

Bassetlaw Local Plan

2021 Transport Study Update

Bassetlaw District Council
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1 EXECUTIVE SUMMARY

1.1 BACKGROUND

- 1.1.1 This strategic transport study identifies the cumulative multi-modal transport implications of future housing and employment Local Plan development within the district to advise strategic transport infrastructure requirements.
- 1.1.2 This report is an update to an earlier study produced in 2019 and reflects the latest development proposals coming forwards through the new Local Plan 2021. This Strategic Assessment Update has been prepared as part of the evidence base in support of the new Local Plan, in accordance with the National Planning Policy Framework (NPPF) which requires local planning authorities to use a proportionate evidence base to support their Local Plan production to help achieve sustainable development.

1.2 EXISTING CONDITIONS

- 1.2.1 Existing transport conditions within the district have been identified which involved a review of existing walking, cycling, bus, rail and road transport. Traffic flow data has been obtained for all 'A' and 'B' Classification roads in the district and this has been analysed and 'factored' to a common 2019 base year.
- 1.2.2 The performance of the road network within the district has been assessed based on link capacity. Congestion Reference Flow (CRF) values have been used as a simple indication of the performance of links within the study area. The assessment identifies link stress levels where stress is defined as the ratio of forecast daily traffic flows against theoretical link capacity expressed as a percentage.

1.3 PROPOSED LOCAL PLAN DEVELOPMENT

- 1.3.1 Residential and employment 2021 Local Plan development details have been provided by the District Council, together with details of potential development sites that could accommodate this Local Plan development.

1.4 TRANSPORT IMPACTS

- 1.4.1 Several highway links have been identified to be susceptible to stress in the future year scenario and may require intervention to support delivery of Local Plan development.
- 1.4.2 An assessment of junctions located on these highways links has also been undertaken and possible junction mitigation measures identified where operational impacts are forecast. Whilst

any mitigation at this stage can be treated only as indicative, outline sketches and cost estimates have been prepared in support of the interventions identified.

1.5 STRATEGIC INFRASTRUCTURE REQUIREMENTS

- 1.5.1 Possible highway infrastructure improvements have been identified in a preliminary form, together with indicative costs. Strategic transport improvements have been described in outline only at this stage and more detailed assessments will be required to identify definitive improvement proposals and delivery priorities. Estimates of scheme costs have been provided and give an approximate 'order of cost' only. Therefore, no reliance in terms of preferred scheme selection should be placed on the cost estimates presented in this report.
- 1.5.2 This study has identified cumulative traffic impacts on the existing highway network due to future Local Plan development planned within the district. The strategic transport improvements that have been identified are aimed at addressing these cumulative impacts. It is beyond the scope of this study to identify all locations where transport infrastructure improvements will be required, and individual development sites may trigger the need for further transport infrastructure/service improvements depending on their nature, size and location.
- 1.5.3 There will be other rural and urban locations within the district where material traffic impacts will occur that have not been specifically examined by this study, particularly within the urban areas of Worksop and Retford. It therefore should not be assumed that the absence of any reference in this study implies that the existing highway network can satisfactorily accommodate future development.
- 1.5.4 Detailed Transport Assessments and Travel Plans will be required in support of planning applications for all major developments, and these should identify site access arrangements, on-site transport infrastructure requirements and off-site transport measures/infrastructure to mitigate their respective transport impacts.
- 1.5.5 Nottinghamshire County Council has confirmed that developers will be required to fund and deliver all new/improved transport infrastructure required to mitigate the impacts of new development on a 'nil detriment' basis. Highway capacity improvements will be secured by planning condition and delivered by developers through Section 278 Agreements.
- 1.5.6 Developers will also be required to fund any travel plan measures/initiatives (including marketing and promotion) required to help mitigate the transport impacts of developments. These measures and improvements will be secured via Section 106 Agreements for developer funding and delivery.
- 1.5.7 In areas of the district where CIL charges apply developers will also be required to contribute towards CIL.

2 INTRODUCTION

2.1 CONTEXT TO THE STUDY AND OBJECTIVES

- 2.1.1 Bassetlaw District Council has commissioned WYG (now Tetra Tech Ltd) to update the district wide transport study last updated in 2019 to reflect the latest development proposals coming forwards through the emerging new Local Plan 2021. This Strategic Assessment Update has been prepared as part of the evidence base in support of the new Local Plan, in accordance with the National Planning Policy Framework (NPPF) which requires local planning authorities to use a proportionate evidence base to support their Local Plan production to help achieve sustainable development.
- 2.1.2 The outputs from the study will form part of the evidence base to support the emerging Local Plan for the district. Its primary objectives are to ensure that transport infrastructure does not constrain the plans development by identifying appropriate new key transport infrastructure, funding and delivery programme at the Plan outset.
- 2.1.3 This strategic assessment update is the first stage of the Transport Assessment process and it will be necessary for more detailed analysis to be undertaken as individual development sites are progressed. This will include more detailed assessments of the transport implications of all development sites, undertaken either as studies to guide the preparation of Development Plan Documents, or as part of the evidence submitted in support of planning applications.
- 2.1.4 The context for Local Plan development within the district is set out in the 2019 Strategic Housing Market Assessment Update for the North Derbyshire and Bassetlaw Housing Market Area (HMA).
- 2.1.5 The latest demographic projections produced by the Office of National Statistics predict that Bassetlaw's resident population will grow by around 6,800 people over the period 2014-2039. This will be accompanied by significant changes in the age profile of the population, particularly a decline in the population of working age, and an increase in the numbers of residents over 65.
- 2.1.6 This Transport Assessment Update will inform and underpin many of the strategic decisions which will be taken in formulating the Local Plan and provide an on-going reference, in realising sensitive, beneficial and sustainable Local Plan development.

3 REPORT STRUCTURE

3.1 STRUCTURE OF THE STUDY REPORT

3.1.1 The structure and content of the remainder of this report is summarised as follows.

3.2 BASELINE ASSESSMENT

3.2.1 This section comprises an overview of the study area, identification of existing transport conditions during 2019¹, travel patterns and existing transport services and infrastructure for the following transport categories:

- Walking
- Cycling
- Bus
- Passenger Rail
- Highways & Car Parking
- Freight

3.2.2 These categories are applied consistently throughout the subsequent sections of the report.

3.3 COMMITTED SCHEMES/DEVELOPMENTS

3.3.1 This section comprises the identification of committed transport schemes and land-use developments that will result in material changes to existing transport conditions within the district and identification of their likely transport effects.

3.4 LOCAL PLAN DEVELOPMENT

3.4.1 This section identifies the proposed Local Plan development site locations, presents an audit of their relative sustainability in transport terms, and identifies modal splits and estimates trip generation and distribution onto existing transport networks.

3.5 IMPACTS OF LOCAL PLAN DEVELOPMENT

3.5.1 This section comprises the identification of likely impacts on existing transport networks due to the proposed Local Plan development.

3.6 TRANSPORT INFRASTRUCTURE REQUIREMENTS

3.6.1 This section identifies potential infrastructure improvements required to facilitate Local Plan development and/or mitigate transportation impacts on existing networks. Potential strategic infrastructure improvements are identified in a preliminary format and these will be subject to

¹ Last complete year before COVID 19 Pandemic impacts.

detailed assessment and design as and when development proposals are brought forward. Preliminary construction costs have been estimated and comments provided on scheme deliverability and priorities.

3.7 SUMMARY AND CONCLUSIONS

- 3.7.1 The final section summarises the findings of the study and presents recommendations.

3.8 FIGURES AND APPENDICES

- 3.8.1 The Figures referred to in the text are presented towards the end of the report. Appendices are attached after the Figures at the end of the report.

4 BASELINE ASSESSMENT

4.1 INTRODUCTION

- 4.1.1 This baseline assessment has been prepared using information obtained from a variety of existing published documents which are summarised in the data sources summary box below. For ease of reference, data sources are highlighted throughout this report at the beginning of each section.

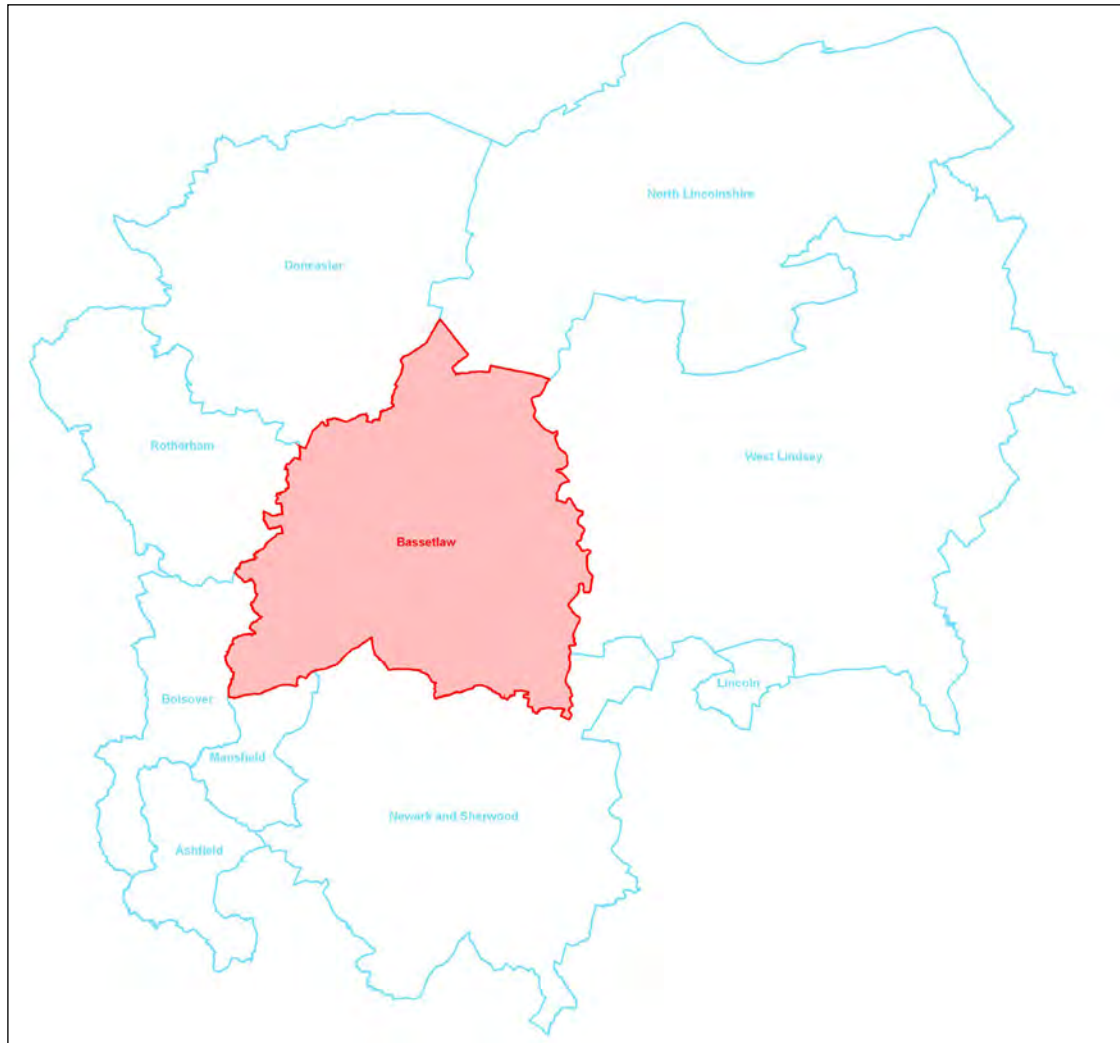
4.2 DATA SOURCES

- Bassetlaw Plan Initial Draft 2021
- Office for National Statistics (ONS) – 2011 Census Data
- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Nottinghamshire County Council Collision Data (Provisional - 2016 – 2020 inclusive)
- Route and timetable information available from Traveline

4.3 STUDY AREA

- 4.3.1 The study area is shown in **Figure 1** and on the image on the next page and comprises the administrative boundary of Bassetlaw District Council. Bassetlaw is the northernmost district in Nottinghamshire, covering 30% of the County. Lincolnshire adjoins the district to the east (West Lindsey District), North Lincolnshire (Unitary Authority) to the north east, Doncaster (Unitary Authority) to the north west, Rotherham (Unitary Authority) to the west, Derbyshire to the south west (Bolsover District) and the Nottinghamshire Districts of Mansfield and Newark and Sherwood to the south.

Figure 1 - Bassetlaw District and Adjacent Authorities



- 4.3.2 The district is predominantly rural in nature with most areas open countryside in agricultural use. There is a dispersed pattern of settlement. The western part of the district is dominated by the market town of Worksop which is the largest town in the district. Retford, the second largest town is in the centre of the district. The town centers of Worksop and Retford contain the greatest concentrations of retail, commercial and business activities in Bassetlaw.

4.4 TRAVEL PATTERNS

- 4.4.1 Census 2011 data obtained from the Nomis website confirms that the percentages of the total district population travelling to work by different modes of transport are as summarised in **Table 1** and **Chart 1** on the next page. This data represents all journeys to work by usual residents aged 16 to 74. Percentages for Nottinghamshire and England are also provided as a comparison.

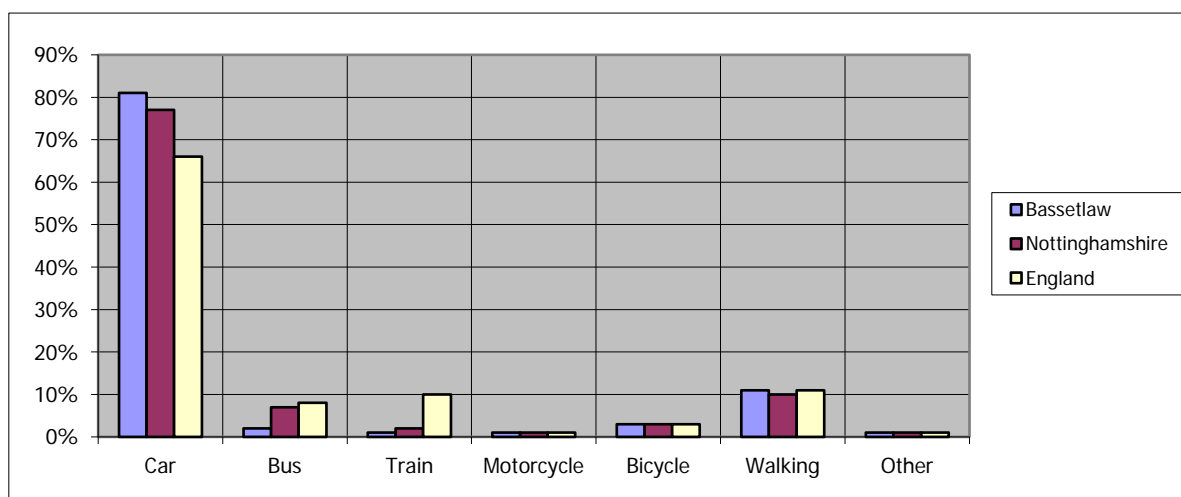
Table 1 – 2011 Census: Mode of Travel to Work (Usual Residents)

Mode of Travel	Bassetlaw	Nottinghamshire	England
Car	81%	77%	66%
Bus	2%	7%	8%
Train	1%	2%	10%
Motorcycle	1%	1%	1%
Bicycle	3%	3%	3%
Walking	11%	10%	11%
Other	1%	1%	1%
Totals	100%	100%	100%

Notes:

1. Car includes car/van drivers, car/van passengers, and taxis
2. Bus includes bus, coach or minibus
3. Train includes train, metro, light rail, tram and underground
4. Motorcycle includes motorcycle, scooter or moped
5. Figures exclude work from home and not working

Chart 1 - 2011 Census: Mode of Travel to Work (Usual Residents)



4.4.2 The predominant mode of travel to work in Bassetlaw is the car and relative levels of car use within the district are higher than for both Nottinghamshire and England. Train and motorcycle use within Bassetlaw is low, but not dissimilar to Nottinghamshire. Bus use within Bassetlaw is lower than for Nottinghamshire and England. Walking and cycling within the district is equivalent to both the county and England.

4.4.3 The data reflects the rural nature of most of Bassetlaw and the relatively sparse public transport provision in rural areas. For many residents, the car is the only feasible mode of transport.

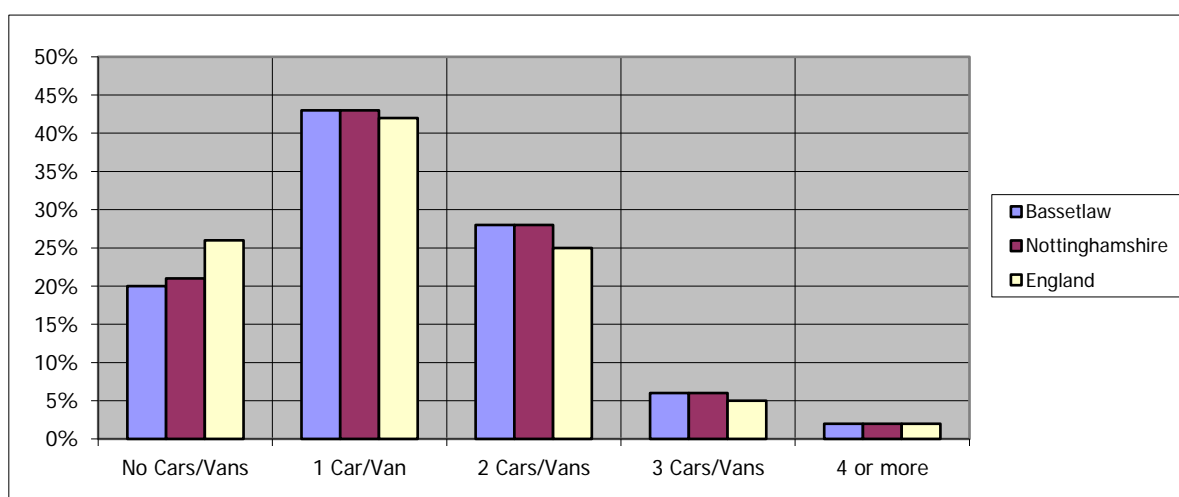
4.5 VEHICLE AVAILABILITY

4.5.1 Car and van availability is summarised in **Table 2** and **Chart 2** below. This shows the percentage of households with access to a car/van. Data is presented for Bassetlaw district, Nottinghamshire, and England.

Table 2 – 2011 Census: Percentage of Households with Cars/Vans Available

	Bassetlaw	Nottinghamshire	England
No cars or vans in household	20%	21%	26%
1 car or van in household	43%	43%	42%
2 cars or vans in household	28%	28%	25%
3 cars or vans in household	6%	6%	5%
4 or more cars or vans in household	2%	2%	2%
Totals	100%	100%	100%

Chart 2 - 2011 Census: Percentage of Households with Cars/Vans Available



4.5.2 With reference to **Table 2** and **Chart 2**, Bassetlaw has a similar percentage of households with access to a vehicle as the wider Nottinghamshire area, with only 20% of households within the district having no access to a vehicle. By comparison, nationally, 26% of households don't have access to a vehicle.

4.5.3 The number of cars/vans available per household is slightly higher than nationally, with the average number of vehicles per household being 1.28 in Bassetlaw, 1.25 in Nottinghamshire and 1.16 nationally.

4.6 JOURNEYS TO WORK

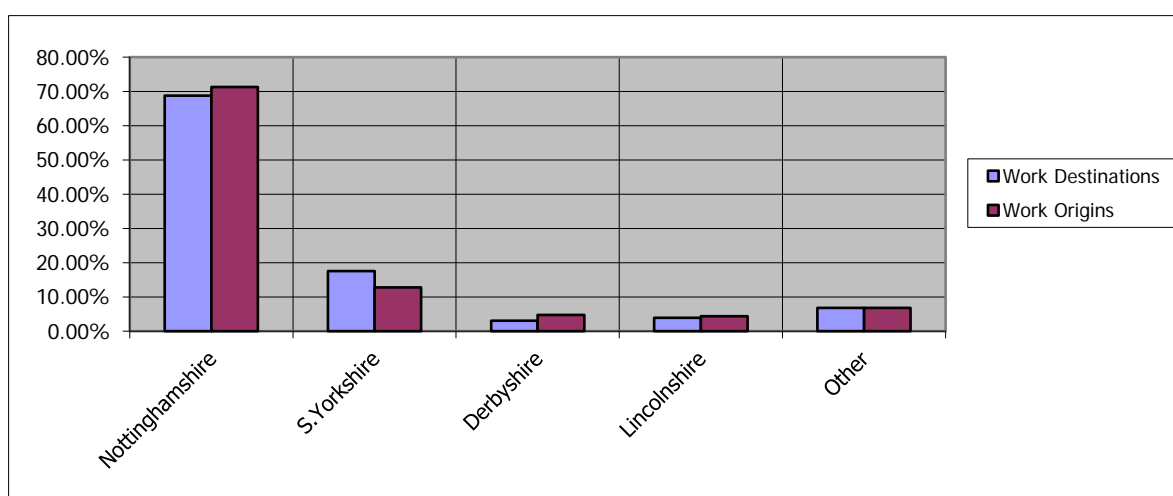
4.6.1 The usual places of work for Bassetlaw residents ages 16 and over (in employment at the time of the 2011 Census) is summarised in **Table 3** and **Chart 3** on the next page (% Destinations). This shows that a large proportion of residents work within the district (61%), or work within

neighboring authority areas close to Bassetlaw. **Table 3** also shows that the reverse situation is similar for people travelling into the district to work.

Table 3 – 2011 Census: Work Destinations and Work Origins (all modes)

Work Destinations	Work Destinations for Bassetlaw Residents	Origins of Employees working in Bassetlaw
Bassetlaw	61.42%	62.52%
Doncaster	7.65%	5.17%
Sheffield	4.18%	2.07%
Rotherham	4.05%	5.04%
Newark and Sherwood	3.39%	4.00%
Bolsover	2.30%	3.87%
West Lindsey	1.92%	2.49%
Mansfield	1.40%	2.55%
Leeds	1.17%	0.23%
Nottingham	1.06%	0.44%
North Lincolnshire	1.01%	1.01%
Ashfield	0.95%	1.05%
Lincoln	0.94%	0.90%
Chesterfield	0.75%	0.84%
Gedling	0.52%	0.75%
Wakefield	0.52%	0.26%
Other	6.77%	6.81%
Total	100.00%	100.00%

Chart 3 - 2011 Census: Work Destinations and Work Origins by County (all modes)



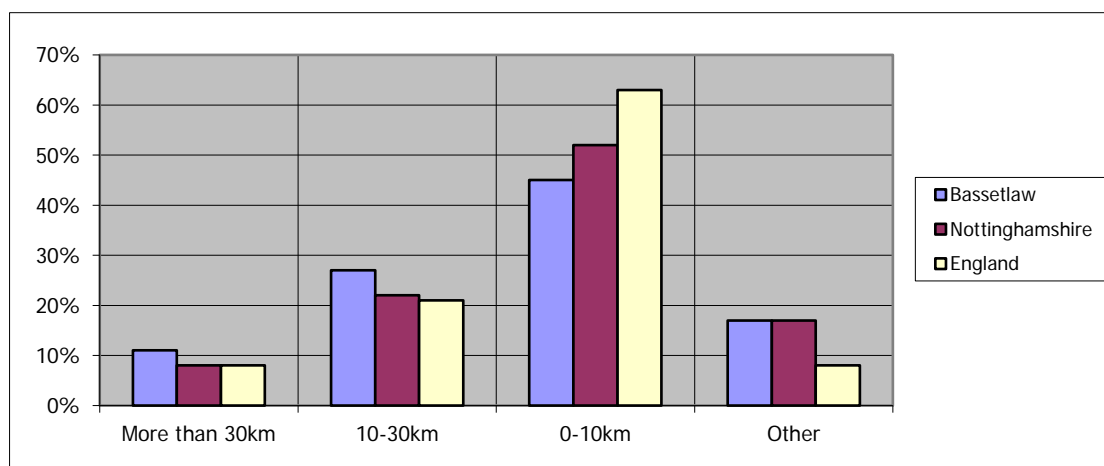
4.6.2 Distances travelled to work for residents of Bassetlaw are summarised in **Table 4** and **Chart 4** below. This shows that Bassetlaw residents travel comparatively further to work, with 11% of Bassetlaw journeys to work being more than 30km, compared with 8% in Nottinghamshire, and 8% nationally. This reflects the rural nature of the district with a dispersed pattern of small settlements and villages, and the lack of self-containment of the labour market within Bassetlaw, evident in Table 3.

Table 4 – 2011 Census: Distance Travelled to Work (all modes)

	Bassetlaw	Nottinghamshire	England
More than 30km	11%	8%	8%
10-30km	27%	22%	21%
0-10km	45%	52%	63%
Other	17%	17%	8%
Totals	100%	100%	100%

Note: the 0-10km category includes work from home

Chart 4 - 2011 Census: Distance Travelled to Work (all modes)



4.7 ROAD SAFETY

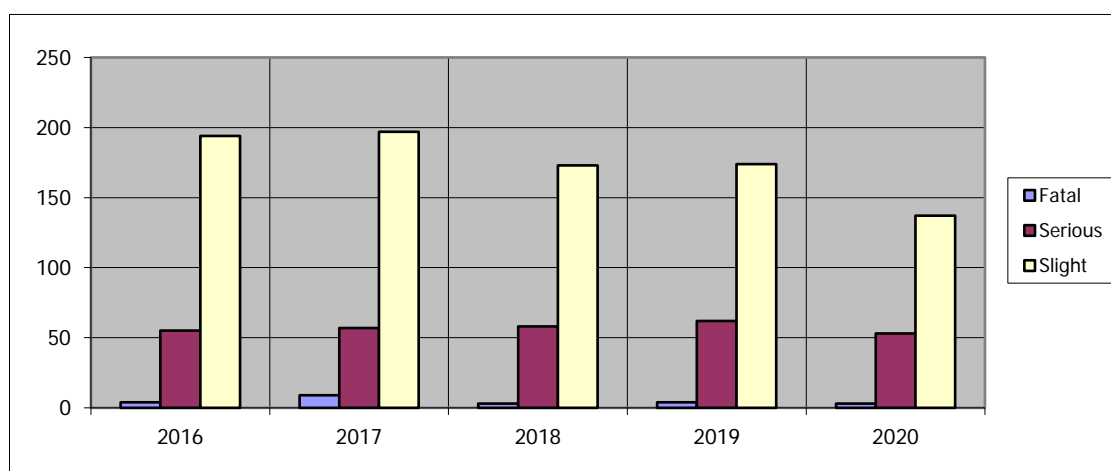
4.7.1 Provisional² Personal Injury Collision (PIC) data has been obtained from Nottinghamshire County Council for the most recently available five-year period between 1st January 2016 and 31st December 2020. The Study Area comprises of entire Bassetlaw District. A summary of the data is presented in **Table 5** and **Chart 5** on the next page.

² Provisional data as the data has yet to be evaluated and confirmed.

Table 5 – Personal Injury Collision Summary (2016 – 2020 Inclusive)

Year	Slight	Serious	Fatal	Total
2016	194	55	4	253
2017	197	57	9	263
2018	173	58	3	234
2019	174	62	4	240
2020	137	53	3	193
Total	875	285	23	1,183

Chart 5 - Personal Injury Collision Summary (2016 – 2020 Inclusive)



- 4.7.2 In total, 1,183 collisions occurred within the study area and of these collisions, 875 were classified as slight in severity, 285 were classified as serious and 23 were classified as fatal. **Figure 2** depicts the locations of all personal injury collisions within the district during this period. Collision severities have been colour and shape coded.
- 4.7.3 With reference to **Table 5** and **Chart 5** it is noted that the greatest number of fatal (9) and slight severity collisions (197) were both recorded in 2017 with the greatest number of serious collisions (62) being recorded in 2019. 2020 had the lowest total number of collisions for the period analysed, this may be linked to the reduced number of network trips during the COVID-19 pandemic lockdown.
- 4.7.4 Analysis of **Figure 2** and the supporting collision data highlighted that recorded collisions (regardless of travel mode) are unsurprisingly clustered in the urban areas of Worksop and Retford and along the higher category roads within the District including the A1(T), A57 and A60.
- 4.7.5 **Figure 3, Figure 4 and Figure 5** show the locations of vulnerable road user collisions. These show similar distribution patterns with the most collisions involving pedestrians, cyclists and motorcyclists being recorded within the Worksop and Retford urban areas.

- 4.7.6 **Figure 3** illustrates pedestrian collisions within the district. A cluster is apparent near the Potter Street and Watson Road junction in Worksop where eight collisions were recorded, of which two were serious and six were slight in severity. A further cluster of four collisions is apparent near the Priorswell Road/Cheapside junction. Elsewhere within the town collisions involving pedestrians are relatively disperse with no obvious clusters. Similarly, within Retford and elsewhere within the district there are no obvious clusters.
- 4.7.7 **Figure 4** shows the distribution of collisions involving pedal cycles within the district. Routes that appear to have a higher than average number of pedal cycle collisions, when compared to the rest of the network are:
- Gateford Road, Retford Road, Watson Road and Priorswell Road in Worksop; and
 - The A638 North Road in Retford.
- 4.7.8 **Figure 5** represents the distribution of motorcycle collisions within the district. A brief visual analysis of the motorcycle collisions shows that there is a higher concentration of collisions on the following.
- Part of Retford Road between B6040 and Watson Road in Worksop
 - Gateford Road in Worksop
 - Ordsall in Retford
- 4.7.9 Within the district, Nottinghamshire County Council (NCC) has identified several road safety remedial treatments that have either already been constructed since the 2010 Transport Study was produced or are ready for construction. These schemes are detailed in **Table 6** on the following page.

Table 6 – Road Safety Remedial Treatment Sites in Bassetlaw from 2010

Location	Treatment
2016/2017 schemes	
A60 Carlton Road north of Owday Lane Wigthorpe	Signs
B6045 Mattersey Rd Ranskill west of Clearwater Lakes	Surface Upgrade and Signs
A638 London Road South Street Retford	Bollard and Lining
Shireoaks Common; vicinity of Woodside Road	Street Lighting Upgrade
A57 Eastbound approach to A1/A614 Apley Head	Signs
A620 Retford Road (southbound) bend south of North Wheatley	Signs
2017/2018 schemes	
A57 Gateford Rd Roundabout	Signing and Drainage
Stanley St/Anston Avenue Worksop	Zebra Improvements
Raymoth Lane Worksop	Toucan Crossing Modifications
Shrewsbury Rd / Retford Rd	Junction Improvement
A620 Gainsborough Road, North Wheatley	Speed Limit Reduction
B6041 High Hoe Road, Bracebridge - Worksop	Signing/Lining
Ashes Park Avenue, Worksop	Street Lighting Upgrade
Claylands Avenue, Worksop	Street Lighting Upgrade
B6045 Blyth Road near Crossley Hill Lane, north of Worksop	Signing/Lining
A638 London Road / Grove Road, Retford	Signing/Lining
Cliff Gate east of Markham Moor	Signing/Lining
A616 Mansfield Road south of Bonbusk (near Derbys border)	Signing/Lining
2018/2019 schemes	
A161 Marsh Lane bend at railway overbridge Misterton	signing
A57 Worksop bypass/Netherton Road roundabout	signing and Lining
A620 Babworth Rd/Ordsall Road, Retford	signing and Lining
A634 Safety Improvements	Contribution
A638 Great North Road, Scrooby Top	reprofiling, signing and lining
A6045 Blyth Road/Hundred Acre Lane, Worksop	-
Blyth Road/ Serlby Road, Harworth	junction improvements
Leverton Road/Little Gringley Lane, east of Retford	signing and lining
Main Street, Ragnall	signing
Shepherds Ave, Worksop	speed limit reduction
Steetley Lane, Rhodesia (bridge over River Ryton)	signing

4.8 HIGHWAYS

Data Sources:

- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- National Highways' TRADS Website
- Bassetlaw District Council's Website
- TA 46/97 'Traffic Flow Ranges for use in the Assessment of New Rural Roads'³
- 2011 National Census Data

Existing Conditions

- 4.8.1 Roads within the district fall into two categories; Motorway/Trunk Road (A1(M)/A1) which are the responsibility of National Highways and County Roads (all other roads in the district) which are the responsibility of Nottinghamshire County Council (NCC). The road network examined for the purposes of this study is identified in **Figure 6**. The network includes all 'A' and 'B' Classification roads within the district as well as locally important unclassified roads.
- 4.8.2 The Transport Investment Strategy published by the Government on 5 July 2017 announced plans for the creation of a new category of roads – a Major Road Network (MRN) of strategically important locally managed links⁴. Several routes within Bassetlaw could potentially fall into this category as the initiative evolves with connotations, in terms of additional funding opportunities and management.
- 4.8.3 Existing conditions on the study area network have been determined through the examination of relevant data sources (as identified at the beginning of this section) and through discussions with the highway authorities responsible for the road network within the district.
- 4.8.4 Traffic flow data has been obtained from NCC and National Highways for all 'A' and 'B' Classification roads and this has been analysed and 'factored' to a common 2019 base year⁵. Details of the data and analysis methodology can be found in **Appendix A** and the resultant flows are illustrated on **Figure 6**. Existing HGV percentages of peak hour flows are illustrated on **Figure 7**.

³ This document was withdrawn from the Design Manual for Roads and Bridges (DMRB) in March 2020 however, to maintain consistency with the 2019 study methodology and in the absence of any replacement DMRB guidance the withdrawn standard has been applied for the purposes of this report update as it still provides useful guidance on link capacity

⁴ <https://www.gov.uk/government/publications/transport-investment-strategy>

⁵ 2019 has been used as the most recent full year not impacted by the Covid 19 pandemic

Traffic Patterns

- 4.8.5 2011 Census 'Journey to Work' data (**Table 3**) indicates that 39% of all employment trips originating within the district have a destination outside the district and 61% are internal to the district. Of those with a destination outside the district the majority are travelling by car to destinations within Nottinghamshire and Yorkshire. Of the trips originating from outside the district the majority are travelling by car from Nottinghamshire, Yorkshire and Derbyshire. Most commuter trips to/from the district are therefore between locations within Nottinghamshire and most of these are made by car.

Sheffield City Region Transport Strategy Consultation

- 4.8.6 The Sheffield City Region LEP have a Transport Strategy in place setting out their transport priorities for the City Region up to 2040. Of relevance to Bassetlaw District is the acknowledgement in the strategy that the A619 between Worksop and Chesterfield is identified as one of the top 20 highway corridors forecast to experience increased delay resulting from population and economic growth by 2025. No other roads within Bassetlaw are identified. The strategy document doesn't identify any specific interventions to address forecast congestion on the A619 corridor.

Network Performance

- 4.8.7 Network performance for the road network within the study area has been assessed based on link capacity. The prime indicator for road capacity and congestion on rural links is determined by the Congestion Reference Flow (CRF), which was defined in Annex D of TA 46/97 'Traffic Flow Ranges for use in the Assessment of New Rural Roads'. This document was withdrawn from the Design Manual for Roads and Bridges (DMRB) in March 2020, but CRF is still referenced in the latest version of TAG Unit A1.3 which was last updated in July 2021. To maintain consistency with the 2019 study methodology and in the absence of any replacement DMRB guidance the withdrawn standard has been applied for the purposes of this report update as it still provides useful guidance on link capacity.
- 4.8.8 Congestion Reference Flow (CRF) values have been used as a simple indication of the performance of links within the study area. The CRF of a link is a standard measure and is an estimate of the Annual Average Daily Traffic (AADT) flow at which the carriageway is likely to be 'congested' in the peak periods on an average day. Congestion is defined as the situation when the hourly traffic demand exceeds the maximum sustainable hourly throughput of the link. When this condition occurs, the effects on traffic flow are likely to be one or more of the following:
- Flows break down with speeds varying
 - Average speeds drop
 - Journey times become longer and unreliable

- Sustainable throughput is reduced; and/or
 - Queues are likely to form
- 4.8.9 Because CRF is calculated using average traffic flows it is implicit that when a link reaches 100% stress (i.e. forecast flows equal CRF) it can be expected to experience the type of conditions described above in half of the weekday peaks during the year.
- 4.8.10 DfT guidance identifies that journey time reliability is not an issue for stress levels below 75% and reliability doesn't deteriorate any further once 125% stress is reached. Links therefore operate satisfactorily between 75% and 100% stress, albeit with reduced performance in terms of journey times and journey time reliability in comparison to a link with less than 75% stress. For links with stress of 100% and greater 'congestion' can be expected to affect half of the weekday peak periods over the course of a year.
- 4.8.11 When a link reaches 100% stress or greater the most likely outcome is slow moving traffic during half of the weekday peaks during the year (i.e. a link at 100% stress isn't automatically 'gridlocked'). In these conditions some drivers may choose to travel outside of the peak periods to avoid potential 'congestion' and some drivers may divert to alternative routes, where less congested alternatives are available. Neither of these effects have been considered in the Transport Study due to the significant additional complexity involved in assessing these factors. The results of the Transport Study are therefore 'worst case'.
- 4.8.12 The assessment methodology uses surveyed link flows and forecast flows to determine Congestion Reference Flows (CRF) and based on these calculated reference capacities link 'stress' levels have been identified where stress is defined as the ratio of the annual average daily traffic (AADT) flow to the Congestion Reference Flow expressed as a percentage.
- 4.8.13 For the purposes of the study the following stress thresholds have been applied to identify when links are approaching, or exceeding their theoretical maximum capacity:
- Less than 90% stress - the link operates within capacity, although journey times may become less reliable over 75% stress.
 - Between 90% and 100% stress - The link is approaching capacity and is increasingly susceptible to flow breakdown.
 - Greater than 100% stress - The link operates over capacity and is likely to experience flow breakdown on a regular basis.
- 4.8.14 It should be noted that CRF is a measure of the performance of the links between junctions however, junctions will typically reach their operational capacity and suffer congestion and delays before a link reaches capacity. It is therefore implicit that where links are forecast to be at, or close to capacity the junctions on the link are also likely to experience problems. Junction operation is discussed later in this report.

- 4.8.15 Details of the CRF calculation methodology, data analysis and results can be found in **Appendix A**. and the resultant CRF link values are illustrated on **Figure 8**. The comparison between observed link flows and CRF values is illustrated on the stress plan presented as **Figure 9**.
- 4.8.16 For ease of reference on **Figure 9**, congestion of less than 75% on links is shown in light green, congestion of 75%-89% is shown in dark green, 90%-99% is shown in orange, and congestion of greater than 100% on links is shown in red.
- 4.8.17 The stress plan clearly indicates that all links within the district currently operate at less than 90% stress. Sections of the A57 and A60 to the west of Worksop have the highest stress within the district (83% and 76%) and the A631 in the northeast of the district has a stress level of 75%. Whilst these links are still within capacity, they could be expected to experience less reliable journey times. Stress levels on all other links within the district fall below 75% and could therefore be expected to operate satisfactorily.

Trunk Road Network

- 4.8.18 The A1 and a small section of the A1(M) represent the trunk road network within Bassetlaw. It's strategically important role in accommodating north-south trips, and local role in providing connectivity within the district is reflected in the volume of traffic it carries – over 50,000 vehicles per day.
- 4.8.19 The strategic approach to managing demand and capacity along the corridor is detailed within the London to Leeds Route Strategy which was published by the Government in April 2015⁶. This detailed investment priorities in the period up until 2020, and the evidence upon which these priorities have been identified. No schemes have been identified for the stretch through Nottinghamshire.

County Highway Network

- 4.8.20 Except for the A1 and A1(M), the road network within Bassetlaw is managed by Nottinghamshire County Council as the Local Highway Authority. Key routes within this network include the A57, A60, A161, A614, A619, A620, A631, A634, A638 and the A6075.

Journey Times

- 4.8.21 Average journey times during the morning peak (0730 – 0930 hrs inbound) have been supplied by Nottinghamshire County Council (Source: Trafficmaster GPS data) and are reproduced in **Table 7** on the next page.

