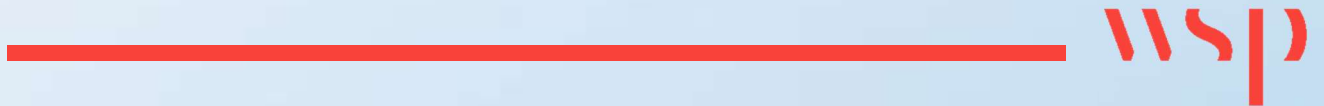


Appendix A

2017 OPTIONS ASSESSMENT REPORT



NOVEMBER 2017

Melton Mowbray Distributor Road OPTIONS ASSESSMENT REPORT

One Queens Drive
Birmingham

B5 4PJ
www.wsp.com

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8.1 SUMMARY74

INTRODUCTION

1.1 BACKGROUND

- 1.1.1 WSP have been appointed by Leicestershire County Council (LCC) to update the Option Assessment Report (OAR) previously prepared by Jacobs as part of the 2016 submission to DfT for the Melton Mowbray Distributor Road Scheme (MMDR).
- 1.1.2 This OAR has therefore been developed to specifically support the Outline Business Case (OBC) to DfT, as well as future statutory procedures.
- 1.1.3 A substantial amount of work has previously been carried out in the option development and initial sifting stage for this scheme. This report therefore consolidates a number of previous reports (including the Transport Evidence Base for Melton - Phase 1 & 2 reports) – and presents the most recent analysis which supports development of the preferred scheme.
- 1.1.4 This update to the OAR follows the development of the new LLITM 2014 base model, particularly in terms of the analysis previously undertaken in the previous LLITM v5.2 model that saw significantly stronger user benefits in terms of an Eastern option compared to a Western route.
- 1.1.5 This updated model has been used to re-test the levels of scheme benefit for support the Outline Business Case for DfT, and also incorporates the receipt of feedback on the OAR from the DfT.
- 1.1.6 In summary, this report updates the previous OAR dated 8th July 2016 prepared by Jacobs and submitted to DfT in September 2016, and provides the following additions and updates;
- à Presents refreshed evidence on problems and issues, congestion levels, through traffic levels and scheme option user benefits analysis, using the updated LLITM 2014 model and future year model scenarios derived from it;
 - à Provides a summary of the evidence of existing problems identified and wide range of options considered, sifted and qualitatively appraised to develop the short list of schemes that were tested in the previous report. This was undertaken through a series of extensive evidence base work streams work carried out by Jacobs on the behalf of both Leicestershire County Council and Melton Borough Council, with reference to officer and local stakeholder groups; and
 - à Refreshes and re-runs the LLITM transport model, based on the new 2014 Base update, to present the latest available evidence in terms of transport user benefits, and the difference between the prime alternatives.

1.2 PROBLEM IDENTIFICATION & LOCAL CONTEXT

- 1.2.1 Melton Mowbray is a market town in Melton Borough, which is an attractive rural area in the north-east part of Leicestershire and is located at the heart of East Midlands.
- 1.2.2 The Borough has a total population of approximately 50,376 according to the 2011 Census. The main activities of the Borough are centred on the market town of Melton Mowbray.
- 1.2.3 The Borough's employment base is primarily in nationally and internationally significant food and drink related manufacturing, and associated agricultural industries, focused on Melton Mowbray. Melton Mowbray is also where most retail, leisure and service sector jobs are located. Tourism which makes a vital contribution to the Borough's economy occurs at locations more widely spread across the Borough as well as at Melton Mowbray.
- 1.2.4 The Borough's connectivity needs relate to cross and through traffic movements, internally and externally to Melton accessing jobs, shops and services in the Borough. The manufacturing businesses are dependent on the movement of products including food products and access to the strategic road network.
- 1.2.5 The Borough is crossed by the A606 Nottingham to Oakham road and the A607 Leicester to Grantham road, each of which converge in the centre of Melton Mowbray, along with a number of other more local routes.
- 1.2.6 The M1 Motorway is about 25 minutes' drive time to the west of Melton Mowbray the A1 trunk road is about 25 minutes' drive time to the east and Nottingham and East Midlands Airport are about 45 minutes' drive time to the north west. Traffic is known to cross the Borough to link from the M1 to the A1 and the east coast ports.
- 1.2.7 Congestion in the centre of Melton Mowbray has been noted as a long standing issue by both Leicestershire County Council and Melton Borough Council; and that can be dated back to the late 1990's and early 2000's, and through successive Local Transport Plans.¹
- 1.2.8 However, the issue has become increasingly pronounced, both in terms of recent trends in traffic growth since the recession, and in light of the significant levels of growth planned for the town as part of the Local Plan.
- 1.2.9 Historically, options considered over this period have generally been developed to tackle existing congestion issues, rather than simultaneously focusing on improving network conditions and accommodating and accelerating the high levels of housing and employment growth now proposed in the town.
- 1.2.10 Importantly, a significant number of dwellings (totalling more than 2,500) are currently part of active planning applications in the town - as part of the Local Plan delivery of over 4,000 dwellings in Melton Mowbray.
- 1.2.11 It is both the current levels of congestion in Melton Mowbray, and the active nature of these applications that make the scheme a priority, and why it is needed now.
- 1.2.12 In 2014 and 2015, work undertaken on the Transport Strategy Evidence Base highlighted current levels of congestion, significant levels of through traffic and limited spare capacity for growth as critical issues facing the historic market town.

¹ A Melton Bypass scheme was developed by Leicestershire County Council as part of Local Transport Plan 2 covering the period 2006-2011. This proposed road was not allocated regional transport funding in 2009, but Leicestershire County Council continued to study further options for relieving congestion in Melton as part of Local Transport Plan 3 for the period 2011-2026.

- 1.2.13 In 2017 the same transport challenges remain, but with ever greater focus on the need to deliver and accelerate additional housing- in a town with a strong employment base, enviably low employment rates, and a need to deliver housing to sustain employment and economic growth.

1.3 OVERVIEW OF ASSESSMENT

- 1.3.1 Section 2.11.1 of Department for Transport (DfT)'s Transport Appraisal Guidance (TAG) states that an Option Assessment Report should document the process of identifying the need for intervention and the process of option development and selection.
- 1.3.2 This OAR provides the details behind each of these (also outlined in Figure 1-1) in order to meet the requirements set out within the DfT Transport Appraisal Process² ;
- à Present a sound body of analysis to provide evidence of the problems and challenges and need for intervention;
 - à Define the future 'without scheme' case and potential scenarios around this case (e.g. where different growth in travel demand from the core assumptions may increase or reduce transport problems and hence the need for intervention);
 - à Clearly state the study or intervention-specific objectives and intended outcomes and enough information to facilitate an understanding of the links between issues and context and the final statement of objectives. Define the geographical area to impact to be addressed by the intervention;
 - à Document the stakeholder engagement strategy adopted including stakeholders involved and their role in informing the option development process;
 - à Document the process of option generation sifting and assessment. Decisions made on discarded options should be recorded along with supporting evidence:
 - à Document the results of the subsequent assessment of potential options against the Option Assessment Framework;
 - à Summarise the headline results across all options considered and provide conclusions on the comparative performance of options; and
 - à Identify the better performing options (including a low cost solution) to be taken forward for further more detailed appraisal in Stage 2. Better performing options have then been re-tested in the latest version of the LLITM model, to best support the OBC.

² DfT 2014, Transport Analysis Guidance: The Transport Appraisal Process
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/431185/webtag-tag-transport-appraisal-process.pdf

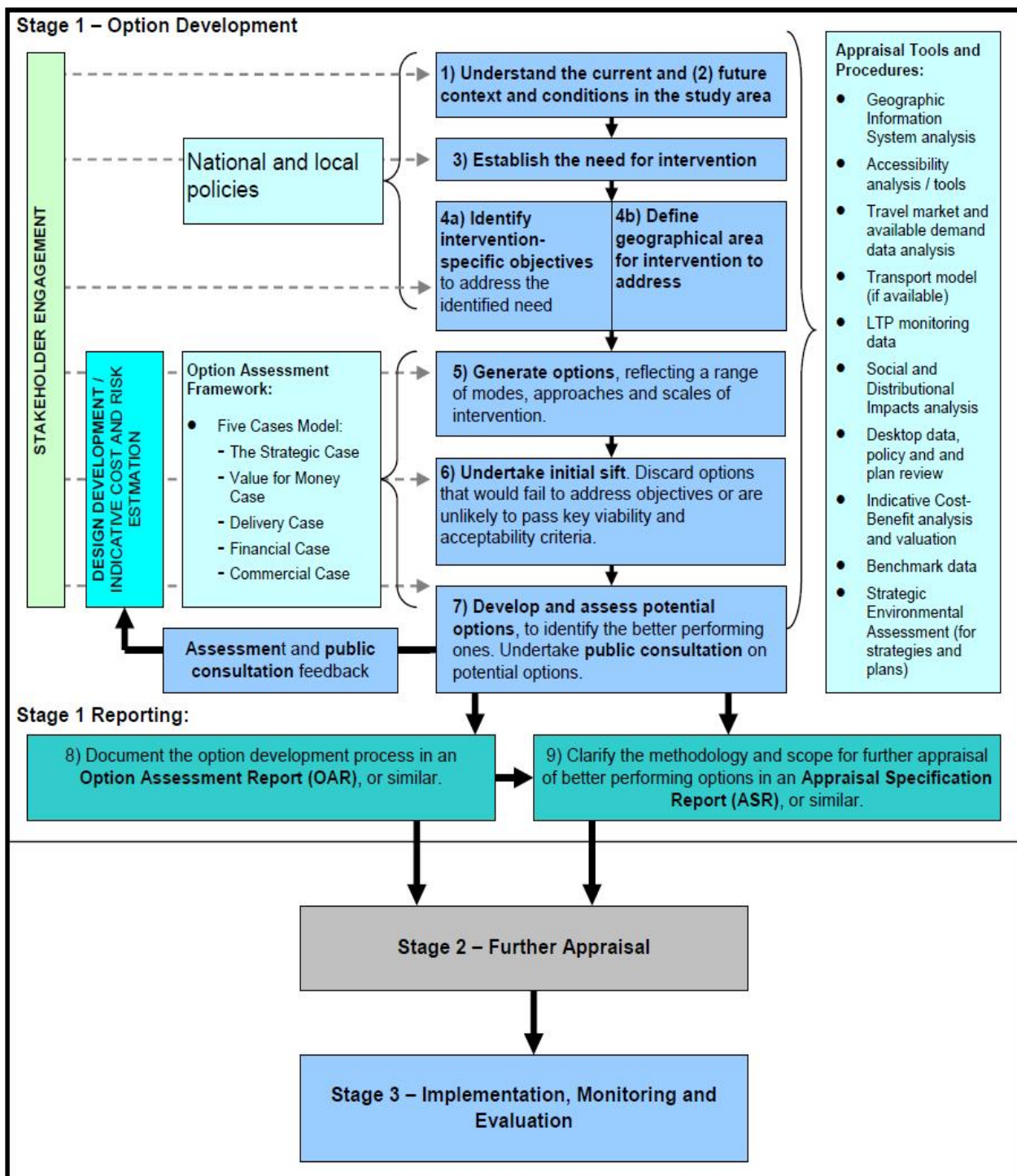


Figure 1-1: Stage 1 (Option Development) process – Extract from WebTAG Transport Analysis Guidance - The Transport Appraisal Process)

1.4 REPORTS FROM PREVIOUS WORK

- 1.4.1 As mentioned earlier, extensive amounts of work has been previously carried out in collecting the evidence base in support of the scheme and have been used to provide the evidence to underpin the scheme development to date.
- 1.4.2 This work is documented in the following reports which are referred to (and summarised) in this OAR:
- à Melton Mowbray Transport Strategy Evidence Base- Stages 1 2 & 3, Jacobs (2014 to 2015).
 - à Melton Mowbray Cumulative Development Impact Study, Jacobs 2014;
 - à Melton Western Bypass Options Testing, Jacobs April 2015;
 - à Melton Mowbray Transport and New Development Position Statement, MBC Sept 2015; and
 - à Melton Mowbray Distributor Road Option Appraisal Report, Jacobs 2016.
- 1.4.3 This OAR summaries the key points, analyses the latest evidence from the new LLITM 2014 Base model, and then re-assesses the most promising options in the new model.

1.5 REPORT STRUCTURE

- 1.5.1 The remainder of the document is structured as follows:
- à **Chapter 2:** Current situation – describes the existing transportation conditions; providing an understanding of existing transport supply and demand;
 - à **Chapter 3:** Future ‘without scheme’ situation – defines the future ‘without scheme’ case and also presents the future ‘without scheme’ transport conditions;
 - à **Chapter 4:** Need for Intervention and Scheme Objectives – summarises current and future transport-related problems and underlying causes that establish the need for an intervention. It also presents the resulting scheme objectives;
 - à **Chapter 5:** Option Generation - documents the process of option generation sifting and assessment and provides a brief description of why some options were discarded;
 - à **Chapter 6:** Options Assessment - documents the results of the subsequent assessment of potential options against the Option Assessment Framework;
 - à **Chapter 7:** Documents the appraisal of monetised and non-monetised benefits; and
 - à **Chapter 8:** Summary – summarises the results of the option assessment and presents the better performing options.

2 CURRENT SITUATION

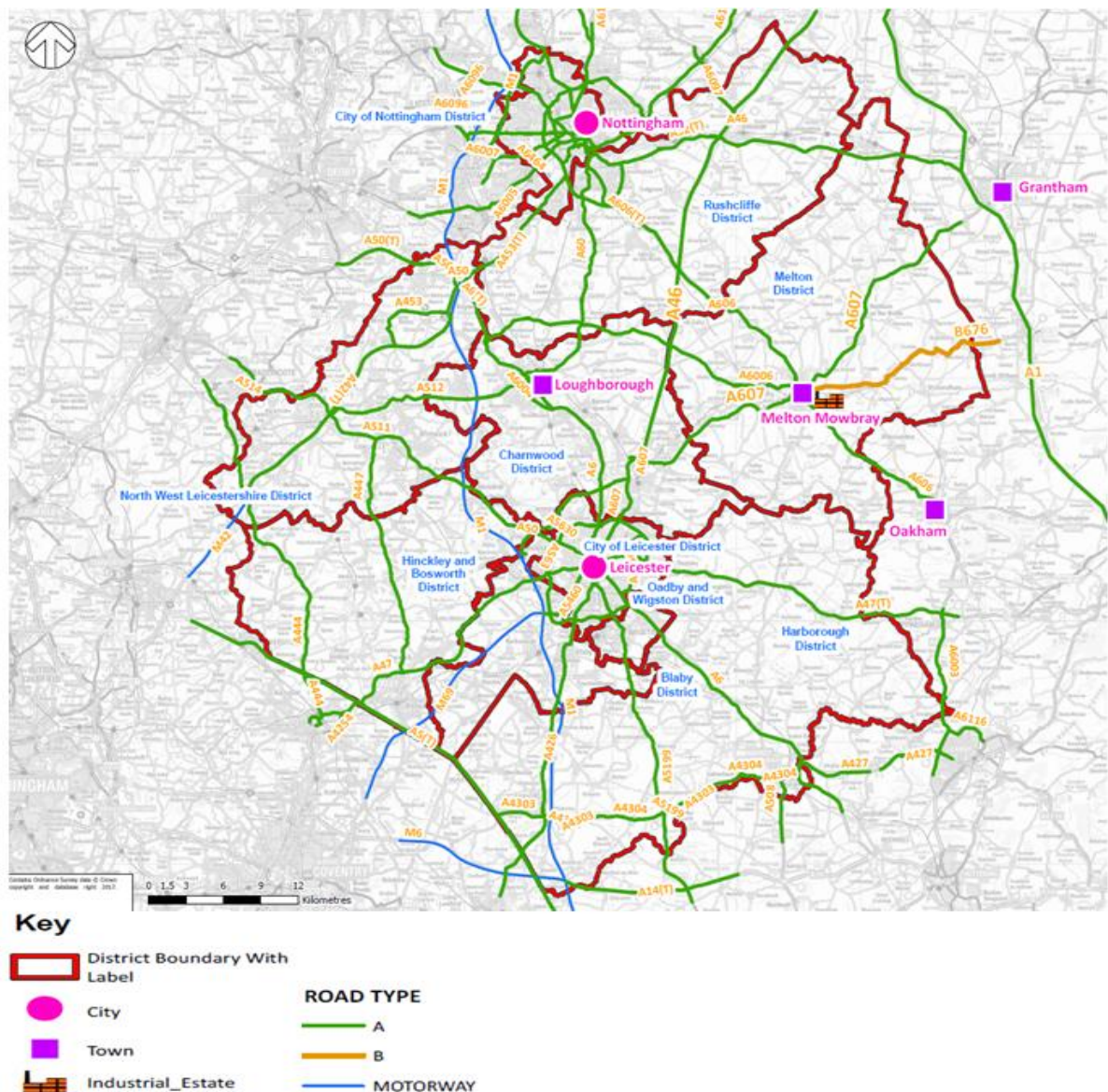
2.1 INTRODUCTION

2.1.1 This chapter describes the present conditions transport conditions surrounding the market town of Melton Mowbray. It provides evidence of the problems, challenges and the need for intervention and informs the option generation process presented later on in this OAR.

2.2 EXISTING ARRANGEMENTS: MELTON'S LOCATION & NETWORK CONNECTIVITY

2.2.1 The town of Melton Mowbray is located in the Borough of Melton in the north-eastern corner of the county of Leicestershire, 20 miles north-west of Leicester, 20 miles south-west of Nottingham and 15 miles east of Loughborough.

2.2.2 The population of the town is just over 25,000, which represents just over half of the 50,000 people who live in the Borough of Melton.



- 2.2.3 At least 6,125 new dwellings are proposed for the borough of Melton as part of the Local Plan between the period 2011 and 2036, most of which will take place in the town of Melton Mowbray (65% approximately). This will lead to a significant increase in the size and population of Melton given its current population of 25,000.
- 2.2.4 At present, planning applications are being progressed for the Sustainable Urban Extensions to the South (for up to 2,000 dwellings) and to the North of the town (for 1,500 dwellings).
- 2.2.5 In terms of travel patterns, around 1,000 people commute to the Borough of Melton to work from Charnwood and Leicester, and around 500 commute to the Borough from Rushcliffe and Rutland. Conversely, around 1,800 residents of the Borough of Melton travel to work in Leicester, while roughly 1,000 commute to Charnwood, 1,000 to Rutland, 850 to Nottingham.
- 2.2.6 Overall, there is a current net outflow of 4,000 people from the Borough of Melton to other districts for work trips, with around 6,000 people commuting into the Borough for work and 10,000 leaving it.
- 2.2.7 This contributes to the through traffic issue in Melton Mowbray: since not all employment is located in the centre of the town, in-commuters must cross the town to reach employment locations on the edge of the town, with a significant amount of food manufacturing located to the east of the town centre. The scale of commuting in and out of the town is also a factor behind the scale of future employment provision (51ha of employment land leading to 6,000 jobs proposed for the borough of Melton as part of the Local Plan up to 2036) which will help provide an enhanced local labour market for the town of Melton's key industries, and its national and international importance and reputation for food production in particular.
- 2.2.8 In terms of connectivity to other key economic centres in the Midlands, the town is connected to Nottingham and Oakham by the A606 and to Leicester and Grantham (and the A1) by the A607.
- 2.2.9 These routes provide the strategic connectivity to Melton Mowbray, but are also a key source of through traffic issues; especially in terms of access to Leicester, Nottingham and the A1.
- 2.2.10 The same radials also serve the town's residential neighbourhoods. The main industrial area is to the east of the town centre, and is served by the B676 and the A6076. Melton Mowbray's manufacturing and food production activities are typically located in this area, and include some of the country's largest food producers, including Just Egg Chilled Foods, Quadex, Pukka Pies, Sundeen and Mars.
- 2.2.11 These businesses serve a national and international marketplace, and as a result also generate significant HGV movements.
- 2.2.12 Market days present a particular problem whereby the strong visitor economy to Melton Mowbray interacts with current levels of local and through traffic demands. This results in levels of traffic being particularly high on these days, with capacity limitations on the network leading to consistent delay problems even outside of traditional peak periods.
- 2.2.13 Melton Mowbray is not directly served by the Strategic Road Network, but it is located roughly ten miles by car from the A46 to the west and 13 miles from the A1 to the east.
- 2.2.14 However the A607 route that bisects the town is part of the Major Road Network (MRN) as proposed by the Rees-Jeffreys Road Fund report in 2016, which will be consulted on by DfT in Autumn 2017.
- 2.2.15 The MRN comprises 3,800 miles of local authority A-roads which carry 43% of England's traffic and therefore provides a critical function in meeting the transport and economic needs of the country.
- 2.2.16 In April 2017, Midlands Connect identified developing the MRN in the Midlands as an early priority for Leicester and Leicestershire. The MMDR together with the Southern Distributor Road, connecting the A607 both sides of the town facilitates part of this network and so helping it to perform its economic function more effectively.

2.3 EXISTING ARRANGEMENTS: TOWN CENTRE CONSTRAINTS

2.3.1 The local highway network in Melton Mowbray consists of seven key radial routes, which are shown in Figure 2-1.



Figure 2-1: Map of Melton Mowbray town centre, showing key traffic pinchpoints (1-9)

- 2.3.2 These include the A606 and the A607, which bisect the town, along with Scaford Road, Saxby Road (B676), Dalby Road (B6047) and the A6006, which terminate in or on the edge of the town centre.
- 2.3.3 The River Eye and the railway line (a key east-west link between Birmingham, Leicester, Peterborough and Cambridge) both bisect the town just south of the town centre in two parallel lines running from east to west.
- 2.3.4 The river and railway line create constraints for vehicular traffic in the town, and as a result of these physical constraints there are only a small number of routes possible for crossing the railway and river to access, or travel through, the town.
- 2.3.5 This results in three north-south routes crossing the railway line (A607, Dalby Road and A606) and two north-south routes crossing the river (A607 and A606).
- 2.3.6 However, and importantly, traffic on any of these routes is funnelled onto the A607 in the town centre where there is significant congestion and delay from the convergence of these routes to a few key junctions.
- 2.3.7 These include the junctions of the A607/A6006 (4), the junction of A607/ Leicester Road (2), the junction of A607/Thorpe Road (1), which are all circled red in Figure 2-1.

2.3.8 Once these junctions reach capacity, further congestion issues are then experienced at a range of other junctions on the approaches to the town centre, and including the following locations, also highlighted in Figure 2-1.

1. A607/Thorpe End
2. A607/Leicester Road
3. A607/Snow Hill
4. A607/A6006
5. A607/Scaford Road
6. A607 Leicester Road / Dalby Road
7. A606 Burton Street / Mill Street
8. A606 Burton Road / Ankle Hill
9. B6407 Dalby Road / Warwick Road

2.4 EXISTING ARRANGEMENTS: JOURNEY TO WORK STATS (2011 CENSUS)

2.4.1 As part of the evidence base, the 2011 census data have been interrogated to understand the level of patronage of the various transport modes in Melton compared to national and regional figures. Table 2-1 summaries the findings of this exercise.

Table 2-1 Level of Patronage for various Transport Modes to Work

	Car	Public Transport	Walk/Cycle	Other
England	66%	18%	14%	2%
East Midlands	75%	8%	15%	2%
Leicestershire	80%	6%	13%	1%
Melton	78%	5%	16%	1%
Melton Urban Area	73%	4%	22%	1%

2.4.2 As shown in Table 2-1, car commuting levels for Melton are similar to the rest of Leicestershire. Out of 24,000 commuters, around 19,000 commuted by car at the time of the 2011 census.

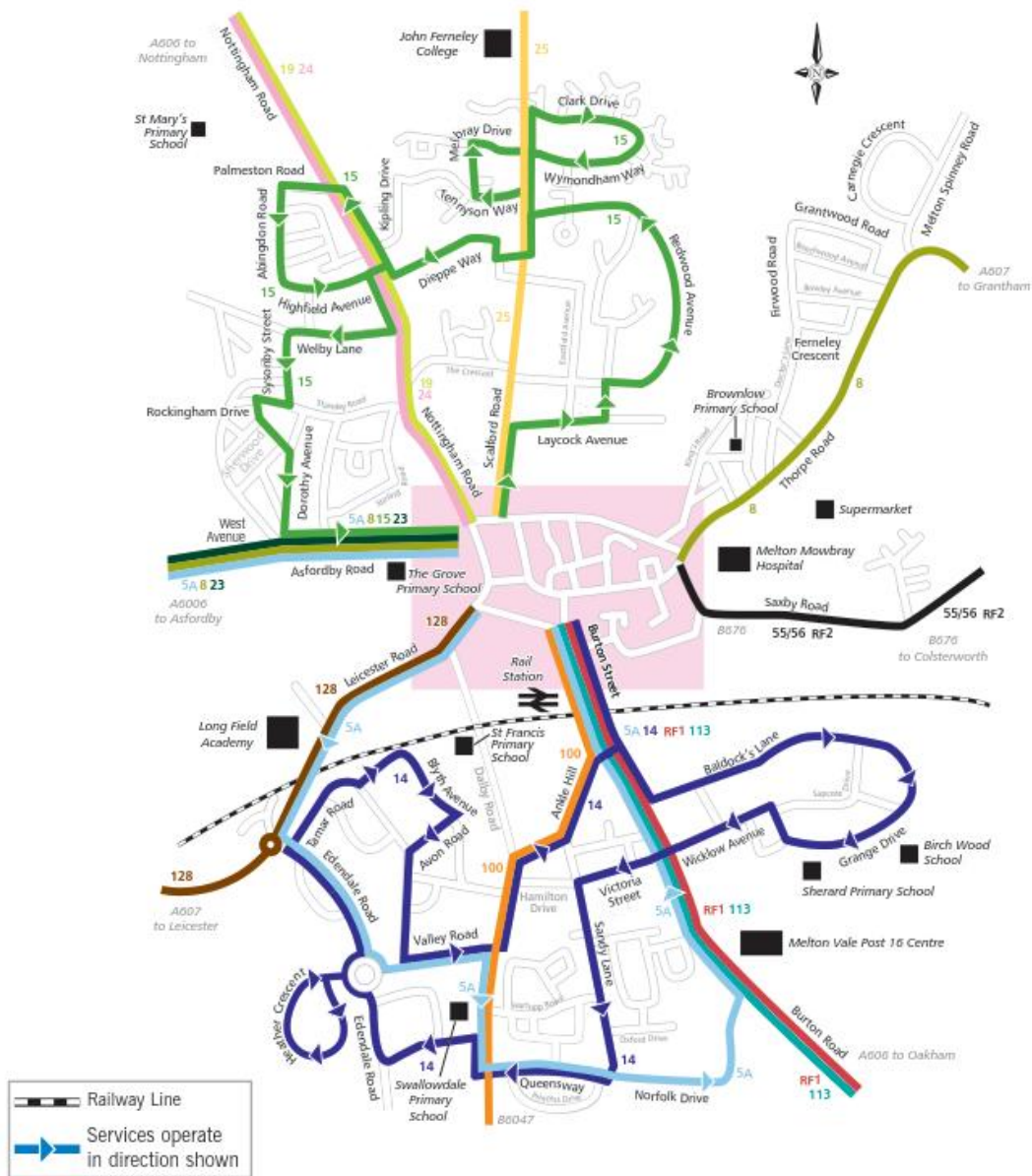
2.4.3 The level of public transport patronage in Melton Mowbray is low compared the rest of England and East Midlands, however, almost a quarter of commuters in the town travel on foot or bicycle.

2.5 EXISTING ARRANGEMENTS: PUBLIC TRANSPORT & ACTIVE MODES

- 2.5.1 Melton Mowbray has a railway station, located south of the town centre, which is used for longer distance trips. Situated on the Birmingham to Peterborough line, there are direct services to Stanstead Airport, Cambridge, Ely, Peterborough, Nuneaton, Leicester and Birmingham New Street. However, there are no railway stations in the suburbs of the town or in the surrounding towns and villages; therefore local public transport is comprised solely of bus services.
- 2.5.2 Public transport currently plays a limited role in meeting the transport needs of the town. In the 2011 Census, for residents of the Borough of Melton, the mode share for public transport was 5%, compared to 78% for car and 16% for walking and cycling, which demonstrates that public transport is currently not popular.
- 2.5.3 Walking is a more appealing alternative to car trips than bus or rail, not least because trip distances within the town are usually relatively short: it is less than three miles from the northern edge of the town to the southern edge and around 1.5 miles from east to west.
- 2.5.4 Whilst there are currently 13 bus services that serve Melton Mowbray, frequencies are generally low that require users to plan their journeys in advance (rather than “turning up” to travel) and offer limited flexibility in terms of departure times. Service spans are limited with less frequent services in the evenings.
- 2.5.5 Bus routes within the town are short with very slow speeds as a result of being part of general traffic. Bus journey times are negatively affected by the same congestion encountered by other vehicles.
- 2.5.6 Bus services are shown in Figure 2-2.

Figure 2-2 Map of bus services in Melton Mowbray (Leicestershire County Council)

Map not to scale



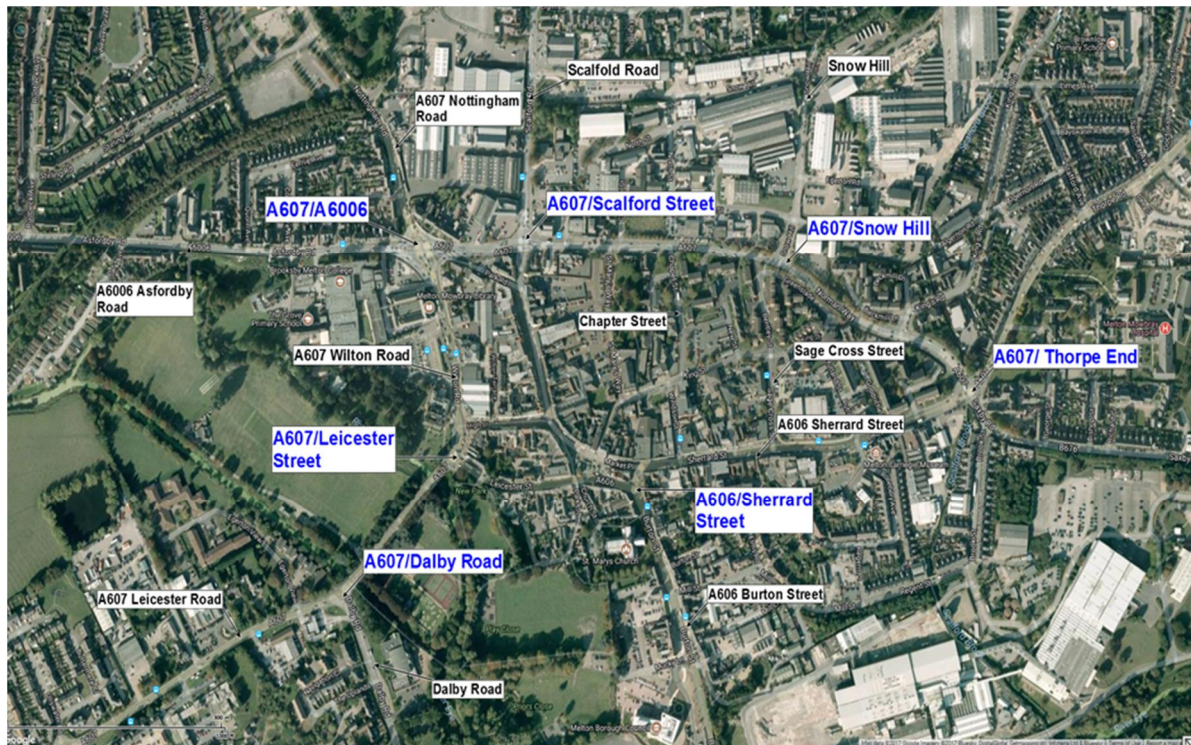
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council. Licence Number 100019271. Published October 2017.

- 2.5.7 However, there are limited, dedicated routes for walkers and cyclists in the town at present, with particular issues for pedestrian severance crossing Norman Way, Nottingham Road and Leicester Road junctions. The removal of traffic from the town centre and associated key junctions needing to be traversed represents an important consideration of the scheme.
- 2.5.8 Any improvements to town centre traffic conditions, will also offer significant corresponding benefits for the public transport offer in Melton Mowbray too.

2.6 PROBLEMS AND ISSUES

- 2.6.1 As part of the process of developing the transport strategy for Melton Mowbray, detailed feasibility studies have been undertaken to evaluate the existing and future problems and issues prevailing within the town without any transport intervention - and to consider a range of potential transport measures as the Local Plan has developed.
- 2.6.2 These studies include:
- à Melton Transport Strategy Evidence Base (Stage 1 – Through Traffic Analysis, 2014);
 - à Melton Transport Strategy Evidence Base (Stage 2 – Non-Through Traffic Analysis, 2014);
 - à Melton Transport Strategy Evidence Base (Stage 3 – Analysis of Traffic at Points of Interest, 2015);
 - à Melton Mowbray Cumulative Development Impacts Study (2014); and
 - à Melton Mowbray Distributor Road Option Appraisal Report (July 2016)
- 2.6.3 Together with analysis carried out using the recently updated 2014 Base LLITM model, these documents provide the evidence for the current traffic-related problems and issues in Melton Mowbray.
- 2.6.4 The Local Model Validation Report (LMVR) for the LLITM 2014 Base has been made available to DfT as part of the submission, alongside a 'Local' LMVR that highlights the performance of the model in the vicinity of Melton Mowbray.
- 2.6.5 The following section presents the results from the LLITM 2014 Base relating to the current extent of the traffic related issues on the Melton Mowbray highway network. Indicators derived from traffic model output have been identified to capture the extent of these issues as identified through stakeholder engagement.
- 2.6.6 These relate to slow journey times, congestion, impedance relating to 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:
- 1) Town Centre Junction Delays;
 - 2) Travel Speeds;
 - 3) Levels of Congestion (volume to capacity ratios on roads approaching junctions);
 - 4) Levels of through traffic in the town centre; and
 - 5) HGV movements through the town centre.
- 2.6.7 Within the analysis in this chapter and the following chapters' reference is made to locations in the town centre which may not be familiar to the reader. These locations are therefore shown on Figure 2-3.

