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A426 Avon Mill / Hunters Lane Improvement Scheme

Options Assessment Report

Warwickshire County Council

November 2022

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Contents

Tables

Figures

1. Introduction

1.1. Purpose of the Options Assessment Report

Warwickshire County Council (WCC) has identified the Avon Mill roundabout on the A426/A4071 corridor and the A426 Newbold Road/Hunters Lane junction (approximately 175m to the south-west of Avon Mill roundabout) as key congestion hotspots affecting the efficient operation of the Major Road Network (MRN) in Rugby.

This Option Assessment Report (OAR) aims to set out the process which has been followed to identify a preferred intervention option for the A426/A4071 Avon Mill/Hunters Lane improvement; hereafter referred to as the Scheme. This includes outlining the existing challenges around the Scheme (the rationale for interventions) and the impacts associated with not changing. Following the identification of the rationale for intervention, this OAR will outline the objectives for the Scheme, the long list of options for intervention, the engagement with stakeholders, the sifting process and appraisal of the short-listed options.

The key purpose of the OAR is to ensure that the funding approval body; the Department for Transport (DfT), is satisfied that a range of multimodal options have been considered and that an objective led and evidence-based approach has been followed to determine the preferred option which will be appraised in the Outline Business Case (OBC).

1.2. Background

The previous OAR, which this report builds on, was submitted to the DfT as part of the Strategic Outline Business Case (SOBC) developed for the scheme in June 2019. Following this submission, clarification comments were provided to WCC in relation to the approach to option identification, which were required to be assessed in a refreshed OAR. Full details of these comments can be seen in Appendix A and a summary is provided below:

- The OAR requires a clearer approach to logic mapping – showing how the sifting criteria relates to the objectives defined for the scheme; and
- Justification is required as to why public transport/active mode focussed alternatives are not appropriate/sufficient to achieve the scheme objectives.

This report will address comments provided by the DfT with further modelling undertaken in the Rugby Wide Area (RWA) S-Paramics model. The results of this modelling can be seen in Appendix B.

1.3. Document Structure

The structure of the OAR Refresh follows transport analysis guidance and the transport appraisal process developed by the DfT.

The remainder of this document is structured as follows:

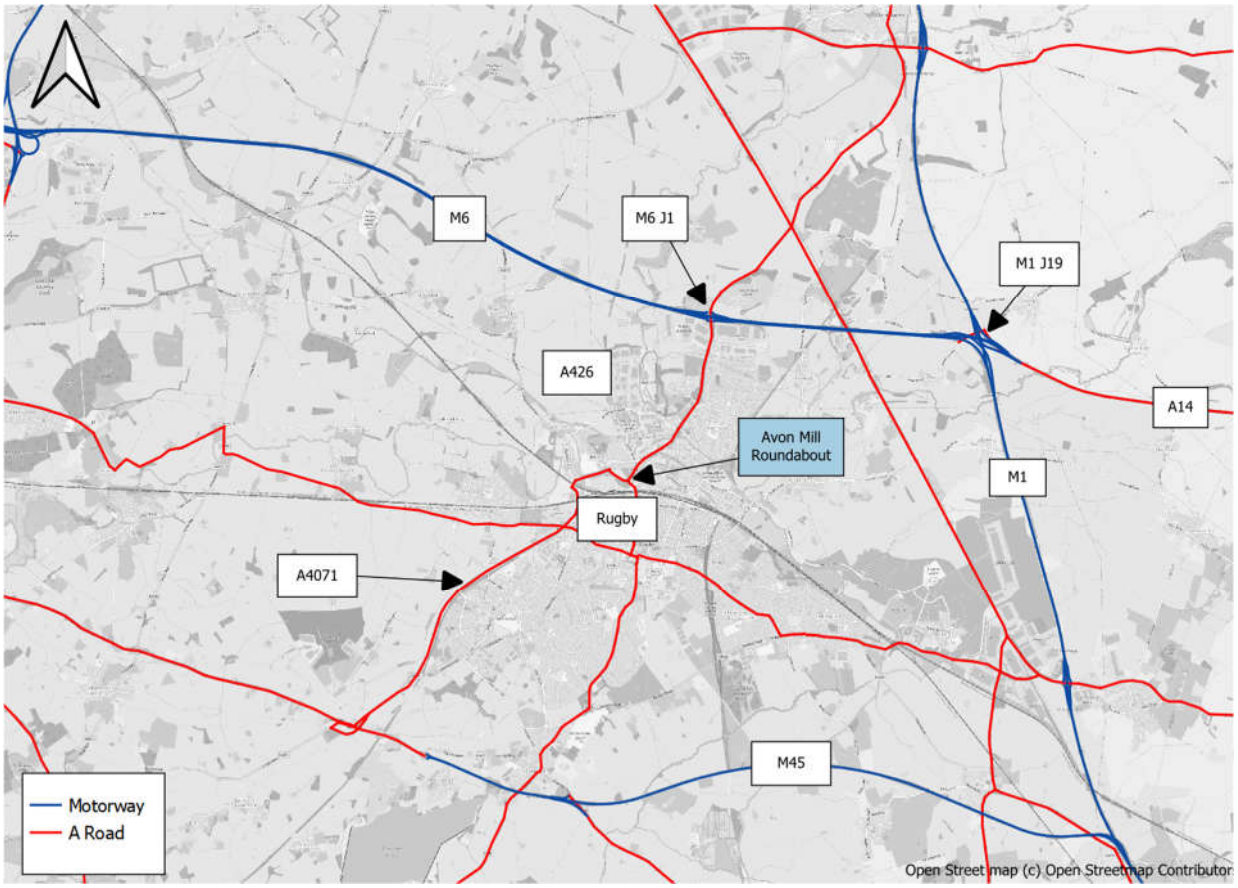
- Section 2 outlines the scheme context including the scheme area and national policies driving the scheme;
- Section 3 provides an overview of the options development process;
- Section 4 outlines the rationale for intervention by presenting the context for the scheme and an analysis of the current issues and problems within the area;
- Section 5 provides an in-depth description of the Options Development Process. This includes the development of the scheme objectives and the identification of a long list, the sifting of a long list, the assessment of the short list and the identification of a preferred option;
- Section 6 provides a description of the Preferred Option and outlines the sensitivity testing process; and
- Section 7 provides a summary of the work done so far and an overview of the next steps.

2. Scheme Context

2.1. Study Area

Rugby is situated at the heart of the UK road network with unrivalled access to the Strategic Road Network (SRN), and with particularly easy access to the M1, M6, M69, A5, and A14 (See Figure 2-1). In addition to the ease of access to the SRN, Rugby is less than an hour's travel time by rail to London and Birmingham, thereby making it an ideal location for commuting to key employment centres.

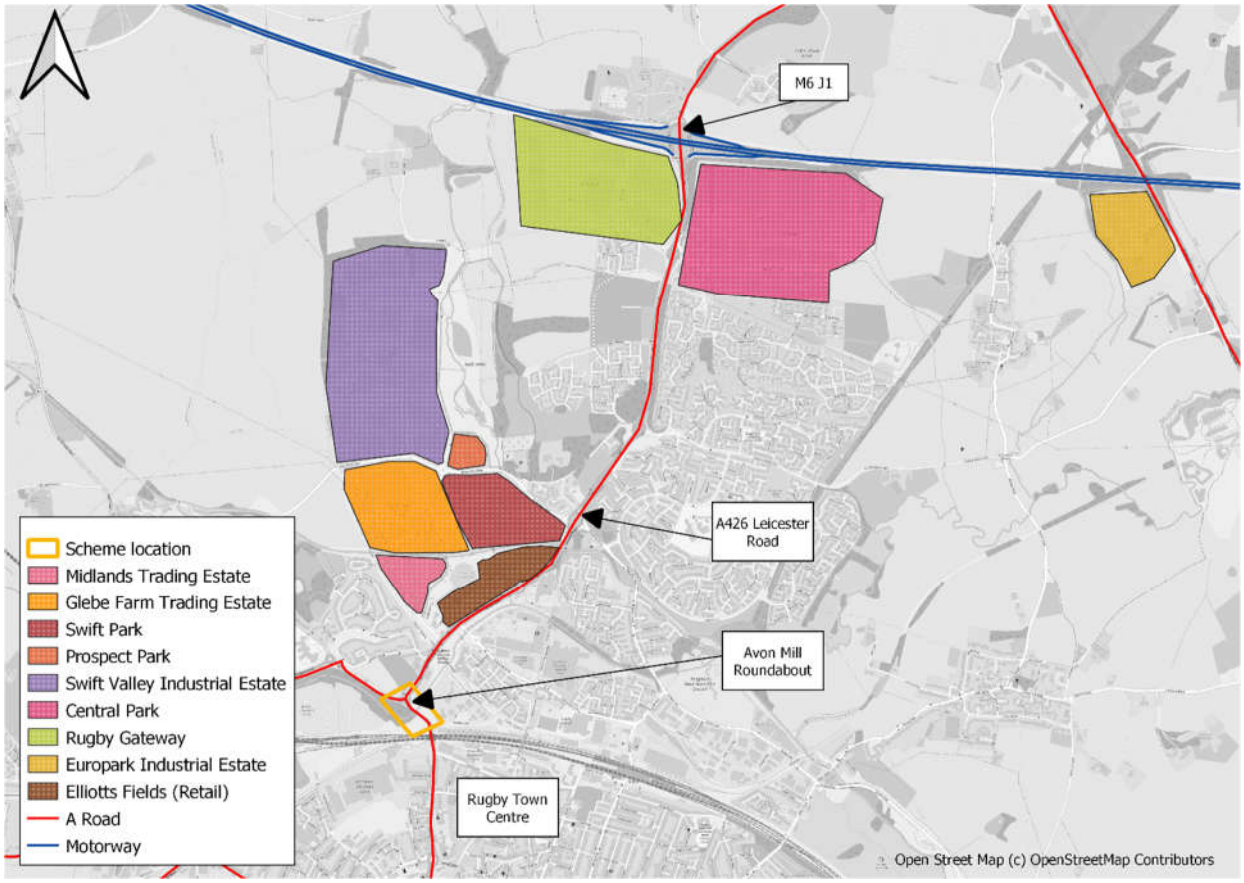
Figure 2-1 - Rugby location



The Borough of Rugby has a total of 106,400 residents (Nomis 2017) with two thirds of these living within the town of Rugby and with the remainder living in villages which range from populations of 20 to 3,000 residents[1]. Large scale employment sites in the town are on the edge of the urban area and within close proximity to Junction 1 of the M6. These employment sites are illustrated in Figure 2-2.

[1] Local Plan 2011-31 Adoption | Rugby Borough Council

Figure 2-2 - Employment Sites



The location of these employment sites on the periphery of Rugby, close to the A426 Leicester Road and M6 Junction 1 result in the private car being the preferred mode for commuting. This is demonstrated in Table 2-1 where 68% of residents living in Rugby travelling to work by the private car, which is 11% greater than the average for England as a whole. In addition to this less than 14% use active travel modes and only 2% use bus which is particularly poor when compared to the average for England.

Table 2-1 - Method of Travel to Work data – 2011 Census data[2]

Method of Travel to Work	% of those living in Rugby	% of those living in England
Work mainly at or from home	5%	5%
Underground or metro	0%	4%
Train	3%	5%
Bus, minibus or coach	2%	7%
Taxi	0%	1%
Motorcycle, scooter or moped	1%	1%
Driving a car or van	68%	57%
Passenger in a car or van	7%	5%
Bicycle	3%	3%
On foot	10%	11%
Other	1%	1%

[2] QS701EW (Method of travel to work) - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)

The Avon Mill roundabout on the A426/A4071 corridor and the A426 Newbold Road/Hunters Lane junction lie between the key employment sites illustrated in Figure 2-3 and Rugby Town Centre thereby providing through traffic and local traffic with access to a range of local and regional growth locations. A map of the scheme location, which is to the north of Rugby Town Centre, is provided in Figure 2-3 and Figure 2-4, which also identifies the key local roads likely to be affected by the preferred option.

Figure 2-3 - Scheme location (Rugby wide)

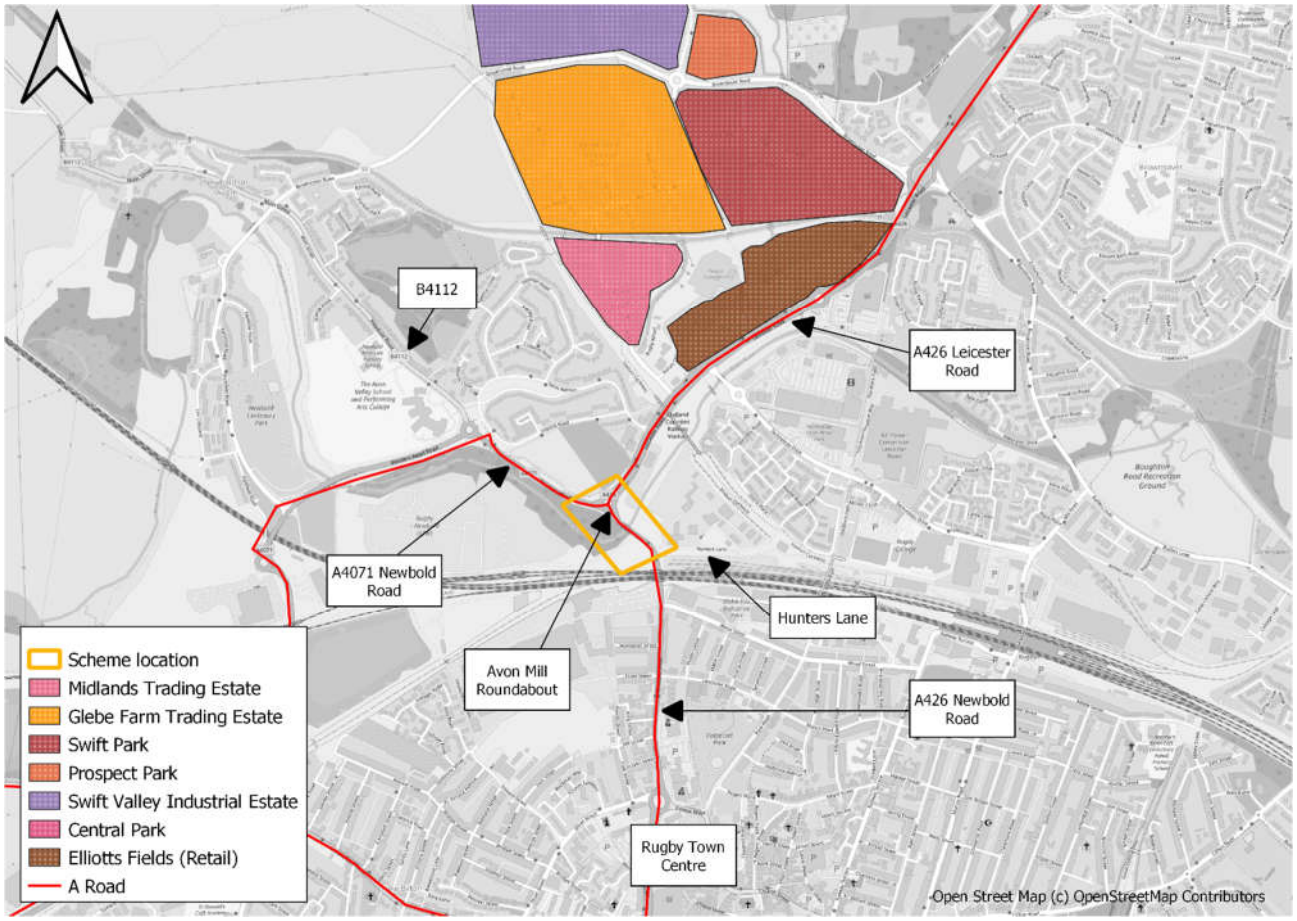
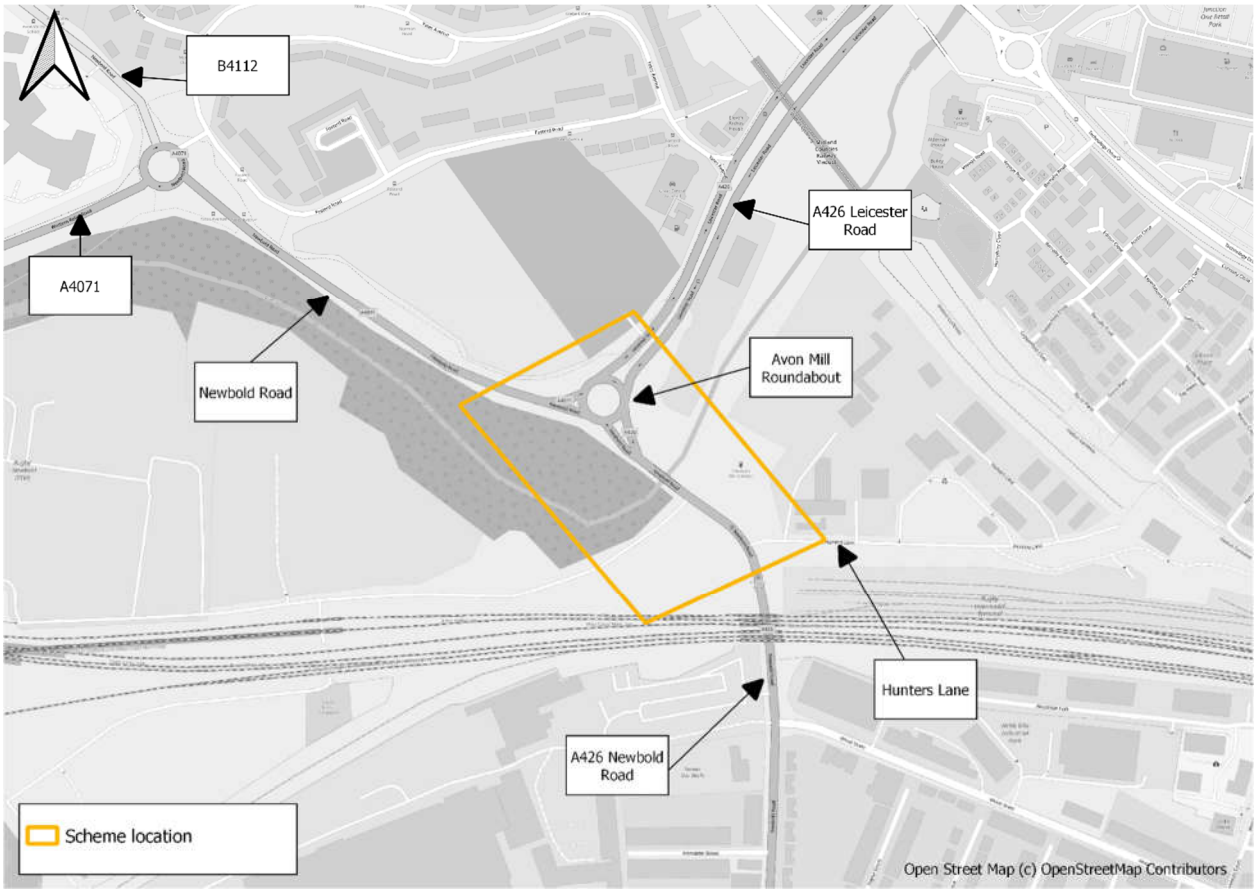


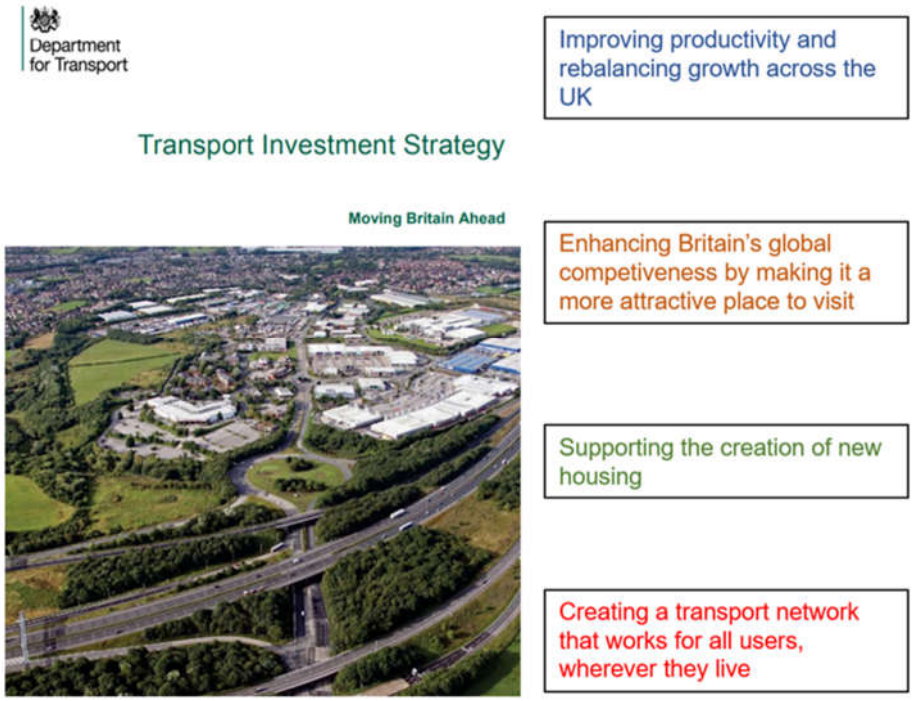
Figure 2-4 – Scheme location



2.2. Strategic Context

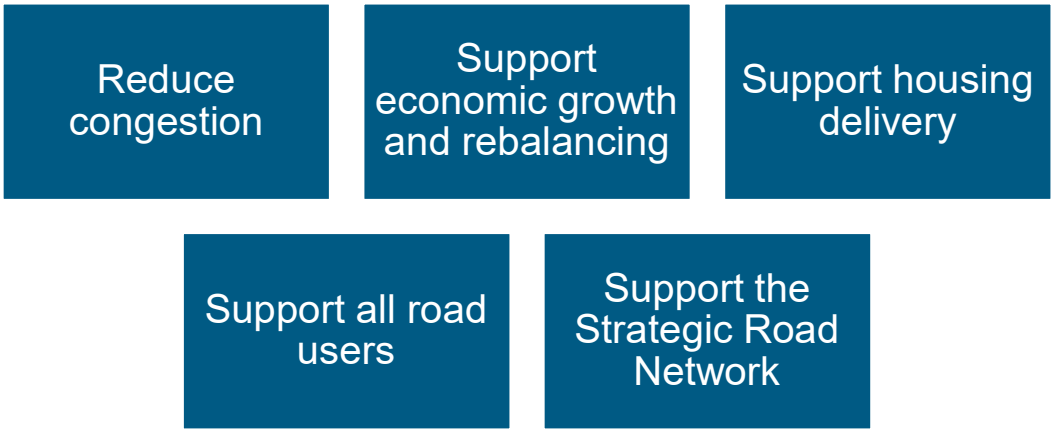
The A426/A4071 is a key economic corridor in the Midlands and has been identified as part of the Major Road Network (MRN) by the DfT. The MRN was created as part of the Transport Investment Strategy (2017) which committed the government to four priorities, as summarised in Figure 2-5.

Figure 2-5 - Transport Investment Strategy - Key Priorities



The MRN has a series of objectives, these are summarised in Figure 2-6.

Figure 2-6 - Objectives of the MRN



The A426/A4071 MRN corridor provides a strategic connection between the M45/A45 at Thurlaston to the south of Rugby on the Strategic Road Network (SRN) and M6 Junction 1 north of Rugby. At the heart of the A426/A4071 corridor in Rugby is the Avon Mill roundabout and Hunters Lane priority junction, as shown in Figure 2-4. The junctions provide traffic with access to a range of local and regional growth locations. As such, the Avon Mill

roundabout is one of the most strategically significant junctions in Rugby and a key location to focus scheme development in order to meet the objectives of the Transport Investment Strategy.

2.2.1. Updates to Strategic Dimension since SOBC submission

In November 2020, the Treasury published a review of its appraisal guidance contained within the Green Book, to ensure that it was able to meet the Government's wider policy objectives around levelling up and decarbonisation. The Green Book review[3] has recommended new guidance that amongst other things puts additional emphasis on the assessment of transformative impacts, the analysis of place-based impacts, and analysis of differential impacts. The review also identifies a number of priority outcomes that are strongly focussed on levelling up including:

- An outcome to raise productivity and empower places so that everyone can benefit from levelling up; and
- Maximise employment across the country to aid economic recovery from Covid-19.

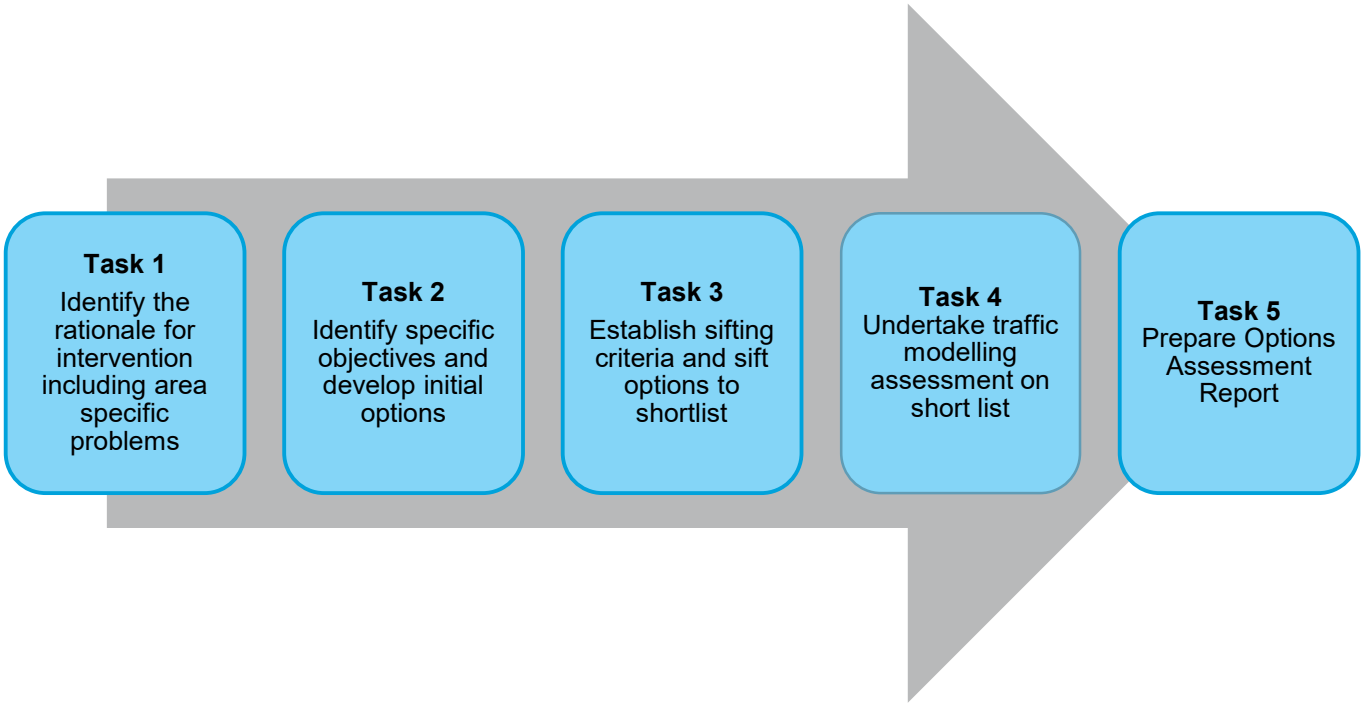
In addition to levelling up, the Transport Decarbonisation Plan (2021) sets out the government's commitments and actions needed to decarbonise the entire transport system in the UK, thereby helping to achieve its Net Zero aspirations by 2050. It is recognised that any transport scheme developed following the Covid-19 pandemic should reduce carbon emissions, improve air quality, cut congestion, support economic growth and improve the experience of transport users, thus creating opportunities for all. As such, the strategic narrative of the scheme has been updated in the OBC to demonstrate its alignment with updated key government priorities since the initial development of the MRN, particularly in relation to levelling up and decarbonisation. This includes a more focused narrative on the improved provision for active modes such as the proposed enlargement of the existing toucan crossing facilities on the A426 Leicester Road and the proposed addition of a new segregated foot/cycleway and bridge crossing over the River Avon.

[3] Green_Book_Review_final_report_241120v2.pdf (publishing.service.gov.uk)

3. Overview of Option Identification and Sifting Analysis

A summary of the overall approach to the identification and sifting of options is provided in Figure 3-1.

Figure 3-1 – Summary of Options Appraisal Process



These tasks can be summarised as follows:

Task 1: Identify the rationale for intervention

Undertake an exploratory task to understand the rationale for intervention within the area. This analysis will summarise the current and future issues within the vicinity of the Scheme which will be identified through analysis undertaken originally for the SOBC, reporting undertaken by Vectos Microsim in July 2022 for the OBC and through stakeholder engagement.

Task 2: Identify specific objectives and develop initial options

Identify specific outcome objectives for the scheme based on the key local, regional and national transport policy and the rationale for intervention in the scheme area. The scheme objectives devised will be used to assist the identification of a long list of options, further informed through discussion with WCC and further technical stakeholders including those from Vectos Microsim, Midlands Connect, Environment Agency, Warwickshire County Council and Rugby Borough Council.

Task 3: Establish sifting criteria and sift options to shortlist

Development of sifting criteria (based on the DfT's Early Assessment and Sifting Tool (EAST)), considering the objectives and the range of options which could be proposed. The long list of options will be assessed against this criterion and a short list of options will be identified from the highest scoring options.

Task 4: Undertake traffic modelling assessment on short list

Following the identification of the shortlist of options, a more in depth assessment of traffic modelling will be undertaken using the Rugby Wide Area (RWA) S-Paramics model. This will assess the performance of the options developed and enable a preferred option to be identified. This task will be undertaken by Vectos

Microsim and the results of the appraisal will be discussed in a workshop with key stakeholders such as; Midlands Connect, Environment Agency, Warwickshire County Council and Rugby Borough Council.

Task 5: Prepare Options Assessment Report

Present the assessment of the shortlisted packages in an Options Assessment Report. This will identify the need for intervention at the junction and the process of option development and selection.

4. Rationale for Intervention (Task 1)

This section provides a summary of the current and future issues within the vicinity of the Scheme. These issues have been identified through analysis undertaken originally for the SOBC, reporting undertaken by Vectos Microsim in July 2022 for the OBC and through stakeholder engagement.

4.1.1. Problem 1 - Congestion

An analysis of speed surveys collected from the Highways Analyst database for the AM and PM peak hours in November 2016 from Tuesday to Thursday was undertaken as part of the Rugby Wide Area (RWA) Base Model Update conducted by Vectos Microsim. These surveys indicated that the Avon Mill roundabout acts as a bottleneck on the A426 corridor causing reduced speeds and congestion, the results from this analysis are illustrated in Table 4-1.

In this instance, freeflow speeds were approximated from speed surveys processed in Highways Analyst for the whole year of 2016 from 05:00-06:00 and 21:00-22:00 for Tuesday to Thursdays. The maximum speed out of the collected hours was then taken to represent the freeflow speed on a link. Further details of the freeflow speeds and peak hour speeds can be seen in Appendix B paragraph 2.13 onward.

Table 4-1 **- Difference in speed from Free Flow conditions (km/h)**

Approach	Freeflow Speed (km/h)	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)	
		Peak Hour Speed (km/h)	Difference from Freeflow (km/h)	Peak Hour Speed (km/h)	Difference from Freeflow (km/h)
A426 Newbold Road NB Entry	**47.7**	24.5	-23.2	13.1	-34.6
A426 Newbold Road SB Exit	**44.1**	28.5	-15.6	23.0	-21.1
A426 Leicester Road SB Entry	**54.0**	26.8	-27.2	31.5	-22.6
A426 Leicester Road NB Exit	**52.7**	41.8	-10.9	41.6	-11.1
A4071 Newbold Road EB Entry	**45.0**	29.8	-15.2	33.7	-11.3
A4071 Newbold Road WB Exit	**49.7**	36.8	-12.9	39.2	-10.4

Table 4-1 demonstrates that the greatest speed reduction in the AM peak, when compared to freeflow speeds, was on the A426 approaches to the Avon Mill roundabout, where speeds reduced by 23.2 km/h (A426 Newbould Road NB Entry) and 27.2 km/h (A426 Leicester Road SB Entry). The analysis demonstrates that the greatest speed reductions are on the entry arms of Avon Mill roundabout, therefore demonstrating that speed reduction is caused by the Avon Mill roundabout instead of congestion stretching back from upstream junctions to the exit arms of the roundabout.

A similar pattern was found in the PM peak analysis where speed reductions were greater on the entry to the roundabout than the exit of the roundabout. Therefore, it is noted that the Avon Mill roundabout is a key hotspot for congestion, and this is an increasing barrier to growth as conditions are expected to worsen which will significantly impact on the ability of the MRN to support the local and sub-regional economy. In addition to this, the bottlenecks resulting from speed reductions at the roundabout will increase the risk of collisions.

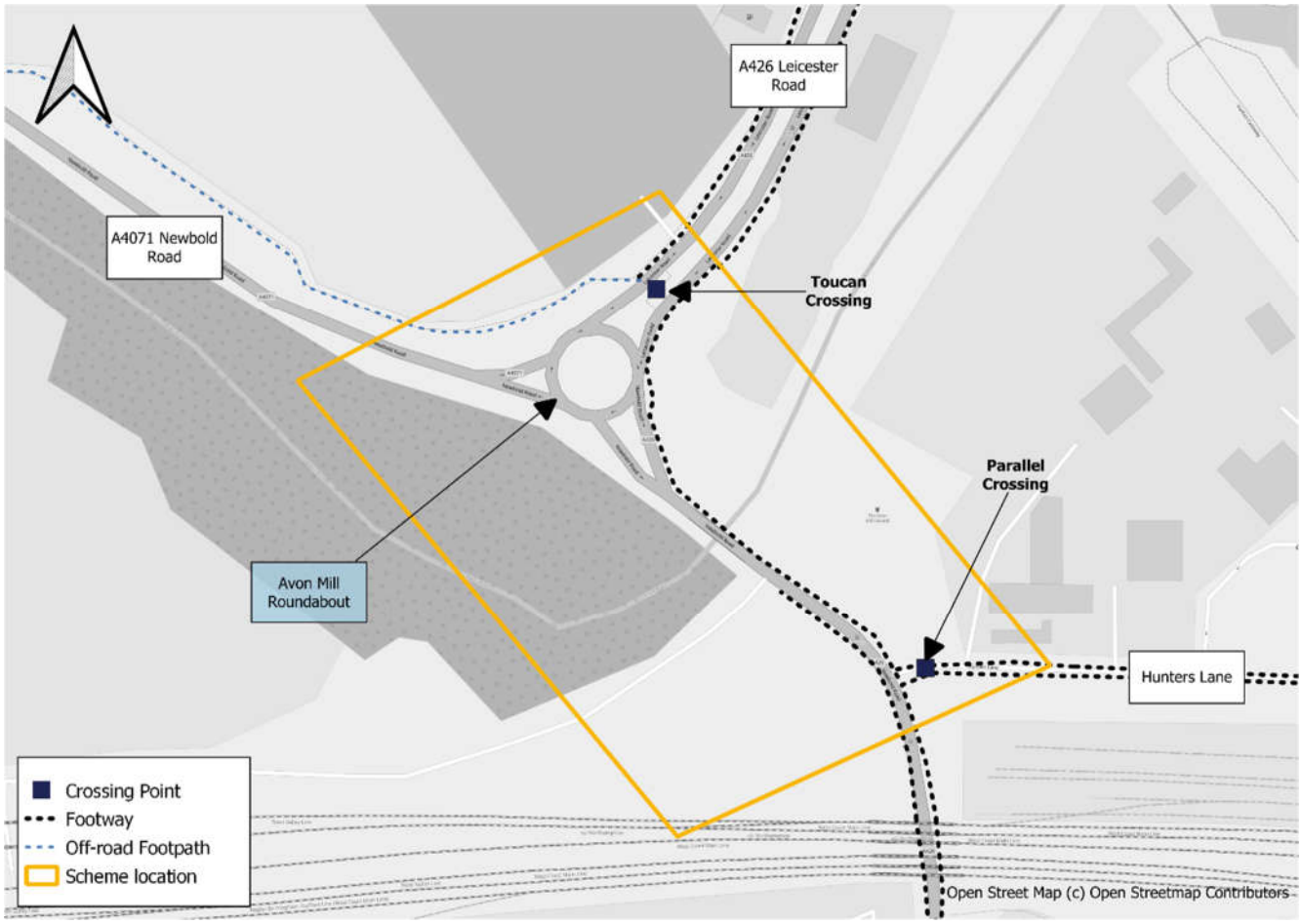
In addition to these Avon Mill specific results, further testing was undertaken to demonstrate the wider impacts on the A426 corridor. This testing demonstrated that congestion along the corridor is indirectly caused by conditions at the Avon Mill roundabout, details of this can be found in Appendix B paragraph 2.16 onward.

4.1.2. Problem 2 - Lack of Active Travel Provision

A desktop audit of active travel facilities within the town has demonstrated that there are varying standards of provision for pedestrians and cyclists around the Avon Mill roundabout. This limited provision for pedestrians and cyclists is likely to lead to the reliance on the private car and dominance of motorised traffic.

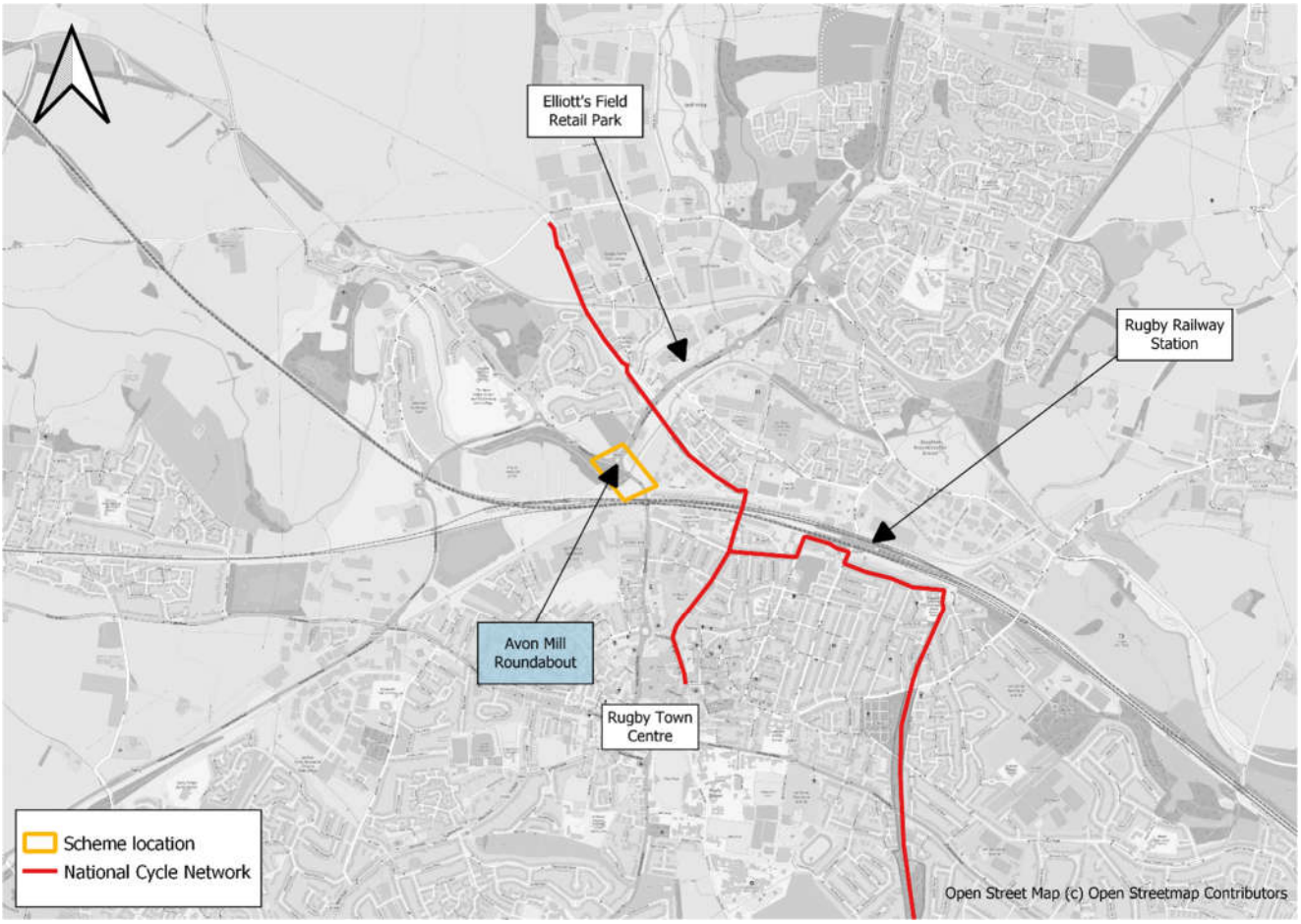
Figure 4-1 demonstrates that there is an inconsistent level of provision for pedestrians within the vicinity of the Scheme as the off-road footpath along the A4071 Newbold Road and the lack of footway provision alongside the western approach of the A426 Newbold Road to Avon Mill.

Figure 4-1 - Pedestrian Facilities



In addition to inconsistent pedestrian facilities, Figure 4-2 illustrates the location of the scheme in relation to the national cycling network (NCN), this demonstrates that although there are existing NCN routes (route 41) within the town of Rugby, there is currently no cycling provision within the scheme area.

Figure 4-2 - Cycling Connectivity



These varying provisions in addition to the traffic volumes and speeds makes walking and cycling through the scheme area less attractive, therefore people are more likely to travel by private vehicle.

These existing issues highlight a lack of active travel provision on the vicinity of the scheme. Further, the Draft Warwickshire Local Cycling and Walking Infrastructure Plan (LCWIP) highlighted the need for improvements, and suggested options, including a segregated footway/cycle bridge for both pedestrians and cyclists at the scheme location. It is clear therefore, that any potential scheme should aim to promote active travel by improving the quality and safety of the local walking and cycling environment.

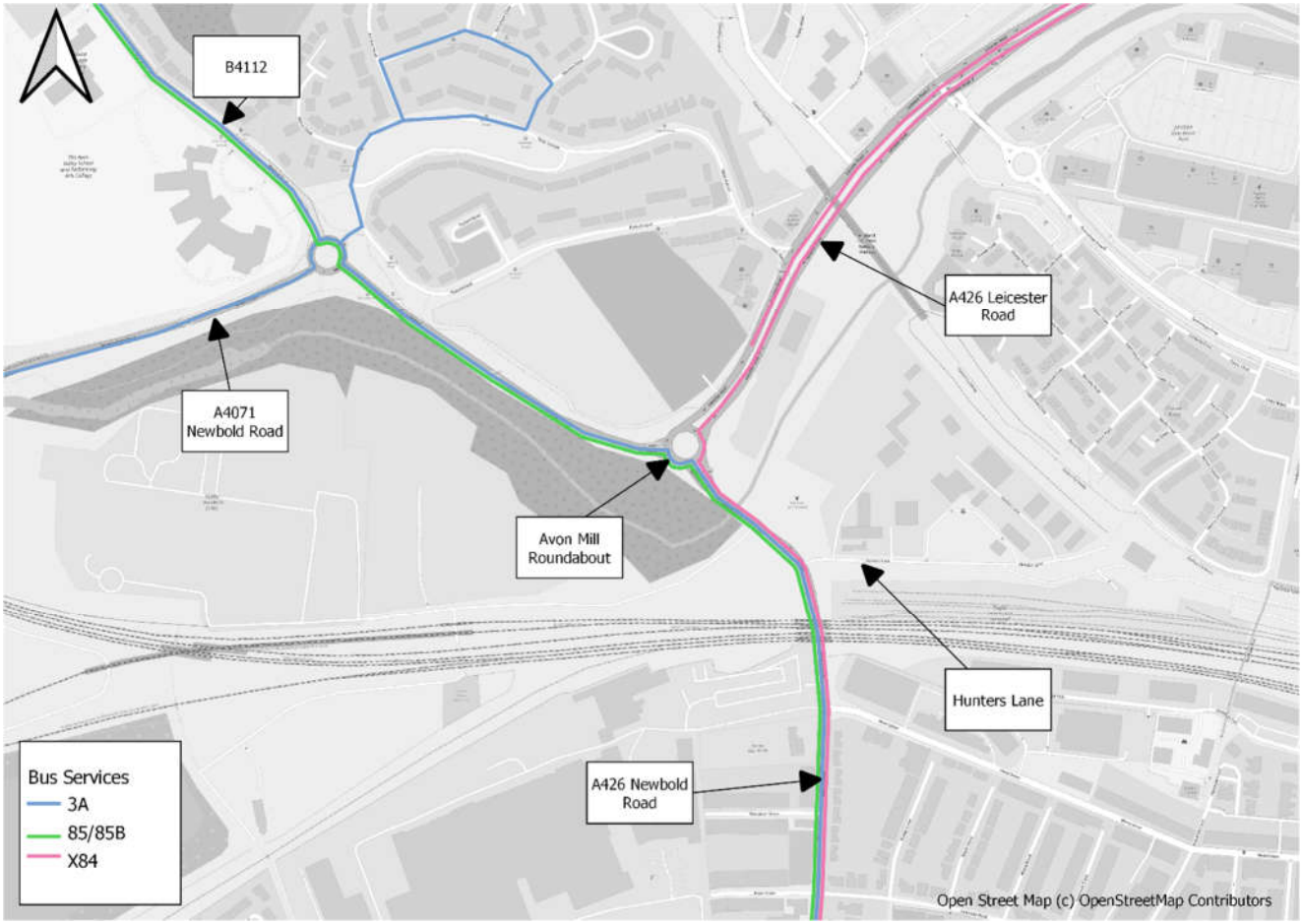
4.1.3. Problem 3 - Public Transport

There are nine bus routes which pass through the scheme area which range from those which serve the area hourly and those that only have one service per week. These services have been split into frequent and infrequent services, the frequent services are detailed in Table 4-2 and their routes are illustrated in Figure 4-3.

Table 4-2 -Frequent Bus Services

Route	Weekday Frequency	Saturday Frequency	Sunday Frequency
X84 – to Leicester	Every 50 minutes	Every hour	No service
85/85B – to Coventry	Every 50 minutes	Every 50 minutes	No service
3A – to Avon Valley School	Every hour	Every hour	No service

Figure 4-3 - Bus Routeing



There are a further six bus services which run through the scheme area, these services are infrequent and have a single departure each week. These services have not been mapped due to their infrequency but are detailed in Table 4-3.

Table 4-3 - Infrequent Bus Services

Route	Weekday Frequency	Saturday Frequency	Sunday Frequency
209 – to Princethorpe	Single departure Friday	No service	No service
210 – to Hinckley	Single departure Monday	No service	No service
211 – to Willey	Single departure Tuesday	No service	No service
213 – to Bedworth	Single departure Tuesday	No service	No service
214 – to Priors Hardwick	Single departure Wednesday	No service	No service
241 – to Nuneaton	Single departure Wednesday	No service	No service

Due to the low numbers of bus services routing through the scheme location which principal bus operator Stagecoach has identified as an existing congestion hotspot, and relatively low bus usage within Rugby (see Table 2-1), there would be little meaningful impact in solving congestion issues for buses only. Instead, it is expected that a highway improvement would prove sufficient to improve journey times within the area and to ensure that there is adequate public transport infrastructure in place on the corridor to facilitate these movements.

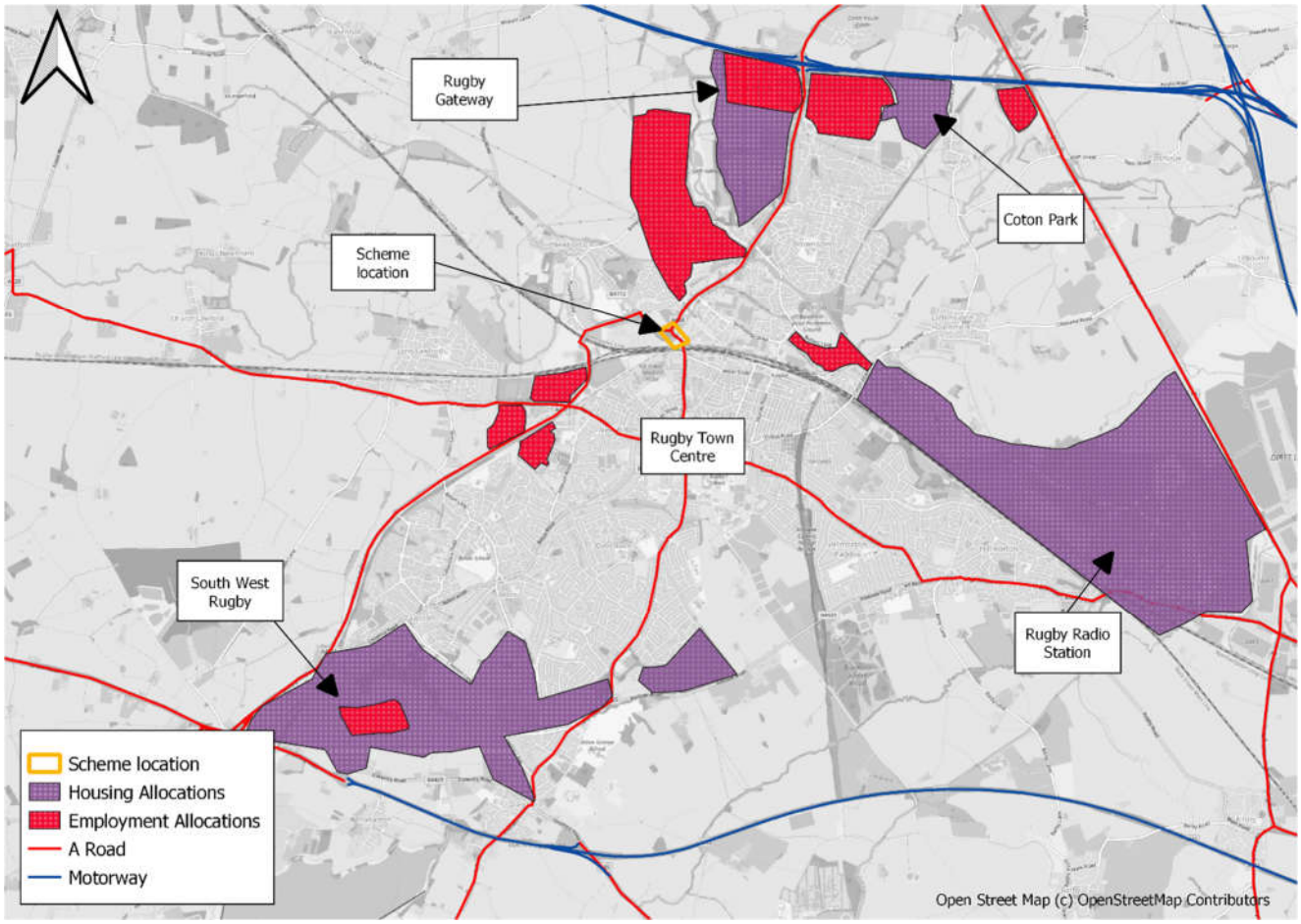
4.1.4. Problem 4 - Lack of capacity to accommodate growth in Local Plan

The Rugby Borough Council Local Plan 2011-2031 for the delivery of housing and employment development demonstrates that a series of major housing and employment sites have been allocated within Rugby. Allocated sites within the Local Plan include:

- Coton Park East – 800 houses;
- Rugby Gateway – 1,300 houses and 35.7 ha of employment;
- Rugby Radio Station – 6,200 houses; and
- South West Rugby – 5,000 houses and 35 ha of employment.

These sites are illustrated on Figure 4-4.

Figure 4-4 - Local Plan Allocations



The sites allocated in the Local Plan were modelled in the RWA by Vectos Microsim to demonstrate their impact upon the road network. This modelling in the RWA demonstrated that there would be an increase of 1,264 vehicles in the AM peak period and 1,165 vehicles in the PM peak period from the 2017 base scenario to the 2031 Local Plan period (see Appendix C for further detail). As a result it is expected that there would be a 22% increase in the AM peak period and a 19% increase in the PM peak period of vehicles on the network, and therefore it is anticipated that the existing layout of the corridor, acting as a strategic connection between the north and the south of the town, will be unable to accommodate the additional demands placed upon it following the delivery of these employment and housing allocations in the coming years.

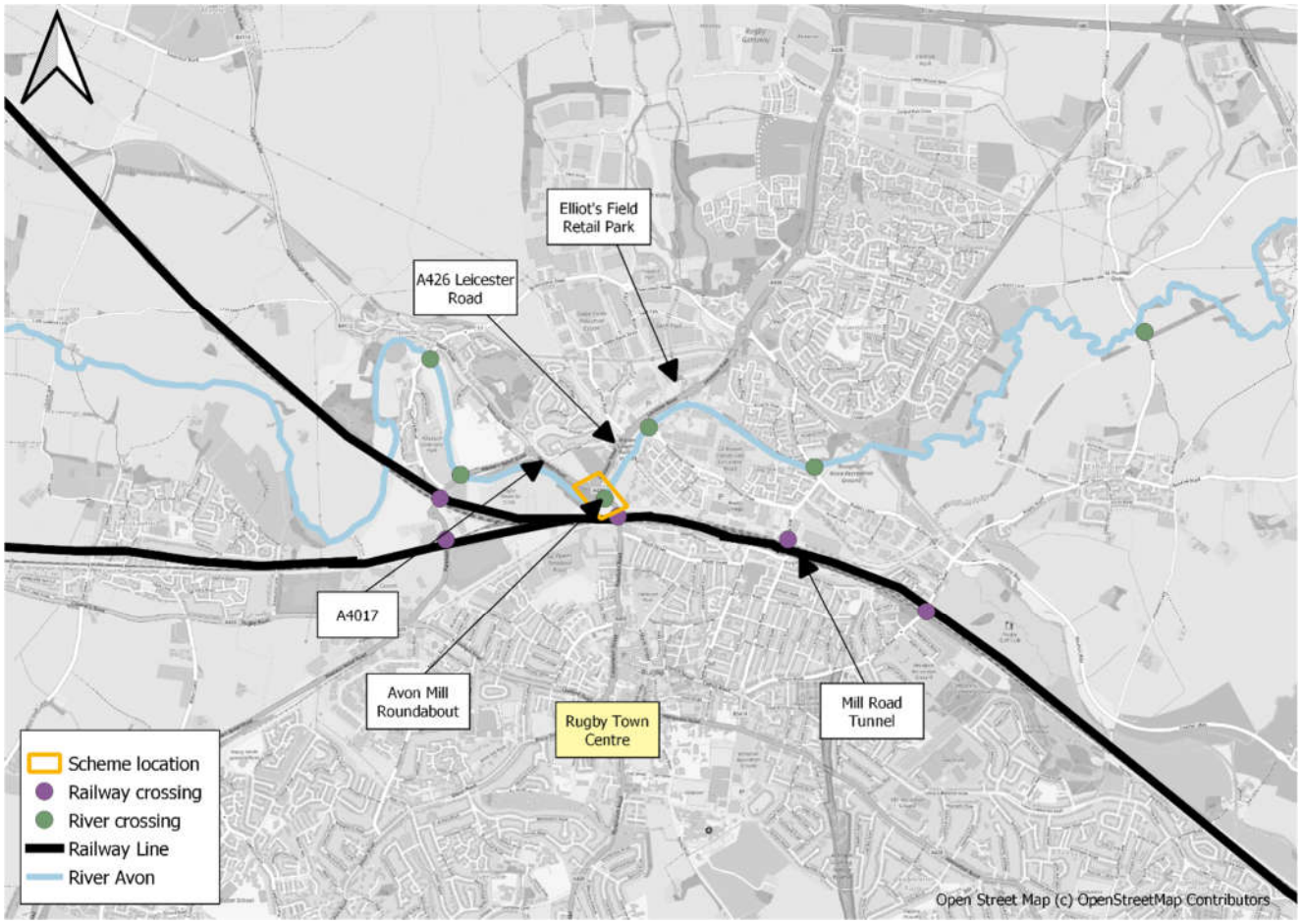
As a result, it is expected that there will be increases in congestion, particularly in peak hours, around the junction that will deter growth in the local and sub-regional economy.

4.1.5. Problem 5 - Network Resilience

The bridge structure over the River Avon and the tunnel under the West Coast Main Line (WCML) Railway on the A426 Newbold Road are one of only a few crossing points within Rugby. These locations are shown in Figure 4-5. Any disruption caused by an unforeseen event such as flooding on the bridge or the railway crossing being struck by a vehicle could lead to serious congestion issues which would lead to damage to the local economy.

In addition to this, traffic may divert onto unsuitable routes which may result in road safety and environmental concerns. These routes include the narrow Mill Road Tunnel which passes under the WCML near Rugby Station and is controlled by shuttle-working signals. It is not feasible to widen the Mill Road tunnel as costs would be prohibitively high. Additional capacity is therefore required to provide flexibility and network resilience at the proposed scheme location .

Figure 4-5 - Crossing locations



4.1.6. Problem 6 – Air Quality

On 25th July 2019, Warwickshire County Council (WCC) declared a Climate Emergency. A few days prior to this, on the 18th July 2019, Rugby Borough Council (RBC) also declared a Climate Emergency and set the aim of becoming Net Zero by 2030. Both authorities are committed to reducing carbon emissions by improving the provision and uptake of active travel opportunities, public transport and low emission travel options.
Prior to the declaration of a Climate Emergency, in December 2004, the urban area of Rugby was designated as an Air Quality Management Area (AQMA) due to exceedances in the annual mean NO2 objective. This further demonstrates the need to improve air quality within the Rugby area,

At present, there is a combination of a dominance of motorised traffic at the scheme location and increasing levels of congestion. As such there is a need to provide greater capacity at the junction to reduce congestion and reduce carbon emissions within the vicinity of the scheme.

4.1.7. Summary of issues

The issues noted above are summarised in Table 4-4 below.

Table 4-4 – Summary of Issues

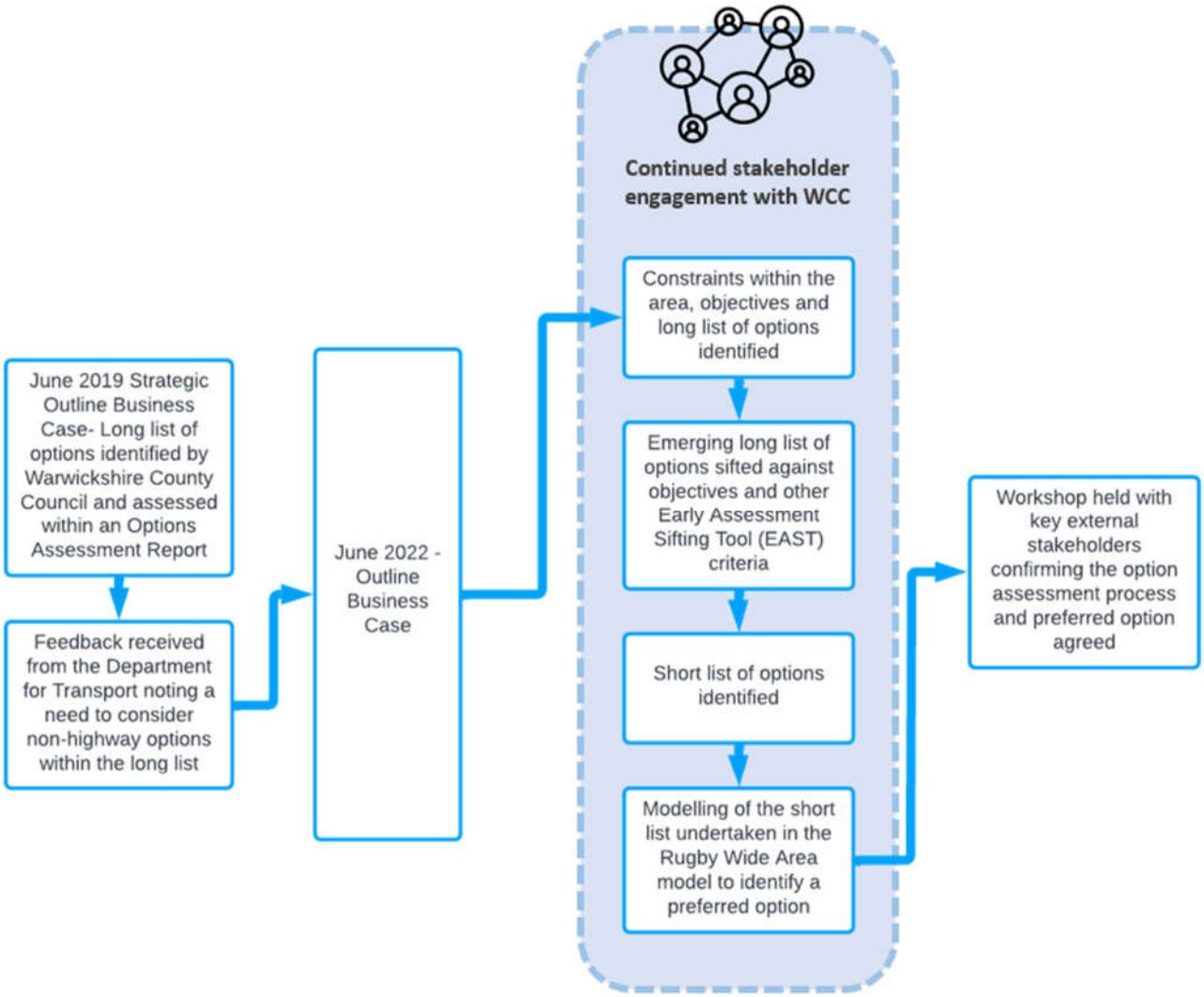
Issue	Existing Situation	Future Situation
Congestion	Queuing traffic and increase vehicle numbers leading to journey time increases.	Congestion to worsen following significant housing and employment growth. Increases in traffic on the network and greater bottlenecks around the junction causing widespread congestion and road safety issues.
Lack of Active Travel Provision	Limited provision for pedestrians and cyclists at the junction resulting in reliance on the private car.	Further reliance and dominance of motorised traffic without designated provision for active modes.
Limited Public Transport provision	Limited service numbers through the junction and limited bus usage throughout Rugby resulting in reliance on the private car.	Continued congestion further deters public transport operators from travelling through the location.
Lack of capacity to accommodate growth in Local Plan	Capacity problems and operational issues resulting in delays and congestion.	Junction unable to accommodate additional demands from Local Plan growth.
Lack of network resilience	The River Avon crossing on the A426 Newbold Road is one of only a few within Rugby. The network could not accommodate any additional pressures resulting from unforeseen events on the River Avon crossing.	Traffic demand to increase and reliance on river crossing increases.
Air quality	Rugby Borough Council declared a climate emergency with the aim of becoming Net Zero by 2034. At present there is a dominance of motorised traffic in the scheme area and increasing levels of congestion.	Increased levels of congestion which is likely to have negative implications on air quality. Rugby Borough Council unable to meet goal of being Net Zero by 2030.

5. Option Development

5.1. Introduction

This section describes the process which was employed to identify the preferred option for the A426/A4071 Avon Mill/Hunters Lane Improvement scheme with a summary of the stages of work demonstrated in Figure 5-1.

Figure 5-1 - Overview of Option Development



5.2. Option Generation (Task 2)

5.2.1. Objective Identification

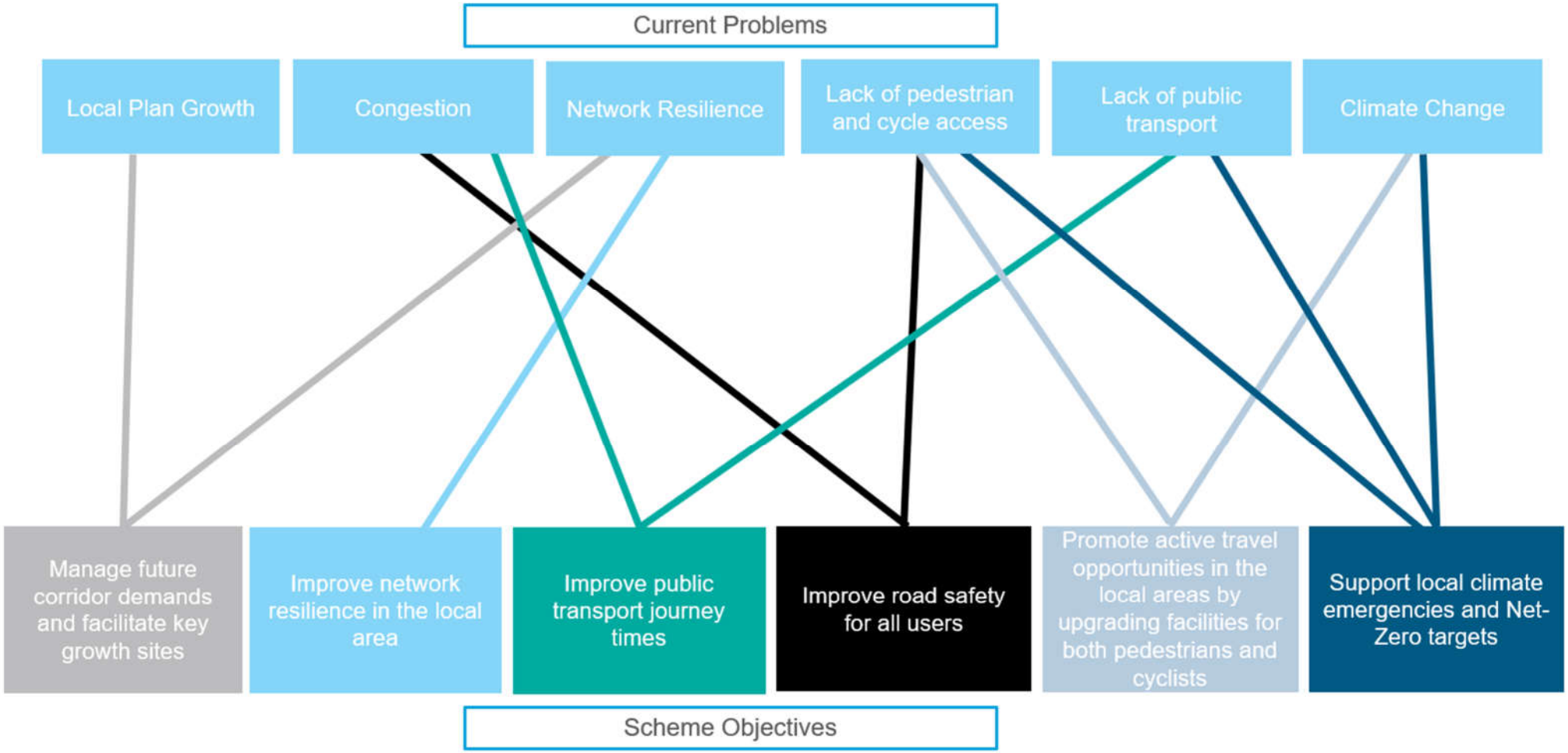
Following the detailed investigation of the problems at the junction in Section 4 it was noted that an improvement scheme would be required at A426/A4071 Avon Mill/Hunters Lane to address these issues. In order to focus the scheme and ensure maximum benefit to the area, a series of draft high-level scheme objectives were developed and discussed with Stakeholders at a workshop. This workshop highlighted the importance of aligning scheme objectives with national, regional, sub-regional and local transport policies such as the MRN and Midlands Connection Regional objectives.

In addition to this, these objectives were informed by the existing issues identified in Section 4. The study objectives are identified as follows:

1. Promote active travel opportunities in the local area by upgrading facilities for both pedestrians and cyclists;
2. Improve network resilience in the local area;
3. Improve road safety for all users;
4. Improve public transport journey times;
5. Manage future corridor demands and facilitate key growth sites; and
6. Support local climate emergencies and Net-Zero targets.

Figure 5-2 illustrates how each of the scheme objectives tackle the current problems identified in Section 4. This figure demonstrates that the majority of the objectives identified address more than one of the issues at the scheme.

Figure 5-2 - Issues versus Objectives



In response to comments provided by the DfT following the submission of the SOBC to 'clearly show how the scheme objectives align with national, regional and local policies and strategies', Table 5-1 provides an indication of how the scheme objectives support both the MRN Objectives and Midlands Connect Regional Objectives. Three ticks for an outcome objective demonstrates a strong alignment to either an MRN or Midlands Connect Regional objective, two ticks a moderate alignment and one tick a slight alignment.

Table 5-1 - Scheme Objectives

Outcome objective	MRN Objectives					Midlands Connect Regional Objectives						
	Reduce congestion	Support economic growth and rebalancing	Support housing delivery	Support all road users	Support the Strategic Road Network	Be ready for HS2 to exploit the economic and regeneration potential objectives identified	Provide journey times reliability to Midlands businesses	Enable population and employment growth	Provide seamless pan regional journeys	Enhance quality of life of Midlands residents	Contribute to reaching Net Zero by 2050	Minimise the impact on the environment from providing new infrastructure
Promote active travel opportunities in the local area by upgrading facilities for both pedestrians and cyclists				✓✓✓					✓	✓✓	✓✓✓	✓✓
Improve network resilience in the local area	✓✓✓	✓	✓	✓	✓	✓	✓✓✓	✓	✓✓✓	✓	✓	
Improve road safety for all users	✓			✓	✓✓		✓✓		✓			
Improve public transport journey times	✓	✓	✓	✓✓			✓✓	✓✓	✓	✓✓		
Manage future corridor demands and facilitate key growth sites	✓✓	✓✓	✓✓✓	✓	✓	✓	✓✓	✓✓	✓	✓		
Improve air quality and noise levels to support local climate emergencies and Net-Zero targets	✓			✓✓						✓	✓✓✓	✓

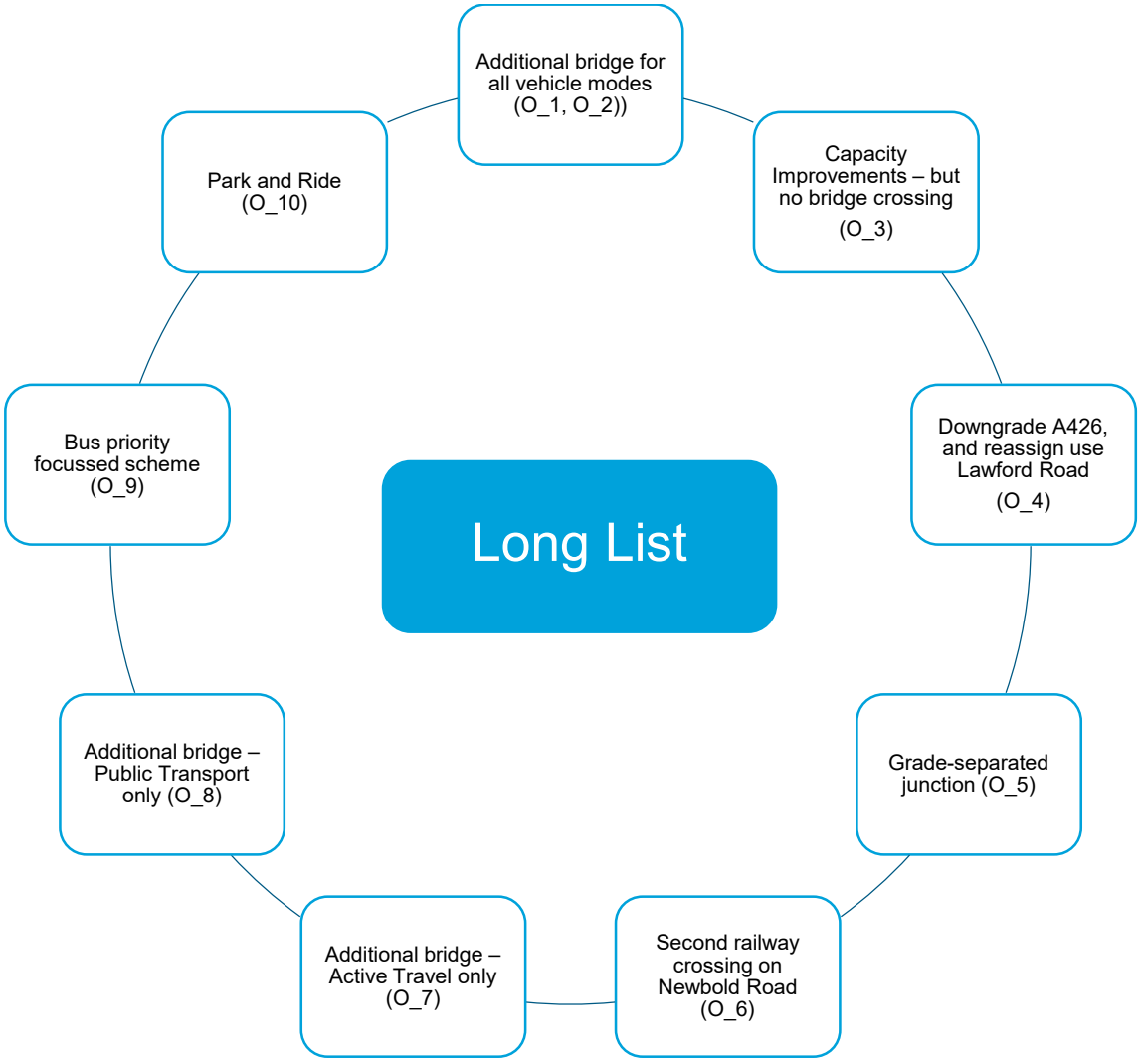
5.2.2. Options Identification and Long List of Options

The option identification process adopted a clear aim of seeking out interventions which had the potential to support the achievement of the outcome objectives. To support the development of this long-list a range of techniques were employed:

- A review of the study area and its constraints;
- An internal 'brainstorming' workshop with members of the Atkins study team; and
- A workshop with key external stakeholders (undertaken on the 6th July 2022) focussing on the constraints, objectives and long list.

A summary of the long list of options is presented in Figure 5-3.

Figure 5-3 - Long list of options



In addition to the long list noted above, variations of a potential scheme were added for the 'Additional bridge for all movements option'. These variations take account of the initial long list developed as part of the SOBC submission in 2019 and are provided in Table 5-2.

