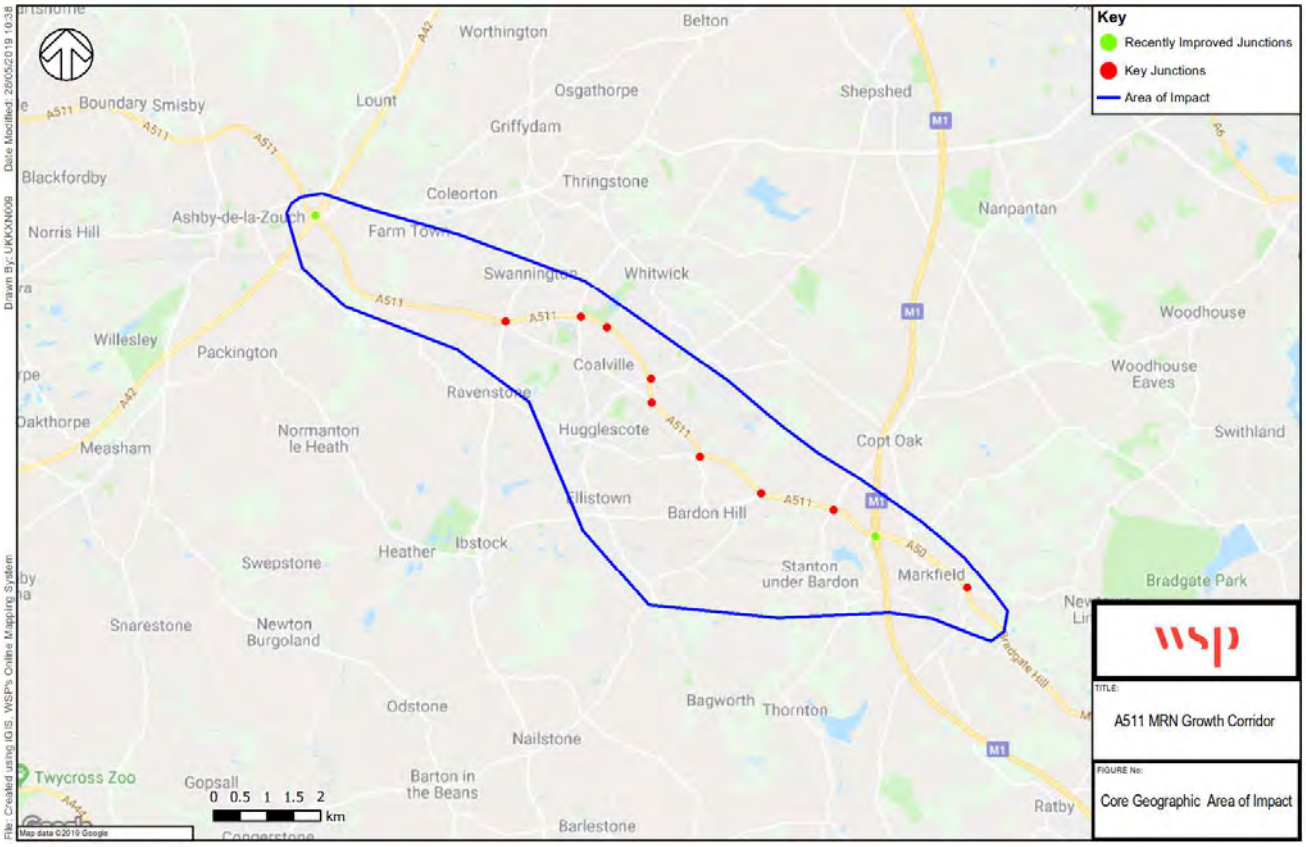
Objectives		Outputs	Conditional Outcomes
		Improved accessibility to M1 J22 and A42 J13 and thereby creating more resilient SRN	
		Improved connectivity between Leicester and the SRN	
Objective 7	**To improve air quality and traffic noise impact along the corridor**	Improved air quality along the A511 MRN Growth Corridor	Improved health and wellbeing of residents
		Reduced traffic noise impact along the A511 MRN Growth Corridor	

5.7 GEOGRAPHIC AREA OF IMPACT

5.7.1. The geographical area of impact to be addressed by potential intervention has been informed through evidence reviewed in sections 2, 3 and 4 which have outlined the current scope of the travel market and key origins and destinations, as well as the extent of current and future transport problems.

5.7.2. The core geographical area of impact comprises the section of A511 between A42 Junction 13 and M1 Junction 22 inclusively even though those junctions have been recently improved, the A50 to the Field Head Roundabout and Beveridge Lane near proposed development south east of Coalville. This area is shown in Figure 5-3 below.

Figure 5-3 - Core Geographic Area of Impact



5.7.3. A wider area of influence has also been identified based on work carried by SYSTRA in November 2016 on the behalf of LCC aimed at providing a robust evidence base to support a series of transport schemes for the Coalville Growth Corridor to enable economic regeneration of the area and facilitate housing and employment growth.

5.7.4. This work was undertaken using Leicester and Leicestershire Integrated Transport Model (LLITM) for a 2031 core scenario in line with the end of the Local Plan for the area and was informed by highly likely development within and outside Coalville and all identified mitigation for the area. The resulting wider area of influence defined by considering those schemes induced link flows exceeding a +5% change from the 2031 Core scenario is shown in Figure 5-4.

Figure 5-4 - Wider Geographic Area of Impact

6 OPTIONS GENERATION

6.1 INTRODUCTION

6.1.1. This chapter details how potential transport options were generated to address existing traffic congestion along the A511 MRN Growth Corridor. DfT guidance[14] describes how a broad range of potential options should be considered to ensure that the most appropriate solution to an identified problem is pursued. In line with the DfT guidance, this section presents the generation of options developed to meet the objectives of the study.

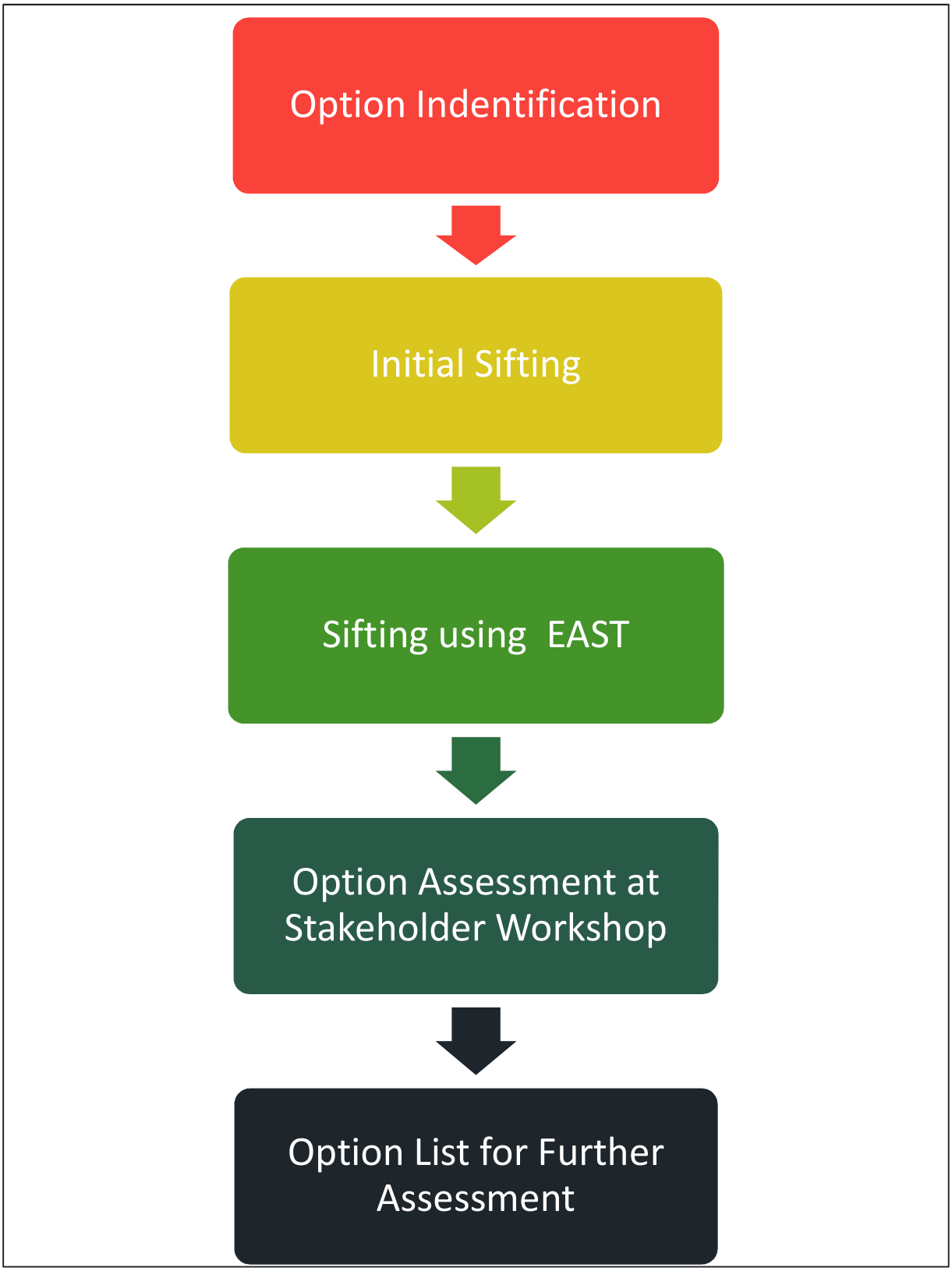
6.2 METHODOLOGY FOR GENERATION OF OPTIONS

6.2.1. Based on the identified objectives set out within Chapter 5, the option generation process undertaken for the study has been primarily focused on measures aimed at improving the mainline traffic flow along the A511 MRN Growth Corridor between the A42 J13 and the M1 J22, the A50 to the Field Head Roundabout and Beveridge Lane near proposed development south east of Coalville. with complementary measures as part of transport packages. These will include measures aimed at addressing the potential residual impacts on the local surrounding roads, users and non-users.

6.2.2. **Figure 6-1** (overleaf) presents the process undertaken in generating the initial long list of options and subsequently the process undertaken to arrive at a short list of options for further assessment.

[14] DfT's Transport Analysis Guidance: The Transport Appraisal Process (May 2018)

Figure 6-1 - Option Assessment Process



6.3 LONG LIST OF OPTIONS

6.3.1. The following options for intervention have been identified for this study. A brief description of each the schemes considered is provided in Appendix C of this OAR.

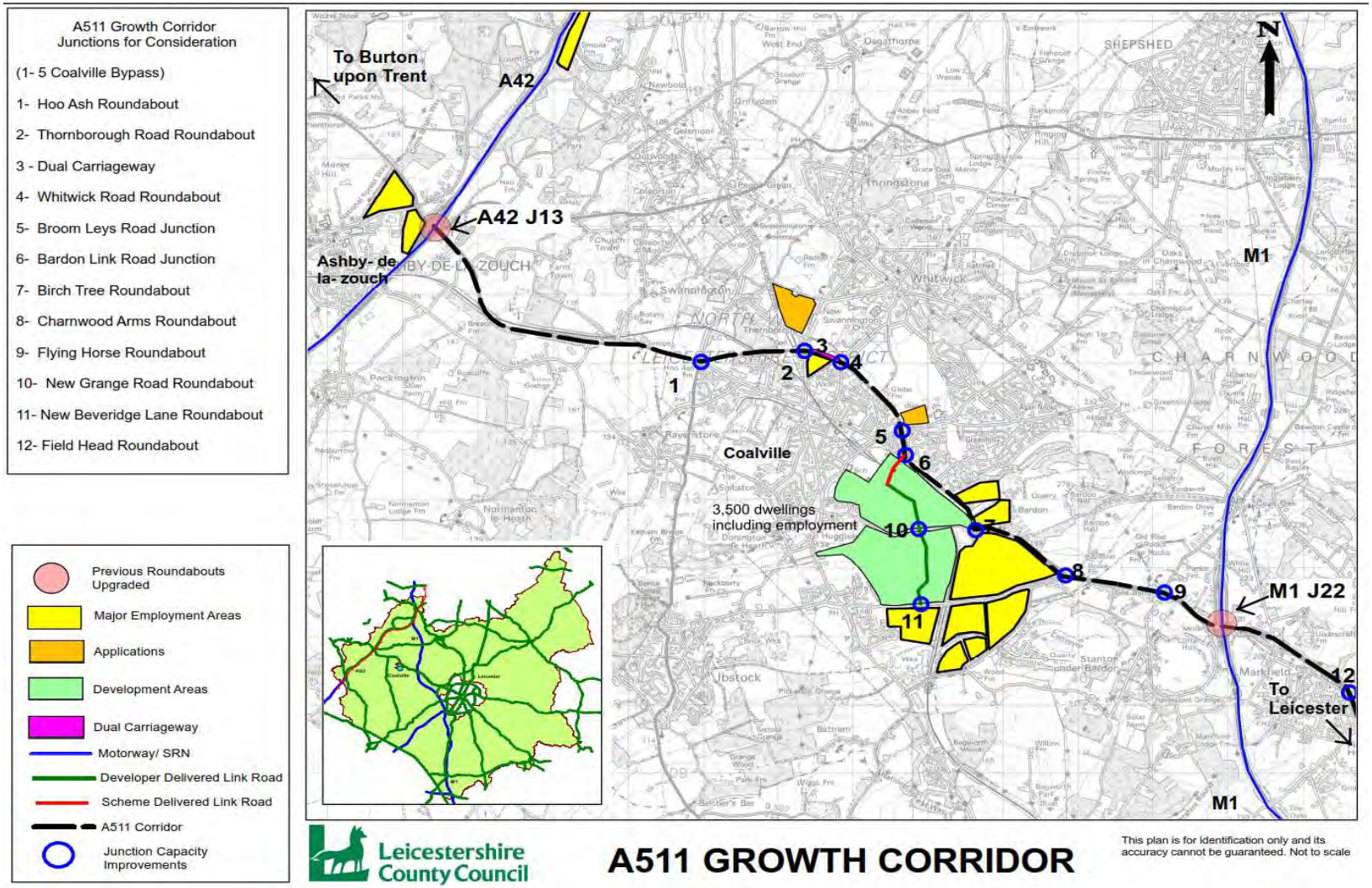
HIGHWAY IMPROVEMENT SCHEMES

Individual Intervention Options

6.3.2. These options include preidentified individual junction mitigation schemes identified from the extensive evidence-based work undertaken along the A511 MRN Growth Corridor. The location of the following individual improvement schemes is shown on Figure 6-2:

- Intervention 1 - Hoo Ash Roundabout Capacity Improvement;
- Intervention 2 - Thornborough Road Roundabout Capacity Improvement;
- Intervention 3 – Stephenson Way Duelling
- Intervention 4 - Whitwick Road Roundabout Capacity Improvement;
- Intervention 5 - Broom Leys Road Junction Capacity Improvement;
- Intervention 6 - Bardon Link Road Junction Capacity Improvement;
- Intervention 7 - Birch Tree Roundabout Capacity Improvement;
- Intervention 9 - Flying Horse Roundabout Capacity Improvement;
- Intervention 10 – New Grange Road Roundabout (Developer Funded – Not Assessed);
- Intervention 11 - New Beveridge Lane Roundabout (Developer Funded –potentially be funded by LCC); and
- Intervention 12 - Field Head Roundabout Capacity Improvement.

Figure 6-2 - A511 MRN Growth Corridor - Junction Improvement Schemes Recommendation at SOBC Stage



Packaged Options

6.3.3. These options are packaged options with various combinations of the individual junction options identified previously:

- Package 1 – Junction Improvements at nine existing junctions, provision of Bardon Link Road and dualling on Stephenson Way.
- Package 2 – Junction Improvements at four existing junctions (Interventions 1,2,4 & 5), and dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout;
- Package 3 – Junction Improvements at two existing junctions: Interventions 6, 7 & 8;
- Package 4 – Junction Improvements at two existing junctions: Interventions 9 & 12;
- Package 5 – Junction Improvements at three existing junctions: Interventions 2, 8, 9 & 12

Bypass

6.3.4. In addition to the above highway schemes the following scheme which has received stakeholder support over a number of years is also considered:

- Bardon Bypass Road - which is parallel to the A511 from Bardon Link Road junction to Birch Tree Roundabout.

PUBLIC TRANSPORT OPTIONS

6.3.5. The following public transport schemes are also considered:

- **Re-opening of the Leicester to Burton Railway Line to passenger on current alignment.** Re-opening the railway line with stations at Burton, Swadlincote, Ashby de la Zouch, Coalville, Leicester West (possible Park and Ride around Leicester Forest East for M1 traffic) and Leicester
- **Re-opening of the Leicester to Burton Railway Line to passenger using Tram Train.** Re-opening the railway line with stations at Burton, Swadlincote, Ashby de la Zouch, Coalville, Leicester West (possible Park and Ride around Leicester Forest East for M1 traffic), before turning off the existing railway onto the A47 to penetrate Leicester as a tram, running on road.
- **Express Bus Service.** A fast bus service on the A511 from Leicester to Burton, only deviating from the A511 to penetrate the larger towns. This could be provided by coach-style vehicles, to increase comfort on longer journeys and to increase service appeal.
- **Cross Town Bus Services.** Currently, Coalville acts as the terminal point for most of services entering the town. We propose a review of the bus network around Coalville to identify which services could be linked to operate through the town, east-west, to cater for demand between other settlements in the corridor. E.g. combine services 11 & 15 to provide a north-south link across Coalville, for which census data suggest there is a demand.
- **Bus Priority Measures** - measures to improve the reliability and journey time of bus services in the corridor by allowing them to bypass or get ahead of general traffic. Could include measures such as:
  - Bus Priority at Signals;
  - Bus lanes across Coalville's A511 roundabouts; and
  - Entry / Exit from Bardon Hill.
- **Increase Frequency of Bus Services across day.** Improve the frequency of local bus services such as 29/29A so they run at their higher frequency all day. Increase frequency of town bus services such as the 15/129 to reduce the need for car trips within towns. Increase frequency of

155/Airlink to provide a stronger tie between Coalville and the Airport than the more frequent but less direct Skylink bus.

- **A511 Corridor Bus Development Plan.** Undertake a full review of the bus network currently utilising the A511, to:
  - Identify pinch points;
  - Receive local feedback from operators and passengers;
  - Provide further information for service and infrastructure enhancements; and
  - Better identify unmet demand.
- **Investment in Hybrid/Electric Buses.** Reduce bus emissions and pollution issues in the corridor.
- **Upgrading of Bus Stop Facilities and Information.** Provision of real-time information, level access facilities and improved shelters at key stops.
- **Re-Route Buses in Leicester to Connect to Leicester Railway Station.** Currently, buses from the A511 terminate at St Margaret's bus station, which is fifteen minutes or more walk from Leicester Railway Station. Services could be extended along Charles Street to connect to the station directly.
- **Investment in enhanced walking routes between bus stops and residences.** Delivery of improved public realm between new developments and the nearest bus stops. A review of the walking routes to/from existing bus stops.

7 OPTION APPRAISAL AND SELECTION OF PREFERRED SCHEME

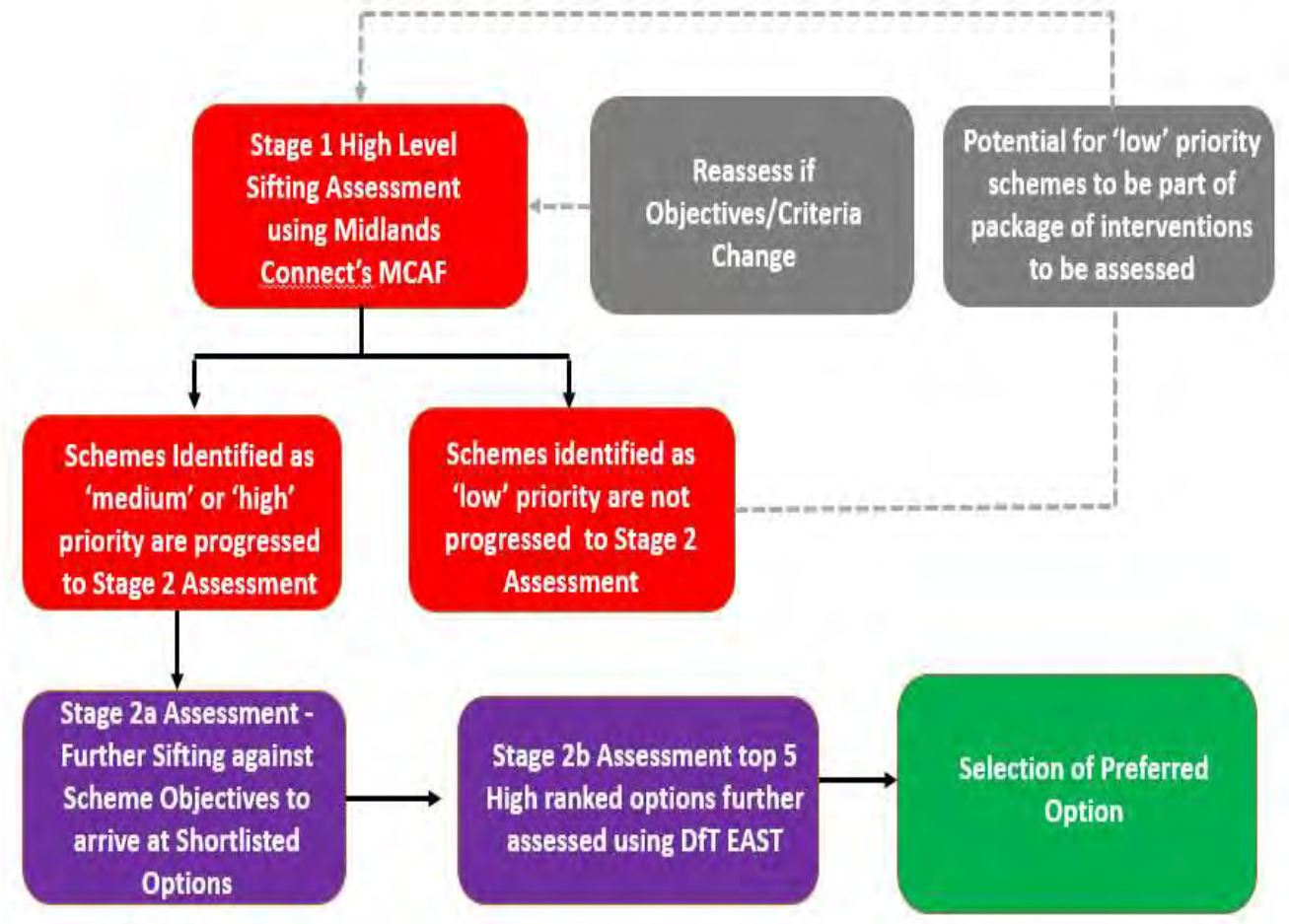
7.1 INTRODUCTION

7.1.1. This chapter presents a high-level assessment of the potential options identified in **Chapter 6** of this report, drawing on professional judgment and knowledge, the characteristics of the study area and the requirements associated with implementation of such schemes in practice.

7.1.2. A tailored option appraisal tool centred on the objectives and outcomes specific to the A511 MRN Growth Corridor. Have been developed to assess the identified long list of options with the aim of arriving at the preferred option. The option appraisal tool has been based on DfT's Early Assessment and Sifting Tool (EAST) in conjunction with Midlands Connect's Multi Criteria Assessment Framework (MCAF) tool

7.1.3. The option appraisal approach used for the A511 MRN Growth Corridor is shown **Figure 7-1**

Figure 7-1 - Option appraisal approach



7.2 Initial Sifting – Midlands Connect's MCAF Tool

7.2.1. To discard options that fail to meet most of the scheme objectives an initial sifting of options (i.e. Stage 1 Assessment) was carried out following step 6 of DfT's Transport Analysis Guidance (May 2018). The guidance sets out which options should be discarded as presented in the box overleaf.

Discard:

- Options which clearly fail to meet the key objectives identified for intervention;
- Options which do not fit with existing local, regional and national programmes and strategies, and do not fit with wider government policies; and
- Options which would be unlikely to pass key viability and acceptability criteria (or represent significant risk) in that they are unlikely to be:
  - Deliverable in an economic, environmental, geographical or social context e.g. options which would result in severe adverse environmental impacts which cannot be mitigated against or where the cost of doing so is too high;
  - Technically sound;
  - Financially affordable; and
  - Acceptable to stakeholders and the public.

7.2.2. The Stage 1 Assessment have been informed by the Midlands Connects MCAF (Stage 1 – High Level Sifting Assessment) tool. The tool 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. This allows the subsequent stages in the appraisal process to be focused only on those interventions that have the most potential to support the objectives and conditional outcomes, as well as being deliverable and affordable.

7.2.3. The MCAF centres on a spreadsheet tool to collate scheme appraisal information and its assessment approach is broadly in line with the DfT's EAST tool. The MCAF tool is particularly useful in presenting the process chosen and results to a broad audience. The following can be achieved from the MCAF process:

- Establish bespoke appraisal criteria to meet the project's needs while ensuring a common base and sharing the same basic objectives with the other motorway hub studies;
- Apply weightings to criteria or objectives, if warranted;
- Collate the scheme/package list and store descriptions and other information;
- Package schemes together;
- Score scheme performance against criteria;
- Provide simple to understand outputs of the appraisal and prioritisation process;

7.2.4. The tool uses the following '5 case' model criteria in line with TAG advice to score each option included in the long list of options:

- Conditional Outcomes (this relates to the scheme specific objectives)
- Economy
- Affordability
- Acceptability
- Environmental

7.2.5. Table 7-1 outlines the A511 MRN Growth Corridor specific weighting for the above 5 criteria used for scoring the Long List options and provides justification for the chosen weighting. The scoring criteria and thresholds for each criterion at each stage are provided in Appendix D.

Table 7-1 – Stage 1 assessment criteria weighting

MCAF Stage 1 Criteria	Weighting	Reason for Weighting
Conditional Outcomes	40%	Schemes taken forward must satisfy all identified scheme objectives
Economy	10%	Impact on the economy has not been fully assessed at this Stage
Affordability	10%	The cost of all identified schemes from the long list of options falls within the threshold for DfT MRN funding (i.e. less £50M)
Acceptability	30%	Schemes taken forward for further assessment must be acceptable to all Stakeholders
Environmental	10%	Impact on the environment has not been fully assessed at this Stage
Total	100%	

7.2.6. The options are ranked 'low', 'medium' and' high' priority based on their overall scores. 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%.

7.3 SHORT LIST FOR FURTHER SIFTING

7.3.1. Following initial sifting, 15 transport options were discarded from the long list and 13 options were taken forward for further assessment. The scoring used for each against the Midlands Connect MCAF 5 'model case' criteria are provided in Appendix E of this OAR.

