

Appendix A

Technical Notes and Notes of Meetings

Scoping Note:

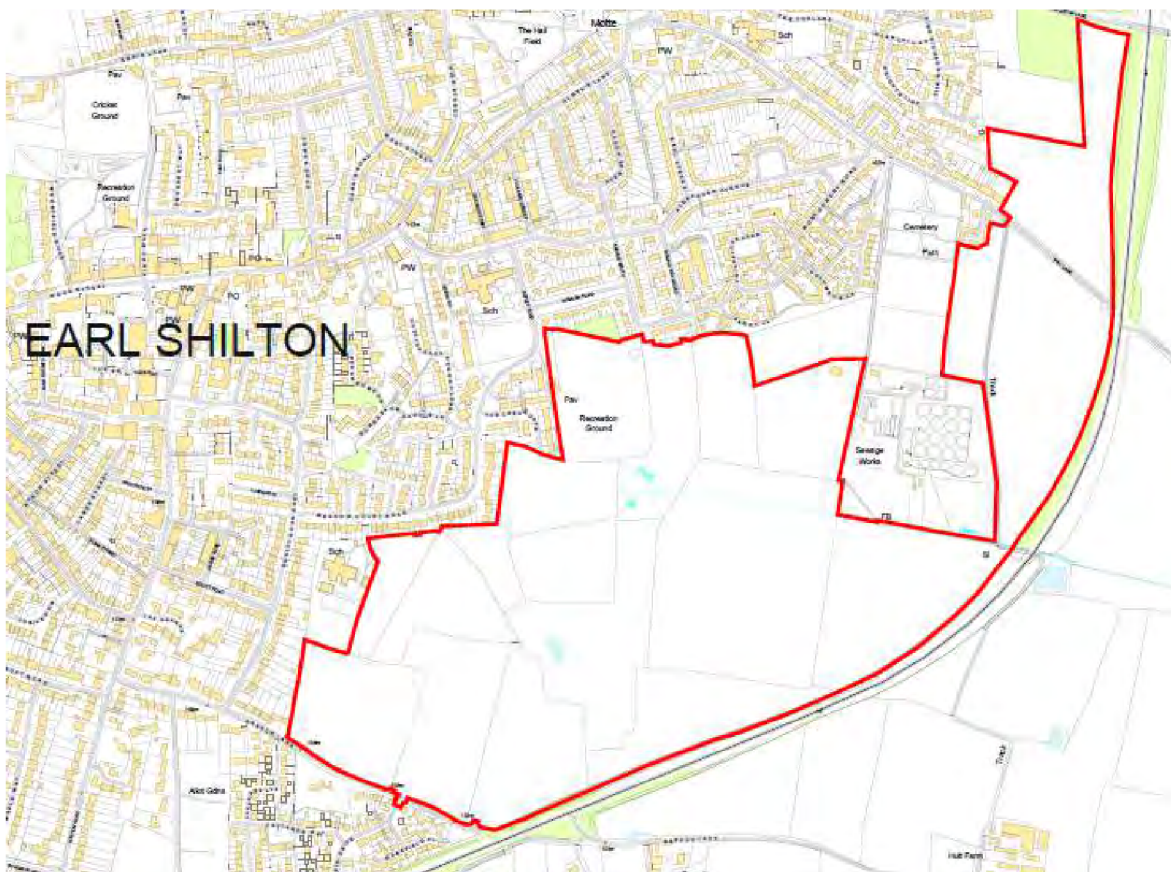
Earl Shilton SUE Transport Assessment and Travel Plan

1. Introduction

1.1 Overview

Bloor Homes, Jelson Homes and Barwood Land (hereafter referred to as 'the Applicants') are seeking planning permission from Hinckley & Bosworth Borough Council (HBBC) for mixed use development of a site, known as the Earl Shilton Sustainable Urban Extension (SUE), located to the southeast of Earl Shilton, Leicestershire. The Scheme is for a mix of uses comprising 1,600 homes, at least 4.5ha of employment (Class B1, B2 and B8), a two-form entry primary school, up to 2,000m² GFA of local retail and 20ha of green space with all matters, apart from access, reserved for future determination. The site is shown in **Figure 1.1**.

Figure 1.1 Indicative boundary



It is the intention of the Applicants that the outline planning application (OPA) will be submitted in July 2020 and pre-application discussions with HBBC have already commenced. The Earl Shilton SUE is identified by HBBC in their Core Strategy document (2006 – 2026), as is a SUE at Barwell to the west (known as the Barwell

West SUE). A draft planning application pack for the Earl Shilton SUE was prepared in 2014 in parallel with the Earl Shilton and Barwell Area Action Plan (AAP) which was adopted in September 2014, however the Applicants did not progress to submission of the application.

The 2014 masterplan is currently being reviewed but will remain compliant with the AAP. In terms of access and movement, the following will be provided:

- Spine road through the site that can accommodate buses, cyclists and private vehicles;
- Two points of access to the development from the A47: one at the existing Fox Meadows development via Masefield Drive; and the other via a new junction to the south of Mill Lane;
- a new access point off Astley Road; and
- Four cycle connection points to the existing Earl Shilton town, located in the south at Breach Lane, centrally via Astley Road / Alexander Avenue and in the north via Mill Lane and Thurlaston Lane.

1.2 Background

A Transport Assessment (TA) and Travel Plan were prepared in 2014 as part of the draft application pack and were fully scoped with Leicestershire County Council (LCC) Highways England.

The 2014 TA was developed based on the approach adopted within the Barwell West SUE TA which used traffic data derived from the Leicester and Leicestershire Integrated Transport Model (LLITM). The traffic generation associated with the Barwell SUE was included within the future baseline.

It was agreed with LCC at the time that the assessment would be based on the years modelled in the LLITM, as follows:

- 2012 Baseline;
- 2026 Future Baseline (including Barwell West SUE, excluding Earl Shilton SUE); and
- 2026 Future Baseline + Earl Shilton SUE traffic.

An Infrastructure Delivery Plan (IDP) was incorporated into the AAP and included a number of transport contribution cost estimates attributable to the Earl Shilton SUE.

It is the intention to update the original TA and Travel Plan and the purpose of this Scoping Note is to set out the elements which remain fixed and those which will need to be updated.

2. Scope of Assessment

2.1 Study Area

It is proposed to retain the study area that was established in the 2014 TA as was agreed with LCC and Highways England. The following sections provide a description of this.

Local Road Network

The development traffic impact was assessed at the following local road network junctions:

1. A47/Carrs Hill;

2. A47/Elmesthorpe Lane;
3. A47/Station Road;
4. A47/Masefield Drive;
5. A47/Leicester Road; and
6. A47 Normandy Way/A447 Ashby Road/B4667 Ashby Road

There was also discussion with LCC at the time of development of the 2014 TA about the need to assess the A47/B582 junction known as Desford Crossroads. LCC was developing an improvement scheme for the junction and a contribution towards this would be sought. It is understood that a roundabout scheme has now been designed and it is anticipated that LCC will seek developer funding towards the cost of this. It is assumed that the design of the scheme would have incorporated traffic generated by allocated developments (including the Earl Shilton SUE) within the junction modelling and therefore it is not considered necessary to include this junction within the assessment.

In addition, it was agreed with LCC at the time that the impact of the Scheme traffic on the town centre of Earl Shilton would also be considered, but in less detail than above and was based on available ATC data for the following routes:

1. Astley Road (north of proposed site access);
2. Alexander Avenue (west of junction with Astley Road);
3. High Street (north of Junction with Alexander Avenue); and
4. Mill Lane (east of Alexander Avenue).

It is proposed that these routes will be included within the updated TA.

Strategic Road Network

Based on discussion with Highways England at the time, the following junction was assessed:

- A47 Normandy Way/A447 Ashby Road

There was discussion at the time about assessment of the A5 Longshoot junction and A5 Dodwells Roundabout, however, as these were included in the Barwell West SUE TA which included the Earl Shilton SUE in the future baseline, and also schemes had been identified at these junctions, they were not included in the assessment.

It is understood from the Highways England 'Improvements and major road projects' site¹, that the A5 schemes are planned to start in 2020/21. It is therefore assumed that there will be no requirement to assess these junctions, as before. Discussion will be

2.2 Baseline traffic data

As identified in Section 1.2, the 2014 TA was based on output from the LLITM which included both the Barwell and Earl Shilton SUEs in the future flows.

At this stage of scoping it is unknown as to the current status of the LLITM and whether it has been updated since 2014 and whether there are further baseline and future baseline years that have been modelled.

¹ <https://highwaysengland.co.uk/projects/a5-dodwells-to-longshoot-widening/>

The scoping response from LCC will confirm whether the LLITM is appropriate and available for use within the OPA timescales.

In the absence of traffic data from the LLITM it is proposed to undertake a series of Manual Classified Counts (MCCs) at the seven junctions within the study area as identified above. Automatic Traffic Counts (ATCs) will be undertaken at the following locations to corroborate the MCC data or for the assessment of the town centre:

1. A47 (north-east of Masefield Drive);
2. A47 (south of Thurlaston Lane overbridge); and
3. A47 (south of Dan's Lane).
4. Astley Road;
5. Alexander Avenue;
6. High Street (west of town centre);
7. High Street (east of town centre); and
8. Mill Lane.

2.3 Assessment Scenarios

Clearly, such a large development can be subject to market cycles and at outline stage it is not possible to define the exact commencement and timetable. The draft planning application assumed that development would commence in 2015 and would be undertaken by three or four housebuilders each completing between 30 and 40 dwellings per annum, a range of 90 to 160 dwellings. Assuming an average of 120 dwellings, the development would take 13 – 14 years to construct. Assuming the same time frame, the development would be expected to be completed by 2035. It is proposed to model the following scenarios:

- 2020 Existing Baseline;
- 2035 Future Baseline (including Barwell West SUE, excluding Earl Shilton SUE); and
- 2035 Future Baseline + Earl Shilton SUE traffic.

In the absence of LLITM output, the 2020 traffic flows would be growthed based on a combination of TEMPro growth factors and committed development traffic.

If the LLITM is appropriate and available to use, the future year scenarios would be compliant with the future modelled years.

2.4 Traffic Generation

Trip Rates

In the 2014 TA traffic generation was developed using a mixture of trip rates which were agreed with LCC and Highways England. The trip rates for residential (split into 90% privately owned and 10% rented), B2, B8, local shops were derived from the Barwell TA as agreed with LCC. A trip rate for the B1 element of the Earl Shilton site was sourced from the TRICS database, based on survey of sites of comparable size and location.

It is proposed to update the trip rates based on the latest TRICS database. A comparison of the trip rates is provided in **Table 2.1**.

Table 2.1 Comparison of trip rates

	Trip rates used in the previous work (based on Barwell TA and TRICS)				Revised 2020 rates (based on latest TRICS database)			
	AM		PM		AM		PM	
	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
Residential (private dwellings)	0.162	0.45	0.436	0.252	0.130	0.371	0.337	0.154
Residential (house for rent/affordable housing)	0.094	0.19	0.237	0.167	0.162	0.313	0.192	0.131
Employment B1	2.1780	0.3220	0.1920	1.8980	1.176	0.113	0.065	1.047
Employment B2	0.5900	0.2600	0.1600	0.4700	0.096	0.038	0.031	0.085
Employment B8	0.0600	0.0100	0.0150	0.0700	0.320	0.061	0.015	0.244
Retail - Local Shops	4.0700	3.9100	4.6500	4.7000	5.556	5.317	7.282	8.036
Education - Primary School	0.4100	0.3100	0.0200	0.0300	0.310	0.140	0.036	0.052

The primary school trip generation was based on the assumption that a household generates 0.24 primary school pupils. Based on the proposed dwelling number of 1,600 houses, this would result in 384 primary school pupils within the SUE. A two-form entry school would have 420 pupils, and therefore there would be 36 pupils external to the site.

Internal traffic generation

Given the proposed mixed use of development and the site location, a series of adjustments were made in the 2014 TA to take into account the containment of trips. The following section sets out the methodology for the calculations of internal trips which were agreed with LCC and Highways England. It is proposed to retain this methodology for the revised assessment.

- Local Shops –all traffic generation for this land use will be internal to the site or pass by traffic using the internal road network of the Earl Shilton Site.
- Primary School – 91.4% of the school trips would be internal to the site (based on the pupil yield of 384 primary school children).
- Employment - to reflect the interaction between both SUEs and the increased propensity for travel by sustainable modes between the two traffic flows from Barwell West and Earl Shilton SUE were reduced by 11.4% which was based on the number of residents who were shown to live and work in Barwell in the Journey to Work data from 2001 Census and was an appropriate proxy to inform future travel patterns between the two sites.

This will be reviewed based on the 2011 Census.

- Residential - for the trips to other internal land uses, these are the inverse of the departures from those land uses, for example, the internal trips leaving the employment are assumed to return to the residential element of the site.

External Trip Generation

From the derivation of internal trips and understanding the implications of transfer trips related to the primary school, it is assumed that all the remaining trips upon the network are external trips. The following section sets out the methodology for the calculations of external trips which were agreed with LCC and Highways England. It is proposed to retain this methodology for the revised assessment.

- Primary School – 8.6% of the school trips will be external (based on the remaining 36 spaces within the school).
- Employment - all HGV trips generated by the employment uses will be external.
- Residential - A further calculation of residential trips based on journey purpose was applied which considered journeys to the secondary school, employment, retail and personal business that would be undertaken by private vehicle rather than bus or cycle.

2.5 Development Traffic Distribution

The development traffic generation was distributed onto the road network external to the site as set out in this section and agreed by LCC and Highways England. It is proposed to retain this approach to distribution and assignment.

- Employment car traffic distribution was based on the LLITM model. HGVs distribution was based on 50% north on the A47 and 50% south of the A47.
- The traffic generation resulting from the remaining primary school places that will not be taken up by residents of the site was distributed in the same way as residential and employment trips, assuming the most logical routing patterns.
- The residential traffic generation was split between the relevant housing areas of the site and access routes as follows:
 - ▶ A47 (S) – via Masfield Drive;
 - ▶ A47(N) – via New Roundabout Junction with A47 (Clickers Way);
 - ▶ Mill Lane – via Mill Lane; and
 - ▶ Astley Road – via New Priority Junction with Astley Road.

Residential External Traffic Distribution – To Earl Shilton Town Centre

The traffic distribution to Earl Shilton town centre is assumed to enter and exit the site via following three access points:

- Astley Road - Route to Earl Shilton Town Centre via Astley Road junction, with traffic splitting north and south on Astley Road to accesses different elements of Earl Shilton town centre (either via Alexander Avenue or Equity Road East/Station Road);
- A47 (S) – Route to Earl Shilton Town Centre via Masfield Drive, A47, Station Road and Earl Shilton High Street; and

- Mill Lane - Route to Earl Shilton Town Centre via Mill Lane, Alexander Avenue and Earl Shilton High Street.

Residential External Traffic Distribution – To Earl Shilton Secondary School

The distribution to Earl Shilton Secondary School, which is located to the north-west of Earl Shilton on Bell Vue Road, has all been assumed to enter and exit the site via three access points as set out below:

- A47 (S) – Route to secondary school Maselfield Drive, A47, Station Road, Stonycroft Road, Doctors Field, Hinkley Road, Bell Vue Road;
- Astley Road – Route to Earl Shilton Secondary School via Astley Road, Equity Road East, Breach Lane, Stonycroft Road, Doctors Field, Hinkley Road, Bell Vue Road; and
- Mill Lane – Route to Earl Shilton Secondary School via Mill Lane, Alexander Avenue, High Steet, Hinkley Road, Bell Vue Road.

Residential External Traffic Distribution – To Earl Shilton Elsewhere

The distribution of residential external trips to elsewhere (i.e. not Earl Shilton) was based on the LLITM Model.

3. Travel Plan

The 2014 Travel Plan will be updated to include current baseline information and the latest policies and initiatives.

4. Summary

The following is proposed for the updated TA and Travel Plan:

- Retain study area identified in the 2014 Early Shilton SUE TA for traffic impact assessment and personal injury accident analysis. Update existing baseline review.
- Use LLITM for future baseline flows if appropriate and available for use within the OPA timescales. Alternatively undertake traffic counts for 2020 baseline and growth factors and committed development for future baseline.
- Update the trip rates based on the latest TRICS database.
- Retain agreed methodology for internal/external trip adjustments.
- Retain traffic distribution based on LLITM.
- Update Travel Plan to include current baseline information and the latest policies and initiatives.

Issued by

Glyn Price



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Approved by

Bev Coupe

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Our Ref:
Your Ref: 21/10112/PREMAJ

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13 July 2021

Dear Sharron,

M69 – Earl Shilton Sustainable Urban Extension (SUE), Mill Lane Earl Shilton, Leicestershire

Thank you for consulting Highways England on 1 July 2021 regarding pre-application ref no 21/10112/PREMAJ, for a residential development of up to 1,500 dwellings, up to 5.3ha of employment land comprising a mix of E (office), B2 and B8 uses, a primary school, up to 2,000 sqm of retail floor space, public open space including Sustainable Urban Drainage Systems (SuDS), recreational open space and the provision of associated infrastructure, at the above location.

It is our understanding that a draft planning application pack for the Earl Shilton SUE was prepared in 2014, however this did not progress to a formal submission. We note that the applicant's transport consultants, Wood Environment & Infrastructure Solutions UK Limited ('Wood'), consulted Highways England in March 2020 regarding this site. Since then we have been in ongoing discussions with Wood, providing comments on the transport assessment work that is currently being undertaken. In October 2020, we issued a letter in response to the Environmental Impact Assessment (EIA) scoping opinion consultation for the proposed development, setting out the general areas of concern and site-specific comments.

We had a traffic modelling inception meeting on 6 May 2021 with the applicant's consultant Wood and WSP, together with Leicestershire City Council. Following the meeting and our review of the Technical Note (TN) entitled 'Earl Shilton SUE Development Traffic Generation Version 5ii', we have raised comments on the trip distribution, the use of PRTM, opening year, future year and assessment scenarios following the meeting, which still remain outstanding.

Having reviewed the submitted supporting document entitled 'Earl Shilton SUE Masterplan Revisions and Pre-application Queries' dated June 2021, we have the following comments:

Section 1.2 states that the submission will be made as two separate outline planning applications. Please note that the development traffic impact should be assessed cumulatively for those two applications.

Section 1.4 mentions the change of the previously proposed southern A47 access to Breach Lane access as well as the realignment of the Spine Road and internal loop arrangement. It is unlikely that these changes will have a significant impact on the Strategic Road Network (SRN), however, we will provide further comments on the overall development traffic impact after reviewing the Transport Assessment which will be submitted to support the upcoming planning application.

Regarding the trip distribution of the proposed primary school, we would recommend the applicant check their suitability with the relevant Local Planning Authorities (LPAs) who should have a better understanding of the local needs, and provide evidence of this confirmation to us.

Given the distance between the proposed development and the M69, we consider that the proposed development is unlikely to have a significant impact on the SRN in terms of boundary treatment. However, should any mitigations being proposed on the SRN as a result of the traffic assessment, the applicant will need to make sure that the proposal does not affect assets within the highway boundary. There should be no impact on issues such as geotechnical, drainage, boundary treatment, etc. The applicant should be directed to DfT Circular 02/2013 for our requirements should any works be proposed affecting our assets.

Please do not hesitate to contact me should you have any further queries.

Yours sincerely,

S Freek

Steve Freek
Midlands Operations Directorate
Email: [REDACTED]

From:
To:
Cc:
Subject:
Date:

27 May 2021 14:35:44

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Hi Bev,

We have reviewed the Technical Note (TN) entitled 'Earl Shilton SUE Development Traffic Generation Version 5ii' and our comment are as follows:

Trip Generation

Trip rates were previously agreed with Highways England in September 2020, however adjustments have been made following discussions between the applicant and LCC, in relation to both trip rates and internalisation assumptions. As the revised trip rates are equal to or higher than the ones we previously agreed, we consider the revised trip rates acceptable. The proposed internalisation methodologies regarding the primary school and the employment area are also considered acceptable.

Use of PRTM

Regarding the proposal of assess the development impact in PRTM, please note that the only thing Highways England has not agree with the use of PRTM yet. The PRTM validation for local area, planning and network assumptions need to be provided and agreed with Highways England. We recommend you to provide a modelling brief regarding step-by-step modelling methodology, so that fundamental matters can be agreed prior to conducting any modelling runs.

Opening Year

Regarding to the proposed assessment years, as commented during the meeting we had on 06/05/2021, we note that in the EIA scoping report we reviewed in October 2020, it states that the opening year will be 2023/2024. However, in the TN it states the opening year will be 2026. Please provide some clarification of whether the opening year is now expected to be 2026, or 2026 is used as a proxy of the real opening year 2023/2024 due to the available assessment years in PRTM? If it is the latter, please provide explanation of how the differences between 2026 and 2023/2024 will be dealt with.

Future Year

Regarding the future year, the TN states that 2036 is the end of the Local Plan period as agreed with LCC. We understand that the end for HBBC's emerging Local Plan is 2039. Therefore, according to the DfT Circular 02/2013, the future year assessment should be 2039. If due to available assessment years in PRTM, a different assessment year is going to be used as a proxy, please provide explanation of how the differences between those two years will be dealt with.

Assessment Scenario

We note that the TN states 2026 and 2036 will be assessed with full development. We would like to emphasise that for the opening year and the future year, the scenarios need to be assessed are 'Base', 'Base + Committed Development', and 'Base + Committed Development + Full Development'.

I hope you find this useful and please do not hesitate to contact me should you have any queries.

Regards,

Chi

Chi Zhang

Assistant Spatial Planner – Midlands (East)

Operations Directorate

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From: Zhang, Chi

Sent: 06 May 2021 17:13

To: [REDACTED]

Subject: RE: Earl Shilton inception meeting Agenda

Hi Bev,

As discussed in today's meeting, the parent zone approach presented in today's meeting and detailed in the Technical Note entitled 'Recommended parent zone for PRTM assessment of the Earl Shilton SUE development' dated 18 February 2021 will need to be revisited. Therefore, we will not review this TN as it will be superseded. Once the revised note is provided, we will provide further comments on it.

In the meantime, we will review the TN about traffic generation and provide comments in due course.

Regards,

Chi

Chi Zhang

Assistant Spatial Planner – Midlands (East)

Operations Directorate

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Subject: RE: Earl Shilton inception meeting Agenda

Attached is the revised Traffic Generation Note which is correctly titled, has corrections to Table 2.2 and includes the appendices. Highways England attendees – please note that there was agreement was reached on the trip rates in September last year.

Also attached is a technical note on parent zones which has previously been shared with LCC.

Kind regards

From:
To:
Subject:
Date:
Attachments:

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good morning Bev,

Thank you for providing the revised *Earl Shilton SUE Development Traffic Generation* Technical Note (TN v2), aiming to address the comments raised in our email of 11 August.

Having reviewed it, we can confirm that we find the revised B1 trip rates suitable.

As previously suggested, we believe that the discrepancies identified within the B2 trip rates are associated to the inclusion, in your assessment, of survey sites with GFAs between 1,010sqm and 20,000 sqm, with some of them falling outside the range considered as representative for the proposed 11,400sqm of B2. Notwithstanding that, the difference with our calculation is about -10 and -12 two-way trips in the AM and PM peaks respectively, which is not likely to significantly affect the results of the assessment. Therefore, the proposed B2 trip generation is also considered acceptable.

Finally, pending confirmation from the LPA of the suitability of the proposed trip generation assumptions for retail and education, the internal and external trip calculation shown in Tables 2.8 – 2.11 also appears to be suitable.

We hope you find this helpful.

Kind regards

Scarlett

Scarlett Griffiths

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From: Coupe, Bev

Sent: 24 August 2020 10:12

To:

<H

Cc:

Subject: RE: Earl Shilton Trip Generation

Scarlett

Thank you for the comments. Attached is Version 2 of the technical note which address the comments as follows:

- Updated B1 and B2 trip rates to reflect the latest TRICS database;
- Correction of numerical errors; and
- Clarification on internal and external traffic generation.

Harry and Rebecca, please note that Version 2 supersedes the original technical note.

Kind regards

Bev

From: Griffiths, Scarlett

Ser
To:
Cc:
Subject: RE: Earl Shilton Trip Generation

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good morning Glyn,

Thank you for submitting for our review the *Earl Shilton SUE Development Traffic Generation* Technical Note (TN) and associated TRICS reports. We have reviewed them and have the following comments:

- We previously confirmed the suitability of the residential trip rates for both privately owned and rented/affordable houses.
- We previously asked for clarifications regarding the typology / size of the employment elements for each B1/B2/B8 land use. These have now been provided.
- Having undertaken a revised trip generation assessment using the land uses assumptions contained in the TN, the B8 trip rates and generation appear suitable.
- The trip rates derived for B1 and B2 still appear lower than expected. We consider that this might be due to the use of a superseded version of TRICS (v7.7.1) and, for the B2 land use, to the fact that no filter has been applied to the Gross Floor Area of the surveyed sites. Although we do not consider this would significantly affect the results of the overall assessment, we recommend this is revised.
- The HGV trip generation for the retail use appears suitable.
- We consider the proposed internalisation rates to be sensible, although we recommend that trip generation assumptions for retail and education are agreed with the LPA.
- It is our understanding that the "Residential - to employment" figures shown in table 2.8 should equate to the sum of the B1, B2 and B8 internal trips, however these figures do not seem to add up. This should be clarified.
- It should also be clarified how the external Residential trips (first row of Table 2.9) have been derived.
- For clarity, and as requested by LCC in their email of 21 July, the total two-way trips for both AM and PM peaks should be shown in the tables contained in the TN.
- We also recommend you to include a final table summarising the external and internal trips, and showing how these add up to the total trip generation from the site.

We hope you find this useful.

Kind regards

Scarlett

Scarlett Griffiths

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From: Price, Glyn

Sent: 29 July 2020 16:42

To: Harry Horsley

Griffiths, Scarlett

Cc: Coupe, Bev <[REDACTED]>; Rebecca Henson <[REDACTED]>

Subject: RE: Earl Shilton Trip Generation

Harry

Thanks for your email last week.

We have now prepared a note regarding traffic generation from the site including justification for the TRICS assessments (attached again) and the internalisation process we propose to use for a mixed use site.

I agree these notes can form a basis for agreement should anything not be accepted and iterations provided so all parties agree in agreement for the traffic generation to be used within the Strategic Model.

We propose to allow the model to deal with trip distribution and this can be addressed at a later date.

Thanks

Glyn Price

Associate Director (Planning Transport & Design)

Canon Court, Abbey Lawn, Abbey Forge, Shrewsbury, SY2 5DE, UK

Direct

VOIP:

Email

www.woodpic.com



From

Sent

To: P

Cc: C

Subject: RE: Earl Shilton Trip Generation

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good afternoon Glyn,

It would be useful if you could combine the information you wanted reviewing into a specific trip gen note please. Especially given it is seeking to clarify an earlier error as I fear this and the requirement to cross reference reports could otherwise get quite confusing. Sorry I thought this is what we had discussed on the teleconference.

Are you also able to tabulate peak hour totals by land use please in addition to the arrivals and departures as you have currently included? Applying the land use quantum detailed earlier in the note would also then present the trip generation which once agreed will be easily identified for use in the strategic modelling.

The note ought to detail the rationale and selection criteria applied in generating the presented TRICS rates and full explanation of methodologies and assumptions made.

Not sure if your intention then is to deal with distribution separately, especially if this might be taken from a parent zone in PRTM as discussed on the teleconference.

Kind regards,

Harry

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Highway Development Management

Please Note: In line with Government Guidance for COVID-19, all site visits including face-to-face meetings must adhere to current social distancing rules. If the guidelines are unable to be met, the meeting must be conducted electronically (skype etc.). There is also a likelihood of a delay in providing a response to your query or concern at this time due to the impact of the COVID-19 restrictions. More details on the Council's policy on social distancing and how it will affect services can be found [here](#).

From:
Sent:
To: Sc
Cc: Co
Subject:

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Scarlett/Harry

Following our online scoping meeting on the 2nd of July 2020 regarding the Earl Shilton SUE Project, we agreed to send on the TRICS outputs that matched the revised rates set out in the Traffic and Transport Scoping Note. These are attached to this email.

It should be noted that there was a slight error in the figures within the scoping note for the "Retail" element.

The table below sets out the issue. We quoted the wrong figures in the scoping note, and they should have the figures in the table below from the actual TRICS output attached to this email.

Description	AM (Arr)	AM (Dep)	PM (Arr)	PM (Dep)
Reported in Scoping Note	5.556	5.317	7.282	8.036
Actual Figures from TRICS	5.149	4.900	6.11	6.458

In terms of the discussion regards the employment trip rates (Particularly B2 and B8) being slightly lower than might have been expected. We feel that on review the rates have be generated in TRICS with the relevant parameters applied for a site of Earl Shilton's location, size and accessibility.

To check if a revised assessment of these would make any difference we undertook a new assessment of the B2 and B8 trip rate (undertaken on the 3rd of July 2020). This reassessment indicated that the B8 rate had just one new site in the TRICS database since this work was last done in February and no new relevant B2 sites

The revised B8 trip rate with the additional site resulted in slightly lower trip rate than in the scoping note, so we have not taken that forward.

On review of these outputs, we would be pleased to discuss trip rates further and work towards rates that can be used in the ongoing works for Earl Shilton in conjunction with the details set out in the scoping report.

In addition it should be noted that we provided "PRTM Development Form" to CCC on the 19nd of July and discussion regarding the modelling process and timeframes are ongoing. It is clear however that agreeing the development traffic generation and distribution needs to be agreed by all stakeholders as soon as possible to allow for the modelling to progress.

Kind Regards

Glyn Price

Associate Director (Planning Transport & Design)

Canon Court, Abbey Lawn, Abbey Forge, Shrewsbury, SY2 5DE, UK

Direct:
VOIP:
Email:

From:
To:
Subject:
Date:
Attachments:

appraisal work

Good morning Bev,

Thank you for inviting Highways England to provide comments on the Earl Shilton SUE proposal and the accompanying Transport Assessment and Travel Plan scoping note.

We note that the closest Strategic Road Network (SRN) routes in the area are the A5 Trunk Road and the M69 and M1 Motorways.

It is our understanding that a draft planning application pack for the Earl Shilton SUE was prepared in 2014, however this did not progress in a formal submission. We also note that the scoping note refers to the assessment work undertaken in 2014 using the Leicester and Leicestershire Integrated Transport Model (LLITM) 2012 Base Model. We understand that, since then, a major update to the LLITM has been undertaken to develop the LLITM 2014 Base model. Furthermore, as the strategic modelling demands on LLITM have increased, a more detailed variant of LLITM has now been developed, known as the Pan-Regional Transport Model (PRTM). It is our understanding that the PRTM is now preferred to LLITM for all strategic modelling applications in Leicestershire County Council (LCC).

Given the time elapsed since the previous work was undertaken and the changes occurred in the modelling tools available for the area, we consider that all the assumptions derived from previous modelling work (including trip distribution) should be revised to make sure that they are representative of the current situation. A meeting with LCC, Highways England and other relevant stakeholders might be beneficial to set out a preferred methodology to carry out the revised assessment work.

The extent of the study area should be based on an updated review of the impact that the development traffic is likely to have on the surrounding network and might need to be extended from what previously proposed. We will not be in a position to comment on the need to include an assessment of the SRN until this revised assessment is carried out.

With regard to this, it is noted that an assessment of the A47 Normandy Way / A447 Ashby Road junction has been considered in the context of understanding the development's impact on the SRN. However, please note that this junction is not part of the SRN and therefore comments relating to this junction should be sought from the appropriate local highway authority.

Should capacity assessments be required for the SRN, then these will need to be undertaken in line with the requirements of Circular 02/2013 and therefore include:

- Opening Year Scenario (the year in which the development is expected to be opened);
- Opening Year Plus Committed Development Scenario; an
- 'Opening Year Scenario Test' - Opening Year plus Committed Development plus the proposed development, which will determine whether any mitigation is required for the SRN.

The impact of the development should also be assessed for ten years after the date of registration of a planning application or the end of the relevant Local Plan, whichever is the greater. This is for information so that Highways England can inform their programme of works for the future. Please note that all committed

developments and infrastructure on the surroundings of the site should be included in the opening year scenario assessment. We recommend liaising with all relevant local planning authorities in the area to determine the consented developments to be incorporated in the assessment.

In the meantime, we have reviewed the traffic generation section of the scoping note and noted that the trip rates used in the previous assessment have been updated based on the latest TRICS database. Having carried out an independent TRICS exercise, we can confirm the suitability of the residential trip rates shown in Table 2.1 (for both privately owned and rented/affordable houses).