Table 5-2 - Additional bridge for all movements - option variations

Option Name	Option Description
O_1A	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_1B	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_1C	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O2_A	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O2_B	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O2_C	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge

5.3. Options Sifting (Task 3)

Guidance in TAG states that it is possible that some options identified in the option generation process do not represent sensible solutions, and as such a sifting process has been employed to select the most suitable option. The process involves discarding options that:

- Would clearly fail to meet the scheme 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 in that they are unlikely to be:
  - 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;
  - Technically sound;
  - Financially affordable; and
  - Acceptable to stakeholders and the public

Initially there were fifteen options identified as part of the long list of options, these options were sifted against a series of outcome objectives, as identified in Section 5.2 following the principles of the Department for Transport's (DfT) Early Appraisal Sifting Tool (EAST). The sifting criteria aligned with the following themes:

- Public Transport;
- Environment;
- Strategic Growth;
- Active Travel; and
- Network Management.

As part of the sifting process, each of the options was subject to a qualitative assessment and were scored on a five-point scale to assess the options against each of the objectives established for the scheme. This scoring criteria is summarised in Table 5-3.

Table 5-3 - Option Sifting Scoring Criteria

Score	Rating	Description
+2	Strongly positive	Strong support of scheme objective
+1	Positive	Support of scheme objective
0	Neutral	Neither supports nor opposes scheme objective
-1	Adverse	Opposes scheme objective
-2	Strongly adverse	Strongly opposes scheme objective

Following the initial sifting of the long list of options, thirteen were removed as they were assessed to be incompatible with the criteria and scheme objectives. Table 5-4 shows that highway focussed improvements were best aligned to the scheme objectives with all interventions associated with the additional bridge for all vehicle movements being strongly aligned with active travel, public transport, environment and strategic growth objectives.

Highway improvements associated with the additional bridge for all movements which included an elliptical roundabout at the A426 Newbold Road/Hunters Lane junction or a signalised junction at the A426 Newbold Road/Hunters Lane junction were removed from the option identification process at this stage due to scoring poorly in Network Management resulting from stakeholder safety concerns. This resulted in two scheme options being taken forward to the short list for further assessment.

Further details on the sifting process are provided in Appendix D.

Table 5-4 – Long list sifting

Option Name	Active Travel	Network Management		Public Transport	Environment	Strategic Growth	Strategic scoring average
	Promote active travel opportunities in the local area by upgrading facilities for both pedestrians and cyclists	Improve road safety for all users	Improve network resilience in the local area	Improve public transport journey times	Support local climate emergencies and Net-Zero targets	Manage future corridor demands and facilitate key growth sites	
Do Nothing	-2	-2	-2	-2	-2	-2	-2
Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	-1	2	1	1	2	1
Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	2	2	1	1	2	2
Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	-1	2	1	1	2	1
Additional bridge for all vehicle movements + Avon Mills Signal Junction + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	-1	2	1	1	2	1
Additional bridge for all vehicle movements + Avon Mills Signal Junction + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	2	2	1	1	2	2
Additional bridge for all vehicle movements + Avon Mills Signal Junction + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	-1	2	1	1	2	1
Capacity improvements on the approach to Avon Mill but no bridge crossing	0	1	0	1	0	1	1
Downgrade A426, and reassign use to Lawford Road	1	0	-1	0	-1	0	0
Grade separated junction at Avon Mill roundabout	-2	0	0	0	0	1	0
Provide a second tunnel at the railway crossing on A426 Newbold Road	0	0	1	0	0	1	0
Additional bridge over the River Avon for active travel only	2	1	0	0	2	1	1
Additional bridge over the River Avon for public transport only	0	0	1	2	2	1	1
Bus priority focussed scheme	0	0	0	2	2	1	1
Park and Ride	0	0	0	1	2	0	1

5.3.1. Short List of Options

Following the initial sifting of the long list of options two scheme options formed the short list, these included:

1. O_1B – Additional bridge for all vehicle movements with an enlarged roundabout at Avon Mill and an Oval roundabout at the Newbold Road/Hunters Lane junction along with the proposed footway/cycle bridge; and
2. O_2B - Additional bridge for all vehicle movements with signalised junction at Avon Mill and an Oval roundabout at the Newbold Road/Hunters Lane junction along with the proposed footway/cycle bridge.

The shortlisted options are described in more detail in Table 5-5.

Table 5-5 - Shortlisted options elements

Option reference	Description
O_1B	• Widen entry arms of Avon Mill roundabout to three lanes; • Widen the A426 Newbold Road roundabout exit to two lanes; • New bridge over the River Avon to form a dual carriageway; • New enlarged toucan pedestrian and cyclist crossing on the A426 Leicester Road before the roundabout; • New roundabout junction at Newbold Road/Hunters Lane with a two-lane entry on all approaches • Provision of additional access to the former Avon Mill Inn site and adjoining properties off the new roundabout - this arrangement has since been replaced by a proposed new left-in/left-out only access junction on the A426 Newbold Road southbound carriageway in response to comments from WCC Safety Engineering.
O_2B	• New traffic-signalised junction to replace the Avon Mill roundabout with a four-stage signal plan; • Widen junction approaches to three lanes; • New bridge over the River Avon to form a dual carriageway; • New signalised pedestrian and cyclist crossing on the A426 Leicester Road incorporated into the signal design; • New roundabout junction at Newbold Road/Hunters Lane with two-lane entry on all approaches. • Provision of additional access to the former Avon Mill Inn site and adjoining properties off the new roundabout - this arrangement has since been replaced by a proposed new left-in/left-out only access junction on the A426 Newbold Road southbound carriageway in response to comments from WCC Safety Engineering.

In order to aid the identification of a single, preferred option, traffic modelling was undertaken on this short list utilising the Rugby Wide Area S-Paramics Model. The results of this assessment are detailed in Section 5.4.

5.4. Short List Assessment (Task 4)

In the previous submission, testing was undertaken in the Leicester Road Paramics Discovery model. However, this model did not allow for the consideration of the wider impacts of scheme proposals. As such, the latest testing of the two shortlisted schemes has been undertaken in the Rugby Wide Area (RWA) model.

The assessment of the scheme has been undertaken in the 2026 RWA Reference Case model. Further details on the selection and use of the model can be seen in Appendix B.

The performance of each option was assessed against the key performance measures listed below:

- Network Mean Delay – the average delay for all vehicles within the model network;
- Total Completed Trips – The average total number of trips recorded as having been completed within the model period;
- Network Mean Speed – the average speed of all vehicles that complete a trip within the model period;
- Average Journey Time – the average time taken to travel along a predefined route through the model;

- Queue length – the average maximum queue lengths recorded at each of the junction approached within the peak hours; and
- Bus travel time – the average time taken to travel along a predefined bus route through the model.

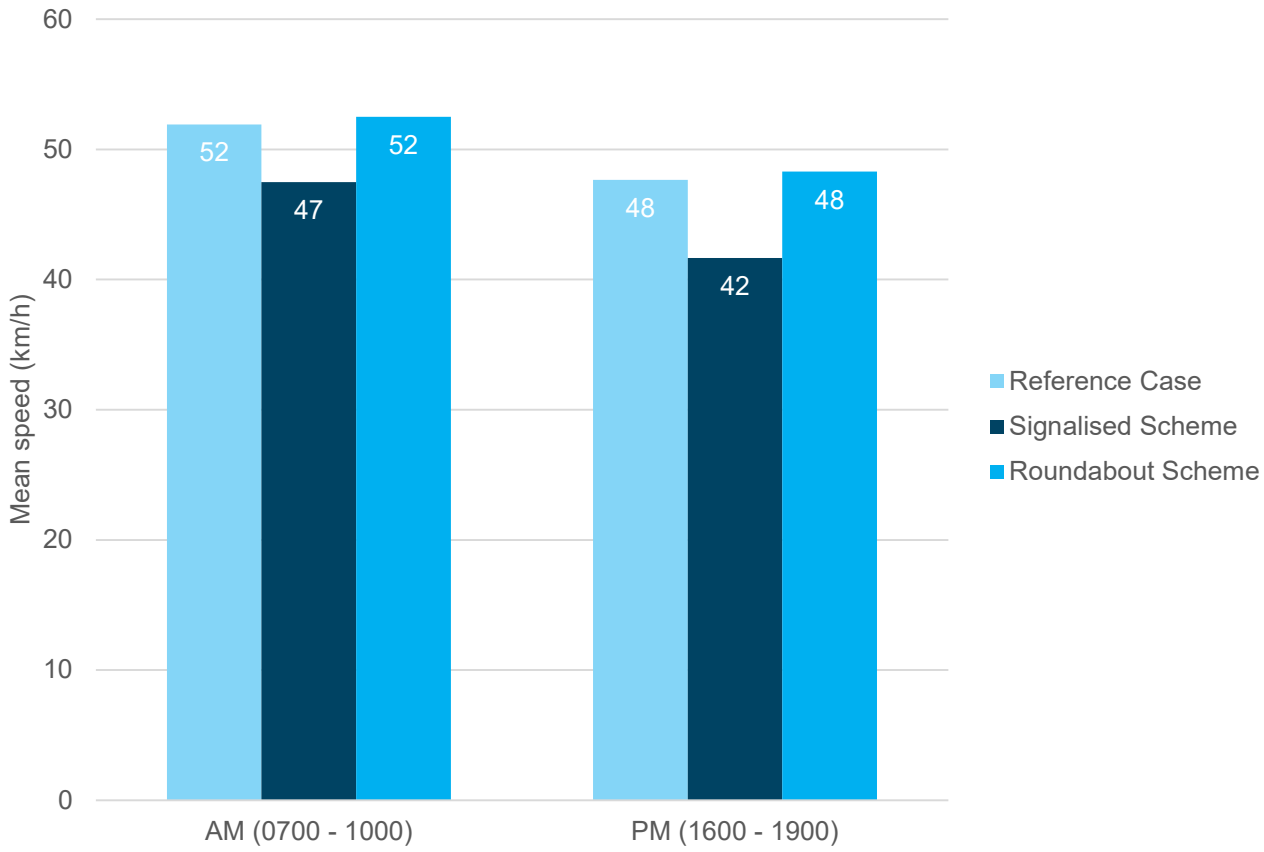
For the purpose of this modelling assessment O_1B will be referred to as the Roundabout scheme and O_2B will be referred to as the Signalised scheme.

5.4.1. Network Wide Statistics

5.4.1.1. Network Mean Speed

Figure 5-4 presents the average network journey speed for the AM and PM periods in the Reference Case, Roundabout scheme, and the Signalised scheme scenarios. The graph shows that under the Signalised scheme there is a decrease in network mean speed of up to 6km/h when compared to the Reference Case whilst the Roundabout scheme will result in network mean speed remaining the same as in the Reference Case.

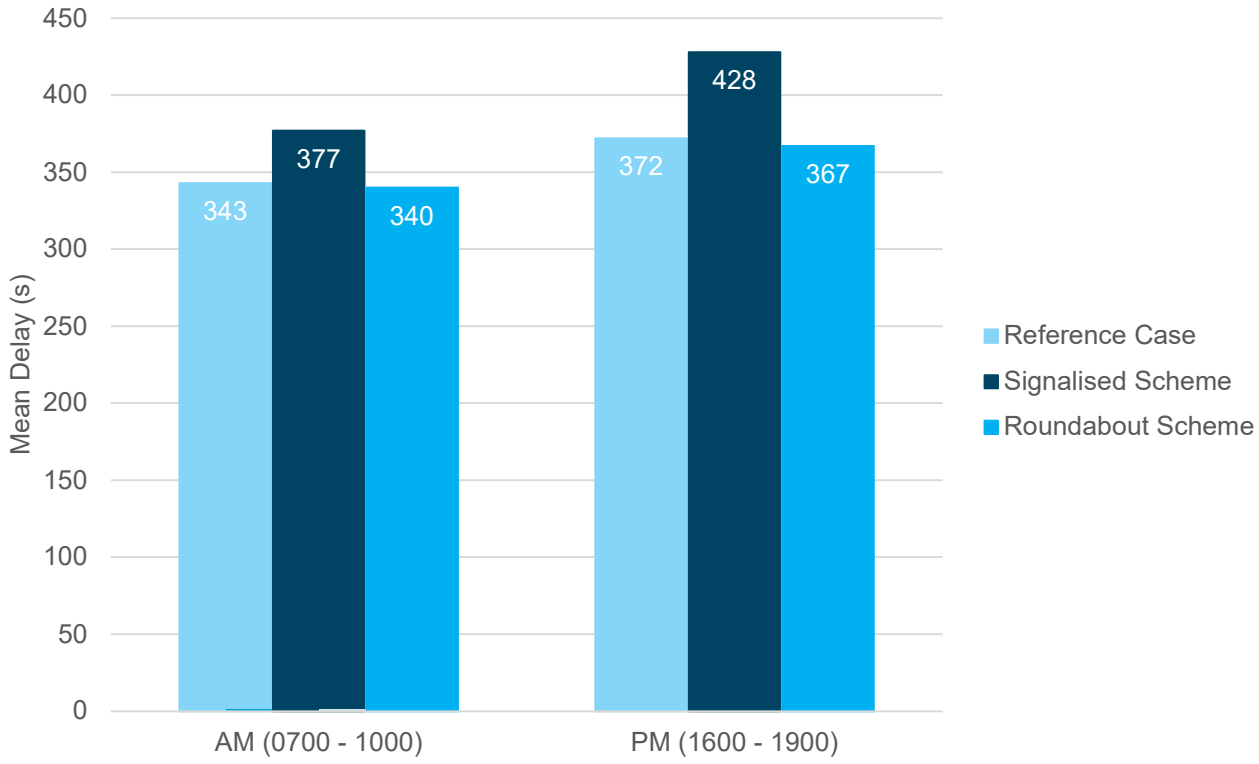
Figure 5-4 - 2026 Network Mean Speed (km/h)



5.4.1.2. Network Mean Delay

The Network Mean Delay is shown in Figure 5-5, this illustrates a worsening of network conditions in the Signalised scheme as the model has predicted a 34 second increase in delay when compared to the Reference Case in the AM peak and a 56 second increase in delay in the PM peak. On the other hand, the Roundabout Scheme is predicted to result in a 3 second improvement in the AM period when compared to the Reference Case and a 5 second improvement in the PM period.

Figure 5-5 - Network Mean Delay (s)



5.4.1.3. Average Network Journey Time

Figure 5-6 and Figure 5-7 present the average network journey time for the AM and PM periods on the approaches to the Avon Mill roundabout for the Reference Case, Roundabout scheme and Signalisation scheme. The graphs show that the average network journey times are significantly higher in the Signalised scheme compared to both the Reference Case and the Roundabout scheme. The results indicate that for the Signalised Scheme there are journey time increases on all approaches in both the AM and PM peak of between 341 seconds (A4071 Newbold Road approach in the PM peak) and 171 seconds (A426 Newbold Road approach in the PM peak).

Figure 5-6 - 2026 Average Journey Time (seconds) – AM Peak

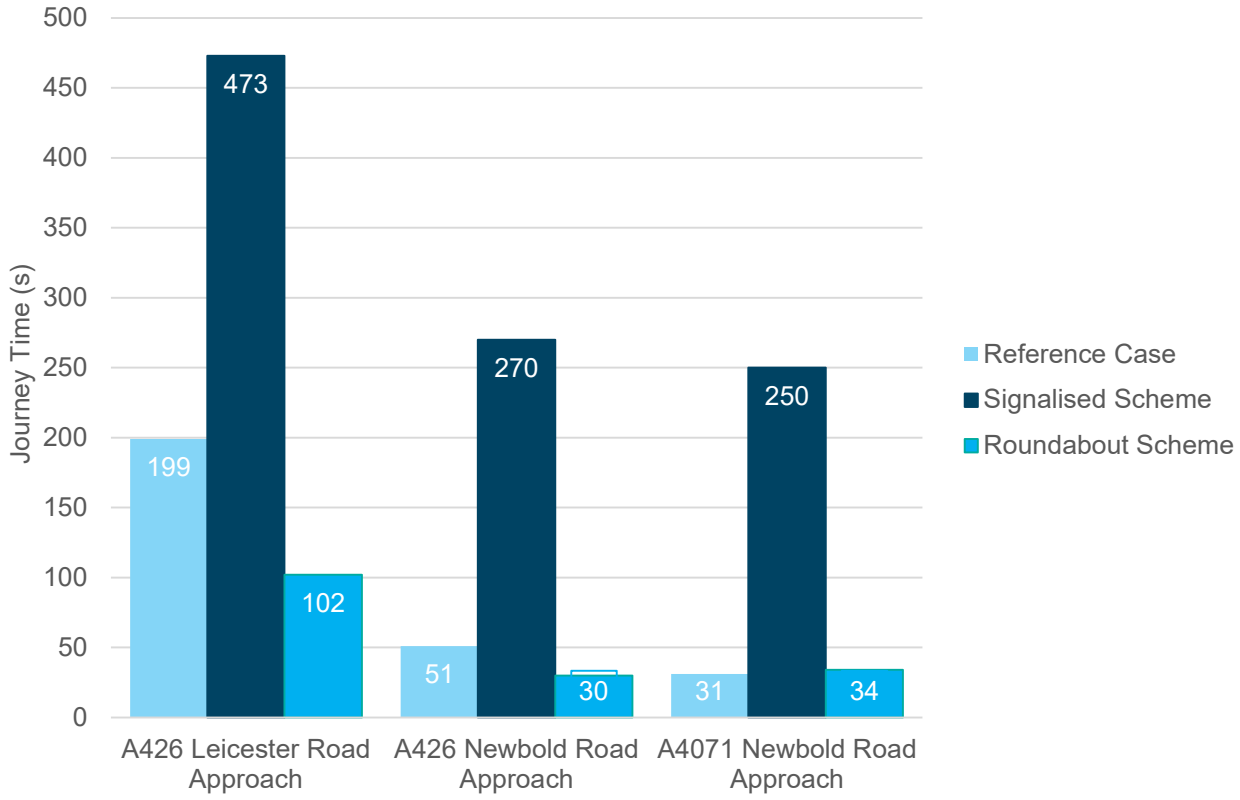
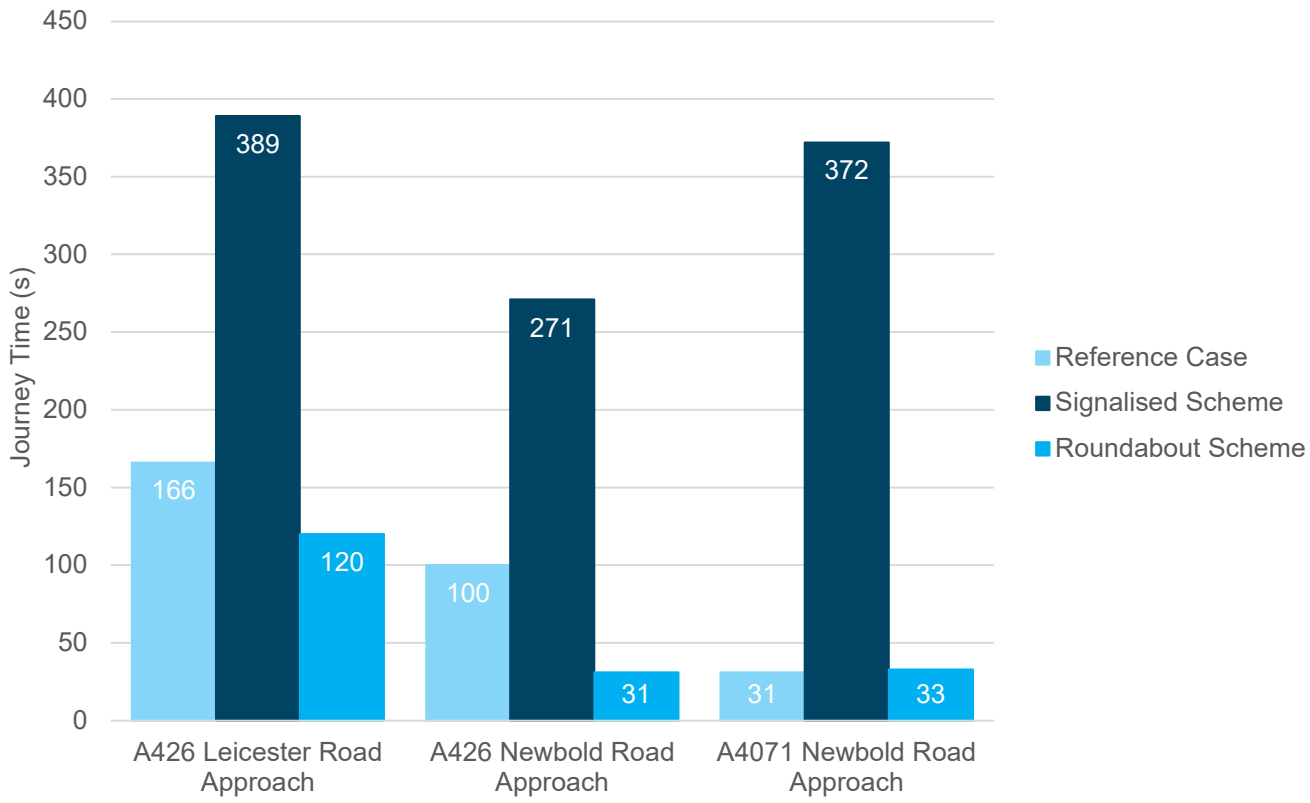


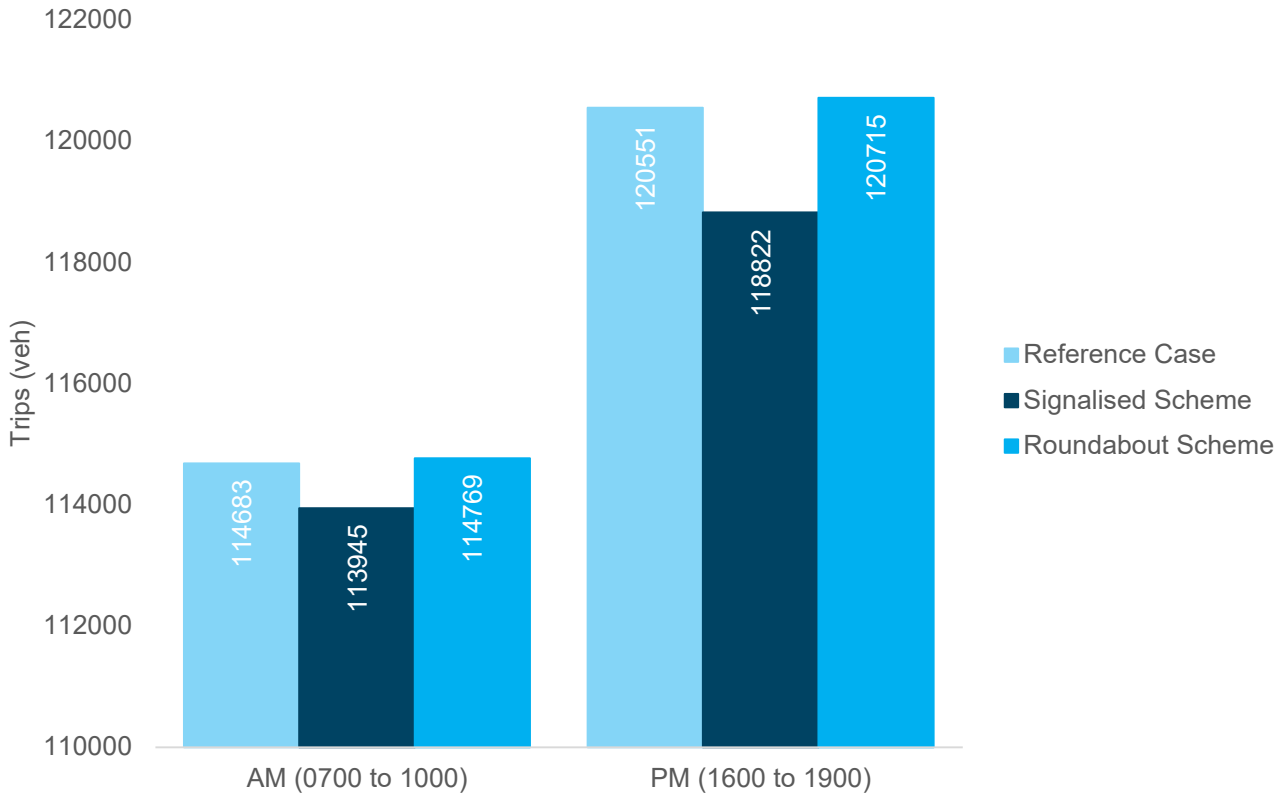
Figure 5-7 - 2026 Average Journey Time (seconds) - PM Peak



5.4.1.4. Completed Network Trips

Figure 5-8 presents the total number of completed network trips for the AM and PM periods for the Reference Case, Roundabout Scheme, and Signalised Scheme scenarios. The graph shows that there is forecast to be an increase in the total number of completed trips in both the Reference Case and the Roundabout Scheme. In addition to this there is expected to be fewer trips on the Signalised Scheme when compared to the Reference Case and Roundabout Scheme. This suggests that the Roundabout scheme accommodates more trips than the other scenarios by offering additional capacity.

Figure 5-8 - 2026 Completed Trips - Vehicles



5.4.2. Queuing

Queue routes were defined within the model for each of the three approaches of both Avon Mill roundabout and A426/Hunters Lane Junction. The results indicate that the Signalised scheme significantly increases the queues on each approach to the Avon Mill roundabout whilst the Roundabout scheme reduces these in most cases. This demonstrates that the Roundabout scheme is predicted to deliver an improvement in localised network conditions.

5.4.2.1. Avon Mill Queuing

Figure 5-9 presents the forecast AM peak period average maximum queue length by approach to the Avon Mill roundabout. The graph shows that the queue lengths on each arm of the Avon Mill roundabout are forecast to reduce under the Roundabout scheme on all arms except the A4071 Newbold Road arm, where there is no material increase in comparison to the Reference Case scenario. The Signalised scheme is forecast to result in an increase in queue lengths on all arms of the Avon Mill roundabout in the AM period.

Figure 5-9 - Avon Mill Roundabout, 2026 AM Peak Period (0700-1000) - Average Maximum Queue Length, Vehicles

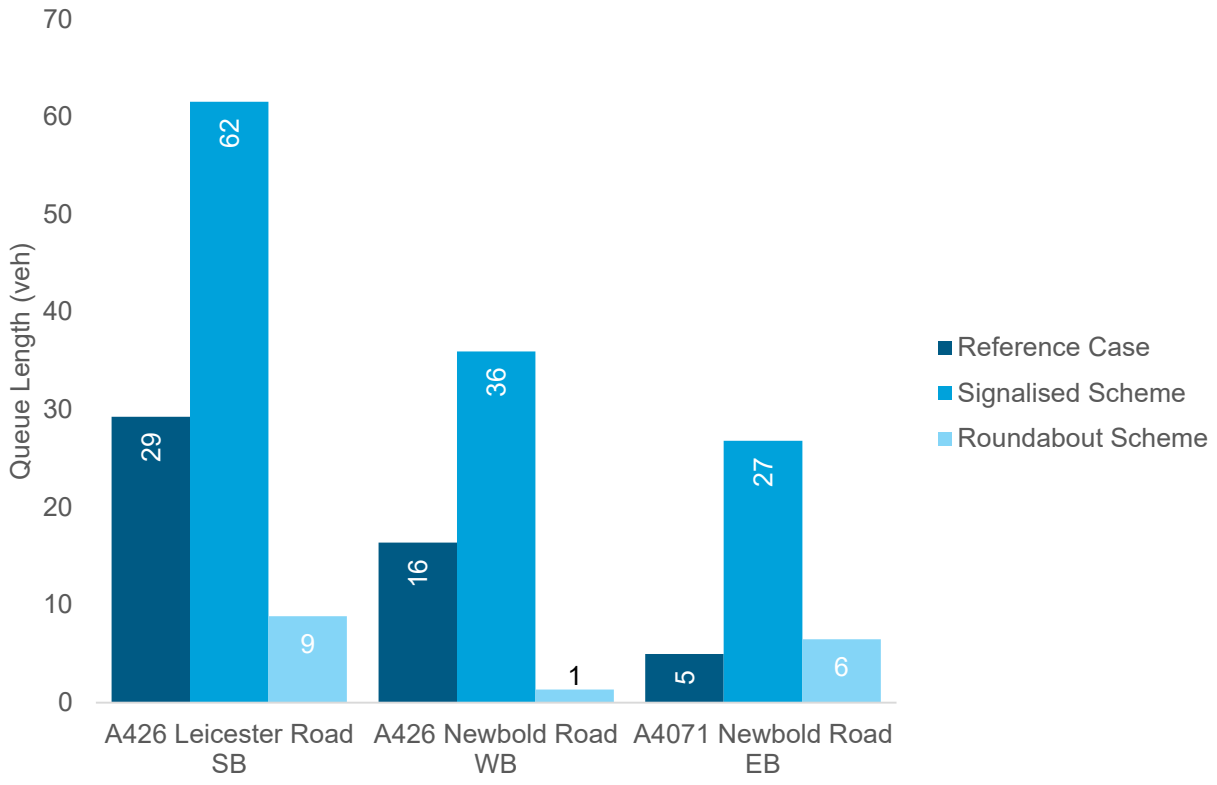
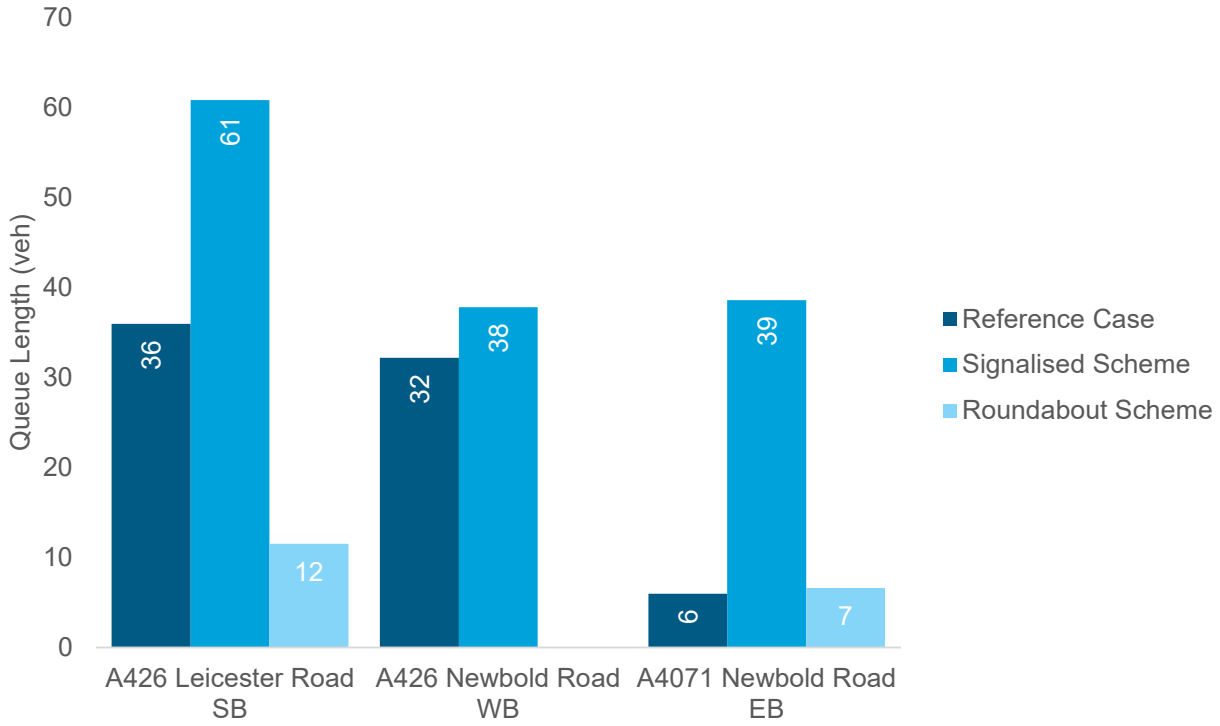


Figure 5-10 presents forecast PM peak hour average maximum queue length by approach to the Avon Mill roundabout. The graph shows that the queue lengths on each arm of the Avon Mill roundabout are forecast to reduce under the Roundabout Scheme for all approaches with the exception of the A4071 Newbold Road approach where there is no material increase. Similar to the AM forecasts, the Signalised scheme is forecast to result in an increase in average maximum queue length on all arms.

Figure 5-10 - Avon Mill Roundabout, 2026 PM Peak Period (1600-1900) - Average Maximum Queue Length, Vehicles



5.4.2.2. A426/Hunters Lane Queuing

Figure 5-11 presents the forecast AM peak period average maximum queue length by approach to the A426/Hunters Lane Junction. The graph shows that the impacts of the schemes vary dependant on the approach, the greatest impact of the schemes tested are on the A426 Newbold Road northbound approach which leads towards the Avon Mill roundabout, this approach has the greatest queue length in the Reference Case. Under the Signalised scheme there is expected to be an increase in queue length, to 20 vehicles, whereas under the Roundabout scheme there is expected to be a reduction in queue length, to 3 vehicles.

Figure 5-11 - A426/Hunters Lane, 2026 AM Peak Period (0700-1000) – Average Maximum Queue Length, Vehicles

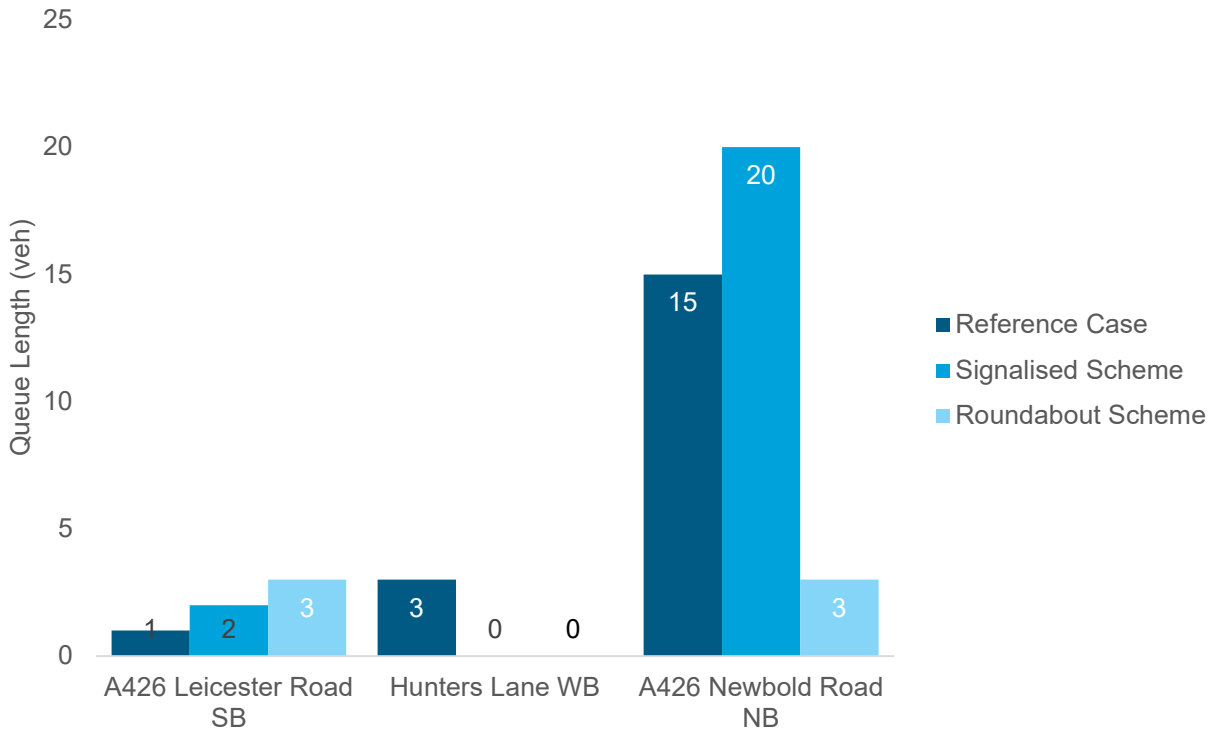
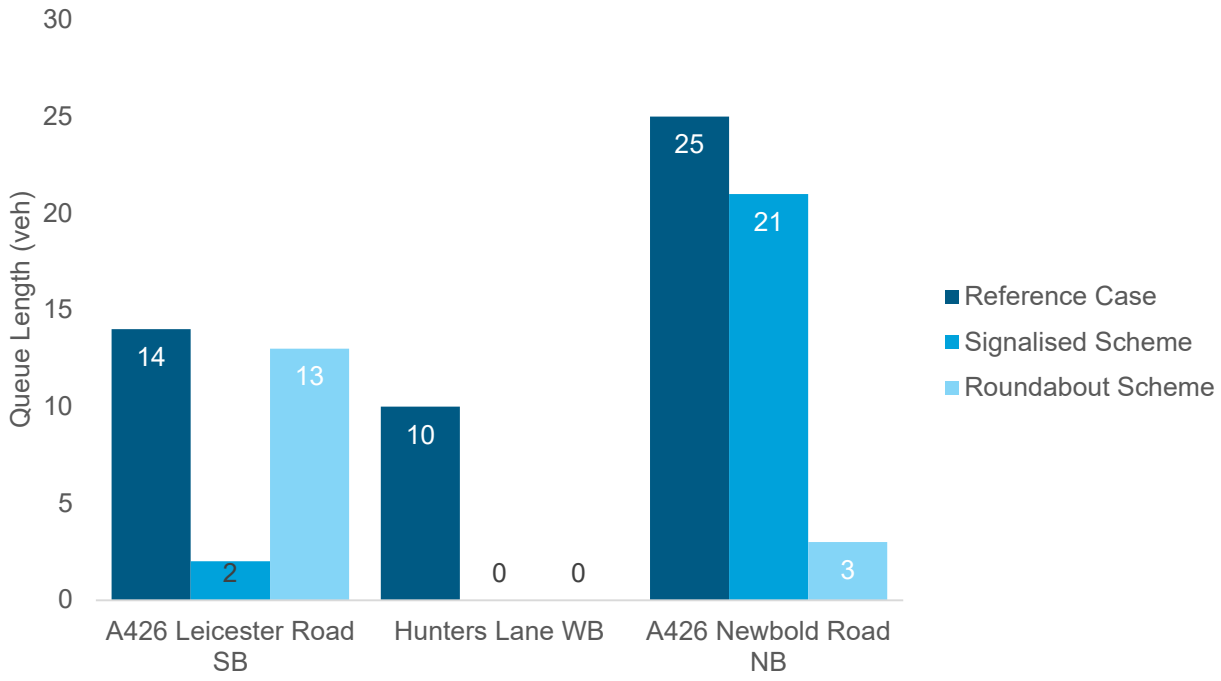


Figure 5-12 presents the forecast PM peak period average maximum queue length by approach to the A426/Hunters Lane Junction. Similar to the AM forecasts, the greatest impact on average maximum queue length is on the A426 Newbold Road northbound approach where the Roundabout scheme leads to a reduction in average maximum queue length of 22 vehicles.

Figure 5-12 - A426/Hunters Lane, 2026 PM Peak Period (1600-1900) - Average Maximum Queue Length, Vehicles



5.4.3. Modelling Summary

The results of the modelling summary indicate that the Roundabout scheme (O_1B) is the best performing option tested, with the scheme reducing network wide journey times, along with localised queue lengths and journey times. On the other hand, the results indicate that the signalised scheme leads to increase journey times and queues and therefore is likely to result in a deterioration of the network.

5.4.4. Active Travel Summary

In addition to the highway benefits, both of the shortlisted options provide benefits to active travel within Rugby. The proposed segregated foot/cycleway and bridge will provide a high-quality link allowing non-motorised users to travel safely away from the main highway and will provide links from the north of Rugby to the south, including areas such as Rugby Station and Rugby Town Centre. In addition to this, the proposed enlarged Toucan Crossing will provide a signalised crossing over the A426 Leicester Road which will ensure that pedestrians and cyclists can continue to cross safely.

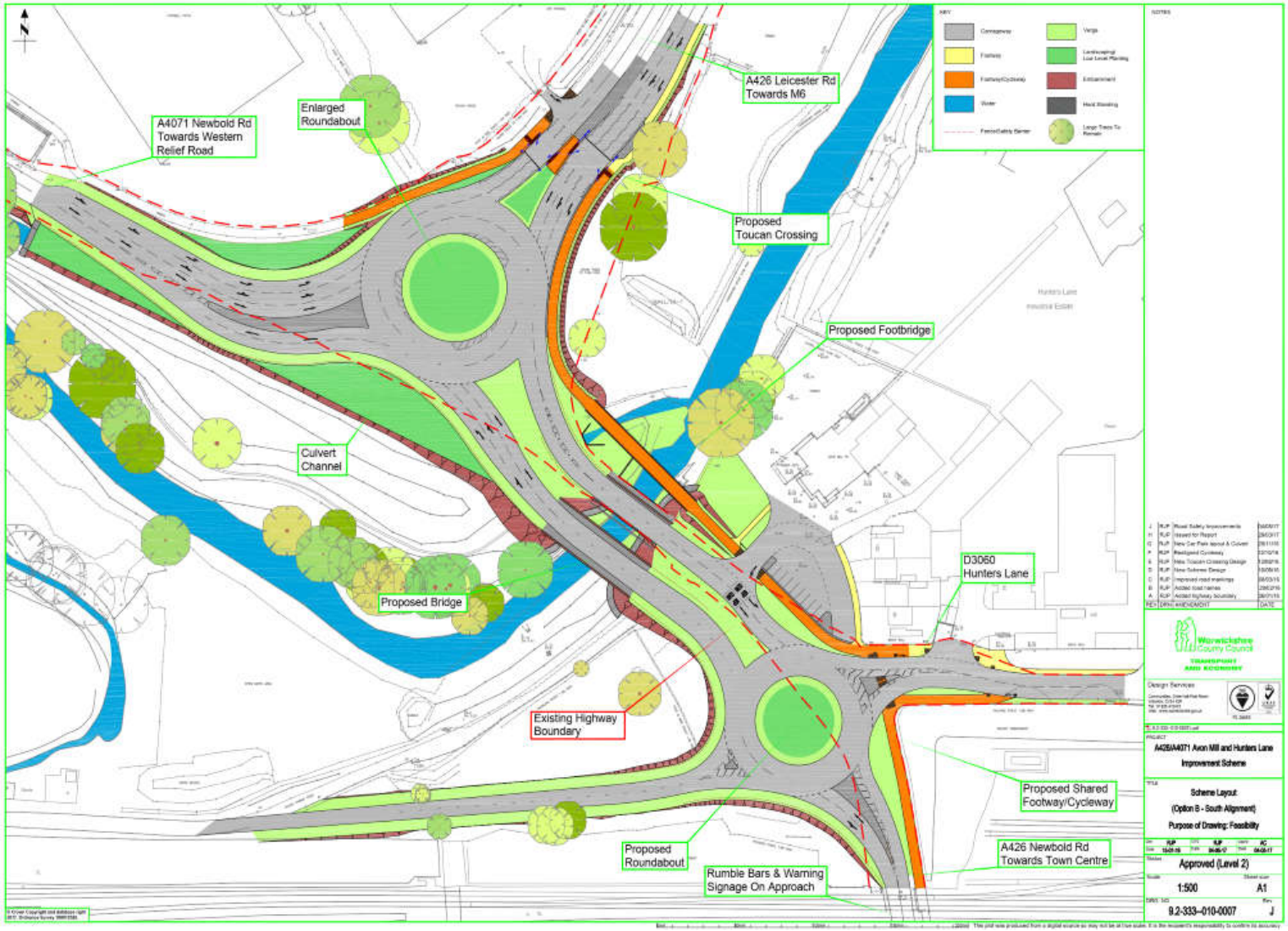
As is the case at the Avon Mill Roundabout, both of the shortlisted options provide an unsignalised crossing at the proposed oval roundabout on the link between Newbold Road/Hunters Lane. Therefore, when analysing the benefits of the schemes to active travel users, both of the shortlisted options will provide the same standard of facilities which are improvements on the current situation. As such, selection of the preferred option will be based upon the findings of the modelling.

6. Preferred option

As indicated in Section 5.4.3, the preferred option to improve Avon Mill roundabout and Newbold Road/Hunters Lane junction was identified as the Roundabout scheme(O_1B). The preferred scheme is illustrated in Figure 6-1, this scheme consists of the following elements:

- Enlargement of the existing Avon Mill roundabout;
- Widening all the Avon Mill roundabout entry arms to three lanes;
- Provision of new or improved two-lane exits on the A426 and A4071 Newbold Road;
- Replacement of the existing A426 Newbold Road/Hunters Lane priority junction with a new roundabout with a two-lane entry for the A426 northbound and southbound approaches;
- Construction of a short length dual carriageway to connect the two roundabouts including a new bridge over the River Avon (south of existing bridge) to provide additional entry and exit capacity at Avon Mill;
- Enlarged Toucan crossing facilities on the A426 Leicester Road;
- New segregated foot/cycleway and bridge parallel to the existing River Avon bridge; and
- New left-in/left-out access junction to former Avon Mill Inn site and adjacent residential properties off the proposed new A426 Newbold Road southbound carriageway.

Figure 6-1 - Preferred Option Design



6.1. Preferred Option testing

Following the selection of the preferred option, further modelling was undertaken to understand the impact of the 'with scheme' scenario in comparison with the Reference Case.

The subsequent sections provide further assessment of the scheme impacts on Public Transport and Carbon Emissions.

6.1.1. Public Transport Impacts

The following tables provide an analysis of the cumulative bus travel time on the three bus routes which pass through the Avon Mill roundabout.

Cumulative bus travel time is calculated by taking all buses on each route and aggregating the individual bus journey times to give the total time for the route.

Table 6-1 - Bus Journey Time Impacts (0700-1000)

Route	Average Number of Completed Bus Trips in Model Period	Reference Case (hh:mm:ss)	With Scheme (hh:mm:ss)	Difference (mm:ss)
3a Circular	2	00:58:03	00:57:36	-00:27
X84 NB	2	00:22:33	00:21:16	-01:17
X84 SB	3	00:43:01	00:41:59	-01:02
85 NB	3	00:29:26	00:29:03	-00:23
85 SB	5	00:49:23	00:50:21	00:59

Table 6-1 indicates that in the AM period, all routes with the exception of 85 southbound experience improvements in average journey times with the scheme. The increase in cumulative journey time is likely due to increased throughput at the roundabout and increased congestion on the A426 south of the junction.

Table 6-2 - Bus Journey Time Impacts (1600-1900)

Route	Average Number of Completed Bus Trips in Model Period	Reference Case (hh:mm:ss)	With Scheme (hh:mm:ss)	Difference (mm:ss)
3a Circular	3	01:52:04	01:46:10	-05:55
X84 NB	2	00:26:30	00:24:13	-02:17
X84 SB	2	00:29:42	00:29:36	-00:06
85 NB	5	00:59:23	00:54:47	-04:37
85 SB	4	00:51:47	00:51:05	-00:41

Table 6-2 demonstrates that the impact in bus journey times is yet again positive with reductions in cumulative travel time up to 6 minutes in some cases. Therefore, the modelling which took place to understand the public transport impacts on the route indicate that the scheme leads to an improvement in average bus journey times. As such, the scheme is expected to meet the objective to increase public transport journey times, thereby making public transport a more attractive mode of transport.

6.1.2. Carbon Emissions Impact

In addition to the scheme specific bus impacts which were assessed, Vectos Microsim also undertook an assessment on the predicted impact on carbon emissions as a result of delivering the proposed scheme. These

impacts were assessed through a calculation of the Carbon Dioxide Equivalent (CO2e) value which would be generated as a result of the vehicle emissions generated by traffic within the model area.

The results of this calculation are illustrated in Table 6-3 which indicates that the scheme results in a reduction in KG CO2e emissions with the Roundabout scheme relative to the Reference Case.

Table 6-3 - Percentage change in kg CO2 equivalent by Vehicle Type

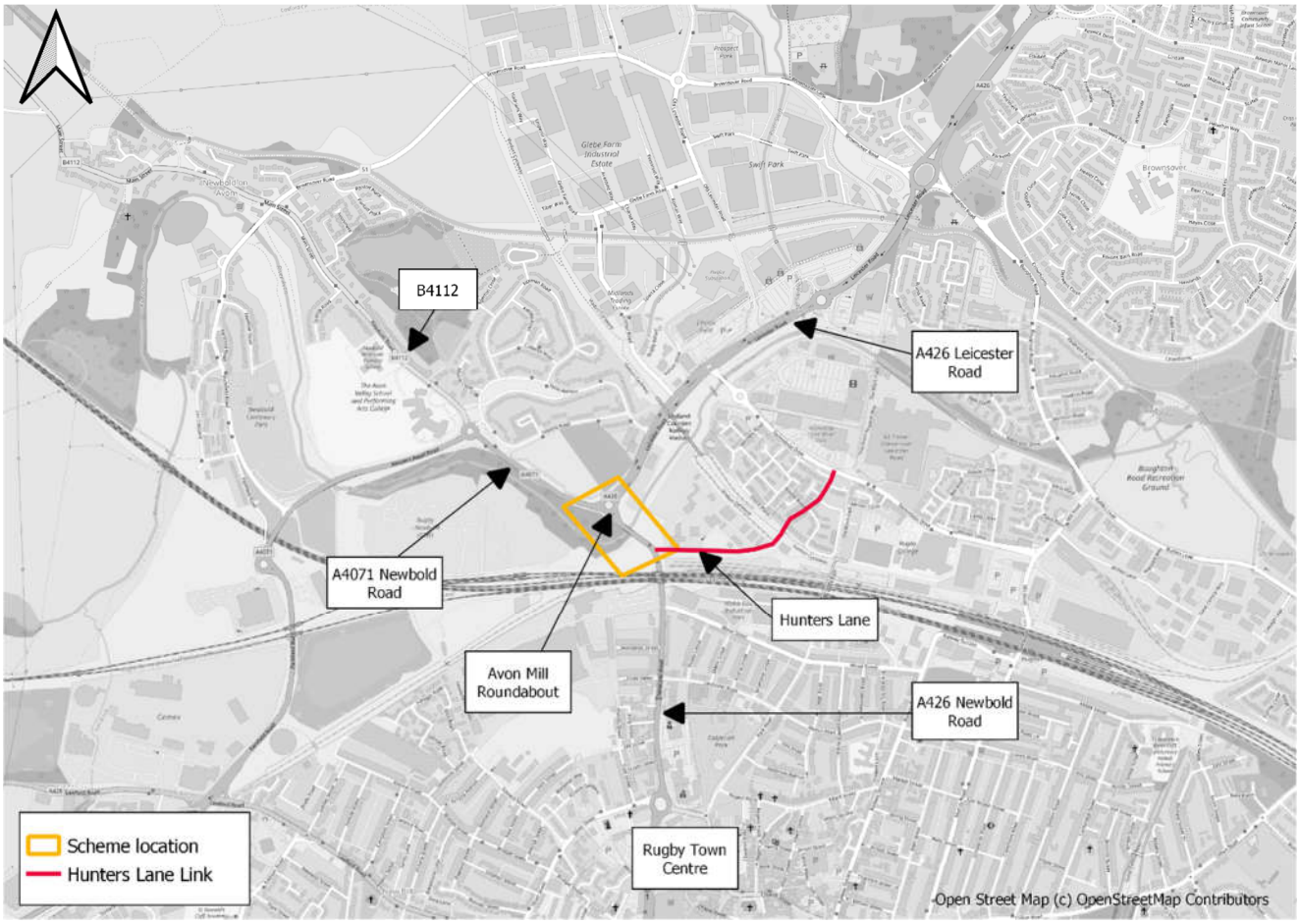
Scenario	Car	Van	HGV	Total
Percentage Change	-0.44%	-0.82%	-0.26%	-0.42%

Whilst a reduction in CO2e is predicted from a reduction in traffic emissions due to reduced congestion and improved journey times, it is anticipated that the segregated footway/cycleway will help lead to a modal shift and therefore result in further reductions in CO2e.

6.2. Sensitivity Testing

In addition to the modelling detailed above, a sensitivity test has been completed where the Hunters Lane link is delivered alongside the Roundabout scheme. A sensitivity test has been undertaken for the inclusion of this link as the deliverability is uncertain.

Figure 6-2 - Hunters Lane Link



6.2.1. Network Wide Statistics

Figure 6-3 and Figure 6-4 demonstrate the Network Mean Delay and Network Mean speeds for the scheme against the reference case, with and without the Hunters Lane link. These demonstrate that the inclusion of the Hunters Lane link provides an improvement on the reference case but also an improvement on the Roundabout Scheme without the Hunters Lane Link with a 1 second improvement in the AM and PM period.

Additionally, the inclusion of the Hunters Lane Link results in a 1 km/h increase in speed in the AM period.

Figure 6-3 - Network Mean Delay (s)

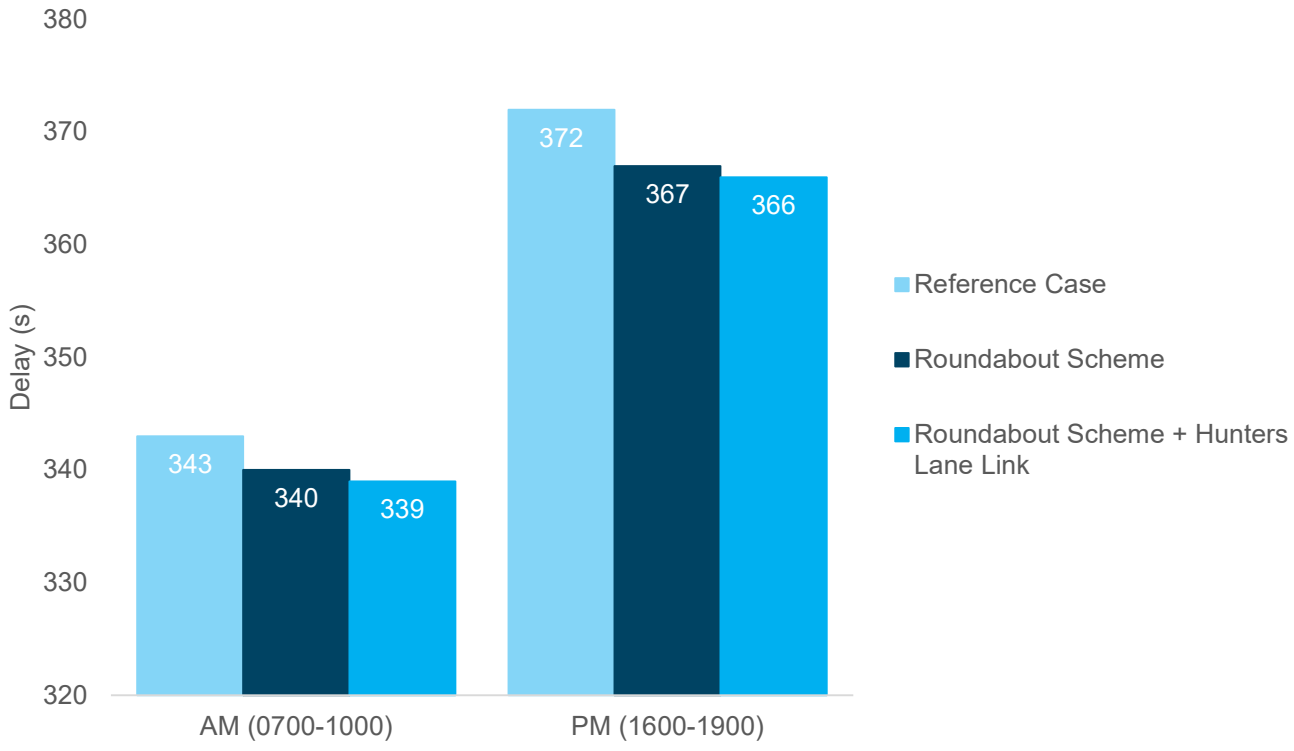
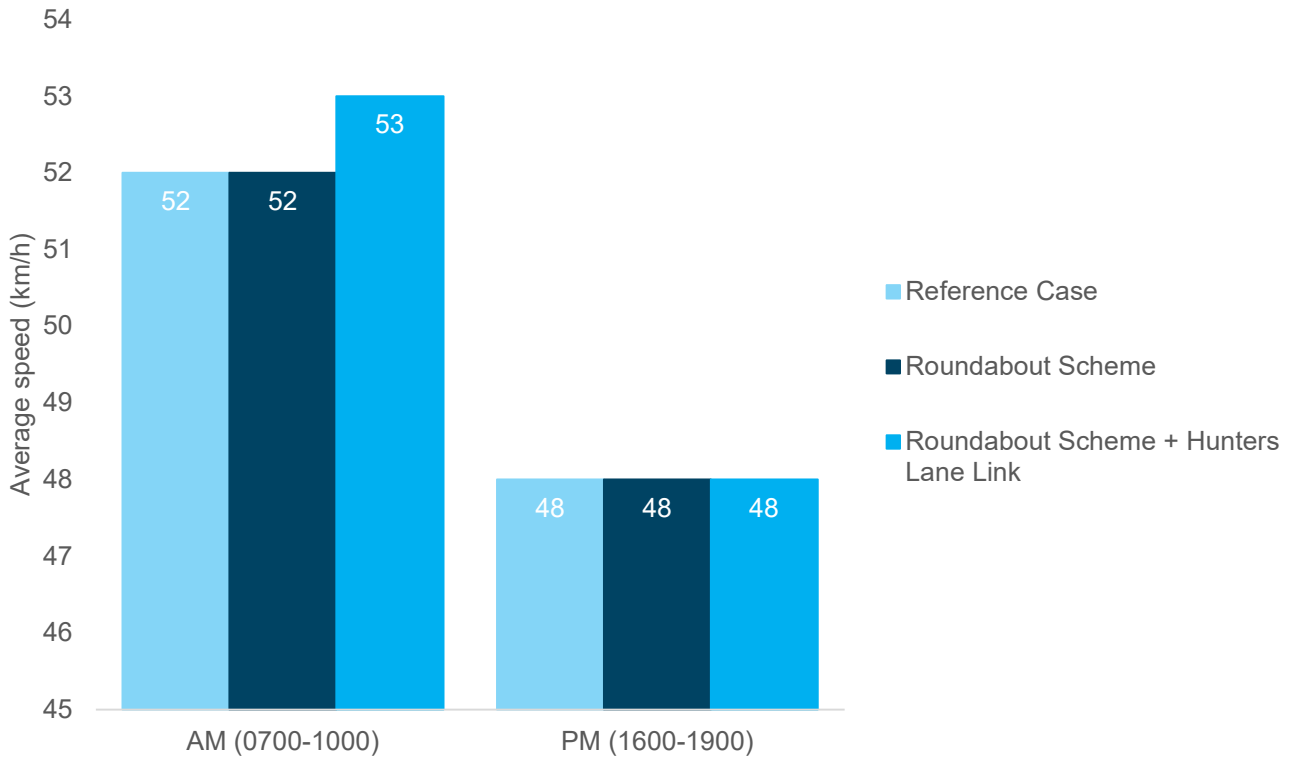


Figure 6-4 - Network Mean Speed (km/h)



6.2.2. Queue Results

Further to the network statistics presented above, queue benefits are illustrated in Figure 6-5 and Figure 6-6 for the approaches to the Avon Mill roundabout in the AM and PM peak periods.

Figure 6-5 - Queue Length (veh) - Avon Mill Roundabout (0700-1000)

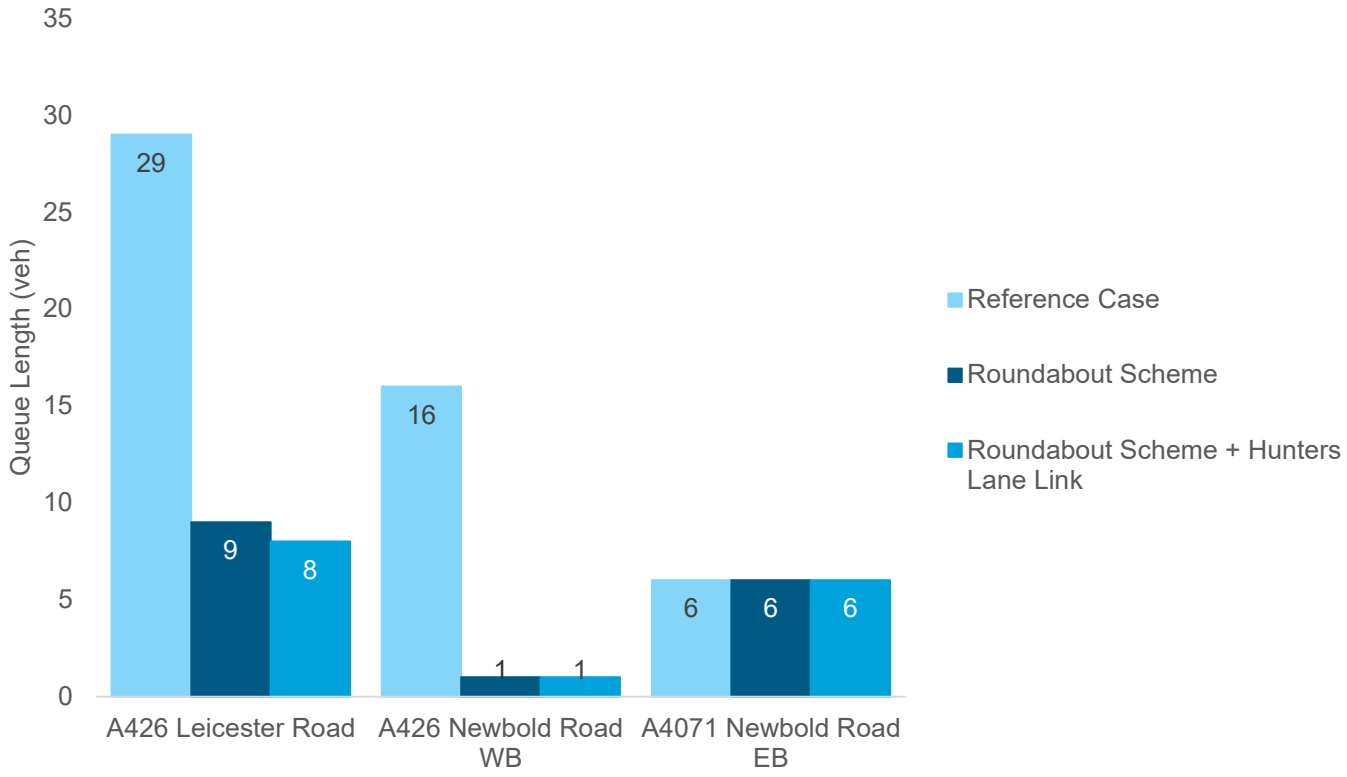
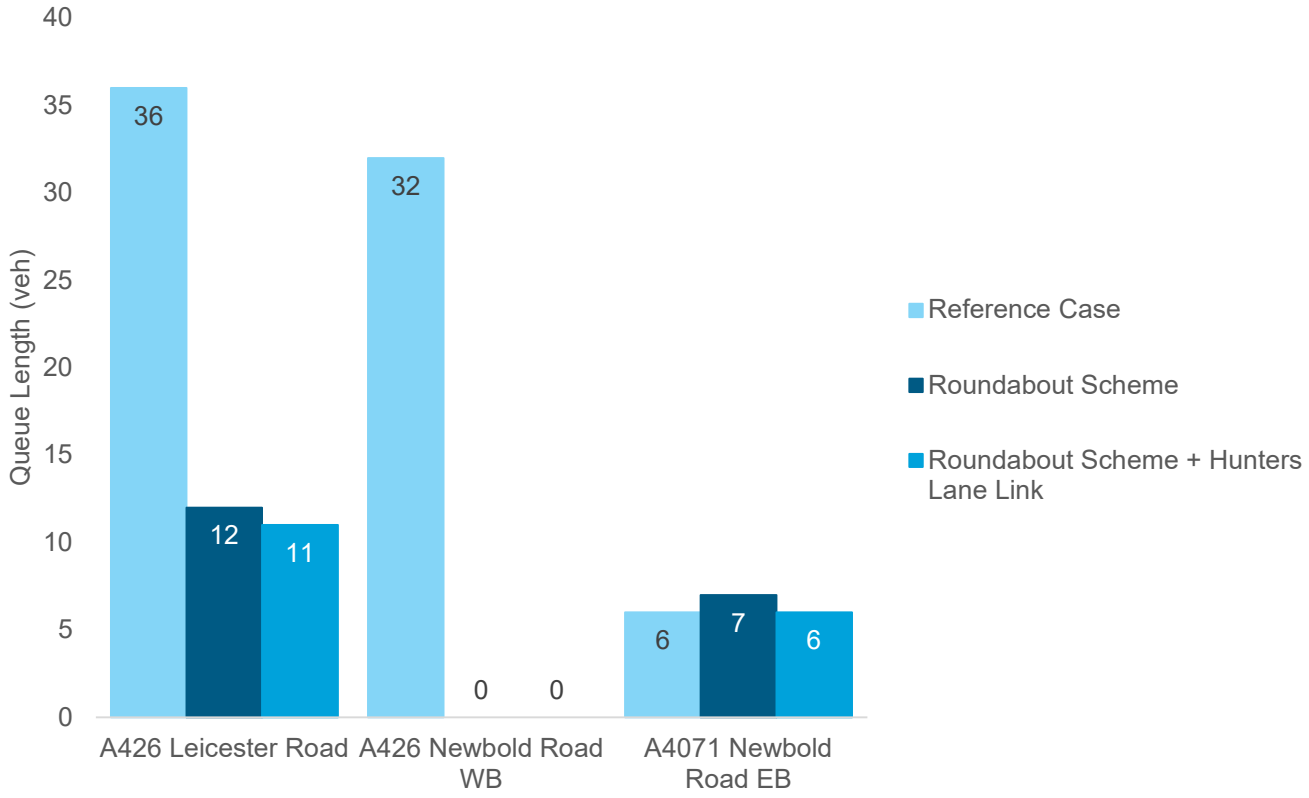


Figure 6-6 - Queue Length (veh) - Avon Mill Roundabout (1600-1900)



The results indicate that with the inclusion of the Hunters Lane Link in addition to the Avon Mill roundabout scheme, there is predicted to be an improvement on all arms with the exception of the A4071 Newbold Road arm where there is no impact, and that these reductions are in line with predictions made for the scheme without the Hunters Lane link.

6.2.3. Summary of preferred scheme modelling

Further testing on the preferred option found that the Roundabout scheme results in improved journey times and carbon emission equivalent thereby helping to meet the objectives of improved public transport journey times and reaching the net zero objective.

Ina addition to this the sensitivity tests demonstrate that the delivery of the Hunters Lane link is not a critical element of the scheme and that the significant benefits which result from the Roundabout scheme are not dependent on the Hunters Lane link being delivered.

7. Summary and Next Steps

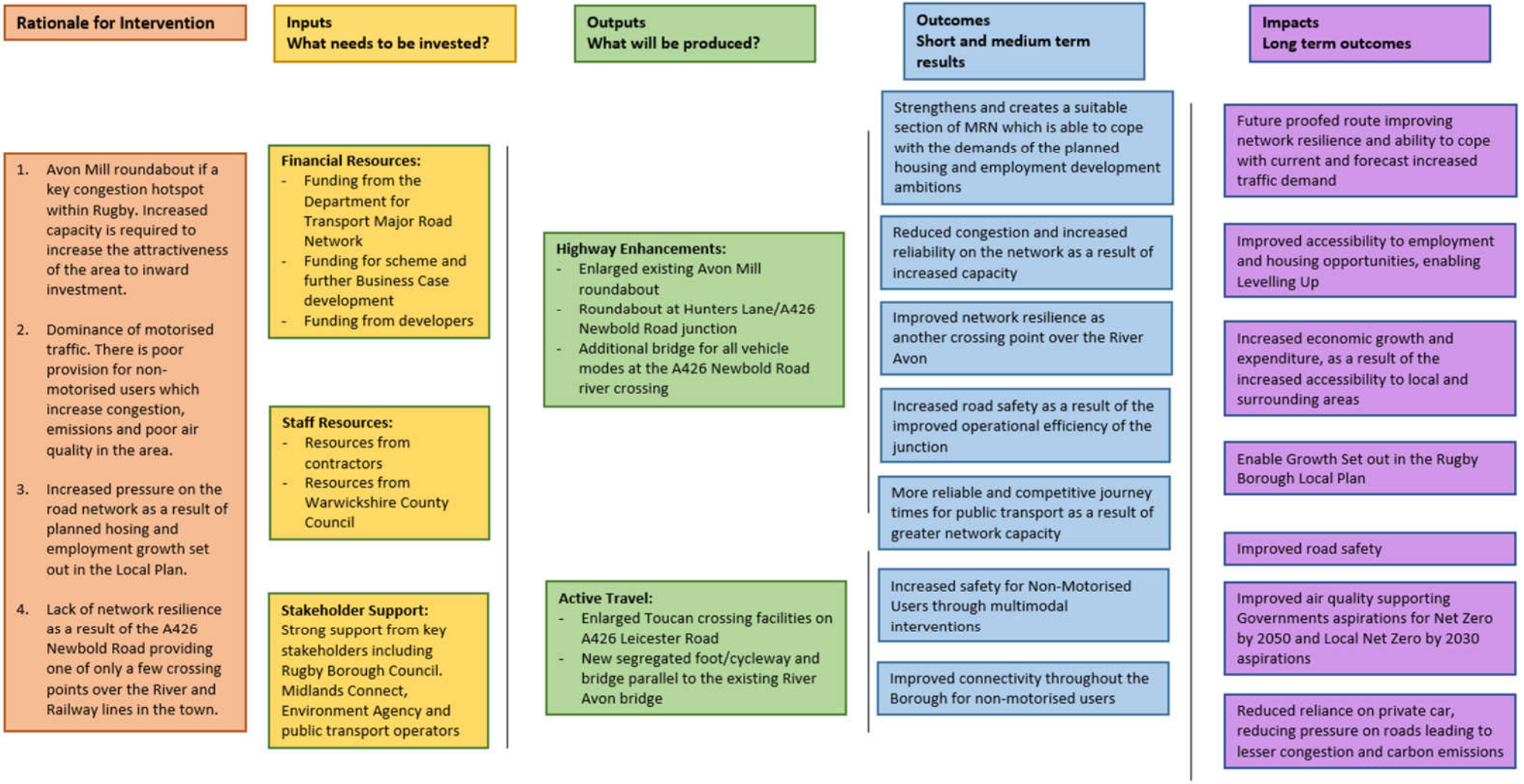
This OAR has set out the process for and results of the options appraisal process for the Scheme. Following sifting to a shortlist of options, this report sets out the methodology by which these options were sorted into two preferred options reflecting the priorities of WCC and key stakeholders. It then sets out the evidence gathered in the traffic modelling assessment. Through the traffic modelling process, a single preferred option was then selected for further appraisal in preparation for the OBC.

Given its greatest potential to reduce network delay, improve journey times and reduce queuing on the most congested arms of the roundabout, the preferred option which consists of two roundabouts has been taken forward. Not only does the additional highway capacity of the scheme reduce congestion, this scheme will help to meet the 'manage future corridor demands and facilitate key growth sites' objective and therefore help to boost economic activity within Rugby. Furthermore, the increased capacity will help to improve public transport journey times and also improve road safety.

Whilst the preferred option is mainly a highway focussed scheme, the proposed bridge for pedestrians and cyclists will provide a new segregated, high-quality pedestrian and cycle facility that will allow non-motorised users to travel safely away from the main highway. In addition, the proposed bridge provides a new cycling connection which will improve access to/from the A426 Newbold Road and Hunters Lane to the south of the town including Rugby Station and provide links to the town centre. In addition to this the inclusion of an enlarged Toucan crossing at Avon Mill roundabout will connect the new pedestrian and cycle link ensuring that pedestrians and cyclists can cross safely.

A logic map has been produced to illustrate the key components of the intervention in order to produce a causal pathway between the key issues noted in Section 2 and the long term outcomes and impacts that this scheme aims to lead to. The logic map is illustrated in Figure 7-1.

Figure 7-1 - Logic Map



Next steps

A five-stage process has been outlined for the options appraisal process, as shown in Section 3. This report sets out Tasks 1, 2, 3 and 4. The next and final step is to prepare the Outline Business Case for submission to the DfT demonstrating the case for investment at the Avon Mill roundabout.

Appendix A. DfT comments

Number	Comment	RAG	Response from scheme promoter
1	Please present data to demonstrate the current problems. Speeds are low approaching the roundabout, but without comparisons against a non-congested time period, or against speeds approaching other similar roundabouts, it's difficult to assess whether this is a problem. Please present evidence to support the statement that blocking back can occur. If this pinch point is released, what would the implications be on donwstream junctions?	A	See Section 4.1.1 in OAR
2	Please clarify which version of the model was used to produce the 2033 Reference Case, and provide relevant model documentation to demonstrate it is fit for purpose. Please provide a clear articulation of the future year traffic conditions and problems that demonstrate the need for the scheme. The DM scheme to extend Hunters Lane to Technology Drive is likely to affect traffic flows and performance at the two DS scheme junctions, and this should be presented and discussed. Given the close proximity of the DS scheme to this DM scheme, please clarify to what extent the DS scheme is designed to alleviate a problem brought about by, or made worse by, a DM scheme.	R	See section 4.1.4 for information on future year traffic conditons and the appendices
3	Please clearly show the evidence to support the statements in the SOBC on the underlying causes of the problem, i.e.physical constraints of the southern arm of the junction which is on a bridge over the River Avon, the relatively small diameter (45m) coupled with a large right-turning volume from the north. Please also give details of any stakeholder engagement undertaken when preparing the OAR.	A	OAR has been updated to reflect wider strategic issues, with additional information provided.
4	The SOBC describes how the proposed scheme supports national, regional and loca policies and strategies. Please also clearly show how the scheme objectives align with national, regional and local policies and strategies. Please provide a timescale for the objectives, to make sure they are SMART.	A	See Chapter 5 in refreshed OAR
5	Please provide further details of why a very limited set of scheme options have been considered, and why, for example, active mode or public transport interventions have not been considered.	R	See Chapter 5 in refreshed OAR

6	Please demonstrate how the sifting criteria relate to the scheme objectives, for example by using an appraisal framework. Please provide evidence to demonstrate the validity of the model results used to reject Option C at Hunters Lane.	R	See Chapter 5 in refreshed OAR
7	Please clarify what changes were made to the short-listed options following further design work after the long-list sifting. Please clarify which version of the model was used to produce the 2033 Reference Case and 'with scheme' results, and verify that it is fit for purpose. The journey time route does not capture the Western arm of the Avon Mill junction, nor the two minor arms of the Hunters Lane junction. Please justify this and comment on whether it would affect the choice of the preferred scheme, particularly at the Hunters Lane junction. In reference to the PEARS assessment, please clarify what is meant by the bullet point in 4.5.1 'Since the levels of delay across all tested scenarios (2016, 2021, and 2033) when assessed using the 2016 demands appeared reasonable, it was decided that the 2016 demands would be used for this assessment' and comment on it's impact on the assessment. Please justify the exclusion of a Saturday model and comment on whether it would affect the choice of the preferred scheme. Please clearly show how the indicators align with the objectives. Please provide an evidence of the assessment of the options against all five cases.	A	See Chapter 5 in refreshed OAR
8	Please update the AST for each element that has not been assessed to explain why it has not been assessed.	A	To be updated in OBC
9	Please provide further details on how the Reduced Option was selected, and evidence to demonstrate that it has been assessed in a robust manner consistent with the preferred option.	A	See Chapter 5 and 6 in refreshed OAR

Appendix B. Options Testing Report – Vectos Microsim

vectos microsim.