7.3.2. The shortlisted options are the options ranked as 'medium' and 'high' priority and are as follows in descending order of priority:

- Package 1 – Junction Improvements at nine existing junctions, provision of Bardon Link Road and dualling on Stephenson Way.
- Package 5 – Junction Improvements at three existing junctions: Interventions 2, 8, 9 & 12
- Package 3 – Junction Improvements at two existing junctions: Interventions 6, 7 & 8;
- Package 2 – Junction Improvements at four existing junctions (Interventions 1,2,4 & 5), and dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout;
- Package 4 – Junction Improvements at two existing junctions: Interventions 9 & 12;
- Intervention 8 - A511/Copt Oak Road Junction (Flying Horse);
- Intervention 6 - A511/Grange Road Roundabout (Birch Tree);
- Intervention 5 - A511/Broom Leys Junction;
- Intervention 6 - A511/Bardon Road roundabout including the "punch through" to provide access to the development site;
- Intervention 9 - A50/Field Head Roundabout;

- Intervention 2 - A511/Thornborough Road Roundabout; and
- Intervention 1 - A511/Swannington Roundabout (Hoo Ash).

7.4 STAGE 2A ASSESSMENT AGAINST SCHEME OBJECTIVES

7.4.1. 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 have been further assessed against the scheme objectives to discard the least performing options and arrive at a shorter list of options for a more detailed assessment.

7.4.2. The full assessment is provided in **Appendix F** of the OAR and the results summarised in **Table 7-2**.

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

- Package 1 – Junction Improvements at nine existing junctions, provision of Bardon Link Road and dualling on Stephenson Way.
- Package 2 – Junction Improvements at four existing junctions (Interventions 1,2,4 & 5), and dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout;
- Package 3 – Junction Improvements at two existing junctions: Interventions 6, 7 & 8;
- Package 4 – Junction Improvements at two existing junctions: Interventions 9 & 12; and
- Package 5 – Junction Improvements at three existing junctions: Interventions 2, 8, 9 & 12.

7.4.4. For simplicity they are referred to as Packages 1 to 5 in the following sections.

Table 7-2 – Stage 2a Assessment Result in order of score ranking.

Options	Objective 1	Objective 3	Objective 2	Objective 4	Objective5	Objective 6	Objective 7	Overall Score	
Package 1 – Junction Improvements at nine existing junctions, provision of Bardon Link Road and dualling on Stephenson Way.	13	13	11	13	5	13	7	**75**	**Options taken forward to Stage 2b Assessment**
Package 2 – Junction Improvements at four existing junctions (Interventions 1,2,4 & 5), and dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout;	6	6	6	6	6	6	6	**42**	
Package 5 – Junction Improvements at three existing junctions: Interventions 2, 8, 9 & 12	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**28**	
Package 4 – Junction Improvements at two existing junctions: Interventions 9 & 12;	**3**	**3**	**4**	**4**	**4**	**4**	**4**	**26**	

Options	Objective 1	Objective 3	Objective 2	Objective 4	Objective5	Objective 6	Objective 7	Overall Score	
Package 3 – Junction Improvements at two existing junctions: Interventions 6, 7 & 8	3	3	3	3	3	3	3	**21**	
Intervention 8 - A511/Copt Oak Road Junction (Flying Horse)	1	1	1	1	1	1	1	7	**Discarded Options**
Intervention 6 - A511/Grange Road Roundabout (Birch Tree);	1	1	1	1	1	1	1	7	
Intervention 5 - A511/Broom Leys Junction	1	1	1	1	1	1	1	7	
Intervention 9 - A50/Field Head Roundabout	1	1	1	1	1	1	1	7	
Intervention 6 - A511/Bardon Road roundabout including Punch Through	1	1	1	1	1	1	1	7	
Intervention 1 - A511/Swannington Roundabout (Hoo Ash);	1	1	1	1	1	1	1	7	

Options	Objective 1	Objective 3	Objective 2	Objective 4	Objective5	Objective 6	Objective 7	Overall Score	
Intervention 2 - A511/Thornborough Road Roundabout	1	1	1	1	1	1	1	7	

7.5 STAGE 2B ASSESSMENT USING AN EAST BASED APPROACH

7.5.1. A largely qualitative sift of the short list of options has been undertaken using a tailored version of the Department for Transport's (DfT's) Early Appraisal Sifting Tool (EAST). Modifications have been made to reflect the nature of the intervention to support the later stages of the options appraisal going forward. These changes are shown in Table 7-3.

7.5.2. EAST 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 business case model (Strategic, Economic, Management, Financial and Commercial).

7.5.3. This tool has been established by DfT as a simple and consistent means of:

- Comparing options based on an agreed set of criteria;
- Allowing the number of options to be filtered based on performance against criteria;
- Identifying potential packaging and enhancements across options; and
- Identifying major uncertainties at the early stage of project development, which can be addressed at later stages of appraisal.

7.5.4. The benefits of using EAST include the ability to filter the number of options based on performance against criteria and to quickly dismiss 'non-runners' early in the appraisal process. Where relevant, any quantified impacts and evidence from previous studies have been included to inform the appraisal process. The scoring of the criteria has been undertaken as outlined in the DfT's EAST guidance note including where modifications have been made.

Table 7-3 – Tailored EAST Criteria

Case	Standard EAST Criteria	Tailored EAST Criteria	Comments /Justification
Strategic Case	Identified problems and objectives of the option	Identified problems and objectives of the option	N/A
	Scale of Impact	Scale of Impact	N/A
	Scale of Impact - Comments	Scale of Impact - Comments	N/A
	Fit with wider transport and government objectives	Fit with wider transport and government objectives	N/A
	Wider transport and government objectives - Comments	Wider transport and government objectives - Comments	N/A
	Fit with other objectives	Fit with other objectives	To provide an understanding of fit /agreement with MRN objectives considering the type of funding being sought
	Fit with other objectives - Comments	Fit with other objectives - Comments	
	Key Uncertainties	Key Uncertainties	N/A

Case	Standard EAST Criteria	Tailored EAST Criteria	Comments /Justification
	Degree of consensus over outcomes?	Degree of consensus over outcomes?	N/A
	Degree of consensus over outcomes? - Comments	Degree of consensus over outcomes? - Comments	N/A
Economic Case	Economic Growth	Economic Growth	N/A
	Economic Growth - Comments	Economic Growth - Comments	N/A
	Carbon Emissions	Carbon Emissions	Relates directly to air quality objectives and supporting the AQMAs along the A511 MRN Growth Corridor
	Carbon Emissions - Comments	Carbon Emissions - Comments	
	Socio-distributional impacts and the region	Socio-distributional impacts and the region	N/A
	Socio-distributional impacts and the region - Comments	Socio-distributional impacts and the region - Comments	N/A
	Local Environment	Local Environment	N/A
	Local Environment - Comments	Local Environment - Comments	N/A
	Well Being	Well Being	N/A
	Well Being - Comments	Well Being - Comments	N/A
	Expected VfM Category	Expected VfM Category	Not Assessed at this Stage
	Expected VfM Category	Expected VfM Category	
Management Case	Implementation timetable	Implementation timetable	N/A
	Implementation timetable - Comments	Implementation timetable - Comments	N/A
	Public acceptability	Public acceptability	N/A
	Public acceptability – Comments	Public acceptability – Comments	N/A
	Practical Feasibility	Practical Feasibility	N/A
	Practical Feasibility – Comments	Practical Feasibility – Comments	N/A
	What is the quality of the supporting evidence	What is the quality of the supporting evidence	N/A
	What is the quality of the supporting evidence – Comments	What is the quality of the supporting evidence – Comments	N/A
	Key Risks	Key Risks	N/A

Case	Standard EAST Criteria	Tailored EAST Criteria	Comments /Justification
Financial Case	Affordability	Affordability	N/A
	Affordability - Comments	Affordability - Comments	N/A
	Capital Cost (£m)?	Capital Cost (£m)?	N/A
	Capital Cost (£m)? - Comments	Capital Cost (£m)? - Comments	N/A
	Revenue Cost (£m)?	Revenue Cost (£m)?	N/A
	Revenue Cost (£m)? – Details	Revenue Cost (£m)? – Details	N/A
	Cost Profile	Cost Profile	N/A
	Overall Cost Risk	Overall Cost Risk	N/A
	Other Cost	Other Cost	N/A
Commercial Case	Flexibility of option	Flexibility of option	N/A
	Flexibility of option – Comments	Flexibility of option – Comments	N/A
	Where is funding coming from?	Where is funding coming from?	N/A
	Any Income generated? (Y/N)	Any Income generated? (Y/N)	Not Assessed at this stage.
	If yes, how much income is generated (£m)?	If yes, how much income is generated (£m)?	

7.5.5. Following the application of the above methodology to the shortlisted options, Table 7-4 to Table 7-9 summarises the performance of each shortlisted option against the scheme objectives and the five-case business case model (i.e. Strategic, Economic, Management, Financial and Commercial).

7.5.6. The full EAST assessment is included in Appendix G

Table 7-4 - 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 Marketfield (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 PICs across several junctions. 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 at the four junctions covered by interventions 1,2,4 and 5. However, it does not provide a resilient and safer road network along the length of the A511 MRN corridor.	This option is likely to reduce collisions at Bardon Road and Birch Tree Roundabouts; 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 at Thornborough Road roundabout and at Field Head roundabout but does not provide a resilient and safer road network along the length of the A511 MRN corridor.

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Score	+++	+	+	+	+
Objective 3 - To improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	This option provides better reliability along the corridor with multiple junction improvements and dualling of the A511 between Thornborough Road Roundabout and Whitwick Road Roundabout, 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 Thornborough Road Roundabout and Whitwick Road Roundabout.	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.
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.

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Score	+++	+	+	+	+
Objective 5 - To improve connectivity for all road user, with 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.
Score	+++	+	+	+	++

Scheme Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
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	+++	+	+	+	+

7.5.7. Table 7-4 shows that Package 1 is likely to best complement the scheme-specific objectives, however, this does not include as assessment of deliverability risk.

Table 7-5 – Strategic Case Appraisal of Shortlisted Options

	Identified Problems and Objectives of the option	Scale of impact	Fit with wider transport and government objectives	Fit with Objectives DfT's MRN objectives	Key Opportunities	Key Uncertainties	Degree of consensus over outcomes?
Package 1	Package 1 – Junction Improvements at nine existing junctions, provision of Bardon Link Road and dualling on Stephenson Way.	Fully Addresses the identified problem	Good fit	Excellent fit	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Attracts economic growth and investment by unlocking employment land at Coalville • Improves safety for road users • Improves air and noise quality by reducing congestion	• Risk of increased car mode share by reducing journey times resulting in increased congestion elsewhere.	Good Consensus
Package 2	Package 2 – Junction Improvements at four existing junctions (Interventions 1,2,4 & 5), and dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout;	Moderate Impact	Reasonable fit	Reasonable fit	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus

Package 3	Package 3 - Junction Improvements at two existing junctions: Interventions 6, 7 & 8;	Minor Impact	Low fit	Low fit	• Somewhat improves journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus
Package 4	Package 4 - Junction Improvements at two existing junctions: Interventions 9 & 12;	Minor Impact	Low fit	Low fit	• Slightly improves journey times on the A511 MRN corridor • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus
Package 5	Package 5 - Junction Improvements at three existing junctions: Interventions 2, 8, 9 & 12	Moderate Impact	Reasonable fit	Reasonable fit	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus

Table 7-6 – Economic Case of Shortlisted Options

	Economic Growth	Air Quality	Socio-distributional Impact within Coalville	Local Environment	Well Being	Outline VfM Category
Package 1	Strong Economic Growth	High Positive Impact	Neutral Impact – This is considered neutral for this review since it has not been assessed at this stage	Neutral Impact	High Positive Impact	Medium VfM
Package 2	Weak Economic Growth	High Positive Impact	Neutral Impact – This is considered neutral for this review since it has not been assessed at this stage	Neutral Impact	Neutral Impact	Low VfM
Package 3	Weak Economic Growth	High Positive Impact	Neutral Impact – This is considered neutral for this review since it has not been assessed at this stage	Neutral Impact	Neutral Impact	Low VfM
Package 4	Weak Economic Growth	Minor Positive Impact	Neutral Impact – This is considered neutral for this review since it has not been assessed at this stage	Neutral Impact	Neutral Impact	Low VfM
Package 5	Positive Economic Growth	High Positive Impact	Neutral Impact – This is considered neutral for this review since it has not been assessed at this stage	Neutral Impact	Minor Positive Impact	Low VfM

Table 7-7 – Management Case of Shortlisted Options

	Implementation Timetable	Public Acceptability	Practical Feasibility	What is the quality of the supporting evidence?	Key Risks
Package 1	Proposed Construction start date is 2022 and end date is 2024	Minor Positive Response	Some Barriers	Excellent Quality Evidence	CPO: The connection from the existing roundabout to the new local distributor road requires compulsory purchase of land. Network Rail: the scheme requires a cattle creep to be improved under Network Rail tracks. Liaison over this is yet to start. Environment Agency: Part of the area through which the new local distributor road is to pass is a flood plain. Initial designs have already recognised that the road will need to be elevated. Liaison with EA is yet to commence.
Package 2	Proposed Construction by 2024	Neutral Response	Some Barriers	Good Quality Evidence	Network Rail: the scheme requires a cattle creep to be improved under Network Rail tracks. Liaison over this is yet to start
Package 3	Proposed Construction by 2024	Neutral Response	No Barriers	Good Quality Evidence	Generic risks associated with a highway scheme of this type.
Package 4	Proposed Construction by 2024	Neutral Response	No Barriers	Reasonable Quality Evidence	Generic risks associated with a highway scheme of this type.
Package 5	Proposed Construction by 2024	Neutral Response	No Barriers	Good Quality Evidence	Generic risks associated with a highway scheme of this type.

Table 7-8 – Financial Case Appraisal of Shortlisted Options

	Affordability	Capital Cost (£m)?	Revenue Costs (£m)?	Cost Profile	Overall Cost Risk	Other Costs
Package 1	Average Affordability (within MRN funding range)	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and risk is estimated at approximately £49M in 2023 outturn prices.	No revenue cost - Capital scheme	At this stage only, a high-level cost and funding profile has been developed. Further detailed consideration of the ground conditions and construction approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions and Bardon Link Road over its lifetime
Package 2	Below Average Affordability (just below MRN funding range)	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and risk is estimated at approximately £16M in 2023 outturn prices.	No revenue cost - Capital scheme	At this stage only, a high-level cost and funding profile has been developed. Further detailed consideration of the ground conditions and construction approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime
Package 3	Below average affordability (just below MRN funding range)	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and risk is estimated at approximately £16M in 2023 outturn prices.	No revenue cost - Capital scheme	At this stage only, a high-level cost and funding profile has been developed. Further detailed consideration of the ground conditions and	Medium Risk	Maintenance of junctions over lifetime

	Affordability	Capital Cost (£m)?	Revenue Costs (£m)?	Cost Profile	Overall Cost Risk	Other Costs
				construction approach is needed before accurate cost profiles can be developed.		
Package 4	Average affordability (outside MRN funding range but within acceptable local contribution amount	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and risk is estimated at approximately £3.4M in 2023 outturn prices.	No revenue cost - Capital scheme	At this stage only, a high-level cost and funding profile has been developed. Further detailed consideration of the ground conditions and construction approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime
Package 5	Very Unaffordable (outside MRN funding range and above acceptable local contribution amount	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and risk is estimated at approximately £9.5M in 2023 outturn prices.	No revenue cost - Capital scheme	At this stage only, a high-level cost and funding profile has been developed. Further detailed consideration of the ground conditions and construction approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime

Table 7-9 – Commercial Case Appraisal of Shortlisted Option

	Flexibility of option	Where is funding coming from?	Any income generated?	Outline Value of Income Generated
Package 1	Slightly Flexible	DfT MRN Funding plus Local Contribution	No direct income generated	No direct income generated
Package 2	Slightly Flexible	Potential DfT MRN Funding plus Local Contribution	No direct income generated	No direct income generated
Package 3	Slightly Flexible	Potential DfT MRN Funding plus Local Contribution	No direct income generated	No direct income generated
Package 4	Slightly Inflexible	Potential Local Contribution	No direct income generated	No direct income generated
Package 5	Slightly Flexible	Not identified	No direct income generated	No direct income generated

7.6 APPRAISAL SUMMARY

SCHEME OBJECTIVES

7.6.1. The option appraisal outlined in Table 7-4 identified that Package 1 is best suited to meet the scheme objectives. Package 1 provides the highest journey time savings across the entire corridor, providing a 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.

7.6.2. Packages 2, 3, 4 and 5 are focused on offering improvements at fewer junctions 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 to achieve the full benefit of connection to the SRN and economic growth in the area

7.6.3. 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.

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

STRATEGIC CASE APPRAISAL

7.6.5. 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.

7.6.6. 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's reduced scope will have a dominantly local impact and thus are a low fit with MRN objectives.

ECONOMIC APPRAISAL

7.6.7. 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".

7.6.8. 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".

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

7.6.10. 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.

7.6.11. 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.

7.6.12. 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 aforementioned 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

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

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

7.6.15. The barriers to the delivery of Packages 1 and 2 are grades 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.

7.6.16. 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".

7.6.17. Risk analysis has been undertaken for all the schemes included in the packages and methods by which it 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.

7.6.18. Whilst these risks may occur, their early identification means measures are 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

7.6.19. 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.

7.6.20. 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).

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

7.6.22. 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.

7.6.23. How the schemes 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.

7.6.24. Commercial Appraisal

7.6.25. Scheme flexibility has been considered in terms of the scheme's scalability to a range of requirements and the scheme's likely adaptability to future changes in movement patterns and requirements. 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, both originating from on the corridor and for over-corridor traffic. 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".

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

7.7 PREFERRED OPTION AT SOBC STAGE

7.7.1. 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.

7.7.2. Following the short list options sift in Section 7.3, the preferred option to be taken forward to the next stage of appraisal is Package 1. This option as shown in **Figure 6-2** 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.

7.7.3. 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.

7.7.4. Following submission of the SOBC to DfT the Package 1 scheme components was subjected to optioneering considering the value contributions of each element of the package. This led to refinement of the package with most significant step to remove the proposed Charnwood Arms Roundabout improvements. The refined package has also been tested in a recalibrated transport model and used to inform the Economic Case of the OBC. Details of the updated scheme are provided in following sections.

7.8 PREFERRED OPTION AT OBC STAGE

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

OPTIONEERING

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

7.8.3. Table 7-10 presents the outcome of the optioneering workshop and a copy of the presentation slides and notes from the Optioneering Workshop are provided in Appendix H.

Table 7-10 – Optioneering Workshop Outcome

Scheme Component Ref.	Scheme Location/Description	Optioneering Outcome	Scheme taken forward
1	Hoo Ash Roundabout – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓
2	Thornborough Road Roundabout – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓
3	Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout – Dualling	Indicated some benefits - further recommendations were made to improve benefits	✓
4	Whitwick Roundabout – Junction Improvement	Indicated neutral benefits – further recommendations were made to improve benefits	✓
5	Broom Leys Junction – Junction Improvement	Indicated some benefits - further recommendations were made to improve benefits	✓

6	Bardon Link Road – Junction Improvement & New Road	Indicated high benefits	✓
7	Birch Tree Roundabout	Indicated high benefits	✓
8	Charnwood Arms Roundabout	Indicated high dis-benefits	X
9	Flying Horse Roundabout	Indicated neutral benefits – further recommendations were made to improve benefits	✓
10	Field Head Roundabout	Indicated high benefits	✓

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

7.8.5. Therefore, for this OAR, the preferred scheme for the A511 MRN Growth Corridor includes:

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

7.8.6. Table 7-11 provides a brief description of the nine components forming the preferred A511 MRN Scheme. The supporting scheme drawings are provided in Appendix A of this OAR.

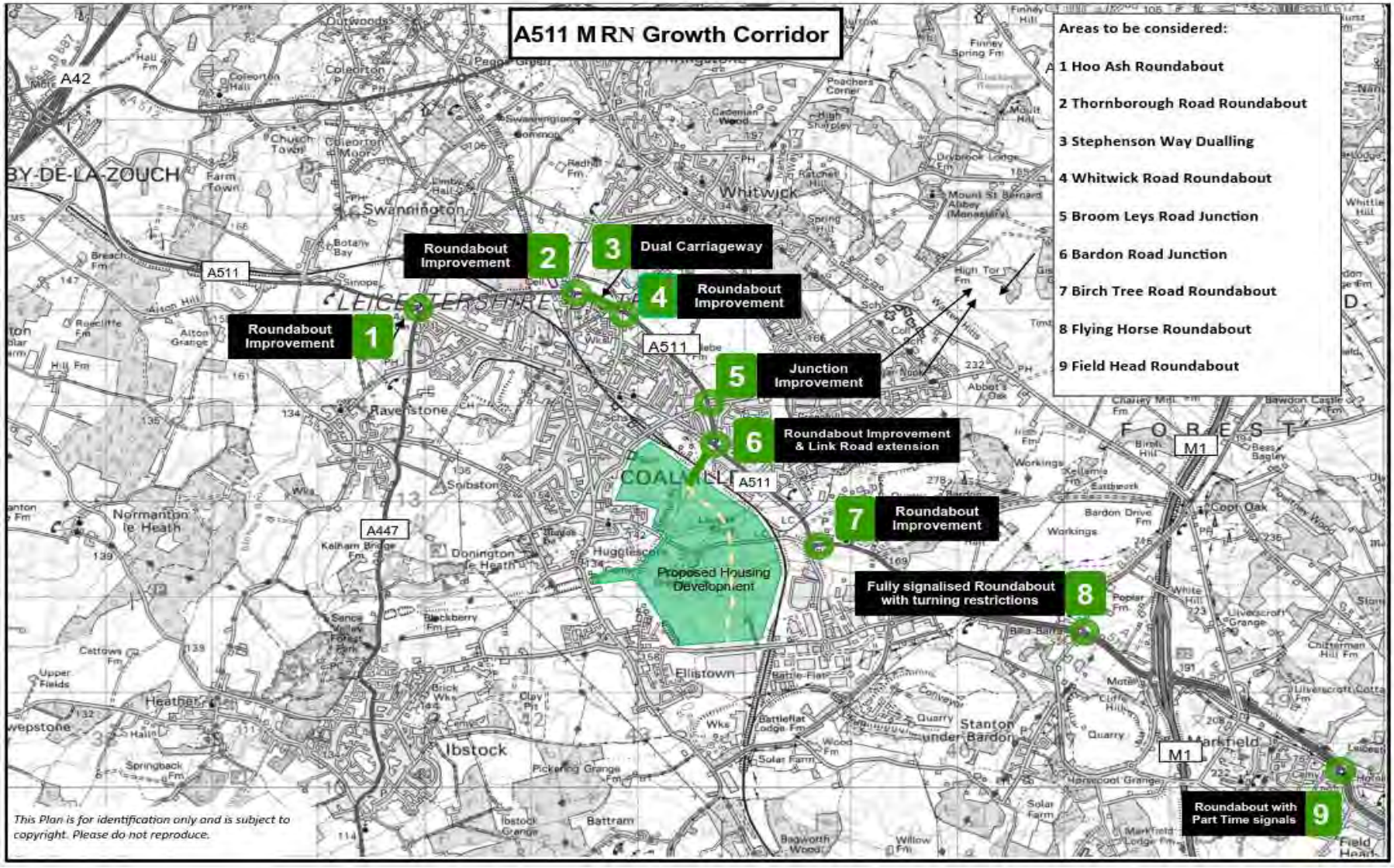
Table 7-11 – Package 1 Scheme Details

Potential Scheme	Scheme Details	Stage of Development
Scheme 1. Hoo Ash Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions.	General Arrangement/ Costed scheme/ Option appraisal
Scheme 2. Thornborough Roundabout	Widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions. The existing crossing on the western (McDonalds) side of the A511 will be retained.	General Arrangement/ Costed scheme/ Option appraisal
Scheme 3. Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout	Alter the existing single lane road to a dual carriageway on Stephenson Way between the Thornborough Road and Whitwick Road roundabouts.	General Arrangement/ Costed scheme/
Scheme 4. Whitwick Road Roundabout	Widened approaches and exits allowing two ahead lanes for A511 in both directions, with proposal for a signalised pedestrian crossing on the junction's eastern side (Morrisons). This will aid in 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
Scheme 5. Broom Leys Junction	Modify the existing traffic signal junction by altering the existing left turn lane on Stephenson Way into Broom Leys Lane (Eastbound) to	General Arrangement/ Costed scheme/

	enable ahead and left traffic. Removing some of the verge and footway to provide two ahead lanes for traffic travelling northbound on Stephenson Way. This will require the existing right turn onto Broom Leys Road (Westbound) to be banned. This should enable improved vehicle throughput, reduced queuing and thus reduced pollution within the AQMA that contains this junction.	
Scheme 6. Bardon Road Roundabout including New Road Connection	This scheme upgrades the existing roundabout at the A511 Stephenson Way / Bardon Road Junction (i.e. Junction 6 on **Figure 4-25**) to allow a new southern arm and road connection to the 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/
Scheme 7. Birch Tree/Reg's Way Roundabout	This scheme will see the delivery of widened entry and exit lanes allowing three lanes and keeping the two lanes on the exit towards Coalville, supporting better traffic flow and reducing the risk of collision, as well as providing signalisation on the A511 approaches to the junction, supporting easier movement to and from the Bardon Lane industrial estates	General Arrangement/ Costed scheme/
Scheme 8. Flying Horse Roundabout	This scheme will see the current partially signalised roundabout altered so that traffic from Stanton Road and traffic from Copt Oak Road can only turn left onto the A511. Traffic travelling on the A511 will not be able to turn right into Stanton Lane. This signalisation might aid in regulating traffic flow and thus reducing the potential for accident at this location which currently shows a large number of PICs. The scheme will also see the existing pedestrian crossings kept with an additional crossing provided on Stanton Lane.	General Arrangement/ Costed scheme/
Scheme 9. Field Head Roundabout	It is proposed to introduce part time signals on the A50 approaches to the roundabout. A two-lane exit is proposed on Launde Road. This adjustment might enable regulation of the traffic flow across the roundabout, as well as improving traffic control at a junction that shows a considerable number of PICs over the last five years.	General Arrangement/ Costed scheme/