Figure 2-3: Key Reference Locations in Melton Mowbray



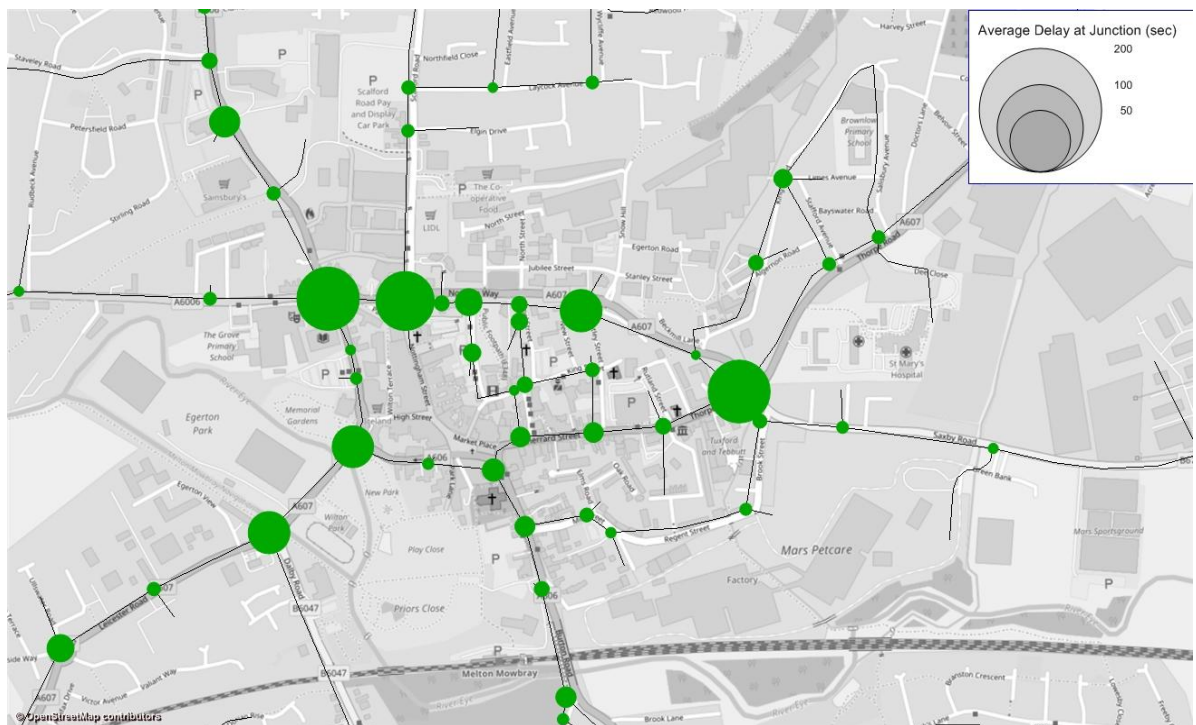
TOWN CENTRE JUNCTION DELAYS

- 2.6.8 The volume of through traffic passing through Melton Mowbray town centre results not only in congestion on links but also significant delays at several junctions. There are two peak traffic movements: one related to school traffic, within and across the town; and another, in the more traditional peak hours, related to commuting and through traffic in the town.
- 2.6.9 Figure 2-4 and Figure 2-5 from the LLITM SATURN model show the average level of delay at pinch points in the town centre in the 2014 Base AM and PM peaks respectively.

Figure 2-4 Node delays in the AM Peak in Melton Mowbray Town Centre in 2014



Figure 2-5 Node delays in the PM Peak in Melton Mowbray Town Centre in 2014



- 2.6.10 It should be noted that these are presented from the latest 2014 LLITM model as a demand weighted averages of the turning movements - rather than maximum delays observed for any turning movement - as well as being an average of across the peak hours, in a neutral month.
- 2.6.11 The analysis therefore tends to underestimate peak hour congestion, but serves to highlight the capacity related delays at a number of key junctions in and around the town centre.
- 2.6.12 As an average across all turning movements, the A607/ Nottingham Road Junction, Scaford Road, and Thorpe End Junction all experience 1.5 minutes average delay; with right and straight ahead movements at these junctions higher than this average.
- 2.6.13 Other junctions (of notable mention the A607/ Leicester Road, Dalby Road and Snow Hill Junctions) typically experience between 30 seconds to 1 minute of delay, as an average across all turning movements.
- 2.6.14 Importantly, it should also be noted that many vehicles have to pass through several of these junctions to reach, or cross, the town centre, so the overall level of delay as a journey time route extends significantly beyond these levels.
- 2.6.15 For example, traffic crossing the town centre east-west or north-south would encounter three or four of main pinch points and delay locations respectively, resulting in a typical (neutral day) delay of 4-5 minutes in total on this part of the journey.
- 2.6.16 To give these values some context, the centre of Melton Mowbray is little more than 500m across.
- 2.6.17 Alongside the scale of delay, this also creates network resilience issues; with limited route choice, and no alternatives across the town centre that don't already experience delay themselves.

TRAVEL SPEEDS

- 2.6.18 Further, Melton Mowbray experiences high levels of congestion. On a delay per mile basis Melton Mowbray has one of the highest levels of delay per mile in any area of Leicestershire, including the City of Leicester (HPIG Report, 2015).
- 2.6.19 This congestion arises due to the extent of through traffic, intra-town traffic, and traffic with destinations in Melton Mowbray itself, alongside network capacity that is limited by the number (and historic scale) of cross town routes, as well as geographical constraints from the river and rail line that funnel traffic to a limited number of key junctions.
- 2.6.20 As well as issues at these junctions, the slow speed of traffic through the centre of Melton Mowbray also encourages rat-running - especially through the historic centre, via routes such as Chapel Street and King Street that are not intended for such purposes.
- 2.6.21 Spatial traffic data derived from Google API, for Melton Mowbray, shown in Figure 2-6 to Figure 2-7, reveals the extent of the congestion problem. On these maps, red indicates slow-moving traffic (<10mph) while green indicates typically uncongested conditions.
- 2.6.22 These plots show that traffic congestion is demonstrated on all links in the town approaching the town centre, and across the whole extent of the town centre on a typical AM and PM peak. Vehicle movements are particularly slow on the A606 (north and south of the town), the A607 (east and west of the town) and on the western and southern sides of the town centre.
- 2.6.23 Further evidence as to the slow nature of speeds in Melton is also documented in the journey time validation section of the latest LLITM 2014 Base Model LMVR, drawing on TrafficMaster data as an additional source.

2.6.24 To further add to the above, Figure 2-8 indicates that on market-days there are significant levels of congestion even in the inter-peak, in addition to those experienced in the AM and PM peaks. Vehicle movements are slow in the town centre and on the northern radials across large parts of the day.

2.6.25 To demonstrate this is actually traffic-related congestion, Figure 2-9 shows a typical off-peak hour in Melton Mowbray by comparison. It is noted that travel speeds are consistently green across the town and town centre in the off-peak; demonstrating that the AM and PM peak patterns, as well as non-traditional peak hours on market days are reflective of the constraint placed on traffic by the town centre network. Many routes show at least a 20mph difference between peak and off-peak speeds.

Figure 2-6: AM Peak hour Speeds- Melton Mowbray

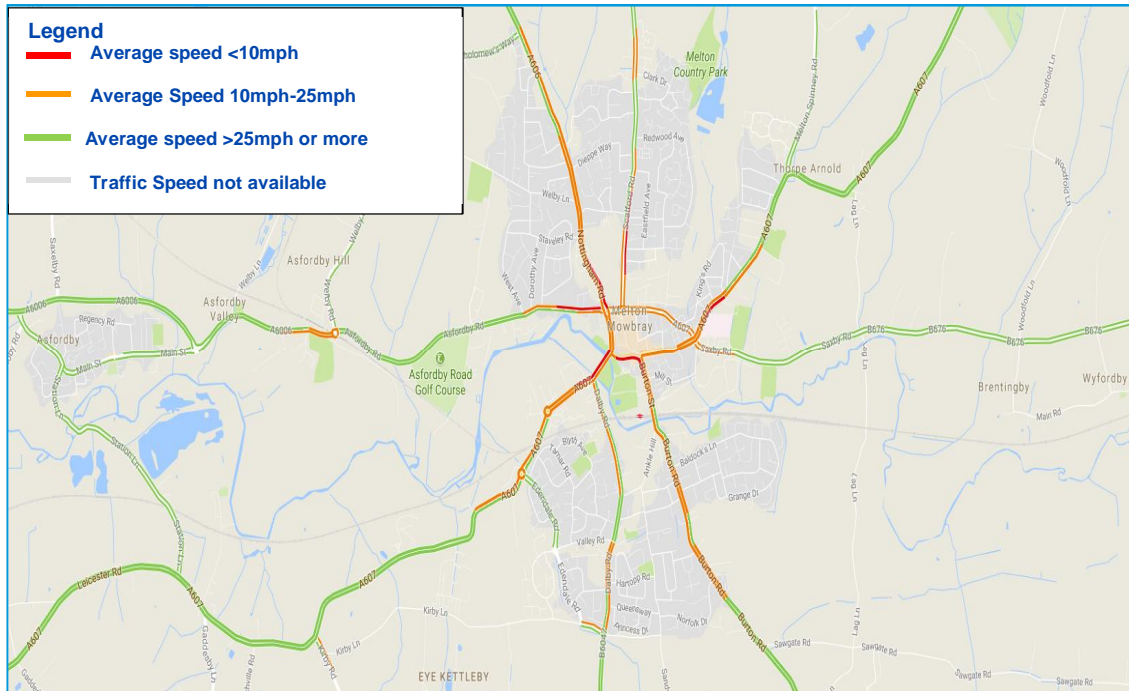


Figure 2-7: PM Peak hour Speeds- Melton Mowbray

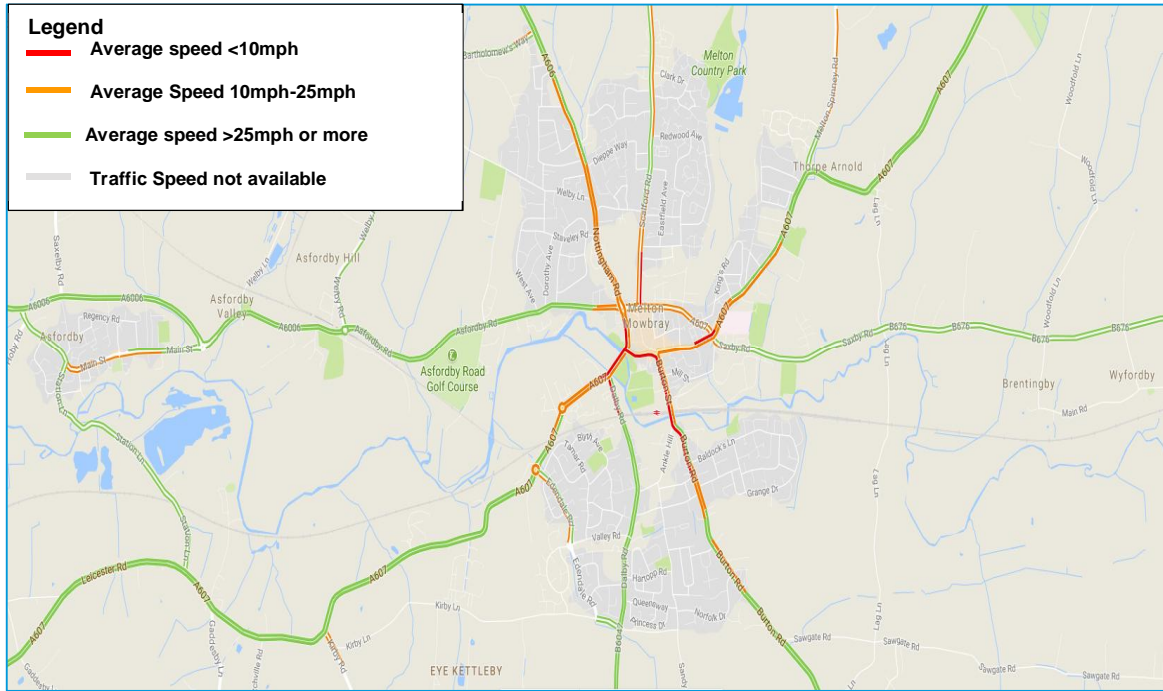


Figure 2-8: Inter-Peak Hour- Melton Mowbray on Market Days

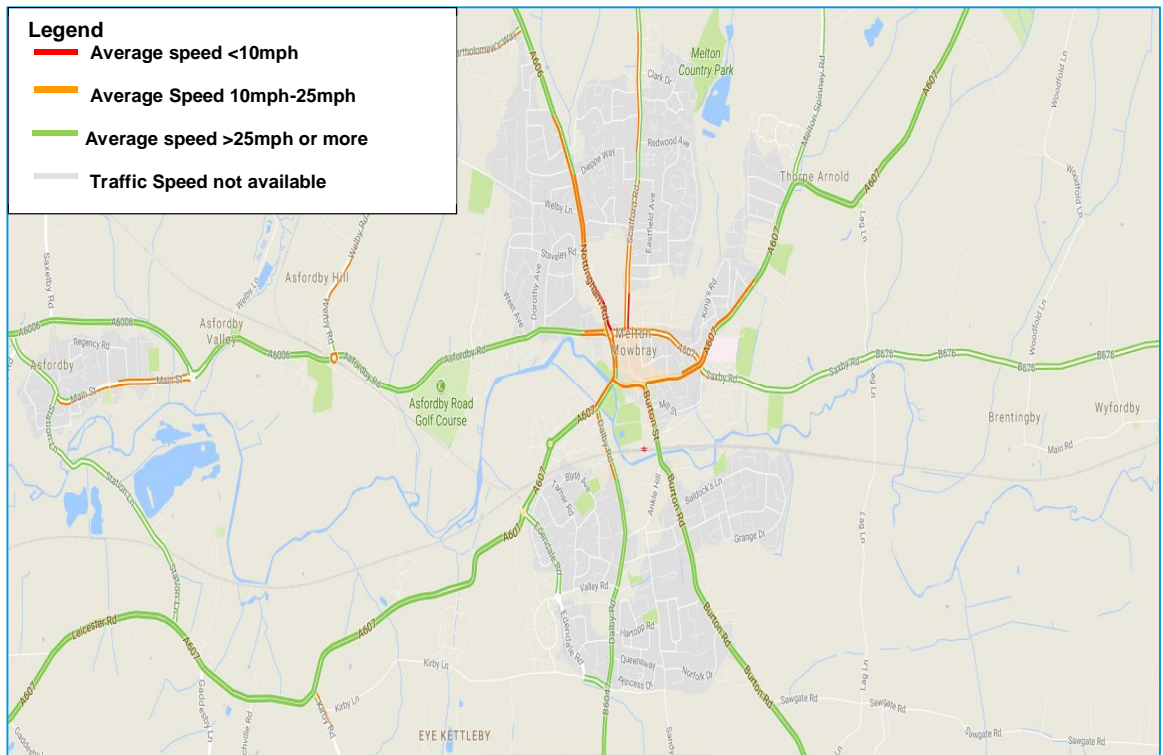
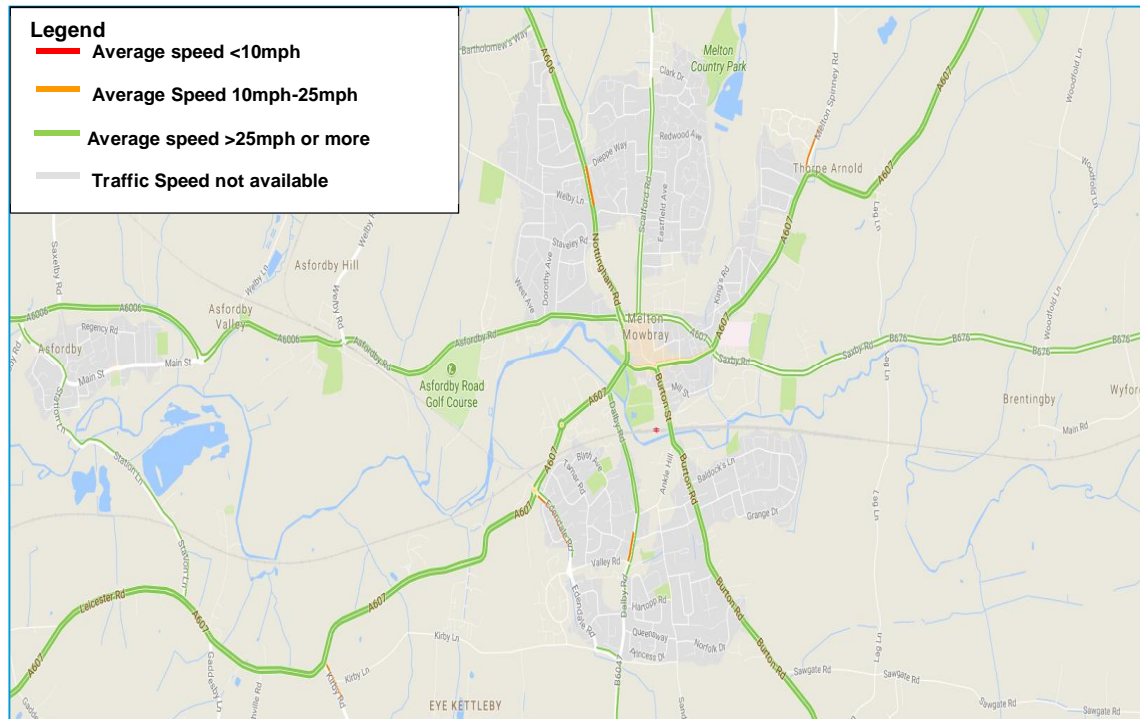


Figure 2-9: Off-Peak Hour- Melton Mowbray (as comparative)



VOLUME TO CAPACITY RATIO (V/C) ON APPROACHES

- 2.6.26** Previous studies have shown that Melton Mowbray experiences congestion at numerous points in the town centre and along key approach routes to the town centre. This section refreshes the evidence using volume to capacity ratio plots from the latest LLITM 2014 Base and spatial traffic data derived from historic Google API.
- 2.6.27** The V/C ratio (typically expressed as a percentage) defines the amount of road capacity (C) (i.e. the level of traffic per hour the link approaching the junction is designed to withstand – above which queuing will occur throughout the hour) taken up by the volume of modelled traffic (V) using it.
- 2.6.28** The V/C on the roads is represented by the colours of the bands along the links with dark green for less than 60%, light green for 60% - 70%, yellow for 70% - 80%, orange for 80% - 90% and red for more than 90% V/C in the respective peak hour for the area around Melton.
- 2.6.29** This section assesses the congestion on the Melton highway network based on the following two critical threshold V/C ratios:
- à 80% to 90% V/C suggests the performance of the junction is impeded as operational capacity has been exceeded for at least part of the peak resulting in some queuing.
 - à >90% V/C suggests that traffic throughout the junction is on the verge of breaking down for the entire peak resulting in potentially long queues, blocking of junctions upstream and the metering of downstream flows.
- 2.6.30** Figure 2-10 and Figure 2-11 show the volume to capacity ratios (V/C) for junction approaches in Melton Mowbray in the 2014 base year AM and PM peak periods respectively.

Figure 2-10: AM Peak hour 2014_Base_Volume / Capacity Ratio at Approaches

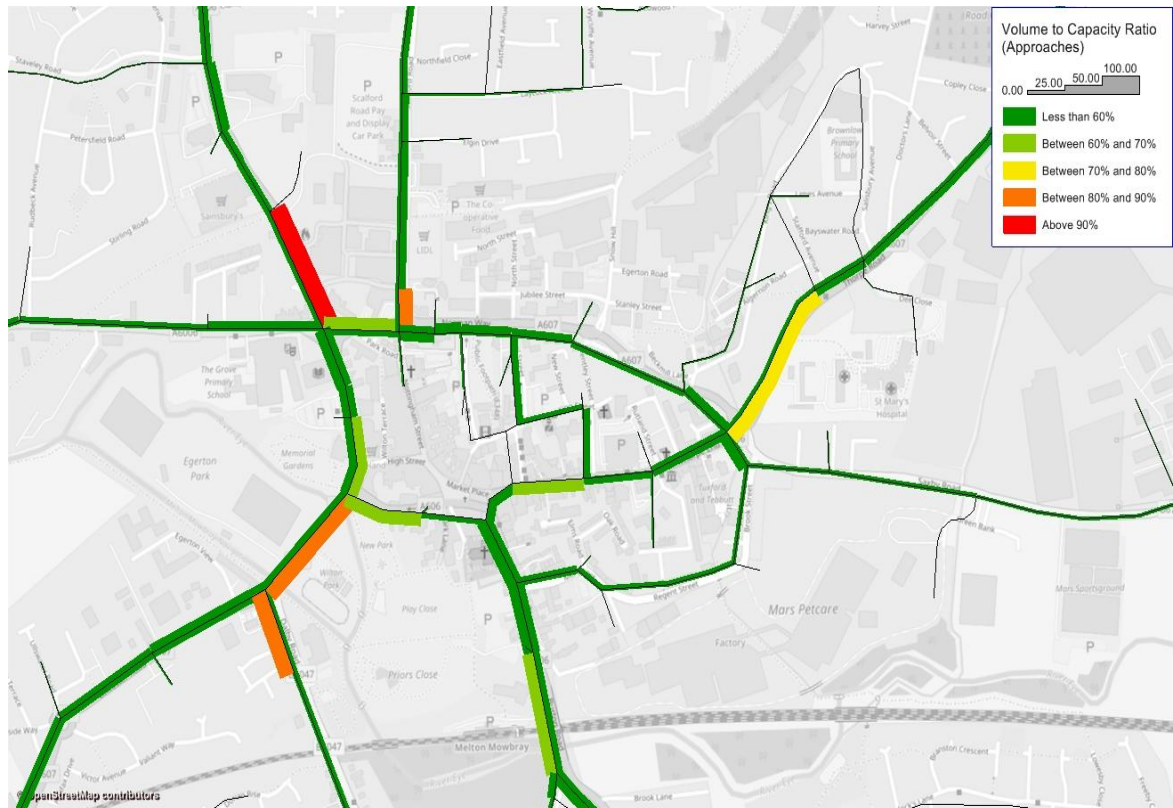
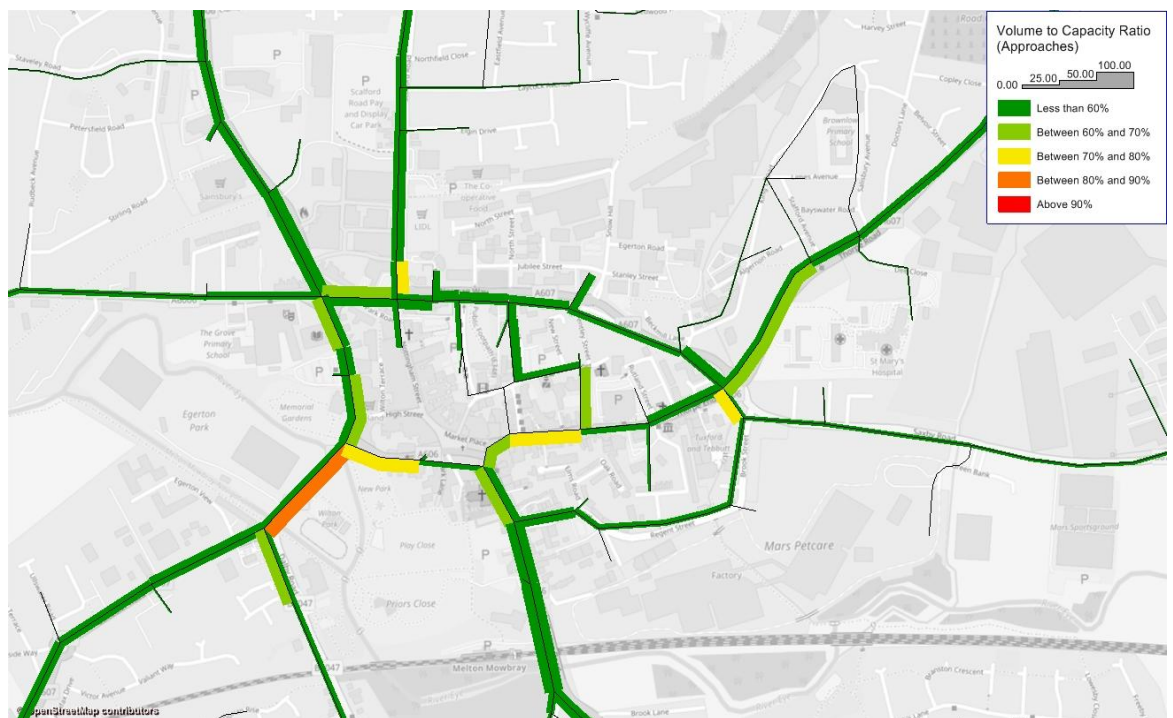


Figure 2-11: PM Peak hour 2014_Base_Volume / Capacity Ratio at Approaches



2.6.31 As shown in Figure 2-10 and Figure 2-11, the highest V/C ratios in the AM peak are found on approaches to the following junctions which all operate at practical capacity with a V/C ratio over 80% :

- à A607/Dalby Road Junction;
- à A606 Nottingham/A6006 Junction; and
- à A607/Scalford Road Junction.

2.6.32 The V/C distribution shows that the majority of congestion is concentrated within Melton town centre where the approaches meet the radial routes. The extent of congestion is therefore critical on cross-town routes. This represents a key point in terms of the need for intervention.

LEVELS OF THROUGH TRAFFIC

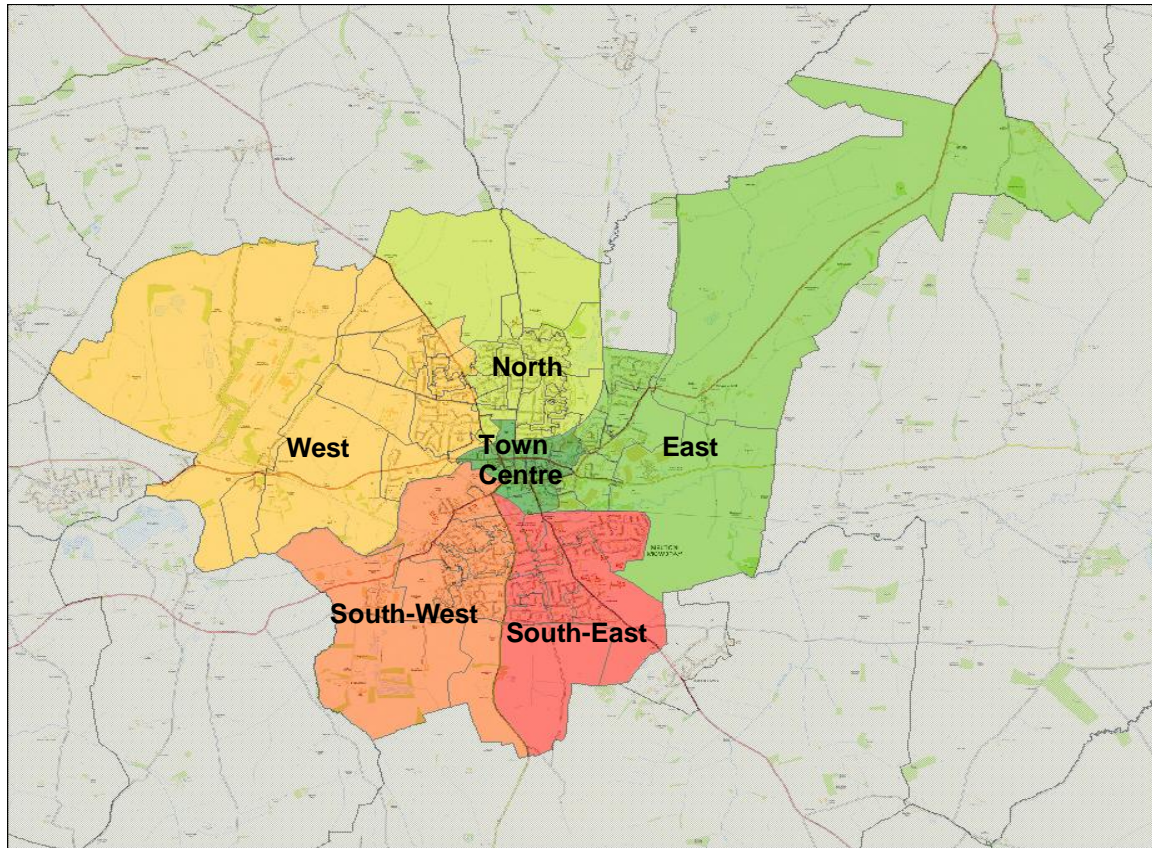
2.6.33 To highlight the levels and patterns of current through traffic in the town, sector-to-sector trip analyses have been undertaken using 2014 base year traffic data.

2.6.34 **Error! Reference source not found.** provides a list of the internal and external sector zones considered in this process, and Figure 2-12 shows the location of internal sector zones within Melton.

Table 2-2 Internal and External Sector References

SECTOR	DESCRIPTION	LOCATION
1	Town Centre	Internal
2	East	Internal
3	North	Internal
4	West	Internal
5	South-West	Internal
6	South-East	Internal
11	A606_NottinghamRd	External
12	ScalfordRd	External
13	MeltonSpinneyRd	External
14	A607_ThorpeRd	External
15	B676_SaxbyRd	External
16	A606_BurtonRd	External
17	DalbyRd	External
18	KirbyRd	External
19	A607_LeicesterRd	External
20	A6006_AsfordbyRd	External

Figure 2-12: Internal Sector Locations



2.6.35 Total overall (12 hour) volumes of through traffic by route are shown in Table 2-3 below.

Table 2-3 2014 External to External Traffic Flow – All Vehicles

2014_Base	A606_NottinghamRd	ScalfordRd	MeltonSpinneyRd	A607_ThorpeRd	B676_SaxbyRd	A606_BurtonRd	DalbyRd	KirbyRd	A607_LeicesterRd	A6006_AsfordbyRd	Total
A606_NottinghamRd	0	0	0	4	77	885	56	0	2	8	1,033
ScalfordRd	0	0	0	0	0	80	0	0	0	9	90
MeltonSpinneyRd	0	0	0	5	1	114	31	0	16	2	170
A607_ThorpeRd	3	0	6	0	1	19	151	0	246	79	505
B676_SaxbyRd	23	0	1	1	0	0	5	0	328	106	465
A606_BurtonRd	1,304	0	29	19	0	0	54	0	977	237	2,620
DalbyRd	63	0	25	133	5	72	0	0	6	18	323
KirbyRd	0	0	0	0	0	0	0	0	202	0	203
A607_LeicesterRd	5	16	3	216	225	840	7	237	0	1	1,549
A6006_AsfordbyRd	9	16	2	119	147	187	22	0	1	0	501
Total	1,408	33	66	497	456	2,196	326	237	1,779	461	7,458

- 2.6.36 Analysis of the LLITM 2014 base model shows that there are approximately 7,500 through traffic movements (7am-7pm) per day across all routes.
- 2.6.37 When looking at the breakdown by route, the largest concentration of through traffic movement is along the A606 axis, constituting more than 40% of total traffic on that route.
- 2.6.38 The percentage of through traffic in the east-west direction is also high, at 25 to 30% of traffic on these routes, with similar through traffic percentages also observed on Dalby Road and Melton Spinney Road
- 2.6.39 A full analysis of traffic movements in the town, incorporating traffic levels and percentages of through traffic by route is shown in Appendix C.
- 2.6.40 Importantly, this shows that:
- à Whilst most traffic to/from the town has origins and destinations in the town centre, there is a significant amount of through traffic in Melton Mowbray in total;
 - à This varies by route, but is highest for the A606 Burton Road, followed by the A606 Nottingham Road. The A607 Leicester Road and Saxby Road have the next highest percentages
 - à Internal through traffic within the town is also apparent, with the North and South of Melton creating the most traffic demands (origin and destination).
 - à East-West movements internally across Melton are typically lower than those North-South and that represents the greater total traffic volume.
- 2.6.41 However, it is important to note that being able to cater for east-west movements is important from a network resilience point of view. Melton Mowbray is not a main through-route for freight between the M1 (including East Midlands Airport) and the A1 (onto ports such as Felixstowe), but is an alternative freight route for such movements during periods of network disruption; as well as being a key freight trip generator and attractor in its own right.
- 2.6.42 Total through traffic volumes on all routes are shown graphically in Figure 2-13 for the 2014 Base AM Peak, Figure 2-14 for the 2014 Base inter-peak and Figure 2-15 for the 2014 Base PM Peak.
- 2.6.43 Figure 2-13 to Figure 2-15 also show the use of Church Street and King Street as a rat-run through the town centre, as well as Dalby Road and minor routes such as Ankle Hill to the south of the town centre to avoid the key, capacity constrained junctions.