OPTIONS TESTING REPORT

Warwickshire County Council

Avon Mill Improvement Scheme Modelling
Options Testing Report

July 2022

Avon Mill Improvement Scheme Modelling
Rugby, Warwickshire

Contents

Appendices

1 Introduction

1.1 Vectos Microsim (VM) has been assisting Warwickshire County Council (WCC) in the collation of evidence to support the business case for the A426/A4071 Avon Mill/Hunters Lane improvement scheme proposals. These proposals seek to improve the operational performance of A426/A4071 Avon Mill roundabout junction and A426 Newbold Road/Hunters Lane junction, that lies to the north-west of Rugby town centre.

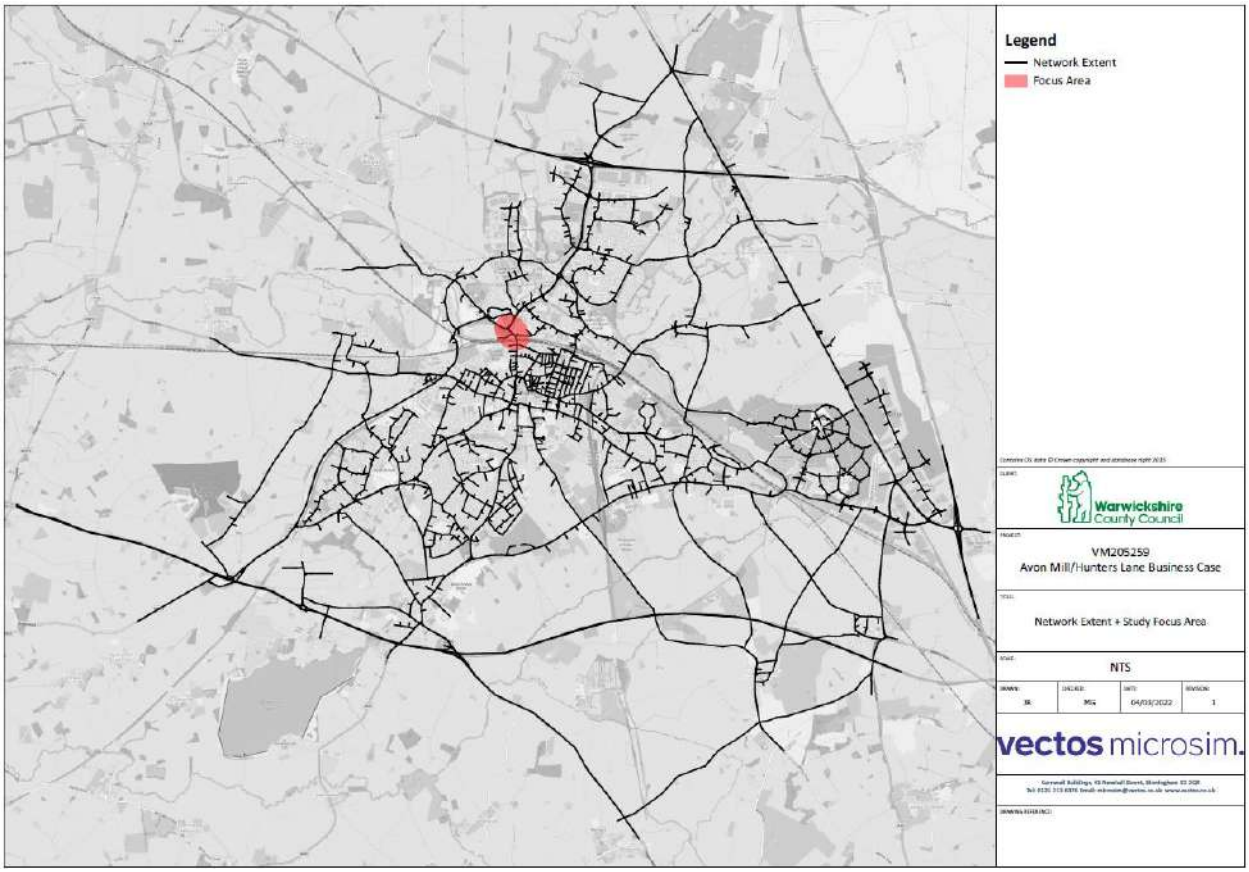
1.2 The scheme is necessary to both improve the operational efficiency of the transport network for all road users as well as facilitating future housing and employment growth. Testing of different scheme options had previously been completed by Arup using cordon models of the area derived from the Rugby Wide Area (RWA) S-Paramics model.

1.3 As the previous testing did not allow for consideration of the wider impacts of the scheme proposals, particularly on re-assignment effects, and also relied on versions of the models which were not consistent, VM has revisited the option testing using the latest RWA S-Paramics Models. Use of the RWA will allow for all potential reassignment effects to be considered within the assessment as well as providing a consistent basis upon which to assess the different options.

Study Area

1.4 The assessment has been completed within WCC's Rugby Wide Area (RWA) S-Paramics model, the extent of this and the location of the scheme proposals is shown in **Figure 1**.

Figure 1 Study Area



Rugby Wide Area Model

1.5 The RWA S-Paramics model has been developed by VM, on behalf of WCC, to a 2016 Base Year, using extensive survey data collected across the town and surrounding key corridors.

1.6 The RWA model was developed to capture the traffic interactions in detail across Rugby town centre, the A426 Leicester Road corridor and Mill Road/Technology Drive. The model also captures the M6 Junction 1, A5, M1 Junction 18 and the A45/M45.

1.7 The Base model was calibrated to turn and link count data across the entire study area, before being validated to WCC Highway Analyst traffic data and, where available, observed journey time datasets

1.8 Full detail on the Base model development and resultant calibration and validation results are available within the supporting model development report[1]. A good level of modelled turn count calibration has been achieved for all junctions on the A426, whilst a good match between observed and modelled journey times have been achieved for the A426 corridor, as demonstrated by the RWA Base Model Update note provided in **Appendix A**.

1.9 Following the development of the Base model, a forecasting exercise was undertaken, whereby all known committed developments and infrastructure, irrespective of magnitude, were included within the Reference Case models, alongside TEMPro adjusted growth.

1.10 This was undertaken for forecast year scenarios of 2026 and 2031. Further to this, 2031 and 2036 Local Plan scenarios were then developed which included all Local Plan allocations on top of the 2031 Reference Case inclusions. Details on the forecast model development, and subsequent updates to the forecast models are available in supporting reports and Technical Notes.

1.11 The scheme assessment conducted within this note was undertaken using the latest RWA forecast models inclusive of all relevant consented developments and infrastructure. Full details on the inclusions can be found in the model forecasting note.[2]

1.12 The assessment documented within this report has been undertaken within the 2026 RWA Reference Case model. For the purposes of the scheme testing, it was deemed appropriate to consider the proposals in a scenario which contained the highest level of certainty related to the consented sites/infrastructure schemes. The 2031 Local Plan model contains allocated sites which may only be classified as reasonably foreseeable, whilst the traffic growth assumptions within the later year models are also subject to less certainty.

[1] VM165068.R002_Rugby Wide Area LMVR

[2] Vectos Microsim, *VM215311.TN001 Rugby Wide Area Paramics Model Forecasting Update Note*, February 2021

1.13 On this basis it was considered that the initial option testing should be undertaken within the 2026 scenario. It is acknowledged that any economic appraisal of the scheme will be required to consider a later forecast horizon year.

The Use of Microsimulation

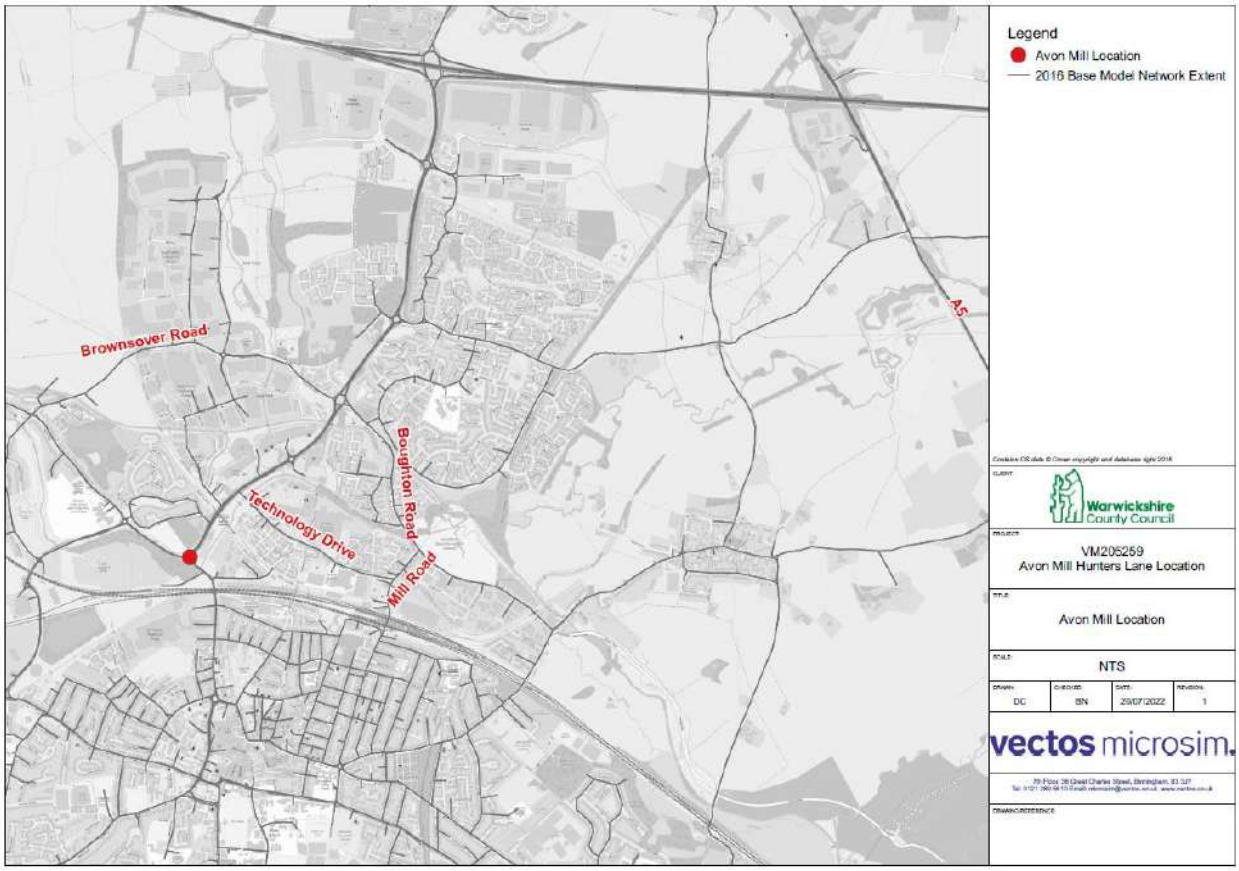
1.14 It is recognised that Business Case submissions are traditionally accompanied by traffic modelling analysis supported by strategic modelling. However, in this instance, a wide area microsimulation model has been adopted to inform the assessment.

1.15 The RWA model is a microsimulation model that was developed to cover the area of Rugby town and its environs. The key advantage of microsimulation modelling is its ability to model, in detail, the traffic interaction along the A426 corridor in response to delivering the scheme proposals. It also allows the replication of existing queuing and congestion issues to be modelled accurately.

1.16 VM consider that it is appropriate to use the RWA S-Paramics model at this stage of the assessment, primarily due to the main issues resulting in the need for the scheme being assessed relating to queuing and blocking back between junctions on the A426 corridor, and subsequent rat-running of trips onto surrounding local roads. A strategic model would not necessarily replicate the issues that are caused by queuing between junctions which is an important aspect of the scheme and appraisal.

1.17 Whilst the queuing impacts are most pronounced along the A426 corridor itself, there are a number of local areas (e.g. Mill Road and Technology Drive), which are also affected by queuing and blocking back between junctions (see **Figure 2** for an indication of these routes).

Figure 2 Location Plan



1.18 The nature of these local routes is such that it would be unlikely to include all of them within a strategic model network whilst the detailed queuing issues, and resultant localised reassignment effects would also be omitted or underestimated if a strategic model were applied. On this basis microsimulation is considered the most appropriate tool for this assessment.

1.19 The RWA model extends to the A5 (as indicated on **Figure 2**), which presents the only viable, strategic level, alternative to the A426 for north-south movements meaning the RWA model is sufficient to capture the majority of reassignment away from the congested area that would occur without the scheme.

1.20 A further advantage of the use of the microsimulation model is that bus routes and services are accurately included within the model, and as such the impact on bus journey times can be extracted, to give an indication of the benefits of delivering the scheme for public transport users on the corridor. These benefits have the potential to be monetised in TUBA along with the benefits to private vehicles.

Scheme Options

1.21 WCC has identified two scheme options at the Avon Mill roundabout, with a further three scheme options at the A426 Newbold Road/Hunters Lane junction. The scheme options are as follows:

i) Avon Mill Roundabout – Roundabout Scheme
ii) Avon Mill Roundabout – Signalised Junction Scheme
iii) Hunters Lane Junction – Roundabout Scheme
iv) Hunters Lane Junction – Elongated Roundabout Scheme

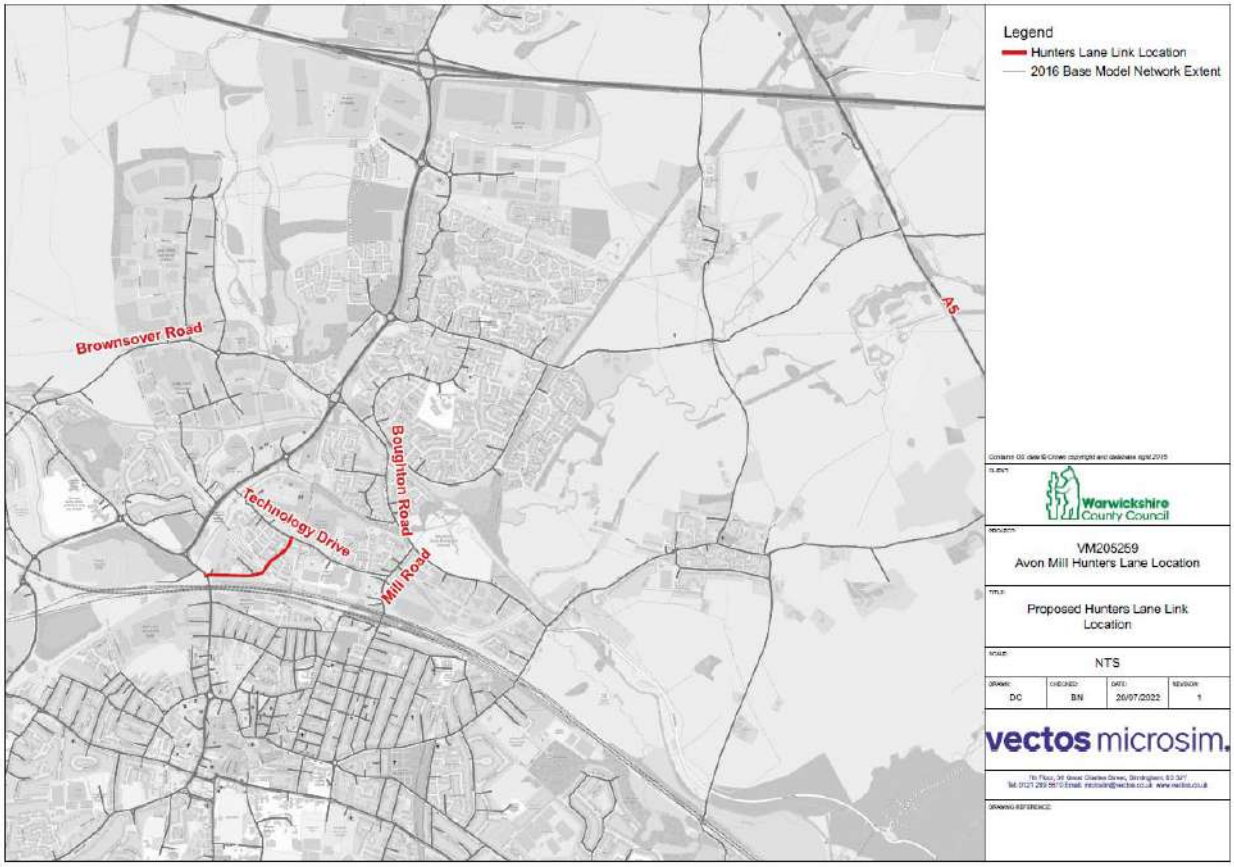
v) Hunters Lane Junction – Signalised Junction Scheme

1.22 The scheme drawings for all options can be found in **Appendix B**.

1.23 These schemes were initially evaluated on highway safety grounds. This led to the rejection of two schemes at A426/Hunters Lane junction, namely the signalised junction scheme and the elongated roundabout scheme.

1.24 More recently there has also been uncertainty around the deliverability of the proposed Hunters Lane link. This proposed link is located approximately 450m south-east of Avon Mill roundabout (as demonstrated within **Figure 3**) and is not included in the MRN scheme proposals. On this basis, the initial option assessment has been undertaken without the Hunters Lane link in place.

Figure 3 Proposed Hunters Lane Link Location



1.25 Once the preferred option has been identified, a further sensitivity test has been undertaken to ascertain the likely additional benefits that could be unlocked through delivery of the Hunters Lane link.

1.26 As a result, the initial With Scheme scenarios reported within this study are predicated on the proposed Hunters Lane link not being delivered. This has resulted in the following scenarios being tested initially:

- **Roundabout Scheme**: Roundabout scheme option at A426/A4071 Avon Mill roundabout + roundabout at A426/Hunters Lane junction – No Hunters Lane link

— **Signalised Junction Scheme**: Signalised junction scheme option at A426/A4071 Avon Mill roundabout + roundabout at A426/Hunters Lane junction – No Hunters Lane link

Study Objectives

1.27 The objective of this study is to determine a preferred option for the A426/A4071 Avon Mill roundabout, by comparing the defined scheme options against a Reference Case scenario. The wider objectives are listed in the Options Appraisal Report being created by Atkins.

1.28 Two options have been tested for the junction in question, initially a roundabout option and secondly a signalised option. To assess the performance of the scheme options, the following indicators will be considered:

— Network Mean Delay: The average journey time for all vehicles that completed a trip within the model period.
— Network Mean Speed: The average speed of all vehicles that completed a trip within the model period.
— Total Completed trips: The average total number of trips that have been completed within the model period.
— Queue Length: The average maximum number of vehicles observed in a queue along a defined route during an hour.
— Journey Times: The average time taken to travel along a predefined route through a model.

1.29 Using the RWA model, an assessment of the scheme proposals has been undertaken to provide a high-level overview of the predicted impacts on the A426/A4071 Avon Mill roundabout itself, and the surrounding highway network.

2 Existing Conditions

2.1 Prior to the scheme testing, the existing conditions at the A426/A4071 Avon Mill junction, and along the A426 corridor in general, have been reviewed. The purpose of this review is to support the evidence base around the need for an improvement scheme at this location.

2.2 In order to highlight the existing conditions, a combination of observed traffic flows, and speed data have been analysed and are reported within the following section of this report.

Observed Traffic Flows

2.3 Traffic flows were compared in three locations, shown in **Figure 4**, to compare volume of traffic on the A426 corridor at the Avon Mill roundabout with those on alternative routes. For this purpose, Manual Classified Count (MCC) data was used to determine the total junction throughput, as well as the throughput by vehicle type.

2.4 MCC data collected on Thursday, 17th of March 2016 was made available by WCC for the purposes of the Rugby Wide Area 2016 Base model development. This data was used to determine the junction throughput of Avon Mill roundabout and the B4112/Parkfield Road junction. Further MCC data collected on Tuesday, 10th of March 2015 was used in the development of the Rugby Wide Area 2016 Base model. This count data was used to determine the junction throughput of Mill Road/Technology Drive junction.

Figure 4 Observed Traffic Flow Analysis Junctions

Total Junction Flows

2.5 The junction throughput for each junction was calculated from the aforementioned MCC surveys by summing the movements for each arm by vehicle type. The following tables present the total junction throughput by vehicle class for the AM and PM peak hours.

Table 1 Avon Mill Total Junction Throughput

Period	CAR	LGV	RIGID	ART	BUS	MCL	PCL	Total
AM Weekday Peak 08:00 to 09:00	2,958	329	91	80	14	7	18	3,497
PM Weekday Peak 17:00 to 18:00	3,157	190	28	41	12	3	20	3,451

2.6 **Table 1** demonstrates that the 2016 observed traffic volumes at the Avon Mill junction served circa 3,450 vehicles within the weekday peaks. A significant number of OGVs have been observed to utilise the junction alongside a smaller number of buses.

Table 2 B4112/Parkfield Road Total Junction Throughput

Period	CAR	LGV	RIGID	ART	BUS	MCL	PCL	Total
AM Weekday Peak 08:00 to 09:00	1,221	112	7	1	7	8	4	1,360
PM Weekday Peak 17:00 to 18:00	1,282	110	6	0	7	12	7	1,424

2.7 The 2016 observed traffic volumes at the B4112/Parkfield Road junction are shown in **Table 2**. The junction serves around 1400 vehicles within the weekday peaks.

Table 3 Mill Road/Technology Drive Total Junction Throughput

Period	CAR	LGV	RIGID	ART	BUS	MCL	PCL	Total
AM Weekday Peak 08:00 to 09:00	1,133	113	17	12	12	7	21	1,315
PM Weekday Peak 17:00 to 18:00	1,428	100	10	8	9	8	18	1,581

2.8 **Table 3** shows the 2015 observed traffic volumes at the Mill Road/Technology Drive junction, which serves up to 1,600 vehicles within the weekday peaks. A low number of OGVs utilise this junction compared to the total junction throughput.

Junction Flow Summary

2.9 Comparing **Tables 1** to **3**, the Avon Mill junction serves significantly higher traffic movements during the peak hours than the B4112/Parkfield Road junction and the Mill Road/Technology Drive junction combined. This analysis has highlighted how the A426/A4071Avon Mill junction is located along the main locally strategic route for north-south traffic between the M6 and the A428 east-west corridor in Rugby, serving considerable traffic volumes.

Speed Data Analysis

2.10 The level of congestion currently occurring at the A426/A4071 Avon Mill junction has been established via a review of speed survey data for each entry arm to the junction. Free flow speeds have been compared to peak hour speeds to provide an insight in the delay impacts occurring at the junction.

2.11 Speed surveys were processed from the Highways Analyst database for the AM and PM peak hours in November 2016 from Tuesday to Thursday with school holidays excluded.

2.12 To approximate free-flow speeds, speed surveys were processed in Highways Analyst for the whole year of 2016 in the hour from 05:00 to 06:00 and from 21:00 to 22:00 for Tuesday to Thursday with school holidays excluded. Here, the maximum speed out of the collected hours was taken to represent the free-flow speed on a link.

A426/A4071 Avon Mill Roundabout

2.13 The free-flow speeds on each approach to the roundabout were compared to the peak hour speeds, as presented within **Table 4** for the AM peak hour and **Table 5** for the PM peak hour.

Table 4 Avon Mill Approach Speeds - AM Peak Hour

		AM Weekday Peak 08:00 to 09:00		
Approach	Freeflow Speed (km/h)	Speed (km/h)	Difference	%-Difference
A426 Newbold Road NB Entry	47.7	24.5	-23.2	-49
A426 Leicester Road SB Entry	54.0	26.8	-27.2	-50
A4071 Newbold Road EB Entry	45.0	29.8	-15.2	-34

2.14 **Table 4** shows that in the AM peak hour, the greatest speed reduction is seen on both the A426 SB and NB approaches to the junction, whereby traffic speeds are roughly halved compared to the free-flow speed. The speed reduction for the A4071 approach is lower than that seen for the A426 approaches.

Table 5 Avon Mill Approach Speeds PM Peak Hour

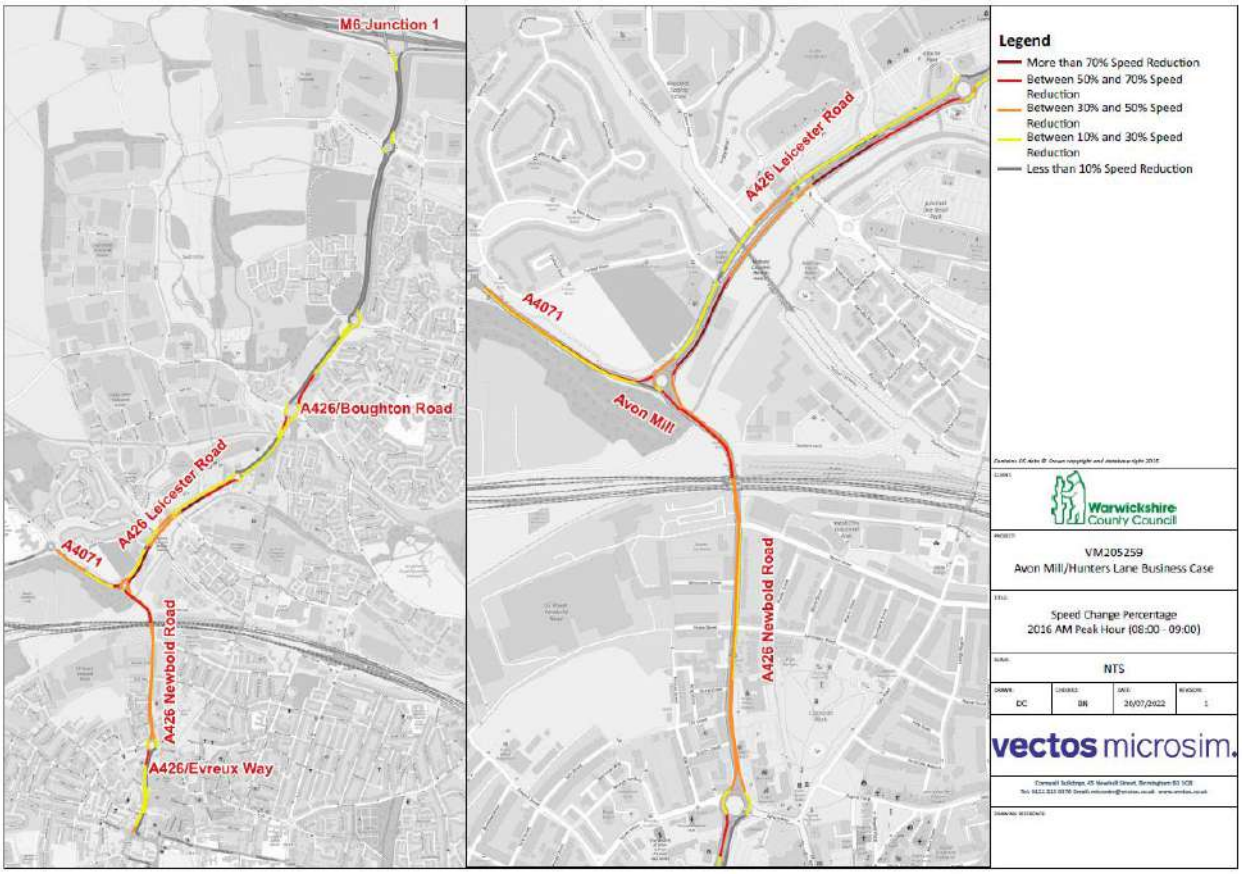
				PM Weekday Peak 17:00 to 18:00		
Approach	Data	Length (km)	Freeflow Speed (km/h)	Speed (km/h)	Difference	%-Difference
A426 Newbold Road NB Entry	TT	0.810	47.7	13.1	-34.6	-73
A426 Leicester Road SB Entry	TT	0.809	54.0	31.5	-22.6	-42
A4071 Newbold Road EB Entry	HA	0.389	45.0	33.7	-11.3	-25

2.15 For the PM peak hour, **Table 5** demonstrate that the largest reduction in speeds occurs on the A426 NB approach to the Avon Mill roundabout, with a reduction in speeds of 73%. The speed reduction on the other approaches is less severe, but still notable.

A426 Corridor

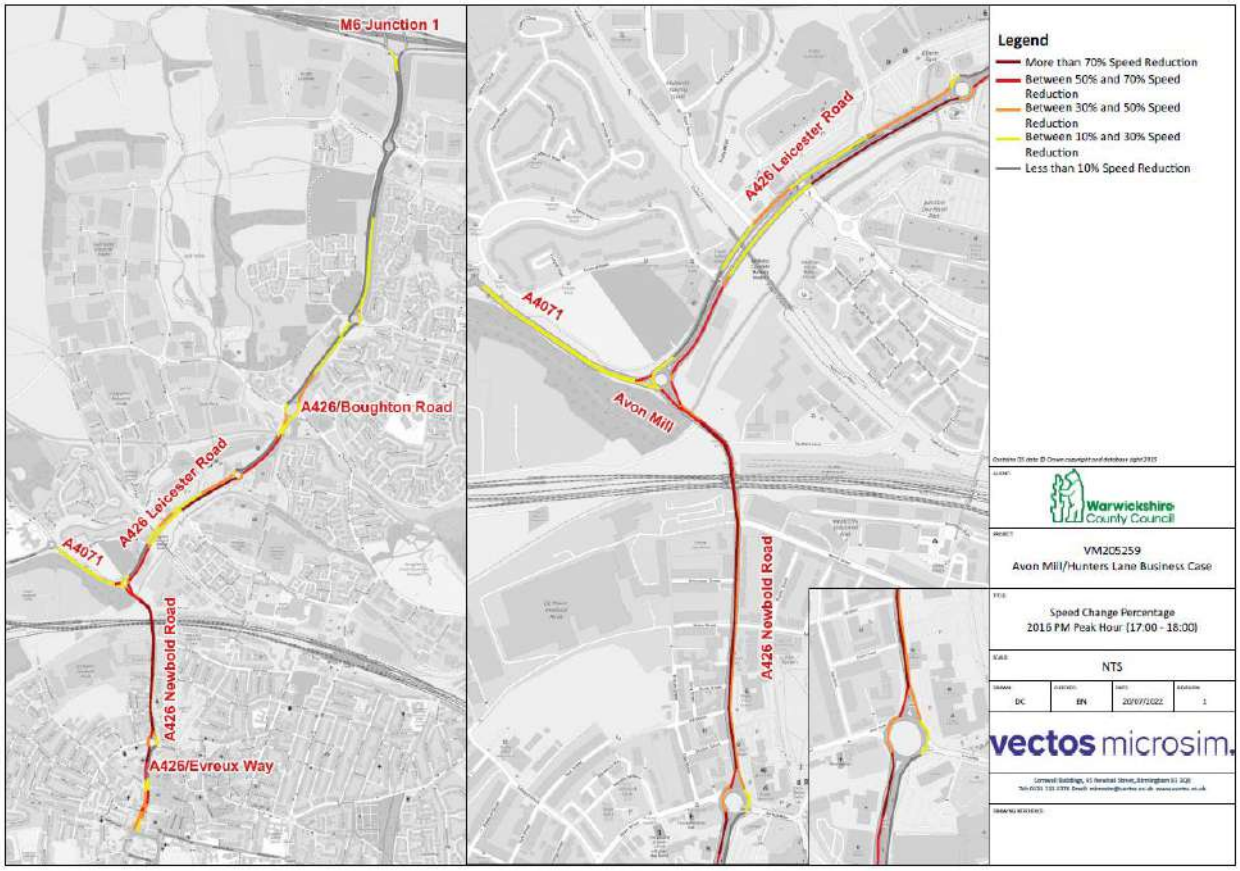
2.16 To supplement these results and demonstrate the wider impacts that the congestion on the approaches to the A426/A4071 Avon Mill roundabout has on the local network, speed changes have been plotted within the following figures on links approaching the junction itself. This is presented within **Figure 5** for the AM peak hour, **Figure 6** for the PM peak hour.

Figure 5 A426 Corridor Percentage Speed Reduction AM Peak Hour



2.17 **Figure 5** demonstrates the change from free-flow speed that occurs during the AM peak hour. These results show that the most notable impact is on the A426/A4071 Avon Mill roundabout. Additionally, though other junctions show an impact as well, most of the impact can be traced back to congestion associated with the Avon Mill roundabout. For example, the southbound impact on the A426 north of Avon Mill roundabout gradually lessens the further north from Avon Mill roundabout it is, with only small local increases near major junctions.

Figure 6 A426 Corridor Percentage Speed Reduction PM Peak Hour



2.18 **Figure 6** shows that during the PM peak hour, like in the AM peak hour, the most severe impact is centred on Avon Mill roundabout. The impacts are less severe further afield from the Avon Mill junction, with local increases in severity near major junctions.

2.19 There is also a major impact in the southbound direction between the A426/B5414 roundabout and Avon Mill roundabout, as seen in **Table 5** for the southbound Avon Mill exit. Looking at **Figure 6**, it can be seen that there is also a major impact on traffic flows in the northbound direction between the two roundabouts, which continues south of the A426/B5414 roundabout towards Rugby Gyratory.

2.20 **Figure 6** also shows that at the A426/B5414 roundabout, the southern exit shows no speed reduction, while there is a slight reduction in the link from the northern approach to the southern exit (see inset). This indicates that the impact is caused by congestion within the roundabout, which is likely caused by the northbound traffic through the roundabout.

2.21 As a result, the congestion at the A426/B5414 roundabout appears to be indirectly caused by the conditions at Avon Mill roundabout.

Existing Conditions Summary

2.22 A comparison of MCC data for representative junctions has shown that the A426 corridor is the main north-south route between the A428 east-west route and the M6 within Rugby. As a result, the Avon Mill roundabout is observed to accommodate a high number of vehicle movements during both AM and PM peak hours.

2.23 Analysis of speed surveys reveals that, on the A426 corridor, there is a considerable reduction in vehicle speeds during the peak hours when compared to the free-flow speed. Additionally, it has been shown that the speed reduction is centred on the A426/A4071Avon Mill roundabout and that speed reductions elsewhere (i.e. not on the approaches to the Avon Mill roundabout) can be traced back to congestion at Avon Mill impacting other junctions.

3 Scenario Development

3.1 As detailed earlier, the latest 2026 RWA Reference Case scenario was used to undertake the Avon Mill scheme testing. This has led to the following scenarios being developed and reported upon:

- 2026 Reference Case
- 2026 Reference Case + Signalised Junction Scheme at Avon Mill
- 2026 Reference Case + Roundabout Scheme at Avon Mill

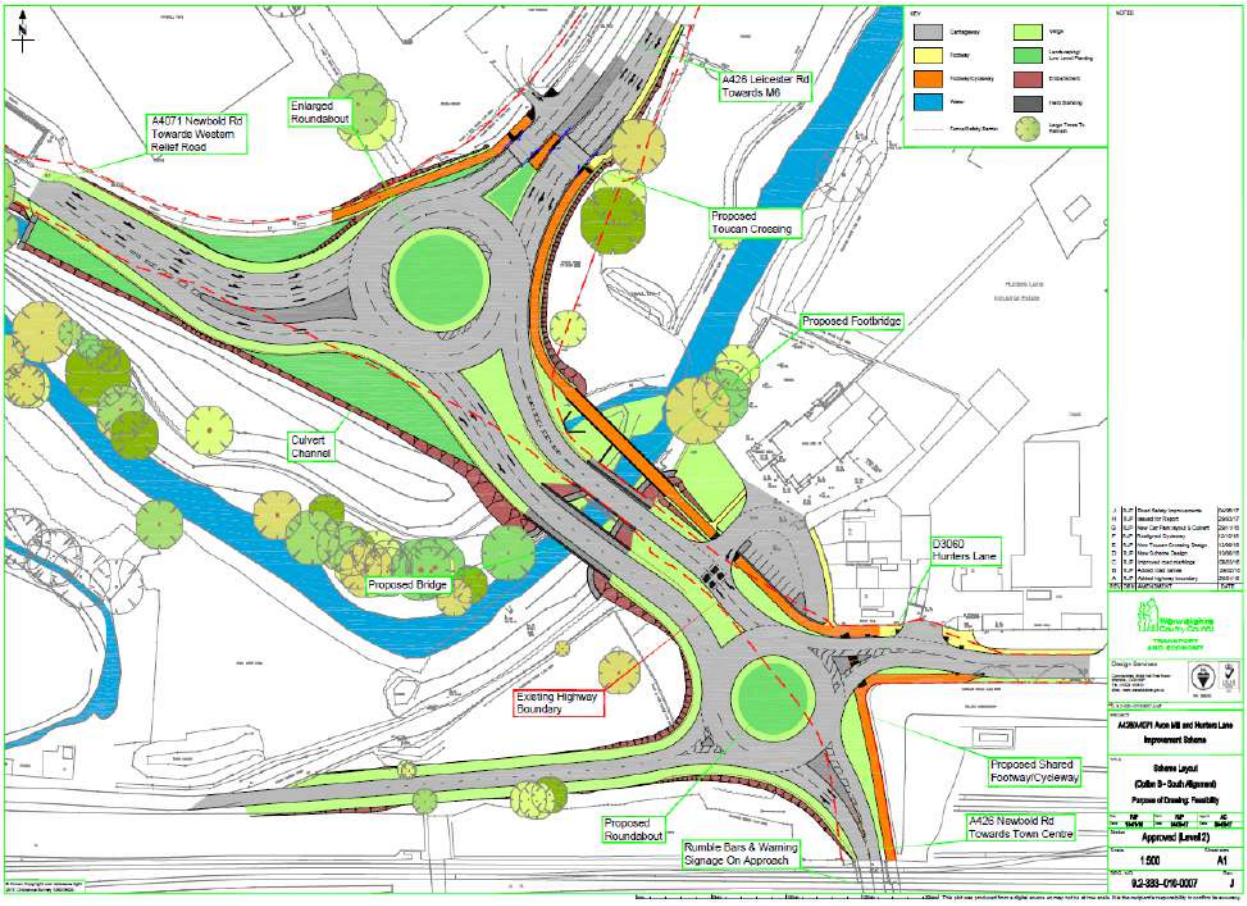
2026 RWA Reference Case

3.2 The 2026 RWA Reference Case has been adopted as the benchmark for the core scheme assessment. This model has been developed to include all known consented developments and infrastructure schemes. For the purposes of the assessment the A426/A4071 Avon Mill junction is coded as the current on-street layout within the 2026 Reference Case.

2026 RWA Reference Case + Roundabout Proposal

3.3 For the roundabout proposal test, the 2026 Reference Case was adapted to include the scheme proposals for the A426/A4071 Avon Mill roundabout as shown within **Figure 7**.

Figure 7 Avon Mill & Hunters Lane – Roundabout Scheme Drawing



3.4 The proposed roundabout scheme at the A426 Newbold Road/Hunters Lane junction has been included at this stage, with the coding of this junction consistent with the drawing despite the link

through Hunters Lane not being delivered at this stage. The intention of including this is to improve access in and out of the existing Hunters Lane, which has the potential to become more difficult should improvements in traffic flow be achieved at the A426/A4071 Avon Mill roundabout.

3.5 The A426/A4071 Avon Mill roundabout scheme proposals consist of widening the existing circulatory, along with all entry arms to the roundabout to three lanes. Additionally, the A426 Newbold Road eastern exit is widened to two lanes and the two lane section on the A4071 western exit arm extended.

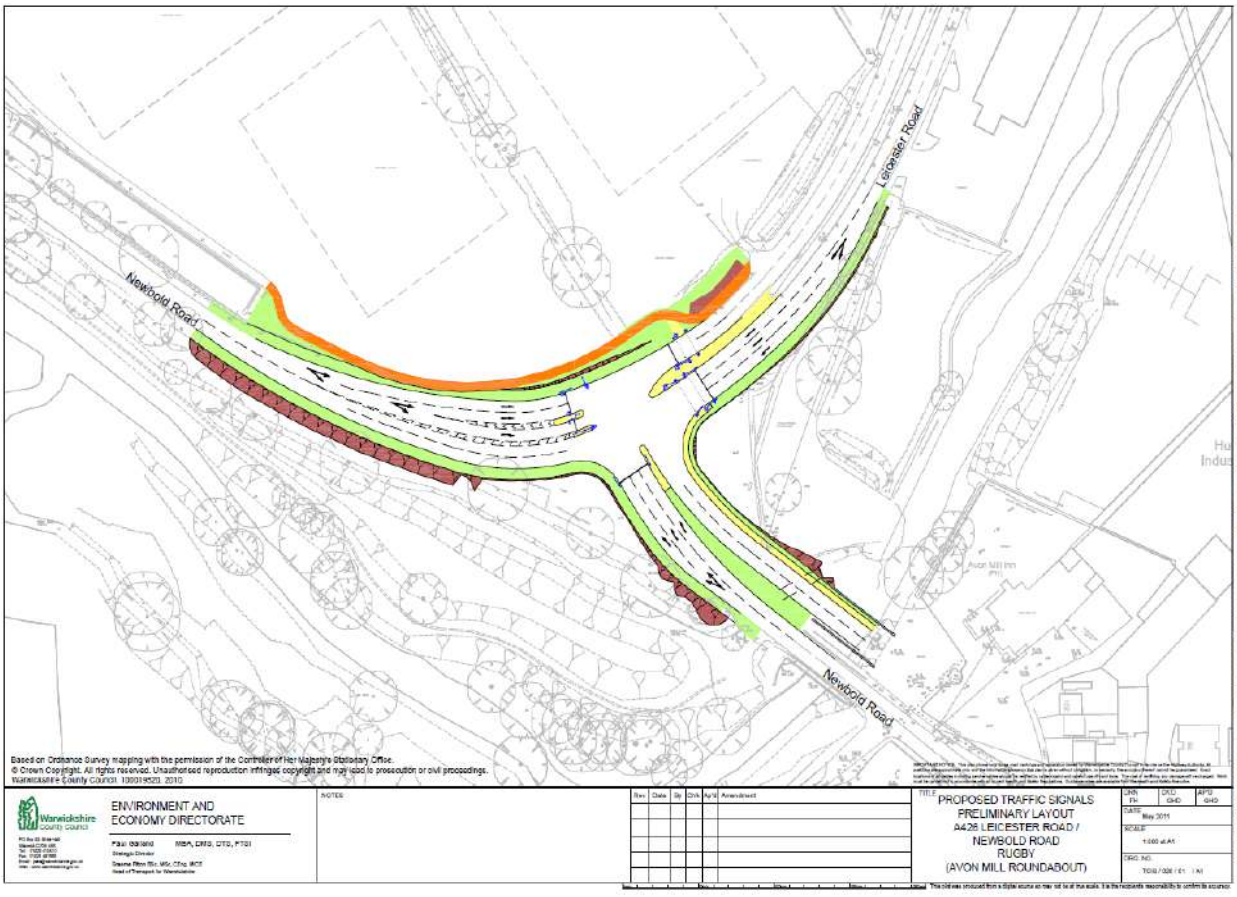
2026 RWA Reference Case + Signalised Junction

3.6 For the purposes of assessing the signalised junction, the 2026 Reference Case was adapted to include the scheme proposals in question. This has consisted of replacing the existing roundabout layout with a signalised three-arm junction proposal as demonstrated within **Figure 8**.

3.7 Signal timings for the junction proposals were input into the S-Paramics model based upon LinSig outputs provided by WCC. These timings were then optimised where necessary to minimise the queues observed in the model.

3.8 In addition to this, the roundabout proposals for the A426/Hunters Lane junction were also included within this model scenario.

Figure 8 Avon Mill – Signalised Junction Scheme Drawing



4 Initial Results Analysis

Overview

4.1 The results presented within this section of the report are based upon the outputs from the following three model scenarios:

- 2026 Reference Case
- 2026 Reference Case + Signalised Junction Scheme at Avon Mill
- 2026 Reference Case + Roundabout Scheme at Avon Mill

4.2 Each of the above scenarios have been run to collect a minimum of 20 runs per scenario.

4.3 The 2026 Reference Case serves as the benchmark scenario, against which the relative impacts of delivering either the signal scheme or roundabout scheme have been considered. Initially the impacts at a strategic level have been considered, before more localised impacts reported.

Network Wide Statistics

4.4 The initial results reported from all model scenarios are the network wide performance statistics. These have been presented for each scenario in **Figures 9-11**. The network wide statistics provide an indication of the scheme impacts at a strategic level, and have been derived from the full set of trips completing their journey during the designated period.

4.5 Details of the network statistics and how they are calculated are provided below:

Network Mean Delay:

4.6 The Network Mean Delay gives the average journey time (seconds) it takes for a vehicle to complete its assigned trip through the model. This is calculated by averaging the journey times of all completed trips in each model run. These results are then averaged across all runs.

Network Mean Speed:

4.7 The Network Mean Speed is the average speed (kilometres per hour) of vehicles completing their trip during the modelled period. The average journey length for each run is calculated from the trips-all files by averaging the length of all completed trips. This is then averaged across all runs and then divided by Network Mean Delay in order to give Network Mean Speed.

Total Completed Trips:

4.8 The Total Completed Trips is the number of vehicular trips that ended their journey during the modelled period. This is calculated for each run and averaged across all runs.

Impacts:

4.9 The Network Mean Delay and Network Mean speeds shown in **Figure 9** and **Figure 10** show a notable worsening of network conditions, at a strategic level, in the signalised junction scenario. This is predicted to occur in the AM where the average journey time for all road users will increase by around 34 seconds, and PM where average journey times are predicted to increase by 56 seconds.

4.10 Conversely the roundabout option indicates, again at a strategic level, that average journey times will improve over those reported in the Reference Case, with a 3 second improvement in the AM period, and 5 second improvement in the PM period.

4.11 The Total Completed Trips (**Figure 11**) also show a similar impact, with fewer trips completed in the model period in the signalised junction scenario and slightly more trips completed if the roundabout proposal is included. This is related to the associated volume of congestion around Avon Mill junction in each scenario, impacting the ability of vehicles to complete their journey in modelled time period.

4.12 These results clearly indicate that, at a network wide level, the signal option is likely to exacerbate existing congestion issues, whilst the roundabout option is likely to deliver betterment on the Reference Case levels of congestion and journey times, when considering journeys across the entire model network.

Figure 9 Network Mean Delay

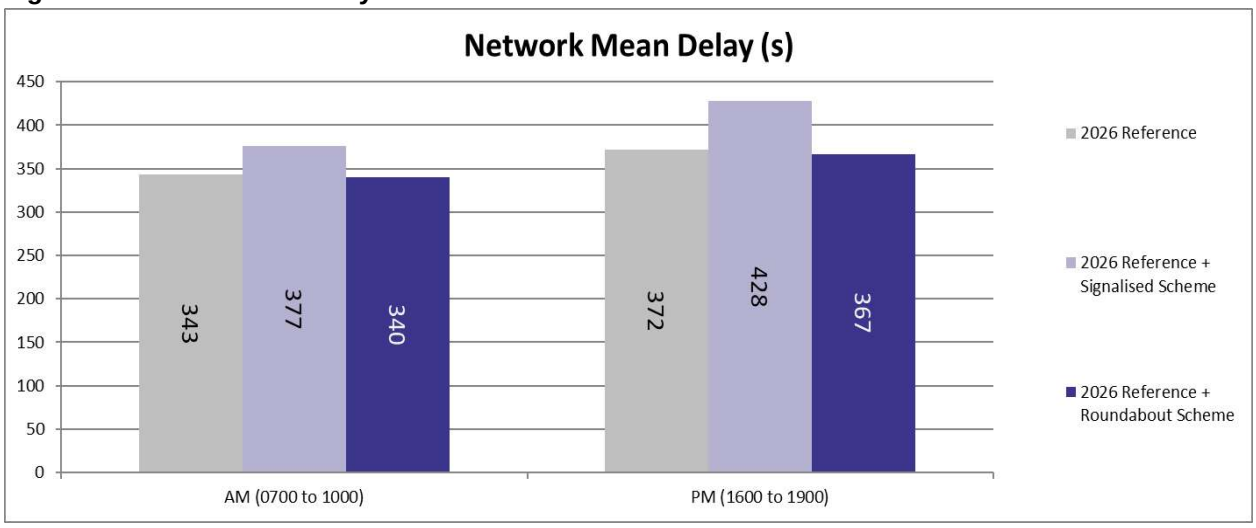


Figure 10 Network Mean Speed

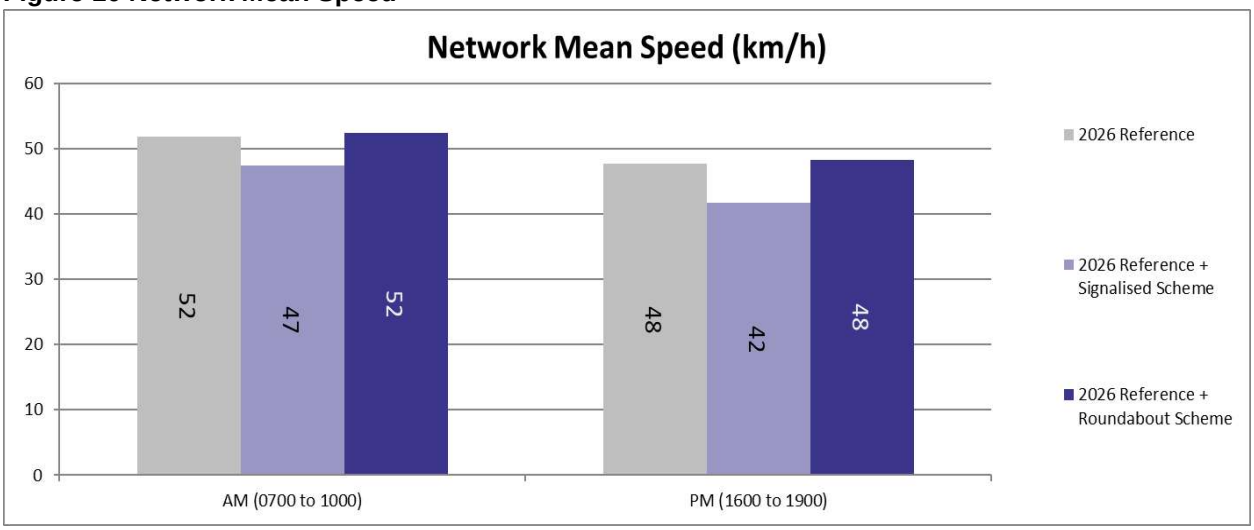
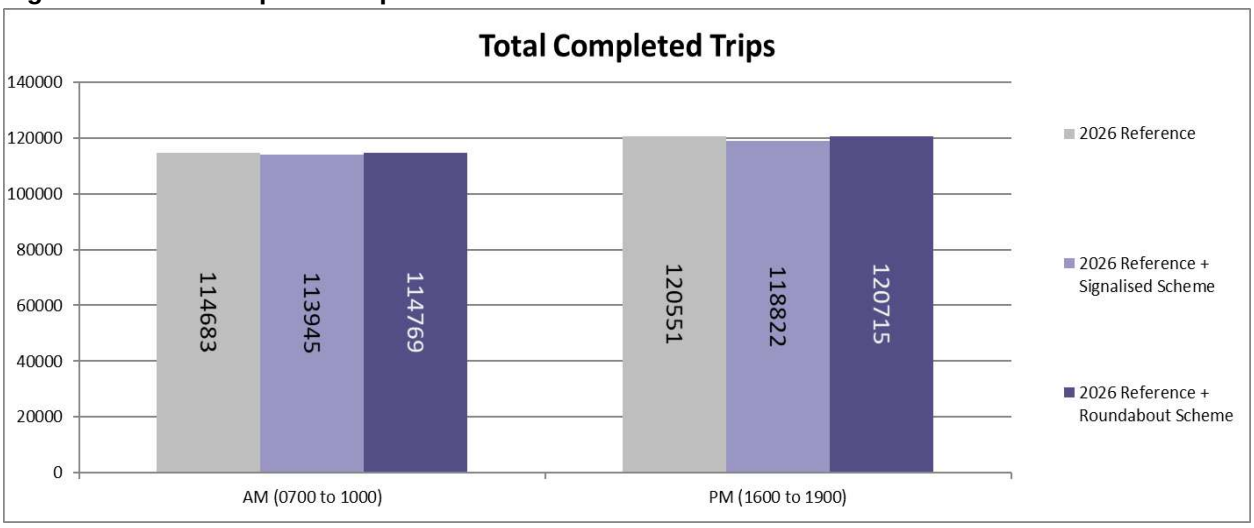


Figure 11 Total Completed Trips



Queue Lengths

4.13 Following the strategic impact review presented through the network wide statistics, a more localised focus has been reported, in the form of queue length analysis. This has been presented within the following section, which reports on the average maximum hourly queue lengths on each approach to the A426/A4071 Avon Mill junction, and A426/Hunters Lane roundabout.

A426/A4071 Avon Mill Roundabout

4.14 The queues reported on each approach to the A426/Avon Mill junction are shown in **Figure 12** for the AM peak hour and in **Figure 13** for the PM peak hour.

Figure 12 A426/A4071 Avon Mill - Queue Length (AM Peak Hour)

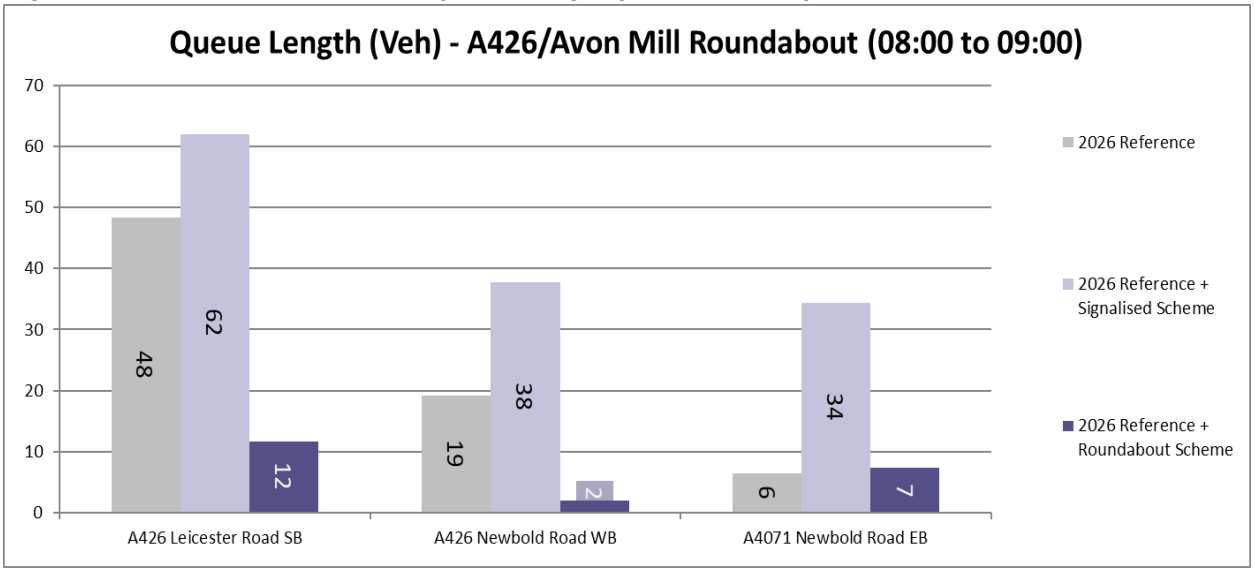
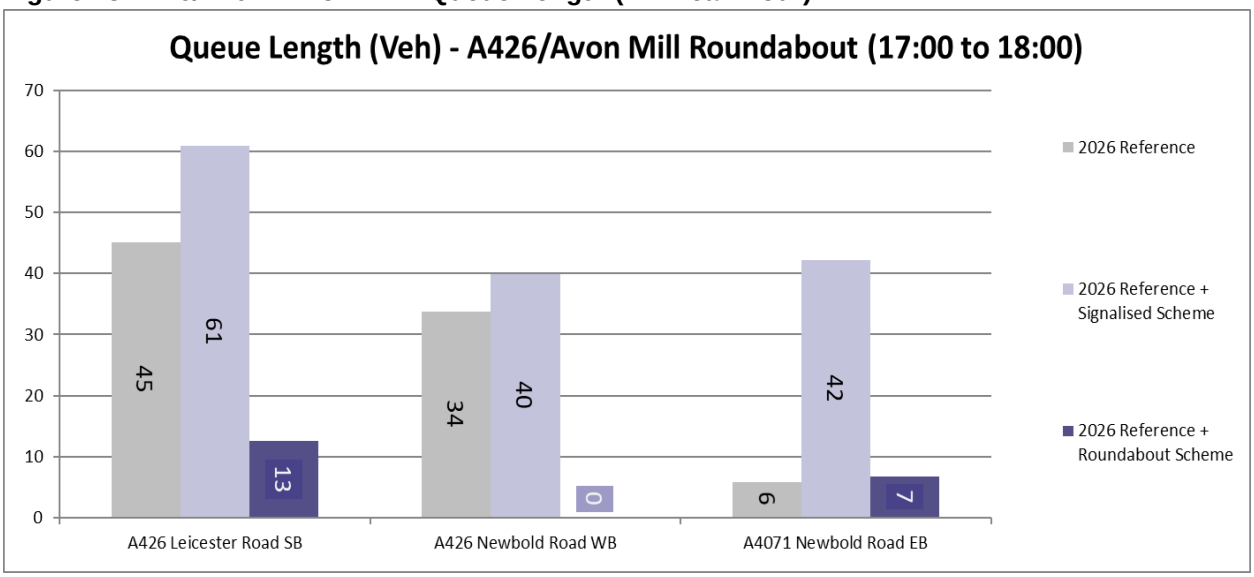


Figure 13 A426/A4071 Avon Mill - Queue Length (PM Peak Hour)



4.15 For both the AM and PM peak hour, the results presented indicate that the signalised junction proposal significantly increases the queues on each approach, while queues are reduced when the roundabout proposal is included.

4.16 Most significantly, the SB queues in the AM peak reduce from 48 vehicles to 12 vehicles within the roundabout scheme included, whilst the NB queues on the A426 Newbold Road arm reduce from 34 vehicles to 0 vehicles in the PM peak hour.

4.17 These results clearly demonstrate that the roundabout proposals are predicted to deliver an improvement in localised network conditions relative to the Reference Case, whilst the signal proposals are predicted to worsen network conditions.

A426/Hunters Lane Roundabout

4.18 The queues reported on each approach to the A426/Hunters Lane junction are shown in **Figure 14** for the AM peak hour and in **Figure 15** for the PM peak hour.

Figure 14 A426/Hunters Lane – Queue Length (AM Peak Hour)

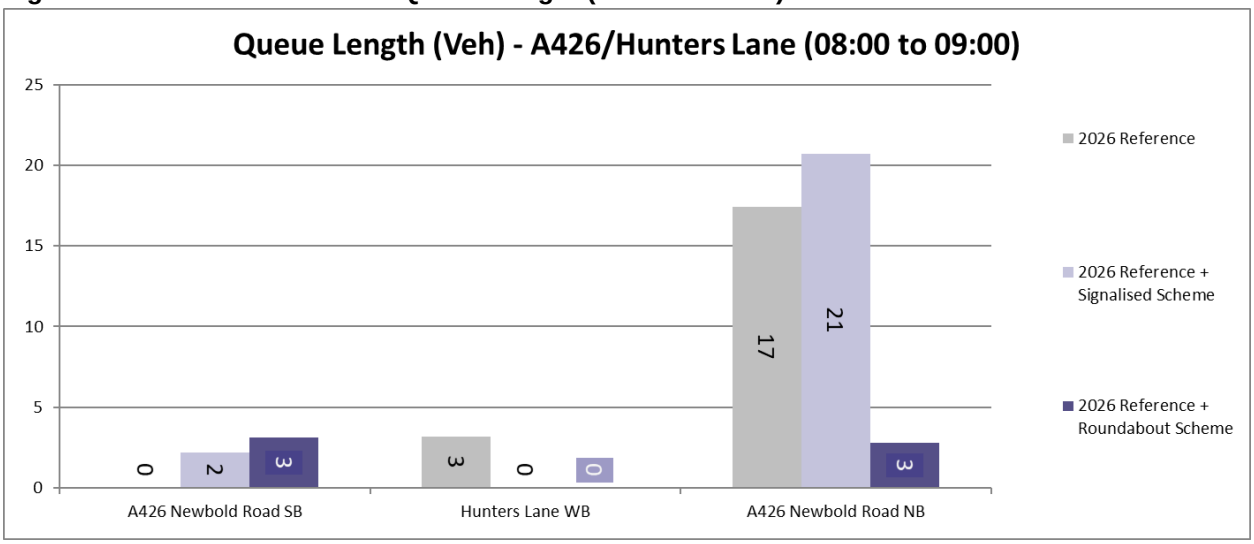
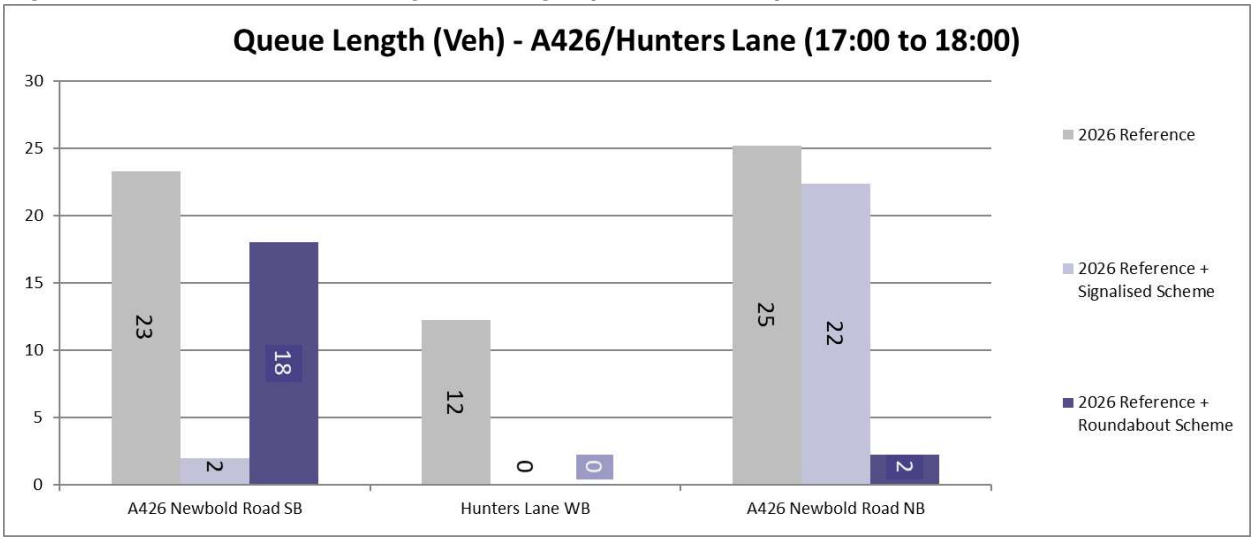


Figure 15 A426/Hunters Lane – Queue Length (PM Peak Hour)



4.19 For both the AM and PM peak hour, the results presented indicate that, the inclusion of the roundabout proposals at the A426/Hunters Lane junction, improves the queue conditions at this junction, relative to the Reference Case conditions.

4.20 Although these improvements are clearly linked to the operation of the A426/A4071 Avon Mill roundabout and the associated improvements at that junction, it is clear that the inclusion of the roundabout at the Hunters Lane junction further improves the localised network performance, with a reduction in the queues reported on the Hunters Lane approach to the junction across the AM and PM (most notably the PM), which results in a zero vehicle queue in both of the A426/A4071 Avon Mill scheme scenarios.

4.21 The modelling also suggests significantly reduced queues on the northbound approach to the roundabout, in the Avon Mill roundabout option scenario, once the scheme is delivered, which is a combination of traffic no longer waiting in a queue behind a vehicle waiting to turn right into Hunters Lane, and a reduced queue extending back from the Avon Mill roundabout.

4.22 This result is not reflected in the signal option scenario, where queues from the signalised A426/A4071 Avon Mill junction extend back through the A426/Hunters Lane roundabout in both the AM and PM period, affecting the northbound approach to this junction.

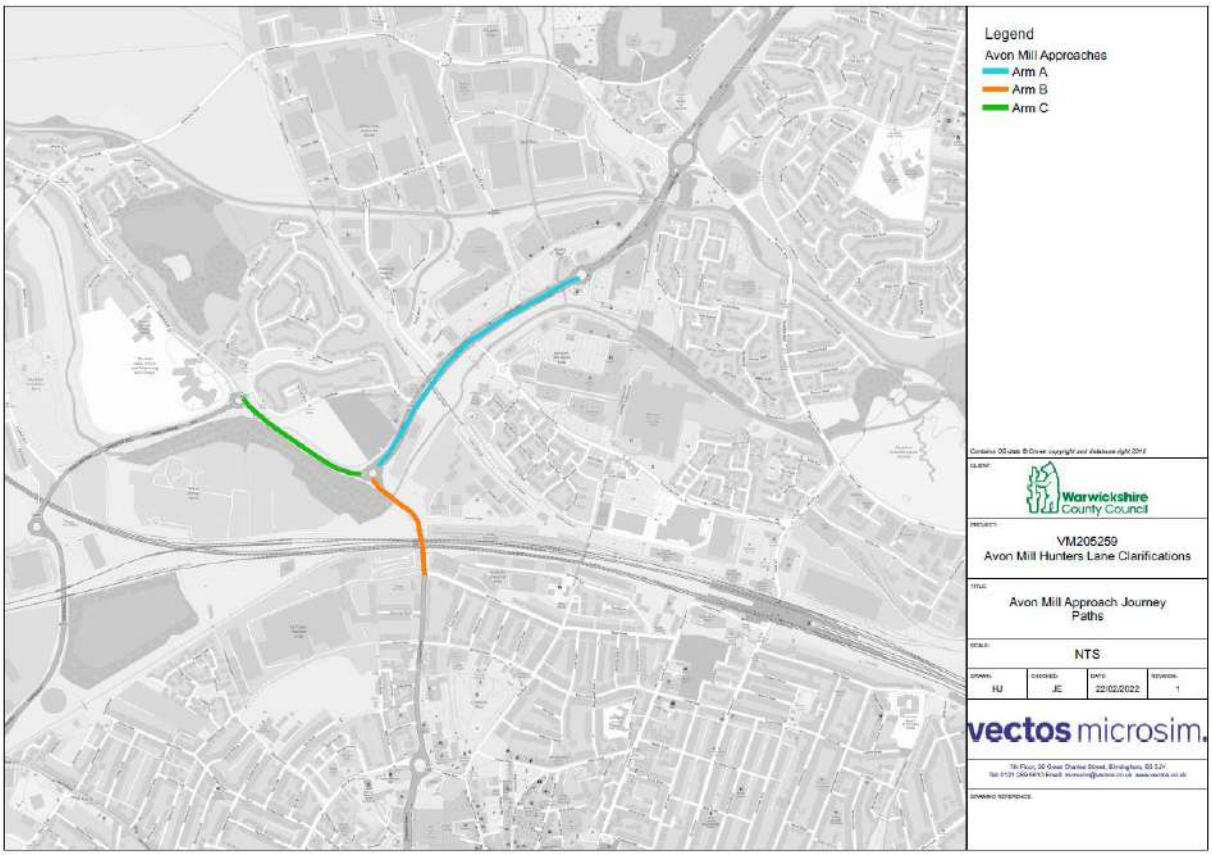
4.23 These queue results indicate that the inclusion of the A426/Hunters Lane roundabout is critical to complimenting the A426/A4071 Avon Mill scheme, with the roundabout at the Hunters Lane junction further improving the localised network performance, and providing additional capacity for the increased traffic now able to travel through the Avon Mill roundabout at the peak times. This is most notable when included alongside the roundabout option for the A426/A4071 Avon Mill junction.

Journey Time Analysis

4.24 In addition to queues length analysis, a further stage of localised impact analysis has been undertaken, through a review of the modelled journey times on each approach to the Avon Mill roundabout.

4.25 The routes on which journey times have been extracted and reported are shown in **Figure 16**.

Figure 16 Avon Mill Approaches



4.26 The average journey time on the approach path is reported in seconds and is shown for A426 Leicester Road SB in **Figures 17** and **18** for the AM and PM peak hour, respectively. **Figures 19** and **20** show the average journey time for A426 Newbold Road NB, while the journey times for A4071 Newbold Road are shown in **Figures 21** and **22**.

4.27 Journey times for each arm are presented for both inbound and outbound journeys. However, the outbound journey times generally have little significance for this localised journey time assessment, as the only impact on these journey times comes from the congestion at downstream junctions.

Figure 17 Journey Time A426 Leicester Road (AM Peak Hour)

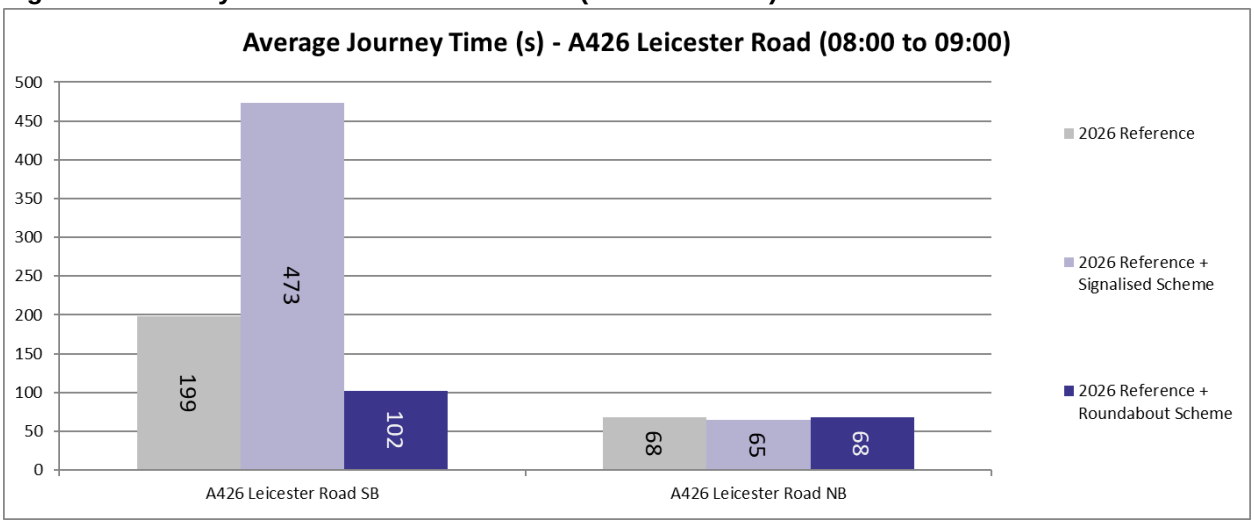
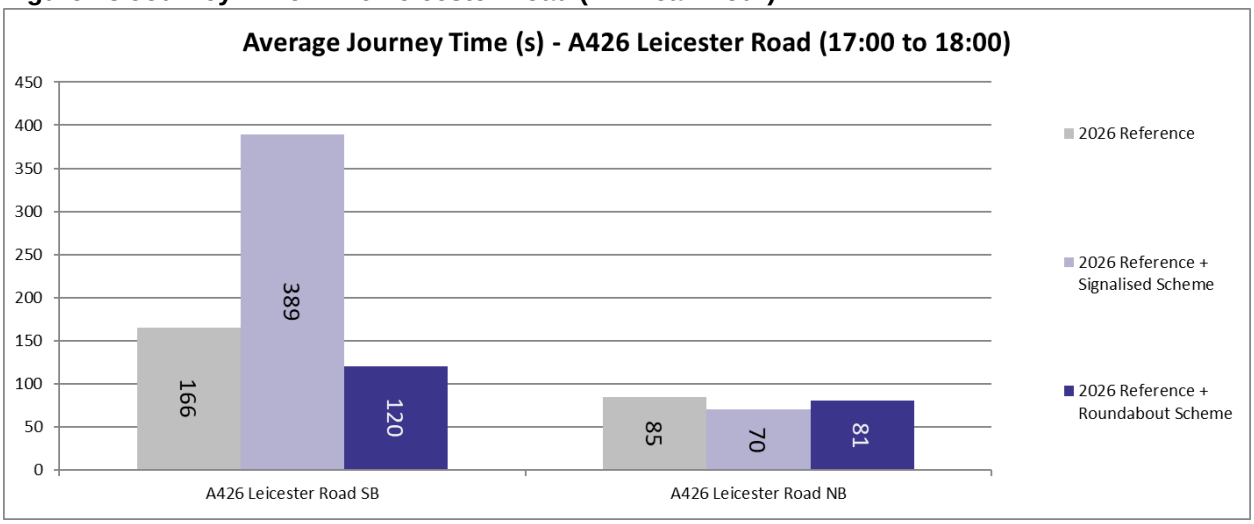


Figure 18 Journey Time A426 Leicester Road (PM Peak Hour)



4.28 The journey time results for the A426 Leicester Road SB approach to A426/Avon Mill junction are presented in **Figure 17** and **Figure 18**. These results clearly indicate that journey times significantly increase in the AM and PM peak hour in the signalised scheme scenario relative to the Reference Case.

4.29 Within the roundabout scheme scenario however, there is predicted to be a 97 second reduction in journey times on the SB approach in the AM peak hour, and a 46 second reduction in the PM peak hour.