7.8.7. The nine components of preferred scheme (Package 1) at OBC stage are shown in Figure 7-2.

Figure 7-2 - Package 1 - Improvement Proposals at OBC Stage



BARDON LINK ROAD AND JUNCTION IMPROVEMENTS

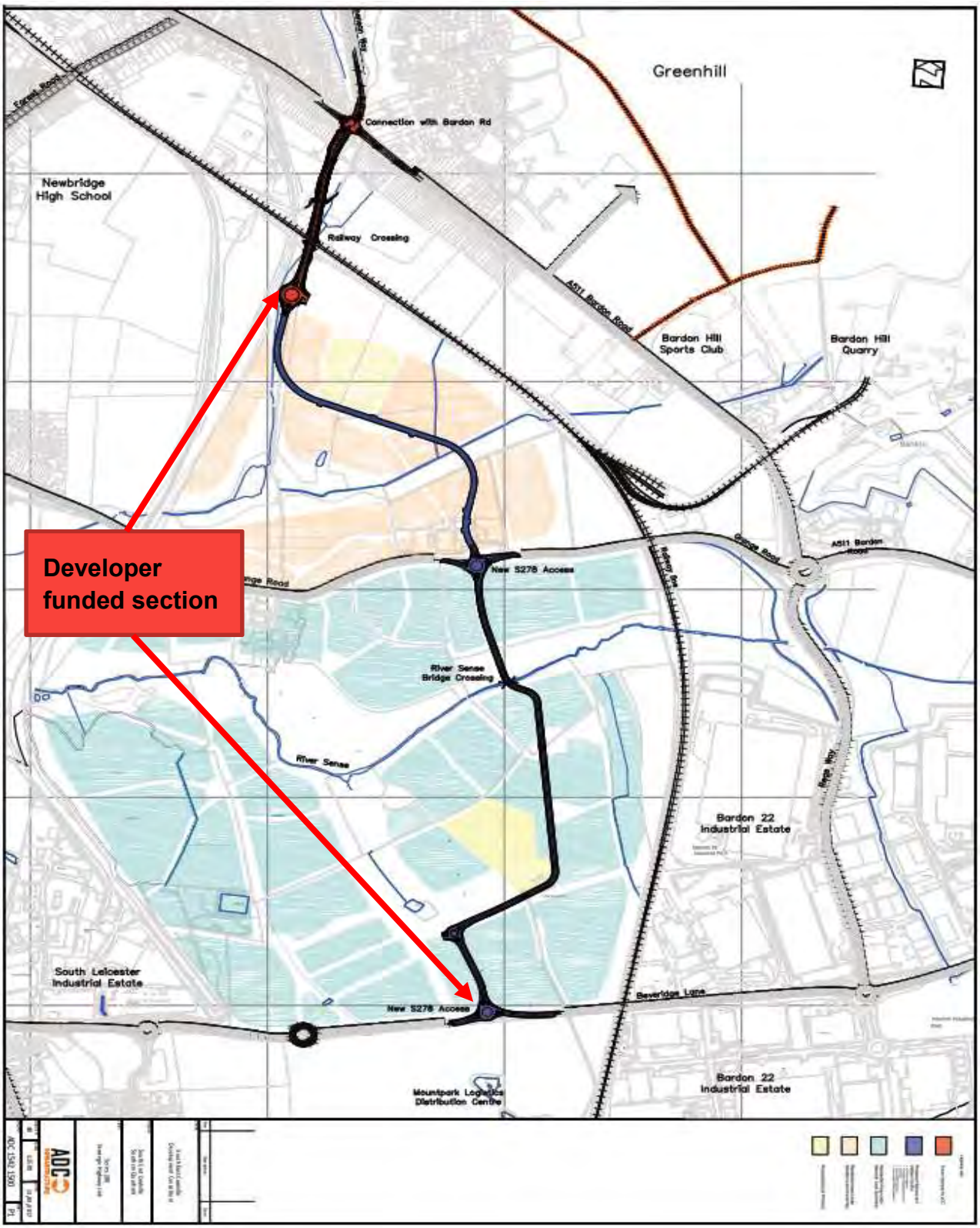
7.8.8. The Bardon Link Road shown in Figure 7-3 will leave the A511 at the Stephenson Way / Bardon Road junction (i.e. Junction 6 on Figure 7-2), before crossing under the Burton-on-Trent to Leicester railway line via an upgrade to the existing underpass. It then continues south to Beveridge Lane via 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.

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

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

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

Figure 7-3 - Bardon Link Road alignment showing developer funded section



7.9 FUTURE TRAFFIC IMPACTS OF THE A511 MRN GROWTH CORRIDOR SCHEME

7.9.1. As stated earlier, the preferred scheme has been tested in the recalibrated PRTM and this section discusses the impact of the A511 MRN Growth Corridor preferred scheme on the surrounding highway network, including its impact on the SRN.

FLOW DIFFERENCE (2038 CORE AND WITH SCHEME)

7.9.2. Figure 7-4, Figure 7-5 and Figure 7-6 provides the flows difference between the 2038 'Core' and 'With Scheme' scenarios of traffic along the A511 MRN Growth Corridor for the AM, IP and PM peak periods respectively.

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

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

Figure 7-4 - Flows Difference Plot - 2038 'Core' and 'With Scheme' - AM Peak

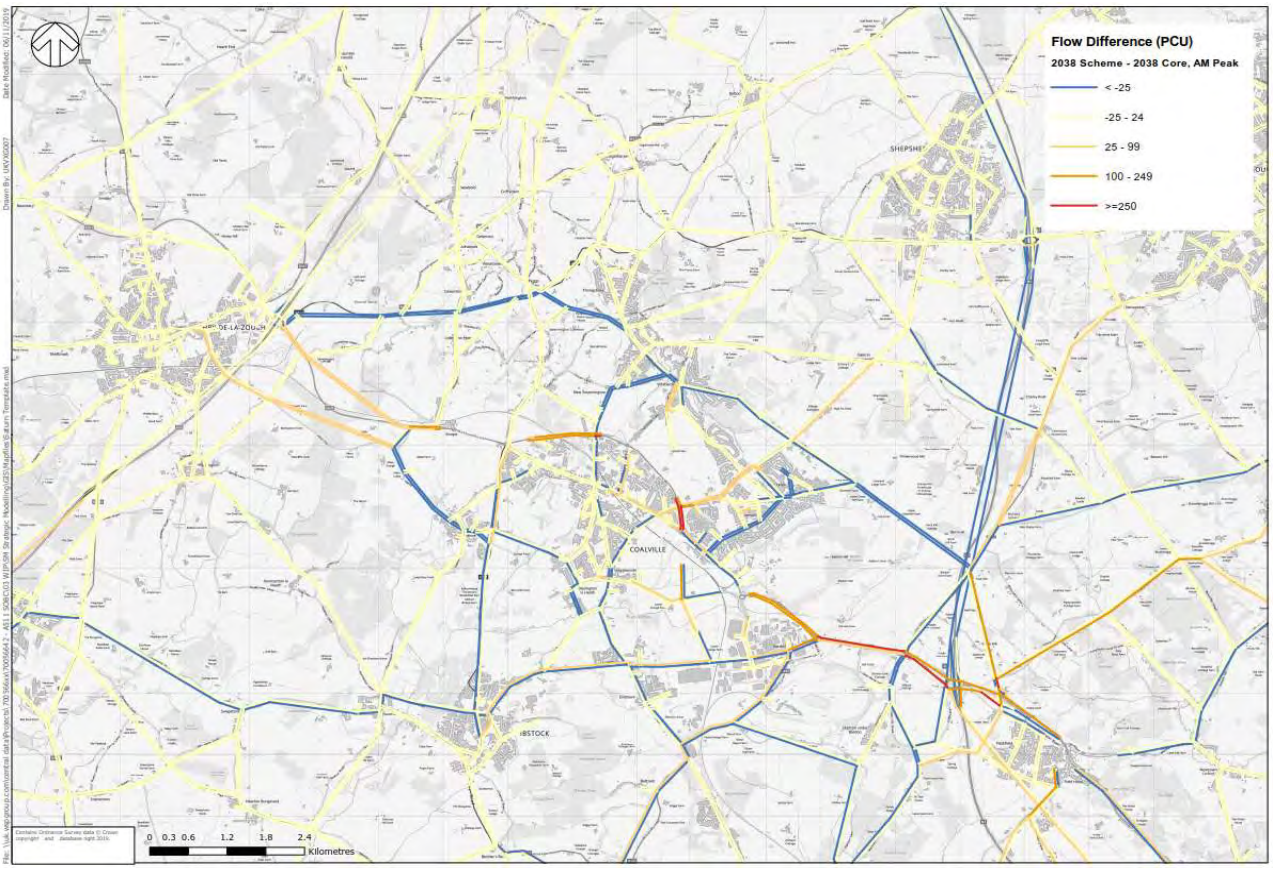


Figure 7-5 – Flow Difference Plot - 2038 'Core' and 'With Scheme' - IP Peak

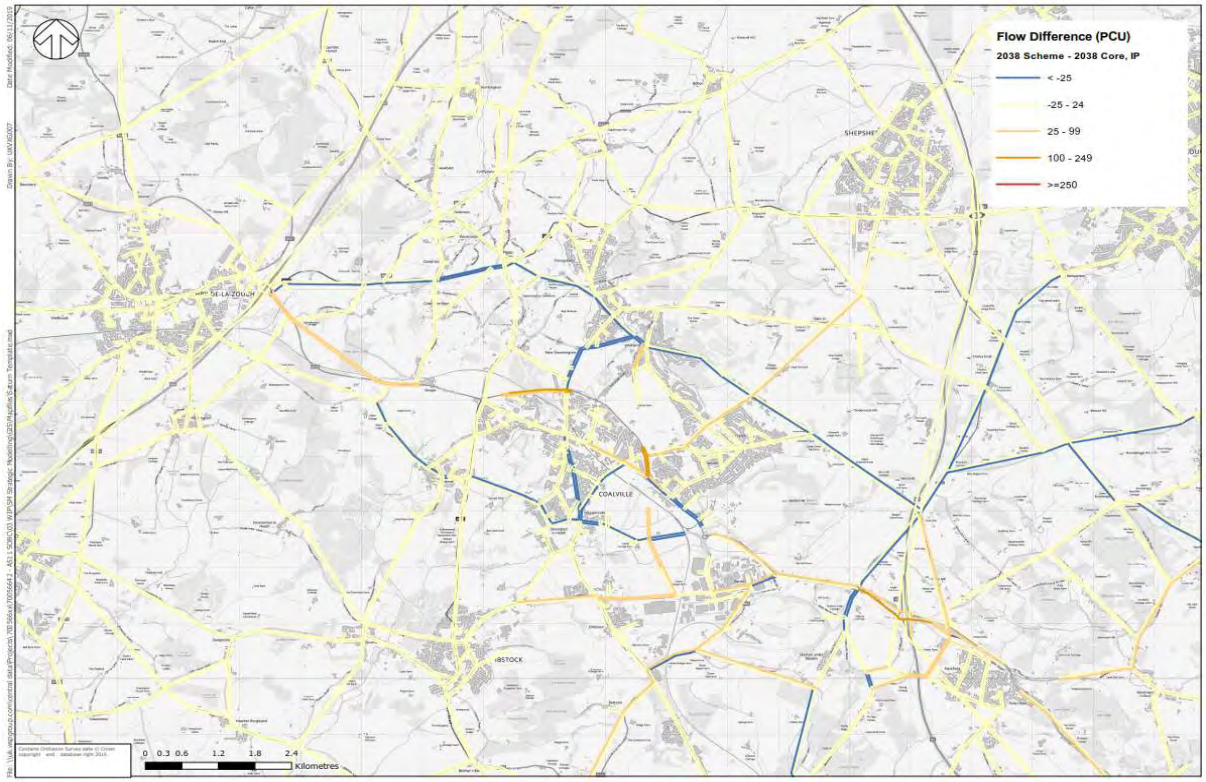
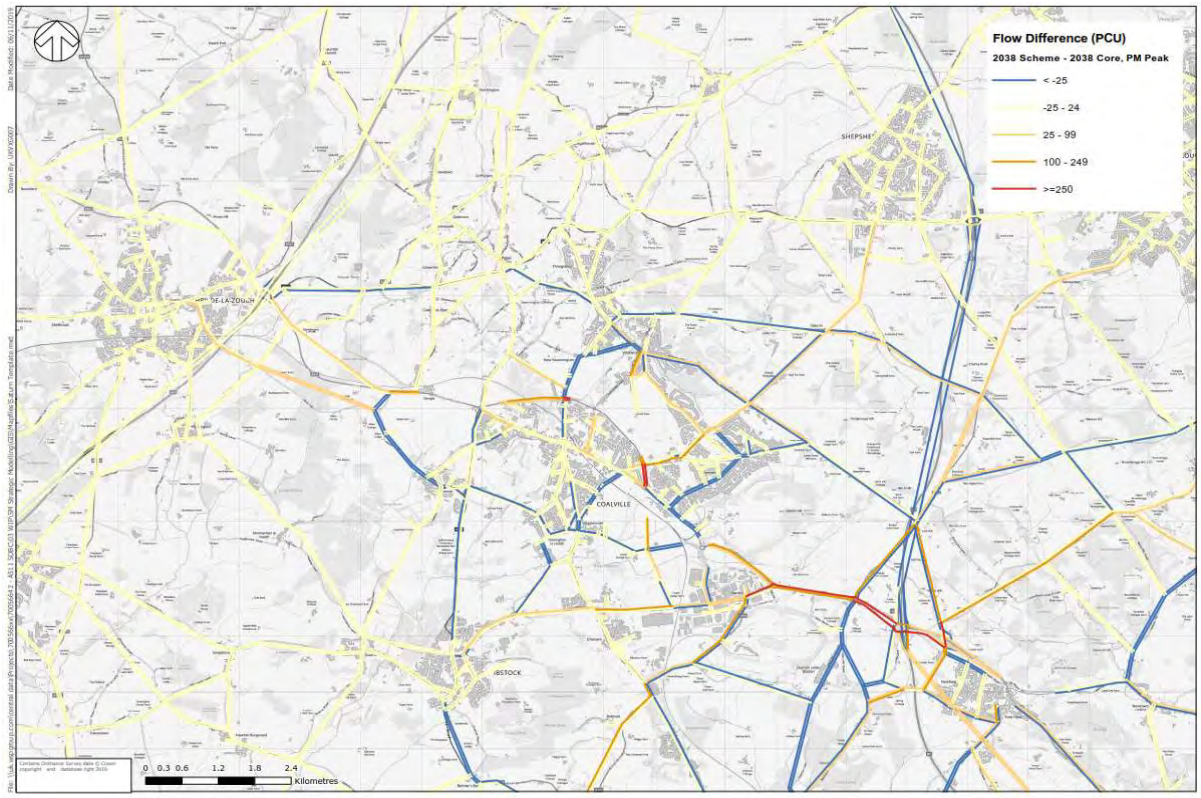


Figure 7-6 - Flow Difference Plot - 2038 'Core' and 'With Scheme' - PM Peak



STRATEGIC ROAD NETWORK

7.9.5. The A511 MRN Growth Corridor scheme is also forecast to have positive impacts on the SRN. Figure 7-7 and Figure 7-8 demonstrate the forecast traffic flow change resulting from the A511 MRN Growth Corridor scheme in 2038 for the AM and PM peaks respectively.

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

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

Figure 7-7 – Forecast Flow Change in Trips 2038 AM

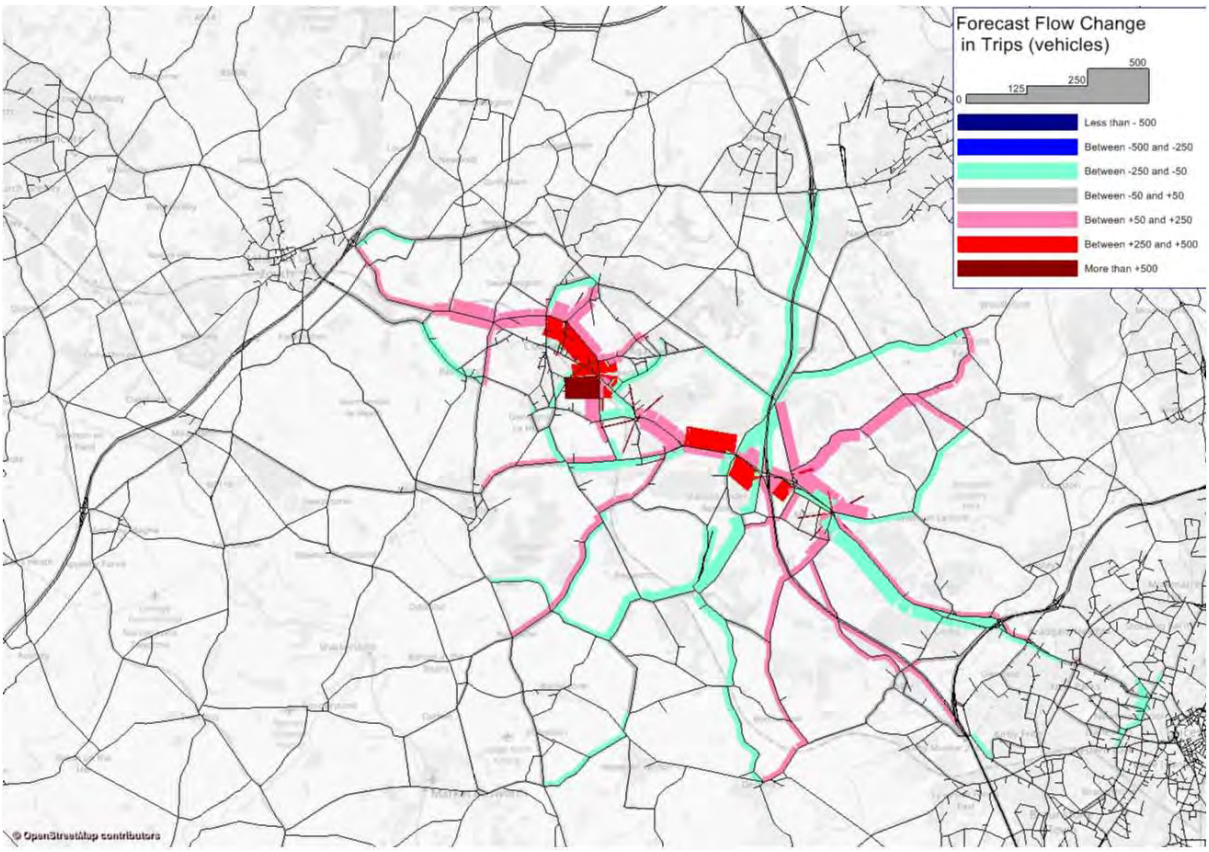
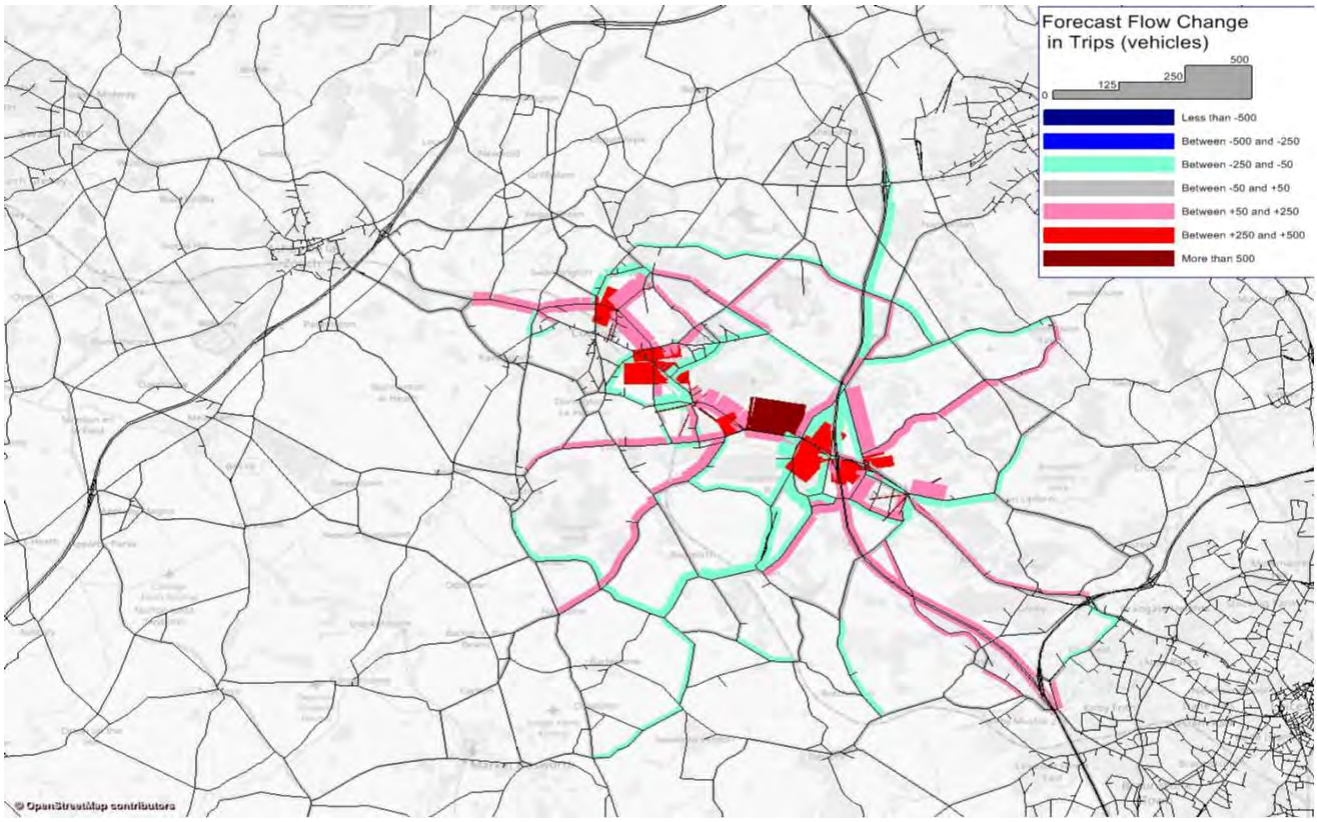


Figure 7-8 – Forecast Flow Change in Trips 2038 PM



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

7.9.8. Table 7-12 demonstrates journey time, speed and delay information for the 2038 Core and 2038 Scheme scenarios in the AM Peak.

Table 7-12 - Journey Times, Speed and Delays – 2038 'Core' and 'without scheme' AM Peak

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

7.9.9. Table 7-12 shows that in the AM Peak, travel speeds along the corridor are slightly higher in the 2038 Scheme scenario when compared to the 2038 Core scenario. The average modelled speed along the corridor in the eastbound direction is 31mph and in the westbound direction is 30mph in the 2038 Core scenario; these average speeds increase in the 2038 Scheme scenario, to 33mph in both the eastbound and westbound directions. Journey times are also expected to reduce by approximately 1-1.5 minutes in both directions in the 2038 Scheme scenario when compared to the 2039 Core scenario; and delays reduced by approximately 70 seconds.

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

7.9.11. Table 7-13 presents journey time, speed and delay information for the 2038 Core and 2038 Scheme Scenarios in the PM Peak.

Table 7-13 - Journey Times, Speed and Delays – 2038 'Core' and 'without scheme' PM Peak

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

7.9.12. Table 7-13 shows that in the PM Peak, travel speeds along the corridor are slightly higher in the 2038 Scheme scenario when compared to the 2038 Core scenario. The average modelled speed along the corridor in the eastbound direction is 33mph and in the westbound direction is 29mph in the 2038 Core scenario; these average speeds increase in the 2038 Scheme scenario, to 34mph in the eastbound direction and 31mph in the westbound direction. Journey times are expected to reduce by approximately 1-2 minutes in both directions in the 2038 Scheme scenario when compared to the 2039 Core scenario; and delays reduced by approximately 60-80 seconds.

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

7.9.14. The above assessment shows that the preferred Package 1 scheme, would help to alleviate some of the traffic related issues along the A511 MRN Growth Corridor and in so doing improve journey reliability and quality for vehicles connecting to the SRN.

8 SUMMARY

8.1.1. The Options Assessment Report (OAR) has been developed in line with the DfT TAG guidance to review the current and future issues relating to the A511 MRN Growth Corridor between the A42 J13 and the M1 J22 to assess the need for intervention along the route. The OAR then examines various strategic options for resolving the identified current and future issues relating to the corridor

8.1.2. The A511 corridor, between Ashby, Coalville and Bardon, is one of two key east-west links in Leicestershire, linking the A42 to the M1 at Junction 22. The Leicester and Leicestershire Enterprise Partnership's (LLEP) Strategic Economic Plan (SEP) identifies the corridor as one of five growth areas in the county. The SEP states that with appropriate interventions, improvements along the A511 corridor, there is an opportunity to unlock significant housing and commercial developments planned for the area, which will otherwise remain constrained by poor transport infrastructure, as well as maintaining good accessibility to the motorway network for existing and growing companies such as DHL and Pall-Ex

8.1.3. This assessment started from reviewing the underlying Transport Strategy Evidence Base which was informed by a TAG, objective-led transport planning and option sifting process that has considered a wide range of potential interventions across all modes and scales, with local resident, officer and project team input.

8.1.4. To understand the current situation around the study area, relevant national, regional and local policy documents and the extensive transport evidence-based work undertaken for the area were reviewed. This evidence-based work included, previous work undertaken as part of the Coalville Transport Study and the North West Leicestershire Infrastructure Delivery Plan which both highlighted current levels of congestion and limited spare capacity issues along the A511 corridor.

8.1.5. To inform this assessment, the Pan-Regional Transport Model (PRTM) which is an extension of the Leicester and Leicestershire Integrated Transport Model (LLITM 2014) has been used to identify the current and future constraints in the area of influence of the A511 MRN Growth Corridor. These include congestion problems at many existing junctions along the A511 MRN Growth Corridor causing delays and network resilient issues, creating limited route choice.

8.1.6. Existing congestion problems create a knock-on effect on the Strategic Route Network (SRN) performance with regards to the A42 and M1 with the A511 struggling at times to fulfil its resilience role between these two roads.

8.1.7. The main source of pollution along this route is caused by emissions from stationary vehicles queueing along the A511. The interventions will help reduce traffic queues and the frequency of stationary traffic, thus providing improvements in air quality.

8.1.8. The need for intervention can be summarised by the following:

- 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 in 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);

- 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;
- 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 MRN Growth Corridor. The A511 will serve as a route for materials and diverted traffic during HS2 construction.

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

8.1.10. Intervention specific objectives were established to address the previously identified current and future issues. The option generation process was developed to align with the strategic objectives of policy and guidance at the regional and local level. The set of intervention-specific objectives include:

- **Objective 1**: Make journeys on the A511 faster and more reliable;
- **Objective 2**: To provide a resilient and safer road network, resilient to road collisions;
- **Objective 3**: To improve reliability and capacity for freight along the A511 MRN Growth Corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area;
- **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 at least 3,500 new dwellings;
- **Objective 5:** To improve connectivity for all road users, with focus on vulnerable road users;
- **Objective 6**: Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13; and
- **Objective 7**: To improve air quality and traffic noise impact along the corridor.