However, we are currently unable to comment on the suitability of trip rates for the employment uses, without clarification of the typology / size of the employment elements for each B1/B2/B8 land use. An assessment carried out using worst cases assumptions suggests that the trip rates shown in Table 2.1 for B1 and B2 are lower than expected. We therefore recommend you provide more details regarding the expected use on site and to forward the reports extracted from TRICS, to allow us a thorough review of the parameters used in the trip rates assessment and comment on their suitability.

We recommend that assumptions for the school trip generation are agreed with the LPA.

Also, the applicant should seek to identify expected proportions of B1, B2 and B8 land uses among the proposed 4.5 hectares of employment land, in order to accurately assess the impacts generated by the employment element of the development.

It is accepted that there will likely be a proportion of residential and employment-related trips that will be internal, including non-HGV trips related to the employment uses, and we will review the proposed assumptions on external trip proportions once these are made available. We also consider that traffic generated by local shops will not impact the SRN in the vicinity of the site.

These comments are only advisory and imply no pre-determined view as to the acceptability of the proposed development in traffic, environmental or highway terms. We recommend that a Transport Assessment is agreed in a staged approach in line with Circular 02/2013, that is the overall methodology and elements such as assessment years, trip generation and distribution approach be agreed prior to further assessment work being carried out. This approach should avoid any abortive work.

Kind regards

Scarlett

Scarlett Griffiths

Highways England | The Cube | 199 Wharfside Street | Birmingham | B1 1RN

Tel:

Web

From: Coupe, B

Sent: 03 March

To: Planning M

Subject: sent to SG - FW: Earl Shilton SUE - Scoping Note for transport appraisal work

I've received a response which advises that Eri will be out of the office for 'an extended period' and that emails won't be forwarded.

As this gives no indication of the time period, could you advise if there is anybody else that can deal with my email?

Regards

Bev

From: Coupe, Bev

Sent: 03 March 2020 14:34

To:

Cc:

<

Subject: Earl Shilton SUE - Scoping Note for transport appraisal work

Dear Eri

Wood has been commissioned by Bloor Homes, Jelson Homes and Barwood Land to produce an outline planning application and supporting technical studies for the Earl Shilton SUE. The intention is to submit the OPA in July this year.

We have had pre-application discussions with Nicola Smith, the planning case officer from Hinckley & Bosworth Borough Council (HBBC) and have asked for a scoping meeting with Rebecca Henson from Leicestershire County Council. Rebecca has advised that you are the contact within Highways England regarding the transport appraisal work.

A Transport Assessment and Travel Plan was prepared in 2014 in consultation with LCC. We propose to update these documents based on the latest baseline and have produced a scoping note that sets out our intended approach with regards to the local and strategic road network. A key aspect is the current status of the LLITM and the availability of data from it which we will discuss with Rebecca.

Please advise if you would be able to attend a scoping meeting to go through our proposed approach and to discuss data availability. Given the timescale for the submission of the OPA, a meeting date in March would be preferable. Alternatively we can liaise through email/telephone/Skype.

Kind regards

Bev

Bev Coupe

Technical Director, Transport & Highways
Environment & Infrastructure Solutions UK

Direct: [REDACTED]

Mobile: [REDACTED]

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Minutes

Date: 3rd July 2020

Meeting at: Skype Based Meeting

Subject / purpose:

Earl Shilton – Traffic and Transport Scoping Meeting

Attendees:

Bev Coupe (BC) - Wood
 Neil Hall (NH) - Wood
 Glyn Price (GP) - Wood
 Rebecca Hanson (RH) – Leicestershire County Council (LCC)
 Harry Horsely (HH) - LCC
 Benjamin Ronayne (BR) - LCC
 Alex Gray (AG) - LCC
Sara xxxx (Sx) – AECOM for Highways England (HE)
 Matt Paker (MP) - LCC
 Richard Best (RB) - LCC
 Steve Freek (SF) - HE
 Tom Baker (TB) - LCC
 Eri Wong (EW) –HE

Apologies:

Scarlett Griffiths – HE

Minutes:

Action by:

1 **Project Background**

NH provided the project background and an update. A draft outline planning application (OPA) had been prepared which included a Transport Assessment that had been fully scoped with LCC and HE and had been based on the Leicestershire & Leicester Integrated Transport Model (LLITM). The project was put on hold in 2014 and the OPA was not submitted.

The Earl Shilton Consortium that is bringing the Earl Shilton Strategic Urban Extension (SUE) forward now comprises Bloor Homes, Jelson Homes and Barwood Homes. Land held by Earl Shilton Town Council and Persimmon Homes has been removed from the SUE boundary and the masterplan is being reviewed

The Consortium and Wood have had meetings with Hinckley and Bosworth Borough Council (HBBC) earlier this year and HBBC is keen for the SUE to progress. The intention is to submit an outline planning application in late Autumn/early Winter 2020.

The meetings with HBBC have indicated that there is an expectation and acceptance that the scheme would be fundamentally the same as the one included in the draft OPA in 2014 with the same access points and access and movement strategy.

Continued...

NH concluded that the aim of the meeting was to understand what has changed since the previous work in terms of the strategic model, the road network and requirements for the TA.

2 **Access**

BC provided a summary of the access points to the site which is set out in the scoping note and comprises:

- New roundabout on A47;
- Connection through Masefield Drive and signalisation of the Masefield Drive/A47 junction;
- Potential connection onto Mill Lane and Astley Road; and
- Pedestrian access to Avenue South leading to Alexander Avenue.

The access from the A47 via Masefield Drive was discussed. LCC raised concerns about the width of the road to accommodate a bus service. BC advised that the road is 7.3m and appropriate for buses. NH set out that noise and air quality concerns were raised in the previous application due to the homes on Masefield Drive being built to back of footway but not about the design of the road.

BC set out the 2014 TA set out that at the A47/Masefield Drive junction signalisation would be required to accommodate development traffic. It is likely that this would continue to be a requirement.

NH set out that there may be a need to make minor changes to proposed roundabout access off the A47 as one area of housing north of this junction will be flipped to employment.

NH set out the proposed access to Astley Road and issues with this requiring a land deal with the town council.

BC set out that the development was provided with a spine road which would also act as the sustainable corridor.

3 **Traffic Modelling**

BC asked LCC about the LLITM model that was used previously in the 2014 TA.

RB responded with background to the changes to the LLIRM. The LLITM has now been widened in scope and is called the PRTM2 model. He also set out that assumptions that form the background of the model have changed since 2014. Committed developments included change regularly and the model is regularly updated. The model also includes new government guidelines from the updated figures in the Green Book.

LCC would be keen to run the development through the new model.

BC set out that the previous approach was to use model data from LLITM and validate with traffic counts. The COVID situation was discussed and how this approach would be difficult now. BC confirmed that Wood would want to use the latest PRTM2 model subject to timescale.

LCC advised that initial estimates range from 3 to 4 months depending on what was needed. BC enquired about a more simple set of assessments and RB set out that it might take 1 to 2 months (depending on planning data and scenarios needed).

RB - Before modelling can commence some up-front tasks would be required. Discussions and agreement with stakeholders (Highways England, LCC, HBBC) as to what would need to be tested. Once this has been undertaken, the modellers would need to work out an "area of influence" which would assist with defining the scope of assessment. Following this more work would be required to amend the model to the area that Wood are looking to assess within. This would include dealing with committed developments that might need to be removed and dealing with the issue of the inclusion or not of the Earl Shilton site.

RB - The model would be run by LCC's approved modellers (AECOM). The modelling team and Development Control teams at LCC are separate and Wood need to be aware that the modelling team works as internal consultants.

LCC

RB - LCC will provide Wood with land uses in the model so that agreement can be reached ASAP with stakeholders as to what land uses should be removed and if necessary added.

BC asked about details of the assessment years within the model. RB set out the following;

- 2014 Baseline;
- 2016 Forecast Year; and
- 2021 Forecast year and then every five years after that to 2051.

NH/BC inquired about extracting data from the model as with the previous assessments to speed up the process of assessment. RB set out that they can't guarantee the links in the local area taken straight from the model as it is not valid in the Earl Shilton area. The only way to validate this would be with counts, particularly turning counts. It was set out that the model validates well in the Hinkley area due to numerous cordons and journey time surveys in that section of the model. An example given was the PRTM2 model would not provide validated traffic flows on the A47 Clickers Way.

Discussion on using old 2012 counts from 2014 TA work for validation. RB said that LCC would also want to use the model to define scope and that may be an issue for using older counts if scope is beyond those counted in 2012.

TB

NH asked whether the TA could just include the access junctions and the off-site junctions would be dealt with during the post submission period. RH pointed out that there would need to be a complete TA in order to register the application.

Both LCC and Highways England would expect the model to be used given the size of the development and wouldn't be able to guarantee would be a quicker process if went on a manual route.

LCC has a large amount of traffic data. TB advised that LCC would work with Wood to provide list of options and scenarios that can reduce timescale

BC set out there would need to be a very precise instruction on the commissioning of any modelling. RB set out there is a standard proforma for developers. TB would provide the proforma to Wood and be on hand to answer any questions. (POST

Continued...

MEETING NOTE – Proforma received and skype meeting arranged with TB on 10th July 2020)

RH asked Highways England (HE) if they would prefer the development be assessed through the PRTM2. EW responded, yes but with some caution particularly on how the model validated on the Highways England network. EW was clear that they considered the 2014 TA to be out of date and in need of revision. EW referred back to the Highways England email response to the Wood Traffic and Transport Scoping note. *(POST MEETING NOTE – This has been located by BC and reviewed)*

Timeframes for modelling were discussed. RB set out that depending on the modelling some information and scenario runs could be sent out when ready rather than all at once to assist with the time frames.

BC asked for cost estimates – RB suggested it could be between 5k to 75k with a guestimate of 30k.

4 **Other Issues**

RB set out that mitigation that is proposed by the development should be delivered by first occupation of the site.

Wood agreed to send the full TRICS assessments informing the Traffic and Transport Scoping note to LCC and HE

Wood

RB set out this meeting confirms the start of pre application discussions and that LCC have a 42 day turn around time to respond to the scoping note. Will endeavour to process this sooner.

It was agreed that RB should be included in all correspondence to LCC on the matter but that TB would be the contact for modelling and HH for the application. Highways England confirmed that Scarlett Griffiths would remain the key point of contact.

Minutes

Date: 9th October 2020

Meeting at: Skype Based Meeting

Subject / purpose:

Earl Shilton – Traffic and Transport – Traffic Generation and Modeling (LCC)

Attendees:

Bev Coupe (BC) - Wood
Neil Hall (NH) - Wood
Glyn Price (GP) - Wood
Harry Horsely (HH) - LCC

Apologies:

Minutes:

Action by:

- 1 BC updated HH on the current situation regards agreement of traffic generation and the Traffic Generation Technical Note including LCC responses via email.

HH the provided an update on the current status of the Barwell TA. Set out work had been progressed over a similar time frame to Earl Shilton. Barwell had resolution to grant ion 2015 subject to a 106 agreement tht was never signed. The last wave of work done on the project was 2017 before a pause in works.

In late 2019 Hinkley and Barewell contacted LCC stating they thought all Barwell land owners would sign. LCC revised the 106 agreements due to the time that expired and thoughts that mitigation may now not be appropriate to deliver. From this LCC moved onto other planning considerations and LLITM changes and much of the previous Barwell transport work needed revisiting and LCC made the call to inform the developers.

Barwell works recommences in February 2020 and they have received a formal LCC transport response in January 2020. Since then the applicant has being rescoping, this took a lot longer than anticipated but recently got to a point of agreed trip generation.

It was also recently agreed that the traffic distribution would be based on the parent zone approach in LLITM.

HH set out that in the previous 106 agreement no improvement were required on the HE network but some were required on the roads onto it, however subsequent to that a pinch point scheme at Dowells has been provided and access to a new McDonald's – The mitigation scheme they had there would now not be deliverable.

HH set out that as it stands Barwell have not commissioned any strategic modeling.

HH stated that it makes sense that there should be some joined up thinking between the two sites.

Discussion then moved onto Barwell Trip generation and Traffic generation

BC asked why the TRICS rates and traffic generation are so much higher than the previous application. HH set out the work was refreshed with new TRICS assessments.

HH set out that the residential rates in Barwell are actually lower than they might have accepted but LCC have agreed these. They have agreed all the Barwell rates after a back and forth process. These are now agreed and it would be preferable that Earl Shilton use the same rates.

HH set out that following the agreement on trip rates, the moved to internalisation. HH set out that he did not agree with Barwell initial assumptions on internalisation of education internalisation. Majority of internal trips are taken from primary school. However, as it stands this has been agreed. HH to provide further details on this methodology.

BC raised issue with Barwell use A1 trip. HH set out that if Earl Shilton retail is not to be A1 then this rate should not be used/

Remaining issues to agree with Wood for Earl Shilton were then discussed

1) Trip Rates/generation

A discussion around rates was undertaken. It was agreed that Wood will follow Barwell TA agreed rates other than

- A1 rates for Pub. Wood would stick with local shops TRICS assessment
- Local Shops TRICS assessment would be revised to latest version of TRICS
- B1 Employment – Not proposed at Barwell. Wood have already provided a Trip rate for this land use updated to latest TRICS version.
- HH set out issues with privately owned residential being 10% in current Wood trip rates. Wood agreed to revise it to have one residential trip considering 100% of residential privately owned.

2) Internalisation

Wood set out more detailed disagreements with the process of internalisation used in the Barwell agreements.

BC set out why it is preferred that they set out the internalisation process previously provided with some amendments based on the results of this meeting. HH content to receive this updated information. BC/NH want to have a different internalisation process because of difference between the two sites, locations of local housing to the proposed school, the nature of the local shops area and to avoid double counting.

Continued...

Agreed revised traffic generation note would be provided to HH (LCC) based on the agreements set out in 1 and 2 above,

HH updated that Scarlett has moved on from the HE – Eire Wong is the manager from the area.

HH then set out that Wood and Earl Shilton team need to be aware if the modeling comes forward at the same time as Barwell LCC want them to be consistent. Version numbers, planning conditions etc need to be consistent.

BC set out Wood have commissioned WSP and are process of arranging an inception meeting. Agreed to invite HH to this meeting.

HH worried that a lack of consistency will lead to abortive work. Highways England need to be invited. Also suggested that the planning authority are invited. Wood to consider when meeting arranged.

HH also started discussion on interim testing post application to establish 5 yearly increments impacts. Wood content to follow this process.

HH requested that in the traffic generation note Wood add in two way trips and trip rates in the tables would help on review. GP to action on issuance of next note.

Minutes

Date: 23rd October 2020

Meeting at: Skype Based Meeting

Subject / purpose:

Earl Shilton – Strategic Modeling Inception Meeting

Attendees:

Bev Coupe (BC) - Wood
Neil Hall (NH) - Wood
Glyn Price (GP) - Wood
Harry Horsely (HH) - LCC
Priya Mistry (PM) – WSP
Paul Byron (PBy) – WSP
Patrick B (PB) - LCC

Apologies:

Tom Baker - LCC
Eri Wong – HE

Minutes:

Action by:

1 **Introductions**

BC introduced the topics for discussion and set out it would be helpful to work through the WSP Scope of Modelling document.

BC also set out the results of the ongoing situation with LCC to agree traffic generation and internalisation of traffic which was revisited later in the meeting. BC suggested baseline modelling could commence ahead of reaching agreement with LCC on the development traffic generation.

2 **Development Proposals**

BC and NH set out the current development proposals using the latest Masterplan.

BC confirmed that Wood would accept LCC's request to use a 100% Private Residential Trip Rate (currently 90% private and 10% affordable).

NH described the three accesses at Mill Lane, A47 and Masefield Drive, as well as the internal link road, pedestrian connectivity.

There was discussion on the fourth access at Astley Road. PBy asked if this should be coded in and NH confirmed its proposed currently as part of scheme and should be coded into the model.

PBy set out that if Astley Road access is coded in that this could be managed by loading points and by making it an unattractive link out of the site. HH asked about the need for a mini roundabout. GP informed this was required by LCC previously as part of a safety scheme to reduce speeds in a School Zone on Astley Road. HH agreed this was appropriate as an access junction. PBy requested the design.

Wood

PBy also requested the designs for the other site accesses and the signal information for the junction of Masfield Drive and A47.

Wood

3 **Modeling Scenarios**

BC set out the proposed scenarios from the modelling brief and advised that interim years would be modelled if required to identify mitigation trigger points, but this would be following submission due to the timescales.

HH questioned if 2026 would actually be the opening year. NH advised on likely timeline: Outline Consent mid-2020, discharge conditions and reserved matters taking work into 2023/24, following this access works would need to be undertaken, then construction could commence. HH accepted this approach and said that it was refreshing to see a developer give a realistic view of opening year and as the highways authority this approach is more robust as there is more background traffic.

HH set out that LCC do not have any objections to the proposed scenario years and advised that that this will need to be agreed with HE.

Wood

4 **Traffic Generation**

BC advised that Wood is content to use the recently agreed Barwell SUE trip rates as these are comparable to ones identified by Wood. There needs to be further consideration of the internalisation of trips and Wood will provide a revised version of the Traffic Generation Note to reflect discussions and justification for this which will consider the Barwell approach.

Wood

BC asked if the lack of agreement on internalisation would affect the modelling starting. HH said this may be an issue for PB to assign traffic.

PBy set out modelling programme and identified that it would take two weeks to set up the core scenarios.

It was noted that to undertake the core scenarios, the baseline needs to be agreed with HBBC.

PB set out that the core model has recently been updated to February 2020. BC advised that Tom Baker had spoken to HBBC and as this is the most up-to-date data, it would be acceptable. PB to confirm with TB/HBBC.

PB (LCC)

There was discussion regarding the inclusion of Barwell within the core scenarios (and Earl Shilton within the Barwell modelling). PBy confirmed that the Do Something model would remove the core Earl Shilton development and replace with Wood's Earl Shilton traffic. HH said as part of this the core model will need to update the buildout rates.

NH commented that after this initial modelling to inform the EIA and TA technical work as part of the planning submission, there would be consideration and discussion of mitigation requirements which would need to be co-ordinated with the Barwell scheme.

HH set out that there will also be other local development schemes which are already committed as well as improvement schemes associated for these developments. Only committed highways schemes should be included in the model.

To assist with Woods understanding of the model, PB said he would send the Planning Assumptions and network assumptions in the current model.

PB (LCC)

BC suggested it might be a good idea for LCC to undertake some modelling without the Barwell and Earl Shilton development to understand the impacts of the two SUEs.

5 **Assumptions on Model Zoning**

PBy set out what is proposed regards zoning of the Earl Shilton SUE, a southern and northern zone. PBy set out that in the model there are currently five zones for the Earl Shilton development and these would be replaced.

The two zones would be connected to the existing highways via the four accesses discussed earlier. PBy set out that this approach will not model internal movements in the site, but that was not considered an issue to the model as none of these trips would leave the site by one zone link and enter by another. They would all stay internal (confirmed by NH).

HH then asked if this approach would take into account traffic from the existing Earl Shilton settlement to the A47. PBy advised that it wouldn't but internal roads could be coded. Wood to provide information on road widths and design speeds.

Wood

NH set out that on the basis of modelling internal road these will need to be designed to make them less attractive routes for through traffic. HH noted that if traffic did route through the development it is providing a benefit to other junctions in Earl Shilton. NH set out that if through traffic was shown to be an issue than Wood can look at if the Mill Lane access is necessary.

WSP will provide an updated Modelling Scope which includes the coding of internal links.

PBy (WSP)

6 **Distribution**

PBy set out that we will be using the parent zone approach. The parent zones will have differing distributions for differing types of trips. A parent zone approach is more robust/resilient to a gravity model approach.

These distributions would be on the adjacent zones as representative of Earl Shilton itself. PBy said that HGV distribution might need to be based on existing zones from further afield and will confirm during model development.

PBy also set out that WSP will need to consider the parent zones for Barwell as there will be trips between the two. BC requested that this distribution is sent to Wood.

WSP

BC also requested if WSP can send the distributions for the adjacent parent zones that will be applied to the ES SUE. PB confirmed this is in the scope agreed.

WSP

BC confirmed that Wood will provide WSP with the land use splits between the two proposed zones based on the current masterplan.

Wood

7 **Signal Timings**

Previous model scope talked about using two iterations, however as Wood are providing signal timings from previous LINSIG model runs this is now no longer required.

Wood

8 **Model Outputs**

The model scope sets out 9 junctions where impacts were previously identified in 2013 TA and are likely to be problematic again in this new raft of modeling. HH set out that

Continued...

this is a good start but Woods assessments should not just be limited to these junctions.

PBy confirmed that there is flexibility regarding junction outputs. Best approach would be to provide results for the 9 most problematic junctions and this gives some flexibility.

NH also set out that we need the link data as well as junction data to inform the EIA and provide magnitude of impact.

HH highlighted that the PRTM flows are not validated to turning counts. BC said that Wood would make the adjustments based on turning count survey data used for the model (LCC to provide this) as there would be data collection issues due COVID-19 situation.

HH set out that LCC have the data. Network Data and Intelligence team at LCC would have the data collected for the development of the LLITM. Wood and HH need to discuss what would be the most appropriate data.

Wood/LCC

9 **HE Potential Issues**

Discussion regards HE thoughts on the modelling scope. BC confirmed this has not been sent to HE yet however, the scope of assessment had been discussed with HE.

HH found an email from the HE for another project going through a modelling process which confirmed HE would want to agree, model baseline, version of the model, validation of the model, forecasts in the model, trip generation assumptions, distribution assumptions, future growth in model, planning assumptions. HE will want all this agreed before modelling stats. Wood to send the modelling scope.

Wood

10 **Ongoing Model Development**

BC asked if the LMVR was available. PB not yet and suggested BC speak to Tom Baker.

Wood

PB set out that the new model contains the Feb 2020 Hinkley planning data. The way the model is set up can take the previous model data (DfT data book and schemes) and can be incorporated into the current model. The new model isn't available - could be three weeks to a month or more.

BC asked what will be different in the new model. PB said the planning data in the old model was three and a half years old. New model from February 2020 includes updated planning data as well as some network schemes that have been built.

11 **Next Steps**

Meeting scheduled for 5th November to discuss the situation regarding the availability of the new model and to decide the course of action to take. HH advised that Barwell scheme is likely to use the new model and LCC preference would be for consistency.



Appendix B

Accident Data

Accident ID	Severity	Date and Time	Year	Number of Vehicles	Number of Casualties	Road Number	Weather Conditions	Road Surface	Light Conditions	Junction Detail	Involved Pedal Cycle	Pedestrian Casualty	Child Casualty	Pedal Cycle Casualty
2016331601498	Sight	2/9/2016, 9:28 AM	2016	3	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2020332000874	Sight	6/11/2020, 6:01 PM	2020	2	1	U0	Fine without high winds	Dry	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2020332000073	Sight	22/1/2020, 4:30 PM	2020	2	1	A47	Fine without high winds	Dry	Darkness: no street lighting	Not at or within 20 metres of junction	0	0	0	0
2018331801194	Sight	13/6/2018, 5:15 AM	2018	2	1	A47	Fine without high winds	Dry	Darkness: street lighting unknown	T or staggered junction	0	0	0	0
2020332000955	Serious	9/12/2020, 4:21 PM	2020	2	1	A47	Other	Wet or Damp	Darkness: street lights present and lit	Roundabout	0	0	0	0
2018331800715	Sight	18/5/2018, 9:50 AM	2018	1	2	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	1	1	0
2018331802086	Sight	13/9/2018, 8:50 AM	2018	2	1	A47	Unknown	Dry	Daylight: regardless of presence of streetlights	Crossroads	0	0	0	0
2018331800465	Sight	8/5/2018, 9:15 AM	2018	1	1	B581	Unknown	Dry	Daylight: regardless of presence of streetlights	Crossroads	0	1	0	0
2017331701144	Sight	6/9/2017, 6:30 PM	2017	2	1	U0	Unknown	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	1	0	1	1
2018331800828	Serious	16/8/2018, 3:00 PM	2018	1	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2020332000545	Sight	2/8/2020, 10:19 PM	2020	2	2	A47	Fine without high winds	Dry	Darkness: no street lighting	Not at or within 20 metres of junction	0	0	0	0
2018331801276	Serious	3/12/2018, 12:28 PM	2018	2	2	A47	Fine without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	1	0
2016331600251	Sight	12/2/2016, 8:10 PM	2016	2	1	U0	Other	Wet or Damp	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2019331901263	Sight	12/12/2019, 6:20 PM	2019	2	2	A47	Fine without high winds	Dry	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2018331801047	Sight	8/9/2018, 11:10 AM	2018	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Roundabout	0	0	0	0
2016331600976	Sight	9/6/2016, 5:25 PM	2016	3	2	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2017331701373	Sight	15/11/2017, 8:22 PM	2017	4	2	B582	Fine without high winds	Wet or Damp	Darkness: street lights present and lit	Crossroads	0	0	0	0
2019331900801	Sight	13/8/2019, 9:44 PM	2019	2	1	A47	Fine without high winds	Dry	Darkness: no street lighting	Not at or within 20 metres of junction	0	0	0	0
2018331801207	Fatal	17/11/2018, 10:50 PM	2018	2	1	U0	Raining without high winds	Wet or Damp	Darkness: street lights present and lit	Not at or within 20 metres of junction	0	0	0	0
2018331800024	Serious	9/1/2018, 12:27 AM	2018	1	1	B581	Fine without high winds	Wet or Damp	Darkness: street lights present and lit	Not at or within 20 metres of junction	0	0	0	0
2020332000250	Sight	19/5/2020, 3:20 PM	2020	1	1	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2016331600627	Fatal	26/4/2016, 11:25 AM	2016	1	1	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	1	0	0
2019331900541	Sight	27/5/2019, 9:42 PM	2019	1	1	A47	Raining without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	Roundabout	0	1	0	0
2018331802172	Sight	18/12/2018, 11:00 AM	2018	3	1	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2016331600794	Sight	16/5/2016, 10:12 AM	2016	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Roundabout	0	0	0	0
2018331801465	Sight	6/9/2018, 1:08 AM	2018	2	2	A47	Fine without high winds	Dry	Darkness: no street lighting	T or staggered junction	0	0	0	0
2018331800817	Serious	13/8/2018, 9:33 AM	2018	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2020332000366	Serious	23/6/2020, 8:48 PM	2020	3	3	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2018331801217	Sight	1/8/2018, 8:00 AM	2018	3	3	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2018331800213	Sight	11/3/2018, 4:18 PM	2018	2	5	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	1	0
2018331801373	Sight	2/12/2018, 9:48 PM	2018	2	1	A47	Raining without high winds	Wet or Damp	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2019331900731	Serious	23/7/2019, 12:06 PM	2019	2	3	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2017331700552	Sight	10/5/2017, 10:56 PM	2017	2	1	U0	Fine without high winds	Dry	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2020332000199	Sight	21/4/2020, 7:54 PM	2020	2	2	B581	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2016331601069	Sight	26/6/2016, 11:00 AM	2016	2	4	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Crossroads	0	0	0	0
2018331800356	Sight	14/4/2018, 11:50 AM	2018	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2018331801174	Sight	2/9/2018, 7:32 PM	2018	1	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Roundabout	0	0	0	0
2020332000054	Sight	13/1/2020, 3:30 PM	2020	3	3	A47	Raining without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2019331900650	Sight	28/3/2019, 11:35 AM	2019	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2018331800763	Serious	21/7/2018, 12:40 AM	2018	3	1	U0	Fine without high winds	Dry	Darkness: street lights present and lit	T or staggered junction	0	0	0	0
2020332000341	Serious	22/6/2020, 1:11 AM	2020	1	1	A47	Fine without high winds	Dry	Darkness: no street lighting	Not at or within 20 metres of junction	0	1	0	0
2020332000501	Sight	12/2/2020, 4:18 PM	2020	2	2	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2018331801397	Sight	21/12/2018, 1:30 PM	2018	3	2	A47	Fine without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2017331700851	Sight	29/6/2017, 4:10 PM	2017	3	3	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Roundabout	0	0	1	0
2018331800428	Sight	22/4/2018, 2:20 PM	2018	2	1	B581	Unknown	Wet or Damp	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	1	0	1	1
2016331601479	Serious	2/9/2016, 7:40 AM	2016	5	1	A47	Fine without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2020332000047	Sight	16/1/2020, 12:24 PM	2020	2	2	A47	Raining without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	T or staggered junction	0	0	0	0
2017331700133	Sight	1/2/2017, 2:30 PM	2017	2	1	A47	Fine without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2018331800365	Sight	16/4/2018, 5:59 PM	2018	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2016331600381	Sight	26/2/2016, 10:55 AM	2016	2	1	B581	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2020332000477	Sight	6/3/2020, 6:37 AM	2020	3	2	A47	Fine without high winds	Wet or Damp	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2017331701725	Sight	16/12/2017, 4:15 PM	2017	2	4	A47	Fog or mist - if hazard	Frost or Ice	Darkness: street lights present and lit	Using private drive or entrance	0	0	0	0
2018331801461	Sight	29/12/2018, 7:35 AM	2018	2	2	A47	Other	Dry	Darkness: no street lighting	Not at or within 20 metres of junction	0	0	0	0
2020332000809	Serious	15/10/2020, 9:57 AM	2020	1	1	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	1	0	0
2018331800389	Sight	23/4/2018, 6:28 PM	2018	2	2	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Using private drive or entrance	0	0	0	0
2017331701154	Serious	19/9/2017, 7:08 PM	2017	2	1	U0	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	0	0	0	0
2020332000017	Fatal	17/1/2020, 11:42 PM	2020	1	1	A47	Fine without high winds	Wet or Damp	Darkness: no street lighting	T or staggered junction	0	0	0	0
2018331800800	Serious	5/2/2018, 6:30 AM	2018	2	1	U0	Fine without high winds	Dry	Darkness: street lighting unknown	Mini roundabout	1	0	0	1
2016331601886	Serious	19/4/2016, 2:36 PM	2016	2	1	A47	Fine without high winds	Dry	Daylight: regardless of presence of streetlights	Not at or within 20 metres of junction	1	0	0	1

Data Source: Department for Transport data published by www.crashmap.co.uk

Appendix C

Traffic Generation Technical Note

Technical Note:

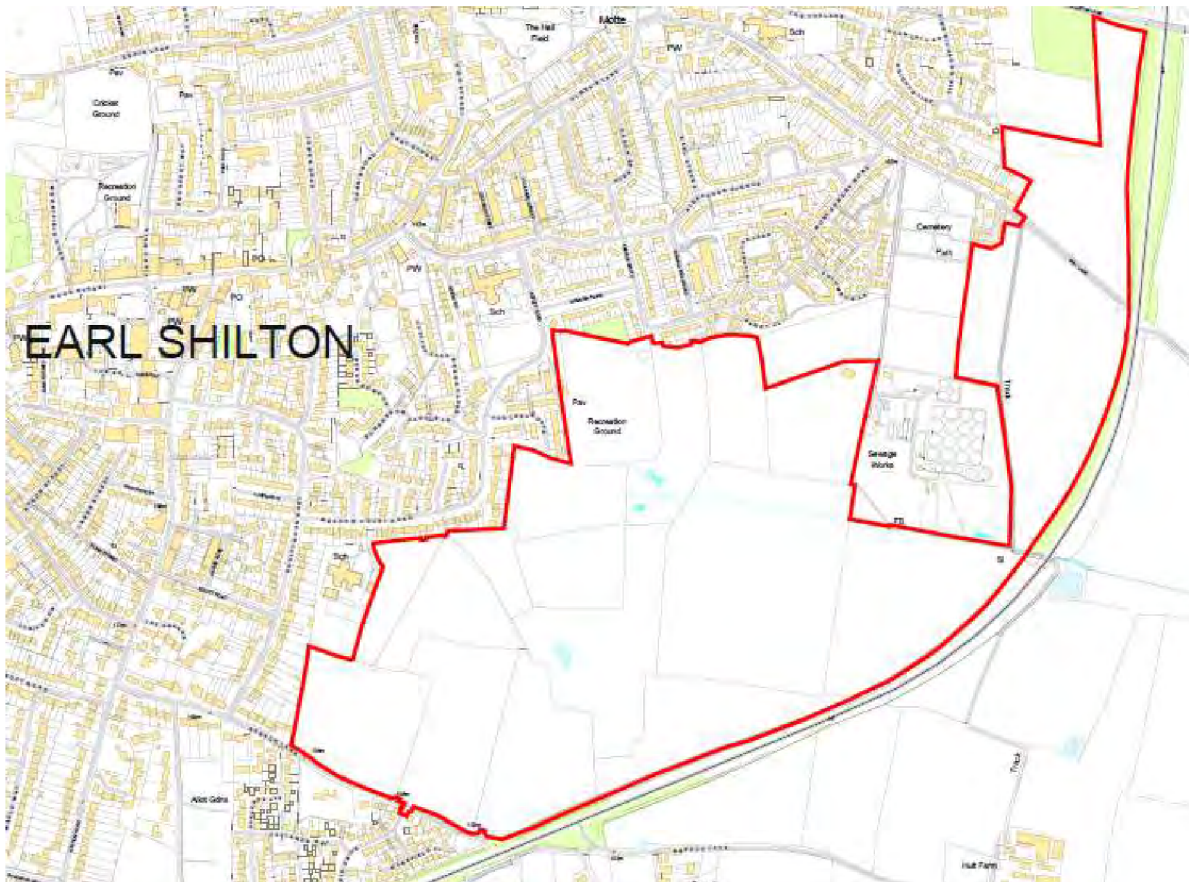
Earl Shilton SUE Development Traffic Generation Version 5ii

1. Introduction

1.1 Overview

Bloor Homes, Jelson Homes and Barwood Land (hereafter referred to as 'the Applicants') are seeking planning permission from Hinckley & Bosworth Borough Council (HBBC) for a mixed use development of an allocated site, known as the Earl Shilton Sustainable Urban Extension (SUE), located to the southeast of Earl Shilton, Leicestershire. The Scheme is for a mix of uses comprising 1,500 homes, at least 5.3ha of employment (Class B1, B2 and B8), a two-form entry primary school, up to 2,000m² GFA of commercial uses, including 2,000m² local centre and 20ha of green space with all matters, apart from access, reserved for future determination. The site boundary is shown in **Figure 1.1**.