Figure 2-13: Through Traffic in the AM Peak in 2014 (All vehicles)

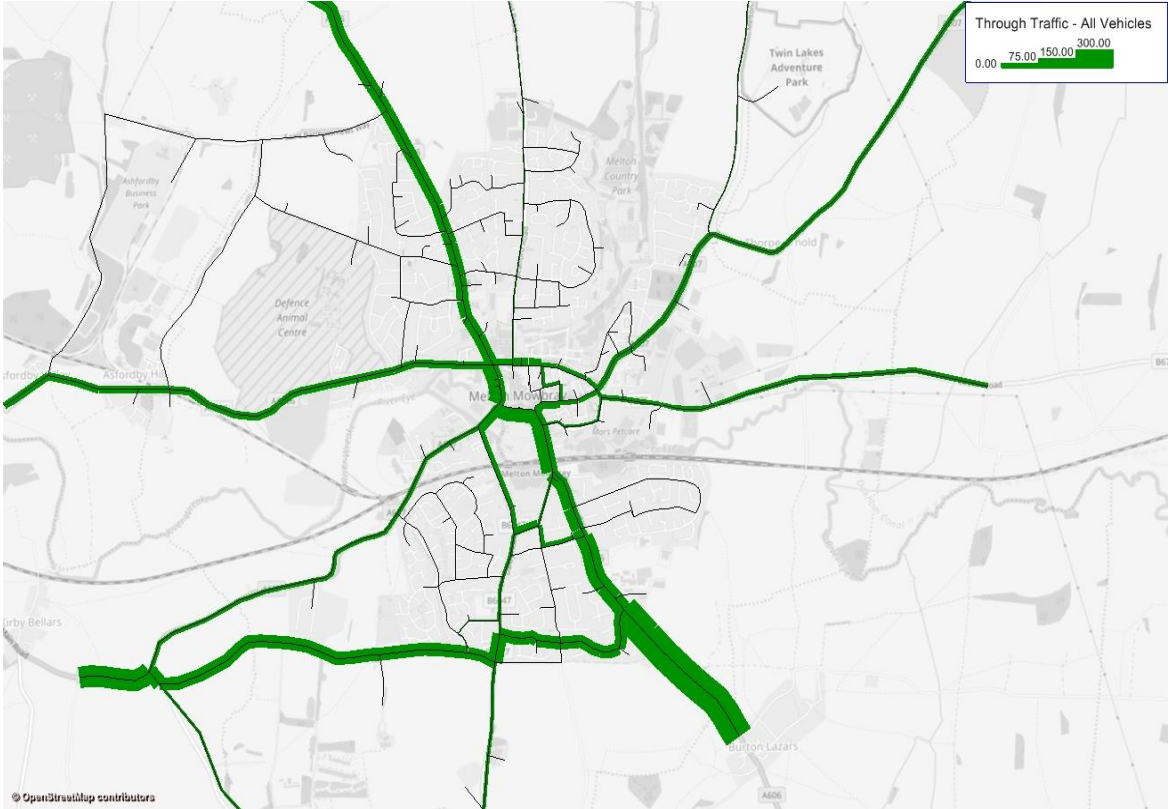


Figure 2-14: Through Traffic in the IP Peak in 2014 (All vehicles)

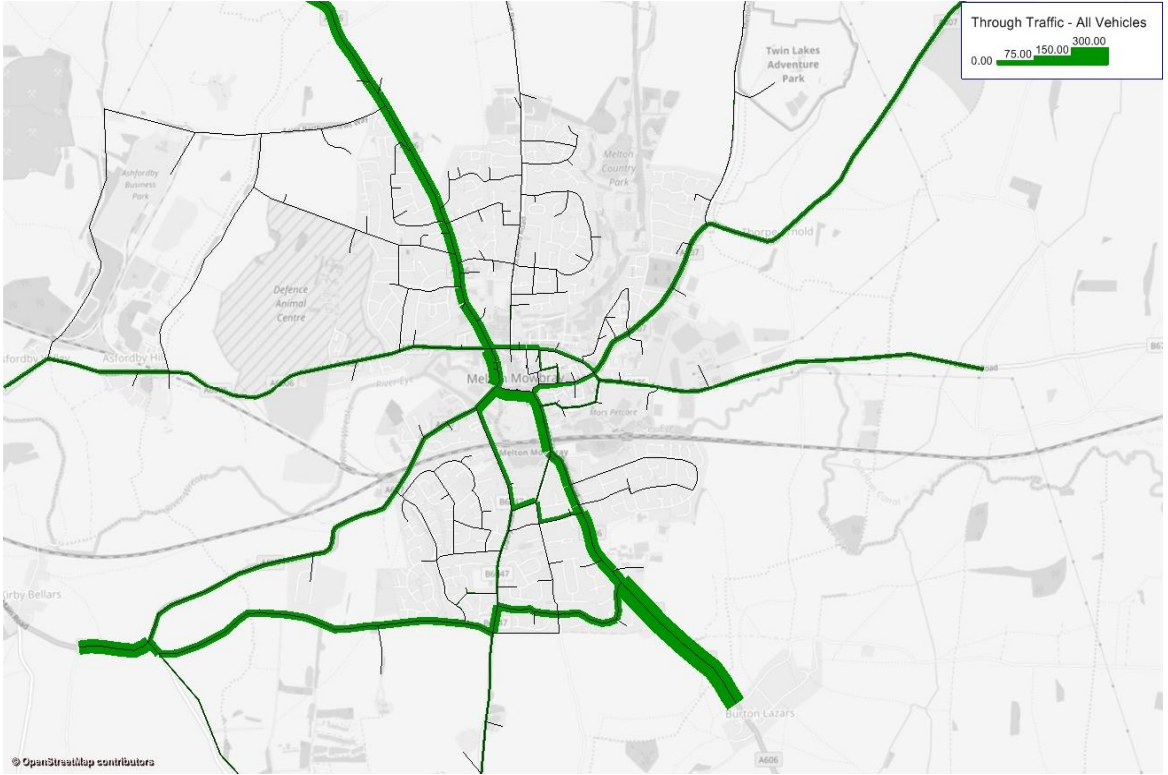
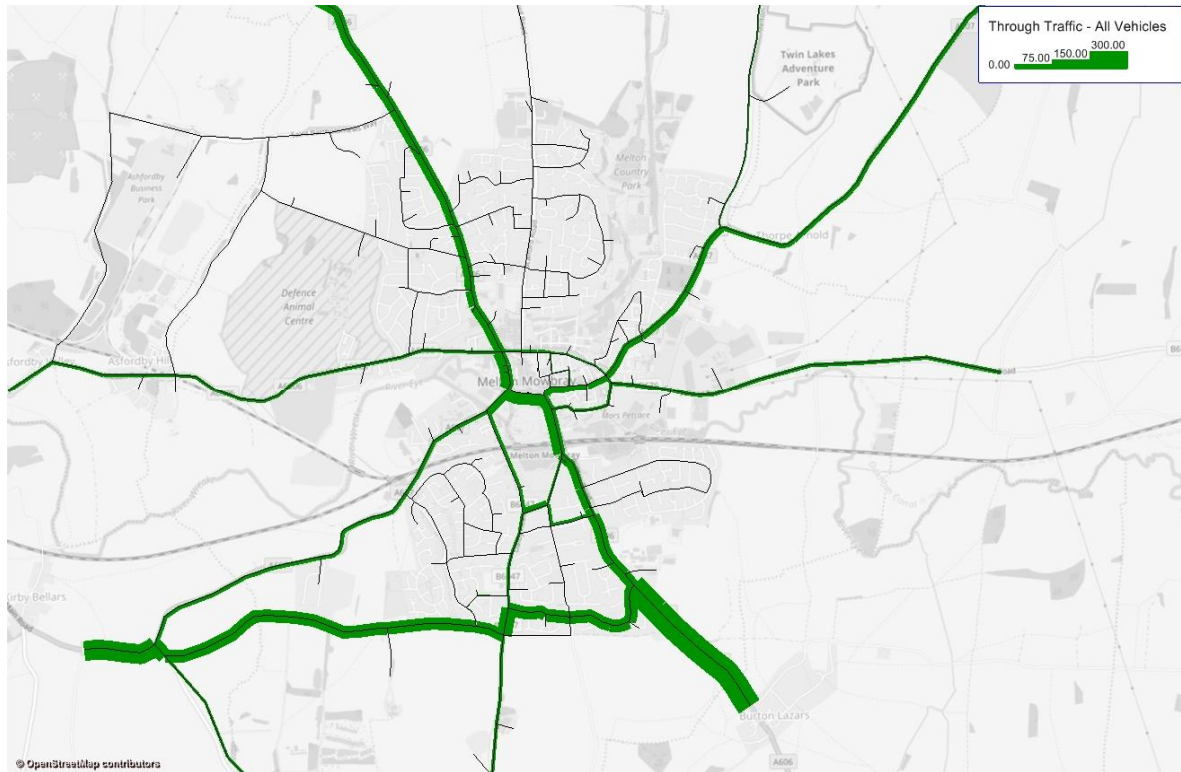


Figure 2-15: Through Traffic in the PM Peak in 2014 (All vehicles)



HGV MOVEMENTS THROUGH THE TOWN CENTRE

- 2.6.44 The centre of Melton Mowbray faces two traffic problems related to Heavy Goods Vehicle (HGV) movements.
- 2.6.45 First, the industrial area to the east of the town centre generates a significant number of HGV movements, many of which use the town centre to access or egress manufacturing premises (particularly for the industrial estate in the east of the town). These are identified in the observed analysis in Appendix C, indicating 170 daily two-way HGV movements to/from the East of the town, and a similar number to/from the South West employment area of Melton.
- 2.6.46 Secondly, there are a significant number of through traffic HGV movements, with non-Melton Mowbray destinations. Both types of HGV movement create problems in the town centre, including safety, noise and air quality problems.
- 2.6.47 Analysis in Appendix C indicates that typically around 50-70% of LGV traffic, and typically 70- 90% of HGV traffic on routes to/from Melton is through traffic.
- 2.6.48 Figure 2-16 to Figure 2-18 show the pattern of current HGV through traffic for the AM, Inter-peak and PM peaks respectively.
- 2.6.49 Through HGV movements are generally south-east to west in the morning peak, although more evenly spread between routes in other time periods.

Figure 2-16: AM Peak hour 2014 Base HGV Through Traffic

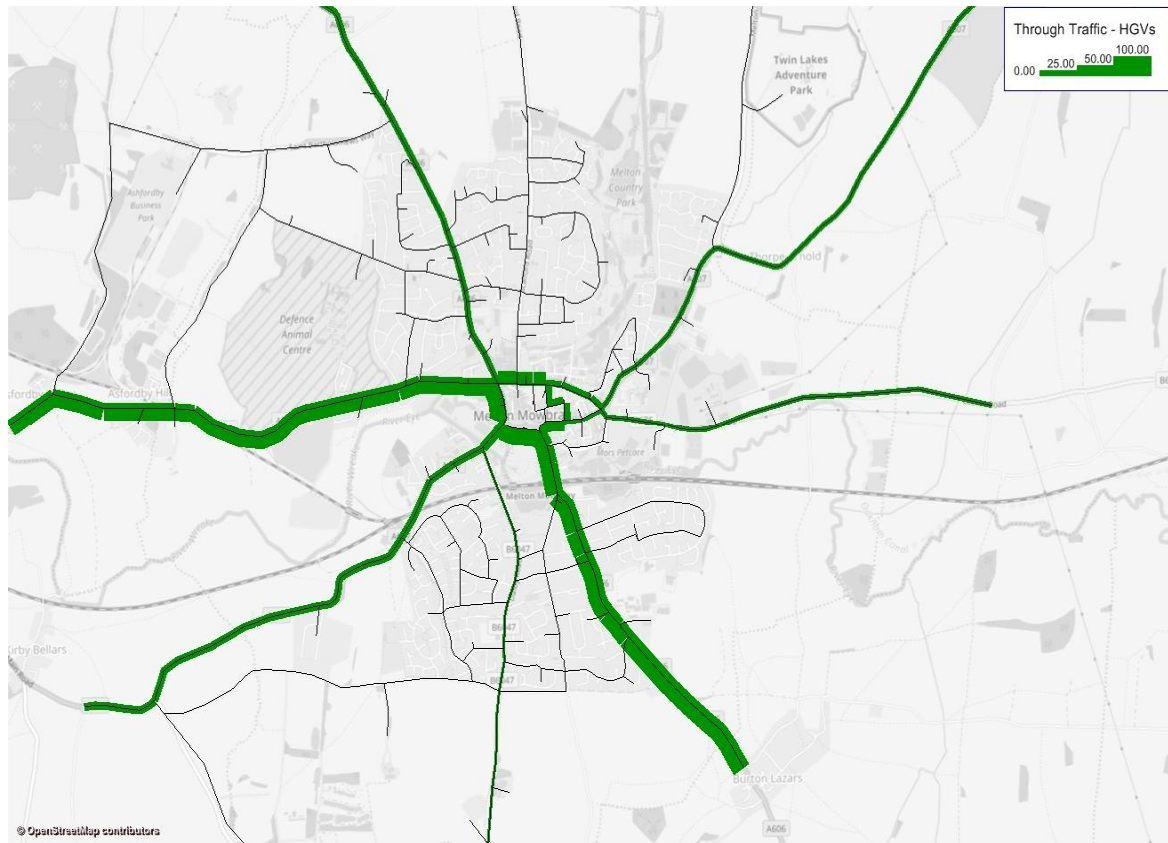


Figure 2-17: Inter-peak hour 2014 Base HGV Through Traffic

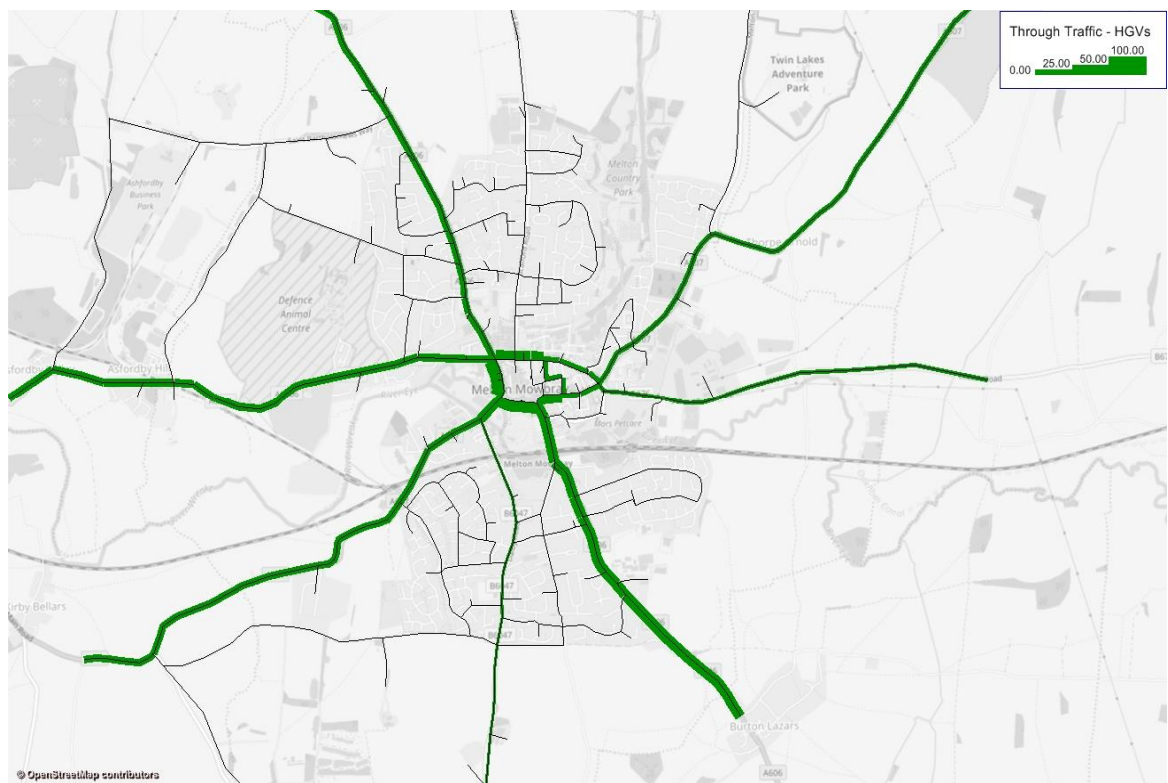
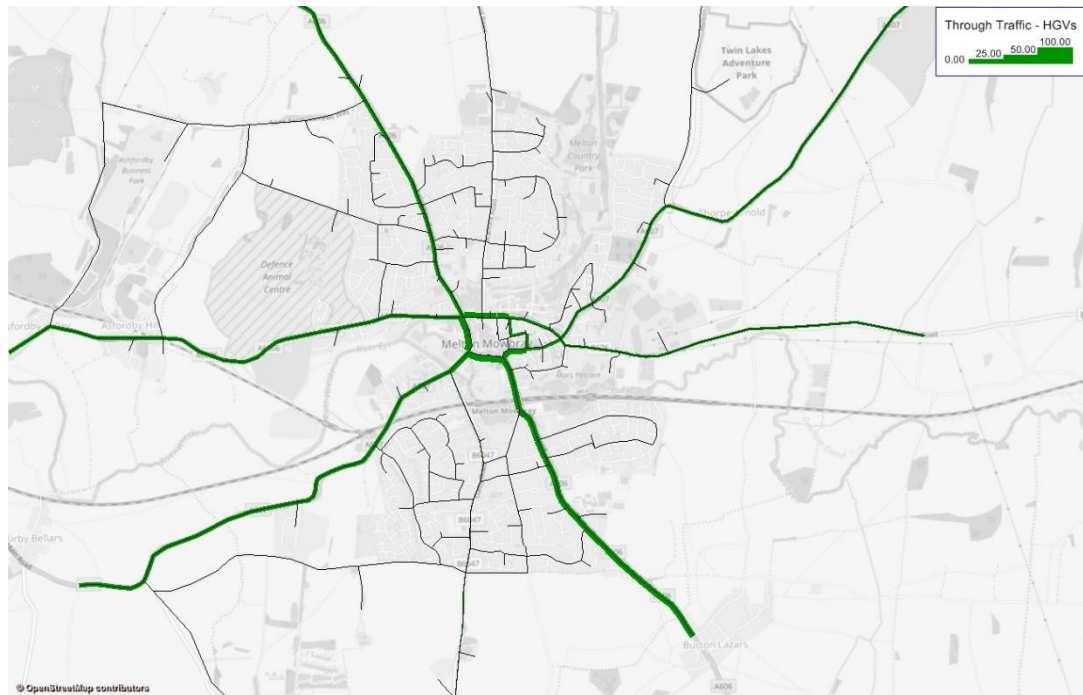


Figure 2-18: PM Peak hour 2014 Base HGV Through Traffic



2.7 SUMMARY OF KEY FINDINGS

2.7.1 The key findings of the study of the existing transport conditions surrounding Melton Mowbray are provided below.

- à Highly significant levels of congestion - several of the junctions and approach routes leading to the town centre experience high levels of congestion.
- à Several of the town centre junctions experience very high delays, of notable mention are the A607/ Nottingham Road Junction, Scalford Road, and Thorpe End Junction all of which experience 1.5 minutes average delay during peaks; with right and straight ahead movements at these junctions higher than this average. It should be noted that many vehicles pass through several of these junctions to reach or cross the town centre, therefore the overall level of delay as a journey time route extends significantly beyond these levels.
- à Alongside the scale of delay, this also creates network resilience issues; with limited route choice, and no alternatives across the town centre that don't already experience delay themselves.
- à There is a high level of through traffic travelling via Melton Mowbray town centre. The through traffic along A606 axis accounts for more than 40% of total traffic on that route, with significant proportions on other routes.
- à The slow speed of traffic through the centre of Melton Mowbray, resulting from congestion, also encourages rat-running - especially through the historic centre, via routes such as Chapel Street and King Street that are not intended for such purposes.
- à The industrial areas to the east and south west of the town centre generate a significant number of HGV movements, many of which use the town centre to access or egress manufacturing premises (particularly for the industrial estate in the east of the town). Secondly, there are a significant number of through traffic HGV movements, with non-Melton Mowbray destinations. Both types of HGV movement create problems in the town centre with the likelihood of associated safety, noise and air quality problems.

3 FUTURE SITUATION - WITHOUT SCHEME

3.1 INTRODUCTION

3.1.1 This chapter describes the future ‘without scheme’ transport conditions on the Melton Mowbray highway network. It provides evidence of the problems, challenges and the need for intervention and it also informs the option generation process presented later on in this OAR.

3.1.2 As mentioned earlier, following the update to the LLITM, work surrounding ‘the identification of the need for intervention’ has been refreshed and is presented in this section of the OAR. The following modelled scenarios will be called upon to establish the future ‘without scheme’ situation:

- 2021 (Do Minimum) Core; and
- 2036 (Do Minimum) Core.

3.1.3 Considerable growth in residential and employment land use is planned across the Melton area by 2036, with housing acceleration and delivery a key component of the scheme.

3.2 PLANNED GROWTH³

3.2.1 The Submission Draft Melton Local Plan sets the housing and employment growth requirement for the area based on recommendations in the Leicester and Leicestershire Strategic Housing Market Assessment (SHMA) 2014 and the Melton Employment Land Study 2015.

3.2.2 As detailed in Policy SS2 – ‘Development Strategy of the local plan, the Leicester and Leicestershire SHMA, identified an Objectively Assessed Need for an equivalent of 245 new dwellings each year (approximately 6125 dwellings at least) for the Borough of Melton between 2011 and 2036. On the other had the Melton Employment land Study identified the need for some 51 hectares of employment land between 2011 and 2036 in Melton Mowbray

3.2.3 Policy SS2 – ‘Development Strategy’ of the Pre Submission Local Plan identifies the Melton Mowbray Main Urban Area (MUA) as the priority location for growth and will accommodate 65% of the Borough’s housing need, equating to about 3980 dwellings and up to 31 hectares of additional employment land by 2036.

3.2.4 Policies SS4 and SS5 of the Pre Submission Local Plan sets out the two key strategic housing development locations, namely the South Sustainable Urban Extension which will accommodate approximately 1,700 dwellings (43%) and the North Sustainable Urban Extension which will accommodate approximately 1,500 dwellings (38%) of the 3,980 required by 2036. The two key strategic housing sites are shown on Figure 3-1.

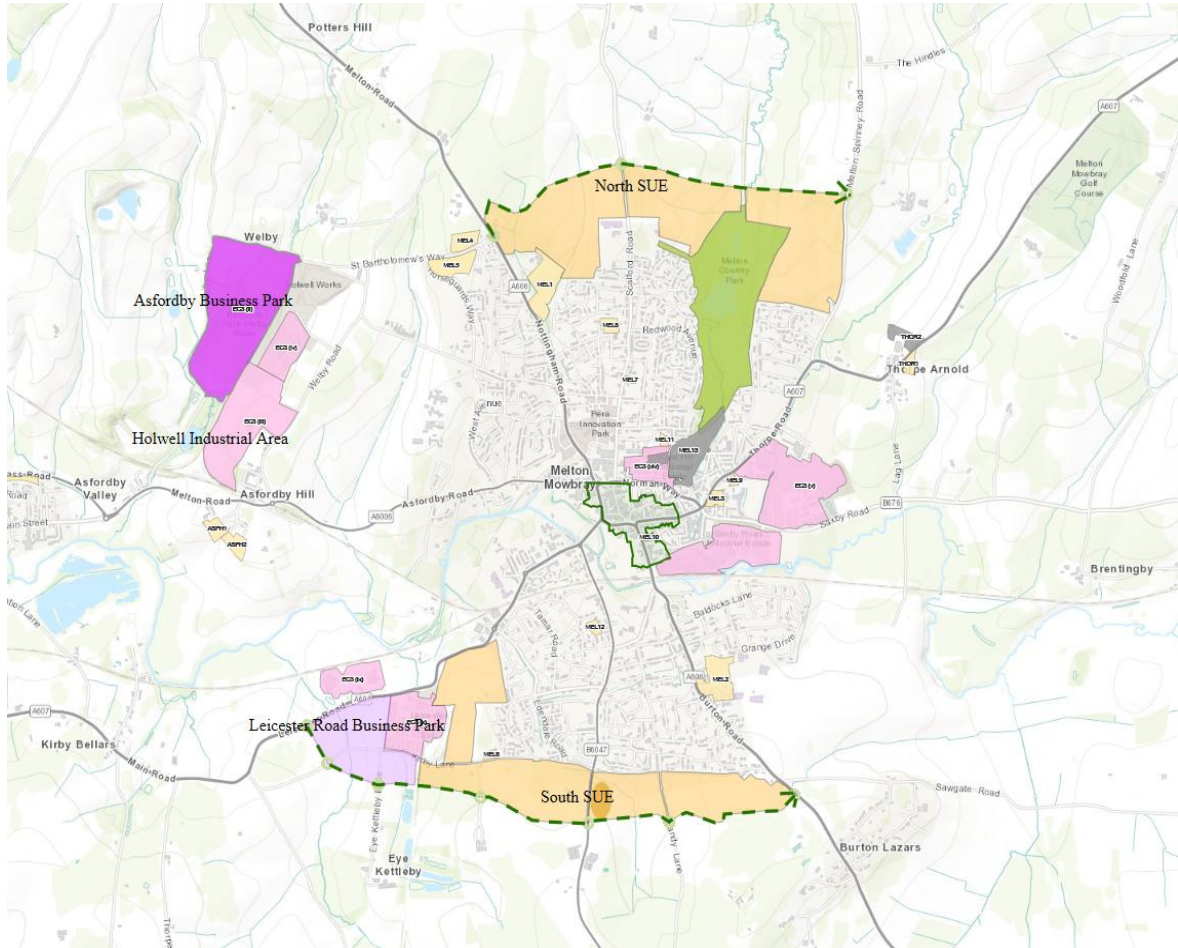
3.2.5 Policy EC1 – ‘Employment Growth in Melton Mowbray’ of the Pre Submission Local Plan details of the key employment land allocations, these are detailed below and shown on Figure 3-1.

1. 10 hectares of employment land within Asfordby Business Park for class B employment uses;
2. 20 hectares of employment land, located off Leicester Road, as part of the South Melton Mowbray Sustainable Neighbourhood; and

³ Melton Borough Pre Submission Draft Plan, November 2016

3. 1 hectare of employment land for B1 (a) office space within or adjacent to Melton Mowbray town centre and/or including PERA Business Park.

Figure 3-1: Indicative Melton Sustainable Neighbourhoods and Key Employment Sites



Source: - Melton Mowbray Interactive Policies Map

- 3.2.6 Such developments increase travel demand and inevitably add further pressure onto the Melton Mowbray highway network.
- 3.2.7 As shown on Figure 3-1, the North and South distributor roads previously considered as part of the options being considered for the scheme in the previous 2016 OAR reporting are now proposed to be brought forward by the developers as part of the North and South SUEs.
- 3.2.8 Key sections of the Southern Route will be in place between 2026 and 2031. No current date is available for the Northern Route, but it is anticipated that without funding from other sources it would be provided by the end of the Local Plan period without a scheme.
- 3.2.9 Thus both of these links are incorporated in the refreshed Do-Minimum without scheme model by 2036 and represent an important update from the earlier OAR work.
- 3.2.10 Table 3-1 presents the modelling assumptions for the 2021 and 2036 Core Scenarios.

Table 3-1 Details of Assumptions included in various Scenarios

Assumption	Background Growth	Development Growth	Northern Distribut or Road	Southern Distribut or Road
2021 Core without Scheme	Y	Y	N	N
2036 Core without Scheme	Y	Y	Y	Y ⁴

- 3.2.11 Figure 3-2 to Figure 3-5 show the forecast traffic volumes by peak hour in 2021 and 2036 across the town using the 2014 LLITM model.
- 3.2.12 In 2021 AM peak (Figure 3-2) traffic flows are at their highest on the western side of the gyratory between A606 Burton Street in the south and Scaford Road in the north resulting in directional traffic flows in excess of 1000 vehicles per hour on approaches to the A606 Burton Street / Mill Street junction and the junctions of Norman Way from A606 Nottingham Road to Snow Hill.
- 3.2.13 In the PM peak (Figure 3-3) the locations of highest traffic flow are broadly the same but with flows in excess of 1,000 vehicles extended to cover junctions on the southern section of the gyratory from Sherrard Street round to A607 Leicester Road / Leicester Street and then west and southwest down the A607 towards Dalby Road.
- 3.2.14 In 2036 (Figure 3-4 and Figure 3-5) it can be seen that traffic growth has resulted in noticeably higher flows on the A607 Leicester Road approaching the Southern Distributor Road (Kirby Lane) but other than this the pattern of high traffic flows remain at the same junctions around the western side of the town centre gyratory. Traffic flows on the eastern side of the gyratory (Snow Hill round to Thorpe End) remain low relative to the western side of the gyratory.
- 3.2.15 To an extent the Southern and Northern Distributor Roads in the Do-Minimum have mitigated some of the effects of traffic growth by providing some additional capacity for SUE development and through traffic. However this is primarily for more localised east-west movements rather than cross town, or north-south through moments along the A606 and A607, both of which as demonstrated earlier are significantly greater in volume.

⁴ Key sections of the Southern Route will be in place before 2036.

Figure 3-2 Core Scenario 2021 AM peak forecast traffic

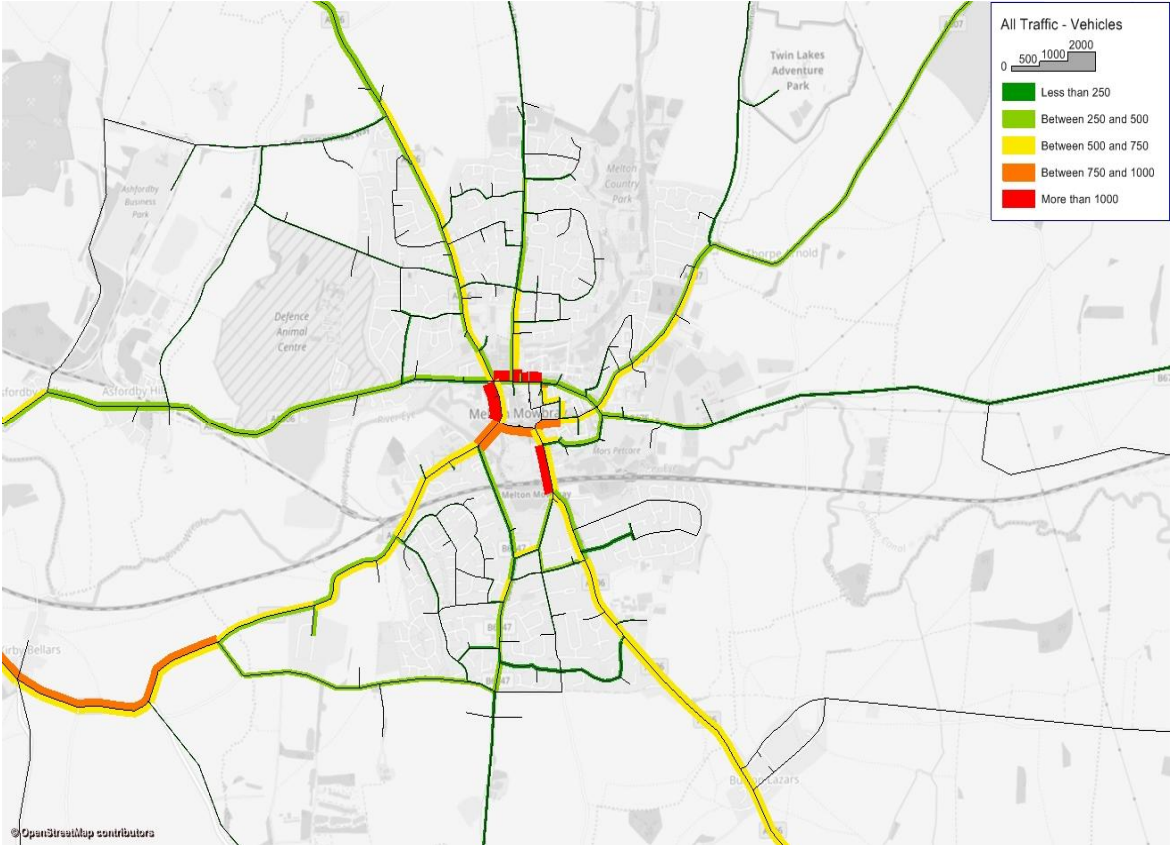


Figure 3-3 Core Scenario 2021 PM peak forecast traffic

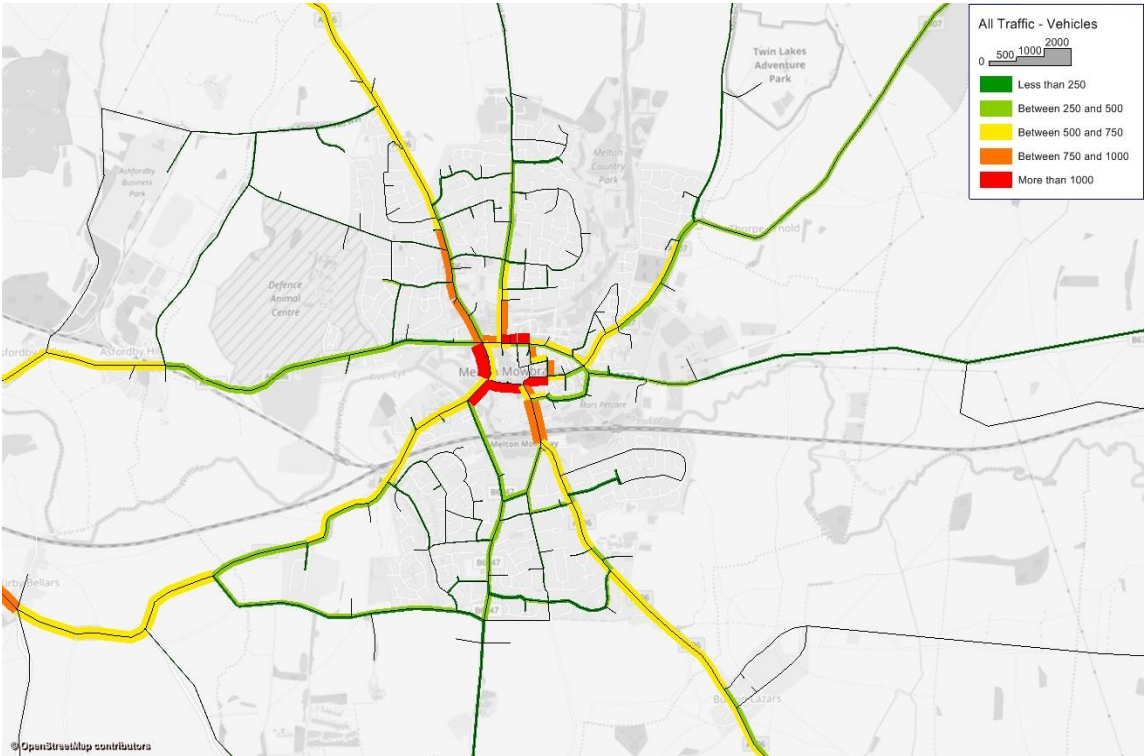


Figure 3-4 Core Scenario 2036 AM peak forecast traffic

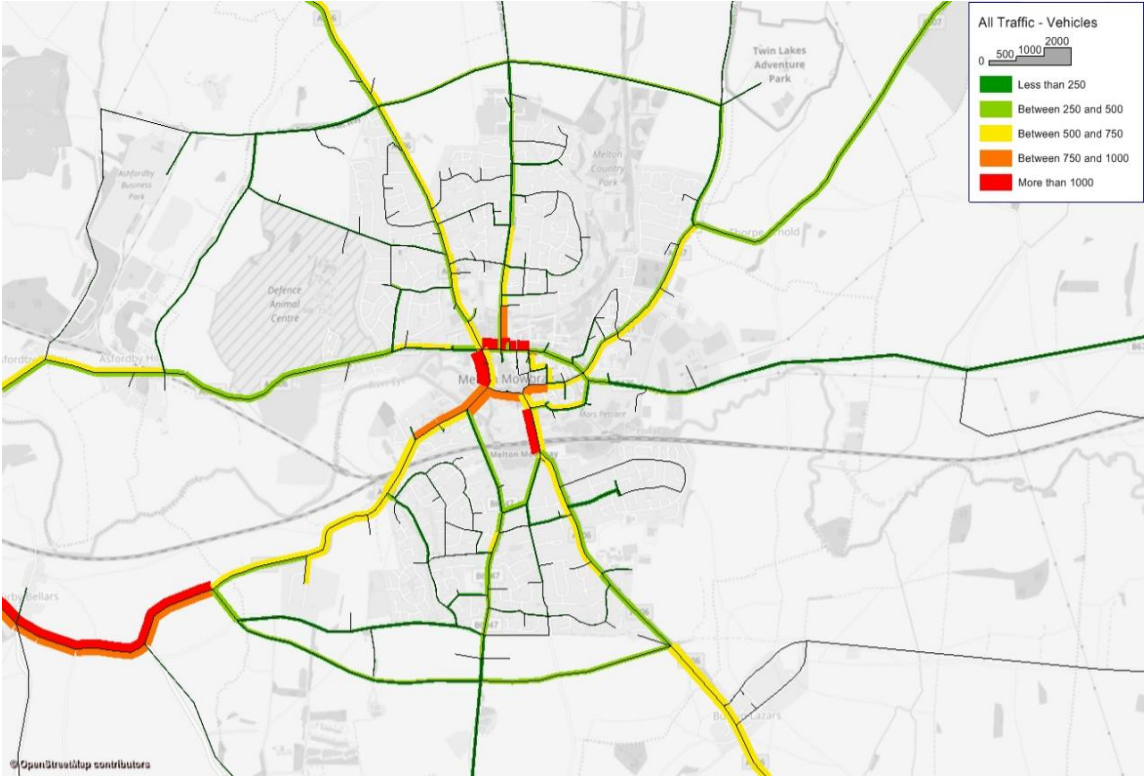
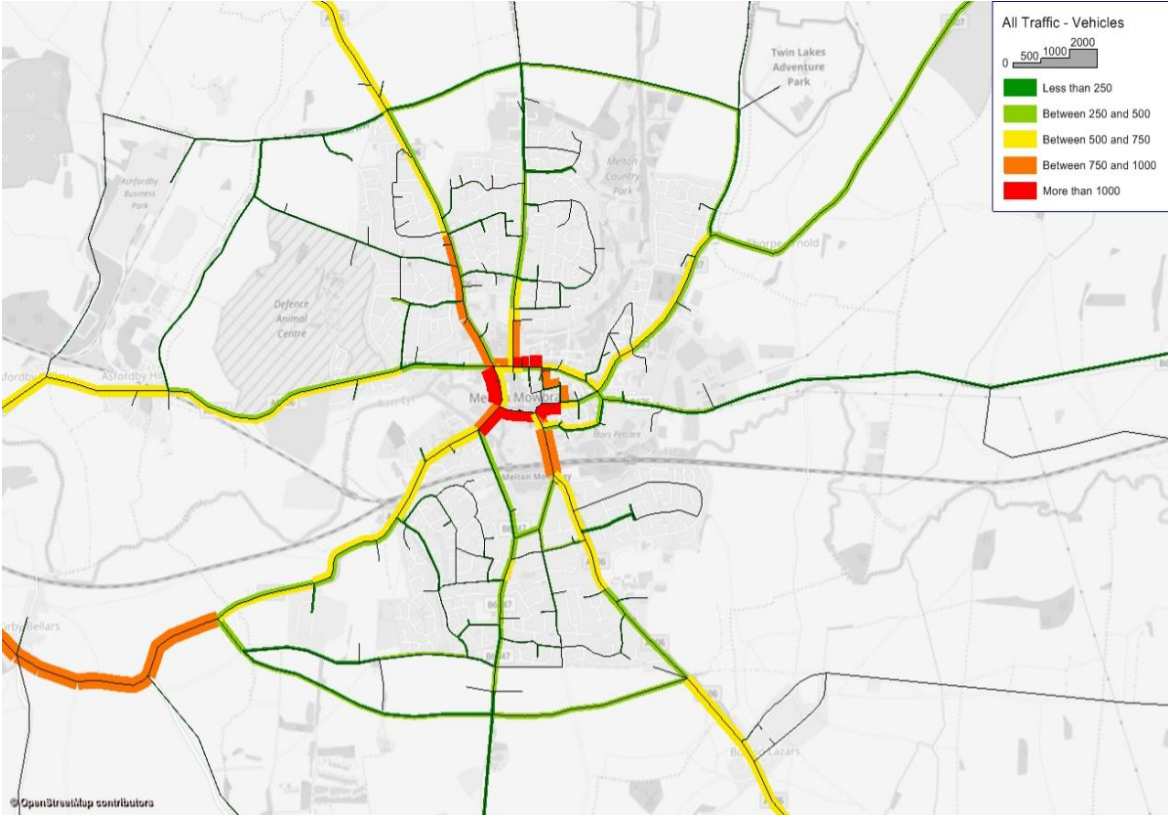


Figure 3-5 Core Scenario 2036 PM peak forecast traffic



3.2.16 The following section presents the results of the refreshed future ‘without scheme’ using the updated LLITM 2014 model.