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416748/London_to_Leeds_East.pdf

Table 7 - Average Journey Times During the AM Peak

Location	Route Length (Miles)	Average Speed (MPH)			Average Journey Time Per Mile (Minutes)		
		2017	2018	2019	2017	2018	2019
Greater Nottm	57.2	16.6	16.4	17.4	03:36	03:39	03:27
Mansfield	30.8	16.7	16.4	16.5	03:35	03:40	03:39
Newark	7.2	16.5	15.7	17.2	03:38	03:49	03:29
Retford	6.0	17.8	16.6	16.4	03:23	03:37	03:40
Worksop	11.2	19.0	18.4	18.4	03:09	03:16	03:16

4.8.22 The data suggests that journey times during the AM peak in Retford and Worksop are better than or broadly comparable to those recorded in Greater Nottingham, there has also been little change over the period covered by the data. The data suggests that the existing urban road networks within Worksop and Retford operate largely satisfactorily and whilst both towns experience some peak period congestion, the level of congestion is not severe and journey times remain reasonable.

Known Issues on the County Highway Network

4.8.23 In the original 2010 study the following locations were identified by Nottinghamshire County Council as experiencing issues (or expected to):

- **Tuxford** - The B1164 Eldon Street/A6075 Ollerton Road simple priority junction was identified as having limited traffic capacity and being likely to require traffic capacity improvements if local plan development increased flows through the junction.
- **Carlton-in-Lindrick** – pedestrian/cyclist connections to Worksop were identified as being poor and requiring improvement as part of any future development in the area.
- **Blyth** - The A614/Blyth Road junction was identified as needing improvement to accommodate any additional traffic due to new development as were the two mini-roundabouts on Blyth Road at its junctions with Scrooby Road and Main Street/Bawtry Road and the A614/Scrooby Road junction to the east of Harworth.
- **Harworth** - The priority roundabouts linking the A1 slip roads to the A614 and B6045 at the A1/A614/B6045 Blyth junction were identified as experiencing peak period congestion and requiring improvement to be able to accommodate additional traffic flows.
- **Worksop** - The A60 into Worksop from the west was identified as a 'bottleneck' with peak period congestion. Four of the A57 roundabouts at Worksop are also identified as accident problem sites.
- **Retford** - Most journeys through Retford go via the A620/A638 roundabout. During peak times, queues often develop along Hospital Road and Amcott Way. In addition to queues at this junction, queues often extend the full length of Arlington Way.

4.8.24 Since the 2010 study was produced Bassetlaw District Council and Nottinghamshire County Council made successful funding bid applications to the D2N2 and Sheffield City Region LEPs for highway improvement schemes to be delivered at the following junctions:

- **A57/A60/Newcastle Ave/St Anne's Drive** roundabout junction in Worksop. This £2.4m improvement was completed in Autumn 2019 by NCC and involved signalisation of the roundabout and associated localised widening on entry arms and the circulatory carriageway. This improvement addressed the 'bottleneck' on the A60 entry to Worksop from the west identified by Nottinghamshire County Council in the 2010 Transport Study.
- **A57/B6041/Woodsetts Lane (Shireoaks Common)** roundabout junction in Worksop. This £1.7m improvement was completed in 2019 by ViaEM. The works delivered a fifth arm off the roundabout to provide access to an adjacent development, introduction of partial signal control, improved pedestrian routes and a new signal controlled pedestrian crossing.
- **A614/Blyth Road junction in Blyth.** An improvement scheme was identified to provide signal control at this junction. This has been installed and became operational in May 2017.
- **B6463 Blyth Road/Scrooby Road/Main Street/Bawtry Road** double mini-roundabout junction in Harworth. An improvement scheme has suggested the introduction of traffic signal control although a feasible and deliverable scheme remains to be identified.
- **A1(T)/A614 junction in Blyth.** An improvement scheme was implemented in May 2017 to enlarge the northern priority roundabout and modify the lane allocations.
- **A614/Scrooby Road priority junction in Harworth.** Traffic signal control was originally identified as a potential improvement scheme although subsequent investigation identified that this would not be achievable from a design and economic perspective and a 'Ghost-Island' right turn scheme is now proposed but has yet to be implemented.

4.9 CAR PARKING

Parking in Bassetlaw

- 4.9.1 With the recent privatization of Ebenezer Terrace Car Park in January 2021, there are 12 designated council car parks in Worksop⁷ providing a total of 1,097 spaces, of which 94 are disabled spaces. There are two short-stay car parks and 10 long-stay car parks currently in use.
- 4.9.2 There are seven designated council car parks in Retford. These provide a total of 559 spaces of which 44 are allocated for disabled users. There are four short-stay car parks and three long-stay car parks. The maximum length of stay in short-stay car parks is typically three hours. Vehicles can park for a full day in long-stay car parks.
- 4.9.3 All designated council car parks in Bassetlaw operate with a pay and display charging mechanism and are open 24 hours a day seven days a week. However, charges only apply between either 0800–1800 hrs or 1000–1600 hrs Monday to Saturday (excluding Bank Holidays except Good Friday).
- 4.9.4 Four tariff structures are operated in the district, varying depending on the location of the car park. These are summarised in **Table 8** and **Table 9**. Details of which tariff applies at each car park are provided in **Table 10**.

Table 8 – Council Car Parks – Short Stay Tariffs

Waiting Period	Short Stay Tariffs		
	Tariff 1	Tariff 2	Tariff 3
Up to 1 hour	Free	Free	50p
Up to 2 hours		£1.00	£1.00
Up to 3 hours		-	£2.00
All Day		£3.20	

Note: Prices correct as of September 2019

Table 9 – Council Car Parks – Long Stay Tariffs

Waiting Period	Long Stay Tariffs
	Tariff 4
Up to 1 hour	£1.00
2 to 3 hours	£2.00
Over 3 hours	£3.00
All Day	£4.00
3-month Season Ticket	£161.00
6-month Season Ticket	£322.00
12-month Season Ticket	£161.00

Note: Prices correct as of September 2019

⁷ <https://www.bassetlaw.gov.uk/transport-streets-parking/parking-information/car-parks-in-worksop/>

Table 10 – Designated Council Car Parks

Location	Type		Ordinary	Disabled	Tariff 1	Tariff 2	Tariff 3	Tariff 4
	Short Stay	Long Stay	Spaces	Spaces				
Worksop								
Town Hall Central		✓	94	6				✓
Castle Hill		✓	60	8				✓
Central Avenue		✓	160	18				✓
Farr Park Central		✓	43	7				✓
Gateford Road Central		✓	129	9				✓
Lead Hill Central	✓		71	5			✓	
Memorial Avenue Central		✓	102	10				✓
Newgate Street East Central		✓	84	9				✓
Newgate Street West Central		✓	61	8				✓
Priorswell Road		✓	67	4		✓		
Prospect Precinct		✓ ⁸	65	5	✓			
Queen Street Central	✓		67	5			✓	
Totals			1,003	94				
Retford								
Carolgate	✓		16	3	✓			
Chancery Lane North Central	✓		17	0			✓	
Chancery Lane South Central	✓		34	4			✓	
Chapelgate		✓	69	4				✓
Churchgate Central		✓	168	18				✓
New Street		✓	174	12				✓
West Street Central	✓		37	3			✓	
Totals			515	44				

Privately Operated Public Car Parks

- 4.9.5 In addition to the Council maintained car parks, there are several privately operated off-street public car parks in the district. However, these are generally associated with a specific use such as the railway stations, supermarkets or retail parks. There is no parking provided at Worksop bus station, although the Queen Street car-park is a short distance away. Details of the car parking provided at the rail stations within the district is provided in **Table 11**.

Table 11 – Station Car Parking⁹

Location	Spaces	Cost per Day
Worksop Railway Station	100	£3
Retford Railway Station	101	£10

⁸ Limited to 10am to 4pm

⁹ Prices correct at 2021

On-Street Parking

- 4.9.6 Areas of on-street parking are available throughout the district. These are free of charge.

Civil Parking Enforcement

- 4.9.7 Civil Parking Enforcement was implemented in Nottinghamshire on 12 May 2008. Bassetlaw District Council makes up part of the Nottinghamshire Parking Partnership, along with Nottinghamshire County Council and all the other District and Borough Councils within the County. This means that the partnership has taken over parking enforcement responsibility for all County roads and Council owned car parks from the Police. Parking in a prohibited area, such as on double yellow lines, carries a fine of £70 and for overstaying, the fine is £50.¹⁰

¹⁰ Reduced by 50% if paid within 14 days

4.10 BUS TRANSPORT

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011-2026
- Nottinghamshire Integrated Passenger Transport Strategy 2015
- Bassetlaw District Council website
- Route and timetable information available from Traveline East

Existing Bus Service Provision

- 4.10.1 Information in this section relates to 2019, a pre COVID-19 situation, on the basis that it is assumed that the post pandemic, public transport travel behaviour and demand will return to pre COVID-19 levels.
- 4.10.2 An analysis of the provision of the Bassetlaw bus network shows two distinct profiles of service. The first relates to the inter-urban bus routes which provide links out of the market towns towards the larger retail centers of Nottingham, Doncaster, and Rotherham. These services are characterised by relatively strong patronage demand and are operated commercially with limited subsidy to ensure service quality.
- 4.10.3 In Worksop services are primarily provided through partnership working with Stagecoach East Midlands. Stagecoach provides the services to an agreed standard and frequency whilst the public sector provides infrastructure improvements.
- 4.10.4 Throughout the remainder of Bassetlaw District, the services receive significant support from Nottinghamshire County Council. A few services are tendered, but most are supported through 'de minimis agreements', with funding targeted to maintain frequencies at times of day or service diversions when they would not be provided due to commercial viability. Nottinghamshire County Council's financial support to the Bassetlaw network is considerable and accounts for around half of the total support paid by Nottinghamshire County Council for the whole county. Notwithstanding this, some 80% of bus journeys by Stagecoach (the major operator) in Bassetlaw are provided commercially. Overall, around 70-80% of the bus journeys in the district are financially supported. The main inter-urban routes are operated commercially but are considered marginal.
- 4.10.5 In terms of the passenger numbers, pre-COVID-19, Stagecoach carries around 1 million passengers per year on their northbound routes between Worksop and Doncaster and another 2 million on their interurban bus services to Rotherham, Nottingham, Retford, and Chesterfield. Around 400,000 p.a. use the Worksop town services, with the remainder being carried on smaller school, rural tendered services.

- 4.10.6 With the decline in retail opportunity in market towns in Bassetlaw, which, along with other economic challenges including increasing demand for online shopping, and the continued growth in car ownership appears to be reducing the demand for bus travel to town centres. This has been exacerbated by the COVID-19 pandemic. At the same time, changes in traffic congestion can affect journey time reliability making bus travel less attractive whilst increasing service operating costs and commercial viability of service.
- 4.10.7 Notwithstanding these issues, land-use changes in Bassetlaw are providing opportunities for increased bus patronage in the area. For example, the continued concentration of large distribution warehouse industries within Bassetlaw offers opportunities to improve the economic outlook for the market towns.
- 4.10.8 Coordinated public transport, planning, and development strategies are necessary to manage the impacts of Local Plan development, and deliver targeted capital infrastructure, and coordinated revenue support for bus service provision.
- 4.10.9 In urban areas across Nottinghamshire, 94% of households are within 800 meters of an hourly or more frequent bus service (0600-1800 hrs Monday to Saturdays). The equivalent figure for the Nottinghamshire rural area is 72%.
- 4.10.10 Voluntary and community transport also provides a key service for people unable to utilise conventional public transport services. The role of this sector is forecast to grow as their capability and capacity increases, subject to available and ongoing funding support.
- 4.10.11 A plan showing the routes taken by bus services through the District is included at **Figure 10** whilst district service operators and the types of services they provide are detailed in **Table 12** Stagecoach East Midlands is the largest commercial bus operator within the district and is shown alongside other operators and the types of services they provide.

Table 12 - Bus Operators and Services in Bassetlaw

Operator	Base(s)	Services Provides
Stagecoach East Midlands	Worksop/Chesterfield	Commercial Network Provision Local and Inter-Urban Services
Marshall's	Sutton-on-Trent	Home to School services
Travel Wight	Newark	Links to Nottingham
Kettlewells	Retford	Home to School services
GEM Mini Travel	Retford	Home to School Services
Wilfreda Beehive	Doncaster	Home to School Services
NCC Transport Services	Various	School / Shopping Services
Stagecoach East Midlands	Worksop	Commercial Network Provision

Bus Services - Retford

4.10.12 During weekday daytimes, Retford has a relatively good bus network. There are inter-urban services to Worksop, Newark, New Ollerton, Doncaster and Gainsborough and a small local town network service serves the main residential areas of the town. **Figure 10** illustrates the bus service network and **Table 13** identifies all bus services operating in the Retford area providing frequency of these services.

Table 13 – Bus Services in the Retford Area (Excluding School Services)

Service No.	Operator	Route	Service Frequency		
			Early Morning	Daytime	Evenings
27	SEM/NCCTS	Retford – Misson	2 Journeys	Every 2 Hours	-
29	SEM	Retford - Doncaster	1 Journey	Every 2 Hours	-
37/37A	Mar	Retford – Tuxford – Newark	1 Journey	Hourly	-
43	SEM	Retford – Worksop - Wensledale	Hourly	Hourly	-
47/47A	SEM	Ordsall - Retford - Ordsall	3 Journeys	Every 30 mins	-
95	SEM	Retford - Gainsborough	1 Journey	Every 2 Hours	-
97	SEM	Gainsborough - Retford	2 Journeys	Every 2 Hours	-
99	SEM	Retford - Doncaster	1 Journey	Hourly	-
123	NCCTS	Retford - Bawtry – Doncaster	-	3 Journeys	-
136	TW	Retford – Tiln Lane - Retford	-	Every 2 Hours	-
190	GEM	Retford – Rampton - Tuxford	1 Journey (out)	1 Journey (return)	-
195	GEM	Retford - Rampton - Tuxford	1 Journey	1 Journey	-
197	NCCTS	Retford - Beckingham	-	1 Journey	-
335	NCCTS/TW	Gringley On the Hill - Clayworth - Retford	2 Journeys	2 Journeys	-
Doncaster Shopper	KET	Tuxford - Retford - Doncaster	-	1 Journey	-
Lincoln Shopper	KET	Retford - Lincoln	-	1 Journey	-
P190	GEM	Retford - Lincoln	-	Every 2 Hours	-

Notes: SEM: Stagecoach East Midlands, NCCTS: Nottinghamshire County Council Transport Services, TW: Travel Wright, Mar: Marshalls of Sutton on Trent, KET: Kettlewells, GEM: GEM Mini Travel

Bus Services – Workshop

4.10.13 During weekday daytimes, Worksop benefits from a comprehensive town service with frequent local provision and a good inter-urban network with services to Rotherham, Doncaster, Chesterfield, and (by connection) to Nottingham. **Table 14** identifies all bus services operating in the Worksop area and frequency of these services.

Table 14 – Bus Services in the Worksop Area (Excluding School Services)

Service No.	Operator *	Route	Service Frequency		
			Early Morning	Daytime	Evenings
4/4A	SEM	Larwood - Worksop - Manton	Every 30 mins	Every 30 mins	-
5	SEM	Worksop – Asda	Every 30 mins	Every 30 mins	-
6	SEM	Worksop - Shireoaks	1 Journey	Every 2 Hours	-
7	SEM	Worksop Circular via Shireoaks	1 Journey	Every 2 Hours	-
19/19A	SEM	Worksop - Dinnington - Rotherham	Every 30 mins	Every 30 mins	Hourly
21/25	SEM	Worksop - Harworth - Doncaster	Every 30 mins	Every 30 mins	Hourly
22	SEM	Worksop –Doncaster	Every 30 mins	Every 30 mins	Hourly
42/43	SEM	Wensleydale - Worksop - Manton - Retford	Hourly	Every 30 mins	-
77	SEM	Chesterfield - Staveley - Clowne - Worksop	Every 30 mins	Every 30 mins	Approx' Hourly
108	NCCTS	Worksop Town Service	-	Hourly	-
209	SEM	Edwinstowe - Worksop	-	Every 2 Hours	-
Sherwood Arrow	SEM	Worksop - New Ollerton - Nottingham	1 Journey	Every 2 Hours	-

Notes: SEM: Stagecoach East Midlands, SC: Stagecoach Chesterfield, NCCTS: NCC Transport Services Other Bus Services Within the District

Other Bus Services Within the District

4.10.14 Most bus services operating within Bassetlaw originate or terminate in either Retford or Worksop. However, there are strong socio-economic links across the district. Several services provide links to key centers such as Lincolnshire and South Yorkshire. The main longer distance destinations served are:

- Rotherham
- Doncaster
- Newark
- Chesterfield
- Lincoln
- Nottingham

4.10.15 Supporting these more strategic bus services through the district will remain a key component of the overall future bus strategy.

Demand Responsive Transport

4.10.16 In spring 2021 Nottinghamshire County Council were successful with a £1.5m bid to the Department of Transport Rural Mobility Fund. This funding will be used to pilot flexible Demand Responsive Transport (DRT) services across Nottinghamshire using new route planning and booking software and new vehicles. The areas to be served in Bassetlaw will be based on a revised network of services in the Ollerton Area with a new hub for interchange to mainline services. The services are expected to commence in 2022.

Accessibility to Services and Key Destinations

4.10.17 **Figure 11** shows the location of bus stops within the district. Each bus stop location is shown with a 400m and 800m buffer zone surrounding the stop to provide an indication of accessibility to bus services within the district. These buffers represent typical 5 and 10-minute walking distances respectively.

4.10.18 As would be expected, the key bus service corridors align with the main transport routes throughout the district. The areas where bus service coverage is at its greatest are within the towns of Retford and Worksop, a corridor between Retford and Worksop, a corridor between Retford and Newark, and outside of the district to Chesterfield, Doncaster and Gainsborough.

4.10.19 The district generally has a good coverage of bus stops, although in some of the more rural areas of the district, as would be expected, walking distances to bus services will be comparably longer.

Community Transport and Voluntary Transport Schemes (CT&VTS)

4.10.20 Nottinghamshire's Sustainable Community Strategy 2010-2020 recognises that "access to services by all is crucial" and one of its aims is to increase the percentage of people able to access employment by public transport. According to LTP3, Worksop is one of the most socially deprived urban areas of the county, with 'pockets' of social deprivation also identified in the rural areas around Retford. In addition, Bassetlaw is one of the areas with the highest limiting long-term illness percentages within the country.

4.10.21 In the rural areas of Bassetlaw one of the challenges of public transport accessibility planning is how best to provide effective quality services to areas where services are commercially less viable. VTS are therefore particularly important in providing a key role in meeting the travel needs of people not supported by commercial public transport services, including some of the following:

- The Bassetlaw Action Centre - offers a range of services to provide transport for those unable to use public transport or for those who do not have access to a service.
- The Bassetlaw Community Car Scheme operates throughout the district, with volunteer drivers.
- The Bassetlaw Community Minibus is operated by Bassetlaw Action Centre under a Section 19 Minibus Permit which makes it available to non-profit making community groups and individuals. Pre-arranged trips of fixed costs are available to all passengers.
- Bassetlaw Car Scheme Plus offers door-to-door services to wheelchair users.
- 'My Journey' based in Mansfield is developing door-to-door and dial a ride services. Dial-a-Trip Ltd are also developing similar services based in Newark.

- Bassetlaw Primary Care Trust has made a financial investment in the local Retford town services to improve the links to the North Road PCT and Bassetlaw District Hospital.

4.10.22 Shopmobility is a free service provided by Bassetlaw District Council which is available to anyone who has limited mobility. The scheme enables disabled people to loan a scooter or wheelchair to travel around Retford and Worksop Town Centres.

National Bus Strategy

4.10.23 In March 2021 the government published its document 'Bus Back Better: national bus strategy for England'¹¹, as part an initiative to build back better services post pandemic. The County Council has published its intention to implement an Enhanced Partnership in April 2022 and provide a Bus Service Improvement Plan by 31st October 2021. These arrangements will cover all services and infrastructure in Nottinghamshire including Bassetlaw.

4.10.24 The NBS sets out some of the current barriers to improving bus services and these include:

- Limited cooperation between operators
- Rival bus networks that do not acknowledge each other's existence
- Capacity issues at certain times of the day on the busiest routes
- Multi-operator tickets that are expensive and hard to find out about
- Lack of evening services
- Complex ticketing
- Poor integration
- Car ownership increases

4.10.25 The NBS sets out initial spending plans for the £3bn for buses in England outside London that was announced by the Prime Minister in February 2020. It will initially be invested in:

- Supporting new and increased services – with at least £300m of funding to support the sector recovery from the pandemic in 2021/22.
- Giving LTAs the skills and people they need to deliver this strategy – with £25m of the £300m allocated in 2021/22.
- Bus priority schemes to speed up journeys – with the first schemes delivered in 2021/22.
- Accelerating the delivery of zero emission buses with £120m in 2021/22.

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/980227/DfT-Bus-Back-Better-national-bus-strategy-for-England.pdf

4.10.26 The NBS provides that:

- By the end of June 2021, all local transport authorities will need to commit to establishing an Enhanced Partnership (EP) across their entire area and all operators are expected to cooperate with that process. An EP is a statutory arrangement under the 2017 Bus Services Act which can specify, for example, timetables and multi-operator ticketing, and allows the LTA to take over the role of registering bus services from the Traffic Commissioners.
- From July 2021, only those LTAs and operators who meet these requirements will continue to receive COVID-19 Bus Services Support Grant (CBSSG) or any new sources of funding from the Government's £3bn budget.
- By the end of October 2021 each local transport authority will need to publish a local Bus Service Improvement Plan (BSIP). Each plan will need to be updated annually and reflected in the authority's Local Transport Plan and in other relevant local plans such as Local Cycling and Walking Infrastructure Plans.
- From April 2022, the new discretionary forms of bus funding will only be available to services operated under an EP and only those services operated under these statutory agreements will be eligible for the reformed BSOG subject to consultation.

4.10.27 Other elements of the NBS which should also be noted include:

- Comprehensive networks and integration – planning as a 'whole system network'; consistency of service patterns across the working week and all times of the day; focus on radial corridors; reminder of obligations on socially necessary services; better integration across bus services regardless of operator including coordinated timetabling, route numbering.
- Integration with other transport modes – e.g. using rail stations as key transport hubs, enabling bike carriage etc.
- Fares and ticketing – simpler and lower, including focus on multi operator products with minimal or no price differential; simplified ticketing such as flat or capped fares; smart price capping as the norm; integration between modes.
- Infrastructure – significant focus on implementation of bus lanes where possible; technology to prioritise buses (e.g. at traffic lights).
- Zero Emission – focus on scaling up to see step change in technology.
- Accessibility – the introduction of the Accessible Information Regulations by summer 2022, which will require operators to provide audible and visible information on buses and

reviewing other key regulations to improve accessibility the existing guidance under the Act for an EPS and franchising.

Bus Stations

4.10.28 The bus station' in Retford is located adjacent to Arlington Way' and was provided by the County Council and opened in July 2007 as part of a programme of upgrade, rebuild and refurbishment of the county's bus stations. The station was highly commended at the 2007 UK Bus Awards for its design and has boosted passenger safety and acted as a catalyst for growth and change in the town center.

4.10.29 The bus station in Worksop opened to the public in August 2015 and replaced stops previously located on Hardy Street. The station is managed by Nottinghamshire County Council in partnership with Bassetlaw District Council.

4.10.30 An annual passenger satisfaction undertaken by NCC in Worksop noted 98% satisfaction with the passenger transport facilities, with 63% rating them as 'Very Good' and 35% of the respondents using public transport more often since the bus station opened.

Bus Station Patronage

4.10.31 Annual patronage figures for Retford and Worksop bus stations have been provided by Nottinghamshire County Council and are presented in **Table 15** below.

Table 15 – Bus Station Usage (Passengers by Year)

Bus Station	2014/15	2018/19	2019/20
Retford	269,618	198,206	168,540
Worksop	596,912	529,765	451,455

Note: 2019/20 data includes the initial impact of COVID-19.

4.10.32 Between the end of 2015 and 2019 the data shows a decline in bus patronage of 26% at Retford Station and a decline of 11% at Worksop Station. Between the end of 2019 and 2020 the data shows a decline in bus patronage of 15% at both Retford and Worksop Bus Stations, although this data does include the initial impacts of COVID-19.

Bus Stops

4.10.33 The quality of bus stop facilities varies across Bassetlaw. Provision ranges from bus shelters, seating, lighting, raised kerbs, bespoke service maps and timetable information to other locations where only bus stop flags demarcate a designated stop.

4.10.34 Typical to the challenges faced across the UK, the variation in information and accessible infrastructure is known to impact on service attractiveness and accessibility, particularly by those with protected characteristics and the mobility impaired.

Bus Priority

4.10.35 No provision is made across Bassetlaw for providing bus priority on the highway network. There are no dedicated bus lanes or Vehicle Detection Systems on traffic signals. This is primarily due to a lack of road space and value of investment decision. However, with the recent investment in a Nottinghamshire centralised Traffic Light Priority (TLP) system and connection of Stagecoach, as the main operator in Bassetlaw, into the system, investment at key signals in Bassetlaw will now be less cost prohibitive and may be included in the forthcoming Bus Service Improvement Plan (BSIP) as a future scheme.

Information and ticketing

4.10.36 Bus service information is provided physically and electronically by each of the service operators for their respective routes, whilst the County Council provides much of the information for tendered services. This service information is collated and available online via Nottinghamshire County Council's website which links through to the Traveline journey planning portal. Real Time Information (RTI) is offered online, and displays are being rolled-out at selected bus stops, including services which cross into adjoining Counties.

4.10.37 Smart phone-based bus service information and access to services is provided by some operators such as Stagecoach and can be used to purchase a range of ticket types for zonal travel within the district.

4.10.38 A PlusBus integrated bus-train ticket is available for purchase alongside train tickets to/from Worksop station, although no other multi-modal or multi-operator tickets are in place. Opportunities for integrated ticketing are being explored as part of the National Bus Strategy arrangements including further PlusBus options.

Network Performance

4.10.39 In October 2014, the Transport and Highways Committee of Nottinghamshire County Council approved a revised Strategic Passenger Transport Framework (SPTF) for assessing the need for the future provision of supported local bus services in Nottinghamshire. In 2019/20 the County Council spent £3.9m on local bus services and it is vital that the funding is used efficiently and effectively.

4.10.40 The SPTF scoring criteria includes six criterion which are as follows.

- Subsidy per passenger

- Passengers per journey
- Availability of alternative public transport services in settlements served
- Index of Multiple Deprivation (IMD)
- Primary Journey purpose (i.e. employment, shopping, education)
- Car ownership levels in the settlements served

4.10.41 The SPTF scoring considers the IMD (Index of Multiple Deprivation) and journey purpose factors to reflect the Council's strategic objectives and is used by the Council to effectively monitor and review supported local bus services. A feature of the SPTF is the facility to rank contracts using both financial and operational criteria, therefore supporting a fairer approach to decisions about future support for services. The SPTF is used when reviewing existing contracts and commissioning new services.

4.11 PASSENGER RAIL

Data Sources:

- National Rail Timetable
- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Route and timetable information available on various rail websites
- National Rail Trends – Office of Road and Rail (ORR) website
- London North Eastern Railway (LNER) and Northern Rail websites

Existing Service Provision

4.11.1 **Figure 12** shows the passenger rail network within Bassetlaw. The district is served by three passenger routes as follows.

- The East Coast Mainline which operating north-south down the center of the district via Retford Station
- The Robin Hood line operating between Nottingham to Worksop
- The Northern Rail Sheffield to Lincoln line located on an east to west axis passing through both Worksop and Retford Stations

4.11.2 The East Coast Main Line (ECML) is the high-speed link between London, Yorkshire, the North East and Edinburgh. The route supports cross-country, commuter services, and freight traffic, particularly over the northern sections. The route forms a key artery on the eastern side of the country and parallels the A1 Trunk Road.

4.11.3 The line's current principal operator is London North Eastern Railway (LNER) whose services include regular trains from King's Cross to Leeds and Edinburgh. Directly Operated Railways (DOR), the government-appointed operator of last resort has operated the LNER franchise since 2018, after the previous operator defaulted. Regular services operate in both directions throughout the day, every day of the week, with the quickest journeys between Retford and London taking approximately an hour and a half.

4.11.4 The Sheffield to Lincoln line spans east from Meadowhall Shopping Centre in Sheffield via Shireoaks, Worksop, Retford, Gainsborough Lea Road to Lincoln, with services operated by Directly Operated Railways (DOR), the government-appointed operator of last resort. Regular services operate in both directions throughout the day Monday to Saturday, with a reduced afternoon only service on Sundays. The service takes approximately one hour between Retford and Meadowhall.

- 4.11.5 The Robin Hood Line is the railway line which spans from Nottingham to Worksop. At Nottingham, there are frequent onward connections to London, Birmingham, Derby, Leicester, Manchester, Norwich and other centres. Passenger services are operated by East Midlands Trains. Regular services operate in both directions throughout the day Monday to Saturday, with a reduced afternoon only service on Sundays.
- 4.11.6 The service takes approximately sixty-five minutes between Worksop and Nottingham. In addition to being an important commuter service the Robin Hood Line also offers access to several visitor attractions in Nottinghamshire and Derbyshire.
- 4.11.7 Current rail service frequencies stopping at Retford, Shireoaks and Worksop stations are summarised in **Table 16**, **Table 17** and **Table 18**.

Table 16 – Current Rail Services Serving Retford Station

Approximate Frequency of Train Services Stopping at Retford Station (Trains/Hour)				
Route	Monday-Friday		Saturday	Sunday
	AM Peak (0700 – 0900)	PM Peak (1600 – 1800)		
Towards Newcastle	1	2	1	1
Towards London	1	2	2	1
Towards Sheffield	2	3	1	1
Towards Lincoln	2	1	1	1

Table 17 – Current Rail Services Serving Shireoaks Station

Approximate Frequency of Train Services Stopping at Shireoaks Station (Trains/Hour)				
Route	Monday-Friday		Saturday	Sunday
	AM Peak (0700 – 0900)	PM Peak (1600 – 1800)		
Towards Sheffield	1	1	1	Every 2 hours
Towards Lincoln	3	2	1	Every 2 hours

Table 18 – Current Rail Services Serving Worksop Station

Approximate Frequency of Train Services Stopping at Worksop Station (Trains/Hour)				
Route	Monday-Friday		Saturday	Sunday
	AM Peak (0700 – 0900)	PM Peak (1600 – 1800)		
Towards Sheffield	3	2	1	Limited PM Service
Towards Lincoln	2	3	1	Limited PM
Towards Nottingham	1	1	1	1

Rail Demand

4.11.8 Rail patronage since the start of 2021 has declined due to the COVID-19. Rail patronage at each of the three stations within Bassetlaw is set out in **Table 19**. The last pre-pandemic data available is for 2019/20 and is shown alongside the 2008/09 by comparison. The data highlights the extent of growth in rail travel since 2008, particularly from Retford, which is the busiest station within Bassetlaw. Whilst station throughput at Worksop has remained relatively constant in recent years, over 160,000 additional passengers are using Retford Station compared with in 2008/09. Patronage at Shireoaks Station has also increased significantly since 2009/09 in percentage terms, but remains a very small and quiet, rural station.

Table 19 – Estimates of Station Usage (Passengers by Year)

Station	2008/09	2019/20	Difference (%)
Shireoaks	23,164	36,624	+58%
Retford	376,066	541,674	+44%
Worksop	444,522	474,830	+6%

Note: Office of Road and Rail (ORR) data applied, estimates based on ticket sales.

Rail Stations

4.11.9 Retford Station is managed by LNER and has parking spaces for 101 cars. The daily car parking charge is £10 per day (Monday to Friday). Discounted rates are available for weekly, monthly, three monthly and annual passes. The higher-level platforms (numbered 1 and 2) respectively serve southbound and northbound East Coast Main Line trains stopping at Retford. Between the two platform tracks there are two further lines, used by fast trains not booked to stop here.

4.11.10 A Station Travel Plan was produced in February 2017 as part of Virgin Trains (then managing the station) franchising agreement. It details a series of objectives, targets and interventions through which to encourage more sustainable access to the station based upon a site assessment and a survey of over 200 station users.

4.11.11 Worksop Railway Station was also opened in July 1849 by the Sheffield and Lincolnshire Junction Railway. It is now an intermediate stop on the regional service from Lincoln to Sheffield operated by Northern Rail and the northern terminus of East Midlands Trains' Robin Hood Line from Nottingham and Mansfield (the section from Mansfield was re-opened to passengers on 25th May 1998). Worksop Station is managed by Northern Rail and has parking spaces for 100 cars. The daily car parking charge is £3 per day.

4.11.12 The only other railway station (Shireoaks Station) within the district is also located on the Lincoln to Sheffield line at Shireoaks, 2km west of Worksop. There is no car parking available at Shireoaks Station, which is also managed by Northern Rail.

4.11.13 A summary of facilities available at all stations within the district is presented in **Table 20**.

Table 20 – Summary of Station Facilities

Facility	Retford	Worksop	Shireoaks
Station Operator	LNER	Northern Rail	Northern Rail
Car Park	Yes	Yes	No
No. of Parking spaces	101	100	-
Accessibility customer help points	Yes	No	No
Hearing loop	Yes	Yes	No
Accessible ticket machines	Yes	No	No
Accessible booking office counter	No	No	No
Ramp for train access	Yes	Yes	Yes
Accessible taxis	Yes	No	No
Pay phones	Yes	Yes	No
Refreshment facilities	Yes	Yes	No
National key toilet	Yes	No	No
Step-free access to whole station	Yes	Partial	Yes
Impaired mobility set-down	Yes	No	No
Accessible car park equipment	Yes	Yes	No
Wheelchairs available	Yes	No	No
Staff help available	Yes	Partial	No
Facilities CCTV	Yes	Yes	Yes
Seated area	Yes	Yes	No
Waiting room	Yes	No	No
Toilets	Yes	Yes	No
Baby changing facility	Yes	No	No
Taxi Rank	Yes	Yes	No
Cycle storage spaces	38	6	-
Cycle storage CCTV	Yes	Yes	-

Accessibility to Services & Key Destinations

4.11.14 **Figure 12** indicates 800m and 3.2km (straight line) catchment distances to all existing rail stations within the district. These represent the typical distances covered in 10 minutes walking or cycling respectively (see **Appendix B** for details). Whilst large parts of Retford and Worksop have reasonable access to passenger rail, the rural areas are located further from the service.

4.11.15 As described earlier in this section the Lincoln to Sheffield line caters predominantly for local movements. The East Coast Mainline serves longer distance destinations between London and Edinburgh as well as linking into a wider network of cross-country, commuter, and local passenger services.

4.11.16 The presence of stations on both rail lines in Bassetlaw District therefore provides the opportunity for linked trips which greatly improves general accessibility to a wide range of key rail destinations nationwide.

4.12 CYCLING AND WALKING

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Cycling in Bassetlaw map (Nottinghamshire County Council)
- Nottinghamshire Cycling Design Guide 2006
- Nottinghamshire Cycling Strategy Delivery Plan
- Nottinghamshire Highway Network Management Plan 2014
- 2011 Census Data

Cycle Network Provision

- 4.12.1 **Figure 13** depicts existing cycling infrastructure within the district. The focus of provision is around Worksop and Retford. The town centers and their environs have reasonably comprehensive networks of dedicated cycling infrastructure and quiet roads suitable for cycling.
- 4.12.2 The focus of the Worksop cycling network stems from the National Cycle Network (NCN) Route 6 which follows the southern towpath of the Chesterfield Canal through the center of the town. This then travels south eastwards on-road through Manton before entering Clumber Park. From this cycling 'spine', the highway authority and its partners have developed several other cycle routes in the town.
- 4.12.3 Around the town center, there are several quieter roads identified by the "Cycling in Bassetlaw" cycle map as being suitable for on-road cycling, with these routes also providing access to the north-west of the town including the Kilton area and Bassetlaw hospital. In the north-eastern part of the town, there are cycle lanes either side of Valley Road. This joins with several quiet road routes and off-road paths linking the residential area of Gateford via a toucan crossing on Raymoth Lane.
- 4.12.4 Retford has a similar layout, with the National Byway on-road cycle network providing a link into the south of the town, with the London Road section encompassing dedicated cycle lanes. The National Byway route also connects with the railway station. At Carolgate a further off-highway route is available along the northern bank of the Chesterfield Canal towards Welham. There are also high-quality cycle lanes on North Road and shared use footways on Babworth Road in the north-western part of the town.
- 4.12.5 Much of the rest of the district's cycling infrastructure is made up of off-road leisure-based facilities. The exceptions are to the west of Gainsborough on the Bassetlaw side of the Nottinghamshire/ Lincolnshire highway authority boundary, where there are shared footway/

cycleways adjacent to the A620 and A631. Aside from this, there is a lack of specific cycling infrastructure within the district.

4.12.6 Longer distance leisure routes are described in more detail below.

National Cycle Network

4.12.7 National Cycle Network (NCN) Route 6 passes through the western part of the district. It travels from Shireoaks on the Derbyshire/ Nottinghamshire boundary eastwards through the center of Worksop before continuing south eastwards into Clumber Park. Route 6 is off-road for most its length within Bassetlaw. This feeds into the wider National Cycle Network via Sheffield to the west and Nottingham to the south.

National Byway

4.12.8 The National Byway extends 4,500 miles through the UK's natural environment, providing signed directions along quiet rural lanes. In addition to the main route, there are 50 circular loop rides. Much of the eastern part of Bassetlaw is connected by the National Byway, with a route from Retford rail station south eastwards towards East Markham and north eastwards to Gainsborough.

Footways

4.12.9 **Figure 14** depicts existing public rights of way within the district. Both the district's main towns have pedestrianised streets within their central areas. This allows good accessibility to their retail offerings and enables safe interchange with buses. Cycling is not permitted within these areas.

4.12.10 Footways are provided in all the main settlements and within many of the residential areas. As the district is largely rural, footways are not normally provided alongside carriageways in these locations. The reasons for this are due to the cost verses likely low levels of footfall, a lack of available width within the highway corridor to provide footways to current specifications and the aesthetic and environmental reasons of not wishing to 'urbanise' the countryside.

Patterns of Movement

4.12.11 Bassetlaw has a reasonably high level of cycling and walking trips to work based upon the 2011 Census results.

4.12.12 **Table 21** on the next page shows that the levels of cycling and walking to work vary greatly depending upon ward within the district the commuter lives in. A total of 13.8% of trips are made by these modes, which is above the Nottinghamshire average of 12.8% and the English average of 14.5%.

4.12.13 Both modes are in their highest in the wards surrounding the main urban areas of Retford and Worksop, with the highest level of cycling in Worksop South East ward (5.5% of trips to work) and the highest level of walking taking place in Sutton (23%). The lowest levels of cycling and walking occur in the more rural wards, such as Beckingham, Ranskill and Everton.