Figure 19 Journey Time A426 Newbold Road (AM Peak Hour)

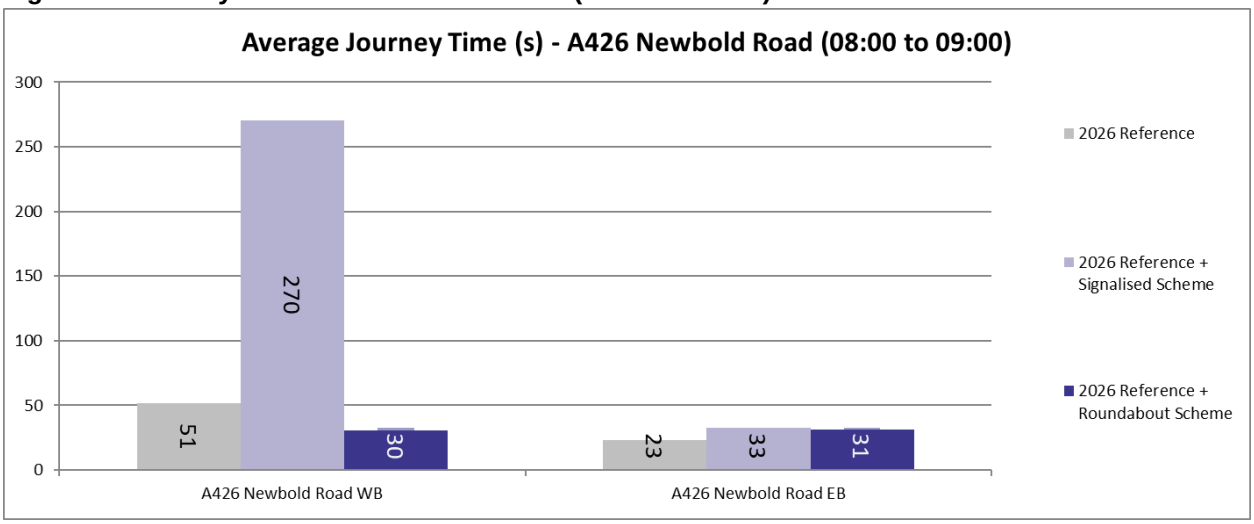
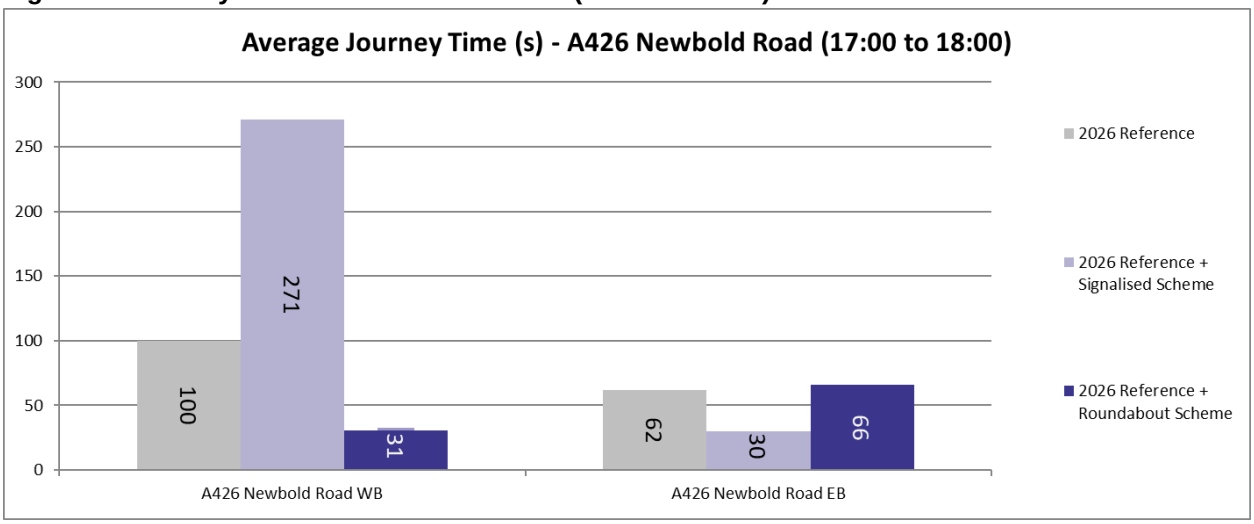


Figure 20 Journey Time A426 Newbold Road (PM Peak Hour)



4.30 The journey time results for the A426 Newbold Road NB approach to A426/Avon Mill junction are presented in **Figure 19** and **Figure 20**. These results again clearly indicate that journey times significantly increase in the AM and PM peak hour in the signalised scheme scenario relative to the Reference Case.

4.31 Within the roundabout scheme scenario, journey times again reduce, with a predicted 19 second reduction in journey times in the AM peak hour, and a 69 second reduction in the PM peak hour.

Figure 21 Journey Time A4071 Newbold Road (AM Peak Hour)

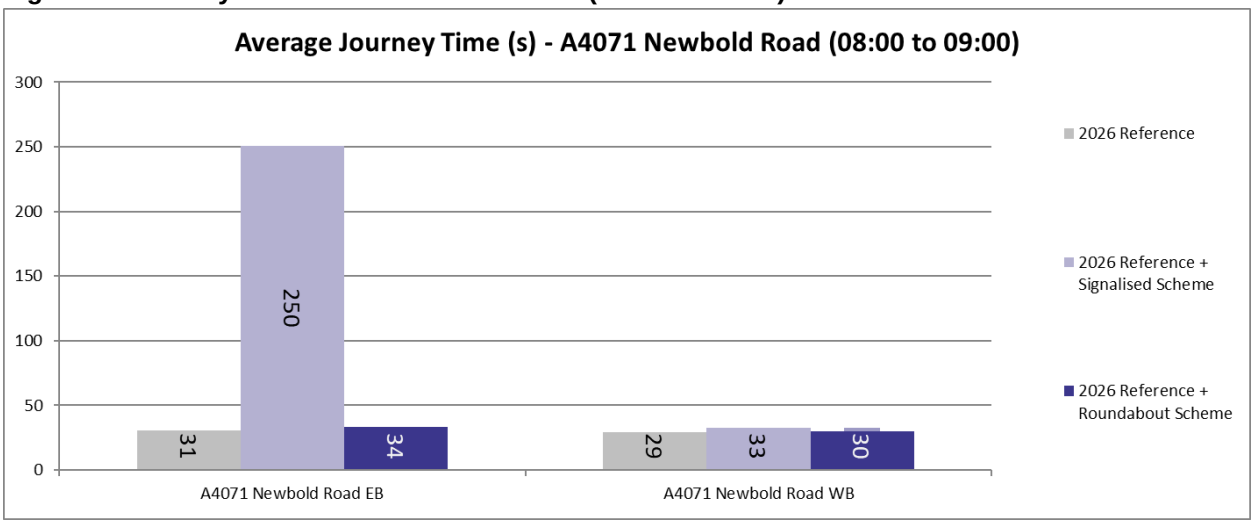
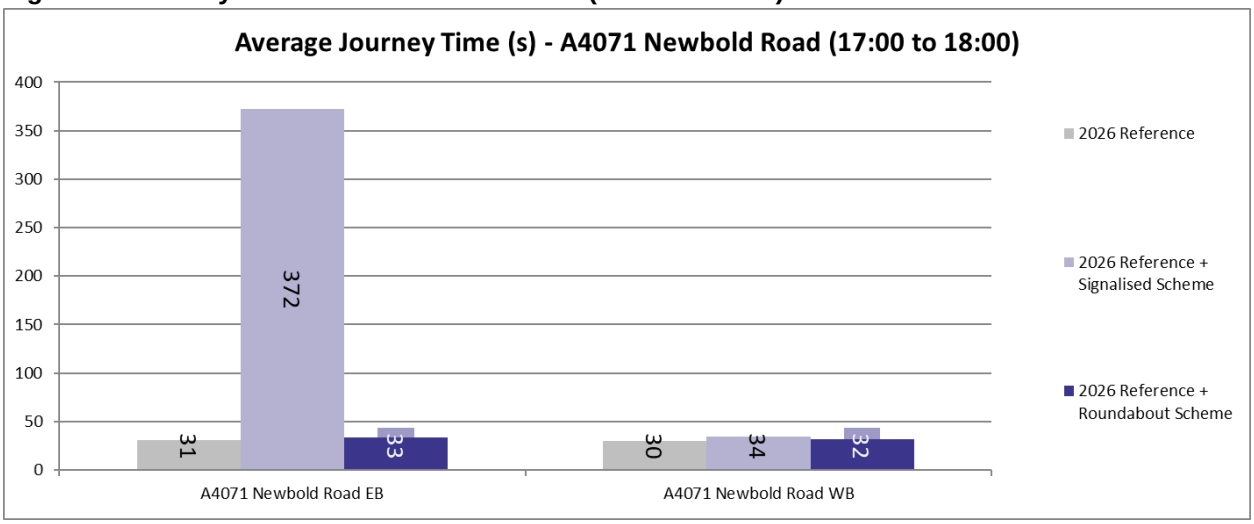


Figure 22 Journey Time A4071 Newbold Road (PM Peak Hour)



4.32 The journey time results for the Newbold Road EB approach to A426/Avon Mill junction are presented in **Figure 21** and **Figure 22**. These results again indicate that journey times are predicted to significantly increase in the AM and PM peak hour in the signalised scheme scenario relative to the Reference Case.

4.33 Within the roundabout scheme scenario however, there is predicted to be no notable impact on journey times, with changes of only 1 or 2 seconds relative to the Reference Case.

Reassignment Impacts

4.34 Following the testing detailed above, further analysis has been undertaken to ascertain the potential traffic re-assignment impacts that may occur following the delivery of the improvement scheme at the A426/Avon Mill junction.

4.35 It is a known issue that as a result of the current congestion issues around the A426/A4071 Avon Mill junction, and subsequent delays on the A426 corridor, some traffic seeks to avoid these delays by travelling along Mill Road and Technology Drive.

4.36 A further benefit of a scheme at the A426/A4071 Avon Mill roundabout is that it will reduce the propensity of traffic to rat-run via more localised routes, thus reducing congestion in these areas which, in turn, are key to accessing Rugby Rail Station.

4.37 Accordingly link flow analysis plots have been produced (see **Figure 23** and **Figure 24**), whereby the difference in traffic flows on this part of the network has been reported against the Reference Case conditions.

4.38 For the purposes of this analysis, and based upon the fact that the roundabout scheme delivers significant improvements in queue lengths and delay when compared to the signalised scheme, only the Roundabout Scheme scenario outputs have been reported against the Reference Case.

Figure 23 Traffic Re-assignment Impacts (AM Peak Hour)

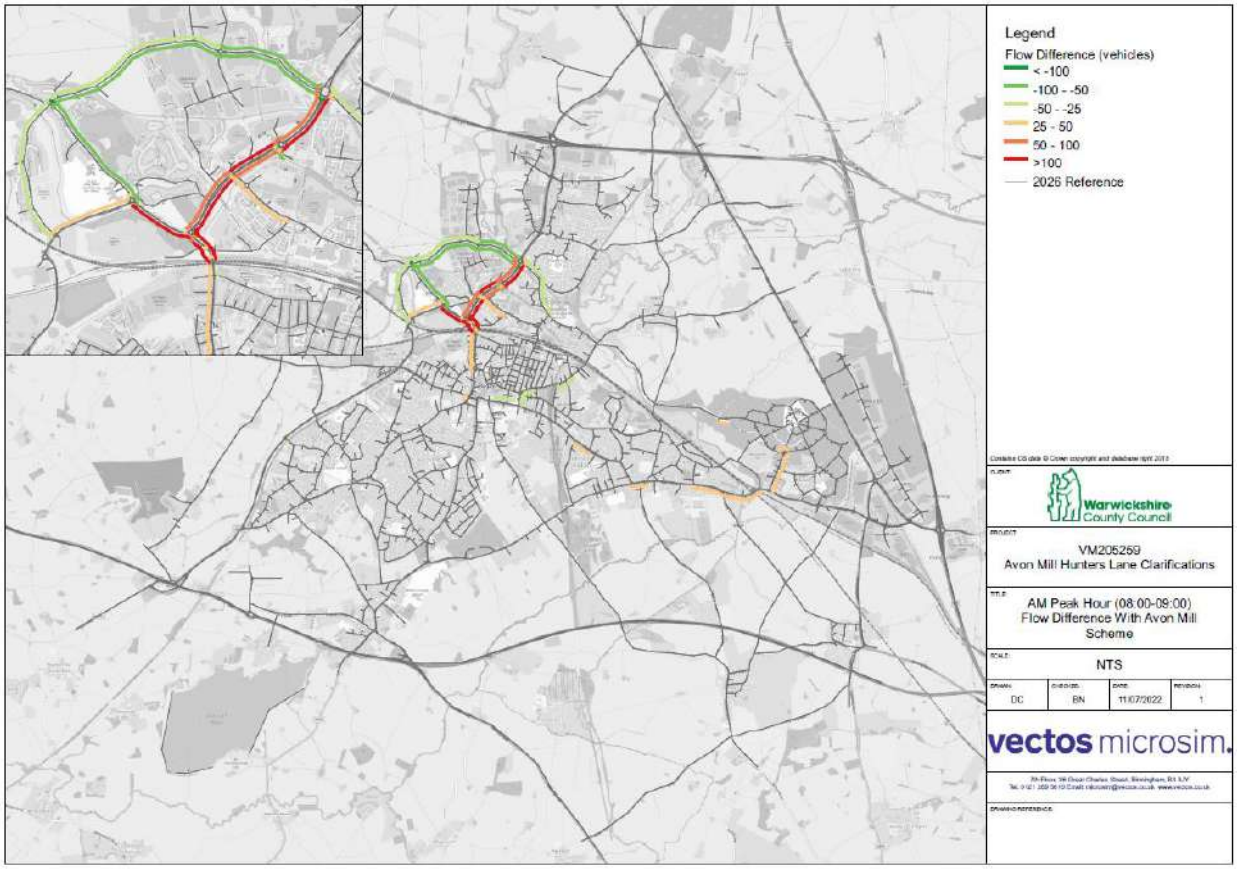
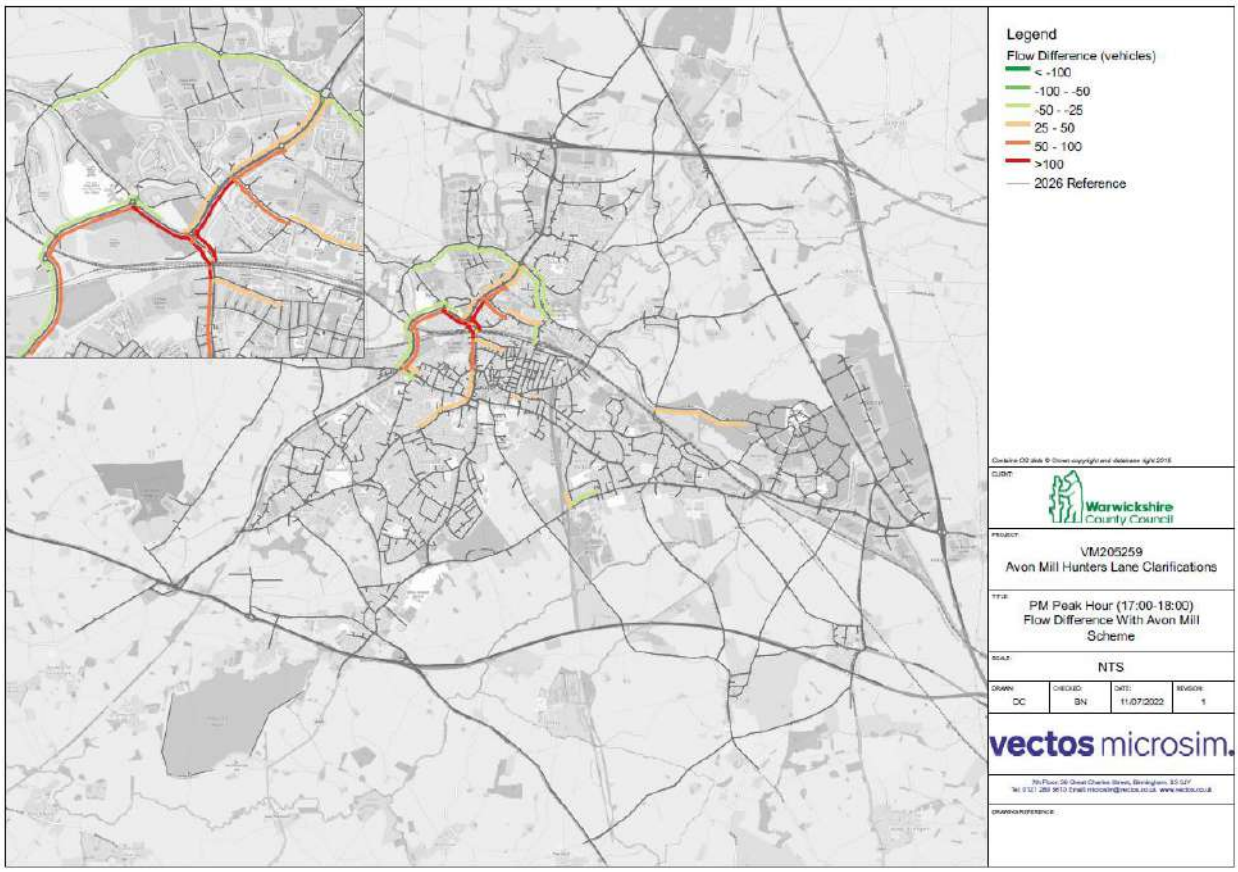


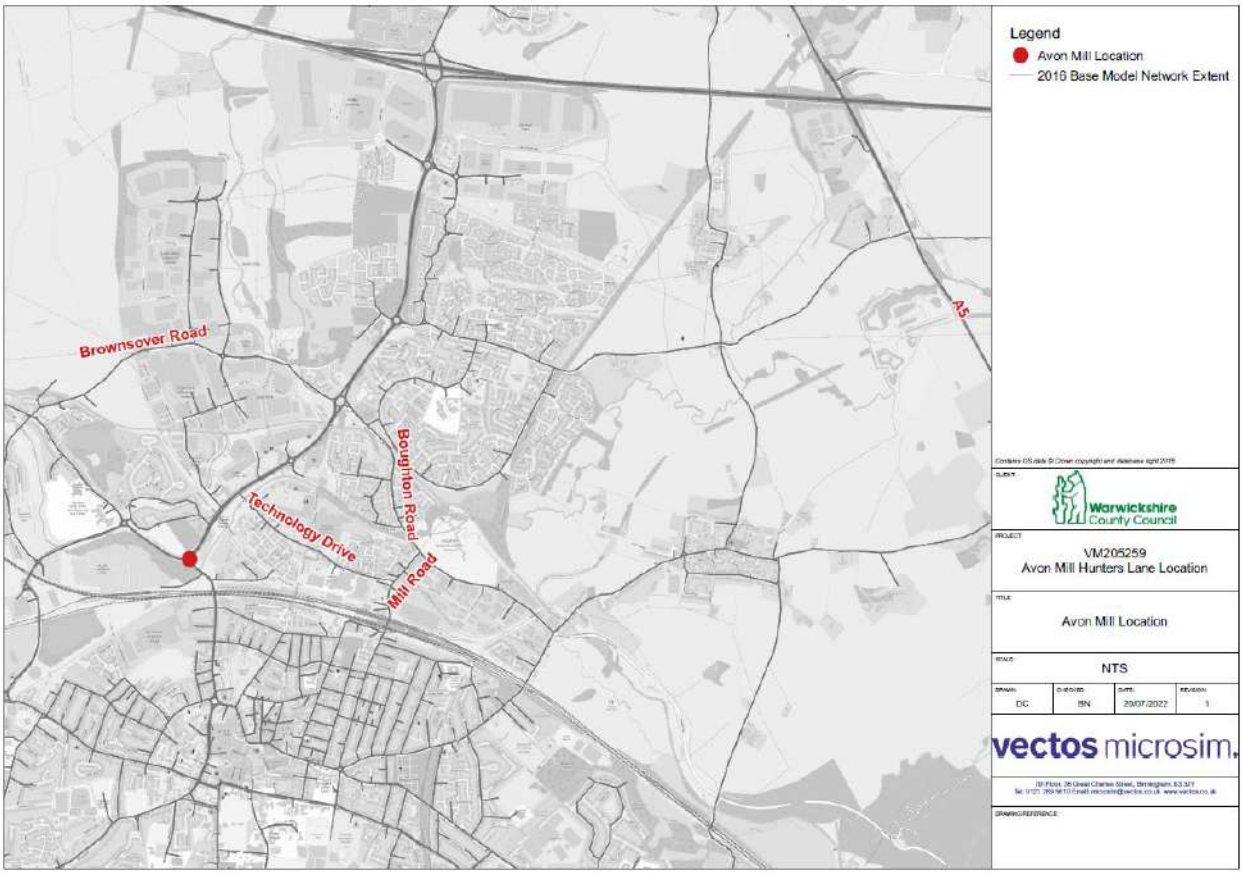
Figure 24 Traffic Re-assignment Impacts (PM Peak Hour)



4.39 The traffic re-assignment as a result of delivering the roundabout scheme proposals at the A426/Avon Mill roundabout have been reported for the AM and PM peak hours in **Figure 23** and **Figure 24**.

4.40 These results clearly indicate that, with the roundabout scheme in place, there is a localised shift in assignment. There is an increase in traffic on the A426, as a result of the reduction in delays on approach the junction, and a corresponding reduction in traffic previously rat-running via more localised routes such as Technology Drive, Mill Road, Boughton Road and Brownsover Road (these routes are highlighted within **Figure 25**.

Figure 25 Localised Alternative Routes Plan



4.41 These impacts occur across both the AM and PM period and should be viewed as an additional scheme benefit as the A426 corridor is the more appropriate route for these trips than the local roads.

4.42 It is also important to note that the link flow difference plots presented do not indicate any potential traffic re-assignment at a more strategic level, with no notable changes in traffic flows induced on the M6 or A5. This demonstrates that the extent of the existing RWA model is sufficient to capture the likely effects of the scheme proposals across the network.

Initial Results Summary

4.43 The results presented within this stage of the report indicate that at both a strategic and localised level, the roundabout scheme is the best performing option tested, with this scheme reducing network wide journey times, along with localised queue lengths and journey times on the most congested approach arms at the junction.

4.44 The results have indicated that the signal scheme is likely to lead to a deterioration of the network performance, which is due to the volume of traffic on each approach and the limited capacity to balance these flows through an optimised set of signal timings.

4.45 On this basis, the modelling is indicating that the preferred option for the A426/A4071 Avon Mill scheme is the roundabout scheme proposals.

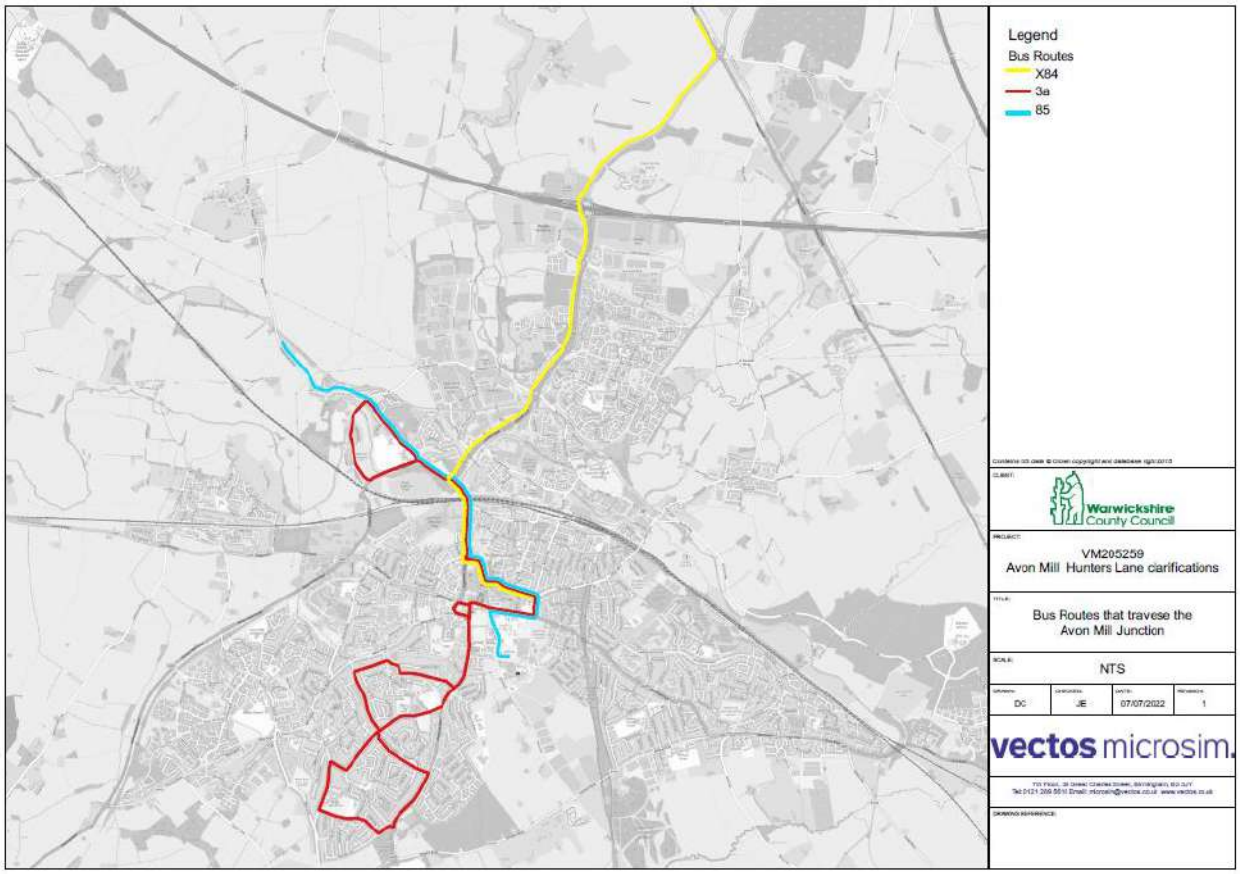
5 Public Transport Impact Assessment

5.1 Following the analysis of the general highway impacts associated with the proposals, further analysis has been undertaken to assess the impacts on bus travel times, for bus services routing through the junction. This assessment specifically considers the changes in bus journey times and bus journey time reliability arising from the scheme proposals.

5.2 A proportion of the public transport services that connect Rugby town centre to areas north of the town (including towards Leicester or Nuneaton) travels through the A426/Avon Mill roundabout. In order to quantify the predicted benefits to public transport services travelling through this junction, as a result of delivering the scheme proposals, bus journey times from across the model have been collected and reported.

5.3 The bus routes included in the RWA model, that route through the A426/A4071 Avon Mill junction are shown in the following:

Figure 26 RWA Bus Routes via A426/A4071 Avon Mill Junction



5.4 The following tables provide an analysis of bus journey times across all routes captured within the models, by reporting the cumulative bus travel time. The cumulative bus travel time is calculated by taking all buses on each route and aggregating the individual bus journey times to give the total time for this route.

5.5 A specific breakdown is provided for services 3a, X84 and 85, as these are the routes that directly travel through the A426/A4071 Avon Mill Roundabout. The results presented compare the 2026 Reference Case with the 2026 Reference Case + Roundabout Scheme (the preferred option), with bus journey times being reported across the AM and PM modelled period (0700-1000 and 1600-1900).

Table 6: AM (07:00-10:00) Avon Mill Specific Bus Journey Time Impacts

Route	Average Number of Completed Bus Trips in Model Period	2026 Reference (hh:mm:ss)	2026 Reference + Scheme (hh:mm:ss)	Difference (mm:ss)
3a Circ	2	00:58:03	00:57:36	-00:27
X84 NB	2	00:22:33	00:21:16	-01:17
X84 SB	3	00:43:01	00:41:59	-01:02
85 NB	3	00:29:26	00:29:03	-00:23
85 SB	5	00:49:23	00:50:21	00:59

Table 7: PM (16:00-19:00) Avon Mill Specific Bus Journey Time Impacts

Route	Average Number of Completed Bus Trips in Model Period	2026 Reference (hh:mm:ss)	2026 Reference + Scheme (hh:mm:ss)	Difference (mm:ss)
3a Circ	3	01:52:04	01:46:10	-05:55
X84 NB	2	00:26:30	00:24:13	-02:17
X84 SB	2	00:29:42	00:29:36	-00:06
85 NB	5	00:59:23	00:54:47	-04:37
85 SB	4	00:51:47	00:51:05	-00:41

5.6 The results presented indicate that overall, the impact of the scheme on bus journey times is positive. **Table 6** and **Table 7** indicate that these routes largely experience improvements in average journey times following the scheme inclusion. There are instances of minor increases (less than 1 minute per bus) in delays on some routes, however these are likely related to the increase in throughput at the Avon Mill roundabout increasing congestion on the A426 south of the Avon Mill junction.

5.7 Further to the above analysis, the average standard deviation of bus journey times across all routes on the model network was also collected. This indicator has been used as a measure of journey time reliability, whereby a lower standard deviation indicates that bus journey times are more consistent across the simulation. These results are presented in **Table 8**.

Table 8: Average Standard Deviation of Bus Journey Times (seconds)

Scenario	AM (07:00-10:00)	PM (16:00-19:00)
2026 Reference	1579	2314
2026 Reference + Roundabout Scheme	1378	2042
Percentage Change	***-12.68%***	***-11.76%***

5.8 **Table 8** indicates that with the scheme in place there is an overall improvement in bus journey time reliability in both the AM and PM period.

Public Transport Summary

5.9 The modelling outputs reported within this section of the report focus on the impacts on bus journey times, and bus journey time reliability, for services travelling through the A426/Avon Mill junction. These results clearly indicate a betterment in average bus journey times, and bus journey time reliability, as a result of delivering the roundabout scheme proposals.

6 Carbon Emissions Impact

6.1 The final stage of assessment focuses on the predicted impact on carbon emissions, as a result of delivering the scheme proposals. These impacts have been assessed through a high-level calculation of the Carbon Dioxide Equivalent (CO2e) value which would be generated as a result of the vehicle emissions generated by traffic within the model area.

6.2 The approach simply takes the total trips completed within each model scenario, the distance and the average speeds achieved within each model scenario. This means that the effect that the scheme has, in terms of emissions generation, can be considered by identifying the effect that the scheme has on distances (i.e. by reducing reassignment) and speeds (by reducing congestion) on fuel consumption within each scenario, by vehicle type.

6.3 This is then converted to Carbon Dioxide Equivalent (CO2e) values to provide the comparable values for each of the following scenarios:

- 2026 Reference Case
- 2026 Reference Case + Roundabout Scheme

6.4 The CO2e values have been calculated via the following steps:

- The total number of completed trips and the average distance travelled have been combined within each scenario to create a value for vehicle kilometres travelled per scenario and by car, LGV and HGV vehicle types.
- The average speeds travelled has been captured within each model scenario.
- For each individual year that has been modelled the fuel consumption has been calculated from the relevant WebTAG tables:
- Table A 1.3.9 has been used to determine the engine split (Petrol, Diesel and Electric) to be assumed for each vehicle type, changing by year.
- Table A 1.3.11 has been used to inform the fuel consumption figures for each different engine type, by year in litres per km.
- Table A 3.3 details the carbon emissions factors by vehicle and engine type changing by year.
- The vehicle miles travelled has been split by the different engine types and combined with the average speed information to create individual total fuel consumption figures for petrol, diesel and electric engine types for each of the vehicle types.
- Fuel consumption figures, by vehicle type and year have been combined with the emissions factors to create the total CO2e figures by vehicle and engine type.

6.5 This process provides CO2e figures by vehicle type which also accounts for the different engine compositions and the changing efficiency levels over the assessment period. The output CO2e values are presented within the following table:

Table 9: Change in Kg CO2 equivalent by Vehicle Type

Scenario	Car	Van	HGV	Total
2026 Without Scheme	29020500	4007960	15419777	48448237
2026 With Scheme	28892503	3975262	15379102	48246868
Percentage Change	***-0.44%***	***-0.82%***	***-0.26%***	***-0.42%***

6.6 The results within **Table 9** indicate that there is a modest reduction in KG CO2e emissions as a result of the scheme delivery. This is as a result of the proposals reducing the distances vehicles travel and increasing the speeds travelled within the model network.

6.7 The model does not allow for variable demand effects and so it is not possible to account for induced traffic at this stage but the current findings indicate that, overall, CO2e levels will improve as a result of the scheme proposals.

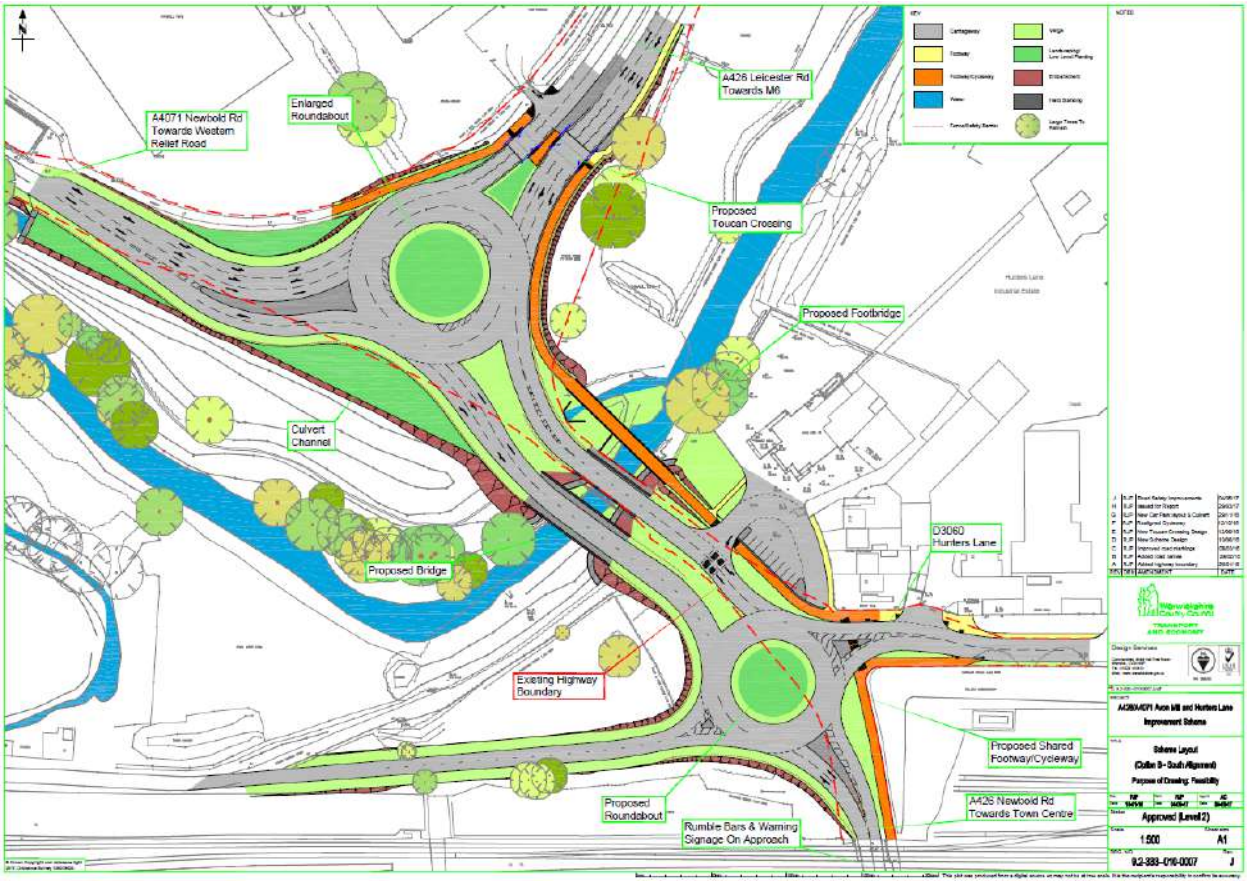
7 Hunters Lane Sensitivity Test

7.1 Following the identification of the roundabout scheme as the preferred option at the Avon Mill junction, a sensitivity test has been completed whereby the proposed Hunters Lane link is delivered alongside the roundabout scheme.

7.2 The proposed Hunters Lane link deliverability is now uncertain; hence it has been tested via a sensitivity test at this stage. This stage of the modelling is intended to demonstrate the additional benefits that the Hunters Lane link scheme could deliver alongside the preferred Avon Mill scheme.

7.3 Previous assessments of the proposed layout of the junction of the A426/Hunters Lane junction have identified a roundabout scheme as the preferred layout, (as shown within **Figure 27**), with a signal option and elongated roundabout being discounted on highway safety grounds.

Figure 27 Hunters Lane – Roundabout Scheme Drawing



7.4 In order to ascertain the additional benefits that could be achieved by delivering the Hunters Lane link, the network wide statistics and localised queue lengths have been reported again as follows:

Network Wide Statistics

7.5 The Network Mean Delay and Network Mean speeds shown in **Figure 28** and **Figure 29** show a negligible improvement in the level of delay at a network wide level with the inclusion of the Hunters Lane link, in addition to the preferred option at the Avon Mill roundabout.

7.6 In both the AM and PM there is a 1 second improvement in average journey times. Further to this, this option also continues to show betterment over Reference Case conditions with as 4 second improvement in average journey times in the AM and 5 second improvement in the PM.

7.7 The Total Completed Trips (**Figure 28**) also indicates a negligible change in the number of trips able to complete once the Hunters Lane link is delivered. These results indicate that, at a network wide level, the inclusion of the Hunters Lane link (in addition to the preferred Avon Mill schemes) results in only small additional improvements over those benefits previously reported.

Figure 28 Network Mean Delay

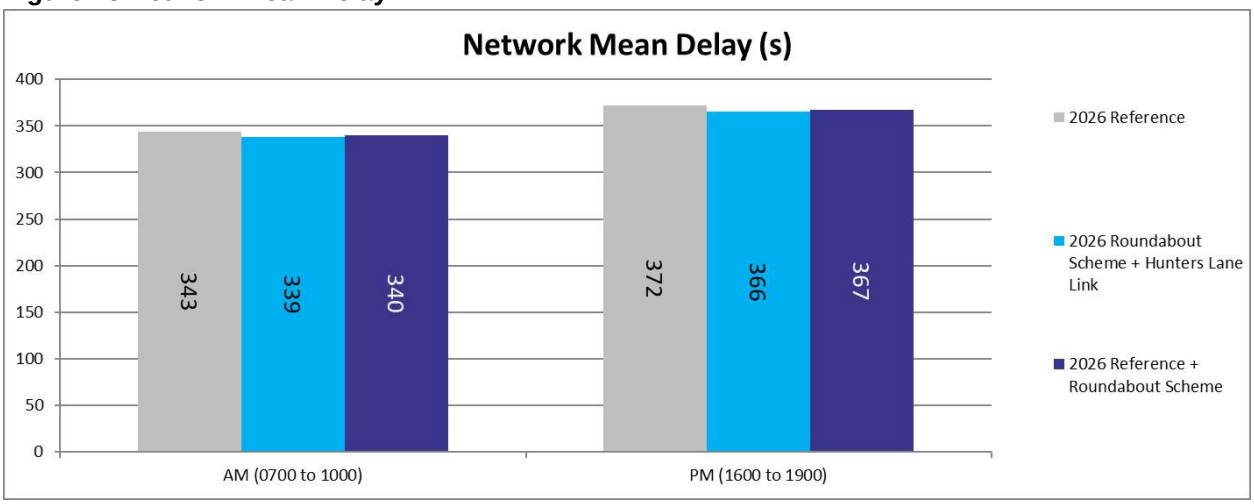


Figure 29 Network Mean Speed

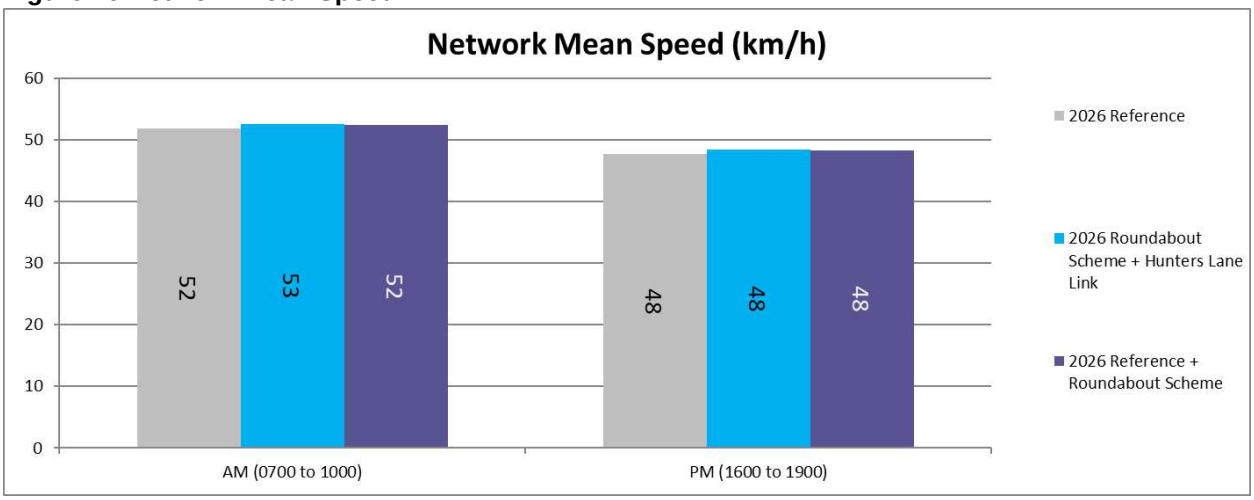
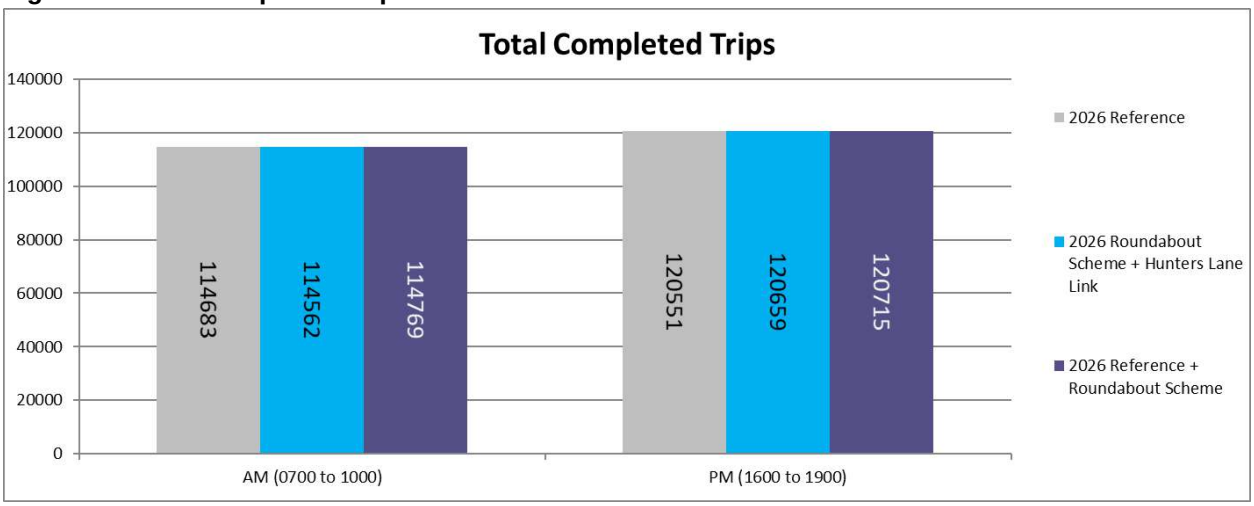


Figure 30 Total Completed Trips



Queue Results

7.8 Further to the analysis presented above, the localised impact in terms of queue lengths at the A426/Avon Mill roundabout have been reported, with a view to presenting the additional benefits that the inclusion of the Hunters Lane link has the potential to deliver at the Avon Mill junction.

7.9 The queue results are presented within **Figure 31** and **Figure 32** for the A426/Avon Mill junction in the AM and PM peak hour respectively.

Figure 31 Avon Mill - Queue Length (AM Peak Hour)

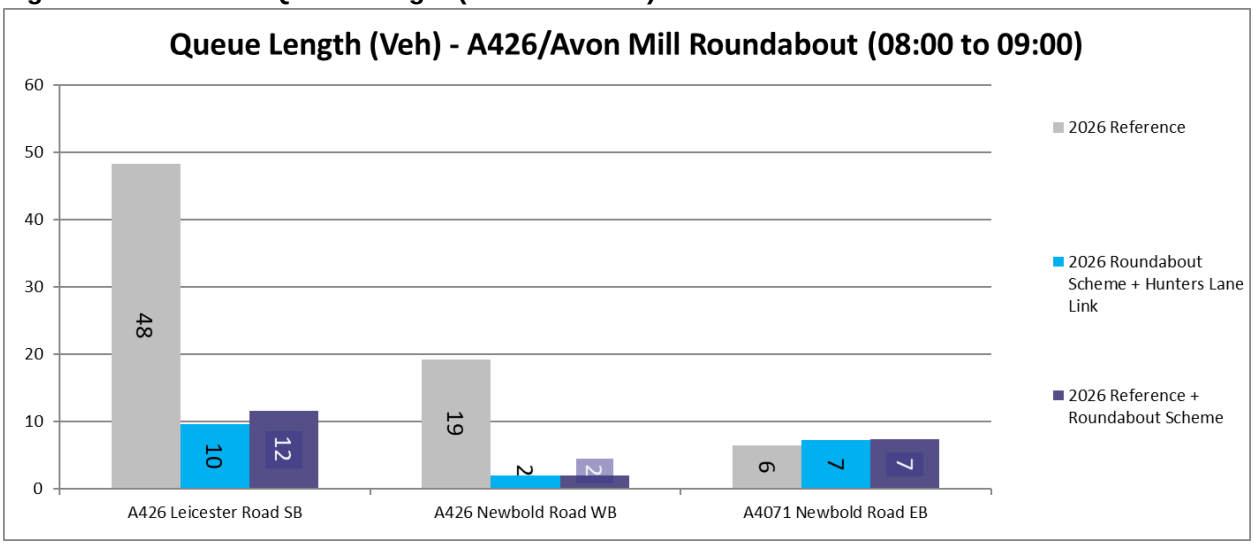
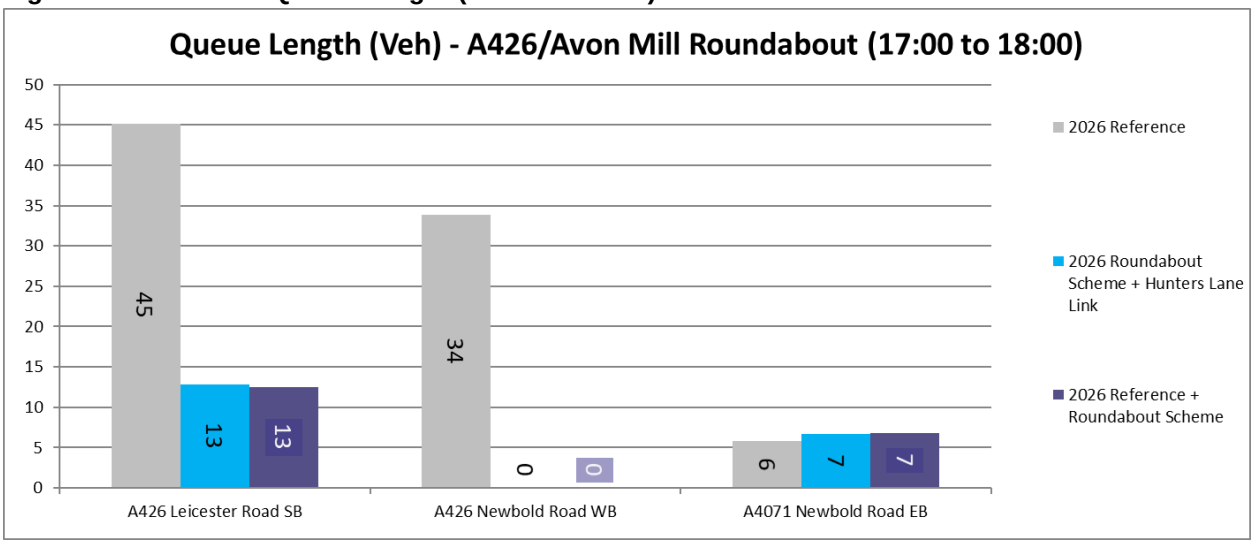


Figure 32 Avon Mill - Queue Length (AM Peak Hour)



7.10 These results indicate that with the inclusion of the Hunters Lane link, alongside the Avon Mill roundabout proposals, there is predicted to be only a marginal improvement in queue lengths in the AM peak hour (A426 SB approach) and no notable change in the PM peak hour.

7.11 These results are indicating that the delivery of the Hunters Lane link will not bring significant additional benefits over those achieved through delivering the roundabout scheme at the Avon Mill junction.

Hunters Lane Link Summary

7.12 The modelling results presented within this section have reported on the impact of delivering the proposed Hunters Lane link, alongside the preferred scheme for the A426/Avon Mill junction.

7.13 The results have indicated that at both a strategic and localised level, there is no significant improvement in the level of delay experienced by all road users across the network, or in queue lengths reported on each approach to the A426/Avon Mill junction

7.14 The modelling undertaken within this sensitivity test is indicating that the delivery of the Hunters Lane link is not a critical element of the scheme, and that the significant benefits unlocked through the delivery of the preferred roundabout solution at the A426/Avon Mill junction are not dependent on the Hunters Lane link also being delivered.

8 Summary & Conclusions

Summary

8.1 Vectos Microsim (VM) has been assisting Warwickshire County Council (WCC) in the collation of evidence to support the business case for the A426/A4071 Avon Mill scheme proposals. These proposals seek to improve the operational performance of A426/A4071 Avon Mill roundabout junction, which lies to the north of Rugby town centre.

8.2 The scheme is necessary to both improve the operational efficiency of the transport network as well as facilitating future housing and employment growth.

8.3 Testing on different scheme options had previously been completed by Arup using cordon models of the area derived from the Rugby Wide Area (RWA) model. This was subsequently supplemented with an assessment completed within the Leicester Road S-Paramics model.

8.4 As previous testing did not allow for consideration of the wider impacts of the scheme proposals, particularly on re-assignment effects, and also relied on models which were not consistent, VM has revisited the option testing using the latest RWA S-Paramics Models.

8.5 All models were based on the latest 2026 RWA future year model. Tw scheme options have subsequently been tested, comprising of the following scenarios:

- Roundabout Scheme: Roundabout scheme option at both Avon Mill roundabout – No Hunters Lane link
- Signalised Junction Scheme: Signalised junction scheme option at Avon Mill roundabout – No Hunters Lane link

8.6 To assess the performance of the scheme options, network wide statistics have been reported, along with localised queue, journey time and traffic re-assignment impacts.

Preferred Option Assessment

8.7 The results presented within this report indicate that at both a strategic and localised level, the roundabout scheme is the best performing option tested, with this scheme reducing network wide journey times, along with localised queue lengths and journey times on the most congested approach arms at the junction.

8.8 The results have indicated that the signal scheme is likely to lead to a deterioration of the network performance, which is due to the volume of traffic on each approach and the limited capacity to balance these flows through an optimised set of signal timings. On this basis, the modelling is indicating that the preferred option for the A426/A4071 Avon Mill scheme is the roundabout scheme proposals.

8.9 Following this, the performance of the preferred roundabout scheme has been further assessed in terms of impacts on modelled bus journey times, and carbon emissions. The modelling outputs reported in terms of the impacts on bus journey times, and bus journey time reliability, for services travelling through the A426/A4071 Avon Mill junction, indicate a betterment in average bus journey times, and bus journey time reliability, as a result of delivering the roundabout scheme proposals.

8.10 Further to this, the Carbon emission results indicate that there is a modest reduction in KG CO2e as a result of the scheme delivery. This is as a result of the proposals reducing the distances vehicles travel and increasing the speeds travelled within the model network.

Hunters Lane Link Assessment

8.11 Following the identification of the roundabout scheme as the preferred option at the Avon Mill junction, a sensitivity test has been completed whereby the proposed Hunters Lane link is delivered alongside the roundabout scheme.

8.12 The proposed Hunters Lane link deliverability is now uncertain; hence it has been tested via a sensitivity test at this stage. This stage of the modelling is intended to demonstrate the additional benefits that the Hunters Lane link scheme could deliver alongside the preferred Avon Mill scheme.

8.13 Previous assessments of the proposed layout of the junction of the A426 Newbold Road/Hunters Lane junction have identified a roundabout scheme as the preferred layout, with a signal option and elongated roundabout being discounted on highway safety grounds.

8.14 The modelling results presented have reported on the impact of delivering the proposed Hunters Lane link, alongside the preferred scheme for the A426/A4971 Avon Mill junction. The results have indicated that at both a strategic and localised level, there is no significant improvement in the level of delay experienced by all road users across the network, or in queue lengths reported on each approach to the A426/Avon Mill junction

8.15 The modelling undertaken within this sensitivity test is indicating that the delivery of the Hunters Lane link is not a critical element of the scheme, and that the significant benefits unlocked through the delivery of the preferred roundabout solution at the A426/A4071 Avon Mill junction are not dependent on the Hunters Lane link also being delivered.

8.16 Despite this, the modelling has demonstrated that the inclusion of the A426/Hunters Lane roundabout proposals are key to improving the network performance around this junction, and compliment the preferred option proposals for the A426/A4071 Avon Mill roundabout. Should the A426/A4071 Avon Mill roundabout proposals be delivered in isolation, then it is likely that the impacts on the Hunters Lane junction would be significant, for both vehicles waiting to exit Hunters Lane, and also vehicles waiting to turn right into Hunters Lane.

Appendix A

Base Model Update Note

vectos microsim.

October 2021

Warwickshire County Council

Avon Mill/Hunters Lane Business Case
Rugby Wide Area Base Model Update

VM205259.TN005

Introduction

1. Vectos Microsim (VM) has been assisting Warwickshire County Council (WCC) in the collation of evidence to support the business case for the Avon Mill scheme proposals.

2. DFT have previously highlighted concerns about the options identification and scheme assessment of the Avon Mill Proposals being undertaken across previous iterations of different models (i.e. a specific junction model and the Leicester Road Corridor Paramics Discovery Model LRCM). DFT has also highlighted that the current LRCM may constrain route choice and reassignment impacts to the North Rugby study area only, and that wider impacts and benefits across Rugby may not be fully captured if the appraisal relies on the LRCM in isolation. To address this concern, VM and WCC proposed that the scheme be re-assessed and appraised within WCC's Rugby Wide Area (RWA) Paramics model.

3. The extent of the RWA is illustrated within **Figure 1** overleaf. The RWA covers the entirety of Rugby town and surrounding villages along with key motorway junctions M6 Junction 1 and M1 junction 18. The future year models also contain a large number of key developments including, most notably, Houlton residential development circa 6000 dwellings on the former Rugby Radio Mast site, DIRFT Rail Freight Terminal and Rugby Gateway residential development and distribution centre in the north. Further details pertaining to the development of the original Base and forecast models are included within the associated LMVR and Forecasting reports.

4. Before making the suite of RWA models available for the Avon Mill assessment, WCC requested that the 2016 RWA Base model was updated to account for additional survey data which has been made available to improve model calibration in certain areas if the model.

5. This note details the amendments made and to highlight the key calibration and validation levels along the A426 corridor, most likely to benefit from the Avon Mill scheme proposals, within the RWA model.

6. Prior to undertaking these refinements, the RWA Base model used for this update has previously been updated with refined Rugby Rail Station car park demands during a recent assessment of options to improve the transport network around Rugby Rail Station, details of which can be found within **Appendix A** of this note. Since the area of Rugby station and Mill Road are likely to benefit from the delivery of Avon Mill, it was considered pertinent to ensure that the changes were retained within the model for the purposes of assessing Avon Mill.

7. In addition, analysis of the current traffic conditions within the Avon Mill Scheme study area have been provided within **Appendix B** of this note.

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Figure 1 Rugby Wide Area Network Extent.

Aims

8. The following steps were taken to refine the RWA Base model;

- In response to new data being available, explicitly model the traffic associated with the Technology Park shopping mall off Technology Drive, which includes the Homebase store;
- Update bus routes and schedules to reflect recent provisions;
- Include TomTom journey time data in the A426 corridor validation to assess the level of fit in light of concerns regarding certain areas not being appropriately validated for the purpose of the Avon Mill Assessment.
- Update the Generalised Cost Equation to the latest WebTag Databook.

Methodology

Technology Park Inclusion

9. Technology Drive is a key road within the north Rugby area. It connects Junction 1 Retail Park, Technology Park and surround residential developments with the A426 via a signalised junction to the West, and Mill Road to the East. It is an area which will be directly affected if the Hunters Lane link is

included as part of the Avon Mill scheme proposals and, if the link is not included then Technology drive will still be indirectly affected as traffic flows are retained on the A426 rather than reassigning away from Avon Mill and onto Technology Drive.

10. A 2019 MCC count was now available for the Technology Park access which was previously included as part of a larger zone also covering the Junction 1 Retail Park, both of which are shown in **Figure 2**. The count provided an opportunity to rationalise the movements within the model in this area. A comparison between the MCC counts and the modelled counts at the Technology Park access can be found in **Table 1**.

Figure 2: Technology Park Location.

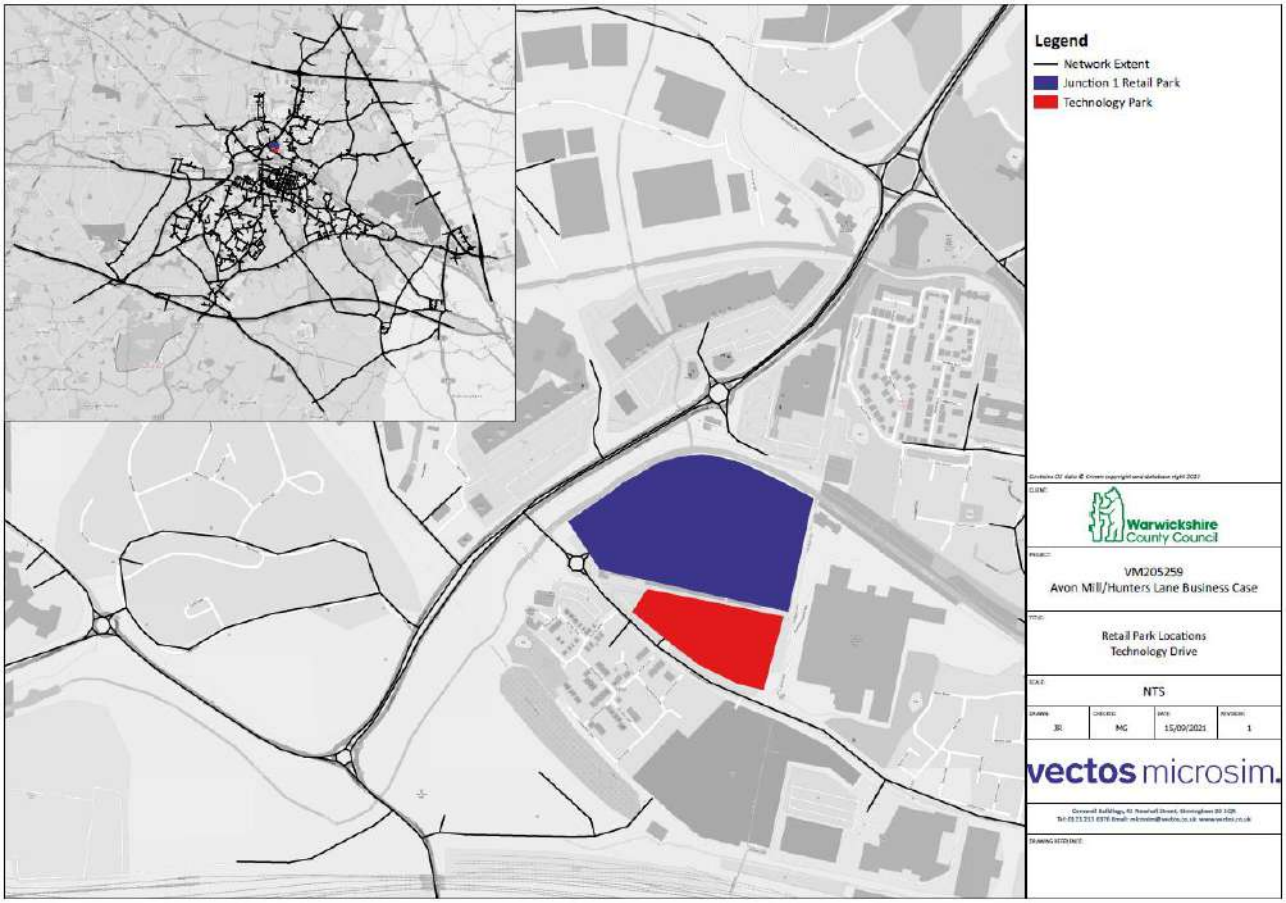


Table 1: Technology Park Access – MCC Counts vs Modelled Counts.

	AM Peak Hour (08:00 – 09:00)			PM Peak Hour (17:00 – 18:00)		
Turn	Observed	Modelled	Difference	Observed	Modelled	Difference
Technology Park to Technology Drive N	24	114	90	85	242	157
Technology Park to Technology Drive N	15	41	26	43	99	56
Technology Drive N to Technology Park	46	116	70	92	250	158
Technology Drive N to Technology Drive S	377	437	60	388	305	-84
Technology Drive S to Technology Park	22	68	46	32	104	72
Technology Drive S to Technology Drive N	393	299	-95	417	345	-72

11. **Table 1** shows that the original model overestimated the flows using the Technology Park access. Therefore a new model zone was created to explicitly represent Technology Park, Zone 1100, and the demands for this zone were calculated based on the newly available MCC survey. Correspondingly, a reduction to Zone 431 demands was applied to account for the Technology Park demands now being stored in Zone 1100 and an additional reduction to ensure that traffic volumes exiting Junction 1 retail park match the original count.

12. Select link analysis was used to determine the direction of travel to/from Zone 431 and the appropriate origin-destination pairs identified to ensure an appropriate trip distribution was applied to the Zone 1100 demands such that a good level of fit was achieved when assessing the turning count calibration at this junction.

13. The trip generation values for Technology Park and the trip reduction values for Junction 1 Retail Park can be found in **Tables 2** and **3**.

Table 2: Technology Park Trip Generation.

	Light Vehicles			Heavy Vehicles		
	Arrival	Departure	Total	Arrival	Departure	Total
07:00 – 08:00	34	15	49	1	1	2
08:00 – 09:00	66	38	104	2	1	3
09:00 – 10:00	109	95	204	1	2	3
16:00 – 17:00	128	129	257	0	0	0
17:00 – 18:00	124	128	252	0	0	0
18:00 – 19:00	91	106	197	0	0	0

Table 3: Junction 1 Retail Park Trip Reduction.

	Light Vehicles			Heavy Vehicles		
	Arrival	Departure	Total	Arrival	Departure	Total
07:00 – 08:00	-109	-107	-217	-8	-5	-13
08:00 – 09:00	-175	-148	-323	-9	-7	-16
09:00 – 10:00	-190	-199	-389	-7	-10	-17
16:00 – 17:00	-132	-389	-521	-3	-14	-17
17:00 – 18:00	-174	-267	-441	-3	-5	-8
18:00 – 19:00	-168	-256	-423	-2	-6	-9

14. The adjustment highlighted above has been accounted for within the updated model demands. Both the release profile and Origin-Destination distribution previously used for Zone 431 were retained for zone 431 and Zone 1100, no changes have been made to the Retail Park calibration parameters following the refinement. Following the adjustment described, network wide and localised calibration checks have been undertaken and are reported later within this note.

Generalised Cost Equation Update

15. Following the update of the base model demands, to refine the interactions along Technology Drive, the Generalised Cost Equation (GCE) has been updated.

16. The GCE, for each vehicle type, have been calculated using the guidance outlined in TAG Unit A1.3 and Unit M2 using relevant values contained in the TAG Data Book July 2021 release V1.15, this Data Book was selected as it was the most up to date at the time of rerunning the base model. The user parameters selected within the Data Book assumed Price Year at 2010, as recommended, and Base year for valuations at 2016, as this is the Year the RWA base model was developed for.

17. The resultant Time and Distance values by vehicle type are shown in the following table 4.

Table 4: Time & Distance Values

Type	Description	Time	Distance	Tolls
1	Car	18.70	6.52	0
2	LGV	25.60	9.03	0
3	OGV1	25.86	16.59	0
4	OGV2	25.86	32.49	0

Bus Routes Update

18. Bus operators have previously expressed concerns around the journey time reliability of the existing service provision of routes that travel via the Avon Mill junction, furthermore they have highlighted this as a key constraint when looking to increase their offering alongside the existing provision. Because of reliability issues around bus journey times along the A426, Bus operators tend to avoid this area.

19. As the Avon Mill Scheme proposals seek to alleviate congestion within the area, as highlighted within the existing conditions analysis, the bus routes and schedules have been updated to 2021 levels in

accordance with information available from bus providers. This will ensure that any public transport benefits are presented using the existing service provision as a benchmark.

20. Following this update, the following services are now captured within the latest RWA Base model. The average number of completed bus trips across each simulated modelled period has been presented by bus route.

Table 5: Average Bus service completions within a model period.

Route	Average Number of Completed Bus Trips in AM Model Period	Average Number of Completed Bus Trips in PM Model Period
D1 NB	2	2
D1 SB	2	2
D2 NB	1	1
D2 SB	1	1
580 NB	1	1
580 SB	1	1
11	1	0
4 NB	10	8
4 SB	8	8
3a Circ	2	2
3 Circ	2	2
2 NB	2	3
2 SB	2	3
1 NB	3	2
1 SB	2	2
63 NB	2	3
63 SB	1	0
86 WB	5	4
86 EB	5	4
9 NB	2	3
9 SB	3	1
Total	**56**	***51***

21. As shown within the table above the total average number of buses shown to complete their designated route within the AM and PM 3 hour modelled periods are 56 and 51 respectively.

22. The following figures highlight the bus routes included within the RWA model following update to the services.

Figure 3: Rugby Bus Routes

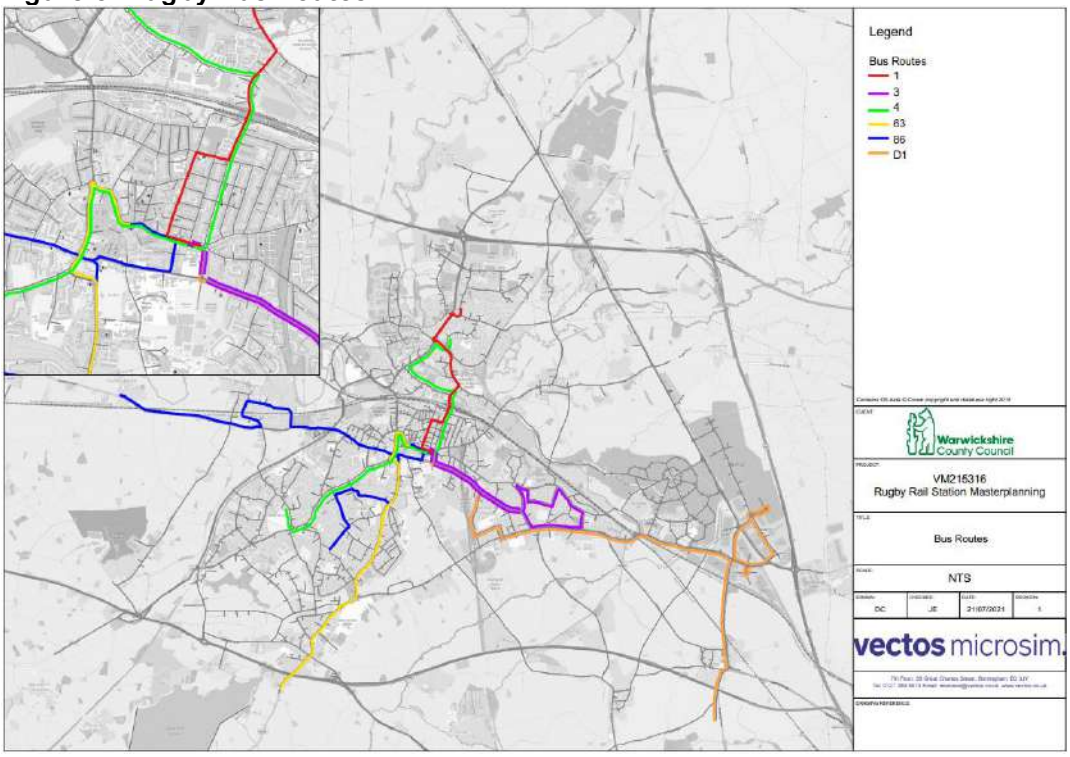
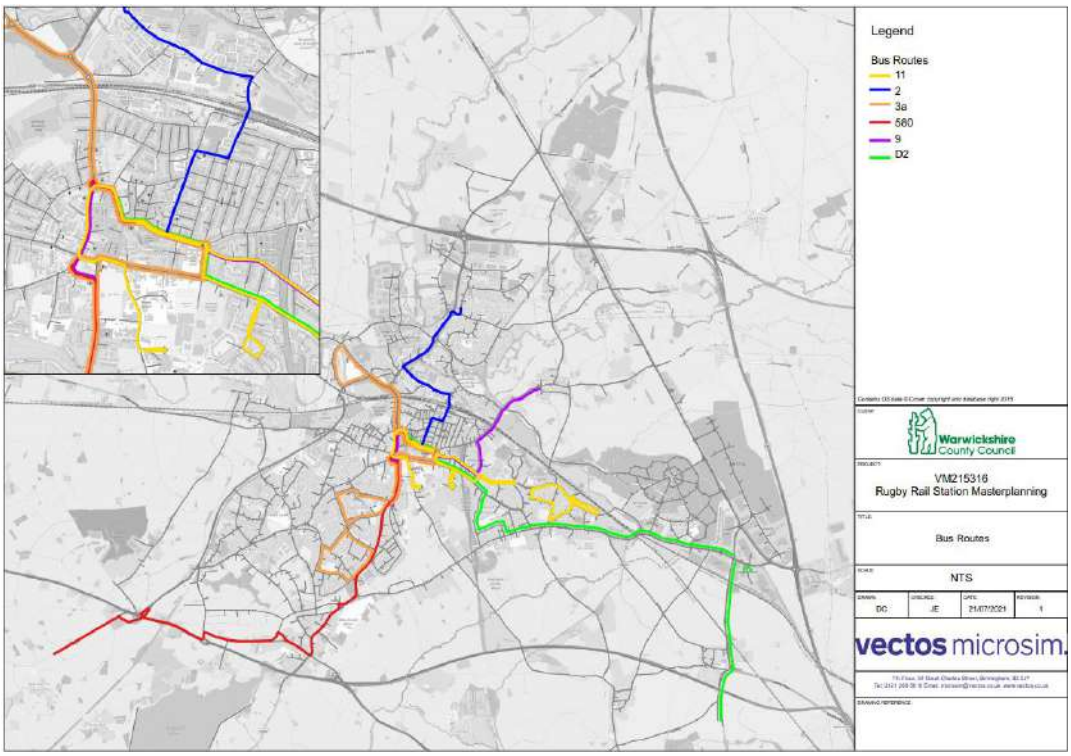


Figure 4: Rugby Bus Routes

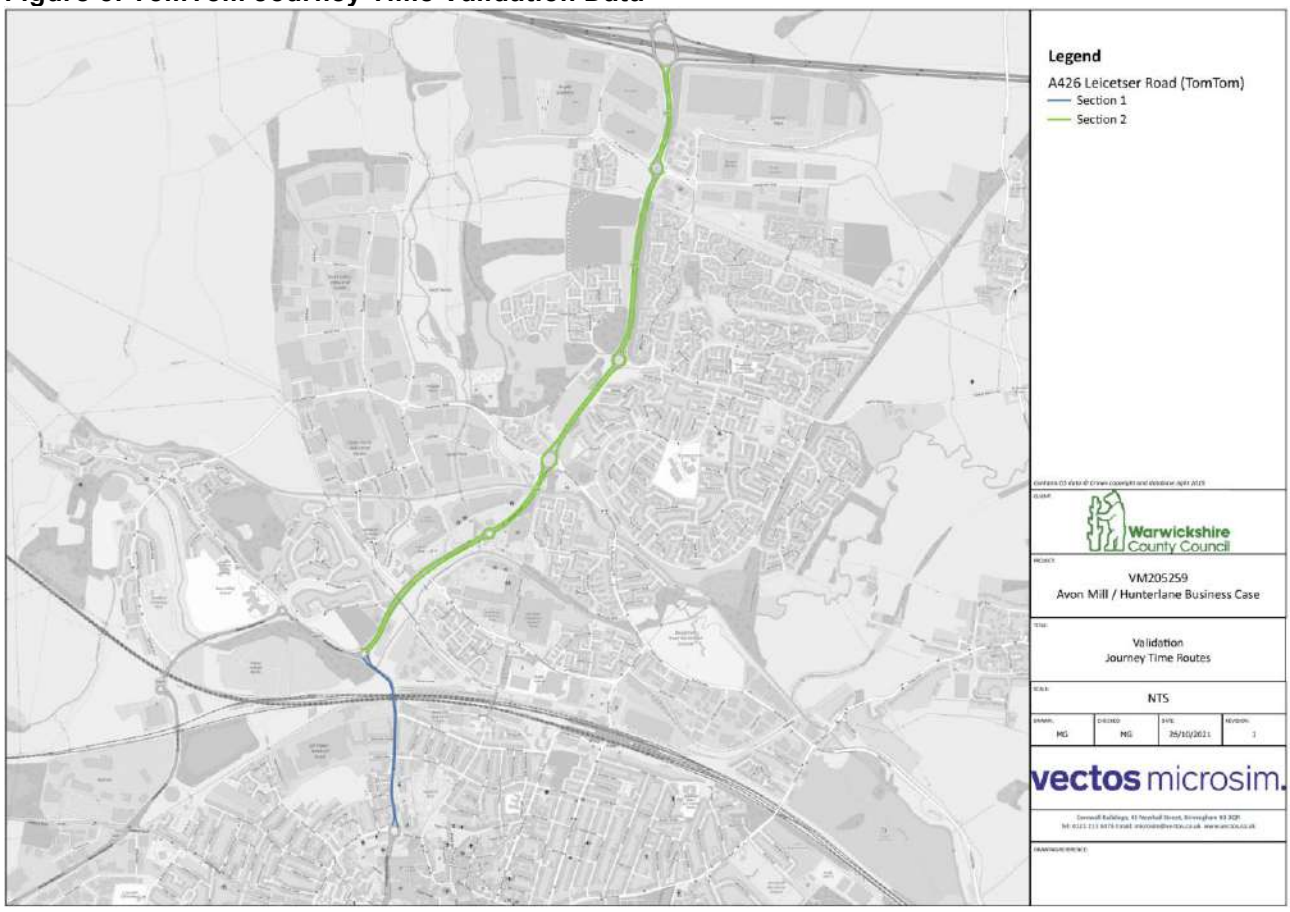


Journey Time Validation Data TomTom.