3.2.17 The future extent of traffic related issues on the Melton Mowbray highway network are presented in relation to the following indicators:

- 1) Town Centre Junction Delays;
- 2) Levels of Congestion - Volume to Capacity Ratio on links and approaches;
- 3) Levels of Through Traffic; and
- 4) Levels of HGV Through Traffic.

3.3 TOWN CENTRE JUNCTION DELAYS

3.3.1 Figure 3-6 and Figure 3-7 show the average level of delay at pinchpoints in the town centre in the 2021 Core scenario AM and PM peak periods respectively and Figure 3-8 to Figure 3-9 show the same for the 2036 Core scenario AM and PM peaks respectively..

Figure 3-6 Node delays in the AM Peak in Melton Mowbray Town Centre in 2021 Core Scenario

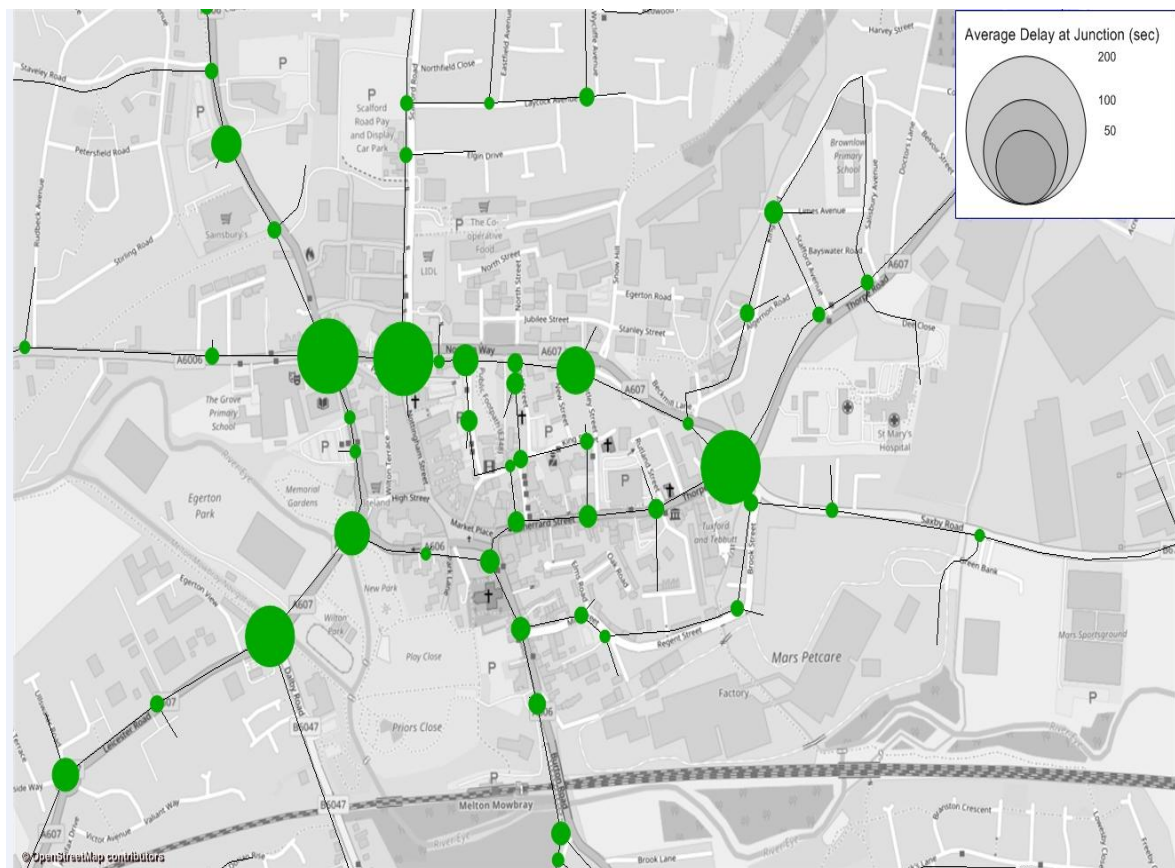


Figure 3-7 Node delays in the PM Peak in Melton Mowbray Town Centre in 2021 Core Scenario

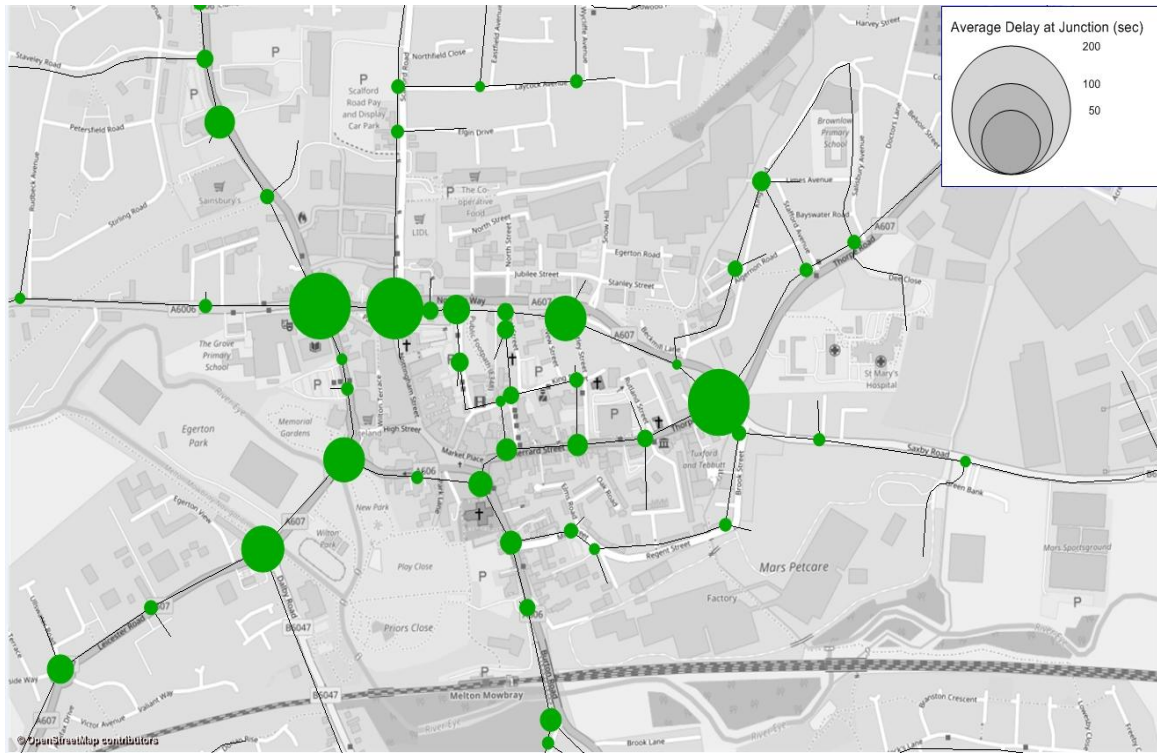


Figure 3-8 Node delays in the AM Peak in Melton Mowbray Town Centre in 2036 Core Scenario

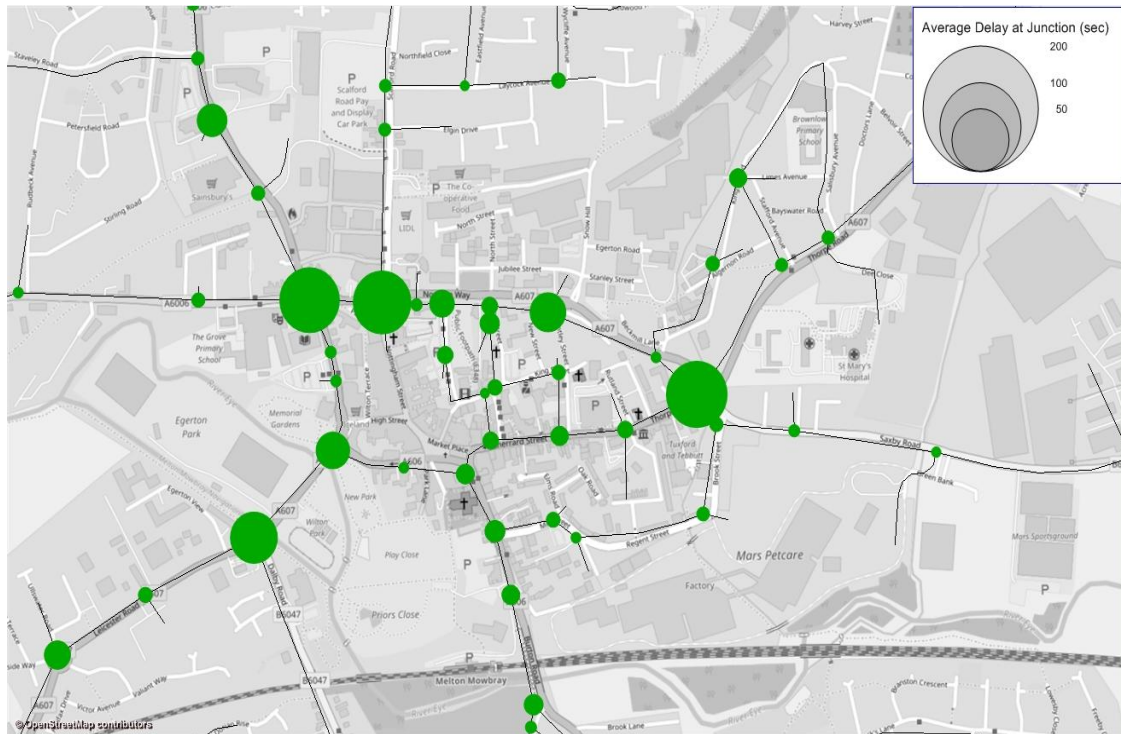
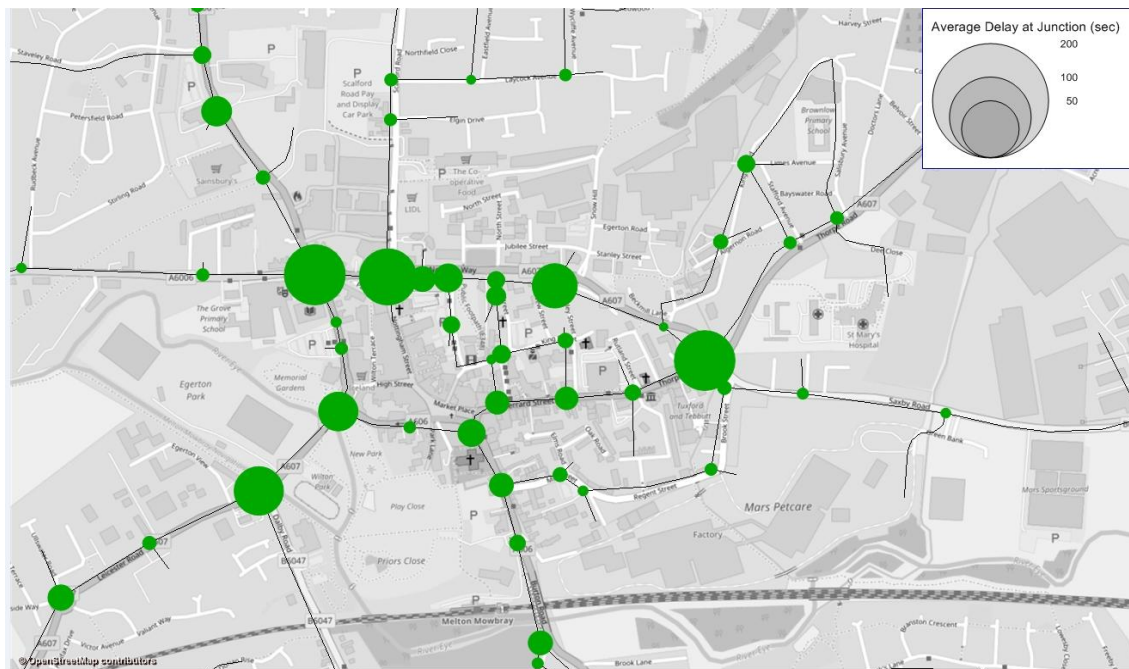


Figure 3-9 Node delays in the PM Peak in Melton Mowbray Town Centre in 2036 Core Scenario



3.3.2 The analysis tends to underestimate peak hour congestion, but serves to highlight the capacity related delays at a number of key junctions in and around the town centre.

3.3.3 Figure 3-6 to Figure 3-9, show that in 2021 and 2036, the A607/ Nottingham Road, Scaford Road, and Thorpe End junctions with Norman Way all experience a deterioration of delay when compared to the 2014 Base. Other junctions typically experience between 30 seconds to 1 minute of delay, as an average across all turning movements in 2021 and 2036 as shown on Figure 3-6 to Figure 3-9, this shows a deterioration of delay at these junctions when compared to the 2014 Base.

3.3.4 Between 2021 and 2036 there isn't much change noted in the junction delays, primarily because of the presence of the Southern and Northern Distributor Roads in the Do Minimum scenario by 2036. However, high levels of delay continue to be present.

3.4 VOLUME TO CAPACITY RATIOS (V/C) ON JUNCTION APPROACHES

3.4.1 The following section focuses on congestion defined in terms of volume / capacity ratios (V/C) on junction approaches in Melton for the Do Minimum scenario mentioned earlier.

3.4.2 Figure 3-10 to Figure 3-11 show the volume to capacity ratios (V/C) for junction approaches in Melton Mowbray in the 2021 Core Scenario AM and PM peak periods respectively and Figure 3-12 to Figure 3-13 show the same for the 2036 Core Scenario AM and PM peaks respectively.

3.4.3 With the growth background traffic and anticipated developments traffic in 2021 and 2036, and even with the Northern and Southern Distributor Roads being built by 2036, there will continue to be a significant level of congestion across the Melton Mowbray highway network.

3.4.4 Several more junction approaches become more congested when compared to the 2014 Base in Section 2, of notable mention are the following key junctions which all operate at practical capacity with a V/C ratio over 80%:

- à A607/Thorpe End Junction;
- à A607/Dalby Road Junction;

- à A607/ Snow Hill Junction
- à A606 Nottingham/A6006 Junction; and
- à A607/Scalford Road Junction.

Figure 3-10: AM Peak hour 2021_Core_Volume / Capacity Ratio at Approaches

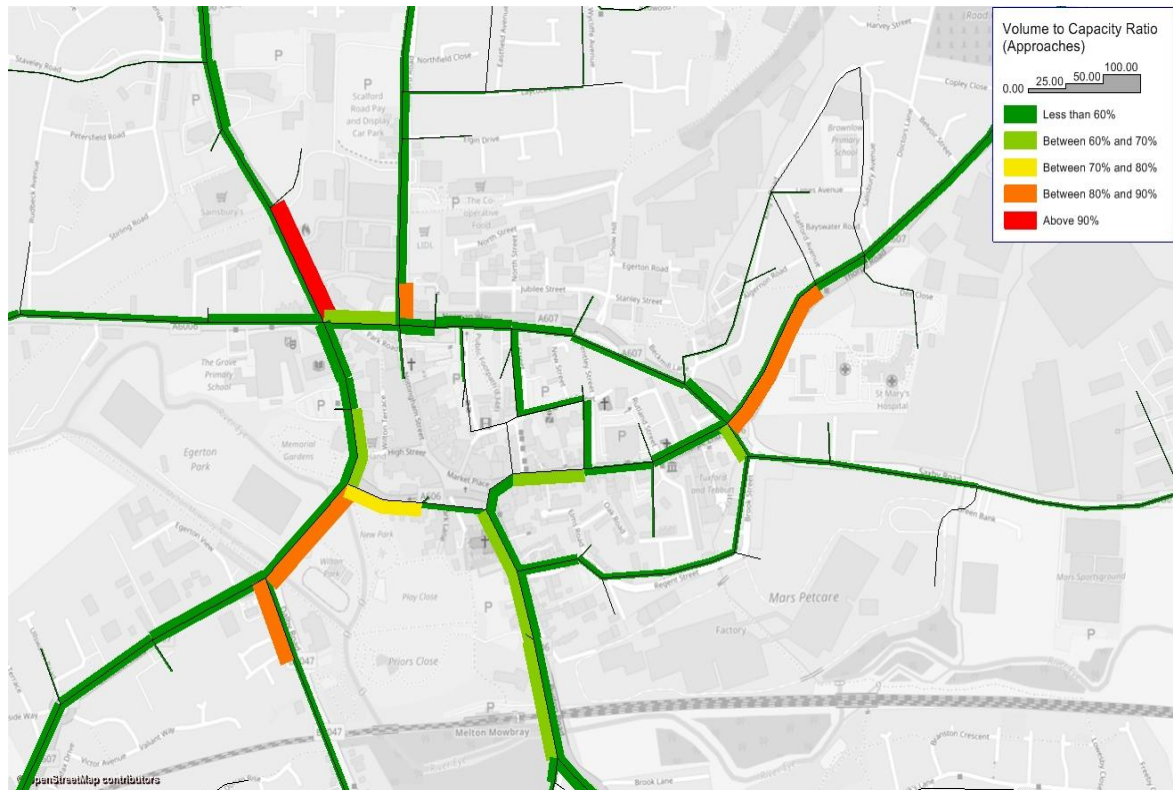


Figure 3-11: PM Peak hour 2021_Core_Volume / Capacity Ratio at Approaches

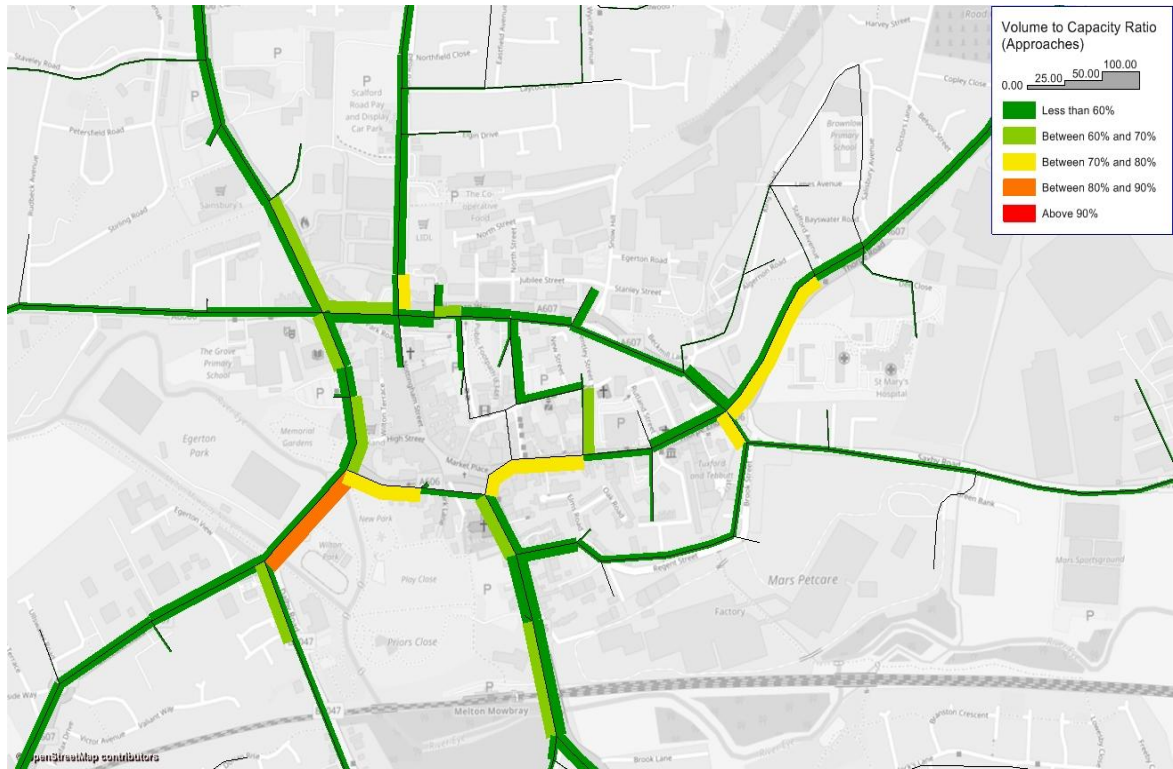


Figure 3-12: AM Peak hour 2036_Core_Volume / Capacity Ratio at Approaches

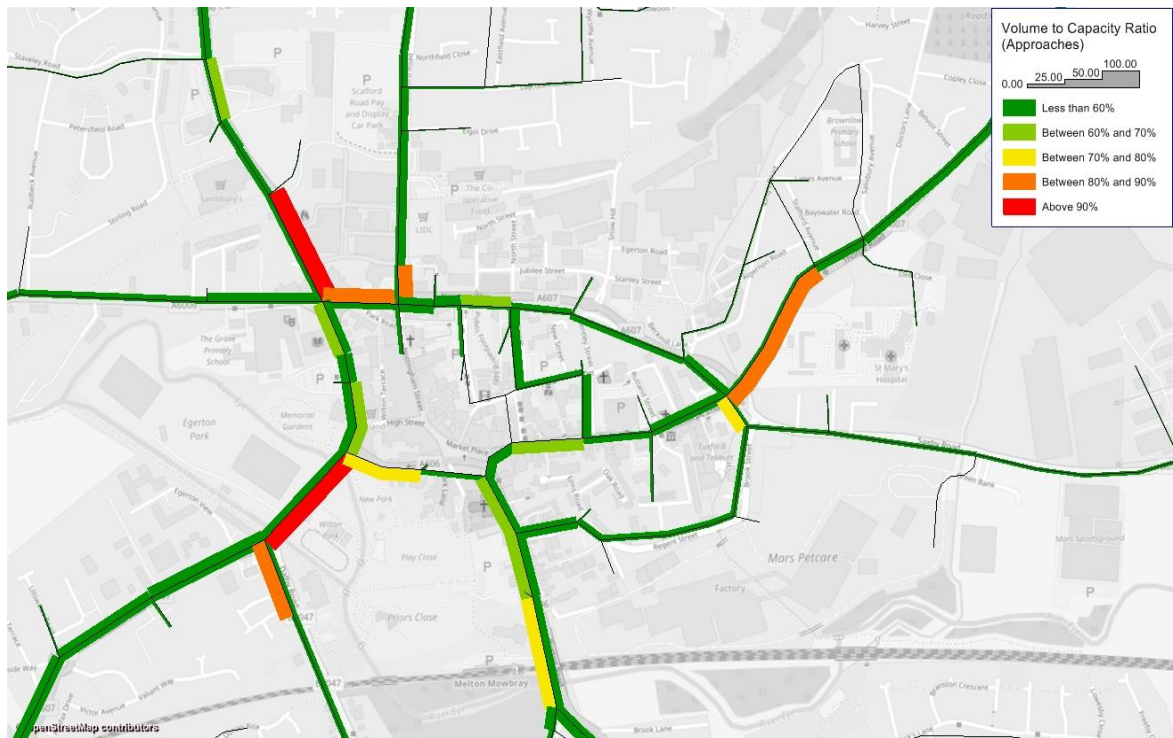
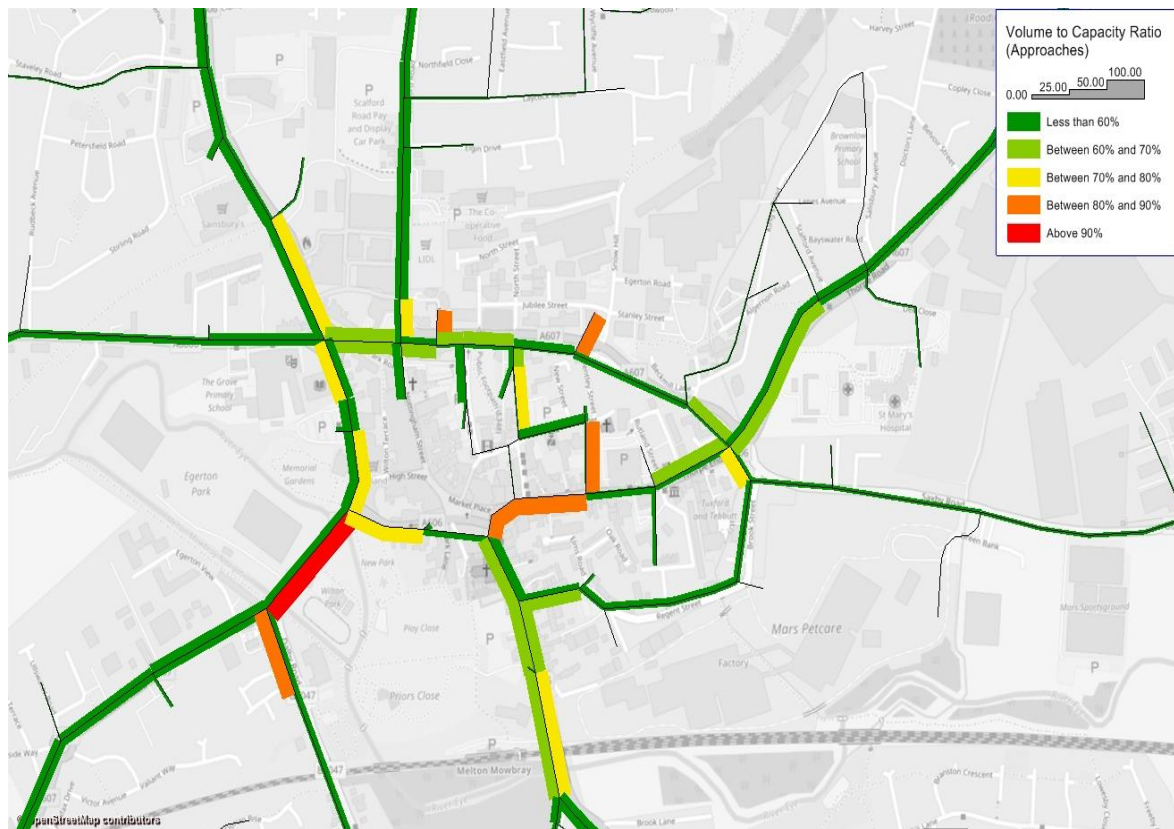


Figure 3-13: PM Peak hour 2036_Core_Volume / Capacity Ratio at Approaches



3.4.5 The V/C distribution shows that the likelihood and extent of queuing will increase over time but will continue to be concentrated within Melton town centre, especially where radial routes meet.

3.4.6 The growing effect of congestion on all cross town routes represents a key point in terms of the need for intervention.

3.5 LEVELS OF THROUGH TRAFFIC

3.5.1 Figure 3-14 to Figure 3-16 show the 2021 scenario through traffic levels for the AM, inter-peak (IP) and PM peaks respectively. Figure 3-17 to Figure 3-19 show the same for 2036 Core Scenario.

3.5.2 By 2021 there is an increase of the level of through traffic along the A606 axis which is still the largest concentration of through traffic movement.

3.5.3 The Kirby Lane / Norfolk Drive route, which links the A606 Burton Road to the A607 Leicester Road also experiences a significant amount of through traffic.

3.5.4 Figure 3-17 shows that with the Southern Distributor Road in place, some through traffic to and from the south of the town on the A606 axis takes advantage of the new opportunity provided as a means of avoiding the congested town centre.

3.5.5 Whilst this moderates the extent of further intensification of current issues in the future, it does however introduce new potential issues that would need to be alleviated, especially in relation to the additional traffic forecast through Asfordby, Kirby Bellars and across Station Lane to the West of Melton Mowbray as the town grows (i.e. avoiding the town centre).

3.5.6 This totals 300-400 pcu's in each direction, leading to widening severance, traffic noise and safety issues to rural communities, as well as in Melton Mowbray town centre itself without intervention (see section 3.6 below).

3.5.7 This is reflective of some emerging discussions and local resident feedback on the Local Plan, with additional traffic cutting through Kirby Bellars and Asfordby with the Southern SUE/ link in place. It brings into play local traffic issues through rural villages and its environmental, safety, severance and quality of life impacts.