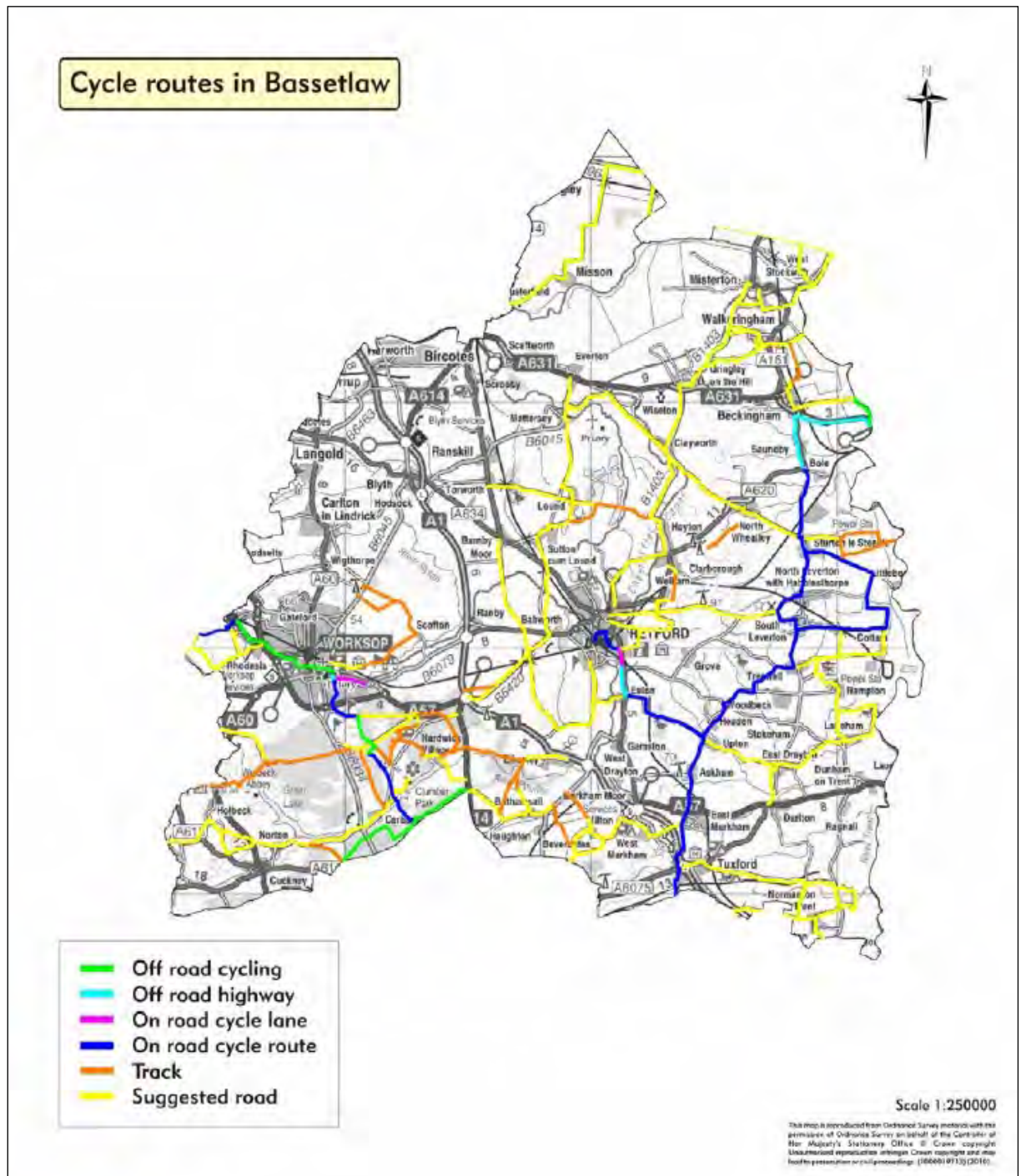
Table 21 – Travel to Work by Mode (2011 Census Data)

Ward	Pedal Cycle (% of Trips)	Walking (% of Trips)
Beckingham	1.60%	4.40%
Blyth	1.20%	7.90%
Carlton	1.40%	6.70%
Clayworth	1.80%	5.50%
East Markham	1.10%	6.80%
East Retford East	3.60%	17.30%
East Retford North	4.40%	14.50%
East Retford South	4.40%	11.30%
East Retford West	3.80%	15.70%
Everton	0.90%	6.00%
Harworth	2.10%	9.50%
Langold	1.10%	6.30%
Misterton	2.00%	6.00%
Rampton	1.60%	10.90%
Ranskill	1.00%	4.60%
Sturton	1.10%	6.20%
Sutton	1.30%	23.00%
Tuxford and Trent	1.70%	9.90%
Welbeck	2.00%	8.80%
Worksop East	3.50%	15.20%
Worksop North	2.70%	9.10%
Worksop North East	2.10%	10.50%
Worksop North West	3.30%	10.30%
Worksop South	2.20%	10.80%
Worksop South East	5.50%	17.40%

4.12.14 In addition to the Census results, Nottinghamshire County Council collects data as part of the Local Transport Plan (LTP) monitoring process. A question was included in the 2015 survey, which provided a sample of the mode share of people travelling to work. Of those surveyed, 15.95% travelled on foot or by cycle.

- 4.12.15 The LTP monitoring also measures the total number of trips made by bike across the authority, against a 2010 baseline. Whilst only a small increase (1%) was recorded between 2014 and 2015, the number of trips increased by 34% between 2010 and 2015 reflecting the increasing popularity of cycling across Nottinghamshire.
- 4.12.16 Within Bassetlaw itself, there are six cycle traffic counters. Overall, these measured a 4% increase in cycling from 2015 to 2019. The average Bassetlaw year on year growth from 2010 to 2019 was 2.5%, ranging from a 5.6% decrease between 2011 and 2012 to a 9.8% increase between 2010 and 2011. This is slightly higher than the average growth in cycling activity in Nottinghamshire which was 2.1% during the same period.
- 4.12.17 The evidence base collected to inform the Nottinghamshire LTP includes information on cycle network length in each district in the county. Bassetlaw has a total network of 84.48km of dedicated cycle provision, comprising 7.88km of on-road cycle lanes, 14.34km of off-road shared use paths and 62.26km of off-road cycle tracks.
- 4.12.18 The Bassetlaw cycle network included in the Nottinghamshire Local Transport Plan Evidence Base Report (LTPEBR) is shown in the image overleaf.

Cycling Routes in Bassetlaw (Source: NCC LTP Evidence Base)



Opportunities to Encourage More Walking & Cycling

4.12.19 Developing a network of connected, coherent, convenient, and convivial walking and cycling corridors requires investment in several areas including:

- The provision of appropriate infrastructure along the links in the network,
- Provision and configuration of junctions and crossings to connect the network, and
- Signage and promotion of the networks to raise awareness and encourage their use.

4.12.20 Generally, the district's main settlements, Worksop, Retford, as well as the western edge of Gainsborough in neighbouring West Lindsey District, are well catered for in terms of cycling infrastructure. The following missing strategic links have been identified through a baseline inspection of existing facilities.

4.12.21 In Worksop, there are a lack of north-south connections for cycling. The A60 Turner Road/ Blyth Road/ Babbage Way continues to present a barrier to connecting the two distinct areas of cycling infrastructure. The narrow carriageway width available underneath the Network Rail Bridge on Gateford Road is a major constraint to reallocating carriageway space to create segregated cycle tracks which in turn could allow the development of a cycle link between Valley Road and Gateford Road. Without measures, such as imposing one-way traffic flow (which could have adverse traffic capacity impacts), or modifications to the bridge structure (likely to be prohibitively expensive) there appears to be no quick win to resolving this connection issue. The alternative route of Carlton Road has a level crossing, however there is insufficient width within the highway corridor to create a segregated cycle track on this route.

4.12.22 Outside of the two main settlements, there are understandably far fewer cycle facilities due to the rural nature of the district. A combination of factors such as journey distance, physical constraints (i.e. available carriageway widths), perceived lack of safety, the potential for interchange with buses and the need to retain the conservation value of rural roads all combine to create barriers to encouraging cycling and walking.

4.12.23 In terms of value for money for a local highway authority, the provision of wide-spread cycling and walking infrastructure between different rural locations is generally not feasible, simply due to there being far fewer potential users of such routes. In general, the comprehensive existing network of more leisure-based cycling and walking provision, such as bridleways, cycle tracks and canal towpaths are considered appropriate for the rural areas of the district.

4.12.24 Opportunities to supplement existing infrastructure to encourage more journeys to work on foot and by bike are where settlements in Bassetlaw are situated within reasonable commuting distances of larger neighboring conurbations. The obvious example is the north west of the district, which is adjacent to Doncaster and the South Yorkshire travel to work area. To achieve such improvements would require close cross-boundary working with partner organisations.

- 4.12.25 There are several opportunities through which walking can be encouraged for shorter journeys, including commuting trips. The provision of formal and informal crossing points on pedestrian desire lines, including an authority wide programme of dropped kerbs would help to remove barriers which prevent those with limited mobility walking.
- 4.12.26 The concept of reprioritising road users at certain junctions across the district, particularly those near schools should be considered, whilst catering for the needs of vulnerable road users should be embedded into new developments through the application of the Manual for Streets guidance¹².
- 4.12.27 Education generates 1 in every 5 trips at peak times and creating School Safety Zones and prioritising safe and secure pedestrian and cycling links to schools should be at the cornerstone of creating a culture of walking and cycling for future generations.
- 4.12.28 Creating an environment which is conducive to walking and cycling is often as a result of many small-scale measures in place, that contribute towards a pleasant journey. The principle of marginal gains is particularly relevant to walking and cycling, and investment in cycle parking, the installation of showers and changing facilities in workplaces, lighting, surfacing and maintenance will all contribute towards a more convivial environment.
- 4.12.29 When seeking to cater for different user groups, particularly the elderly or those with limited mobility, the availability of street furniture, especially dropped kerbs and benches can make a significant difference in walking being a realistic option.

¹² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf

4.13 FREIGHT

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Network Rail Website (www.networkrail.co.uk)

Road Freight

4.13.1 For the purposes of land use and transport planning the County Council applies the following hierarchy of roads:

- Category 1 – Main Roads (Strategic Road Network) – carry traffic between main towns.
- Category 2 – Major Secondary Roads – carry traffic between and within main towns and connect to the Strategic Road Network.
- Category 3 – Other Secondary Roads – district distributor roads, like Category 2 but traffic is not specifically directed to use them.
- Category 4 – Local Roads – local distributor roads and access roads.

4.13.2 The purpose of this hierarchy is to influence traffic to take the most suitable routes and to minimise intrusion in the areas through which it passes.

4.13.3 Heavy goods vehicles are directed to use Category 1 and 2 roads wherever possible and through traffic is not encouraged to use Category 3 and 4 roads. Roads forming the strategic network include all Trunk Roads, County primary roads and County non-primary routes of more than local importance, which in Bassetlaw District are the A1(M), A1(T), A57, A60, A161, A614, A616, A619, A620, A631, A632, A634, A638 and A6075.

4.13.4 In certain areas, heavy goods vehicles are prohibited by location specific or area-wide mandatory vehicle weight limits. All existing weight limits within the district are indicated on **Figure 15**.

4.13.5 Many of the HGVs on these corridors are undertaking through trips which do not have an origin or destination within Bassetlaw. Therefore, there is limited scope to influence the demand and number of vehicles, with the emphasis therefore on minimising the impact on local communities and vulnerable road users.

4.13.6 Whilst there are no freight consolidation centres within the district, there are several locations which generate HGV trips, for example Manton Wood Business Park, Wilko and B&Q/Wincanton distribution centers in Worksop, Snape Lane Industrial Estate in Harworth etc.

In these cases, there is the opportunity to work with the operators to maximise the efficiency and mitigate the impacts of operations to the benefit of both businesses and local communities.

Rail Freight

- 4.13.7 Nationally, rail moves 12% of all the UK's inland surface freight¹³. The principal routes for rail freight through the district are the East Coast Mainline and the East-West rail link between Lincoln and Sheffield, which connects Retford and Worksop. Both lines are shared between passenger and freight rail services
- 4.13.8 The Robin Hood line also provides passenger (and some freight) rail services and forms a direct rail link starting from Worksop through Mansfield to Nottingham. The East Midlands Route Study¹⁴ produced by Network Rail in March 2019 indicated that by 2023 capacity would be required for between one and two freight trains per day between Mansfield and Worksop¹⁵, with a similar level of demand on the Bassetlaw section of the Robin Hood Line in 2043.
- 4.13.9 Sheffield International Rail Freight Terminal (SIRFT) is located adjacent to Europa Way near M1 Junctions 33 and 34 (M1J33 and M1J34) and provides modern warehousing and distribution facilities. SIRFT is connected to the Sheffield – Doncaster freight line and provides connections to mainland Europe and key destinations in the UK. The proximity of this facility to Bassetlaw provides good opportunities for freight to be transported to/from the district via rail.

Water-borne Freight

- 4.13.10 The River Trent forms the eastern boundary to the district however it doesn't pass close to any main settlements within the district. No other major UK waterways pass through the district. The River Idle and the Chesterfield Canal pass through the district but neither of these are currently used for commercial uses. The scope for using waterways within Bassetlaw for commercial freight movements is therefore very low. As such, the relevance of water-borne freight to this study is negligible and has not been considered further.

¹³ <https://cdn.networkrail.co.uk/wp-content/uploads/2017/08/Railway-Upgrade-Plan-Update-2017-2018.pdf>

¹⁴ <https://cdn.networkrail.co.uk/wp-content/uploads/2019/11/East-Midlands-Route-Study.pdf>

¹⁵ Pre-COVID-19 estimates noting that COVID-19 impact on service demand has yet to be determined.

5 COMMITTED IMPROVEMENTS AND DEVELOPMENTS

5.1 INTRODUCTION

- 5.1.1 For the purposes of this study committed infrastructure schemes have been assumed to be any proposed changes to existing transport infrastructure or transport services within the district where funding and/or delivery timescales have been confirmed. As this is a strategic study, smaller scale improvements that are unlikely to significantly alter existing transport conditions have been ignored.
- 5.1.2 Committed land-use developments within the district have been assumed to be proposed developments with planning permissions yet to be implemented, or developments already under construction but yet to be completed or occupied.
- 5.1.3 Only land-use development proposals that will result in material changes to existing transport conditions within the district have been considered. The criteria used to identify whether transport effects are material are described later in this section.

5.2 HIGHWAYS

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011 - 2026
- National Highways' website (www.nationalhighways.co.uk)
- Nottinghamshire County Council website (www.nottinghamshire.gov.uk)
- Bassetlaw District Council website (www.bassetlaw.gov.uk)

Scheme Summary

- 5.2.1 Since the 2010 study was produced Bassetlaw District Council and Nottinghamshire County Council have made successful applications to the D2N2 and Sheffield City Region LEPs for funding towards highway improvement schemes at the following junctions:
- A57/A60/Newcastle Ave/St Anne's Drive roundabout junction in Worksop. This £2.4m improvement was completed in Autumn 2019 by NCC and involved signalisation of the roundabout and associated localised widening on entry arms and the circulatory carriageway. This improvement addressed the 'bottleneck' on the A60 entry to Worksop from the west identified by Nottinghamshire County Council in the 2010 Transport Study.
 - A57/B6041/Woodsetts Lane (Shireoaks Common) roundabout junction in Worksop. This £1.7m improvement was completed in 2019 by ViaEM. The works delivered a fifth arm off the roundabout to provide access to an adjacent development, introduction of partial

signal control, improved pedestrian routes and a new signal controlled pedestrian crossing.

- A614/Blyth Road junction in Blyth. An improvement scheme was identified to provide signal control at this junction. This has been installed and became operational in May 2017.
- B6463 Blyth Road/Scrooby Road/Main Street/Bawtry Road double mini-roundabout junction in Harworth. An improvement scheme has suggested the introduction of traffic signal control although a feasible and deliverable scheme remains to be identified.
- A1(T)/A614 junction in Blyth. An improvement scheme was implemented in May 2017 to enlarge the northern priority roundabout and modify the lane allocations.
- A614/Scrooby Road priority junction in Harworth. Traffic signal control was originally identified as a potential improvement scheme although subsequent investigation identified that this would not be achievable from a design and economic perspective and a 'Ghost-Island' right turn scheme is now proposed but has yet to be implemented.

5.2.2 Bassetlaw District Council's 2020/21 Infrastructure Funding Statement currently identifies the following transport improvement schemes for CIL funding:

- A620/A638 roundabout, Retford – Not Commenced
- A57/Claylands Avenue roundabout, Worksop – Not Commenced
- A60/A619 roundabout, Worksop – Not Commenced
- A57/B6041 Gateford Road roundabout, Worksop B6041 arm only – Completed

A1 Elkesley Junctions

5.2.3 National Highways completed an improvement scheme on the A1(T) at Elkesley in January 2019 to improve road safety and access to the village. The scheme provided a new grade separated junction onto the A1 to serve the village with links to Jockey Lane and a realigned Coalpit Lane. The scheme is now complete and open to traffic. No other Trunk Road or Motorway improvement schemes are currently identified within the district.

A1/B6387 Twyford Bridge Junction

5.2.4 It is understood that development proposals for a major B8 use-class distribution centre on the former Bevercotes Colliery will be required to deliver improvements to replace the northbound slip roads at the A1/B6387 Twyford Bridge junction as a conditional requirement of planning permission.

Delivery Timescale

5.2.5 The improvements mentioned in this section are required to facilitate development within the district and as such delivery timescales will be largely dependent on the timescales for major

developments, particularly for those improvement schemes that are to be wholly, or part funded by developers.

Network & Traffic Changes

- 5.2.6 The junction improvement schemes mentioned in this section will not affect CRF values on the highway network within the district. No account has therefore been taken of these improvements in the assessments presented later in this report. However, the assessment does consider the committed and proposed developments that the junction improvements will facilitate and the resultant changes in traffic flows.

Car Parking

- 5.2.7 No committed improvement schemes have been identified that will materially alter existing public parking provision within the district. Any proposed new parking provision associated with committed private developments is assumed to cater for the requirements of the development only and will therefore not materially affect existing parking conditions.

5.3 BUS TRANSPORT

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011-2026
- Nottinghamshire's Local Transport Plan Implementation Plan 2018/19-2020/21
- Nottinghamshire Integrated Passenger Transport Strategy 2015
- Integrated Ticketing Strategy and Delivery Plan 2015

Scheme Summary

- 5.3.1 Nottinghamshire's Local Transport Plan Implementation Plan 2018/19-2020/21, provides an indicative programme for schemes during the plan period.
- 5.3.2 **Passenger transport services:** This will likely include the following measures:
- Improve rail services (including frequency and journey times) to local and longer distance destinations;
 - Support the establishment of a high-speed rail line through the East Midlands;
 - Work with bus, rail, taxi and community transport operators to ensure that all drivers and personnel are adequately trained;
 - Work with commercial bus operators and stakeholders to ensure an adequate bus network;
 - Support the commercial bus network with subsidised services within allocated budgets;

- Use community transport to help complement the conventional network within available funding; and
 - Support light rail systems and extensions where they demonstrate value for money, have limited environmental impacts and have public support.
- 5.3.3 The focus will primarily be on routes that will provide access to employment and training, and links to such routes.
- 5.3.4 **Passenger transport infrastructure:** This will likely include the following measures:
- Work with bus operators to improve the quality, accessibility and efficiency of bus fleets;
 - Implement a planned programme of improvements to waiting facilities (i.e. timetable information, raised kerbs, real-time information and shelters);
 - Implement a planned programme of new/enhanced bus stations as necessary;
 - Work in partnership with rail partners to improve accessibility at rail stations;
 - Work with public transport operators on the cost and range of available tickets that are easy to understand; and
 - Work with public transport operators and neighbouring authorities to investigate integrated ticketing options.
- 5.3.5 Focus again will primarily be on identified strategic passenger transport corridors.

Bus Fleet

- 5.3.6 The Stagecoach East Midlands fleet consists of fully accessible and Disability Discrimination Act 2005 (DDA) compliant buses and around 87% of the operational fleet in Worksop are less than 10 years old. Stagecoach also operates several initiatives including:
- Driver disability awareness training
 - Automatic Vehicle Location system, which allows for continuous digital monitoring of the location of the bus, service punctuality and provision of real time passenger information
 - Electronic ticketing through a mobile 'phone application
 - An online e-shop, both of which allow passengers to make use of available discounts in advance of travel

Infrastructure Investments

- 5.3.7 The following bus related infrastructure improvements are planned for the period up to the end of 2021:
- Bassetlaw Clearway Programme; and

- Carlton in Lindrick - hotspot resolution.

5.3.8 In addition, NCC is working on the development of an ambitious County-wide Public Transport Infrastructure Investment Delivery Plan, which will facilitate economic growth and jobs creation. The Plan will concentrate on key improvement of transport corridors, which will improve punctuality and reliability and help grow the public transport passenger base. Feasibility work will be undertaken on key corridor in Bassetlaw, including those seen as priority by the bus operators.

Other Improvements in Worksop

5.3.9 Following the opening of the bus station in Worksop, bus operators and NCC have been planning further public transport investments. NCC is working with Stagecoach to enable information from Stagecoach to be displayed in real time at the bus station and Real Time Passenger Information (RTPI) displays in the town. In addition, NCC is working with the local bus operators on the introduction of integrated ticketing in Bassetlaw. Finally, the Council's transport and travel services have developed an enforcement plan to tackle congestion and illegal parking issues at key junctions of the network.

5.4 PASSENGER RAIL

Data Sources

- Network Rail (NR) Railway Upgrade Plan (www.networkrail.co.uk)
- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Rail North - Long Term Rail Strategy, March 2015
- East Midlands Rail Franchise Public Consultation; DfT, July 2017
- Route Specifications London North Eastern and East Midlands; Network Rail, 2019

5.4.1 Committed infrastructure and service improvements on the rail network will help improve the strategic connectivity of Bassetlaw with neighbouring authorities and further afield.

Infrastructure Improvements

5.4.2 There are currently no infrastructure improvements planned on the Lincoln to Sheffield Line, Robin Hood Line or East Coast Mainline within Bassetlaw. On the wider network, however, Network Rail is set to deliver several schemes. These are detailed in relation to the Strategic Route Sections (SRSs) they comprise on the national rail network:

- East Coast Mainline: £1.2B upgrade to deliver faster, more reliable services and more frequent trains. At present the predominant line speed is 125mph.
- Sheffield to Gainsborough Line: The line is undergoing an upgrade including new trains following the franchisee change to Arriva.
- Nottingham to Worksop Line (Robin Hood Line): No improvements are programmed to be delivered.

5.4.3 As part of the award of the Northern Franchise to Arriva Rail North in 2019, a series of service improvements have been provided from December 2019 which will benefit both Worksop and Retford Stations on the Sheffield - Worksop - Retford - Lincoln line. These planned changes were impacted by the COVID-19 pandemic.

5.4.4 The planned service level (pre COVID-19) provides:

- One train per hour between 06:30 and 23:00hrs, with one additional service in the morning and evening peaks, Monday to Saturday. Journey times between Worksop and Sheffield takes 33 minutes.
- On a Sunday, there are 6 trains in each direction running at irregular intervals, commencing in mid-afternoon.
- An additional train in each direction every hour between 07:00 and 19:00 hrs, Monday to Saturday between Sheffield - Worksop - Retford. This represents a further 26 trains over the course of the day.
- On Sundays, an hourly service in each direction will be provided between Lincoln and Sheffield via Worksop and Retford between 10:00 and 22:00 hrs, an increase of 26 trains in total.
- Journey times will also improve as whilst one of the two trains per hour between Sheffield - Worksop - Retford will stop at all the intermediate stations, the other will run non-stop reducing journey times between both Retford and Worksop with Sheffield by 6 minutes as highlighted in **Table 22** overleaf.

Table 22 – Changes in Rail Journey Times from December 2019

Route	Journey Time Now	Journey Time from 2019		Reduction in journey time for 1 train per hour
		For the train that calls at the 5 smaller stations	For the train that runs non-stop Worksop - Sheffield	
Sheffield – Worksop	33 mins	30 mins	24 mins	6 mins
Sheffield – Retford	40 mins	40 mins	34 mins	6 mins
Retford – Sheffield	44 mins	44 mins	38 mins	6 mins
Worksop - Sheffield	34 mins	34 mins	28 mins	6 mins

- Improvements in onward connectivity with trains from Worksop set to continue beyond Sheffield and other South Yorkshire stations to serve Wakefield and Leeds.
- Investment in both new rolling stock and refurbishment of the existing fleet to improve the journey experience.

Service Improvements – East Coast Mainline

- 5.4.5 Virgin Trains which operated the East Coast Mainline handed the franchise back to the Department of Transport in June 2018. The service is now operated by a company called LNER, who are wholly owned by the Department of Transport.

Service Improvements – Robin Hood Line

- 5.4.6 There are no line-specific programmed improvements set to come forward which may benefit Bassetlaw rail users in the short to medium term on the Robin Hood Line.

5.5 CYCLING AND WALKING

Data Sources

- Nottinghamshire Local Transport Plan (LTP3) 2011 to 2026
- Cycling in Bassetlaw map (Nottinghamshire County Council)
- Nottinghamshire Cycling Strategy Delivery Plan
- Nottinghamshire Cycling Action Plan
- City Cycle Ambition Programme
- Nottinghamshire Highway Network Management Plan
- Nottinghamshire Cycling Design Guide 2006
- Nottinghamshire County Council Rights of Way Improvement Plan
- LTP Highways Capital and Revenue Programmes 2021/22

Scheme Summary

- 5.5.1 Nottinghamshire County Council has been consulted with regards to the programme of committed cycling and walking schemes for 2017/2018.
- 5.5.2 The County Council are currently developing a network of strategic cycle corridors in Worksop and Retford. At present there is no further detail as to which routes may be included.
- 5.5.3 The County Council also has an annual budget for introducing new cycle parking and directional signing for cycle routes. The directional signing may be useful for notifying cyclists of links using quiet roads to new cycle routes and new developments, although for the latter developers will be required to provide this infrastructure where it is directly related to new development.
- 5.5.4 For pedestrians there is also an area-wide programme to implement new dropped crossings and make dropped crossing upgrades at existing junctions.

Public Rights of Way (PROW) schemes

- 5.5.5 As part of the LTP budget there is an annual programme for carrying out Rights of Way upgrades and signing/wayfinding improvements throughout Nottinghamshire. Upgrades to PROW typically consist of measures such as surface enhancement and widening, renewing stiles and gates and removal of obstruction or overgrown vegetation.

Sherwood Forest

- 5.5.6 The County Council completed £5.3m improvement works to the Sherwood Forest visitor centre in October 2018. As well as a new visitor centre the works included improvements to walking and cycling accessibility, including a new zebra crossing across the B6034, improvements to

the footway at the Forest Corner/B6034, provision of cycle spaces and secure cycle storage and lockers. Existing trails connecting National Cycling Route 6 to the visitor centre were also maintained.

5.5.7 The original proposals included a multi-user network to connect the visitor centre with settlements throughout the county and outside. It included the following key projects relevant to Bassetlaw to enhance cycling, walking and equestrian routes by providing additional links to the National Cycle Network, National Byway, Public Rights of Way network and local cycle network. These may be revisited in the future:

- Development of a route from Worksop to Doncaster;
- Connect Retford with National Cycle Network Route 6 and south eastern Worksop;
- Links to Bolsover and Cresswell from the National Cycle Network just south of the Bassetlaw District boundary;
- Longer distance route to Lincoln, which would be accessed in the district using the National Byway from the east of the district or National Cycle Network in the west of the district.

5.5.8 It is considered, for the purposes of the Bassetlaw Transport Study, that future development sites consider these proposals and try to link in with these to encourage sustainable transport to new homes, leisure and workplaces.

Delivery Timescale & Funding

5.5.9 The primary source for carrying out cycling and walking schemes will be the Local Transport Plan. Appendix 2 of the Highways Capital and Revenue Programmes 2021/22 details the following Integrated Transport Programme of works for Bassetlaw, in addition to general safety and speed management schemes that are likely to benefit walkers and cyclists.

- Claylands Avenue, Worksop - pedestrian access improvements
- Eastgate, Normanton on Trent - dropped kerbs
- Unrecorded path, Thrumpton - surfacing
- Bassetlaw bus shelter improvements programme
- Elkesley - bus turning circle protection
- Manton Wood Business Park, Worksop - bus turning circle protection
- Randall Way, Retford - segregated cycle facilities

Safety Improvements:

- A57/A1/A614 Five Lanes End Roundabout - surfacing and drainage
- A60 Doncaster Road and A634 Maltby Road, Oldcotes - signing and/or lining
- A632 Langwith Road (west of Copper Beech), Langwith - signing and/or lining

- B1403 Walkeringham Road, Gringley on the Hill - surfacing
- B6040 Watson Road/B6024 Newcastle Street, Worksop - pedestrian guard rail
- B6420 Mansfield Road (bend at Green Lane), Babworth - signing and/or lining
- Keswick Road, Worksop - 20 mph speed limit
- Old London Road, Barnby Moor - signing and/or lining
- Radford Street, Manton - lighting
- Scrooby Road/Shrewsbury Road, Harworth - lighting and signal modifications

Speed management:

- A57, Dunham on Trent - signing and lining
- B6045 Worksop Road (NE of Briber Road), Blyth - interactive speed sign

5.5.10 Additional funding opportunities for providing infrastructure for further schemes identified for non-motorised users in the district as part of the Transport Study include:

- Inclusion within Local Transport Plan projects which are non-specific cycling/ walking schemes but will benefit these users – e.g. highway improvements, safer routes to school, accident remedial schemes, smarter choices/ accessibility planning, speed limit reviews and local access transport studies. There is a need to ensure that design is suitable for cyclists and pedestrians through documents such as DfT LTN 1/20 and Manual for Streets.
- Nottinghamshire County Council Supporting Local Communities Fund – up to £50,000 for capital environmental and regeneration schemes, often with an accessibility element involved.
- Works secured by planning condition and delivered through Section 278 Agreements.
- Sustrans Connect2 – Big Lottery Funding to create dedicated, high quality local walking and cycling networks.
- Sustrans Links to Schools fund – to connect schools and their communities to the National Cycle Network to provide the safe routes that young people need to cycle and walk to school.
- Landfill Communities Fund – used to provide environmental benefits and to improve the lives of communities living near landfill sites.
- Aggregates Levy Sustainability Fund – used to reduce the environmental impacts of the extraction of aggregates and to deliver benefits to areas subject to these impacts.
- Schools Travel Plan Capital Grants – used to deliver travel plan measures/initiatives and associated improvement works.
- Coalfields Regeneration Trust – is a regional rather than local funding opportunity and would be geographically limited to former coalfield areas.

- Partnerships with Public Transport Operators and Local Employers, for example to introduce cycle parking near bus stops and employment areas.

5.6 FREIGHT

- 5.6.1 No specific road or rail freight infrastructure proposals have been identified. However, there are several B8 use-class development (warehouse/distribution) sites proposed that have been considered as committed land-use developments.

5.7 DEVELOPMENTS

Committed Land-Use Developments

- 5.7.1 For the purposes of the study land-use developments have been split into two categories; committed land-use developments located within the Bassetlaw District and committed land-use developments located in adjacent Districts/Boroughs that are likely to result in trips through Bassetlaw District.
- 5.7.2 To avoid double counting, trips between origins/destinations within the district and land-use developments outside of the district have been ignored since these are accounted for in the trips to/from committed and future Local Plan development within the district (although it is acknowledged that land-use developments in adjacent Districts/Boroughs may change the distribution of trips to/from the district).

Committed Developments within the District

- 5.7.3 Information has been obtained from the planning department at Bassetlaw District Council regarding all committed land-use developments within the district¹⁶ (most of these are proposed developments with planning permission yet to be implemented, or developments already under construction but yet to be completed or occupied). A summary of the committed developments that have been considered is presented in **Table 23** on the following page whilst **Figure 16** shows locations.

¹⁶ Correct as of July 2021

Table 23 – Committed Development within the District

Location	Application Number	Size of Development by Development Use-Class				
		C3 (Dwellings)	100 sqm Floor Area			
			B1	B2	B8	A1
Harworth & Bircotes						
Land South of Scrooby Road Harworth	12/01784/RES	118				
Harworth Colliery (Jones)	17/01566/RES	71				
Harworth Colliery (Kier) DN11 8JN	17/01575/RES	125				
Harworth Colliery	18/01210/OUT	1,300				
South of (DN11 8PB) - 1	19/00876/OUT	489				
South of (DN11 8PB) - 2	19/00876/OUT	163				
Land Off Essex Road Bircotes	20/00051/FUL	120				
Harworth House	18/00195/PDN	94				
Blyth Road	19/00866/VOC		783	783	783	
Workshop						
Former Dormer Tools (Walker & Sons)	16/00725/FUL	36				
Land South Of Tylden Road Rhodesia	18/00337/FUL	111				
Land West Of Queen Elizabeth Crescent Rhodesia Workshop	19/00852/FUL	127				
Land north east of St Lukes School (Harron)	17/00271/RES	108				
Wood End Farm	18/00648/RES	46				
Land North Of Thievesdale Lane And West Of Blyth Road	15/01477/OUT	97				
Land at Gateford Park (Jones Homes)	17/00033/RES	144				
Land south of (S81 8AG)	19/01408/RES	198				
Lot 3 Gateford Park (Barratt)	20/00109/RES	276				
Former Mansfield Hosiery	20/00183/FUL	54				
Land At Shireoaks Common	20/01696/RES		65	89	179	13
Retford						
Kenilworth Nurseries (DN22 7JE) Phase 1	16/01777/FUL	87				
Land West Of Longholme Road And Park Lane Retford	18/00069/OUT	60				
Rear of Kenilworth Nurseries (Phase 2)	18/00695/FUL	109				
Land West Of Tilm Lane Retford	18/01445/RES	62				
Land North Of Bracken Lane Retford	19/00765/OUT	71				
Land West Of Tilm Lane Retford	19/01477/RES	107				
Land At North Road Retford	20/01477/RES	187				
Land At North Road	20/01477/RES		67	48	48	41
Thrumpton Lane	20/00197/COND		13	24		51
Rural Bassetlaw						
Land east of (S81 9QX)	18/01148/FUL	129				
Firbeck Colliery	19/01137/RES	400				
Welbeck Colliery	15/01037/FUL	65				
Land To North And West Of Chestnut Road Langold	15/01605/OUT	300				
Land On The East Side Of Doncaster Road Langold	20/00916/RES	165				
Land At Ashvale Road Tuxford	19/01165/RES	86				
Land Off The A57 Workshop Bypass*	20/00482/RES		310	310	310	
Explore Way	18/00544/COND			498		
Totals		5,505	1,238	1,753	1,320	104

Notes:

1. For sites marked with an asterisk a total employment floor area was supplied. An equal split has therefore been assumed across the relevant employment use-classes.

Committed Development Outside of the District

5.7.4 An assessment has also been undertaken of the likely future traffic effects of committed and likely developments in adjacent Districts/Boroughs/Metropolitan Authorities. In order to do this we have obtained information on development proposals within all authorities that border Bassetlaw, plus other authorities where future development is likely to influence transport conditions within Bassetlaw District. Data has been obtained from a variety of sources including consultation with the relevant local authority planning departments and relevant planning strategy documents. Data has been obtained from the following Councils:

- Bolsover District Council
- Chesterfield Borough Council
- Doncaster MBC
- City of Lincoln Council
- Mansfield District Council
- Newark and Sherwood District Council
- North East Derbyshire District Council
- North Lincolnshire Council
- North Kesteven District Council
- Rotherham MBC
- Sheffield City Council
- West Lindsey District Council

5.7.5 In accordance with Department for Transport (DfT) Transport Analysis Guidance (TAG) the data was summarised and categorised by likelihood of the development proceeding using the following definitions of probability:

- **Near Certain:** The outcome will happen or there is a high probability that it will happen.
- **More Than Likely:** The outcome is likely to happen but there is some uncertainty.
- **Reasonably Foreseeable:** The outcome may happen, but there is significant uncertainty.
- **Hypothetical:** There is considerable uncertainty whether the outcome will ever happen

5.7.6 The study considers only those sites classified as 'Near Certain' and 'More Than Likely'. A summary of the developments that were identified as being applicable to the study is presented in **Appendix C**.

5.7.7 The DfT trip-end model (TEMPro dataset v7.2) was used to compare development levels in each surrounding district individually. Districts with developments in excess of TEMPro predictions were left as they were. Districts with development totals falling short of TEMPro were uplifted, in accordance with TAG guidance. **Table 24** on the next page summarises the

data supplied by each adjacent authority, the TEMPRO forecast increase in dwellings and jobs over the Plan period and the figures that have been applied in the study.

Table 24 – Committed Development Outside the District

Authority	As Provided		TEMPRO		Applied in Study	
	Dwellings	Jobs	Dwellings	Jobs	Dwellings	Jobs
Chesterfield	2,598	1,640	3,911	2,762	3,911	2,762
Bolsover	4,049	5,555	3,164	1,552	4,049	5,555
North East Derbyshire	3,225	2,148	8,178	1,675	8,178	2,148
Lincoln City	757	0	4,166	2,785	4,166	2,785
West Lindsey	1,945	3,722	5,387	1,552	5,387	3,722
Newark and Sherwood	11,564	20,252	6,729	2,732	11,564	20,252
Doncaster	9,587	18,516	11,170	6,750	11,170	18,516
Sheffield City	10,191	5,322	26,550	13,716	26,550	13,716
Mansfield	3,147	9,918	3,622	2,189	3,622	9,918
North Lincs	5,588	0	9,751	3,891	9,751	3,891
Rotherham	3,211	0	9,073	5,637	9,073	5,637
North Kesteven	11,527	0	7,268	2,293	11,527	2,293
	67,389	67,074	98,969	47,533	108,948	91,195

6 LOCAL PLAN DEVELOPMENT

6.1 INTRODUCTION

6.1.1 Bassetlaw District Council has provided details of local plan development expected within the plan period and this is summarised in **Table 25**. For employment sites, gross floor area (GFA) has been estimated as 40% of the gross site areas supplied by the District Council.

Table 25 – Development Site Location, Type and Size

Settlement	Reference	Site	Residential (Dwellings)	Employment (Gross Site Area Ha)
Workshop Central Area	DPD001	Land off Turner Road, Worksop	80	
	DPD002	Land off Carlton Road/Blyth Road	71	
	DPD003	Car Park, Gateford Road	20	
	DPD004	Builders Yard Dock Road	10	
	DPD005	Former Fire Station Site	15	
	DPD006	Land south of Sandy Lane	52	
	DPD007	Central Avenue Car Park	36	
	DPD008	Land to south of Central Avenue Car Park	20	
	DPD009	Bus Station, Hardy Street	42	
	DPD010	Crown House, Newcastle Ave, Worksop	25	
	DPD011	Priory Centre	150	
	DPD012	The WASH, Bridge Court	0	
	DPD014	Creative Village Site 2	20	
	DPD015	Warehouse, Priorswell Road	60	
	DPD016	Vets on Newcastle Avenue, Near Castle Hill	8	
	DPD017	Newcastle Avenue Garages	20	
	DPD018	Middletons	10	
	DPD019	Lead Hill Car Park	15	
	DPD020	Old Ship PH	2	
	DPD021	Town Hall and Market Square	0	
	DPD022	Newgate surgery	0	
	DPD023	Land west of Newgate Street South	8	
	DPD024	The Mayfair Centre	36	
	DPD025	Magistrates Court	26	
	DPD026	Workshop Public Sector Hub	0	
	DPD027	Creative Village Site 1	20	
	DPD028	The Regal	5	
Workshop	HS1	Peaks Hill Farm, Worksop	1,080	5
	HS2	Former Bassetlaw Pupil Referral Centre, Worksop	20	
	HS3	Radford Street, Worksop	120	
	HS4	Former Manton Primary School, Worksop	100	
	HS5	Talbot Road, Worksop	15	
	EM01	Apleyhead Junction, Worksop	0	216
Retford	HS7	Trinity Farm	244	

	HS8	Milnercroft, Leafields	5	
	HS9	Former Elizabethan School, North Road	46	
	HS10	St Michael's View	20	
	HS11	Fairygrove, London Road	61	
	HS12	Station Road	5	
	HS13	Ordsall South	930	
	HS13	Ollerton Road (part of HS13)	200	
Rural Bassetlaw	NP04	Ollerton Road, Tuxford	75	
	ST3	Bassetlaw Garden Village	590	10
Totals			4,262	231

6.2 DISTRIBUTION OF LOCAL PLAN DEVELOPMENT

- 6.2.1 Where residential Local Plan development is identified in within the Worksop Central area, this has been spread across the proposed sites based on a pro-rata basis. The total Central Worksop number of dwellings for the assessment is 751 dwellings. The sites identified are shown in **Figure 16**. All potential development sites in each settlement were included. In all instance's development has been sited at the specific locations supplied by the District Council.

7 FORECAST YEARS AND BACKGROUND TRAFFIC GROWTH

7.1 FORECAST YEARS

7.1.1 A forecast year of 2038 has been applied which is consistent with the end of the Local Plan period. No growth factor has been applied to the 2019 background traffic flows to estimate 2038 flows as traffic flows from committed developments have been calculated separately and added to the 2019 base flows to obtain 2038 baseline flows. The study assesses the following:

- 2019 Base Year (see **Figure 6**)
- 2038 Base + Committed (**Figure 17**)
- 2038 Base + Committed + Local Plan Development (**Figure 18**)

7.1.2 For the sake of completeness, a comparison has been undertaken between the growth assumptions included in the DfT trip-end model (TEMPRO dataset v7.2) programme which provides summaries of National Trip End Model (NTEM) forecast data for transport planning purposes. Details of which can be found in **Appendix D**.