Figure 1.1 Indicative boundary



1.2 Background

A draft outline planning application (OPA) had been prepared in 2014 which included a Transport Assessment (TA) that had been fully scoped with LCC and HE. The 2014 TA was developed based on the approach adopted within the Barwell West SUE TA which used traffic data derived from the Leicester and Leicestershire Integrated Transport Model (LLITM). The traffic generation associated with the Barwell SUE was included within the future baseline. The project was put on hold in 2014 and the OPA was not submitted.

The Earl Shilton Consortium that is bringing the Earl Shilton SUE forward now comprises Bloor Homes, Jelson Homes and Barwood Homes. Land held by Earl Shilton Town Council and Persimmon Homes is part of the SUE allocation which is for up to 1,600 dwellings, but is not included in the Scheme boundary. **Figure 1.2** shows the current masterplan.

The Consortium and Wood have had meetings with Hinckley and Bosworth Borough Council (HBBC) earlier this year and HBBC is keen for the SUE to progress. The meetings with HBBC have indicated that there is an expectation and acceptance that the scheme would be fundamentally the same as the one included in the draft OPA in 2014 with the same access points and access and movement strategy.

1.3 Scoping History

A meeting was held with the officers from the highway authorities, Leicestershire County Council (LCC) and Highways England (HE) on 3rd July 2020 during which the scope of the TA and the approach to traffic modelling was discussed. An email received from HE on the 9th of September confirmed acceptance of the proposed trip rates (**Appendix A**).

Earlier versions on the traffic generation note identified the proposed approach towards internalisation. Following the issue of Version 3, LCC advised that agreement had been reached with the transport consultants for the Barwell SUE and it was recommended that the same approach should be adopted for the Earl Shilton SUE in order to be consistent. Wood incorporated adjustments to the traffic generation proposals in Version which incorporated elements of the Barwell SUE, such as using the same trip rates and revising internalisation assumptions. Keys aspects that Wood did not agree with include the following:

- No passby or linked trip allowance.
- No allowance for transferred trips to the primary school (trips to an existing primary school within Earl Shilton that could be transferred to the site). This is considered unreasonable as the new primary school within the SUE is not going to create new school pupils from existing residential areas.
- 50% of primary school trips external to the SUE.
- No allowance for internalisation of retail trips (no trips to/from the retail originate from within the site). This is considered to be unreasonable as the retail is intended to serve the SUE and is located within the centre of the site.

Whilst there is continued disagreement with the above elements of the Barwell SUE traffic generation methodology, following discussion with the Client, in order to be able to progress the modelling, the same approach is proposed where applicable. This will be reviewed once the results are available.

The development impact will be tested in the Pan-Regional Transport Model (PRTM) which is restricted to 5-year increments. The following years are being tested:

- 2021 – existing baseline;

- 2026 – year of opening - full development (in accordance with assessment requirements for HE); and
- 2036 – full development (the end of the Local Plan period as agreed with LCC).

There may be a requirement to test the interim year of 2031 for the purpose of identifying the threshold for mitigation schemes. It is proposed that this will be defined following the completion of the initial modelling and mitigation identification and modelling.

2. Traffic Generation

2.1 Introduction

Traffic generation has been calculated based on a combination of trip rates agreed with the Barwell SUE transport consultant and trip rates derived from the latest version of the TRICS database for those land uses that are not part of the Barwell SUE.

2.2 Trip Rates

The trip rates for the Barwell SUE have been assumed for the following land uses:

- Residential Private Dwellings;
- Employment – B2;
- Retail – Local Shops;
- Education – Primary School

The Barwell SUE trip rate for B8 has not been adopted as the trip rate identified by Wood is considered to be more robust and includes HGV rates.

The Barwell SUE development land use mix does not include B1 employment.

With regards to the residential trip rates, these are assumed to be 100% private residential, as per the Barwell SUE approach and does not account for affordable housing.

The commercial land uses will comprise a mix of blended uses within the new Use Class Order E. For the purpose of the TA, local retail has been assumed as the worst-case scenario traffic generator and the Barwell SUE trip rate has been adopted.

Table 2.1 summarises the key selection criteria for the trip rates generated by Wood.

Table 2.1 Site selection criteria - TRICS

Land Use	Category	Survey Days	Calculation Options	Locations	Location Subcategory
Employment B1	A – office	Weekdays	Multi-modal	Suburban area, edge of town	Industrial zone, commercial zone, residential zone, built-up zone, no subcategory
Employment B8	F – warehousing (commercial)	Weekdays	Total vehicles	Edge of town	Industrial zone

A summary of the resultant total vehicular trip rates is provided in **Table 2.2**. The TRICS outputs generated by Wood are included in **Appendix B**.

Table 2.2 Summary of trip rates – Total Vehicles

Land use	Unit of measurement	AM (08:00-09:00)			PM (17:00-18:00)		
		In	Out	Total	In	Out	Total
Residential (private dwellings)*	Dwelling	0.151	0.441	0.592	0.392	0.160	0.552
Employment B1**	100m ² GFA	1.825	0.142	1.967	0.13	1.753	1.883
Employment B2*	100m ² GFA	0.392	0.181	0.573	0.130	0.395	0.525
Employment B8**	100m ² GFA	0.262	0.177	0.439	0.154	0.290	0.444
Retail - Local Shops*	100m ² GFA	6.209	6.019	12.228	6.777	7.062	13.839
Education - Primary School*	Pupil	0.285	0.174	0.459	0.021	0.035	0.056

Notes: * Trip rate same as for Barwell SUE ** Trip rate identified by Wood

The Barwell SUE traffic generation note does not include trip rates for HGVs, therefore Wood has continued to use the HGV trip generation set out in the previous versions of this note and this is set out in **Table 2.3**.

Table 2.3 Summary of trip rates – HGVs

Land use	Unit of measurement	AM (08:00-09:00)			PM (17:00-18:00)		
		In	Out	Total	In	Out	Total
Employment B1	100m ² GFA	0.005	0.000	0.005	0	0	0
Employment B2	100m ² GFA	0.022	0.016	0.038	0.003	0.002	0.005
Employment B8	100m ² GFA	0.050	0.088	0.138	0.092	0.058	0.15
Retail - Local Shops	100m ² GFA	0.107	0.092	0.199	0.036	0.05	0.086

2.3 Traffic Generation

The development schedule is similar to the previous land use mix, except there is a slight reduction in the number of dwellings from 1,600 to 1,500 compared to the draft planning application, and a reduction in retail from 2,500m² to 2,000m² and an increase in B2 and B8. For the purpose of the TA, in order to undertake a robust assessment and provide flexibility on land use mix, the following has been assumed.:

- 1,600 dwellings (the full SUE allocation) – for the purpose of the assessment, 100% private has been assumed;
- 2,000m² B1 (note that this is attached to the B2 and B8, but for the purpose of the assessment, this has been assumed to be standalone office) (unchanged);
- B2 – 11,400m² (increased);
- B8 – 11,400m² (increased);

- Local retail – 2,000m² (reduced); and
- Primary school – two form entry – 420 pupils (unchanged)

Based on the trip rates set out in Table 2.2 and the anticipated land use schedule above, the total traffic generation has been calculated as summarised in **Table 2.4**.

Table 2.4 Development Traffic – Total Vehicles

Land Use	Quantum of Development	AM (08:00 – 09:00)			PM (17:00-18:00)		
		In	Out	Total	In	Out	Total
Residential (private dwellings)	1600 dwellings	242	706	947	627	256	883
Employment B1	2,000m ² GFA	37	3	39	3	35	38
Employment B2	11,400m ² GFA	45	21	65	15	45	60
Employment B8	11,400m ² GFA	30	20	50	18	33	51
Retail - Local Shops	2,000m ² GFA	124	120	245	136	141	277
Education - Primary School	420 pupils	120	73	193	9	15	24
Total		598	943	1,539	808	525	1,333

The number of HGVs has been calculated based on the trip rates in Table 2.3 and are summarised in **Table 2.5**.

Table 2.5 Development Traffic – HGVs

Land Use	Quantum of Development	AM (08:00 – 09:00)			PM (17:00-18:00)		
		In	Out	Total	In	Out	Total
Employment B1	2,000m ² GFA	0	0	0	0	0	0
Employment B2	11,400m ² GFA	3	2	5	0	0	0
Employment B8	11,400m ² GFA	6	10	16	10	7	17
Retail - Local Shops	2,000m ² GFA	2	2	4	1	1	2
Total		11	14	25	11	8	18

2.4 Adjustments for Internalisation

Primary School

The phasing of the school is unknown at this stage and needs to be identified with the Local Education Authority, however, given the scale of the development and based on experience of other SUE developments, it is anticipated that the opening of the school would be required by the 300th dwelling. Before the school is built and opened, school children from the SUE will need to be accommodated in the local schools which are near to the periphery of the SUE, and it is acknowledged that once the school does open, it will likely enrol children from the surrounding area outside of the SUE.

The previous assumption was that each household generates 0.24 primary school pupils, which, based on 1,600 dwellings for the allocation as a whole, would result in 384 primary school pupils which represents 91.4% of the 2FE school population of 420 pupils. The remaining 36 pupils (8.4% of the school) would be expected to be from a local catchment around the school from the existing residential areas, which are within walkable distances. Whilst it was considered robust to assume that 80% of pupils will be from the SUE as a whole (1,600 dwelling allocation), for the purpose of consistency with the Barwell SUE, it has been assumed that 50% of the pupils will be from within the SUE and 50% will be from outside the SUE.

The resultant traffic generation is set out in **Table 2.6**.

Table 2.6 Primary School – Internal and External Trips

	AM Peak (08:00-09:00)			PM Peak (17:00 – 18:00)		
	In	Out	Total	In	Out	Total
Total Primary School Trips	120	73	193	9	15	24
50% External Pupil Trips (AM)	60	37	97	5*	5	10
50% Internal Trips (AM)	60	36	96	4*	5	9

* rounded up

Employment

For the previous assessment, it was suggested by LCC Highways that reference should be made to the Barwell SUE TA regarding the level of internal trips. The original Barwell TA identified that 11.4% of residents would work locally and travel by sustainable means which was based on the Journey to Work data from the 2001 Census.

A revised assessment of the 2011 journey to work census data shows that 11% of the working population in Earl Shilton work in Earl Shilton. Therefore, for the purpose of this assessment it is assumed that 11% of the employment trips would originate from within Earl Shilton, comprising the existing town and the proposed SUE.

To determine the level of internalisation within the SUE, the following calculation has been undertaken.

- Existing Earl Shilton population - 10,047 residents
- Estimated population for Earl Shilton SUE - 3,680 residents based on 2.3 persons per household from the 2011 Census
- The combined population would be 13,727 residents, of which Earl Shilton would comprise 27% of the total population
- Therefore of the 11% local employment trips, it is assumed that 3% of the trips will be internal to the Earl Shilton SUE and 8% external but from Earl Shilton.

The approach taken by the Barwell SUE assumes that 6.8% would be internal to the SUE.

2.5 Traffic Generation

Based on the methodology identified in Section 2.4 above, a summary of the traffic generation is set out in **Tables 2.7** and **2.8**.

Table 2.7 AM Peak – Breakdown of Traffic Generation

Land use	Total Traffic Generation			Internal Traffic			External Traffic		
	In	Out	Total	In	Out	Total	In	Out	Total
Total residential	242	706	947				242	706	947
Employment - B1	37	3	39	1	0	1	36	3	38
Employment – B2	45	21	65	1	1	2	44	20	63
Employment – B8	30	20	50	1	0	1	29	20	49
Retail - Local Shops	124	120	245				124	120	245
Education – Primary School	120	73	193	60	36	96	60	37	97
Total Vehicles	598	943	1,539	62	37	100	536	906	1,439
HGVs	11	14	25				11	14	25

Table 2.12 provides a summary of the total traffic generation, the internal traffic and the resultant external traffic in the PM peak hour.

Table 2.8 PM Peak – Breakdown of Traffic Generation

Land use	Total Traffic Generation			Internal Traffic			External Traffic		
	In	Out	Total	In	Out	Total	In	Out	Total
Total residential	627	256	883				627	256	883
Employment - B1	3	35	38	0	1	1	3	34	37
Employment – B2	15	45	60	0	1	2	15	44	58
Employment – B8	18	33	51	0	1	1	18	32	50
Retail - Local Shops	136	141	277				136	141	277
Education – Primary School	9	15	24	4	5	9	5	10	15
Total Vehicles	808	525	1,333	4	8	13	804	517	1,320
HGVs	11	8	18				11	8	18

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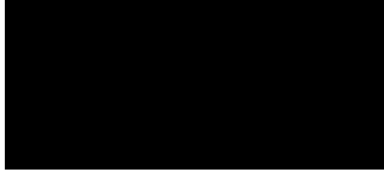
Glyn Price



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Approved by

Rev Coupe



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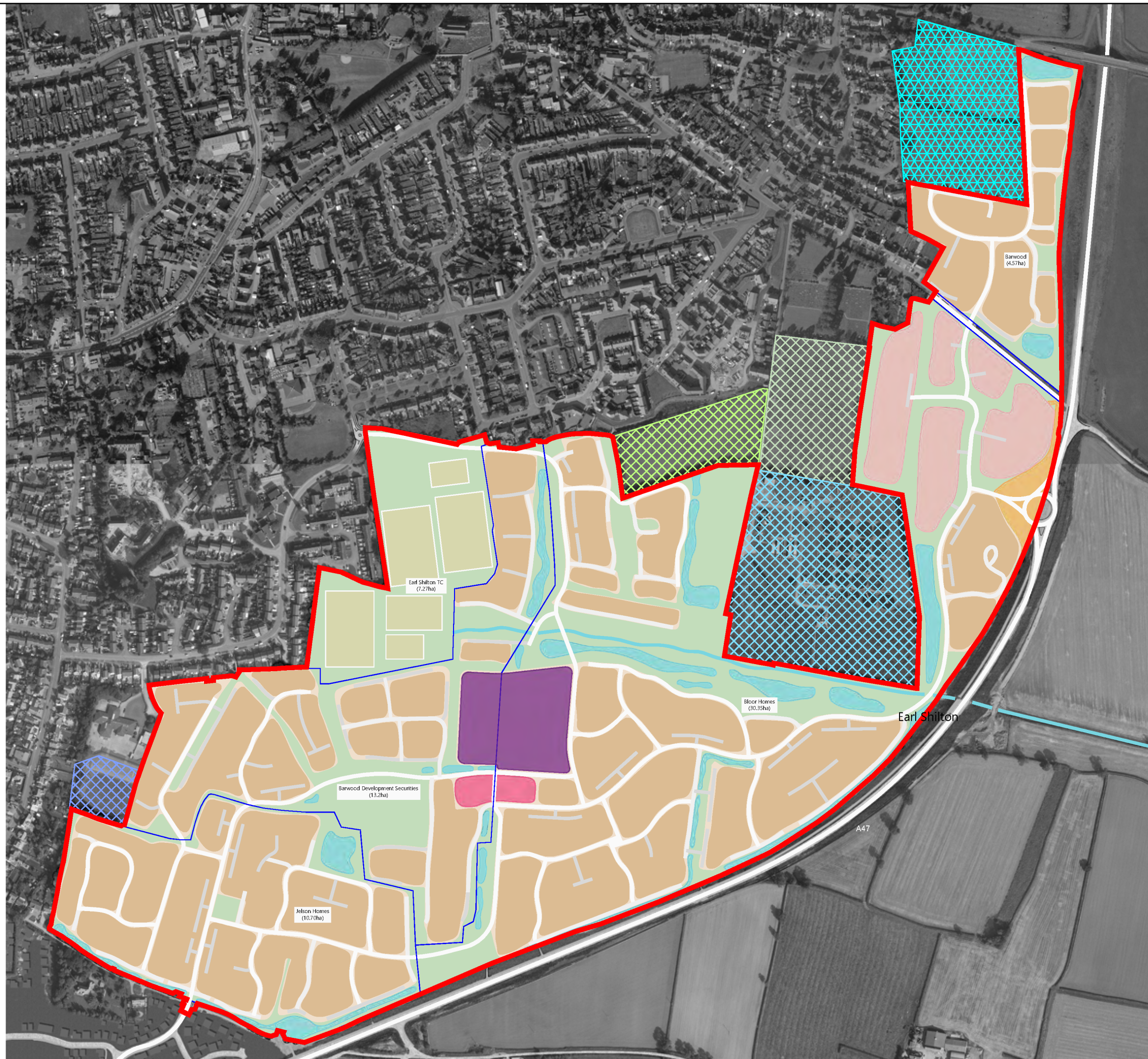
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Figures



- Key
- Site boundary (64.2ha)
 - Net residential land (34.7ha)
@40dph yields 1390 dwellings
 - of which:
Jelson Homes 8.97ha; 360 dwellings
Bloor Homes 14.33ha; 570 dwellings
Barwood 11.5ha; 460 dwellings
 - Employment (5.3ha)
 - School site (2ha)
 - Community hub (0.5ha)
 - Public open space (incorporating SuDS) (18.3ha)
 - Sports pitches (2.5ha)
 - Dedicated SuDS features (2.6ha)
 - Land for S.278 highway works (0.5ha)
 - H&B District Council (1.6ha)
 - Leicestershire CC (0.6ha)
 - Persimmon Homes (3.3ha)
 - Severn Trent Water (5.8ha)
 - Shilton TC (2.2ha)

0 m 300 m
Scale 1:5000 @ A3
© 2014 Google

Earl Shilton

Figure 1.2

Illustrative masterplan showing ownership boundaries and housing capacity

April 2021



Appendix A

Comments from Highways England

Coupe, Bev

From: Griffiths, Scarlett [REDACTED]
Sent: 09 September 2020 11:36
To: Coupe, Bev
Subject: RE: Earl Shilton Trip Generation

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good morning Bev,

Thank you for providing the revised *Earl Shilton SUE Development Traffic Generation* Technical Note (TN v2), aiming to address the comments raised in our email of 11 August.

Having reviewed it, we can confirm that we find the revised B1 trip rates suitable.

As previously suggested, we believe that the discrepancies identified within the B2 trip rates are associated to the inclusion, in your assessment, of survey sites with GFAs between 1,010sqm and 20,000 sqm, with some of them falling outside the range considered as representative for the proposed 11,400sqm of B2. Notwithstanding that, the difference with our calculation is about -10 and -12 two-way trips in the AM and PM peaks respectively, which is not likely to significantly affect the results of the assessment. Therefore, the proposed B2 trip generation is also considered acceptable.

Finally, pending confirmation from the LPA of the suitability of the proposed trip generation assumptions for retail and education, the internal and external trip calculation shown in Tables 2.8 – 2.11 also appears to be suitable.

We hope you find this helpful.

Kind regards

Scarlett

Scarlett Griffiths

Highways England | The Cube | 199 Wharfside Street | Birmingham | B1 1RN

Tel: [REDACTED]

Web: <https://highwaysengland.co.uk>

From: Coupe, Bev [REDACTED]
Sent: 24 August 2020 10:12
To: Griffiths, Scarlett; Griffiths, Scarlett; Griffiths, Scarlett; Griffiths, Scarlett; Griffiths, Scarlett
Re: [REDACTED]
Cc: Price, Glyn <glyn.price@woodpic.com>
Subject: RE: Earl Shilton Trip Generation

Scarlett

Thank you for the comments. Attached is Version 2 of the technical note which address the comments as follows:

- Updated B1 and B2 trip rates to reflect the latest TRICS database;
- Correction of numerical errors; and
- Clarification on internal and external traffic generation.

Harry and Rebecca, please note that Version 2 supersedes the original technical note.

Kind regards

Bev

From: Griffiths, Scarlett

Sent: 11 August 2020 09:35

To: Price, Glyn

Cc: Coupe, Bev

Subject: RE: Earl Shilton Trip Generation

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good morning Glyn,

Thank you for submitting for our review the *Earl Shilton SUE Development Traffic Generation Technical Note (TN)* and associated TRICS reports. We have reviewed them and have the following comments:

- We previously confirmed the suitability of the residential trip rates for both privately owned and rented/affordable houses.
- We previously asked for clarifications regarding the typology / size of the employment elements for each B1/B2/B8 land use. These have now been provided.
- Having undertaken a revised trip generation assessment using the land uses assumptions contained in the TN, the B8 trip rates and generation appear suitable.
- The trip rates derived for B1 and B2 still appear lower than expected. We consider that this might be due to the use of a superseded version of TRICS (v7.7.1) and, for the B2 land use, to the fact that no filter has been applied to the Gross Floor Area of the surveyed sites. Although we do not consider this would significantly affect the results of the overall assessment, we recommend this is revised.
- The HGV trip generation for the retail use appears suitable.
- We consider the proposed internalisation rates to be sensible, although we recommend that trip generation assumptions for retail and education are agreed with the LPA.
- It is our understanding that the "Residential - to employment" figures shown in table 2.8 should equate to the sum of the B1, B2 and B8 internal trips, however these figures do not seem to add up. This should be clarified.
- It should also be clarified how the external Residential trips (first row of Table 2.9) have been derived.
- For clarity, and as requested by LCC in their email of 21 July, the total two-way trips for both AM and PM peaks should be shown in the tables contained in the TN.
- We also recommend you to include a final table summarising the external and internal trips, and showing how these add up to the total trip generation from the site.

We hope you find this useful.

Kind regards

Scarlett

Scarlett Griffiths

Highways England | The Cube | 199 Wharfside Street | Birmingham | B1 1RN

Web: <https://highwaysengland.co.uk>

From: [REDACTED]
Sent: 20 July 2020 16:42

To: [REDACTED]
Cc: [REDACTED]
Subject: [REDACTED]

Harry

Thanks for your email last week.

We have now prepared a note regarding traffic generation from the site including justification for the TRICS assessments (attached again) and the internalisation process we propose to use for a mixed use site.

I agree these notes can form a basis for agreement should anything not be accepted and iterations provided so all parties agree in agreement for the traffic generation to be used within the Strategic Model.

We propose to allow the model to deal with trip distribution and this can be addressed at a later date.

Thanks

Glyn Price

Associate Director (Planning Transport & Design)
Canon Court, Abbey Lawn, Abbey Forgate, Shrewsbury, SY2 5DE, UK

Direct: [REDACTED]
VOIP: [REDACTED]
Email: [REDACTED]

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wood.

From: Harry Horsley <Harry.Horsley@leics.gov.uk>
Sent: 21 July 2020 16:13

To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Earl Shilton Trip Generation

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good afternoon Glyn,

It would be useful if you could combine the information you wanted reviewing into a specific trip gen note please. Especially given it is seeking to clarify an earlier error as I fear this and the requirement to cross reference reports could otherwise get quite confusing. Sorry I thought this is what we had discussed on the teleconference.

Are you also able to tabulate peak hour totals by land use please in addition to the arrivals and departures as you have currently included? Applying the land use quantum detailed earlier in the note would also then present the trip generation which once agreed will be easily identified for use in the strategic modelling.

The note ought to detail the rationale and selection criteria applied in generating the presented TRICS rates and full explanation of methodologies and assumptions made.

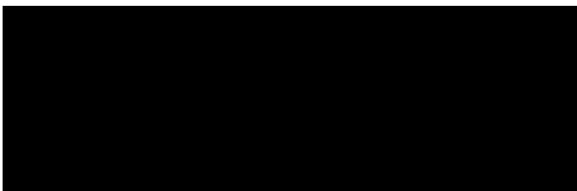
Not sure if your intention then is to deal with distribution separately, especially if this might be taken from a parent zone in PRTM as discussed on the teleconference.

Kind regards,

Harry

a

Highway Development Management



Please Note: In line with Government Guidance for COVID-19, all site visits including face-to-face meetings must adhere to current social distancing rules. If the guidelines are unable to be met, the meeting must be conducted electronically (skype etc.). There is also a likelihood of a delay in providing a response to your query or concern at this time due to the impact of the COVID-19 restrictions. More details on the Council's policy on social distancing and how it will affect services can be found [here](#).

From: Price, Glyn [REDACTED]

Sent: 21 July 2020 15:28

To: [REDACTED]

Cc: [REDACTED]

Subject: [REDACTED]

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Scarlett/Harry

Following our online scoping meeting on the 2nd of July 2020 regarding the Earl Shilton SUE Project, we agreed to send on the TRICS outputs that matched the revised rates set out in the Traffic and Transport Scoping Note. These are attached to this email.

It should be noted that there was a slight error in the figures within the scoping note for the "Retail" element.

The table below sets out the issue. We quoted the wrong figures in the scoping note, and they should have the figures in the table below from the actual TRICS output attached to this email.

Description	AM (Arr)	AM (Dep)	PM (Arr)	PM (Dep)
Reported in Scoping Note	5.556	5.317	7.282	8.036
Actual Figures from TRICS	5.149	4.900	6.11	6.458

In terms of the discussion regards the employment trip rates (Particularly B2 and B8) being slightly lower than might have been expected. We feel that on review the rates have been generated in TRICS with the relevant parameters applied for a site of Earl Shilton's location, size and accessibility.

To check if a revised assessment of these would make any difference we undertook a new assessment of the B2 and B8 trip rate (undertaken on the 3rd of July 2020). This reassessment indicated that the B8 rate had just one new site in the TRICS database since this work was last done in February and no new relevant B2 sites

The revised B8 trip rate with the additional site resulted in slightly lower trip rate than in the scoping note, so we have not taken that forward.

On review of these outputs, we would be pleased to discuss trip rates further and work towards rates that can be used in the ongoing works for Earl Shilton in conjunction with the details set out in the scoping report.

In addition it should be noted that we provided “PRTM Development Form” to CCC on the 19nd of July and discussion regarding the modelling process and timeframes are ongoing. It is clear however that agreeing the development traffic generation and distribution needs to be agreed by all stakeholders as soon as possible to allow for the modelling to progress.

Kind Regards

Glyn Price

Associate Director (Planning Transport & Design)

Canon Court, Abbey Lawn, Abbey Forgate, Shrewsbury, SY2 5DE, UK

Direct

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Email

www.woodplc.com

wood.

Appendix B

TRICS Output

Calculation Reference: AUDIT-206602-200814-0832

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : A - OFFICE

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	1 days
	ES EAST SUSSEX	1 days
	HF HERTFORDSHIRE	1 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days
	LC LANCASHIRE	1 days
09	NORTH	
	DH DURHAM	2 days
	TW TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 1230 to 5000 (units: sqm)
 Range Selected by User: 1000 to 5000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 14/08/20

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	5 days
Wednesday	2 days
Thursday	4 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	15 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	7
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	5

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

A1	1 days
B1	14 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	3 days
10,001 to 15,000	2 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	5 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	6 days
500,001 or More	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	8 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	14 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	15 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BD-02-A-03	OFFICES	BEDFORDSHIRE
	BROMHAM ROAD BEDFORD		
	Edge of Town Centre No Sub Category		
	Total Gross floor area:	1469 sqm	
	Survey date: MONDAY	14/10/13	Survey Type: MANUAL
2	CA-02-A-06	OFFICES	CAMBRIDGESHIRE
	LYNCH WOOD PETERBOROUGH		
	Edge of Town Commercial Zone		
	Total Gross floor area:	4040 sqm	
	Survey date: WEDNESDAY	19/10/16	Survey Type: MANUAL
3	DH-02-A-02	CONSTRUCTION COMPANY	DURHAM
	DURHAM ROAD NEAR DURHAM BOWBURN		
	Edge of Town Industrial Zone		
	Total Gross floor area:	2000 sqm	
	Survey date: TUESDAY	27/11/12	Survey Type: MANUAL
4	DH-02-A-03	ENGINEERING COMPANY	DURHAM
	ALDERMAN BEST WAY DARLINGTON		
	Edge of Town No Sub Category		
	Total Gross floor area:	3530 sqm	
	Survey date: THURSDAY	18/10/18	Survey Type: MANUAL
5	ES-02-A-12	COUNCIL OFFICES	EAST SUSSEX
	VICARAGE LANE HAILSHAM		
	Edge of Town Centre Built-Up Zone		
	Total Gross floor area:	3640 sqm	
	Survey date: THURSDAY	26/11/15	Survey Type: MANUAL
6	GM-02-A-09	LEASED OFFICES	GREATER MANCHESTER
	NEW MOUNT STREET MANCHESTER		
	Edge of Town Centre Built-Up Zone		
	Total Gross floor area:	2500 sqm	
	Survey date: MONDAY	26/09/16	Survey Type: MANUAL
7	HF-02-A-04	OFFICES	HERTFORDSHIRE
	STATION WAY ST ALBANS		
	Edge of Town Centre Residential Zone		
	Total Gross floor area:	5000 sqm	
	Survey date: THURSDAY	02/10/14	Survey Type: MANUAL
8	LC-02-A-09	OFFICES	LANCASHIRE
	FURTHERGATE BLACKBURN		
	Suburban Area (PPS6 Out of Centre) Built-Up Zone		
	Total Gross floor area:	2600 sqm	
	Survey date: TUESDAY	04/06/13	Survey Type: MANUAL
9	LE-02-A-04	COUNCIL OFFICES	LEICESTERSHIRE
	BURTON STREET MELTON MOWBRAY		
	Edge of Town Centre Built-Up Zone		
	Total Gross floor area:	3981 sqm	
	Survey date: WEDNESDAY	30/11/16	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	NY-02-A-02	DISTRICT COUNCIL OFFICES	NORTH YORKSHIRE
	STATION ROAD		
	RICHMOND		
	Edge of Town Centre		
	No Sub Category		
	Total Gross floor area:	1930 sqm	
	Survey date: THURSDAY	14/03/19	Survey Type: MANUAL
11	TW-02-A-08	HOUSING ASSOCIATION OFFICE	TYNE & WEAR
	BENTON PARK ROAD		
	NEWCASTLE UPON TYNE		
	Longbenton		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	4800 sqm	
	Survey date: FRIDAY	19/10/18	Survey Type: MANUAL
12	WL-02-A-01	PET INSURANCE COMPANY	WILTSHIRE
	THE CRESCENT		
	AMESBURY		
	SUNRISE WAY		
	Edge of Town		
	Development Zone		
	Total Gross floor area:	2500 sqm	
	Survey date: TUESDAY	18/09/18	Survey Type: MANUAL
13	WM-02-A-04	OFFICE	WEST MIDLANDS
	BOURNVILLE LANE		
	BIRMINGHAM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	1800 sqm	
	Survey date: TUESDAY	10/11/15	Survey Type: MANUAL
14	WO-02-A-02	OFFICE	WORCESTERSHIRE
	MOOR STREET		
	WORCESTER		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	2000 sqm	
	Survey date: MONDAY	14/11/16	Survey Type: MANUAL
15	WY-02-A-05	OFFICES	WEST YORKSHIRE
	PIONEER WAY		
	CASTLEFORD		
	WHITWOOD		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	1230 sqm	
	Survey date: TUESDAY	23/05/17	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	2868	0.607	15	2868	0.081	15	2868	0.688
08:00 - 09:00	15	2868	1.825	15	2868	0.142	15	2868	1.967
09:00 - 10:00	15	2868	1.139	15	2868	0.281	15	2868	1.420
10:00 - 11:00	15	2868	0.388	15	2868	0.267	15	2868	0.655
11:00 - 12:00	15	2868	0.246	15	2868	0.239	15	2868	0.485
12:00 - 13:00	15	2868	0.449	15	2868	0.558	15	2868	1.007
13:00 - 14:00	15	2868	0.549	15	2868	0.430	15	2868	0.979
14:00 - 15:00	15	2868	0.337	15	2868	0.418	15	2868	0.755
15:00 - 16:00	15	2868	0.235	15	2868	0.495	15	2868	0.730
16:00 - 17:00	15	2868	0.242	15	2868	0.967	15	2868	1.209
17:00 - 18:00	15	2868	0.130	15	2868	1.753	15	2868	1.883
18:00 - 19:00	14	2985	0.041	14	2985	0.503	14	2985	0.544
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			6.188			6.134			12.322