8.1.11. To identify intervention measures, a long list of options was short listed down to five options for further assessment using the DfT's EAST approach. This process entailed an initial sift of the long list followed by assessment against the scheme objectives to discard the least performing options and arrive at the short list for a more detailed assessment.

8.1.12. The evidence base demonstrated that a scheme which addresses congestion issues at key junctions along the A511 is best able to solve existing congestion and through traffic issues, as well as being best placed to accommodate the significant levels of housing and employment growth coming forward and support the construction of HS2. This scheme, known as Package 1 is the preferred option to be taken forward for more detailed appraisal. Following the submission of the SOBC in July 2019, the Package 1 scheme was subjected to optioneering considering the value contributions of each element of the package. This led to refinement of the package with most significant step to remove the proposed Charnwood Arms Roundabout improvements. The refined package has also been tested in a recalibrated transport model.

8.1.13. Details of the proposals included in the refined Package 1 are shown on **Figure 7-2**. These includes Interventions at eight existing junctions, dualling of the A511 between Thornborough Road Roundabout & Whitwick Road Roundabout and provision of Bardon Link Road with two new junctions.

8.1.14. The benefits of Package 1 include the following:

- 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 East Midlands Gateway (Strategic Rail Freight Interchange), East Midlands Airport and Castle Donington via the corridor.
- The greatest ability to provide for the full extent of housing and employment growth proposed in the Local Plan;
- Scored more highly on almost all qualitative scheme objectives than alternative options; and
- Provides the greatest opportunity to support walking, cycling and urban realm improvements as part of a wider transport strategy.
- 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;
- 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; and
- It will offer the most accident savings along the entire corridor and in so doing improve journey time reliability for all users especially businesses along the corridor who heavily depended on the efficient movement of freight along the corridor.

Appendix A

PROPOSED JUNCTION IMPROVEMENT SCHEMES

NOTES:

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM. DERIVED BY GPS (THEY MAY NOT CORRELATE WITH ORDNANCE SURVEY BENCHMARK VALUES).

ALL COORDINATES RELATE TO ORDNANCE SURVEY OSGB36 TRANSVERSE MERCATOR PROJECTION. REFIXED USING GPS FROM THE NATIONAL GPS NETWORK. HOWEVER, THE LOCAL SCALE FACTOR HAS BEEN REMOVED TO ALLOW REAL DISTANCES TO BE MEASURED.

ANY ERRORS OR OMISSIONS ON DRAWINGS TO BE REPORTED TO LCC ENGINEER / PM AS SOON AS IDENTIFIED.

Key:

- New kerb line
- Road marking
- New back of footway
- Footway
- Carriageway
- Extents of works

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33573

CLIENT: Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT - A511/HOO ASH
Consultation Drawing

DRAWING NUMBER		SCALE
MRN A511-000_Hoo Ash/H1/1/1		1:500
PREPARED BY:	B Wilson	DATE: 19/09/2019
CHECKED BY:	A Dunn	SIZE : A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE :MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Dgn\Consultation\Hoo Ash	
AUTOCAD FILENAME:	MRN A511-000_Hoo Ash/H1/1/1	

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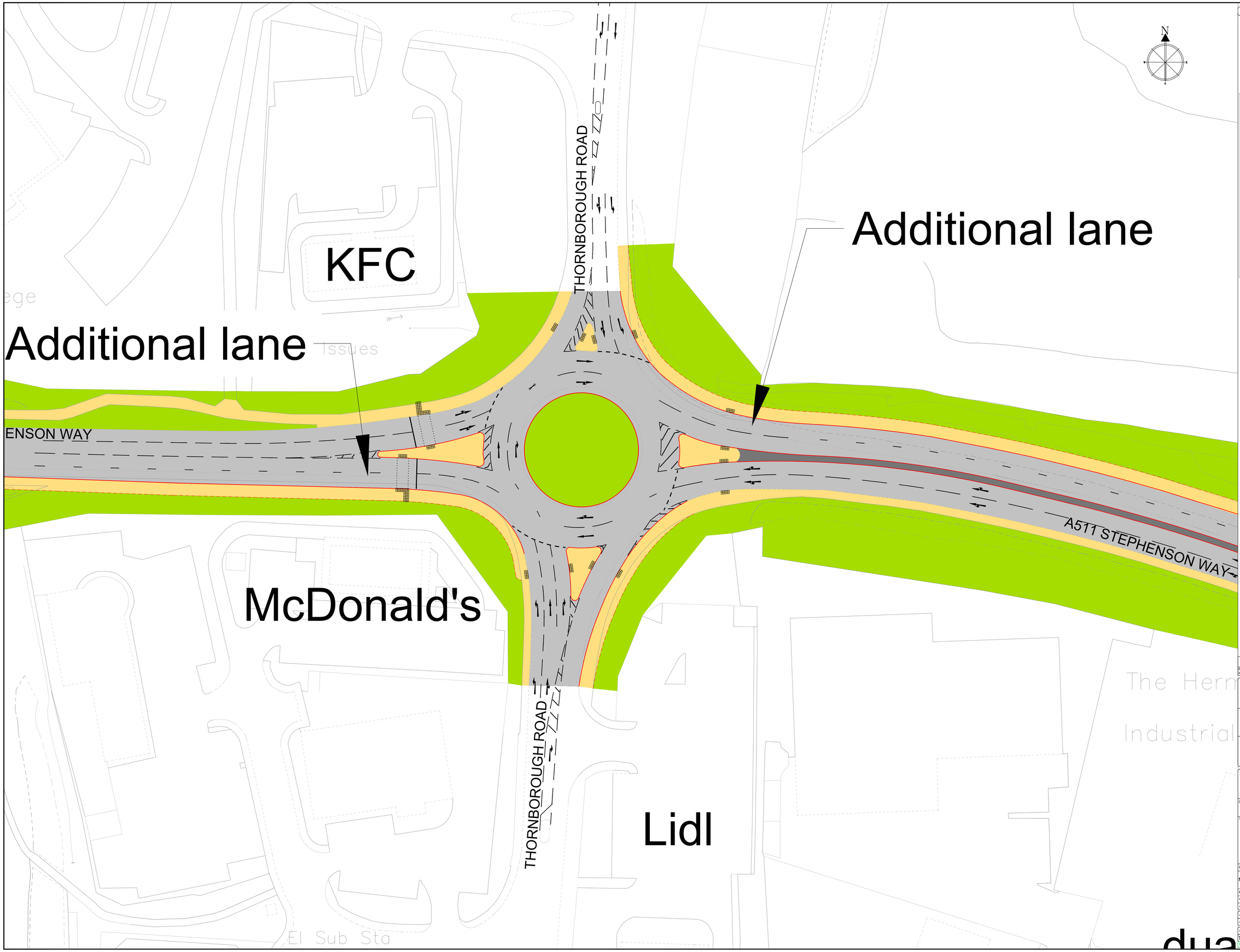

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MRN.000 A511_TRD_H1_1_1		NOT TO SCALE
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AUTOCAD FILENAME:	MRN.A511.000_Dualling/H1/1/1_2	

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Additional lanes

New proposed leisure centre

Widened to dual carriageway

Additional lane

Lidl

THORNBOROUGH ROAD

A511 STEPHENSON WAY

A511 from Ashby

The Hermitage Industrial Estate

SAMSON ROAD

El Sub Sta

Quorn House

ATLAS COURT

Drain

140.9m

145.4m

N

NOTES:

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM, DERIVED BY GPS (THEY MAY NOT CORRELATE WITH ORDNANCE SURVEY BENCHMARK VALUES).

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Key:

- New kerb line
- Road marking
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- Footway
- Carriageway
- Extent of works
- Non footway

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NOTES:

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM, DERIVED BY GPS (THEY MAY NOT CORRELATE WITH ORDNANCE SURVEY BENCHMARK VALUES).

ALL COORDINATES RELATE TO ORDNANCE SURVEY OSGB36 TRANSVERSE MERCATOR PROJECTION, REFIXED USING GPS FROM THE NATIONAL GPS NETWORK. HOWEVER, THE LOCAL SCALE FACTOR HAS BEEN REMOVED TO ALLOW REAL DISTANCES TO BE MEASURED.

ANY ERRORS OR OMISSIONS ON DRAWINGS TO BE REPORTED TO LCC ENGINEER / PM AS SOON AS IDENTIFIED.

Key:

- New kerb line
- Road marking
- New back of footway
- Footway
- Carriageway
- Extent of works
- Non footway

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT
A511/WHITWICK RBT
Consultation Drawing

DRAWING NUMBER	SCALE
MRN.000 A511_WRBT_H1_1_1	1:500

PREPARED BY:	B Wilson	DATE:	19/09/2019
CHECKED BY:	A Dunn	SIZE :	A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE :	MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Dgn\Consultation\Dualing		
AUTOCAD FILENAME:	MRN A511.000_Dualing\H1\1_2		

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ANY ERRORS OR OMISSIONS ON DRAWINGS TO BE REPORTED TO LCC ENGINEER / PM AS SOON AS IDENTIFIED.

Key:

- New kerb line
- Road marking
- New back of footway
- Footway
- Carriageway
- Extent of works
- Non footway

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE
HIGHWAYS

FS 33973

CLIENT:
Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT - A511/Broom Leys
Consultation Drawing

DRAWING NUMBER		SCALE	
MRN A511-000_Broom Leys/H1/1/1		1:500	
PREPARED BY:	B Wilson	DATE:	18/09/19
CHECKED BY:	A Dunn	SIZE :	A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE :	MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Drgs\Consultation\Broom Leys		
AUTOCAD FILENAME:	MRN A511.000_Broom Leys_H1/1/1		

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Properties to be acquired

Proposed new road

Railway underpass

Link to housing development Grange View

NOTES:

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LAND WILL BE REQUIRED TO DELIVER THE NEW ROAD.

Key:

- New kerb line
- Road marking
- New back of footway
- Footway
- Carriageway
- Extent of works

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ANN CARRUTHERS
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ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT:
Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT - A511/Bardon Rd
Consultation Drawing

DRAWING NUMBER		SCALE
MRN A511-000_Bardon Rd/H1/1/1		NOT TO SCALE
PREPARED BY:	B Wilson	DATE: 18/09/19
CHECKED BY:	A Dunn	SIZE : A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE : MRN A511-000

AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Drgs\Consultation\Bardon Rd
AUTOCAD FILENAME:	MRN A511.000_Bardon Rd/H1/1/1

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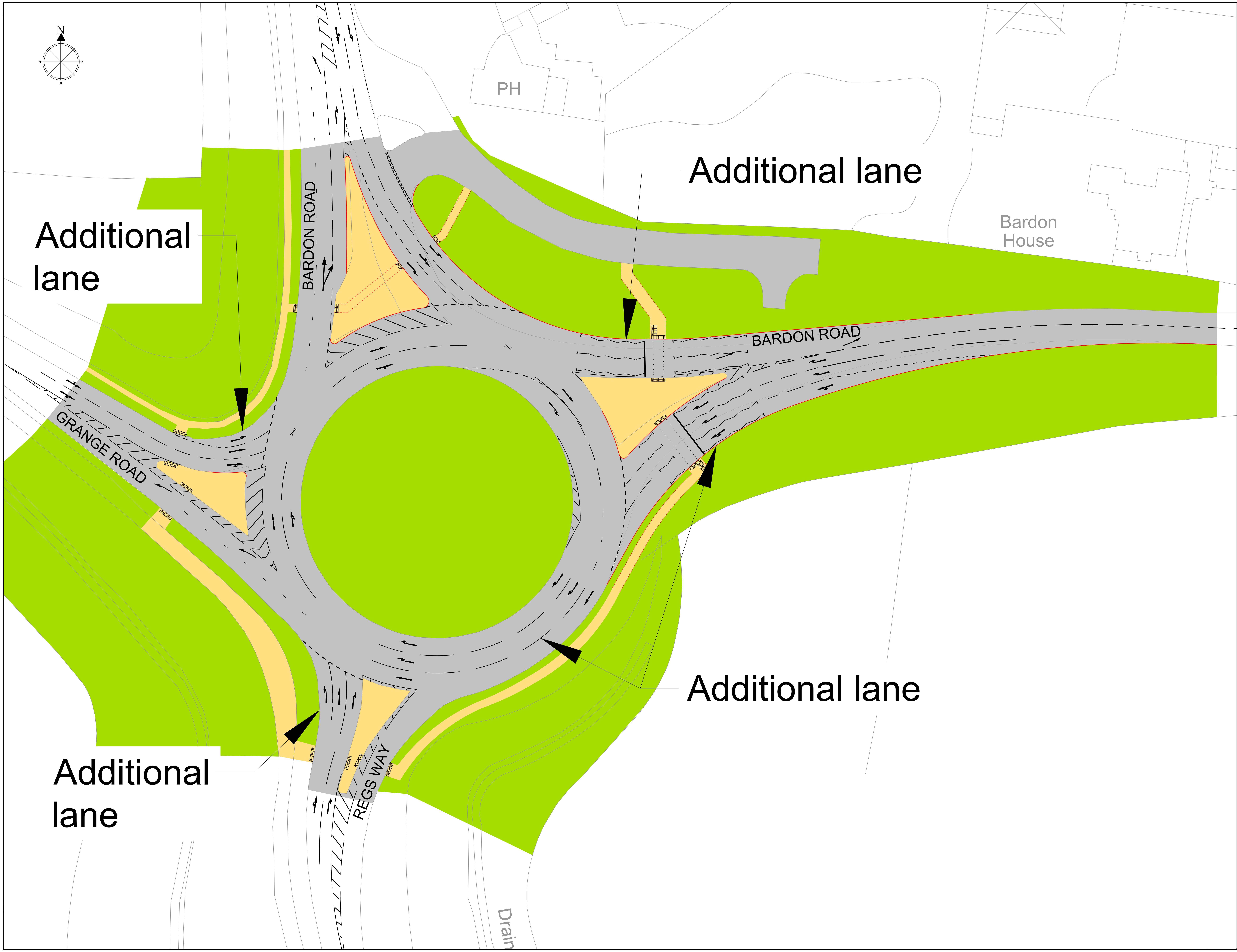

NOTES:

Key:

- New kerb line
- Road marking
- New back of footway
- Footway
- Carriageway
- Extent of works

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT
A511/BIRCH TREE
Consultation Drawing

DRAWING NUMBER		SCALE	
MRN A511-000_BIRCH TREE/H1/1/1		NOT TO SCALE	
PREPARED BY:	B Wilson	DATE:	18/09/2019
CHECKED BY:	A Dunn	SIZE :	A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE :	MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Drgs\Consultation\Birch Tree		
AUTOCAD FILENAME:	A511/Birch Tree/H1/1/1		

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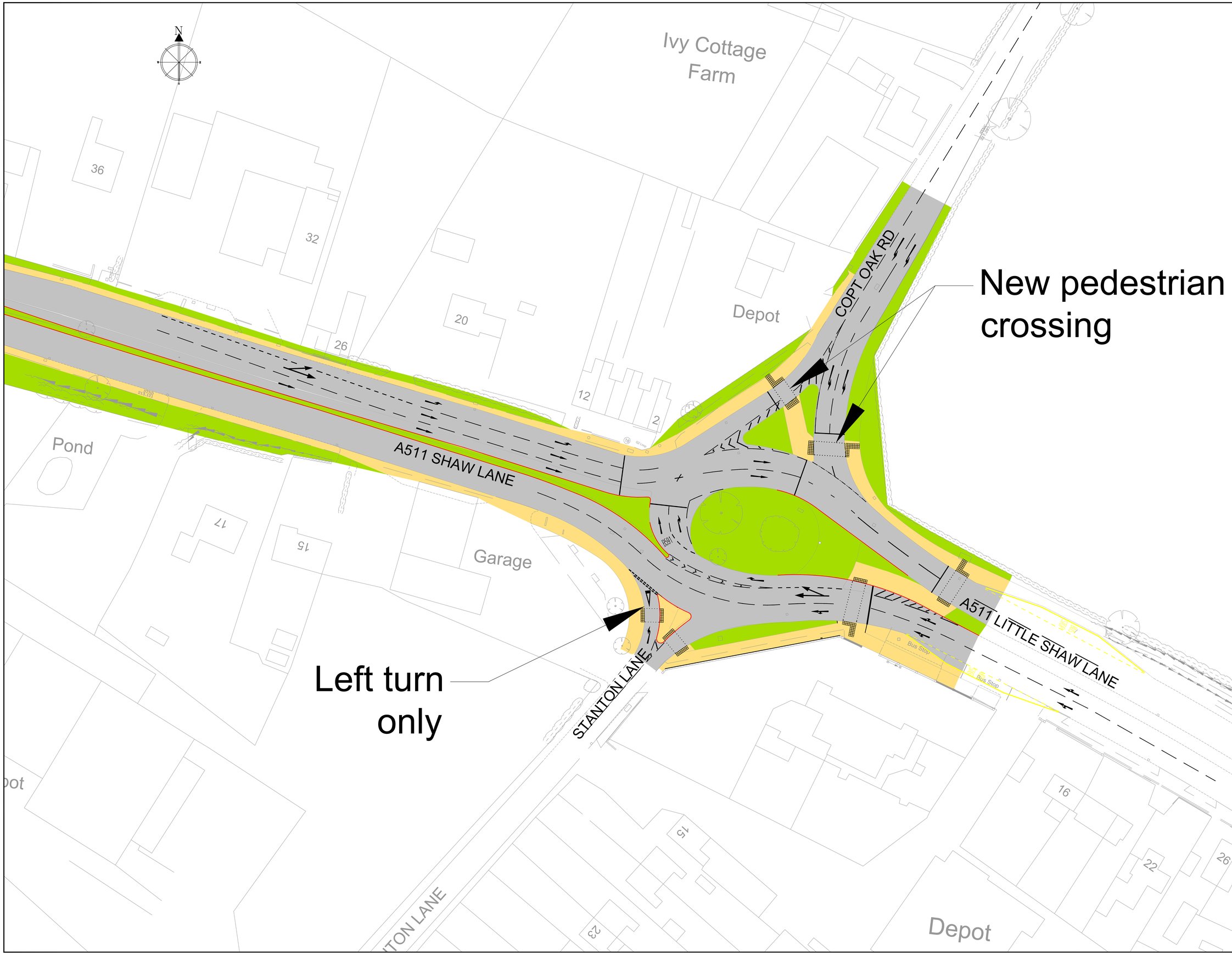

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Key:

- New kerb line
- Road marking
- Footway
- Carriageway
- Extents of works

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33573

CLIENT: Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT
A511/FLYING HORSE
Consultation Drawing

DRAWING NUMBER		SCALE
MRN A511-000_Flying Horse/H1/1/1		NOT TO SCALE
PREPARED BY:	B Wilson	DATE: 18/09/2019
CHECKED BY:	A Dunn	SIZE : A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE - MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PMD\gis\Consultation\Flying Horse	
AUTOCAD FILENAME:	MRN A511-000_Flying Horse/H1/1/1	

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- Road marking
- New back of footway
- Footway
- Carriageway
- Extent of works

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ANN CARRUTHERS
DIRECTOR

ENVIRONMENT AND
TRANSPORT DEPARTMENT

LEICESTERSHIRE HIGHWAYS

FS 33613

CLIENT: Assets and Major Programmes

TITLE:
A511 GROWTH CORRIDOR
FEASIBILITY LAYOUT
A511/FIELD HEAD ROUNDABOUT
Consultation Drawing

DRAWING NUMBER		SCALE
MRN A511-000_FIELD HEAD/H1/1/1		NOT TO SCLAE
PREPARED BY:	B Wilson	DATE: 18/09/19
CHECKED BY:	A Dunn	SIZE : A0
APPROVED BY:	J Walker & P Clarke	CORR. FILE : MRN A511-000
AUTOCAD PROJECT DIR:	N:\Proj Majors\MRN A511\PM\Dgn\Consultation\Field Head	
AUTOCAD FILENAME:	MRN A511-000_Field Head/H1/1/1	

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Appendix B

LETTER OF SUPPORT FROM STAKEHOLDERS

creating economic prosperity

Leicester & Leicestershire Enterprise Partnership

Angie Dunn,
Environment and Transport Department,
Leicestershire County Council,
County Hall,
Glenfield
LE3 8JN.

21 June 2019

Dear Angie,

MRN A511 Growth Corridor

Thank you for your letter dated 5th June 2019, concerning the above.

On behalf of Leicester and Leicestershire Enterprise Partnership (LLEP), I would like to confirm our full support of Leicestershire County Council's bid for funds to improve the A511 section of the Major Road Network (MRN).

The proposals put forward support one of our five growth areas within our Strategic Economic Plan (SEP) and emerging Local Industrial Strategy. The proposals will reduce delays and improve journey times on the A511, connecting 10,400 homes, 25 hectares of employment development and 5,600 jobs in Coalville and Ashby to the wider area, including East Midlands Airport and the strategic rail freight interchange at Castle Donnington.

The funding from this bid will help to significantly kick-start ambitious plans for future growth, addressing housing needs and facilitating high levels of traffic movement. It will start the process of filling gaps in connectivity between the strategic highway network and tackle general congestion on the main road network. The proposed infrastructure would help to maximise the potential of one of Leicestershire's key strengths, its location in the heart of the country. The strategic importance of the Leicestershire North West Growth Area is demonstrated by the fact that:

- The M1 and A42 corridors are critical economic corridors;
- Coalville Growth Corridor is outlined within the LEP Strategic Economic Plan; and
- It is closely linked to key economic growth locations in the sub-region, such as East Midlands Enterprise Gateway.

Leicestershire County Council has an excellent track record on delivery of large and major transport schemes, including schemes from multiple public and private sources. In recent years these have included the M1 Bridge to Growth, the Loughborough Town Centre Scheme (a key element to help regeneration), and the junctions at junction 22 of the M1 as well as junction 13 of the A42 as part of the A511 Growth Corridor. All of these were completed within budget and programme.

Please ask for: Andrew L Smith
Direct Line: 0116 454 2801
Email: andrewl.smith@leicester.gov.uk
Our Ref: ALS/MRN A511 Growth Corridor
Date: 25th June 2019

Leicester City Council

Dear Angie

Thank you for your letter dated 5th June 2019, concerning the above.

On behalf of Leicester City Council, I would like to confirm our full support of Leicestershire County Council's bid for funds to improve the A511 section of the Major Road Network (MRN).

The proposals put forward for funding will reduce delays and improve journey times on the A511, connecting 10,400 homes and 5,600 jobs Coalville and Ashby to the wider area, including East Midlands Airport and the strategic rail freight interchange at Castle Donnington.

This builds on work carried out to improve the A50 in Leicester as part of the Leicester North West Transport project. Further work on the A50 corridor within Leicester is proposed and improving the remainder of this route within the County is welcomed.

The City of Leicester plays a vital economic and social role; providing employment, social (including health and educational) and leisure facilities. Furthermore, as the area's population continues to grow so new residents of new or expanded county settlements will likewise have a reliance on Leicester City for economic and social provision.

Efficient and effective transport connectivity to and within the City of Leicester is therefore essential. The transport infrastructure proposals outlined in the bid are ambitious but deliverable and will transform connectivity across the Leicester urban area and help the future growth of Leicester and Leicestershire's economy and facilitate substantial housing development as outlined in our Strategic Growth Plan up to 2050.

I wish you every success in your bid.

Yours sincerely

Andrew L Smith
Director of Planning, Development and Transportation

Andrew Bridgen MP

HOUSE OF COMMONS
LONDON SW1A 0AA

Angie Dunn
Environment & Transport
County Hall
Leicestershire County Council
Glenfield
LE3 8RA

24th June 2019

Dear Angie

Thank you for your letter dated 21st June 2019, concerning the above.

As a Member of Parliament representing constituents in North West Leicestershire, I would like to confirm my full support of Leicestershire County Council's bid for funds to improve the A511 section of the Major Road Network (MRN).

I have worked closely with Leicestershire County Council to champion funding bids for infrastructure along the A511 Growth Corridor as a result of necessary growth in housing and jobs in my constituency. I am aware that the Coalville Contribution Strategy administered by North West Leicestershire District Council has a shortfall of funding for transport measures necessary to enable such growth.

The proposals put forward for funding will reduce delays and improve journey times on the A511, connecting 10,400 homes, 25 hectares of employment development and 5,600 jobs in Coalville and Ashby to the wider area, including East Midlands Airport and the strategic rail freight interchange at Castle Donnington.

Whilst my constituency does not directly benefit from the investment in HS2, investment in improvements to the A511 will provide a suitable alternative route whilst realignment of the A512 takes place, as well as providing a suitable route to the HS2 compound which is proposed near to A42 J13.

This bid will offer the opportunity to deliver initiatives set out in the North West Leicestershire Local Plan 2011 to 2031.

I look forward to a successful outcome for this bid and supporting Leicestershire County Council in its delivery programme.

Yours sincerely

Andrew Bridgen MP

Member of Parliament for North West Leicestershire
Tel: 01530 41 77 36
Email: andrew.bridgen.mp@parliament.uk
www.andrewbridgen.com

David Tredinnick MP

HOUSE OF COMMONS
LONDON SW1A 0AA

24 June 2019

Dear Angie

MRN A511 Growth Corridor

Thank you for your letter dated 21st June 2019, concerning the above.

As a Member of Parliament representing constituents in Bosworth, I would like to confirm my full support of Leicestershire County Council's bid for funds to improve the A511 section of the Major Road Network (MRN).

I have worked closely with Leicestershire County Council to champion funding bids for infrastructure along the A511 Growth Corridor as a result of necessary growth in housing and jobs in Leicestershire.

The proposals put forward for funding will reduce delays and improve journey times on the A511, connecting 10,400 homes, 25 hectares of employment development and 5,600 jobs in Coalville and Ashby to the wider area, including East Midlands Airport and the strategic rail freight interchange at Castle Donnington.

Whilst my constituency does not directly benefit from the investment in HS2, investment in improvements to the A511 will provide a suitable alternative route whilst realignment of the A512 takes place, as well as providing a suitable route to the HS2 compound which is proposed near to A42 J13.

This bid will offer the opportunity to deliver initiatives set out in the North West Leicestershire Local Plan 2011 to 2031.

I look forward to a successful outcome for this bid and supporting Leicestershire County Council in its delivery programme.