7.1.3 This analysis confirms that the combination of 'Committed + Local Plan development' assumptions for Bassetlaw District applied in this study (residential and employment combined) exceeds the future growth assumptions contained within the National Trip End Model¹⁷. As a result, the assessment is robust and no additional allowance for 'background' traffic growth is considered necessary.

7.1.4 As this study is assessing proposed Local Plan allocations for the district the information contained within this study on proposed future Local Plan development is also more up to date than the assumptions in the National Trip End Model, which will need to be updated to reflect the new Local Plan once it is adopted.

¹⁷ TEMPRO land-use dataset 7.2, dated February 2017

8 TRIP GENERATION, DISTRIBUTION & ASSIGNMENT

8.1 COMMITTED DEVELOPMENT TRIP GENERATION

- 8.1.1 Traffic flows from committed developments within the district have been estimated using TRICS¹⁸ vehicle trip rates for the relevant development use-classes. These calculations are summarised in **Appendix E**. For committed developments outside of the district, traffic flows have also been estimated using vehicle trip rates obtained from the TRICS database. Detailed TRICS printouts for each relevant development use-class can be found in **Appendix E**.

8.2 RESIDENTIAL LOCAL PLAN TRIP GENERATION

- 8.2.1 Residential person trip generation has been estimated using TRICS 'average'¹⁹ person trip rates for Houses Privately Owned. A mean/median 'cross reference' test has been undertaken for the trip rates and no significant bias was observed²⁰ so use of the average (mean) trip rates is appropriate.

8.3 EMPLOYMENT TRIP GENERATION

- 8.3.1 Employment person trip generation have been estimated using TRICS person trip rates for either B1 Business Parks, B2 Industrial Estates, or B8 Warehouse/Distribution, whichever is most appropriate (see summary table in Appendix E for details of the assumptions applied). A mean/median 'cross reference' test has been undertaken for the trip rates for each employment use-class and where a bias of greater than 10% was observed the higher of the mean/median trip rates has been applied. Where no significant bias was observed average (mean) trip rates have been applied.

8.4 MODAL SPLITS

- 8.4.1 Modal split percentages have been derived from National Census 2011 'Travel to Work Data' for each of the 16 Middle Super Output Areas (MSOA) within the District. Trips by each mode of transport have been estimated by applying these modal split percentages to the person trips derived using TRICS. Separate modal splits have been derived for 'daytime population' and 'resident population' and applied to employment and residential related trips respectively. Details of the person trip generation and modal split calculations can be found in **Appendix E**.
- 8.4.2 The trip generation calculations presented in this study apply observed modal splits based on 2011 Census data. This is considered to represent a 'worst case' in terms of vehicular trip generation since no allowance has been made for future modal shifts that may occur due to

¹⁸ Version 7.8.2

¹⁹ Nottinghamshire County Council previously confirmed that average trip rates were sufficiently robust for this area-wide transport study. However, it may be necessary to consider a sensitivity test using 85th percentile trip rates when transport assessments for individual sites are prepared.

²⁰ i.e. Potentially unrepresentative sites within the TRICS data sample are not unduly biasing the average.

initiatives to reduce travel demand (i.e. parking policy, fiscal measures, smarter choices etc.) or initiatives to achieve modal shifts to sustainable transport (i.e. encouraging more walking and cycling, lower speed limits, public transport improvements etc.)²¹

- 8.4.3 The MSOA specific trip rates described above were applied to the Local Plan development identified in **Table 25**. The only exception was for the proposed new Garden Village where the modal splits for MSOA Bassetlaw 12 (Worksop) were applied as this is more likely to be representative of a new sustainable community than the trip rates for rural MSOA Bassetlaw 15.

8.5 TRIP DISTRIBUTION & ASSIGNMENT

- 8.5.1 Trip distribution has been based on 2011 National Census Travel to Work statistics for each MSOA within the district. To distribute trips onto the existing transport networks the relevant MSOAs have been treated as origins for residential development and destinations for employment development. Travel to work data for these wards has then been used to identify respective destination and origin wards.
- 8.5.2 Routes between the identified origins and destinations for MSOA have been identified using an 'all or nothing' trip assignment on a representation of the district's highway network modelled using VISUM software. This process applies the shortest route available in terms of journey time ignoring any delays due to network performance.
- 8.5.3 It should be noted that this methodology presents a 'worst case' assessment of traffic impacts at specific locations on the highway network since it assumes that no vehicle trips will deviate to avoid delays and congestion on the network. In practice, vehicle trips would re-assign to alternative routes to avoid congested areas of the network (i.e. drivers tend to follow the 'path of least resistance').²²
- 8.5.4 Committed development trips generated outside the district that pass through the district have also been distributed based on National Census 2011 Travel to Work data. **Figure 19** indicates the locations of adjacent authorities and the key routes assumed for the purposes of distributing these trips through the district.
- 8.5.5 All vehicle trips have been assigned onto the road network within the district using VISUM. The resultant data has then been read into GIS and represented graphically on a plan of the study area. Generated trips have been presented graphically using network 'stress plans' where

²¹ It should be noted that the traffic generation rates of individual development sites could be greater than those applied for the purposes of this strategic study depending on the specific nature of each development. Detailed Transport Assessments will therefore be required in support of developments at the planning application stage.

²² It should be noted that whilst this approach represents the 'worst case' at already congested junctions it ignores nearby junctions which may be adversely impacted due to trips diverting onto alternative routes.

"stress" is defined as the ratio of the annual average daily traffic (AADT) flow to the Congestion Reference Flow expressed as a percentage.

9 IMPACTS OF LOCAL PLAN DEVELOPMENT

9.1 MULTI-MODAL IMPACTS

- 9.1.1 The estimated trip generation by non-car modes of transport is summarised in **Table 26** and **Table 27**.

Table 26 – Total Two-Way Trips by Travel Mode (AM Peak)

Location	Train	Bus/Coach	Bicycle	On Foot	Driving a Car
Central Worksop	5	33	14	89	452
Worksop	30	145	80	508	2,692
Retford	11	37	58	244	966
Rural Bassetlaw	12	55	43	190	1,656
Totals	59	270	194	1,030	5,766

Table 27 – Summary of Impacts on Sustainable Transport Modes

Increase in Passengers per Train Carriage ¹	Estimated Additional Buses Required to Meet Demand		Cycling – New Trips		Walking – New Trips	
	District ²	Worksop ²	District	Worksop	District	Worksop
1 to 2	5	3	194	80	1,030	508

Notes:

1. See paragraph 9.3.1 for assumptions applied.
2. See paragraph 9.2.1 for assumptions applied.

9.2 IMPACTS ON BUS TRANSPORT

- 9.2.1 A total of 270 new bus trips are forecast by bus (bus, coach, minibus combined) with 54% (145 trips) originating in and around Worksop. Assuming a notional bus occupancy of 50 persons per bus would equate to approximately five additional buses in the AM peak hour to accommodate the total anticipated demand across the district with three buses required to meet the maximum additional demands in Worksop during the AM peak hour.
- 9.2.2 Developers will be required to fund new/improved bus services to meet the additional travel demands generated by new developments. Given the scale of the forecast increase in demand for bus travel this should be accommodated through a combination of using any spare capacity on existing services, providing additional buses to increase capacity on existing service routes, or through the provision of new bespoke services.
- 9.2.3 Increases across the remaining rural areas of the district are relatively small with less than a single bus load estimated from any one location during the AM peak hour. As a result, these

should be easily accommodated on the existing bus network, with suitable developer-funded capacity enhancements where necessary.

9.3 IMPACTS ON PASSENGER RAIL

- 9.3.1 The estimated additional demand for rail is 59 trips across the district in the AM peak with 51% (30 trips) originating within Worksop and 19% (11 trips) originating within Retford. Assuming the total demand across the district is split equally between Retford station (served by the East Coast Mainline and providing a link to London) and Worksop station (served by the Robin Hood Line and providing a link to Nottingham) this would equate to an additional demand of approximately 30 trips through each station in the AM peak.
- 9.3.2 Considering that this demand will be spread over the peak period (six trains serve Worksop station and six trains serve Retford station in the AM peak) the additional demand per train is likely to be small. For example, 30 passengers averaged over six services at a station would be five passengers per train. Depending on the service, these passengers could be split over two to nine carriages and could therefore result in an increase of one to two people per carriage on average. This level of anticipated increased demand for rail travel should be accommodated by existing services and would be insufficient to justify any improvements to rail infrastructure or services.

9.4 IMPACTS ON CYCLING & WALKING

- 9.4.1 Forecast maximum walking trips are 1,030 across the whole district of which 49% (508 trips) are generated within Worksop and 24% (244 trips) are generated in Retford. These trips would be distributed across the district on existing pedestrian networks. However, this should be considered in further detail at the planning application stage as part of the Transport Assessments prepared for individual developments.
- 9.4.2 The origins and destinations of walking trips to/from development sites should be examined to determine where enhancements to existing pedestrian networks may be required to safely accommodate additional trips. Developers will be required to deliver new/improved pedestrian infrastructure to provide access to individual development sites and to provide safe connections to existing networks, including the provision of new crossing facilities, capacity enhancements and other appropriate infrastructure, as necessary.
- 9.4.3 Forecast maximum cycling trips are 194 across the whole district with 41% of these generated in Worksop (80 trips). As for walking trips these would be distributed across the district on existing cycle networks and the impacts of these increases should be considered in further detail at the planning application stage as part of the Transport Assessments prepared for individual developments and new/improved cycling infrastructure provided as necessary.

9.5 HIGHWAY LINK IMPACTS

- 9.5.1 As mentioned earlier Congestion Reference Flow (CRF) values have been used as a simple indication of the performance of links within the study area. Based on these calculated reference capacities link “stress” levels have been identified where “stress” is defined as the ratio of the annual average daily traffic (AADT) flow to the Congestion Reference Flow expressed as a percentage.
- 9.5.2 For the purposes of the study the following stress thresholds have been applied to identify when links are approaching, or exceeding their theoretical maximum capacity:
- Less than 90% stress - the link operates within capacity, although journey times may become less reliable over 75% stress.
 - Between 90% and 100% stress - The link is approaching capacity and is increasingly susceptible to flow breakdown.
 - Greater than 100% stress - The link operates over capacity and is likely to experience flow breakdown on a regular basis.
- 9.5.3 Network ‘stress’ levels for the 2038 Reference Case (Base + Committed) flows are illustrated in **Figure 20** and network ‘stress’ levels for 2038 Reference Case + Local Plan development flows are illustrated in **Figure 21**. For ease of reference ‘stress’ levels have been colour coded and any links coloured Red (100% and greater Stress) are summarised in **Table 28** on the next page.

Table 28 – Link Impact Summary

Ref	Description	Location	2019 Base	2038 Ref Case	2038 Ref Case + LP
L1	A57 between Gateford Road & Claylands Ave	A57 Worksop Bypass	83%	100%	115%
L2	A57 between Claylands Ave & Sandy Lane	A57 Worksop Bypass	72%	88%	107%
L3	A57 between A60 and B6034	A57 Worksop Bypass	72%	83%	114%
L4	A57 between B6034 and B6040	A57 Worksop Bypass	59%	74%	126%
L5	A57 between B6040 and A614/A1	East of Worksop	51%	66%	121%
L6	A60 between A619 & A57	West of Worksop	73%	86%	102%
L7	A60 southwest of A619	West of Worksop	76%	83%	91%
L8	A57 northwest of Worksop	A57 Northwest of Worksop	64%	74%	82%
L9	B6045 south of junction with Farmers Branch	Northeast Worksop	67%	80%	98%
L10	B6045 north of Thievesdale Lane	Northeast Worksop	49%	57%	76%
L11	A631 East of Beckingham	Northeast Bassetlaw	75%	78%	79%

9.5.4 With reference to **Table 28** no links within the district are over capacity in the 2019 Base Year. With the addition of committed development traffic, one link within the district is at its theoretical capacity by 2038 (i.e. in the 2038 Reference Case which is the situation that will exist without Local Plan development).

9.5.5 It should be noted that the results presented in **Table 28** represent the ‘worst case’ in terms of highway traffic impacts because the methodology used to derive them:

- assumes all committed development will be complete by 2038
- applies robust TRICS trip generation rates
- applies observed (2011 Census) modal splits
- makes no allowance for peak spreading or route reassignment
- makes no allowance for measures to reduce the need to travel (e.g. homeworking etc.)
- makes no allowance for expanding the supply and availability of sustainable travel alternatives.
- takes no account of the potential benefits of future technology such as autonomous vehicles etc.

9.5.6 The combined effects of the provision of sustainable transport measures, demand management and peak spreading as part of planned Local Plan development within the district is also expected to deliver lower traffic impacts in practice than those forecast in the study.

9.6 HIGHWAY JUNCTION IMPACTS

9.6.1 The junctions on links forecast to exceed 100% stress are likely to experience capacity issues in advance of consideration of link widening/dualling. Junctions identified to fall within this category are shown in the image below and are summarised in **Table 29** on the next page.

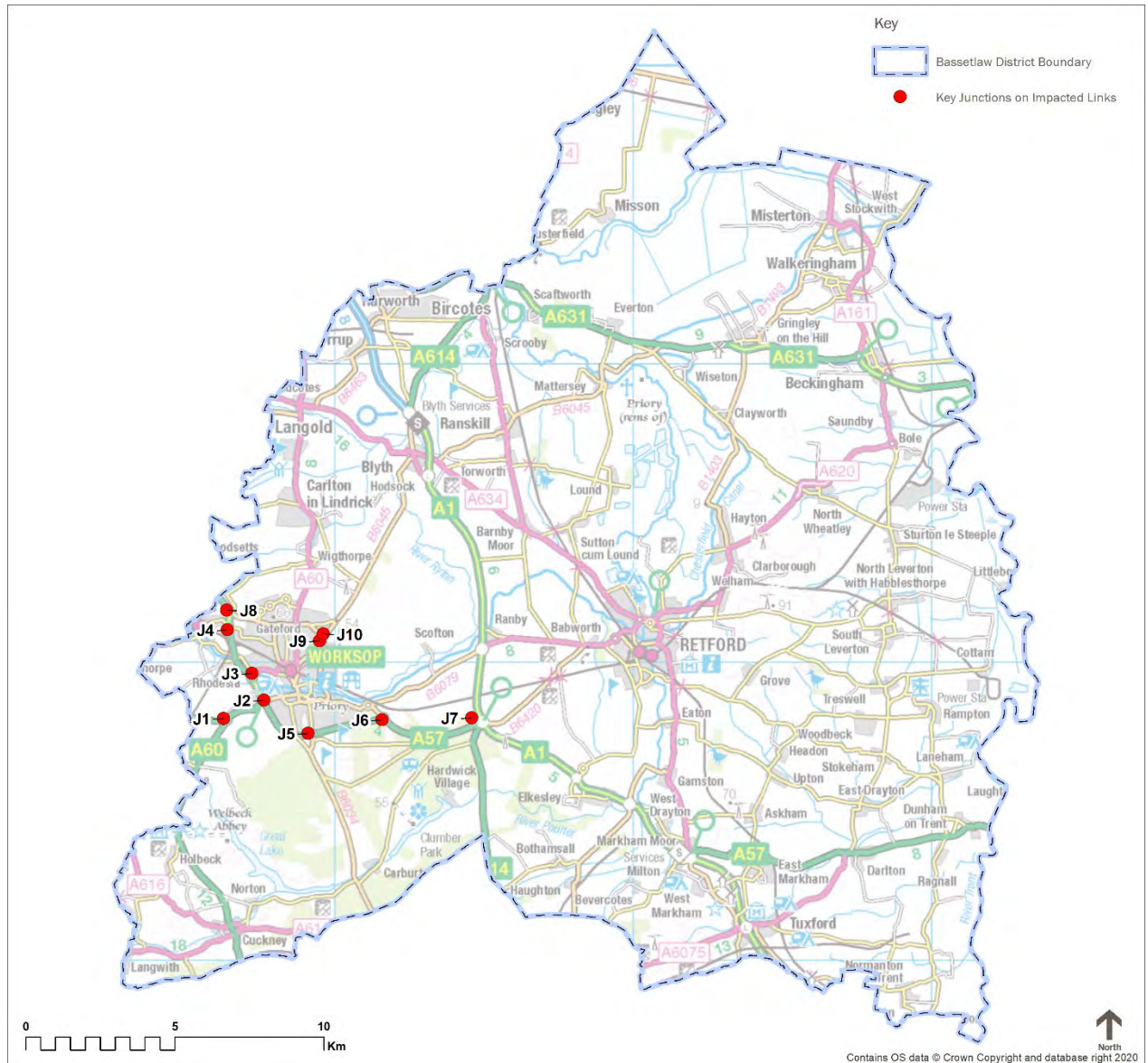


Table 29 - Key Junctions on Links Forecast to Exceed 100% Stress

Ref No	Junction Description
J1	A60/A619 Roundabout, Worksop
J2	A57/A60/B6024/St Anne's Drive Roundabout, Worksop
J3	A57/Sandy Lane Roundabout, Worksop
J4	A57/Claylands Ave/Shireoaks Common Roundabout, Worksop
J5	A57/B6034/Netherton Road Roundabout, Worksop
J6	A57/B6040 Roundabout, Mantonwood
J7	A614/A57 Roundabout, east of Worksop
J8	A57/Gateford Road Roundabout, Worksop
J9	Blyth Road/Kilton Hill Signal Junction, Worksop
J10	Blyth Road/Farmers Branch Priority Junction, Worksop

- 9.6.2 A separate Transport Assessment has been prepared to examine the local transport implications of proposed Local Plan allocations within Retford. This study identifies the need for junction improvements at several locations within Retford to mitigate Local Plan development traffic.
- 9.6.3 There will be other rural and urban locations within the district where material traffic impacts will occur that have not been specifically examined by this study, particularly within the urban areas of Worksop and Retford. It therefore should not be assumed that the absence of any reference in this study implies that the existing highway network can satisfactorily accommodate future development.
- 9.6.4 Detailed Transport Assessments and Travel Plans will be required in support of planning applications for all major developments, and these should identify site access arrangements, on-site transport infrastructure requirements and off-site transport measures/infrastructure to mitigate their respective transport impacts.

10 DEMAND MANAGEMENT

10.1 INTRODUCTION

- 10.1.1 From a traffic and highways perspective it is favourable to seek to reduce traffic impacts by managing travel demand thereby reducing/removing the requirement for highway improvement works.
- 10.1.2 Ideally residential and employment development uses should therefore be complementary to provide local employment opportunities that are accessible by walking, cycling and public transport, to help reduce the need to travel by car.
- 10.1.3 Demand for car use is also managed through the application of appropriate car parking standards. Limiting car parking provision at trip destinations (for example, employment, leisure and retail parking) can help to encourage the use of sustainable modes. However, a careful balance needs to be struck between limiting parking provision and meeting reasonable demand to prevent incidental parking problems. Current best practice recommends the use of minimum parking standards for trip origins (residential parking) and maximum parking standards for trip destinations, acknowledging the fact that limiting parking availability at trip origins does not necessarily discourage car ownership and can result in on-street parking in inappropriate locations.

10.2 TRAVEL PLANNING

- 10.2.1 Demand for car trips can also be reduced by encouraging use of sustainable transport modes (i.e. walking, cycling, bus etc.) and in accordance with the NPPF, Travel Plans will be required in support of planning applications for all major developments. It is expected that the Travel Plans developed and implemented for each site will complement the strategic infrastructure improvements detailed in this report to increase use of modes of transport other than the private car. Travel Plans should be prepared in accordance with the guidance contained within the Nottinghamshire County Council 'Guidance for the preparation of Travel Plans in support of Planning Applications' (September 2010) that can be found on the council's website²³.

10.3 TRAVEL PLANS FOR EMPLOYMENT USES

- 10.3.1 Although primarily aimed at staff, it will be expected that Travel Plans developed for employment uses will also cover visitors and deliveries to each site. The key measure to include within an employment-use development Travel Plan is the appointment of a Travel Plan coordinator to oversee the implementation, monitoring and evaluation of the Travel Plan. Initiatives that the Travel Plan coordinator would oversee include:

²³ <http://www.nottinghamshire.gov.uk/media/124515/travelplanguidance.pdf>

- Encouraging use of the Nottinghamshire car sharing service (<https://liftshare.com/uk/community/nottinghamshare>)
- Implementing car-sharing initiatives for staff including dedicated parking bays.
- Providing Public Transport timetable information in public areas/restrooms/changing rooms.
- Negotiations with public transport operators to adjust timetables to fit shift times and discounted fares.
- Personalised journey planning.
- Staff salary incentives for adoption of sustainable travel behaviour.
- Providing loans for season tickets, cycle purchase etc.
- Use of local suppliers and rationalisation of delivery movements.
- Setting up cycle clubs, secure cycle parking, storage lockers, shower/changing facilities, negotiating discounts with local cycle shops.
- Design and maintenance of walking and cycling routes within the site to ensure good links to bus stops, cycle routes and adjacent footways.
- Undertaking Travel Plan monitoring and reporting to determine whether target modal shares are being achieved. As part of this process the County Council will require multi-modal travel surveys to be undertaken (compatible with the TRICS survey format) and site-specific trip generation rates to be calculated for all modes.

10.4 TRAVEL PLANS FOR RESIDENTIAL USES

10.4.1 Again, the key measure to include within a residential-use development Travel Plan is the appointment of a Travel Plan coordinator to oversee the implementation, monitoring and evaluation of the Travel Plan. Initiatives that the Travel Plan coordinator would oversee include:

- Encouraging use of the Nottinghamshire car sharing service (<https://liftshare.com/uk/community/nottinghamshare>)
- Preparation and distribution of travel information packs to residents including walking, cycling and public transport maps.
- Cycle parking provided within residences.
- Low cost cycle purchase initiatives.
- Design and maintenance of walking and cycling routes within the site to ensure good links to bus stops, cycle routes and adjacent footways.
- Encourage home working through provision of Wi-Fi coverage, Broadband etc.
- Personalised journey planning.
- Provision of public transport travel information hubs.
- Undertake Travel Plan monitoring and reporting to determine whether target modal shares are being achieved. As part of this process the County Council will require multi-

modal travel surveys to be undertaken (compatible with the TRICS survey format) and site-specific trip generation rates to be calculated for all modes.

10.5 MODAL SHARE TARGETS

- 10.5.1 It is expected that Travel Plans will set out mode share targets against which the effectiveness of the Travel Plans will be measured to enable corrective actions to be identified when targets are not met. Targets for each site will be different depending on the end-user and the travel plan measures identified. Bassetlaw District Council may also impose planning obligations or require a sum to be paid as part of a Section 106 Agreement, to pay for the delivery of additional sustainable travel measures/initiatives if modal share targets are not achieved. Developers will be required to fund and implement sustainable travel measures, public transport service reliability improvements, and bus priority measures as well as sustainable transport infrastructure improvements to achieve modal split targets.
- 10.5.2 Existing modal splits for the district derived from 2011 Census data are summarised in **Table 1** (page 10) and as discussed in Section 2 the district exhibits a higher proportion of the population using private motor vehicles to travel to work (81%) than the rest of the County (77%) and England as a whole (66%). Cycling and walking to work is approximately the same within the district as the County and England however travelling to work by bus and rail is lower. The existing modal splits reflect the rural nature of most of the district.
- 10.5.3 Achieving modal shift away from the car is most likely to require an increase in use of public transport as the level of walking and cycling in the district is already relatively high and there is likely to be limited opportunity to further encourage walking and cycling in the rural areas of the district where longer journey distances discourage significant additional use of these modes.
- 10.5.4 It should be reasonable to assume that, as an initial target, car use should aim to be reduced from the existing level (81%) to the same level as the County average (77%), equivalent to a 5% reduction in car use (or a 4% modal shift). A 4% modal shift to public transport would achieve this if the walking and cycling modal share remained constant at 14%, taking public transport use to approximately 6% and approximately equal to the County average of 7%.
- 10.5.5 However, it should be noted that the County Council has historically funded approximately 70% of bus services within the district and the level of public funding may change in the future which could affect service levels. Greater levels of private funding may therefore be necessary to maintain/improve current bus service levels.

10.6 ON-GOING TRAVEL PLAN MONITORING

- 10.6.1 It is essential that the Travel Plans identify a long term²⁴ plan for continually monitoring and reviewing the Travel Plan and taking corrective actions where necessary and agreeing these with Bassetlaw District Council.

10.7 TRAVEL PLAN COSTS

- 10.7.1 All costs associated with developing, implementing, managing and monitoring Travel Plans will be met by developers and these costs are to be identified at the planning application stage and secured through planning conditions. The Council may also require financial sums to be paid by developers to enable the Council to implement further sustainable travel measures if modal shift targets are not achieved. Such funds are typically time limited and refunded to the developer if they are not required.

²⁴ Timescale should be agreed with the planning and highway authorities on a site by site basis, but in any case, should be a minimum of 5 years' post opening of the development.

11 TRANSPORT INFRASTRUCTURE REQUIREMENTS

11.1 INTRODUCTION

- 11.1.1 This section identifies likely infrastructure improvements that will be required to address the cumulative impacts of the proposed 2021 Local Plan development that has been assessed. Potential improvements are described in outline only at this stage and more detailed assessments will be required to identify definitive improvement proposals.
- 11.1.2 Scheme costs have been identified in preliminary form and these are intended to give an approximate 'order of cost'. All costs exclude utilities, land acquisition and other unknown factors.

11.2 BUS TRANSPORT

New/Improved Bus Infrastructure

- 11.2.1 The promotion and marketing of existing public transport services to potential residents/employees should form part of the initial 'soft' travel plan measures implemented by developers to ensure that existing services are used as much as possible before new transport infrastructure is proposed. This will require careful assessment at the planning application stage to determine whether existing services have enough capacity to accommodate forecast demands. The cost of extensions to existing services to meet additional demand due to development will be the responsibility of developers.
- 11.2.2 It is anticipated that forecast demand for bus travel will primarily be met through a combination of available capacity on existing services and enhancements/extensions to existing services. Where new/improved services are provided by developers these are likely to require revenue subsidy from developers until services become established and financially self-supporting.
- 11.2.3 Improvements to bus services may take several forms including extending, increasing or supplementing service /route frequency. It is recommended that improvements are coordinated to capture economies of scale Through consultation with existing bus service providers to test the commerciality of (and therefore reduce the subsidy required for) any potential service improvements.
- 11.2.4 Although both Residential and Employment development sites require servicing by bus transport; it is Residential sites which are most likely to be served without financial support, as a commercial operator may see the potential for a viable service. To encourage sustainable travel behaviour bus services should be implemented prior to development occupation so services are therefore still likely to require early years financial support from developers to achieve modal shift until sufficient patronage is available for a self-sustaining service.

11.2.5 Comments on a settlement-by-settlement basis are provided as follows.

Worksop Central

11.2.6 Worksop Central enjoys a network of relatively frequent bus services and as journey times are low, it is possible to provide comprehensive services with a modest infrastructure.

11.2.7 The Local Plan development detailed earlier focus most planned development within Worksop. Potential development sites are spread across the town (**Figure 16**) and none is likely to be more than a 20-minute bus journey from the town centre.

11.2.8 Most of the Central Worksop residential site allocations are small (up to 150 residential units) and are generally distributed across the area. It is not anticipated that the proposed development will generate any significant impacts on existing local services.

Worksop

11.2.9 Worksop outer area also enjoys a network of relatively frequent bus services and as journey times are low, it is possible to provide comprehensive services with a modest infrastructure.

11.2.10 The Peaks Hill Farm Development site (Site Reference HS1) is the largest development allocation of this area proposing 1,080 residential dwellings along with a small employment component. This site is north of the town on the extremity of the current urban area and is likely to present the most difficulties in terms of bus transport. However, as it is adjacent to existing residential development it should still easily be served by modifications to the existing bus network, although additional resources will be required.

11.2.11 The employment site at Apleyhead, Worksop (Site Reference SEM01) is the largest employment site with a total site area of 216 Ha. This site is located immediately adjacent to the strategic A57 route and will therefore benefit from access to existing bus services currently using the A57. The option to consider service diversion into the site will be subject to commercial evaluation and detailed discussions relating to how the site is brought forward.

Retford

11.2.12 As with Worksop, Retford also has a network of relatively frequent bus services provided with modest infrastructure. Unlike Worksop, which has a bespoke town service network, residential areas on the periphery of Retford are generally served by inter-urban bus services as they enter or leave the town.

11.2.13 Residential development in Retford is expected to provide a total of 1,511 dwellings during the plan period. There is no new employment proposed within the plan.

11.2.14 The largest residential site, Ordsall South (Site Reference HS13) is forecast to generate 930 residential units during the plan period. This site is served by a half-hourly bus service and this frequency could easily be increased to meet additional demand, if necessary. The remainder of the development is located across the Retford area.

Rural Clusters

11.2.15 The balance of the proposed residential development is spread across small developments located in clusters of villages within the district. No employment development is proposed in these locations. The level of development planned should be accommodated on existing bus services in these areas of the district.

11.2.16 A total of 665 residential units are proposed across the rural area of the district with the largest single site being the New Garden Community (Bassetlaw Garden Village) (Site Reference HS13) which accounts for 590 residential units and 10 Ha of employment uses during the plan period. This area of the district is relatively poorly served by existing bus services with just a few services offering at best, hourly daytime frequencies between Retford and Newark-on-Trent and local villages.

11.2.17 Given the scale of residential development planned for the new Garden Community it is expected that new services will be needed to provide frequent bus connections to Worksop, Retford and Newark-on-Trent from where train connections can be made to destinations further afield. A larger development of more than the 590 units proposed within the plan period may achieve the critical mass required for bus services to be commercially viable in the future, however new services are likely to require financial subsidy from developers until they become established and financially self-supporting.

All Locations

11.2.18 In addition to new/improved bus services there will also be a requirement for new/improved supporting infrastructure in the form of additional bus stops, shelters, seating etc. for all locations. Further enhancements such as real-time passenger information systems should also be explored as this offers good potential to further increase bus patronage.

11.2.19 General consideration should also be given to bus priority measures, where appropriate, to improve bus journey times and journey time reliability.

Delivery Timescale

11.2.20 Unlike rail, where improvements have long implementation timescales, improvements to bus services can usually be introduced with relatively short notice.

- 11.2.21 Consultation with existing bus service providers is always recommended to test the commercial viability of (and therefore reduce the subsidy required for) any potential new or improved services.
- 11.2.22 Complementary infrastructure improvements should also be considered as and when development sites are progressed and more accurate estimates of bus passenger demands, likely routes and infrastructure requirements can be determined.
- 11.2.23 Regarding timing it is essential to implement new and improved bus services and infrastructure very early in the life of a development, ideally before any units on the site are occupied, so that facilities are available and operational for new residents and employees to use immediately. This is an important aspect of establishing good, sustainable travel behaviour and should be a conditional requirement of planning permissions for new development.
- 11.2.24 Detailed investigations should be undertaken at the planning application stage to identify the appropriate level of new/improved bus services and complementary infrastructure improvements required to cater for forecast demands and achieve modal split targets. Delivery of an appropriate package of improvements should be a conditional requirement of planning permission and should be implemented prior to development occupation to encourage sustainable travel behaviour.
- 11.2.25 Improvements to bus networks/infrastructure should therefore be timed to coincide with developments to meet forecast demands.

Indicative Costs

- 11.2.26 The cost of providing additional resources will be site specific and will be dependent upon the details of the bus contract specifications, numbers of vehicles required, routes, service frequencies and any new/improved infrastructure required.
- 11.2.27 However, as a general 'rule of thumb' a new bus service with a single vehicle, costs in the order of £400 - £500 per day to operate, or approximately £140,000 - £175,000 per vehicle per annum for a 7-day service.
- 11.2.28 Improvements are funded to a specified level for specific time periods and are not therefore "open-ended" (usually secured via a Section 106 Agreement). A worthwhile option to pursue is the implementation of improvements funded by "Kickstart approach" money where the commercial operator or local authority will take over the risk attached to providing improvements to bus services after a designated period.

Potential for Park & Ride

- 11.2.29 Park & Ride facilities are typically used to manage car demands on congested urban networks by encouraging drivers to park on the outskirts of a city or town and travel into the centre using a more sustainable mass transit mode of transport such as bus or light rail.
- 11.2.30 To be commercially viable Park & Ride schemes typically require a significant resident population outside of the town centre who work and shop in the town centre.
- 11.2.31 Park & Ride sites also need to be located conveniently close to the existing major highway network, and on radial routes with public transport priority. They must also serve a centre with high parking charges and/or limited parking supply.
- 11.2.32 Within the district, Worksop is the largest town, and it currently does not experience traffic congestion or parking demand problems to the extent that a Park & Ride facility would be warranted. However, it is suggested that this situation is monitored for possible future investigation.

11.3 PASSENGER RAIL

New/Improved Infrastructure

- 11.3.1 As detailed in **Table 27** the demand forecasts for rail due to Local Plan development within the district are relatively low based on existing modal splits (59 AM person trips) and would not, on its own justify any additional investment in rail infrastructure.
- 11.3.2 Typically, a High-Speed Train (HST) as used by East Coast on services to London, will have seating capacity for 550. A class 142/144 Pacer, as used by Northern Rail on services from Retford and Worksop to Sheffield and Lincoln will have a seating capacity for between 100 and 125 passengers. A class 153 or 156 Super Sprinter as used by East Midlands Trains on the Robin Hood Line will have a passenger capacity of between 75 and 125.
- 11.3.3 On weekdays during the morning peak period, there are 2 trains departing Retford for London; four trains north to Doncaster, York and Scotland; two from Worksop to Nottingham; three from Retford to Sheffield and two from Worksop to Lincoln. A reasonable assumption is that these trains will have a total capacity for approximately 4,175 passengers, although of course there are existing customer movements to consider. Given this wider perspective, the predicted level of rail usage is not significant and should be comfortably accommodated by existing services.

11.4 CYCLING AND WALKING

New/Improved Infrastructure

- 11.4.1 With reference to **Table 27** the forecast increase in use of all sustainable transport modes based on existing modal splits is relatively modest. An increase of up to 194 two-way cycle trips (AM) and 1,030 (AM) walking trips when spread across the whole district and throughout the AM peak would result in low increases at any specific location.
- 11.4.2 When distributed pro rata to the residential development sizes given in **Table 25** the largest increase in walking trips would be in Worksop, equivalent to an average of approximately eight trips per minute over an hour.
- 11.4.3 For cycling the largest increase in trips would be in Worksop (80 trips in the AM peak) equivalent to an average of approximately two trips per minute over an hour. As a result, it is anticipated that existing pedestrian and cycle networks will have enough capacity to accommodate forecast increases.
- 11.4.4 However, demand for these modes should be assessed on a site-by-site basis as part of the Transport Assessments submitted in support of planning applications as there may be specific Local Plan development sites where considerable levels of walking and cycle movements will be generated which may warrant improvements to existing infrastructure. There are several obvious gaps in the existing cycle network, for example around Carlton-in-Lindrick and contributions to this infrastructure may be required from developers of future sites in affected areas. Additionally, where the provision of adjacent off-site cycling or walking infrastructure enhancement is appropriate for future development sites, contributions to longer distances or area-wide cycling and walking projects may be required.
- 11.4.5 All developments must also make adequate provision for on-site cycle-related infrastructure including cycle parking, secure and covered cycle storage, cyclist shower/changing/storage facilities etc. to fully encourage cycle use as a sustainable means of travel. Details will need to be identified on a site-specific basis and designed and implemented in accordance with current standards and best practice guides such as the Nottinghamshire Cycling Design Guide, the Nottinghamshire Highways Design Guide and the Department for Transport's Local Transport Note 1/20 'Cycle Infrastructure Design'. Provision of such facilities should be a conditional requirement of planning permission.
- 11.4.6 Internal access roads should give priority to cycles and pedestrians wherever possible. New infrastructure connections from developments onto the existing cycle network will also be required, including new controlled crossings at locations where major roads present barriers to cyclists and pedestrians.

- 11.4.7 For pedestrians, facilities should be included to connect the developments to existing footways and where appropriate provide additional crossing facilities. Consideration of gradients for wheelchair users and pushchair users must be made. Personal security and street lighting is also of importance for pedestrian trips, as well as ensuring that footways are wide enough to accommodate the increased levels of usage, particularly at bus stops. Connections to public transport are essential concerns. At sites where there may be high levels of visitors, direction signing to bus and train interchanges may be appropriate to encourage walking to these locations ahead of the use of private car.

Delivery Timescale

- 11.4.8 Improvements to cycling/walking infrastructure should therefore be timed to coincide with developments to meet forecast demands.

11.5 HIGHWAY INFRASTRUCTURE

- 11.5.1 This section of the report outlines potential strategic infrastructure improvements that could be implemented to provide additional traffic capacity at locations that have been identified to be operating over capacity due to the cumulative traffic impacts of proposed Local Plan development. A summary of key impacts and potential mitigation is presented in **Appendix G**.

Approach to Link Mitigation Strategy

- 11.5.2 Noting the 'high level' evaluation purpose of the assessment undertaken, it would be inappropriate at this stage to identify detailed mitigation schemes due to the very robust nature of the assessment and the current unknowns regarding deliverable modal shift at Local Plan allocation sites.
- 11.5.3 The following approach is therefore considered to be the most appropriate to address future traffic conditions on links within the district:
- National Highways and NCC to undertake ongoing monitoring of traffic conditions on key links within the district.
 - Sustainable travel measures to be identified and delivered by developments emerging through the Local Plan to maximise modal shift benefits.
 - The design principles of Garden Communities to be rigorously applied to the planned new Garden Community site to minimise the need to travel and help achieve a step-change in modal shift.
 - The transport implications of major developments to be assessed in detail at the planning application stage, to be funded by developers.
 - The identification and delivery of appropriate highway mitigation schemes to address residual traffic impacts, for developer funding and delivery.

- 11.5.4 In several situations, providing significant additional link capacity could include physical measures such as carriageway widening or soft measures such as travel behaviour change.
- 11.5.5 Physical measures often require significant capital investment and are dependent on available highway land, relocation of footways, land ownership, drainage, lighting, and a range of utility constraints. The requirement for structures and land acquisition can also contribute significantly to capital costs.
- 11.5.6 Travel behaviour change would require network users to modify their travel behaviour, either by using alternative routes, or travelling at alternative times when the network is less busy (i.e. peak spreading) in order to avoid congestions and delay. The methodology applied in this study is unable to take these factors into account and the forecast stress levels should therefore be considered a '**worst case**' assessment.

Priority Interventions

- 11.5.7 With reference to the CRF results presented in **Table 28**, it is noted that two links (L4 - A57 between B6034 and B6040 and L5 - A57 between B6040 and A614/A1) which together provide a key link between Worksop and the A1 to the east are forecast to operate with significant stress with the addition of Local Plan development. Closer examination of links L4 and L5 highlight that whilst operating within capacity in the 2019 base year scenario, the future development scenario significantly increases traffic flow on this section of the A57.
- 11.5.8 With reference to **Figure 16** it can be seen that links L4 and L5 connect a number of key Local Plan Allocation proposals within both Worksop and Retford including two of the larger plan allocation sites; the New Garden Community (Bassetlaw Garden Village - Site Reference HS13) and Apleyhead Junction, Worksop (Site Reference SEM01).
- 11.5.9 Links L4 and L5 of the A57 will therefore be central to the delivery of the proposed local plan allocations and it is recommended that consideration of potential interventions on these sections of the A57 should be prioritised.