23. The original base model was validated against journey times extracted from Highways Analyst for 11 key routes and corridors across the Rugby modelled area, this is detailed within the original model LMVR. In addition a further 3 routes along the most congested areas of the network Leicester Road, Mill Road and Dunchurch Crossroads were collected via the Manual Car Observer (MCO) method.

24. Following the recent acquisition of TomTom data, covering the length of the A426 corridor, validity of the modelled travel times has been compared against the TomTom travel times for the purposes of this update. The TomTom Data covers the A426 corridor from Rugby gyratory to the M6 roundabout. The locations where this data has been used are highlighted within Sections 1 and 2 of the Leicester Road.

Figure 5: TomTom Journey Time Validation Data



Overall Model Calibration

25. Following the refinement of the Technology Park traffic volumes and the updates to the Bus Services and Generalised Costs, the overall model calibration was assessed to ensure that the model was still fit for purpose.

26. A total of 13 two-way link counts and 95 junction count surveys were used to assess model calibration. This resulted in around 730 data samples being used to assess model calibration. In addition to this, the sum of the movements from each approach to the surveyed junctions was calculated to provide an additional 338 link counts to assess against TAGs flow assessment criteria.

The GEH Statistic

27. The observed flows were checked against the modelled flows on the network and the level of convergence between flows has been calculated. The initial assessment measure is the GEH statistic, which is a common comparative measure in this context. The formula of the GEH statistic is as follows:

$$GEH = \sqrt{\frac{(O-E)^2}{0.5(O+E)}}$$

Where

O = Observed flow

E = Modelled assigned flow

28. The GEH is a measure that includes both the absolute and the relative difference. The convergence is considered acceptable if the GEH statistic is less than 5 in 85% of data (TAG, Volume 12).

TAG Criteria

29. The model calibration and validation process has been carried out, where possible, in accordance with the criteria specified within TAG Vol.12 (Traffic Appraisal Manual). These guidelines are summarised in **Table 6**.

Table 6: TAG Model Assessment Criteria.

Criteria and Measure	Acceptability
Assigned Hourly Flows	
Individual flows within 100vph (flows<700vph)	85% of all cases
Individual flows within 15% (flows 700-2700vph)	85% of all cases
Individual flows within 400vph (flows>2700vph)	85% of all cases
GEH statistic: individual flows GEH<5	85% of all cases
Modelled Journey Times	
Times within 15% (or 1 minute, if higher)	85% of all cases

Turn Count Calibration

30. A summary of the overall level of model calibration achieved is summarised within the following tables, while the full results can be found in **Appendix C**. This assessment is focussed on the full set of Turn and Link surveys (but does not include the approach link counts derived from the junction surveys). All modelled results were based on an average of 10 random seed runs per time period.

Table 7: AM Turn Count Calibration.

	07:00 – 08:00		08:00 – 09:00		09:00 – 10:00	
Counts	733		734		725	
GEH ≤ 5	682		659		679	
%	**93%**		**90%**		**94%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	539	74%	494	67%	520	72%
4	627	86%	592	81%	621	86%
5	682	93%	659	90%	679	94%
6	710	97%	697	95%	704	97%
7	728	99%	718	98%	718	99%
8	731	100%	728	99%	722	100%
9	731	100%	733	100%	725	100%
10	732	100%	734	100%	725	100%

Table 8: PM Turn Count Calibration.

	16:00 – 17:00		17:00 – 18:00		18:00 – 19:00	
Counts	728		726		723	
GEH ≤ 5	661		645		659	
%	**91%**		**89%**		**91%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	513	70%	478	66%	504	70%
4	593	81%	581	80%	602	83%
5	661	91%	645	89%	659	91%
6	697	96%	694	96%	693	96%
7	714	98%	713	98%	710	98%
8	721	99%	724	100%	719	99%
9	725	100%	726	100%	721	100%
10	728	100%	726	100%	723	100%

31. From **Tables 7** and **8** it can be seen that, following the model updates, the overall Turn Count calibration exceeds TAG guidance.

Link Count Calibration

32. Entry flows have been aggregated for all links that comprise the turning count surveys. The result of this is to provide an overall level of calibration in the context of purely link flows, since a large number of small turning counts can potentially bias the results of the calibration check. An overview of the outcome of this process is provided within the following tables, while the full results can be found in **Appendix D**. It can be seen that the overall Link Count calibration remains good, exceeding TAG guidance.

Table 9: AM Link Count Calibration.

	07:00 – 08:00		08:00 – 09:00		09:00 – 10:00	
Counts	338		338		338	
GEH ≤ 5	302		306		308	
%	**89%**		**91%**		**91%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	228	67%	205	61%	231	68%
4	279	83%	271	80%	275	81%
5	302	89%	306	91%	308	91%
6	322	95%	321	95%	322	95%
7	333	99%	327	97%	328	97%
8	337	100%	332	98%	336	99%
9	338	100%	336	99%	338	100%
10	338	100%	338	100%	338	100%

Table 10: PM Link Count Calibration.

	16:00 – 17:00		17:00 – 18:00		18:00 – 19:00	
Counts	338		338		338	
GEH ≤ 5	302		301		302	
%	**89%**		**89%**		**89%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	229	68%	222	66%	229	68%
4	275	81%	272	80%	275	81%
5	302	89%	301	89%	302	89%
6	317	94%	321	95%	323	96%
7	327	97%	328	97%	331	98%
8	333	99%	332	98%	334	99%
9	334	99%	336	99%	335	99%
10	335	99%	337	100%	336	99%

Link Flow Calibration

33. As noted above, the turn counts on each link were aggregated to provide an additional set of link counts. This allowed for a significantly larger set of data from which a comparison of the observed and modelled flows could be undertaken according to TAG flow calibration criteria. The outcome of these comparisons, for both AM and PM peak hour periods, has been presented within the following table.

Table 11: Link Flow Calibration.

	07:00 – 08:00	08:00 – 09:00	09:00 – 10:00	16:00 – 17:00	17:00 – 18:00	18:00 – 19:00
Observed <700vph	285	264	291	268	252	279
Modelled within 100vph	265	249	281	254	242	268
% within DMRB	**93%**	**94%**	**97%**	**95%**	**96%**	**96%**
Pass / fail	Pass	Pass	Pass	Pass	Pass	Pass
Observed 700 to 2700vph	45	63	42	56	71	55
Modelled within 15%	40	61	34	48	62	45
% within DMRB	**89%**	**97%**	**81%**	**86%**	**87%**	**82%**
Pass / fail	Pass	Pass	Fail	Pass	Pass	Fail
Observed >2700vph	8	11	5	14	15	4
Modelled within 15%	8	11	5	14	15	4
% within DMRB	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Pass / fail	Pass	Pass	Pass	Pass	Pass	Pass
Total Counts	338	338	338	338	338	338
Total within standard	313	321	332	316	319	317
% within DMRB	**93%**	**95%**	**95%**	**93%**	**94%**	**94%**
Pass / fail	Pass	Pass	Pass	Pass	Pass	Pass

34. From **Table 11** above it can be seen that the Link Flow calibration is extremely good, with all total count values above 90%, exceeding TAG criteria.

Localised Calibration

Turn Count Calibration

35. Although overall calibration levels are important, in this instance the local junction calibration is considered more critical and so this has been considered in detail during this update.

36. Calibration levels of junctions close to or affected by to the Avon Mill scheme proposals have been presented for the nine junctions illustrated within **Figure 6**. This is presented within **Tables 12 and 13** and further demonstrate that the model provides a good level of base calibration within the area of assessment.

Figure 6: Localised Calibration Locations.

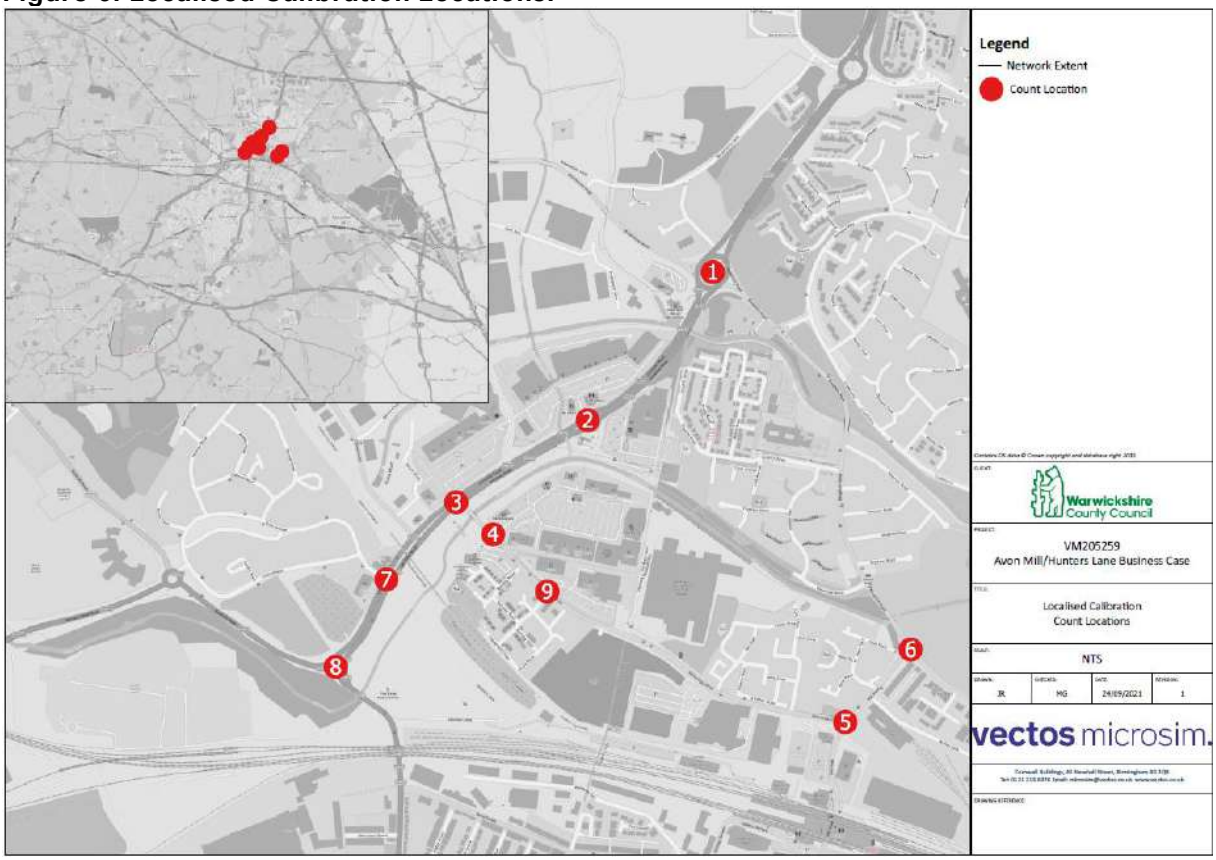


Table 12: AM Turn Count Calibration - Local.

	07:00 – 08:00		08:00 – 09:00		09:00 – 10:00	
Counts	69		69		69	
GEH ≤ 5	65		63		62	
%	**94%**		**91%**		**90%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	50	72%	48	70%	42	61%
4	61	88%	57	83%	56	81%
5	65	94%	63	91%	62	90%
6	68	99%	67	97%	65	94%
7	69	100%	69	100%	66	96%
8	69	100%	69	100%	67	97%
9	69	100%	69	100%	68	99%
10	69	100%	69	100%	69	100%

Table 13: PM Turn Count Calibration - Local.

	16:00 – 17:00		17:00 – 18:00		18:00 – 19:00	
Counts	69		69		68	
GEH ≤ 5	63		64		55	
%	**91%**		**93%**		**81%**	
GEH ≤	**Count**	**%**	**Count**	**%**	**Count**	**%**
3	44	64%	41	59%	32	47%
4	53	77%	54	78%	46	68%
5	63	91%	64	93%	55	81%
6	66	96%	67	97%	62	91%
7	67	97%	69	100%	66	97%
8	68	99%	69	100%	68	100%
9	68	99%	69	100%	68	100%
10	69	100%	69	100%	68	100%

37. As demonstrated in the tables above the local levels of calibration are very good and exceed TAG criteria in all hours except the last PM hour between 18:00 and 19:00. For the last PM hour, the result of 81% falls slightly below of the 85% required by TAG, however, this is still considered an acceptable calibration since the majority of counts still return a GEH of less than 6 when the criteria is loosened and no count comparisons return a GEH of 8 or more.

38. The detailed turn counts for the junctions on Technology Drive and Mill Road and A426 Corridor can be seen in **Appendix E.**

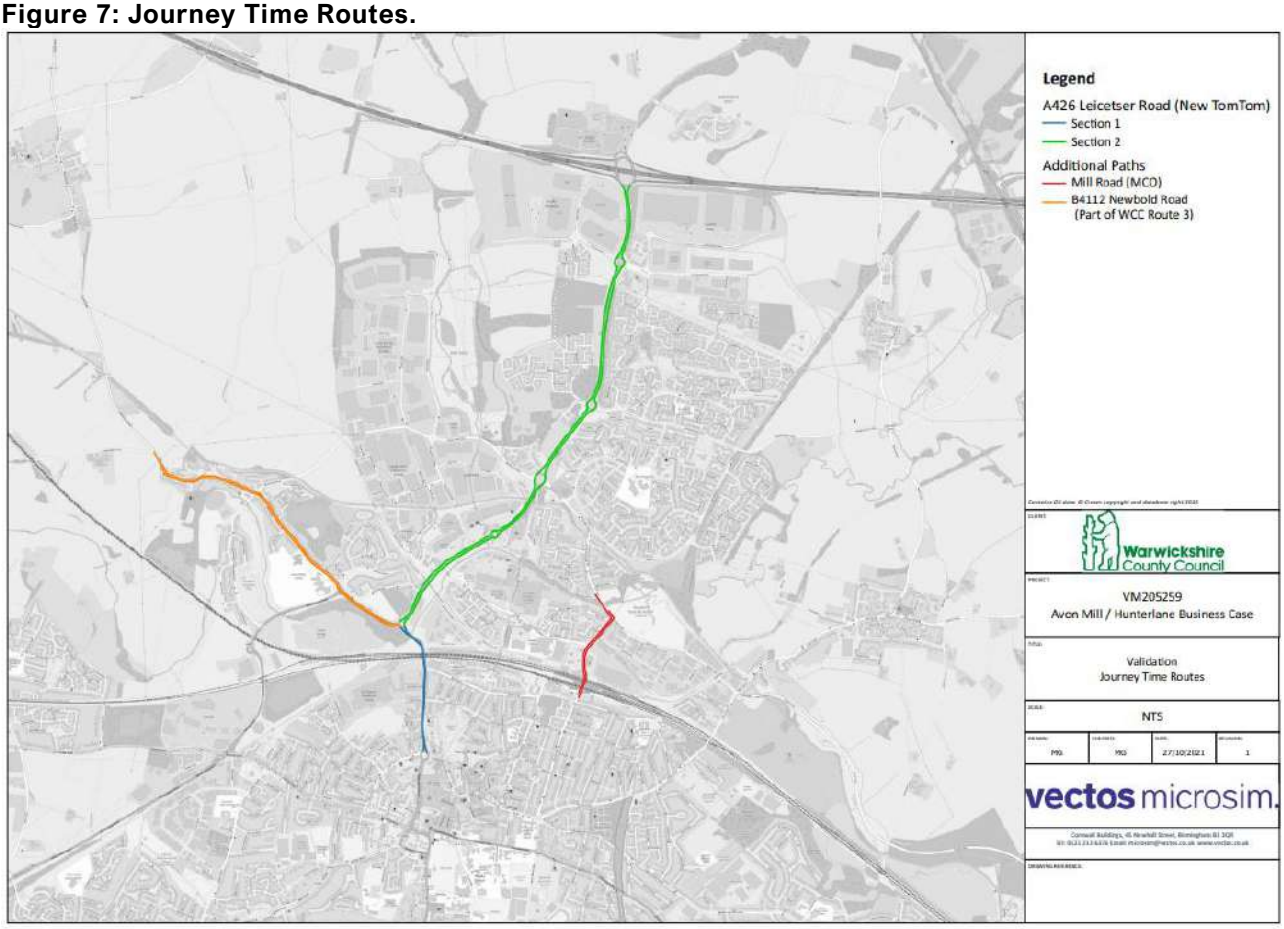
Observed Journey Time Validation

39. As discussed previously, the RWA was originally validated to journey times on several key routes within the study area. In addition, additional routes, along Leicester Road and Mill Road were collected via the Manual Car Observer (MCO) method. Following the recent acquisition of TomTom data, covering the length of the A426 corridor, validity of the modelled travel times has been compared against the TomTom travel times for the purposes of this update. The observed MCO journey times along Mill Road have been retained as per the original LMVR and the journey time from the Newbold section of WCC Route 3 has been isolated for the purposes of the local validation.

40. The two-way routes used for the local validation, which are considered most critical to the Avon Mill Assessment are illustrated within **Figure 7** and consist of:

- A426 Leicester Road (between M6 Junction 1 and Evreux Way)
- B4112 Newbold Road (between Yates Avenue and A426 Leicester Road)
- Mill Road (between Murray Road and Boughton Road)

Figure 7: Journey Time Routes.



41. TAG states 85% or more of modelled journey times must be within 15% (or 1 minute, if higher) of observed journey times on routes that are greater than 3km for the model to be considered as validated.

42. The A426 Leicester Road route has been split into sections and comparisons made between the observed and modelled journey times by each individual section.

43. Paramics records the time it takes for every vehicle to traverse the entire length of the path within the model period. This information is collated and then the average journey time calculated for all vehicles, across each model hour.

44. The newly acquired journey time information along Leicester Road corridor captured a northbound/southbound route for Section 1 and 2 and was obtained from April 2016 TomTom. B4112 Newbold Road data uses the original 2016 Traffic Master journey times extracted for the validation of the existing base model, this section made up part of the wider WCC route 3 detailed within the base model LMVR, this data was originally presented for peak hour only in line with the original LMVR. For the Mill Road corridor, observed journey time surveys were collected in March 2015. The surveys captured a northbound/southbound route, from the junction of Boughton Road/Waterside Drive to Mill Road/Sandown Road.

45. A comparison between the observed and modelled journey times can be found in **Table 14** for the AM and **Table 15** for the PM.

Table 14: AM Journey Time Validation.

	Route	OBS (s)	MOD (s)	Diff (S)	Diff (%)	Pass/Fail
07:00 – 08:00	Leicester Rd Sec 1 NB	82	81	1	0.98%	Pass
	Leicester Rd Sec 2 NB	220	238	-18	-8.00%	Pass
	Leicester Rd Sec 2 SB	245	244	0	0.16%	Pass
	Leicester Rd Sec 1 SB	82	80	2	1.94%	Pass
	Mill Road NB	176	179	-3	-1.64%	Pass
	Mill Road SB	151	175	-24	-15.60%	Pass
08:00 – 09:00	Leicester Rd Sec 1 NB	128	123	4	3.37%	Pass
	Leicester Rd Sec 2 NB	243	266	-23	-9.58%	Pass
	Leicester Rd Sec 2 SB	357	400	-42	-11.88%	Pass
	Leicester Rd Sec 1 SB	106	111	-5	-4.96%	Pass
	B4112 Newbold Road NB	191	153	38	19.92%	Pass
	B4112 Newbold Road SB	202	159	43	21.51%	Pass
	Mill Road NB	221	190	31	13.95%	Pass
	Mill Road SB	336	285	51	15.27%	Pass
09:00 – 10:00	Leicester Rd Sec 1 NB	85	94	-8	-9.61%	Pass
	Leicester Rd Sec 2 NB	225	216	9	3.90%	Pass
	Leicester Rd Sec 2 SB	252	308	-55	-21.86%	Pass
	Leicester Rd Sec 1 SB	89	84	5	5.75%	Pass
	Mill Road NB	201	179	22	10.75%	Pass
	Mill Road SB	317	273	44	13.79%	Pass

Table 15: PM Journey Time Validation.

	Route	OBS (s)	MOD (s)	Diff (S)	Diff (%)	Pass/Fail
16:00 – 17:00	Leicester Rd Sec 1 NB	300	132	168	56.10%	Fail
	Leicester Rd Sec 2 NB	242	251	-9	-3.72%	Pass
	Leicester Rd Sec 2 SB	284	310	-26	-9.15%	Pass
	Leicester Rd Sec 1 SB	124	99	25	20.51%	Pass
	Mill Road NB	235	212	23	9.77%	Pass
	Mill Road SB	146	176	-30	-20.22%	Pass
17:00 – 18:00	Leicester Rd Sec 1 NB	259	199	59	22.90%	Pass
	Leicester Rd Sec 2 NB	240	244	-5	-1.95%	Pass
	Leicester Rd Sec 2 SB	352	365	-12	-3.51%	Pass
	Leicester Rd Sec 1 SB	133	141	-9	-6.61%	Pass
	B4112 Newbold Road NB	191	153	38	19.92%	Pass
	B4112 Newbold Road SB	202	159	43	21.51%	Pass
	Mill Road NB	373	393	-20	-5.47%	Pass
	Mill Road SB	297	255	42	14.12%	Pass
18:00 – 19:00	Leicester Rd Sec 1 NB	108	182	-74	-68.35%	Fail
	Leicester Rd Sec 2 NB	220	229	-9	-4.00%	Pass
	Leicester Rd Sec 2 SB	258	285	-28	-10.82%	Pass
	Leicester Rd Sec 1 SB	88	101	-13	-15.31%	Pass
	Mill Road NB	191	228	-37	-19.57%	Pass
	Mill Road SB	189	175	14	7.32%	Pass

46. **Tables 14** and **15** demonstrate that a good level of local journey time validation has been achieved in both the AM and PM peak periods.

47. For the key corridor, A426 Leicester Road, 100% pass rate has been achieved within the AM across all periods. Within the PM 100% validation has been achieved within the peak hour.

48. Within the PM pre peak shoulder hour, the average journey time on the section 1 northbound approach is shown to be too quick, however, within the peak hour the model journey times are shown to be representative of the delay on this approach. Within the post peak this pattern is reversed with the journey time reported being too slow.

49. 100% Validation is achieved along Mill Road and in all modelled periods and Newbold Road within the peak hour.

50. Overall, the above tables demonstrate that the updated RWA base model is representative of travel times along these three key corridors highlighted, most n.

Model Performance

51. On completion of the update, analysis was undertaken to assess the overall level of stability to ensure that the model could be considered fit for use. The outcome of this assessment, based on 15 runs per time period, is summarised below.

Model Stability

52. The stability focuses on the number of vehicles present on the network at a certain point in time and are based on successful runs only. These figures have been taken from the batch farm output files.

53. A successful run has been deemed as such if the number of vehicles on the network is shown to increase from the start of the period, reach a peak level, and then fall as the period nears its end. This has been supported by visual observations of the models to ensure that in cases where this pattern is not present, that it is indeed a result of an unrealistic locking up of the network.

54. The results presented within the following table and figures show the stability of the updated 2016 Base model.

Figure 8: AM Model Stability

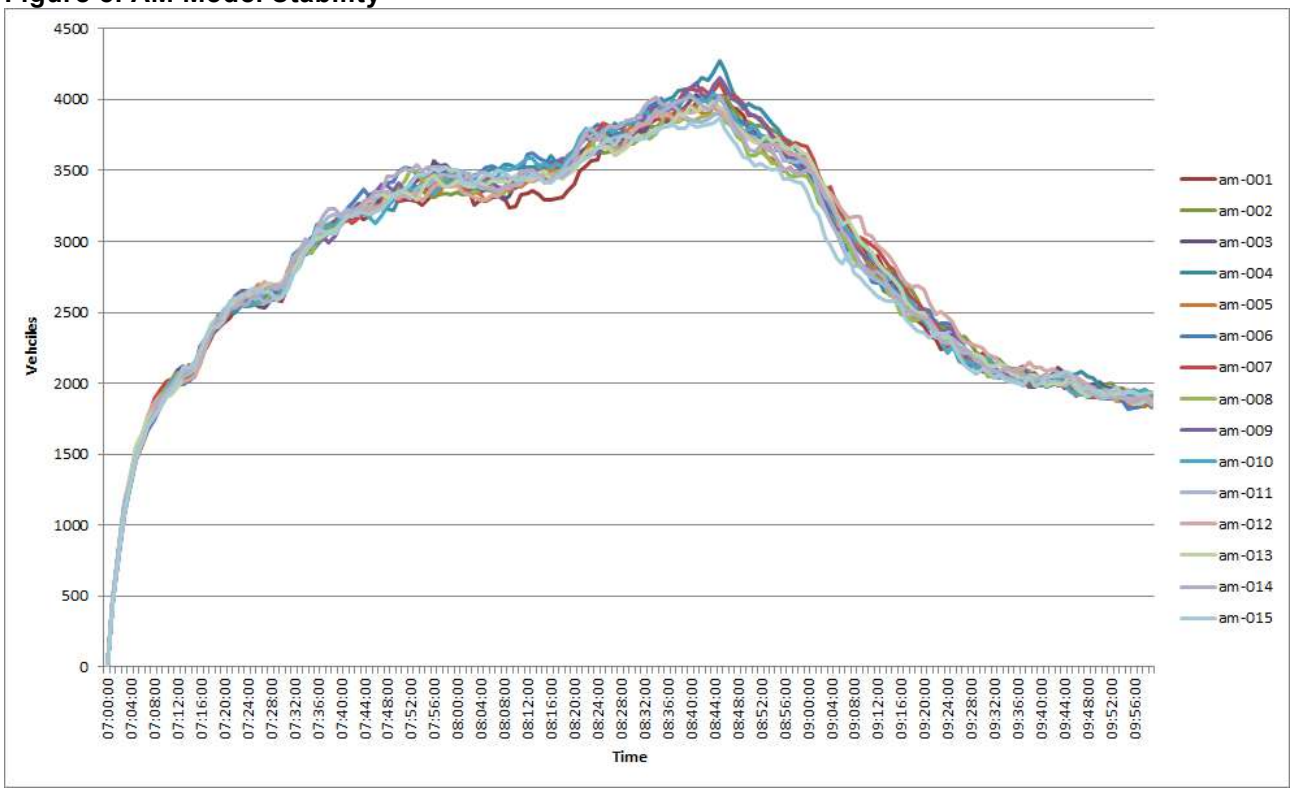


Figure 9: PM Model Stability

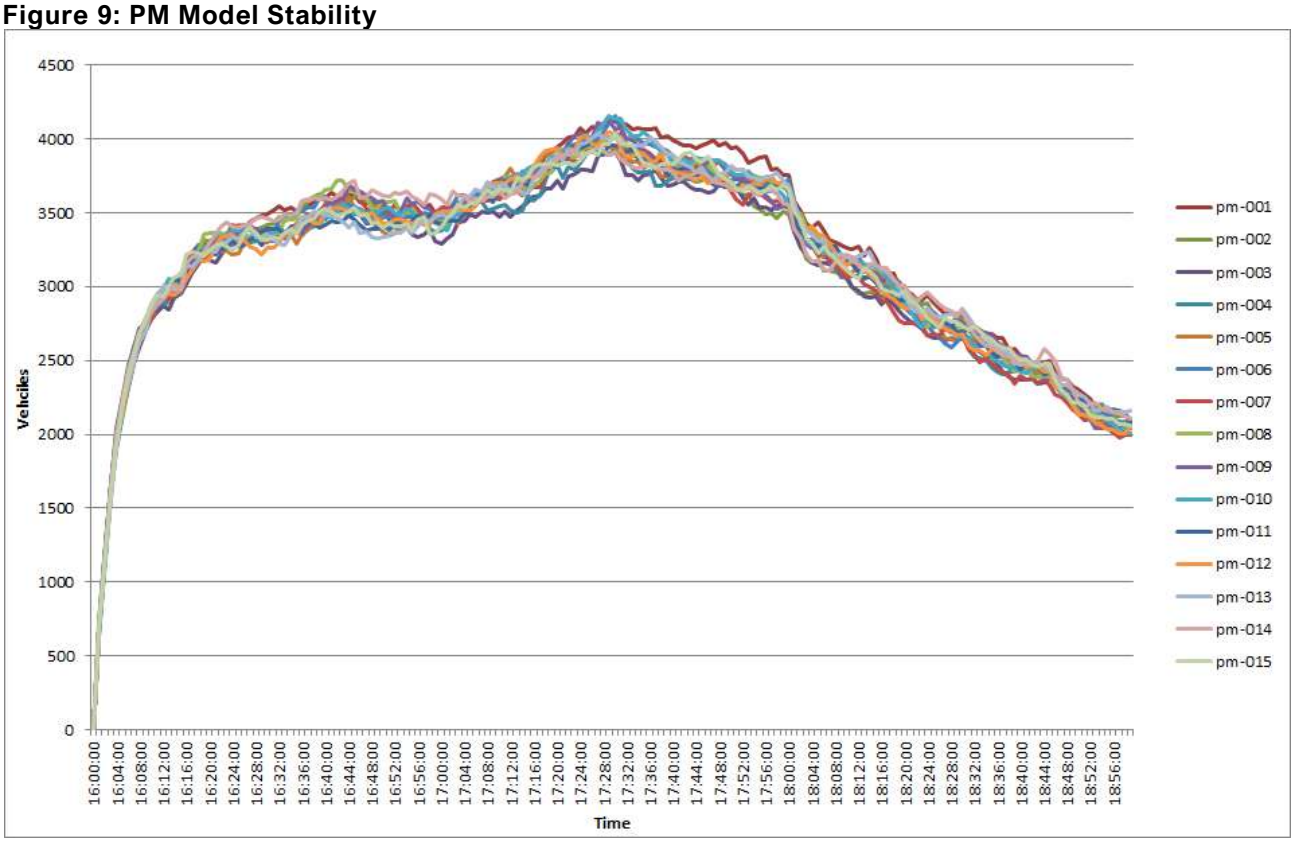


Table 16: 2016 Base Model Stability

	AM	PM
Runs	15	15
Successful Runs	15	15
Success Rate	100%	100%
Peak (veh): Max	4275	4157
Peak (veh): Ave Max	4059	4044
End of Period (veh): Max	1939	2155
End of Period (veh): Ave	1414	1550

55. The model stability was recorded at 100% successful in the AM and PM periods. These models are therefore considered to be stable and provide a suitable tool in which the future year models can be developed.

Summary & Conclusion

Summary

56. Before making the suite of RWA models available for the Avon Mill assessment, WCC have requested that the 2016 RWA Base model was updated to account for additional data that has come forward via recent development impact assessments undertaken within the Rugby area. It was considered appropriate to update the model to include this information within the existing Rugby area prior to undertaking any assessment of the scheme.

57. In addition, the opportunity to update the Generalised Cost Equation and Public Transport inclusions has also been undertaken.

58. Additional TomTom journey time validation data along the A426 Leicester Road corridor has been made available as part of this update to provide further confidence in the validation of the base model in this area.

59. Additional MCC counts collected in 2019 were used to assess the Technology Park access performance on Technology Drive. Demands for Technology Park were separated into a new zone, Zone 1100, and based on the 2019 MCC. Furthermore, the demands previously attributed to the Technology Park entrance were removed from their zone, Zone 431.

60. A further step was taken to ensure this reduction did not cause undue impact on the Junction 1 Retail Park demands. Here, the reduction was reduced until the impact on the turn count calibration at Junction 1 was minimised.

61. Calibration and validation of the model were then assessed on both a local and full model level.

Conclusion

62. VM has been assisting WCC in the collation of evidence to support the business case for the Avon Mill scheme proposals. To ensure that the RWA model is suitable for use in this project, the model was refined by VM.

63. This report summarises the refinements made to the model and presents calibration and validation data to assess the suitability of the model. Here, special attention was given to the area around the A426 corridor, as concerns had previously been raised for this part of the model.

64. Overall, a level of calibration and validation exceeding TAG criteria was achieved for the full model.

65. At the local level, the calibration around Technology Drive was good for all hours with the exception of the last PM hour from 18:00 to 19:00, were calibration levels of 81% have been achieved, however this is still considered to be a good level of calibration.

66. The validation for Leicester Road specifically passed TAG criteria in both the AM and PM Peak hours.

67. Model stability checks have demonstrated that the model is stable in both the AM and PM peak hours and provides a good tool for forecast years to be developed from.

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October 2021

Warwickshire County Council

Appendix A – Rugby Station Updates

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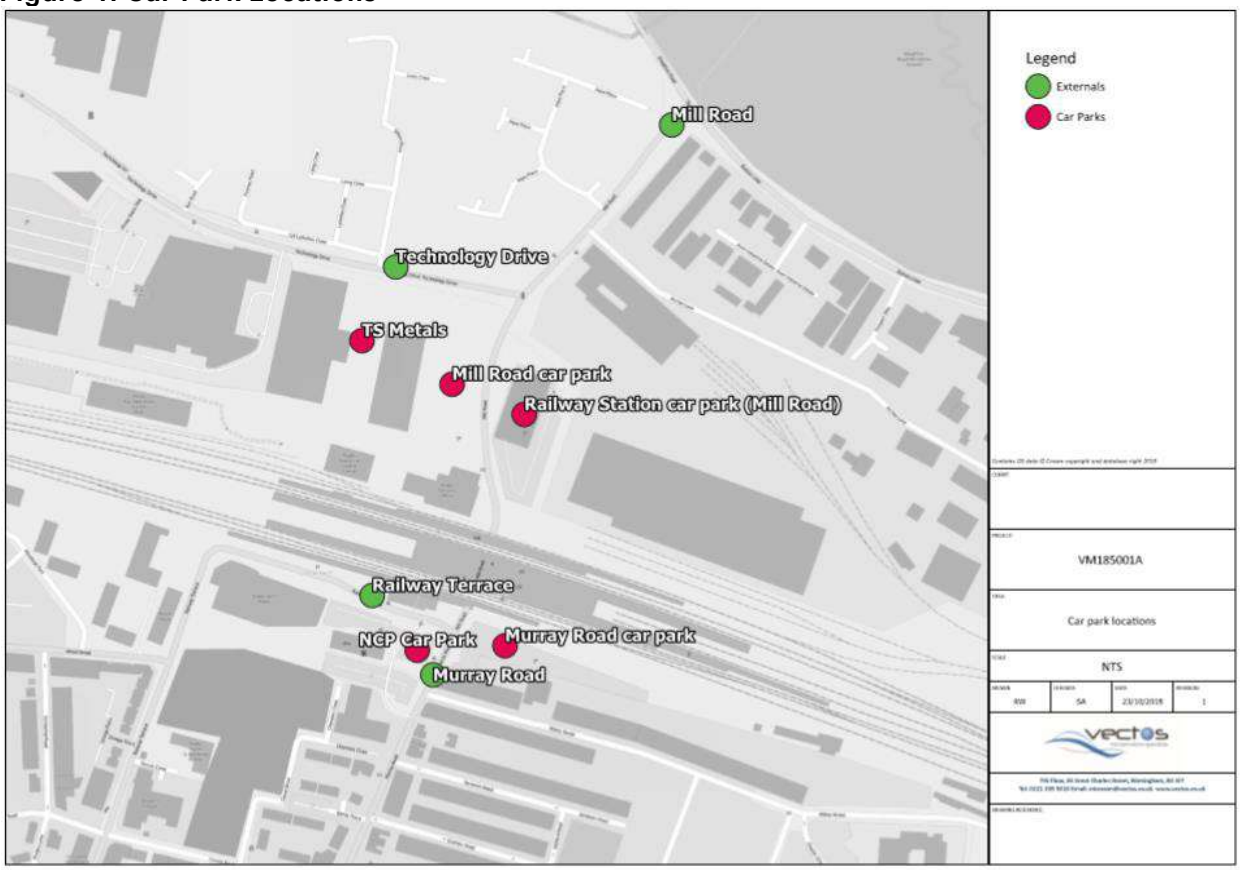
Rugby Rail Station Local Area Model Refinement

68. The following appendix details the changes made to the RWA Base in advance of the refinements outlined within the main technical note, these updates were undertaken for another study but were carried forward into the latest RWA Base model.

69. An update the 2016 Rugby Wide Area (RWA) Paramics Base Model was undertaken to ensure that car parks around Rugby rail station are accurately represented in the model

70. The following car parks are located close to the rail station and were considered as part of this assessment.

Figure 1: Car Park Locations



71. Trip totals and distribution to the external points shown on **Figure A1** were collected for each car park using Automatic Number Plate Recognition (ANPR) to enable the routes vehicles take to and from the car parks to be captured at the same time.

72. The observed trip totals for each car park are shown in the table below:

Table A1: Observed Car Park Trip Totals (vehicles)

Car Park	AM (07:00-10:00)		PM (16:00-19:00)	
	In	Out	In	Out
NCP Car Park	8	1	6	18
Mill Road Car Park	88	10	52	98
Murray Road Car Park	17	1	2	53
TS Metals	4	4	57	68
Railway Station - Mill Road	210	1	8	189

73. The NCP, Mill Road, Murray Road and TS Metals car parks all already existed in the model as part of larger model zones.

74. The zones these car parks relate to are as follows:

- NCP Car Park – Zone 121
- Mill Road Car Park – Zone 418
- Murray Road Car Park – Zone 122
- TS Metals Car Park – Zone 418

75. These car parks were replicated within the model by splitting a portion of the demand from the original zones and assigning it to new zones which represent the car parks. The trip generation levels removed from existing zones was calculated using the in/out totals from the observed ANPR data.

76. The new car park zones are listed below:

- NCP Car Park – Zone 1004
- Mill Road Car Park – Zone 1002
- Murray Road Car Park – Zone 1003
- TS Metals Car Park – Zone 1001
- Railway Station (Mill Road) – Zone 1000

77. This method ensured that the overall number of trips on the network unchanged but allowed for the movements at the car parks to be more accurately represented within the model.

78. For the Railway Station (Mill Road) car park no zone existed in the base model and so new demands had to be created to reflect this car park. Three-hour demand totals were derived from the observed ANPR data for this car park (**Table A1**). This was then split into hourly demands by using the hourly demand proportions for zone 418 which was also used to create the trip distribution for the new zone representing Mill Road Car Park.

79. Zone 418 was considered an appropriate proxy as it is close in location to the Railway Station (Mill Road) car park and already contains two of the other car parks considered in this study.

80. The demands assigned to matrix 1 before and after the inclusion of the car parks are shown in the table below:

Table A2: Matrix 1 Demands Before and After Car Park Inclusion (vehicles)

Time Period	Original Demands	Demands Post Car Park Inclusion	Change
07:00-08:00	32119	32199	80
08:00-09:00	36662	36753	91
09:00-10:00	25981	26023	42
16:00-17:00	37713	37791	78
17:00-18:00	38162	38225	63
18:00-19:00	26499	26558	59

81. **Table A2** shows that there is a small increase in demand following the car park inclusion, this increase is approximately equal to the number of trips assigned to the Railway Station (Mill Road) car park.

82. To assess the trip distributions assigned to each car park the modelled proportion of trips travelling north/south from each car park was compared to the splits seen in the ANPR data.

83. An initial review of this data found some variation from the observed values. Therefore the distributions were refined by scaling the demands for trips to zones north and south of the car park in such a way that the north/south split was closer to observed levels but the overall trip volume and wider model distribution is relatively unchanged.

84. The calibration results following these adjustments can be seen in the tables below. For the purposes of these checks the TS metals and Mill Road car parks had their trips combined as they share an access in the model.

Table A3: AM North/South Car Park Trip Calibration Results

Car Park	Inbound						Outbound					
	North			South			North			South		
	Mod	Obs	GEH	Mod	Obs	GEH	Mod	Obs	GEH	Mod	Obs	GEH
Murray Road	11	12	**0.32**	0	5	**3.16**	1	1	**0.29**	0	0	**0.74**
TS Metals + Mill Road	57	47	**1.34**	32	45	**2.06**	8	11	**1.01**	5	3	**1.00**
Railway Station	147	166	**1.50**	58	44	**2.02**	0	1	**0.64**	0	0	**0.60**
NCP	3	4	**0.38**	3	3	**0.11**	0	1	**0.91**	0	0	**0.85**

Table A4: PM North/South Car Park Trip Calibration Results

Car Park	Inbound						Outbound					
	North			South			North			South		
	Mod	Obs	GEH	Mod	Obs	GEH	Mod	Obs	GEH	Mod	Obs	GEH
Murray Road	1	2	**0.82**	0	0	**-**	23	7	**4.07**	22	46	**4.20**
TS Metals + Mill Road	32	75	**5.81**	21	34	**2.48**	118	143	**2.23**	44	23	**3.65**
Railway Station	6	7	**0.39**	3	1	**1.13**	133	150	**1.39**	58	39	**2.68**
NCP	2	2	**0.17**	2	1	**0.58**	11	9	**0.68**	3	8	**2.40**

85. As can be seen in **Tables A3-A4** the car park trip totals calibrate well against observed conditions with the majority of movements having a GEH below 5.

86. The only exception to this is the inbound PM movement for trip from the north to the TS metals and Mill Road car parks. Given that this is underestimated and the total inbound trip generation is based on the observed count this indicated that trips are being held up elsewhere on the network on their way to this car park from the north rather than there being an issue with the trip distribution causing vehicles to arrive via the southern approach.

87. The following table shows the demand change following the car park distribution refinement process:

Table A5: Matrix 1 Demands Before and After Car Park Distribution Refinement (vehicles)

Time Period	Demands Prior to Distribution Changes	Demands Post Distribution Changes	Change
07:00-08:00	32199	32198	-2
08:00-09:00	36753	36751	-2
09:00-10:00	26023	26023	0
16:00-17:00	37791	37792	1
17:00-18:00	38225	38224	-2
18:00-19:00	26558	26549	-8

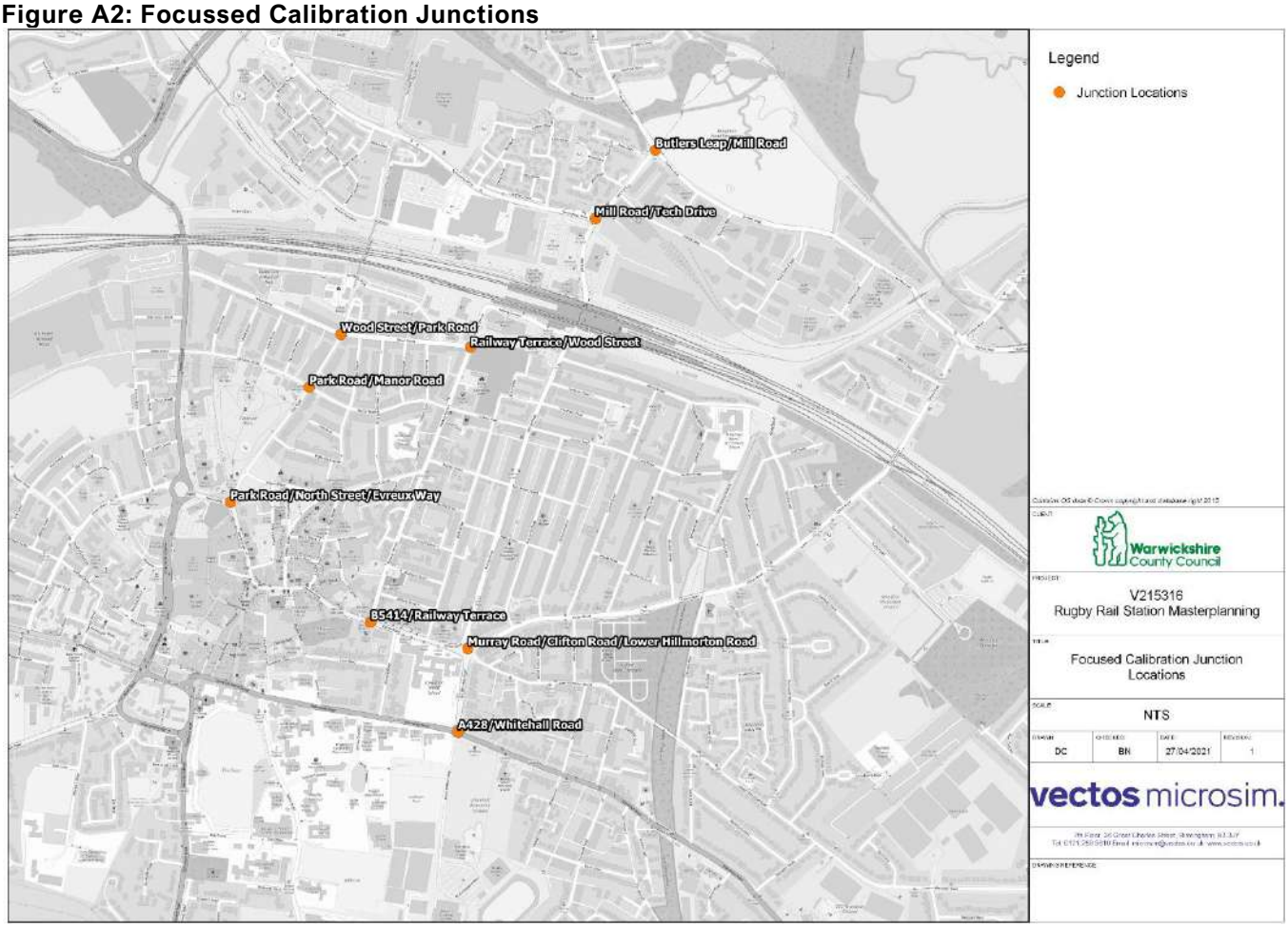
88. The results in **Table A5** show that the distribution adjustment process has a negligible effect on the overall level of demand.

Calibration Results

89. Having adjusted the demands to ensure the Station car park usage was accurately replicated within the model, the next stage was to assess the performance of the RWA model in the area immediately around the Rail Station to understand local calibration levels and, where necessary, make adjustments to ensure the model is calibrated to an appropriate level in the immediate vicinity of the Rail Station.

90. The location of the junctions were calibration has been reviewed is illustrated within **Figure A2**.

Figure A2: Focussed Calibration Junctions



91. The results prior to the inclusion of the car parks can be seen in the tables overleaf:

Table A6: AM Pre-Car Park Focussed Calibration Results

Target GEH	07:00-08:00			08:00-09:00			09:00-10:00		
	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target
<3	76	50	**65.8%**	76	53	**69.7%**	76	52	**68.4%**
<4	76	59	**77.6%**	76	59	**77.6%**	76	61	**80.3%**
<5	76	68	**89.5%**	76	68	**89.5%**	76	68	**89.5%**
<6	76	72	**94.7%**	76	71	**93.4%**	76	72	**94.7%**
<7	76	75	**98.7%**	76	75	**98.7%**	76	75	**98.7%**
<8	76	75	**98.7%**	76	76	**100.0%**	76	75	**98.7%**
<9	76	75	**98.7%**	76	76	**100.0%**	76	76	**100.0%**
<10	76	76	**100.0%**	76	76	**100.0%**	76	76	**100.0%**

Table A7: PM Pre-Car Park Focussed Calibration Results

Target GEH	16:00-17:00			17:00-18:00			18:00-19:00		
	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target
<3	76	39	**51.3%**	76	36	**47.4%**	76	43	**56.6%**
<4	76	54	**71.1%**	76	49	**64.5%**	76	47	**61.8%**
<5	76	65	**85.5%**	76	58	**76.3%**	76	59	**77.6%**
<6	76	73	**96.1%**	76	67	**88.2%**	76	66	**86.8%**
<7	76	75	**98.7%**	76	73	**96.1%**	76	72	**94.7%**
<8	76	76	**100.0%**	76	75	**98.7%**	76	73	**96.1%**
<9	76	76	**100.0%**	76	75	**98.7%**	76	75	**98.7%**
<10	76	76	**100.0%**	76	76	**100.0%**	76	76	**100.0%**

92. **Tables A6 and A7** show that the existing base model is well calibrated around Rugby Rail Station

93. **Tables A8 and A9** show the levels calibration achieved once the car parks have been included in the model with all their distribution adjustments.

Table A8: AM Post-Car Park Focussed Calibration Results

Target GEH	07:00-08:00			08:00-09:00			09:00-10:00		
	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target
<3	76	46	**60.5%**	76	54	**71.1%**	76	53	**69.7%**
<4	76	57	**75.0%**	76	60	**78.9%**	76	62	**81.6%**
<5	76	65	**85.5%**	76	66	**86.8%**	76	67	**88.2%**
<6	76	72	**94.7%**	76	69	**90.8%**	76	69	**90.8%**
<7	76	74	**97.4%**	76	74	**97.4%**	76	74	**97.4%**
<8	76	75	**98.7%**	76	76	**100.0%**	76	75	**98.7%**
<9	76	75	**98.7%**	76	76	**100.0%**	76	76	**100.0%**
<10	76	75	**98.7%**	76	76	**100.0%**	76	76	**100.0%**

Table A9: PM Post-Car Park Focussed Calibration Results

Target GEH	16:00-17:00			17:00-18:00			18:00-19:00		
	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target	Total Surveys	Number Under Target	% Under Target
<3	76	43	**56.6%**	76	38	**50.0%**	76	45	**59.2%**
<4	76	52	**68.4%**	76	47	**61.8%**	76	48	**63.2%**
<5	76	64	**84.2%**	76	57	**75.0%**	76	56	**73.7%**
<6	76	70	**92.1%**	76	65	**85.5%**	76	67	**88.2%**
<7	76	76	**100.0%**	76	73	**96.1%**	76	70	**92.1%**
<8	76	76	**100.0%**	76	75	**98.7%**	76	74	**97.4%**
<9	76	76	**100.0%**	76	76	**100.0%**	76	75	**98.7%**
<10	76	76	**100.0%**	76	76	**100.0%**	76	76	**100.0%**

94. **Tables A8 and A9** show that following the inclusion of the car parks the focussed calibration remains at a high-level meaning that the updated RWA model can be considered suitable for assessing the impact of proposed scheme interventions in the area around Rugby Rail Station.

95. The main scheme assessment for Rugby Rail Station will be undertaken using the RWA Local Plan model. As such it was necessary to add the car park zones and demands to the Local Plan model.

96. The demands for the car parks and the associated reductions to other zones were kept consistent with the base in the Local Plan model. As such no growth was assumed for these zones.

97. The RWA Local Plan model consists of all committed and allocated development sites and the associated infrastructure within the model area. It therefore represents the maximum likely growth in the Local Plan period

Appendix B – Existing Conditions

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Existing Traffic Conditions

98. The following analysis is intended to provide evidence of the current traffic conditions within the Avon Mill Study area. The following analysis focuses on traffic speeds on approach to the Avon mill junction.

Survey Data

99. Speed surveys were collected from the Highways Analyst database for the AM and PM peak hours in November 2016 from Tuesday to Thursday with school holidays excluded. For the Saturday peak hour, speed surveys were collected between March and November 2016 and school holidays were included.

100. Additionally, to approximate freeflow speeds, speed surveys were collected in Highways Analyst for the whole year of 2016 in the hour from 05:00 to 06:00 and from 21:00 to 22:00 for Tuesday to Thursday with school holidays excluded. Here, the maximum speed out of the collected hours was taken to represent the freeflow speed on a link.

101. During the validation of the RWA base model, discrepancy where identified within the observed Highways Analyst data along the Leicester Road corridor. As a result, additional TomTom travel time data was acquired for the AM and PM peak hours via streetwise to ensure that a robust data set was used for validation.

102. TomTom data was collected from during April 2016 for Monday to Thursday with school holidays excluded. The freeflow speeds were calculated from the maximum speed of the hours from 05:00 to 06:00 and from 20:00 to 21:00.

103. To ensure consistency between data used in model validation and the data used to highlight the existing traffic conditions, the Highways analyst data has been supplemented with TomTom where possible.

Avon Mill Roundabout

104. The freeflow speeds were compared to the peak hour speeds on the approaches to Avon Mill roundabout and can be seen in **Table B5** for the AM peak hour, **Table B6** for the PM peak hour, and **Table B7** for the Saturday peak hour.

Table B5: Avon Mill Approach Speeds AM Peak Hour

				AM Weekday Peak 08:00 to 09:00		
Approach	Data	Length (km)	Freeflow Speed (km/h)	Speed (km/h)	Difference	%-Difference
A426 Newbould Road NB Entry	TT	0.810	47.7	24.5	-23.2	-49
A426 Newbold Road SB Exit	TT	0.813	44.1	28.5	-15.6	-35
A426 Leicester Road SB Entry	TT	0.809	54.0	26.8	-27.2	-50
A426 Leicester Road NB Exit	TT	0.818	52.7	41.8	-10.9	-21
A4071 Newbold Road EB Entry	HA	0.389	45.0	29.8	-15.2	-34
A4071 Newbold Road WB Exit	HA	0.395	49.7	36.8	-12.9	-26

105. **Table B5** shows that in the AM peak hour, the greatest speed reduction is seen on both A426 approaches to the junction, for which the speed is roughly halved compared to the freeflow speed. In addition, the speed reduction seen on all exits of the roundabout is less severe, indicating that the speed reduction is caused by the Avon Mill roundabout instead of congestion stretching back from upstream junctions.

106. The speed reduction for the A4071 approach is lower than that seen for the A426 approaches. However, the speed reduction is higher than or similar to that observed for the exits from the roundabout, while the approach speed is lower than or similar to the observed exit speed. Therefore, the speed reduction of 34% compared to the freeflow speed is likely caused by the Avon Mill roundabout itself, instead of congestion from upstream junctions.

Table B6: Avon Mill Approach Speeds PM Peak Hour

				PM Weekday Peak 17:00 to 18:00		
Approach	Data	Length (km)	Freeflow Speed (km/h)	Speed (km/h)	Difference	%-Difference
A426 Newbould Road NB Entry	TT	0.810	47.7	13.1	-34.6	-73
A426 Newbold Road SB Exit	TT	0.813	44.1	23.0	-21.1	-48
A426 Leicester Road SB Entry	TT	0.809	54.0	31.5	-22.6	-42
A426 Leicester Road NB Exit	TT	0.818	52.7	41.6	-11.1	-21
A4071 Newbold Road EB Entry	HA	0.389	45.0	33.7	-11.3	-25
A4071 Newbold Road WB Exit	HA	0.395	49.7	39.2	-10.4	-21

107. For the PM peak hour, **Table B6** shows that the highest speed reduction is found on the northbound A426 approach to the Avon Mill roundabout with a reduction in speed of 73%. This is at least 30% higher than the reduction in speed for any of the roundabout exits, again indicating that the speed reduction is due to the Avon Mill roundabout itself, not congestion from an upstream junction.

108. The speed reduction at the other approaches is less severe, but still larger than the speed reduction for the northbound or westbound exits, again indicating that for these exits, congestion caused by upstream junctions is not the issue.

109. However, for the southbound exit of the Avon Mill roundabout, the exit speed reduction is higher than the entry speed reduction for the southbound and eastbound approaches. Additionally, the exit speed in absolute values is lower than the entry speed, indicating that congestion blocking back from the A426/B5414 roundabout to the south may play a role.

Table B7: Avon Mill Approach Speeds SAT Peak Hour

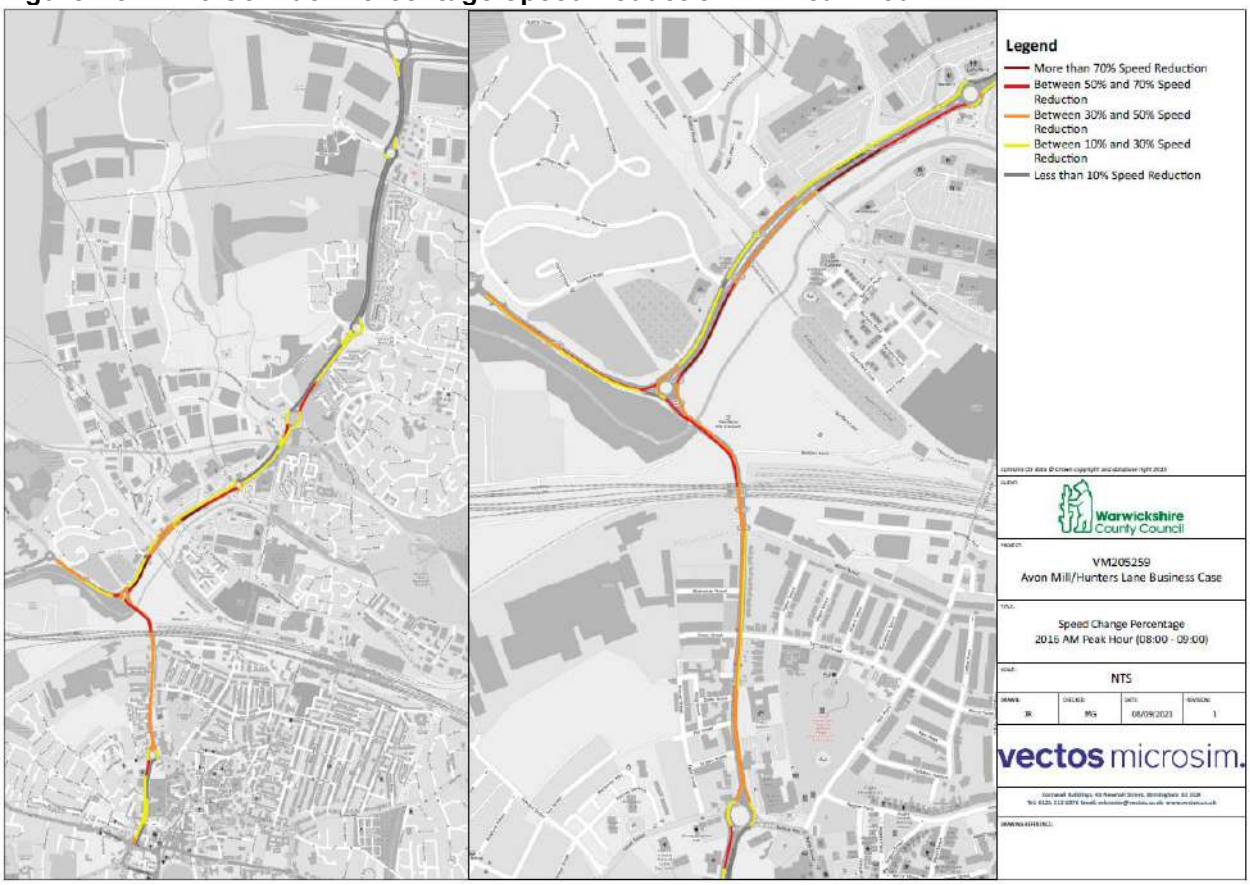
				SAT Weekday Peak 12:00 to 13:00		
Approach	Data	Length (km)	Freeflow Speed (km/h)	Speed (km/h)	Difference	%-Difference
A426 Newbould Road NB Entry	HA	0.810	49.9	18.8	-31.1	-62
A426 Newbold Road SB Exit	HA	0.813	47.9	19.8	-28.1	-59
A426 Leicester Road SB Entry	HA	0.809	43.3	31.0	-12.3	-28
A426 Leicester Road NB Exit	HA	0.818	50.9	33.7	-17.2	-34
A4071 Newbold Road EB Entry	HA	0.389	45.0	38.1	-6.9	-15
A4071 Newbold Road WB Exit	HA	0.395	49.7	44.0	-5.7	-11

110. **Table B7** shows that for the Saturday peak hour, the pattern observed in the PM peak hour is repeated, though the speed reduction on the northbound A426 approach is slightly lower than in the PM.

A426 Corridor

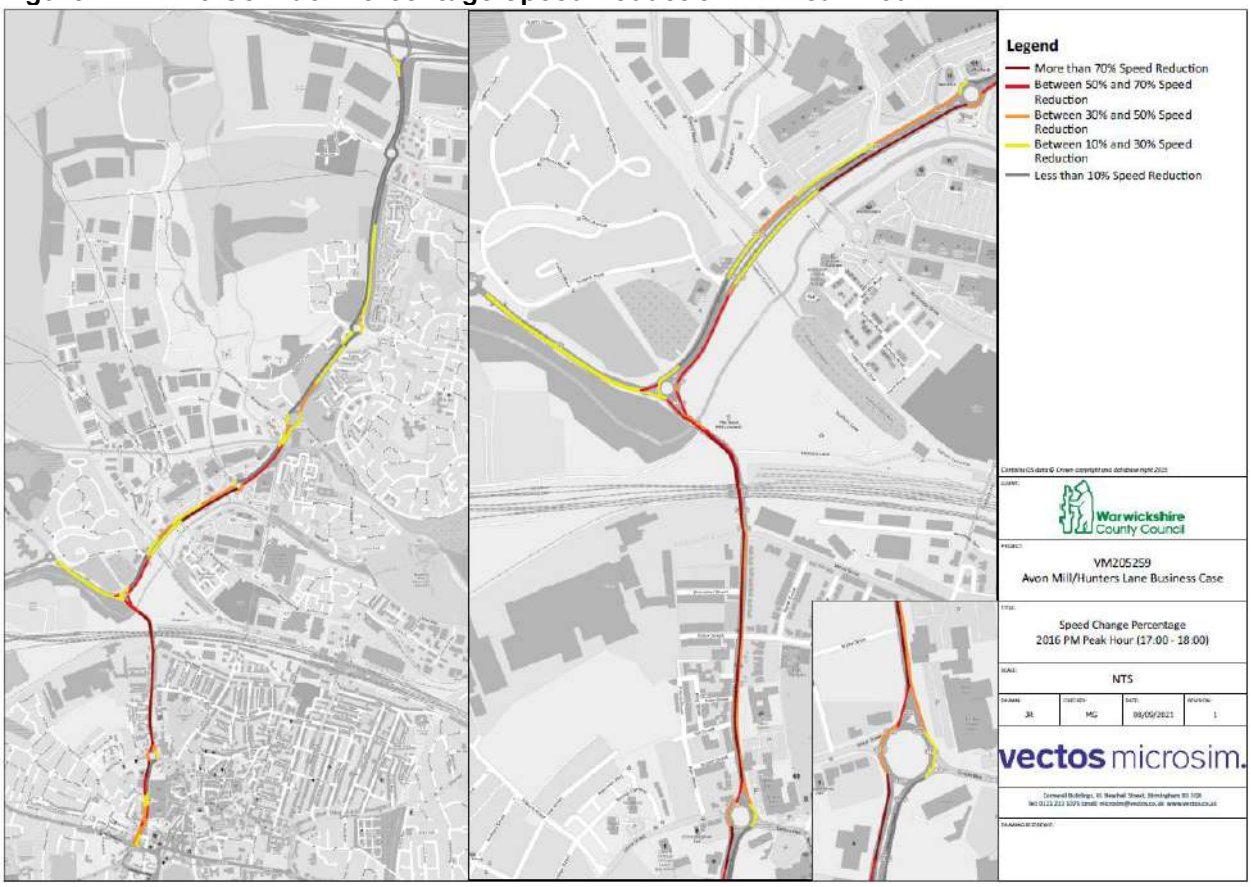
111. To further investigate these results, speed changes by road section were mapped in GIS. These can be found in **Figure B3** for the AM peak hour, **Figure B4** for the PM peak hour, and **Figure B5** for the Saturday peak hour.

Figure B3: A426 Corridor Percentage Speed Reduction AM Peak Hour



112. In **Figure B3** it can be seen that the most severe impact during the AM peak hour in terms of speed reduction is centred on the Avon Mill roundabout. Additionally, though other junctions show an impact as well, most of the impact can be traced back to congestion associated with the Avon Mill roundabout. For example, the southbound impact on the A426 north of Avon Mill roundabout gradually lessens the further north from Avon Mill roundabout it is, with only small local increases near major junctions.

Figure B4: A426 Corridor Percentage Speed Reduction PM Peak Hour



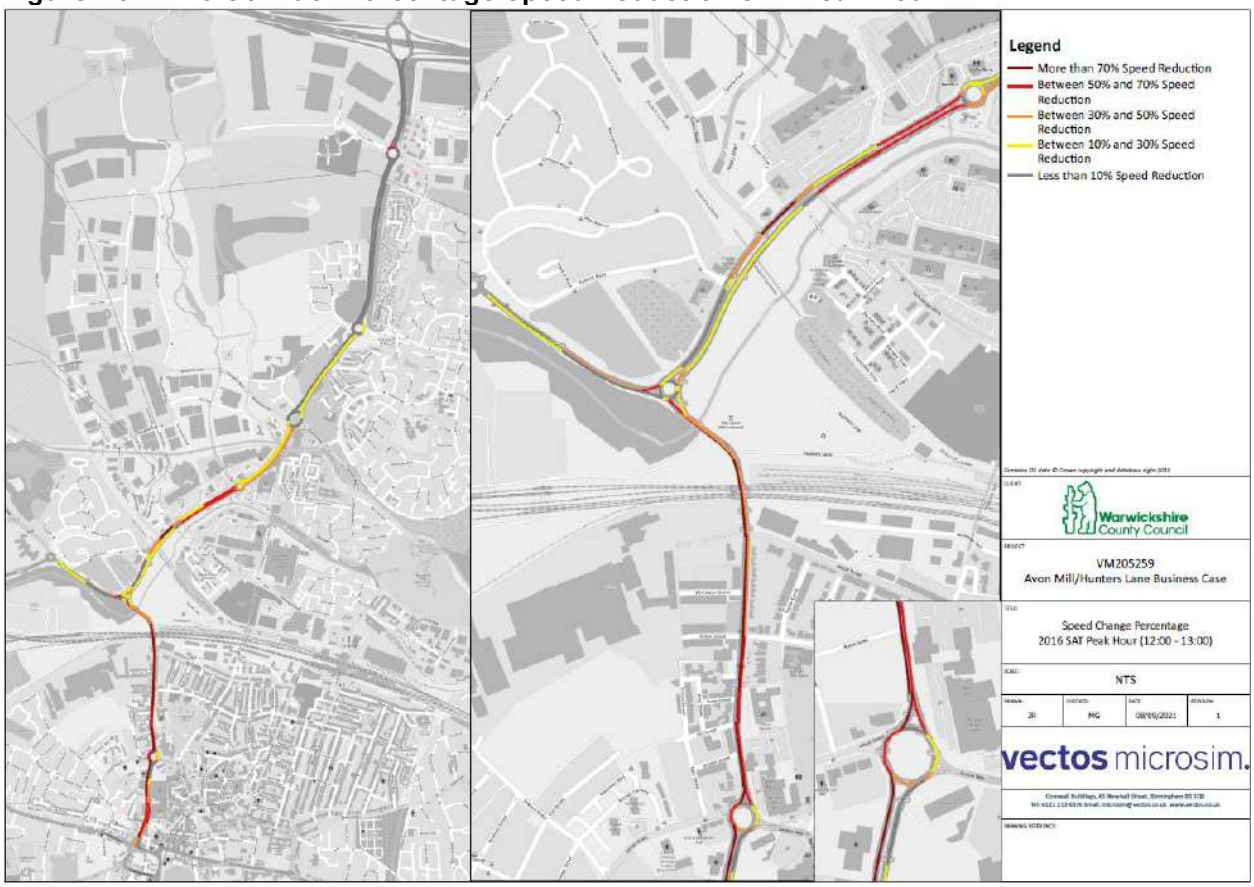
113. **Figure B4** shows that in the PM peak hour, like in the AM peak hour, the most severe impact is centred on Avon Mill roundabout. The impacts get less severe further from Avon Mill junction, with local increases in severity near major junctions.

114. However, there is also a major impact in the southbound direction between the A426/B5414 roundabout and Avon Mill roundabout, as seen in **Table B7** for the southbound Avon Mill exit. Looking at **Figure B4**, it can be seen that there is also a major impact in the northbound direction between the two roundabouts, which continues south of the A426/B5414 roundabout.

115. Meanwhile, **Figure B4** also shows that at the A426/B5414 roundabout, the southern exit shows no speed reduction, while there is a slight reduction in the link from the northern approach to the southern exit. This indicates that the impact is caused by congestion within the roundabout, which is likely caused by the northbound traffic through the roundabout.

116. As a result, the impact at the A426/B5414 roundabout is indirectly caused by the conditions at Avon Mill roundabout.

Figure B5: A426 Corridor Percentage Speed Reduction SAT Peak Hour



117. For the PM peak hour, seen in **Figure B5**, a similar pattern to the PM peak hour is observed, with the major impact coming from Avon Mill roundabout, with some additional impact caused by the A426/Technology Drive junction.

118. Again, there is a severe impact between the A426/B5414 roundabout and Avon Mill roundabout. Looking at **Figure B5**, the pattern in the speed reduction shows even more clearly that the impact north of the A426/B5414 roundabout is caused by the northbound traffic to Avon Mill roundabout blocking back through the roundabout.

Summary

119. An analysis of speed surveys has shown that on the A426 corridor, there is a considerable reduction in speed during the peak hours when compared to the freeflow speed. Additionally, it has been shown that the speed reduction is centred on the Avon Mill roundabout and that speed reductions which were not on the approaches to the Avon Mill roundabout can be traced back to congestion on said approaches impacting other junctions.

120. Therefore, it can be concluded that the Avon Mill roundabout is an existing bottleneck within the A426 corridor, causing the majority of its congestion.