Yours sincerely

David Tredinnick MP

Angie Dunn
Assistant Engineer, Asset and Major Programmes
Environment & Transport
Leicestershire County Council
County Hall, Glenfield
Leicester LE3 8RA

House of Commons: 020 7219 4514 Email: davidtredinnickmp@parliament.uk Constituency: 01455 635741

HARWORTH ESTATES INVESTMENTS LTD
Advantage House
Poplar Way
Rotherham
S60 5TR
Tel 0114 349 3131

Harworth

FAO Angie Dunn
Asset and Major Programmes Environment and Transport
Leicestershire County Council
County Hall
Leicester Road,
Leicester
LE3 8RA

26th June 2019

Dear Angie

MRN A511 Growth Corridor

Thank you for your letter dated 5th June 2019, concerning the above.

On behalf of the Harworth Group I am pleased to provide this letter to confirm our full support of Leicestershire County Council's bid for funds to improve the A511 section of the Major Road Network (MRN), which include the urgently required A511-Beveridge Lane link in North West Leicestershire. This will facilitate much needed new homes and employment space that the Midlands urgently require to meet its growth ambitions.

Major schemes in Leicestershire, including our consented 2,000+ homes site at Coalville, provide an important contribution to delivering high quality homes, reflecting local styles and distinctiveness, in a range of types, sizes and tenures suited to local needs. The proposals will greatly benefit the people North West Leicestershire and will allow the delivery of over 2,000 new homes alongside community facilities and Country Park in a sustainable location that is a fitting regeneration of previously developed land.

The funding from this bid will help to facilitating high levels of traffic movement. It will start the process of filling gaps in connectivity between the strategic highway network and tackle general congestion on the main road network.

Yours sincerely

James Connelly
Project Manager

creating economic prosperity

Leicester & Leicestershire Enterprise Partnership

A key factor for our support is the track record for the delivery of such projects and the ability of Leicestershire County Council to work with developers to ensure the delivery of transport infrastructure.

This bid will complement the LLEP's vision for making the most of its strongest assets in terms of place, people and business, ensuring that these three gears of the local economy function effectively and have positive sustainable inter-relationships.

I wish you every success in your bid and would wish to continue to work with you in the future to assist in the implementation of the bid proposals.

Yours sincerely,

Kevin Harris
LLEP Chair

Leicester and Leicestershire Enterprise Partnership
City Hall, 115 Charles Street, Leicester, LE1 1FZ
0116 454 2917
admin@llep.org.uk
www.llep.org.uk
@llepnews

Appendix C

LONG LIST OF OPTIONS

Interventions List

	ID	Intervention Name	Intervention Type	Description	Estimated Capital Cost incl. Optimism Bias
Individual Junction Options	S1	Junction 1 - A511/Swannington Roundabout (Hoo Ash);	Junction Improvements	Existing roundabout with widening entry and exits enabling two ahead lanes for A511 in both directions and widening on Ashby Road to form a flared two lane approach.	5,426,537
	S2	Junction 2 - A511/Thornborough Road Roundabout	Junction Improvements	Widening on all approaches and exits to the roundabout enabling two ahead lanes for A511 in both directions.	3,704,182
	S3	Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout	Dualling	Dualling of carriageway	4,594,592
	S4	Junction 4 - A511/Whitwick Road Roundabout	Junction Improvements	Widened approaches and exits enabling two ahead lanes for A511 in both direction. Roundabout to be converted to signalised roundabout.	4,237,015
	S5	Junction 5 - A511/Broom Leys Junction	Junction Improvements	Modified traffic signal junction with additional northbound lane on A511 and banned right turn.	4,140,161
	S6	Junction 6 - A511/Bardon Road roundabout inc Punch Through	Junction Improvements	Fully signalised roundabout with improved pedestrian facilities.	10,383,026
	S7	Junction 7 - A511/Grange Road Roundabout (Birch Tree);	Junction Improvements	Widened approaches and exits enabling three lanes on A511 approaches and two lane exit on A511 east.	4,278,720
	S8	Junction 8 - A511/Charnwood Road roundabout	Junction Improvements	Fully signalised roundabout with improved pedestrian facilities.	3,306,232
	S9	Junction 9 - A511/Copt Oak Road Junction (Flying Horse)	Junction Improvements	Fully signalised roundabout with some left turn restrictions.	1,864,312
	S10	Junction 11 - A511/Beveridge Lane Roundabout (Stardust)	Junction Improvements	New roundabout connecting the link road with the Beveridge Lane	4,104,084
	S11	Junction 12 - A511/Field Head Roundabout	Junction Improvements	Signalisation of the roundabout.	3,035,238
	S12	Bardon Road Bypass	New Road Infrastructure	Short section of new highway to the south that would have run parallel to the existing Bardon Road	-
Packaged Options	S13	Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualling of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11	Packaged Improvements	Junction 1 - Existing roundabout with widening entry and exits enabling two ahead lanes for A511 in both directions and widening on Ashby Road to form a flared two lane approach. Junction 2 - 'Widening on all approaches and exits to the roundabout enabling two ahead lanes for A511 in both directions. Junction 4 - 'Widened approaches and exits enabling two ahead lanes for A511 in both direction. Roundabout to be converted to signalised roundabout. Junction 5 - 'Modified traffic signal junction with additional northbound lane on A511 and banned right turn. Junction 6 - 'Fully signalised roundabout with improved pedestrian facilities. Junction 7 - 'Widened approaches and exits enabling three lanes on A511 approaches and two lane exit on A511 east. Junction 8 - 'Fully signalised roundabout with improved pedestrian facilities. Junction 9 - 'Fully signalised roundabout with some left turn restrictions. Junction 10 - New roundabout connecting the link road with the Grange Road. Junction 11 - New roundabout connecting the link road with the Beveridge Lane. Junction 12 - Signalisation of existing roundabout. Dualling of A511 Link between J2 and J4 New Link Road between J6 and J10 New Link Road between J10 and J11	49,074,099
	S14	Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualling of the A511 between J2 & J4	Packaged Improvements	Junction 1 - Existing roundabout with widening entry and exits enabling two ahead lanes for A511 in both directions and widening on Ashby Road to form a flared two lane approach. Junction 2 - 'Widening on all approaches and exits to the roundabout enabling two ahead lanes for A511 in both directions. Junction 4 - 'Widened approaches and exits enabling two ahead lanes for A511 in both direction. Roundabout to be converted to signalised roundabout. Junction 5 - 'Modified traffic signal junction with additional northbound lane on A511 and banned right turn. Dualling of A511 Link between J2 and J4	22,102,487
	S15	Package 3 - Junction Improvements at three existing junctions J6,J7 and J8	Packaged Improvements	Junction 6 - 'Fully signalised roundabout with improved pedestrian facilities. Junction 7 - 'Widened approaches and exits enabling three lanes on A511 approaches and two lane exit on A511 east. Junction 8 - 'Fully signalised roundabout with improved pedestrian facilities.	17,967,979
	S16	Package 4 - Junction Improvements at two existing junctions J9 and 12.	Packaged Improvements	Junction 9 - 'Fully signalised roundabout with some left turn restrictions. Junction 12 - Signalisation of existing roundabout.	4,899,550
	S17	Package 5 - Junction Improvements at J2,J8, J9 and J12		Junction 2 - 'Widening on all approaches and exits to the roundabout enabling two ahead lanes for A511 in both directions. Junction 8 - 'Fully signalised roundabout with improved pedestrian facilities. Junction 9 - 'Fully signalised roundabout with some left turn restrictions. Junction 12 - Signalisation of existing roundabout.	11,909,964

Interventions List

	ID	Intervention Name	Intervention Type	Description	Estimated Capital Cost incl. Optimism Bias
Public Transport Options	S18	Re-opening of the Leicester to Burton Railway Line to passenger on current alignment.	Public Transport Improvements	Re-opening the railway line with stations at Burton, Swadlincote, Ashby de la Zouch, Coalville, Leicester West (possible Park and Ride around Leicester Forest East for M1 traffic) and Leicester	-
	S19	Re-opening of the Leicester to Burton Railway Line to passenger using Tram Train	Public Transport Improvements	Re-opening the railway line with stations at Burton, Swadlincote, Ashby de la Zouch, Coalville, Leicester West (possible Park and Ride around Leicester Forest East for M1 traffic?), before turning off of the existing railway onto the A47 to penetrate Leicester as a Tram, running on road.	-
	S20	Express Bus Service	Public Transport Improvements	A fast bus service on the A511 corridor from Leicester to Burton, only deviating from the A511 to penetrate the larger towns and Cities This could be provided by coach-style vehicles, to increase comfort on longer journeys and to increase service appeal. One option could include Burton-Coalville-Leicester	-
	S21	Cross Town Bus Services	Public Transport Improvements	Currently, Coalville acts as the terminal point for the majority of services entering the town. We propose a review of the bus network around Coalville to identify which services could be linked to operate through the town, east-west, to cater for demand between other settlements on the corridor. E.g. combine the 11 & 15 to provide a north-south link across Coalville, for which census data suggest there is demand for. This could include additional services from Coalville's northern estates to employment sites at locations such as Ibstock and Bardon	-
	S22	Bus Priority Measures	Public Transport Improvements	Measures to improve the reliability and journey time of bus services on the corridor by allowing them to bypass or get ahead of general traffic. Could include measures such as: Bus Priority at Signals Bus lanes across Coalville's A511 roundabouts Entry / Exit from Bardon Hill.	-
	S23	Increase Frequency of Bus Services Across Day	Public Transport Improvements	Improve the frequency of local bus services such as 29/29A so they run at their higher frequency all day. Increase frequency of town bus services such as the 15/129 to reduce the need for car trips within towns. Increase frequency of 155/Airlink to provide a stronger tie between Coalville and the Airport then the more frequent but less direct Skylink bus. LCC Have identified services between Coalville & Ibstock and Coalville & Leicester to be considered as priority.	-
	S24	A511 Corridor Bus Development Plan	Public Transport Improvements	Undertake a full review of the bus network currently utilising the A511, to: •Identify pinch points •Receive local feedback from operators and passengers •Provide further information for service and infrastructure enhancements. •Better identify unmet demand *Produced phased scheme of interventions to improve services along the corridor, with outline costing and funding packages	-
	S25	Investment in Hybrid/Electric Buses	Public Transport Improvements	Reduce bus emissions and pollution issues on corridor.	-
	S26	Upgrading of Bus Stop Facilities and Information	Public Transport Improvements	Provision of real-time information, level access facilities and improved shelters at key stops.	-
	S27	Re-Route Buses in Leicester to Connect to Leicester Railway Station	Public Transport Improvements	Currently, buses from the A511 corridor terminate at St Margaret's bus station, which is fifteen minutes or more walk from Leicester Railway Station. Services could be extended along Charles Street to connect to the station directly.	-
	S28	Investment in enhanced walking routes between bus stops and residences	Public Transport Improvements	Delivery of improved public realm between new developments and the nearest bus stops. A review of the walking routes to/from existing bus stops.	-

Appendix D

STAGE 1 (MCAF) ASSESSMENT CRITERIA WEIGHTING

Stage 1 Criteria and Weighting

Super Criteria Weighting

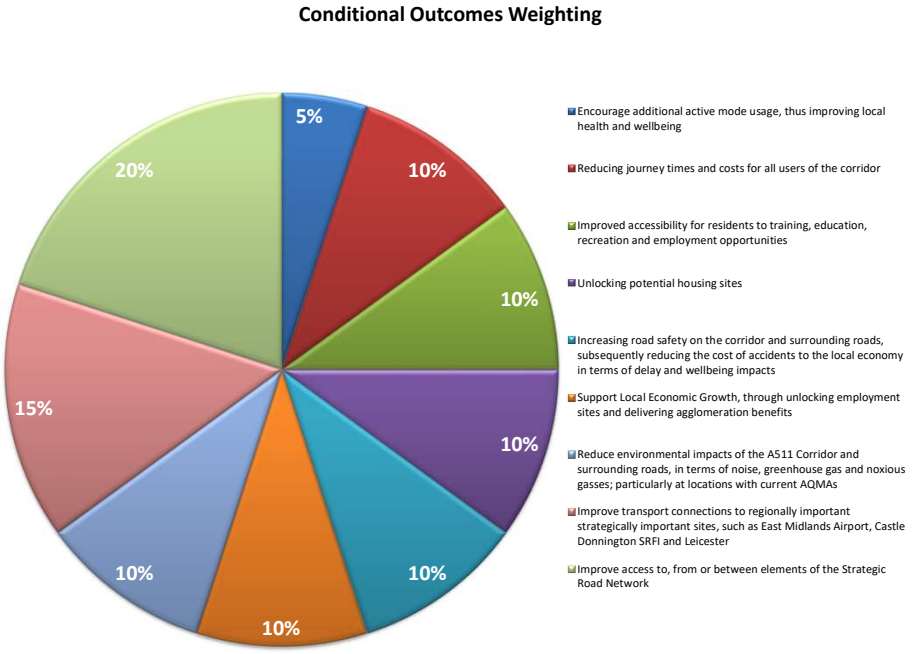
Weighting below is applied to each objective to prioritise scoring dependant upon the below weightings:

	Weighting
Conditional Outcomes	40%
Economy	10%
Affordability	10%
Acceptability	30%
Environmental	10%
	100%

Conditional Outcomes

The following Conditional Outcomes were considered during this assessment:

	Criteria Weighting (within	Overall Criteria Weighting
Encourage additional active mode usage, thus improving local health and wellbeing	5%	2.0%
Reducing journey times and costs for all users of the corridor	10%	4.0%
Improved accessibility for residents to training, education, recreation and employment opportunities	10%	4.0%
Unlocking potential housing sites	10%	4.0%
Increasing road safety on the corridor and surrounding roads, subsequently reducing the cost of accidents to the local economy in terms of delay and wellbeing impacts	10%	4.0%
Support Local Economic Growth, through unlocking employment sites and delivering agglomeration benefits	10%	4.0%
Reduce environmental impacts of the A511 Corridor and surrounding roads, in terms of noise, greenhouse gas and noxious gasses; particularly at locations with current AQMAs	10%	4.0%
Improve transport connections to regionally important strategically important sites, such as East Midlands Airport, Castle Donnington SRFI and Leicester	15%	6.0%
Improve access to, from or between elements of the Strategic Road Network	20%	8.0%
Objective Sub-Total	100%	40.0%

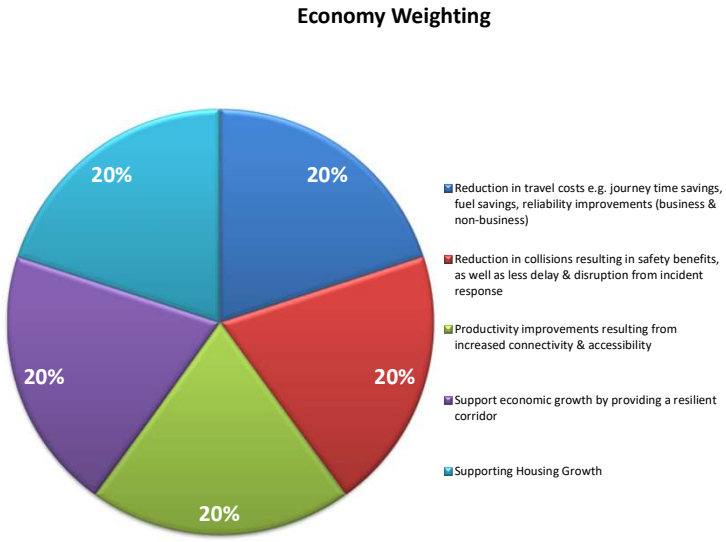


Stage 1 Criteria and Weighting

Economy

The following **Economy criteria** were considered during this assessment:

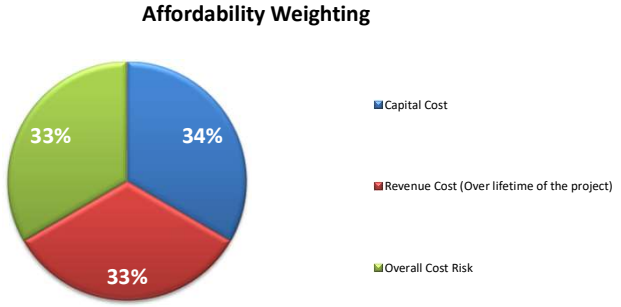
	Criteria Weighting 20	Overall Criteria Weighting
Reduction in travel costs e.g. journey time savings, fuel savings, reliability improvements (business & non-business)	20%	2.00%
Reduction in collisions resulting in safety benefits, as well as less delay & disruption from incident response	20%	2.00%
Productivity improvements resulting from increased connectivity & accessibility	20%	2.00%
Support economic growth by providing a resilient corridor	20%	2.00%
Supporting Housing Growth	20%	2.00%
Objective Sub-Total	100%	6.0%



Affordability

The following **Affordability criteria** were considered during this assessment:

	Criteria Weighting	Overall Criteria Weighting
Capital Cost	33%	3.3%
Revenue Cost (Over lifetime of the project)	33%	3.3%
Overall Cost Risk	33%	3.3%
Objective Sub-Total	100%	10.0%

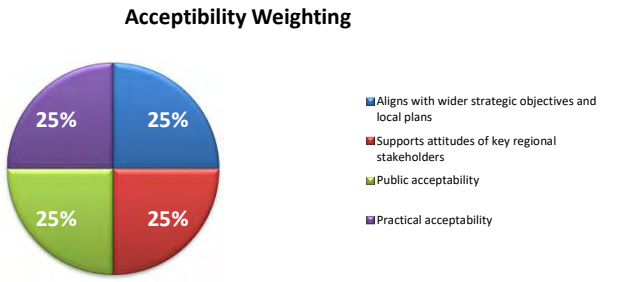


Stage 1 Criteria and Weighting

Acceptability

The following **Acceptibility criteria** headings were considered during this assessment:

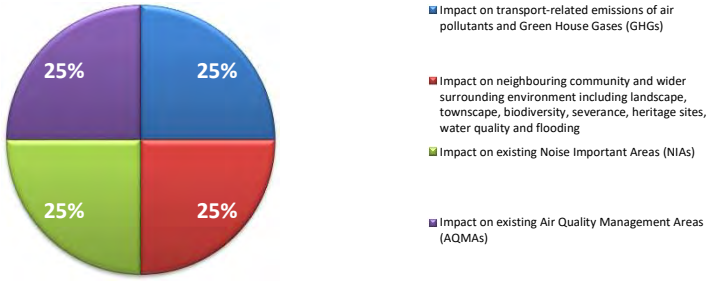
	Criteria Weighting	Overall Criteria Weighting
Aligns with wider strategic objectives and local plans	25%	7.5%
Supports attitudes of key regional stakeholders	25%	7.5%
Public acceptability	25%	7.5%
Practical acceptability	25%	7.5%
Objective Sub-Total	100%	30.0%



Environmental

The following **Environmental criteria** headings were considered during this assessment:

	Criteria	Overall Criteria
Impact on transport-related emissions of air pollutants and Green House Gases (GHGs)	25%	2.5%
Impact on neighbouring community and wider surrounding environment including landscape, townscape, biodiversity, severance, heritage sites, water quality and flooding	25%	2.5%
Impact on existing Noise Important Areas (NIAs)	25%	2.5%
Impact on existing Air Quality Management Areas (AQMAs)	25%	2.5%
Objective Sub-Total	100%	10.0%



Appendix E

SHORTLISTED OPTIONS

Stage 1 Weighted Needs Assessment Results

Instructions

The below table sets out the 'Weighted Needs' in ranking order as per the overal weighted score

A priority needs assessment is based upon whether an intervention is either High/Medium/Low priority dependant upon the the percentage bandings associated with it. The associated bandings are as follows:

High Priority	**Greater than**	**80%**		
Medium Priority	**Between**	**40%**	and	**80%**
Low Priority	**Less Than**	**40%**		

All the percentages above are editable, of which are highlight like such >>

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 12, dualling of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11	82%	High Priority
2	Package 5 - Junction Improvements at J2,J8, J9 and J12	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 12.	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 inc Punch Through	51%	Medium Priority
10	Junction 8 - A511/Charnwood Road roundabout	50%	Medium Priority
11	Junction 12 - 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%	Medium Priority
14	Junction 4 - A511/Whitwick Road Roundabout	40%	Low Priority
15	Junction 11 - A511/Beveridge Lane Roundabout (Stardust)	38%	Low Priority
16	Increase Frequency of Bus Services Across Day	35%	Low Priority
17	Express Bus Service	34%	Low Priority
18	Re-opening of the Leicester to Burton Railway Line to passenger on current alignment.	33%	Low Priority
19	Re-opening of the Leicester to Burton Railway Line to passenger using Tram Train	33%	Low Priority
20	Investment in enhanced walking routes between bus stops and residences	32%	Low Priority
21	A511 Corridor Bus Development Plan	32%	Low Priority
22	Cross Town Bus Services	30%	Low Priority
23	Investment in Hybrid/Electric Buses	30%	Low Priority
24	Bus Priority Measures	29%	Low Priority
25	Bardon Road Bypass	29%	Low Priority
26	Re-Route Buses in Leicester to Connect to Leicester Railway Station	27%	Low Priority
27	Upgrading of Bus Stop Facilities and Information	26%	Low Priority
28	Dual Carriageway between Thornborough (McDonalds) Roundabout and Whitwick Road Roundabout	23%	Low Priority

Scheme Description	Stage 1 - Score against Criteria of Assessment							
	Conditional Outcomes	Economy	Affordability	Acceptability	Environmental	Total	Rank	
Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualling of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11	31%	10%	2%	30%	9%	82%	1	Options Taken Forward to Stage 2 Assessment
Package 5 - Junction Improvements at J2,J8, J9 and J12	31%	7%	3%	26%	6%	74%	2	
Package 3 - Junction Improvements at three existing junctions J6,J7 and J8	28%	6%	3%	26%	6%	70%	3	
Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualling of the A511 between J2 & J4	24%	6%	3%	26%	6%	66%	4	
Package 4 - Junction Improvements at two existing junctions J9 and 12.	24%	5%	3%	23%	6%	62%	5	
Junction 9 - A511/Copt Oak Road Junction (Flying Horse)	21%	5%	3%	23%	5%	57%	6	
Junction 7 - A511/Grange Road Roundabout (Birch Tree);	23%	5%	3%	19%	5%	55%	7	
Junction 5 - A511/Broom Leys Junction	21%	3%	3%	19%	6%	52%	8	
Junction 6 - A511/Bardon Road roundabout inc Punch Through	20%	5%	3%	23%	0%	51%	9	
Junction 8 - A511/Charnwood Road roundabout	21%	3%	3%	23%	0%	50%	10	
Junction 12 - A511/Field Head Roundabout	24%	5%	3%	11%	5%	49%	11	
Junction 2 - A511/Thornborough Road Roundabout	20%	5%	3%	19%	0%	47%	12	
Junction 1 - A511/Swannington Roundabout (Hoo Ash);	17%	5%	3%	19%	3%	46%	13	
Junction 4 - A511/Whitwick Road Roundabout	17%	1%	3%	19%	0%	40%	14	Discarded Options
Junction 11 - A511/Beveridge Lane Roundabout (Stardust)	9%	2%	3%	23%	1%	38%	15	
Increase Frequency of Bus Services Across Day	7%	4%	3%	19%	3%	35%	16	
Express Bus Service	9%	4%	3%	15%	3%	34%	17	
Re-opening of the Leicester to Burton Railway Line to passenger on current alignment.	13%	4%	3%	11%	1%	33%	18	
Re-opening of the Leicester to Burton Railway Line to passenger using Tram Train	13%	4%	3%	11%	1%	33%	19	
Investment in enhanced walking routes between bus stops and residences	3%	4%	3%	19%	3%	32%	20	
A511 Corridor Bus Development Plan	7%	4%	3%	15%	3%	32%	21	
Cross Town Bus Services	6%	4%	3%	15%	3%	30%	22	
Investment in Hybrid/Electric Buses	7%	2%	3%	15%	3%	30%	23	
Bus Priority Measures	6%	3%	3%	15%	3%	29%	24	
Bardon Road Bypass	10%	3%	3%	11%	1%	29%	25	
Re-Route Buses in Leicester to Connect to Leicester Railway Station	3%	3%	3%	15%	3%	27%	26	
Upgrading of Bus Stop Facilities and Information	3%	2%	3%	15%	3%	26%	27	
Dual Carriageway between Thornborough Roundabout and Whitwick Road Roundabout	12%	0%	3%	8%	0%	23%	28	

Appendix F

STAGE 2A- EAST ASSESSMENT RESULTS

Unique Ref. No.	Description	Performance against Scheme Objectives														Overall Score
		Objective 1		Objective 2		Objective 3		Objective 4		Objective 5		Objective 6		Objective 7		
		Make journeys on the A511 faster and more reliable	Ranking	To provide a resilient and safer road network, resilient to road collisions	Ranking	To improve reliability and capacity for freight along the A511 MRN corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	Ranking	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	Ranking	To improve connectivity for all road user, with particular focus on vulnerable road users	Ranking	Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13.	Ranking	To improve air quality and traffic noise impact along the corridor	Ranking	
S1	**Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualling of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11**	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).	13	This option is more likely to reduce the number of collisions along the whole corridor as PIC's are currently concentrated on 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.	13	This option provides better reliability along the corridor as a whole 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.	11	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)	13	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	5	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.	13	This option will improve air quality by reducing congestion at individual junctions along the A511 corridor, however, noise impact is likely to be similar.	7	75
S2	**Package 5 - Junction Improvements at J2,J8, J9 and J12**	This option provides journey time savings on the A511 at individual junctions between Coalville (Thornborough Roundabout) and Marketfield (Field Head Roundabout). However, it does not provide journey time savings and a faster network along the length of the corridor, therefore existing congestion problems are likelty to remain.	4	This option is likely to reduce collisons on J2, J8 and J9, but not provide a resilient and safer road network along the length of the A511 MRN corridor.	4	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.	4	This option does not solely have the potential to deliver employment and housing development as it is only likely to improve journey times and reliability at specific junctions.	4	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	4	This option will somewhat improve connectivity to the SRN as the scheme involves improving individual junctions, rather than the network as a whole.	4	This option will improve air quality by reducing congestion at individual junctions, however, noise impact is likely to be similar.	4	28
S3	**Package 3 - Junction Improvements at three existing junctions J6,J7 and J8**	This option provides journey time savings on the A511 at individual junctions (between Coalville and Bardon). However, it is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	3	This option is likely to reduce collisons on J6, J7 and J8, but not provide a resilient and safer road network along the length of the A511 MRN corridor.	3	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.	3	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on individual junction improvements.	3	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	3	This option is unlikely to improve connectivity to the SRN as the scheme involves only improving individual junctions, rather than the network as a whole and therefore congestion/queueing is likely to build up elsewhere on the A511 MRN corridor.	3	This option will improve air quality by reducing congestion at individual junctions, however, noise impact is likely to be similar.	3	21
S4	**Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualling of the A511 between J2 & J4**	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, it is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	6	This option is likely to reduce collisons on J1, J2 and J4 and J5, but not provide a resilient and safer road network along the length of the A511 MRN corridor.	6	This option is likely to improve reliability and capacity for freight vehicles along the A511 MRN corridor by dualling the A511 between jucntions 2 and 4.	6	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on individual junction improvements and dualling limited sections of the A511.	6	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	6	This option is unlikely to improve connectivity to the SRN as the scheme involves only improving individual junctions, rather than the network as a whole and therefore congestion/queueing is likely to build up elsewhere on the A511 MRN corridor.	6	This option will improve air quality by reducing congestion at individual junctions, however, noise impact is likely to be similar.	6	42
S5	**Package 4 - Junction Improvements at two existing junctions J9 and 12.**	This option provides journey time savings on the A511 at the Flyign Horse Roundabout and the Field Head Roundabout. However, it is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	2	This option is likely to reduce collisions at individual junctions but not provide a resilient and safer road network along the length of the A511 MRN corridor.	2	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.	2	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on individual junction improvements.	2	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	2	This option is unlikely to improve connectivity to the SRN as the scheme involves only improving individual junctions, rather than the network as a whole and therefore congestion/queueing is likely to build up elsewhere on the A511 MRN corridor.	2	This option will improve air quality by reducing congestion at individual junctions, however, noise impact is likely to be similar.	2	14
S6	**Junction 9 - A511/Copt Oak Road Junction (Flying Horse)**	This option only provides journey time savings on the Flying Horse Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	1	This option is only likely to reduce collisions on the Flying Horse Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Flying Horse Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S7	**Junction 7 - A511/Grange Road Roundabout (Birch Tree);**	This option only provides journey time savings on the Birch Tree Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	1	This option is only likely to reduce collisions on the Birch Tree Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Birch Tree Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S8	**Junction 5 - A511/Broom Leys Junction**	This option only provides journey time savings on the Broom Leys / A511 signalised junction. It is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	1	This option is only likely to reduce collisions on the Broom Leys / A511 signalised junction as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Broom Leys / A511 signalised junction.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7