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	1230 - 5000 (units: sqm)
Survey date range:	01/01/12 - 14/08/20
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	2868	0.002	15	2868	0.002	15	2868	0.004
08:00 - 09:00	15	2868	0.012	15	2868	0.012	15	2868	0.024
09:00 - 10:00	15	2868	0.012	15	2868	0.014	15	2868	0.026
10:00 - 11:00	15	2868	0.007	15	2868	0.009	15	2868	0.016
11:00 - 12:00	15	2868	0.005	15	2868	0.002	15	2868	0.007
12:00 - 13:00	15	2868	0.005	15	2868	0.002	15	2868	0.007
13:00 - 14:00	15	2868	0.005	15	2868	0.005	15	2868	0.010
14:00 - 15:00	15	2868	0.007	15	2868	0.009	15	2868	0.016
15:00 - 16:00	15	2868	0.005	15	2868	0.005	15	2868	0.010
16:00 - 17:00	15	2868	0.005	15	2868	0.002	15	2868	0.007
17:00 - 18:00	15	2868	0.014	15	2868	0.016	15	2868	0.030
18:00 - 19:00	14	2985	0.000	14	2985	0.000	14	2985	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.079			0.078			0.157

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
08:00 - 09:00	15	2868	0.005	15	2868	0.000	15	2868	0.005
09:00 - 10:00	15	2868	0.007	15	2868	0.012	15	2868	0.019
10:00 - 11:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
11:00 - 12:00	15	2868	0.002	15	2868	0.002	15	2868	0.004
12:00 - 13:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
13:00 - 14:00	15	2868	0.005	15	2868	0.002	15	2868	0.007
14:00 - 15:00	15	2868	0.005	15	2868	0.005	15	2868	0.010
15:00 - 16:00	15	2868	0.002	15	2868	0.002	15	2868	0.004
16:00 - 17:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
17:00 - 18:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
18:00 - 19:00	14	2985	0.000	14	2985	0.000	14	2985	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.026			0.023			0.049

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

PSVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
08:00 - 09:00	15	2868	0.007	15	2868	0.000	15	2868	0.007
09:00 - 10:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
10:00 - 11:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
11:00 - 12:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
12:00 - 13:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
13:00 - 14:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
14:00 - 15:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
15:00 - 16:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
16:00 - 17:00	15	2868	0.000	15	2868	0.000	15	2868	0.000
17:00 - 18:00	15	2868	0.000	15	2868	0.002	15	2868	0.002
18:00 - 19:00	14	2985	0.000	14	2985	0.000	14	2985	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.002			0.009

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	2868	0.007	15	2868	0.002	15	2868	0.009
08:00 - 09:00	15	2868	0.035	15	2868	0.000	15	2868	0.035
09:00 - 10:00	15	2868	0.007	15	2868	0.000	15	2868	0.007
10:00 - 11:00	15	2868	0.005	15	2868	0.000	15	2868	0.005
11:00 - 12:00	15	2868	0.000	15	2868	0.005	15	2868	0.005
12:00 - 13:00	15	2868	0.007	15	2868	0.005	15	2868	0.012
13:00 - 14:00	15	2868	0.002	15	2868	0.005	15	2868	0.007
14:00 - 15:00	15	2868	0.002	15	2868	0.000	15	2868	0.002
15:00 - 16:00	15	2868	0.000	15	2868	0.005	15	2868	0.005
16:00 - 17:00	15	2868	0.002	15	2868	0.005	15	2868	0.007
17:00 - 18:00	15	2868	0.002	15	2868	0.021	15	2868	0.023
18:00 - 19:00	14	2985	0.002	14	2985	0.014	14	2985	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.062			0.133

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

Calculation Reference: AUDIT-206602-200724-0707

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : F - WAREHOUSING (COMMERCIAL)

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	HC HAMPSHIRE	1 days
	KC KENT	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 3625 to 13200 (units: sqm)
 Range Selected by User: 2000 to 20000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 14/03/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Thursday	2 days
Friday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	5

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	4
Commercial Zone	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B8

6 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

5,001 to 10,000

1 days

10,001 to 15,000

1 days

15,001 to 20,000

2 days

20,001 to 25,000

1 days

25,001 to 50,000

1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000

1 days

125,001 to 250,000

3 days

250,001 to 500,000

1 days

500,001 or More

1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0

2 days

1.1 to 1.5

4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No

6 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present

6 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	EX-02-F-01	SPORTS SUPPLEMENTS	ESSEX
	BRUNEL WAY		
	COLCHESTER		
	SEVERALLS INDUSTRIAL PK		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	6560 sqm	
	Survey date: FRIDAY	18/05/18	Survey Type: MANUAL
2	HC-02-F-02	LOGISTICS	HAMPSHIRE
	RUTHERFORD ROAD		
	BASINGSTOKE		
	Suburban Area (PPS6 Out of Centre)		
	Commercial Zone		
	Total Gross floor area:	13200 sqm	
	Survey date: THURSDAY	16/06/16	Survey Type: MANUAL
3	KC-02-F-02	COMMERCIAL WAREHOUSING	KENT
	MILLS ROAD		
	AYLESFORD		
	QUARRY WOOD		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11200 sqm	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
4	SF-02-F-03	ROAD HAULAGE	SUFFOLK
	CENTRAL AVENUE		
	IPSWICH		
	WARREN HEATH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	4700 sqm	
	Survey date: FRIDAY	18/09/15	Survey Type: MANUAL
5	WM-02-F-02	LOGISTICS FIRM	WEST MIDLANDS
	SOVEREIGN ROAD		
	BIRMINGHAM		
	KINGS NORTON		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	3625 sqm	
	Survey date: MONDAY	09/11/15	Survey Type: MANUAL
6	WY-02-F-02	DISTRIBUTION COMPANY	WEST YORKSHIRE
	STAITHGATE LANE		
	BRADFORD		
	NEWHALL		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	10446 sqm	
	Survey date: THURSDAY	14/03/19	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.105	1	10446	0.057	1	10446	0.162
05:30 - 06:00	1	10446	0.249	1	10446	0.115	1	10446	0.364
06:00 - 06:30	1	10446	0.182	1	10446	0.153	1	10446	0.335
06:30 - 07:00	1	10446	0.383	1	10446	0.096	1	10446	0.479
07:00 - 07:30	6	8289	0.133	6	8289	0.082	6	8289	0.215
07:30 - 08:00	6	8289	0.165	6	8289	0.082	6	8289	0.247
08:00 - 08:30	6	8289	0.115	6	8289	0.107	6	8289	0.222
08:30 - 09:00	6	8289	0.147	6	8289	0.070	6	8289	0.217
09:00 - 09:30	6	8289	0.121	6	8289	0.060	6	8289	0.181
09:30 - 10:00	6	8289	0.113	6	8289	0.066	6	8289	0.179
10:00 - 10:30	6	8289	0.078	6	8289	0.076	6	8289	0.154
10:30 - 11:00	6	8289	0.090	6	8289	0.080	6	8289	0.170
11:00 - 11:30	6	8289	0.080	6	8289	0.092	6	8289	0.172
11:30 - 12:00	6	8289	0.092	6	8289	0.092	6	8289	0.184
12:00 - 12:30	6	8289	0.084	6	8289	0.078	6	8289	0.162
12:30 - 13:00	6	8289	0.088	6	8289	0.062	6	8289	0.150
13:00 - 13:30	6	8289	0.070	6	8289	0.095	6	8289	0.165
13:30 - 14:00	6	8289	0.113	6	8289	0.125	6	8289	0.238
14:00 - 14:30	6	8289	0.070	6	8289	0.109	6	8289	0.179
14:30 - 15:00	6	8289	0.090	6	8289	0.099	6	8289	0.189
15:00 - 15:30	6	8289	0.090	6	8289	0.123	6	8289	0.213
15:30 - 16:00	6	8289	0.064	6	8289	0.086	6	8289	0.150
16:00 - 16:30	6	8289	0.088	6	8289	0.149	6	8289	0.237
16:30 - 17:00	6	8289	0.056	6	8289	0.117	6	8289	0.173
17:00 - 17:30	6	8289	0.092	6	8289	0.167	6	8289	0.259
17:30 - 18:00	6	8289	0.062	6	8289	0.123	6	8289	0.185
18:00 - 18:30	6	8289	0.040	6	8289	0.125	6	8289	0.165
18:30 - 19:00	6	8289	0.032	6	8289	0.064	6	8289	0.096
19:00 - 19:30	1	10446	0.057	1	10446	0.182	1	10446	0.239
19:30 - 20:00	1	10446	0.038	1	10446	0.067	1	10446	0.105
20:00 - 20:30	1	10446	0.019	1	10446	0.048	1	10446	0.067
20:30 - 21:00	1	10446	0.086	1	10446	0.038	1	10446	0.124
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			3.292			3.085			6.377

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	3625 - 13200 (units: sqm)
Survey date range:	01/01/12 - 14/03/19
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

TAXIS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.010	1	10446	0.010	1	10446	0.020
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.006	6	8289	0.004	6	8289	0.010
07:30 - 08:00	6	8289	0.002	6	8289	0.004	6	8289	0.006
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.004	6	8289	0.004	6	8289	0.008
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.002	6	8289	0.002	6	8289	0.004
17:30 - 18:00	6	8289	0.002	6	8289	0.002	6	8289	0.004
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.026			0.026			0.052

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.019	1	10446	0.029	1	10446	0.048
05:30 - 06:00	1	10446	0.057	1	10446	0.086	1	10446	0.143
06:00 - 06:30	1	10446	0.038	1	10446	0.096	1	10446	0.134
06:30 - 07:00	1	10446	0.048	1	10446	0.067	1	10446	0.115
07:00 - 07:30	6	8289	0.034	6	8289	0.046	6	8289	0.080
07:30 - 08:00	6	8289	0.020	6	8289	0.042	6	8289	0.062
08:00 - 08:30	6	8289	0.024	6	8289	0.052	6	8289	0.076
08:30 - 09:00	6	8289	0.026	6	8289	0.036	6	8289	0.062
09:00 - 09:30	6	8289	0.028	6	8289	0.026	6	8289	0.054
09:30 - 10:00	6	8289	0.040	6	8289	0.012	6	8289	0.052
10:00 - 10:30	6	8289	0.044	6	8289	0.034	6	8289	0.078
10:30 - 11:00	6	8289	0.044	6	8289	0.026	6	8289	0.070
11:00 - 11:30	6	8289	0.050	6	8289	0.046	6	8289	0.096
11:30 - 12:00	6	8289	0.030	6	8289	0.030	6	8289	0.060
12:00 - 12:30	6	8289	0.044	6	8289	0.026	6	8289	0.070
12:30 - 13:00	6	8289	0.032	6	8289	0.012	6	8289	0.044
13:00 - 13:30	6	8289	0.024	6	8289	0.032	6	8289	0.056
13:30 - 14:00	6	8289	0.030	6	8289	0.046	6	8289	0.076
14:00 - 14:30	6	8289	0.030	6	8289	0.026	6	8289	0.056
14:30 - 15:00	6	8289	0.032	6	8289	0.034	6	8289	0.066
15:00 - 15:30	6	8289	0.038	6	8289	0.044	6	8289	0.082
15:30 - 16:00	6	8289	0.034	6	8289	0.020	6	8289	0.054
16:00 - 16:30	6	8289	0.044	6	8289	0.040	6	8289	0.084
16:30 - 17:00	6	8289	0.034	6	8289	0.024	6	8289	0.058
17:00 - 17:30	6	8289	0.048	6	8289	0.016	6	8289	0.064
17:30 - 18:00	6	8289	0.044	6	8289	0.042	6	8289	0.086
18:00 - 18:30	6	8289	0.020	6	8289	0.024	6	8289	0.044
18:30 - 19:00	6	8289	0.028	6	8289	0.010	6	8289	0.038
19:00 - 19:30	1	10446	0.010	1	10446	0.048	1	10446	0.058
19:30 - 20:00	1	10446	0.010	1	10446	0.010	1	10446	0.020
20:00 - 20:30	1	10446	0.019	1	10446	0.029	1	10446	0.048
20:30 - 21:00	1	10446	0.010	1	10446	0.019	1	10446	0.029
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.033			1.130			2.163

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

CYCLISTS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.002	6	8289	0.000	6	8289	0.002
08:00 - 08:30	6	8289	0.002	6	8289	0.000	6	8289	0.002
08:30 - 09:00	6	8289	0.012	6	8289	0.000	6	8289	0.012
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.002	6	8289	0.002
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.002	6	8289	0.002
15:30 - 16:00	6	8289	0.000	6	8289	0.002	6	8289	0.002
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.002	6	8289	0.002
17:00 - 17:30	6	8289	0.000	6	8289	0.004	6	8289	0.004
17:30 - 18:00	6	8289	0.000	6	8289	0.006	6	8289	0.006
18:00 - 18:30	6	8289	0.000	6	8289	0.002	6	8289	0.002
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.016			0.020			0.036

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

CARS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.077	1	10446	0.019	1	10446	0.096
05:30 - 06:00	1	10446	0.191	1	10446	0.029	1	10446	0.220
06:00 - 06:30	1	10446	0.124	1	10446	0.038	1	10446	0.162
06:30 - 07:00	1	10446	0.316	1	10446	0.019	1	10446	0.335
07:00 - 07:30	6	8289	0.068	6	8289	0.016	6	8289	0.084
07:30 - 08:00	6	8289	0.123	6	8289	0.020	6	8289	0.143
08:00 - 08:30	6	8289	0.074	6	8289	0.022	6	8289	0.096
08:30 - 09:00	6	8289	0.099	6	8289	0.018	6	8289	0.117
09:00 - 09:30	6	8289	0.058	6	8289	0.022	6	8289	0.080
09:30 - 10:00	6	8289	0.042	6	8289	0.018	6	8289	0.060
10:00 - 10:30	6	8289	0.010	6	8289	0.020	6	8289	0.030
10:30 - 11:00	6	8289	0.028	6	8289	0.030	6	8289	0.058
11:00 - 11:30	6	8289	0.018	6	8289	0.036	6	8289	0.054
11:30 - 12:00	6	8289	0.028	6	8289	0.034	6	8289	0.062
12:00 - 12:30	6	8289	0.022	6	8289	0.038	6	8289	0.060
12:30 - 13:00	6	8289	0.030	6	8289	0.026	6	8289	0.056
13:00 - 13:30	6	8289	0.030	6	8289	0.042	6	8289	0.072
13:30 - 14:00	6	8289	0.062	6	8289	0.060	6	8289	0.122
14:00 - 14:30	6	8289	0.024	6	8289	0.060	6	8289	0.084
14:30 - 15:00	6	8289	0.044	6	8289	0.056	6	8289	0.100
15:00 - 15:30	6	8289	0.028	6	8289	0.056	6	8289	0.084
15:30 - 16:00	6	8289	0.024	6	8289	0.054	6	8289	0.078
16:00 - 16:30	6	8289	0.018	6	8289	0.080	6	8289	0.098
16:30 - 17:00	6	8289	0.022	6	8289	0.086	6	8289	0.108
17:00 - 17:30	6	8289	0.028	6	8289	0.129	6	8289	0.157
17:30 - 18:00	6	8289	0.010	6	8289	0.068	6	8289	0.078
18:00 - 18:30	6	8289	0.018	6	8289	0.092	6	8289	0.110
18:30 - 19:00	6	8289	0.002	6	8289	0.050	6	8289	0.052
19:00 - 19:30	1	10446	0.048	1	10446	0.134	1	10446	0.182
19:30 - 20:00	1	10446	0.019	1	10446	0.048	1	10446	0.067
20:00 - 20:30	1	10446	0.000	1	10446	0.019	1	10446	0.019
20:30 - 21:00	1	10446	0.057	1	10446	0.010	1	10446	0.067
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.742			1.449			3.191

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

LGVS**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.010	1	10446	0.010
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.010	1	10446	0.010	1	10446	0.020
06:30 - 07:00	1	10446	0.019	1	10446	0.010	1	10446	0.029
07:00 - 07:30	6	8289	0.024	6	8289	0.016	6	8289	0.040
07:30 - 08:00	6	8289	0.018	6	8289	0.016	6	8289	0.034
08:00 - 08:30	6	8289	0.016	6	8289	0.032	6	8289	0.048
08:30 - 09:00	6	8289	0.020	6	8289	0.016	6	8289	0.036
09:00 - 09:30	6	8289	0.034	6	8289	0.012	6	8289	0.046
09:30 - 10:00	6	8289	0.030	6	8289	0.036	6	8289	0.066
10:00 - 10:30	6	8289	0.024	6	8289	0.022	6	8289	0.046
10:30 - 11:00	6	8289	0.018	6	8289	0.024	6	8289	0.042
11:00 - 11:30	6	8289	0.012	6	8289	0.010	6	8289	0.022
11:30 - 12:00	6	8289	0.034	6	8289	0.028	6	8289	0.062
12:00 - 12:30	6	8289	0.018	6	8289	0.014	6	8289	0.032
12:30 - 13:00	6	8289	0.022	6	8289	0.024	6	8289	0.046
13:00 - 13:30	6	8289	0.016	6	8289	0.020	6	8289	0.036
13:30 - 14:00	6	8289	0.018	6	8289	0.018	6	8289	0.036
14:00 - 14:30	6	8289	0.016	6	8289	0.020	6	8289	0.036
14:30 - 15:00	6	8289	0.014	6	8289	0.004	6	8289	0.018
15:00 - 15:30	6	8289	0.024	6	8289	0.022	6	8289	0.046
15:30 - 16:00	6	8289	0.006	6	8289	0.012	6	8289	0.018
16:00 - 16:30	6	8289	0.022	6	8289	0.024	6	8289	0.046
16:30 - 17:00	6	8289	0.000	6	8289	0.006	6	8289	0.006
17:00 - 17:30	6	8289	0.014	6	8289	0.016	6	8289	0.030
17:30 - 18:00	6	8289	0.006	6	8289	0.010	6	8289	0.016
18:00 - 18:30	6	8289	0.002	6	8289	0.008	6	8289	0.010
18:30 - 19:00	6	8289	0.002	6	8289	0.004	6	8289	0.006
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.010	1	10446	0.010	1	10446	0.020
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.019	1	10446	0.010	1	10446	0.029
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.468			0.464			0.932

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP* FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

MOTOR CYCLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.010	1	10446	0.000	1	10446	0.010
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.002	6	8289	0.000	6	8289	0.002
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.002	6	8289	0.000	6	8289	0.002
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.004	6	8289	0.000	6	8289	0.004
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.002	6	8289	0.000	6	8289	0.002
14:00 - 14:30	6	8289	0.000	6	8289	0.002	6	8289	0.002
14:30 - 15:00	6	8289	0.000	6	8289	0.004	6	8289	0.004
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.004	6	8289	0.004
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.020			0.010			0.030

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Light Vehicles (LV)**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Rigid Trucks - No Trailer (OGV1)**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Trucks Towing Trailers (OGV2)**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Buses**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:30 - 14:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:30 - 21:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP \times FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Non-Motorised Vehicles (NMV)**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:00 - 09:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:30 - 11:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:00 - 11:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
11:30 - 12:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:00 - 12:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
12:30 - 13:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
13:00 - 13:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
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14:00 - 14:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
14:30 - 15:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:00 - 15:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
15:30 - 16:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:00 - 16:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
16:30 - 17:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:00 - 17:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
17:30 - 18:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
18:30 - 19:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
19:00 - 19:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
19:30 - 20:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
20:00 - 20:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
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21:00 - 21:30									
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23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

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TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Cycles**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
05:30 - 06:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:00 - 06:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
06:30 - 07:00	1	10446	0.000	1	10446	0.000	1	10446	0.000
07:00 - 07:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
07:30 - 08:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:00 - 08:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
08:30 - 09:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
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09:30 - 10:00	6	8289	0.000	6	8289	0.000	6	8289	0.000
10:00 - 10:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
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TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Scooters**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
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01:00 - 01:30									
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18:00 - 18:30	6	8289	0.000	6	8289	0.000	6	8289	0.000
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21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.000			0.000			0.000

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TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Non-Vehicular People Movements (NVPM)**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
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05:00 - 05:30	1	10446	0.000	1	10446	0.000	1	10446	0.000
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Appendix D

PRTM Technical Note



Leicestershire County Council

EARL SHILTON SUE

PRTM Modelling and Assessment Report





Leicestershire County Council

EARL SHILTON SUE

PRTM Modelling and Assessment Report

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70076931

OUR REF. NO. EARL SHILTON SUE MODELLING REPORT

DATE: JULY 2021



Leicestershire County Council

EARL SHILTON SUE

PRTM Modelling and Assessment Report

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QUALITY CONTROL

Issue/revision	Draft	Revision 1	Revision 2	Revision 3
Remarks	PRTM Modelling and Assessment Report			
Date	02/07/2021			
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Checked by	Matthew Ng			
Authorised by	Paul Byron			
Project number	70076931			
Report number	01			

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1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. WSP was commissioned by Leicestershire County Council (LCC) to undertake the strategic traffic assessment for the Earl Shilton Sustainable Urban Extension (SUE) Development proposal using the Pan Regional Transport Model (PRTM).
- 1.1.2. The proposed Earl Shilton SUE development site is the mixed-use development on southern and eastern edge of Earl Shilton.
- 1.1.3. The Earl Shilton SUE development assessment has been undertaken using PRTM forecast model for AM and PM peak hours.

1.2. PURPOSE OF THE REPORT

- 1.2.1. This report presents the results of the Earl Shilton SUE strategic traffic assessment using the PRTM Model.
- 1.2.2. It is structured as follows:
 - Chapter 2 Development Proposal;
 - Chapter 3 Modelling Scenarios and Assumptions;
 - Chapter 4 Development Trip Generation;
 - Chapter 5 Development Trip Distribution;
 - Chapter 6 Area of Influence of the Development; and,
 - Chapter 7 Modelling Results.

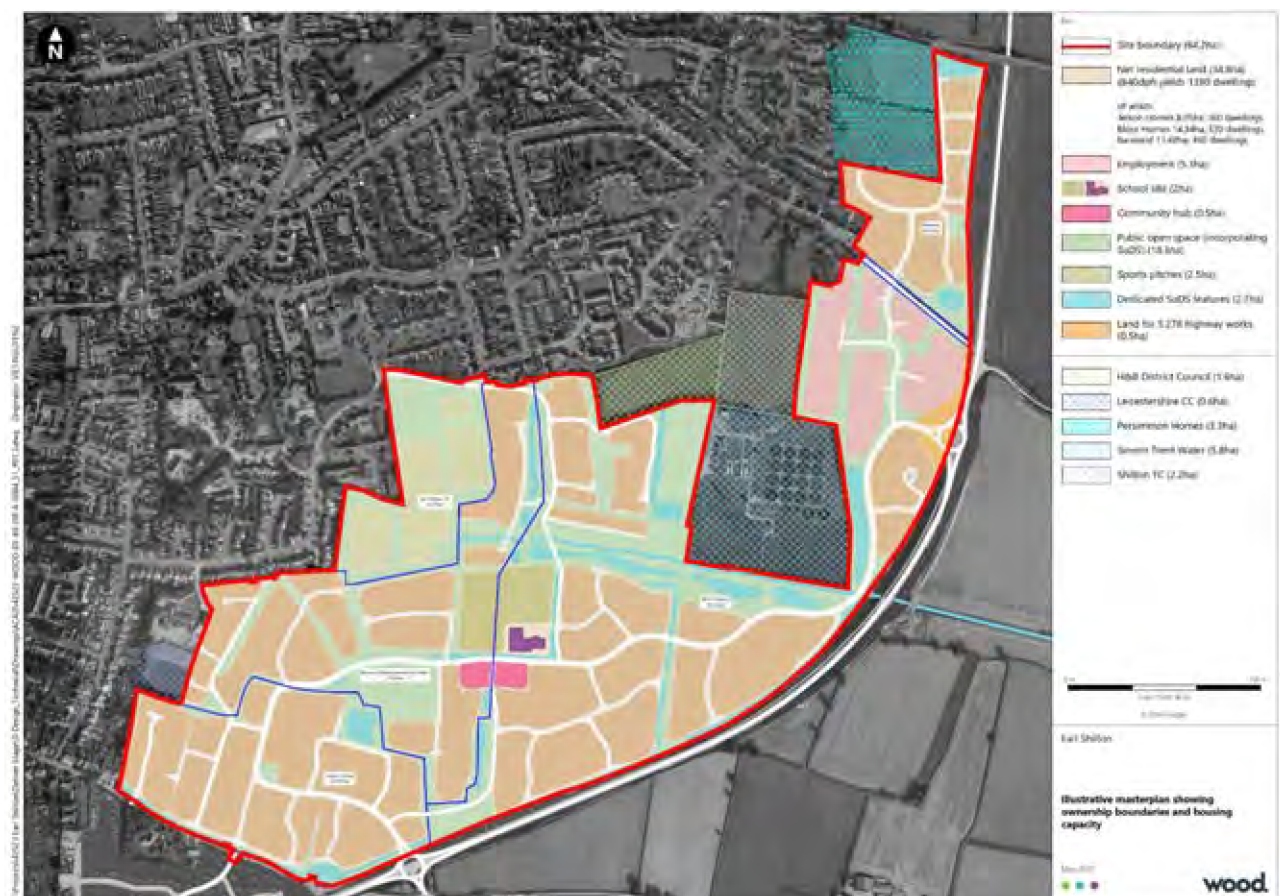
2. DEVELOPMENT PROPOSAL

2.1. DEVELOPMENT ASSUMPTIONS

2.1.1. The development proposal comprises:

- 1,600 dwellings – 100% private;
- B1 – 2,000m² (note that this is attached to the B2 and B8, but for the purpose of the assessment, this has been assumed to be standalone office);
- B2 – 11,400m²;
- B8 – 11,400m²;
- Local retail – 2,000m²;
- Primary school – two form entry – 420 pupils; and
- Four vehicular points of accesses,
 1. New 4 arm roundabout junction on A47 with Beech Lane;
 2. New roundabout junction on A47;
 3. Via Mill Lane; and,
 4. Via Astley Road.

2.1.2. The masterplan is shown in Figure 2-1.



Source: Wood

Figure 2-1 – Development Masterplan

3. MODELLING SCENARIOS AND ASSUMPTIONS

3.1.1. The following modelling scenarios were generated to undertake the traffic modelling for the Earl Shilton SUE:

- 2021 Forecast Year;
 - 2021 DM: Core – no development and no associated infrastructure (this is assumed to be the 'existing' baseline).
- 2026 Forecast Year; and
 - 2026 DM: Core – no development and no associated infrastructure.
 - 2026 DS: Core + Full Development + Access Arrangements – 100% occupancy.
- 2036 Forecast Year.
 - 2036 DM: Core – no development and no associated infrastructure.
 - 2036 DS: Core + Full Development + Access Arrangements – 100% occupancy.

3.1.2. Modelling runs were undertaken for AM peak and PM peak for each scenario.

3.2. INFRASTRUCTURE ASSOCIATED WITH THE DEVELOPMENT

3.2.1. The coding of proposed access and localised highway access arrangements is undertaken in SATURN based on the drawings provided by Wood. Figure 3-1 presents the coded network. This includes:

- Coding the development specific zones;
 - Zone 6124 represents the northern part of the development which connects to two loading points on the internal link road.
 - Zone 6130 represents the southern part of the development which connects to three loading points on the internal link road.
- The Earl Shilton SUE development trips are loaded onto the development internal link road via priority junctions as presented with green triangles on the figure;
- The internal junctions on the internal link road will be coded as priority roundabouts as presented with purple dots on the figure;
- Coding four access arrangements;
 - 1) New 4 arm roundabout junction on A47 with Breach Lane (Figure 3-2).
 - 2) Proposed site access from A47 (Figure 3-3).
 - 3) Existing Mill Lane.
 - 4) Astley Road Access via a priority junction (Figure 3-4).
- Coding of the internal link road.