Warwickshire County Council

Appendix C – Turn Calibration

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Birmingham
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			0700-0800			0800-0900			0900-1000			1600-1700			1700-1800			1800-1900		
Junction	Approach	To	Observed	Modelled	GEH	Observed	Modelled	GEH	Observed	Modelled	GEH	Observed	Modelled	GEH	Observed	Modelled	GEH	Observed	Modelled	GEH
A4071/A45	A4071 SB	A45 EB	203	125	6.1	248	208	2.6	144	112	2.8	223	181	3.0	258	182	5.1	143	114	2.6
A4071/A45	A45 WB	A45 WB	1391	1278	3.1	1164	1091	2.2	805	803	0.1	926	808	4.0	1026	1032	0.2	807	877	2.4
A4071/A45	A45 EB	A4071 NB	367	272	5.3	491	444	2.2	340	243	5.7	538	464	3.3	595	557	1.6	424	399	1.2
A4071/A45	A45 EB	A45 EB	999	1018	0.6	832	784	1.7	595	564	1.3	928	1035	3.4	1054	1071	0.5	712	720	0.3
A4071/B4642	A4071 SB	B4642 EB	15	7	2.4	28	16	2.6	10	8	0.7	22	12	2.4	30	14	3.4	17	9	2.2
A4071/B4642	A4071 SB	A4071 SB	579	525	2.3	454	557	4.6	258	339	4.7	388	443	2.7	457	534	3.5	264	354	5.1
A4071/B4642	B4642 WB	A4071 NB	11	9	0.6	33	17	3.2	16	5	3.4	23	9	3.5	28	11	3.8	24	9	3.7
A4071/B4642	B4642 WB	A4071 SB	440	388	2.6	405	371	1.7	226	247	1.4	196	192	0.3	219	216	0.2	184	182	0.1
A4071/B4642	A4071 NB	A4071 NB	378	326	2.8	491	462	1.3	270	233	2.3	464	404	2.9	554	539	0.6	400	384	0.8
A4071/B4642	A4071 NB	B4642 EB	133	99	3.2	249	289	2.4	162	114	4.1	360	321	2.1	412	384	1.4	323	305	1.0
A4071/Whitefriars Road	A4071 SB	Whitefriars Road EB	71	45	3.4	80	63	2.0	46	44	0.3	123	97	2.5	182	143	3.1	128	112	1.5
A4071/Whitefriars Road	A4071 SB	A4071 SB	525	460	2.9	445	510	3.0	250	321	4.2	404	460	2.7	477	536	2.6	263	351	5.0
A4071/Whitefriars Road	Whitefriars Road WB	A4071 NB	164	161	0.2	191	210	1.3	69	94	2.8	106	107	0.1	100	110	1.0	95	97	0.2
A4071/Whitefriars Road	Whitefriars Road WB	A4071 SB	68	88	2.3	42	59	2.4	15	19	1.0	9	9	0.0	8	9	0.3	12	7	1.6
A4071/Whitefriars Road	A4071 NB	A4071 NB	382	321	3.3	507	469	1.7	287	237	3.1	445	376	3.4	551	505	2.0	390	365	1.3
A4071/Whitefriars Road	A4071 NB	Whitefriars Road EB	2	5	1.6	7	10	1.0	9	6	1.1	27	28	0.2	43	42	0.2	34	34	0.0
A4071/Bilton Lane	Bilton Lane SB	A4071 EB	2	6	2.0	5	5	0.0	1	3	1.4	10	7	1.0	2	11	3.5	2	5	1.6
A4071/Bilton Lane	Bilton Lane SB	Bilton Lane SB	53	47	0.8	139	110	2.6	46	51	0.7	123	104	1.8	125	111	1.3	76	81	0.6
A4071/Bilton Lane	Bilton Lane SB	A4071 WB	46	47	0.1	70	69	0.1	27	36	1.6	46	47	0.1	61	65	0.5	30	36	1.0
A4071/Bilton Lane	A4071 WB	Bilton Lane SB	76	59	2.1	146	134	1.0	85	83	0.2	207	173	2.5	266	234	2.0	208	200	0.6
A4071/Bilton Lane	A4071 WB	A4071 WB	486	409	3.6	407	470	3.0	235	300	4.0	470	503	1.5	580	603	0.9	338	409	3.7
A4071/Bilton Lane	Bilton Lane NB	Bilton Lane NB	129	108	1.9	123	108	1.4	73	72	0.1	87	71	1.8	78	68	1.2	78	80	0.2
A4071/Bilton Lane	Bilton Lane NB	A4071 EB	172	152	1.6	289	260	1.8	118	146	2.4	112	106	0.6	158	137	1.7	135	124	1.0
A4071/Bilton Lane	Bilton Lane NB	A4071 WB	60	50	1.3	52	39	1.9	33	26	1.3	16	11	1.4	18	13	1.3	25	12	3.0
A4071/Bilton Lane	A4071 EB	Bilton Lane NB	54	51	0.4	55	60	0.7	26	29	0.6	49	50	0.1	63	67	0.5	55	55	0.0
A4071/Bilton Lane	A4071 EB	A4071 EB	474	413	2.9	630	609	0.8	326	304	1.2	473	408	3.1	543	514	1.3	389	376	0.7
A4071/Bilton Lane	A4071 EB	Bilton Lane SB	9	7	0.7	15	13	0.5	8	4	1.6	27	19	1.7	45	34	1.8	51	34	2.6
A428/Lawford Heath Lane/The Green	The Green SB	A428 Coventry Road EB	29	46	2.8	32	47	2.4	23	31	1.5	25	35	1.8	19	36	3.2	32	34	0.3
A428/Lawford Heath Lane/The Green	The Green SB	Lawford Heath Lane SB	25	34	1.7	42	38	0.6	8	14	1.8	9	10	0.3	15	17	0.5	5	6	0.4
A428/Lawford Heath Lane/The Green	The Green SB	A428 Coventry Road WB	61	59	0.3	46	44	0.3	38	37	0.2	18	17	0.2	39	38	0.2	25	25	0.0
A428/Lawford Heath Lane/The Green	A428 Coventry Road WB	The Green NB	3	6	1.4	20	12	2.0	14	14	0.0	34	19	2.9	41	25	2.8	17	19	0.5
A428/Lawford Heath Lane/The Green	A428 Coventry Road WB	Lawford Heath Lane SB	42	28	2.4	36	31	0.9	32	24	1.5	15	16	0.3	20	31	2.2	17	25	1.7
A428/Lawford Heath Lane/The Green	A428 Coventry Road WB	A428 Coventry Road WB	439	466	1.3	396	394	0.1	273	282	0.5	342	321	1.2	335	388	2.8	225	221	0.3
A428/Lawford Heath Lane/The Green	Lawford Heath Lane NB	The Green NB	6	18	3.5	4	18	4.2	8	11	1.0	24	22	0.4	53	39	2.1	22	25	0.6
A428/Lawford Heath Lane/The Green	Lawford Heath Lane NB	A428 Coventry Road EB	22	20	0.4	19	23	0.9	21	17	0.9	23	37	2.6	52	54	0.3	18	26	1.7
A428/Lawford Heath Lane/The Green	Lawford Heath Lane NB	A428 Coventry Road WB	7	14	2.2	11	22	2.7	9	18	2.4	25	19	1.3	29	31	0.4	7	16	2.7
A428/Lawford Heath Lane/The Green	A428 Coventry Road EB	The Green NB	8	8	0.0	18	17	0.2	13	13	0.0	40	39	0.2	26	27	0.2	37	35	0.3
A428/Lawford Heath Lane/The Green	A428 Coventry Road EB	A428 Coventry Road EB	192	238	3.1	274	331	3.3	214	247	2.2	340	368	1.5	379	441	3.1	275	270	0.3
A428/Lawford Heath Lane/The Green	A428 Coventry Road EB	Lawford Heath Lane SB	26	43	2.9	32	49	2.7	14	19	1.2	9	15	1.7	8	15	2.1	3	11	3.0
A426/Yates Avenue	A426 SB	A426 SB	1293	1254	1.1	1417	1544	3.3	1183	1360	5.0	1656	1548	2.7	1682	1723	1.0	1489	1665	4.4
A426/Yates Avenue	A426 NB	A426 NB	1244	1078	4.9	1445	1483	1.0	1148	1264	3.3	1336	1313	0.6	1374	1548	4.6	1312	1416	2.8
A426/Yates Avenue	A426 NB	Yates Avenue WB	21	13	1.9	55	25	4.7	31	22	1.7	40	20	3.7	28	15	2.8	13	13	0.0
A426/Yates Avenue	Yates Avenue EB	A426 NB	33	41	1.3	81	58	2.8	40	44	0.6	66	60	0.8	48	71	3.0	35	61	3.8
A5/Newton Manor Lane	A5 SB	Unnamed Road EB	7	38	6.5	12	37	5.1	17	39	4.2	24	62	5.8	17	55	6.3	18	76	8.5
A5/Newton Manor Lane	A5 SB	A5 SB	638	695	2.2	560	726	6.5	326	383	3.0	413	461	2.3	544	496	2.1	335	366	1.7
A5/Newton Manor Lane	A5 SB	Newton Manor Lane WB	84	83	0.1	142	111	2.8	57	70	1.6	96	127	2.9	122	157	3.0	59	74	1.8
A5/Newton Manor Lane	Unnamed Road WB	A5 NB	22	40	3.2	23	43	3.5	25	42	2.9	17	22	1.1	9	18	2.4	11	43	6.2
A5/Newton Manor Lane	Unnamed Road WB	A5 SB	5	12	2.4	6	10	1.4	10	5	1.8	5	18	3.8	5	21	4.4	5	6	0.4
A5/Newton Manor Lane	A5 NB	A5 NB	396	380	0.8	414	561	6.7	275	361	4.8	458	539	3.6	541	719	7.1	403	606	9.0
A5/Newton Manor Lane	A5 NB	Unnamed Road EB	5	4	0.5	10	10	0.0	13	10	0.9	10	18	2.1	5	11	2.1	8	5	1.2
A5/Newton Manor Lane	A5 NB	Newton Manor Lane WB	119	114	0.5	142	148	0.5	68	106	4.1	119	138	1.7	145	171	2.1	135	164	2.4
A5/Newton Manor Lane	Newton Manor Lane EB	A5 NB	59	80	2.5	78	85	0.8	42	58	2.3	97	113	1.6	105	127	2.0	47	83	4.5
A5/Newton Manor Lane	Newton Manor Lane EB	A5 SB	122	121	0.1	103	133	2.8	83	84	0.1	103	75	3.0	121	91	2.9	93	77	1.7
A5/Lilbourne Road	A5 SB	A5 SB/Rugby Road EB	720	675	1.7	644	718	2.8	417	376	2.1	436	430	0.3	534	465	3.1	378	351	1.4
A5/Lilbourne Road	A5 SB	Lilbourne Road WB	19	17	0.5	36	21	2.8	23	17	1.3	60	39	3.0	75	52	2.9	32	26	1.1
A5/Lilbourne Road	Rugby Road WB	A5 NB/Lilbourne Road	64	62	0.3	67	90	2.6	63	59	0.5	43	50	1.0	37	49	1.8	42	52	1.5
A5/Lilbourne Road	Rugby Road WB	A5 SB	15	62	7.6	17	90	10.0	10	59	8.3	0	50		0	49		0	52	
A5/Lilbourne Road	A5 NB	A5 NB/Lilbourne Road	472	397	3.6	520	556	1.6	348	377	1.5	616	621	0.2	744	802	2.1	554	671	4.7
A5/Lilbourne Road	A5 NB	Rugby Road EB	5	3	1.0	7	8	0.4	7	12	1.6	10	14	1.2	16	20	0.9	16	15	0.3
A5/Lilbourne Road	Lilbourne Road EB	A5 NB	44	46	0.3	61	67	0.8	36	31	0.9	34	29	0.9	39	34	0.8	29	19	2.0
A5/Lilbourne Road	Lilbourne Road EB	Rugby Road EB/A5 SB	60	112	5.6	54	109	6.1	42	56	2.0	44	104	7.0	90	143	4.9	54	99	5.1
A5/Site Access	A5 SB	A5 SB	403	397	0.3	313	285	1.6	225	182	3.0	182	203	1.5	257	269	0.7	165	179	1.1
A5/Site Access	A5 SB	A5 SWB	362	289	4.0	366	416	2.5	199	198	0.1	238	231	0.5	291	218	4.6	207	181	1.9
A5/Site Access	A5 NB	A5 NB	244	247	0.2	238	240	0.1	162	168	0.5	318	293	1.4	327	325	0.1	270	267	0.2
A5/Site Access	A5 NB	A5 SWB	9	2	3.0	11	3	3.0	1	3	1.4	7	4	1.3	11	5	2.1	10	5	1.8
A5/Site Access	A5 NEB	A5 NB	214	220	0.4	265	281	1.0	141	186	3.5	280	310	1.7	362	408	2.3	249	278	1.8
A5/Parklands/A428	Parklands SB	Parklands SB	2	0	2.0	2	0	2.0	1	0	1.4	0	1		0	1		0	1	
A5/Parklands/A428	Parklands SB	A5 WB	56	80	2.9	63	71	1.0	54	53	0.1	183	143	3.1	177	143	2.7	134	121	1.2
A5/Parklands/A428	Parklands SB	A428 NB	42	46	0.6	16	38	4.2	28	40	2.1	67	79	1.4	72	89	1.9	81	82	0.1
A5/Parklands/A428	Parklands SB	A5 SB	36	35	0.2	26	32	1.1	13	21	1.9	59	51	1.1	50	56	0.8	56	51	0.7
A5/Parklands/A428	A5 WB	Parklands SB	124	96	2.7	120	128	0.7	106	98	0.8	103	86	1.7	122	89	3.2	103	81	2.3
A5/Parklands/A428	A5 WB	A5 WB	4	0	2.8	3	0	2.4	0	0		11	0	4.7	11	0	4.7	6	0	3.5
A5/Parklands/A428	A5 WB	A428 NB	569	540	1.2	553	648	3.9	466	454	0.6	433	485	2.4	668	573	3.8	448	454	0.3
A5/Parklands/A428	A5 WB	A5 SB	221	207	1.0	239	201	2.6	167	142	2.0	251	233	1.2	286	255	1.9	213	203	0.7
A5/Parklands/A428	A428 NB	Parklands SB	68	83	1.7	86	113	2.7	57	66	1.1	45	66	2.8	71	94	2.5	53	84	3.7
A5/Parklands/A428	A428 NB	A5 WB	669	571	3.9	541	507	1.5	360	319	2.2	564	502	2.7	557	540	0.7	422	367	2.8
A5/Parklands/A428	A5 SB	Parklands SB	61	53	1.1	56	64	1.0	49	42	1.0	32	21	2.1	65	34	4.4	34	24	1.9
A5/Parklands/A428	A5 SB	A5 WB	345	335	0.5	282	222	3.8	202	140	4.7	162	177	1.2	210	232	1.5	137	155	1.5
A5/Parklands/A428	A5 SB	A428 NB	7	3	1.8	4	2	1.2	8	1	3.3	4	1	1.9	9	3	2.4	7	2	2.4
A5/A428	A5 SB	A428 EB	42	55	1.9	45	60	2.1	24	42	3.1	10	22	3.0	13	36	4.6	14	22	1.9
A5/A428	A5 SB	A5 SB	281	182	6.5	292	304	0.7	143	121	1.9	200	183	1.2	243	155	6.2	179	135	3.5
A5/A428	A5 SB	A428 WB	48	50	0.3	48	56	1.1	31	42	1.8	30	29	0.2	45	36	1.4	27	31	0.7
A5/A428	A428 WB	A5 NB	6	27	5.2	17	25	1.7	16	17	0.2	26	41	2.6	21	41	3.6	21	42	3.7
A5/A428	A428 WB	A428 EB	15	5	3.2	6	4	0.9	5	4	0.5	0	5		4	7	1.3	6	6	0.0
A5/A428	A428 WB	A5 SB	296	344	2.7	292	363	3.9	258	260	0.1	284	288	0.2	354	307	2.6	240	243	0.2
A5/A428	A428 WB	A428 WB	252	179	5.0	236	234	0.1	184	172	0.9	250	248	0.1	429	347	4.2	339	284	3.1
A5/A428	A5 NB	A5 NB	222	162	4.3	259	215	2.9	148	144	0.3	251	216	2.3	345	291	3.0	216	173	3.1
A5/A428	A5 NB	A428 EB	337	341	0.2	322	330	0.4	185	212	1.9	295	307	0.7	299	315	0.9	190	212	1.6
A5/A428	A5 NB	A428 WB	31	16	3.1	29	22	1.4	18	17	0.2	11	23	2.9	11	26	3.5	19	25	1.3
A5/A428	A428 EB	A5 NB	37	35	0.3	44	40	0.6	27	25	0.4	49	57	1.1	48	79	3.9	36	63	3.8
A5/A428	A428 EB	A428 EB	415	333	4.2	322	337	0.8	215	188	1.9	260	200	4.0	309	275	2.0	258	207	3.3
A5/A428	A428 EB	A5 SB	9	6	1.1	10	3	2.7	13	5	2.7	27	8	4.5	16	6	3.0	16	5	3.4
A428/Crick Road/Kilsby Lane	A428 Crick Road EB	A428 Crick Road EB	404	345	3.0	321	352	1.7	235	192	2.9	245	184	4.2	331	291	2.3	270	215	3.5
A428/Crick Road/Kilsby Lane	A428 Crick Road EB	Kilsby Lane SB	144	169	2.0	204	252	3.2	99	172	6.3	154	214	4.4	203	224	1.4	144	212	5.1
A428/Crick Road/Kilsby Lane	A428 Crick Road WB	A428 Crick Road WB	228	176	3.7	266	225	2.6	174	165	0.7	285	252	2.0	420	359	3.1	386	306	4.3
A428/Crick Road/Kilsby Lane	A428 Crick Road WB	Kilsby Lane SB	4	4	0.0	6	6	0.0	5	5	0.0	4	4	0.0	4	5	0.5	11	11	0.0
A428/Crick Road/Kilsby Lane	Kilsby Lane NB	A428 Crick Road WB	79	129	4.9	178	208	2.2	118	146	2.4	188	301	7.2	224	327	6.2	200	230	2.0
A428/Crick Road/Kilsby Lane	Kilsby Lane NB	A428 Crick Road EB	1	1	0.0	2	2	0.0	2	2	0.0	6	7	0.4	6	6	0.0	6	6	0.0
A428/Ashlawn Road	A428 Ashlawn Road SB	A428 Ashlawn Road EB	376	299	4.2	458	411	2.3	315	314	0.1	471	460	0.5	602	615	0.5	493	551	2.5
A428/Ashlawn Road	A428 Ashlawn Road SB	Ashlawn Road WB	57	61	0.5	130	126	0.4	59	64	0.6	93	90	0.3	62	69	0.9	74	77	0.3
A428/Ashlawn Road	A428 Ashlawn Road WB	A428 Ashlawn Road NB	312	275	2.2	440	424	0.8	379	378	0.1	424	487	3.0	514	565	2.2	532	580	2.0
A428/Ashlawn Road	A428 Ashlawn Road WB	Ashlawn Road WB	219	148	5.2	393	333	3.1	191	199	0.6	240	232	0.5	273	287	0.8	235	286	3.2
A428/Ashlawn Road	Ashlawn Road EB	A428 Ashlawn Road NB	21	38	3.1	57	128	7.4	69	85	1.8	99	123	2.3	85	101	1.7	67	103	3.9
A428/Ashlawn Road	Ashlawn Road EB	A428 Ashlawn Road EB	172	201	2.1	198	298	6.4	166	144	1.8	245	205	2.7	242	246	0.3	226	227	0.1
Ashlawn Road/Barby Road	Barby Road SB	B4429 Ashlawn Road EB	16	24	1.8	24	41	3.0	27	39	2.1	58	70	1.5	46	62	2.2	26	45	3.2
Ashlawn Road/Barby Road	Barby Road SB	Onley Lane SB	16	24	1.8	15	25	2.2	20	10	2.6	39	32	1.2	48	19	5.0	32	19	2.6
Ashlawn Road/Barby Road	Barby Road SB	B4429 Ashlawn Road WB	33	27	1.1	42	30	2.0	48	38	1.5	81	80	0.1	84	61	2.7	44	37	1.1
Ashlawn Road/Barby Road	B4429 Ashlawn Road WB	Barby Road NB	42	52	1.5	87	112	2.5	49	69	2.6	36	29	1.2	34	28	1.1	41	34	1.1
Ashlawn Road/Barby Road	B4429 Ashlawn Road WB	Onley Lane SB	10	2	3.3	14	5	2.9	3	1	1.4	11	5	2.1	9	4	2.0	4	3	0.5
Ashlawn Road/Barby Road	B4429 Ashlawn Road WB	B4429 Ashlawn Road WB	425	302	6.5	599	519	3.4	321	278	2.5	379	344	1.8	392	356	1.9	362	364	0.1
Ashlawn Road/Barby Road	Onley Lane NB	Barby Road NB	28	19	1.9	32	31	0.2	33	27	1.1	22	37	2.8	24	26	0.4	23	8	3.8
Ashlawn Road/Barby Road	Onley Lane NB	B4429 Ashlawn Road EB	6	0	3.5	3	0	2.4	1	0	1.4	3	1	1.4	6	1	2.7	5	0	3.2
Ashlawn Road/Barby Road	Onley Lane NB	B4429 Ashlawn Road WB	18	7	3.1	45	19	4.6	26	16	2.2	24	21	0.6	28	25	0.6	31	22	1.7
Ashlawn Road/Barby Road	B4429 Ashlawn Road EB	Barby Road NB	98	76	2.4	178	111	5.6	125	94	3.0	84	64	2.3	94	73	2.3	84	70	1.6
Ashlawn Road/Barby Road	B4429 Ashlawn Road EB	B4429 Ashlawn Road EB	242	235	0.5	524	544	0.9	289	275	0.8	564	461	4.5	659	577	3.3	446	429	0.8
Ashlawn Road/Barby Road	B4429 Ashlawn Road EB	Onley Lane SB	19	8	3.0	40	16	4.5	25	12	3.0	45	20	4.4	32	25	1.3	24	22	0.4
A5/Newton Lane	A5 SB	A5 SB	690	681	0.3	673	689	0.6	396	399	0.2	473	569	4.2	552	614	2.6	354	429	3.8
A5/Newton Lane	A5 SB	Newton Lane WB	18	7	3.1	24	16	1.8	12	5	2.4	34	15	3.8	46	14	5.8	17	5	3.6
A5/Newton Lane	A5 NB	A5 NB	437	396	2.0	470	567	4.3	310	354	2.4	562	526	1.5	623	690	2.6	460	556	4.3
A5/Newton Lane	A5 NB	Newton Lane WB	6	0	3.5	3	0	2.4	0	0		2	0	2.0	3	0	2.4	1	0	1.4
A5/Newton Lane	Newton Lane EB	A5 NB	56	28	4.3	63	36	3.8	22	8	3.6	72	39	4.4	107	45	7.1	42	27	2.6
A5/Newton Lane	Newton Lane EB	A5 SB	3	0	2.4	2	0	2.0	1	0	1.4	1	0	1.4	4	0	2.8	2	0	2.0
Ashlawn Road/Barby Lane	Ashlawn Road EB	Ashlawn Road EB	530	496	1.5	620	671	2.0	438	418	1.0	665	624	1.6	771	813	1.5	667	731	2.4
Ashlawn Road/Barby Lane	Ashlawn Road EB	Barby Lane SB	24	4	5.3	56	37	2.8	43	40	0.5	57	38	2.8	71	48	3.0	61	48	1.8
Ashlawn Road/Barby Lane	Ashlawn Road WB	Ashlawn Road WB	502	392	5.2	737	669	2.6	514	516	0.1	598	673	3.0	704	790	3.1	719	808	3.2
Ashlawn Road/Barby Lane	Ashlawn Road WB	Barby Lane SB	7	3	1.8	19	1	5.7	20	1	5.9	19	18	0.2	30	20	2.0	22	3	5.4
Ashlawn Road/Barby Lane	Barby Lane NB	Ashlawn Road WB	32	35	0.5	97	88	0.9	54	60	0.8	66	51	2.0	82	60	2.6	58	58	0.0
Ashlawn Road/Barby Lane	Barby Lane NB	Ashlawn Road EB	11	2	3.5	18	2	5.1	15	1	4.9	26	4	5.7	23	24	0.2	16	6	3.0
School Street/Lower Street	School Street SB	Lower Street EB	70	72	0.2	123	108	1.4	66	70	0.5	106	121	1.4	130	147	1.4	70	86	1.8
School Street/Lower Street	School Street SB	School Street SB	31	33	0.4	53	61	1.1	30	40	1.7	66	76	1.2	79	91	1.3	62	78	1.9
School Street/Lower Street	Lower Street WB	School Street NB	68	67	0.1	100	104	0.4	62	70	1.0	93	119	2.5	90	121	3.0	73	99	2.8
School Street/Lower Street	Lower Street WB	School Street SB	4	5	0.5	18	21	0.7	5	10	1.8	14	16	0.5	8	10	0.7	13	18	1.3
School Street/Lower Street	School Street NB	School Street NB	51	45	0.9	83	74	1.0	45	42	0.5	57	76	2.3	55	81	3.2	61	72	1.3
School Street/Lower Street	School Street NB	Lower Street EB	2	5	1.6	15	19	1.0	3	5	1.0	11	11	0.0	14	14	0.0	15	16	0.3
M45/A45/Coventry Road	B4429 Coventry Road SB	M45 EB	45	41	0.6	22	45	4.0	17	28	2.3	12	25	3.0	8	34	5.7	9	30	4.8
M45/A45/Coventry Road	B4429 Coventry Road SB	A45 Coventry Road WB	427	479	2.4	376	398	1.1	223	248	1.6	226	236	0.7	222	237	1.0	213	241	1.9
M45/A45/Coventry Road	M45 WB	B4429 Coventry Road NB	10	48	7.1	17	49	5.6	11	36	5.2	23	56	5.3	45	80	4.4	43	47	0.6
M45/A45/Coventry Road	M45 WB	A45 Coventry Road WB	910	828	2.8	732	683	1.8	551	551	0.0	644	592	2.1	755	794	1.4	565	630	2.7
M45/A45/Coventry Road	A45 Coventry Road EB	B4429 Coventry Road NB	174	124	4.1	275	277	0.1	238	172	4.6	381	342	2.1	459	446	0.6	293	313	1.1
M45/A45/Coventry Road	A45 Coventry Road EB	M45 EB	1004	1053	1.5	754	806	1.9	474	545	3.1	759	889	4.5	830	860	1.0	556	562	0.3
A429/M45	B4429 Daventry Road SB	A45 Daventry Road SB	218	212	0.4	205	270	4.2	151	229	5.7	198	196	0.1	211	238	1.8	141	166	2.0
A429/M45	A45 Daventry Road NB	B4429 Daventry Road NB	133	165	2.6	224	289	4.1	161	184	1.8	261	241	1.3	284	270	0.8	173	190	1.3
A429/M45	M45 Slip Road EB	B4429 Daventry Road NB	6	2	2.0	9	4	2.0	13	2	4.0	2	9	3.0	4	11	2.6	10	9	0.3
A429/M45	M45 Slip Road EB	A45 Daventry Road SB	391	288	5.6	314	263	3.0	167	122	3.7	248	269	1.3	321	254	4.0	201	184	1.2
A4071/B4453	A4071 NB	A4071 NB	322	271	3.0	429	444	0.7	243	243	0.0	470	463	0.3	539	557	0.8	391	399	0.4
A4071/B4453	A4071 NB	B4453 SB	44	29	2.5	63	42	2.9	66	43	3.1	74	51	2.9	61	46	2.1	34	28	1.1
A4071/B4453	A4071 SB	A4071 SB	157	120	3.1	196	175	1.5	89	110	2.1	98	79	2.0	116	122	0.6	78	100	2.3
A4071/B4453	A4071 SB	B4453 SB	848	771	2.7	675	756	3.0	397	487	4.3	487	540	2.3	564	631	2.7	369	439	3.5
A4071/B4453	B4453 NB	A4071 SB	88	67	2.4	110	114	0.4	100	67	3.6	176	152	1.9	190	142	3.7	108	78	3.1
A4071/B4453	B4453 NB	A4071 NB	202	191	0.8	301	352	2.8	182	140	3.3	370	329	2.2	430	413	0.8	317	310	0.4
B4453/A4071	B4453 Straight Mile SB	A4071 EB	87	62	2.9	113	79	3.5	105	61	4.8	156	97	5.2	156	121	3.0	112	96	1.6
B4453/A4071	B4453 Straight Mile SB	B4453 Straight Mile SB	129	105	2.2	128	80	4.7	101	73	3.0	75	36	5.2	92	46	5.5	72	41	4.1
B4453/A4071	A4071 WB	B4453 Straight Mile NB	543	475	3.0	454	477	1.1	288	293	0.3	376	373	0.2	364	417	2.7	262	263	0.1
B4453/A4071	A4071 WB	B4453 Straight Mile SB	329	318	0.6	297	323	1.5	194	235	2.8	204	211	0.5	233	263	1.9	155	205	3.7
B4453/A4071	B4453 Straight Mile NB	B4453 Straight Mile NB	242	226	1.0	329	395	3.5	203	146	4.3	443	406	1.8	517	440	3.5	348	290	3.2
B4453/A4071	B4453 Straight Mile NB	A4071 EB	209	199	0.7	293	387	5.1	175	145	2.4	392	389	0.2	476	434	2.0	312	288	1.4
A45/B4453	A45 EB	B4453 Straight Mile SB	196	167	2.2	203	159	3.3	163	133	2.5	179	133	3.7	192	168	1.8	152	137	1.2
A45/B4453	B4453 Straight Mile NB	A45 EB	558	498	2.6	450	486	1.7	262	295	2.0	375	388	0.7	361	422	3.1	260	267	0.4
A45/A4071/Lawford Heath Lane	Lawford Heath Lane SB	A45 London Road EB	85	103	1.9	106	157	4.4	78	85	0.8	68	97	3.2	91	130	3.7	39	69	4.1
A45/A4071/Lawford Heath Lane	A4071 SB	Lawford Heath Lane NB	45	60	2.1	57	83	3.1	42	66	3.3	49	47	0.3	50	84	4.2	43	64	2.9
A45/A4071/Lawford Heath Lane	A45 London Road EB	Lawford Heath Lane NB	34	32	0.3	30	29	0.2	28	24	0.8	33	32	0.2	33	39	1.0	17	19	0.5
A45/A4071/Lawford Heath Lane	A45 London Road EB	A45 London Road EB	337	227	6.6	442	371	3.5	264	194	4.6	498	407	4.3	549	475	3.3	405	363	2.1
A428/Moors Lane	Moors Lane SB	A428 Crick Road EB	21	12	2.2	20	8	3.2	9	5	1.5	4	3	0.5	14	4	3.3	7	2	2.4
A428/Moors Lane	A428 Crick Road WB	Moors Lane NB	5	1	2.3	9	4	2.0	5	3	1.0	14	3	3.8	20	2	5.4	13	2	4.0
A428/Moors Lane	A428 Crick Road WB	A428 Crick Road WB	203	168	2.6	222	208	1.0	163	157	0.5	264	248	1.0	407	351	2.9	361	286	4.2
A428/Moors Lane	A428 Crick Road EB	A428 Crick Road EB	393	333	3.1	319	349	1.6	221	186	2.5	206	170	2.6	285	272	0.8	224	190	2.4
A428/Kingsley Avenue	Kingsley Avenue SB	A428 Hillmorton Road (SB)	64	82	2.1	150	177	2.1	61	66	0.6	85	90	0.5	97	102	0.5	63	69	0.7
A428/Kingsley Avenue	Kingsley Avenue SB	A428 Hillmorton Road (NB)	64	68	0.5	114	94	2.0	55	56	0.1	42	48	0.9	58	56	0.3	77	76	0.1

A428/Kingsley Avenue	A428 Hillmorton Road (NB)	Kingsley Avenue NB	19	22	0.7	41	77	4.7	39	45	0.9	86	111	2.5	89	125	3.5	57	106	5.4
A428/Kingsley Avenue	A428 Hillmorton Road (NB)	A428 Hillmorton Road (NB)	328	288	2.3	436	474	1.8	393	419	1.3	460	494	1.6	519	539	0.9	555	579	1.0
A428/Kingsley Avenue	A428 Hillmorton Road (SB)	Kingsley Avenue NB	54	38	2.4	90	76	1.5	54	56	0.3	114	94	2.0	144	131	1.1	93	97	0.4
A428/Kingsley Avenue	A428 Hillmorton Road (SB)	A428 Hillmorton Road (SB)	368	283	4.7	465	358	5.3	345	311	1.9	497	465	1.5	618	579	1.6	517	559	1.8
A428/Fisher Avenue	A428 Hillmorton Road (SB)	A428 Hillmorton Road (SB)	369	303	3.6	408	394	0.7	364	344	1.1	536	522	0.6	666	661	0.2	534	610	3.2
A428/Fisher Avenue	A428 Hillmorton Road (SB)	Fisher Avenue NB	24	39	2.7	123	61	6.5	24	39	2.7	60	45	2.1	43	50	1.0	43	41	0.3
A428/Fisher Avenue	A428 Hillmorton Road (NB)	A428 Hillmorton Road (NB)	383	330	2.8	506	506	0.0	428	448	1.0	476	483	0.3	547	538	0.4	595	580	0.6
A428/Fisher Avenue	A428 Hillmorton Road (NB)	Fisher Avenue NB	49	17	5.6	93	31	7.9	44	17	4.9	53	22	5.1	57	20	6.0	46	22	4.1
A428/Fisher Avenue	Fisher Avenue SB	A428 Hillmorton Road (NB)	20	54	5.6	146	145	0.1	47	66	2.5	74	85	1.2	39	78	5.1	64	84	2.3
A428/Fisher Avenue	Fisher Avenue SB	A428 Hillmorton Road (SB)	51	24	4.4	156	69	8.2	45	30	2.4	105	55	5.6	132	68	6.4	101	57	5.0
A426/Ashlawn Road	A426 SB	Ashlawn Road EB	163	146	1.4	367	338	1.5	214	198	1.1	324	310	0.8	310	314	0.2	241	253	0.8
A426/Ashlawn Road	A426 SB	A426 WB	439	431	0.4	368	493	6.0	303	407	5.5	397	418	1.0	411	481	3.3	339	376	2.0
A426/Ashlawn Road	Ashlawn Road WB	A426 NB	113	97	1.6	282	238	2.7	174	159	1.2	252	239	0.8	257	256	0.1	228	239	0.7
A426/Ashlawn Road	Ashlawn Road WB	Ashlawn Road EB	1	0	1.4	1	0	1.4	0	0		0	0		1	0	1.4	0	0	
A426/Ashlawn Road	Ashlawn Road WB	A426 WB	374	214	9.3	387	291	5.2	214	171	3.1	236	205	2.1	268	194	4.9	219	185	2.4
A426/Ashlawn Road	A426 EB	A426 NB	244	258	0.9	353	430	3.9	356	396	2.1	442	469	1.3	491	564	3.2	386	458	3.5
A426/Ashlawn Road	A426 EB	Ashlawn Road EB	220	197	1.6	393	338	2.9	223	182	2.9	364	251	6.4	465	372	4.5	295	263	1.9
A428/Whitehall Road	Whitehall Road SB	A428 Hillmorton Road EB	202	179	1.7	241	227	0.9	225	212	0.9	335	272	3.6	373	304	3.8	370	285	4.7
A428/Whitehall Road	Whitehall Road SB	Bruce Williams Way SB	12	38	5.2	23	27	0.8	22	41	3.4	24	50	4.3	74	113	4.0	70	80	1.2
A428/Whitehall Road	Whitehall Road SB	A428 Hillmorton Road WB	320	267	3.1	455	412	2.1	375	340	1.9	433	390	2.1	456	391	3.2	400	344	2.9
A428/Whitehall Road	A428 Hillmorton Road WB	Whitehall Road NB	357	262	5.4	395	371	1.2	325	326	0.1	329	306	1.3	296	315	1.1	304	315	0.6
A428/Whitehall Road	A428 Hillmorton Road WB	Bruce Williams Way SB	11	47	6.7	28	76	6.7	25	70	6.5	24	34	1.9	52	61	1.2	88	83	0.5
A428/Whitehall Road	A428 Hillmorton Road WB	A428 Hillmorton Road WB	258	262	0.2	305	393	4.7	250	281	1.9	209	232	1.5	238	279	2.6	290	297	0.4
A428/Whitehall Road	Bruce Williams Way NB	Whitehall Road NB	12	21	2.2	7	12	1.6	12	19	1.8	24	33	1.7	58	36	3.2	54	28	4.1
A428/Whitehall Road	Bruce Williams Way NB	A428 Hillmorton Road EB	9	5	1.5	5	9	1.5	20	11	2.3	27	34	1.3	39	33	1.0	35	29	1.1
A428/Whitehall Road	Bruce Williams Way NB	A428 Hillmorton Road WB	7	10	1.0	19	24	1.1	14	13	0.3	51	47	0.6	60	43	2.4	85	34	6.6
A428/Whitehall Road	A428 Hillmorton Road EB	Whitehall Road NB	220	152	5.0	301	219	5.1	306	270	2.1	353	363	0.5	392	417	1.2	287	317	1.7
A428/Whitehall Road	A428 Hillmorton Road EB	A428 Hillmorton Road EB	178	206	2.0	219	284	4.1	184	274	5.9	358	432	3.7	458	545	3.9	303	459	8.0
A428/Whitehall Road	A428 Hillmorton Road EB	Bruce Williams Way SB	22	36	2.6	35	47	1.9	42	34	1.3	61	40	3.0	100	53	5.4	99	39	7.2
A428/Whitehall Road	A428 Hillmorton Road EB	A428 Hillmorton Road WB	5	4	0.5	27	10	4.0	12	6	2.0	20	12	2.0	24	14	2.3	10	8	0.7
Murray Road/Clifton Road/Lower Hillmorton Road	Murray Road SB	Clifton Road EB	32	11	4.5	25	13	2.8	48	18	5.2	57	21	5.8	40	22	3.2	56	24	5.1
Murray Road/Clifton Road/Lower Hillmorton Road	Murray Road SB	Whitehall Road SB	201	110	7.3	205	114	7.2	193	115	6.3	223	149	5.4	227	156	5.1	318	170	9.5
Murray Road/Clifton Road/Lower Hillmorton Road	Murray Road SB	B5414 WB	34	32	0.3	50	36	2.1	40	35	0.8	31	46	2.4	42	45	0.5	31	38	1.2
Murray Road/Clifton Road/Lower Hillmorton Road	Clifton Road WB	Murray Road NB	58	30	4.2	91	44	5.7	83	23	8.2	55	18	6.1	59	18	6.6	69	17	7.9
Murray Road/Clifton Road/Lower Hillmorton Road	Clifton Road WB	Lower Hillmorton Road SB	5	8	1.2	20	17	0.7	13	11	0.6	20	18	0.5	26	21	1.0	11	18	1.8
Murray Road/Clifton Road/Lower Hillmorton Road	Clifton Road WB	Whitehall Road SB	155	201	3.4	248	310	3.7	172	233	4.3	157	229	5.2	182	264	5.5	194	225	2.1
Murray Road/Clifton Road/Lower Hillmorton Road	Lower Hillmorton Road NB	Murray Road NB	51	35	2.4	54	46	1.1	52	58	0.8	40	48	1.2	41	59	2.5	37	43	0.9
Murray Road/Clifton Road/Lower Hillmorton Road	Lower Hillmorton Road NB	Whitehall Road SB	42	45	0.5	71	55	2.0	82	74	0.9	95	75	2.2	105	89	1.6	74	66	1.0
Murray Road/Clifton Road/Lower Hillmorton Road	Lower Hillmorton Road NB	B5414 WB	113	123	0.9	169	187	1.3	161	220	4.3	117	182	5.3	102	170	5.8	110	170	5.1
Murray Road/Clifton Road/Lower Hillmorton Road	Whitehall Road NB	Murray Road NB	234	98	10.6	170	93	6.7	184	111	6.0	174	100	6.3	176	99	6.6	186	101	7.1
Murray Road/Clifton Road/Lower Hillmorton Road	Whitehall Road NB	Lower Hillmorton Road SB	32	23	1.7	65	55	1.3	87	71	1.8	84	65	2.2	61	59	0.3	43	48	0.7
Murray Road/Clifton Road/Lower Hillmorton Road	Whitehall Road NB	B5414 WB	228	219	0.6	302	312	0.6	228	276	3.0	226	238	0.8	224	256	2.1	243	254	0.7
Murray Road/Clifton Road/Lower Hillmorton Road	B5414 EB	Murray Road NB	13	18	1.3	35	30	0.9	26	36	1.8	54	32	3.4	34	29	0.9	29	27	0.4
Murray Road/Clifton Road/Lower Hillmorton Road	B5414 EB	Clifton Road EB	67	63	0.5	134	120	1.2	95	128	3.1	254	252	0.1	305	303	0.1	165	200	2.6
Murray Road/Clifton Road/Lower Hillmorton Road	B5414 EB	Lower Hillmorton Road SB	45	69	3.2	137	148	0.9	93	144	4.7	171	226	3.9	183	250	4.6	95	183	7.5
Murray Road/Clifton Road/Lower Hillmorton Road	B5414 EB	B5414 WB	8	5	1.2	10	4	2.3	22	5	4.6	16	7	2.7	19	6	3.7	21	4	4.8
B5414/Railway Terrace	Railway Terrace SB	B5414 Clifton Road EB	90	72	2.0	81	100	2.0	127	99	2.6	229	170	4.2	268	198	4.6	156	127	2.4
B5414/Railway Terrace	B5414 Clifton Road WB	Railway Terrace NB	100	118	1.7	198	158	3.0	195	180	1.1	132	144	1.0	134	156	1.8	135	163	2.3
B5414/Railway Terrace	B5414 Clifton Road WB	B5414 Clifton Road WB	430	403	1.3	614	566	2.0	508	553	2.0	445	485	1.9	433	499	3.1	448	456	0.4
B5414/Railway Terrace	B5414 Clifton Road EB	Railway Terrace NB	10	20	2.6	28	28	0.0	37	37	0.0	33	30	0.5	18	27	1.9	29	24	1.0
B5414/Railway Terrace	B5414 Clifton Road EB	B5414 Clifton Road EB	162	162	0.0	339	300	2.2	289	311	1.3	517	419	4.5	560	468	4.1	371	351	1.1
Lower Hillmorton Road/Boundary Road	Lower Hillmorton Road SB	Lower Hillmorton Road SB	85	69	1.8	273	207	4.3	105	117	1.1	257	246	0.7	278	288	0.6	178	213	2.5
Lower Hillmorton Road/Boundary Road	Lower Hillmorton Road SB	Boundary Road SB	38	27	1.9	75	44	4.0	38	28	1.7	71	37	4.6	75	37	5.1	45	33	1.9
Lower Hillmorton Road/Boundary Road	Lower Hillmorton Road NB	Lower Hillmorton Road NB	171	157	1.1	353	326	1.5	212	234	1.5	191	222	2.2	195	234	2.7	185	245	4.1
Lower Hillmorton Road/Boundary Road	Lower Hillmorton Road NB	Boundary Road SB	7	22	3.9	11	33	4.7	7	24	4.3	20	26	1.3	17	22	1.1	23	35	2.2
Lower Hillmorton Road/Boundary Road	Boundary Road NB	Lower Hillmorton Road NB	49	38	1.7	101	79	2.3	52	57	0.7	83	76	0.8	89	90	0.1	68	81	1.5
Lower Hillmorton Road/Boundary Road	Boundary Road NB	Lower Hillmorton Road SB	7	14	2.2	24	35	2.0	11	27	3.7	21	44	4.0	45	65	2.7	22	47	4.3
A428/Percival Road	A428 Hillmorton Road EB	A428 Hillmorton Road EB	383	343	2.1	509	473	1.6	377	391	0.7	648	617	1.2	756	745	0.4	613	692	3.1
A428/Percival Road	A428 Hillmorton Road EB	Percival Road SB	104	99	0.5	163	132	2.6	70	77	0.8	123	112	1.0	135	125	0.9	100	101	0.1
A428/Percival Road	A428 Hillmorton Road WB	A428 Hillmorton Road WB	461	442	0.9	717	731	0.5	513	583	3.0	555	595	1.7	575	645	2.8	663	715	2.0
A428/Percival Road	A428 Hillmorton Road WB	Percival Road SB	18	40	4.1	16	61	7.3	17	26	1.9	12	19	1.8	11	15	1.1	12	17	1.3
A428/Percival Road	Percival Road NB	A428 Hillmorton Road WB	98	93	0.5	189	175	1.0	125	128	0.3	187	154	2.5	211	202	0.6	133	139	0.5
A428/Percival Road	Percival Road NB	A428 Hillmorton Road EB	3	6	1.4	9	56	8.2	5	12	2.4	9	19	2.7	9	24	3.7	6	14	2.5
The Kent/Lower Hillmorton Road	The Kent SB	The Kent EB	72	62	1.2	149	104	4.0	82	66	1.9	147	120	2.3	169	123	3.8	131	106	2.3
The Kent/Lower Hillmorton Road	The Kent SB	Lower Hillmorton Road WB	26	9	4.1	68	43	3.4	46	30	2.6	90	54	4.2	124	76	4.8	90	64	3.0
The Kent/Lower Hillmorton Road	The Kent WB	The Kent NB	135	84	4.9	161	115	3.9	109	43	7.6	125	111	1.3	131	148	1.4	101	63	4.2
The Kent/Lower Hillmorton Road	The Kent WB	Lower Hillmorton Road WB	89	92	0.3	199	186	0.9	119	135	1.4	151	171	1.6	143	166	1.9	157	195	2.9
The Kent/Lower Hillmorton Road	Lower Hillmorton Road EB	The Kent NB	99	89	1.0	143	122	1.8	52	44	1.2	72	64	1.0	86	73	1.5	53	47	0.8
The Kent/Lower Hillmorton Road	Lower Hillmorton Road EB	The Kent EB	58	53	0.7	142	136	0.5	85	91	0.6	167	173	0.5	212	207	0.3	121	145	2.1
Ashlawn Road/Percival Road	Percival Road SB	B4429 Ashlawn Road EB	12	2	3.8	24	5	5.0	13	2	4.0	12	3	3.3	15	2	4.5	10	3	2.7
Ashlawn Road/Percival Road	Percival Road SB	B4429 Ashlawn Road WB	139	123	1.4	160	170	0.8	72	78	0.7	76	75	0.1	80	79	0.1	68	67	0.1
Ashlawn Road/Percival Road	B4429 Ashlawn Road WB	Percival Road NB	4	1	1.9	26	13	2.9	16	6	3.0	20	9	2.9	12	5	2.4	15	6	2.8
Ashlawn Road/Percival Road	B4429 Ashlawn Road WB	B4429 Ashlawn Road WB	344	231	6.7	539	451	4.0	287	264	1.4	345	310	1.9	361	316	2.4	355	344	0.6
Ashlawn Road/Percival Road	B4429 Ashlawn Road EB	Percival Road NB	37	41	0.6	121	153	2.7	86	83	0.3	186	133	4.2	275	189	5.6	127	108	1.8
Ashlawn Road/Percival Road	B4429 Ashlawn Road EB	B4429 Ashlawn Road EB	211	189	1.6	427	447	1.0	240	207	2.2	452	365	4.3	431	410	1.0	360	340	1.1
Hillmorton Lane/South Road	Hillmorton Lane SB	Hillmorton Lane SB	89	74	1.7	199	146	4.0	103	94	0.9	229	175	3.8	277	195	5.3	207	166	3.0
Hillmorton Lane/South Road	Hillmorton Lane SB	South Road WB	1	7	3.0	11	19	2.1	4	5	0.5	7	3	1.8	6	4	0.9	0	3	
Hillmorton Lane/South Road	Hillmorton Lane NB	Hillmorton Lane NB	212	162	3.7	284	231	3.3	159	86	6.6	176	158	1.4	188	206	1.3	134	106	2.6
Hillmorton Lane/South Road	Hillmorton Lane NB	South Road WB	13	5	2.7	16	6	3.0	9	4	2.0	17	12	1.3	21	15	1.4	21	7	3.7
Hillmorton Lane/South Road	South Road EB	Hillmorton Lane NB	4	8	1.6	5	20	4.2	6	6	0.0	3	4	0.5	5	3	1.0	4	3	0.5
Hillmorton Lane/South Road	South Road EB	Hillmorton Lane SB	6	0	3.5	20	2	5.4	13	1	4.5	8	2	2.7	13	6	2.3	7	1	3.0
Church Street/Main Street/Lilbourne Road	Church Street SB	Libourne Road EB	72	81	1.0	168	139	2.3	87	74	1.4	195	188	0.5	229	204	1.7	177	178	0.1
Church Street/Main Street/Lilbourne Road	Church Street SB	Main Street WB	119	111	0.7	281	180	6.7	105	109	0.4	188	179	0.7	209	210	0.1	155	153	0.2
Church Street/Main Street/Lilbourne Road	Libourne Road WB	Main Street WB	86	94	0.8	116	151	3.0	100	91	0.9	111	137	2.3	116	170	4.5	99	113	1.4
Church Street/Main Street/Lilbourne Road	Main Street EB	Church Street NB	180	176	0.3	285	220	4.1	131	114	1.5	303	229	4.5	340	255	4.9	175	162	1.0
Church Street/Main Street/Lilbourne Road	Main Street EB	Libourne Road EB	62	66	0.5	69	75	0.7	66	47	2.5	67	119	5.4	101	167	5.7	69	104	3.8
Railway Terrace/Wood Street	Railway Terrace SB	Railway Terrace SB	92	89	0.3	85	96	1.2	87	86	0.1	83	81	0.2	138	82	5.3	98	73	2.7
Railway Terrace/Wood Street	Railway Terrace SB	Wood Street WB	39	65	3.6	52	72	2.5	46	62	2.2	35	55	3.0	33	54	3.2	38	48	1.5
Railway Terrace/Wood Street	Railway Terrace NB	Railway Terrace NB	131	112	1.7	116	90	2.6	105	106	0.1	103	94	0.9	157	112	3.9	134	90	4.2
Railway Terrace/Wood Street	Railway Terrace NB	Wood Street WB	45	18	4.8	120	60	6.3	86	47	4.8	96	40	6.8	80	46	4.3	85	49	4.4
Railway Terrace/Wood Street	Wood Street EB	Railway Terrace NB	40	46	0.9	51	57	0.8	42	58	2.3	75	71	0.5	83	83	0.0	54	59	0.7
Railway Terrace/Wood Street	Wood Street EB	Railway Terrace SB	41	29	2.0	95	60	4.0	84	45	4.9	170	105	5.5	208	120	6.9	104	64	4.4
Rugby Gyratory	A426 Corporation Street	Southbound	435	460	1.2	613	707	3.7	484	655	7.2	928	828	3.4	1031	998	1.0	736	877	5.0
Rugby Gyratory	Lawrence Sherriff Street	Northbound	628	658	1.2	754	856	3.6	700	784	3.1	837	888	1.7	937	1084	4.6	774	947	5.9
Rugby Gyratory	Lawrence Sherriff Street	Southbound	537	487	2.2	818	840	0.8	649	643	0.2	828	773	1.9	892	825	2.3	803	747	2.0
Rugby Gyratory	A426	Southbound	383	361	1.1	554	602	2.0	433	551	5.3	732	711	0.8	816	806	0.4	574	663	3.6
Rugby Gyratory	Firs Drive	Northbound	20	31	2.2	28	39	1.9	26	39	2.3	29	44	2.5	35	47	1.9	31	44	2.1
Rugby Gyratory	Firs Drive	Southbound	8	10	0.7	16	26	2.2	26	35	1.6	23	32	1.7	42	42	0.0	25	35	1.8
Rugby Gyratory	Bilton Road	Northbound	478	399	3.8	668	654	0.5	572	550	0.9	472	505	1.5	471	521	2.2	506	538	1.4
Rugby Gyratory	Bilton Road	Southbound	313	229	5.1	485	425	2.8	384	378	0.3	637	503	5.6	701	568	5.3	642	527	4.8
Rugby Gyratory	Lawford Road	Westbound	163	163	0.0	207	255	3.2	166	212	3.3	242	218	1.6	225	220	0.3	190	198	0.6
Rugby Gyratory	Lawford Road	Eastbound	309	217	5.7	299	222	4.8	334	247	5.1	400	301	5.3	507	418	4.1	369	296	4.0
Oliver Street/Lawford Road	Oliver Street SB	Lawford Road EB	65	49	2.1	58	44	2.0	48	59	1.5	56	58	0.3	56	78	2.7	65	79	1.6
Oliver Street/Lawford Road	Oliver Street SB	Northcote Road SB	8	8	0.0	2	5	1.6	8	10	0.7	12	15	0.8	15	16	0.3	9	14	1.5
Oliver Street/Lawford Road	Oliver Street SB	Lawford Road WB	243	326	4.9	313	321	0.4	236	282	2.9	417	436	0.9	458	475	0.8	325	339	0.8
Oliver Street/Lawford Road	Lawford Road WB	Oliver Street NB	9	21	3.1	26	48	3.6	18	36	3.5	25	24	0.2	41	29	2.0	41	31	1.7
Oliver Street/Lawford Road	Lawford Road WB	Northcote Road SB	2	3	0.6	2	4	1.2	6	6	0.0	10	10	0.0	10	9	0.3	10	9	0.3
Oliver Street/Lawford Road	Lawford Road WB	Lawford Road WB	127	136	0.8	135	193	4.5	146	180	2.7	185	199	1.0	198	210	0.8	143	167	1.9
Oliver Street/Lawford Road	Northcote Road NB	Oliver Street NB	7	10	1.0	15	18	0.7	6	9	1.1	7	11	1.3	2	4	1.2	7	8	0.4
Oliver Street/Lawford Road	Northcote Road NB	Lawford Road EB	9	6	1.1	5	4	0.5	6	4	0.9	8	6	0.8	10	6	1.4	4	3	0.5
Oliver Street/Lawford Road	Northcote Road NB	Lawford Road WB	17	19	0.5	15	18	0.7	4	5	0.5	5	6	0.4	12	14	0.6	11	13	0.6
Oliver Street/Lawford Road	Lawford Road EB	Oliver Street NB	137	199	4.8	211	277	4.2	211	249	2.5	150	175	2.0	125	196	5.6	142	187	3.5
Oliver Street/Lawford Road	Lawford Road EB	Lawford Road EB	243	184	4.0	257	186	4.8	249	163	6.0	327	230	5.8	407	324	4.3	287	206	5.2
Oliver Street/Lawford Road	Lawford Road EB	Northcote Road SB	2	2	0.0	6	5	0.4	4	13	3.1	11	12	0.3	9	11	0.6	9	11	0.6
Dunchurch Road/Overslade	Dunchurch Raod SB	Dunchurch Road SB	332	323	0.5	356	452	4.8	328	417	4.6	469	469	0.0	576	566	0.4	398	456	2.8
Dunchurch Road/Overslade	Dunchurch Raod SB	Overslade WB	70	62	1.0	163	157	0.5	96	107	1.1	154	153	0.1	164	160	0.3	114	130	1.4
Dunchurch Road/Overslade	Dunchurch Raod NB	Dunchurch Road NB	345	327	1.0	477	535	2.6	409	497	4.1	351	441	4.5	367	481	5.5	358	423	3.3
Dunchurch Road/Overslade	Dunchurch Raod NB	Overslade WB	19	14	1.2	56	39	2.5	20	21	0.2	22	22	0.0	21	20	0.2	8	9	0.3
Dunchurch Road/Overslade	Overslade Lane EB	Dunchurch Road NB	67	67	0.0	183	169	1.1	110	110	0.0	112	111	0.1	97	100	0.3	86	87	0.1
Dunchurch Road/Overslade	Overslade Lane EB	Dunchurch Road SB	3	7	1.8	20	26	1.3	9	13	1.2	19	23	0.9	17	20	0.7	21	33	2.3
Bilton Road/May Lane/Lytham Road	May Lane SB	Bilton Road EB	71	86	1.7	142	137	0.4	100	108	0.8	97	89	0.8	118	100	1.7	102	96	0.6
Bilton Road/May Lane/Lytham Road	May Lane SB	Lytham Road SB	39	46	1.1	145	113	2.8	78	73	0.6	156	83	6.7	131	84	4.5	91	66	2.8
Bilton Road/May Lane/Lytham Road	May Lane SB	Bilton Road WB	10	21	2.8	19	27	1.7	6	15	2.8	11	13	0.6	25	21	0.8	9	10	0.3
Bilton Road/May Lane/Lytham Road	Bilton Road WB	May Lane NB	53	27	4.1	105	52	6.0	73	44	3.8	100	54	5.2	127	65	6.3	105	62	4.7
Bilton Road/May Lane/Lytham Road	Bilton Road WB	Lytham Road SB	16	15	0.3	53	43	1.4	58	44	2.0	79	60	2.3	77	60	2.1	50	46	0.6
Bilton Road/May Lane/Lytham Road	Bilton Road WB	Bilton Road WB	223	187	2.5	314	328	0.8	215	262	3.0	299	327	1.6	407	428	1.0	308	357	2.7
Bilton Road/May Lane/Lytham Road	Lytham Road NB	May Lane NB	90	63	3.1	174	113	5.1	97	72	2.7	122	75	4.7	119	76	4.4	80	55	3.0
Bilton Road/May Lane/Lytham Road	Lytham Road NB	Bilton Road EB	49	46	0.4	107	93	1.4	89	66	2.6	83	65	2.1	70	61	1.1	92	68	2.7
Bilton Road/May Lane/Lytham Road	Lytham Road NB	Bilton Road WB	29	30	0.2	68	60	1.0	33	42	1.5	36	39	0.5	38	48	1.5	34	41	1.1
Bilton Road/May Lane/Lytham Road	Bilton Raod EB	May Lane NB	4	6	0.9	12	12	0.0	5	9	1.5	11	9	0.6	11	9	0.6	3	4	0.5
Bilton Road/May Lane/Lytham Road	Bilton Raod EB	Bilton Road EB	236	214	1.5	393	372	1.1	308	319	0.6	318	307	0.6	311	312	0.1	333	324	0.5
Bilton Road/May Lane/Lytham Road	Bilton Raod EB	Lytham Road SB	11	13	0.6	42	49	1.0	32	31	0.2	30	35	0.9	36	39	0.5	34	42	1.3
Lawford Lane/Main Street/Alwyn Road	Main Street WB	Lawford Lane NB	93	110	1.7	210	228	1.2	121	168	3.9	171	208	2.7	231	270	2.5	165	218	3.8
Lawford Lane/Main Street/Alwyn Road	Main Street WB	Alwyn Road SB	80	41	5.0	120	75	4.6	82	50	3.9	105	58	5.2	121	66	5.7	94	61	3.7
Lawford Lane/Main Street/Alwyn Road	Main Street WB	Main Street WB	325	279	2.6	339	331	0.4	242	263	1.3	290	279	0.7	311	310	0.1	256	259	0.2
Lawford Lane/Main Street/Alwyn Road	Alwyn Road NB	Lawford Lane NB	33	27	1.1	79	56	2.8	35	33	0.3	64	37	3.8	59	39	2.9	61	39	3.1
Lawford Lane/Main Street/Alwyn Road	Alwyn Road NB	Main Street EB	18	21	0.7	31	35	0.7	31	34	0.5	28	36	1.4	31	41	1.7	36	38	0.3
Lawford Lane/Main Street/Alwyn Road	Alwyn Road NB	Main Street WB	45	36	1.4	85	48	4.5	28	23	1.0	57	36	3.1	53	36	2.5	44	36	1.3
Lawford Lane/Main Street/Alwyn Road	Main Street EB	Lawford Lane NB	10	21	2.8	26	49	3.8	16	23	1.6	13	38	5.0	23	44	3.6	20	43	4.1
Lawford Lane/Main Street/Alwyn Road	Main Street EB	Main Street EB	165	126	3.2	354	365	0.6	211	168	3.1	360	297	3.5	348	332	0.9	315	289	1.5
Lawford Lane/Main Street/Alwyn Road	Main Street EB	Alwyn Road SB	32	19	2.6	134	72	6.1	25	18	1.5	57	30	4.1	68	36	4.4	54	28	4.1
Dunchurch Road/Shakespeare Gardens	Dunchurch Road SB	Dunchurch Raod SB	363	310	2.9	434	438	0.2	324	395	3.7	445	438	0.3	511	535	1.0	384	443	2.9
Dunchurch Road/Shakespeare Gardens	Dunchurch Road SB	Shakespeare Gardens WB	24	18	1.3	45	36	1.4	31	31	0.0	56	36	2.9	54	39	2.2	35	38	0.5
Dunchurch Road/Shakespeare Gardens	Dunchurch Road NB	Dunchurch Road NB	288	296	0.5	450	491	1.9	377	462	4.2	384	427	2.1	399	466	3.2	330	391	3.2
Dunchurch Road/Shakespeare Gardens	Dunchurch Road NB	Shakespeare Gardens WB	15	25	2.2	58	70	1.5	60	67	0.9	80	98	1.9	97	135	3.5	76	114	3.9
Dunchurch Road/Shakespeare Gardens	Shakespeare Gardens EB	Dunchurch Road NB	35	46	1.7	81	88	0.8	44	51	1.0	57	46	1.5	53	40	1.9	57	47	1.4
Dunchurch Road/Shakespeare Gardens	Shakespeare Gardens EB	Dunchurch Raod SB	68	88	2.3	97	131	3.2	55	73	2.3	66	94	3.1	47	81	4.3	53	77	3.0
Dunchurch Road/Bawnmore Road	Dunchurch Road SB	Dunchurch Road EB	64	52	1.6	93	80	1.4	125	107	1.7	135	104	2.8	181	142	3.1	121	103	1.7
Dunchurch Road/Bawnmore Road	Dunchurch Road SB	Dunchurch Road SB	371	317	2.9	389	409	1.0	243	304	3.7	320	332	0.7	317	368	2.8	270	316	2.7
Dunchurch Road/Bawnmore Road	Dunchurch Road SB	Bawnmore Road WB	52	42	1.5	132	120	1.1	41	58	2.4	89	68	2.4	99	83	1.7	72	77	0.6
Dunchurch Road/Bawnmore Road	Dunchurch Road WB	Dunchurch Road NB	21	32	2.1	50	64	1.9	86	91	0.5	114	123	0.8	140	138	0.2	124	129	0.4
Dunchurch Road/Bawnmore Road	Dunchurch Road WB	Dunchurch Road SB	86	83	0.3	101	90	1.1	143	129	1.2	220	193	1.9	230	199	2.1	182	151	2.4
Dunchurch Road/Bawnmore Road	Dunchurch Road WB	Bawnmore Road WB	44	43	0.2	71	71	0.0	94	89	0.5	163	136	2.2	166	142	1.9	178	121	4.7
Dunchurch Road/Bawnmore Road	Dunchurch Road NB	Dunchurch Road NB	209	224	1.0	331	380	2.6	291	366	4.1	306	369	3.4	353	445	4.6	277	357	4.5
Dunchurch Road/Bawnmore Road	Dunchurch Road NB	Dunchurch Road EB	61	38	3.3	133	88	4.3	138	82	5.3	222	143	5.8	208	163	3.3	185	154	2.4
Dunchurch Road/Bawnmore Road	Dunchurch Road NB	Dunchurch Road SB	4	3	0.5	4	3	0.5	6	2	2.0	2	2	0.0	9	3	2.4	12	4	2.8
Dunchurch Road/Bawnmore Road	Dunchurch Road NB	Bawnmore Road WB	87	87	0.0	166	197	2.3	96	107	1.1	170	185	1.1	177	212	2.5	149	187	2.9
Dunchurch Road/Bawnmore Road	Bawnmore Road EB	Dunchurch Road NB	49	54	0.7	130	128	0.2	69	76	0.8	94	94	0.0	61	65	0.5	56	57	0.1
Dunchurch Road/Bawnmore Road	Bawnmore Road EB	Dunchurch Road EB	57	48	1.2	104	81	2.4	107	72	3.7	116	71	4.7	134	77	5.5	118	69	5.1
Dunchurch Road/Bawnmore Road	Bawnmore Road EB	Dunchurch Road SB	146	182	2.8	235	332	5.8	125	167	3.5	167	209	3.1	163	226	4.5	117	159	3.6
Coventry Road/Cawton Lane	Coventry Road WB	Cawton lane SB	68	27	5.9	109	53	6.2	35	17	3.5	40	24	2.8	43	31	2.0	45	32	2.1
Coventry Road/Cawton Lane	Coventry Road WB	Coventry Road WB	460	397	3.0	403	378	1.3	212	245	2.2	197	196	0.1	218	219	0.1	186	184	0.1
Coventry Road/Cawton Lane	Cawston Lane NB	Coventry Road EB	29	25	0.8	52	32	3.1	39	27	2.1	87	48	4.7	98	59	4.4	56	43	1.8
Coventry Road/Cawton Lane	Cawston Lane NB	Coventry Road WB	18	6	3.5	19	8	3.0	26	5	5.3	29	6	5.5	31	9	4.9	13	7	1.9
Coventry Road/Cawton Lane	Coventry Road EB	Coventry Road EB	131	102	2.7	253	297	2.7	167	121	3.8	361	322	2.1	421	392	1.4	341	313	1.5
Coventry Road/Cawton Lane	Coventry Road EB	Cawton lane SB	9	3	2.4	22	5	4.6	16	3	4.2	22	5	4.6	16	5	3.4	13	4	3.1
Calvestone Road/Coventry Road	Calvestone Road SB	Calvestone Road NB	1	0	1.4	1	0	1.4	0	0		1	0	1.4	0	0		0	0	
Calvestone Road/Coventry Road	Calvestone Road SB	Coventry Road EB	47	40	1.1	126	109	1.6	34	37	0.5	60	63	0.4	56	59	0.4	64	67	0.4
Calvestone Road/Coventry Road	Calvestone Road SB	Coventry Road WB	102	73	3.1	111	81	3.1	30	29	0.2	35	31	0.7	33	31	0.4	30	26	0.8
Calvestone Road/Coventry Road	Calvestone Road SB	Cawton Grange Drive NB	2	3	0.6	7	5	0.8	8	2	2.7	3	3	0.0	6	3	1.4	7	3	1.8