Unique Ref. No.	Description	Performance against Scheme Objectives														Overall Score
		Objective 1		Objective 2		Objective 3		Objective 4		Objective 5		Objective 6		Objective 7		
		Make journeys on the A511 faster and more reliable	Ranking	To provide a resilient and safer road network, resilient to road collisions	Ranking	To improve reliability and capacity for freight along the A511 MRN corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	Ranking	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	Ranking	To improve connectivity for all road user, with particular focus on vulnerable road users	Ranking	Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13.	Ranking	To improve air quality and traffic noise impact along the corridor	Ranking	
S9	Junction 12 - A511/Field Head Roundabout	This option only provides journey time savings on Field Head Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	1	This option is only likely to reduce collisions on Field Head Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Field Head Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S10	Junction 6 - A511/Bardon Road roundabout inc Punch Through	This option only provides journey time savings on the Bardon Road Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the A511 MRN corridor.	1	This option is only likely to reduce collisions on the Bardon Road Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Bardon Road Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S11	Junction 1 - A511/Swannington Roundabout (Hoo Ash);	This option only provides journey time savings on the Bardon Road Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the Hoo Ash Roundabout.	1	This option is only likely to reduce collisions on Hoo Ash Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Hoo Ash Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S12	Junction 2 - A511/Thornborough Road Roundabout	This option only provides journey time savings on the Bardon Road Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the Thornborough Road Roundabout.	1	This option is only likely to reduce collisions on the Thornborough Road Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the Thornborough Road Roundabout.	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7
S13	Junction 8 - A511/Charnwood Road roundabout	This option only provides journey time savings on the Bardon Road Roundabout. It is unlikely to reduce journey times and improve relaibility along the length of the A511 / Beveridge Lane Roundabout.	1	This option is only likely to reduce collisions on the A511 / Beveridge Lane Roundabout as opposed to providing a more resilient and safer road network along the length of the A511 MRN corridor.	1	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 the A511 / Beveridge Lane Roundabout	1	This option is unlikely to facilitate growth and unlock employment and housing opportunities as the scheme is only concentrated on a single junction improvement.	1	This option is unlikely to improve connectivity to all road users as the scheme is concentrated on a single junction improvement which will benefit road users only.	1	This option is unlikely to improve connectivity to the SRN as the scheme only improves a single junction, rather than the corridor as a whole and therefore congestion/queueing is likely to build up elsewhere on the network.	1	This option is unlikely to improve air and noise quality along the A511 MRN corridor.	1	7

Appendix G

STAGE 2B EAST BASED ASSESSMENT RESULTS

Unique Ref. No.	Description	Performance against Scheme Objectives													
		Objective 1		Objective 2		Objective 3		Objective 4		Objective 5		Objective 6		Objective 7	
		Make journeys on the A511 faster and more reliable	Ranking	To provide a resilient and safer road network, resilient to road collisions	Ranking	To improve reliability and capacity for freight along the A511 MRN corridor and in so doing support the efficient operation of logistics and mineral extraction needs of the area.	Ranking	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	Ranking	To improve connectivity for all road user, with particular focus on vulnerable road users	Ranking	Support the SRN by providing a reliable and resilient link to M1 J22 and A42 J13.	Ranking	To improve air quality and traffic noise impact along the corridor	Ranking
S1	Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualing of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11	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).	13	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.	13	This option provides better reliability along the corridor as a whole with multiple junction improvements and dualing 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.	11	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)	13	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users, however does include some improvements to crossing facilities.	5	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.	13	This option will improve air quality by reducing congestion at individual junctions along the A511 corridor, however, noise impact will likely change little from current levels.	7
S4	Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualing of the A511 between J2 & J4	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.	6	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.	6	This option is likely to improve reliability and capacity for freight vehicles along the A511 MRN corridor by dualing the A511 between junctions 2 and 4.	6	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.	6	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	6	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 as a whole. Congestion/queueing is thus likely to continue to still occur elsewhere on the A511 MRN corridor, reducing the benefits from the junctions improved.	6	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	6
S3	Package 3 - Junction Improvements at three existing junctions J6,J7 and J8	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.	3	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.	3	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.	3	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.	3	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	3	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.	3	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	3
S5	Package 4 - Junction Improvements at two existing junctions J9 and 12.	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.	4	This option is likely to reduce collisions at individual junctions but not provide a resilient and safer road network along the length of the A511 MRN corridor.	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.	4	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.	4	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	4	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 as a whole. Congestion/queueing is thus likely to continue to still occur elsewhere on the A511 MRN corridor, reducing the benefits from the junctions improved.	4	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	4
S2	Package 5 - Junction Improvements at J2,J8, J9 and J12	This option provides journey time savings on the A511 at individual junctions between Coalville (Thornborough Roundabout) and Marketfield (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.	4	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.	4	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.	4	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.	4	This option improves connectivity for mainly vehicular road users as opposed to vulnerable road users.	4	This option will somewhat improve connectivity to the SRN as the scheme but only to/from the eastern side of Coalville, rather then the whole corridor.	4	This option will improve air quality by reducing congestion at individual junctions however, noise impact will likely change little from current levels.	4

Unique Ref. No.	Description	Strategic									
		Scale of impact	Scale of impact - Comments	Fit with wider transport and government objectives	Wider transport and government objectives - Comments	Fit with Objectives DfT's MRN objectives	Fit with DfT's MRN objectives - Comments	Key Opportunities	Key Uncertainties	Degree of consensus over outcomes?	Degree of consensus over outcomes? - Comments
S1	**Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualing of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11**	Fully Addresses the identified problem	• Improved journey time reliability on the A511 MRN corridor with the improvement of multiple junctions and dualing which increases capacity • Creates a more resilient and safer road network • Supports North West Leicestershire objectives of facilitating growth by delivering transport infrastructure; to unlock 25ha of employment land and approx. 3,500 new dwellings by providing the Bardon Link Road and improving multiple junctions along the corridor • Supports the SRN by providing resilient links to the M1 and the A42 • Improves air quality and traffic noise impact across the corridor by reducing congestion at all junctions	Good fit	• Supports the government's objectives to reduce congestion by improving journey times along the whole corridor • Supports the government's objective to facilitate economic growth by unlocking 25ha of employment land • Supports the government's objective to deliver housing by unlocking 3,500 dwellings in Coalville (including two sustainable urban extensions) • Supports the SRN by providing resilient links to the M1 and A42.	Excellent fit	• Creates a more reliable and less congested transport network by providing capacity improvements at multiple existing junctions along the A511 MRN corridor which also reduces journey times • Providing a better connected transport network by improving connections to the SRN • Supporting the economy by enhancing productivity and responding to local growth priorities by unlocking employment land • Enhances global competitiveness by attracting investment and job opportunities by unlocking employment sites •Supports the creation of new housing by unlocking 3,500 dwellings in Coalville via the Bardon Link Road	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Attracts economic growth and investment by unlocking employment land at Coalville • Improves safety for road users • Improves air and noise quality by reducing congestion	* Risk of increased car mode share by reducing journey times resulting in increased congestion elsewhere.	Good Consensus	To date there has not been an consultation with the public over any particular option/corridor. However some high-level stakeholder engagement has taken place indicating support for the scheme in principle) This package would support stakeholder desire for a complete package across the whole corridor.
S4	**Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualing of the A511 between J2 & J4**	Moderate Impact	• Improved journey time reliability on the A511 MRN corridor with the improvement of multiple junctions and capacity improved by dualing • Creates a more resilient and safer road network • Supports the SRN by providing resilient links to the M1 and the A42 • Improves air quality and traffic noise impact at some locations along the corridor by reducing congestion.	Reasonable fit	• Supports the government's objectives to reduce congestion by improving journey times at multiple junctions along the corridor and increasing capacity via dualing • Supports economic growth by providing a more reliable road network via journey time savings from the junction improvements • Supports the SRN by improving the existing links to the M1 and A42.	Reasonable fit	• Creates a more reliable and less congested transport network by providing capacity improvements at multiple existing junctions along the A511 Growth corridor which also reduces journey times • Providing a better connected transport network by improving existing connections to the SRN	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus	To date there has not been an consultation with the public over any particular option/corridor. However some high-level stakeholder engagement has taken place indicating support for the scheme in principle). However preference is for complete package of options since there is a need for a holistic solution for the full potential of the corridor to be realised .
S3	**Package 3 - Junction Improvements at three existing junctions J6,J7 and J8**	Minor Impact	• Improved journey time reliability on individual junctions along the A511 corridor • Improved capacity at Bardon Road Roundabout, Birch Tree Roundabout and Charnwood Arms Roundabout • Helps support the SRN by providing better links to the M1 and the A42 as journey times on certain junctions will be reduced • Improves air quality and traffic noise impact along the corridor by reducing congestion at 3 junctions (near Coalville)	Low fit	• Supports the government's objectives to reduce congestion by improving journey times at three junctions along the corridor • Supports economic growth by providing a more reliable road network via journey time savings from the junction improvements • Supports the SRN by improving the existing links to the M1 and A42.	Low fit	• Creates a more reliable and less congested transport network by providing capacity improvements at multiple existing junctions along the A511 Growth corridor which also reduces journey times • Providing a better connected transport network by improving existing connections to the SRN	• Somewhat improves journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus	To date there has not been an consultation with the public over any particular option/corridor. However some high-level stakeholder engagement has taken place indicating support for the scheme in principle). However preference is for complete package of options since there is a need for a holistic solution for the full potential of the corridor to be realised .
S5	**Package 4 - Junction Improvements at two existing junctions J9 and 12.**	Minor Impact	• Minor improvements in journey time reliability on the A511 MRN corridor with the improvement of two existing junctions • Improves air quality and traffic noise impact at some locations along the corridor by reducing congestion.	Low fit	• Supports the government's objectives to reduce congestion by improving journey times at two junctions along the corridor • Unlikely to promote economic growth • Unlikely to improve connectivity to the SRN	Low fit	• Slightly increases reliability and a less congested network on the corridor due to junction improvements resulting in minor reductions in journey times • Unlikely to provide a better connected transport network by improving connections to the SRN • Unlikely to support economic growth or unlock housing developments	• Slightly improves journey times on the A511 MRN corridor • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus	To date there has not been an consultation with the public over any particular option/corridor. However some high-level stakeholder engagement has taken place indicating support for the scheme in principle). However preference is for complete package of options since there is a need for a holistic solution for the full potential of the corridor to be realised .
S2	**Package 5 - Junction Improvements at J2,J8, J9 and J12**	Moderate Impact	• Improved journey time reliability on individual junctions along the A511 corridor • Improved capacity at Thornborough Road Roundabout, Charnwood Arms Roundabout, Flying Horse Roundabout and Field Head Roundabout • Supports the SRN by providing better links to the M1 and the A42 as journey times on certain junctions will be reduced • Improves air quality and traffic noise impact at some locations along the corridor by reducing congestion.	Reasonable fit	• Supports the government's objectives to reduce congestion by improving journey times at multiple junctions along the corridor • Supports economic growth by providing a more reliable road network via journey time savings from the junction improvements • Supports the SRN by improving the existing links to the M1 and A42.	Reasonable fit	• Creates a more reliable and less congested transport network by providing capacity improvements at multiple existing junctions along the A511 Growth corridor which also reduces journey times • Providing a better connected transport network by improving existing connections to the SRN	• Improve journey times on the A511 MRN corridor • Improves connectivity to the SRN • Improves safety for road users • Improves air and noise quality by reducing congestion	• Unlikely to fully promote or support economic growth • Unlikely to fully unlock housing developments in Coalville • Unlikely to fully support the SRN	Reasonable Consensus	To date there has not been an consultation with the public over any particular option/corridor. However some high-level stakeholder engagement has taken place indicating support for the scheme in principle). However preference is for complete package of options since there is a need for a holistic solution for the full potential of the corridor to be realised .

Unique Ref. No.	Description	Overall Performance												
		Economic								Management				
		Economic Growth	Economic growth - Comments	Air Quality	Air Quality - Comments	Socio-distributional impacts within Northampton	Local environment	Local environment - Comments	Well being	Outline VfM Category	Implementation timetable	Public acceptability	Practical feasibility	What is the quality of the supporting evidence?	Key Risk Comments
S1	**Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualing of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11**	Strong Economic Growth	• Contribution to Gross Value Added (GVA) by unlocking employment land and creating jobs •The Bardon Link Road is crucial to unlocking employment land and the delivery of 3,500 new homes	High Positive Impact	Provides additional capacity to support the reduction of air quality issues at multiple junctions along the A511 MRN corridor, including Birch Tree Roundabout and the Charwood Arms Roundabout which are located along the A511 Stephenson Way / Bardon Road which is recognised as an AQMA in the North West Leicestershire Local Plan. Providing additional capacity will support the increase of free flow movements and reduce stop/start movements.	Neutral Impact	Neutral Impact	WAITING FOR ENV WORK	High Positive Impact	Medium VfM	Proposed Construction start date is 2022 and end date is 2024	Neutral Response	Some Barriers	Excellent Quality Evidence	#NAME?
S4	**Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualing of the A511 between J2 & J4**	Weak Economic Growth	• Unlikely to promote or support economic growth	High Positive Impact	Provides additional capacity to support the reduction of air quality issues at multiple junctions along the A511 MRN corridor. Providing additional capacity will support the increase of free flow movements and reduce stop/start movements Critically, flow is improved at the A511/Broom Leys junctions in the north of the AQMA	Neutral Impact	Neutral Impact	WAITING FOR ENV WORK	Neutral Impact	Low VfM	Proposed Construction by 2024	Minor Positive Response	Some Barriers	Good Quality Evidence	Network Rai: the scheme requires a cattle creep to be improved under Network Rail tracks. Liaison over this is yet to start
S3	**Package 3 - Junction Improvements at three existing junctions J6,J7 and J8**	Weak Economic Growth	• Unlikely to promote or support economic growth	High Positive Impact	Provides additional capacity to support the reduction of air quality issues at multiple junctions along the A511 MRN corridor, including Birch Tree Roundabout and the Charwood Arms Roundabout which are located along the A511 Stephenson Way / Bardon Road which is recognised as an AQMA in the North West Leicestershire Local Plan.	Neutral Impact	Neutral Impact	WAITING FOR ENV WORK	Neutral Impact	Low VfM	Proposed Construction by 2024	Neutral Response	No Barriers	Good Quality Evidence	Generic Risk Involved
S5	**Package 4 - Junction Improvements at two existing junctions J9 and 12.**	Weak Economic Growth	• Unlikely to promote or support economic growth	Minor Positive Impact	Providing additional capacity at the junctions will support the increase of free flow movements and reduce stop/start movements. However, unlikely to relieve congestion along the whole corridor.	Neutral Impact	Neutral Impact	WAITING FOR ENV WORK	Neutral Impact	Low VfM	Proposed Construction by 2024	Neutral Response	No Barriers	Reasonable Quality Evidence	Generic Risk Involved
S2	**Package 5 - Junction Improvements at J2,J8, J9 and J12**	Positive Economic Growth	• Likely to promote or support economic growth but with some constraint due to connections to the M1 only being improved, rather then the M1 and the A42. This means that only some of economic growth will be realised.	High Positive Impact	Provides additional capacity to support the reduction of air quality issues at multiple junctions along the A511 MRN corridor, including the Charwood Arms Roundabout, located along the A511 Stephenson Way / Bardon Road and recognised as an AQMA by the North West Leicestershire Local Plan. Providing additional capacity will support the increase of free flow movements and reduce stop/start movements.	Neutral Impact	Neutral Impact	WAITING FOR ENV WORK	Minor Positive Impact	Low VfM	Proposed Construction by 2024	Neutral Response	No Barriers	Good Quality Evidence	Generic Risk Involved

Unique Ref. No.	Description	Financial						Commercial			
		Affordability	Capital Cost (£m)?	Revenue Costs (£m)?	Cost Profile	Overall cost risk	Other Costs	Flexibility of option	Where is funding coming from?	Any income generated?	Outline Value of Income Generated
S1	**Package 1 - Junction Improvements at nine existing junctions J1,J2,J4,J5,J6,J7,J8,J9 and 12, dualing of the A511 between J2 & J4 and provision of Bardon Link Road and two new junctions J10 and J11**	Average Affordability	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and allowance for inflation in 2022 is approximately £38M subject to change. The Scheme Cost is within DfT's MRN funding range.	No revenue cost - Capital scheme	At this stage a high-level cost and funding profile has been developed, further detailed consideration of the ground conditions and constructions approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions and Bardon Link Road over its lifetime	Very Flexible	DfT MRN Funding plus Local Contribution	No direct income generated	Not Assessed at this Stage
S4	**Package 2 - Junction Improvements at four existing junctions J1,J2,J4 & J5, and dualing of the A511 between J2 & J4**	Below Average Affordability	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and allowance for inflation in 2022 is approximately £17M subject to change. The Scheme Cost is just outside DfT's MRN funding range, but could still be potentially funded via MRN funding.	No revenue cost - Capital scheme	At this stage a high-level cost and funding profile has been developed, further detailed consideration of the ground conditions and constructions approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime	Slightly Flexible	DfT MRN Funding plus Local Contribution	No direct income generated	Not Assessed at this Stage
S3	**Package 3 - Junction Improvements at three existing junctions J6,J7 and J8**	Below Average Affordability	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and allowance for inflation in 2022 is approximately £14M subject to change.he Scheme Cost is just outside DfT's MRN funding range, but could still be potentially funded via MRN funding.	No revenue cost - Capital scheme	At this stage a high-level cost and funding profile has been developed, further detailed consideration of the ground conditions and constructions approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime	Slightly Inflexible	DfT MRN Funding plus Local Contribution	No direct income generated	Not Assessed at this Stage
S5	**Package 4 - Junction Improvements at two existing junctions J9 and 12.**	Average Affordability	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and allowance for inflation in 2022 is approximately £4M subject to change. The Scheme Cost is just outside DfT's MRN funding range, but within the required 15% conribution amount required for MRN funding for Package 1.	No revenue cost - Capital scheme	At this stage a high-level cost and funding profile has been developed, further detailed consideration of the ground conditions and constructions approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime	Slightly Inflexible	Local Contribution	No direct income generated	Not Assessed at this Stage
S2	**Package 5 - Junction Improvements at J2,J8, J9 and J12**	Very Unaffordable	The full project cost including scheme preparation, land, anticipated, compensation, contingencies and allowance for inflation in 2022 is approximately £9M subject to change. The Scheme Cost is just outside DfT's MRN funding range and the required 15% conribution amount required for MRN funding for Package 1.	No revenue cost - Capital scheme	At this stage a high-level cost and funding profile has been developed, further detailed consideration of the ground conditions and constructions approach is needed before accurate cost profiles can be developed.	Medium Risk	Maintenance of junctions over lifetime	Slightly Flexible	Not Identified	No direct income generated	Not Assessed at this Stage

Appendix H

OPTIONEERING WORKSHOP NOTES

Optioneering Workshop

Optioneering Workshop

Monday 29th July 2019

Leicestershire County Council – Gartree Committee Room

Present:	Barron, Jonny	Leicestershire County Council
	Bass, Claire	Leicestershire County Council
	Byrne, Michael	Leicestershire County Council
	Chappell, Alex	AECOM
	Dunn, Angie	Leicestershire County Council
	Gibbs, Adam	Bentley Project Management
	O'Toole, Aoife	WSP
	Parker, Matt	Leicestershire County Council
	Psarras, Stefanos	AECOM
	Sampson, Charles	Leicestershire County Council
	Sawal, Rakesh	Leicestershire County Council
	Andy Stinson	Leicestershire County Council
	Lynne Stinson	Leicestershire County Council
	Reza Toulouei	AECOM

Apologies: Mark Dazeley - AECOM.

Key Findings:

1) Introductions were made and an opening presentation was made by Reza Toulouei and Alex Chapple relating to the background to the MRN A511Grpwth Corridor project and summarized the modelled outputs from the Strategic Outline Business Case.

2) A presentation was made by Reza Toulouei and Alex Chapple of AECOM using the Powerpoint file: 'A511 Growth Corridor Workshop.ppt'

3) Key issues identified during discussion:

   - With full time signals the benefits of the Field Head junction remained neutral. The use of part-time signals was recommended

   - Flying Horse Roundabout indicated high benefits and was recommended to be included.

   - Charnwood Arms junction indicated high disbenefits and was recommended to be excluded

   - Birch Tree Roundabout indicated high benefits and was recommended to be included.

- Bardon Road junction and the Link Road extension indicated high benefits and were recommended to be included.
- Broom Leys junction indicated low benefits and was recommended to be included.
- Whitwick Road Roundabout indicated neutral benefits but after discussion was recommended to be included.
- Stephenson Way Dual Carriageway indicated low benefits and was recommended to be included.
- Thornborough Road Roundabout indicated low benefits and was recommended to be included.
- Hoo Ash Road Roundabout indicated low benefits and was recommended to be included.

Appendix A

Presentation to

Workshop

A511 Growth Corridor Workshop

Indicative Modelling Results

29th July 2019 – 09:30

Leicestershire County Council – Gartree Committee Room

Lynne Stinson

Team Manager – Asset & Major Programmes

Welcome

- Welfare Facilities
- Fire Exits
- Smoking/Vaping
- Mobile Phones
- Time

Schedule

09:30 - Tea & Coffee

10:00 – Welcome – Lynne Stinson
10:05 - Introduction & Modelling Overview - AECOM
10:20 - Field Head Roundabout
11:00 - Flying Horse Roundabout
11:30 - Charnwood Arms Roundabout
12:00 - Birch Tree Roundabout

12:30 - Lunch

13:30 - Bardon Link Road Junction
14:00 - Broom Leys Road Junction
14:30 - Whitwick Road Roundabout

15:15 - Break

15:30 - Dual Carriageway
15:45 - Thornborough Road Roundabout
16:15 - Hoo Ash Roundabout
16:30 - Next Steps

17:00 - Finish

A511 Growth Corridor

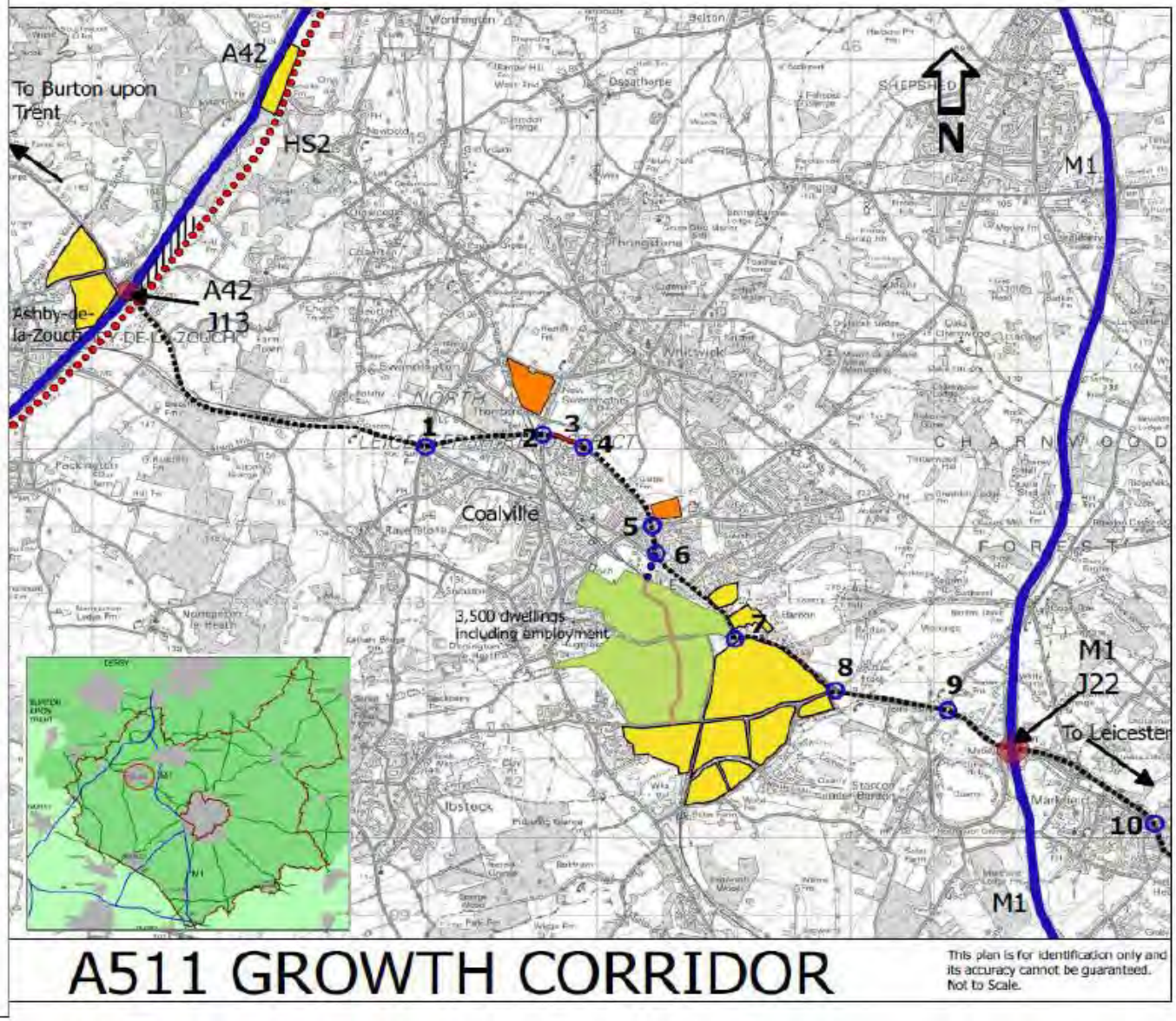
Leicestershire County Council

A511 Growth Corridor Junction Improvements

(1-5 Coalville Bypass)

1 - Hoo Ash Roundabout
2- Thornborough Road Roundabout
3- Dual Carriageway
4- Whitwick Road Roundabout
5- Broom Leys Road Junction
6- Bardon Link Road Junction
7- Birch Tree Roundabout
8- Charnwood Arms Roundabout
9- Flying Horse Roundabout
10- Field Head Roundabout

*Bid Total approx £49.4m



Key

- New Junctions
- Dual Carriageway
- Previous Roundabout Upgrades
- Proposed Bardon Link Road
- Developer Constructed Bardon Link Road
- HS2 Compound
- Major Employement Area
- Development Areas
- Indicative HS2 Route
- Motorway/SRN
- A511 Corridor
- Applications

Leicestershire County Council

A511 GROWTH CORRIDOR

This plan is for identification only and its accuracy cannot be guaranteed. Not to Scale.