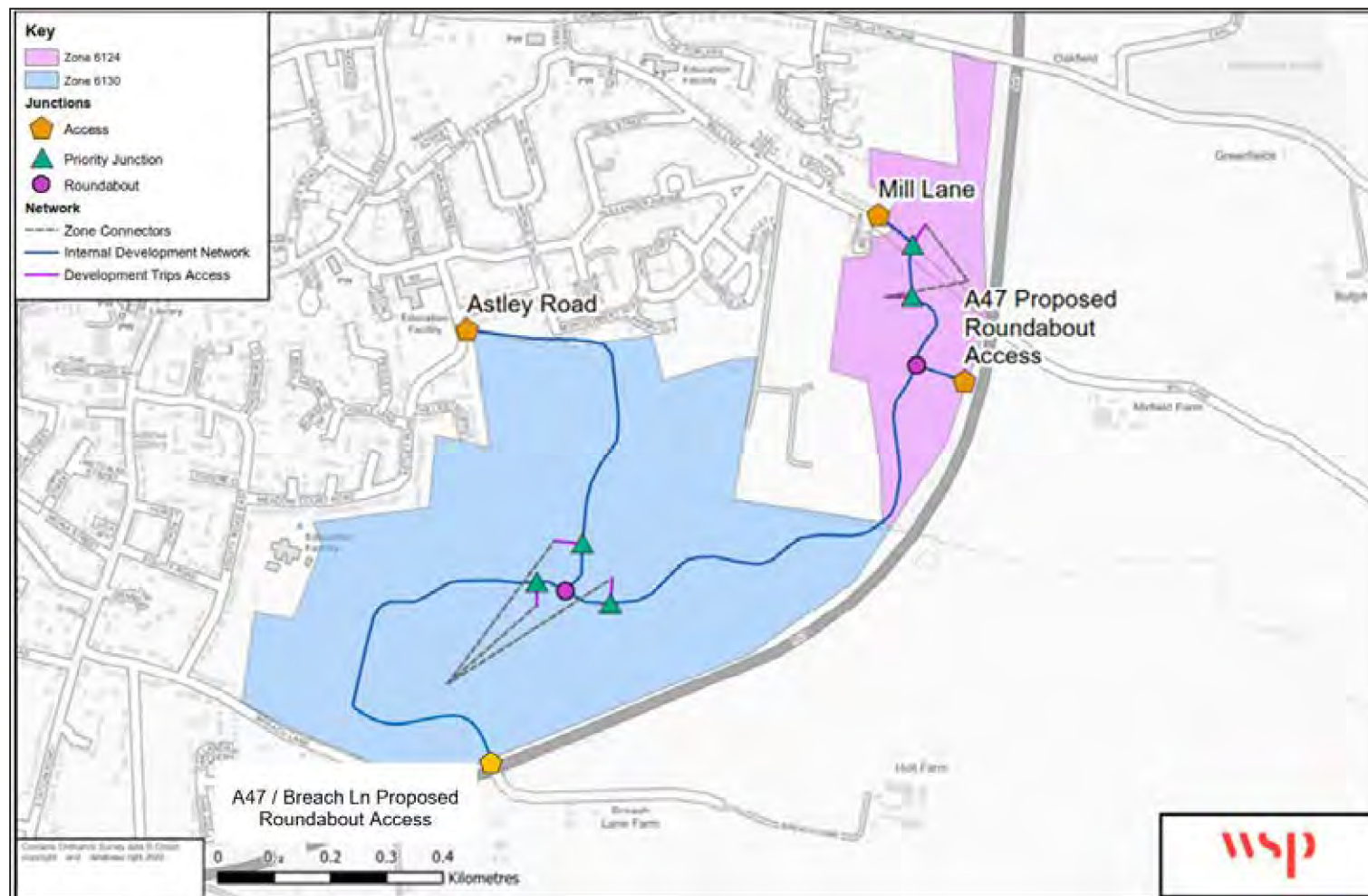
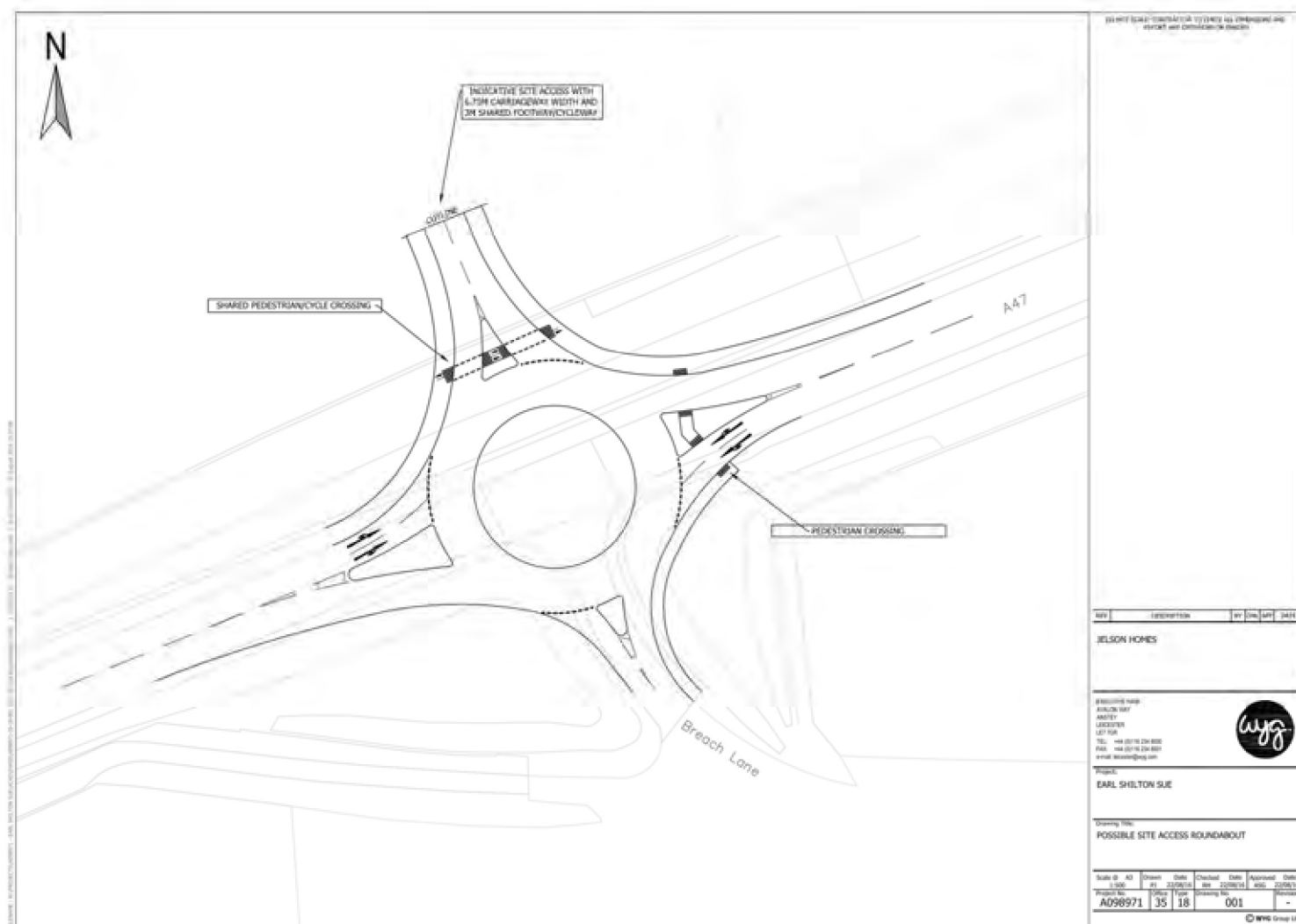
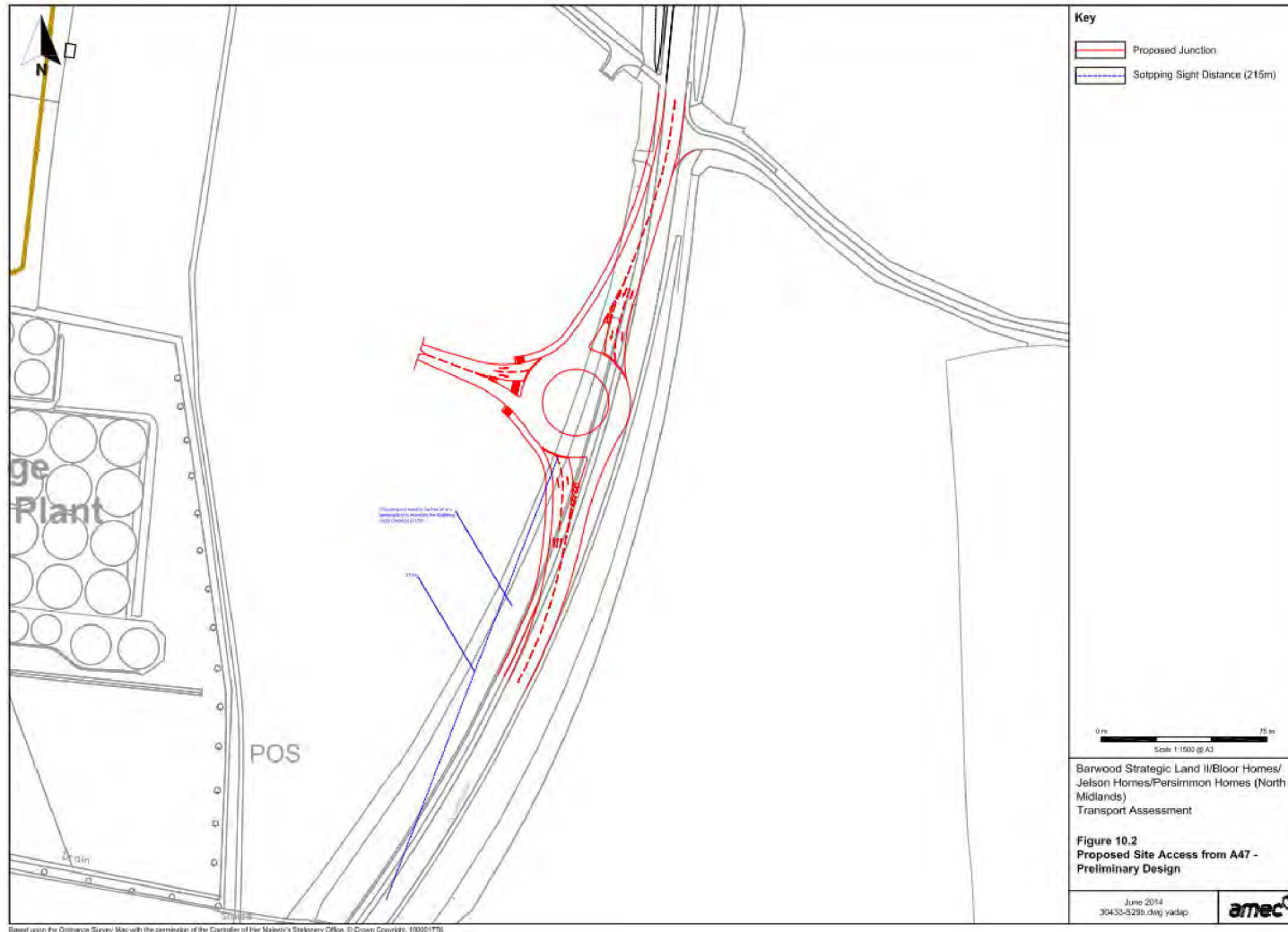


Figure 3-1 –With Development Network



Source: Wood

Figure 3-2 – Proposed Site Access from A47 with Breach Lane



Source: Wood

Figure 3-3 – Proposed Site Access from A47



Figure 3-4 – Proposed Access from Astley Road

Core Scenario

- 3.2.2. LCC provided WSP with the latest Core Scenario available for use which includes all committed schemes and developments proposed for each corresponding forecast year.
- 3.2.3. WSP have reviewed the PRTM planning inputs and uncertainty logs which confirms that the model includes the proposed SUE access arrangements, highway improvements associated with SUE and the Earl Shilton SUE development. The Core Scenario models using the NTEM constrained version of PRTM has been updated to remove the existing Earl Shilton SUE and associated infrastructure.
- 3.2.4. For the traffic impact assessment of any development, it is important that the 'Core Scenario', against which the impact of the development is assessed is based on the most realistic projection of transport schemes and planned land use that would be present near the proposed development in the assessment year.
- 3.2.5. In the context of the Earl Shilton SUE, the Barwell Sustainable Urban Extension (SUE) is a major committed development nearby and is likely to have a significant impact on the traffic in the surrounding area. It was therefore important that the Barwell SUE is included in the 'Core Scenario' of the model used for the Earl Shilton assessment. The modelled assumptions have been checked and updated using the Stantec Barwell trip generation note (Barwell Sustainable Urban Extension, Transport Technical Note 03, 11th September 2020).

Core + Development Scenario

- 3.2.6. The 'Core + Development Scenario' for Earl Shilton SUE was built on the Core Scenario with the Earl Shilton SUE demand and infrastructure changes associated with the development added in.
- 3.2.7. The PRTM currently represents Earl Shilton SUE with 5 zones (6121, 6124, 6130, 6132 and 6134). Three of these zones (6121, 6132 and 6134) contain existing demand and other developments in addition to the proposed Earl Shilton SUE. Using mostly empty zones with little to no existing development would enable easier analysis of the inbound and outbound trips of the proposed development via select link analysis in the Core + Development Scenario. Therefore, the two existing zones, 6124 and 6130, with no significant existing development were used to represent the Earl Shilton SUE development in the Core + Development Scenario.

4. DEVELOPMENT TRIP GENERATION

TRIP GENERATION

- 4.1.1. The trip generation associated with the development has agreed previously between the LCC and the developer and supplied to WSP by Wood in Modelling Assumptions and Clarification Note dated 10 February 2021.
- 4.1.2. Figure 4-1 presents the zoning of the SUE. The 2026 and 2036 With Development scenarios includes the full SUE development with land use split shown in Table 4-1.

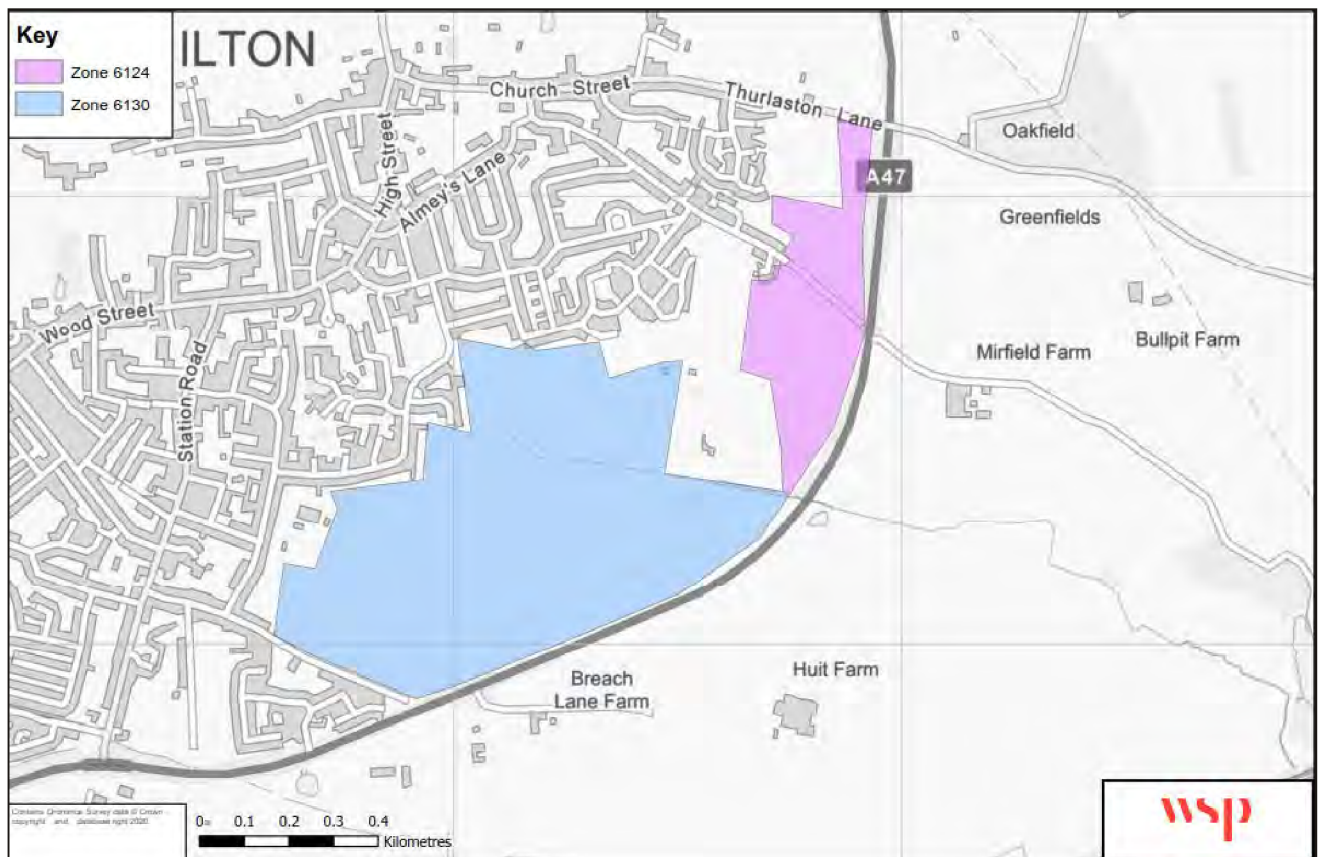


Figure 4-1 – Zoning System

Table 4-1 – Land use split for the two development zones 6124 and 6130

Full Development	Zone 6124 (Mill Lane/ A47 Access)	Zone 6130 (Breach Lane/ A47 Access)
1,600 dwellings – allocation	320	1,300
2,000m ² B1	100%	
11,400m ² B2	100%	

Full Development	Zone 6124 (Mill Lane/ A47 Access)	Zone 6130 (Breach Lane/ A47 Access)
11,400m ² B8	100%	
2,000m ² Local Retail		100%
2FE Primary School / 420 Pupils		100%

- 4.1.3. Total traffic generation is summarised in Table 4-2 and Table 4-3. Only external development traffic is modelled i.e. no internal trips between Zone 6130 and Zone 6124 as these would use the road network within the development as shown on the masterplan.

Table 4-2 –AM Peak – Breakdown of Traffic Generation

Land use	Total Traffic Generation			Internal Traffic			External Traffic		
	In	Out	Total	In	Out	Total	In	Out	Total
Total residential	242	706	947				242	706	947
Employment - B1	37	3	39	1	0	1	36	3	38
Employment – B2	45	21	65	1	1	2	44	20	63
Employment – B8	30	20	50	1	0	1	29	20	49
Retail - Local Shops	124	120	245				124	120	245
Education – Primary School	120	73	193	60	36	96	60	37	97
Total Vehicles	598	943	1,539	62	37	100	536	906	1,439
HGVs	11	14	25				11	14	25

Table 4-3 –PM Peak – Breakdown of Traffic Generation

Land use	Total Traffic Generation			Internal Traffic			External Traffic		
	In	Out	Total	In	Out	Total	In	Out	Total
Total residential	627	256	883				627	256	883
Employment - B1	3	35	38	0	1	1	3	34	37
Employment – B2	15	45	60	0	1	2	15	44	58
Employment – B8	18	33	51	0	1	1	18	32	50
Retail - Local Shops	136	141	277				136	141	277
Education – Primary School	9	15	24	4	5	9	5	10	15
Total Vehicles	808	525	1,333	4	8	13	804	517	1,320
HGVs	11	8	18				11	8	18

- 4.1.4. The proposed Earl Shilton SUE development is estimated to generate around 1,439 external vehicular trips in the morning peak hour and around 1,320 trips in the evening peak hour.

5. DEVELOPMENT TRIP DISTRIBUTION

5.1. APPROACH

- 5.1.1. The trip distribution for the development has been undertaken based on the '*distribution from parent zones*' approach. In this approach a set of donor zones near the new development that reflect similar land use characteristics are identified and are used for informing the distribution of the trips generated by the new development.

5.2. PARENT ZONES AND LOCATIONS

- 5.2.1. The proposed Earl Shilton SUE development site is mixed-use development on southern and eastern edge of Earl Shilton. Within the PRTM forecast model, the two existing zones, 6124 and 6130, with no significant existing development were used to represent the Earl Shilton SUE development in the Core + Development Scenario.
- 5.2.2. The trip distribution for the proposed development has been undertaken using a demand weighted distribution from a set of nearby parent zones of a similar land use type. The trip distribution of the identified parent zones was first reviewed in the base year PRTM model and, when found satisfactory, the demand weighted distribution of the same zones in the PRTM forecast model was used for the trip distribution for the new zones representing the Earl Shilton SUE development. This will allow the forecast years to incorporate future interactions between the existing PRTM zones and other growth locations around the city.
- 5.2.3. The PRTM model parent zones used to inform the Earl Shilton SUE Development trip distribution are listed underneath:
- 5.2.4. The PRTM model parent zones used to inform the Earl Shilton SUE Development trip distribution include zones 6133, 6136, 6137, 6144 and 6143 where land use characteristics are similar to the Earl Shilton SUE Development site. These parent zones are circled in Figure 5-1.

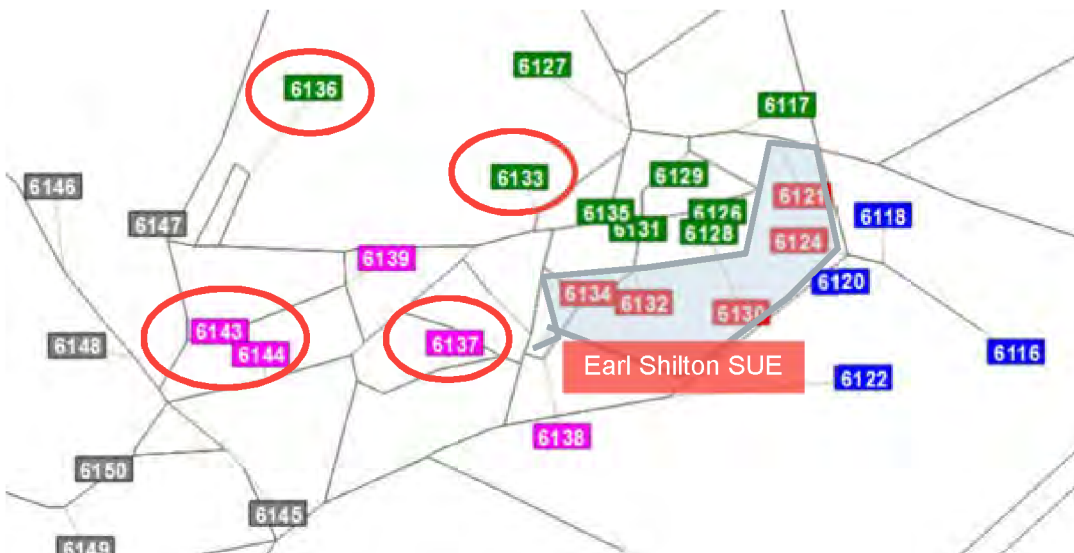


Figure 5-1 - Parent zones used for trip distribution

5.3. TRIP DISTRIBUTION OF DEVELOPMENT TRAFFIC

- 5.3.1. The trip distribution for development trips, analysed using select link analysis (SLA) of the SATURN highway model for 2026 AM and PM peak hours, are presented in Figure 5-2 and Figure 5-3 respectively. Similarly the distribution for 2036 AM and PM peak hours are presented in Figure 5-4 and Figure 5-5.
- 5.3.2. In these figures the traffic going to the development (inbound flows) are shown in blue, whereas traffic departing from the development (outbound flows) are shown in red. The flows are measured in passenger car equivalent units per hour (PCUs/hr)
- 5.3.3. It is noticed that the majority of trips from the Earl Shilton development distribute towards Urban parts of Leicester and Hinckley; A small proportion of trips travel to the North i.e. Kirkby Mallory.
- 5.3.4. The key roads impacted by development traffic include, A47, and B581, and Shilton Road.

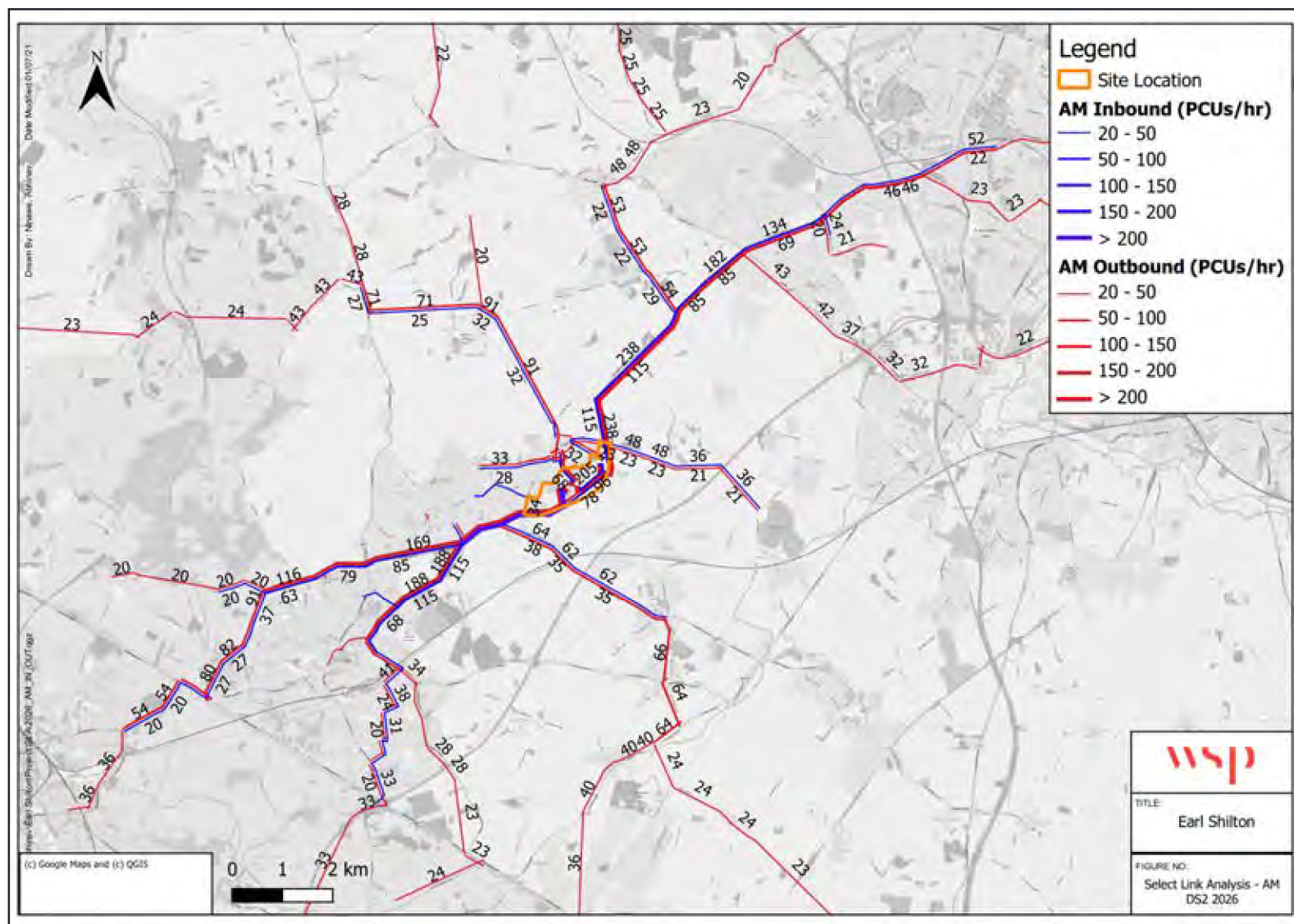


Figure 5-2 – Earl Shilton SUE trip distribution 2026 AM Peak

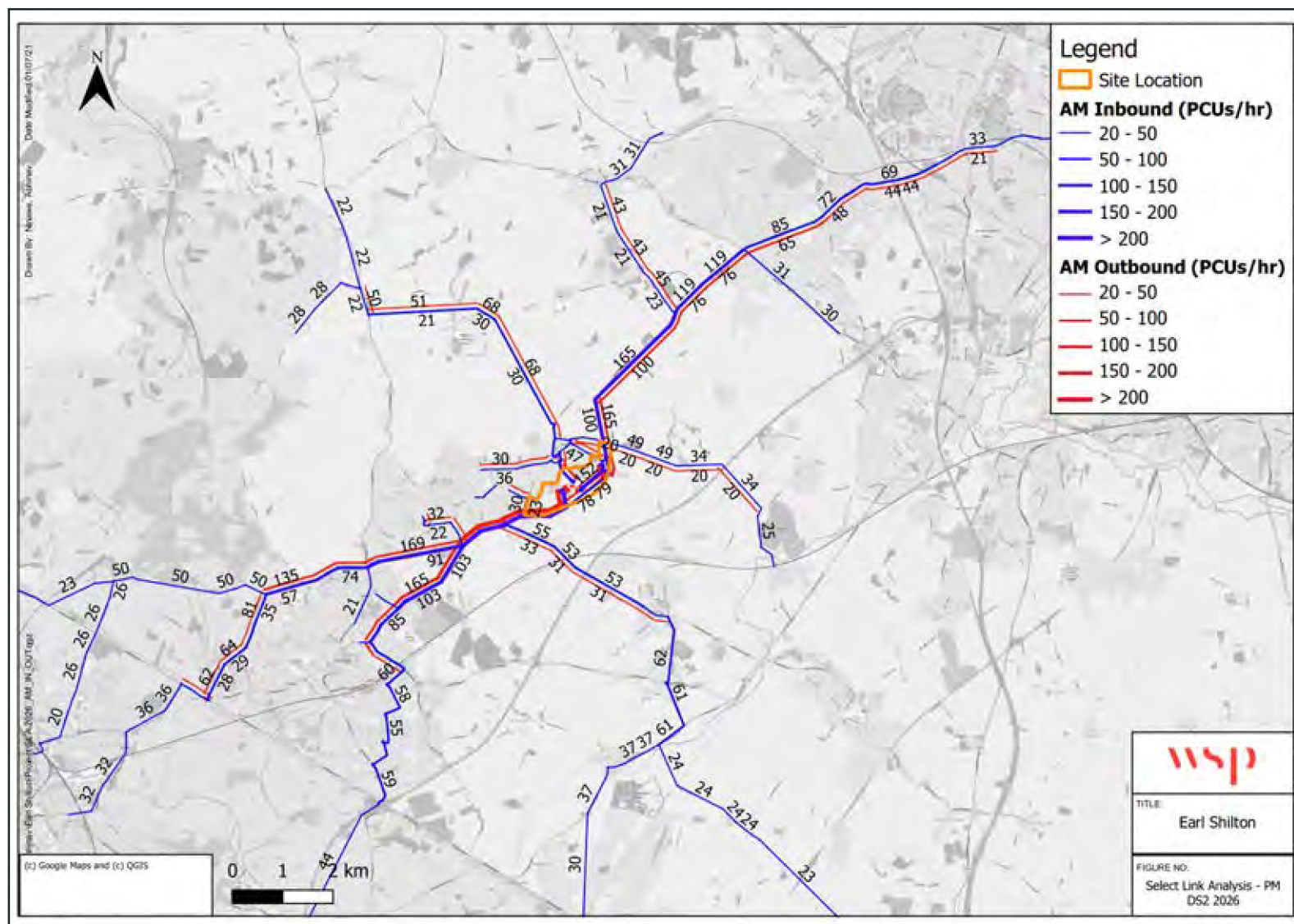


Figure 5-3 – Earl Shilton SUE trip distribution 2026 PM peak

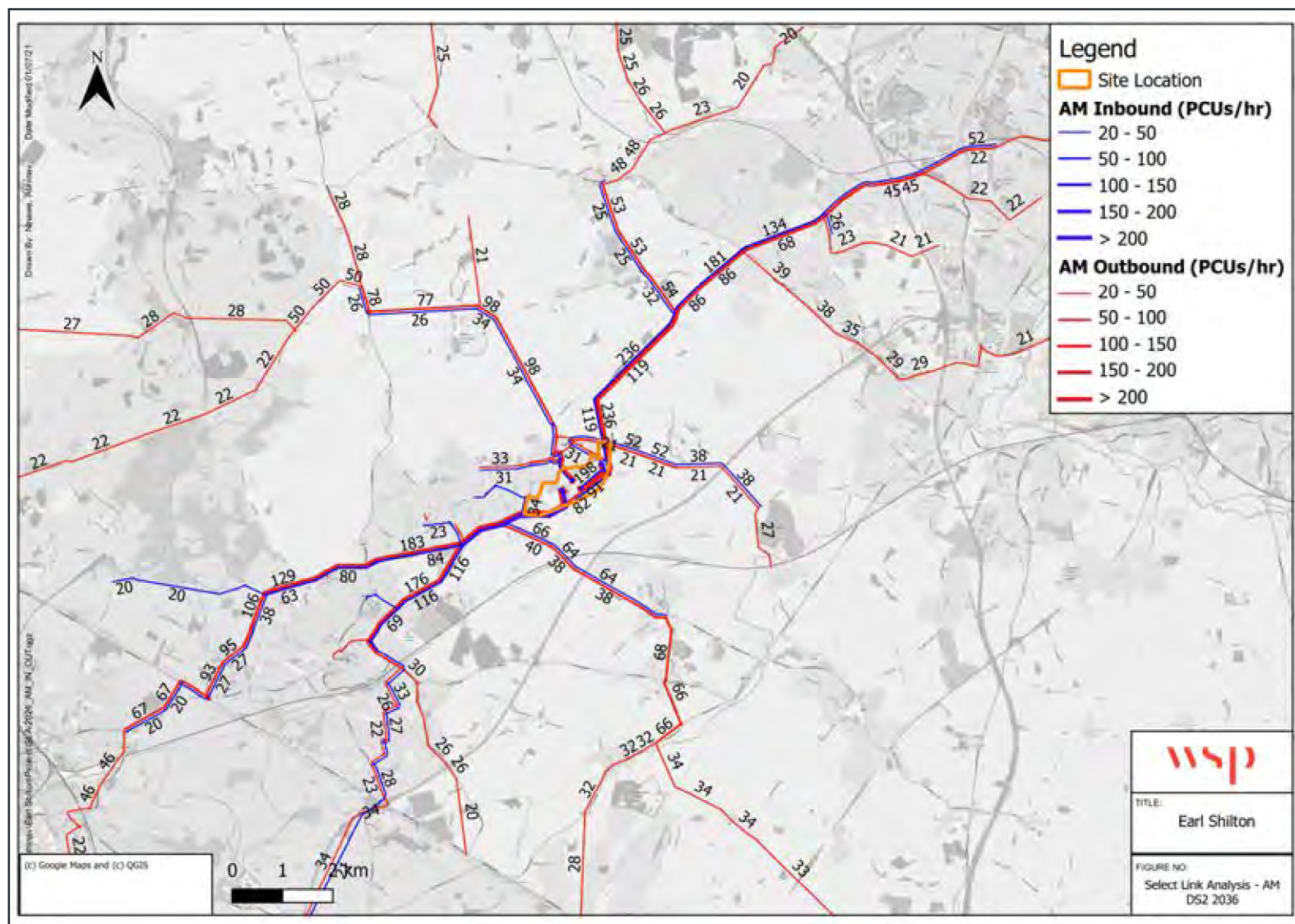


Figure 5-4– Earl Shilton SUE trip distribution 2036 AM peak

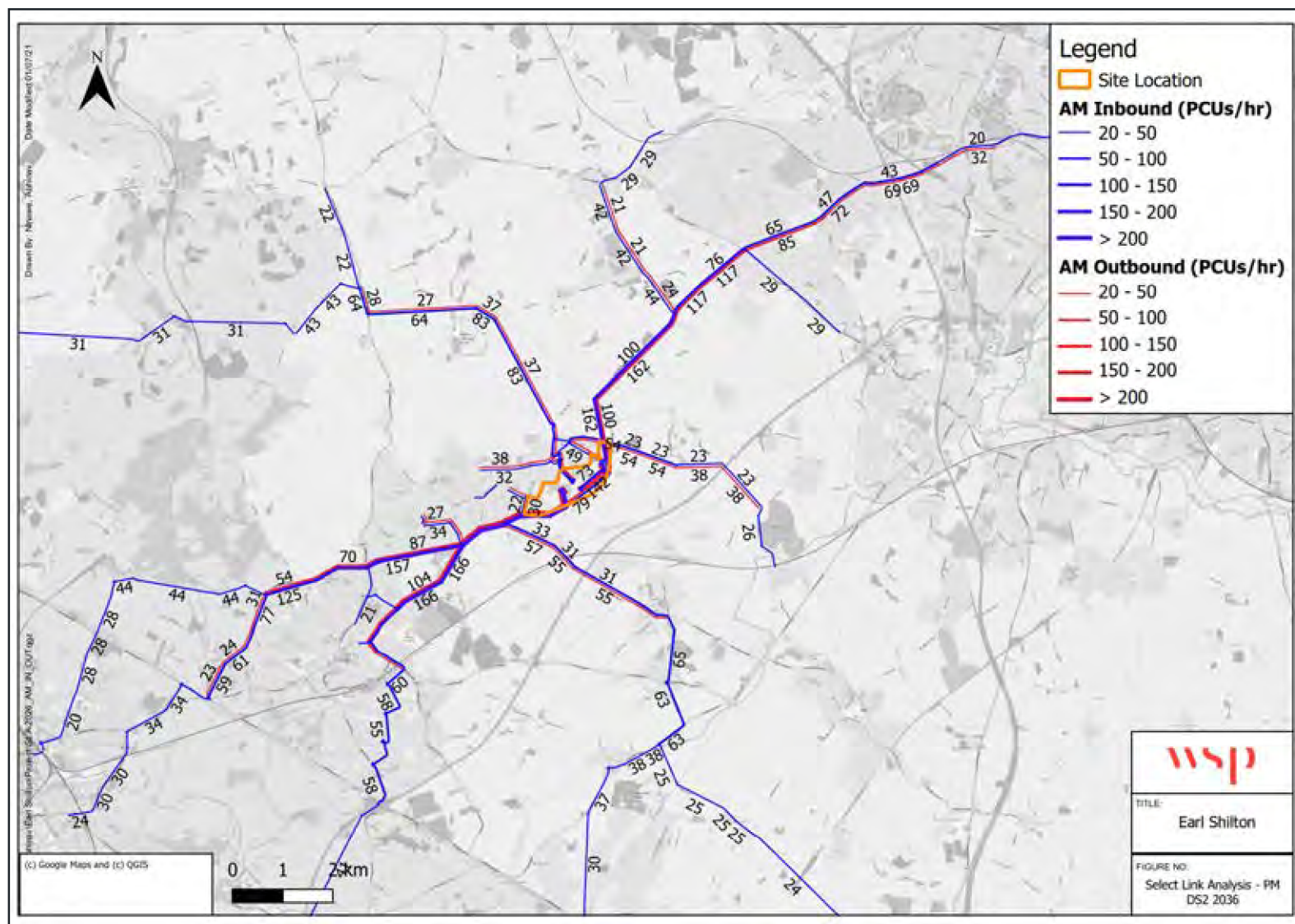


Figure 5-5– Earl Shilton SUE trip distribution 2036 PM peak

6. AREA OF INFLUENCE

6.1. RELEVANCE OF AREA OF INFLUENCE

- 6.1.1. The area of influence (AOI) is defined as the area likely to be impacted by a development or a scheme and where the traffic conditions are likely to change noticeably due to the proposals.
- 6.1.2. The AOI is used to limit the range of the detailed traffic assessment of the Earl Shilton SUE and forms the key area for reporting purposes.
- 6.1.3. The AOI is defined on a link basis, by comparing future year modelled traffic flows with and without the development.
- 6.1.4. Links which witness an increase or decrease in flow greater than five percent are defined as falling within the likely AOI.
- 6.1.5. The impacts of the development traffic are two-fold; increased flow as a direct result of development traffic and reassignment of existing traffic to alternative routes. The AOI shows both these impacts.
- 6.1.6. As per Transport Assessment guidance, the impact of any development is not considered significant if the resulting two-way flow change is less than 30 vehicles in the peak hour. For this reason, as well as to eliminate the impact of background noise and minor local redistribution impacts, links witnessing traffic change of less than 30 vehicles in single direction have been excluded from the AOI analysis.