Calvestone Road/Coventry Road	Coventry Road WB	Calvestone Road NB	16	13	0.8	63	53	1.3	34	37	0.5	66	70	0.5	79	84	0.6	59	67	1.0
Calvestone Road/Coventry Road	Coventry Road WB	Coventry Road EB	1	0	1.4	3	0	2.4	4	0	2.8	1	0	1.4	1	0	1.4	2	0	2.0
Calvestone Road/Coventry Road	Coventry Road WB	Coventry Road WB	330	277	3.0	301	284	1.0	193	204	0.8	175	167	0.6	190	193	0.2	165	163	0.2
Calvestone Road/Coventry Road	Coventry Road WB	Cawton Grange Drive NB	20	18	0.5	60	48	1.6	44	43	0.2	111	72	4.1	86	73	1.5	76	65	1.3
Calvestone Road/Coventry Road	Coventry Road EB	Calvestone Road NB	20	18	0.5	34	27	1.3	24	11	3.1	71	53	2.3	90	68	2.5	67	56	1.4
Calvestone Road/Coventry Road	Coventry Road EB	Coventry Road EB	117	83	3.4	237	271	2.1	164	111	4.5	304	251	3.2	336	303	1.8	251	232	1.2
Calvestone Road/Coventry Road	Coventry Road EB	Cawton Grange Drive NB	25	25	0.0	37	30	1.2	23	28	1.0	73	63	1.2	92	81	1.2	74	69	0.6
Calvestone Road/Coventry Road	Cawston Grange Drive SB	Coventry Road EB	48	47	0.1	141	111	2.7	57	57	0.0	62	57	0.6	51	51	0.0	62	59	0.4
Calvestone Road/Coventry Road	Cawston Grange Drive SB	Coventry Road WB	97	78	2.0	99	67	3.5	31	26	0.9	31	22	1.7	36	27	1.6	40	26	2.4
Newton Road/Newton Manor Lane	Newton Road SB	Newton Manor Lane EB	7	6	0.4	6	3	1.4	2	1	0.8	1	2	0.8	5	0	3.2	5	1	2.3
Newton Road/Newton Manor Lane	Newton Road SB	Newton Road SB	30	20	2.0	49	36	2.0	21	11	2.5	40	24	2.8	40	23	3.0	23	15	1.8
Newton Road/Newton Manor Lane	Newton Road SB	Newton Manor Lane WB	18	42	4.4	29	68	5.6	15	15	0.0	20	47	4.7	16	50	5.9	28	28	0.0
Newton Road/Newton Manor Lane	Newton Manor Lane WB	Newton Road NB	5	3	1.0	3	2	0.6	2	2	0.0	1	1	0.0	6	2	2.0	7	3	1.8
Newton Road/Newton Manor Lane	Newton Manor Lane WB	Newton Road SB	51	64	1.7	112	78	3.5	49	72	3.0	64	89	2.9	102	117	1.4	49	55	0.8
Newton Road/Newton Manor Lane	Newton Manor Lane WB	Newton Manor Lane WB	143	125	1.6	174	179	0.4	79	105	2.7	141	170	2.3	202	206	0.3	143	185	3.3
Newton Road/Newton Manor Lane	Newton Road NB	Newton Road NB	49	19	5.1	51	25	4.2	31	15	3.3	78	45	4.2	84	58	3.1	41	32	1.5
Newton Road/Newton Manor Lane	Newton Road NB	Newton Manor Lane EB	52	70	2.3	74	77	0.3	28	59	4.7	62	91	3.3	54	105	5.7	36	57	3.1
Newton Road/Newton Manor Lane	Newton Road NB	Newton Manor Lane WB	272	230	2.7	406	322	4.4	225	135	6.7	305	229	4.7	342	261	4.7	217	203	1.0
Newton Road/Newton Manor Lane	Newton Manor Lane EB	Newton Road NB	13	24	2.6	19	31	2.4	15	11	1.1	42	41	0.2	46	35	1.7	40	39	0.2
Newton Road/Newton Manor Lane	Newton Manor Lane EB	Newton Manor Lane EB	139	131	0.7	126	135	0.8	99	81	1.9	151	100	4.6	140	114	2.3	112	100	1.2
Newton Road/Newton Manor Lane	Newton Manor Lane EB	Newton Road SB	116	108	0.8	302	182	7.7	117	90	2.7	289	287	0.1	312	297	0.9	264	274	0.6
Newton Manor Lane/Crow Thorns	Newton Manor Lane EB	Newton Manor Lane EB	189	206	1.2	308	272	2.1	152	124	2.4	387	368	1.0	409	374	1.8	286	310	1.4
Newton Manor Lane/Crow Thorns	Newton Manor Lane EB	Crow Thorns SB	31	20	2.2	36	22	2.6	43	22	3.7	73	50	2.9	105	62	4.7	68	43	3.4
Newton Manor Lane/Crow Thorns	Newton Manor Lane WB	Newtron Manor Lane WB	349	339	0.5	479	487	0.4	262	214	3.1	320	334	0.8	431	405	1.3	304	321	1.0
Newton Manor Lane/Crow Thorns	Newton Manor Lane WB	Crow Thorns SB	77	52	3.1	119	80	3.9	63	45	2.4	132	107	2.3	155	110	3.9	90	97	0.7
Newton Manor Lane/Crow Thorns	Crow Thorns NB	Newtron Manor Lane WB	91	78	1.4	88	73	1.7	38	41	0.5	38	32	1.0	63	43	2.7	53	38	2.2
Newton Manor Lane/Crow Thorns	Crow Thorns NB	Newton Manor Lane EB	74	61	1.6	139	75	6.2	81	56	3.0	122	68	5.5	105	78	2.8	103	94	0.9
Newton Manor Lane/Hollowell Way	Newton Manor Lane EB	Newton Manor Lane EB	149	153	0.3	269	229	2.5	146	106	3.6	436	366	3.5	483	408	3.6	307	315	0.5
Newton Manor Lane/Hollowell Way	Newton Manor Lane EB	Hollowell Way SB	64	34	4.3	140	81	5.6	64	38	3.6	189	94	8.0	186	100	7.2	172	93	6.9
Newton Manor Lane/Hollowell Way	Newton Manor Lane WB	Newton Manor Lane WB	449	446	0.1	552	515	1.6	296	249	2.8	273	294	1.2	351	367	0.8	272	301	1.7
Newton Manor Lane/Hollowell Way	Newton Manor Lane WB	Hollowell Way SB	51	49	0.3	91	96	0.5	49	41	1.2	91	73	2.0	104	78	2.7	86	66	2.3
Newton Manor Lane/Hollowell Way	Hollowell Way NB	Newton Manor Lane WB	138	109	2.6	177	144	2.6	86	62	2.8	102	88	1.4	155	109	4.0	141	94	4.3
Newton Manor Lane/Hollowell Way	Hollowell Way NB	Newton Manor Lane EB	51	56	0.7	77	58	2.3	44	40	0.6	64	100	4.0	87	90	0.3	76	93	1.8
Coton Park Drive/Central Park Drive	Coton Park Drive SB	Central Park Drive WB	2	1	0.8	6	3	1.4	9	4	2.0	1	0	1.4	1	0	1.4	7	3	1.8
Coton Park Drive/Central Park Drive	Coton Park Drive SB	Coton Park Drive SB	2	2	0.0	13	11	0.6	5	8	1.2	42	12	5.8	61	12	8.1	14	12	0.6
Coton Park Drive/Central Park Drive	Coton Park Drive SB	Central Park Drive EB	32	38	1.0	66	77	1.3	57	59	0.3	287	271	1.0	265	243	1.4	84	89	0.5
Coton Park Drive/Central Park Drive	Central Park Drive EB	Coton Park Drive NB	8	3	2.1	7	3	1.8	5	3	1.0	4	2	1.2	0	0		3	1	1.4
Coton Park Drive/Central Park Drive	Central Park Drive EB	Coton Park Drive SB	2	1	0.8	21	3	5.2	6	3	1.4	31	4	6.5	39	4	7.5	16	4	3.8
Coton Park Drive/Central Park Drive	Central Park Drive EB	Central Park Drive EB	24	48	4.0	39	30	1.5	21	14	1.7	157	69	8.3	145	69	7.3	49	27	3.6
Coton Park Drive/Central Park Drive	Coton Park Drive NB	Coton Park Drive NB	57	49	1.1	78	59	2.3	20	21	0.2	12	14	0.6	7	7	0.0	6	7	0.4
Coton Park Drive/Central Park Drive	Coton Park Drive NB	Central Park Drive WB	37	20	3.2	60	24	5.6	12	2	3.8	15	2	4.5	11	1	4.1	7	2	2.4
Coton Park Drive/Central Park Drive	Coton Park Drive NB	Central Park Drive EB	237	147	6.5	253	231	1.4	103	102	0.1	145	189	3.4	154	174	1.6	144	128	1.4
Coton Park Drive/Central Park Drive	Central Park Drive WB	Coton Park Drive NB	236	262	1.6	303	382	4.3	152	194	3.2	39	69	4.1	36	71	4.8	39	69	4.1
Coton Park Drive/Central Park Drive	Central Park Drive WB	Central Park Drive WB	132	68	6.4	158	111	4.1	84	56	3.3	15	27	2.6	31	32	0.2	16	24	1.8
Coton Park Drive/Central Park Drive	Central Park Drive WB	Coton Park Drive SB	59	103	4.9	81	132	4.9	114	128	1.3	227	120	8.1	269	162	7.3	223	131	6.9
Coton Park Drive/Central Park Drive	Central Park Drive WB	Central Park Drive EB	2	0	2.0	2	1	0.8	5	1	2.3	3	2	0.6	2	2	0.0	3	1	1.4
Campion Way/Newton Manor Lane	Campion Way SB	Newton Monor Lane EB	12	22	2.4	22	25	0.6	6	12	2.0	10	12	0.6	7	14	2.2	8	12	1.3
Campion Way/Newton Manor Lane	Campion Way SB	Newton Manor Lane WB	117	93	2.3	128	77	5.0	63	37	3.7	52	21	5.1	46	23	3.9	60	27	5.0
Campion Way/Newton Manor Lane	Newton Manor Lane WB	Campion Way NB	8	9	0.3	21	23	0.4	10	13	0.9	19	21	0.4	20	28	1.6	17	22	1.1
Campion Way/Newton Manor Lane	Newton Manor Lane WB	Newton Manor Lane WB	576	541	1.5	708	633	2.9	368	306	3.4	353	360	0.4	496	448	2.2	402	374	1.4
Campion Way/Newton Manor Lane	Newton Manor Lane EB	Campion Way NB	20	8	3.2	45	21	4.2	31	16	3.1	88	58	3.5	119	76	4.4	92	68	2.7
Campion Way/Newton Manor Lane	Newton Manor Lane EB	Newton Monor Lane EB	201	167	2.5	388	285	5.6	206	131	5.8	615	449	7.2	663	495	7.0	474	394	3.8
Campion Way/Newton Manor Lane	Campion Way SB	Newton Manor Lane EB	44	27	2.9	66	29	5.4	25	13	2.8	18	14	1.0	28	15	2.8	25	14	2.5
Campion Way/Newton Manor Lane	Campion Way SB	Newton Manor Lane WB	36	88	6.6	44	71	3.6	17	33	3.2	13	20	1.7	15	22	1.6	17	24	1.5
Campion Way/Newton Manor Lane	Newton Manor Lane WB	Campion Way NB	7	11	1.3	21	22	0.2	13	14	0.3	32	22	1.9	61	35	3.8	39	26	2.3
Campion Way/Newton Manor Lane	Newton Manor Lane WB	Newton Manor Lane WB	435	405	1.5	549	538	0.5	287	242	2.8	325	343	1.0	428	413	0.7	322	333	0.6
Campion Way/Newton Manor Lane	Newton Manor Lane EB	Campion Way NB	2	7	2.4	10	19	2.4	4	14	3.3	29	54	3.9	33	75	5.7	25	71	6.6
Campion Way/Newton Manor Lane	Newton Manor Lane EB	Newton Manor Lane EB	178	200	1.6	277	265	0.7	172	133	3.2	441	406	1.7	486	421	3.1	329	338	0.5
Wood Street/Park Road	Wood Street WB	Park Road SB	9	30	4.8	14	33	3.9	10	21	2.8	18	38	3.8	22	42	3.5	13	38	5.0
Wood Street/Park Road	Wood Street WB	Wood Street WB	55	72	2.1	74	98	2.6	70	86	1.8	127	129	0.2	144	125	1.6	115	116	0.1
Wood Street/Park Road	Park Road NB	Wood Street EB	9	15	1.7	35	30	0.9	22	28	1.2	20	19	0.2	30	32	0.4	22	29	1.4
Wood Street/Park Road	Park Road NB	Wood Street WB	20	4	4.6	11	4	2.6	10	3	2.7	23	4	5.2	39	4	7.5	25	3	5.9
Wood Street/Park Road	Wood Street EB	Wood Street EB	101	86	1.6	182	152	2.3	137	130	0.6	189	137	4.1	191	167	1.8	111	113	0.2
Wood Street/Park Road	Wood Street EB	Park Road SB	9	2	3.0	14	6	2.5	7	5	0.8	26	9	4.1	33	21	2.3	28	12	3.6
Park Road/Manor Road	Park Road SB	Manor Road EB	2	0	2.0	2	1	0.8	1	0	1.4	6	2	2.0	5	3	1.0	4	3	0.5
Park Road/Manor Road	Park Road SB	Park Road SB	13	25	2.8	28	31	0.6	14	21	1.7	32	36	0.7	42	44	0.3	29	34	0.9
Park Road/Manor Road	Park Road SB	Lancaster Road WB	4	7	1.3	8	8	0.0	5	5	0.0	6	9	1.1	11	15	1.1	11	14	0.8
Park Road/Manor Road	Manor Road WB	Park Road NB	3	2	0.6	7	1	3.0	6	1	2.7	10	2	3.3	17	1	5.3	11	1	4.1
Park Road/Manor Road	Manor Road WB	Park Road SB	23	38	2.7	48	33	2.4	34	22	2.3	27	35	1.4	38	34	0.7	29	23	1.2
Park Road/Manor Road	Manor Road WB	Lancaster Road WB	55	36	2.8	69	36	4.6	34	28	1.1	74	50	3.0	68	53	1.9	56	46	1.4
Park Road/Manor Road	Park Road NB	Park Road NB	18	14	1.0	32	26	1.1	27	24	0.6	40	17	4.3	59	27	4.9	36	26	1.8
Park Road/Manor Road	Park Road NB	Manor Road EB	4	15	3.6	5	12	2.4	12	20	2.0	12	20	2.0	13	39	5.1	17	24	1.5
Park Road/Manor Road	Park Road NB	Lancaster Road WB	8	4	1.6	20	3	5.0	11	3	3.0	28	3	6.4	53	5	8.9	20	4	4.6
Park Road/Manor Road	Lancaster Road EB	Park Road NB	5	3	1.0	7	7	0.0	3	6	1.4	3	4	0.5	10	7	1.0	7	5	0.8
Park Road/Manor Road	Lancaster Road EB	Manor Road EB	15	12	0.8	28	22	1.2	28	23	1.0	34	22	2.3	43	42	0.2	32	37	0.9
Park Road/Manor Road	Lancaster Road EB	Park Road SB	10	1	3.8	29	1	7.2	13	1	4.5	28	2	6.7	27	1	6.9	17	1	5.3
A428 Lawford Road/Jubilee Street	A428 Lawford Road SB	Jubilee Street NB	23	23	0.0	63	61	0.3	26	24	0.4	71	64	0.9	75	77	0.2	46	50	0.6
A428 Lawford Road/Jubilee Street	A428 Lawford Road SB	A428 Lawford Road SB	319	319	0.0	449	394	2.7	374	282	5.1	448	339	5.5	515	437	3.6	440	335	5.3
A428 Lawford Road/Jubilee Street	A428 Lawford Road SB	Addison Road SB	197	164	2.5	318	318	0.0	228	210	1.2	281	226	3.5	271	270	0.1	169	191	1.6
A428 Lawford Road/Jubilee Street	A428 Lawford Road NB	A428 Lawford Road NB	449	421	1.3	506	408	4.6	338	301	2.1	545	438	4.8	678	530	6.0	452	332	6.1
A428 Lawford Road/Jubilee Street	A428 Lawford Road NB	Jubilee Street NB	6	6	0.0	3	9	2.4	15	11	1.1	15	18	0.7	17	17	0.0	19	20	0.2
A428 Lawford Road/Jubilee Street	A428 Lawford Road NB	Addison Road SB	132	104	2.6	202	167	2.6	159	140	1.6	144	131	1.1	118	119	0.1	95	101	0.6
A428 Lawford Road/Jubilee Street	Addison Road NB	A428 Lawford Road NB	224	223	0.1	319	317	0.1	186	196	0.7	304	252	3.1	329	280	2.8	168	161	0.5
A428 Lawford Road/Jubilee Street	Addison Road NB	Jubilee Street NB	12	10	0.6	51	31	3.1	27	27	0.0	30	26	0.8	27	25	0.4	18	18	0.0
A428 Lawford Road/Jubilee Street	Addison Road NB	A428 Lawford Road SB	71	63	1.0	113	87	2.6	150	121	2.5	134	116	1.6	140	118	1.9	74	71	0.4
A428/Cromwell Road	A428 Hillmorton Road SB	A428 Hillmorton Road SB	343	285	3.3	412	391	1.0	370	351	1.0	651	579	2.9	784	703	3.0	644	612	1.3
A428/Cromwell Road	A428 Hillmorton Road SB	Cromwell Road SB	50	44	0.9	55	73	2.3	49	68	2.5	105	86	1.9	130	109	1.9	84	91	0.7
A428/Cromwell Road	A428 Hillmorton Road NB	A428 Hillmorton Road NB	530	427	4.7	661	661	0.0	522	525	0.1	495	434	2.8	495	501	0.3	624	567	2.3
A428/Cromwell Road	A428 Hillmorton Road NB	Cromwell Road SB	16	19	0.7	55	53	0.3	47	53	0.8	96	88	0.8	103	102	0.1	75	84	1.0
A428/Cromwell Road	Cromwell Road NB	A428 Hillmorton Road NB	100	117	1.6	93	124	3.0	79	101	2.3	61	83	2.6	70	88	2.0	61	91	3.4
A428/Cromwell Road	Cromwell Road NB	A428 Hillmorton Road SB	76	75	0.1	137	95	3.9	42	46	0.6	56	56	0.0	52	54	0.3	63	55	1.0
Bilton Road/Addison Road	Bilton Road SB	Bilton Road SB	256	211	2.9	372	344	1.5	235	260	1.6	316	291	1.4	424	395	1.4	336	328	0.4
Bilton Road/Addison Road	Bilton Road SB	Addison Road NB	14	10	1.2	35	30	0.9	18	18	0.0	28	25	0.6	43	37	0.9	34	33	0.2
Bilton Road/Addison Road	Bilton Road NB	Bilton Road NB	229	201	1.9	407	388	1.0	310	328	1.0	329	319	0.6	323	326	0.2	348	339	0.5
Bilton Road/Addison Road	Bilton Road NB	Addison Road NB	44	26	3.0	71	46	3.3	63	43	2.7	77	62	1.8	82	70	1.4	56	55	0.1
Bilton Road/Addison Road	Addison Road SB	Bilton Road NB	20	32	2.4	41	47	0.9	27	35	1.4	32	38	1.0	27	34	1.3	20	32	2.4
Bilton Road/Addison Road	Addison Road SB	Bilton Road SB	41	56	2.2	90	88	0.2	44	48	0.6	58	52	0.8	77	70	0.8	41	41	0.0
Bilton Road/Bawnmore Road	Bilton Road WB	Bawnmore Road One Way	88	80	0.9	186	173	1.0	86	92	0.6	109	101	0.8	152	149	0.2	78	99	2.2
Bilton Road/Bawnmore Road	Bilton Road WB	Bilton Road WB	266	173	6.3	306	231	4.6	230	205	1.7	271	212	3.8	340	281	3.3	270	240	1.9
Bilton Road/Bawnmore Road	Bawnmore Road NB	Bilton Road EB	86	91	0.5	136	158	1.8	154	152	0.2	140	134	0.5	136	139	0.3	119	120	0.1
Bilton Road/Bawnmore Road	Bawnmore Road NB	Bilton Road WB	116	92	2.4	176	167	0.7	126	133	0.6	179	171	0.6	184	191	0.5	135	153	1.5
Bilton Road/Bawnmore Road	Bawnmore Road NB	Ivy Grange NB	1	8	3.3	2	10	3.3	4	16	3.8	6	19	3.7	5	22	4.6	4	18	4.2
Bilton Road/Bawnmore Road	Bilton Road EB	Bilton Road EB	162	147	1.2	320	297	1.3	243	248	0.3	310	274	2.1	324	284	2.3	300	293	0.4
Bilton Road/Bawnmore Road	Bilton Road EB	Bawnmore Road SB	73	85	1.4	204	263	3.9	84	121	3.7	175	222	3.3	190	244	3.7	145	203	4.4
Bilton Road/Bawnmore Road	Ivy Grange SB	Bilton Road EB	5	0	3.2	11	0	4.7	8	0	4.0	4	0	2.8	9	0	4.2	7	0	3.7
Bilton Road/Bawnmore Road	Ivy Grange SB	Bawnmore Road SB	2	0	2.0	9	0	4.2	1	0	1.4	3	0	2.4	2	0	2.0	3	0	2.4
Bilton Road/Bawnmore Road	Ivy Grange SB	Bilton Road WB	9	0	4.2	6	0	3.5	2	0	2.0	4	0	2.8	8	0	4.0	5	0	3.2
Overslade Lane/Deepmore Road	Overslade Lane SB	Overslade Lane SB	113	107	0.6	234	190	3.0	143	125	1.6	158	137	1.7	163	144	1.5	145	128	1.5
Overslade Lane/Deepmore Road	Overslade Lane SB	Deepmore Road NB	6	7	0.4	21	28	1.4	12	17	1.3	28	32	0.7	21	30	1.8	23	31	1.5
Overslade Lane/Deepmore Road	Overslade Lane NB	Overslade Lane NB	79	80	0.1	275	217	3.7	162	142	1.6	199	168	2.3	206	173	2.4	158	154	0.3
Overslade Lane/Deepmore Road	Overslade Lane NB	Deepmore Road NB	6	5	0.4	19	18	0.2	7	5	0.8	15	13	0.5	21	20	0.2	13	14	0.3
Overslade Lane/Deepmore Road	Deepmore Road SB	Overslade Lane NB	20	30	2.0	24	40	2.8	9	17	2.2	17	27	2.1	10	18	2.1	14	20	1.5
Overslade Lane/Deepmore Road	Deepmore Road SB	Overslade Lane SB	7	7	0.0	30	27	0.6	8	8	0.0	13	13	0.0	11	11	0.0	11	11	0.0
Alwyn Road/Northampton Lane	Alwyn Road SB	Northampton Lane EB	44	22	3.8	117	49	7.5	49	25	3.9	61	28	4.9	68	35	4.6	45	26	3.2
Alwyn Road/Northampton Lane	Alwyn Road SB	Northampton Lane WB	101	85	1.7	155	121	2.9	73	73	0.0	74	65	1.1	86	73	1.5	50	50	0.0
Alwyn Road/Northampton Lane	Northampton Lane WB	Alwyn Road NB	25	14	2.5	88	45	5.3	48	16	5.7	62	33	4.2	60	43	2.4	72	29	6.1
Alwyn Road/Northampton Lane	Northampton Lane WB	Northampton Lane WB	23	11	2.9	66	21	6.8	23	16	1.6	29	17	2.5	39	25	2.5	29	19	2.0
Alwyn Road/Northampton Lane	Northampton Lane EB	Alwyn Road NB	33	26	1.3	120	73	4.8	53	35	2.7	102	69	3.6	144	101	3.9	78	63	1.8
Alwyn Road/Northampton Lane	Northampton Lane EB	Northampton Lane EB	23	14	2.1	45	25	3.4	34	14	4.1	37	19	3.4	47	25	3.7	37	17	3.8
Cawston Lane/Northampton Lane	Cawston Lane SB	Northampton Lane EB	7	1	3.0	21	5	4.4	9	3	2.4	15	7	2.4	17	8	2.5	14	9	1.5
Cawston Lane/Northampton Lane	Cawston Lane SB	Cawston Lane SB	54	28	4.1	92	53	4.6	31	16	3.1	43	22	3.7	43	27	2.7	41	28	2.2
Cawston Lane/Northampton Lane	Northampton Lane WB	Cawston Lane NB	12	3	3.3	29	7	5.2	14	6	2.5	14	4	3.3	18	8	2.8	15	6	2.8
Cawston Lane/Northampton Lane	Northampton Lane WB	Cawston Lane SB	119	135	1.4	215	176	2.8	92	93	0.1	77	73	0.5	107	85	2.2	60	55	0.7
Cawston Lane/Northampton Lane	Cawston Lane NB	Cawston Lane NB	40	28	2.1	53	33	3.0	33	25	1.5	84	51	4.0	96	60	4.1	57	43	2.0
Cawston Lane/Northampton Lane	Cawston Lane NB	Northampton Lane EB	20	14	1.5	81	57	2.9	40	28	2.1	75	66	1.1	130	90	3.8	60	65	0.6
Fareham Avenue/Ashlawn Road	Fareham Avenue SB	B4429 Ashlawn Road EB	19	53	5.7	24	87	8.5	7	13	1.9	14	20	1.5	8	13	1.5	13	18	1.3
Fareham Avenue/Ashlawn Road	Fareham Avenue SB	B4429 Ashlawn Raod WB	44	29	2.5	87	48	4.7	31	20	2.2	41	28	2.2	40	25	2.6	36	25	2.0
Fareham Avenue/Ashlawn Road	B4429 Ashlawn Road WB	Fareham Avenue NB	5	8	1.2	18	36	3.5	9	12	0.9	26	28	0.4	13	32	4.0	13	29	3.5
Fareham Avenue/Ashlawn Road	B4429 Ashlawn Road WB	B4429 Ashlawn Raod WB	280	182	6.4	431	359	3.6	257	215	2.7	341	225	6.9	347	260	5.0	343	280	3.6
Fareham Avenue/Ashlawn Road	B4429 Ashlawn Road EB	Fareham Avenue NB	23	14	2.1	43	38	0.8	10	11	0.3	44	34	1.6	46	41	0.8	36	32	0.7
Fareham Avenue/Ashlawn Road	B4429 Ashlawn Road EB	B4429 Ashlawn Road EB	203	183	1.4	382	436	2.7	244	202	2.8	417	340	4.0	383	371	0.6	335	337	0.1
Fisher Avenue/Ashlawn Road	Fisher Avenue SB	B4429 Ashlawn Road EB	7	35	6.1	21	34	2.5	9	22	3.3	17	24	1.5	9	33	5.2	11	21	2.5
Fisher Avenue/Ashlawn Road	Fisher Avenue SB	B4429 Ashlawn Road WB	29	39	1.7	55	72	2.1	22	37	2.8	25	41	2.8	21	39	3.3	26	43	2.9
Fisher Avenue/Ashlawn Road	B4429 Ashlawn Road WB	Fisher Avenue NB	5	23	4.8	76	46	3.8	17	31	2.9	33	43	1.6	18	49	5.4	18	47	5.1
Fisher Avenue/Ashlawn Road	B4429 Ashlawn Road WB	B4429 Ashlawn Road WB	266	165	6.9	419	363	2.8	230	201	2.0	291	220	4.4	313	271	2.5	290	275	0.9
Fisher Avenue/Ashlawn Road	B4429 Ashlawn Road EB	Fisher Avenue NB	16	39	4.4	109	154	3.9	31	60	4.3	81	104	2.4	88	113	2.5	71	102	3.3
Fisher Avenue/Ashlawn Road	B4429 Ashlawn Road EB	B4429 Ashlawn Road EB	182	193	0.8	223	373	8.7	214	159	4.0	325	253	4.2	301	282	1.1	264	267	0.2
Cosford Lane/Valley Drive	Cosford Lane WB	Valley Drive SB	4	7	1.3	8	15	2.1	4	11	2.6	9	27	4.2	10	31	4.6	4	21	4.8
Cosford Lane/Valley Drive	Valley Drive NB	Cosford Lane EB	4	25	5.5	11	57	7.9	7	27	4.9	8	11	1.0	3	15	4.0	7	11	1.3
Cosford Lane/Valley Drive	Valley Drive NB	Valley Drive WB	29	23	1.2	52	24	4.5	21	18	0.7	19	13	1.5	17	13	1.0	22	8	3.6
Cosford Lane/Valley Drive	Valley Drive EB	Cosford Lane EB	0	2		2	2	0.0	0	2		2	1	0.8	0	1		0	3	
Cosford Lane/Valley Drive	Valley Drive EB	Valley Drive SB	27	20	1.4	25	23	0.4	26	20	1.3	40	47	1.1	38	40	0.3	25	47	3.7
A426/Coton Road	A426 SB	A426 SB	1089	1001	2.7	1067	1089	0.7	810	845	1.2	809	844	1.2	888	904	0.5	708	804	3.5
A426/Coton Road	A426 NB	A426 NB	791	683	4.0	834	875	1.4	639	663	0.9	897	801	3.3	891	909	0.6	723	802	2.9
A426/Coton Road	A426 NB	Coton Road WB	9	9	0.0	24	53	4.7	17	17	0.0	35	36	0.2	41	54	1.9	17	36	3.7
A426/Coton Road	Coton Road EB	A426 SB	15	21	1.4	18	24	1.3	18	60	6.7	8	17	2.5	9	9	0.0	16	51	6.0
Park Road/North Street/Evreux Way	Park Road SB	North Street SB	17	22	1.1	29	29	0.0	45	24	3.6	40	32	1.3	25	35	1.8	34	30	0.7
Park Road/North Street/Evreux Way	Park Road SB	Evreux Way WB	180	271	6.1	237	288	3.1	234	249	1.0	317	371	2.9	324	393	3.6	244	291	2.9
Park Road/North Street/Evreux Way	North Street NB	Park Road NB	16	3	4.2	27	5	5.5	19	5	4.0	30	5	6.0	39	5	7.2	30	5	6.0
Park Road/North Street/Evreux Way	North Street NB	Evreux Way WB	382	380	0.1	482	522	1.8	368	518	7.1	380	466	4.2	362	485	6.0	350	493	7.0
Park Road/North Street/Evreux Way	Evreux Way EB	Park Road NB	178	225	3.3	391	485	4.5	335	455	6.0	280	332	3.0	319	376	3.1	254	349	5.5
Park Road/North Street/Evreux Way	Evreux Way EB	North Street SB	175	205	2.2	410	408	0.1	383	383	0.0	498	381	5.6	483	412	3.4	406	333	3.8
A426/Lancaster Road/Essex Street	A426 Newbold Road SB	Lancaster Road EB	20	9	2.9	27	19	1.7	28	17	2.3	40	19	3.9	76	32	6.0	57	32	3.7
A426/Lancaster Road/Essex Street	A426 Newbold Road SB	A426 Newbold Road SB	645	623	0.9	822	859	1.3	764	850	3.0	940	1023	2.6	926	1101	5.5	911	1011	3.2
A426/Lancaster Road/Essex Street	Lancaster Road WB	A426 Newbold Road NB	56	27	4.5	82	28	7.3	42	23	3.3	63	45	2.4	51	54	0.4	60	55	0.7
A426/Lancaster Road/Essex Street	Lancaster Road WB	A426 Newbold Road SB	28	19	1.9	36	19	3.2	14	12	0.6	40	17	4.3	56	17	6.5	42	12	5.8
A426/Lancaster Road/Essex Street	A426 Newbold Road NB	A426 Newbold Road NB	837	791	1.6	900	991	3.0	741	854	4.0	603	681	3.1	649	793	5.4	688	811	4.5
A426/Lancaster Road/Essex Street	A426 Newbold Road NB	Lancaster Road EB	10	7	1.0	10	10	0.0	23	13	2.4	7	10	1.0	18	18	0.0	12	11	0.3
A426/Lancaster Road/Essex Street	A426 Newbold Road NB	Essex Street WB	2	2	0.0	2	1	0.8	8	1	3.3	4	0	2.8	1	0	1.4	1	0	1.4
A426/Lancaster Road/Essex Street	Essex Street EB	A426 Newbold Road NB	3	0	2.4	6	0	3.5	5	0	3.2	4	1	1.9	2	1	0.8	2	0	2.0
A426/ M6	A426 SB	M6 EB	33	14	3.9	50	29	3.3	37	34	0.5	44	39	0.8	22	20	0.4	18	30	2.4
A426/ M6	A426 SB	A426 SB	798	755	1.5	840	871	1.1	569	650	3.3	529	589	2.5	590	669	3.1	502	634	5.5
A426/ M6	A426 SB	M6 WB	281	244	2.3	237	216	1.4	224	221	0.2	249	226	1.5	234	226	0.5	179	191	0.9
A426/ M6	M6 WB	A426 NB	46	32	2.2	48	35	2.0	72	59	1.6	65	59	0.8	49	44	0.7	49	50	0.1
A426/ M6	M6 WB	A426 SB	262	331	4.0	302	420	6.2	194	233	2.7	161	224	4.5	192	257	4.3	185	236	3.5
A426/ M6	A426 NB	A426 NB	614	484	5.5	556	649	3.8	392	410	0.9	651	608	1.7	619	712	3.6	529	618	3.7
A426/ M6	A426 NB	M6 EB	186	171	1.1	162	211	3.6	118	121	0.3	231	290	3.7	250	289	2.4	154	193	3.0
A426/ M6	A426 NB	M6 WB	725	625	3.8	596	583	0.5	410	412	0.1	676	639	1.4	504	562	2.5	378	432	2.7
A426/ M6	M6 EB	A426 NB	227	187	2.8	256	242	0.9	222	209	0.9	190	184	0.4	204	205	0.1	161	167	0.5
A426/ M6	M6 EB	A426 SB	690	753	2.3	666	732	2.5	478	486	0.4	507	507	0.0	649	652	0.1	493	496	0.1

A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 SB	Newton Manor Lane EB	39	66	3.7	60	93	3.8	65	109	4.7	161	265	7.1	231	337	6.3	138	228	6.7
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 SB	A426 Leicester Road SB	1470	1434	0.9	1574	1643	1.7	1121	1143	0.7	1082	1092	0.3	1296	1293	0.1	987	1098	3.4
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 SB	Lower Lodge Avenue WB	11	9	0.6	22	20	0.4	14	16	0.5	22	21	0.2	26	26	0.0	41	43	0.3
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Newton Manor Lane WB	A426 NB	270	237	2.1	177	218	2.9	97	111	1.4	49	96	5.5	58	108	5.5	64	83	2.2
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Newton Manor Lane WB	A426 Leicester Road SB	392	432	2.0	509	596	3.7	298	332	1.9	225	307	5.0	335	381	2.4	328	332	0.2
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Newton Manor Lane WB	Lower Lodge Avenue WB	13	11	0.6	29	29	0.0	8	10	0.7	24	23	0.2	27	27	0.0	33	25	1.5
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 Leicester Road NB	A426 NB	1212	1071	4.2	1153	1176	0.7	877	892	0.5	1297	1226	2.0	1140	1229	2.6	964	1078	3.6
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 Leicester Road NB	Newton Manor Lane EB	101	121	1.9	185	196	0.8	180	133	3.8	414	331	4.3	498	390	5.1	456	392	3.1
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	A426 Leicester Road NB	Lower Lodge Avenue WB	11	20	2.3	17	21	0.9	27	32	0.9	58	65	0.9	67	77	1.2	58	70	1.5
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Lower Lodge Avenue EB	A426 NB	50	55	0.7	37	42	0.8	21	21	0.0	21	22	0.2	15	17	0.5	14	17	0.8
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Lower Lodge Avenue EB	Newton Manor Lane EB	26	23	0.6	31	26	0.9	9	7	0.7	16	17	0.2	27	22	1.0	11	13	0.6
A426 / Newton Manor Lane / A426 Leicester Road / Lodge Avenue	Lower Lodge Avenue EB	A426 Leicester Road SB	46	61	2.1	35	46	1.7	24	34	1.9	31	46	2.4	31	42	1.8	24	35	2.0
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road SB	Boughton Road EB	363	307	3.1	319	330	0.6	217	220	0.2	237	216	1.4	291	249	2.6	209	175	2.5
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road SB	A426 Leicester Road SB	1156	1145	0.3	1235	1314	2.2	965	1059	3.0	963	1025	2.0	1170	1231	1.8	985	1107	3.8
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road SB	Brownsover Road WB	405	436	1.5	553	591	1.6	282	302	1.2	151	188	2.8	179	224	3.2	149	197	3.6
Brownsover Road/ Boughton Road/ Leicester Road	Boughton Road WB	A426 Leicester Road NB	286	280	0.4	273	210	4.1	176	170	0.5	317	286	1.8	269	241	1.8	293	190	6.6
Brownsover Road/ Boughton Road/ Leicester Road	Boughton Road WB	A426 Leicester Road SB	244	219	1.6	250	269	1.2	247	232	1.0	295	264	1.9	287	275	0.7	246	254	0.5
Brownsover Road/ Boughton Road/ Leicester Road	Boughton Road WB	Brownsover Road WB	105	68	4.0	198	186	0.9	102	101	0.1	77	90	1.4	109	118	0.8	70	106	3.8
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road NB	A426 Leicester Road NB	868	795	2.5	842	951	3.6	723	743	0.7	1058	973	2.7	1027	1085	1.8	955	1044	2.8
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road NB	Boughton Road EB	124	116	0.7	174	188	1.0	161	180	1.5	261	252	0.6	312	265	2.8	308	271	2.2
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road NB	A426 Leicester Road SB	4	0	2.8	4	1	1.9	4	0	2.8	2	0	2.0	4	0	2.8	1	0	1.4
Brownsover Road/ Boughton Road/ Leicester Road	A426 Leicester Road NB	Brownsover Road WB	74	66	1.0	95	96	0.1	74	96	2.4	52	93	4.8	59	103	4.9	51	98	5.4
Brownsover Road/ Boughton Road/ Leicester Road	Brownsover Road EB	A426 Leicester Road NB	160	159	0.1	216	227	0.7	174	135	3.1	411	385	1.3	401	373	1.4	220	293	4.6
Brownsover Road/ Boughton Road/ Leicester Road	Brownsover Road EB	Boughton Road EB	56	31	3.8	138	108	2.7	60	54	0.8	135	201	5.1	169	179	0.8	103	134	2.8
Brownsover Road/ Boughton Road/ Leicester Road	Brownsover Road EB	A426 Leicester Road SB	34	29	0.9	64	40	3.3	67	55	1.5	97	96	0.1	114	94	2.0	86	77	1.0
Leicester Road/ Newbold Road	A426 Leicester Road SB	A426 Leicester Road NB	33	15	3.7	64	27	5.5	52	25	4.4	49	33	2.5	34	27	1.3	37	18	3.6
Leicester Road/ Newbold Road	A426 Leicester Road SB	A426 Newbold Road EB	680	739	2.2	739	881	5.0	683	852	6.1	757	785	1.0	757	894	4.8	778	932	5.3
Leicester Road/ Newbold Road	A426 Leicester Road SB	B4112 Newbold Road WB	539	485	2.4	645	623	0.9	468	510	1.9	775	728	1.7	784	798	0.5	667	712	1.7
Leicester Road/ Newbold Road	A426 Newbold Road WB	A426 Leicester Road NB	623	626	0.1	677	772	3.5	590	737	5.7	678	688	0.4	668	766	3.7	674	822	5.4
Leicester Road/ Newbold Road	A426 Newbold Road WB	B4112 Newbold Road WB	142	110	2.9	250	185	4.4	124	127	0.3	238	157	5.8	242	169	5.1	165	133	2.6
Leicester Road/ Newbold Road	B4112 Newbold Road EB	A426 Leicester Road NB	541	457	3.8	686	710	0.9	530	522	0.3	619	622	0.1	675	766	3.4	553	588	1.5
Leicester Road/ Newbold Road	B4112 Newbold Road EB	A426 Newbold Road EB	229	183	3.2	410	325	4.4	230	181	3.4	235	167	4.8	266	199	4.4	197	145	4.0
Central Park Dr/ A426	A426 SB	Central Park Drive EB	254	165	6.1	274	216	3.7	182	113	5.7	138	72	6.4	164	91	6.5	149	77	6.8
Central Park Dr/ A426	A426 SB	A426 SB	1452	1488	0.9	1513	1639	3.2	1070	1158	2.6	1028	1163	4.1	1259	1410	4.1	1037	1226	5.6
Central Park Dr/ A426	A426 SB	Business Park WB	49	46	0.4	23	24	0.2	23	24	0.2	11	10	0.3	2	3	0.6	2	2	0.0
Central Park Dr/ A426	Central Park Drive WB	A426 NB	212	181	2.2	189	227	2.6	94	100	0.6	296	307	0.6	247	245	0.1	129	126	0.3
Central Park Dr/ A426	Central Park Drive WB	A426 SB	86	46	4.9	153	108	3.9	119	71	4.9	229	215	0.9	257	237	1.3	144	118	2.3
Central Park Dr/ A426	Central Park Drive WB	Business Park WB	5	3	1.0	4	4	0.0	8	8	0.0	1	2	0.8	2	4	1.2	2	5	1.6
Central Park Dr/ A426	A426 NB	A426 NB	1304	1105	5.7	1118	1197	2.3	808	832	0.8	1214	1208	0.2	1090	1269	5.2	927	1089	5.1
Central Park Dr/ A426	A426 NB	Central Park Drive EB	172	157	1.2	216	258	2.7	169	172	0.2	118	85	3.3	119	96	2.2	117	81	3.6
Central Park Dr/ A426	A426 NB	Business Park WB	34	32	0.3	14	31	3.6	18	25	1.5	10	12	0.6	5	11	2.1	2	8	2.7
Central Park Dr/ A426	Business Park EB	A426 NB	13	12	0.3	18	18	0.0	26	3	6.0	30	42	2.0	41	44	0.5	16	21	1.2
Central Park Dr/ A426	Business Park EB	A426 SB	5	7	0.8	11	13	0.6	18	21	0.7	18	24	1.3	5	14	2.9	8	14	1.8
Leicester Road/ A426	Retail Park Access SB	A426 Leicester Road EB	6	7	0.4	18	25	1.5	51	32	2.9	127	103	2.2	128	94	3.2	125	80	4.4
Leicester Road/ A426	Retail Park Access SB	Retail Park Access SB	1	1	0.0	2	2	0.0	10	2	3.3	29	15	3.0	34	15	3.8	30	15	3.2
Leicester Road/ A426	Retail Park Access SB	A426 Leicester Road WB	8	14	1.8	20	24	0.9	69	36	4.6	165	110	4.7	152	112	3.5	173	89	7.3
Leicester Road/ A426	A426 Leicester Road WB	Retail Park Access NB	19	25	1.3	23	58	5.5	80	60	2.4	118	77	4.2	105	83	2.3	101	75	2.8
Leicester Road/ A426	A426 Leicester Road WB	A426 Leicester Road EB	3	0	2.4	2	1	0.8	7	0	3.7	3	0	2.4	4	0	2.8	0	0	
Leicester Road/ A426	A426 Leicester Road WB	Retail Park Access SB	230	214	1.1	186	211	1.8	226	207	1.3	220	173	3.4	268	216	3.3	214	191	1.6
Leicester Road/ A426	A426 Leicester Road WB	A426 Leicester Road WB	1188	1137	1.5	1339	1354	0.4	980	1085	3.3	1006	1116	3.4	1182	1295	3.2	999	1181	5.5
Leicester Road/ A426	Retail Park Access NB	Retail Park Access NB	4	2	1.2	4	2	1.2	17	2	4.9	8	3	2.1	16	3	4.2	21	5	4.4
Leicester Road/ A426	Retail Park Access NB	A426 Leicester Road EB	150	140	0.8	150	128	1.9	157	135	1.8	202	176	1.9	242	189	3.6	275	204	4.6
Leicester Road/ A426	Retail Park Access NB	A426 Leicester Road WB	141	133	0.7	125	129	0.4	153	156	0.2	200	200	0.0	210	195	1.1	236	231	0.3
Leicester Road/ A426	A426 Leicester Road EB	Retail Park Access NB	15	26	2.4	49	51	0.3	149	59	8.8	170	114	4.7	163	133	2.5	217	130	6.6
Leicester Road/ A426	A426 Leicester Road EB	A426 Leicester Road EB	917	845	2.4	972	1077	3.3	748	844	3.4	1029	1051	0.7	1027	1173	4.4	914	1130	6.8
Leicester Road/ A426	A426 Leicester Road EB	Retail Park Access SB	94	101	0.7	135	151	1.3	162	153	0.7	185	146	3.0	213	184	2.1	212	188	1.7
Leicester Road/ A426	A426 Leicester Road EB	A426 Leicester Road WB	12	15	0.8	10	21	2.8	18	17	0.2	16	23	1.6	30	23	1.4	13	19	1.5
Leicester Road/ Technology Drive	A426 Leicester Road NB	A426 Leicester Road NB	892	867	0.8	966	1152	5.7	830	922	3.1	1045	1015	0.9	1095	1196	3.0	970	1154	5.6
Leicester Road/ Technology Drive	A426 Leicester Road NB	Technology Drive	211	232	1.4	366	399	1.7	342	371	1.5	337	372	1.9	393	426	1.6	332	351	1.0
Leicester Road/ Technology Drive	A426 Leicester Road SB	A426 Leicester Road SB	1106	1065	1.2	1207	1259	1.5	919	1026	3.4	1079	1101	0.7	1186	1251	1.9	1039	1180	4.2
Leicester Road/ Technology Drive	A426 Leicester Road SB	Technology Drive	223	222	0.1	282	245	2.3	289	275	0.8	319	302	1.0	391	362	1.5	374	380	0.3
Leicester Road/ Technology Drive	Technology Drive	A426 Leicester Road SB	167	200	2.4	254	308	3.2	270	304	2.0	494	466	1.3	398	455	2.8	425	488	2.9
Leicester Road/ Technology Drive	Technology Drive	A426 Leicester Road NB	169	130	3.2	195	148	3.6	232	150	5.9	363	338	1.3	326	306	1.1	372	311	3.3
Newbold Road/ Hunters Lane	A426 Newbold Road SB	Hunters Lane EB	95	107	1.2	57	86	3.4	66	80	1.6	27	27	0.0	15	22	1.6	6	13	2.3
Newbold Road/ Hunters Lane	A426 Newbold Road SB	A426 Newbold Road SB	796	807	0.4	1093	1117	0.7	815	962	4.9	954	924	1.0	1008	1068	1.9	969	1064	3.0
Newbold Road/ Hunters Lane	Hunters Lane WB	A426 Newbold Road NB	18	20	0.5	31	36	0.9	51	46	0.7	48	59	1.5	28	35	1.2	10	16	1.7
Newbold Road/ Hunters Lane	Hunters Lane WB	A426 Newbold Road SB	32	29	0.5	40	41	0.2	52	51	0.1	75	79	0.5	60	77	2.1	19	30	2.2
Newbold Road/ Hunters Lane	A426 Newbold Road NB	A426 Newbold Road NB	756	725	1.1	889	927	1.3	654	808	5.7	837	804	1.2	866	905	1.3	820	926	3.6
Newbold Road/ Hunters Lane	A426 Newbold Road NB	Hunters Lane EB	66	60	0.8	29	34	0.9	49	46	0.4	45	33	1.9	32	29	0.5	24	27	0.6
Newbold Road/ B4112	B4112 Newbold Road SB	Yates Avenue EB	8	4	1.6	31	4	6.5	10	7	1.0	25	16	2.0	31	17	2.9	24	14	2.3
Newbold Road/ B4112	B4112 Newbold Road SB	A4701 Newbold Road SB	183	211	2.0	350	388	2.0	188	204	1.1	232	327	5.7	239	352	6.6	183	247	4.4
Newbold Road/ B4112	B4112 Newbold Road SB	A4701 Western Relief Road WB	133	113	1.8	241	192	3.3	73	66	0.8	248	200	3.2	306	268	2.2	148	127	1.8
Newbold Road/ B4112	Yates Avenue WB	B4112 Newbold Road NB	12	11	0.3	23	15	1.8	13	11	0.6	15	14	0.3	16	17	0.2	18	9	2.4
Newbold Road/ B4112	Yates Avenue WB	A4701 Newbold Road SB	36	16	3.9	69	34	4.9	40	26	2.4	39	31	1.4	54	34	3.0	39	25	2.5
Newbold Road/ B4112	Yates Avenue WB	A4701 Western Relief Road WB	24	19	1.1	41	28	2.2	20	18	0.5	34	29	0.9	19	19	0.0	25	22	0.6
Newbold Road/ B4112	A4701 Newbold Road NB	B4112 Newbold Road NB	126	134	0.7	324	272	3.0	120	177	4.7	252	189	4.2	243	213	2.0	198	206	0.6
Newbold Road/ B4112	A4701 Newbold Road NB	Yates Avenue EB	21	12	2.2	59	26	5.1	48	23	4.2	70	15	8.4	61	13	7.9	61	12	8.1
Newbold Road/ B4112	A4701 Newbold Road NB	A4701 Newbold Road SB	2	0	2.0	1	0	1.4	1	0	1.4	3	0	2.4	1	0	1.4	1	0	1.4
Newbold Road/ B4112	A4701 Newbold Road NB	A4701 Western Relief Road WB	523	441	3.7	509	508	0.0	427	442	0.7	700	675	1.0	733	733	0.0	571	628	2.3
Newbold Road/ B4112	A4701 Western Relief Road EB	B4112 Newbold Road NB	118	84	3.4	195	158	2.8	75	57	2.2	125	87	3.7	105	76	3.0	60	41	2.7
Newbold Road/ B4112	A4701 Western Relief Road EB	Yates Avenue EB	10	29	4.3	35	37	0.3	13	27	3.1	42	45	0.5	47	58	1.5	30	43	2.2
Newbold Road/ B4112	A4701 Western Relief Road EB	A4701 Newbold Road SB	551	422	5.8	701	616	3.3	523	467	2.5	579	441	6.1	647	578	2.8	531	458	3.3
Newbold Road/ B4112	A4701 Western Relief Road EB	A4701 Western Relief Road WB	6	4	0.9	1	3	1.4	3	3	0.0	3	5	1.0	9	9	0.0	4	6	0.9
Parkfield Road	A4071 Western Relief Road SB	A4071 Western Relief Road SB	692	571	4.8	795	730	2.4	519	531	0.5	977	897	2.6	1042	1031	0.3	756	791	1.3
Parkfield Road	A4071 Western Relief Road NB	A4071 Western Relief Road NB	673	530	5.8	904	786	4.1	579	528	2.2	741	561	7.1	797	696	3.7	594	522	3.0
Parkfield Road	A4071 Western Relief Road NB	Parkfield Road WB	104	106	0.2	184	192	0.6	86	92	0.6	154	116	3.3	135	128	0.6	89	75	1.5
Parkfield Road	Parkfield Road EB	A4071 Western Relief Road NB	15	16	0.3	41	29	2.0	26	24	0.4	20	23	0.6	19	26	1.5	19	24	1.1
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Brownsover Road WB	B4112 Main Street SB	47	52	0.7	145	147	0.2	47	56	1.3	196	213	1.2	282	246	2.2	104	124	1.9
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Brownsover Road WB	Parkfield Road WB	9	9	0.0	14	14	0.0	12	9	0.9	22	12	2.4	40	16	4.5	29	11	4.0
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Brownsover Road WB	B4112 Main Street NB	72	74	0.2	66	103	4.0	40	89	6.1	224	184	2.8	227	226	0.1	108	152	3.9
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street NB	Brownsover Road EB	107	82	2.6	173	141	2.6	56	68	1.5	67	62	0.6	43	48	0.7	44	53	1.3
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street NB	Parkfield Road WB	5	1	2.3	22	2	5.8	19	4	4.4	20	15	1.2	33	15	3.7	46	15	5.6
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street NB	B4112 Main Street NB	124	106	1.7	170	174	0.3	106	132	2.4	243	194	3.3	260	235	1.6	176	199	1.7
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Parkfield Road EB	Brownsover Road EB	52	49	0.4	115	84	3.1	48	44	0.6	38	27	1.9	52	35	2.6	31	24	1.3
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Parkfield Road EB	B4112 Main Street SB	18	17	0.2	33	22	2.1	18	3	4.6	22	15	1.6	37	15	4.3	46	14	5.8
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	Parkfield Road EB	B4112 Main Street NB	65	45	2.7	79	91	1.3	40	37	0.5	96	68	3.1	81	78	0.3	41	39	0.3
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street SB	Brownsover Road EB	136	120	1.4	195	160	2.6	85	50	4.3	62	122	6.3	93	137	4.1	60	97	4.2
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street SB	B4112 Main Street SB	239	266	1.7	320	411	4.8	159	182	1.8	157	239	5.8	234	311	4.7	162	215	3.9
Brownsover Road/ Newbold Road/ Parkfield Road/ Main Street	B4112 Main Street SB	Parkfield Road WB	3	3	0.0	11	5	2.1	8	7	0.4	14	14	0.0	23	14	2.1	14	13	0.3
Valley Dr/ Brownsover Road/ Old Leicester Road	Valley Drive SB	Brownsover Road EB	22	36	2.6	42	81	5.0	55	57	0.3	125	136	1.0	96	152	5.0	57	120	6.7
Valley Dr/ Brownsover Road/ Old Leicester Road	Valley Drive SB	Brownsover Road WB	4	6	0.9	13	7	1.9	11	10	0.3	39	21	3.3	33	19	2.7	12	11	0.3
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road WB	Valley Drive NB	76	99	2.5	137	179	3.3	88	82	0.7	33	34	0.2	44	39	0.8	23	33	1.9
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road WB	Brownsover Road EB	3	3	0.0	1	8	3.3	0	9		2	31	7.1	2	28	6.7	0	25	
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road WB	Old Leicester Road SB	195	176	1.4	230	237	0.5	113	135	2.0	55	55	0.0	43	55	1.7	51	45	0.9
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road WB	Brownsover Road EB	311	249	3.7	520	375	6.9	247	197	3.4	196	147	3.7	260	206	3.5	191	174	1.3
Valley Dr/ Brownsover Road/ Old Leicester Road	Old Leicester Road NB	Valley Drive NB	6	9	1.1	16	14	0.5	10	14	1.2	8	7	0.4	12	11	0.3	5	8	1.2
Valley Dr/ Brownsover Road/ Old Leicester Road	Old Leicester Road NB	Brownsover Road EB	73	52	2.7	55	59	0.5	54	58	0.5	161	165	0.3	151	158	0.6	78	98	2.1
Valley Dr/ Brownsover Road/ Old Leicester Road	Old Leicester Road NB	Brownsover Road EB	40	28	2.1	42	40	0.3	26	21	1.0	128	123	0.4	158	115	3.7	41	52	1.6
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road EB	Valley Drive NB	13	17	1.0	33	43	1.6	30	26	0.8	13	10	0.9	12	18	1.5	4	16	3.8
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road EB	Brownsover Road EB	135	132	0.3	301	229	4.4	162	119	3.6	373	360	0.7	382	309	3.9	247	256	0.6
Valley Dr/ Brownsover Road/ Old Leicester Road	Brownsover Road EB	Old Leicester Road SB	71	62	1.1	64	54	1.3	40	31	1.5	21	38	3.1	30	41	1.8	18	27	1.9
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street SB	A426 Rugby Road	3	3	0.0	7	7	0.0	10	10	0.0	4	4	0.0	3	3	0.0	4	4	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street SB	Gibbet Lane EB	20	20	0.0	26	26	0.0	13	13	0.0	21	21	0.0	16	16	0.0	18	18	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street SB	A5 Watling Street SB	438	438	0.0	403	428	1.2	202	198	0.3	261	223	2.4	295	224	4.4	145	144	0.1
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street SB	A426 WB	374	366	0.4	402	477	3.6	233	276	2.7	255	291	2.2	261	285	1.5	206	248	2.8
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 Rugby Road	A5 Watling Street NB	5	5	0.0	7	7	0.0	14	14	0.0	7	7	0.0	2	2	0.0	3	3	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 Rugby Road	Gibbet Lane EB	21	21	0.0	22	22	0.0	15	15	0.0	19	19	0.0	14	14	0.0	12	12	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 Rugby Road	A5 Watling Street SB	114	153	3.4	97	148	4.6	88	81	0.8	154	174	1.6	185	222	2.6	124	130	0.5
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 Rugby Road	A426 WB	601	616	0.6	560	537	1.0	451	436	0.7	413	397	0.8	452	452	0.0	353	359	0.3
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	Gibbet Lane WB	A5 Watling Street NB	13	11	0.6	27	27	0.0	15	17	0.5	27	27	0.0	22	22	0.0	9	9	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	Gibbet Lane WB	A426 Rugby Road	16	14	0.5	27	27	0.0	18	20	0.5	41	40	0.2	29	30	0.2	9	9	0.0
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	Gibbet Lane WB	A5 Watling Street SB	17	23	1.3	8	31	5.2	10	23	3.2	24	46	3.7	15	32	3.5	9	27	4.2
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	Gibbet Lane WB	A426 WB	61	52	1.2	58	57	0.1	53	58	0.7	50	71	2.7	50	55	0.7	46	75	3.7
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street NB	A5 Watling Street NB	205	164	3.0	234	222	0.8	162	164	0.2	327	286	2.3	402	356	2.4	294	290	0.2
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street NB	A426 Rugby Road	94	107	1.3	91	137	4.3	101	113	1.2	152	127	2.1	198	203	0.4	122	139	1.5
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street NB	Gibbet Lane EB	18	27	1.9	22	37	2.8	23	24	0.2	16	12	1.1	15	37	4.3	6	9	1.1
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A5 Watling Street NB	A426 WB	75	114	4.0	78	158	7.4	84	119	3.5	92	133	3.9	91	131	3.8	72	155	7.8
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 EB	A5 Watling Street NB	268	254	0.9	358	421	3.2	206	231	1.7	228	257	1.9	207	252	3.0	229	255	1.7
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 EB	A426 Rugby Road	417	368	2.5	385	419	1.7	381	401	1.0	481	383	4.7	480	504	1.1	395	404	0.5
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 EB	Gibbet Lane EB	29	22	1.4	33	36	0.5	32	37	0.9	51	39	1.8	48	52	0.6	44	59	2.1
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 EB	A5 Watling Street SB	97	82	1.6	67	99	3.5	85	97	1.3	97	149	4.7	74	149	7.1	70	129	5.9
Gibbet Roundabout/ Rugby Road/ Gibbet Lane	A426 EB	A426 WB	9	0	4.2	5	0	3.2	0	0		1	0	1.4	4	0	2.8	2	0	2.0
Coton Park Dr/ Newton Manor Lane	Coton Park Drive	Newton Manor Lane EB	76	48	3.6	160	143	1.4	56	29	4.1	126	116	0.9	135	110	2.3	79	104	2.6
Coton Park Dr/ Newton Manor Lane	Coton Park Drive	Newton Manor Lane WB	156	107	4.3	198	192	0.4	93	89	0.4	96	96	0.0	125	101	2.3	135	87	4.6
Coton Park Dr/ Newton Manor Lane	Newton Manor Lane WB	Coton Park Drive	76	67	1.1	144	135	0.8	78	48	3.8	111	82	3.0	150	91	5.4	127	86	4.0
Coton Park Dr/ Newton Manor Lane	Newton Manor Lane WB	Newton Manor Lane WB	519	583	2.7	523	628	4.4	305	327	1.2	205	312	6.7	296	395	5.3	288	330	2.4
Coton Park Dr/ Newton Manor Lane	Newton Manor Lane EB	Coton Park Drive	38	51	1.9	56	76	2.5	76	105	3.0	144	159	1.2	198	202	0.3	196	189	0.5
Coton Park Dr/ Newton Manor Lane	Newton Manor Lane EB	Newton Manor Lane EB	136	138	0.2	224	222	0.1	169	129	3.3	454	431	1.1	567	526	1.8	421	422	0.0
Boughton Road	Boughton Road SB	Cow Thorned WB	95	73	2.4	147	138	0.8	114	124	0.9	219	214	0.3	239	226	0.9	220	221	0.1
Boughton Road	Boughton Road SB	Boughton Road SB	448	365	4.1	493	473	0.9	323	322	0.1	445	432	0.6	523	453	3.2	394	346	2.5
Boughton Road	Cow Thornes EB	Boughton Road NB	209	187	1.6	236	213	1.5	167	166	0.1	171	143	2.2	166	152	1.1	173	139	2.7
Boughton Road	Cow Thornes EB	Boughton Road SB	130	89	3.9	247	191	3.8	130	90	3.8	118	110	0.7	135	112	2.1	131	120	1.0
Boughton Road	Boughton Road NB	Boughton Road NB	445	377	3.4	479	436	2.0	345	321	1.3	526	488	1.7	492	465	1.2	436	393	2.1
Boughton Road	Boughton Road NB	Cow Thorned WB	55	41	2.0	134	134	0.0	91	91	0.0	220	156	4.7	227	161	4.7	167	146	1.7
Technology Dr	Technology Drive SB	Technology Drive SB	12	41	5.6	13	52	6.8	8	45	7.2	12	70	9.1	32	73	5.7	17	61	7.0
Technology Dr	Technology Drive SB	Retail Park EB	122	97	2.4	157	133	2.0	276	302	1.5	298	329	1.8	373	423	2.5	390	408	0.9
Technology Dr	Technology Drive SB	Technology Drive SB	296	315	1.1	482	453	1.3	346	304	2.3	353	272	4.6	380	295	4.6	303	259	2.6
Technology Dr	Retail Park WB	Technology Drive NB	106	113	0.7	106	126	1.9	178	165	1.0	281	327	2.6	302	320	1.0	367	391	1.2
Technology Dr	Retail Park WB	Technology Drive SB	29	15	3.0	47	29	2.9	68	37	4.3	122	90	3.1	134	100	3.1	145	94	4.7
Technology Dr	Technology Drive NB	Technology Drive SB	215	183	2.3	325	281	2.5	311	237	4.5	574	415	7.2	383	364	1.0	398	351	2.4
Technology Dr	Technology Drive NB	Retail Park EB	30	36	1.0	43	58	2.1	94	60	3.9	117	100	1.6	134	124	0.9	137	95	3.9
A426/ Wood Street/ Newbold Road	A426 Newbold Road SB	Wood Street EB	95	122	2.6	177	210	2.4	123	166	3.6	159	132	2.2	185	155	2.3	108	119	1.0
A426/ Wood Street/ Newbold Road	A426 Newbold Road SB	A426 Newbold Road SB	618	612	0.2	839	825	0.5	706	814	3.9	877	866	0.4	879	982	3.4	873	936	2.1
A426/ Wood Street/ Newbold Road	A426 Newbold Road SB	Wood Street WB	115	97	1.7	133	114	1.7	31	43	2.0	1	2	0.8	3	3	0.0	0	41	
A426/ Wood Street/ Newbold Road	Wood Street WB	A426 Newbold Road NB	53	66	1.7	60	65	0.6	54	65	1.4	82	127	4.4	89	118	2.9	84	117	3.3
A426/ Wood Street/ Newbold Road	Wood Street WB	A426 Newbold Road SB	11	30	4.2	21	63	6.5	19	55	5.9	42	127	9.2	54	112	6.4	37	82	5.8
A426/ Wood Street/ Newbold Road	Wood Street WB	Wood Street WB	2	3	0.6	1	3	1.4	0	6		1	2	0.8	0	7		0	10	
A426/ Wood Street/ Newbold Road	A426 Newbold Road NB	A426 Newbold Road NB	747	716	1.1	866	896	1.0	621	786	6.2	676	669	0.3	693	774	3.0	709	803	3.4
A426/ Wood Street/ Newbold Road	A426 Newbold Road NB	Wood Street EB	13	30	3.7	27	65	5.6	27	60	5.0	26	44	3.0	26	60	5.2	56	66	1.3
A426/ Wood Street/ Newbold Road	A426 Newbold Road NB	Wood Street WB	71	60	1.4	53	50	0.4	20	32	2.4	0	14		1	9	3.6	1	8	3.3
A426/ Wood Street/ Newbold Road	Wood Street EB	A426 Newbold Road NB	17	7	2.9	6	1	2.7	9	2	3.0	135	56	8.1	104	42	7.3	46	22	4.1
A426/ Wood Street/ Newbold Road	Wood Street EB	A426 Newbold Road SB	1	5	2.3	1	4	1.9	0	3		1	47	9.4	0	41		0	21	
Butlers Leap/Mill Road	Butlers Leap SB	Butlers Leap SB	159	130	2.4	247	290	2.6	186	195	0.7	304	271	1.9	367	344	1.2	215	232	1.1
Butlers Leap/Mill Road	Butlers Leap SB	Mill Road WB	350	292	3.2	383	347	1.9	293	234	3.6	245	157	6.2	293	194	6.3	243	170	5.1
Butlers Leap/Mill Road	Butlers Leap NB	Butlers Leap NB	237	227	0.7	298	263	2.1	206	224	1.2	235	275	2.5	285	324	2.2	213	248	2.3
Butlers Leap/Mill Road	Butlers Leap NB	Mill Road WB	151	181	2.3	250	237	0.8	177	147	2.4	171	162	0.7	226	210	1.1	130	129	0.1
Butlers Leap/Mill Road	Mill Road EB	Butlers Leap NB	225	172	3.8	196	165	2.3	220	175	3.2	350	349	0.1	358	289	3.8	340	275	3.7
Butlers Leap/Mill Road	Mill Road EB	Butlers Leap SB	72	124	5.3	133	136	0.3	141	104	3.3	219	160	4.3	237	175	4.3	133	135	0.2
Mill Road/Tech Drive	Mill Road SB	Mill Road SB	395	308	4.6	430	355	3.8	321	271	2.9	263	203	3.9	330	236	5.6	265	213	3.4
Mill Road/Tech Drive	Mill Road SB	Technology Drive EB	119	156	3.2	218	233	1.0	146	140	0.5	146	203	4.3	187	222	2.4	118	171	4.4

Mill Road/Tech Drive	Mill Road NB	Mill Road NB	227	227	0.0	176	202	1.9	264	215	3.2	371	306	3.5	371	282	4.9	370	277	5.2
Mill Road/Tech Drive	Mill Road NB	Technology Drive EB	128	62	6.8	180	99	6.9	155	96	5.3	203	156	3.5	216	170	3.3	264	165	6.8
Mill Road/Tech Drive	Technology Drive WB	Mill Road NB	73	126	5.3	136	205	5.3	103	130	2.5	209	148	4.6	219	164	4.0	102	149	4.2
Mill Road/Tech Drive	Technology Drive WB	Mill Road SB	138	90	4.5	135	117	1.6	112	102	1.0	197	125	5.7	223	141	6.1	174	127	3.8
Daventry Road / Longdown Lane /London Road / Woolscott Road	A45 SB	Longdown Lane EB	27	66	5.7	52	96	5.1	17	52	6.0	77	107	3.1	125	144	1.6	62	140	7.8
Daventry Road / Longdown Lane /London Road / Woolscott Road	A45 SB	A45 SB	323	405	4.3	350	441	4.6	223	312	5.4	316	333	0.9	329	352	1.2	256	220	2.3
Daventry Road / Longdown Lane /London Road / Woolscott Road	Longdown Lane WB	A45 NB	132	96	3.4	116	127	1.0	33	66	4.7	39	54	2.2	43	66	3.1	22	67	6.7
Daventry Road / Longdown Lane /London Road / Woolscott Road	Longdown Lane WB	A45 SB	27	59	4.9	25	58	5.1	22	36	2.6	18	36	3.5	24	37	2.4	19	9	2.7
Daventry Road / Longdown Lane /London Road / Woolscott Road	A45 NB	A45 NB	358	342	0.9	328	329	0.1	231	216	1.0	357	395	2.0	414	424	0.5	264	304	2.4
Daventry Road / Longdown Lane /London Road / Woolscott Road	A45 NB	Longdown Lane EB	14	13	0.3	22	42	3.5	12	9	0.9	25	25	0.0	41	28	2.2	27	6	5.2
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road SB	The Ridgeway EB	6	0	3.5	9	0	4.2	10	3	2.7	5	7	0.8	8	14	1.8	5	10	1.8
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road SB	Daventry Road SB	42	60	2.5	75	72	0.3	59	56	0.4	76	80	0.5	95	85	1.1	61	45	2.2
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road SB	Longdown Lane WB	53	56	0.4	56	60	0.5	35	36	0.2	32	35	0.5	34	38	0.7	22	10	3.0
Daventry Road / The Ridgeway / Longdown Lane	The Ridgeway WB	Daventry Road NB	1	0	1.4	4	5	0.5	7	1	3.0	7	0	3.7	8	0	4.0	5	1	2.3
Daventry Road / The Ridgeway / Longdown Lane	The Ridgeway WB	Daventry Road SB	3	13	3.5	2	21	5.6	3	18	4.6	14	31	3.6	11	39	5.6	11	16	1.4
Daventry Road / The Ridgeway / Longdown Lane	The Ridgeway WB	Longdown Lane WB	113	88	2.5	98	80	1.9	27	41	2.4	28	31	0.6	45	39	0.9	24	37	2.4
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road NB	Daventry Road NB	35	31	0.7	95	67	3.1	49	52	0.4	62	56	0.8	83	64	2.2	63	48	2.0
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road NB	The Ridgeway EB	5	8	1.2	9	25	3.9	8	38	6.3	4	14	3.3	7	14	2.2	4	17	4.0
Daventry Road / The Ridgeway / Longdown Lane	Daventry Road NB	Longdown Lane WB	5	19	4.0	3	46	8.7	6	21	4.1	6	28	5.3	4	26	5.7	8	26	4.4
Daventry Road / The Ridgeway / Longdown Lane	Longdown Lane EB	Daventry Road NB	11	2	3.5	31	32	0.2	15	4	3.6	38	40	0.3	62	46	2.2	47	49	0.3
Daventry Road / The Ridgeway / Longdown Lane	Longdown Lane EB	The Ridgeway EB	32	49	2.7	49	84	4.3	26	41	2.6	67	70	0.4	118	112	0.6	51	88	4.4
Daventry Road / The Ridgeway / Longdown Lane	Longdown Lane EB	Daventry Road SB	2	24	6.1	5	21	4.4	1	19	5.7	6	17	3.2	4	13	3.1	5	10	1.8
Daventry Road / The Ridgeway	Daventry Road SB	Daventry Road SB	283	255	1.7	423	377	2.3	235	266	2.0	316	326	0.6	319	294	1.4	213	234	1.4
Daventry Road / The Ridgeway	Daventry Road SB	The Ridgeway WB	112	81	3.2	99	83	1.7	27	48	3.4	40	59	2.7	62	69	0.9	38	41	0.5
Daventry Road / The Ridgeway	Daventry Road NB	Daventry Road NB	318	320	0.1	315	344	1.6	197	201	0.3	359	376	0.9	493	489	0.2	283	223	3.8
Daventry Road / The Ridgeway	Daventry Road NB	The Ridgeway WB	7	23	4.1	4	23	5.2	4	11	2.6	6	5	0.4	6	10	1.4	1	11	4.1
Daventry Road / The Ridgeway	The Ridgeway EB	Daventry Road NB	42	45	0.5	65	92	3.0	35	66	4.4	78	69	1.0	119	110	0.8	56	92	4.2
Daventry Road / The Ridgeway	The Ridgeway EB	Daventry Road SB	2	11	3.5	5	18	3.8	4	16	3.8	3	18	4.6	5	29	5.8	11	25	3.3
Main Road / Daventry Road	Main Road EB	Main Road EB	131	99	3.0	128	155	2.3	92	115	2.3	77	99	2.3	95	95	0.0	56	77	2.6
Main Road / Daventry Road	Main Road EB	Daventry Road SB	41	21	3.6	88	42	5.7	31	26	0.9	54	21	5.4	53	21	5.3	32	22	1.9
Main Road / Daventry Road	Main Road WB	Main Road WB	47	85	4.7	68	129	6.1	58	81	2.8	111	184	6.0	156	190	2.6	124	114	0.9
Main Road / Daventry Road	Main Road WB	Daventry Road SB	3	9	2.4	2	8	2.7	1	5	2.3	0	5		0	7		3	5	1.0
Main Road / Daventry Road	Daventry Road NB	Main Road WB	26	35	1.6	60	47	1.8	35	34	0.2	67	53	1.8	103	53	5.7	54	36	2.7
Main Road / Daventry Road	Daventry Road NB	Main Road EB	6	6	0.0	5	6	0.4	2	5	1.6	2	6	2.0	3	7	1.8	2	5	1.6
Dunchurch Crossroads	Southam Road	Coventry Road	51	52	0.1	62	62	0.0	44	59	2.1	119	58	6.5	79	55	2.9	44	46	0.3
Dunchurch Crossroads	Southam Road	Rugby Road	205	209	0.3	276	287	0.7	176	225	3.5	320	312	0.5	400	369	1.6	256	307	3.0
Dunchurch Crossroads	Southam Road	Daventry Road	13	15	0.5	13	21	1.9	14	20	1.5	15	32	3.5	26	32	1.1	16	25	2.0
Dunchurch Crossroads	Coventry Road	Rugby Road	150	98	4.7	200	198	0.1	170	129	3.4	275	203	4.7	312	296	0.9	298	271	1.6
Dunchurch Crossroads	Coventry Road	Daventry Road	30	27	0.6	49	46	0.4	17	24	1.5	33	24	1.7	36	27	1.6	22	30	1.6
Dunchurch Crossroads	Coventry Road	Southam Road	110	64	4.9	160	151	0.7	46	81	4.4	78	45	4.2	81	100	2.0	57	69	1.5
Dunchurch Crossroads	Rugby Road	Daventry Road	184	173	0.8	177	202	1.8	107	186	6.5	167	143	1.9	165	178	1.0	133	110	2.1
Dunchurch Crossroads	Rugby Road	Southam Road	334	235	5.9	284	272	0.7	171	226	3.9	173	205	2.3	224	255	2.0	205	228	1.6
Dunchurch Crossroads	Rugby Road	Coventry Road	236	170	4.6	173	200	2.0	178	145	2.6	150	103	4.2	138	100	3.5	153	124	2.5
Dunchurch Crossroads	Daventry Road	Southam Road	27	24	0.6	46	56	1.4	23	31	1.5	19	11	2.1	25	15	2.2	27	18	1.9
Dunchurch Crossroads	Daventry Road	Coventry Road	15	19	1.0	36	15	4.2	19	8	3.0	33	21	2.3	55	23	5.1	26	27	0.2
Dunchurch Crossroads	Daventry Road	Rugby Road	119	117	0.2	207	211	0.3	146	160	1.1	215	209	0.4	260	239	1.3	154	161	0.6
A45 Westbound (9911/2)			1760	1547	5.2	1445	1443	0.1	935	977	1.4	1140	1024	3.5	1212	1291	2.2	945	1018	2.3
A45 Eastbound (9911/1)			1328	1318	0.3	1262	1173	2.6	876	778	3.4	1453	1520	1.7	1596	1580	0.4	1139	1086	1.6
M45 Eastbound (M45/5099B)			660	780	4.5	544	618	3.1	396	463	3.2	556	615	2.4	547	643	3.9	375	416	2.1
M45 Westbound (M45/5099A)			668	670	0.1	536	565	1.2	503	493	0.4	434	486	2.4	577	661	3.4	450	494	2.0
M1 Northbound (M1/3305A)			3627	3593	0.6	3911	3790	1.9	2836	2820	0.3	4541	4578	0.5	4121	4250	2.0	2453	2515	1.2
M1 Southbound (M1/3305B)			4332	4092	3.7	3717	3932	3.5	3575	3506	1.2	4049	4289	3.7	3675	3819	2.4	1890	1932	1.0
M1 Northbound (M1/3247A)			3517	3572	0.9	3703	3831	2.1	2774	2881	2.0	4388	4579	2.9	3927	4130	3.2	2396	2423	0.6
M1 Southbound (M1/3247B)			4067	3979	1.4	3740	3876	2.2	3430	3480	0.9	3959	4251	4.6	3538	3835	4.9	1899	1991	2.1
M6 Southbound (M6/5362B)			2746	2669	1.5	2263	2378	2.4	1765	1830	1.5	2745	2703	0.8	2763	2952	3.5	930	960	1.0
M6 Northbound (M6/5362A)			3083	3126	0.8	2886	3079	3.5	2513	2615	2.0	2795	2739	1.1	2791	2754	0.7	1983	2051	1.5
	Counts			**733**			**734**			**725**			**728**			**726**			**723**	
	GEH ≤5			**682**			**659**			**679**			**661**			**645**			**659**	
	Calibration %			**93%**			**90%**			**94%**			**91%**			**89%**			**91%**	
		3		539	74%		494	67%		520	72%		513	70%		478	66%		504	70%
		4		627	86%		592	81%		621	86%		593	81%		581	80%		602	83%
		5		682	93%		659	90%		679	94%		661	91%		645	89%		659	91%
		6		710	97%		697	95%		704	97%		697	96%		694	96%		693	96%
		7		728	99%		718	98%		718	99%		714	98%		713	98%		710	98%
		8		731	100%		728	99%		722	100%		721	99%		724	100%		719	99%
		9		731	100%		733	100%		725	100%		725	100%		726	100%		721	100%
		10		732	100%		734	100%		725	100%		728	100%		726	100%		723	100%

Appendix D – Link Calibration

Vectos
7th Floor
36 Great Charles Street
Birmingham
B3 3JY

0121 2895 610

vectos.co.uk

	07:00:00			08:00:00			09:00:00			16:00:00			17:00:00			18:00:00		
	OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
A4071 SB	203	125	6.1	248	208	2.6	144	112	2.8	223	181	3.0	258	182	5.1	143	114	2.6
A45 WB	1391	1278	3.1	1164	1091	2.2	805	803	0.1	926	808	4.0	1026	1032	0.2	807	877	2.4
A45 EB	367	272	5.3	491	444	2.2	340	243	5.7	538	464	3.3	595	557	1.6	424	399	1.2
A45 EB	999	1018	0.6	832	784	1.7	595	564	1.3	928	1035	3.4	1054	1071	0.5	712	720	0.3
A4071 SB	594	532	2.6	482	573	4.0	268	347	4.5	410	455	2.2	487	548	2.7	281	363	4.6
B4642 WB	451	397	2.6	438	388	2.5	242	252	0.6	219	201	1.2	247	227	1.3	208	191	1.2
A4071 NB	511	425	4.0	740	751	0.4	432	347	4.3	824	725	3.6	966	923	1.4	723	689	1.3
A4071 SB	596	505	3.9	525	573	2.0	296	365	3.8	527	557	1.3	659	679	0.8	391	463	3.5
Whitefriars Road WB	232	249	1.1	233	269	2.3	84	113	2.9	115	116	0.1	108	119	1.0	107	104	0.3
A4071 NB	384	326	3.1	514	479	1.6	296	243	3.2	472	404	3.2	594	547	2.0	424	399	1.2
Bilton Lane SB	101	100	0.1	214	184	2.1	74	90	1.8	179	158	1.6	188	187	0.1	108	122	1.3
A4071 WB	562	468	4.1	553	604	2.1	320	383	3.4	677	676	0.0	846	837	0.3	546	609	2.6
Bilton Lane NB	361	310	2.8	464	407	2.7	224	244	1.3	215	188	1.9	254	218	2.3	238	216	1.5
A4071 EB	537	471	2.9	700	682	0.7	360	337	1.2	549	477	3.2	651	615	1.4	495	465	1.4
The Green SB	115	139	2.1	120	129	0.8	69	82	1.5	52	62	1.3	73	91	2.0	62	65	0.4
A428 Coventry Road WB	484	500	0.7	452	437	0.7	319	320	0.1	391	356	1.8	396	444	2.3	259	265	0.4
Lawford Heath Lane NB	35	52	2.6	34	63	4.2	38	46	1.2	72	78	0.7	134	124	0.9	47	67	2.6
A428 Coventry Road EB	226	289	3.9	324	397	3.8	241	279	2.4	389	422	1.6	413	483	3.3	315	316	0.1
A426 SB	2586	2508	1.5	2834	3088	4.7	2366	2720	7.0	3312	3096	3.8	3364	3446	1.4	2978	3330	6.3
A426 NB	2530	2182	7.2	3000	3016	0.3	2358	2572	4.3	2752	2666	1.7	2804	3126	5.9	2650	2858	4.0
Yates Avenue EB	66	82	1.9	162	116	3.9	80	88	0.9	132	120	1.1	96	142	4.2	70	122	5.3
A5 SB	645	733	3.4	572	763	7.4	343	422	4.0	437	523	3.9	561	551	0.4	353	442	4.5
A5 SB	84	83	0.1	142	111	2.8	57	70	1.6	96	127	2.9	122	157	3.0	59	74	1.8
Unnamed Road WB	27	52	4.0	29	53	3.7	35	47	1.9	22	40	3.2	14	39	4.9	16	49	5.8
A5 NB	401	384	0.9	424	571	6.6	288	371	4.6	468	557	3.9	546	730	7.3	411	611	8.8
A5 NB	119	114	0.5	142	148	0.5	68	106	4.1	119	138	1.7	145	171	2.1	135	164	2.4
Newton Manor Lane EB	181	201	1.4	181	218	2.6	125	142	1.5	200	188	0.9	226	218	0.5	140	160	1.6
A5 SB	720	675	1.7	644	718	2.8	417	376	2.1	436	430	0.3	534	465	3.1	378	351	1.4
A5 SB	19	17	0.5	36	21	2.8	23	17	1.3	60	39	3.0	75	52	2.9	32	26	1.1
Rugby Road WB	79	124	4.5	84	180	8.4	73	118	4.6	43	100	6.7	37	98	7.4	42	104	7.3
A5 NB	477	400	3.7	527	564	1.6	355	389	1.8	626	635	0.4	760	822	2.2	570	686	4.6
Lilbourne Road EB	104	158	4.7	115	176	5.1	78	87	1.0	78	133	5.4	129	177	3.9	83	118	3.5
A5 SB	765	686	2.9	679	701	0.8	424	380	2.2	420	434	0.7	548	487	2.7	372	360	0.6
A5 NB	253	249	0.3	249	243	0.4	163	171	0.6	325	297	1.6	338	330	0.4	280	272	0.5
A5 NEB	214	220	0.4	265	281	1.0	141	186	3.5	280	310	1.7	362	408	2.3	249	278	1.8
Parklands SB	136	161	2.1	107	141	3.1	96	114	1.8	309	274	2.0	299	289	0.6	271	255	1.0
A5 WB	349	303	2.5	362	329	1.8	273	240	2.1	365	319	2.5	419	344	3.8	322	284	2.2
A5 WB	569	540	1.2	553	648	3.9	466	454	0.6	433	485	2.4	668	573	3.8	448	454	0.3
A428 NB	737	654	3.1	627	620	0.3	417	385	1.6	609	568	1.7	628	634	0.2	475	451	1.1
A5 SB	413	391	1.1	342	288	3.0	259	183	5.1	198	199	0.1	284	269	0.9	178	181	0.2
A5 SB	371	287	4.6	385	420	1.7	198	205	0.5	240	234	0.4	301	227	4.6	220	188	2.2
A428 WB	569	555	0.6	551	626	3.1	463	453	0.5	560	582	0.9	808	702	3.9	606	575	1.3
A5 NB	590	519	3.0	610	567	1.8	351	373	1.2	557	546	0.5	655	632	0.9	425	410	0.7
A428 EB	461	374	4.3	376	380	0.2	255	218	2.4	336	265	4.1	373	360	0.7	310	275	2.0
A428 Crick Road EB	548	514	1.5	525	604	3.3	334	364	1.6	399	398	0.1	534	515	0.8	414	427	0.6
A428 Crick Road WB	232	180	3.6	272	231	2.6	179	170	0.7	289	256	2.0	424	364	3.0	397	317	4.2
Kilsby Lane NB	80	130	4.9	180	210	2.1	120	148	2.4	194	308	7.2	230	333	6.1	206	236	2.0
A428 Ashlawn Road SB	433	360	3.7	588	537	2.2	374	378	0.2	564	550	0.6	664	684	0.8	567	628	2.5
A428 Ashlawn Road WB	531	423	4.9	833	757	2.7	570	577	0.3	664	719	2.1	787	852	2.3	767	866	3.5
Ashlawn Road EB	193	239	3.1	255	426	9.3	235	229	0.4	344	328	0.9	327	347	1.1	293	330	2.1
Barby Road SB	65	75	1.2	81	96	1.6	95	87	0.8	178	182	0.3	178	142	2.8	102	101	0.1
B4429 Ashlawn Road WB	477	356	5.9	700	636	2.5	373	348	1.3	426	378	2.4	435	388	2.3	407	401	0.3
Onley Lane NB	52	26	4.2	80	50	3.7	60	43	2.4	49	59	1.4	58	52	0.8	59	30	4.3
B4429 Ashlawn Road EB	359	319	2.2	742	671	2.7	439	381	2.9	693	545	5.9	785	675	4.1	554	521	1.4
A5 SB	708	688	0.8	697	705	0.3	408	404	0.2	507	584	3.3	598	628	1.2	371	434	3.1
A5 NB	443	396	2.3	473	567	4.1	310	354	2.4	564	526	1.6	626	690	2.5	461	556	4.2
Newton Lane EB	59	28	4.7	65	36	4.1	23	8	3.8	73	39	4.5	111	45	7.5	44	27	2.9
Ashlawn Road EB	554	500	2.4	676	708	1.2	481	458	1.1	722	662	2.3	842	861	0.7	728	779	1.9
Ashlawn Road WB	509	395	5.4	756	670	3.2	534	517	0.7	617	691	2.9	734	810	2.7	741	811	2.5
Barby Lane NB	43	37	0.9	115	90	2.5	69	61	1.0	92	55	4.3	105	84	2.2	74	64	1.2
School Street SB	101	105	0.4	176	169	0.5	96	110	1.4	172	197	1.8	209	238	1.9	132	164	2.6
Lower Street WB	72	72	0.0	118	125	0.6	67	80	1.5	107	135	2.5	98	131	3.1	86	117	3.1
School Street NB	53	50	0.4	98	93	0.5	48	47	0.1	68	87	2.2	69	95	2.9	76	88	1.3
B4429 Coventry Road SB	472	520	2.2	398	443	2.2	240	276	2.2	238	261	1.5	230	271	2.6	222	271	3.1
M45 WB	920	876	1.5	749	732	0.6	562	587	1.0	667	648	0.7	800	874	2.6	608	677	2.7
A45 Coventry Road EB	1178	1177	0.0	1029	1083	1.7	712	717	0.2	1140	1231	2.6	1289	1306	0.5	849	875	0.9
B4429 Daventry Road SB	218	212	0.4	205	270	4.2	151	229	5.7	198	196	0.1	211	238	1.8	141	166	2.0
A45 Daventry Road NB	133	165	2.6	224	289	4.1	161	184	1.8	261	241	1.3	284	270	0.8	173	190	1.3
M45 Slip Road EB	397	290	5.8	323	267	3.3	180	124	4.5	250	278	1.7	325	265	3.5	211	193	1.3
A4071 NB	322	271	3.0	429	444	0.7	243	243	0.0	470	463	0.3	539	557	0.8	391	399	0.4
A4071 NB	44	29	2.5	63	42	2.9	66	43	3.1	74	51	2.9	61	46	2.1	34	28	1.1
A4071 SB	157	120	3.1	196	175	1.5	89	110	2.1	98	79	2.0	116	122	0.6	78	100	2.3
A4071 SB	848	771	2.7	675	756	3.0	397	487	4.3	487	540	2.3	564	631	2.7	369	439	3.5
B4453 NB	290	258	1.9	411	466	2.6	282	207	4.8	546	481	2.9	620	555	2.7	425	388	1.8
B4453 Straight Mile SB	87	62	2.9	113	79	3.5	105	61	4.8	156	97	5.2	156	121	3.0	112	96	1.6
B4453 Straight Mile SB	129	105	2.2	128	80	4.7	101	73	3.0	75	36	5.2	92	46	5.5	72	41	4.1
A4071 WB	872	793	2.7	751	800	1.8	482	528	2.0	580	584	0.2	597	680	3.3	417	468	2.4
B4453 Straight Mile NB	242	226	1.0	329	395	3.5	203	146	4.3	443	406	1.8	517	440	3.5	348	290	3.2
B4453 Straight Mile NB	209	199	0.7	293	387	5.1	175	145	2.4	392	389	0.2	476	434	2.0	312	288	1.4
A45 EB	196	167	2.2	203	159	3.3	163	133	2.5	179	133	3.7	192	168	1.8	152	137	1.2
B4453 Straight Mile NB	558	498	2.6	450	486	1.7	262	295	2.0	375	388	0.7	361	422	3.1	260	267	0.4
Lawford Heath Lane SB	85	103	1.9	106	157	4.4	78	85	0.8	68	97	3.2	91	130	3.7	39	69	4.1
A4071 SB	45	60	2.1	57	83	3.1	42	66	3.3	49	47	0.3	50	84	4.2	43	64	2.9
A45 London Road EB	371	259	6.3	472	400	3.4	292	218	4.6	531	439	4.2	582	514	2.9	422	382	2.0
Moors Lane SB	21	12	2.2	20	8	3.2	9	5	1.5	4	3	0.5	14	4	3.3	7	2	2.4
A428 Crick Road WB	208	169	2.8	231	212	1.3	168	160	0.6	278	251	1.7	427	353	3.7	374	288	4.7
A428 Crick Road EB	393	333	3.1	319	349	1.6	221	186	2.5	206	170	2.6	285	272	0.8	224	190	2.4
Kingsley Avenue SB	128	150	1.9	264	271	0.4	116	122	0.6	127	138	1.0	155	158	0.2	140	145	0.4
A428 Hillmorton Road (NB)	347	310	2.0	477	551	3.3	432	464	1.5	546	605	2.5	608	664	2.2	612	685	2.9
A428 Hillmorton Road (SB)	422	321	5.2	555	434	5.4	399	367	1.6	611	559	2.1	762	710	1.9	610	656	1.8
A428 Hillmorton Road (SB)	393	342	2.7	531	455	3.4	388	383	0.3	596	567	1.2	709	711	0.1	577	651	3.0
A428 Hillmorton Road (NB)	432	347	4.3	599	537	2.6	472	465	0.3	529	505	1.1	604	558	1.9	641	602	1.6
Fisher Avenue SB	20	54	5.6	146	145	0.1	47	66	2.5	74	85	1.2	39	78	5.1	64	84	2.3
Fisher Avenue SB	51	24	4.4	156	69	8.2	45	30	2.4	105	55	5.6	132	68	6.4	101	57	5.0
A426 SB	602	577	1.0	735	831	3.4	517	605	3.7	721	728	0.3	721	795	2.7	580	629	2.0
Ashlawn Road WB	488	311	8.9	670	529	5.8	388	330	3.1	488	444	2.0	526	450	3.4	447	424	1.1
A426 EB	464	455	0.4	746	768	0.8	579	578	0.0	806	720	3.1	956	936	0.7	681	721	1.5
Whitehall Road SB	534	484	2.2	719	666	2.0	622	593	1.2	792	712	2.9	903	808	3.2	840	709	4.7
A428 Hillmorton Road WB	626	571	2.2	728	840	4.0	600	677	3.0	562	572	0.4	586	655	2.8	682	695	0.5
Bruce Williams Way NB	28	36	1.4	31	45	2.3	46	43	0.4	102	114	1.2	157	112	3.9	174	91	7.2
A428 Hillmorton Road EB	425	398	1.3	582	560	0.9	544	584	1.7	792	847	1.9	974	1029	1.7	699	823	4.5
Murray Road SB	267	153	7.9	280	163	7.9	281	168	7.5	311	216	5.9	309	223	5.3	405	232	9.7
Clifton Road WB	218	239	1.4	359	371	0.6	268	267	0.1	232	265	2.1	267	303	2.1	274	260	0.9