Modelling Overview

Leicestershire County Council

Model Runs Undertaken (SOBC Model)

- Core (with southern section of Bardon Link Road)
- Core Sensitivity Test Scenario 1 (with neither of the Bardon Link Roads included)
- Core Sensitivity Test Scenario 2 (with northern and southern part of the Bardon Link Roads included)
- Full Scheme Package
- Reduced Scheme Package (without Fieldhead Roundabout alterations)
- Interpeak Sensitivity Test: Reduced Scheme Package (without Fieldhead Roundabout alterations), removing IP and OP signalisation at some junctions

Leicestershire County Council

TUBA Runs Undertaken

- Core vs. Reduced Scheme Package: PVB £40.1m
- Core Sensitivity Test 1 vs. Full Scheme Package: PVB £81.8m
- Core Sensitivity Test 1 vs. Reduced Scheme Package: PVB £102.7m
- Core Sensitivity Test 2 vs. Full Scheme: PVB -£30.3m
- Core vs. Interpeak Sensitivity Test Reduced Scheme Package: PVB £50.4m
  - Signalisation removed from roundabouts (Whitwick Rd, Charnwood Arms, Flying Horse) in the IP and OP time periods

Modelling Summary Results (TUBA)

Leicestershire County Council

Inferred Value of Scheme Components (SOBC Models)

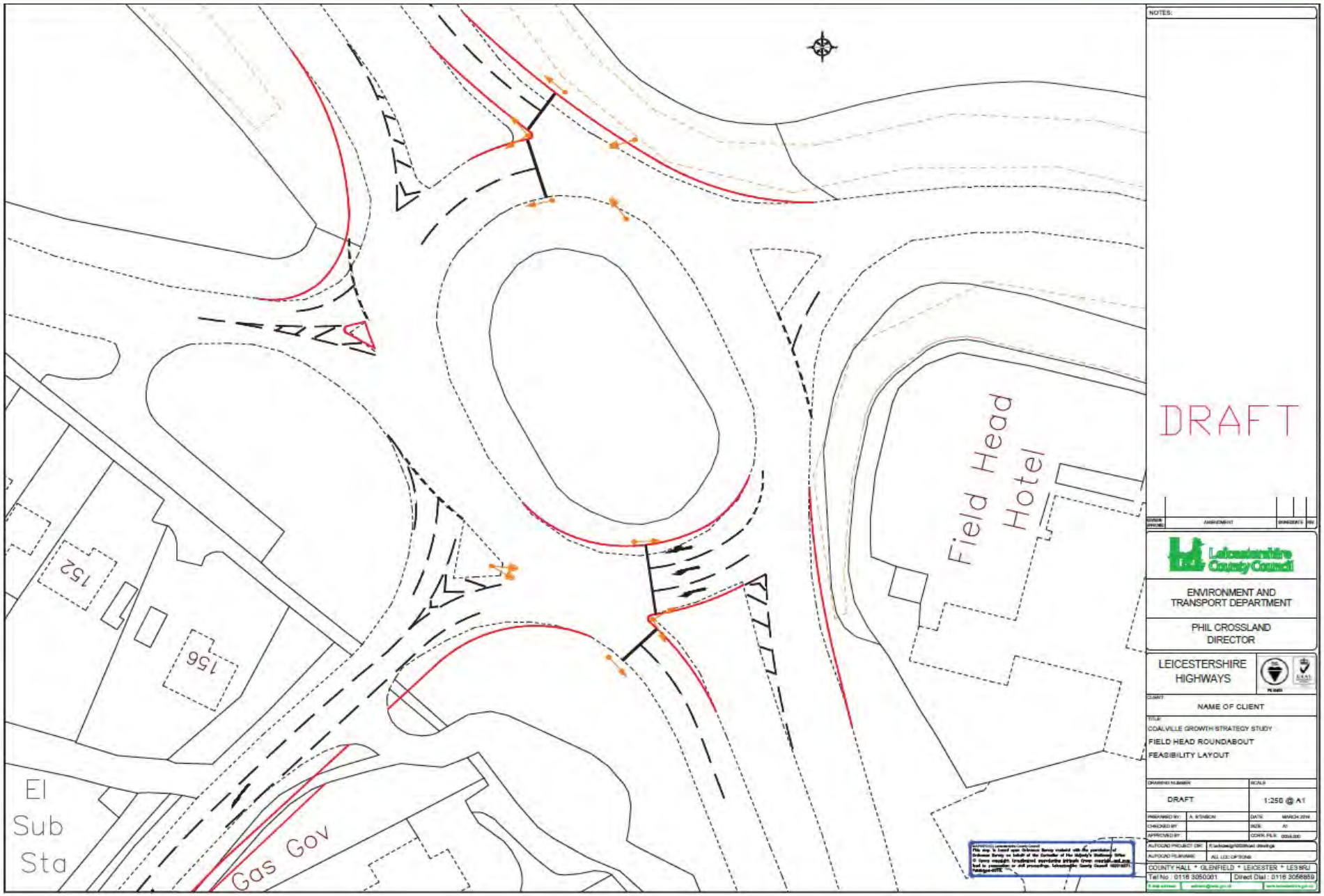
- Scheme Package without Fieldhead: PVB £40.1m
- Impact of Fieldhead Improvements PVB £0 to £-20m
- Impact of Link Road Extension and J6: PVB £50m+
- Impact of removing IP signal improvements: PVB ~£10m
  - Signalisation removed from roundabouts
    - Whitwick Rd, Charnwood Arms, Flying Horse) in the IP and OP periods
- Impact of dualling (scheme 3): PVB negligable
  - V/C reduces from ~75 to ~25 in 2036
  - Greater benefit expected in 2051

Individual Junction Analysis

- (dis)benefits for each junction has been predicted using a qualitative assessment based on modelled total number of vehicle hours delay, as an indication
  - X Low, XX Medium, XXX High Disbenefits
  - √ Low, √ √ Medium, √ √ √ High Benefits
- The indicative junction infrastructure cost is shown

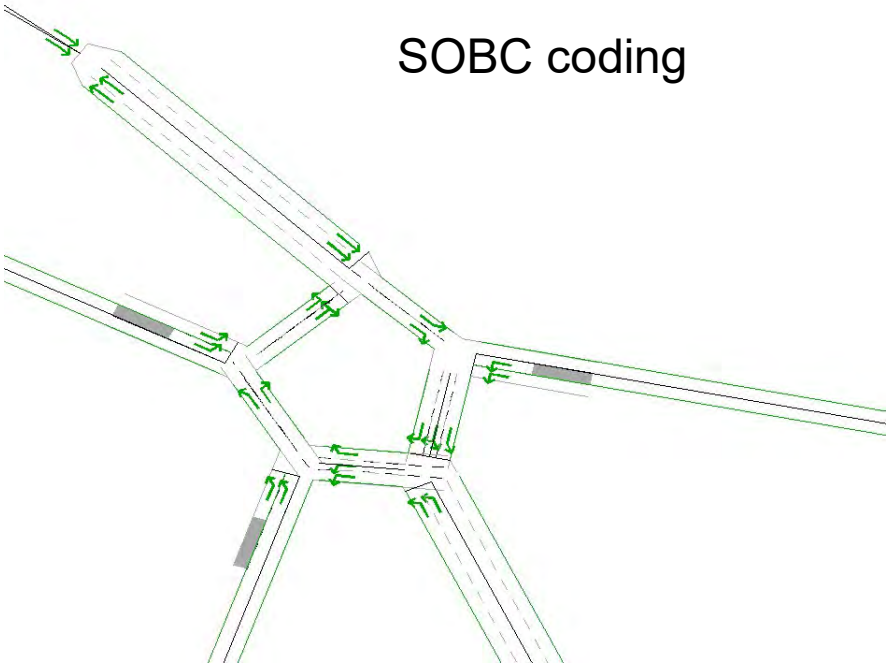
Junction 10 – Field Head Roundabout

Leicestershire County Council

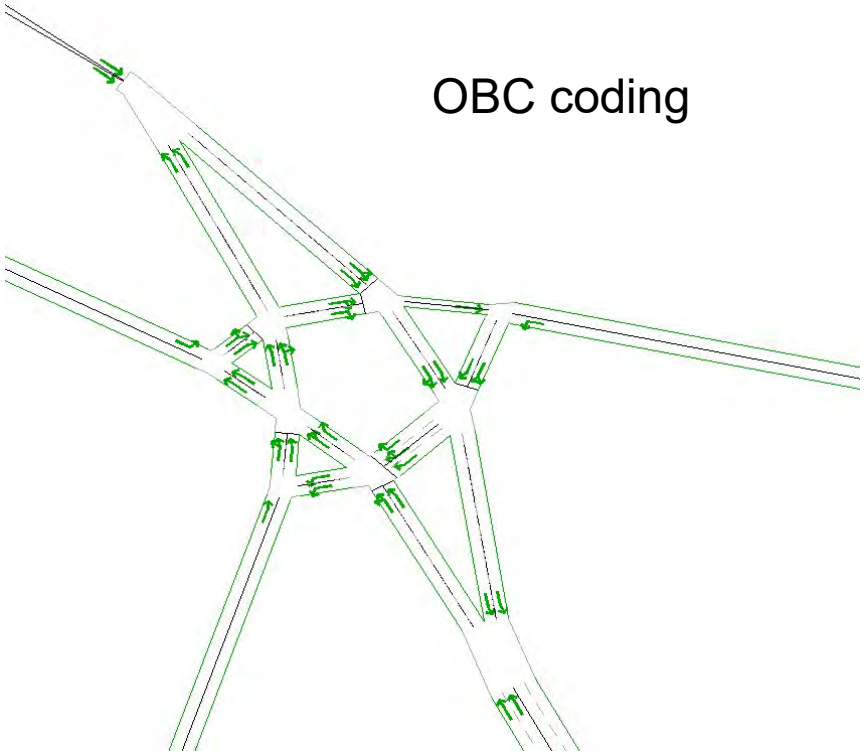


Field Head Roundabout

SOBC coding



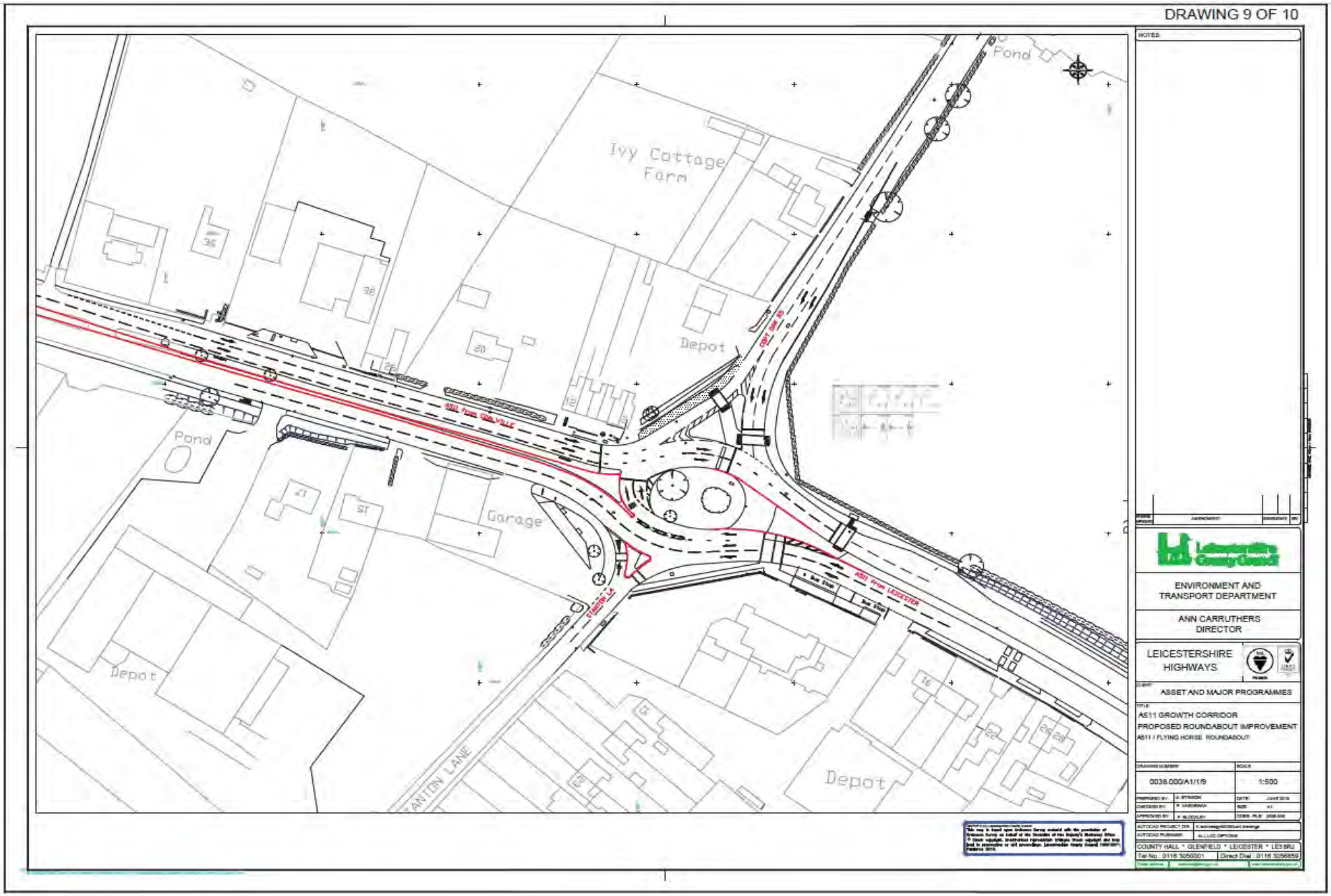
OBC coding



Interpretation of coding in SATURN

- SOBC coding: expected disbenefits, inferred from different TUBA tests, is up to -20m
- OBC coding: indicative TUBA tests for a single year suggest neutral or modest disbenefits
- **Recommendation: neutral**

Junction 9 – Flying Horse Roundabout

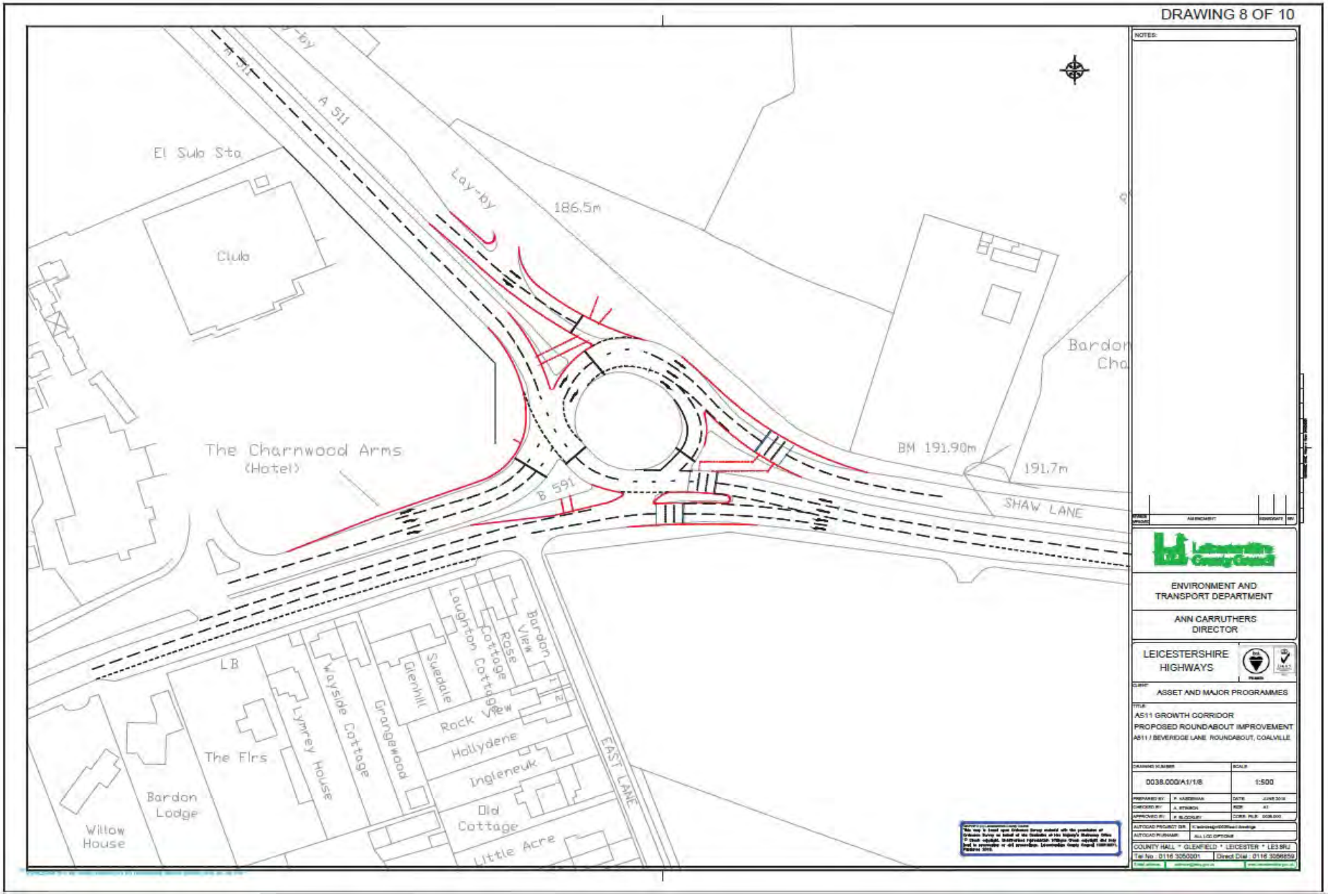


Flying Horse Roundabout

- Infrastructure Cost: £1.3m
- Delay reduction
- Expected contribution: benefits (√ √ √)
- **Recommendation:** include

Junction 8 – Charnwood Arms Roundabout

Leicestershire County Council

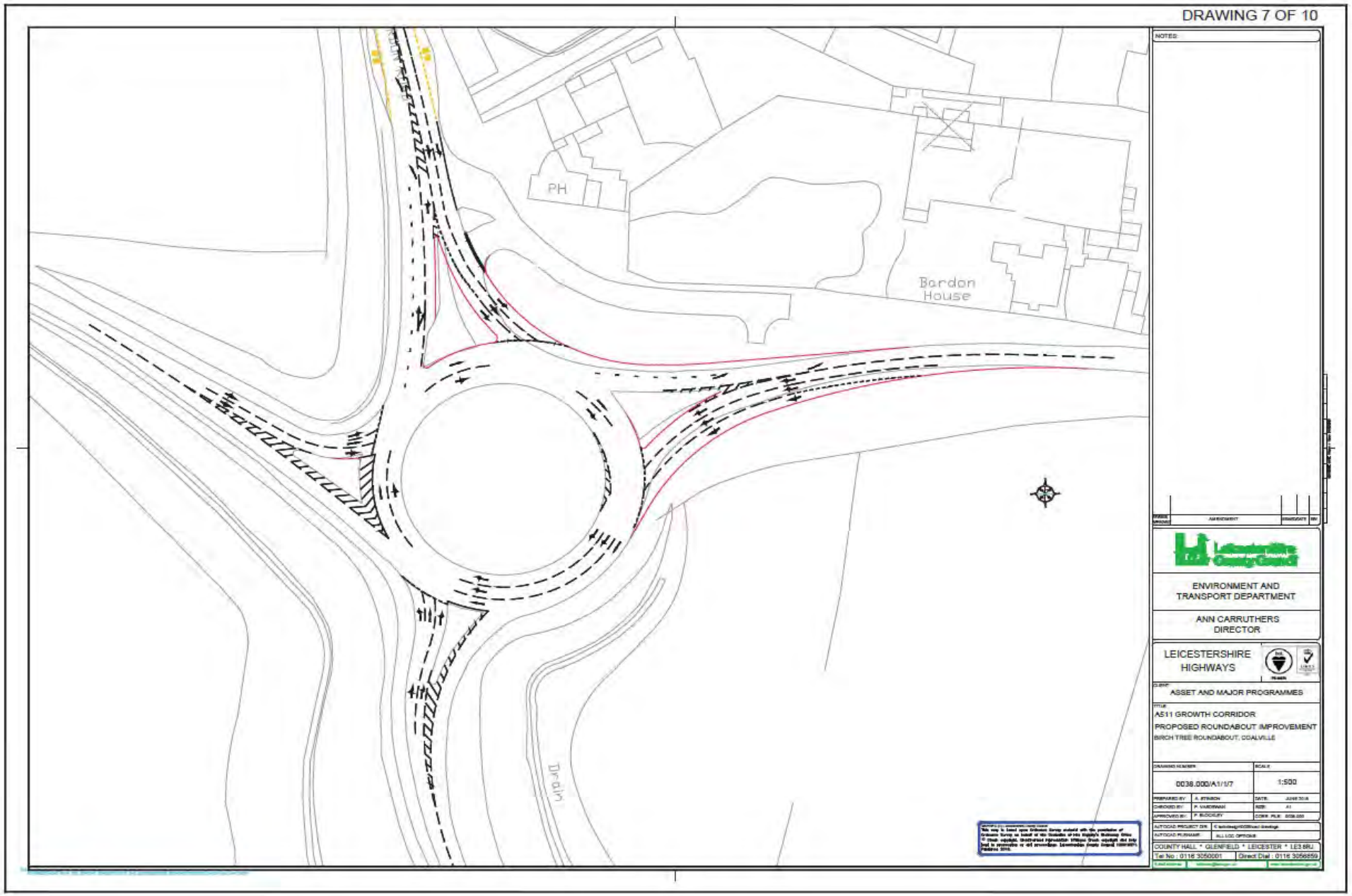


Charnwood Arms Roundabout

- Infrastructure Cost: £2.3m
- Delay increases
- Expected contribution: disbenefits (xxx)
- **Recommendation:** exclude

Junction 7 – Birch Tree Roundabout

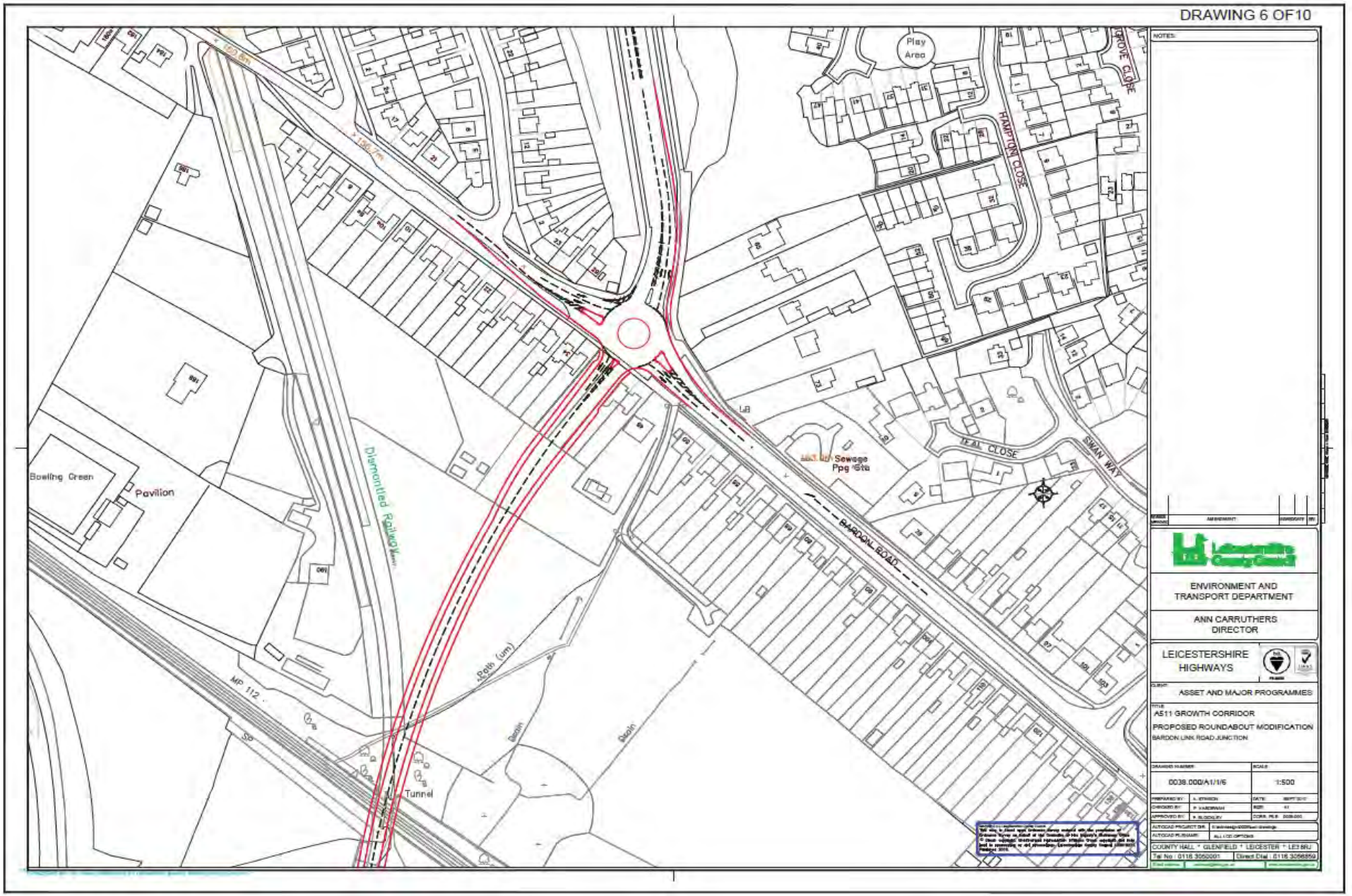
Leicestershire County Council



Birch Tree Roundabout

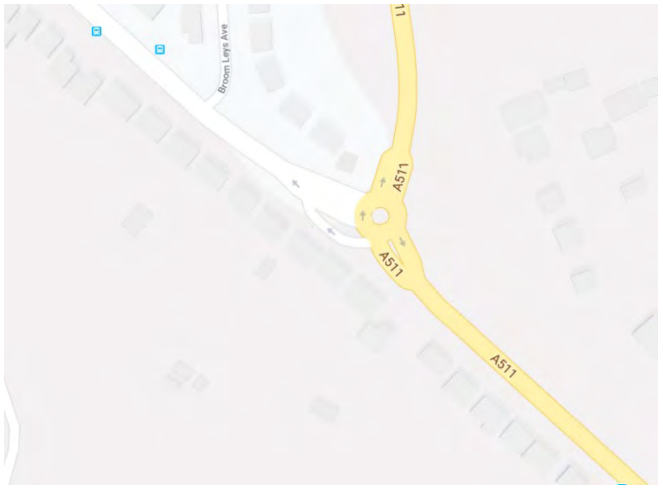
- Infrastructure Cost: £3.1m
- Delay reduction
- Expected contribution: benefits √ √ √
- **Recommendation:** include