Figure 3-14: Through Traffic in the AM Peak in 2021 Core Scenario (All vehicles)

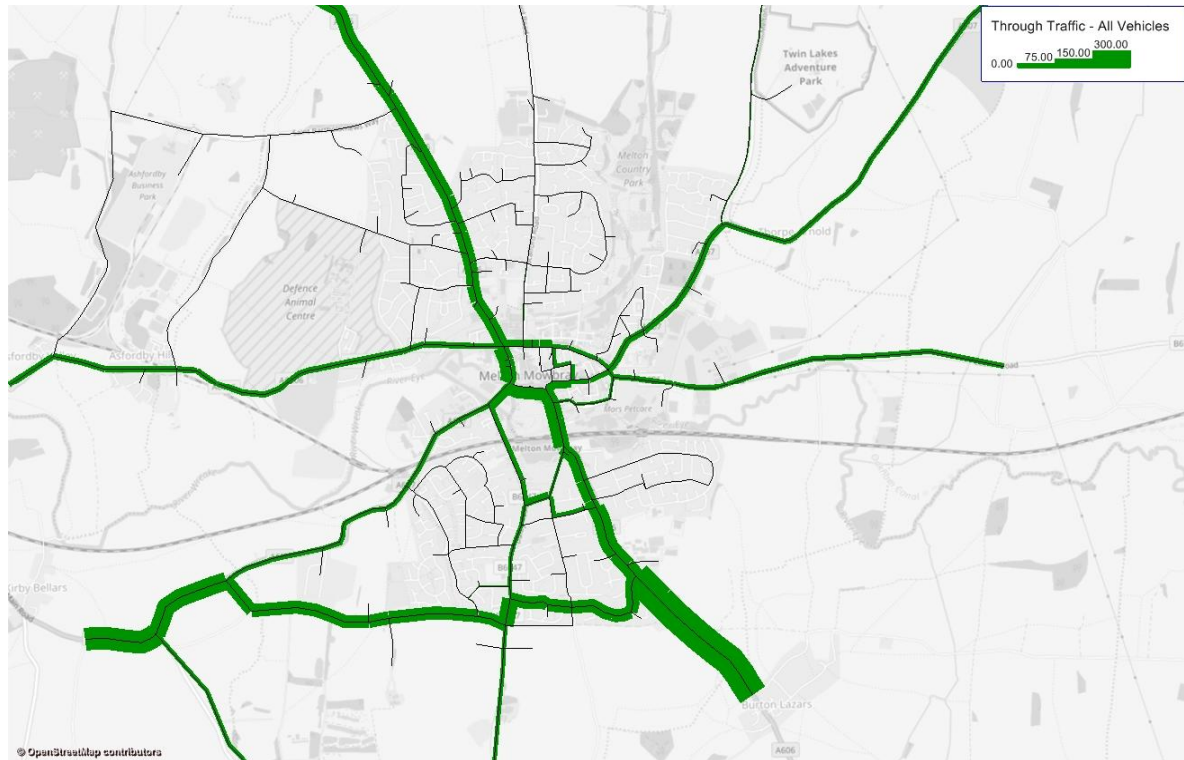


Figure 3-15: Through Traffic in the Inter-peak in 2021 Core Scenario (All vehicles)

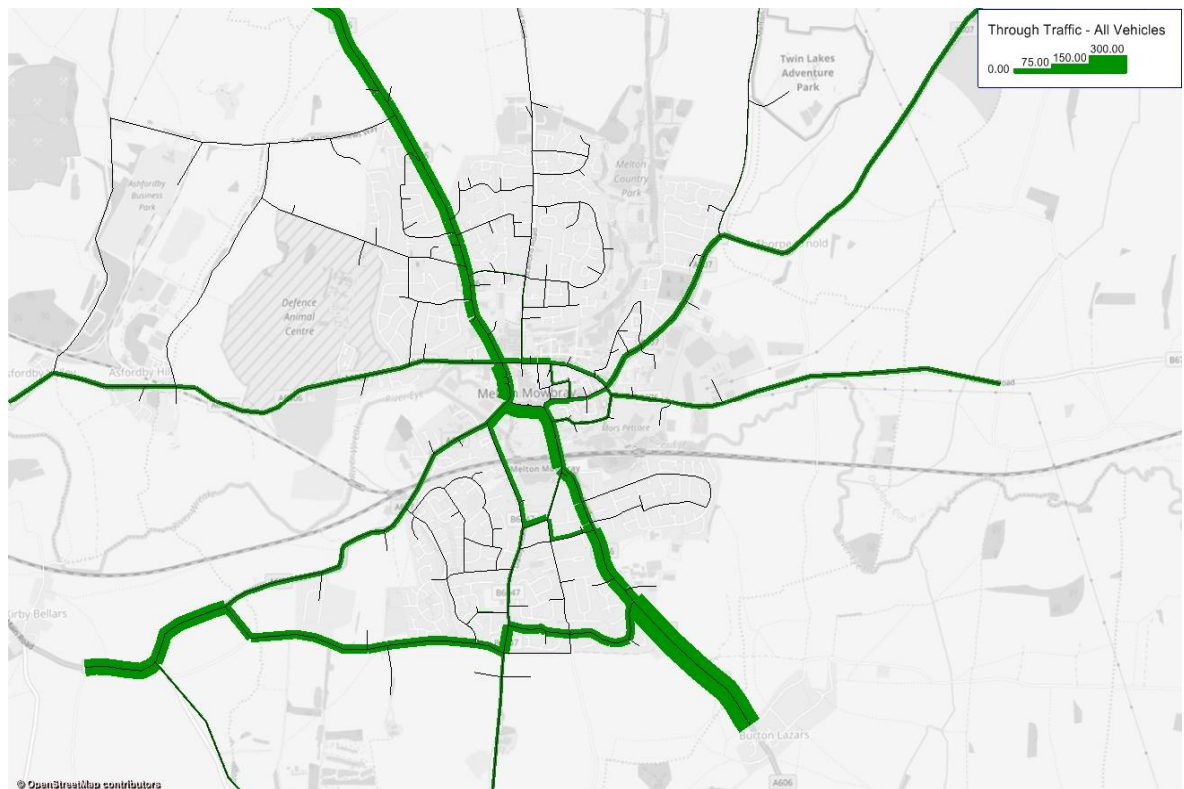


Figure 3-16: Through Traffic in the PM Peak in 2021 Core Scenario (All vehicles)

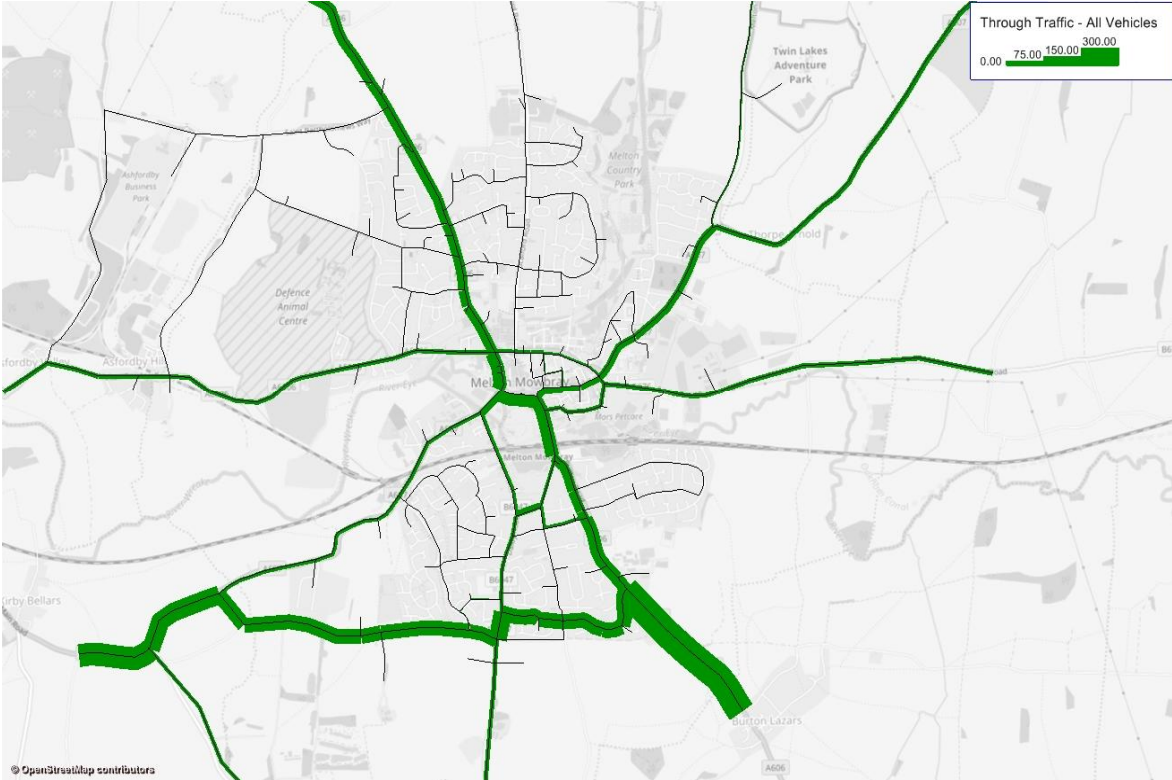


Figure 3-17: Through Traffic in the AM Peak in 2036 Core Scenario (All vehicles)

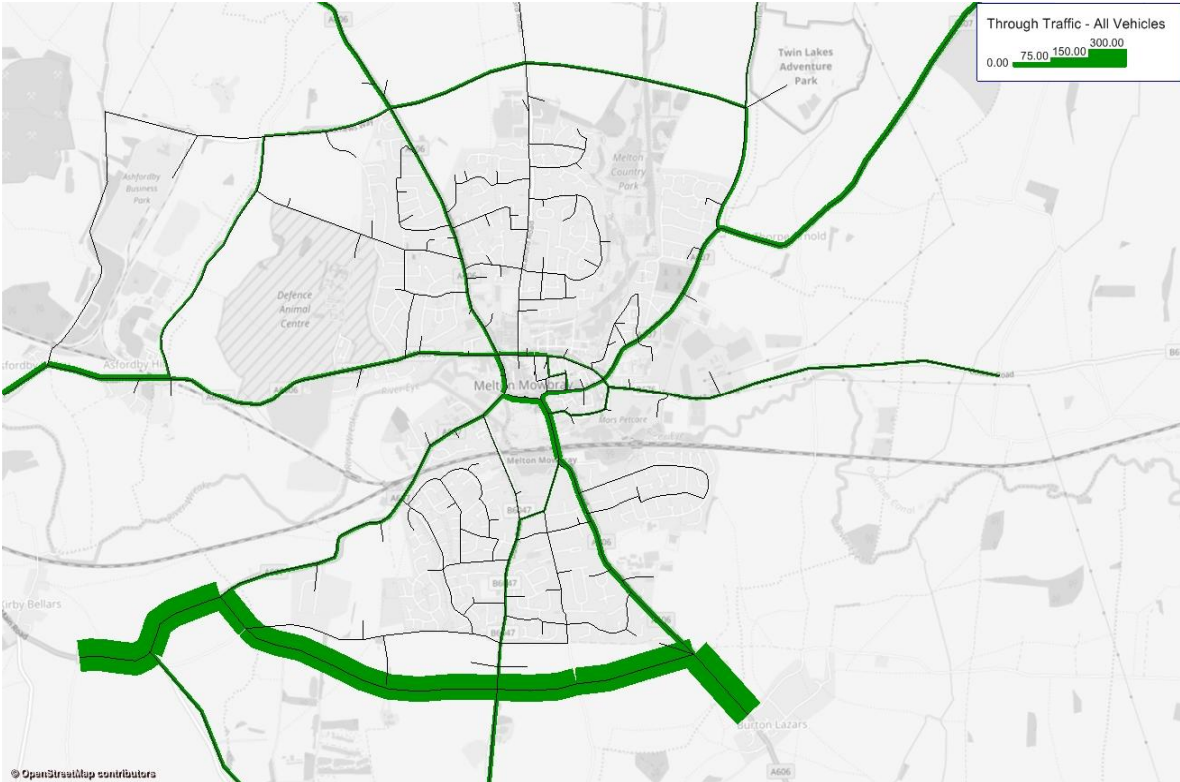


Figure 3-18: Through Traffic in the IP Peak in 2036 Core Scenario (All vehicles)

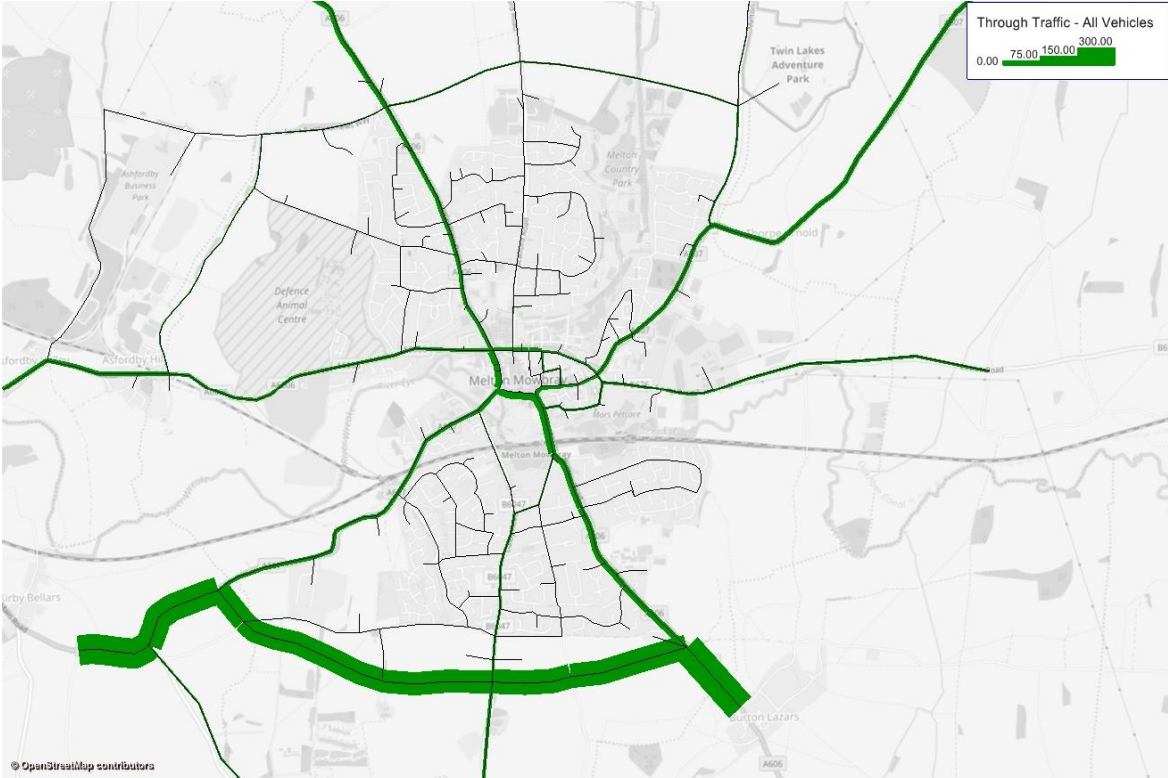
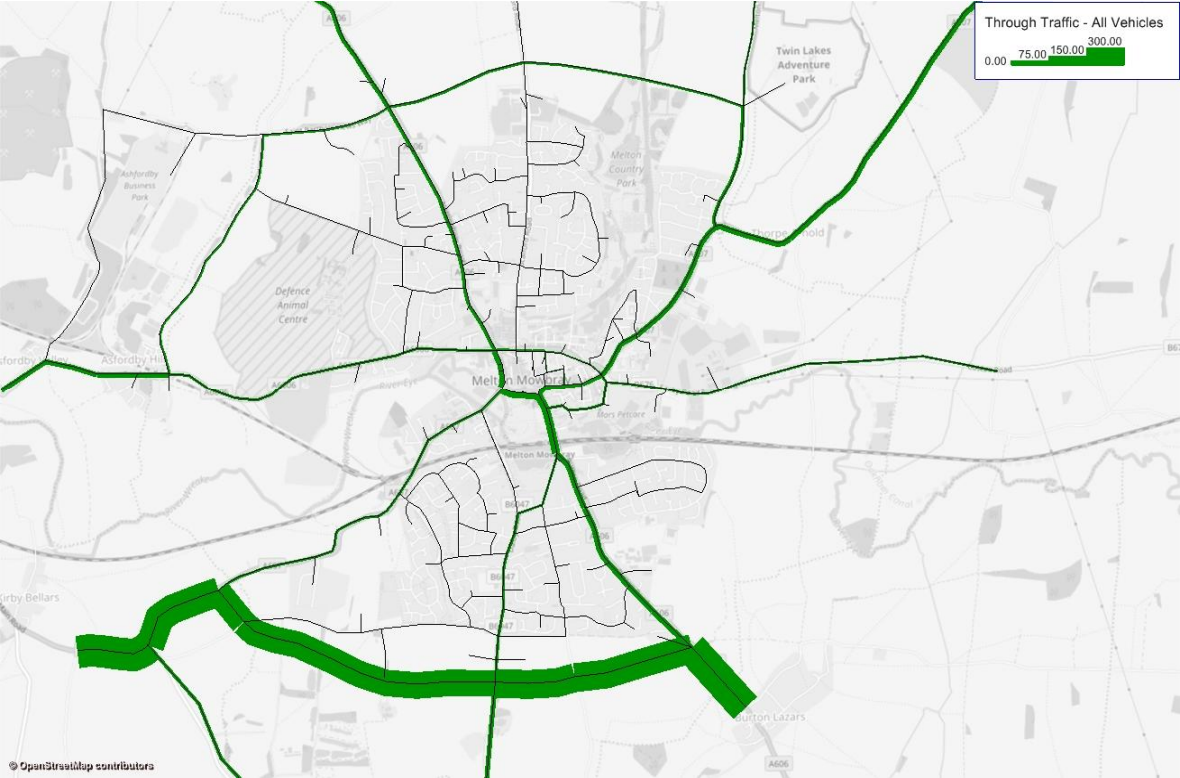


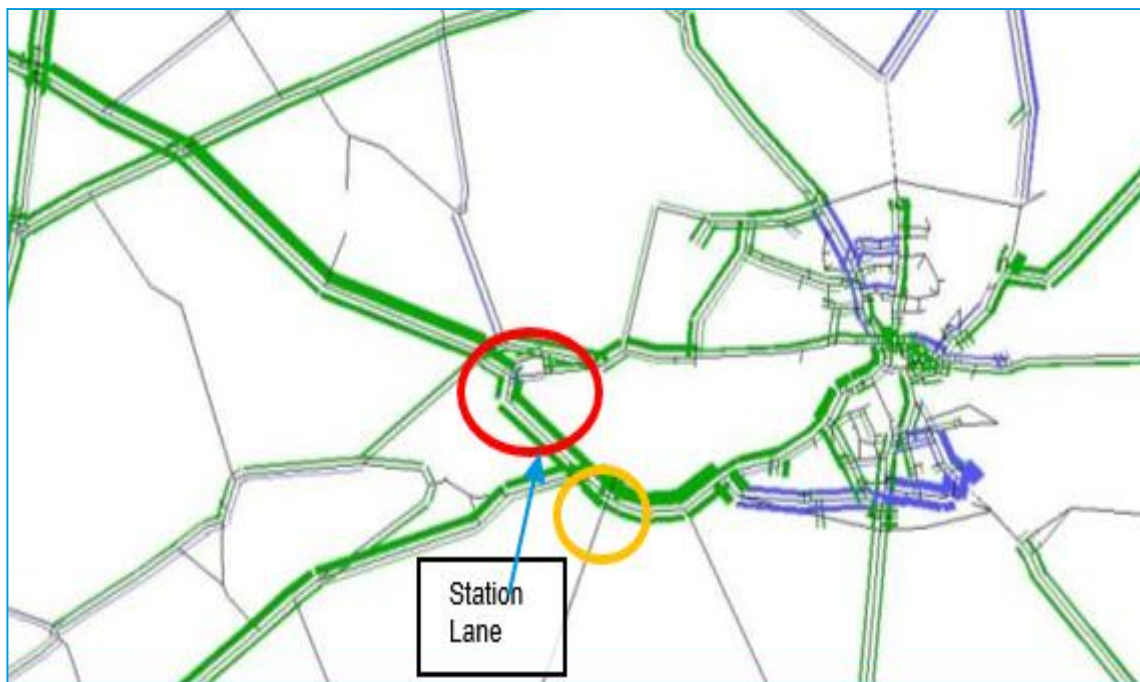
Figure 3-19: Through Traffic in the PM Peak in 2036 Core Scenario (All vehicles)



3.6 FUTURE TRAFFIC-RELATED IMPACTS IN TOWN CENTRE AND VILLAGES

- 3.6.1 The LLITM 2014 base shows that in the future, traffic-related problems and issues are likely to extend beyond the present town centre. This creates additional concerns in the context of traffic volumes, safety, and severance through some rural villages adjacent to Melton Mowbray itself – notably Asfordby, and Kirby Bellars.
- 3.6.2 As the traffic grows in the future, and as the developer-link road to the south is built out during the 2020's, forecasts suggest that without the scheme, there will be a significant rise of undesirable vehicle movements through adjacent local villages.
- 3.6.3 This is as a result of continued slow speeds through the town centre, and the provision of the Southern Distributor road.
- 3.6.4 Figure 3-20 below shows an increase of nearly 300 pcu's an hour in each direction along Station Lane to the west of the town of Melton Mowbray, and through the villages of Asfordby (marked by a red circle) and surrounding settlements, including Kirby Bellars (marked by an orange circle).

Figure 3-20 LLITM 2021 v 2036 Core AM Peak Flows (Green indicates increase; blue indicates decrease)



3.7 HGV MOVEMENTS THROUGH THE TOWN CENTRE

- 3.7.1 In the future the daily percentage of HGV through traffic with respect to overall through traffic volume within Melton Mowbray is forecast to increase from 12% in 2014 to 20% in 2036.
- 3.7.2 This will directly impact on the HGV through traffic going through the town centre with associated issues of safety, noise, air quality and severance issues

Figure 3-21 to Figure 3-23 show the 2021 Core Scenario HGV through traffic for the AM, inter-peak (IP) and PM peaks respectively and

3.7.3 Figure 3-24 to Figure 3-26 show the same for 2036 Core Scenario.

3.7.4 By 2021 there is an increase of the level of through traffic along the A606 axis which is still one of the largest concentrations of through traffic HGV movement. However, the Asfordby Road and A607 Leicester Road links also experience a significantly higher level of HGV through traffic and collectively constitute over 50% of the HGV through traffic on the highway network.

3.7.5 The presence of the Northern and Southern Distributor Roads in 2036 does not seem to have an impact on the routing of HGV through traffic, with a North-South link important to change this. .

Figure 3-21: Through Traffic in the AM Peak in 2021 Core Scenario (HGV)

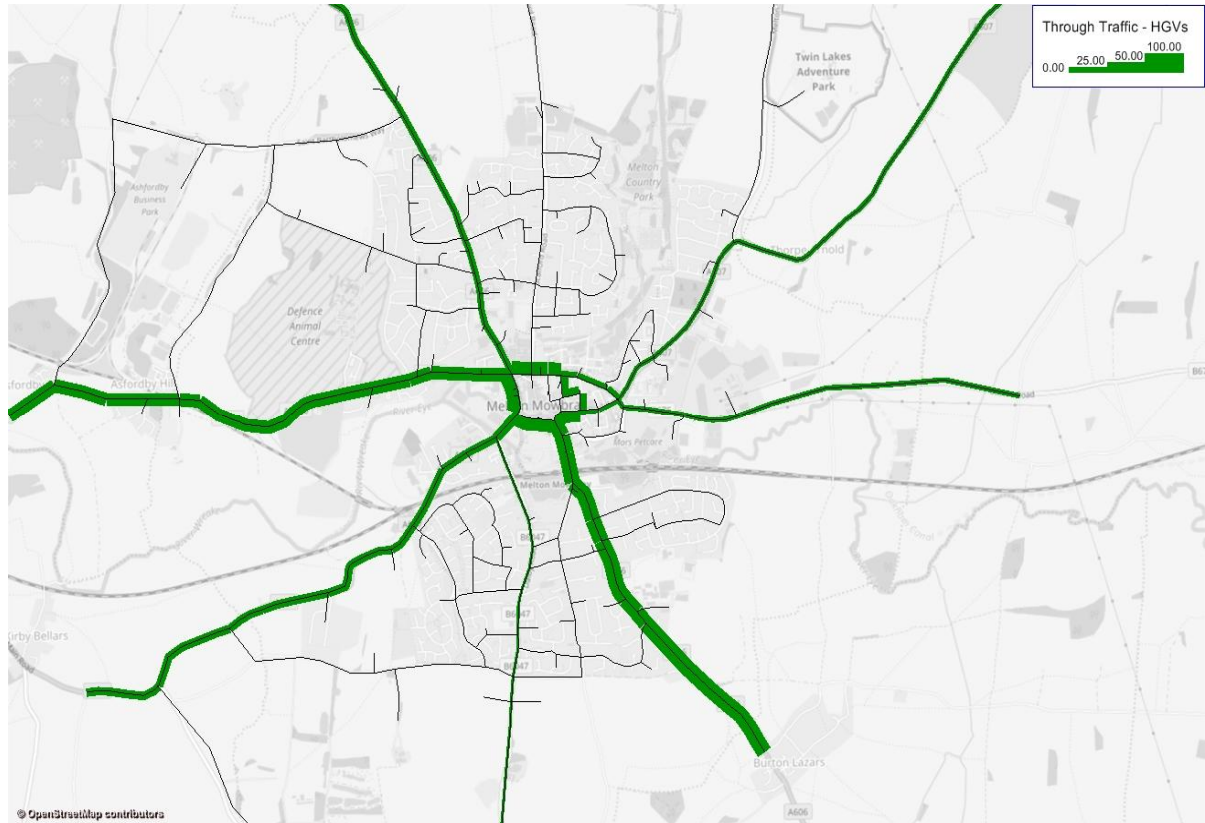


Figure 3-22: Through Traffic in the IP Peak in 2021 Core Scenario (HGV)

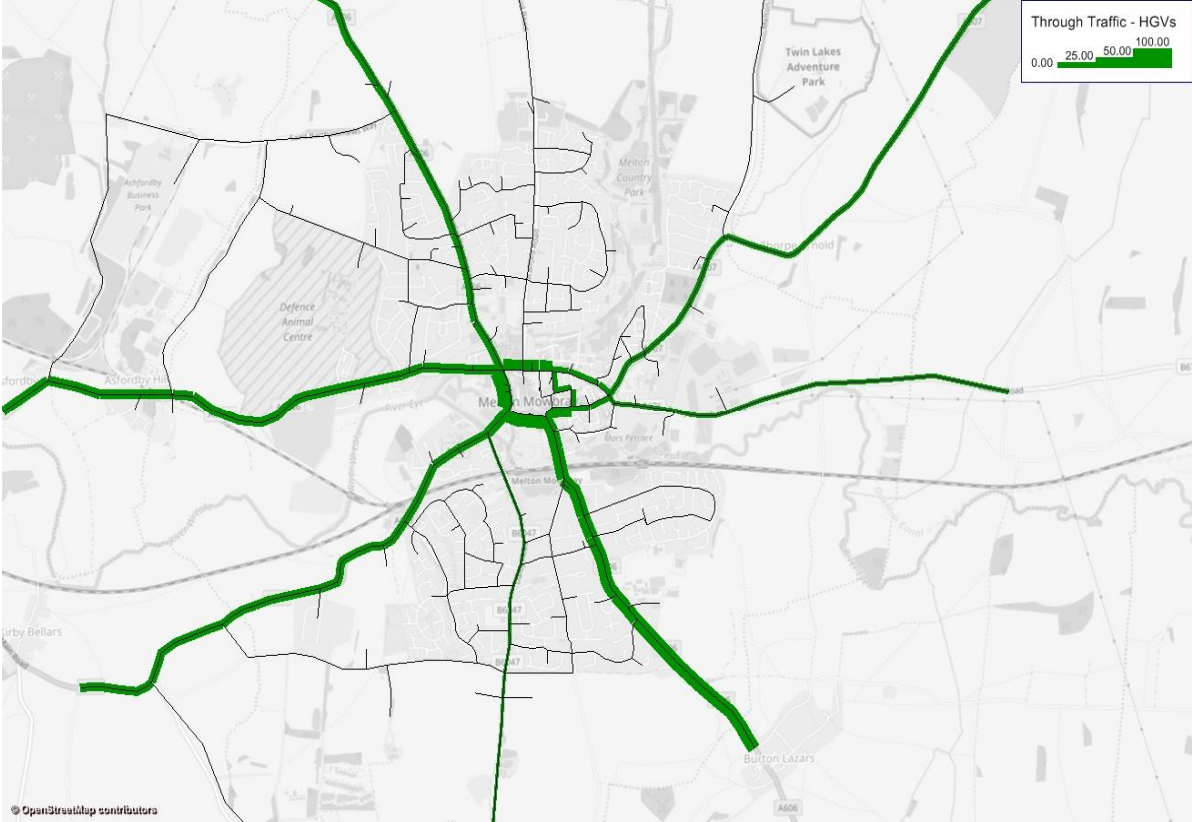


Figure 3-23: Through Traffic in the PM Peak in 2021 Core Scenario (HGV)

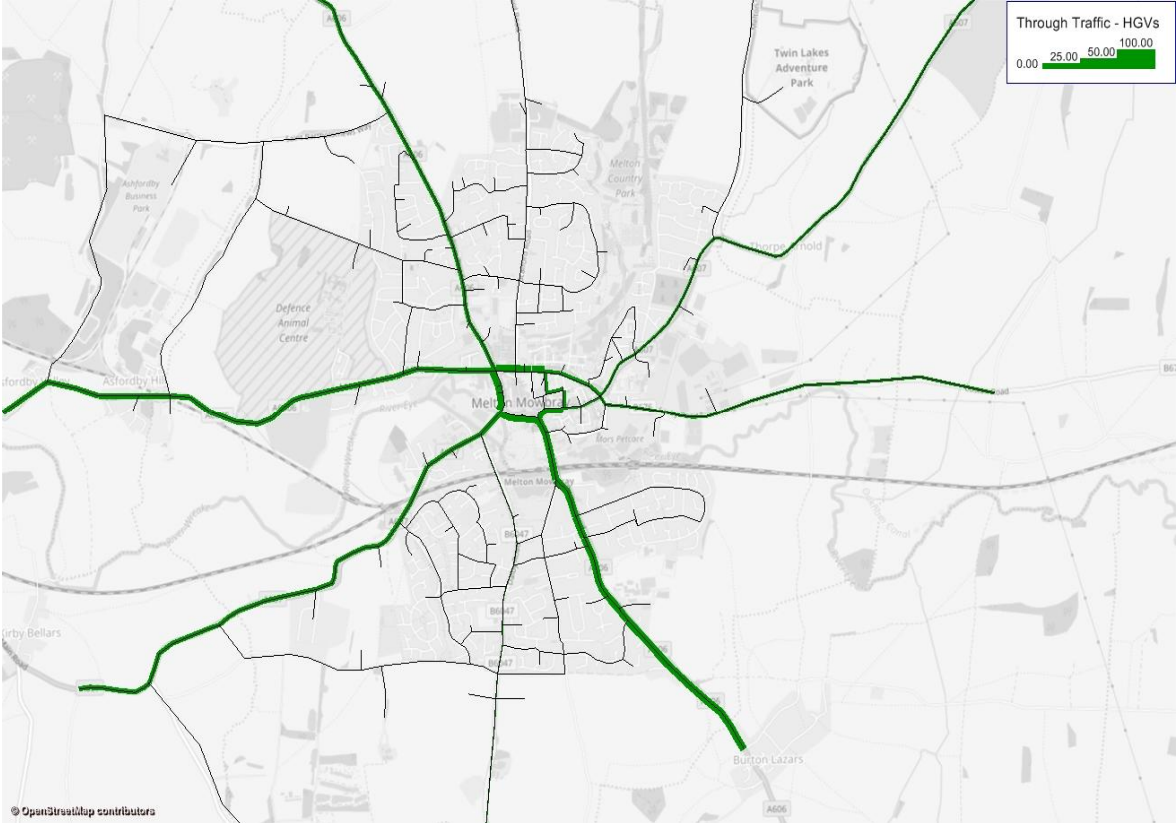


Figure 3-24: Through Traffic in the AM Peak in 2036 Core Scenario (HGV)

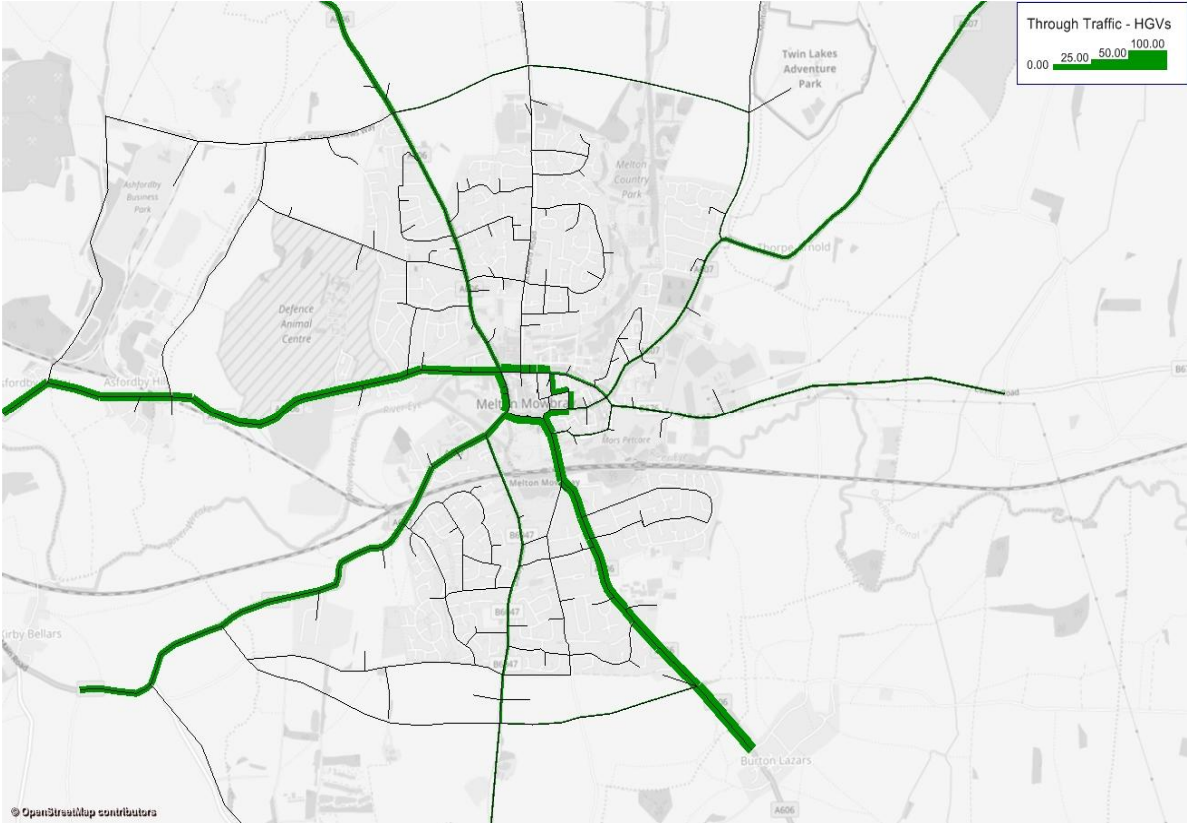


Figure 3-25: Through Traffic in the IP Peak in 2036 Core Scenario (HGV)

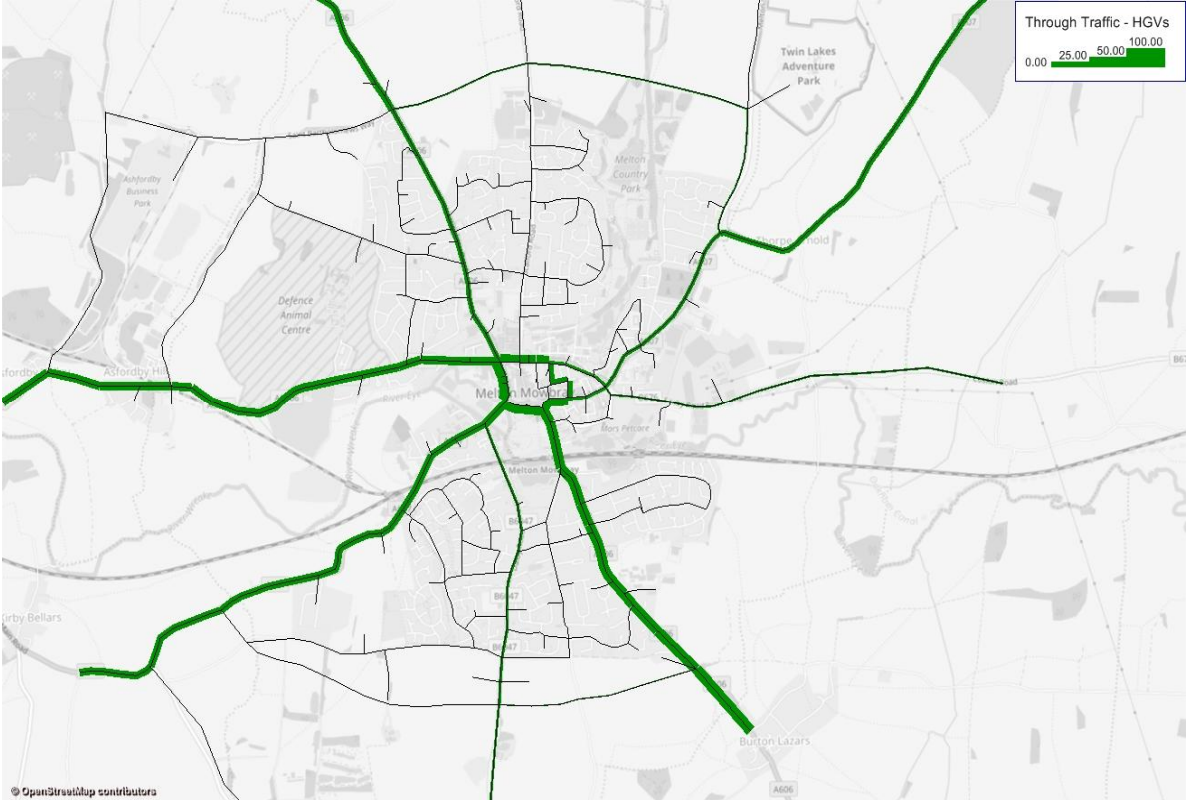
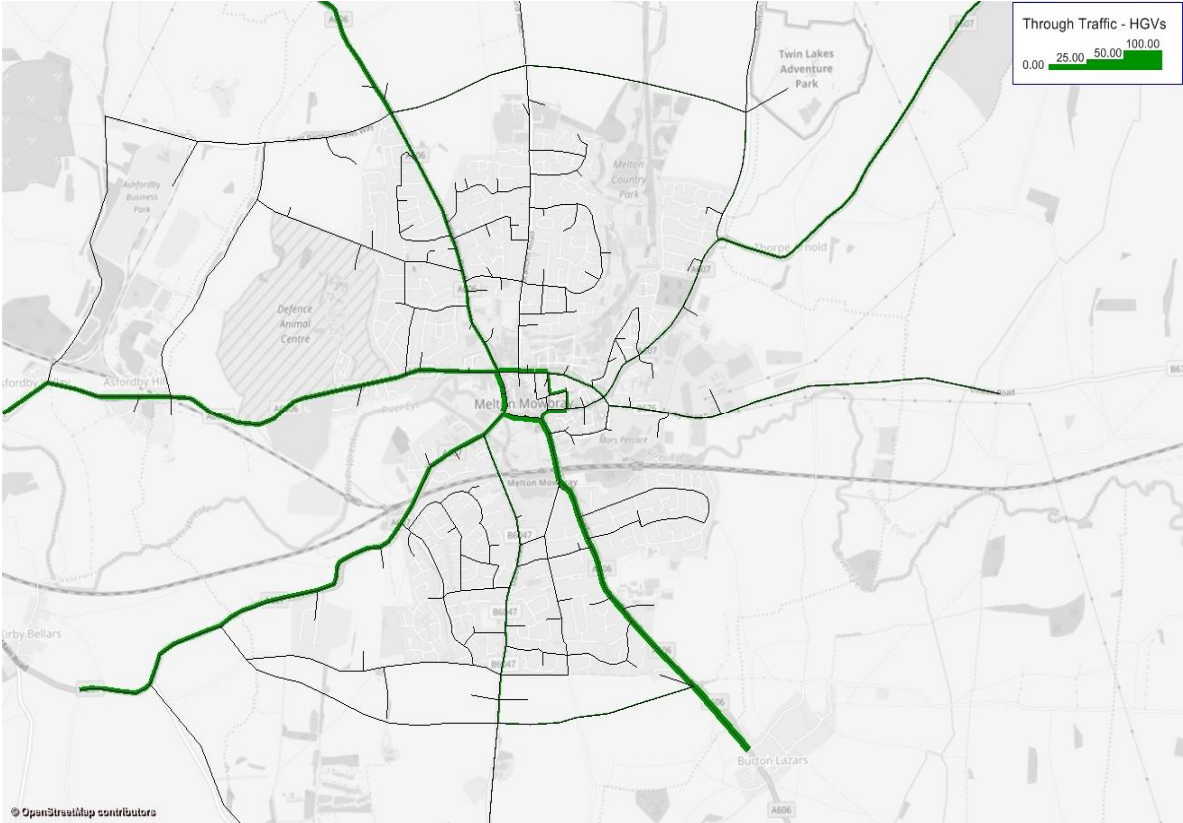


Figure 3-26: Through Traffic in the PM Peak in 2036 Core Scenario (HGV)



4 NEED FOR INTERVENTION AND SCHEME OBJECTIVES

4.1 INTRODUCTION

- 4.1.1 This section establishes the need for intervention in the study area. It summarises the current and future transport-related problems and their underlying causes.
- 4.1.2 The identification of problems and issues builds upon the evidence presented in previous chapters and from previous studies and scheme-specific analysis work.