Lower Hillmorton Road NB	206	203	0.2	294	288	0.4	295	352	3.2	252	305	3.2	248	318	4.2	221	279	3.7
Whitehall Road NB	494	340	7.5	537	460	3.4	499	458	1.9	484	403	3.8	461	414	2.2	472	403	3.3
B5414 EB	133	155	1.8	316	302	0.8	236	313	4.6	495	517	1.0	541	588	2.0	310	414	5.5
Railway Terrace SB	90	72	2.0	81	100	2.0	127	99	2.6	229	170	4.2	268	198	4.6	156	127	2.4
B5414 Clifton Road WB	530	521	0.4	812	724	3.2	703	733	1.1	577	629	2.1	567	655	3.6	583	619	1.5
B5414 Clifton Road EB	172	182	0.8	367	328	2.1	326	348	1.2	550	449	4.5	578	495	3.6	400	375	1.3
Lower Hillmorton Road SB	123	96	2.6	348	251	5.6	143	145	0.2	328	283	2.6	353	325	1.5	223	246	1.5
Lower Hillmorton Road NB	178	179	0.1	364	359	0.3	219	258	2.5	211	248	2.4	212	256	2.9	208	280	4.6
Boundary Road NB	56	52	0.5	125	114	1.0	63	84	2.4	104	120	1.5	134	155	1.7	90	128	3.6
A428 Hillmorton Road EB	487	442	2.1	672	605	2.7	447	468	1.0	771	729	1.5	891	870	0.7	713	793	2.9
A428 Hillmorton Road WB	479	482	0.1	733	792	2.1	530	609	3.3	567	614	1.9	586	660	3.0	675	732	2.1
Percival Road NB	101	99	0.2	198	231	2.3	130	140	0.9	196	173	1.7	220	226	0.4	139	153	1.2
The Kent SB	98	71	2.9	217	147	5.2	128	96	3.0	237	174	4.4	293	199	6.0	221	170	3.6
The Kent WB	224	176	3.4	360	301	3.2	228	178	3.5	276	282	0.4	274	314	2.3	258	258	0.0
Lower Hillmorton Road EB	157	142	1.2	285	258	1.6	137	135	0.2	239	237	0.1	298	280	1.1	174	192	1.3
Percival Road SB	151	125	2.2	184	175	0.7	85	80	0.6	88	78	1.1	95	81	1.5	78	70	0.9
B4429 Ashlawn Road WB	348	232	6.8	565	464	4.5	303	270	1.9	365	319	2.5	373	321	2.8	370	350	1.1
B4429 Ashlawn Road EB	248	230	1.2	548	600	2.2	326	290	2.1	638	498	5.9	706	599	4.2	487	448	1.8
Hillmorton Lane SB	90	81	1.0	210	165	3.3	107	99	0.8	236	178	4.0	283	199	5.4	207	169	2.8
Hillmorton Lane NB	225	167	4.1	300	237	3.8	168	90	6.9	193	170	1.7	209	221	0.8	155	113	3.6
South Road EB	10	8	0.7	25	22	0.6	19	7	3.3	11	6	1.7	18	9	2.4	11	4	2.6
Church Street SB	191	192	0.1	449	319	6.6	192	183	0.7	383	367	0.8	438	414	1.2	332	331	0.1
Libourne Road WB	86	94	0.8	116	151	3.0	100	91	0.9	111	137	2.3	116	170	4.5	99	113	1.4
Main Street EB	242	242	0.0	354	295	3.3	197	161	2.7	370	348	1.2	441	422	0.9	244	266	1.4
Railway Terrace SB	131	154	1.9	137	168	2.5	133	148	1.3	118	136	1.6	171	136	2.8	136	121	1.3
Railway Terrace NB	176	130	3.7	236	150	6.2	191	153	2.9	199	134	5.0	237	158	5.6	219	139	6.0
Wood Street EB	81	75	0.7	146	117	2.5	126	103	2.1	245	176	4.8	291	203	5.6	158	123	3.0
A426 Corporation Street	435	460	1.2	613	707	3.7	484	655	7.2	928	828	3.4	1031	998	1.0	736	877	5.0
Lawrence Sherriff Street	628	658	1.2	754	856	3.6	700	784	3.1	837	888	1.7	937	1084	4.6	774	947	5.9
Lawrence Sherriff Street	537	487	2.2	818	840	0.8	649	643	0.2	828	773	1.9	892	825	2.3	803	747	2.0
A426	383	361	1.1	554	602	2.0	433	551	5.3	732	711	0.8	816	806	0.4	574	663	3.6
Firs Drive	20	31	2.2	28	39	1.9	26	39	2.3	29	44	2.5	35	47	1.9	31	44	2.1
Firs Drive	8	10	0.7	16	26	2.2	26	35	1.6	23	32	1.7	42	42	0.0	25	35	1.8
Bilton Road	478	399	3.8	668	654	0.5	572	550	0.9	472	505	1.5	471	521	2.2	506	538	1.4
Bilton Road	313	229	5.1	485	425	2.8	384	378	0.3	637	503	5.6	701	568	5.3	642	527	4.8
Lawford Road	163	163	0.0	207	255	3.2	166	212	3.3	242	218	1.6	225	220	0.3	190	198	0.6
Lawford Road	309	217	5.7	299	222	4.8	334	247	5.1	400	301	5.3	507	418	4.1	369	296	4.0
Oliver Street SB	316	383	3.6	373	370	0.2	292	351	3.3	485	509	1.1	529	569	1.7	399	432	1.6
Lawford Road WB	138	160	1.8	163	245	5.7	170	222	3.7	220	233	0.9	249	248	0.1	194	207	0.9
Northcote Road NB	33	35	0.3	35	40	0.8	16	18	0.5	20	23	0.6	24	24	0.0	22	24	0.4
Lawford Road EB	382	385	0.2	474	468	0.3	464	425	1.8	488	417	3.3	541	531	0.4	438	404	1.7
Dunchurch Raod SB	402	385	0.9	519	609	3.8	424	524	4.6	623	622	0.0	740	726	0.5	512	586	3.2
Dunchurch Raod NB	364	341	1.2	533	574	1.7	429	518	4.1	373	463	4.4	388	501	5.4	366	432	3.3
Overslade Lane EB	70	74	0.5	203	195	0.6	119	123	0.4	131	134	0.3	114	120	0.6	107	120	1.2
May Lane SB	120	153	2.8	306	277	1.7	184	196	0.9	264	185	5.3	274	205	4.5	202	172	2.2
Bilton Road WB	292	229	3.9	472	423	2.3	346	350	0.2	478	441	1.7	611	553	2.4	463	465	0.1
Lytham Road NB	168	139	2.3	349	266	4.7	219	180	2.8	241	179	4.3	227	185	2.9	206	164	3.1
Bilton Raod EB	251	233	1.2	447	433	0.7	345	359	0.7	359	351	0.4	358	360	0.1	370	370	0.0
Main Street WB	498	430	3.2	669	634	1.4	445	481	1.7	566	545	0.9	663	646	0.7	515	538	1.0
Alwyn Road NB	96	84	1.3	195	139	4.3	94	90	0.4	149	109	3.5	143	116	2.4	141	113	2.5
Main Street EB	207	166	3.0	514	486	1.3	252	209	2.8	430	365	3.3	439	412	1.3	389	360	1.5
Dunchurch Road SB	387	328	3.1	479	474	0.2	355	426	3.6	501	474	1.2	565	574	0.4	419	481	2.9
Dunchurch Road NB	303	321	1.0	508	561	2.3	437	529	4.2	464	525	2.7	496	601	4.5	406	505	4.6
Shakespeare Gardens EB	103	134	2.8	178	219	2.9	99	124	2.4	123	140	1.5	100	121	2.0	110	124	1.3
Dunchurch Road SB	487	411	3.6	614	609	0.2	409	469	2.9	544	504	1.7	597	593	0.2	463	496	1.5
Dunchurch Road WB	151	158	0.6	222	225	0.2	323	309	0.8	497	452	2.1	536	479	2.5	484	401	3.9
Dunchurch Road NB	361	352	0.5	634	668	1.3	531	557	1.1	700	699	0.0	747	823	2.7	623	702	3.1
Bawnmore Road EB	252	284	2.0	469	541	3.2	301	315	0.8	377	374	0.2	358	368	0.5	291	285	0.4
Coventry Road WB	528	424	4.8	512	431	3.7	247	262	0.9	237	220	1.1	261	250	0.7	231	216	1.0
Cawston Lane NB	47	31	2.6	71	40	4.2	65	32	4.7	116	54	6.7	129	68	6.1	69	50	2.5
Coventry Road EB	140	105	3.2	275	302	1.6	183	124	4.8	383	327	3.0	437	397	2.0	354	317	2.0
Calvestone Road SB	152	116	3.1	245	195	3.4	72	68	0.5	99	97	0.2	95	93	0.2	101	96	0.5
Coventry Road WB	367	308	3.2	427	385	2.1	275	284	0.5	353	309	2.4	356	350	0.3	302	295	0.4
Coventry Road EB	162	126	3.0	308	328	1.1	211	150	4.5	448	367	4.0	518	452	3.0	392	357	1.8
Cawston Grange Drive SB	145	125	1.7	240	178	4.3	88	83	0.5	93	79	1.5	87	78	1.0	102	85	1.8
Newton Road SB	55	68	1.7	84	107	2.4	38	27	1.9	61	73	1.5	61	73	1.5	56	44	1.7
Newton Manor Lane WB	199	192	0.5	289	259	1.8	130	179	3.9	206	260	3.5	310	325	0.8	199	243	3.0
Newton Road NB	373	319	2.9	531	424	4.9	284	209	4.8	445	365	4.0	480	424	2.6	294	292	0.1
Newton Manor Lane EB	268	263	0.3	447	348	5.0	231	182	3.4	482	428	2.5	498	446	2.4	416	413	0.1
Newton Manor Lane EB	220	226	0.4	344	294	2.8	195	146	3.8	460	418	2.0	514	436	3.6	354	353	0.1
Newton Manor Lane WB	426	391	1.7	598	567	1.3	325	259	3.9	452	441	0.5	586	515	3.0	394	418	1.2
Crow Thorns NB	165	139	2.1	227	148	5.8	119	97	2.1	160	100	5.3	168	121	3.9	156	132	2.0
Newton Manor Lane EB	213	187	1.8	409	310	5.2	210	144	5.0	625	460	7.1	669	508	6.6	479	408	3.4
Newton Manor Lane WB	500	495	0.2	643	611	1.3	345	290	3.1	364	367	0.2	455	445	0.5	358	367	0.5
Hollowell Way NB	189	165	1.8	254	202	3.4	130	102	2.6	166	188	1.7	242	199	2.9	217	187	2.1
Coton Park Drive SB	36	41	0.8	85	91	0.6	71	71	0.0	330	283	2.7	327	255	4.2	105	104	0.1
Central Park Drive EB	34	52	2.7	67	36	4.3	32	20	2.4	192	75	10.1	184	73	9.8	68	32	5.1
Coton Park Drive NB	331	216	7.0	391	314	4.1	135	125	0.9	172	205	2.4	172	182	0.8	157	137	1.6
Central Park Drive WB	429	433	0.2	544	626	3.4	355	379	1.3	284	218	4.2	338	267	4.1	281	225	3.5
Campion Way SB	129	115	1.3	150	102	4.3	69	49	2.6	62	33	4.2	53	37	2.4	68	39	4.0
Newton Manor Lane WB	584	550	1.4	729	656	2.8	378	319	3.2	372	381	0.5	516	476	1.8	419	396	1.1
Newton Manor Lane EB	221	175	3.3	433	306	6.6	237	147	6.5	703	507	8.0	782	571	8.1	566	462	4.6
Campion Way SB	80	115	3.5	110	100	1.0	42	46	0.6	31	34	0.5	43	37	0.9	42	38	0.6
Newton Manor Lane WB	442	416	1.3	570	560	0.4	300	256	2.6	357	365	0.4	489	448	1.9	361	359	0.1
Newton Manor Lane EB	180	207	1.9	287	284	0.2	176	147	2.3	470	460	0.5	519	496	1.0	354	409	2.8
Wood Street WB	64	102	4.2	88	131	4.1	80	107	2.8	145	167	1.8	166	167	0.1	128	154	2.2
Park Road NB	29	19	2.0	46	34	1.9	32	31	0.2	43	23	3.5	69	36	4.6	47	32	2.4
Wood Street EB	110	88	2.2	196	158	2.9	144	135	0.8	215	146	5.1	224	188	2.5	139	125	1.2
Park Road SB	19	32	2.6	38	40	0.3	20	26	1.3	44	47	0.4	58	62	0.5	44	51	1.0
Manor Road WB	81	76	0.6	124	70	5.5	74	51	2.9	111	87	2.4	123	88	3.4	96	70	2.9
Park Road NB	30	33	0.5	57	41	2.3	50	47	0.4	80	40	5.2	125	71	5.5	73	54	2.4
Lancaster Road EB	30	16	2.9	64	30	5.0	44	30	2.3	65	28	5.4	80	50	3.7	56	43	1.8
A428 Lawford Road SB	539	506	1.4	830	773	2.0	628	516	4.7	800	629	6.4	861	784	2.7	655	576	3.2
A428 Lawford Road NB	455	427	1.3	509	417	4.3	353	312	2.2	560	456	4.6	695	547	5.9	471	352	5.9
A428 Lawford Road NB	132	104	2.6	202	167	2.6	159	140	1.6	144	131	1.1	118	119	0.1	95	101	0.6
Addison Road NB	224	223	0.1	319	317	0.1	186	196	0.7	304	252	3.1	329	280	2.8	168	161	0.5
Addison Road NB	83	73	1.1	164	118	3.9	177	148	2.3	164	142	1.8	167	143	1.9	92	89	0.3
A428 Hillmorton Road SB	393	329	3.4	467	464	0.1	419	419	0.0	756	665	3.4	914	812	3.5	728	703	0.9
A428 Hillmorton Road NB	546	446	4.5	716	714	0.1	569	578	0.4	591	522	2.9	598	603	0.2	699	651	1.8
Cromwell Road NB	176	192	1.2	230	219	0.7	121	147	2.2	117	139	1.9	122	142	1.7	124	146	1.9
Bilton Road SB	270	221	3.1	407	374	1.7	253	278	1.5	344	316	1.5	467	432	1.7	370	361	0.5
Bilton Road NB	273	227	2.9	478	434	2.1	373	371	0.1	406	381	1.3	405	396	0.4	404	394	0.5
Addison Road SB	61	88	3.1	131	135	0.3	71	83	1.4	90	90	0.0	104	104	0.0	61	73	1.5
Bilton Road WB	88	80	0.9	186	173	1.0	86	92	0.6	109	101	0.8	152	149	0.2	78	99	2.2
Bilton Road WB	266	173	6.3	306	231	4.6	230	205	1.7	271	212	3.8	340	281	3.3	270	240	1.9
Bawnmore Road NB	203	191	0.9	314	335	1.2	284	301	1.0	325	324	0.1	325	352	1.5	258	291	2.0

Bilton Road EB	235	232	0.2	524	560	1.5	327	369	2.3	485	496	0.5	514	528	0.6	445	496	2.4
Ivy Grange SB	16	0	5.7	26	0	7.2	11	0	4.7	11	0	4.7	19	0	6.2	15	0	5.5
Overslade Lane SB	119	114	0.5	255	218	2.4	155	142	1.1	186	169	1.3	184	174	0.7	168	159	0.7
Overslade Lane NB	85	85	0.0	294	235	3.6	169	147	1.8	214	181	2.3	227	193	2.3	171	168	0.2
Deepmore Road SB	27	37	1.8	54	67	1.7	17	25	1.7	30	40	1.7	21	29	1.6	25	31	1.1
Alwyn Road SB	44	22	3.8	117	49	7.5	49	25	3.9	61	28	4.9	68	35	4.6	45	26	3.2
Alwyn Road SB	101	85	1.7	155	121	2.9	73	73	0.0	74	65	1.1	86	73	1.5	50	50	0.0
Northampton Lane WB	48	25	3.8	154	66	8.4	71	32	5.4	91	50	4.9	99	68	3.4	101	48	6.1
Northampton Lane EB	33	26	1.3	120	73	4.8	53	35	2.7	102	69	3.6	144	101	3.9	78	63	1.8
Northampton Lane EB	23	14	2.1	45	25	3.4	34	14	4.1	37	19	3.4	47	25	3.7	37	17	3.8
Cawston Lane SB	61	29	4.8	113	58	5.9	40	19	3.9	58	29	4.4	60	35	3.6	55	37	2.7
Northampton Lane WB	131	138	0.6	244	183	4.2	106	99	0.7	91	77	1.5	125	93	3.1	75	61	1.7
Cawston Lane NB	60	42	2.5	134	90	4.2	73	53	2.5	159	117	3.6	226	150	5.5	117	108	0.8
Fareham Avenue SB	63	82	2.2	111	135	2.2	38	33	0.8	55	48	1.0	48	38	1.5	49	43	0.9
B4429 Ashlawn Road WB	285	190	6.2	449	395	2.6	266	227	2.5	367	253	6.5	360	292	3.8	356	309	2.6
B4429 Ashlawn Road EB	226	197	2.0	425	474	2.3	254	213	2.7	461	374	4.3	429	412	0.8	371	369	0.1
Fisher Avenue SB	36	74	5.1	76	106	3.1	31	59	4.2	42	65	3.1	30	72	5.9	37	64	3.8
B4429 Ashlawn Road WB	271	188	5.5	495	409	4.0	247	232	1.0	324	263	3.6	331	320	0.6	308	322	0.8
B4429 Ashlawn Road EB	198	232	2.3	332	527	9.4	245	219	1.7	406	357	2.5	389	395	0.3	335	369	1.8
Cosford Lane WB	4	7	1.3	8	15	2.1	4	11	2.6	9	27	4.2	10	31	4.6	4	21	4.8
Valley Drive NB	33	48	2.4	63	81	2.1	28	45	2.8	27	24	0.6	20	28	1.6	29	19	2.0
Valley Drive EB	27	22	1.0	27	25	0.4	26	22	0.8	42	48	0.9	38	41	0.5	25	50	4.1
A426 SB	1089	1001	2.7	1067	1089	0.7	810	845	1.2	809	844	1.2	888	904	0.5	708	804	3.5
A426 NB	800	692	4.0	858	928	2.3	656	680	0.9	932	837	3.2	932	963	1.0	740	838	3.5
Coton Road EB	15	21	1.4	18	24	1.3	18	60	6.7	8	17	2.5	9	9	0.0	16	51	6.0
Park Road SB	197	293	6.1	266	317	3.0	279	273	0.4	357	403	2.4	349	428	4.0	278	321	2.5
North Street NB	398	383	0.8	509	527	0.8	387	523	6.4	410	471	2.9	401	490	4.2	380	498	5.6
Evreux Way EB	353	430	3.9	801	893	3.2	718	838	4.3	778	713	2.4	802	788	0.5	660	682	0.8
A426 Newbold Road SB	665	632	1.3	849	878	1.0	792	867	2.6	980	1042	1.9	1002	1133	4.0	968	1043	2.4
Lancaster Road WB	84	46	4.7	118	47	7.8	56	35	3.1	103	62	4.5	107	71	3.8	102	67	3.8
A426 Newbold Road NB	849	800	1.7	912	1002	2.9	772	868	3.4	614	691	3.0	668	811	5.3	701	822	4.4
Essex Street EB	3	0	2.4	6	0	3.5	5	0	3.2	4	1	1.9	2	1	0.8	2	0	2.0
A426 SB	1112	1013	3.0	1127	1116	0.3	830	905	2.5	822	854	1.1	846	915	2.3	699	855	5.6
M6 WB	308	363	3.0	350	455	5.2	266	292	1.6	226	283	3.6	241	301	3.6	234	286	3.2
A426 NB	1525	1280	6.5	1314	1443	3.5	920	943	0.8	1558	1537	0.5	1373	1563	5.0	1061	1243	5.4
M6 EB	917	940	0.8	922	974	1.7	700	695	0.2	697	691	0.2	853	857	0.1	654	663	0.4
A426 SB	1520	1509	0.3	1656	1756	2.4	1200	1268	1.9	1265	1378	3.1	1553	1656	2.6	1166	1369	5.7
Newton Manor Lane WB	675	680	0.2	715	843	4.6	403	453	2.4	298	426	6.7	420	516	4.4	425	440	0.7
A426 Leicester Road NB	1324	1212	3.1	1355	1393	1.0	1084	1057	0.8	1769	1622	3.6	1705	1696	0.2	1478	1540	1.6
Lower Lodge Avenue EB	122	139	1.5	103	114	1.1	54	62	1.1	68	85	1.9	73	81	0.9	49	65	2.1
A426 Leicester Road SB	3848	3776	1.2	4214	4470	3.9	2928	3162	4.2	2702	2858	3.0	3280	3408	2.2	2686	2958	5.1
Boughton Road WB	1270	1134	3.9	1442	1330	3.0	1050	1006	1.4	1378	1280	2.7	1330	1268	1.7	1218	1100	3.5
A426 Leicester Road NB	2140	1954	4.1	2230	2472	5.0	1924	2038	2.6	2746	2636	2.1	2804	2906	1.9	2630	2826	3.8
Brownsover Road EB	500	438	2.9	836	750	3.1	602	488	4.9	1286	1364	2.1	1368	1292	2.1	818	1008	6.3
A426 Leicester Road SB	2504	2478	0.5	2896	3062	3.0	2406	2774	7.2	3162	3092	1.3	3150	3438	5.0	2964	3324	6.4
A426 Newbold Road WB	1530	1472	1.5	1854	1914	1.4	1428	1728	7.6	1832	1690	3.4	1820	1870	1.2	1678	1910	5.5
B4112 Newbold Road EB	1540	1280	6.9	2192	2070	2.6	1520	1406	3.0	1708	1578	3.2	1882	1930	1.1	1500	1466	0.9
A426 SB	254	165	6.1	274	216	3.7	182	113	5.7	138	72	6.4	164	91	6.5	149	77	6.8
A426 SB	1501	1534	0.8	1536	1663	3.2	1093	1182	2.6	1039	1173	4.0	1261	1413	4.2	1039	1228	5.6
Central Park Drive WB	303	230	4.5	346	339	0.4	221	179	3.0	526	524	0.1	506	486	0.9	275	249	1.6
A426 NB	1510	1294	5.8	1348	1486	3.7	995	1029	1.1	1342	1305	1.0	1214	1376	4.5	1046	1178	4.0
Business Park EB	18	19	0.2	29	31	0.4	44	24	3.4	48	66	2.4	46	58	1.7	24	35	2.0
Retail Park Access SB	30	44	2.3	80	102	2.3	260	140	8.5	642	456	7.9	628	442	8.0	656	368	12.7
A426 Leicester Road WB	2880	2752	2.4	3100	3248	2.6	2586	2704	2.3	2694	2732	0.7	3118	3188	1.2	2628	2894	5.1
Retail Park Access NB	590	550	1.7	558	518	1.7	654	586	2.7	820	758	2.2	936	774	5.5	1064	880	5.9
A426 Leicester Road EB	2076	1974	2.3	2332	2600	5.4	2154	2146	0.2	2800	2668	2.5	2866	3026	2.9	2712	2934	4.2
A426 Leicester Road NB	2206	2198	0.2	2664	3102	8.2	2344	2586	4.9	2764	2774	0.2	2976	3244	4.8	2604	3010	7.7
A426 Leicester Road SB	2658	2574	1.6	2978	3008	0.5	2416	2602	3.7	2796	2806	0.2	3154	3226	1.3	2826	3120	5.4
Technology Drive	672	660	0.5	898	912	0.5	1004	908	3.1	1714	1608	2.6	1448	1522	1.9	1594	1598	0.1
A426 Newbold Road SB	891	914	0.8	1150	1203	1.5	881	1042	5.2	981	951	1.0	1023	1090	2.1	975	1077	3.2
Hunters Lane WB	50	49	0.1	71	77	0.7	103	97	0.6	123	138	1.3	88	112	2.4	29	46	2.8
A426 Newbold Road NB	822	785	1.3	918	961	1.4	703	854	5.4	882	837	1.5	898	934	1.2	844	953	3.6
B4112 Newbold Road SB	324	328	0.2	622	584	1.5	271	277	0.4	505	543	1.7	576	637	2.5	355	388	1.7
Yates Avenue WB	72	46	3.4	133	77	5.5	73	55	2.3	88	74	1.6	89	70	2.1	82	56	3.1
A4701 Newbold Road NB	672	587	3.4	893	806	3.0	596	642	1.8	1025	879	4.7	1038	959	2.5	831	846	0.5
A4701 Western Relief Road EB	685	539	5.9	932	814	4.0	614	554	2.5	749	578	6.6	808	721	3.1	625	548	3.2
A4071 Western Relief Road SB	692	571	4.8	795	730	2.4	519	531	0.5	977	897	2.6	1042	1031	0.3	756	791	1.3
A4071 Western Relief Road NB	777	636	5.3	1088	978	3.4	665	620	1.8	895	677	7.8	932	824	3.6	683	597	3.4
Parkfield Road EB	15	16	0.3	41	29	2.0	26	24	0.4	20	23	0.6	19	26	1.5	19	24	1.1
Brownsover Road WB	128	135	0.6	225	264	2.5	99	154	4.9	442	409	1.6	549	488	2.7	241	287	2.8
B4112 Main Street NB	236	189	3.2	365	317	2.6	181	204	1.7	330	271	3.4	336	298	2.1	266	267	0.1
Parkfield Road EB	135	111	2.2	227	197	2.1	106	84	2.3	156	110	4.0	170	128	3.4	118	77	4.2
B4112 Main Street SB	378	389	0.6	526	576	2.1	252	239	0.8	233	375	8.1	350	462	5.6	236	325	5.3
Valley Drive SB	26	42	2.7	55	88	3.9	66	67	0.1	164	157	0.6	129	171	3.4	69	131	6.2
Brownsover Road WB	585	527	2.5	888	799	3.1	448	423	1.2	286	267	1.1	349	328	1.1	265	277	0.7
Old Leicester Road NB	119	89	2.9	113	113	0.0	90	93	0.3	297	295	0.1	321	284	2.1	124	158	2.9
Brownsover Road EB	219	211	0.5	398	326	3.8	232	176	3.9	407	408	0.0	424	368	2.8	269	299	1.8
A5 Watling Street SB	835	827	0.3	838	938	3.4	458	497	1.8	541	539	0.1	575	528	2.0	373	414	2.1
A426 Rugby Road	741	795	1.9	686	714	1.1	568	546	0.9	593	597	0.2	653	690	1.4	492	504	0.5
Gibbet Lane WB	107	100	0.7	120	142	1.9	96	118	2.1	142	184	3.3	116	139	2.0	73	120	4.8
A5 Watling Street NB	392	412	1.0	425	554	5.8	370	420	2.5	587	558	1.2	706	727	0.8	494	593	4.2
A426 EB	820	726	3.4	848	975	4.2	704	766	2.3	858	828	1.0	813	957	4.8	740	847	3.8
Coton Park Drive	232	155	5.5	358	335	1.2	149	118	2.7	222	212	0.7	260	211	3.2	214	191	1.6
Newton Manor Lane WB	595	650	2.2	667	763	3.6	383	375	0.4	316	394	4.1	446	486	1.9	415	416	0.0
Newton Manor Lane EB	174	189	1.1	280	298	1.1	245	234	0.7	598	590	0.3	765	728	1.4	617	611	0.2
Boughton Road SB	543	438	4.7	640	611	1.2	437	446	0.4	664	646	0.7	762	679	3.1	614	567	1.9
Cow Thornes EB	339	276	3.6	483	404	3.8	297	256	2.5	289	253	2.2	301	264	2.2	304	259	2.7
Boughton Road NB	500	418	3.8	613	570	1.8	436	412	1.2	746	644	3.9	719	626	3.6	603	539	2.7
Technology Drive SB	860	906	1.5	1304	1276	0.8	1260	1302	1.2	1326	1342	0.4	1570	1582	0.3	1420	1456	0.9
Retail Park WB	270	256	0.9	306	310	0.2	492	404	4.2	806	834	1.0	872	840	1.1	1024	970	1.7
Technology Drive NB	490	438	2.4	736	678	2.2	810	594	8.2	1382	1030	10.1	1034	976	1.8	1070	892	5.7
A426 Newbold Road SB	828	831	0.1	1149	1149	0.0	860	1023	5.3	1037	1000	1.2	1067	1140	2.2	981	1096	3.6
Wood Street WB	66	99	3.6	82	131	4.7	73	126	5.3	125	256	9.5	143	237	6.8	121	209	6.9
A426 Newbold Road NB	831	806	0.9	946	1011	2.1	668	878	7.6	702	727	0.9	720	843	4.4	766	877	3.9
Wood Street EB	18	12	1.5	7	5	0.8	9	5	1.5	136	103	3.0	104	83	2.2	46	43	0.4
Butlers Leap SB	1018	844	5.7	1260	1274	0.4	958	858	3.3	1098	856	7.7	1320	1076	7.0	916	804	3.8
Butlers Leap NB	776	816	1.4	1096	1000	3.0	766	742	0.9	812	874	2.1	1022	1068	1.4	686	754	2.5
Mill Road EB	594	592	0.1	658	602	2.2	722	558	6.5	1138	1018	3.7	1190	928	8.1	946	820	4.2
Mill Road SB	1028	928	3.2	1296	1176	3.4	934	822	3.8	818	812	0.2	1034	916	3.8	766	768	0.1
Mill Road NB	710	578	5.2	712	602	4.3	838	622	8.0	1148	924	7.0	1174	904	8.4	1268	884	11.7
Technology Drive WB	422	432	0.5	542	644	4.2	430	464	1.6	812	546	10.2	884	610	10.0	552	552	0.0
A45 SB	350	471	6.0	402	537	6.2	240	364	7.1	393	440	2.3	454	496	1.9	318	360	2.3
Longdown Lane WB	159	155	0.3	141	185	3.4	55	102	5.3	57	90	3.8	67	103	3.9	41	76	4.6
A45 NB	372	355	0.9	350	371	1.1	243	225	1.2	382	420	1.9	455	452	0.1	291	310	1.1
Daventry Road SB	101	116	1.4	140	132	0.7	104	95	0.9	113	122	0.8	137	137	0.0	88	65	2.6
The Ridgeway WB	117	101	1.5	104	106	0.2	37	60	3.3	49	62	1.7	64	78	1.7	40	54	2.0

Daventry Road NB	45	58	1.8	107	138	2.8	63	111	5.1	72	98	2.8	94	104	1.0	75	91	1.8
Longdown Lane EB	45	75	3.9	85	137	4.9	42	64	3.0	111	127	1.5	184	171	1.0	103	147	3.9
Daventry Road SB	395	336	3.1	522	460	2.8	262	314	3.1	356	385	1.5	381	363	0.9	251	275	1.5
Daventry Road NB	325	343	1.0	319	367	2.6	201	212	0.8	365	381	0.8	499	499	0.0	284	234	3.1
The Ridgeway EB	44	56	1.7	70	110	4.2	39	82	5.5	81	87	0.7	124	139	1.3	67	117	5.2
Main Road EB	172	120	4.3	216	197	1.3	123	141	1.6	131	120	1.0	148	116	2.8	88	99	1.1
Main Road WB	50	94	5.2	70	137	6.6	59	86	3.2	111	189	6.4	156	197	3.1	127	119	0.7
Daventry Road NB	32	41	1.5	65	53	1.6	37	39	0.3	69	59	1.3	106	60	5.0	56	41	2.2
Southam Road	269	276	0.4	351	370	1.0	234	304	4.3	454	402	2.5	505	456	2.2	316	378	3.3
Coventry Road	290	189	6.5	409	395	0.7	233	234	0.1	386	272	6.3	429	423	0.3	377	370	0.4
Rugby Road	184	173	0.8	177	202	1.8	107	186	6.5	167	143	1.9	165	178	1.0	133	110	2.1
Rugby Road	570	405	7.5	457	472	0.7	349	371	1.2	323	308	0.8	362	355	0.4	358	352	0.3
Daventry Road	161	160	0.1	289	282	0.4	188	199	0.8	267	241	1.6	340	277	3.6	207	206	0.1
A45 Westbound	1760	1547	5.2	1445	1443	0.1	935	977	1.4	1140	1024	3.5	1212	1291	2.2	945	1018	2.3
A45 Eastbound	1328	1318	0.3	1262	1173	2.6	876	778	3.4	1453	1520	1.7	1596	1580	0.4	1139	1086	1.6
M45 Eastbound	660	780	4.5	544	618	3.1	396	463	3.2	556	615	2.4	547	643	3.9	375	416	2.1
M45 Westbound	668	670	0.1	536	565	1.2	503	493	0.4	434	486	2.4	577	661	3.4	450	494	2.0
M1 Northbound	3627	3593	0.6	3911	3790	1.9	2836	2820	0.3	4541	4578	0.5	4121	4250	2.0	2453	2515	1.2
M1 Southbound	4332	4092	3.7	3717	3932	3.5	3575	3506	1.2	4049	4289	3.7	3675	3819	2.4	1890	1932	1.0
M1 Northbound	3517	3572	0.9	3703	3831	2.1	2774	2881	2.0	4388	4579	2.9	3927	4130	3.2	2396	2423	0.6
M1 Southbound	4067	3979	1.4	3740	3876	2.2	3430	3480	0.9	3959	4251	4.6	3538	3835	4.9	1899	1991	2.1
M6 Southbound	2746	2669	1.5	2263	2378	2.4	1765	1830	1.5	2745	2703	0.8	2763	2952	3.5	930	960	1.0
M6 Northbound	3083	3126	0.8	2886	3079	3.5	2513	2615	2.0	2795	2739	1.1	2791	2754	0.7	1983	2051	1.5

		338			338			338			338			338			338	
		302			306			308			302			301			302	
		89%			**91%**			**91%**			**89%**			**89%**			**89%**	
<=3		228	67%		205	61%		231	68%		229	68%		222	66%		229	68%
<=4		279	83%		271	80%		275	81%		275	81%		272	80%		275	81%
<=5		302	89%		306	91%		308	91%		302	89%		301	89%		302	89%
<=6		322	95%		321	95%		322	95%		317	94%		321	95%		323	96%
<=7		333	99%		327	97%		328	97%		327	97%		328	97%		331	98%
<=8		337	100%		332	98%		336	99%		333	99%		332	98%		334	99%
<=9		338	100%		336	99%		338	100%		334	99%		336	99%		335	99%
<=10		338	100%		338	100%		338	100%		335	99%		337	100%		336	99%

	07:00:00			**08:00:00**			**09:00:00**			**16:00:00**			**17:00:00**			**18:00:00**		
	OBS	MOD	% Pass	OBS	MOD	% Pass	OBS	MOD	% Pass	OBS	MOD	% Pass	OBS	MOD	% Pass	OBS	MOD	% Pass
Low	285	265	**93%**	264	249	**94%**	291	281	**97%**	268	254	**95%**	252	242	**96%**	279	268	**96%**
Med	45	40	**89%**	63	61	**97%**	42	34	**81%**	56	48	**86%**	71	62	**87%**	55	45	**82%**
High	8	8	**100%**	11	11	**100%**	5	5	**100%**	14	14	**100%**	15	15	**100%**	4	4	**100%**
all	338	313	**93%**	338	321	**95%**	338	320	**95%**	338	316	**93%**	338	319	**94%**	338	317	**94%**

vectos microsim.

October 2021

Warwickshire County Council

Appendix E – Local Calibration

Vectos
7th Floor
36 Great Charles Street
Birmingham
B3 3JY

0121 2895 610

vectos.co.uk

121. Table 12: AM Turn Count Calibration – Technology Drive.

From	To	07:00 – 08:00			08:00 – 09:00			09:00 – 10:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 3										
A426 S	A426 N	892	867	0.8	966	1152	5.7	830	922	3.1
A426 S	Technology Drive	211	232	1.4	366	399	1.7	342	371	1.5
A426 N	A426 S	1106	1065	1.2	1207	1259	1.5	919	1026	3.4
A426 N	Technology Drive	223	222	0.1	282	245	2.3	289	275	0.8
Technology Drive	A426 S	167	200	2.4	254	308	3.2	270	304	2.0
Technology Drive	A426 N	169	130	3.2	195	148	3.6	232	150	5.9
Junction 4										
Technology Drive N	Technology Drive N	12	41	5.6	13	52	6.8	8	45	7.2
Technology Drive N	Retail Park E	122	97	2.4	157	133	2.0	276	302	1.5
Technology Drive N	Technology Drive S	296	315	1.1	482	453	1.3	346	304	2.3
Retail Park E	Technology Drive N	106	113	0.7	106	126	1.9	178	165	1.0
Retail Park E	Technology Drive S	29	15	3.0	47	29	2.9	68	37	4.3
Technology Drive S	Technology Drive S	215	183	2.3	325	281	2.5	311	237	4.5
Technology Drive S	Retail Park E	30	36	1.0	43	58	2.1	94	60	3.9
Junction 9										
Technology Park E	Technology Drive N	10	13	0.9	24	28	0.8	67	70	0.4
Technology Park E	Technology Drive S	6	3	1.4	15	10	1.4	30	26	0.8
Technology Drive N	Technology Park E	24	19	1.1	46	39	1.1	67	79	1.4
Technology Drive N	Technology Drive S	255	309	3.2	377	441	3.2	312	264	2.8
Technology Drive S	Technology Park E	11	12	0.3	22	25	0.6	43	28	2.5
Technology Drive S	Technology Drive N	283	206	4.9	393	312	4.3	399	228	9.7
Junction 5										
Mill Road N	Mill Road S	395	308	4.6	430	355	3.8	321	271	2.9
Mill Road N	Technology Drive W	119	156	3.2	218	233	1.0	146	140	0.5
Mill Road S	Mill Road N	227	227	0.0	176	202	1.9	264	215	3.2
Mill Road S	Technology Drive W	128	62	6.8	180	99	6.9	155	96	5.3
Technology Drive W	Mill Road N	73	126	5.3	136	205	5.3	103	130	2.5
Technology Drive W	Mill Road S	138	90	4.5	135	117	1.6	112	102	1.0
Junction 6										
Butlers Leap N	Butlers Leap S	159	130	2.4	247	290	2.6	186	195	0.7
Butlers Leap N	Mill Road W	350	292	3.2	383	347	1.9	293	234	3.6
Butlers Leap S	Butlers Leap N	237	227	0.7	298	263	2.1	206	224	1.2
Butlers Leap S	Mill Road W	151	181	2.3	250	237	0.8	177	147	2.4
Mill Road W	Butlers Leap N	225	172	3.8	196	165	2.3	220	175	3.2
Mill Road W	Butlers Leap S	72	124	5.3	133	136	0.3	141	104	3.3

Table 13: PM Turn Count Calibration - Technology Drive.

From	To	16:00 – 17:00			17:00 – 18:00			18:00 – 19:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 3										
A426 S	A426 N	1045	1015	0.9	1095	1196	3.0	970	1154	5.6
A426 S	Technology Drive	337	372	1.9	393	426	1.6	332	351	1.0
A426 N	A426 S	1079	1101	0.7	1186	1251	1.9	1039	1180	4.2
A426 N	Technology Drive	319	302	1.0	391	362	1.5	374	380	0.3
Technology Drive	A426 S	494	466	1.3	398	455	2.8	425	488	2.9
Technology Drive	A426 N	363	338	1.3	326	306	1.1	372	311	3.3
Junction 4										
Technology Drive N	Technology Drive N	12	70	9.1	32	73	5.7	17	61	7.0
Technology Drive N	Retail Park E	298	329	1.8	373	423	2.5	390	408	0.9
Technology Drive N	Technology Drive S	353	272	4.6	380	295	4.6	303	259	2.6
Retail Park E	Technology Drive N	281	327	2.6	302	320	1.0	367	391	1.2
Retail Park E	Technology Drive S	122	90	3.1	134	100	3.1	145	94	4.7
Technology Drive S	Technology Drive S	574	415	7.2	383	364	1.0	398	351	2.4
Technology Drive S	Retail Park E	117	100	1.6	134	124	0.9	137	95	3.9
Junction 9										
Technology Park E	Technology Drive N	76	94	2.0	85	88	0.3	58	80	2.6
Technology Park E	Technology Drive S	53	33	3.0	43	40	0.5	48	26	3.6
Technology Drive N	Technology Park E	93	79	1.5	92	85	0.7	67	74	0.8
Technology Drive N	Technology Drive S	363	282	4.5	388	309	4.2	343	279	3.6
Technology Drive S	Technology Park E	35	34	0.2	32	35	0.5	24	25	0.2
Technology Drive S	Technology Drive N	480	423	2.7	417	399	0.9	382	366	0.8
Junction 5										
Mill Road N	Mill Road S	263	203	3.9	330	236	5.6	265	213	3.4
Mill Road N	Technology Drive W	146	203	4.3	187	222	2.4	118	171	4.4
Mill Road S	Mill Road N	371	306	3.5	371	282	4.9	370	277	5.2
Mill Road S	Technology Drive W	203	156	3.5	216	170	3.3	264	165	6.8
Technology Drive W	Mill Road N	209	148	4.6	219	164	4.0	102	149	4.2
Technology Drive W	Mill Road S	197	125	5.7	223	141	6.1	174	127	3.8
Junction 6										
Butlers Leap N	Butlers Leap S	304	271	1.9	367	344	1.2	215	232	1.1
Butlers Leap N	Mill Road W	245	157	6.2	293	194	6.3	243	170	5.1
Butlers Leap S	Butlers Leap N	235	275	2.5	285	324	2.2	213	248	2.3
Butlers Leap S	Mill Road W	171	162	0.7	226	210	1.1	130	129	0.1
Mill Road W	Butlers Leap N	350	349	0.1	358	289	3.8	340	275	3.7
Mill Road W	Butlers Leap S	219	160	4.3	237	175	4.3	133	135	0.2

Table 14: AM Turn Count Calibration – A426 Corridor North.

From	To	07:00 – 08:00			08:00 – 09:00			09:00 – 10:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 1										
A426 N	Boughton Road E	363	307	3.1	319	330	0.6	217	220	0.2
A426 N	A426 S	1156	1145	0.3	1235	1314	2.2	965	1059	3.0
A426 N	Brownsover Road W	405	436	1.5	553	591	1.6	282	302	1.2
Boughton Road E	A426 N	286	280	0.4	273	210	4.1	176	170	0.5
Boughton Road E	A426 S	244	219	1.6	250	269	1.2	247	232	1.0
Boughton Road E	Brownsover Road W	105	68	4.0	198	186	0.9	102	101	0.1
A426 S	A426 N	868	795	2.5	842	951	3.6	723	743	0.7
A426 S	Boughton Road E	124	116	0.7	174	188	1.0	161	180	1.5
A426 S	A426 S	4	0	2.8	4	1	1.9	4	0	2.8
A426 S	Brownsover Road W	74	66	1.0	95	96	0.1	74	96	2.4
Brownsover Road W	A426 N	160	159	0.1	216	227	0.7	174	135	3.1
Brownsover Road W	Boughton Road E	56	31	3.8	138	108	2.7	60	54	0.8
Brownsover Road W	A426 S	34	29	0.9	64	40	3.3	67	55	1.5
Junction 2										
Retail Park Access N	A426 E	6	7	0.4	18	25	1.5	51	32	2.9
Retail Park Access N	Retail Park Access S	1	1	0.0	2	2	0.0	10	2	3.3
Retail Park Access N	A426 W	8	14	1.8	20	24	0.9	69	36	4.6
A426 E	Retail Park Access N	19	25	1.3	23	58	5.5	80	60	2.4
A426 E	A426 E	3	0	2.4	2	1	0.8	7	0	3.7
A426 E	Retail Park Access S	230	214	1.1	186	211	1.8	226	207	1.3
A426 E	A426 W	1188	1137	1.5	1339	1354	0.4	980	1085	3.3
Retail Park Access S	Retail Park Access N	4	2	1.2	4	2	1.2	17	2	4.9
Retail Park Access S	A426 E	150	140	0.8	150	128	1.9	157	135	1.8
Retail Park Access S	A426 W	141	133	0.7	125	129	0.4	153	156	0.2
A426 W	Retail Park Access N	15	26	2.4	49	51	0.3	149	59	8.8
A426 W	A426 E	917	845	2.4	972	1077	3.3	748	844	3.4
A426 W	Retail Park Access S	94	101	0.7	135	151	1.3	162	153	0.7
A426 W	A426 W	12	15	0.8	10	21	2.8	18	17	0.2

Table 15: AM Turn Count Calibration – A426 Corridor South.

From	To	07:00 – 08:00			08:00 – 09:00			09:00 – 10:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 7										
A426 N	A426 S	1293	1254	1.1	1417	1544	3.3	1183	1360	5.0
A426 S	A426 N	1244	1078	4.9	1445	1483	1.0	1148	1264	3.3
A426 S	Yates Avenue W	21	13	1.9	55	25	4.7	31	22	1.7
Yates Avenue W	A426 N	33	41	1.3	81	58	2.8	40	44	0.6
Junction 8										
A426 N	A426 N	33	15	3.7	64	27	5.5	52	25	4.4
A426 N	A426 E	680	739	2.2	739	881	5.0	683	852	6.1
A426 N	B4112 W	539	485	2.4	645	623	0.9	468	510	1.9
A426 E	A426 N	623	626	0.1	677	772	3.5	590	737	5.7
A426 E	B4112 W	142	110	2.9	250	185	4.4	124	127	0.3
B4112 W	A426 N	541	457	3.8	686	710	0.9	530	522	0.3
B4112 W	A426 E	229	183	3.2	410	325	4.4	230	181	3.4

Table 16: PM Turn Count Calibration – A426 Corridor North.

From	To	16:00 – 17:00			17:00 – 18:00			18:00 – 19:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 1										
A426 N	Boughton Road E	237	216	1.4	291	249	2.6	209	175	2.5
A426 N	A426 S	963	1025	2.0	1170	1231	1.8	985	1107	3.8
A426 N	Brownsover Road W	151	188	2.8	179	224	3.2	149	197	3.6
Boughton Road E	A426 N	317	286	1.8	269	241	1.8	293	190	6.6
Boughton Road E	A426 S	295	264	1.9	287	275	0.7	246	254	0.5
Boughton Road E	Brownsover Road W	77	90	1.4	109	118	0.8	70	106	3.8
A426 S	A426 N	1058	973	2.7	1027	1085	1.8	955	1044	2.8
A426 S	Boughton Road E	261	252	0.6	312	265	2.8	308	271	2.2
A426 S	A426 S	2	0	2.0	4	0	2.8	1	0	1.4
A426 S	Brownsover Road W	52	93	4.8	59	103	4.9	51	98	5.4
Brownsover Road W	A426 N	411	385	1.3	401	373	1.4	220	293	4.6
Brownsover Road W	Boughton Road E	135	201	5.1	169	179	0.8	103	134	2.8
Brownsover Road W	A426 S	97	96	0.1	114	94	2.0	86	77	1.0
Junction 2										
Retail Park Access N	A426 E	127	103	2.2	128	94	3.2	125	80	4.4
Retail Park Access N	Retail Park Access S	29	15	3.0	34	15	3.8	30	15	3.2
Retail Park Access N	A426 W	165	110	4.7	152	112	3.5	173	89	7.3
A426 E	Retail Park Access N	118	77	4.2	105	83	2.3	101	75	2.8
A426 E	A426 E	3	0	2.4	4	0	2.8	0	0	
A426 E	Retail Park Access S	220	173	3.4	268	216	3.3	214	191	1.6
A426 E	A426 W	1006	1116	3.4	1182	1295	3.2	999	1181	5.5
Retail Park Access S	Retail Park Access N	8	3	2.1	16	3	4.2	21	5	4.4
Retail Park Access S	A426 E	202	176	1.9	242	189	3.6	275	204	4.6
Retail Park Access S	A426 W	200	200	0.0	210	195	1.1	236	231	0.3
A426 W	Retail Park Access N	170	114	4.7	163	133	2.5	217	130	6.6
A426 W	A426 E	1029	1051	0.7	1027	1173	4.4	914	1130	6.8
A426 W	Retail Park Access S	185	146	3.0	213	184	2.1	212	188	1.7
A426 W	A426 W	16	23	1.6	30	23	1.4	13	19	1.5

Table 17: PM Turn Count Calibration – A426 Corridor South.

From	To	16:00 – 17:00			17:00 – 18:00			18:00 – 19:00		
		OBS	MOD	GEH	OBS	MOD	GEH	OBS	MOD	GEH
Junction 7										
A426 N	A426 S	1656	1548	2.7	1682	1723	1.0	1489	1665	4.4
A426 S	A426 N	1336	1313	0.6	1374	1548	4.6	1312	1416	2.8
A426 S	Yates Avenue W	40	20	3.7	28	15	2.8	13	13	0.0
Yates Avenue W	A426 N	66	60	0.8	48	71	3.0	35	61	3.8
Junction 8										
A426 N	A426 N	49	33	2.5	34	27	1.3	37	18	3.6
A426 N	A426 E	757	785	1.0	757	894	4.8	778	932	5.3
A426 N	B4112 W	775	728	1.7	784	798	0.5	667	712	1.7
A426 E	A426 N	678	688	0.4	668	766	3.7	674	822	5.4
A426 E	B4112 W	238	157	5.8	242	169	5.1	165	133	2.6
B4112 W	A426 N	619	622	0.1	675	766	3.4	553	588	1.5
B4112 W	A426 E	235	167	4.8	266	199	4.4	197	145	4.0

Appendix B

Scheme Option Drawings

A4071 Newbold Rd Towards Western Relief Road

Enlarged Roundabout

A426 Leicester Rd Towards M6

Proposed Toucan Crossing

Proposed Footbridge

Culvert Channel

Proposed Bridge

Existing Highway Boundary

D3060 Hunters Lane

Proposed Shared Footway/Cycleway

Proposed Roundabout

A426 Newbold Rd Towards Town Centre

Rumble Bars & Warning Signage On Approach

Hunters Lane Industrial Estate

KEY

- Carriageway
- Footway
- Footway/Cycleway
- Water
- Fence/Safety Barrier
- Verge
- Landscaping/ Low Level Planting
- Embankment
- Hard Standing
- Large Trees To Remain

NOTES

REV	DRN	AMENDMENT	DATE
J	RJP	Road Safety Improvements	04/05/17
H	RJP	Issued for Report	29/03/17
G	RJP	New Car Park layout & Culvert	29/11/16
F	RJP	Realigned Cycleway	12/10/16
E	RJP	New Toucan Crossing Design	12/08/16
D	RJP	New Scheme Design	10/08/16
C	RJP	Improved road markings	08/03/16
B	RJP	Added road names	29/02/16
A	RJP	Added highway boundary	26/01/16

Warwickshire County Council
TRANSPORT AND ECONOMY

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FS 26655

9.2-333--010-0007J.pdf

PROJECT
A426/A4071 Avon Mill and Hunters Lane Improvement Scheme

TITLE
Scheme Layout
(Option B - South Alignment)
Purpose of Drawing: Feasibility

Drn	RJP	Ckd	RJP	App'd	AC
Date	15-01-16	Date	04-05-17	Date	04-05-17

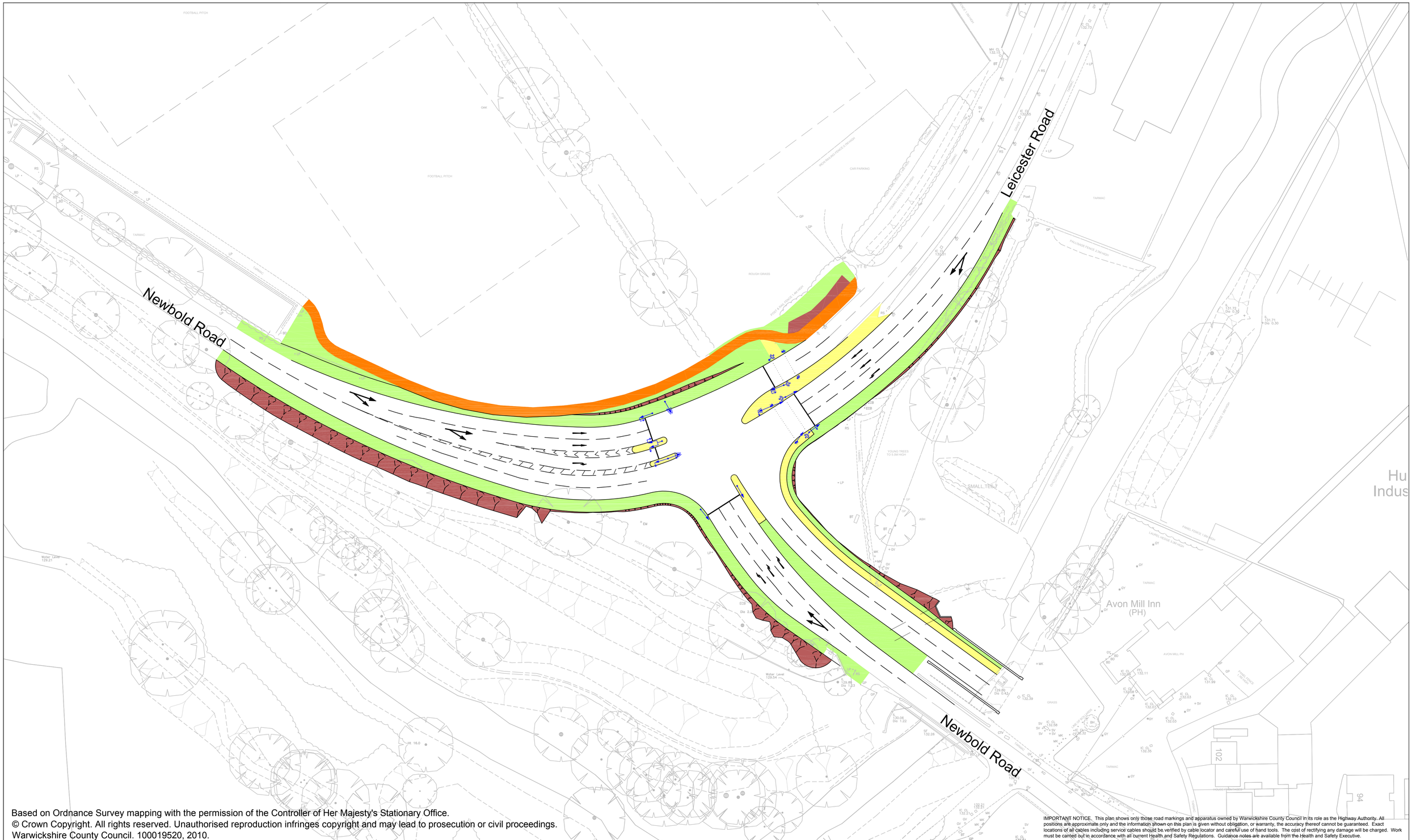
Status: Approved (Level 2)

Scale: 1:500 Sheet size: A1

DRG. NO. 9.2-333--010-0007 Rev. J

0mm 50mm 100mm 150mm 200mm

This plot was produced from a digital source so may not be at true scale. It is the recipient's responsibility to confirm its accuracy.



IMPORTANT NOTICE. This plan shows only those road markings and apparatus owned by Warwickshire County Council in its role as the Highway Authority. All positions are approximate only and the information shown on this plan is given without obligation, or warranty, the accuracy thereof cannot be guaranteed. Exact locations of all cables including service cables should be verified by cable locator and careful use of hand tools. The cost of rectifying any damage will be charged. Work must be carried out in accordance with all current Health and Safety Regulations. Guidance notes are available from the Health and Safety Executive.

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ENVIRONMENT AND
ECONOMY DIRECTORATE

Paul Galland MBA, DMS, DTS, FTSI
Strategic Director

Graeme Fitton BSc, MSc, CEng, MICE
Head of Transport for Warwickshire

NOTES

Rev	Date	By	Ch'k	Ap'd	Amendment

TITLE
PROPOSED TRAFFIC SIGNALS
PRELIMINARY LAYOUT
A426 LEICESTER ROAD /
NEWBOLD ROAD
RUGBY
(AVON MILL ROUNDABOUT)

DRN	CK'D	AP'D
FH	GHD	GHD

DATE May 2011

SCALE 1:500 at A1

DRG. NO. TCIS / 020 / 01 / A1

0mm 50mm 100mm 150mm 200mm This plot was produced from a digital source so may not be at true scale. It is the recipient's responsibility to confirm its accuracy.

H:\Traffic\SIGNALS\Projects 2011 & 12\Avon Mill Roundabout\Leicester Rd - Newbold Rd\DWG\TCIS 020 01 A1 (prelim).dwg, 25/05/2011 10:03:59

Appendix C. Junction Throughput (Vectos)

vectos microsim.

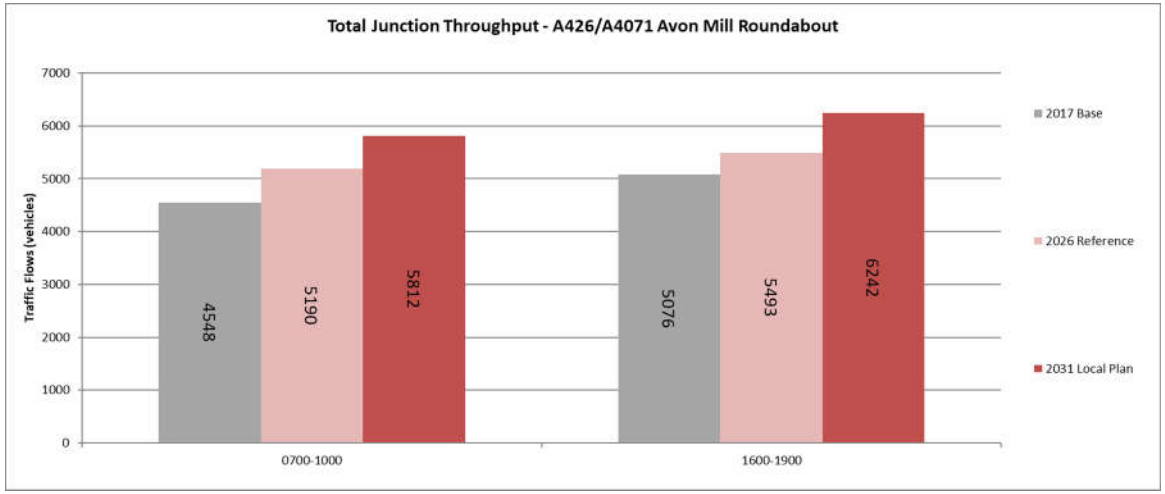
Job Title:	Avon Mill Business Case
Job Number:	VM205259
Model Name:	Rugby Wide Area Model
Model Year:	2026/2031
Date:	September 2022

Scenarios:

Scenario 1	2017 Base Location
Scenario 2	2026 Reference + Roundabout Scheme
Scenario 3	2031 Local Plan

Avon Mill Roundabout Throughput (vehicle flows)

	AM	PM
2017 Base	4548	5076
2026 Reference	5190	5493
2031 Local Plan	5812	6242



Appendix D. Long List Sifting

Avon Mill - Option Sifting

Version Control

Version	Date	Description of changes	Author
0.1	4 July 2022	First draft	Elizabeth Hardcastle

Strategic Alignment	Ranking Options				
Objective					
Active Travel					
Promote active travel opportunities in the local area by upgrading facilities for both pedestrians and cyclists	2	1	0	-1	-2
Network Management					
Improve road safety for all users	2	1	0	-1	-2
Improve network resilience in the area	2	1	0	-1	-2
Public Transport					
Improve public transport journey times	2	1	0	-1	-2
Environment					
To support local climate emergencies and Net-Zero targets	2	1	0	-1	-2
Strategic Growth					
Manage future corridor demands and facilitate key growth sites	2	1	0	-1	-2
Other Criteria					
Delivery Cost	<£1m	£1-3m	£3-5m	£5-10m	>£10m
Stakeholder Acceptability	2	1	0	-1	-2

Key

Score	Rating	Description
2	Strongly Positive	Strong support of scheme objectives
1	Positive	Support of scheme objectives
0	Neutral	Neither supports nor opposes scheme objective
-1	Adverse	Opposes Scheme objective
-2	Strongly adverse	Strongly opposes scheme objective

Long List of Options

Option No	Option Name
O_0	Do Nothing
O_1A	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_1B	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_1C	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_2A	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_2B	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_2C	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge
O_3	Capacity improvements on the approach to Avon Mill but no bridge crossing
O_4	Downgrade A426, and reassign use to Lawford Road
O_5	Grade separated junction at Avon Mill roundabout
O_6	Provide a second tunnel at the railway crossing on A426 Newbold Road
O_7	Additional bridge over the River Avon for active travel only
O_8	Additional bridge over the River Avon for public transport only
O_9	Bus priority focussed scheme
O_10	Park and Ride

Ref	Option name	Active Travel			Network Management				
		Promote active travel opportunities in the local area by upgrading facilities for both pedestrians and cyclists	Comments	TOTAL	Improve road safety for all users	Comments	Improve network resilience in the local area	Comments	TOTAL
O_0	Do Nothing	-2	Existing congestion remains, does not accommodate sustainable travel	-2	-2	No improvement proposed.	-2	No improvement proposed.	-2
O_1A	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	-1	Stakeholder concerns highlighted safety issues associated with the elliptical roundabout at Hunters Lane/Newbold Road	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	1
O_1B	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	2	Improvements to traffic flow, which could reduce risk of accidents. Segregation of pedestrians and cyclists from traffic through new cycle bridge	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	2
O_1C	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	-1	Stakeholder concerns highlighted safety issues associated with the signal junction at Hunters Lane/Newbold Road	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	1
O_2A	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	-1	Stakeholder concerns highlighted safety issues associated with the elliptical roundabout at Hunters Lane/Newbold Road	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	1
O_2B	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	2	Improvements to traffic flow, which could reduce risk of accidents. Segregation of pedestrians and cyclists from traffic through new cycle bridge	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	2
O_2C	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	2	Promotes active travel by upgrading facilities by implementing a footway/cycleway bridge	2	-1	Stakeholder concerns highlighted safety issues associated with the signal junction at Hunters Lane/Newbold Road	2	Additional bridge provides an extra point of crossing in the town reduing risk of severance in the event of an accident	1
O_3	Capacity improvements on the approach to Avon Mill but no bridge crossing	0	No additional pedestrian/cycle infrastructure	0	1	Improvements to traffic flow, which could reduce risk of accidents.	0	Improve traffic flow help to improve resillience. Still only one river crossing at this location.	1
O_4	Downgrade A426, and reassign use to Lawford Road	1	Reduced traffic on A426 - Improves pedestrian and cycling environment	1	0	Improved traffic flow, which could reduce risk of accidents. Lawford Road could see additional safety concerns due to increased traffic.	-1	Lawford Road could see additional traffic and may not be equipped to deal with this.	-1
O_5	Grade separated junction at Avon Mill roundabout	-2	Segregation of movements through significant infrastructure will make cycling and pedestrians less attractive	-2	0	Improved traffic flow, which could reduce risk of accidents. Increased traffic conflict.	0	Improve traffic flow help to improve resillience. Still only one river crossing at this location.	0
O_6	Provide a second tunnel at the railway crossing on A426 Newbold Road	0	No additional pedestrian/cycle infrastructure	0	0	Unlikely to have a road safety benefit	1	Provides another point of crossing the railway line	1
O_7	Additional bridge over the River Avon for active travel only	2	Assumed improved facilities for both pedestrian and cyclists as part of final scheme design.	2	1	Improved active travel facilities to increase segregation from traffic	0	Additional bridge provides an extra corssing point but for active trave only. Does not increase resilience of highway network.	1
O_8	Additional bridge over the River Avon for public transport only	0	No additional pedestrian/cycle infrastructure	0	0	Unlikely to have a road safety benefit	1	Additional bridge provides an extra corssing point but for public transport only. Does not reduce the risk of severance for private vehicles.	1
O_9	Bus priority focussed scheme	0	No additional pedestrian/cycle infrastructure	0	0	Unlikely to have a road safety benefit	0	Improved flow of public transport. Still only one river crossing at this location	0
O_10	Park and Ride	0	No additional pedestrian/cycle infrastructure	0	0	Unlikely to have a road safety benefit	0	Reduced vehicles on the road but singular crossing point remains.	0

Strategic Alignment										
Public Transport			Environment			Strategic Growth				
Improve public transport journey times	Comments	TOTAL	Support local climate emergencies and Net-Zero targets	Comments	TOTAL	Manage future corridor demands and facilitate key growth sites	Comments	TOTAL	Strategic Scoring	Cost acceptability (0=No, 1=Yes)
-2	No improvement proposed.	-2	-2	Existing congestion remains, does not accommodate sustainable travel	-2	-2	No improvement proposed.	-2	-2	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	1	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	2	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	1	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	1	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	2	1
1	Improvements to highway will improve public transport journey times	1	1	Vehicular useage remians the same. Small reductions in emmisions due to less congestion. Improved walking aand cycling facilities may make these modes more accessible and result in a change in mode share away from the private vehicle	1	2	Increased highway capacity accmodates future growth. Improvements to pedestrian and cycle facilities may also lead to increased uptake of active travel modes in the future.	2	1	1
1	Improvements to highway will improve public transport journey times	1	0	Vehicular useage remians the same. Small reductions in emmisions due to less congestion	0	1	Increased highway capacity accmodates future growth and facilitates sustainable access to growth sites	1	1	1
0	Improved traffic flow which may improv e public transport journey times. Lawford Road may struggle with the increased traffic and public transport.	0	-1	Vehicular usage will remain the same. May be increases in congestion due to downgrade.	-1	0	No increase in highway capacity	0	0	1
0	Improved traffic flow which may improve public transport journey times	0	0	Vehicular useage remians the same. Small reductions in emmisions due to less congestion	0	1	Increased highway capacity accmodates future growth and facilitates sustainable access to growth sites	1	0	0
0	Improved traffic flow which may improve public transport journey times	0	0	Vehicular useage remians the same. Small reductions in emmisions due to less congestion	0	1	Increased highway capacity accmodates future growth and facilitates sustainable access to growth sites	1	0	0
0	No increase in capacity for vehicles. Journey times for PT will not change much	0	2	Improved active travel facilities may increase the likelihood of more journeys being made by walking and cycling	2	1	Facilitate sustainable access (by cycling) to growth sites	1	1	1
2	Priority to buses improve public transport journey times.	2	2	Improved public transport facilities may reduce public transport journey times and increase mode share which will help to meet climate targets	2	1	Facilitate sustainable access (by bus) to growth sites	1	1	1
2	Priority to buses improve public transport journey times.	2	2	Improved public transport facilities, through a new bridge may reduce public transport journey times and increase mode share which will help to meet climate targets	2	1	Facilitate sustainable access (by bus) to growth sites	1	1	1
1	Reduction in vehicle traffic will increase bus reliability	1	2	Park and ride may lead to a reassignment of traffic away from Rugby town centre. This may result in improvements to air quality in the area.	2	0	Encouraging park and ride will reduce demands on the corridor to help flows in the future	0	1	1

			Shortlisting	
Comments	Stakeholder Acceptability	Comments	To be included in the Shortlist? 0= No, 1 = Yes	Justification
No cost as no intervention proposed.	-1	No intervention unlikely to be acceptable.	0	Not considered further. Intervention is required to ensure improved network resillience along corridor.
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	0	Not considered further due to stakeholder concerns about road safety
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	1	Work has already been undertaken on this option. This option will help to accommodate Local Plan growth and future proof the Avon Mill roundabout for increased demand in the future.
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	0	Not considered further due to stakeholder concerns about road safety
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	0	Not considered further due to stakeholder concerns about road safety
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	1	Work has already been undertaken on this option. This option will help to accommodate Local Plan growth and future proof the Avon Mill roundabout for increased demand in the future.
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	0	Not considered further due to stakeholder concerns about road safety
Relatively modest intervention proposed.	1	Relatively minor, no issue expected with gaining support.	0	Not considered further. Intervention is required to ensure improved network resillience along corridor.
Relatively modest intervention proposed.	-1	Stakeholders unlikely to support major downgrade	0	Not considered further. Intervention is required to ensure improved network resillience along corridor.
Costly intervention	-1	Stakeholders unlikely to support this due to the costs involved and the disruption it may lead to	0	Not considered further. Intervention is required to ensure improved network resillience along corridor.
Cost would be unacceptable. Too much work involved.	-1	Stakeholders unlikely to support this due to the disruption building a new tunnel would cause to the rail network and road network	0	Not considered further. This intervention would be too costly and the level of disruption to the network would not gain stakeholder support.
Relatively modest intervention proposed.	1	Supported by those stakeholders with active travel interest	0	Not considered further, intervention is required to ensure netowrk resilience along the corridor.
Relatively modest intervention proposed.	1	Supported by those stakeholders with public transport interest.	0	Not considered further. Intervention is required to ensure improved network resillience along corridor. Bus use in the area is low and few bus routes pass through the site
Relatively modest intervention proposed.	1	Supported by those stakeholders with public transport interest.	0	Not considered further. Intervention is required to ensure improved network resillience along corridor. Bus use in the area is low and few bus routes pass through the site
Relatively modest intervention proposed.	1	Supported by those stakeholders with public transport interest.	0	Not considered further. Intervention is required to ensure improved network resillience along corridor.

Shortlist Summary

Option	Description	Comment	Shortlist
O_0	Do Nothing	Not considered further. Intervention is required to ensure improved network resillience along corridor.	Not Included
O_1A	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Not considered further due to stakeholder concerns about road safety	Not Included
O_1B	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Work has already been undertaken on this option. This option will help to accommodate Local Plan growth and future proof the Avon Mill roundabout for increased demand in the future.	Included
O_1C	Additional bridge for all vehicle movements + Avon Mills enlarged roundabout + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Not considered further due to stakeholder concerns about road safety	Not Included
O_2A	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Elliptical roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Not considered further due to stakeholder concerns about road safety	Not Included
O_2B	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Oval roundabout at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Work has already been undertaken on this option. This option will help to accommodate Local Plan growth and future proof the Avon Mill roundabout for increased demand in the future.	Included
O_2C	Additional bridge for all vehicle movements + Avon Mills Signal Junction + Signal junction at Newbold Road/Hunters Lane + proposed footway/cycleway bridge	Not considered further due to stakeholder concerns about road safety	Not Included
O_3	Capacity improvements on the approach to Avon Mill but no bridge crossing	Not considered further. Intervention is required to ensure improved network resillience along corridor.	Not Included
O_4	Downgrade A426, and reassign use to Lawford Road	Not considered further. Intervention is required to ensure improved network resillience along corridor.	Not Included
O_5	Grade separated junction at Avon Mill roundabout	Not considered further. Intervention is required to ensure improved network resillience along corridor.	Not Included
O_6	Provide a second tunnel at the railway crossing on A426 Newbold Road	Not considered further. This intervention would be too costly and the level of disruption to the network would not gain stakeholder support.	Not Included
O_7	Additional bridge over the River Avon for active travel only	Not considered further, intervention is required to ensure netowrk resilience along the corridor.	Not Included
O_8	Additional bridge over the River Avon for public transport only	Not considered further. Intervention is required to ensure improved network resillience along corridor. Bus use in the area is low and few bus routes pass through the site	Not Included
O_9	Bus priority focussed scheme	Not considered further. Intervention is required to ensure improved network resillience along corridor. Bus use in the area is low and few bus routes pass through the site	Not Included
O_10	Park and Ride	Not considered further. Intervention is required to ensure improved network resillience along corridor.	Not Included

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