Junction 6 – Bardon Link Road Junction

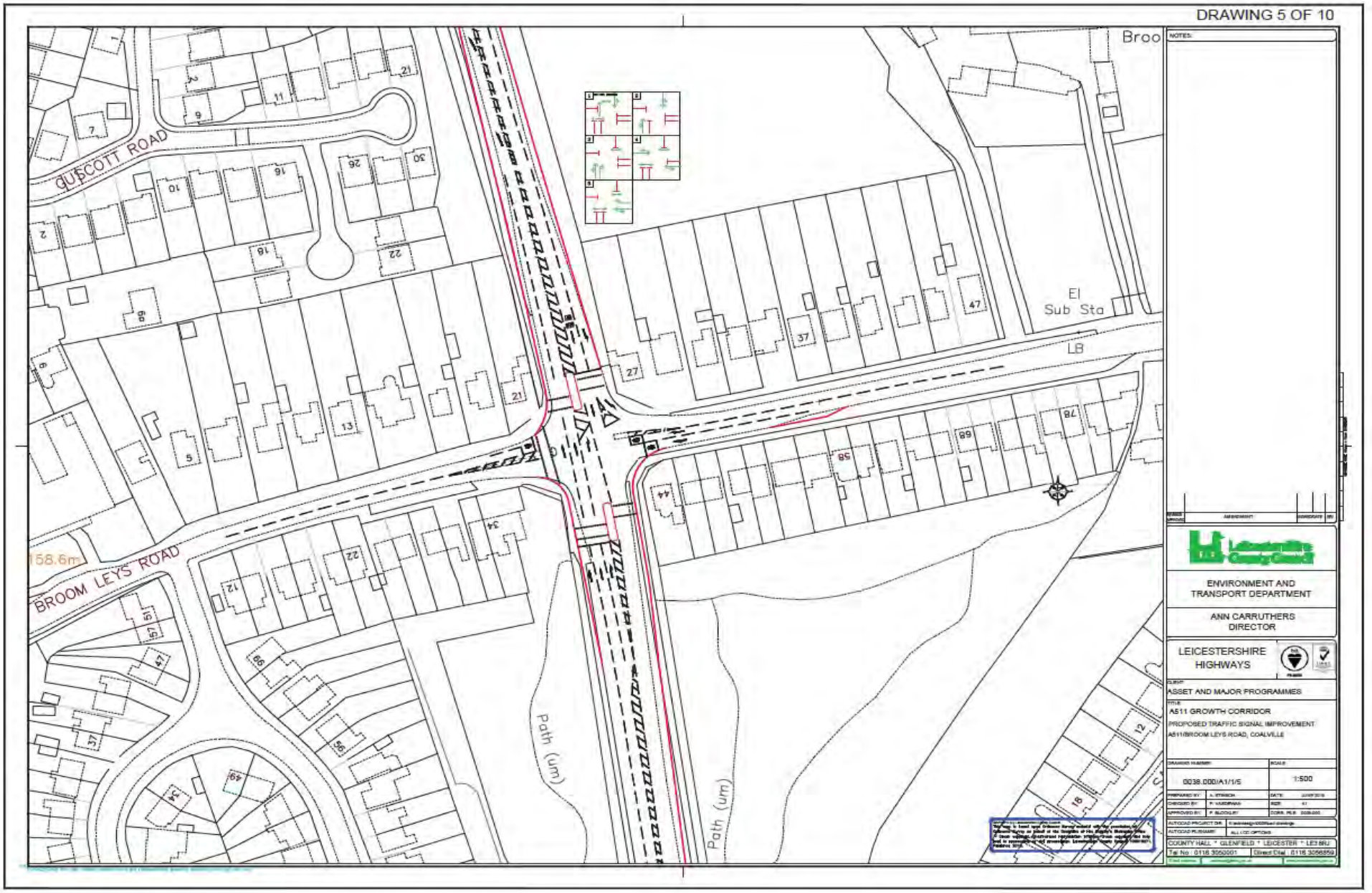


A511/ Bardon Rd/ Bardon Link Road

- Infrastructure Cost: £7.5m
- Vehicle delays:
- benefits √ √ √ (High)
- **Recommendation:** include

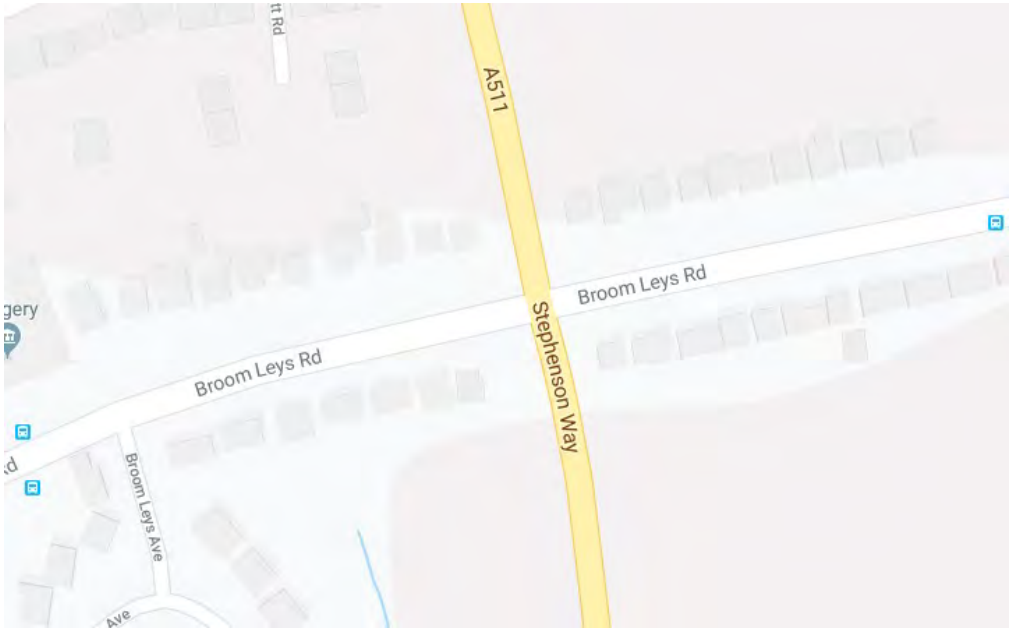


Junction 5 – Broom Leys Road Junction

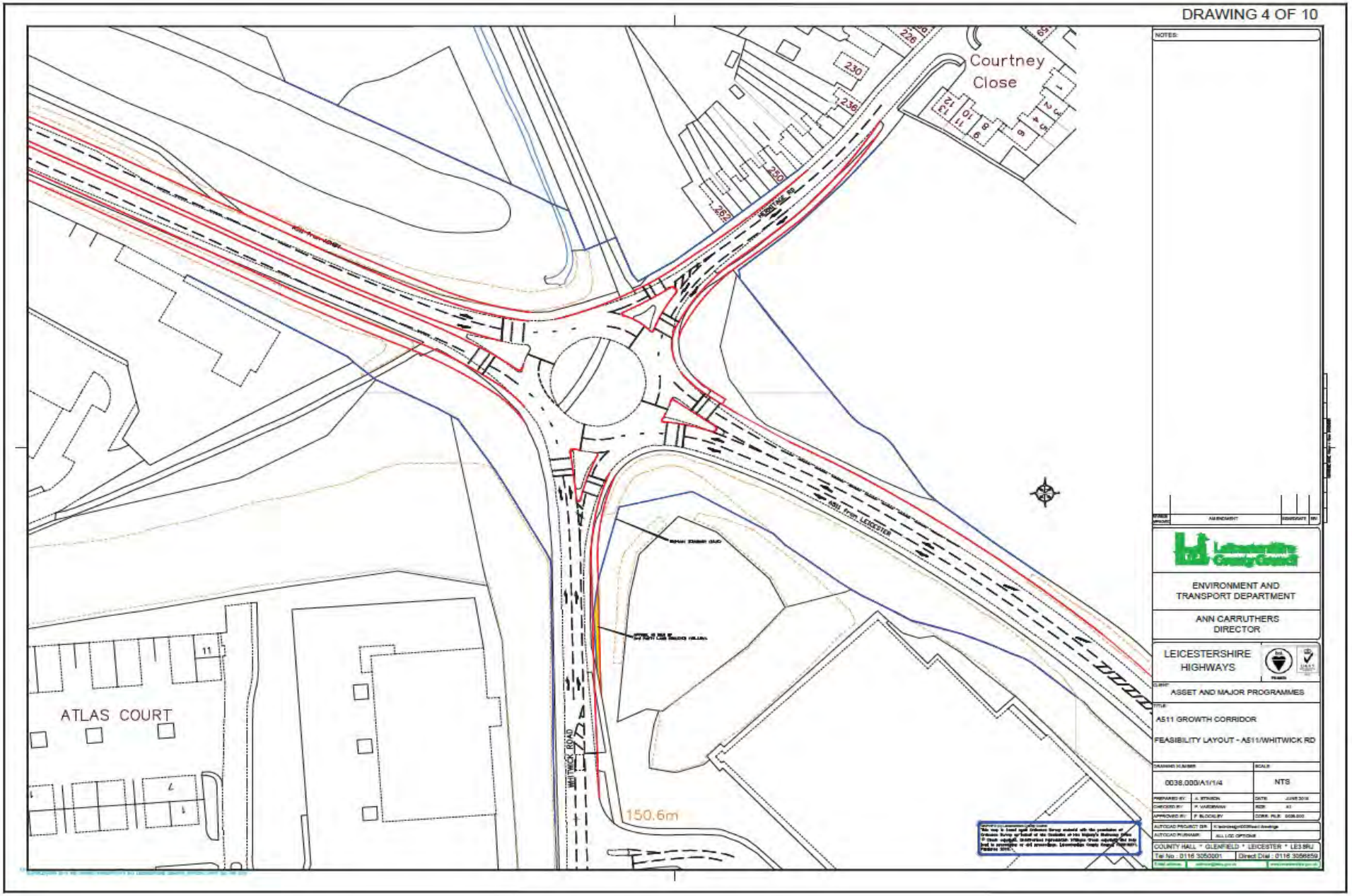


A511/ Broom Leys Rd Junction

- Infrastructure Cost: £2.8m
- Delay reduction
- Expected contribution: benefits (√)
- **Recommendation:** include



Junction 4 – Whitwick Road Roundabout



A511/ Whitwick Rd Roundabout

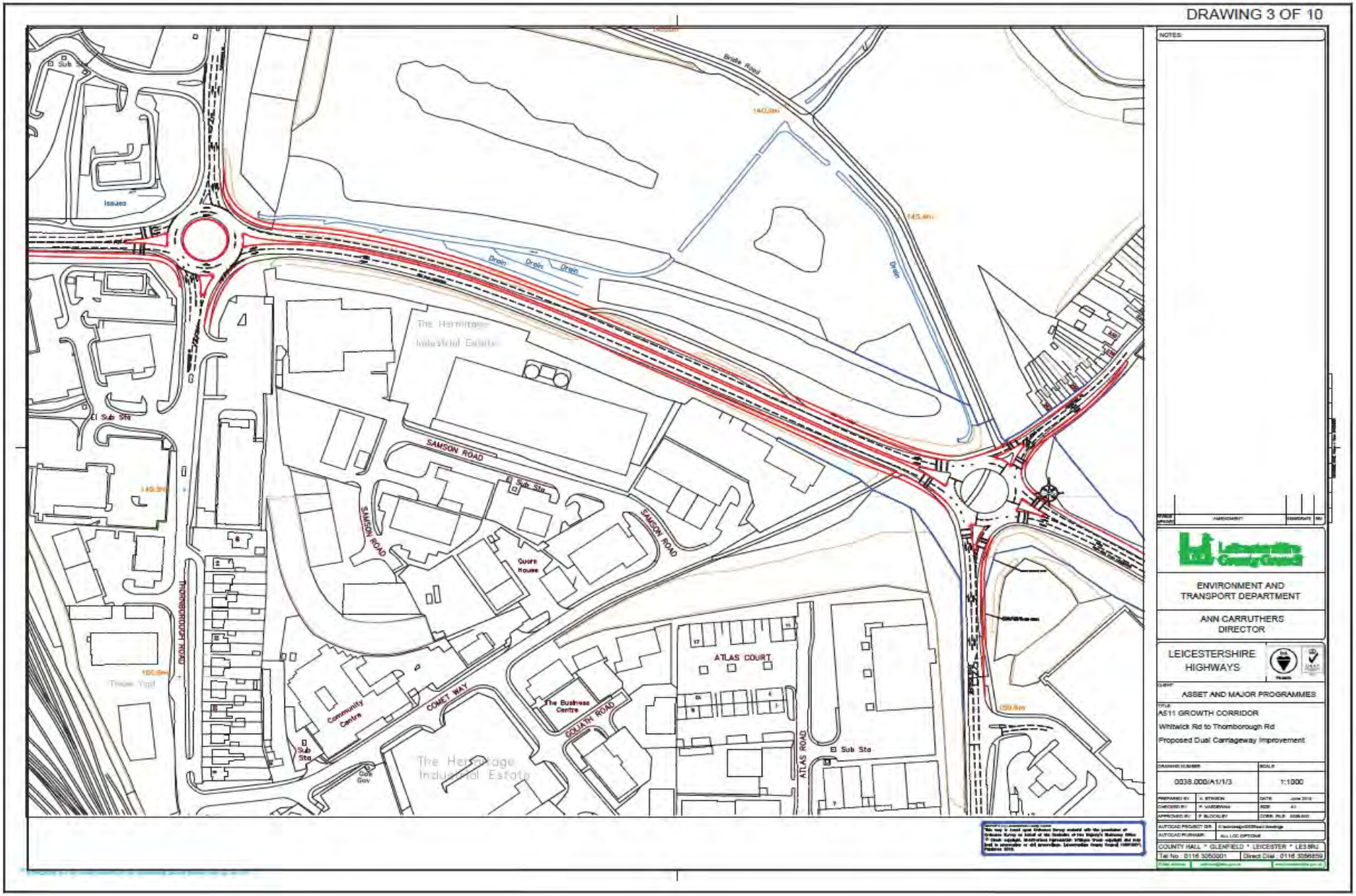
- Infrastructure Cost: £2.9m

- Delay increase – We think that signal optimisation may help address the disbenefits seen in the SOBC tests; contribution may be neutral or modest benefit
- Expected contribution: **dis**benefits (x)

- **Recommendation:** neutral

Junction 3 – Dual Carriageway

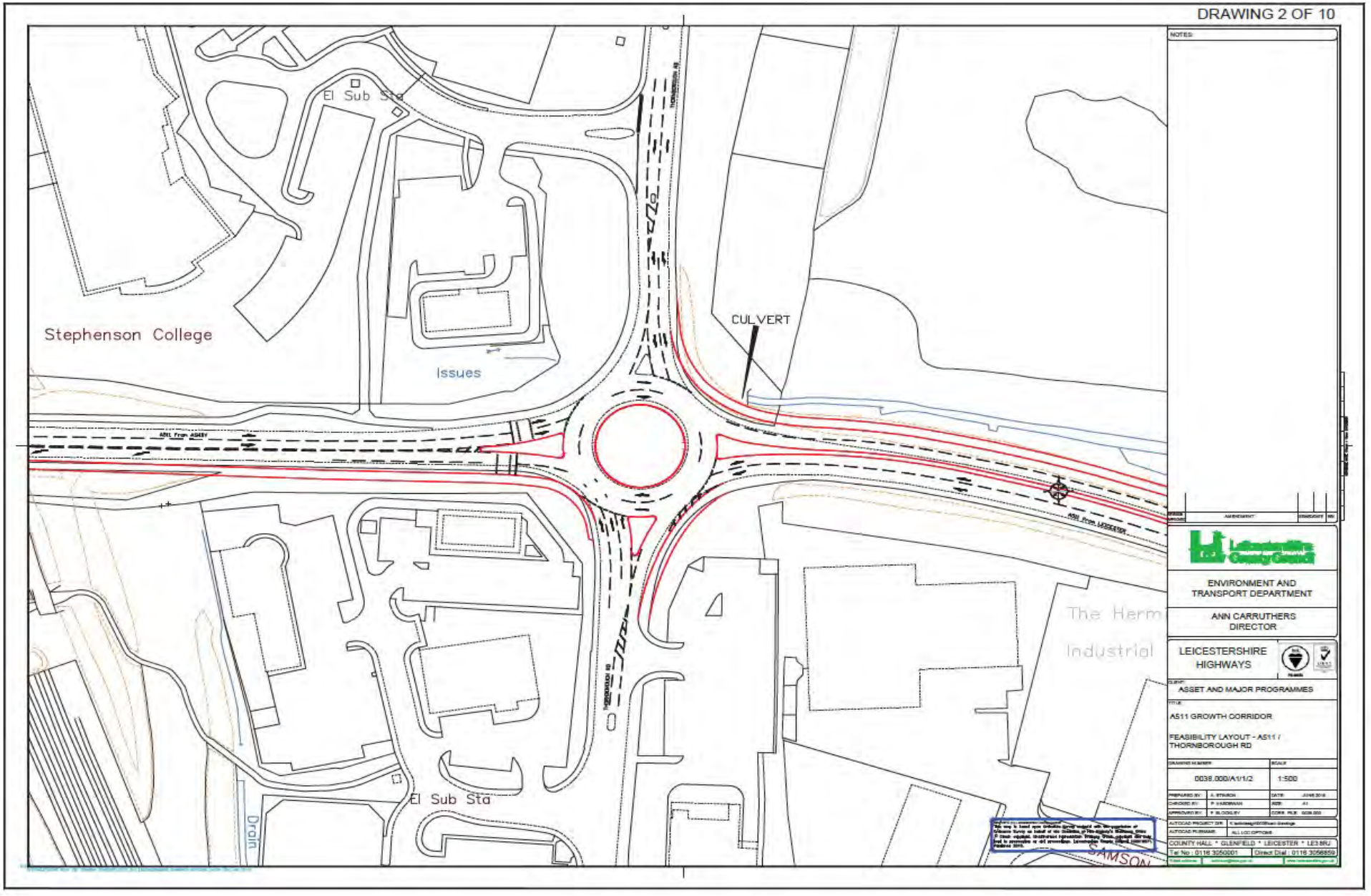
Leicestershire County Council



Dual Carriageway

- Infrastructure Cost: £3.1m
- V/C reduces from ~75 to ~25 in 2036 - Greater benefit expected in 2051
- Expected contribution: negligible in 2026/2036, benefits (√) in 2051
- **Recommendation:** include

Junction 2 – Thornborough Road Roundabout



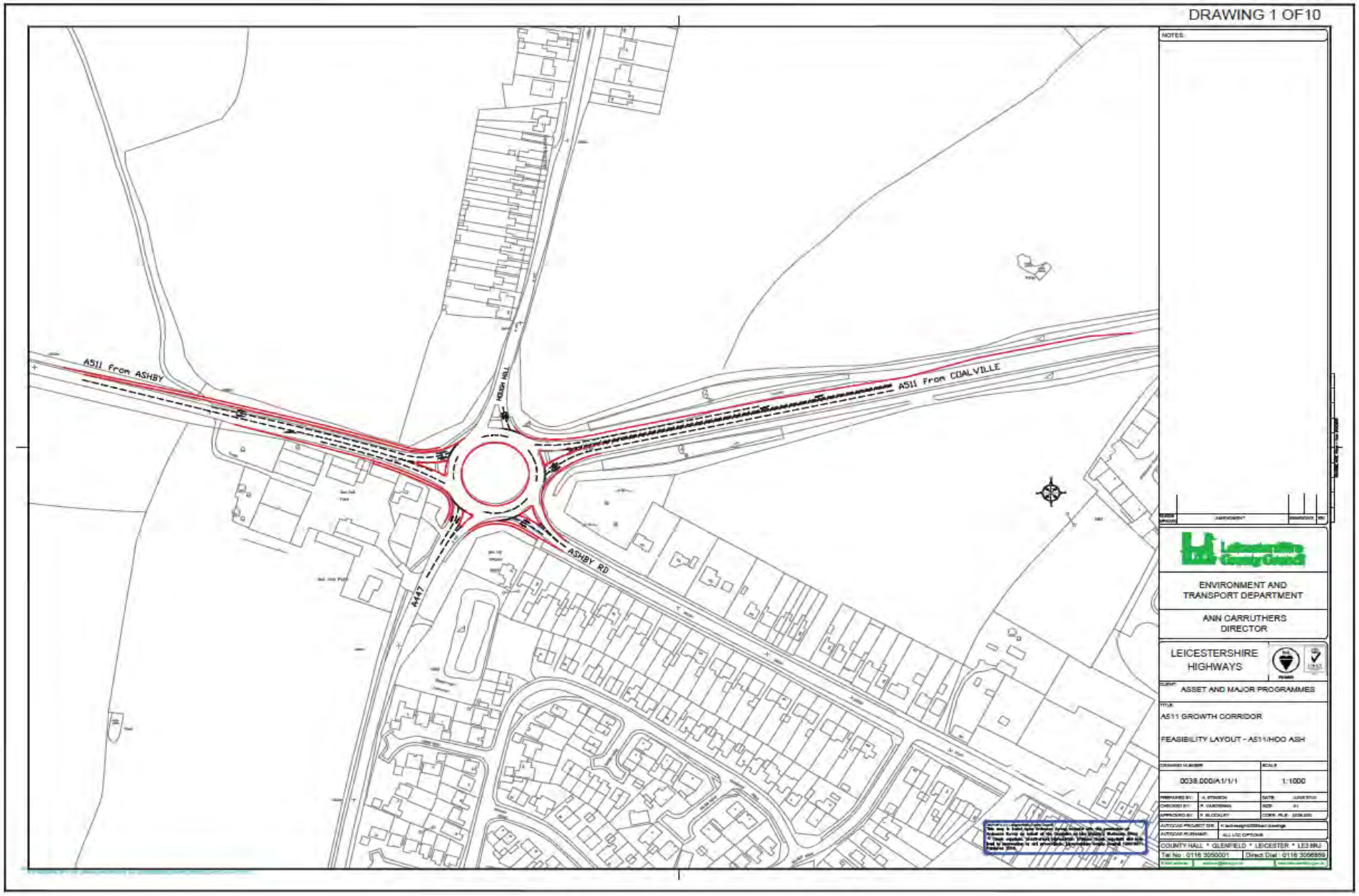
A511/ Thornborough Rd Roundabout

Leicestershire County Council

- Infrastructure Cost: £2.1m
- Delay reduction
- Expected contribution: benefits (√)
- **Recommendation:** include

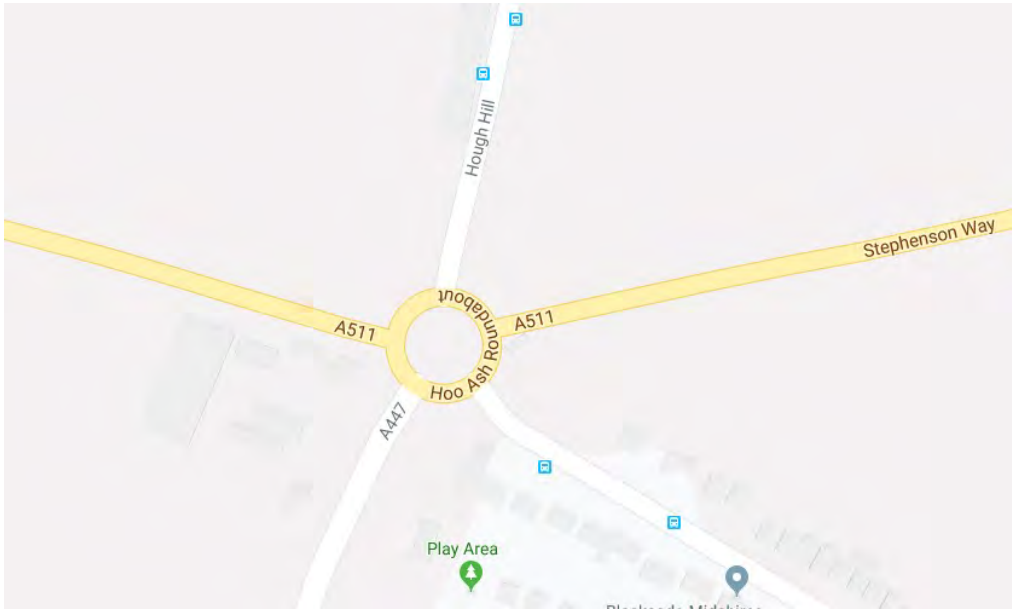
Junction 1 – Hoo Ash Roundabout

Leicestershire County Council



A511/ Hoo Ash Roundabout

- Infrastructure Cost: £3.9m
- Delay reduction
- Expected contribution: benefits (√)
- **Recommendation:** include



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