4.2 IDENTIFIED PROBLEMS AND DRIVERS OF CHANGE

- 4.2.1 The previous chapters highlight a range of issues and identified problems that together constitute the reasons as to why there is a need for intervention. These include the facts that:
- à The town centre is already congested;
 - à This creates slow journey times as well as unreliable journeys;
 - à Through traffic levels are high and are most pronounced in terms of cross town centre movements- on the A606 and then A607;
 - à HGV numbers are relatively low on each route but due to their need to cross the town centre, their impact is high since the town centre routes are already congested, and with significant pedestrian and safety issues;
 - à Significant rat running to avoid congested junctions currently takes place and will only get worse in the future year;
 - à Low public transport connectivity leads to a high car mode share, reinforcing the difficulty of commercially viable alternatives; and
 - à Any additional development would have an area wide impact in the future, and not site specific, resulting in the need for an intervention that relieves a significant number of locations to be effective.

4.3 A CONTINUATION OF CURRENT TRANSPORT PROBLEMS

- 4.3.1 Without intervention, the analysis of the LLITM 2014 Base model in the preceding chapter therefore indicates that there will be a continuation of existing transport problems in the future.
- 4.3.2 Without intervention, the problems and issues identified in Melton Mowbray in the above section will continue and potentially worsen- both with respect to the areal extent of issues, as well as intensity.
- 4.3.3 This means that roads will remain congested, with some of the highest levels of delay per mile in the County - impacting on both local residents, and those from a wider catchment seeking to make longer distance movements to/from Leicester, Nottingham, Loughborough, the M1 or A1.
- 4.3.4 Melton Mowbray will continue to have high levels of through traffic - through traffic that impacts on residents as a result of the routes that such traffic is forced to take, as well as further impacts on the attractiveness of the town to the visitor economy, curtailing the extent and attractiveness of the historic market town centre.
- 4.3.5 This is particularly the case given the proportion of traffic that is HGV and LGV – both as a percentage of overall traffic, and absolute volumes - with the corresponding noise, safety, severance and air quality problems also brought by these movements; alongside significant forecast growth of such movements in the future.

- 4.3.6 As a result of the current network configuration converging on several key junctions, and with key geographical constraints provided by the river and rail line, resilience of the network to perturbation will remain poor with corresponding impacts on reliability. This will be exacerbated as Melton Mowbray continues to grow, with impacts over time also extending to adjacent villages as well as the town centre, if no improvements are delivered.
- 4.3.7 Considering the existing traffic conditions within the town, further improvements to public transport will also be difficult to bring into practice, alongside the further housing delivery and economic expansion of the town proposed in the emerging Local Plan.
- 4.3.8 However there are also likely to impacts on the economy and vitality of Melton in the future as a result.

4.4 DELIVERY OF HOUSING JOBS AND ECONOMIC GROWTH

- 4.4.1 As noted in the Leicester and Leicestershire Strategic Economic Plan, Melton Mowbray is a thriving market-town, with a strong housing market and industrial base, offering significant local employment opportunities. Unemployment is exceptionally low against UK averages, at only 1.3%.
- 4.4.2 The town is the main economic centre for the Borough of Melton, providing a base for the larger employers and functioning as the key retail, leisure and service destination for the residents of the Borough.
- 4.4.3 A major constraint imposed by the existing transport system is the limitation to grow the town's economy and labour market catchment through delivery of housing and employment sites, and to attract further employment investments. An efficient, strategic transport solution is therefore the key to enable the town to deliver its development plan proposals - to solve local housing needs, those required to sustain local jobs growth, and support a national policy issue.
- 4.4.4 Doing nothing will lead to the above problems and issues, to slow (and potentially actually curtail) the significant levels of economic growth, job creation and housing delivery proposed as part of the emerging Local Plan; itself delivering over 4,000 dwellings and 6,000 jobs in total in Melton Mowbray, from employment land being made available for expansion.
- 4.4.5 In order to accelerate delivery of this growth, and in light of existing network constraints, the convergence of routes at congested junctions in the town centre, and highly significant levels of growth, it is recognised in the emerging Local Plan that a strategic intervention is required.
- 4.4.6 This is needed to support and accelerate housing and employment delivery, but also to enhance the vitality of the town centre further, with the removal of traffic providing opportunities for town centre regeneration and renewal of the urban fabric, as well as providing opportunities for walking/cycling and better bus travel times to ensure that the new housing growth has greater sustainable travel opportunities than those offered presently.

4.5 SCHEME OBJECTIVES

- 4.5.1 DfT guidance⁵ outlines how a clear set of objectives designed to address the identified problems should be set. The guidance indicates that objectives should be consistent with the following criteria:
- à Be informed by an appropriate level of stakeholder engagement and by a realistic appreciation of the issues and context.
 - à Reflect opportunities and constraints.

⁵ Department for Transport (2014), Transport Analysis Guidance, The Transport Appraisal Process [online]. Available from: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/431185/webtag-tag-transport-appraisal-process.pdf> [accessed: 7 June 2016].

- à Reflect underlying causes.
- à Avoid indications of preferred solutions.
- à Be consistent with wider local regional and national objectives identified in but focused on addressing the identified need rather seeking to contribute to all of these objectives.
- à Enable more specific targets to be developed in due course.

4.5.2 The scheme objectives have been derived from the Evidence Base previously detailed that has been collected and agreed by Leicestershire County Council as the highway authority and Melton Borough Council., supported by regular interaction with local Stakeholder Groups and the Transport Reference Group in particular.

4.5.3 The objectives developed are aligned with the issues and problems in the previous sections, and those of local, sub-regional and national policy concerning:

- à Reducing congestion and improving reliability;
- à Improved connectivity at local, regional and national scales;
- à Enhanced productivity and competitiveness;
- à Unlocking development opportunities for housing and employment; and
- à Creating an attractive place for sustainable growth and general wellbeing.

4.5.4 The analysis presented in this OAR confirms all the findings in previous work and in supports the existing scheme objectives (unchanged from the previous 2016 Options Assessment Report) and set out below:

- à **Objective 1:** Improve access to Melton Mowbray town centre enabling its full potential: To improve accessibility to jobs and the retail centre via significantly reducing current severe levels of congestion and journey time unreliability in the peaks.
- à **Objective 2:** Reduce congestion on the local network, in particular key pinch points in and around Melton Mowbray town centre: To remove through traffic from the town centre and therefore improve the vitality and viability of the town centre;
- à **Objective 3:** Reduce impact on rat run routes through improving the south-north connectivity.
- à **Objective 4:** Remove HGV through traffic in Melton Mowbray town centre.
- à **Objective 5:** Improve access to the areas of potential development. Thereby enabling and accelerating over 5,000 dwellings and 6,000 jobs located on the outskirts of Melton Mowbray.
- à **Objective 6:** Promote a quality road space in town centre suitable for non-transport uses and attractive to inward investment.
- à **Objective 7:** Increase levels of public transport, walking and cycling use within the Study Area.
- à **Objective 8:** Improve highway safety for all road users within the Study Area.

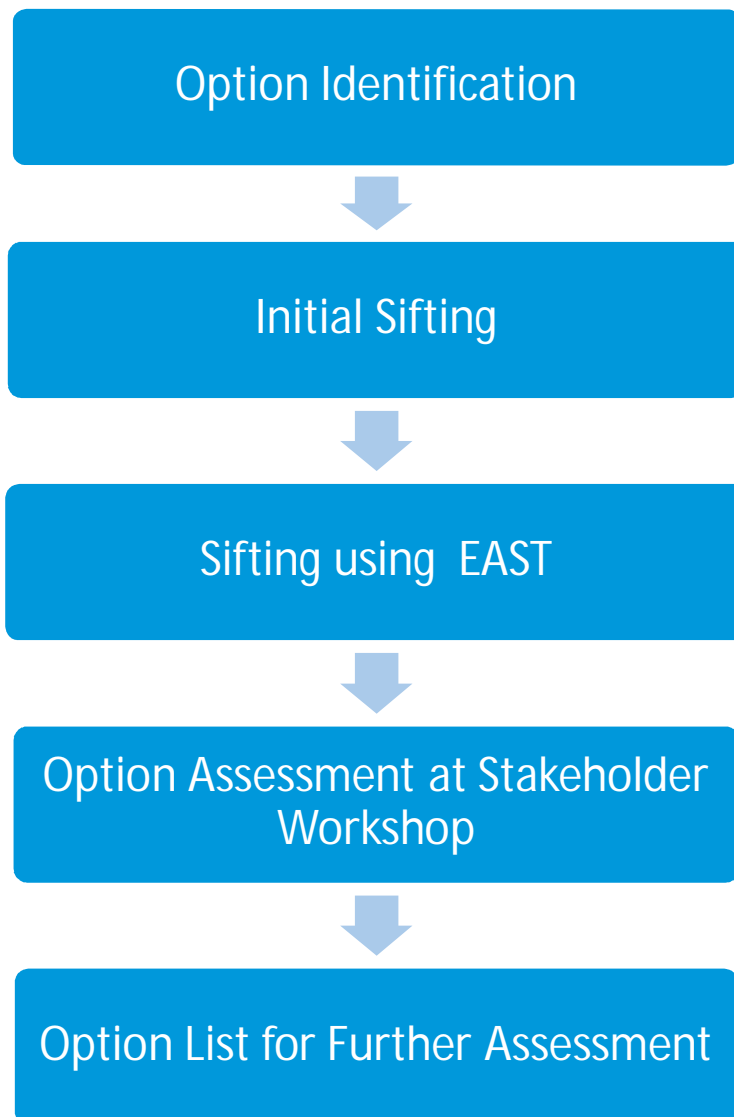
4.5.5 The objectives have been developed in parallel with the evidence-led process and, agreed through consultation undertaken between 2014 and 2016 with Local Authorities, the Local Melton Mowbray Transport Stakeholder Reference Group and workshops with local highways officers.

5 OPTIONS GENERATION

5.1 INTRODUCTION

- 5.1.1 This chapter details how potential transport options were generated to address existing traffic congestion in Melton Mowbray and support future growth of the town.
- 5.1.2 The approach to generating options is represented in Figure 5-1, and follows best-practice advocated in DfT's transport analysis guidance, WebTAG.

Figure 5-1: Approach to Options Assessment



5.2 OPTIONS IDENTIFICATION

- 5.2.1 DfT guidance⁶ describes how a broad range of potential options should be considered in order to ensure that the most appropriate solution to an identified problem is pursued. Therefore, in line with this guidance, a long list of potential options was generated with local stakeholder, officer and consultant input to provide an unbiased view of all historic proposals and local aspirations.
- 5.2.2 The long list was informed by the transport evidence base produced, and the conclusions of the Melton Transport Study Phase 1 Stage 1, which in summary were that:
- à The town centre is already congested;
 - à About one third of total traffic is from within the town, crossing the town centre;
 - à Longer distance through traffic is about one fifth of total traffic;
 - à HGV numbers are relatively low, but as they need to cross the town centre their impact is high;
 - à Melton is relatively self-contained, with an average trip length of around 4km;
 - à There is highly significant rat running to avoid congested junctions;
 - à Low public transport connectivity, and slow journey times leads to a high car and walk/cycle share; and
 - à Any additional development would have an area wide impact affecting several congestion points in the town as well as surrounding communities.
- 5.2.3 Options were proposed at the workshop consultation events with Melton Borough Council, Leicestershire County Council and other stakeholders, including local residents, held in December 2014.
- 5.2.4 Jacobs also identified some additional transport options following the review of current and previous studies.
- 5.2.5 A wide range of options were compiled which covered all modes and scales of options, and included public transport, highway infrastructure, and traffic demand management e.g. park and ride, land-use changes and cycling and pedestrian improvements.
- 5.2.6 The range of options also varied in terms of cost from low-cost, such as a junction improvement, to high-cost such as major highway infrastructure. Each option was placed in one of the following categories:
- à Demand Management.
 - à Network Improvement.
 - à Non-motorised.
 - à Public Transport.
 - à Traffic Management.

⁶ Department for Transport (2014), Transport Analysis Guidance, An Overview of Transport Appraisal [online]. Available from: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427073/webtag-tag-overview.pdf> [accessed: 7 June 2016]

5.3 OPTIONS GENERATION

5.3.1 In total, a long list of 60 transport options were identified and categorised as follows:

- à 14 x Demand Management Options
- à 17 x Network Improvement Options
- à 5 x Non-Motorised User Options
- à 16 x Public Transport Options.
- à 8 x Traffic Management Options.

5.3.2 This list is included in Appendix A and B of this OAR.

5.3.3 As shown on the long list of options included in Appendix A and B, a variety of town centre improvement options (all modes) were considered as part of the 60 potential schemes generated at the initial stage of the options work.

5.3.4 The results of the initial sifting exercises are included in Appendix A and B with scores for options and the reason for not progressing further clearly recorded.

5.3.5 The scale of current congestion, its causes and future growth levels, generally ruled out the initial identified walking/cycling, and PT options, which do not consider the provision of further capacity first; to then enable these measures be considered as part of the Wider Melton Transport Strategy.

5.4 INITIAL SIFTING OPTIONS

5.4.1 Following generation of the long list, some options were removed because they were too vague, were not deliverable at all, or did clearly not fit with the context of the detailed evidence base and current transport problems in the town.

5.4.2 Then an initial sifting of options was carried out following step 6 of the Department for Transport's Transport Analysis Guidance, as summarised in the box below, which sets out which options should be discarded.

Discard options that:

- would clearly fail to meet the key objectives identified for intervention;
- do not fit with existing local, regional and national programmes and strategies, and do not fit with wider government priorities; and
- would be unlikely to pass key viability and acceptability criteria (or represent significant risk) in that they are unlikely to be:
 - Ø deliverable in a particular 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;
 - Ø technically sound;
 - Ø financially affordable; and,
 - Ø acceptable to stakeholders and the public.

5.4.3 The webTAG criteria correspond to three main criteria which were used to sift the Melton Mowbray long list of options:

- à Deliverability (including whether technically sound based on knowledge of existing constraints).

- à Affordability.
- à Acceptability.

5.4.4 For each criterion the following colours were used to determine whether a transport option was discarded or not:

- à Red: does not meet key viability and acceptability criteria.
- à Amber: borderline in meeting / not meeting criteria.
- à Green: does meet key viability and acceptability criteria.
- à Purple: duplicate option (discarded).

5.4.5 If a particular option was classified as red for one or more of the sifting criteria than it was discarded from the options list.

5.4.6 If one or more amber criteria was assigned then a judgement on whether to retain or discard the option was made on a case by case basis. In each case an explanation to justify the decision is provided next to the option in the long list (Appendix A).

5.4.7 Following initial sifting, 36 transport options were removed from the long list.

5.4.8 24 options were taken forward for further sifting.

5.5 SIFTING USING AN EAST-BASED APPROACH (MOAT)

5.5.1 A spreadsheet-based tool, called the Melton Option Appraisal Tool (MOAT), was developed and used for further sifting of the remaining options.

5.5.2 MOAT is based upon the Department for Transport's Early Assessment and Sifting Tool (EAST), a decision support tool to develop, summarise and present evidence on options in a clear and consistent format.

5.5.3 EAST is designed to be used without having to obtain detailed evidence to allow options to be considered at an early stage of development. EAST is based around the five business case model approach advocated by the Department for Transport. The corresponding criteria used by MOAT to filter options are indicated in **Table 2.1**.

Table 2.1 Comparison of EAST Business Case Sift and MOAT Option Filter

EAST Business Case	MOAT Option Filter
Strategic	Meets defined local objectives.
Economic	Economic value
Managerial	Deliverability & Constraints
Financial	Cost
Commercial	Perceived value/ Deliverability

5.5.4 The assessment has been evidence and objective led and has been undertaken to correspond to the seven Melton Mowbray local objectives developed and agreed from the evidence base at a workshop with Leicestershire County Council and Melton Borough Council on 13th February 2015.

5.5.5 Each option was scored by stakeholders, comprising different tables of groups of residents, officers and consultant support that scored options on a five point scale from -2 to +2 to determine the contribution towards each scheme objective.

- 5.5.6 The first two objectives in the list relating to improving access to Melton Town Centre and the areas of potential development, and reduce congestion on the local network; in particular key pinch points in and around Melton Town Centre) were given double the weighting factor as these were considered to be of higher priority than other study objectives.
- 5.5.7 An example option assessed using MOAT is included in Figure 5-2. The assessment covered all types of option; across modes, and of low and higher cost.
- 5.5.8 Following assessment of individual transport options a list of 34 options ranked by score was produced. This is included as Appendix B.

Figure 5-2: MOAT Option Assessment

Option Details	
Option Number:	MM/PT-03
Option Description:	Improve/provide school bus services
Option Aim:	Reduce car trips to schools in particular during the AM Peak
Option Scheme Type:	Public Transport
Option Filtering	
Deliverability	Deliverable
Practical Feasibility	Feasible
Cost	<£250k
Perceived Value	May deliver value for money
Further Appraisal Required:	Judgement Required
Judgement Decision For Further Appraisal:	YES
Reason for Decision:	Success is dependent on cooperation of schools & parents, benefits are long term changes in travel habits, which may lead to a reduction in car trips generated by the schools
Option Appraisal	
Contribution towards the Study Objectives	Weighting Factor
1 Improve access to Melton Town Centre and the areas of potential development	2 Neutral
2 Reduce congestion on the local network; in particular key pinch points in and around Melton Mowbray Town Centre	+1
3 Address HGV impact in Melton Mowbray town centre	Neutral
4 Improve connectivity to local and regional centres for example Leicester and Nottingham	Neutral
5 Improve effectiveness of public transport facilities within Melton Mowbray	+1
6 Increase levels of walking and cycling within the study area	Neutral
7 Improve highway safety for all road users within Melton Mowbray	+1
8	Neutral
Overall Performance against the Study Objectives (*2 weighting factor applied to the 'highest priority' Study Objectives)	+4

5.6 OPTION ASSESSMENT AT STAKEHOLDER WORKSHOP

- 5.6.1 A workshop took place on 13 February 2015 at Melton Borough Council offices with local residents, the Transport Reference Group, Council officers from both the Borough Council and Leicestershire County Council and consultant support.
- 5.6.2 For each of the transport options taken forward from the EAST sifting the option appraisal process was reviewed and agreement was reached on the scoring i.e. the contribution to the study objectives. Two new options were added to the list of schemes:

- 1) MM/DM-17 Leicester Road car park: to relieve congestion in the town centre by providing a new car park on a key radial route.
- 2) MM/TM-07 Interim Management System; real time information for drivers on congestion: to encourage rerouting of traffic and to influence motorists travel patterns by providing information on congestion on key roads.

5.7 OPTIONS LIST FOR FURTHER ASSESSMENT

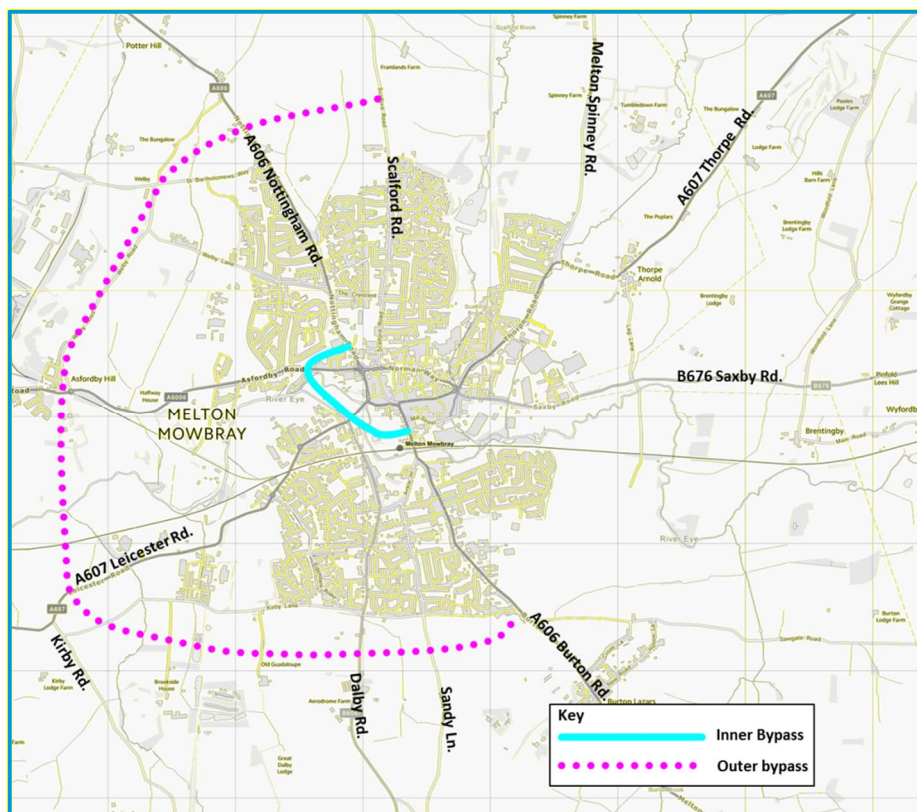
- 5.7.1 Following the stakeholder workshop a revised list of transport options was produced for further assessment and detailed modelling, and is also included in Appendix B of this report.
- 5.7.2 The Options List shown in Appendix B includes a ranking of the transport options for further assessment. The ranking is in terms of how well an option achieves against all seven local objectives.
- 5.7.3 As can be seen the six highest ranked options are bypass suggestions which would distribute traffic around the north, south, east or west of the town:
- à Junction improvements together with a highway infrastructure link road south, west and north of the town (MM/NI-06) – jointly ranked first.
 - à Through traffic diverted around the town using an Eastern Distributor Road – jointly ranked first (MM/NI-09).
 - à Staged bypass/distributor road build in stages prioritised by congestion on gyratory (MM/NI-04) - jointly ranked first.
 - à Bypass to the east south and west sides of the town (MM/NI-11) – jointly ranked first.
 - à A northern bypass of the town (MM/NI-07) – jointly ranked fifth.
 - à A southern bypass for through traffic (MM/NI-08) – jointly ranked fifth.
- 5.7.4 All these options fall into the medium to high cost category but their potential impact in terms of addressing the local objectives and the acceptability for such a major intervention amongst many of the stakeholders warranted further appraisal of developing conceptual bypass options.
- 5.7.5 Such that not all options were of such potential cost/ scale, an inner bypass route within the town was added to the options short list.
- 5.7.6 The concept of such a shorter and more direct route within the built up area was considered the low cost alternative to the larger schemes circumventing the town which were identified by stakeholders and ranked so highly following the early option appraisal.

5.8 INNER BYPASS V. OUTER BYPASS OPTION ASSESSMENT

- 5.8.1 The option generation and multi-criteria analysis exercise for Melton Mowbray was conducted in April 2015 with the potential better performing schemes subsequently modelled in LLITM v5.2. This was to provide further evidence and detail to support the shortlisted and potentially more preferable solutions.
- 5.8.2 This work tested a shorter, Inner Bypass, as a lower cost alternative to the west of the town centre against an Outer Bypass to the west of town.
- 5.8.3 The objective of each would be to solve existing congestion issues in the town and provide additional capacity to accommodate traffic from upcoming development proposals. The purpose of the test was to provide evidence on the scale of highway intervention required.
- 5.8.4 The locations of the inner and outer options are shown in Figure 5-3.

- 5.8.5 The key conclusions of this assessment, using the full LLITM v5.2 model was that whilst some journey times decrease, an inner bypass scheme does not offer any significant benefit to the north or south of Melton, nor does it promote consistent journey time reductions across Melton as a whole. This is due to additional, complex signalised junctions being created in and around the town centre, which introduces additional opposing movements, and therefore also additional travel time for a significant number of movements.
- 5.8.6 It was therefore concluded that an Inner Bypass would provide only very limited, and short term capacity to relieve congestion at some current congestion pinchpoints, and not significantly benefit through traffic or the town more generally.
- 5.8.7 Moreover, whilst acting as a bypass for the Nottingham Road/ Asfordby Hill junction, a short, Inner Bypass scheme has little benefit on other congested junction locations around the town centre; on approaches north and south to/from the town centre, and on key congestion points further east.

Figure 5-3: Inner and Outer Bypass Options – Assessment



- 5.8.8 On the other hand, a potential Outer Bypass appeared to be a longer term solution for the town not only to address pinch points but also to support town's Local Plan growth.
- 5.8.9 Compared to the without scheme scenario, a significant proportion of the traffic flows were shown to reduce with the introduction of the Outer Bypass across Melton Mowbray.
- 5.8.10 As a result, this assessment recommended that the Outer Bypass accompanied by a series of network improvements within the town centre would be a potential long term solution to reduce the prevailing congestion and to support delivery of Local Plan development plan proposals.
- 5.8.11 These development plans were themselves crystallising by 2015 at proposed levels approaching 5,000 dwellings at the time in the Borough, and with a similar expansion of employment also proposed.

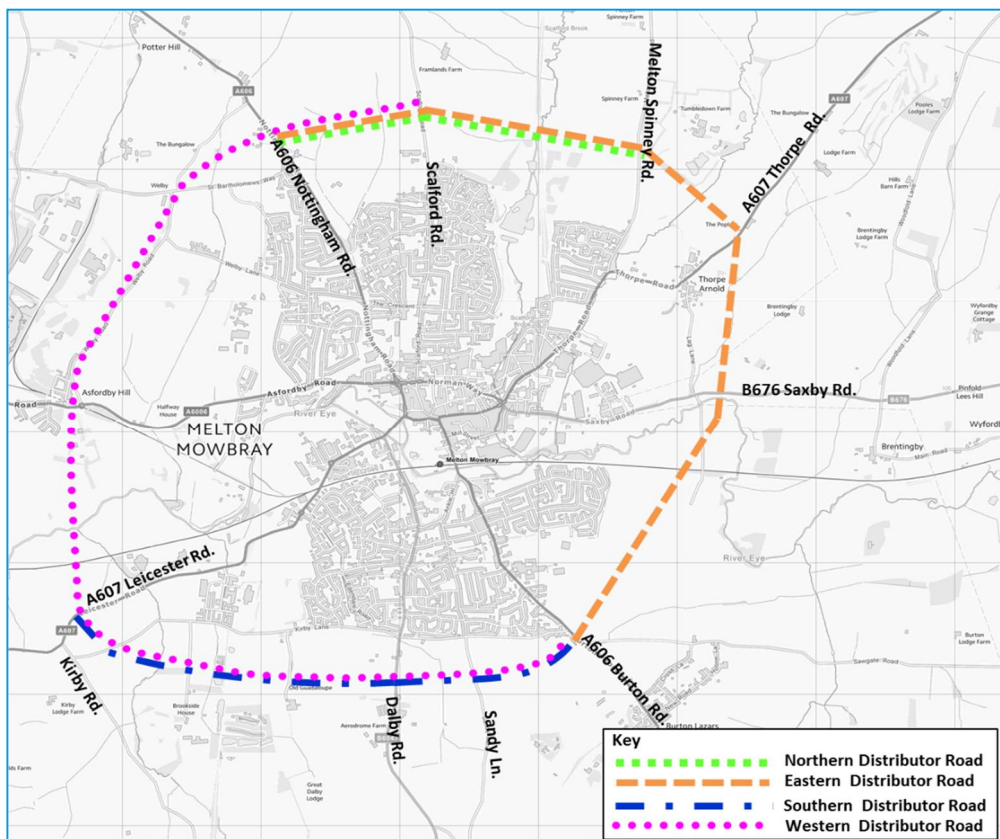
5.9 OUTER BYPASS OPTIONS ASSESSMENTS (2016)

5.9.1 Following the appraisal of potential Inner and Outer 'Bypass' Options within Melton Mowbray in Mid-2015, and the preceding Transport Evidence Base for Melton (Phase 1 & Phase 2 Reports), further assessment was undertaken to determine the most beneficial and cost effective location of the Outer Bypass (referred to as a distributor road) in recognition of the Melton North and South SUE locations.

5.9.2 In total four 'outer' distributor road options were brought forward and tested in early 2016, which are as follows:

- à A Western Distributor Road, the pink dotted line in Figure 5-4. Linking the A606 Burton Road to the A607 Leicester Road to the A606 Nottingham road and on to Scaford Road;
- à A Northern Distributor Road shown by the green line in Figure 5-4. This option will link the A606 Nottingham Road to Scaford Road and Melton Spinney Road;
- à A Southern Distributor Road represented by the dark blue line in Figure 5-4 joining the A606 Burton Road and A607 Leicester Road; and,
- à An Eastern Distributor Road presented by the orange dashed line in Figure 5-4. This option links the A606 Burton Road and the A606 Nottingham Road, via B676 Saxby Road; A607 Thorpe Road; Melton Spinney Road and Scaford Rd.

Figure 5-4: Outer Distributor Road Options – 2016 Assessment



5.9.3 The boundaries of these bypass options were developed from the OAR long listing and shortlisting process; these options were either put forward by stakeholders or officers, and were the preferred outcomes from the shortlisting process against the objectives.

5.9.4 Fundamentally each of these options are derived from the patterns of delay in the town centre, and in terms of through traffic movements.

- 5.9.5 Critically each of these options connect together 2 (or more) of the main A-road radial routes into Melton, directly linked to the evidence base on through traffic movements and delay locations in the town.
- 5.9.6 The inclusion of the Northern and Southern options on their own allows for clear, comparative evidence regarding the additional transport benefits of a fuller (more expensive) Eastern or Western route, as part of the scheme development process. This was considered important to ensure different scales of option were looked at, as well as route.
- 5.9.7 Each of these options were comparatively and consistently tested in the LLITM v5.2 model, the latest available at the time, and reported with a WebTAG compliant OAR produced in 2016 to assess these highway options. As the Local Plan was not yet at submission stage, two levels of growth were tested to see if the levels of growth made any difference to preferred options as recommended in DfT guidance.
- 5.9.8 Importantly, the OAR, for either level of growth, concluded that based on the traffic flow analysis, delay reduction impacts, and the lower cost of an Eastern Route, a distributor road to the east of the town was likely to be the most successful option in meeting the key objectives defined for Melton Mowbray above.
- 5.9.9 In particular, a scheme to the east was forecast to have nearly double the levels of travel time and user benefits of alternative options, provide the highest level of congestion reduction at the key junctions in Melton Mowbray town centre, and to best accommodate future growth.

5.10 ENVIRONMENTAL CONSTRAINTS & DELIVERABILITY

- 5.10.1 As part of the deliverability considerations of the options, particularly for east vs west alignments, environmental constraints mapping has been undertaken highlighting the principal constraints encompassing the identified routes for all the options under consideration and is included in Appendix D.
- 5.10.2 On the western side of Melton, and therefore likely to be impacted on by the Western Distributor Road option the following main environmental constraints were identified;
- Indicative Fluvial Flood Zones 2 and 3;
 - Main Rivers;
 - 2x Railway Line crossings;
 - Grade I & II Listed Buildings;
 - Parks;
 - Footpaths;
 - TRANSCO National Gas Pipeline
 - Local Wildlife Sites;
 - Waterbodies;
 - Asfordby Road Golf Course; and
 - Noise Important Areas.

5.10.3 On the eastern side of Melton, and therefore likely to be impacted on by the Eastern Distributor Road option the following main environmental constraints were identified;

- Indicative Fluvial Flood Zones 2 and 3;
- Main Rivers
- River Eye Site of Special Scientific Interest (SSSI)
- 1 X Railway Line crossing
- Grade I & II Listed Buildings
- Melton Country Parks
- Footpaths
- TRANSCO National Gas Pipeline
- Overhead Electricity Lines 132Kv
- Local Wildlife Sites
- Waterbodies

5.10.4 The environmental constraints assessment suggested that whilst there are different deliverability challenges to the east or west of the town.

5.10.5 However, both are considered deliverable, with no show-stoppers that would prevent delivery.

5.10.6 That said, it is recognised that the mitigation required to offset impacts either side of the town will be different. Importantly the east and west options share a number of common environmental constraints and issues; notably associated with the rivers, flood zones and railway lines, although the extent, width to be traversed and number of rail crossing required is greater on the Western Side.

5.10.7 On the eastern side particular attention is required in terms of the River Eye SSSI and potential impacts on Melton Country Park; and that have also been important parts of consultation and local stakeholder feedback into the analysis.