6.2. AREA OF INFLUENCE FOR THE DEVELOPMENT

- 6.2.1. To determine the area of influence, the PRTM runs undertaken for 2026 and 2036 'Reference Case' and 'With Development' for the AM and PM peak hours are compared.
- 6.2.2. Figure 6-1 and Figure 6-2 display the 2026 AOI and the links with a flow change greater than five percent for the respective time periods. Similarly, Figure 6-3 and Figure 6-4 show the 2036 AOI.
- 6.2.3. Detailed assessment based on absolute flow change is assessed in Chapter 7 of this report.

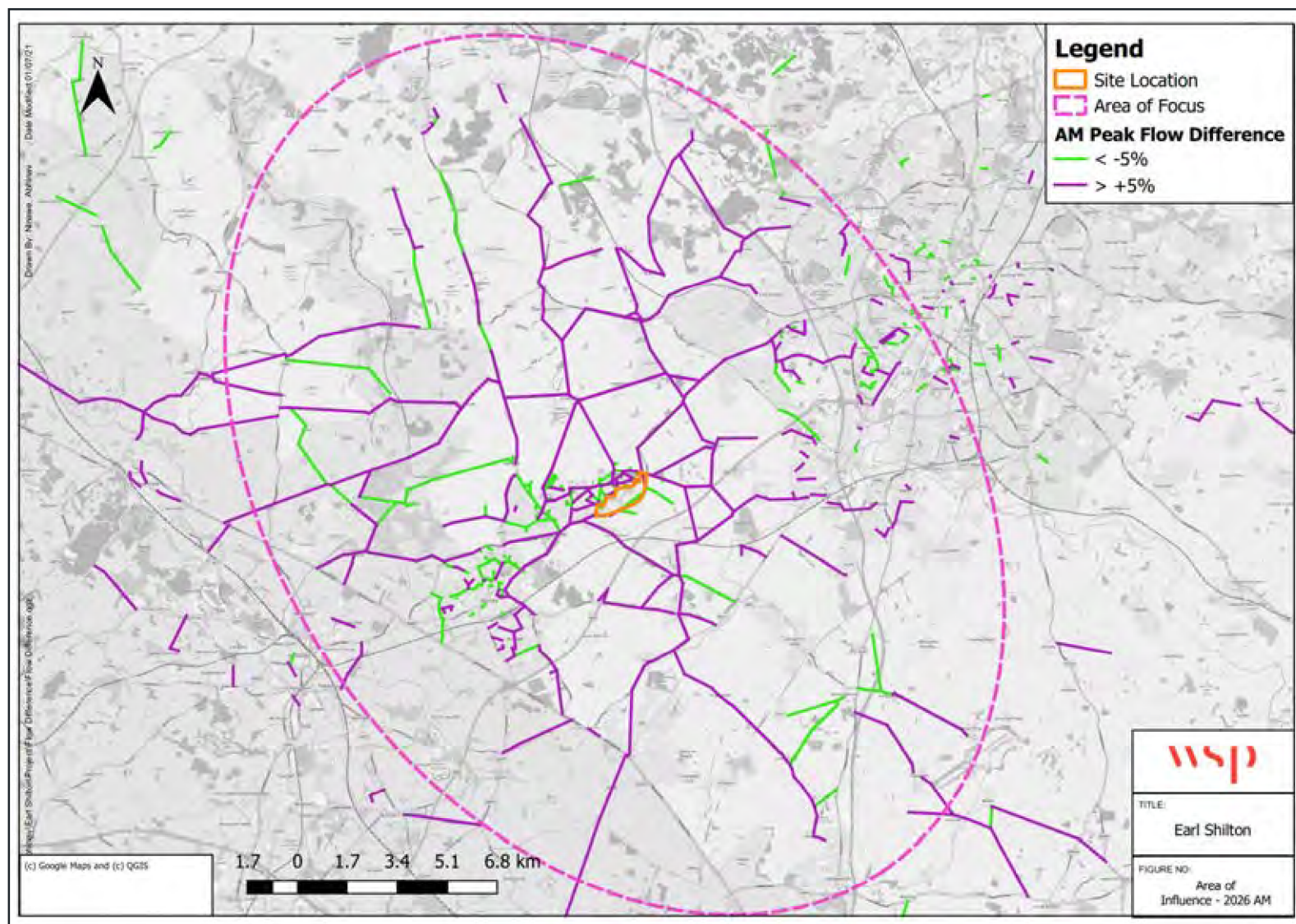


Figure 6-1 – Earl Shilton SUE area of influence in the 2026 PRTM model, AM peak- 5% flow change

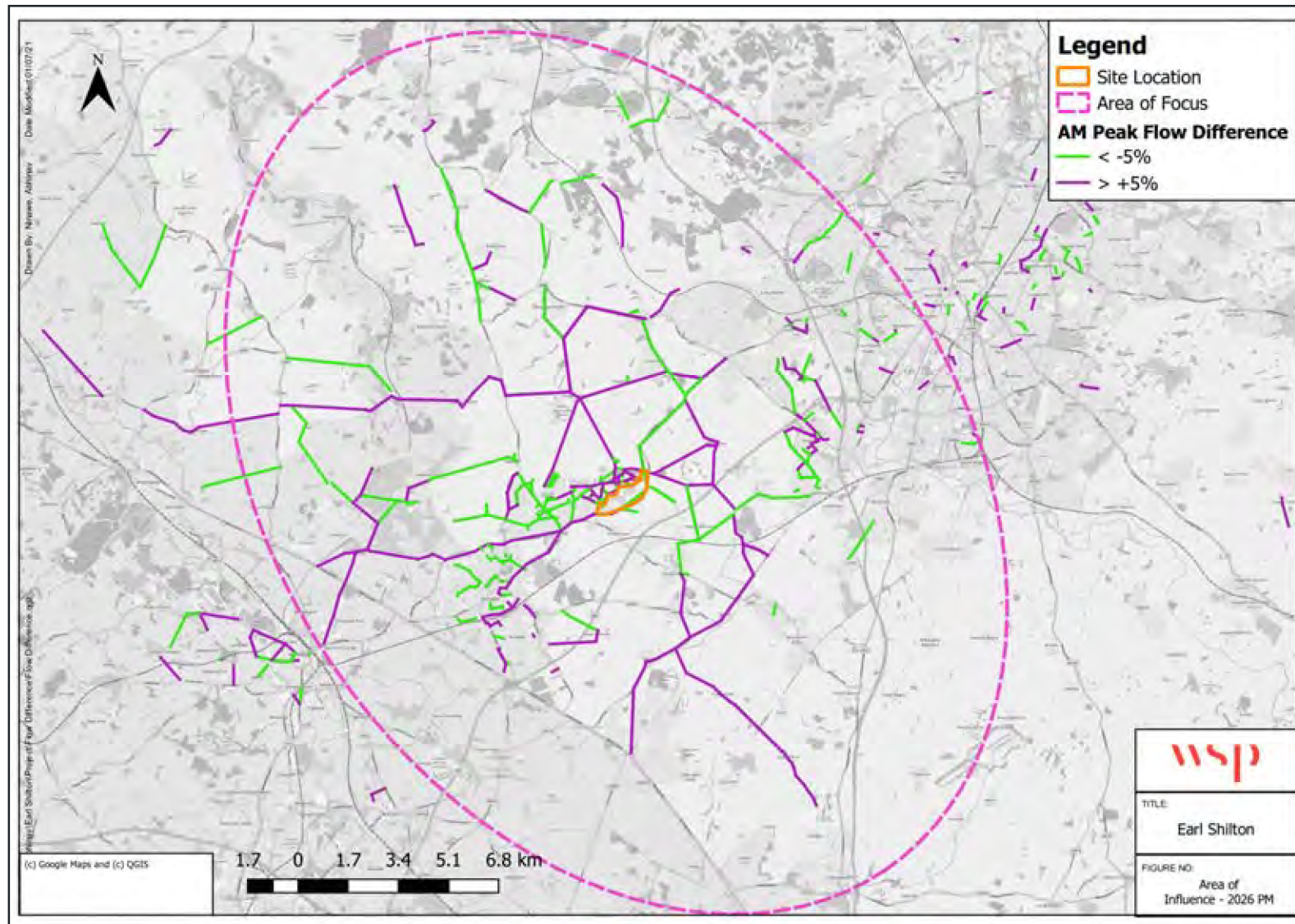


Figure 6-2 – Earl Shilton SUE area of influence in the 2026 PRTM model, PM peak- 5% flow change

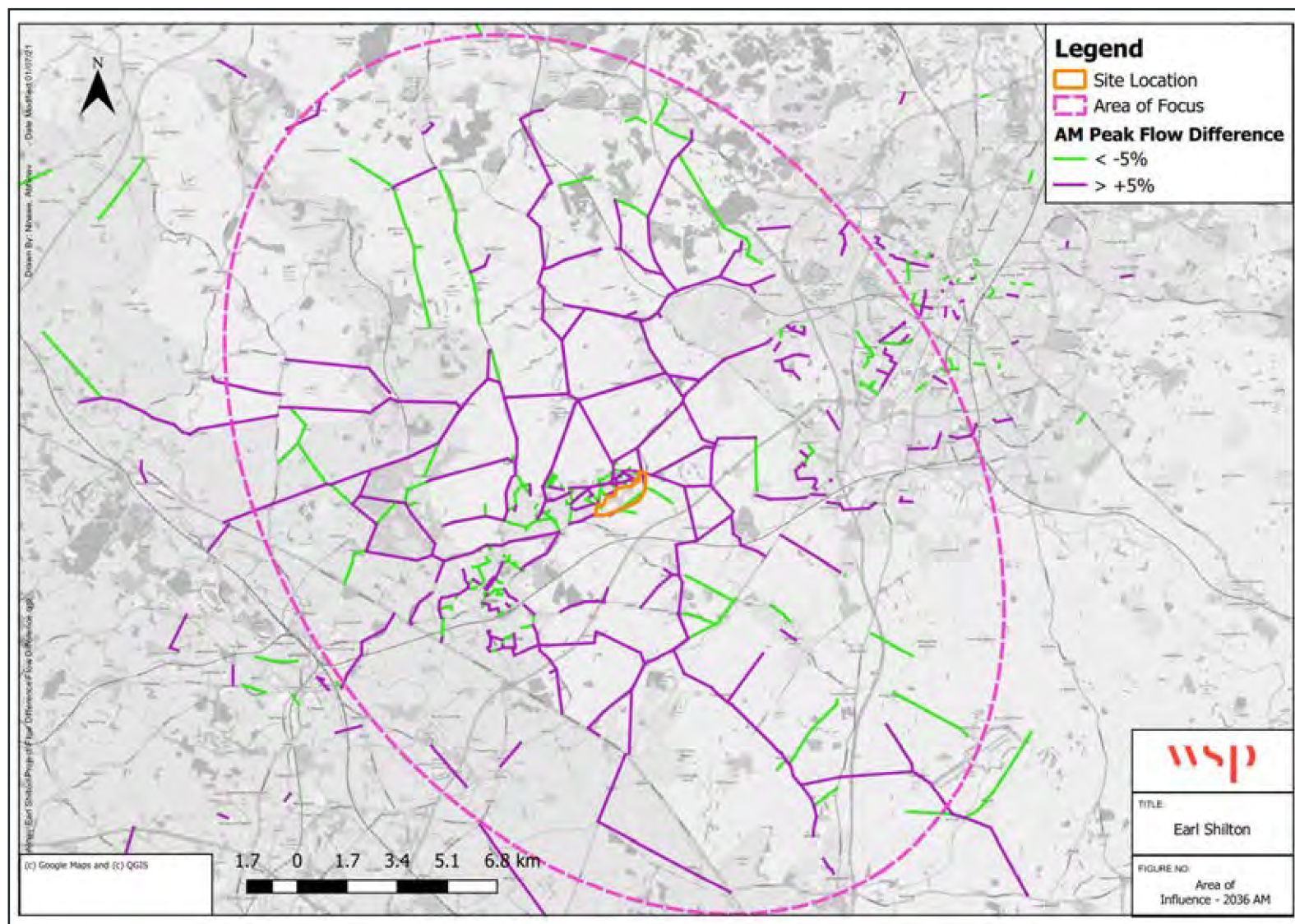


Figure 6-3 – Earl Shilton SUE area of influence in the 2036 PRTM model, AM peak- 5% flow change

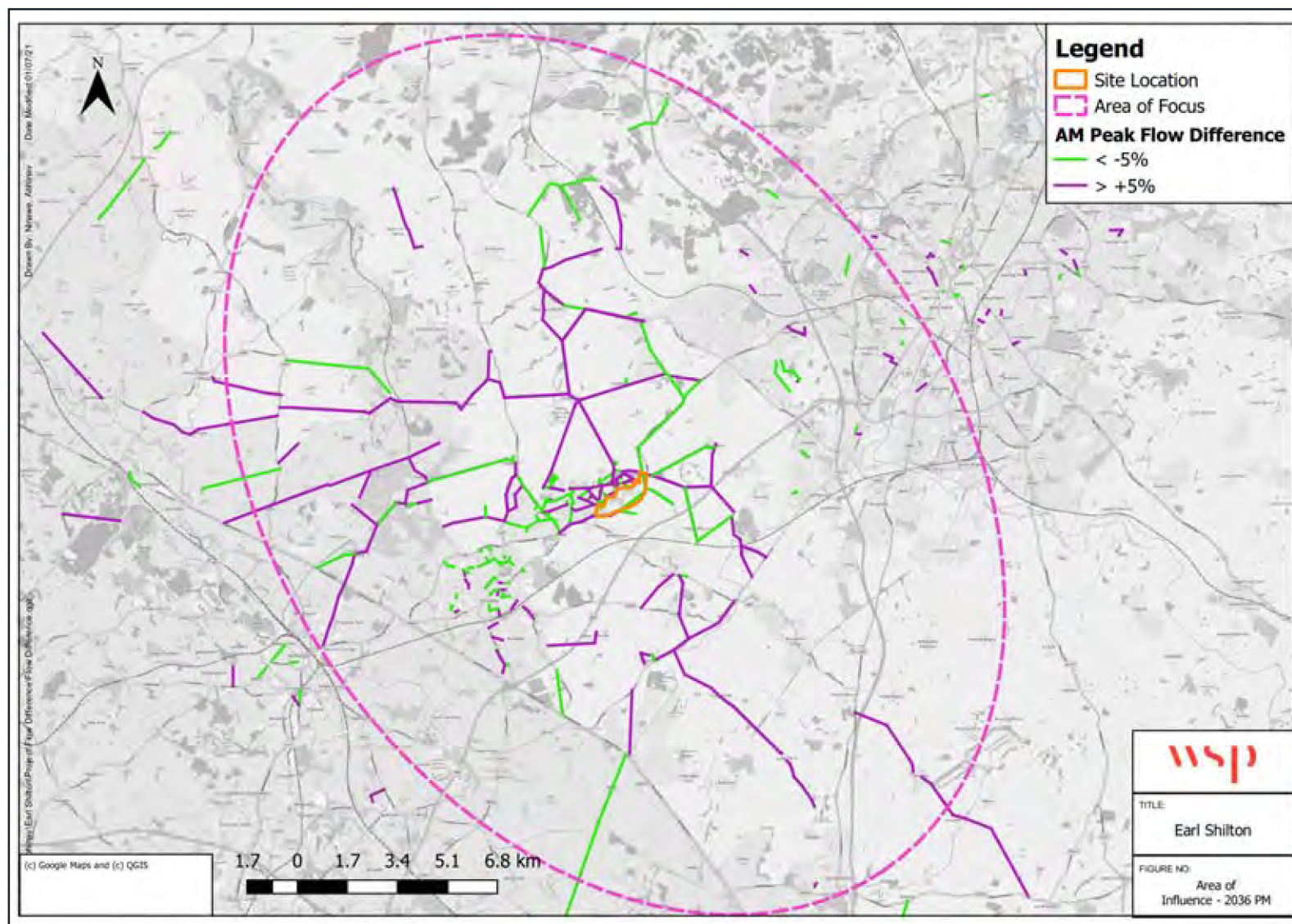


Figure 6-4– Earl Shilton SUE area of influence in the 2036 PRTM model, PM peak- 5% flow change

7. MODELLING RESULTS

7.1. DEVELOPMENT IMPACT ASSESSMENT

- 7.1.1. To assess the impacts of development, PRTM modelling results for “With Development” scenario were compared against the Core scenario. This provides an indication of the impact the development is likely to have on the traffic without any mitigation measures. These impacts are analysed in terms of:

- Traffic flow changes; and,
- Delay difference plots.

TRAFFIC FLOW CHANGES

- 7.1.2. The changes in traffic flows between the 2026 “With Development” and Core Scenario are presented in Figure 7-1 and Figure 7-2 respectively for AM peak and PM peak hours. The level of change is indicated using proportional bandwidths, blue indicates an increase in flow, green indicates a decrease in flow.
- 7.1.3. Similarly Figure 7-3 and Figure 7-4, show the changes in traffic flows between the 2036 “With Development” and Core Scenario for AM peak and PM peak hours
- 7.1.4. The figures show the change of traffic pattern along A47, Shilton Road and Thurlaston Lane. This is due to the reassignment of background traffic.

DELAY DIFFERENCE PLOTS

- 7.1.5. The changes in delay between the 2026 “With Development” and Core Scenario are presented in Figure 7-5 and Figure 7-6 respectively for AM peak and PM peak hours. The level of change is indicated using proportional bandwidth, magenta indicates an increase in delay, green indicates a decrease, and grey indicates insignificant change in delay of less than +/-3 seconds. It can be noticed that overall presents delay is insignificant.

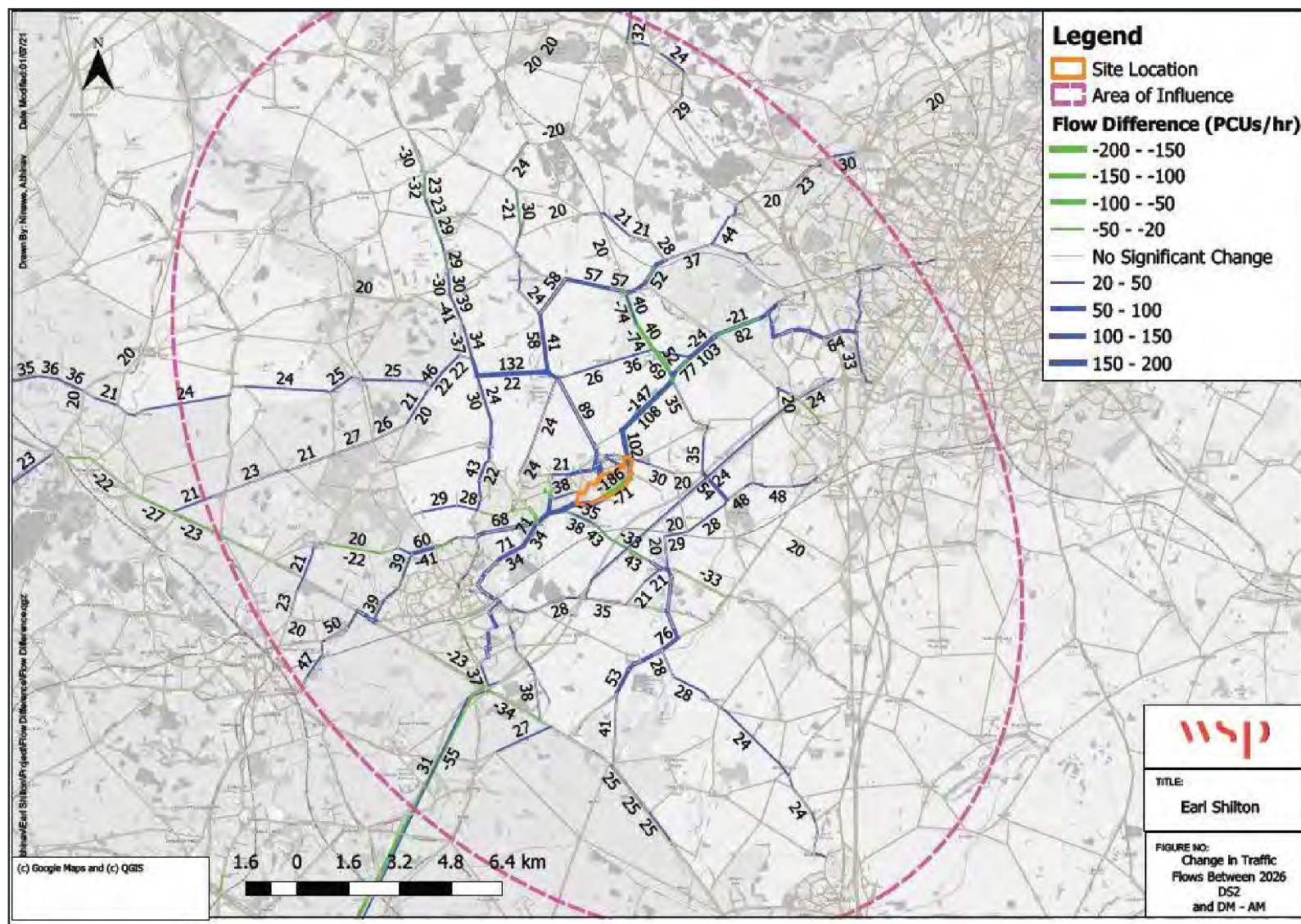


Figure 7-1 – AM peak traffic flow change between 2026 Core Scenario and 2026 With Development Scenario

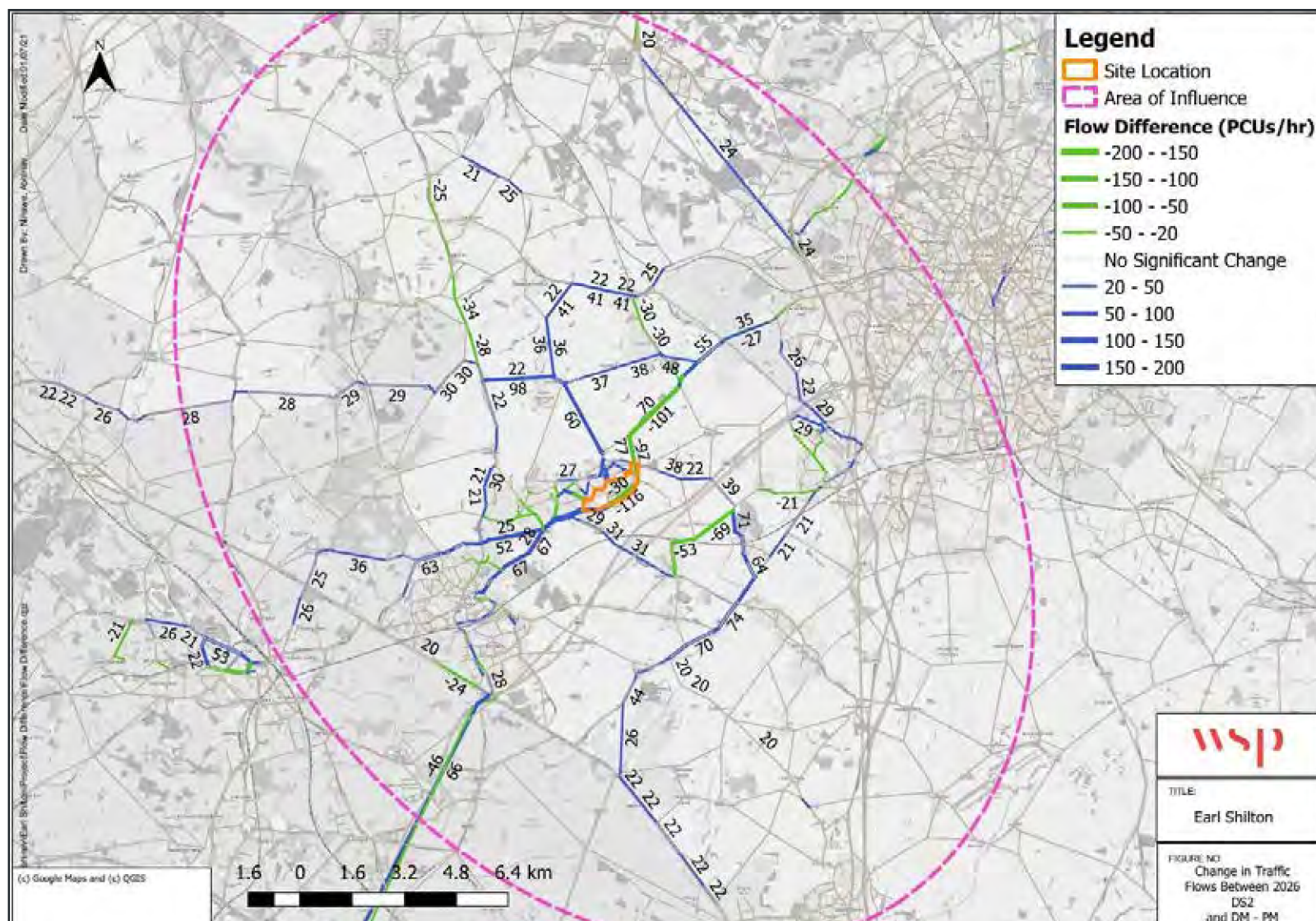


Figure 7-2 – PM peak traffic flow change between 2026 Core Scenario and 2026 With Development Scenario

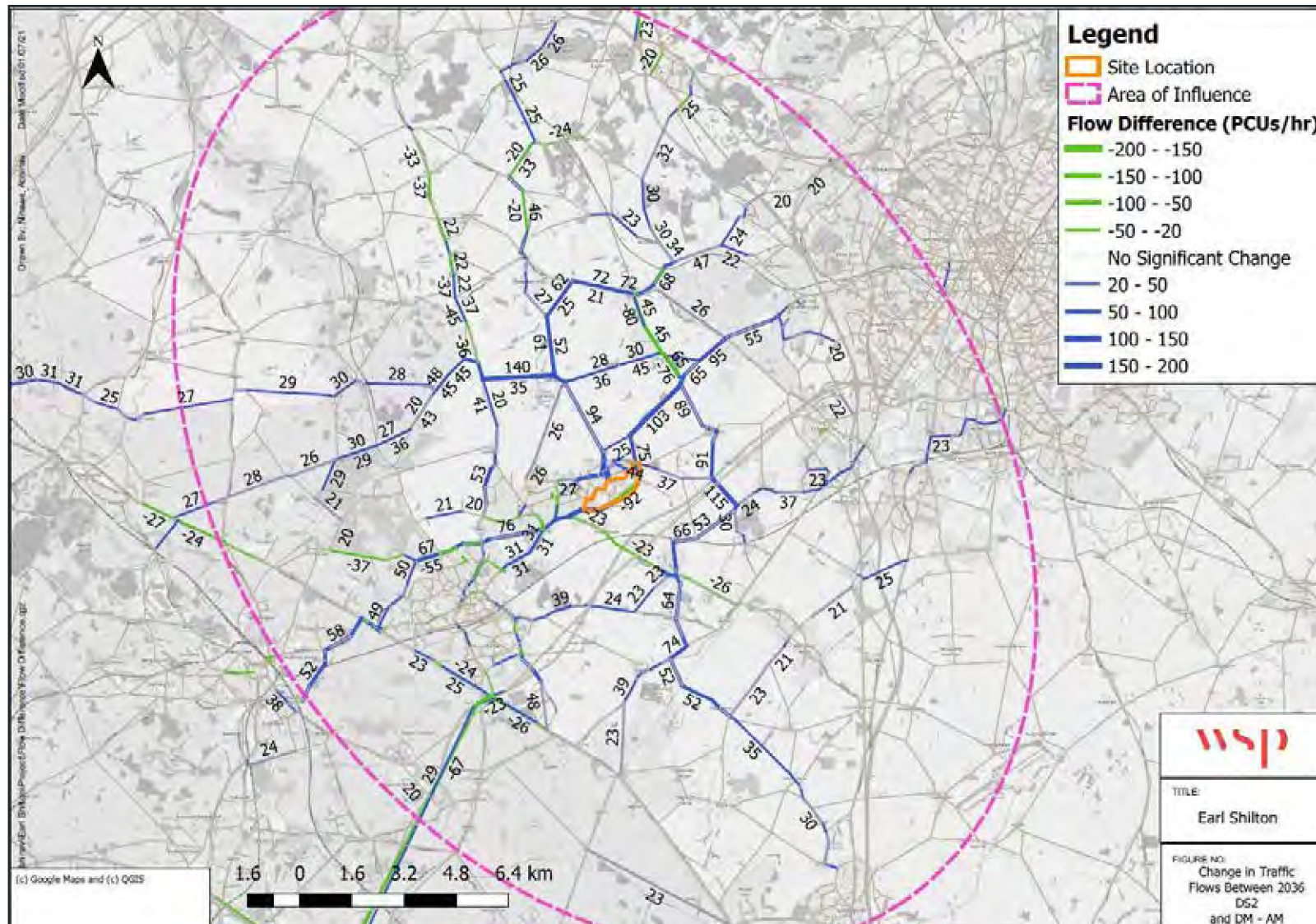


Figure 7-3 – AM peak traffic flow change between 2036 Core Scenario and 2036 With Development Scenario