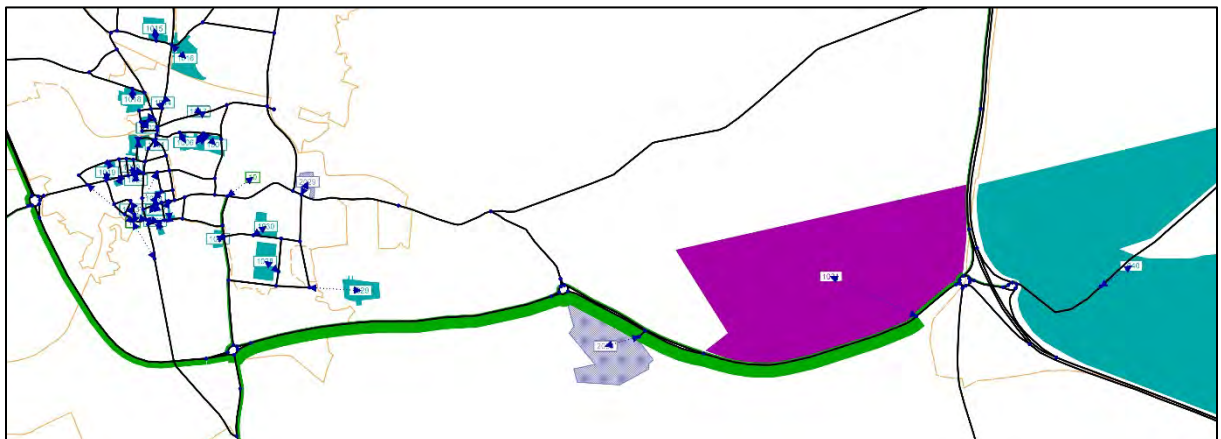
11.6 A57 LINK CAPACITY

- 11.6.1 Flow Bundle plots from the VISUM model used to assign development vehicle trips onto the highway network are presented in the images on the following page. These show that most trips from the 'Land off the A57 Apleyhead' site are assigned directly onto the A57 (trips represented in green with the thickness of the line proportional to flow volume) with a strong weighting to/from Worksop.

AM Development Peak Flow Bundle on A57



PM Development Peak Flow Bundle on A57



11.6.2 The Flow Bundle plots suggest that the 'Land off the A57 Apleyhead' potential allocation site is contributing significantly to the forecast traffic flows on the eastern end of the A57. Link flows on the eastern end of the A57 have therefore been examined to determine the proportion of the total development traffic flows that are being contributed by each of the proposed major allocations within the district.

11.6.3 Forecast impacts for each development that results in more than 30 two-way development trips on the eastern end of the A57 in any hour are summarised in **Table 30** on the next page. The flows in the table represent the total Local Plan allocation vehicle trips expressed as the two-way sum of the AM/PM peaks. The percentage of the total development flow from each of the major Local Plan allocation sites is also presented.

Table 30 – Forecast 2-Way Impacts on the A57 by Major Allocation Sites

Allocation Site Name	A57 Between B6034 and B6040		A57 East of Old Coach Road to Apleyhead Site Access		A57 East of Apleyhead Site access to A1(T) Apleyhead Interchange	
	Development Flows (Vehicles)	Percentage by Site	Development Flows (Vehicles)	Percentage by Site	Development Flows (Vehicles)	Percentage by Site
Apleyhead Site, Worksop	1,913	72%	2,260	72%	752	46%
Bassetlaw Garden Village	604	23%	693	22%	693	43%
Ordsall South	65	2%	65	2%	65	4%
Peaks Hill Farm, Worksop	0	0%	32	1%	32	2%
Sum of other 40 sites	72	3%	83	3%	83	5%

11.6.4 As can be seen above the site with the largest impact on the eastern end of the A57 is the Apleyhead site (72%). On the easternmost section of the A57 between the Apleyhead site access and the A1/A614/A57 Apleyhead interchange the impact reduces to 46%, with impacts of 43% due to the Bassetlaw Garden Village and 4% due to Ordsall South. This reduction is due to the routing of the Apleyhead site trips which is heavily biased to/from the west. The Peaks Hill Farm site and all other allocation sites within the district result in very small impacts on these sections of the A57.

11.6.5 Link flows on the eastern end of the A57 have also been examined to determine whether it is realistic to expect to be able to mitigate the 2038 Design Flows at these junctions, or whether, in practice link capacity on the A57 would constrain flows through the junctions.

11.6.6 Guidance on link capacity is provided in Volume 5 of the Design Manual for Roads and Bridges (DMRB) in TA 79/99 'Traffic Capacity of Urban Roads' and TA 46/97 'Traffic Flow Ranges for use in the Assessment of New Rural Roads'²⁵.

11.6.7 The A57 between its junctions with the A1 and the B6034 Netherton Road is a two-lane single carriageway road with a carriageway width of approximately 7.3m. This section of the A57 is predominantly rural in character however, for the purposes of this assessment forecast link flows on the A57 have been compared against both rural and urban link flow standards.

11.6.8 Comparing the characteristics of the A57 to Table 1 of TA79/99 shows it is classed as an Urban All-Purpose (UAP1) road "High standard single/dual carriageway road carrying predominantly through traffic with limited access, 40 to 60mph speed limit, with limited access". Table 2 of TA79/99 shows that 7.3m wide UAP1 category roads have a one-way hourly capacity in each

²⁵ Both documents were withdrawn from the Design Manual for Roads and Bridges (DMRB) in March 2020 however, to maintain consistency with the 2019 study methodology and in the absence of any replacement DMRB guidance the withdrawn standards have been applied for the purposes of this report update as they still provide useful guidance on link capacity.

direction equivalent to 1,590 VPH (busiest direction of flow assuming a 60/40 directional split) which is equivalent to a two-way hourly capacity of 2,650 VPH.

11.6.9 The equation below provides a calculation for link capacity where:

$$\text{Capacity} = [A - B * Pk\%H]$$

Where for single carriageways A = 1,380, B = 15 and Pk%H is the percentage of Heavy Vehicles in the peak hour.

11.6.10 Applying the observed 12% percentage of Heavy Vehicles in the peak hour (see **Figure 7**) for Pk%H gives the maximum Rural Link capacities summarised in the table below.

Table 31 – A57 Link Capacities (2-Way VPH)

A57 Link	Urban Link Capacity		Rural Link Capacity	
	AM	PM	AM	PM
J5 (B6034) to J6 (B6040)	2,650	2,650	2,400	2,400
J6 (B6040) to J7 (A1)	2,650	2,650	2,400	2,400

11.6.11 The Forecast 2038 Link Flows for these A57 links are summarised in the table below.

Table 32 – A57 Link Flows (2-Way VPH)

A57 Link	2038 Design Flows	
	AM	PM
J5 (B6034) to J6 (B6040)	3,221	3,207
J6 (B6040) to J7 (A1)	3,233	3,098

Note: Link flow values exceeding the highest link capacity thresholds are shown in red

11.6.12 Comparing the link flows in **Table 32** against the link capacities in **Table 31** the forecast flows exceed the theoretical link capacity by up to 583 VPH if urban link capacity is applied and up to 833 VPH if rural link capacity is applied. For these sections of the A57 to continue to perform satisfactorily additional link capacity may therefore be required, which could mean widening the A57 to dual carriageway between the B6034 Netherton Road (J5) and the A1 (J6) over a length of circa 6km.

11.6.13 However, as discussed earlier in this report the methodology used to derive forecast traffic flows is very robust because it:

- is based on pre-Covid19 traffic data
- makes no allowance for peak spreading, home working, or changes to commuting patterns that have occurred since early 2020
- assumes all committed and Local Plan development will be complete by 2038
- applies robust TRICS trip generation rates

- applies observed (2011 Census) modal splits
- makes no allowance for route reassignment
- makes no allowance for expanding the supply and availability of sustainable travel alternatives.
- takes no account of the potential benefits of future technology such as autonomous vehicles etc.

11.6.14 The combined effects of the provision of sustainable transport measures and demand management that developers will be required to deliver at the planning application stage is expected to deliver lower traffic impacts in practice than those forecast in this study.

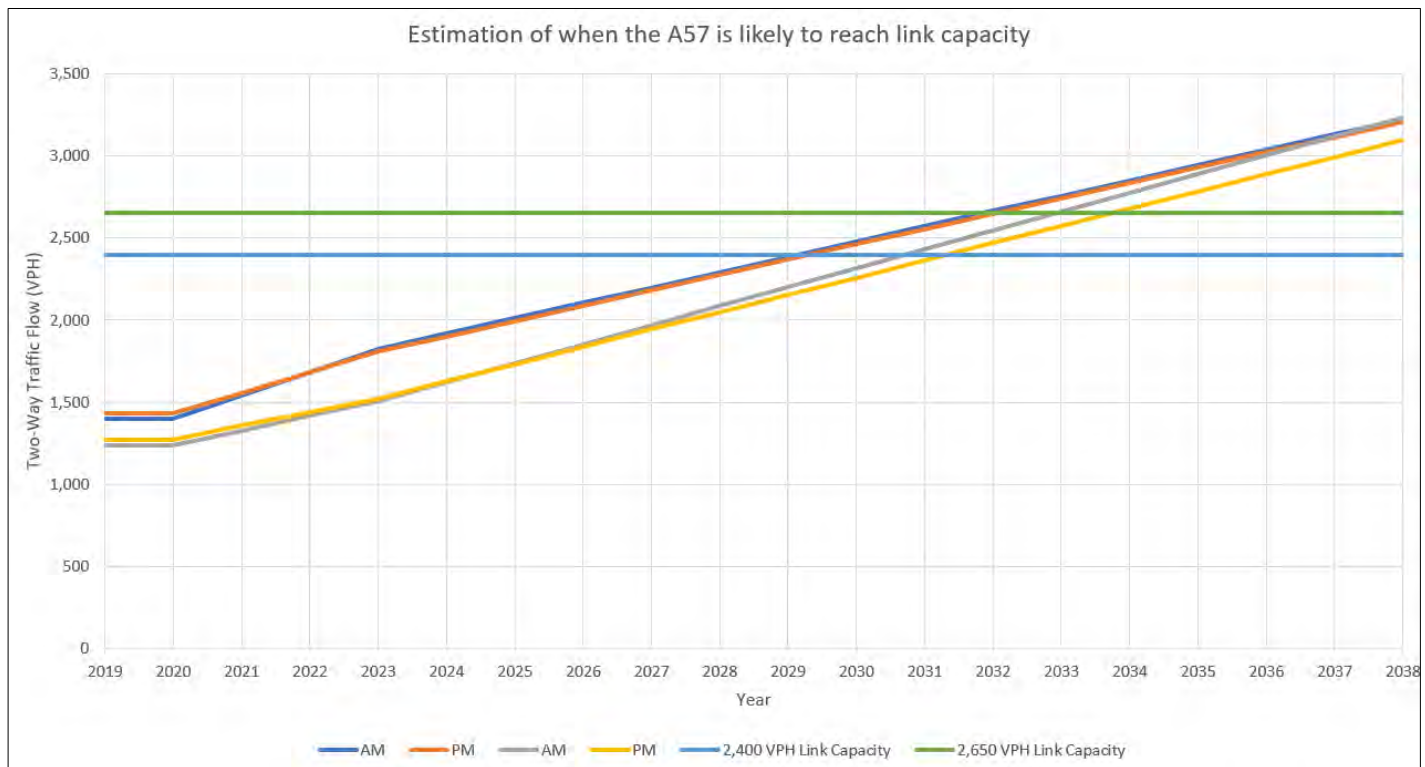
11.6.15 An estimate has been made of when the eastern sections of the A57 may be expected to reach their theoretical link capacity, noting the caveats mentioned above. The estimate assumes that all committed development is delivered and fully occupied at a linear rate between 2020 and 2023 and that all Local Plan development is delivered and fully occupied at a linear rate between 2023 and 2038.

11.6.16 The results of this analysis are shown in the graph on the next page where the two horizontal lines (green and blue) represent the theoretical A57 link capacity of 2,650 VPH and 2,400 VPH respectively and the sloped lines represent the cumulative increase in two way AM/PM peak hour traffic flows on the A57 (Base + Committed Development + Local Plan development flows).

11.6.17 The dark blue and orange sloped lines represent the AM and PM traffic flows respectively on the A57 between J5 (B6034) and J6 (B6040), whilst the grey and yellow sloped lines represent the AM and PM traffic flows respectively on the A57 between J6 (B6040) to J7 (A1).

11.6.18 As can be seen from the graph the A57 between J5 (B6034) and J6 (B6040) is forecast to reach the 2,400 VPH theoretical link capacity just after 2029 and the 2,650 VPH link capacity by 2032. For the A57 between J6 (B6040) to J7 (A1) this is forecast to reach the 2,400 VPH theoretical link capacity just before 2031 and the 2,650 VPH link capacity by 2033.

11.6.19 This is clearly a simplistic analysis; however, it suggests that link capacity issues are unlikely on the eastern end of the A57 within the first seven to 10 years of the plan period even with the robust assessment methodology applied in this study.



11.6.20 Monitoring of the performance of the A57 is therefore recommended in the short to medium term whilst options for potential mitigation are investigated further as part of a five-year plan review.

Possible Mitigation for the A57 between B6040 and A614/A1 (L5)

11.6.21 As discussed in Section 10, from a traffic and highways perspective it is favourable to seek to reduce traffic impacts by managing travel demand thereby reducing/removing the requirement for highway improvement works.

11.6.22 The first stage for addressing potential link capacity issues on the A57 will therefore be to encourage use of sustainable transport modes (i.e. walking, cycling, bus etc.) for all new development and in accordance with the NPPF, Travel Plans will be required in support of planning applications for all major developments. It is expected that the Travel Plans developed and implemented for each site will complement the strategic infrastructure improvements detailed in this report to increase use of modes of transport other than the private car.

11.6.23 Possible options such as the creation of a new railway station on the proposed Garden Village site, which could then also serve as a Parkway station, and/or the creation of a Park and Ride facility on the proposed Garden Village site should also be explored to help relieve car trips on the A57. These types of options should be considered ahead of carriageway widening.

Possible Widening of the A57 between B6040 and A614/A1 (L5)

11.6.24 Widening of this section of the A57 to dual carriageway would be a major undertaking, involving potential significant loss of trees as this section of the A57 passes through Sherwood Forest and is forested on both sides of the carriageway. There are also several access junctions that would need improving including junctions serving B&Q, Wilko and DHL distribution centres, and a side road junction (Old Coach Road) that would need to be improved, in addition to the roundabout junctions with the B6034 / Netherton Road (J5), B6040 Mantonwood (J6) and the A1 / A614 Apleyhead (J7).

11.6.25 The cost of improving this section of the A57 will therefore be heavily dependent upon the design of the scheme considering factors such as:

- Whether at-grade or grade separated junctions are provided
- Replacement pedestrian bridge between J4 (B6034) and J5 (B6040)
- Replacement road bridge between J4 (B6034) and J5 (B6040)
- Need for any other structures such as culverts or retaining walls
- Earthworks
- Third-party land costs where widening cannot be achieved within the highway boundary
- Utility diversion / protection works
- Tree removal
- Drainage
- Lighting
- Traffic management during construction

11.6.26 It is therefore not possible at this stage to provide an estimated cost for widening this section of the A57 without first undertaking a feasibility study and preliminary design exercise and Bassetlaw District Council intends to commission a separate study to examine this in due course. However, given the scale of the works required, the cost of a widening scheme is likely to be significant and beyond the affordability of developer contributions alone.

11.6.27 It is therefore recommended that the Council work with relevant partners to agree an 'Improvement Plan' for the A57 corridor which considers planned growth as well as other likely sites that may come forward through the lifetime of the Local Plan. The Improvement Plan should identify a credible mechanism for mitigation and the delivery of any improvements required to the highway.

11.7 JUNCTION IMPACTS

11.7.1 For the junctions on links identified to be stressed in the future development scenario a potential mitigation strategy has been investigated. **Table 29** on page 74 identifies a total of 10 junctions on links forecast to be close to, or over 100% stress with the addition of Local Plan development traffic flows. Junction capacity assessments have been undertaken at six of these junctions as listed in **Table 33** below.

Table 33 – Junctions Assessed

Ref No.	Junction Description
J1	A60 Mansfield Road/A619, Worksop
J3	A57/Sandy Lane Roundabout, Worksop
J4	A57/Claylands Ave/Shireoaks Common Roundabout, Worksop
J5	A57/B6034/Netherton Road Roundabout, Worksop
J6	A57/B6040 Roundabout, Mantonwood
J7	A614/A57 Roundabout, east of Worksop

11.7.2 The type and scale of improvement works required/deliverable at each location are summarised and preliminary costs have been identified later in this chapter. Scheme costs are identified in preliminary form only and these are intended to give an approximate 'order of cost' and a concept of the type of improvement which may be achievable. All cost estimates presented should be treated as indicative and exclude land acquisition and utilities costs as these are unknown at this stage.

11.7.3 Because the improvements are at a preliminary stage optimism bias of 46% has been applied which is a contingency cost allowance that reflects the greater level of cost uncertainty in the early stages of a scheme. This reduces as the improvement schemes are developed in more detail and costs become more certain. This is in accordance with DfT WebTAG guidance²⁶.

11.7.4 The other four junctions on links expected to experience significant stress are identified in **Table 34** on the next page with an explanation as to why these junctions have not been assessed as part of this study.

²⁶ See Table 8 of TAG Unit A1.1 – Recommended optimism bias uplifts for different projects at different stages of the life of a transport project.

Table 34 – Junctions Not Assessed

Ref	Location	Reason for not Assessing
J2	A57/A60/B6024/St Anne's Drive	Junction improved by ViaEM in 2016. Recommend monitor performance, no further improvements proposed in short term.
J8	A57/B6041 Gateford Road	Junction improved by ViaEM in 2019. Recommend monitor performance, no further improvements proposed in short term.
J9	B6045 Blyth Road/B6041 Kilton Hill	Main impacts due to the Peaks Hill Farm allocation. Recommended that the developer of this site assess the operation of these junctions and identify and deliver appropriate mitigation at these junctions, if required.
J10	B6045 Blyth Road/Farmers Branch	

11.7.5 A summary of the junction assessments and possible mitigation is presented on the following pages.

J1 - A60/A619 ROUNDABOUT, WORKSOP

Existing Junction Layout



(Map data © 2019 Google)

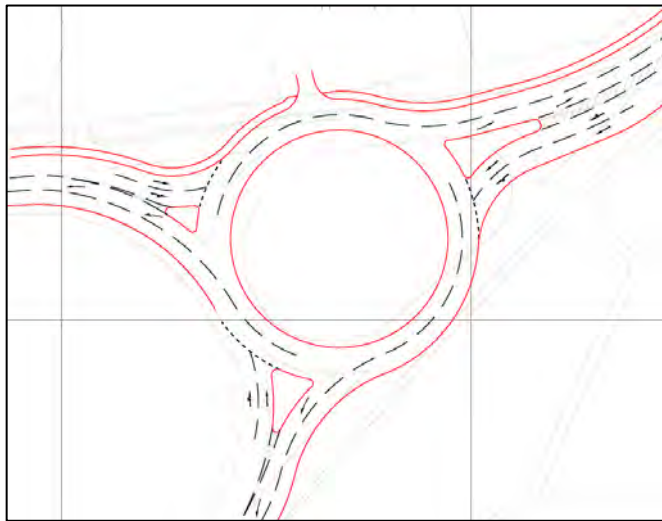
Junction Type/Details

Priority three arm roundabout with single lane approaches.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
1.10	37.80	1.00	17.00

Mitigation Proposals



Mitigation Description

Improvements to the junction have been proposed which involve replacing the existing arrangement with a standard roundabout with spiral lane markings and associated widening on entries and exits. This requires the private access to the north of the junction to be repositioned a few metres to the west to tie into the new roundabout. See **Figure 23**.

Operational Performance (2038 Design Flows)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
0.83	4.5	0.65	1.8

Anticipated Mitigation Costs

Construction Work Cost:	£2,213,403
Optimism Bias:	£1,018,165
Total	£3,231,569

J3 - A57/SANDY LANE ROUNDABOUT, WORKSOP

Existing Junction Layout



(Map data © 2019 Google)

Junction Type/Details

Priority four arm roundabout with two lane approaches.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
1.14	103.3	1.13	116.1

Mitigation Proposals



Mitigation Description

Improvements to the junction have been proposed which involve widening both A57 entries to incorporate an additional lane, with associated exit widening on the A57 to the south (See **Figure 24**).

Operational Performance (2038 Design Flows)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
0.73	2.7	0.80	3.7

Anticipated Mitigation Costs

Construction Work Cost:	£2,213,403
Optimism Bias:	£1,018,165
Total	£3,231,569

J4 - A57/CLAYLANDS AVE/SHIREOAKS COMMON, WORKSOP

Existing Junction Layout



(Map data © 2019 Google)

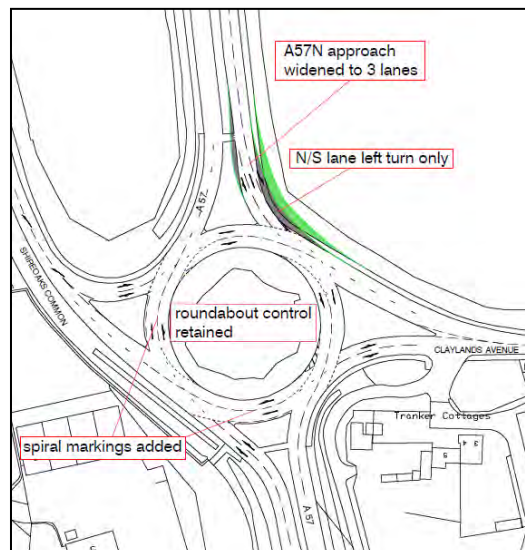
Junction Type/Details

Priority four arm roundabout with two lane approaches.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
0.80	4.2	0.65	1.9

Mitigation Proposals



Mitigation Description

ViaEM proposed improvement which incorporates widening on the A57 north arm to add an additional lane for the left turn into Claylands Ave and provision of spiral markings on the roundabout (See layout drawing in **Appendix F**).

Operational Performance (2038 Design Flows)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
0.86	6.1	0.81	4.2

Anticipated Mitigation Costs

Construction Work Cost:	£737,801
Optimism Bias:	£339,388
Total	£1,077,190

J5 - A57/B6034/NETHERTON ROAD ROUNDABOUT, WORKSOP

Existing Junction Layout



(Map data © 2019 Google)

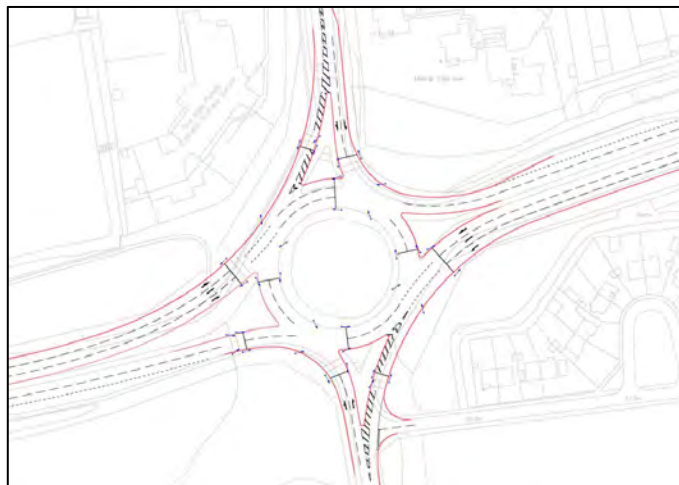
Junction Type/Details

Priority four arm roundabout with two lane approaches.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
1.17	30.3	1.18	108.4

Mitigation Proposals



Mitigation Description

Widening of the A57 arms to provide additional lanes. Widening on the minor arms to cater for the signal installation. Widening of the circulatory carriageway to provide two/three lanes to cater for traffic flows (see **Figure 25**). Assessment considers alternative stage sequences to prevent queue blocking on the circulatory carriageway. Circulatory queues are within available stacking space and the improvement more than mitigates Local Plan traffic impacts.

Operational Performance (2038 Design Flows)

Stages	AM Peak		PM Peak	
	Reserve Capacity	Delay per Hour (PCU)	Reserve Capacity	Delay per Hour (PCU)
3	-10.6%	52.69	-10.6%	55.53
4	-22.0%	190.35	-26.5%	252.54

Anticipated Mitigation Costs

Construction Work Cost:	£2,951,204
Optimism Bias:	£1,357,554
Total	£4,308,758

J6 - A57/B6040 ROUNDABOUT, MANTONWOOD

Existing Junction Layout



(Map data © 2019 Google)

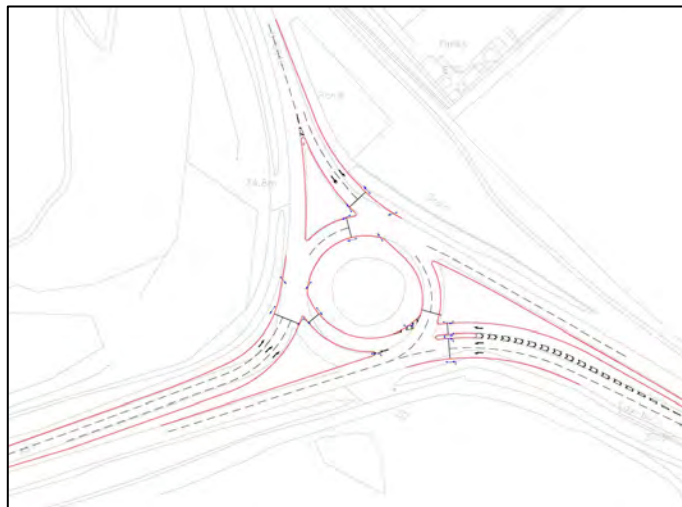
Junction Type/Details

Priority three arm roundabout with two lane entries.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
1.13	93.90	1.19	121.90

Mitigation Proposals



Mitigation Description

Provision of full signal control with widening on both A57 arms to provide additional lanes. Minor widening on side roads (See **Figure 26**).

Operational Performance (2038 Design Flows)

AM Peak		PM Peak	
Reserve Capacity	Delay per Hour (PCU)	Reserve Capacity	Delay per Hour (PCU)
-6.7%	43.59	-4.8%	33.32

Anticipated Mitigation Costs

Construction Work Cost:	£2,951,204
Optimism Bias:	£1,357,554
Total	£4,308,758

J7 - A57/A614/A1 FIVE LANES END ROUNDABOUT, APLEYHEAD

Existing Junction Layout



(Map data © 2019 Google)

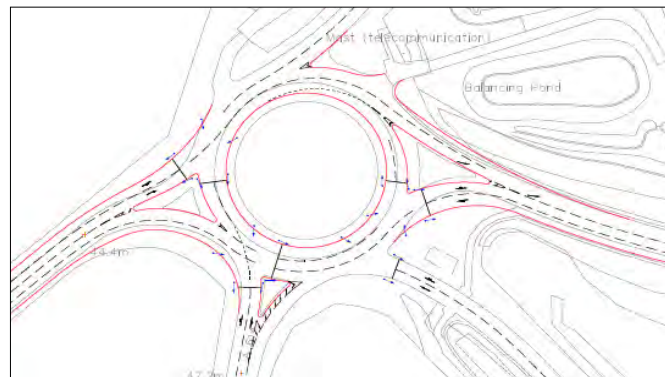
Junction Type/Details

Priority seven arm roundabout with a single wide circulatory carriageway.

Operational Performance (2038 Reference Case)

AM Peak		PM Peak	
Max. RFC	Max. Queue (PCU)	Max. RFC	Max. Queue (PCU)
1.16	57.4	1.13	61.0

Mitigation Proposals



Mitigation Description

Provision of full signal control with widening on both A57 arms to provide additional lanes. Minor widening on side roads (See **Figure 27**).

Operational Performance (2038 Design Flows)

AM Peak		PM Peak	
Reserve Capacity	Delay per Hour (PCU)	Reserve Capacity	Delay per Hour (PCU)
-6.5%	56.04	1.9%	38.95

Anticipated Mitigation Costs

Construction Work Cost:	£2,951,204
Optimism Bias:	£1,357,554
Total	£4,308,758

11.8 FUNDING

11.8.1 Potential sources of funding have been identified as follows:

- Developer – funding provided in full by developers to address transport impacts due to development proposals.
- LTP/Developer – funding split between the Local Transport Plan (LTP) budget and developer(s) to address existing transport issues on the County highway network that will be exacerbated by development proposals.
- LEP/Developer – funding split between the Local Enterprise Partnership (LEP) budget and developer(s) to deliver capacity improvements that facilitate economic growth.

11.8.2 If an appropriate funding source (Central Government or through the LEP) can be identified then highway mitigation schemes could potentially be promoted by Nottinghamshire County Council in partnership and with match funding from the District Council.

11.8.3 The current LTP3 period commits funding to 31st March 2026, beyond this date funding levels and priorities are unknown. In the absence of LTP funding developers will be expected to restore link and/or junction capacity to the state it would have been without a development proceeding (i.e. achieve 'nil detriment') and the works required to achieve this will need to be fully developer funded.

11.9 IMPROVEMENT PRIORITIES

11.9.1 The delivery of any measures or infrastructure improvements required to mitigate the direct transport impacts of developments will need to be timed to coincide with the development and this will be the responsibility of developers.

11.9.2 Further detailed consideration will need to be given to the likely delivery programme for Local Plan development across the district by development location and time to be able to estimate the 'build-up' of cumulative traffic impacts. An estimate of thresholds could then be made that would 'trigger' the requirement for the improvements. It would then be possible to prioritise scheme delivery more accurately, balancing the requirement for strategic improvements against development requirements which would assist with securing infrastructure through planning conditions and identifying any funding shortfalls etc.

12 SUMMARY

12.1 PREAMBLE

- 12.1.1 This strategic transport study identifies the cumulative multi-modal transport implications of future housing and employment Local Plan development within the district to advise strategic transport infrastructure requirements.

12.2 EXISTING CONDITIONS

- 12.2.1 Existing transport conditions within the district have been identified which involved a review of existing walking, cycling, bus, rail and road transport. Traffic flow data has been obtained for all 'A' and 'B' Classification roads in the district and this has been analysed and 'factored' to a common 2019 base year.
- 12.2.2 The performance of the road network within the district has been assessed based on link capacity. Congestion Reference Flow (CRF) values have been used as a simple indication of the performance of links within the study area. The CRF of a link is a standard measure and is an estimate of the Annual Average Daily Traffic (AADT) flow at which the carriageway is likely to be 'congested' in the peak periods on an average day. Congestion is defined as the situation when the hourly traffic demand exceeds the maximum sustainable hourly throughput of the link.
- 12.2.3 The assessment methodology uses surveyed link flows and forecast flows to determine Congestion Reference Flows (CRF) and based on these calculated reference capacities link 'stress' levels have been identified where stress is defined as the ratio of the annual average daily traffic (AADT) flow to the Congestion Reference Flow expressed as a percentage.

12.3 PROPOSED LOCAL PLAN DEVELOPMENT

- 12.3.1 Residential and employment 2021 Local Plan development details have been provided by the District Council, together with details of potential development sites that could accommodate this Local Plan development.

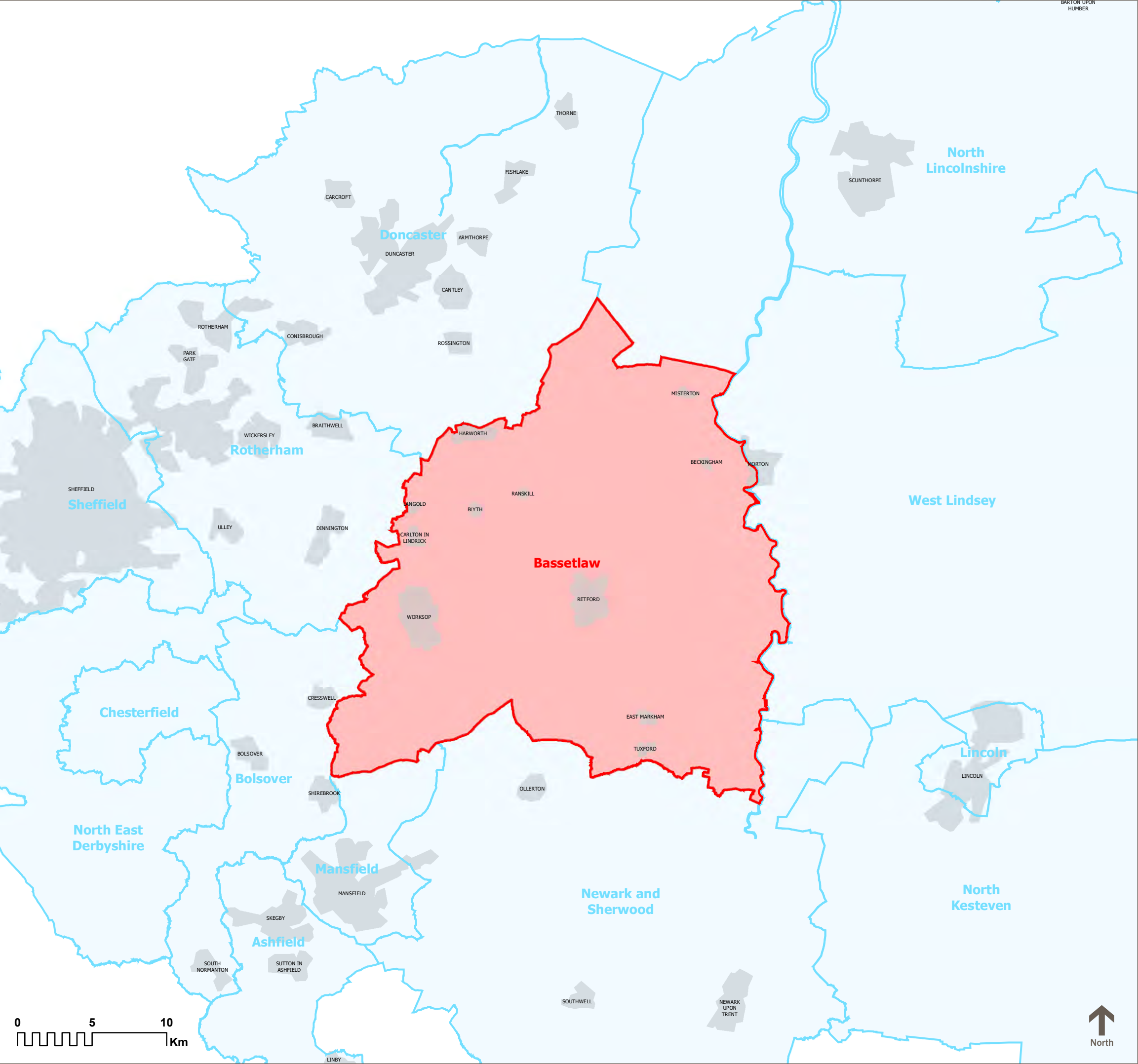
12.4 TRANSPORT IMPACTS

- 12.4.1 Using the CRF assessment methodology, several highway links have been identified to be susceptible to stress in the future year scenario and may require intervention to support delivery of the proposed 2021 Local Development Plan.
- 12.4.2 An assessment of junctions located on these highways links has also been undertaken and possible mitigation measures identified where operational impacts are forecast. Whilst any mitigation at this stage can be treated only as indicative, outline sketches and cost estimates have been prepared in support of the interventions identified.

12.5 STRATEGIC INFRASTRUCTURE REQUIREMENTS

- 12.5.1 Possible highway infrastructure improvements have been identified in a preliminary form, together with indicative costs. These are summarised in **Appendix G**.
- 12.5.2 Strategic transport improvements have been described in outline only at this stage and more detailed assessments will be required to identify definitive improvement proposals and delivery priorities. Estimates of scheme costs have been provided and give an approximate 'order of cost' only. Therefore, no reliance in terms of preferred scheme selection should be placed on the cost estimates presented in this report.
- 12.5.3 This strategic study has identified cumulative traffic impacts on the existing highway network due to future Local Plan development planned within the district. The strategic transport improvements that have been identified are aimed at addressing these cumulative impacts. It is beyond the scope of this study to identify all locations where transport infrastructure improvements will be required, and individual development sites may trigger the need for further transport infrastructure/service improvements depending on their nature, size and location.
- 12.5.4 There will be other rural and urban locations within the district where material traffic impacts will occur that have not been specifically examined by this study, particularly within the urban areas of Worksop and Retford. It therefore should not be assumed that the absence of any reference in this study implies that the existing highway network can satisfactorily accommodate future development.
- 12.5.5 Detailed Transport Assessments and Travel Plans will be required in support of planning applications for all major developments, and these should identify site access arrangements, on-site transport infrastructure requirements and off-site transport measures/infrastructure to mitigate their respective transport impacts.
- 12.5.6 Nottinghamshire County Council has confirmed that developers will be required to fund and deliver all new/improved transport infrastructure required to mitigate the impacts of new development on a 'nil detriment' basis. Highway capacity improvements will be secured by planning condition and delivered by developers through Section 278 Agreements.
- 12.5.7 Developers will also be required to fund any travel plan measures/initiatives (including marketing and promotion) required to help mitigate the transport impacts of developments. These measures and improvements will be secured via Section 106 Agreements for developer funding and delivery.
- 12.5.8 In areas of the district where CIL charges apply developers will also be required to contribute towards CIL.