5.11 SUMMARY

5.11.1 Through stakeholder engagement presenting the issues facing Melton Mowbray in terms of congestion and its threat to growth, a wide range of potential options were identified.

5.11.2 To ensure consistency with WebTAG guidance, an EAST-based approach was taken to sift and filter these options (60 in total) to a prioritised list of interventions using a bespoke option appraisal tool (MOAT), and using an evidence and objective-led approach, as follows:

- 1) Improve access to Melton Town Centre and the areas of potential development.
- 2) Reduce congestion on the local network; in particular key pinch points in and around Melton Town Centre.
- 3) Address HGV impact in Melton Mowbray Town Centre.
- 4) Improve connectivity to local and regional centres, for example Leicester and Nottingham.

- 5) Increase levels of walking and cycling within the study area.
- 6) Improve effectiveness of public transport facilities within Melton Mowbray.
- 7) Improve highway safety for all road users within the study area.

- 5.11.3 The prioritisation showed that the strongest performers against the local objectives (below) were generally bypass forms of intervention; although a range of different types were ensured to be considered as part of the detailed analysis.
- 5.11.4 These were seen by some stakeholders as the necessary step change in network capacity required to accommodate development and traffic growth in and around the town, and so warranted particular further investigation.
- 5.11.5 Nevertheless, the remaining list of options is to be re-visited to identify complimentary interventions which safeguard the positive impacts of the bypass, as well as adding further value in their own right.
- 5.11.6 These are being progressed as part of local studies, to support the current OBC to DfT and to maximise value from it for the town.
- 5.11.7 In addition, to provide further confidence in terms of the key decision of east vs west alignment for the distributor road, these two options have been reassessed using the latest 2014 LLITM model. The assessment is reported in the next Chapter.

6 OPTIONS ASSESSMENT REFRESH

6.1 INTRODUCTION

- 6.1.1 As stated earlier, the Northern and Southern Distributor roads are being provided as part of the Melton Southern and Northern Sustainable Urban Extensions respectively.
- 6.1.2 These therefore now form a part of the Do-Minimum scenario (i.e. will more than likely come forward without the scheme).
- 6.1.3 However, whilst an Outline Planning Application has been submitted for the Southern SUE and associated link road, the link road to the North (and associated housing) is not expected to come forward as quickly within the Local Plan period, without acceleration provided by the scheme.
- 6.1.4 As the Northern and Southern options are now in the Do Minimum models, they are therefore not assessed as options in their own right. This refreshed OAR chapter therefore only reassesses the Eastern and Western alternatives as part of the options being brought forward for the Melton Mowbray Distributor Road (MMDR) scheme, and that are forecast based on this updated Do-Minimum position.
- 6.1.5 The refresh has been undertaken with the new LLITM 2014 Base model.
- 6.1.6 Table 6-1 presents the scenario assumptions modelled as part of the refresh to update this OAR identifying the best option for the scheme.

Table 6-1 **Details of Assumptions included in various Scenarios**

Assumption	Background Growth	Development Growth	Northern Distributor Road	Southern Distributor Road	Eastern Distributor Road	Western Distributor Road
2021 Core	Y	Y	N	N	N	N
2021 MMDR Western	Y	Y	N	Y	N	Y
2021 MMDR Eastern	Y	Y	Y	N	Y	N
2036 Core	Y	Y	Y	Y	N	N
2036 MMDR Western	Y	Y	Y	Y	N	Y
2036 MMDR Eastern	Y	Y	Y	Y	Y	N

6.2 WESTERN DISTRIBUTOR ROAD OPTION

- 6.2.1 The aforementioned Western Distributor Road would create a link from the A606 Burton Road to Leicester Road A607, the A6006 Asfordby Road, and the A606 Nottingham Road.
- 6.2.2 In the original OAR and as shown in Figure 5-4, it was considered that a Western Distributor Road extending to Scalford Road was likely to provide the greatest level of benefits; being able to compare this option against an Eastern option.
- 6.2.3 That work, in the LLITM v5.2 model, showed significantly greater transport benefits of an Eastern Route, compared to the Western Distributor route.
- 6.2.4 In light of the fact that the section between Scalford Road to Nottingham Road is more likely to be brought forward (without the MMDR scheme) by developers as part of the Northern SUE, the OAR Refresh, using the new LLITM 2014 now provides a direct comparison of an A606 – A606 route to the East or West, with both options starting and ending at the A606.
- 6.2.5 Figure 6-1 and Figure 6-2 show forecast traffic flows in 2036 by direction in the AM and PM peak.

Figure 6-1 Western Distributor Road Forecast traffic 2036 AM peak

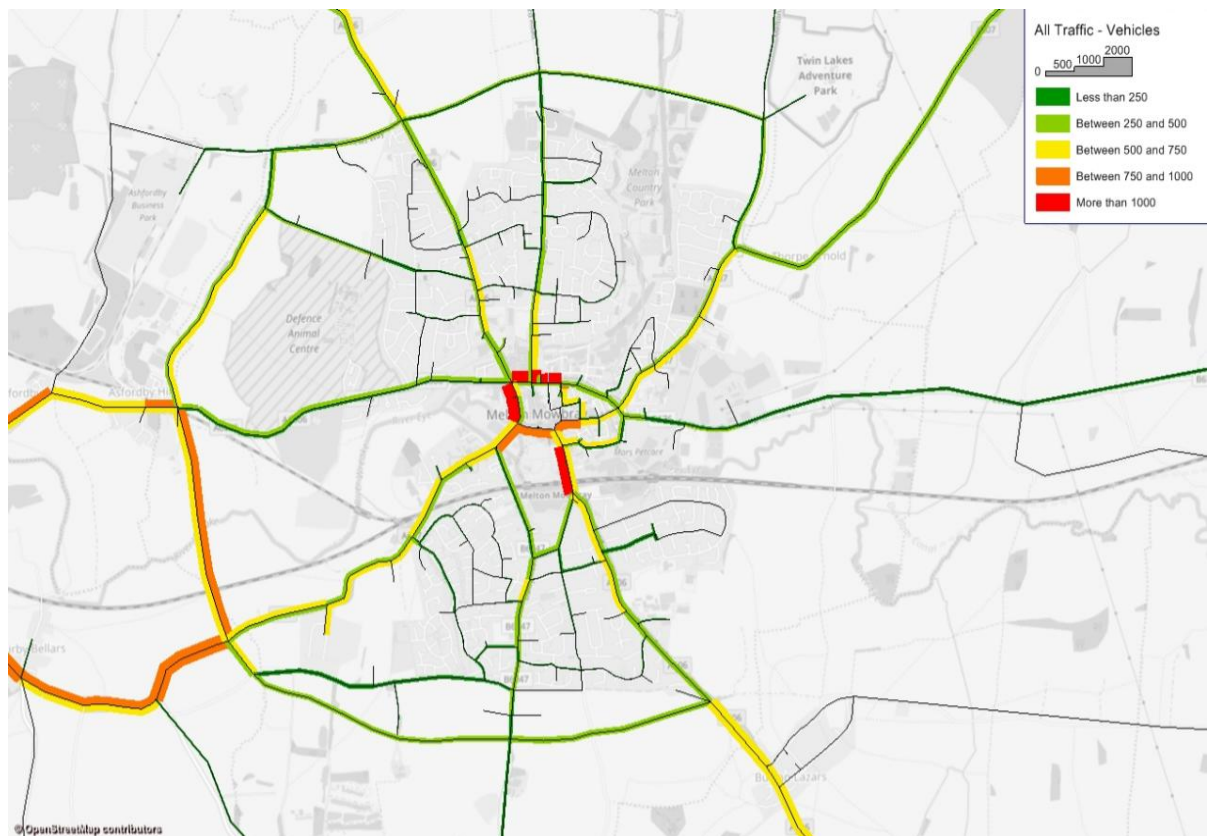
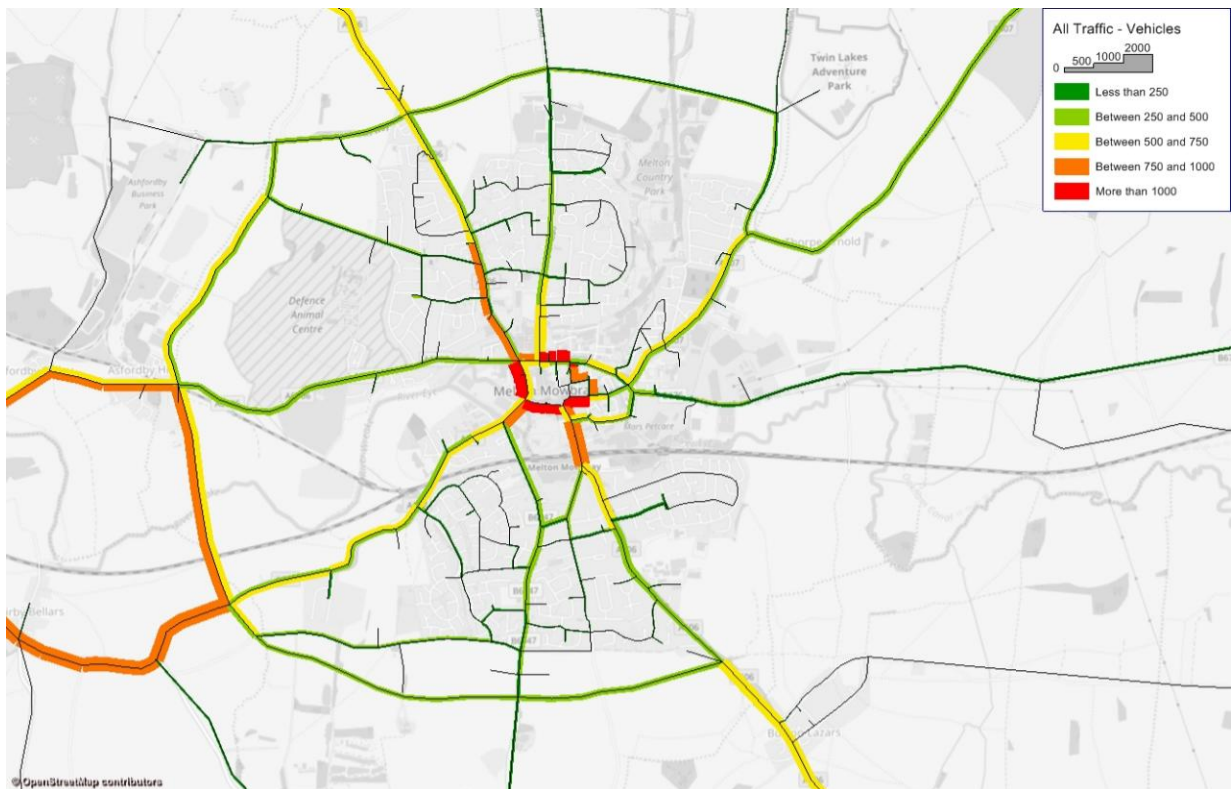
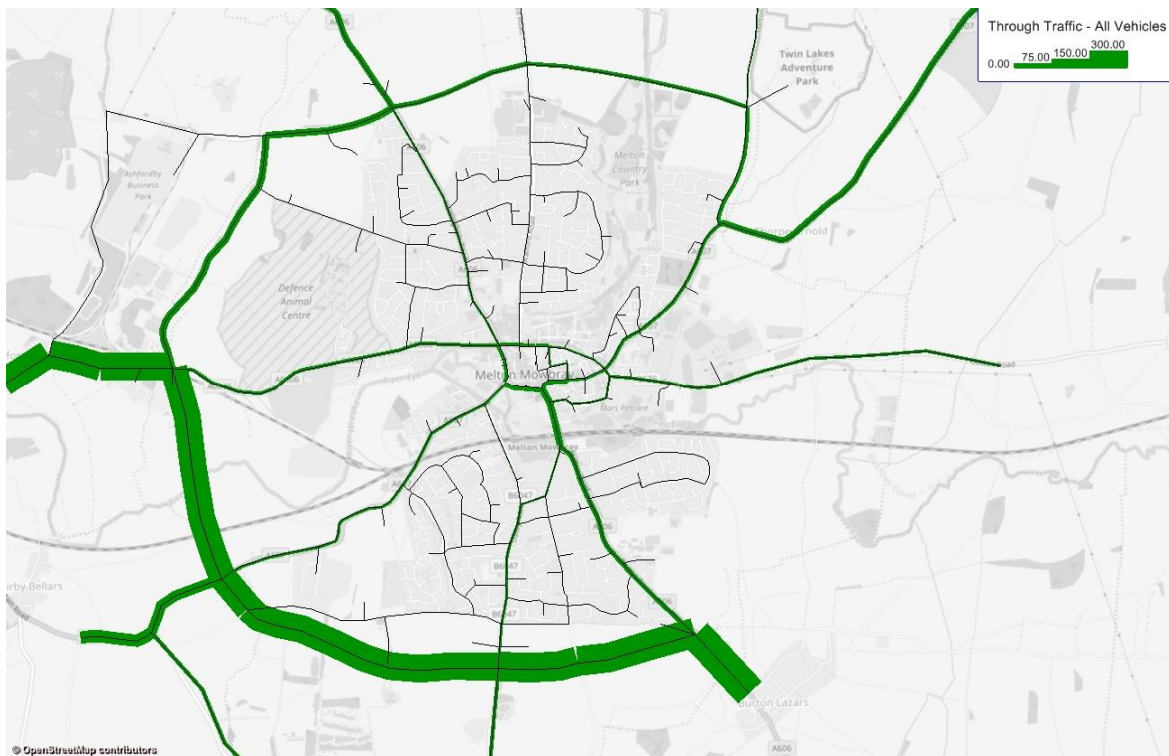


Figure 6-2 Western Distributor Road Forecast traffic 2036 PM peak



- 6.2.6 Figure 6-3 shows the through traffic levels with the Western Distributor option in place in the AM peak in 2036. The pattern in the PM peak in is almost identical.
- 6.2.7 Compared with the Core Scenario the route carries higher volumes of through traffic, which continues beyond the A607 Leicester Road until the Asfordby Road (A6006).
- 6.2.8 To this extent the option is reducing traffic impact on settlements adjacent to Station Lane west of Melton Mowbray.
- 6.2.9 However and importantly, there remains some through traffic in the town centre- especially to the east of the town centre, and on the A606 Burton Road and A607.

Figure 6-3 Western Distributor Road Through Traffic 2036 AM peak



6.3 EASTERN DISTRIBUTOR ROAD OPTION

- 6.3.1 The aforementioned Eastern Distributor Road would create a link from the A606 Burton Road, round to the A607 Thorpe Road and then to A606 Nottingham Road.
- 6.3.2 Figures 6.4 and 6.5 show forecast traffic flows in 2036 by direction in the AM and PM peak.
- 6.3.3 The Eastern Distributor Road option has a similar maximum level of traffic attracted to it as the Western option over the central north/south section, but importantly the extent of traffic reassignment to the route reaches further around the town (for both through traffic between Nottingham Road to Burton Road) and for new traffic generated by the developments. This is primarily because the Eastern option is a shorter route than a similar connection from the A606-A606 to the west.
- 6.3.4 The scheme shows a significant reduction in traffic on the east side of the town centre gyratory including Burton Street and Thorpe Road approaches, although given the wider extent of from which traffic is reassigned, rat run routes through the town centre avoiding the Thorpe End / Norman Way junction are also relieved. There is a small reduction in traffic on Station Lane between A6006 Asfordby Road and A607 Leicester Road.

Figure 6-4 Eastern Distributor Road forecast traffic 2036 AM peak

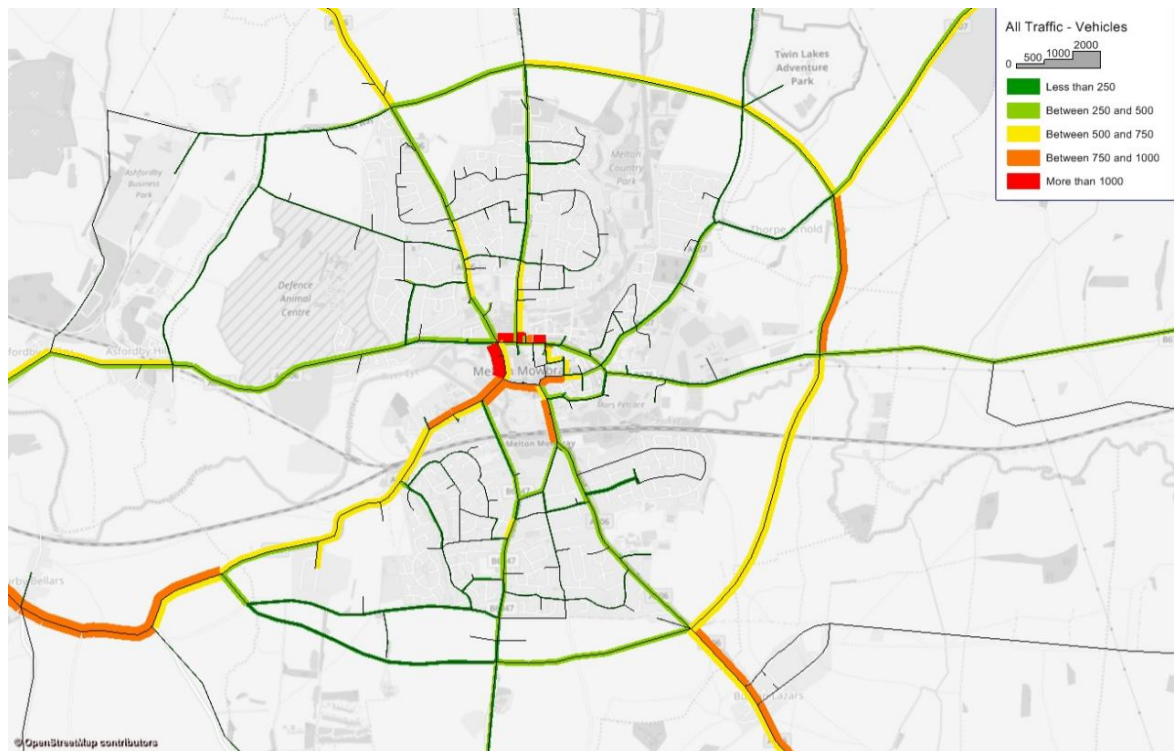
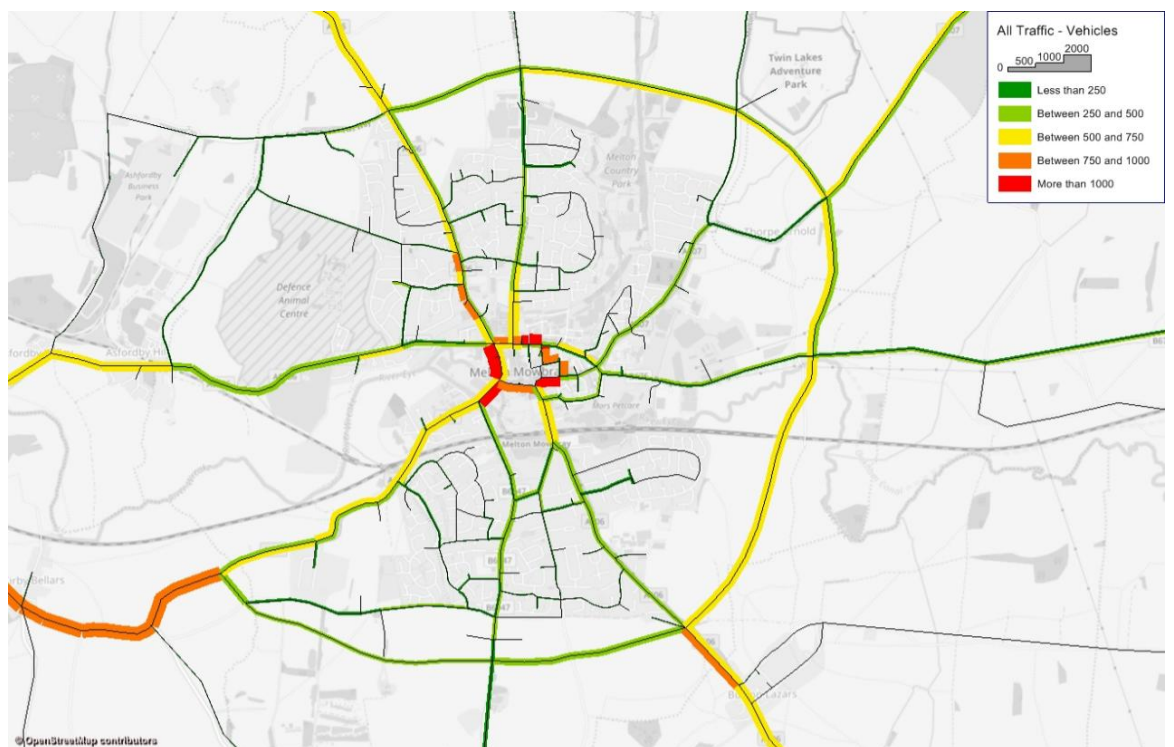


Figure 6-5 Eastern Distributor Road forecast traffic 2036 PM peak

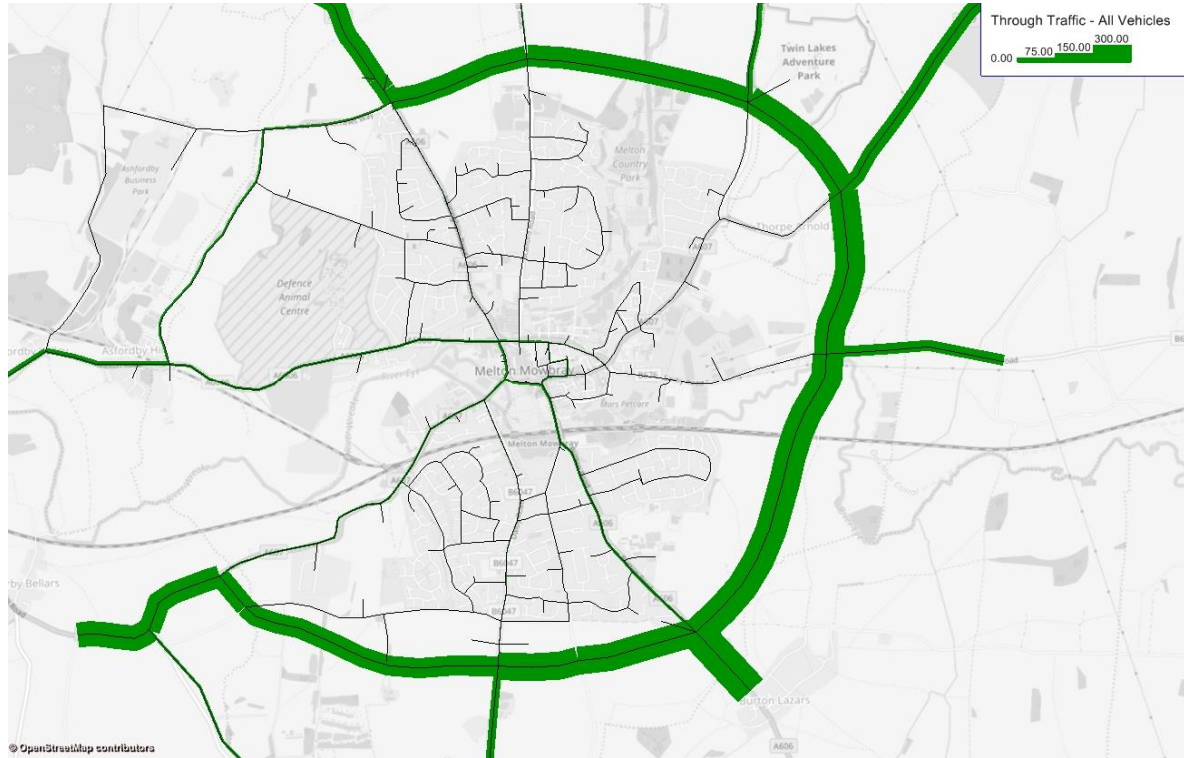


6.3.5 Figure 6-6 shows the through traffic with the Eastern Distributor option in place in the AM peak in 2036. The pattern in the PM peak is almost identical.

6.3.6 Compared with the Core Scenario almost all through traffic is removed from the town.

6.3.7 Importantly therefore, the Eastern option is providing a more attractive route for through traffic compared to a western option, and primarily because it is a shorter route between the A606–A606; that from the problems and issues section is the key through route through the town.

Figure 6-6 Eastern Distributor Road Through Traffic 2036 AM peak



7 ECONOMIC BENEFITS

7.1 OVERVIEW

7.1.1 In order to determine whether a scheme provides value for money it is necessary to understand the monetary benefits offered by each scheme. The following section sets out the monetary benefits based on the refreshed traffic forecasts and changes detailed in the previous section and produced by the latest LLITM 2014 Base model.

7.1.2 The benefits are calculated over 60 years from the opening year; by means of interpolation between the modelled forecast years, using the most recent release of TUBA have been used to estimate the scheme benefits.

7.2 TRANSPORT BENEFITS MONETARY VALUATION-METHODOLOGY

7.2.1 The benefits for each scheme have been estimated by comparing the model outputs from the Do Minimum scenario to the Do Something scenario, using TUBA v1.9.9 software to monetise the changes in travel time and vehicle operating costs.

7.2.2 TUBA also calculates the changes in Indirect Tax Revenues as a result of changes in speed and distance.

7.2.3 These changes affect the amount of fuel being used and therefore affect the amount of taxes the Government receives.

7.2.4 A summary of the process by which TUBA is used to calculate the Travel Time VOC and Indirect Tax benefits of each scheme is provided in Figure 7-1.

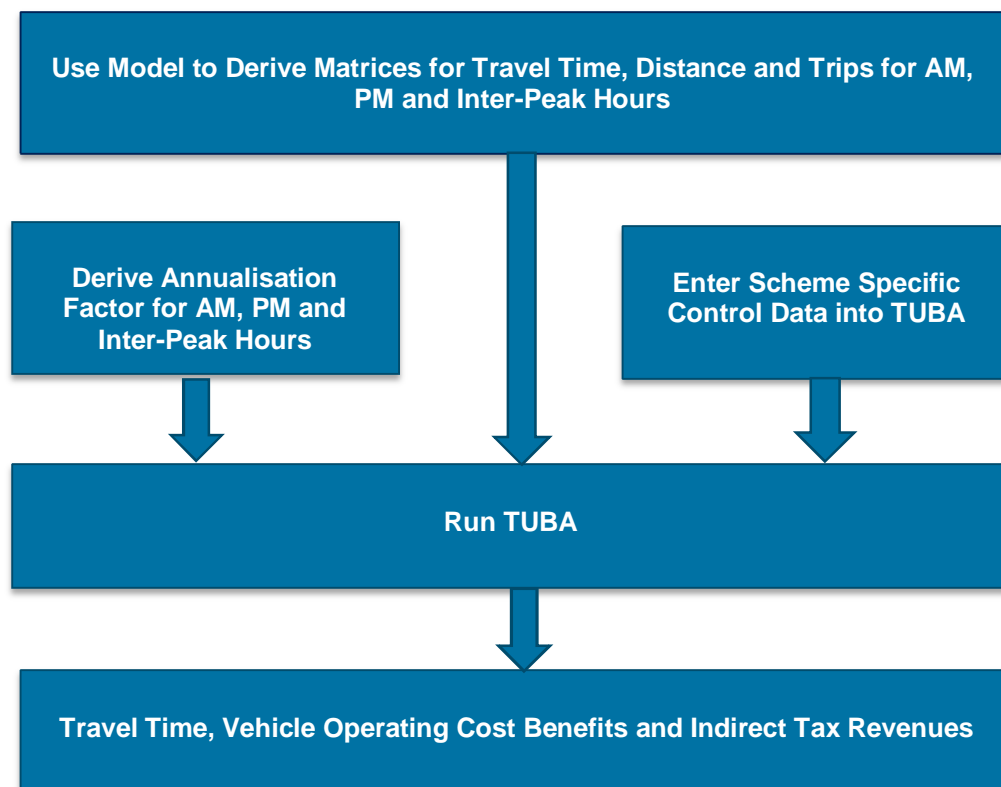


Figure 7-1: Derivation of Travel Time, Vehicle and Operating Costs Benefits and Indirect Taxes

7.3 LEVELS OF COMPARATIVE USER BENEFIT & VALUE FOR MONEY ASSESSMENT

- 7.3.1 To understand the relative levels of total transport user benefits between the options the schemes' Present Value of Benefit (PVB) have been compared.
- 7.3.2 A summary of the differences in the levels of benefit between the options are shown in Table 7-1 from the new LLITM 2014 base modelling.
- 7.3.3 A comparison against the previous OAR modelling using LLITM v5.2 in 2016 is also presented.
- 7.3.4 In both models, and both assessments, linked to the flow and through traffic changes in the previous section, it can be seen that the level of total user benefits are higher with the Eastern option.
- 7.3.5 This conclusion therefore remains unchanged from previous OAR assessments.
- 7.3.6 Indeed, a similar magnitude of difference between Eastern and Western options is noted between the assessments.
- 7.3.7 On a comparative basis, including off peak and weekend benefits, the new LLITM model produces slightly lower overall levels of benefit for both options.
- 7.3.8 This is expected given the new LLITM 2014 base model is based on NTEM (TemPRO v7.2) which generally incorporated lower levels of background traffic growth that previous versions, and also incorporates latest DfT value of time changes.

Table 7-1 Present Value of Benefits Summary

Category	Western Distributor Road	Eastern Distributor Road
Benefits (PVB) New LLITM 2014 Base Model⁷	£70.7m	£110.3m
Benefits (PVB) Previous LLITM v5.2 OAR Assessment	£68.0m (£81.6m including off peak and weekends to compare directly to the new model values above)	£101.3m (£121.6m including off peak and weekends to compare directly to the new model values above)

⁷ Subject to final TUBA checks.

- 7.3.9 These are also then compared to the Present Value of Cost (PVC) and BCR's
- 7.3.10 This then enables a value for money comparisons to be undertaken, with the primary statistic used being the Benefit to Cost Ratio (BCR). This is simply the ratio of PVB to PVC.
- 7.3.11 Given the above results there is also forecast to be a difference in the BCR between the Western and Eastern options, with a TUBA only BCR of 0.7 for the Western option, compared to 1.3 for the comparative Eastern Option.
- 7.3.12 The costs below include 44% optimism bias, so there is potential for the costs here to reduce for final OBC submission, and the BCR's to improve for the final OBC submission as a result of the above, as well as developer contributions also being incorporated.
- 7.3.13 As the Southern route is now incorporated within the Core Scenario, a partial Western route excluding the Southern route) has also been tested and is shown in the final column of Table 7-2.
- 7.3.14 Whilst the costs of this option are therefore lower as it excludes the Southern route, the benefits of this option are only slightly lower in user benefit terms. This means that the BCR's between a full Eastern route and a partial Western route are closer, although the size of total transport benefit for the town is 60% higher for the full Eastern Option.
- 7.3.15 Importantly, and in terms of housing delivery, an Eastern route also accelerates the Northern housing SUE that is not achieved by a partial Western Route excluding the Southern; nor are developer contributions associated with this.
- 7.3.16 The whole of the Northern SUE section is accelerated to be in place by 2021 with the Eastern Option, and is not incorporated in the BCR's below.
- 7.3.17 Table 7-2 also provides a summary of the value for money assessment of a comparative acceleration of the Southern Link Road to 2021, together with the western option in the same 2021 opening year.
- 7.3.18 This serves as a direct comparative against the Eastern Option, with the Eastern or Western option providing a full half route around the town in 2021.

Table 7-2 Value for Money Assessment Summary

Category	Western Distributor Road (Including Southern DR)	Eastern Distributor Road	Western Distributor Road (Excluding Southern DR)
Benefits (PVB) New LLITM 2014 Base Model	£70.7m	£110.3m	£68.2m
Cost (PVC)	£97.0m	£86.1m	£57.1m
Indicative BCR (TUBA only)	0.7	1.3	1.2

*DR – Distributor Road

7.4 NON-MONETISED BENEFITS

- 7.4.1 It is important to recognise that the transport user benefits and financial impacts and differences between the schemes above are not the only factors in determining a potential choice of option.
- 7.4.2 There are a number of other, non-monetised objectives that should also be considered in an options appraisal process. These are aligned with the evidence and objective led process followed through this OAR, and these objectives have been developed from the Evidence Base in the proceeding chapters, and using the same objectives to ensure consistency of appraisal and logic.
- 7.4.3 These are shown in Table 7-3, and have been used to assess the full range of potential non-monetised benefits from each of the comparative routes.

Table 7-3 Appraisal Objectives

Appraisal Objectives	
1	Improve access to Melton Mowbray town centre enabling its full potential: To improve accessibility to jobs and retail centre via significantly reducing current severe levels of congestion and journey time unreliability in the peaks.
2	Reduce congestion on the local network, in particular key pinch points in and around Melton Mowbray town centre: To remove through traffic from the town centre and therefore improve the vitality and viability of the town centre.
3	Reduce impact on rat run routes via improving the south-north connectivity.
4	Remove HGV through traffic in Melton Mowbray town centre
5	Improve access to the areas of potential development. Thereby enabling and accelerating over 5,000 dwellings and 6,000 jobs located on the outskirts of Melton
6	Promote a quality road space in town centre suitable for non-transport uses and attractive to inward investment
7	Increase levels of public transport, walking and cycling use within the Study Area.
8	Improve highway safety for all road users within the Study Area

- 7.4.4 Based on the evidence in the proceeding chapters and outputs from the stakeholder workshops the results of the comparisons of the Eastern and Western options are shown in Table 7-4 across the full set of objectives.
- 7.4.5 To ensure that a variety of views were taken into account stakeholders at the session were broken into three groups and the feedback from each of the three groups is recorded below to inform a more comprehensive analysis of any potential differences between the options.