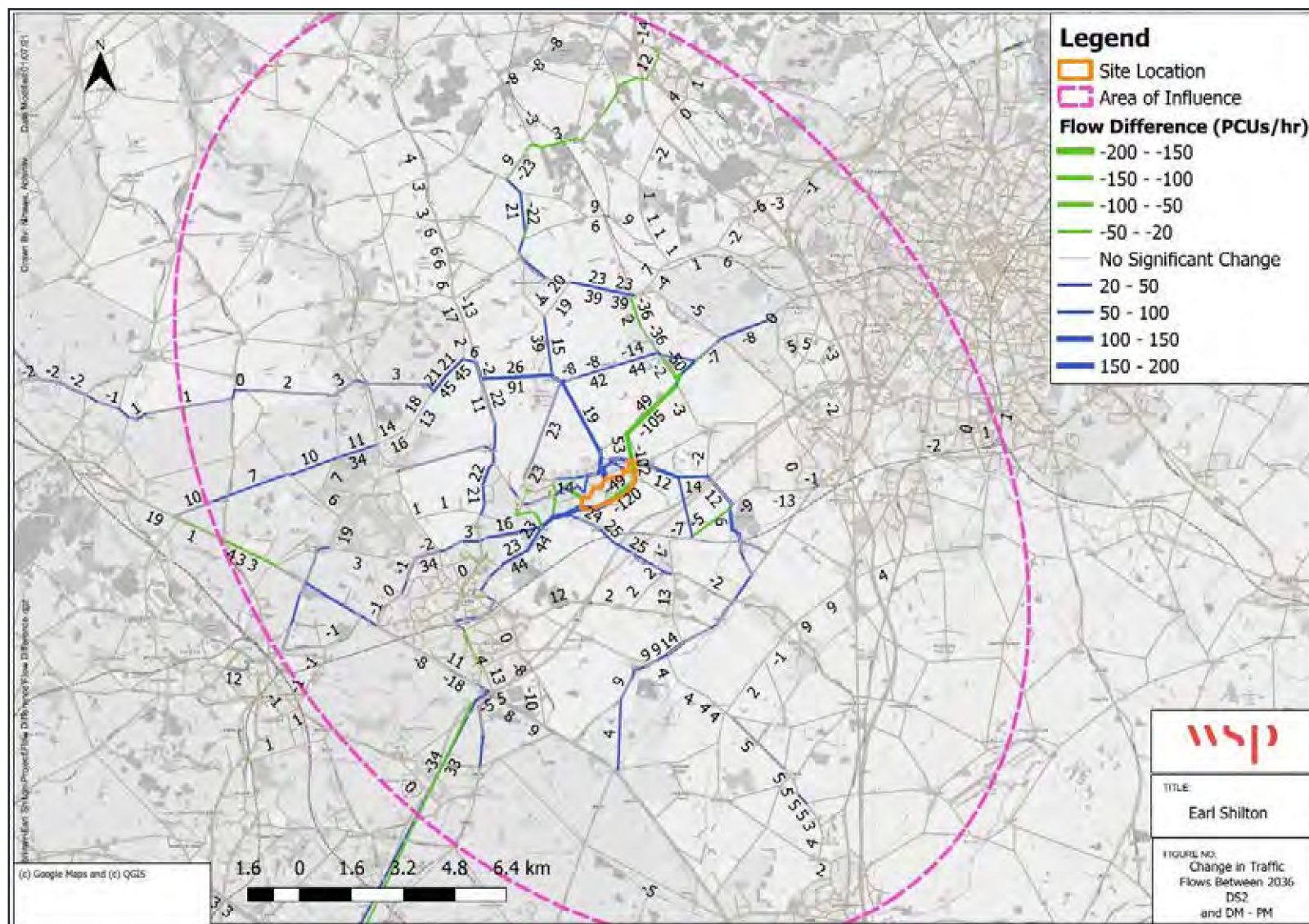


Figure 7-4 – PM peak traffic flow change between 2036 Core Scenario and 2036 With Development Scenario

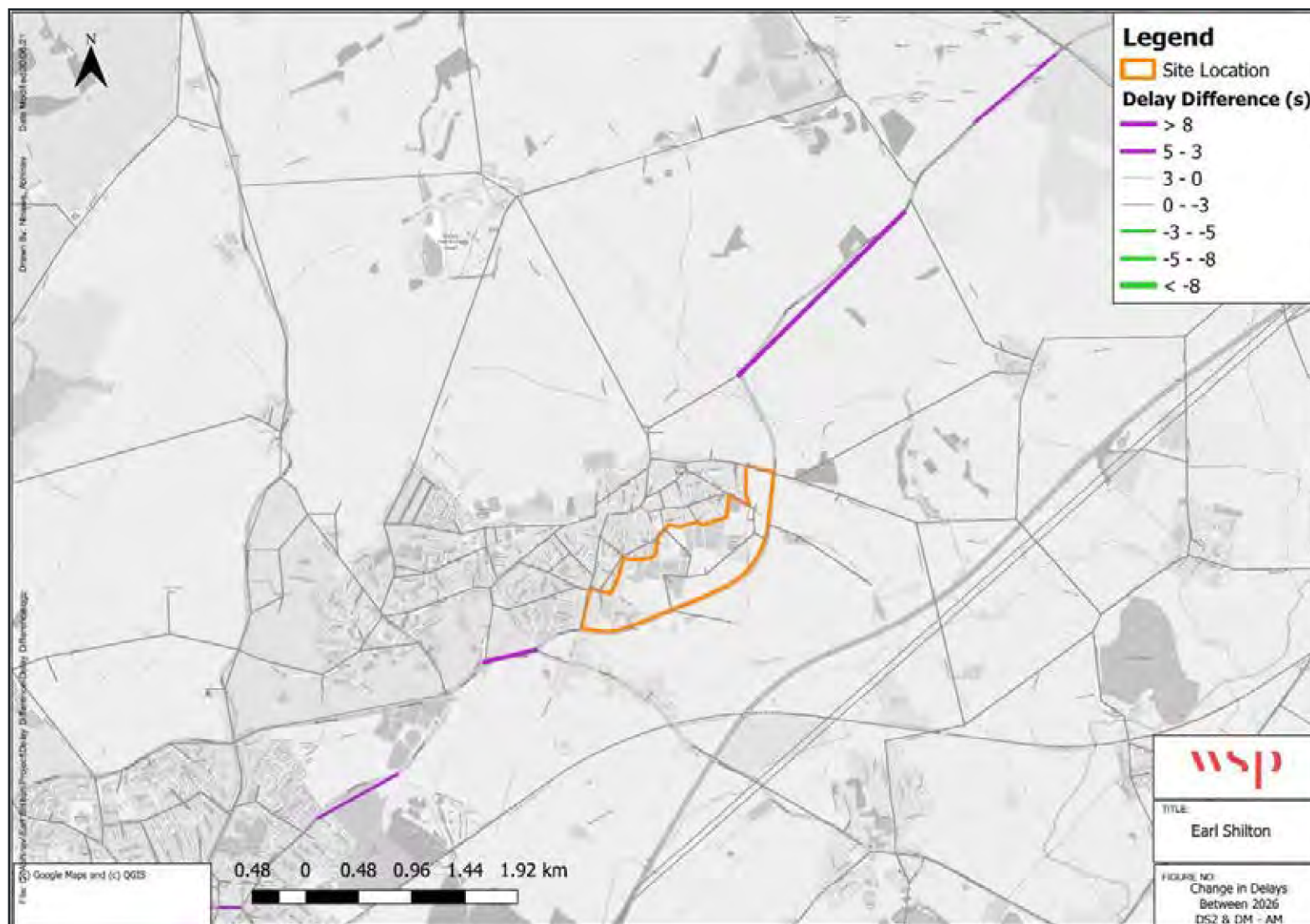


Figure 7-5 – AM peak delay change between 2026 Core Scenario and 2026 With Development Scenario

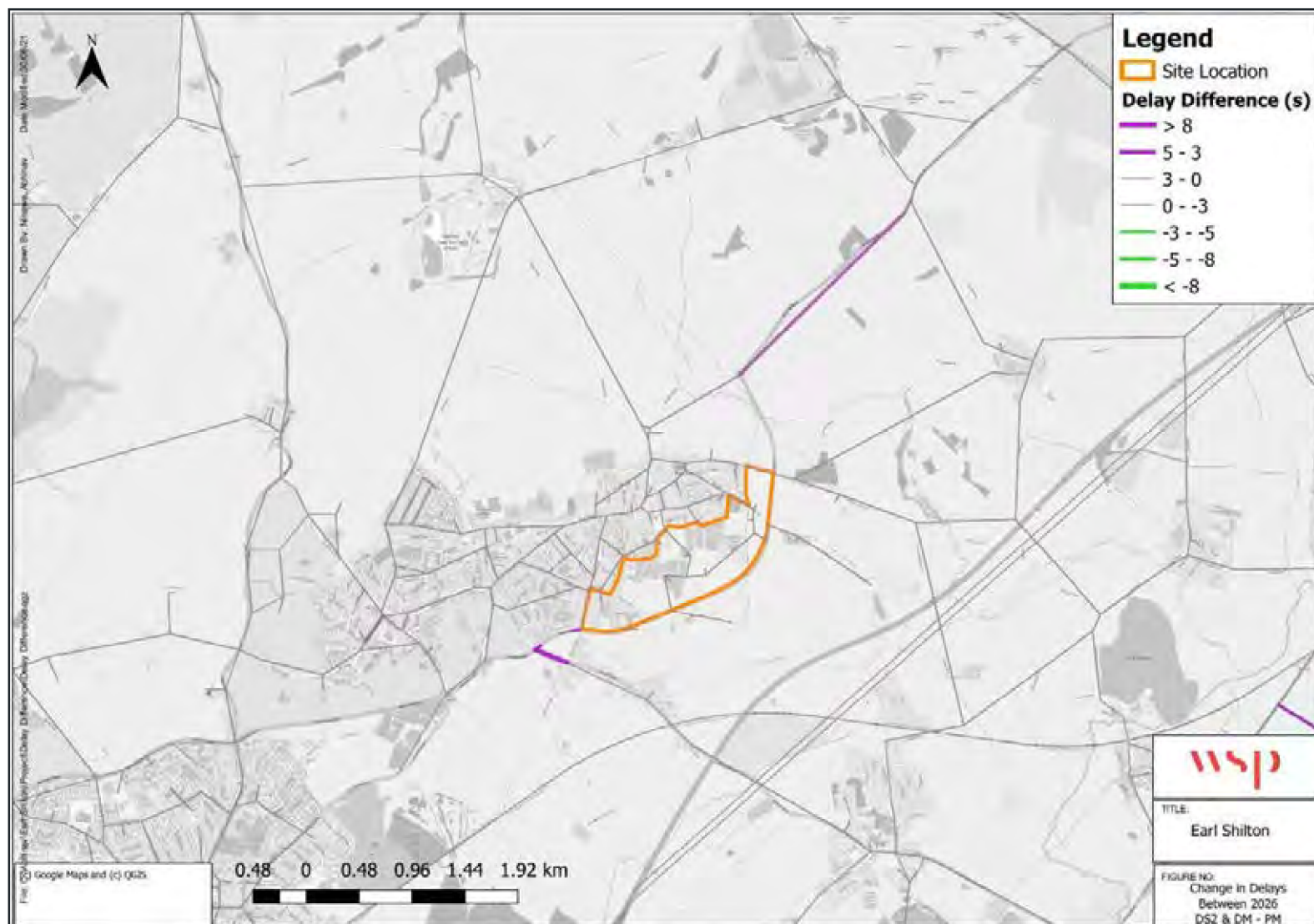


Figure 7-6 – PM peak delay change between 2026 Core Scenario and 2026 With Development Scenario

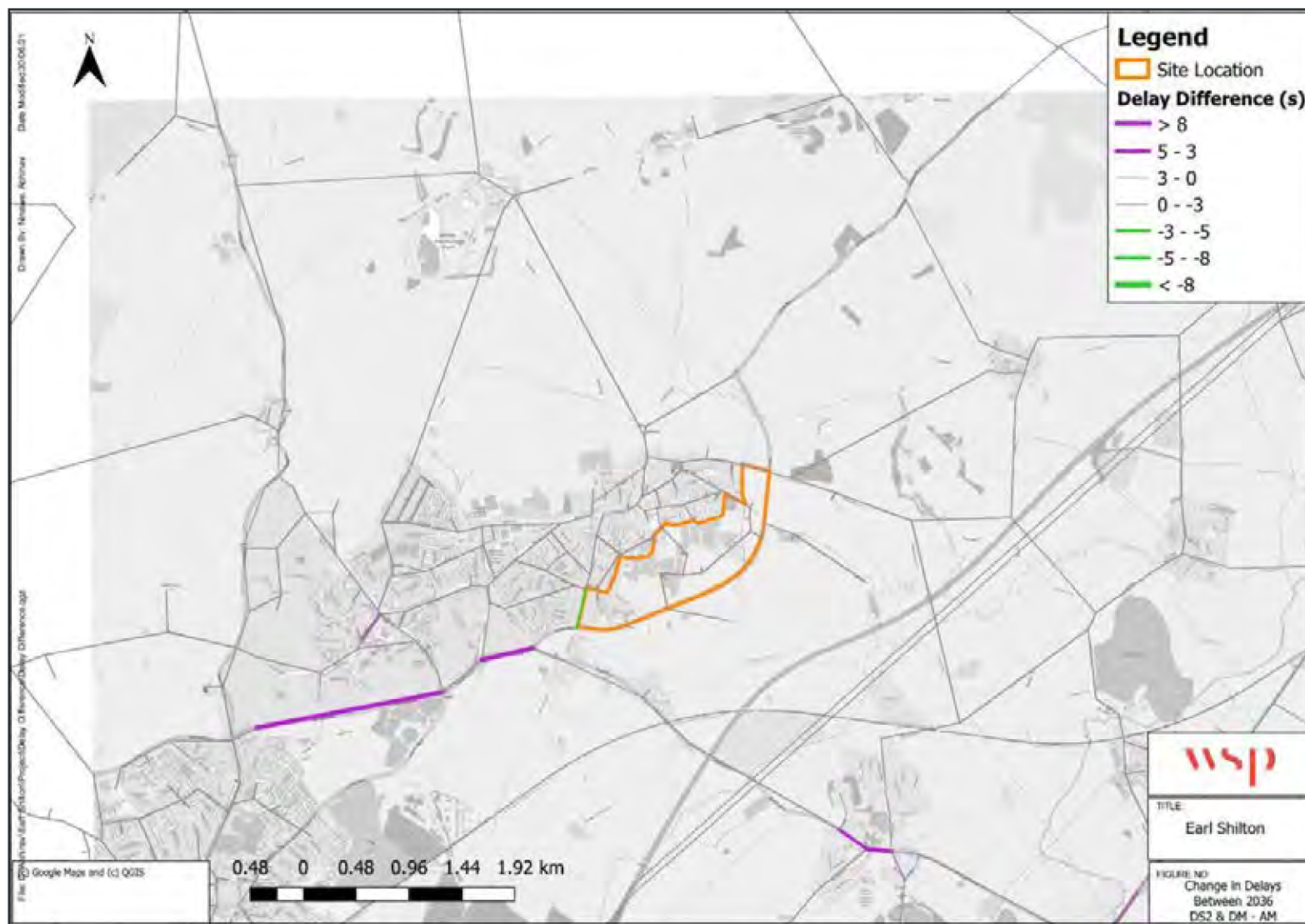


Figure 7-7 – AM peak delay change between 2036 Core Scenario and 2036 With Development Scenario

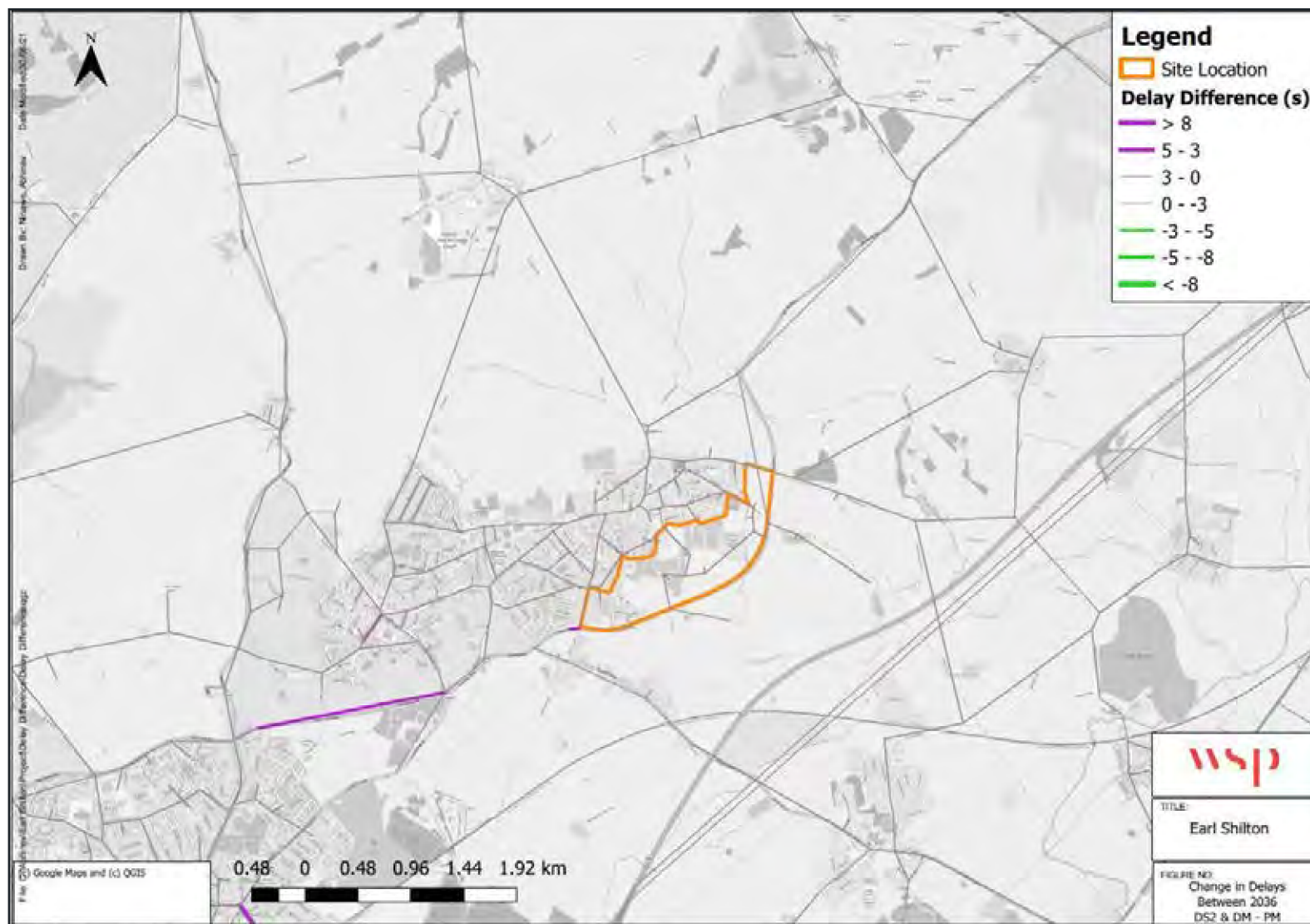


Figure 7-8 – PM peak delay change between 2036 Core Scenario and 2036 With Development Scenario

7.2. MODELLING OUTPUTS FOR DETAILED JUNCTION ASSESSMENT

7.2.1. Table 7-1 below lists the nine junctions for which turning flow outputs (PCUs) and V/C ratios are requested and produced. Six of the junctions are local junctions whilst the remaining three are strategic. A corresponding map is presented below in Figure 7-9.

Table 7-1 – Requested Junctions

Number	Junction Name
1	A47/ Leicester Road Roundabout
2	A47 / A581 Station Road Signalised Junction
3	A47 / Wilkinson lane Signalised Junction
4	A47 / Masefield Drive Priority Junction
5	A47 / Leicester Road Roundabout
6	A47 Hinckley Road / B582 Leicester Lane / A582 Desford Road
7	A47 / A447 Ashby Road Signalised Junction
8	Dodwells Roundabout
9	A5 / A47 The Long Shoot Signalised Junction

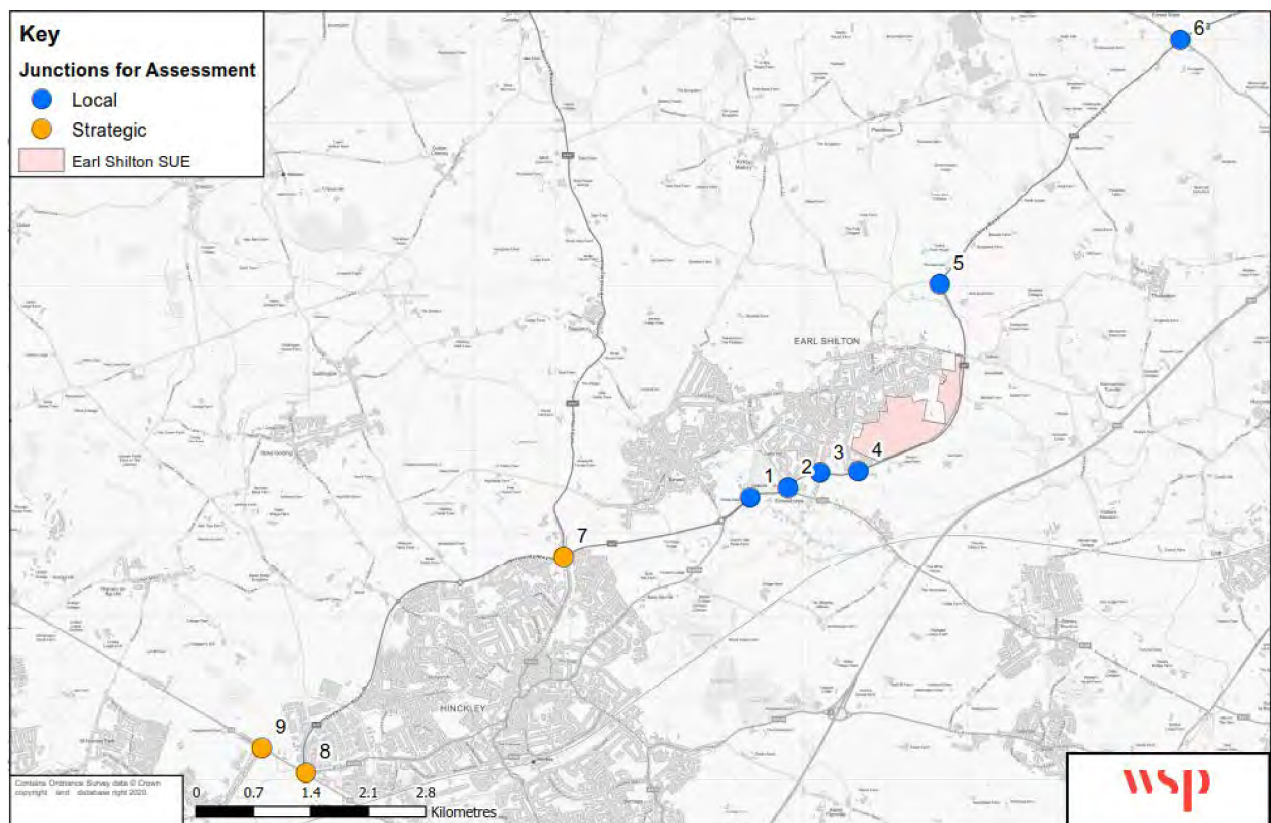


Figure 7-9 – Junctions Identified for traffic flows

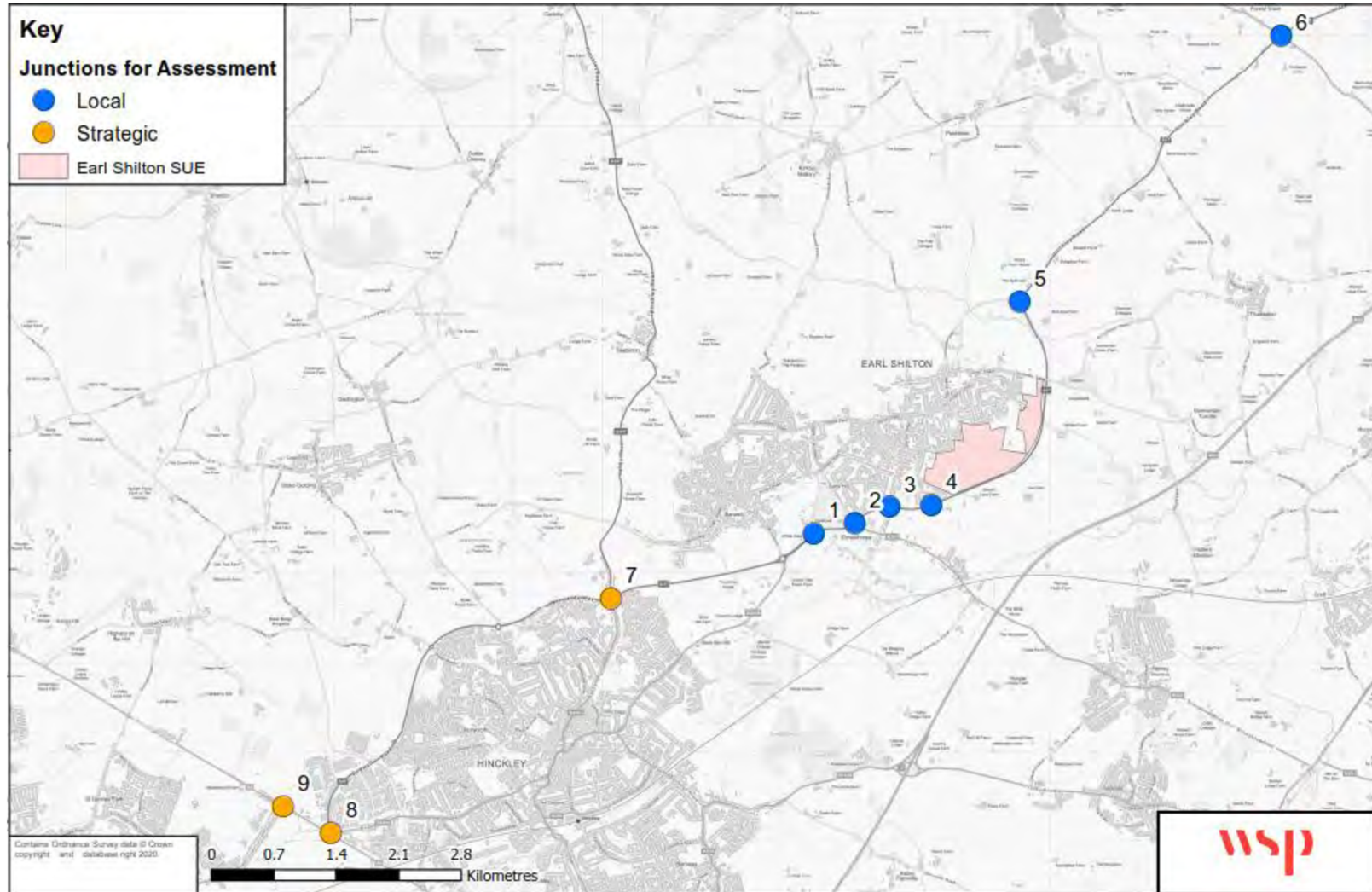
- 7.2.2. The detailed turn flows for these identified junctions were extracted from the PRTM model for each time-period and modelled scenario. These turn flows are included in **Appendix A**.
- 7.2.3. The volume capacity ratio for each turning movement for these identified junctions were extracted from the PRTM model for each time-period and modelled scenario. These volume capacity ratios are included in **Appendix B**.
- 7.2.4. As previously informed, the PRTM is not calibrated for junction turning movements, therefore these results should be treated with appropriate caution.