FIGURES



Key

- Bassetlaw District
- Surrounding District Boundaries
- Main Urban Areas

PRELIMINARY ISSUE

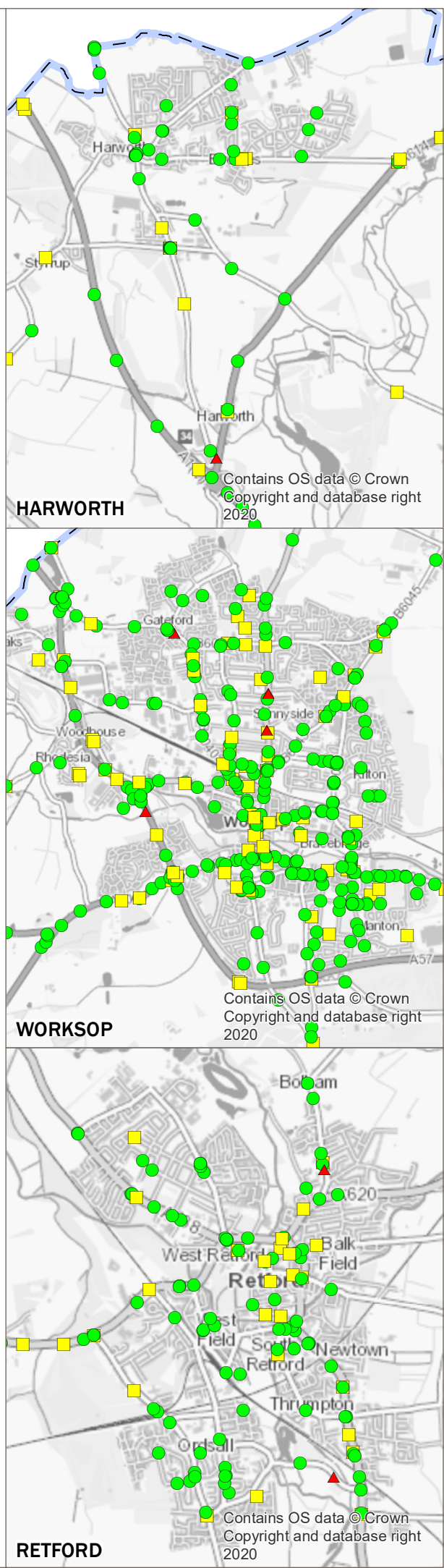
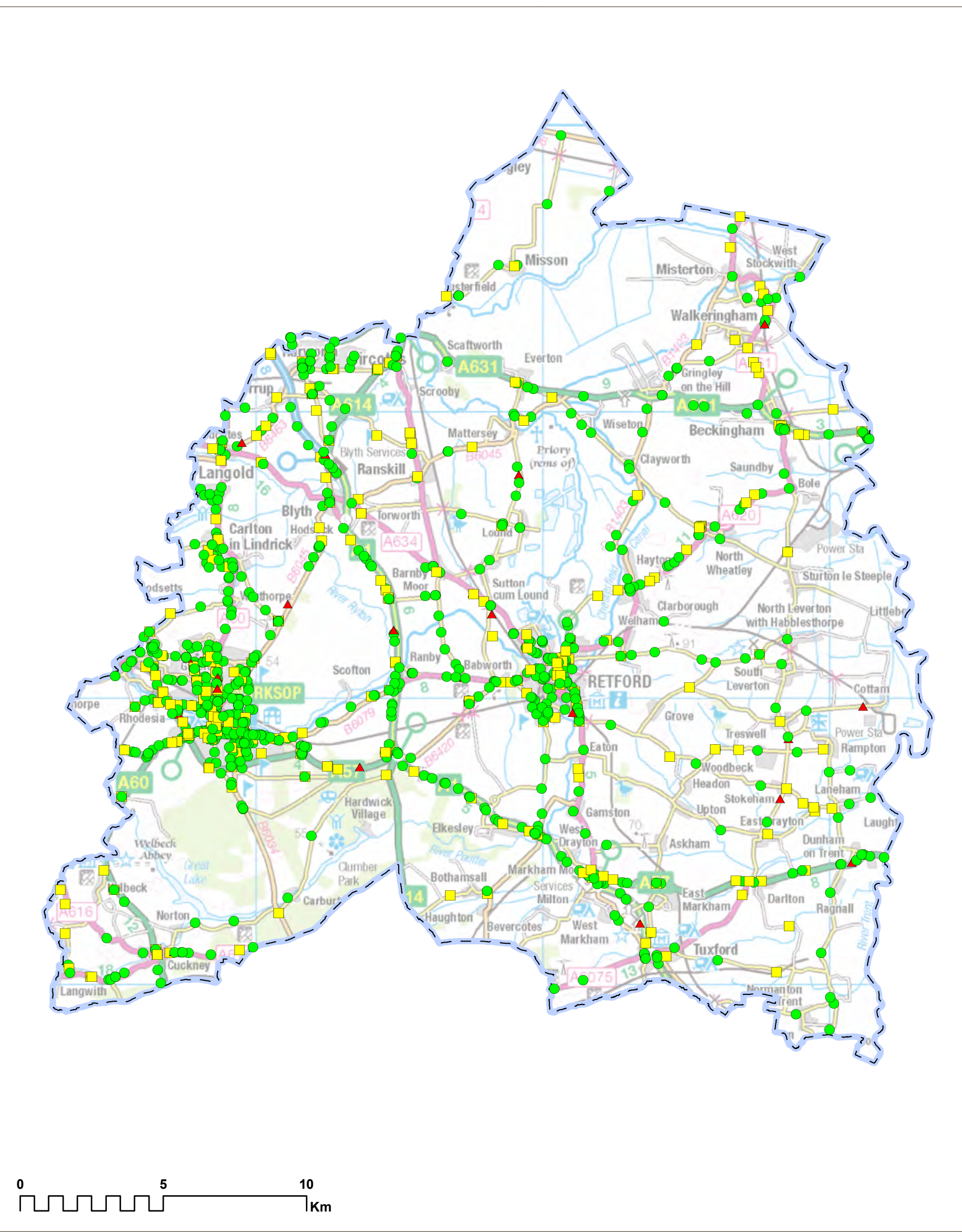
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Rev	Description		Date	Dwn	Chk App

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Bassetlaw District Council

FIGURE 1
STUDY AREA AND SURROUNDING DISTRICTS

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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
-	TTE	00	XX	MP	O	023	-	

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Key

Bassetlaw District Boundary

Severity

- Fatal
- Serious
- Slight

PRELIMINARY ISSUE

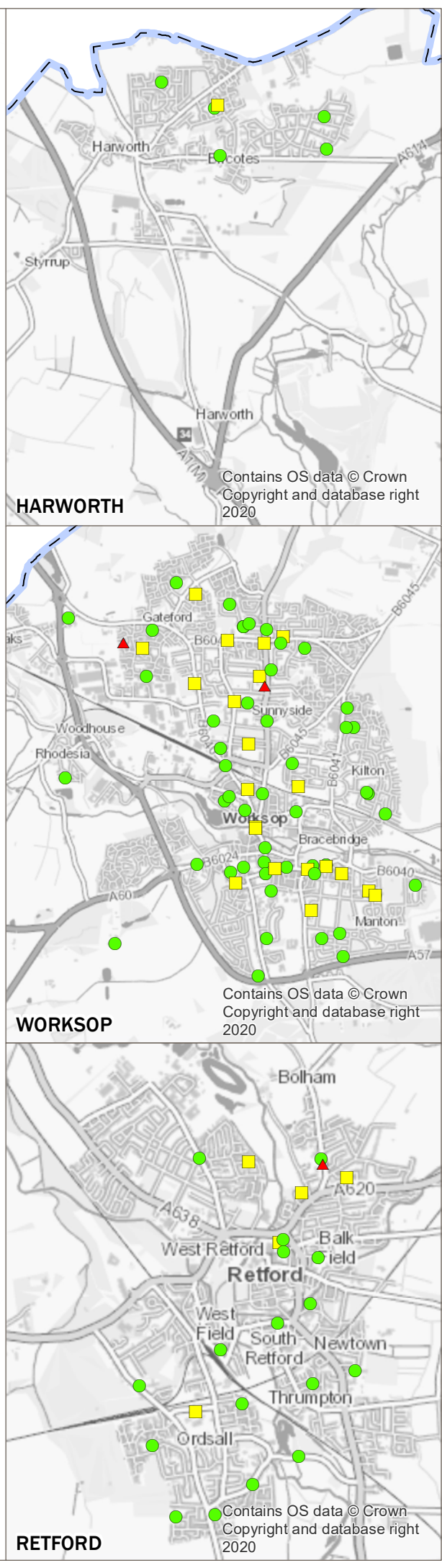
Rev	Description	Date	Dwn	Chk	App
-	-	-	-	-	-

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Bassetlaw District Council

FIGURE 2
COLLISION DATA (01/01/2016 - 31/12/2020)

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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Key

Bassetlaw District Boundary

Severity

Fatal

Serious

Slight

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-	-	-	-	-	-

Bassetlaw Local Plan Transport Study

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FIGURE 3

PEDESTRIAN INVOLVED COLLISIONS

(01/01/2016 - 31/12/2020)

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
B027617	NJ	Jul 21	JJC	Jul 21	ASG	Jul 21	1:150,000	S1
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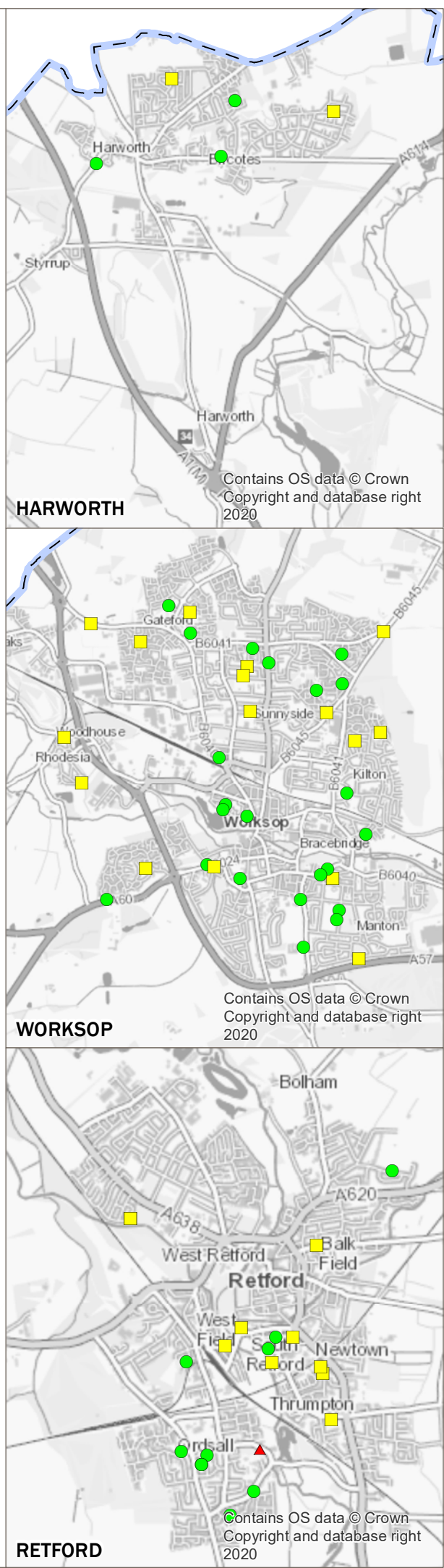
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Key

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Severity

Fatal

Serious

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FIGURE 5

MOTORCYCLIST INVOLVED COLLISIONS

(01/01/2016 - 31/12/2020)

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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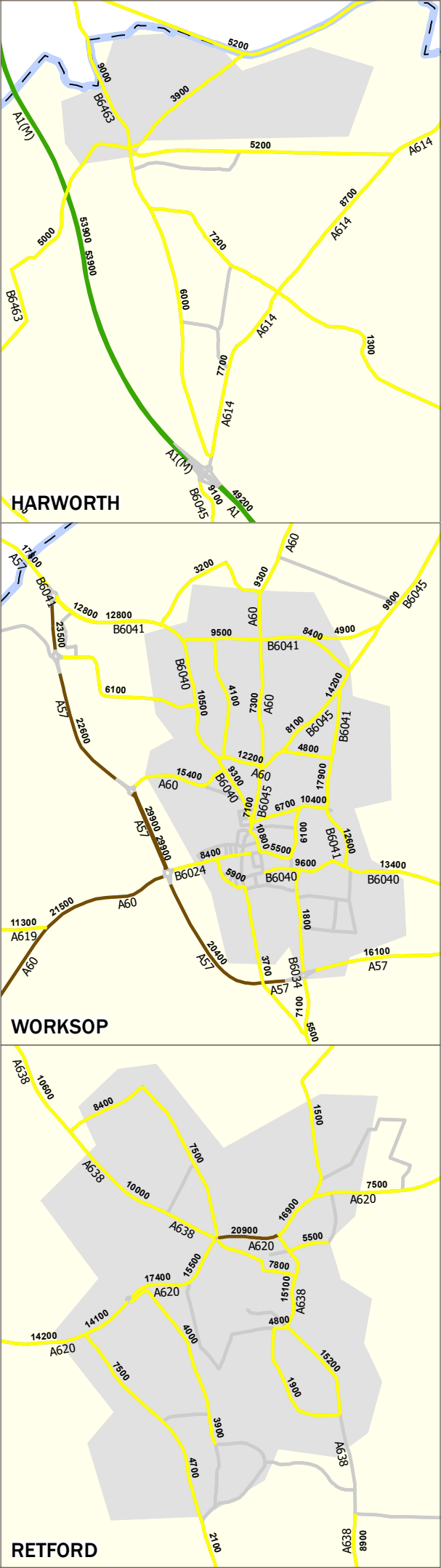
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Leicester 133501 Data Project 0027617 - Bassetlaw Local Plan TA Update 001 - A3x240 & 005015 - 005027617-016_CollisionsData_Motorcyclist.mxd



Key

- Bassetlaw District Boundary
- Main Urban Areas

AADT Flows (2-way VPD)

- No Count Data
- Under 20,000 Vehicles
- 20,000 - 40,000 Vehicles
- 40,000 - 60,000 Vehicles
- Over 60,000 Vehicles

PRELIMINARY ISSUE

-	-	-	-	-	-
Rev	Description	Date	Dwn	Chk	App

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FIGURE 6
BASE 2019 AADT FLOWS

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Key

- Bassetlaw District Boundary
- Main Urban Areas

Peak Hour HGV %

- Under 5%
- 5% - 9%
- 10% - 14%
- 15% - 19%
- 20% or greater

PRELIMINARY ISSUE

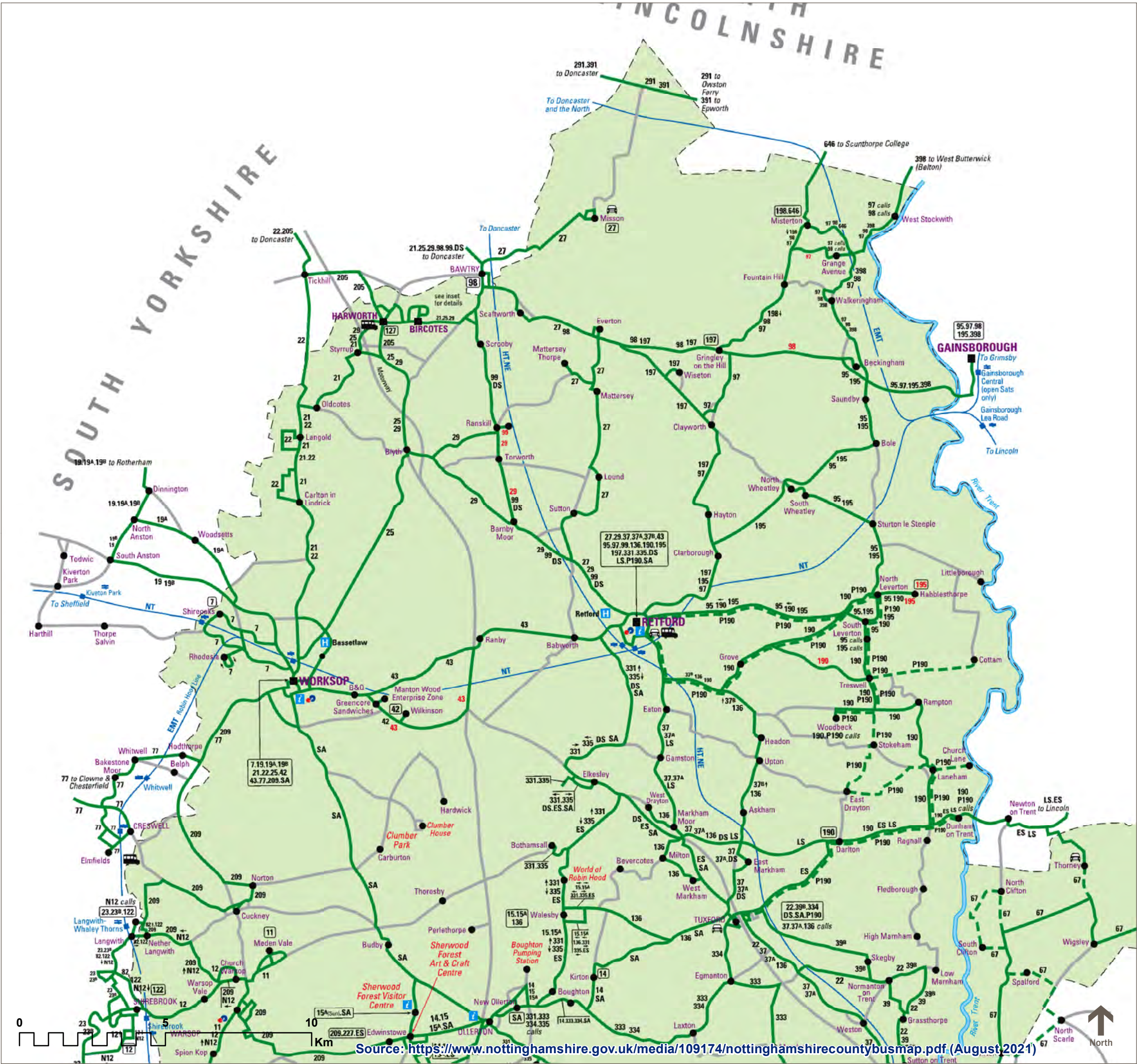
Rev	Description	Date	Dwn	Chk	App
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-	-	-	-	-	-

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FIGURE 7
2019 PEAK HOUR HGV PERCENTAGE

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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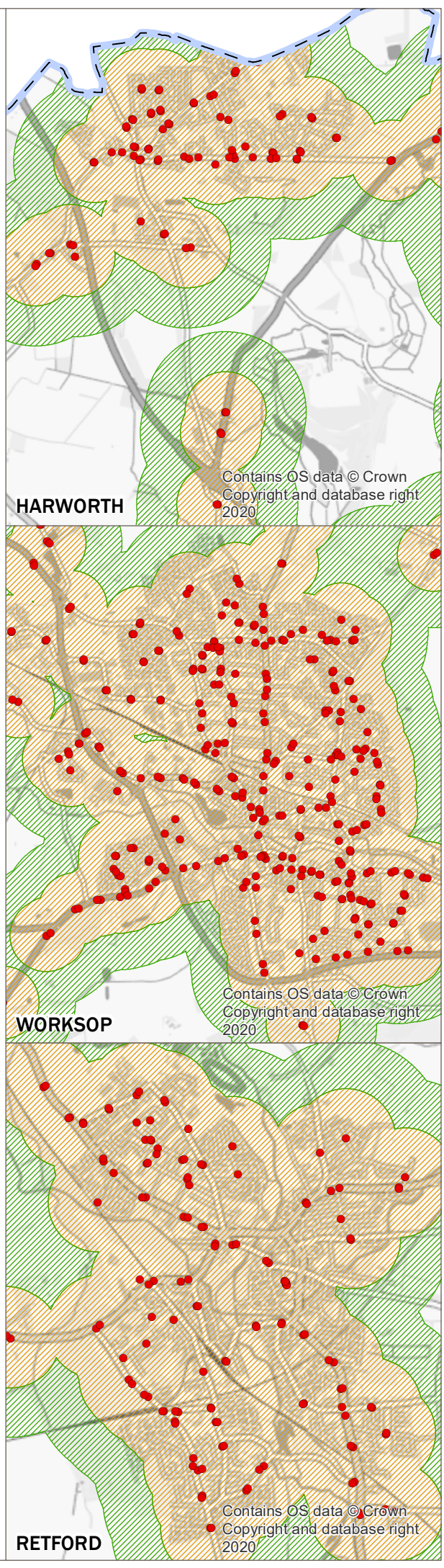
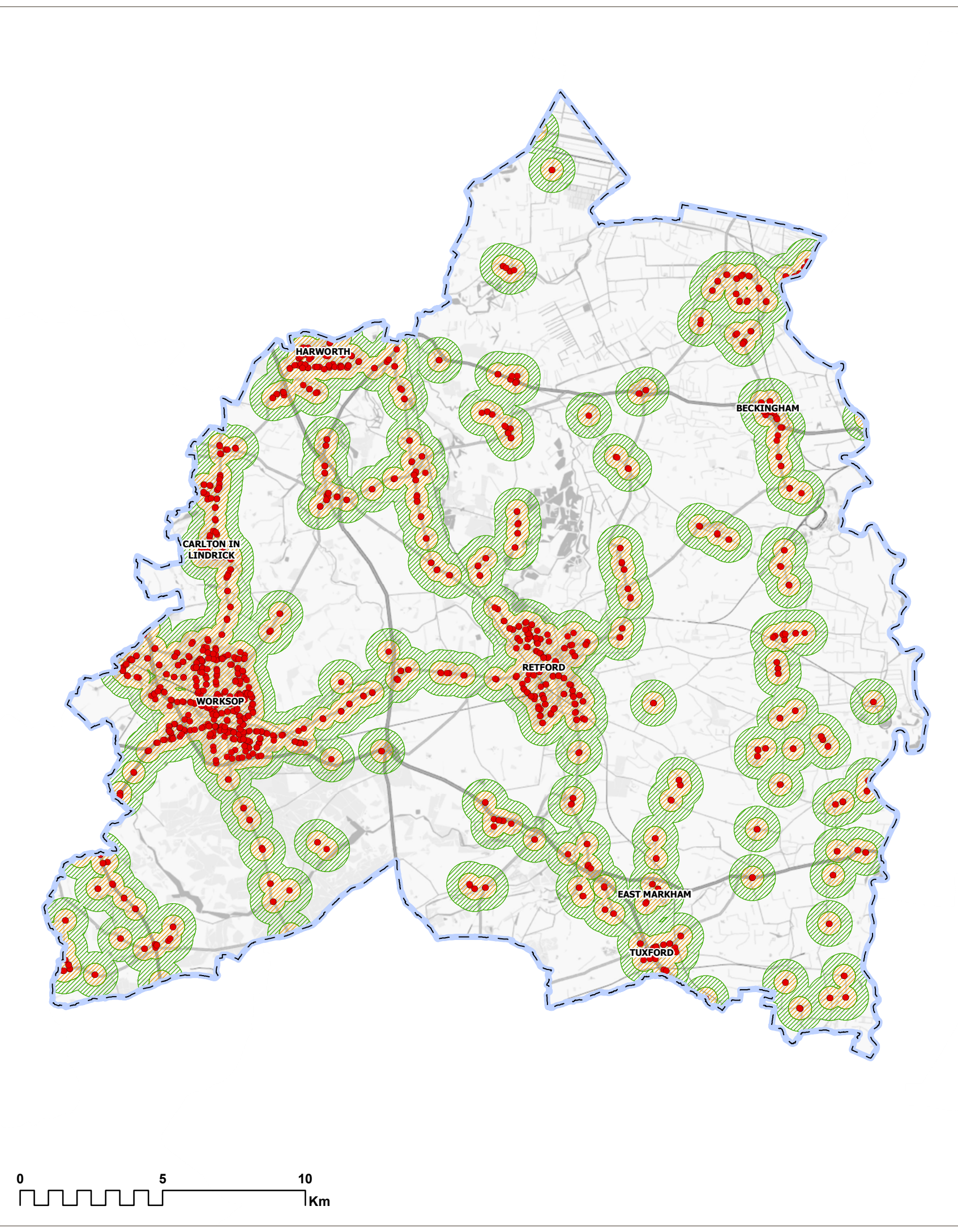
Rev	Description	Date	Dwn	Chk	App
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Bassetlaw District Council

FIGURE 10
EXISTING BUS SERVICE NETWORK

TTE Proj No	Drwn by	Date	Ch'ked by	Date	App'd by	Date	Scale @ A3	Suitability
B027617	JJC	Jul 21	ASG	Jul 21	ASG	Jul 21	1:127,377	S1
Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
-	TTE	00	XX	MP	O	017	-	

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- Key
- Bassetlaw District Boundary
 - Bus Stop
 - 400m Walk Buffer From Bus Stop
 - 800m Walk Buffer From Bus Stop

PRELIMINARY ISSUE

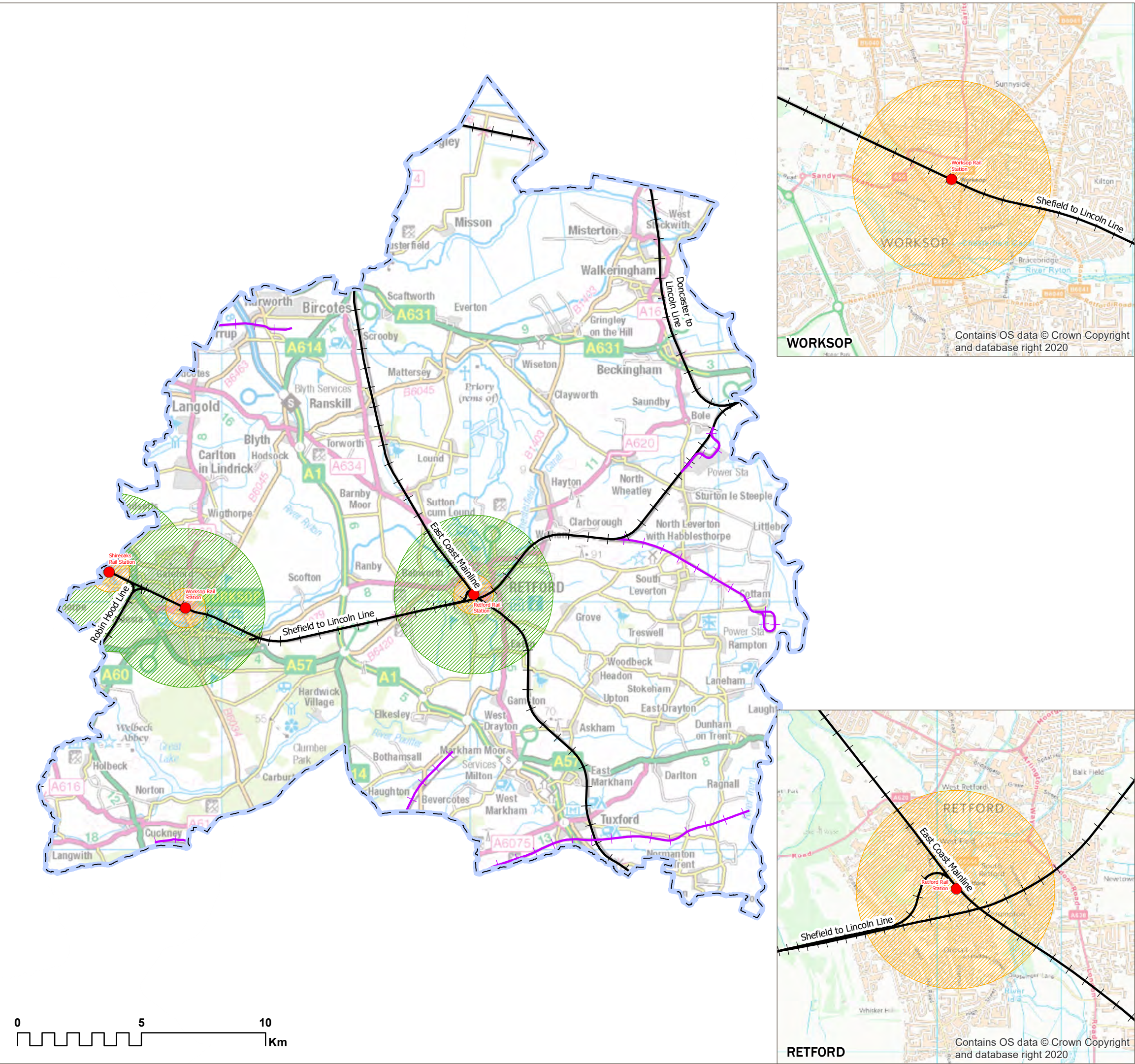
Rev	Description	Date	Dwn	Chk	App

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FIGURE 11
BUS STOP LOCATIONS

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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Key

- Bassetlaw District Boundary
- Railway Station
- Passenger Railway Line
- Freight Railway Line
- 800m Walk Buffer From Railway Station
- 3.2km Walk Buffer From Railway Station

PRELIMINARY ISSUE

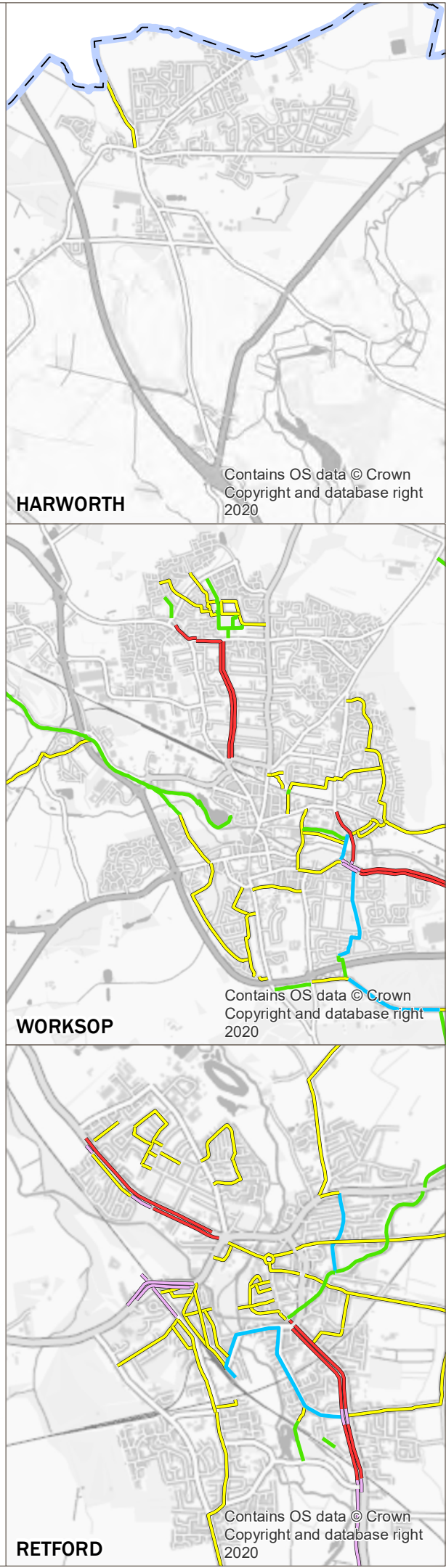
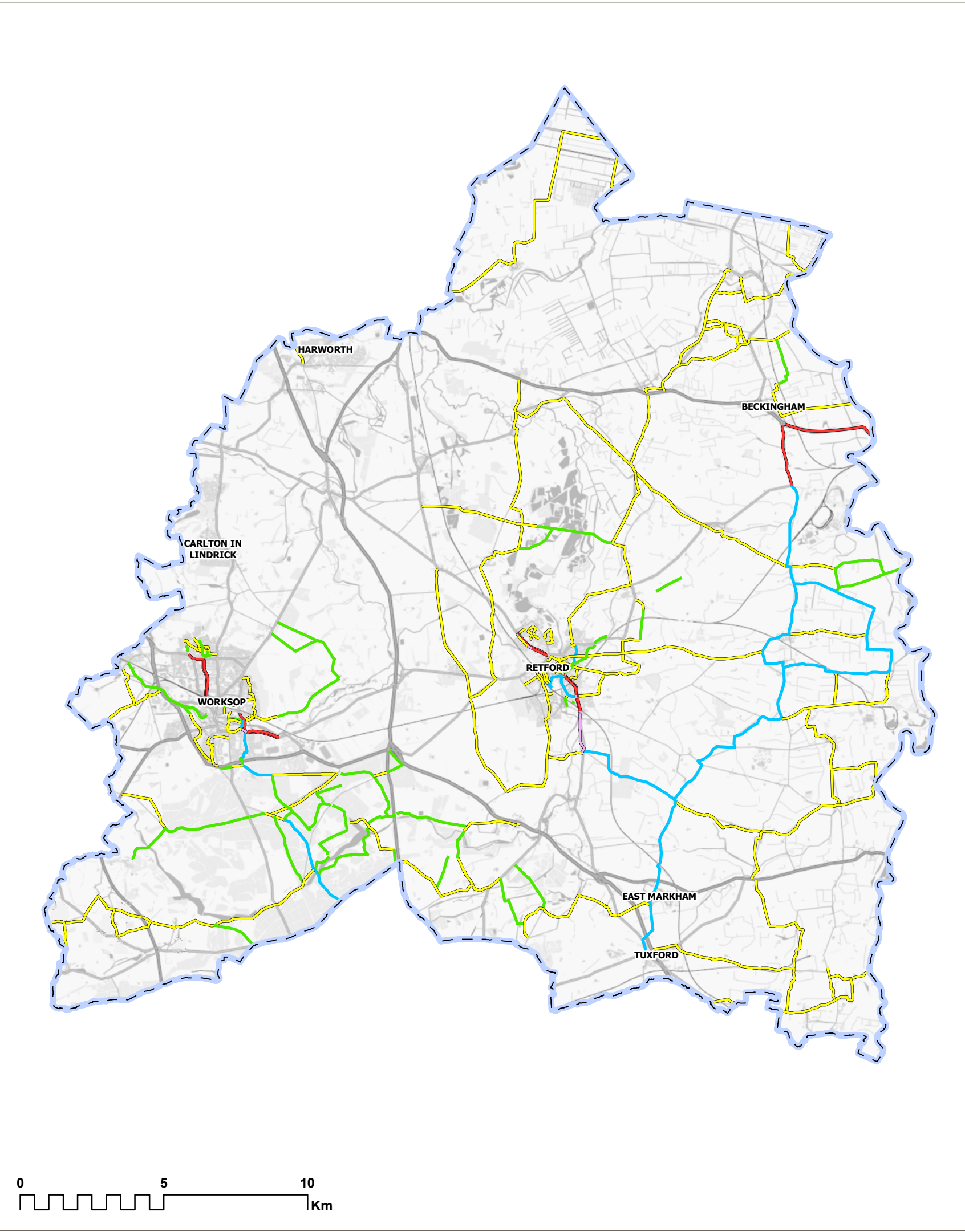
Rev	Description	Date	Dwn	Chk	App
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FIGURE 12
EXISTING PASSENGER RAIL NETWORK

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
-	TTE	00	XX	MP	O	021	-	

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Key

- Bassetlaw District Boundary
- Road suggested for cycling
- On-road cycle lane
- On-road cycle route (signed)
- Off-road cycle facility (highway)
- Off-road cycle track (leisure routes e.g. towpath)

Note:
Classifications of infrastructure are based on Figure 37 from the Nottinghamshire County Council Local Transport Plan Evidence Base Report

PRELIMINARY ISSUE

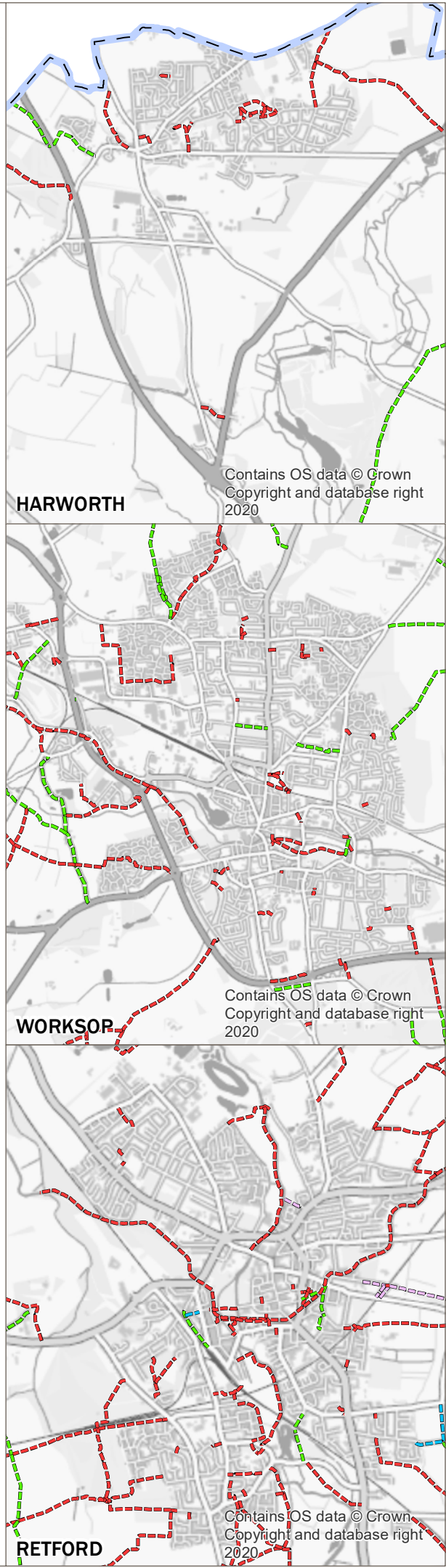
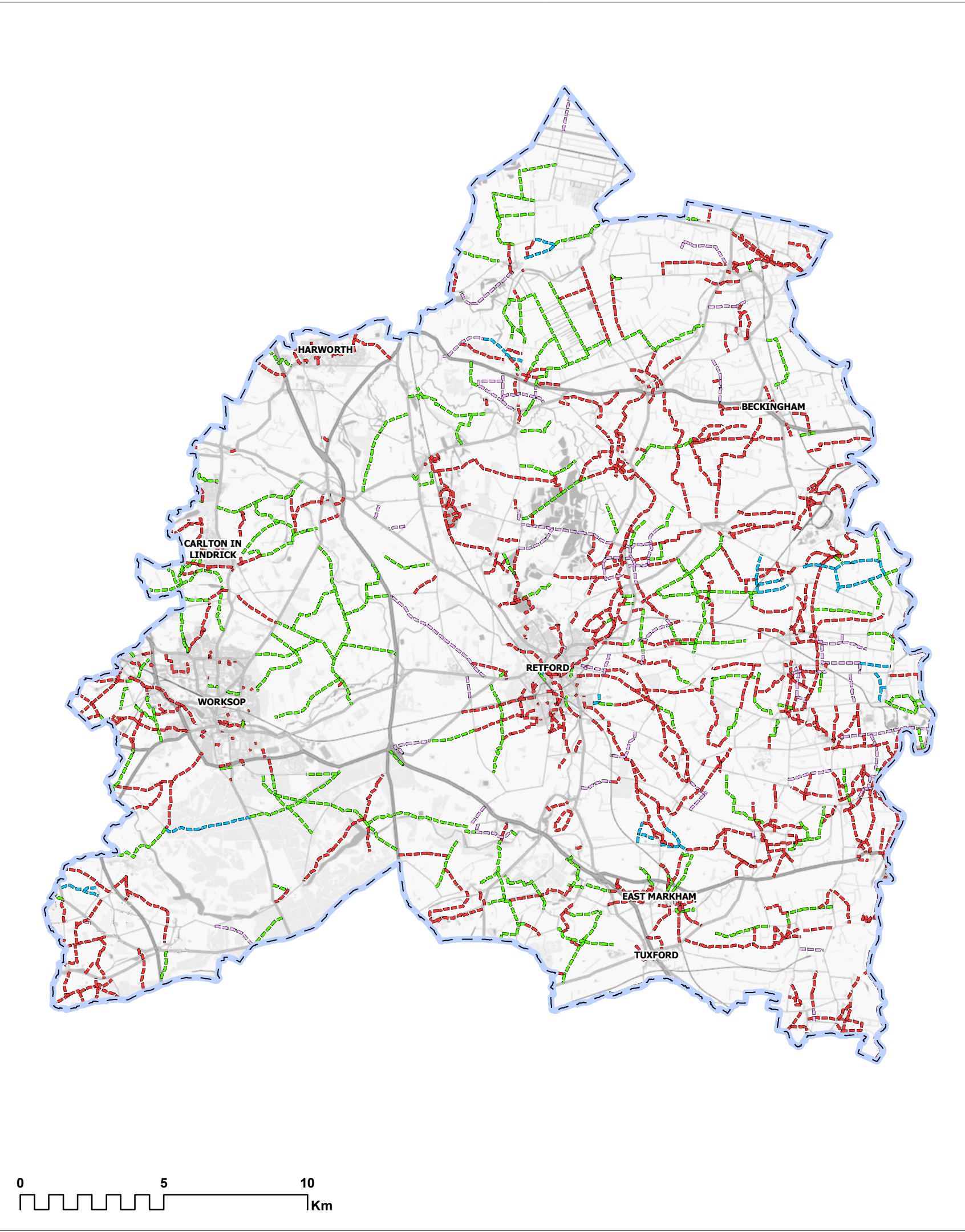
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Rev	Description	Date	Dwn	Chk	App

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FIGURE 13
EXISTING CYCLE INFRASTRUCTURE

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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-	TTE	00	XX	MP	O	022	-	

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Key

- Bassetlaw District Boundary
- Footpath
- Bridleway
- Restricted Byway
- BOAT
- Byway

PRELIMINARY ISSUE

-	-		-	-	-
Rev	Description	Date	Dwn	Chk	App

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FIGURE 14
PUBLIC RIGHTS OF WAY

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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Key

- Bassetlaw District Boundary
- 7.5 Tonnes Environmental Weight Restriction or As Specified
- Roads Exempt From Weight Restriction
- Area Wide 18 Tonnes Environmental Weight Restriction