Table 7-4 Wider Transport Strategy Objectives- Qualitative Assessment between Options

Objective	Group 1 Assessment	Group 2 Assessment	Group 3 Assessment	Comments On Decision
Improve access to Melton Town Centre enabling full potential	East	East	East	An Eastern route provides more in terms of higher overall numbers of vehicles using the route. The maximum loading of traffic on the Eastern and Western routes are similar but the eastern route showed a relatively even/consistently high loading along the entire length. This therefore makes the town centre more accessible to traffic that needs to access the town itself. These benefits are spread across the town more widely compared with the west.
Reduce congestion on the local network in particular key pinch points in and around Melton Town Centre	No Difference	East	East	Both routes achieve benefits towards objectives however given that East positively affects more junctions assumed this equates to the better overall benefit. Particular area where east had more benefit than west was to the south of the town centre i.e. Burton Street Sherrard Street.
Reduce impact on rat run routes	East	East	No Difference	Assessment of the evidence shows that the East offers relief to more congested junctions therefore encouraging greater use of appropriate routes. East saw greater reductions on town centre rat runs whereas west saw greater reductions in residential areas in the west of the town on existing routes to avoid the town centre.
Remove HGV through traffic in Melton Mowbray town centre	East	West (plus Southern)	East	All groups found this difficult to distinguish. If employment development was to 'go west' then west provides a direct connection for HGVs however overall relief for HGVs crossing the town centre could be better met with an eastern option. However East could also allow more trips to/from the existing industrial area on that side of the town to avoid going through the town completely.
Improve access to the areas of potential development enabling full potential	East	West (plus Southern)	East	An Eastern Route supports development in both the cumulative development and higher growth scenarios. An Eastern route also maximises employment at existing sites would enable more existing businesses to stay put ensuring a greater proportion of the strategic employment site at Asfordby Hill is kept free for new/growing businesses rather than just relocating from elsewhere in the town. Further commercial evidence is needed to understand whether growth at Asfordby Hill could occur with an Eastern Route (only). A Western plus Southern route was based on the need to link to Melton Spinney Road; this could be achieved through Eastern route too in conjunction with a Southern route.
Promote a quality road space in town centre suitable for	East	No Difference	East	An Eastern route provides relief across more junctions and therefore offers more opportunity for changes to the town centre. However neither probably offers

non-transport uses and attractive to inward investment				'transformational' opportunities
Increase levels of public transport, walking and cycling use within the Study Area.	No Difference	No Difference	No Difference	<p>The delivery of the growth itself will improve viability of the PT network and therefore both West & East benefit the public transport network in this way.</p> <p>In terms of reliability improved junction performance will add to PT journey time reliability and therefore the Eastern route may have a marginal advantage</p>
Improve highway safety for all road users within the Study Area	East	East	East	<p>New purpose built road constructed to modern standards is generally safer than old/non-purpose built roads through town. As the eastern route appears to have potential to attract more traffic off the old roads through the town than the western route it is possibly marginally better in safety terms.</p>

Based on a range of objectives it can be seen that no single option is preferable against the full set of objectives, but that for the majority of the objectives it has been found against the evidence base and above results that an Eastern Route is likely to offer greater levels of benefit.

This corroborates evidence on the transport user benefits, and value for money differences between the options in earlier sections in coming to the view that the Eastern route is, and remains, the Preferred option.

8 SUMMARY

8.1 SUMMARY

- 8.1.1 The Options Assessment Report (OAR) has been developed in line with the DfT WebTAG guidance. This has started from the underlying Transport Strategy Evidence Base, being informed by a WebTAG, 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.
- 8.1.2 This has then been followed with LLITM modelling and economic appraisal of preferred options- that has also then been reassessed in the latest new LLITM 2014 model- to support final decision making as part of the OBC submission to DfT.
- 8.1.3 In 2015 and 2016, work undertaken on the Transport Strategy Evidence Base and the Melton Mowbray Options Appraisal Report highlighted current levels of congestion, through traffic and limited spare capacity for growth as critical issues facing the town.
- 8.1.4 The Options Appraisal assessed range of smaller-scale and inner bypass improvements in close proximity to the town centre, as well as a multi-criteria analysis of over 60 different potential interventions for the town; covering all modes, walking and cycling and demand management options, and that were derived from the evidence base as well as ideas and suggestions from the local Melton transport Stakeholder Reference Group.
- 8.1.5 The study suggested that given the limited spare network capacity, any mitigation would need to be of demonstrably sufficient magnitude to not only mitigate the impacts of the future development, but also contribute to a wider benefit for residents as part of the overall growth strategy for the town. In addition, it set out why public transport, demand management and active mode options were not considered suitable, and thus not advanced, in isolation.
- 8.1.6 The Melton Transport Strategy Evidence Base (Phase 1 & Phase 2 Reports, 2014-16), forms the evidence base for option identification and appraisal for key interventions in the town, and, based on recent RSI, traffic count information, demonstrates that through traffic within the town is a particular issue, especially north-south. This drives a requirement for an intervention to cross the river/ rail line in the town to be effective - both in terms of mitigating current congestion and traffic pinch points in the town, as well as supporting and accelerating growth. This has subsequently been found to be exactly the same in the new (mobile phone and RSI) LLITM 2014 model, that reinforces these conclusions, and with the same patterns and levels of benefit differences between the options.
- 8.1.7 As the Southern and the Northern Distributor roads are now incorporated as part of the Core scenario (as 'more than likely' schemes in WebTAG terms to come forward during the Local Plan period without intervention), the Western and Eastern Options have been re-tested in the 2017 updated LLITM model (LLITM 2014 base). These tests re-confirm the key choice of route, essentially east vs west.
- 8.1.8 In both models, and both assessments, the results show that the level of total user benefits is higher with the Eastern option. Importantly there is a significant difference, with 60% higher benefits to the East.
- 8.1.9 Given the above results, there is also forecast to be a difference in the BCR between the Western and Eastern options, with a (TUBA only) BCR of 0.7 for the Western option, compared to 1.3 for the comparative Eastern Option.
- 8.1.10 Additional monetised benefits and non-monetised assessments being undertaken for the Economic Case will add to these TUBA only BCR's. Environmental constraint analysis indicates that either

option is deliverable with no show-stoppers, and a number of shared impacts between the route options.

- 8.1.11 Further to the above evidence, the options appraisal has also been assessed against a full set of local objectives, and that has also been taken into account.
- 8.1.12 The assessment concluded that whilst no single option is preferable against the full set of objectives, for the majority of the objectives it has been found against the evidence base and above results that an Eastern route is likely to offer greater levels of benefit to the town.
- 8.1.13 This corroborates evidence on the transport user benefits, and value for money differences between the options in earlier sections in coming to the view that the Eastern route is, and remains, the preferred option.
- 8.1.14 In other words, the evidence above demonstrates that an Eastern route 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.

Appendix A

Long List of Options

ID	Scheme Type	Scheme	Origin	Affordability	Deliverability	Acceptability	Decision	Justification of Decision
MM/NM-03	Non-Motorised Demand	Promote change in behaviour, safe cycle routes public transport and pedestrian friendly routes which enjoyable to use.	Stakeholder	Green	Green	Green	Y	Non-infrastructure scheme involving travel planning and marketing etc.
MM/DM-12	Management	Special market day traffic measures: permanent signing, temporary parking restrictions, temporary road closures, vehicle bans, enforcement	Jacobs	Green	Green	Yellow	Y	Acceptability doubtful as benefits would be on market days only and would require police co-operation to work.
MM/PT-01	Public Transport	New free parking area with a bus link	Stakeholder	Red	Red	Green	N	Unlikely to be affordable or deliverable due to difficulty and cost of finding land for parking or an existing car park and cost of operating bus services.
MM/PT-09	Public Transport Network	2 South & 2 North park & ride Schemes	Stakeholder	Red	Red	Green	N	Unlikely to be affordable or deliverable due to difficulty and cost of finding land for parking or an existing car park and cost of operating bus services/ associated infrastructure.
MM/NI-01	Improvement	Improve Dalby Road Mini roundabouts	Stakeholder	Green	Red	Red	N	May mean junction widening to increase capacity which would require land acquisition and have a negative impact on local residents.
MM/NI-14	Network Improvement Traffic	New road linking A607 (Thorpe Road) and B66 (Saxby Road), by extending Dee Close or Crossfield Drive	Stakeholder	Yellow	Yellow	Yellow	N	Would require purchase of land. Would benefit A607 to B676 movement, but both roads would still lead to some junction so wouldn't benefit any other routing. Could open up land to the east of / along the new road for development. Dee Close option would result in loss of sports fields.
MM/TM-01	Management Demand	Check traffic signals in town centre and Norman Way & Thorpe Way	Stakeholder	Green	Green	Green	Y	Relatively low cost and little impact on residents.
MM/DM-15	Management	Edge of centre car park; congestion charge	Stakeholder	Red	Yellow	Red	N	New car park unlikely to be deliverable or affordable. Congestion charge highly unlikely to be acceptable or affordable (operation).
MM/PT-02	Public Transport	Provide buses to key supermarkets	Stakeholder	Yellow	Green	Green	Y	Affordability / deliverability for these bus improvements alone questionable.
MM/PT-07	Public Transport	Park & Ride off A6006	Stakeholder	Red	Green	Green	N	Unlikely to be affordable due to difficulty and cost of finding land for parking and cost of operating bus services.
MM/PT-08	Public Transport Network	Park & Ride specially provided for Tuesday Market days	Stakeholder	Red	Green	Green	N	Unlikely to be affordable due to difficulty and cost of finding land for parking and cost of operating bus services. Benefit on market days only.
MM/NI-02	Improvement Network	Tweaks to existing roads e.g. make Mill Street one way, utilise rat runs	Stakeholder	Green	Green	Red	N	Extensive use of residential roads for through traffic unlikely to gain local political support.
MM/NI-03	Improvement Network	Install new roundabout in key points e.g. Burton Lazars, Burton Road (A606)	Stakeholder	Green	Green	Red	N	May be more likely to slow flow of traffic on A606 and therefore not acceptable.
MM/NI-05	Improvement Network	Junction Improvements & highway infrastructure on southern inner relief road	Stakeholder	Green	Green	Green	Y	Assuming that relatively low cost and acceptable.
MM/NI-12	Improvement	Realigned B676 (Saxby Road)	Stakeholder	Green	Yellow	Red	N	Seems unlikely that funding could be secured, hierarchy of roads based on function suggests moving traffic from an A road to a B road should not be an aim.
MM/NI-16	Network Improvement	Link road from Saxby Road to Melton Road with dedicated school access to: Birch Wood School, Sherrard County School & Melton Vale Post 16 Centre	Jacobs	Yellow	Green	Green	Y	Affordability questionable: would require new river crossing (tunnel /bridge).
MM/PT-13	Public Transport	Introduce a direct rail services from Melton to Loughborough & Nottingham	Jacobs	Yellow	Green	Green	Y	Affordability in question: issues of line capacity, rolling stock availability etc.
MM/PT-14	Public Transport Network	Introduce a half hourly rail service between Melton & Leicester	Jacobs	Yellow	Green	Green	Y	Affordability in question: issues of line capacity, rolling stock availability etc.
MM/NI-13	Improvement Demand	Western Bypass	Jacobs	Red	Green	Red	Y	Affordability an issue: significant amount of land required.
MM/DM-04	Management Demand	HGV management plan. Levy through traffic	Stakeholder	Red	Green	Red	N	The cost and acceptability of a levy on through traffic is likely to stop this scheme, HGV management alone would pass sifting.
MM/DM-06	Management Demand	Ban HGV except for access	Stakeholder	Yellow	Red	Green	N	Would need ongoing enforcement action. Deliverability a barrier as HGVs need access or alternative routes.
MM/DM-13	Management	Introduce a station travel plan	Jacobs	Green	Green	Green	Y	Benefits of a station travel plan for town would be more significant in combination with improved rail services
MM/PT-03	Public Transport Traffic	improve/provide school bus service	Stakeholder	Green	Yellow	Green	Y	Deliverability for these bus improvements alone questionable.
MM/TM-16	Management Traffic	Review weight restrictions on roads	Stakeholder	Green	Red	Green	N	Difficult to deliver in isolation as needs to be part of a wider HGV management plan.
MM/TM-04	Management Demand	Make Mill Street & Regents Street one way (eastbound)	Stakeholder	Green	Green	Green	Y	Would legitimise more direct movement from south to east.
MM/TM-06	Management Demand	Make Norman Way one way	Stakeholder	Green	Green	Green	Y	Affordable and deliverable and may reduce junction pressures; but without mitigation could increase rat running.
MM/DM-08	Management Demand	Look at school start and finish times and review catchments (flexi work times)	Stakeholder	Green	Green	Yellow	Y	Relatively low cost option, but risk of not receiving approval. Collaboration and cooperation with the schools in and around Melton would be necessary.
MM/DM-14	Management Traffic	Implement town-side personalised travel planning projet in conjunction with / without new housing developments	Jacobs	Green	Green	Green	Y	Relatively low cost option, which could work well in conjunction with new development.
MM/TM-05	Management Network	Look at inner relief road & convert to one way system	Stakeholder	Green	Green	Red	Y	Relatively low cost and deliverable, concern of rat-running on parallel routes.
MM/NI-04	Improvement Network	By pass in stages, sort out pinch points along inner ring road	Stakeholder	Red	Green	Green	N	Other bypass options would cover this.
MM/NI-06	Improvement Network	Junction Improvements & highway infrastructure link 1,2,3,south,west and north (3/4 link road)	Stakeholder	Red	Green	Green	N	Cost likely to be prohibitive with need to cross river and rail lines
MM/NI-07	Improvement Network	Northen Bypass	Stakeholder	Yellow	Yellow	Green	Y	Cost likely to be high: Significant land take.
MM/NI-08	Improvement	Through traffic to be diverted around the town southern bypass	Stakeholder	Yellow	Yellow	Green	N	Scheme could be costly: significant land take. Constraints such as rail lines and rivers question deliverability.

ID	Scheme Type	Scheme	Origin	Affordability	Deliverability	Acceptability	Decision	Justification of Decision
MM/NI-09	Network Improvement	Through traffic to be diverted around the town eastern bypass	Stakeholder	Yellow	Green	Green	N	Scheme could be costly: significant land take. Constraints such as rail lines and rivers question deliverability. A major scheme with associated costs. Only of benefit when a motorway incident occurs, other measures could be considered.
MM/NI-10	Network Improvement	New A1-M1 Link	Stakeholder	Red	Green	Green	N	
MM/NI-11	Network Improvement	By pass east, south and west	Stakeholder	Yellow	Green	Green	N	
MM/NI-15	Network Improvement	Use former railway alignemnt between A6606 and A6006	Jacobs	Red	Green	Green	N	Scheme would be costly: rail line constraints
MM/NI-17	Traffic Improvement	Improve/upgrade Leg Lane	Jacobs	Blue	Blue	Blue	N	Duplicate of MM/NI-09 (eastern bypass)
MM/DM-05	Traffic Management	Restrict parking at schools		Green	Yellow	Green	N	Scheme has issues with deliverability as it would require cooperation of schools and potentially could be difficult to enforce. May not be acceptable with increased parking in surrounding areas.
MM/TM-03	Traffic Management	Review need for traffic lights in on key radial routes and within the town centre		Green	Green	Green	Y	Affordability would depend on scale of changes required.
MM/TM-02	Traffic Management	Town-wide 20mph speed limit (expeting strategic roads)		Green	Green	Yellow	Y	Low-cost option. Opposition from public is possible. Would not normally not be implemented on main arterial roads.
MM/DM-01	Demand Management	HGV management plan	Stakeholder	Green	Green	Green	Y	Relatively low-cost and would generally be acceptable.
MM/DM-02	Demand Management	Introduce work place parking levy	Stakeholder	Red	Green	Red	N	Highly unlikely to be affordadle or acceptable in a town of this site.
MM/DM-03	Demand Management	Imposing timing resriction roads, introduce congestion charge	Stakeholder	Red	Green	Red	N	Practicality of time-based driving restrictions unlikely to be acceptable for all road users. Congestion charge highly unlikely to be acceptable or affordable (operation).
MM/DM-07	Demand Management	Congestion charge	Stakeholder	Red	Green	Red	N	Congestion charge highly unlikely to be acceptable or affordable (operation).
MM/DM-09	Demand Management	Review the school traffic plans	Stakeholder	Green	Green	Green	Y	Easy to deliver with support from schools and parents.
MM/DM-10	Demand Management	Employment growth in town to be managed	Stakeholder	Green	Green	Red	N	Long term planning of development in the town centre would ensure that non-car modes are encourages and that traffic impacts of development are mitigated.
MM/DM-11	Demand Management	Relocation of livestock market	Jacobs	Red	Green	Yellow	N	Costs would be significant. Not likely to be acceptable de to recent investment at existing site.
MM/PT-04	Public Transport	Need laterr services (bus & train)	Stakeholder	Yellow	Green	Green	N	Costs (in relation to benefits) may be questionable.
MM/PT-05	Public Transport	Better connectivity by bus	Stakeholder	Blue	Blue	Blue	N	Duplicate of MM/PT-16
MM/PT-06	Public Transport	Bus only area in town: Leicester Road, Burton Road & Thorpe End	Stakeholder	Red	Red	Red	N	Main issue: deliverability (alternative routes for other traffic)
MM/PT-10	Public Transport	Move the station & combine with park & ride	Stakeholder	Red	Green	Red	N	Affordability main issue when works to close existing station taken into account.
MM/PT-11	Public Transport	Edge of town and central carr parks	Stakeholder	Red	Red	Yellow	N	Cost and availability of land presents barriers
MM/PT-12	Public Transport	Introduce more bus routes which serve north and south of Melton Mowbray	Jacobs	Yellow	Green	Green	N	More affordable as part of packages of bus improvements across town / area.
MM/PT-15	Public Transport	New park and ride station between Melton and Leicester	Jacobs	Red	Green	Green	N	Cost depends on if a new service is provided or amending an existing service. Would provide a sustaianable option to private car, for those living in the south Melton and those from potential new developments in the south of Melton would have an alternative to driving to existing station.
MM/NM-01	Non-Motorised	Promote short journeys through accesible services	Stakeholder	Red	Red	Red	N	Option not understood.
MM/NM-02	Non-Motorised	Safe cycle routes especially for schools	Stakeholder	Green	Green	Green	Y	Improved routes could whole town and likely to be acceptable.
MM/NM-04	Non-Motorised	Improve footpath connections with villages. Look at dediacted network of walking routes within the town and connecting surrounding villages	Stakeholder	Green	Green	Green	Y	Cost would be dependent on scale of improvements.
MM/NM-05	Non-Motorised	Promote walking, cycling with parking interchanges.	Stakeholder	Green	Green	Green	Y	Depends on securing suitable car parks.
MM/PT-16	Public Transport	Develop bus strategy for Melton Mowbray and improve network within town and to destinations outside.	Jacobs	Green	Green	Green	Y	More affordable as package of measures to improve bus travel.

Appendix B

Sifting Using East

Options List for Further Assessment

	Scheme	SIFT			Justification	Proceed Score:	MOAT							Justification	Proceed	Cost	Rank	
		Cost	Deliverability	Acceptability			Score	O1	O2	O3	O4	O5	O6					O7
							18	4	4	2	2	2	2					2
OPTIONS DISCARDED AT MOAT ANALYSIS STAGE	MMNI16	Link Road from Saxby Road to Melton Road with dedicated school access to Birchwood School, Sherrard County School, Melton Vale Post 16 Centre	A	G	G	Y	14	4	4	1	1	1	1	2	Would not resolve issues on the western side of Melton Mowbray.	N	M-H	5
	MMNI13	Western Bypass	A	G	G	Y	14	4	4	1	2	1	1	1	As a standalone scheme this would only address issues related to traffic between north east and south east and would not have a significant impact to and from other directions.	N	M-H	5
	MMNI17	Improve / upgrade Leg Lane route	A	A	G	Y	13	4	4	1	1	1	1	1	This would constitute an eastern bypass but to a lower standard and with less connectivity with developments north and south of the town. A better option, more suited for HGV traffic as well, has already been selected.	N	M-H	9
	MMPT13	New direct rail services from Melton to Loughborough & Nonningham	A	G	G	Y	11	4	2	0	2	2	0	1	This scheme will not address the volume of HGV traffic in the town. It would stimulate car traffic to the station and so have no real impact on cycling and walking environment.	N		10
	MMPT14	Introduce a half hourly rail service between Melton and Leicester	A	G	G	Y	11	4	2	0	2	2	0	1	This scheme will not address the volume of HGV traffic in the town. It would stimulate car traffic to the station and so have no real impact on cycling and walking environment.	N	M-H	10
	MMTM07	Interim management system, real time information for drivers in congestion.	A	A	G	Y	9	2	2	1	1	1	1	1	This option will not provide the Big Move needed on the network to accommodate growth in travel demand and so have a short/interim lifespan on its own.	N	M	12
	MMNI14	New road linking A607 (Thorpe Road) and B676 (Saxby Road), by extending Dee Close or Crossfield Drive	A	A	A	Y	9	2	2	1	1	1	1	1	This option will not provide the Big Move needed on the network to accommodate growth in travel demand and so have a short/interim lifespan on its own.	N	M	12
	MMDM17	Leicester Road Car Park	A	A	G	Y	8	2	2	0	1	1	1	1	This option would improve accessibility and, if appropriately managed and sited, could reduce the number of car journeys into the town centre. However, it has a localised impact and would not address the issues relating to HGV traffic.	N	M	14
	MMNM01	Promote (non-car) short journeys through (local) accessible services.	G	G	G	Y	7	2	2	1	0	0	1	1	This option does not address the importance of regional connectivity to stimulate growth whether by car or by public transport.	N	L	15
	MMNI05	Junction improvements and highway infrastructure on southern inner relief road	G	G	G	Y	7	2	2	1	1	0	0	1	May not reduce through traffic along key diagonal movements across the town, or encourage trips by non car modes due to increasing severance.	N	M	15
	MMTM01	check traffic signals in town centre, Norman Way and Thorpe Way	G	G	G	Y	7	2	2	1	1	0	0	1	On their own any tweaking is unlikely to resolve congestion issues beyond the short term and does not improve the attractiveness of public transport, walking and cycling.	N		15
	MMTM03	Review need for traffic lights on key radial routes and within town centre	G	G	G	Y	7	2	2	1	1	0	0	1	On their own any tweaking is unlikely to resolve congestion issues beyond the short term and does not improve the attractiveness of public transport, walking and cycling.	N	L	15
	MMDM01	HGV management plan.	G	G	G	Y	6	2	2	1	0	0	0	1	The potential for this scheme would depend on the methodology for controlling HGV movements and the implications of how and where HGVs would be re-routed. This would be difficult to implement without additional road space to accommodate HGV traffic.	N	L	19
	MMPT16	Develop bus strategy for Melton Mowbray and improve network within town and to destinations outside	G	G	G	Y	6	2	0	0	1	2	0	1	Cost depends on number of new bus services and network improvement measures required. Impact of bus priority measures on road space for other traffic will as a minimum offset any beneficial impact in terms of congestion. The option will not address the impact of HGVs.	N	M	19

Appendix C

Sector-to-Sector Analysis

Melton Mowbray - 2014 12hr Day - All Vehicles Traffic Flow

2014_Base	Town Centre	East	North	West	South-West	South-East	A606_NottinghamRd	ScafordRd	MeltonSpinneyRd	A607_ThorpeRd	B676_SaxbyRd	A606_BurtonRd	DalbyRd	KirbyRd	A607_LeicesterRd	A6006_AsfordbyRd	Total	Percentage of Traffic on Road associated with Through Traffic
Town Centre	2,235	1,610	1,749	762	1,689	2,074	563	101	77	682	215	585	194	0	736	847	14,121	
East	1,640	1,400	1,116	231	767	1,102	221	1	484	739	380	329	145	0	564	434	9,552	
North	1,653	1,078	1,284	655	1,406	1,418	1,120	582	8	79	207	398	144	0	416	298	10,747	
West	824	309	614	1,092	676	187	760	112	3	85	135	362	95	0	50	2,010	7,313	
South-West	1,659	732	1,406	541	1,768	753	184	113	30	276	75	480	205	134	2,434	40	10,831	
South-East	1,446	866	1,277	144	548	999	178	0	58	335	86	675	198	0	598	257	7,667	
A606_NottinghamRd	668	251	1,059	669	143	166	0	0	0	4	77	885	56	0	2	8	3,988	25.9%
ScafordRd	136	9	490	78	43	15	0	0	0	0	0	80	0	0	0	9	861	10.4%
MeltonSpinneyRd	113	447	7	2	79	98	0	0	0	5	1	114	31	0	16	2	916	18.6%
A607_ThorpeRd	748	727	52	63	278	375	3	0	6	0	1	19	151	0	246	79	2,749	18.4%
B676_SaxbyRd	321	573	181	49	85	86	23	0	1	1	0	0	5	0	328	106	1,758	26.4%
A606_BurtonRd	571	321	434	357	479	617	1,304	0	29	19	0	0	54	0	977	237	5,400	48.5%
DalbyRd	206	178	113	79	244	263	63	0	25	133	5	72	0	0	6	18	1,405	23.0%
KirbyRd	37	0	31	19	134	0	0	0	0	0	0	0	0	0	202	0	423	-
A607_LeicesterRd	884	520	490	85	2,283	602	5	16	3	216	225	840	7	237	0	1	6,412	24.2%
A6006_AsfordbyRd	1,133	581	359	1,884	25	48	9	16	2	119	147	187	22	0	1	0	4,532	11.1%
Total	14,275	9,604	10,660	6,711	10,645	8,802	4,434	942	726	2,693	1,553	5,026	1,308	371	6,578	4,348	88,675	
Percentage of Traffic on Road associated with Through Traffic							31.8%	3.5%	9.0%	18.4%	29.3%	43.7%	24.9%	-	27.0%	10.6%	32.1%	

Melton Mowbray - 2014 12hr Day - LGV Traffic Flow

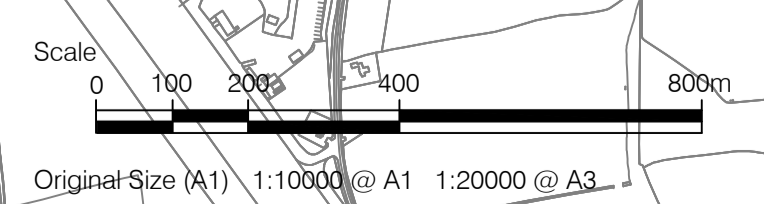
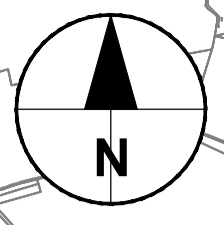
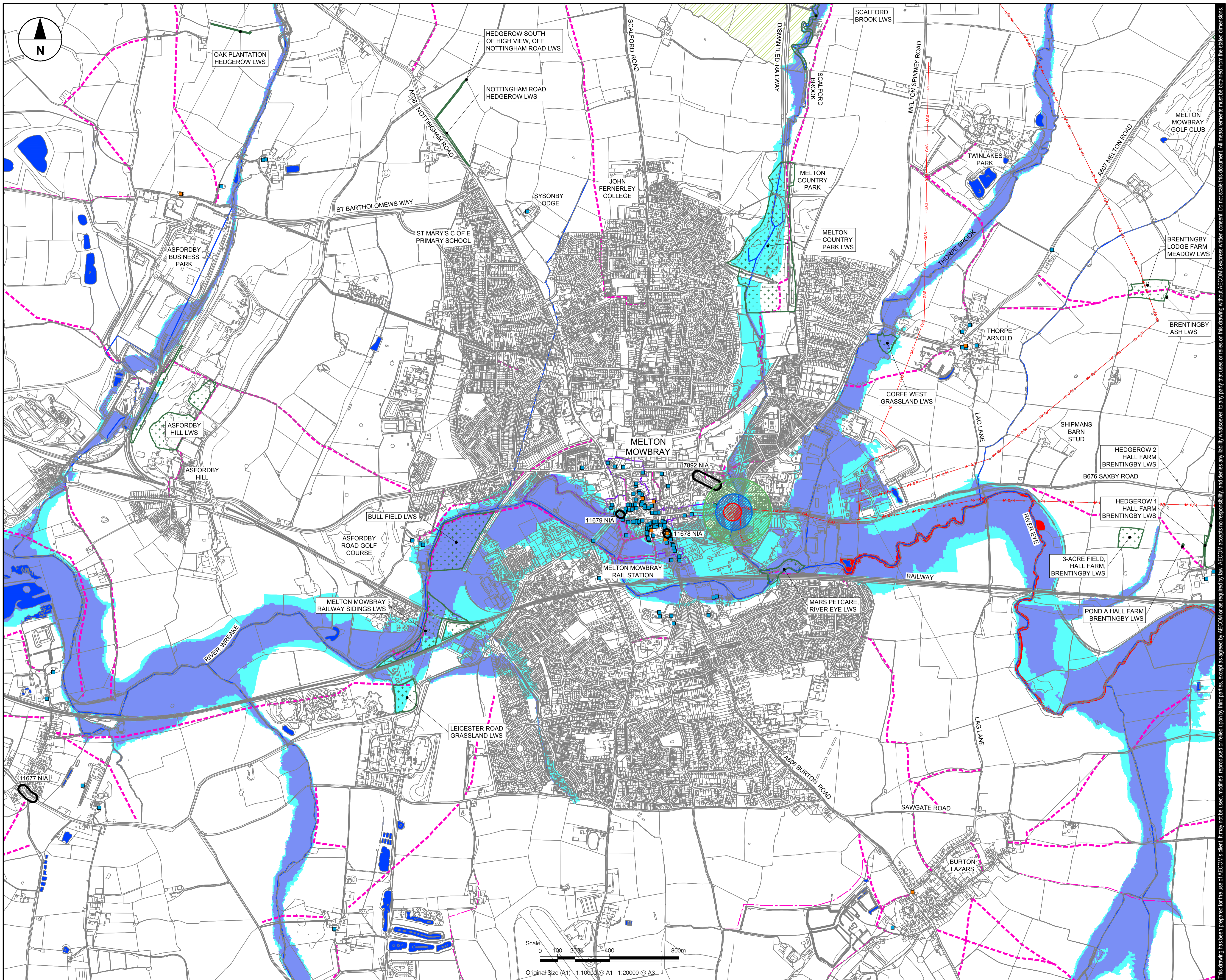
2014_Base	Town Centre	East	North	West	South-West	South-East	A606_NottinghamRd	ScalfordRd	MeltonSpinneyRd	A607_ThorpeRd	B676_SaxbyRd	A606_BurtonRd	DalbyRd	KirbyRd	A607_LeicesterRd	A6006_AsfordbyRd	Total	Percentage of Traffic on Road associated with Through Traffic
Town Centre	413	297	161	136	198	84	60	9	8	91	23	96	51	0	132	121	1,880	
East	271	261	93	74	122	60	23	0	56	86	28	70	44	0	100	79	1,369	
North	143	93	46	40	66	25	45	11	0	9	9	38	19	0	32	28	605	
West	152	102	42	51	75	26	25	4	0	7	12	49	20	0	0	154	722	
South-West	214	125	86	83	320	29	19	8	2	58	10	25	11	31	297	9	1,326	
South-East	60	46	20	18	38	13	9	0	2	18	3	13	8	0	36	7	289	
A606_NottinghamRd	62	33	37	26	16	10	0	0	0	0	19	289	6	0	0	0	498	63.0%
ScalfordRd	9	1	9	4	1	1	0	0	0	0	0	13	0	0	0	0	37	35.5%
MeltonSpinneyRd	10	57	0	0	5	4	0	0	0	0	0	20	8	0	1	0	106	27.9%
A607_ThorpeRd	83	88	6	5	52	23	0	0	0	0	0	4	61	0	31	4	357	27.9%
B676_SaxbyRd	22	26	9	8	12	5	5	0	0	0	0	0	0	0	73	20	179	54.7%
A606_BurtonRd	55	46	25	32	32	11	339	0	2	3	0	0	4	0	196	7	753	73.3%
DalbyRd	32	41	12	14	12	8	7	0	5	44	0	4	0	0	0	0	180	33.4%
KirbyRd	6	0	4	1	25	0	0	0	0	0	0	0	0	0	33	0	69	-
A607_LeicesterRd	162	102	58	6	299	23	0	1	1	15	62	129	0	53	0	0	909	28.7%
A6006_AsfordbyRd	109	88	26	130	4	2	0	1	0	6	26	0	0	0	0	0	393	8.4%
Total	1,803	1,407	634	629	1,275	323	534	34	77	337	192	749	232	84	931	431	9,672	
Percentage of Traffic on Road assoctaed with Through Traffic							65.8%	5.5%	11.1%	20.2%	55.7%	61.2%	34.2%	-	35.8%	7.5%	36.0%	

Melton Mowbray - 2014 12hr Day - HGV Traffic Flow

2014_Base	Town Centre	East	North	West	South-West	South-East	A606_NottinghamRd	ScalfordRd	MeltonSpinneyRd	A607_ThorpeRd	B676_SaxbyRd	A606_BurtonRd	DalbyRd	KirbyRd	A607_LeicesterRd	A6006_AsfordbyRd	Total	Percentage of Traffic on Road associated with Through Traffic
Town Centre	0	1	0	0	0	0	4	0	0	2	2	6	3	0	8	6	31	
East	0	3	0	1	1	0	13	0	0	38	4	38	10	0	39	21	168	
North	0	0	0	0	0	0	8	4	0	0	0	2	2	0	9	1	28	
West	0	1	0	0	0	0	32	0	0	1	1	3	7	0	35	3	83	
South-West	0	1	0	0	1	0	8	0	0	1	1	1	6	0	118	16	153	
South-East	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	5	
A606_NottinghamRd	1	12	6	27	8	0	0	0	0	4	9	105	48	0	2	0	222	75.6%
ScalfordRd	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.0%
MeltonSpinneyRd	0	0	0	0	0	0	0	0	0	5	0	1	0	0	1	1	10	95.8%
A607_ThorpeRd	0	42	0	1	1	0	3	0	6	0	1	6	6	0	122	33	220	79.8%
B676_SaxbyRd	0	5	0	1	1	0	9	0	0	1	0	0	5	0	84	44	150	95.3%
A606_BurtonRd	1	47	1	3	3	0	216	0	1	6	0	0	3	0	25	227	533	89.8%
DalbyRd	0	11	1	6	6	0	52	0	0	4	5	2	0	0	6	18	114	77.4%
KirbyRd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
A607_LeicesterRd	1	36	6	32	137	0	4	0	1	128	81	20	7	0	0	1	453	53.2%
A6006_AsfordbyRd	1	21	0	1	15	0	0	0	1	28	53	187	22	0	1	0	329	88.2%
Total	5	180	19	72	172	1	352	4	10	219	156	373	118	0	451	370	2,503	
Percentage of Traffic on Road assoctaed with Through Traffic							81.0%	0.0%	96.1%	80.6%	95.0%	86.1%	75.8%	-	53.4%	87.2%	81.3%	

Appendix D

Environmental Constraints Map



PROJECT
MELTON MOWBRAY DISTRIBUTOR ROAD

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 www.aecom.com

REGISTRATION
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NOTES
 1. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
 2. THIS DRAWING IS BASED ON ORDNANCE SURVEY AND LIDAR DATA.

- LEGEND**
- TRANS CO NATIONAL GAS PIPELINE
 - OVERHEAD ELECTRICITY LINES 132KV
 - FOOTPATHS
 - BRIDLEWAYS
 - GRADE I LISTED BUILDING
 - GRADE II LISTED BUILDING
 - GRADE II LISTED BUILDING
 - CONSERVATION AREA
 - LOCAL WILDLIFE SITE
 - ANCIENT WOODLAND
 - COUNTRYSIDE STEWARDSHIP AGREEMENTS
 - 7892 NIA
 - NOISE IMPORTANT AREA
 - RIVER EYE SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
 - MAIN RIVERS
 - WATERBODIES
 - FLOOD ZONE 2
 - FLOOD ZONE 3
 - SOURCE PROTECTION ZONE**
 - ZONE I - INNER PROTECTION ZONE
 - ZONE II - OUTER PROTECTION ZONE
 - ZONE III - TOTAL CATCHMENT
 - ZONE OF SPECIAL INTEREST

ISSUE/REVISION

I/R	DATE	DESCRIPTION
-	20/11/2017	FIRST ISSUE

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SHEET TITLE
 ENVIRONMENTAL CONSTRAINTS

SHEET NUMBER
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