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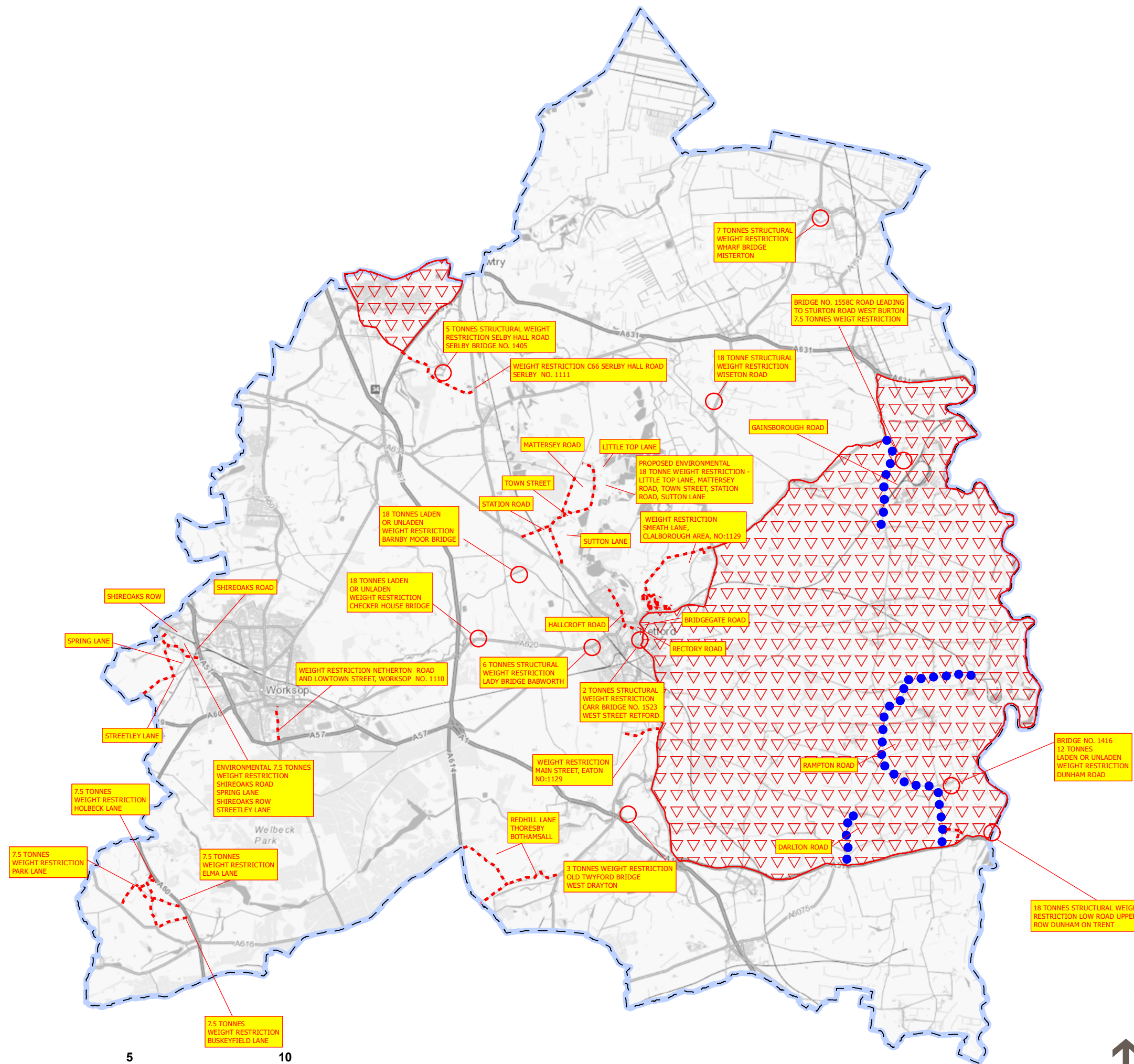
FIGURE 15
EXISTING HGV WEIGHT RESTRICTIONS

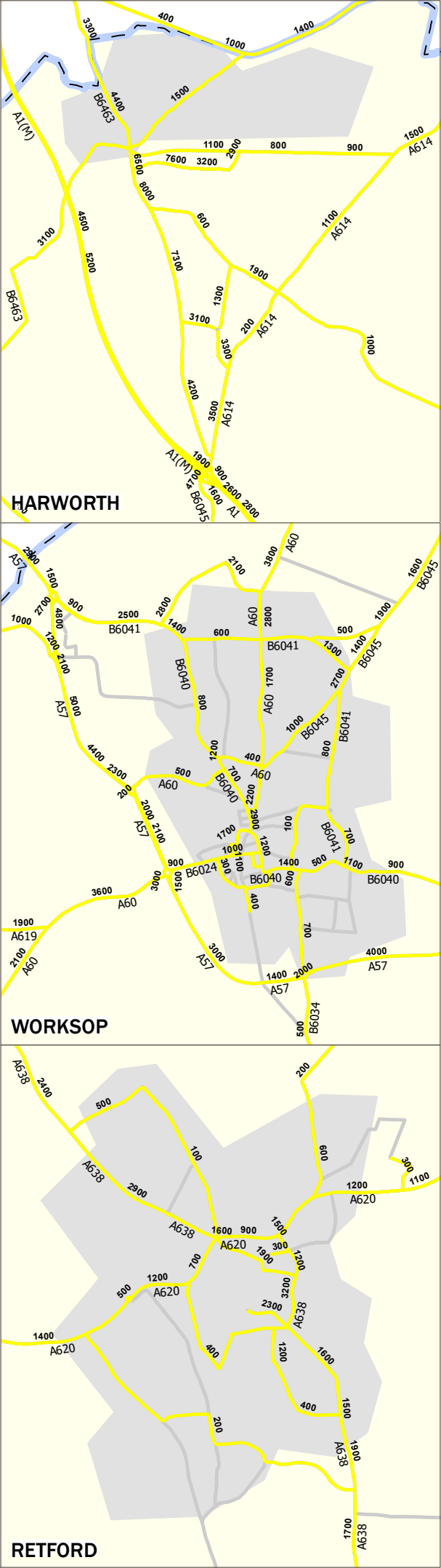
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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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- Key
- Bassetlaw District Boundary
 - Main Urban Areas
 - AADT Flows (2-way VPD)
 - No Assigned Flow
 - Under 20,000 Vehicles
 - 20,000 - 40,000 Vehicles
 - 40,000 - 60,000 Vehicles
 - Over 60,000 Vehicles

PRELIMINARY ISSUE

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Rev	Description	Date	Dwn	Chk	App

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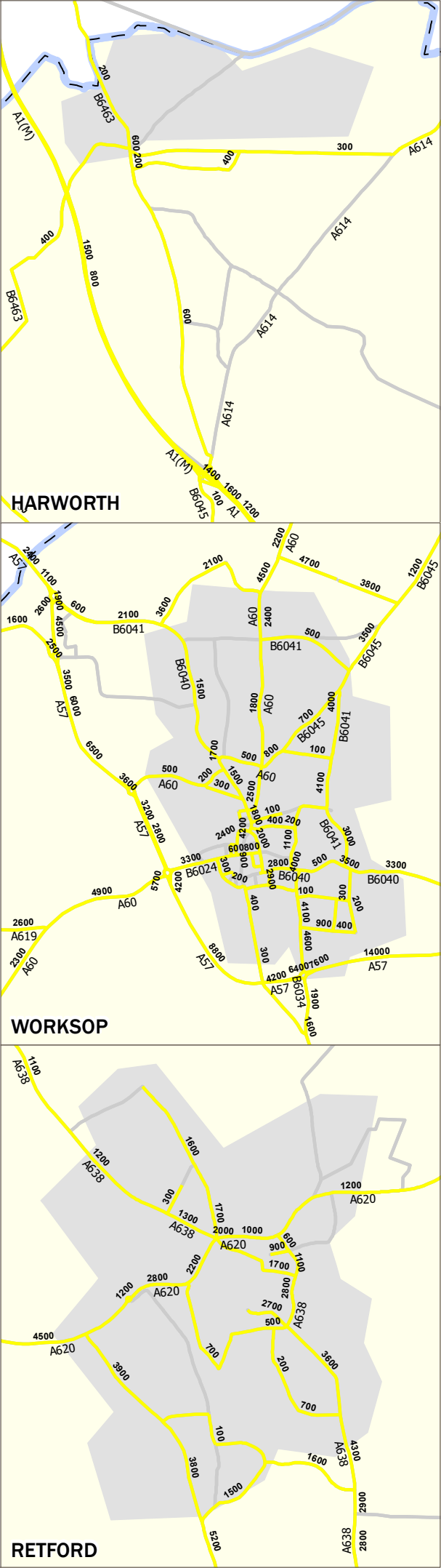
FIGURE 17
2038 COMMITTED DEVELOPMENT FLOWS AADT

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Key

Bassetlaw District Boundary

Main Urban Areas

AADT Flows (2-way VPD)

No Count Data

Under 20,000 Vehicles

20,000 - 40,000 Vehicles

40,000 - 60,000 Vehicles

Over 60,000 Vehicles

PRELIMINARY ISSUE

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Rev	Description	Date	Dwn	Chk	App

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FIGURE 18
2038 LOCAL PLAN GROWTH FLOWS AADT

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
B027617	JJC	Jul 21	MR	Jul 21	ASG	Jul 21	1:150,000	S1
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Key

- Bassetlaw District Boundary
- External Zones
- Main Urban Areas

INTERNAL

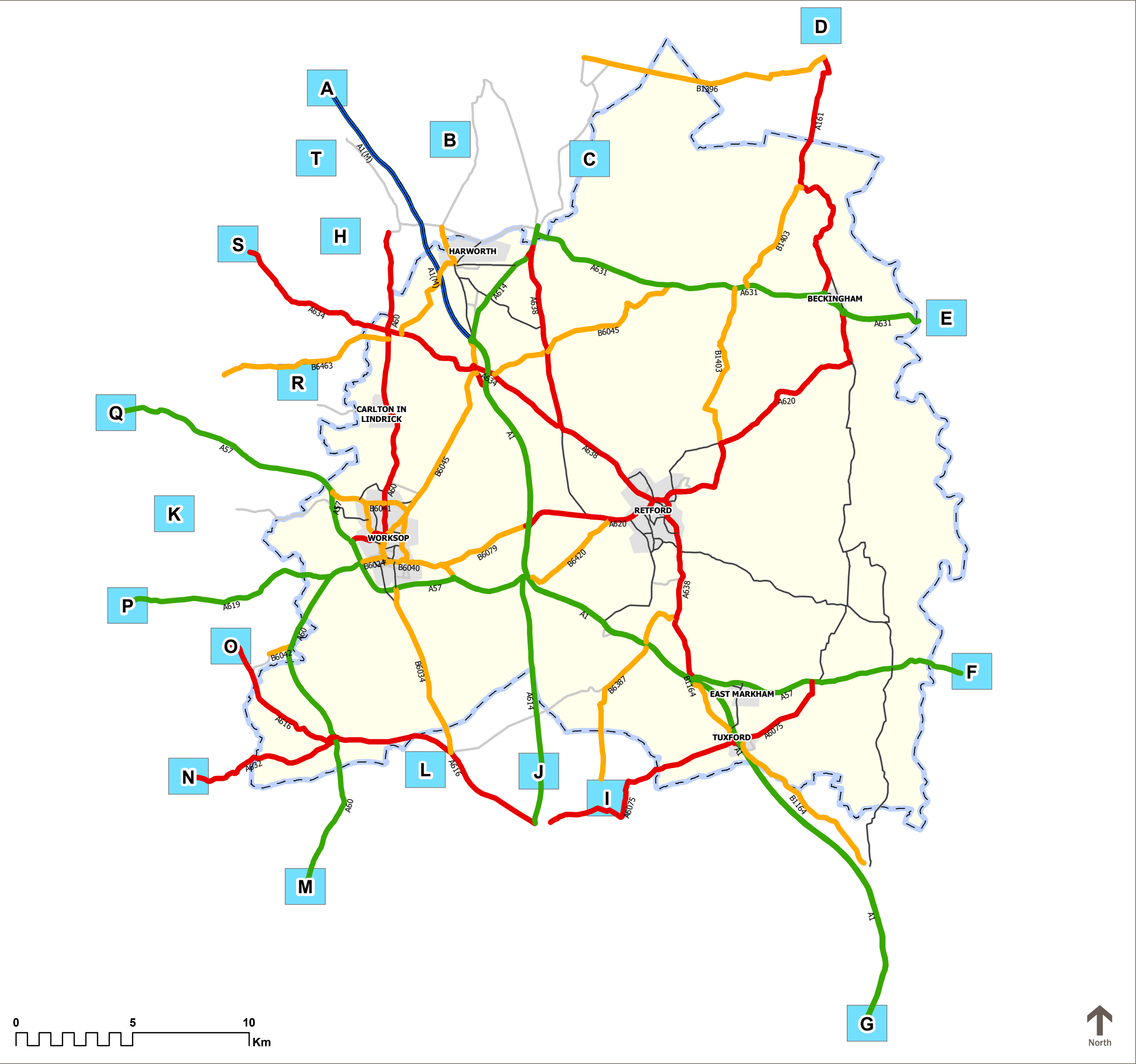
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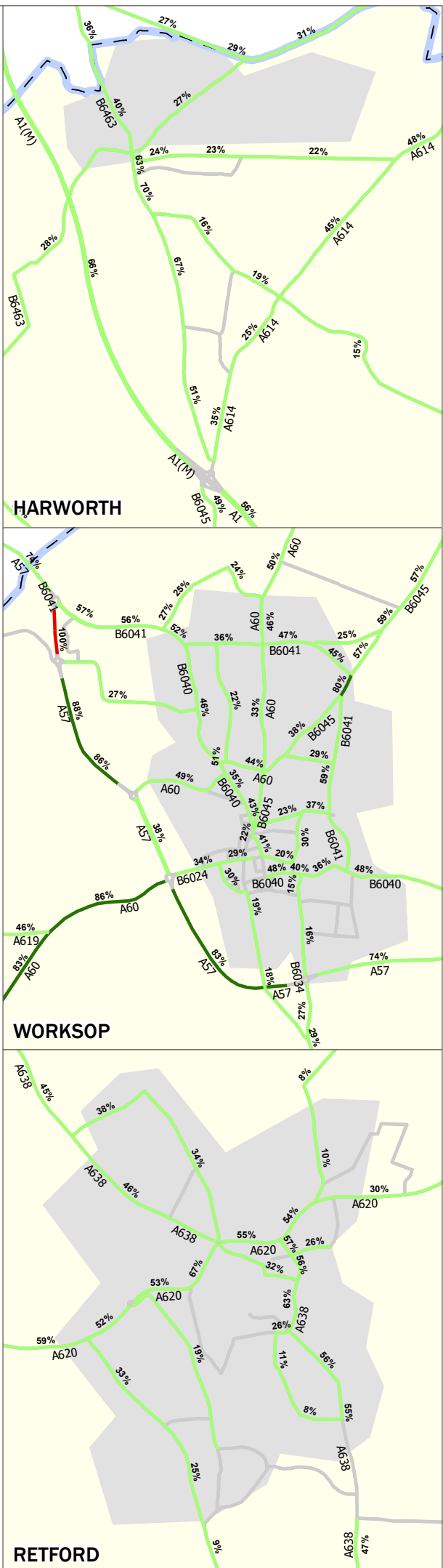
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FIGURE 19
EXTERNAL ZONES

TTE Proj No	Drwn by	Date	Ch'ked by	Date	Appr'd by	Date	Scale @ A3	Suitability
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-	TTE	00	XX	MP	O	0XX	-	

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Main Urban Areas

— No Count Data / Assigned Flow

100% and greater

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Rev	Description	Date	Dwn	Chk App

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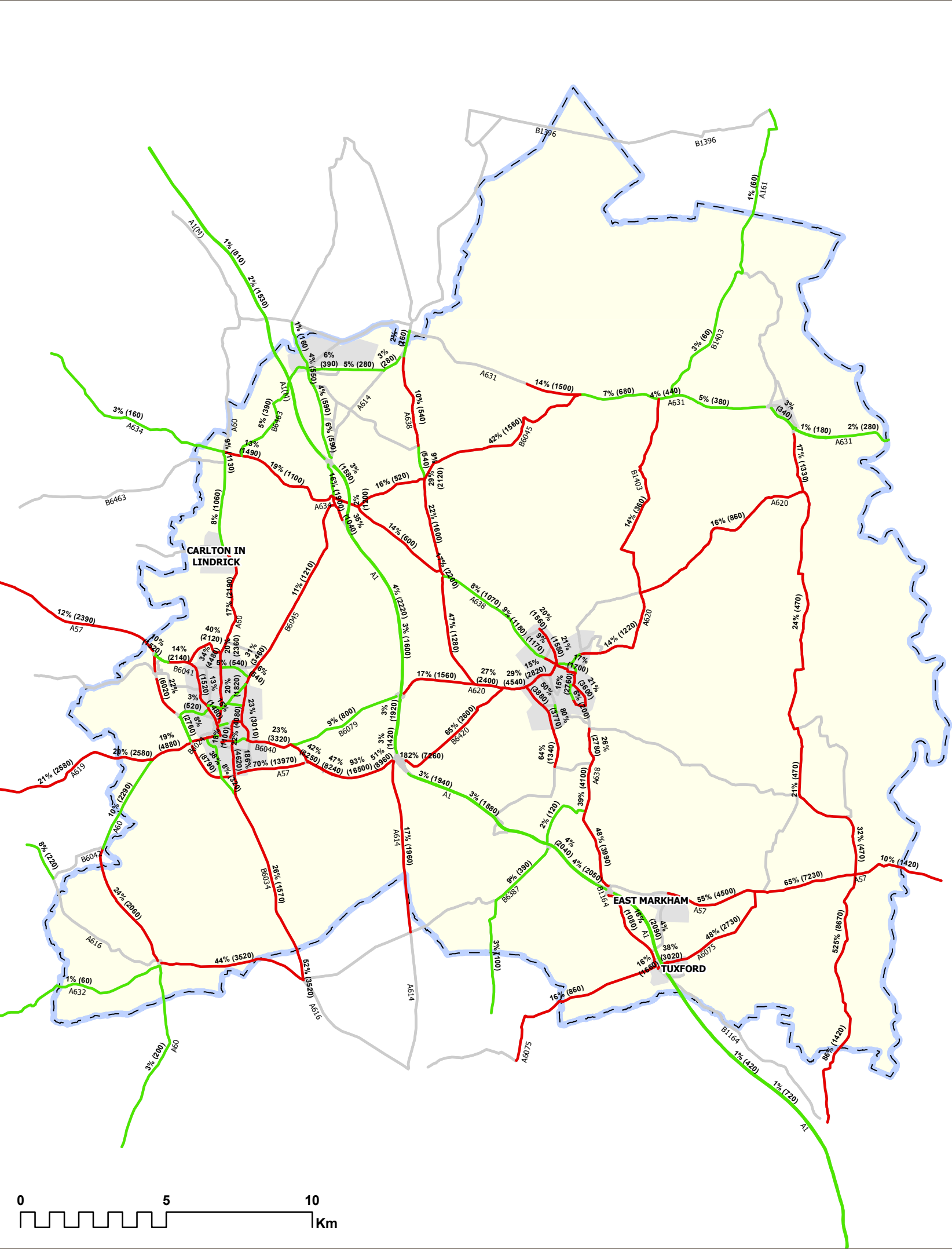
FIGURE 20
2038 BASE + COMMITTED STRESS PLAN

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Client Proj No	Origin	Vol/System	Level/Location	Type/Code	Role	Drawing No	Revision	
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Key

- Bassetlaw District Boundary
- Main Urban Areas

Growth (AADT % Increase of Base)

- 0% - 10%
- Over 10%

PRELIMINARY ISSUE

Rev	Description	Date	Dwn	Chk

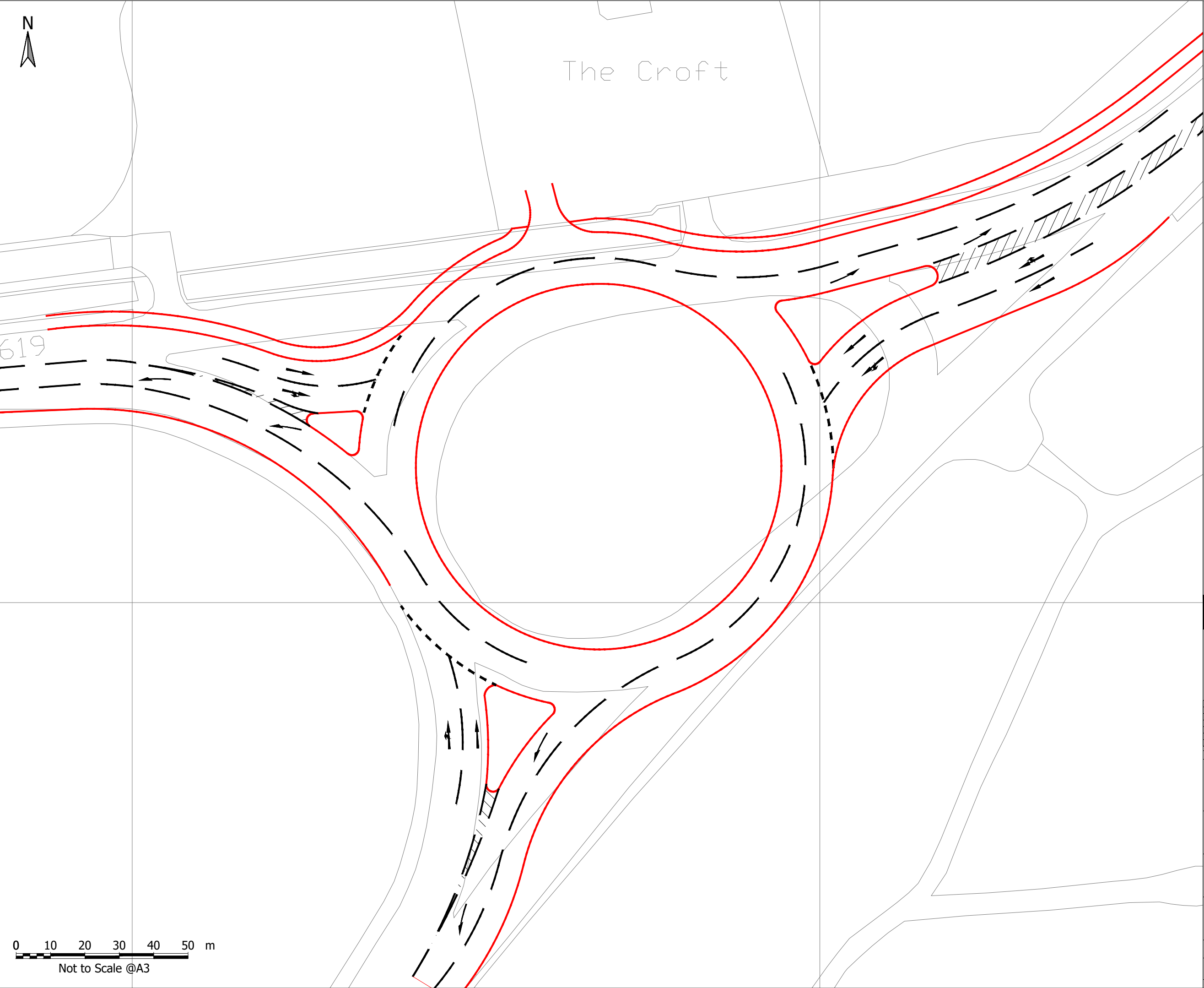
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FIGURE 22
2038 LOCAL PLAN GROWTH PERCENTAGE IMPACTS

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The Croft

619

Key:

— New kerbs

PRELIMINARY ISSUE

P01	PRELIMINARY FIRST ISSUE	04.08.2021	ASG	RH	ASG

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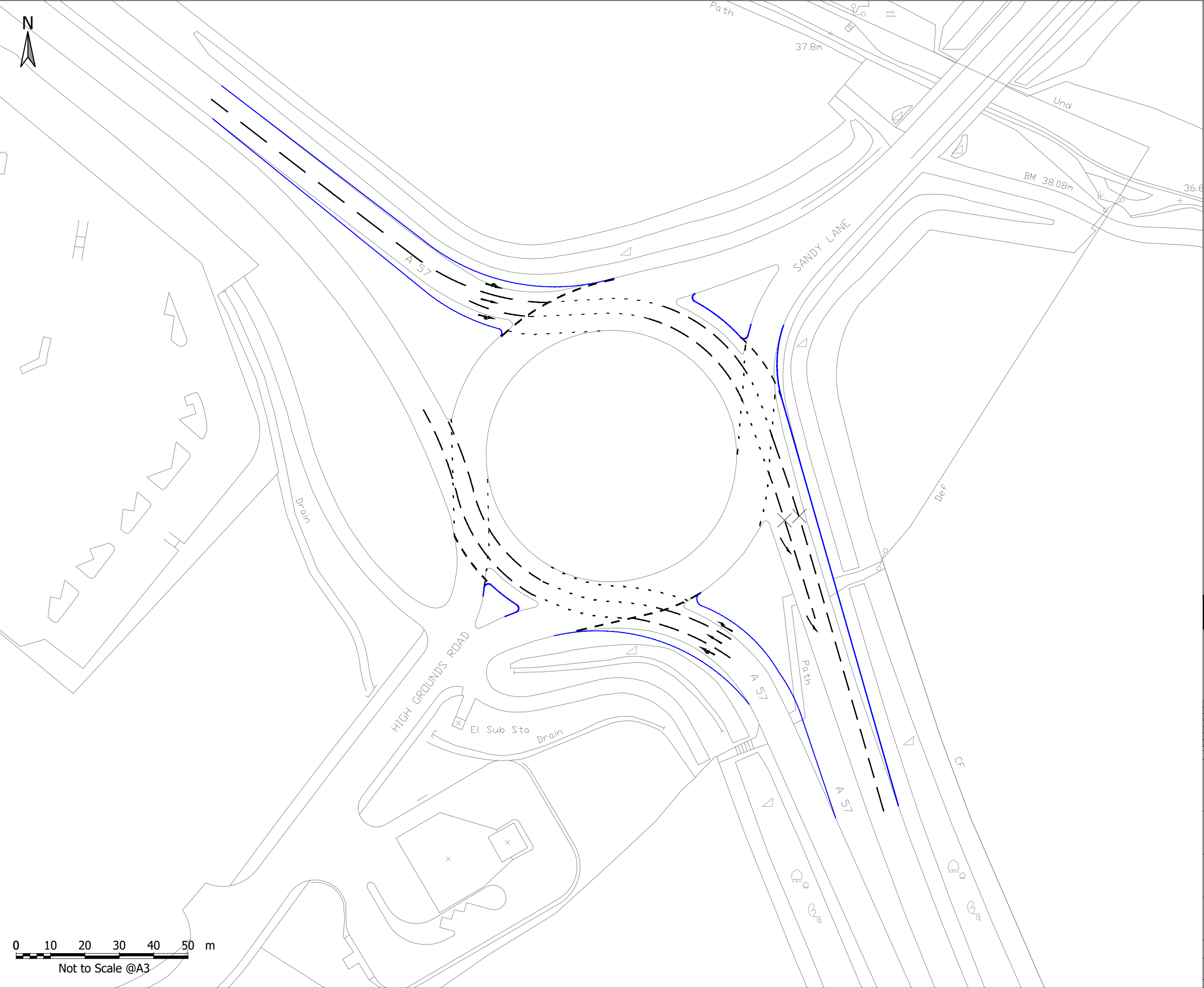
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Figure 23
Possible Mitigation Scheme
J1 - A60 / A619

B027617	ASG04 Aug 2021	RH	04 Aug 2021	ASG04 Aug 2021	NTS	S2
B027617	TTE	00	XX	SK	O	0001 P01

0 10 20 30 40 50 m
Not to Scale @A3



Key:
New kerbs

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P01	PRELIMINARY FIRST ISSUE	04.08.2021	ASG	RH	ASG

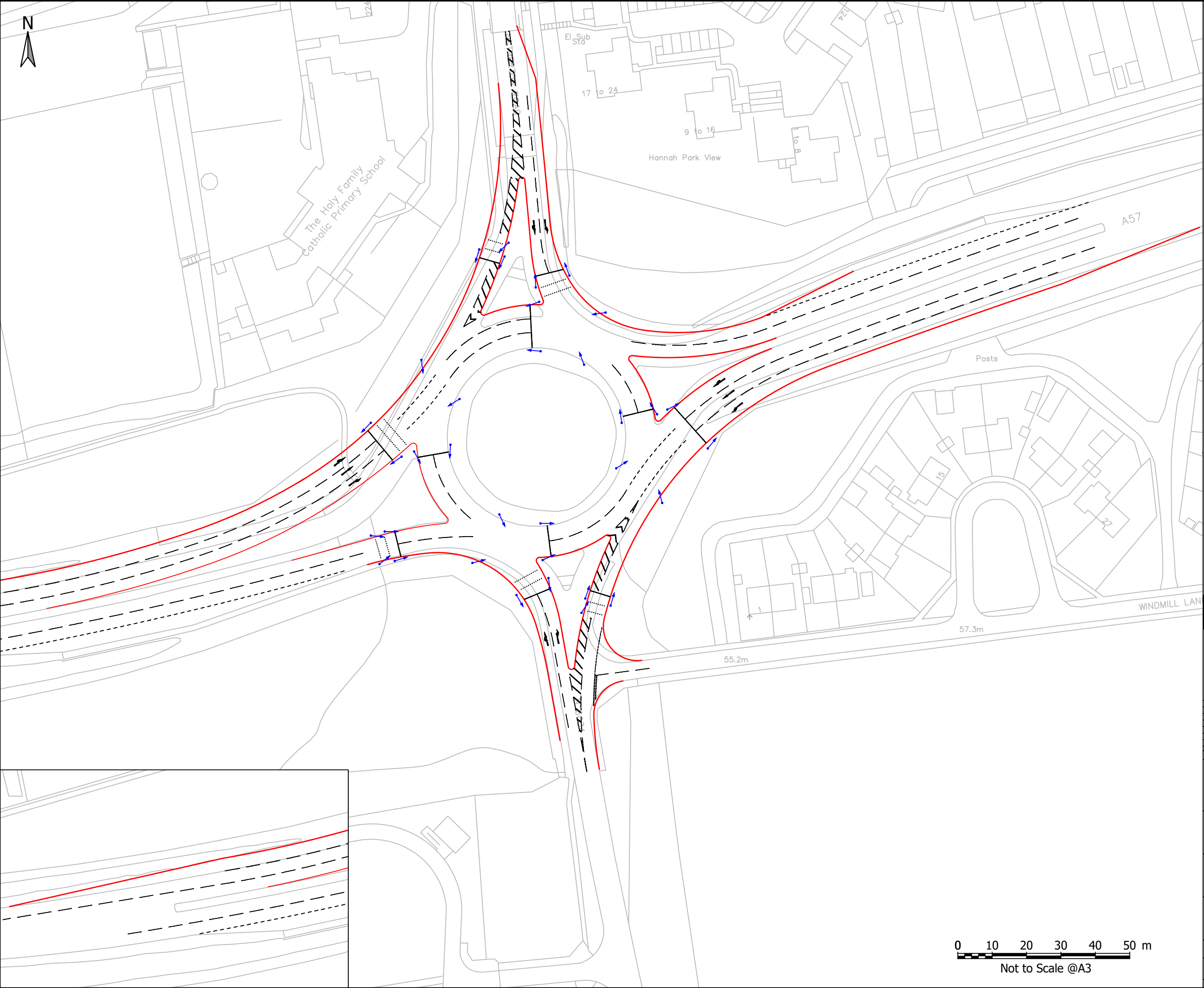
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Figure 24
Possible Mitigation Scheme
J3 - A57 / Sandy Lane

B027617	ASG04 Aug 2021	RH 04 Aug 2021	ASG04 Aug 2021	NTS	S2
B027617	TTE	00	XX	SK	O 0001 P01



Key:
— New kerbs

PRELIMINARY ISSUE

P01	PRELIMINARY FIRST ISSUE	04.08.2021	ASG	RH	ASG

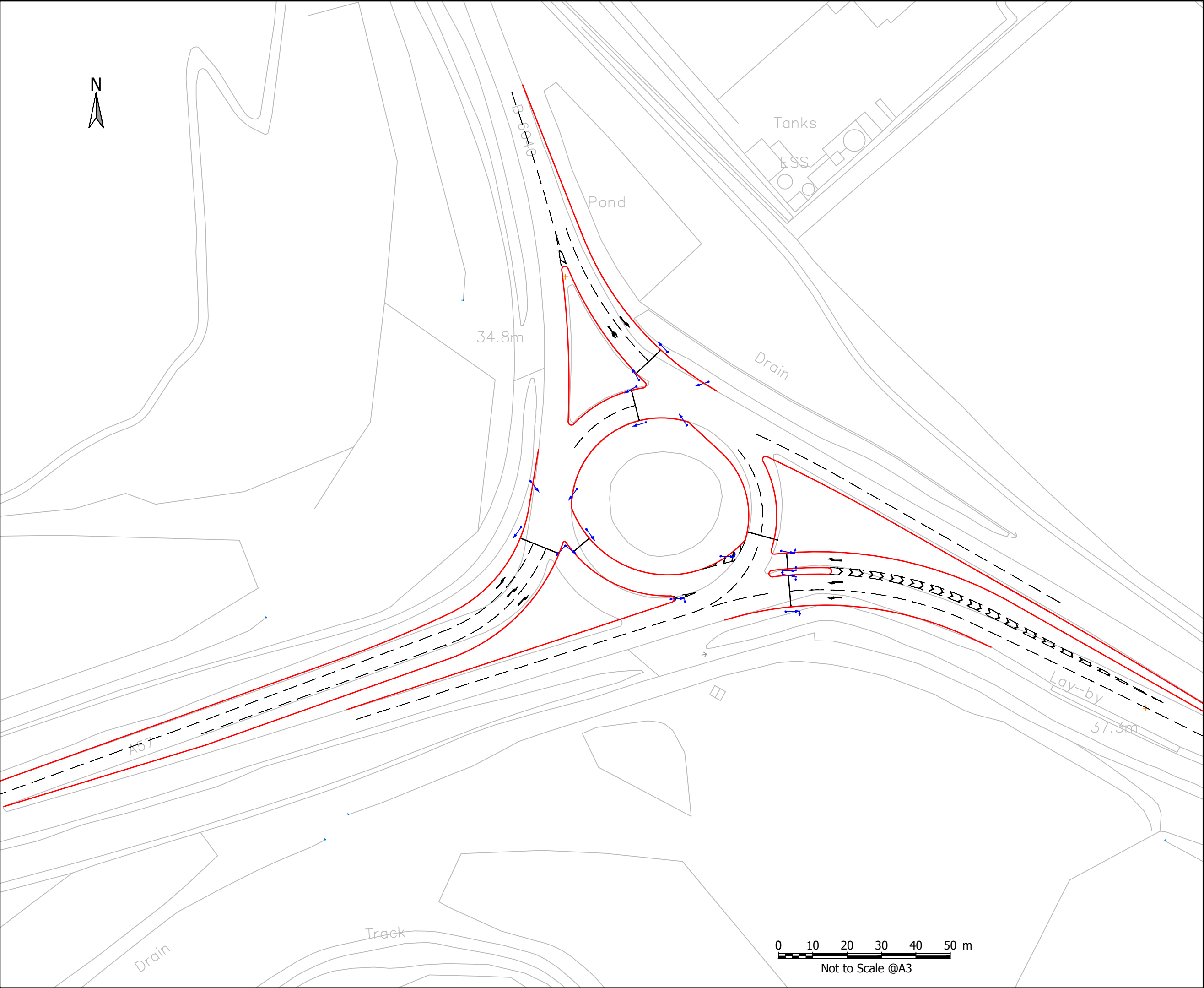
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Bassetlaw Local Plan Transport Study

Figure 25
Possible Mitigation Scheme
J5 - A57 / B6034

B027617	ASG04 Aug 2021	RH	04 Aug 2021	ASG04 Aug 2021	NTS	S2
B027617	TTE	00	XX	SK	O	0001 P01



Key:

— New kerbs

PRELIMINARY ISSUE

P01	PRELIMINARY FIRST ISSUE	04.08.2021	ASG	RH	ASG

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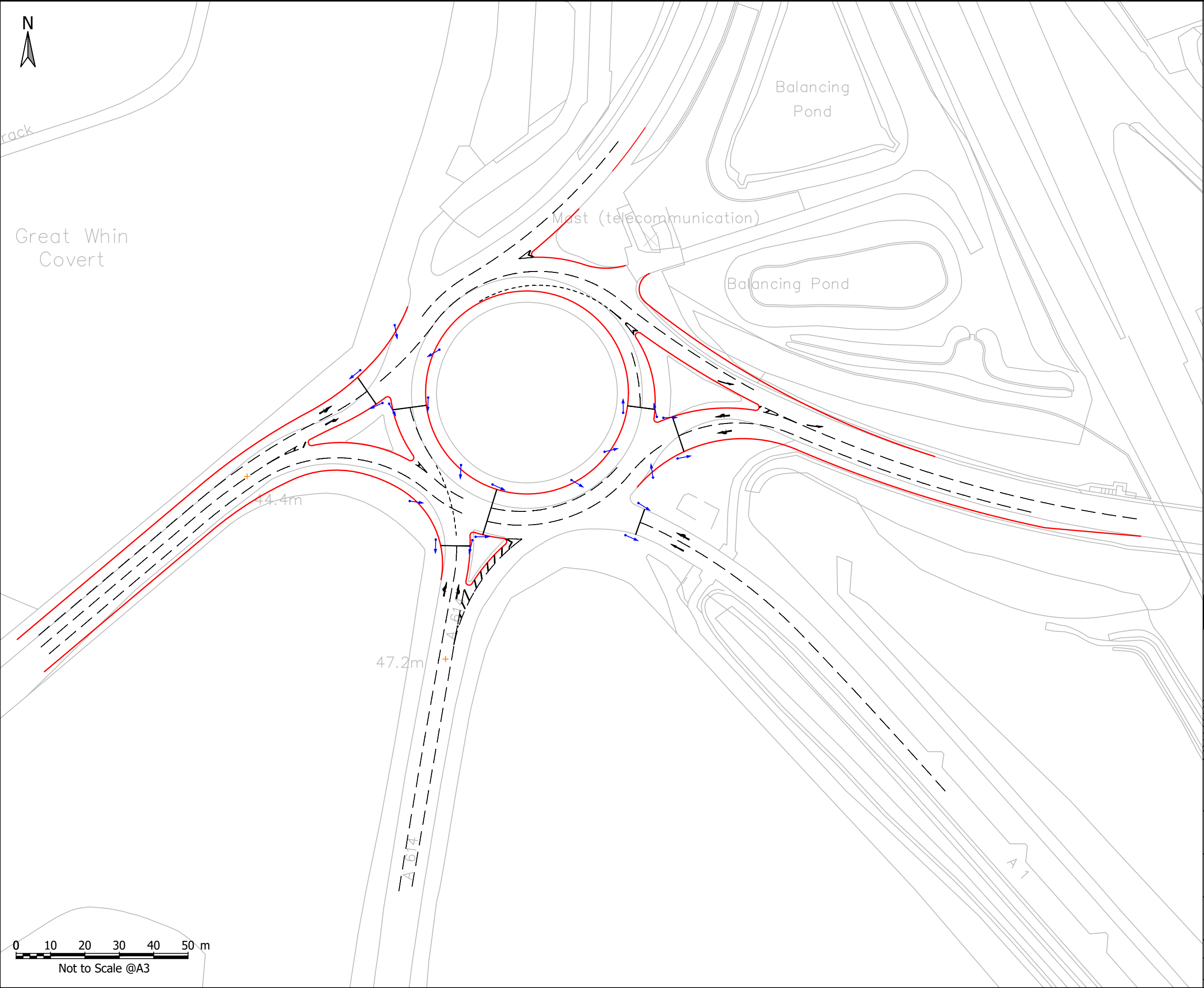


Bassetlaw District Council

Bassetlaw Local Plan Transport Study

Figure 26
Possible Mitigation Scheme
J6 - A57 / B6040

B027617	ASG04 Aug 2021	RH	04 Aug 2021	ASG04 Aug 2021	NTS	S2
B027617	TTE	00	XX	SK	O	0001 P01



Key:

— New kerbs

PRELIMINARY ISSUE

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Figure 27
Possible Mitigation Scheme
J7 - A57 / A614 / A1

B027617	ASG04 Aug 2021	RH 04 Aug 2021	ASG04 Aug 2021	NTS	S2
B027617	TTE	00	XX	SK	O 0001 P01

APPENDICES

APPENDIX A – BASE DATA

ATC Data

Location	Source	Ref	Survey Ref	Direction One	Direction Two	2-Way Weekday Ave (Mon - Fri)	Direction One	Direction Two	2-Way Daily Ave (Mon-Sun)	Weekday AM Peak	2-Way AM Peak Hour (Ave Mon-Fri)	Weekday PM Peak	2-Way PM Peak Hour (Ave Mon-Fri)	Date	Year										
A57 Main Street, Durham on Trent n/w of The Green attached to LC no.9	NOTTSPERMANENT	1001	000011418174	6.927	EB	6.354	WB	13.381	5.937	EB	7.214	WB	13.151	563	EB	538	WB	1.207	2018-04-30 to 2018-05-06	2018					
A57 WORKSOP BYPASS (SOUTH OF B6041 GATEFORD ROAD)	NOTTSPERMANENT	1002	000010605081	12.681	NB	12.645	SB	25.326	11.788	NB	11.789	SB	23.577	702	NB	11.54	SB	1.856	2018-04-01 to 2018-10-31	2018					
A60 High Road, Carlton in Lindrick (south of Long Lane)	NOTTSPERMANENT	1004	000010375984	4.989	NB	4.976	SB	9.965	4.649	NB	4.648	SB	9.927	309	NB	4.26	SB	735	2019-01-01 to 2019-12-31	2019					
A60 Carlton Road, Worksop (north of Wincfield Ave - updated 5th Oakholme Rise)	NOTTSPERMANENT	1006	000010625881	3.788	NB	3.858	SB	7.646	3.588	NB	3.708	SB	7.296	212	NB	313	SB	525	349	NB	264	SB	613	2019-01-01 to 2019-12-31	2019
A620 BAWWORTH (east of B6420 Mansfield Road)	NOTTSPERMANENT	1010	00001346880	7.756	EB	7.827	WB	15.583	7.084	EB	7.154	WB	14.238	625	EB	685	WB	1.310	707	EB	637	WB	1.344	2019-01-01 to 2019-12-31	2019
A620 Baworth Road, Retford (east of Railway Bridge)	NOTTSPERMANENT	1011	000010000867	9.310	EB	9.258	WB	18.568	8.667	EB	8.583	WB	17.250	791	EB	840	WB	1.531	743	EB	712	WB	1.455	13/11/2015-14/11/15	2015
A620 Welham Road, Clarbrough Nth of Bonemill Lane	NOTTSPERMANENT	1011	000010527382	3.915	NB	4.134	SB	8.049	3.626	NB	3.827	SB	7.453	282	NB	393	SB	675	347	NB	350	SB	697	2019-01-01 to 2019-12-31	2019
A631 Bawtry Road, Scalfworth (NW of Theaker Lane)	NOTTSPERMANENT	1016	000010106691	5.181	WB	5.073	EB	10.254	4.942	WB	4.778	EB	9.270	455	WB	367	EB	822	392	WB	480	EB	872	2018-01-01 to 2018-12-31	2018
A638 Great North Road, Gamston (south of Causeway Lane)	DFT Manual Count	1028	000000077444	4.819	NB	4.663	SB	9.482	4.473	NB	4.328	SB	8.802	432	NB	392	SB	824	529	NB	405	SB	934	2016	2016
A6075 Lincoln Road, Tuxford (west of Marnham Road)	NOTTSPERMANENT	1031	000011207471	3.027	EB	3.142	WB	6.169	2.742	EB	2.865	WB	5.607	308	EB	309	WB	617	261	EB	314	WB	575	2019-01-01 to 2019-12-31	2019
B1403 Main Street, Hayton north of Smeath Lane attached to LC no.28	NOTTSPERMANENT	1033	000010517184	1.115	NB	1.166	SB	2.281	1.063	NB	1.095	SB	2.158	78	NB	120	SB	198	109	NB	83	SB	192	2018-12-04 to 2018-12-16	2018
B6024 NEWCASTLE AVE WORKSOP (east of Westgate)	NOTTSPERMANENT	1034	000010755878	4.574	NB	4.351	SB	8.925	4.310	NB	4.115	SB	8.425	245	NB	313	SB	558	388	NB	320	SB	708	2019-04-02 to 2019-12-31	2019
B6034 OLLERTON RD WEST OF CARBURTON	NOTTSPERMANENT	1035	000010706073	3.035	NB	3.021	SB	6.056	2.773	NB	2.764	SB	5.537	283	NB	252	SB	535	266	NB	266	SB	532	2019-01-01 to 2019-12-31	2019
B6040 Retford Road, Worksop (west of B6079)	NOTTSPERMANENT	1036	000010716078	7.404	EB	7.533	WB	14.837	6.596	EB	6.801	WB	13.397	549	EB	455	WB	984	570	EB	605	WB	1.175	2019-01-01 to 2019-12-31	2019
B6040 Gateford Road, Worksop (NW of Victoria Square)	NOTTSPERMANENT (turning count)	1037	000000030716	5.545	NB	4.401	SB	9.946	5.183	NB	4.017	SB	9.200	295	NB	329	SB	624	468	NB	291	SB	759	01/10/2015	2015
B6041 High Hoe Road, Worksop (NW of Bracebridge)	NOTTSPERMANENT (turning count)	1040	000000003551	7.124	NB	6.354	SB	13.478	6.445	NB	5.805	SB	12.250	468	NB	578	SB	1.066	580	NB	473	SB	1.053	05/06/2014	2014
B6045 Blyth Road, Worksop (SW of Gloucester Road)	NOTTSPERMANENT	1041	000010655980	4.368	NB	4.519	SB	8.887	3.978	NB	4.116	SB	8.094	414	NB	259	SB	673	308	NB	423	SB	731	2019-01-01 to 2019-12-31	2019
B6045 Ranskill Road, Metheress (west of village)	NOTTSPERMANENT	1045	000011106888	1.504	EB	1.517	WB	3.021	1.378	EB	1.408	WB	2.786	115	EB	140	WB	255	158	EB	129	WB	287	2019-08-07 to 2019-12-31	2019
B6079 Retford Road, near Ranby (west of A1)	NOTTSPERMANENT	1046	000010906480	4.310	NB	4.528	SB	8.838	3.883	NB	4.037	SB	7.920	378	NB	365	SB	749	344	NB	403	SB	747	2019-01-01 to 2019-12-31	2019
B6420 Mansfield Road, Merton	ATC Data for Baseflow	1052	000000000900	1.595	NB	1.778	SB	3.173	1.495	NB	1.634	SB	3.129	114	NB	206	SB	320	136	NB	260	SB	296	12/10/2019-10/09	2009
B6463 Tickhill Road, Harworth (North of Main Street B6463)	NOTTSPERMANENT (turning count)	1049	000000003617	4.830	NB	4.830	SB	9.661	4.484	NB	4.484	SB	9.968	306	NB	414	SB	720	443	NB	419	SB	862	16/07/2019	2019
B6463 Main Street, Shrumpton (West of Blyth Road)	NOTTSPERMANENT (turning count)	1050	000000000367	2.670	EB	2.670	WB	5.341	2.479	EB	2.479	WB	4.957	241	EB	158	WB	399	231	EB	238	WB	469	16/07/2019	2019
C65 Blyth Road Harworth South of Harworth Railway Line	NOTTSPERMANENT	1051	000010306191	3.470	NB	3.372	SB	6.842	3.057	NB	2.971	SB	6.028	179	NB	337	SB	516	395	NB	227	SB	622	2019-01-01 to 2019-12-31	2019
Old London Road, Nr Ranby (north of Green Mile Lane)	NOTTSPERMANENT (turning count)	1052	000000003715	1.253	NB	1.620	SB	2.774	1.432	NB	1.398	SB	2.550	91	NB	124	SB	215	105	NB	99	SB	195	30/09/2015	2015
Randall Way, Retford (SW of Millman Way)	NOTTSPERMANENT (turning count)	1054	000000003540	2.444	EB	2.055	WB	4.399	2.021	EB	1.777	WB	3.798	390	NB	331	WB	611	234	NB	277	WB	510	08/05/2014-26/10/2012-08/11/2012	2012
SCROOBY RD HARWORTH (west of Waterlaid Road)	NOTTSPERMANENT	1058	000010336291	2.697	EB	2.684	WB	5.381	2.618	EB	2.599	WB	5.217	151	EB	164	WB	317	256	EB	224	WB	480	2019-01-01 to 2019-12-31	2019
Smeath Lane, Retford (NE of Tilt Lane)	NOTTSPERMANENT	1060	000011117082	831	NB	788	SB	1,619	784	NB	734	SB	1,518	52	NB	51	SB	103	66	NB	66	SB	132	2019-01-01 to 2019-12-31	2019
Sparken Hill, Worksop - South of Danesfield Road	NOTTSPERMANENT	1062	000010000008	2.032	NB	1.970	SB	4.002	1.830	NB	1.779	SB	3,610	202	NB	259	SB	461	163	NB	138	SB	301	10/09/2014-11/09/2014	2014
Village Road, Worksop (south of Nene Walk)	NOTTSPERMANENT	1066	000010000020	7.054	NB	7.139	WB	4.193	1.903	NB	1.997	WB	3,900	226	EB	305	WB	613	193	NB	167	WB	402	2019-01-01 to 2019-12-31	2019
Westgate, Worksop (west of Park St)	NOTTSPERMANENT (turning count)	1067	000000000415	3.169	WB	3.169	EB	6.337	2.941	WB	2.941	EB	5,883	213	WB	210	EB	423	295	WB	266	EB	561	26/03/2018	2018
West Hill Road, Retford (north of the Fairway)	NOTTSPERMANENT	1068	000010000057	2.255	NB	2.465	SB	4.720	2.098	NB	2.361	SB	4,461	286	NB	181	SB	467	155	NB	230	SB	385	30/10/2013	2013
Whimsey Moor Lane, Retford (SE of Thrumpton Close)	NOTTSPERMANENT	1070	000010000055	1.013	NB	884	SB	1,897	988	NB	856	SB	1,844	106	NB	80	SB	186	105	NB	90	SB	195	30/10/2013	2013
A 620 - Moorgate - Retford (North East of A638 Arlinton Way)	NOTTSPERMANENT	1072	000000004131	9.112	NB	9.112	SB	18.224	8.458	NB	8.458	SB	16,516	571	NB	757	SB	1,328	749	NB	649	SB	1,398	12/03/2018	2018
B 6044 - Albert Road - Retford (West of Beehive Street)	NOTTSPERMANENT	1074	000000000910	1.595	NB	1.778	SB	3.173	1.495	NB	1.634	SB	3.129	114	NB	206	SB	320	136	NB	260	SB	296	12/10/2019-10/09	2009
Bridgegate - Retford (South East of A620 / A 638 Roundabout)	NOTTSPERMANENT	1075	000000000249	4.196	EB	4.196	SB	8.392	3.895	EB	3.895	SB	7.789	321	NB	295	SB	616	330	NB	302	SB	632	14/03/2016	2016
Spital Hill - Retford (North East of A638 Arlinton Way)	NOTTSPERMANENT	1076	000000000248	2.980	EB	2.980	WB	5.960	2.766	EB	2.766	WB	5,532	171	EB	278	WB	449	246	EB	281	WB	522	12/03/2018	2018
B 6024 - POTTER STREET - WORKSOP (East of Watson Road)	NOTTSPERMANENT	1079	000000000248	5.191	EB	5.191	WB	10.382	4.819	EB	4.819	WB	9,637	285	EB	426	WB	711	411	EB	451	WB	862	26/03/2018	2018
A57 (West of B6040 Roundabout)	NOTTSPERMANENT	1080	000010000020	11.200	NB	10.672	WB	21.872	10.427	EB	9.995	WB	20,278	986	NB	669	WB	1,657	794	NB	978	WB	1,769	2019-01-01 to 2019-12-31	2019
B6034 (South of A57 Roundabout)	NOTTSPERMANENT	1084	000000000214	3.810	NB	3.810	SB	7.620	4.310	NB	4.310	SB	8,637	410	NB	336	SB	617	325	NB	314	SB	639	16/07/2019	2019
Eastgate (east of B6045/B6040)	Worksop MTCs	1098	000000000413	3.627	EB	3.627	WB	7.254	3.367	EB	3.367	WB	6,734	168	EB	283	WB	451	210	EB	358	WB	568	26/03/2018	2018
Memorial Ave (east of B6040 junction)	NOTTSPERMANENT	1102	000000000241	2.750	EB	2.962	WB	5.712	2.680	EB	2.820	WB	5,500	173	EB	257	WB	430	301	EB	284	WB	585	21/03/2016	2016
B6040 (north of B6024 junction)	NOTTSPERMANENT	1103	000010000009	6.519	NB	4.966	SB	11,485	6.117	NB	4.677	SB	10,794	420	NB	401	SB	821	549	NB	387	SB	936	2017-03-05 to 2017-03-16	2017
Lincoln Road (north of Ollerton Hill)	NOTTSPERMANENT	1104	000010000009	1.573	NB	1.573	WB	3.147	1.573	NB	1.573	WB	3,147	157	NB	157	WB	314	157	NB	157	WB	314	20/09/17-21/09/17	2017
A57 EAST MARKHAM (EAST OF LINCOLN RD)	DFT Manual Count	1117	000000036590	3.923	EB	3.757	WB	7.680	3.642	EB	3.487	WB	7,129	410	EB	325	WB	735	345	EB	336	WB	681	2016	2016
A57 WORKSOP (SOUTH OF SANDY LANE)	NOTTSPERMANENT	1138	000010705779	15.696	NB	16.113	SB	31.809	14.797	NB	15.143	SB	29,940	1,042	NB	1,227	SB	2,269	1,352	NB	1,276	SB	2,628	2019-05-01 to 2019-10-31	2019
A57 WORKSOP BYPASS (NORTH OF SANDY LANE)	NOTTSPERMANENT (turning count)	1139	000000000903	12.147	NB	12.147	SB	24.295	11.276	NB	11.276	SB	22,552	702	NB	1,003	SB	1,705	975	NB	930	SB	1,905	16/07/2019	2019
A57 WORKSOP BYPASS (EAST OF B6044 LAMB LANE)	NOTTSPERMANENT (turning count)	1140	000000000904	13.696	EB	13.696	WB	27.393	13.696	EB	13.696	WB	26,000	845	EB	508	WB	1,344	646	EB	805	WB	1,431	16/07/2019	2019
A60 MANSFIELD ROAD, WORKSOP (WEST OF MEADOW ROAD)	NOTTSPERMANENT (turning count)	1142	000000000205	11.573	NB	11.573	WB	23.151	11.573	NB	11.573	WB	21,490	945	EB	595	WB	1,744	938	EB	991	WB	1,929	16/07/2019	2019
A161 HAYEY ROAD, MISTERTON (N OF ROOKS LANE)	NOTTSPERMANENT	1146	000010107995	2.416	EB	2.579	SB	4.995	2.213	NB	2.364	SB	4,577	183	NB	204	SB	387	216	NB	225</				

APPENDIX B – WALKING & CYCLING ASSUMPTIONS

Estimation of Distance Cycled on a Commuter Route in 10 Minutes

12.00	mph (Source: Local Transport Note 2/08, DfT, Oct 2008 (Pages 41 and 42 refer - lower 12mph speed applied))
1.609344	mph to kph conversion factor
19.31	kph
0.32	km per Minute
322	m per minute
5.36	m per second
3,219	metres travelled in 10 minutes

Estimation of Distance Walked in 10 Minutes

3.00	mph (Assumed average walking speed)
1.609344	mph to kph conversion factor
4.83	kph
0.08	km per Minute
80	m per minute
1.34	m per second
805	metres travelled in 10 minutes

Quotes:

Building Sustainable Transport into New Developments (DfT, April 2008) - 'Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes walking distance (around 800 metres)'

A Sustainable Future for Cycling (DfT & Cycling England, Jan 2008) - '23% of car trips are less than 2 miles, a distance that is easily cycled in less than 15 minutes'

Walking and cycling : Action Plan (DfT, 2004) - '42% of all trips are within 2 miles - less than the average length of a cycle trip'

APPENDIX C – COMMITTED DEVELOPMENT

Outside of the District

Near Certain	Size of Development						
	No. of	100 sq m				Beds	Spaces
	Dwellings	B1	B2	B8	A1	Hotel	P+R
Chesterfield	476	0	0	0	0	0	0
Bolsover	1,529	212	189	212	0	0	0
'NE Derbyshire'	1,654	13	12	25	0	0	0
'Lincoln City'	277	0	0	0	0	0	0
'West Lindsey'	1,815	600	350	150	49	56	0
'Newark and Sherwood'	11,564	4,271	350	1,100	76	0	0
Doncaster	9,587	2,501	156	183	0	0	0
'Sheffield City'	9,754	483	483	483	0	0	0
Mansfield	3,147	1,119	1,558	1,766	0	0	0
'North Lincs'	1,276	0	0	0	0	0	0
Rotherham	3,147	0	0	0	0	0	0
'North Kesteven'	2,448	0	0	0	0	0	0

More Than Likely	Size of Development						
	No. of	100 sq m				Beds	Spaces
	Dwellings	B1	B2	B8	A1	Hotel	P+R
Chesterfield	2,122	221	221	221	0	0	0
Bolsover	2,520	267	907	907	0	0	0
'NE Derbyshire'	1,571	275	275	275	0	0	0
'Lincoln City'	480	0	0	0	0	0	0
'West Lindsey'	130	0	0	0	0	0	0
'Newark and Sherwood'	0	0	0	0	0	0	0
Doncaster	0	645	1,194	2,114	0	0	0
'Sheffield City'	437	235	235	235	0	0	0
Mansfield	0	0	0	0	0	0	0
'North Lincs'	4,312	0	0	0	0	0	0
Rotherham	64	0	0	0	0	0	0
'North Kesteven'	9,079	0	0	0	0	0	0

Core Scenario (Near Certain or More Than Likely)	Size of Development						
	No. of	100 sq m				Beds	Spaces
	Dwellings	B1	B2	B8	A1	Hotel	P+R
Chesterfield	2,598	221	221	221	0	0	0
Bolsover	4,049	479	1,095	1,119	0	0	0
'NE Derbyshire'	3,225	288	288	300	0	0	0
'Lincoln City'	757	0	0	0	0	0	0
'West Lindsey'	1,945	600	350	150	49	56	0
'Newark and Sherwood'	11,564	4,271	350	1,100	76	0	0
Doncaster	9,587	3,146	1,350	2,297	0	0	0
'Sheffield City'	10,191	717	717	717	0	0	0
Mansfield	3,147	1,119	1,558	1,766	0	0	0
'North Lincs'	5,588	0	0	0	0	0	0
Rotherham	3,211	0	0	0	0	0	0
'North Kesteven'	11,527	0	0	0	0	0	0
	67,389	10,841	5,930	7,671	124	56	0

Summary of all Committed Developments within Bassetlaw District

Location	Application Number	Size of Development by Development Use-Class				
		C3 (Dwellings)	100 sqm Floor Area			
			B1	B2	B8	A1
Harworth & Bircotes						
Land South Of Scrooby Road Harworth	12/01784/RES	118				
Harworth Colliery (Jones)	17/01566/RES	71				
Harworth Colliery (Kier) DN11 8JN	17/01575/RES	125				
Harworth Colliery	18/01210/OUT	1300				
South of (DN11 8PB) - 1	19/00876/OUT	489				
South of (DN11 8PB) - 2	19/00876/OUT	163				
Land Off Essex Road Bircotes	20/00051/FUL	120				
Harworth House	18/00195/PDN	94				
Blyth Road*	19/00866/VOC		783	783	783	
Workshop						
Former Dormer Tools (Walker & Sons)	16/00725/FUL	36				
Land South Of Tylden Road Rhodesia	18/00337/FUL	111				
Land West Of Queen Elizabeth Crescent Rhodesia Workshop	19/00852/FUL	127				
Land north east of St Lukes School (Harron)	17/00271/RES	108				
Wood End Farm	18/00648/RES	46				
Land North Of Thievesdale Lane And West Of Blyth Road	15/01477/OUT	97				
Land at Gateford Park (Jones Homes)	17/00033/RES	144				
Land south of (S81 8AG)	19/01408/RES	198				
Lot 3 Gateford Park (Barratt)	20/00109/RES	276				
Former Mansfield Hosiery	20/00183/FUL	54				
Land At Shireoaks Common	20/01696/RES		65	89	179	13
Retford						
Kenilworth Nurseries (DN22 7JE) Phase 1	16/01777/FUL	87				
Land West Of Longholme Road And Park Lane Retford	18/00069/OUT	60				
Rear of Kenilworth Nurseries (Phase 2)	18/00695/FUL	109				
Land West Of Tilt Lane Retford	18/01445/RES	62				
Land North Of Bracken Lane Retford	19/00765/OUT	71				
Land West Of Tilt Lane Retford	19/01477/RES	107				
Land At North Road Retford	20/01477/RES	187				
Land At North Road	20/01477/RES		67	48	48	41
Thrumpton Lane	20/00197/COND		13	24		51
Rural Bassetlaw						
Land east of (S81 9QX)	18/01148/FUL	129				
Firbeck Colliery	19/01137/RES	400				
Welbeck Colliery	15/01037/FUL	65				
Land To North And West Of Chestnut Road Langold	15/01605/OUT	300				
Land On The East Side Of Doncaster Road Langold	20/00916/RES	165				
Land At Ashvale Road Tuxford	19/01165/RES	86				
Land Off The A57 Workshop Bypass*	20/00482/RES		310	310	310	
Explore Way	18/00544/COND			498		
Totals		5505	1238	1753	1320	104

APPENDIX D – COMPARISON WITH TEMPRO

TEMPRO Analysis

Information on growth assumptions obtained from TEMPRO (7.2 dataset) for the study time period of 2021 to 2038 are summarised in the table below.

Area	Base (2021) Households	Base (2021) Jobs	Future (2038) Households	Future (2038) Jobs	Increase in Households	Increase in Jobs
Bassetlaw (Authority)	50,998	59,687	55,860	62,625	4,862	2,938

TEMPRO therefore assumes an increase of 4,862 dwellings within Bassetlaw District during the study time period.

The study has examined the following increase in dwellings in the District during the study time period:

	Core Scenario
Committed Residential Dwellings	5,505
Proposed Residential Dwellings	4,211
Total Residential Dwellings	9,716

The lowest committed/proposed residential development that has been assessed therefore exceeds the growth assumptions contained within TEMPRO by a factor of: 2.00

Additional allowance has also been made for the effect of committed development trips from outside of the district that will pass through the District.

On this basis it is not considered necessary to apply any additional traffic growth to the highway network within the district.

TEMPRO assumes an increase of 2,938 jobs, or employees within Bassetlaw District during the study time period.

Employee densities for different employment uses are provided in Appendix 7 of 'The Regional Spatial Strategy For The East Midlands (RSS8)', March 2005, an extract of which is reproduced below:

(iii) Estimate of Number of Employees

Existing employee density data for each of the three broad employment uses (B1 Office, B2 General Industry/B1 Non-Office, and B8 Warehousing) indicates the following square metre/employee:

	Out of City Centre	Urban	Rural	Out of Town
B1	14	16	16	16
B2	30	35	35	35
B8	78	78	78	78

Applying these employee densities to the committed and proposed employment uses proposed within the District gives:

Proposed Use-Class	Sqm/Employee	Committed GFA (Sqm)	Growth GFA (Sqm)	Total GFA (Sqm)	Estimated Employees
B1	16	123,830	33,441	157,271	9,829
B2	35	175,315	198,717	374,032	10,687
B8	78	132,019	417,035	549,054	7,039
Total		431,164	649,193	1,080,357	27,555

*40% of 269 Ha split based on trip gen assumptions

The increase in employees in TEMPRO is 2,938

Assuming the same proportional split between employment uses the increase in TEMPRO is equivalent to the following employment areas:

Proposed Use-Class	% of Total	Estimated Total GFA (Sqm)
B1	15%	6,843
B2	35%	35,601
B8	51%	116,465
Total	100%	158,909

The study has examined the following increase in employment floor area in the District during the study time period:

Committed Employment (Sqm)	431,164
Growth Employment (Sqm)	649,193
Total Employment (Sqm)	1,080,357

With an equivalent employee increase of 27,555

The committed/proposed employment development that has been assessed therefore exceeds the growth assumptions contained within TEMPRO by a factor of: 6.80

Additional allowance has also been made for the effect of committed development trips from outside of the district that will pass through the District.

On this basis it is not considered necessary to apply any additional traffic growth to the highway network within the district.

APPENDIX E – LOCAL PLAN DEVELOPMENT DETAILS

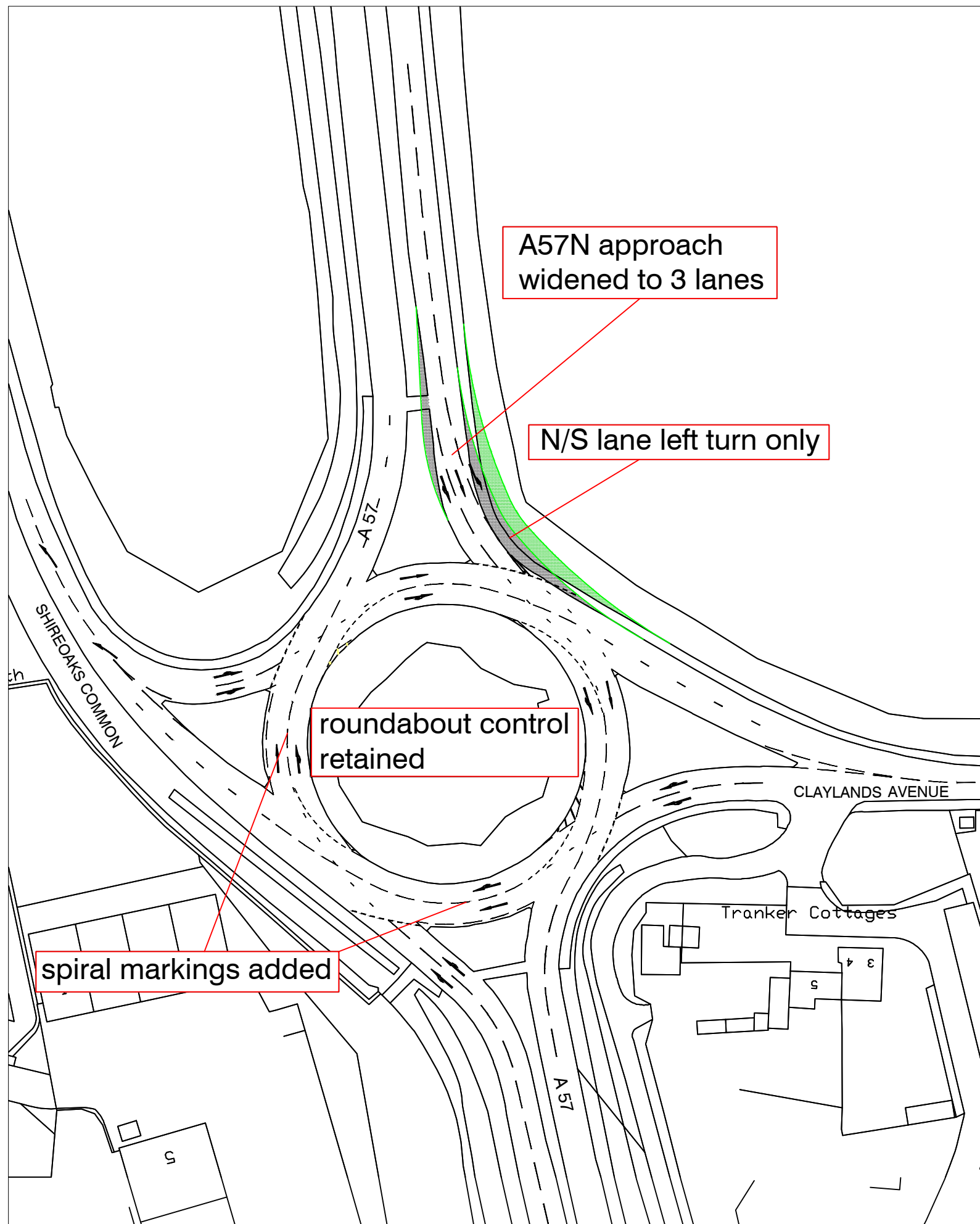
Proposed Development Allocations in Bassetlaw Local Plan - Worksop Central Area

DPD Ref	Location	Existing Site Use Description	Proposed Use	Residential Dwellings
DPD001	Land off Turner Road, Worksop	Former Council tip site	Residential	80
DPD002	Land off Carlton Road/Blyth Road	Vacant brownfield site	Residential	71
DPD003 (LAA465)	Car Park, Gateford Road	Currently a car park	Residential	20
DPD004	Builders Yard Dock Road	Former builder's yard that is un-used	Residential	10
DPD005	Former Fire Station Site	Former Fire Station site	Residential	15
DPD006	Land south of Sandy Lane	Existing council housing estate	Residential	52
DPD007	Central Avenue Car Park	Site currently functions as a car park	Residential	36
DPD008	Land to south of Central Avenue Car Park	Brownfield site	Residential	20
DPD009	Bus Station, Hardy Street	Currently used as a bus depot	Residential	42
DPD010	Crown House, Newcastle Ave, Worksop	Currently an office block	Residential	25
DPD011	Priory Centre	Shopping Centre with car park	Residential	150
DPD012	The WASH, Bridge Court	Currently a restaurant	Employment	0
DPD014	Creative Village Site 2	Industrial uses	Mixed	20
DPD015 (LAA467)	Warehouse, Priorswell Road	Site used to operate as a warehouse	Residential	60
DPD016	Vets on Newcastle Avenue, Near Castle Hill	Vet and car park	Residential	8
DPD017	Newcastle Avenue Garages	MOT Garage and car sales forecourt	Residential	20
DPD018	Middletons	Retail with rear parking	Mixed	10
DPD019	Lead Hill Car Park	Currently a car park	Residential	15
DPD020	Old Ship PH	Old public house, now vacant	Residential	2
DPD021	Town Hall and Market Square	Market square	Employment	0
DPD022	Newgate surgery	Health centre	Health Centre	0
DPD023	Land west of Newgate Street South	Vacant land currently a car park	Residential	8
DPD024	The Mayfair Centre	Used to be a Poundstretcher	Residential	36
DPD025	Magistrates Court	Former Magistrates Court	Residential	26
DPD026	Worksop Public Sector Hub	Public Sector Hub	Employment	0
DPD027	Creative Village Site 1	Industrial uses	Mixed	20
DPD028	The Regal	Former theatre	Mixed	5
				751

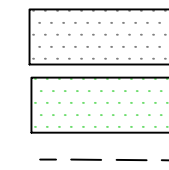
Proposed Development Allocations in Bassetlaw Local Plan - Outside of Worksop Central Area

Ref	Location	Site Description	Proposed Use	Residential		Employment		Comments
				Development within Plan Period (to 2037) Dwellings	Development beyond end of Plan Period - Dwellings	Development within Plan Period (to 2037) Site Area (Ha)	Development beyond end of Plan Period - Site Area (Ha)	
Worksop								
HS1	Peaks Hill Farm, Worksop	Greenfield site on the norther edge of the built-up area	Residential & Employment (5Ha of employment for E(g) B2/B8 uses)	1,080	120	0	0	1,000 dwellings within Plan Period
HS1	Peaks Hill Farm, Worksop	Greenfield site on the norther edge of the built-up area	Residential & Employment (5Ha of employment for E(g) B2/B8 uses)	0	0	5.0	0.0	Part of the Housing Allocation mentioned above (HS1)
HS2	Former Bassetlaw Pupil Referral Centre, Worksop	Brownfield site accessed off Newgate Street	Residential	20	0	0	0	
HS3	Radford Street, Worksop	Disused allotment site within a residential area. Access from Furnival Street	Residential	120	0	0	0	120 affordable dwellings
HS4	Former Manton Primary School, Worksop	Brownfield site within a residential area. Accessed off Kingston Road	Residential	100	0	0	0	
HS5	Talbot Road, Worksop	Greenfield plot within a residential area. Access from Talbot Road/Lincoln Road	Residential	15	0	0	0	
EM01	Apleyhead Junction, Worksop	Greenfield site east of Worksop. Accessed off the A57	Use Class E(g) B2 Industrial and B8 Storage and Distribution	0	0	216.0	0.0	
Totals for Worksop				1,335	120.0	221.0	0.0	
Retford								
HS7	Trinity Farm		Residential	244	0	0	0	
HS8	Milnercroft, Leafields		Residential	5	0	0	0	
HS9	Former Elizabethan School, North Road		Residential	46	0	0	0	
HS10	St Michael's View		Residential	20	0	0	0	
HS11	Fairygrove, London Road		Residential	61	0	0	0	
HS12	Station Road		Residential	5	0	0	0	
HS13	Ordsall South		Residential	930	450	0	0	LAA245, LAA246
	Ollerton Road		Residential	200	0	0	0	LAA141, LAA270, LAA276 - Part of Ordsall South (HS13)
Totals for Retford				1,511	450.0	0.0	0.0	
Rural Bassetlaw								
NP04	Ollerton Road, Tuxford		Residential	75	0	0	0	
ST3	Bassetlaw Garden Village		Mixed Use - Residential and Employment	590	3,500	10	5	
Totals for Rural Bassetlaw				665	3,500.0	10.0	5.0	
			Overall Totals	3,511	4,070	231	5	

APPENDIX F – VIAEM IMPROVEMENT FOR J4




KEY:



new carriageway
new footway
new lining

Please note - no areas of land
beyond current highway boundaries
should be required



Rev						
Status		Description	Drawn	Chkd	Auth	Date
Project						
A57/ Claylands Ave, Workso improvement scheme OS ref:456404/381092						
Property No.		Project No. HW30847/CN1900790				
Title						
Roundabout impt scheme A57N widened and white lining impts						
Scale		Drawn rr			Date 7/20	
1/1000 @A3		Chkd			Date	
		Auth		Traced		
Drawing No.			Rev			
HW30847/TS/101						
in partnership with						
via		 Nottinghamshire County Council				
www.viaem.co.uk Tel: 0115 804 2100 Bilsthorpe Depot, Bilsthorpe Business Park Nottinghamshire NG22 8ST						

APPENDIX G – POTENTIAL MITIGATION SUMMARY

Summary of Recommended Junction and Link Mitigation

Links									
Ref	Description	Junction/Link Standard	Location	2019 Base	2038 Ref Case	2038 Ref Case + LP	Comments	Mitigation	Indicative Costs (£m)
L1	A57 between Gateford Road & Claylands Ave	Single carriageway	Workshop Bypass	83%	100%	115%	All links are currently within capacity at the 2019 base year. With the addition of committed development traffic flows one link reaches capacity. With the addition of LP development traffic six links exceed capacity and two links are close to capacity. However, the transport study is very robust for the following reasons: 1. All committed development is assumed to be delivered within the Plan Period 2. Robust trip generation methodology has been applied 3. Existing modal splits have been applied for trip generation purposes 4. No trip discounts have been used to reflect modal shift due to sustainable travel infrastructure/measures 5. No account has been taken of the effects of 'peak spreading' 6. No allowance has been made of trip reassignment due to network delays/congestion 7. No allowance has been made of the benefits of Garden Communities in terms of reducing the need to travel 8. No allowance has been made for possible technology advances (e.g. autonomous vehicles) The Transport Study is therefore a 'worst case' assessment and future traffic conditions are likely to be less onerous in practice. The recommended approach is therefore to monitor link performance on most links and seek to minimise development traffic impacts through the use of sustainable travel and assess residual traffic impacts as development sites come forward through planning.	Monitor performance - no works identified	£0
L2	A57 between Claylands Ave & Sandy Lane	Single carriageway	Workshop Bypass	72%	88%	107%		Monitor performance - no works identified	£0
L3	A57 between A60 and B6034	Single carriageway	Workshop Bypass	72%	83%	114%		Monitor performance - no works identified	£0
L4	A57 between B6034 and B6040	Single carriageway	Workshop Bypass	59%	74%	126%		Widening to dual carriageway may be required	TBC
L5	A57 between B6040 and A614/A1	Single carriageway	East of Workshop	51%	66%	121%			
L6	A60 between A619 & A57	Single carriageway	West of Workshop	73%	86%	102%		Manage development impacts through sustainable travel	£0
L7	A60 southwest of A619	Single carriageway	West of Workshop	76%	83%	91%		Manage development impacts through sustainable travel	£0
L8	A57 northwest of Workshop	Single carriageway	Northwest of Workshop	64%	74%	82%		Manage development impacts through sustainable travel	£0
L9	B6045 south of junction with Farmers Branch	Single carriageway	Northeast Workshop	67%	80%	98%		Manage development impacts through sustainable travel	£0
L10	B6045 north of Thievesdale Lane	Single carriageway	Northeast Workshop	49%	57%	76%		Manage development impacts through sustainable travel	£0
L11	A631 East of Beckingham	Single carriageway	Northeast Bassetlaw	75%	78%	79%		Manage development impacts through sustainable travel	£0
Key Junctions on Links with Greater than 100% Stress									
Ref	Description	Junction/Link Standard	Location	Related Link	Max' Link Stress	Comments		Mitigation Strategy	Indicative Costs (£m)
J1	A60 Mansfield Road/A619	Priority Roundabout	Workshop	L6	102%	Key junction on A60 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£3.23
J2	A57/A60/B6024/St Anne's Drive	Signal Roundabout	Workshop	L3	114%	Key junction on A57 - Junction improved by ViaEM in 2016 - recommend monitor performance, no further improvements proposed in short term		Monitor junction performance - no works proposed	£0
J3	A57/Sandy Lane	Priority Roundabout	Workshop	L2	107%	Key junction on A57 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£3.23
J4	A57/Claylands Ave/Shireoaks Common	Priority Roundabout	Workshop	L2	107%	Key junction on A57 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£1.07
J5	A57/B6034/Netherton Road	Priority Roundabout	Workshop	L3	114%	Key junction on A57 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£4.31
J6	A57/B6040	Priority Roundabout	Mantonwood, Workshop	L4	126%	Key junction on A57 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£4.31
J7	A614 Blyth Road/A57/A1(T)	Priority Roundabout	East of Workshop	L5	121%	Key junction on A57 - Indicative improvement scheme identified - recommend developing this scheme up in further detail for developer funding		Identify detailed scheme for developer funding	£4.31
J8	A57/B6041 Gateford Road	Priority Roundabout	Workshop	L1	115%	Key junction on A57 - Junction improved by ViaEM in 2019 - recommend monitor performance, no further improvements proposed in short term		Monitor junction performance - no works proposed	£0
J9	B6045 Blyth Road/B6041 Kilton Hill	3-Arm Signal Junction	Workshop	L9	98%	Main impacts due to the Peaks Hill Farm allocation - recommended that the developer identify & deliver appropriate mitigation at these junctions		Developer of Peaks Hill Farm allocation to address	£0
J10	B6045 Blyth Road/Farmers Branch	3-Arm Priority Junction	Workshop	L9	98%				
								Total (£m)	£20.46

Summary of Recommended Highway Mitigation & Indicative Cost Split

Junction Mitigation				Proportion of Total Development Traffic Flows by Allocation Site (%)							Indicative Costs Split by Major Site (£m)						
Ref	Location	Likely Mitigation	Indicative Mitigation Costs (£m)	Apleyhead Site, Worksop	Bassetlaw Garden Village	Ordsall South	Peaks Hill Farm, Worksop	Worksop Public Sector Hub	Sum of other 39 sites	% Check	Apleyhead Site, Worksop	Bassetlaw Garden Village	Ordsall South	Peaks Hill Farm, Worksop	Worksop Public Sector Hub	Sum of other 39 sites	Totals
J1	A60 Mansfield Road/A619	Replace with standard roundabout with localised widening	£3.23	31%	11%	4%	28%	5%	21%	100%	£1.00	£0.37	£0.11	£0.91	£0.16	£0.67	£3.23
J3	A57/Sandy Lane	Entry and exit widening on A57 arms	£3.23	54%	20%	2%	0%	2%	21%	100%	£1.76	£0.65	£0.08	£0.00	£0.08	£0.66	£3.23
J4	A57/Claylands Ave/Shireoaks Common	Widening of A57 north arm and provision of spiral markings	£1.07	40%	15%	1%	35%	1%	9%	100%	£0.42	£0.16	£0.01	£0.38	£0.01	£0.09	£1.07
J5	A57/B6034/Netherton Road	Widening on all arms and circulatory carriageway, provision of full signal control	£4.31	66%	21%	2%	0%	5%	7%	100%	£2.83	£0.89	£0.10	£0.00	£0.21	£0.28	£4.31
J6	A57/B6040	Widening on A57 arms, minor widening on side road arm, provision of full signal control	£4.31	69%	21%	2%	1%	5%	2%	100%	£2.96	£0.91	£0.09	£0.04	£0.22	£0.09	£4.31
J7	A614 Blyth Road/A57/A1(T)	Widening on A57 arms, minor widening on side road arms, provision of full signal control	£4.31	36%	44%	7%	2%	8%	5%	100%	£1.53	£1.88	£0.30	£0.07	£0.34	£0.20	£4.31
			£20.46	-	-	-	-	-	-	-	£10.51	£4.86	£0.68	£1.40	£1.01	£2.00	£20.46

Note: Proprtional splits based on total development flows into junctions.