Appendix A

JUNCTION TURNING FLOWS



LOCATIONS OF FLOW REQUESTED JUNCTIONS



FLOW REQUESTED JUNCTIONS

Number	Junction Name
1	A47/ Leicester Road Junction
2	A47 / A581 Station Road Junction
3	A47 / Wilkinson lane Junction
4	A47 / Masefield Drive Junction
5	A47 / Leicester Road Junction
6	A47 Hinckley Road / B582 Leicester Lane / A582 Desford Road Junction
7	A47 / A447 Ashby Road Junction
8	Dodwells Roundabout
9	A5 / A47 The Long Shoot Junction

SCENARIOS

❑ 2021 Forecast Year

- ❑ **2021 DM: Core – no development and no associated infrastructure (this is assumed to be the ‘existing’ baseline).**

❑ 2026 Forecast Year

- ❑ **2026 DM: Core – no development and no associated infrastructure.**
- ❑ **2026 DS: Core + Full Development + Access Arrangements – 100% occupancy.**

❑ 2036 Forecast Year

- ❑ **2036 DM: Core – no development and no associated infrastructure.**
- ❑ **2036 DS: Core + Full Development + Access Arrangements – 100% occupancy.**

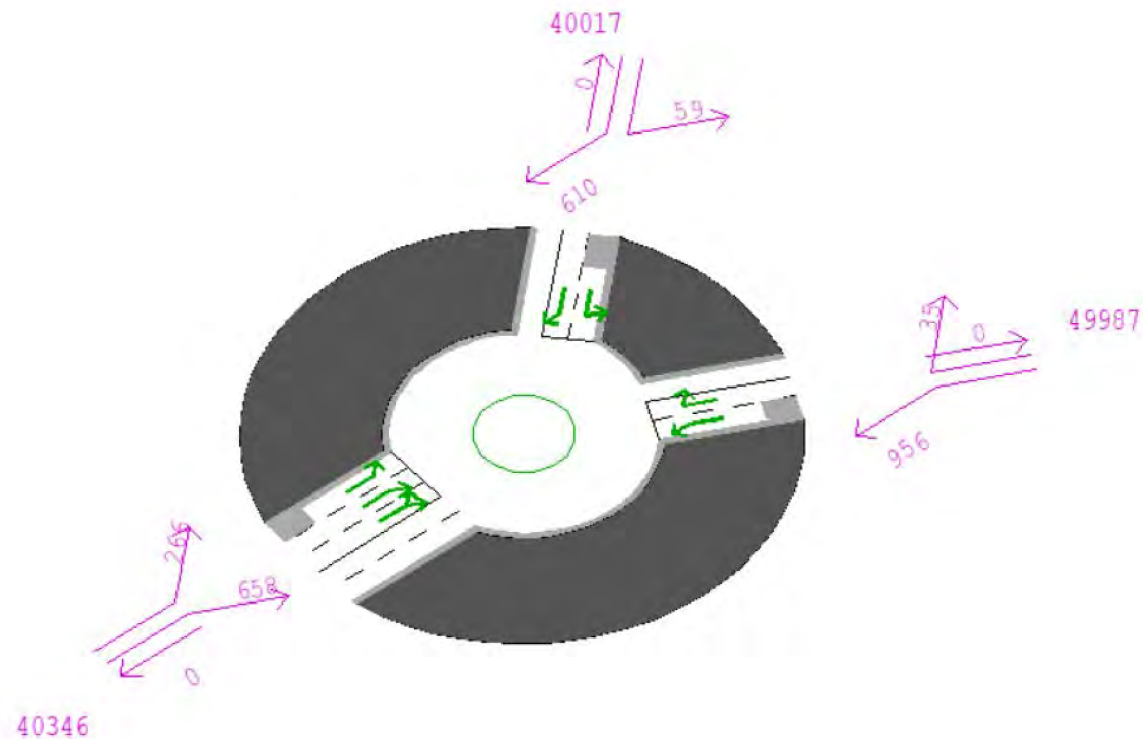


2021 DM

AM Peak

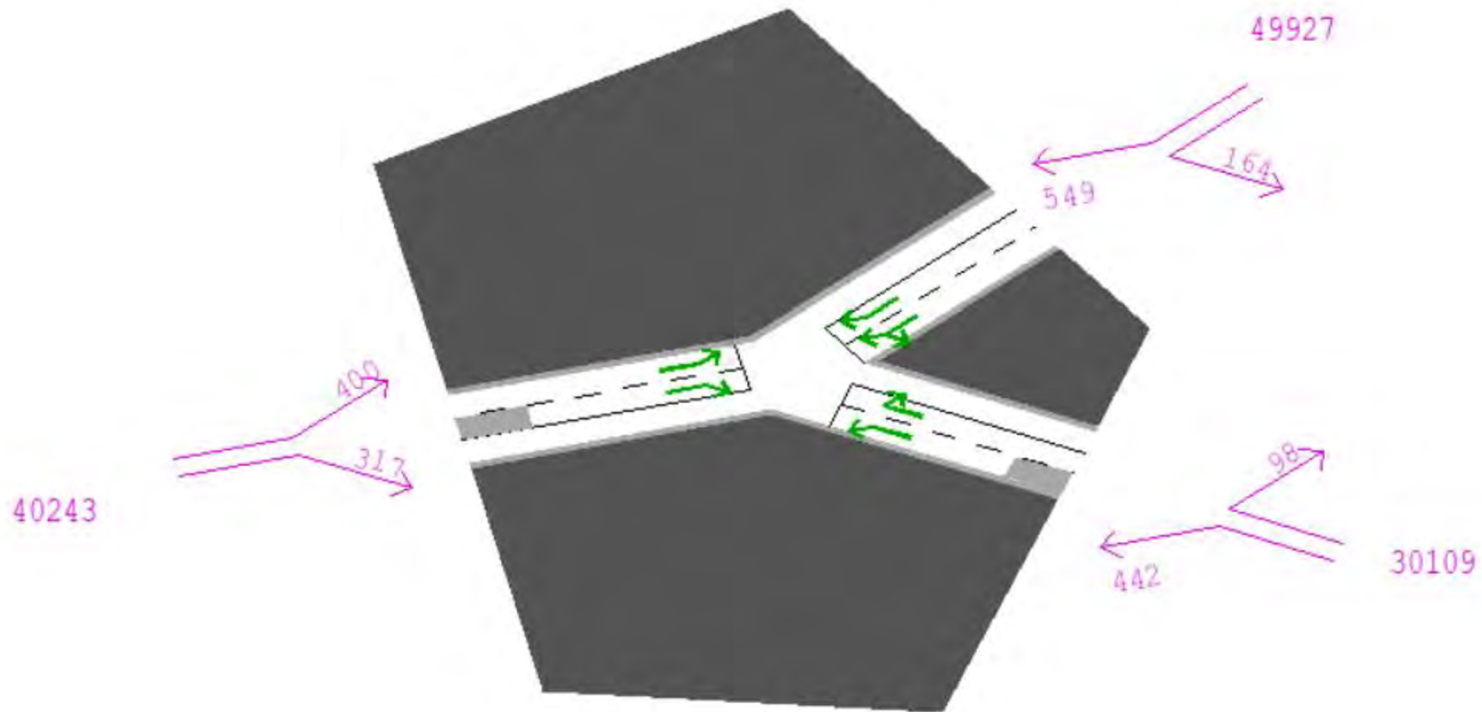
1. A47/ LEICESTER ROAD JUNCTION

2021 DM Scenario - AM Peak



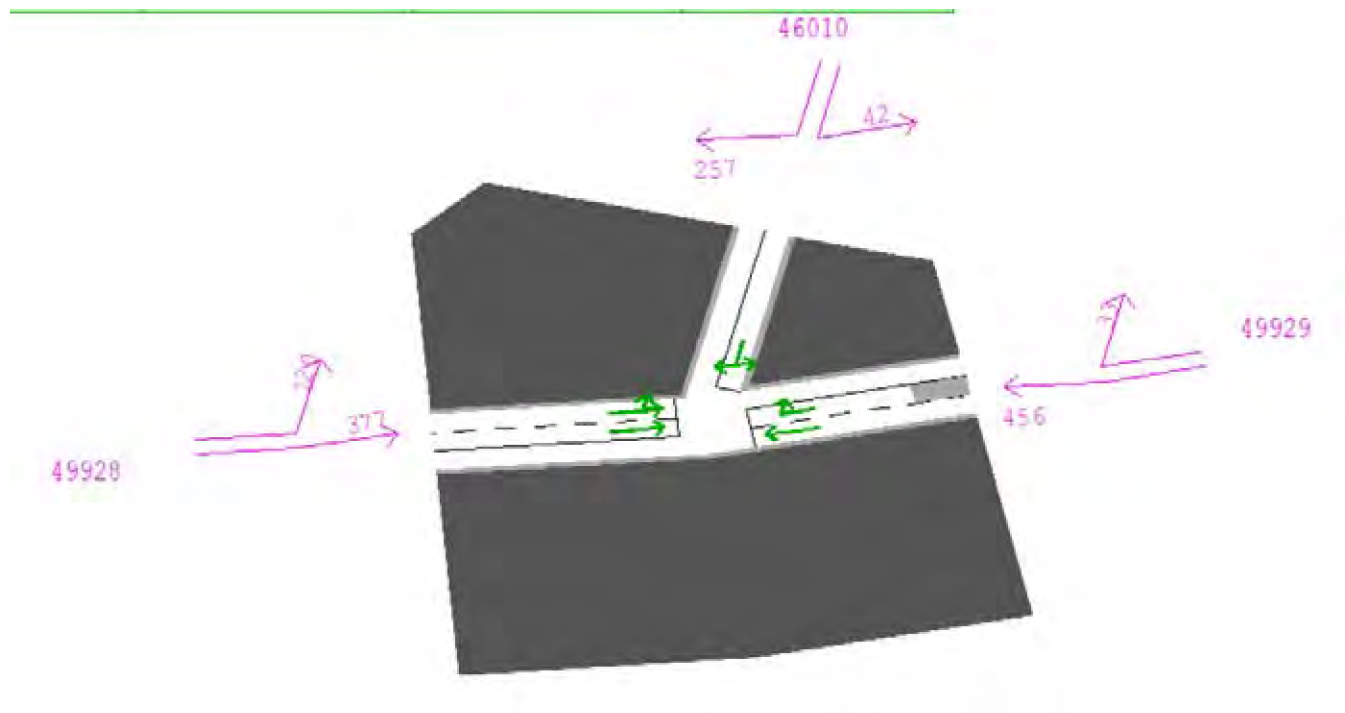
2. A47 / A581 STATION ROAD JUNCTION

2021 DM Scenario - AM Peak



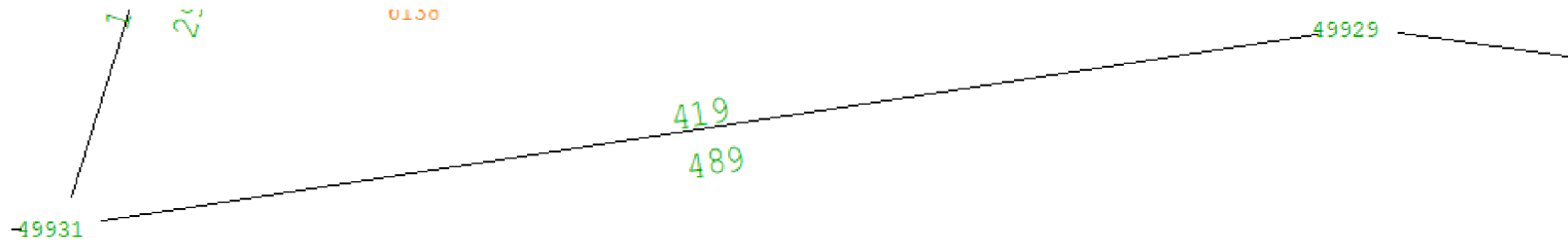
3. A47 / WILKINSON LANE JUNCTION

2021 DM Scenario - AM Peak



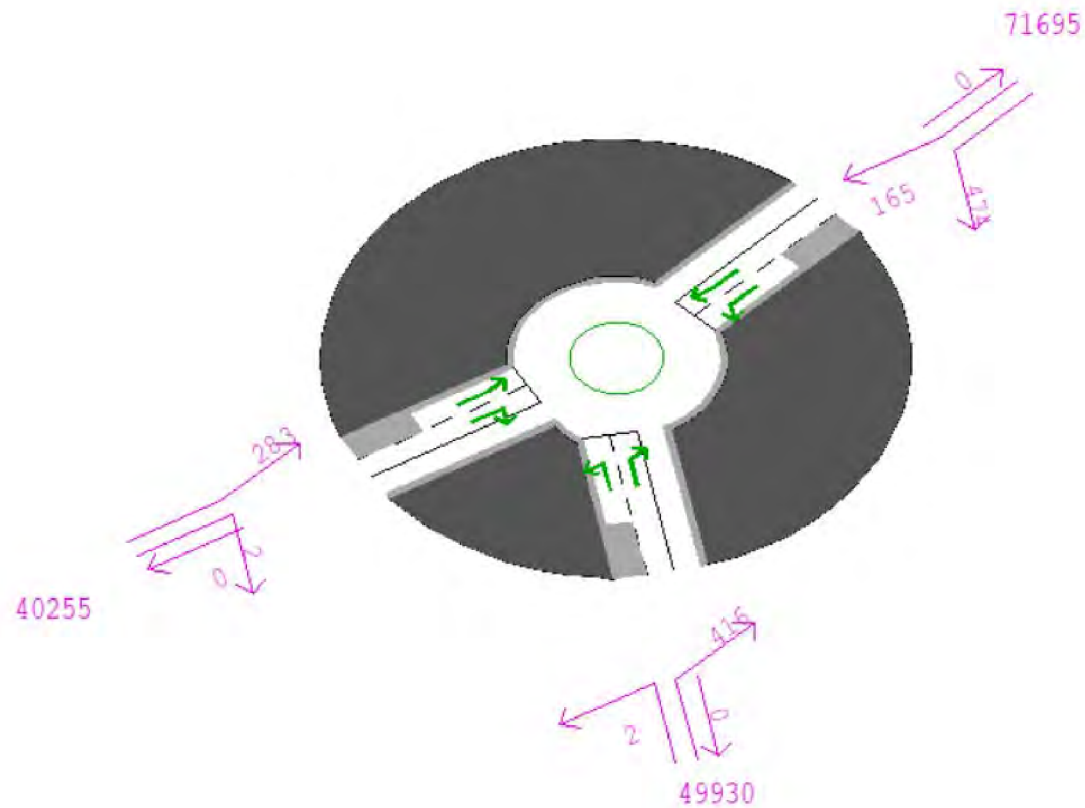
4. A47 / MASEFIELD DRIVE JUNCTION

2021 DM Scenario - AM Peak



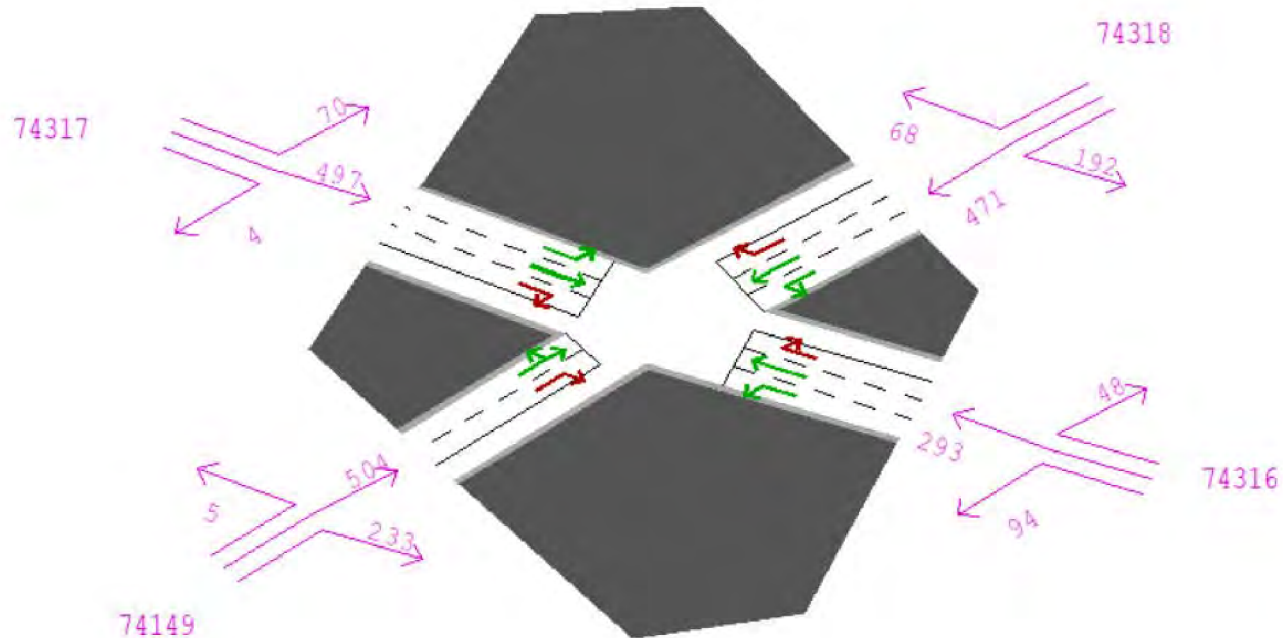
5. A47 / LEICESTER ROAD JUNCTION

2021 DM Scenario - AM Peak



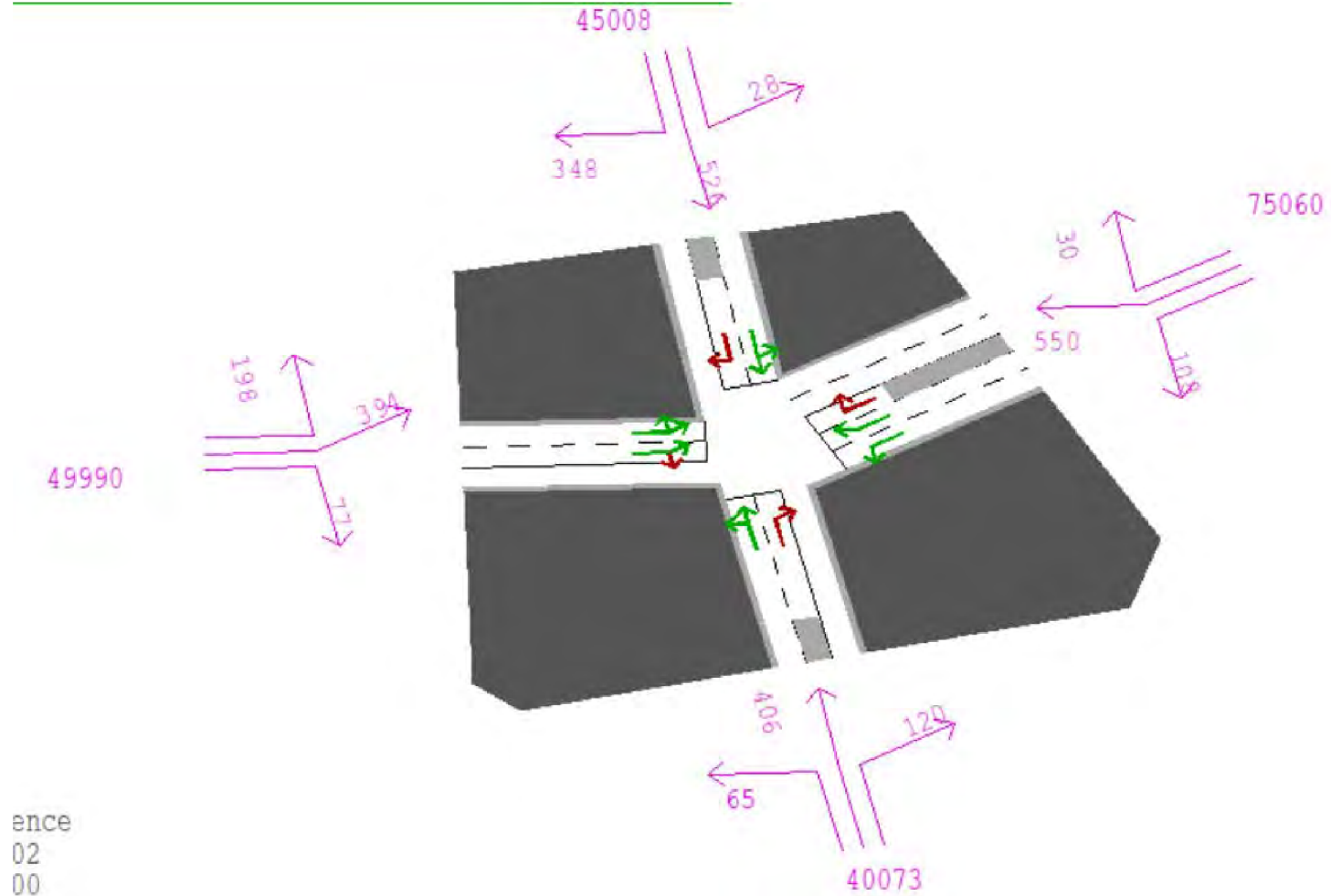
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2021 DM Scenario - AM Peak



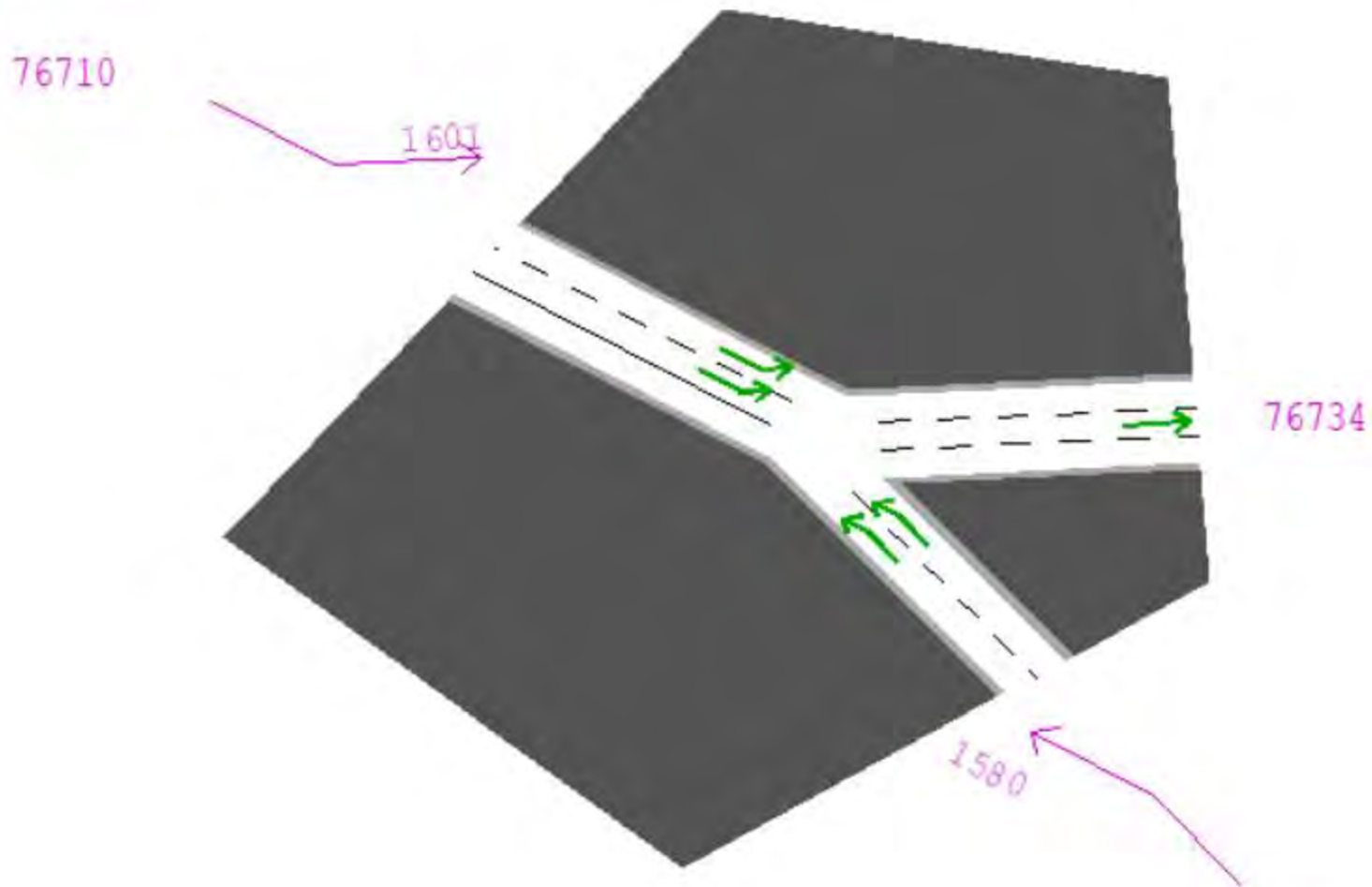
7. A47 / A447 ASHBY ROAD JUNCTION

2021 DM Scenario - AM Peak



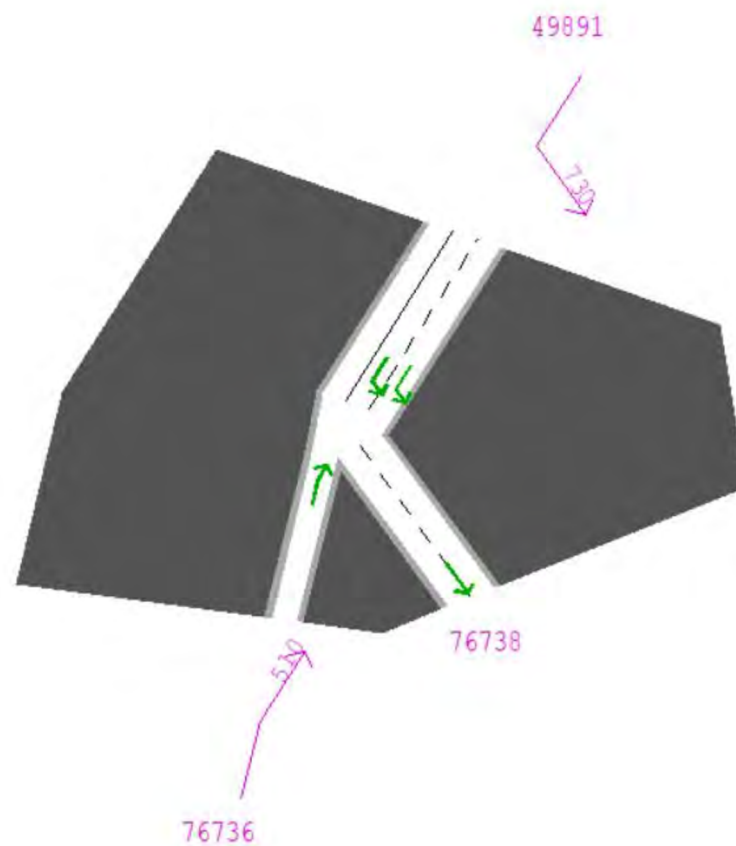
8. DODWELLS ROUNDABOUT

2021 DM Scenario - AM Peak



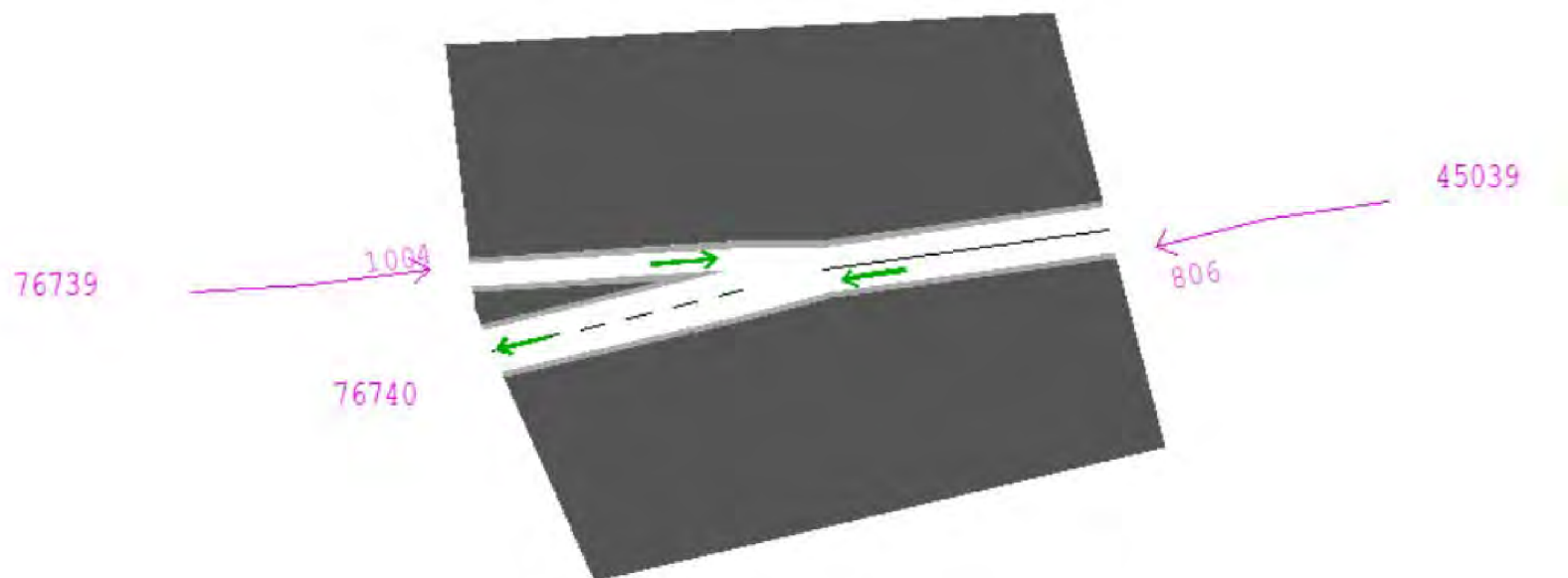
8. DODWELLS ROUNDABOUT

2021 DM Scenario - AM Peak



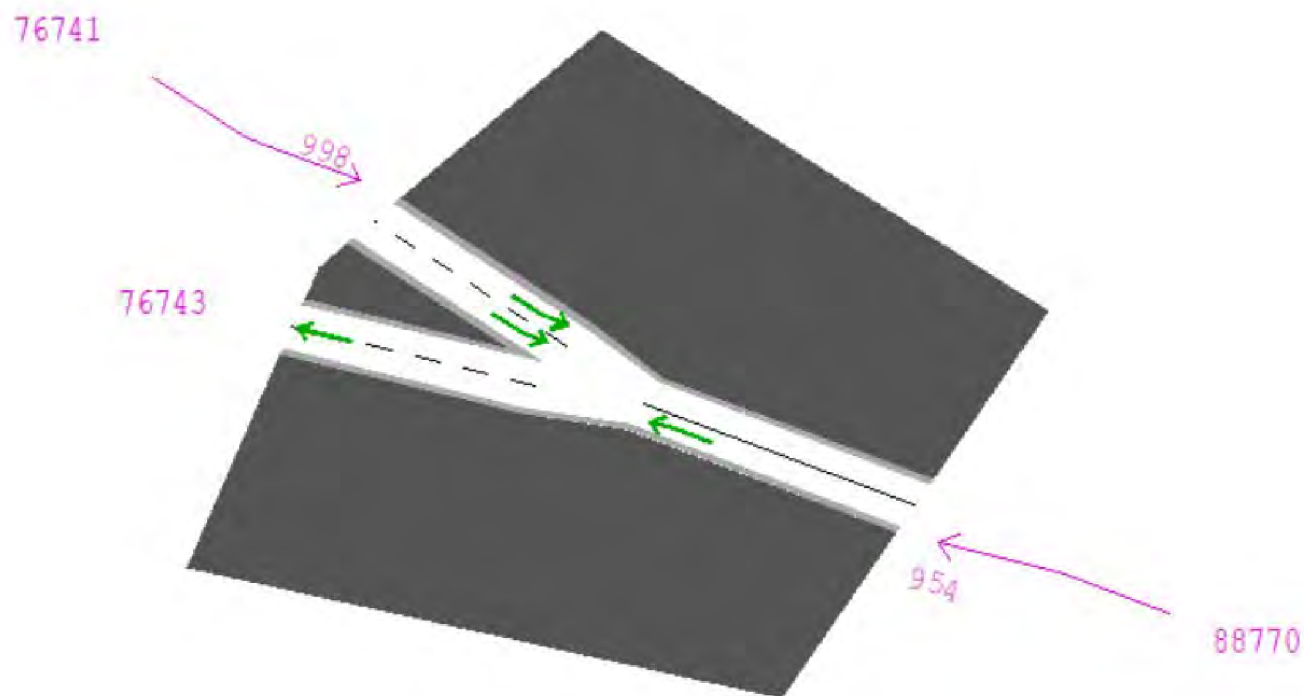
8. DODWELLS ROUNDABOUT

2021 DM Scenario - AM Peak



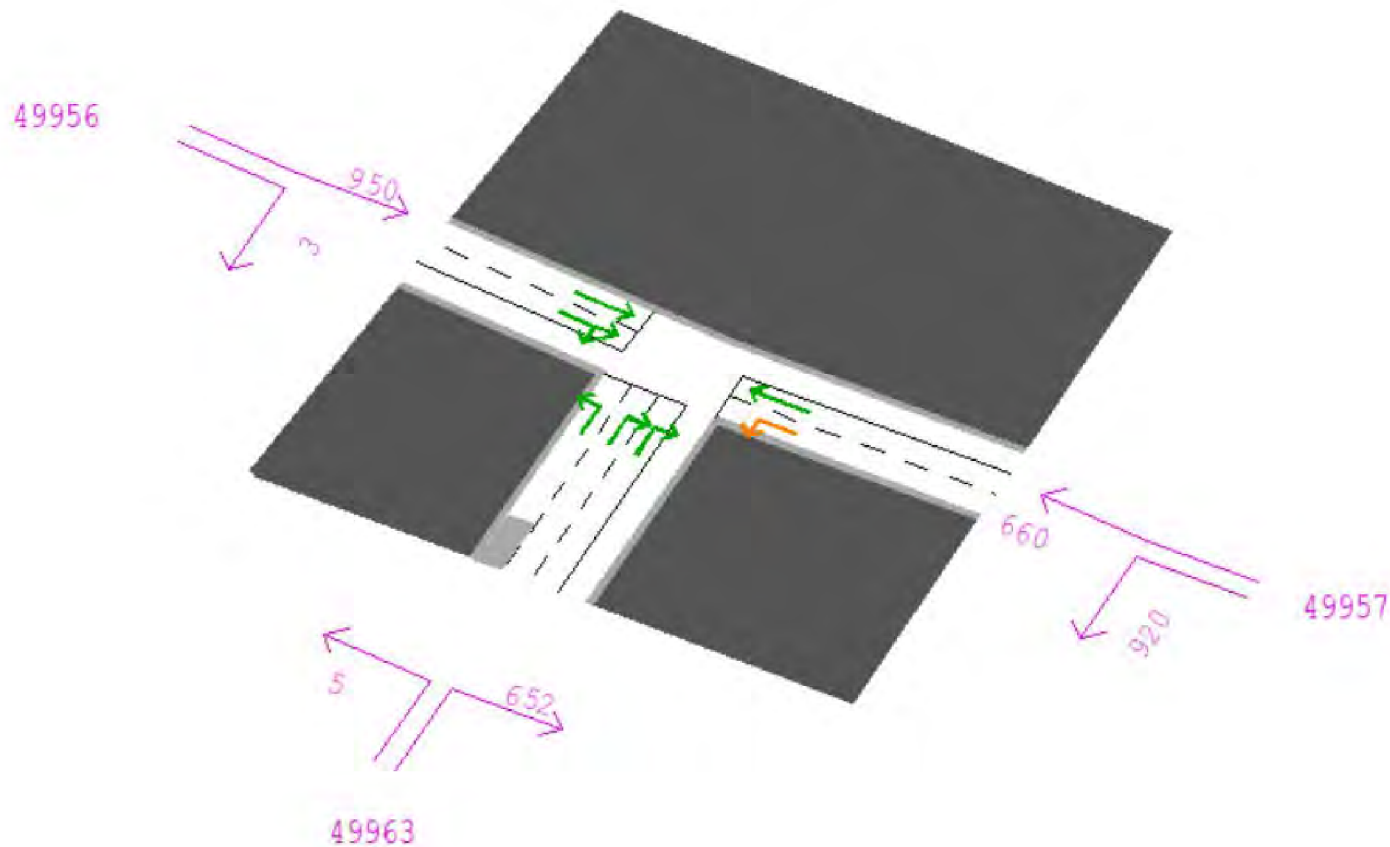
8. DODWELLS ROUNDABOUT

2021 DM Scenario - AM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2021 DM Scenario - AM Peak



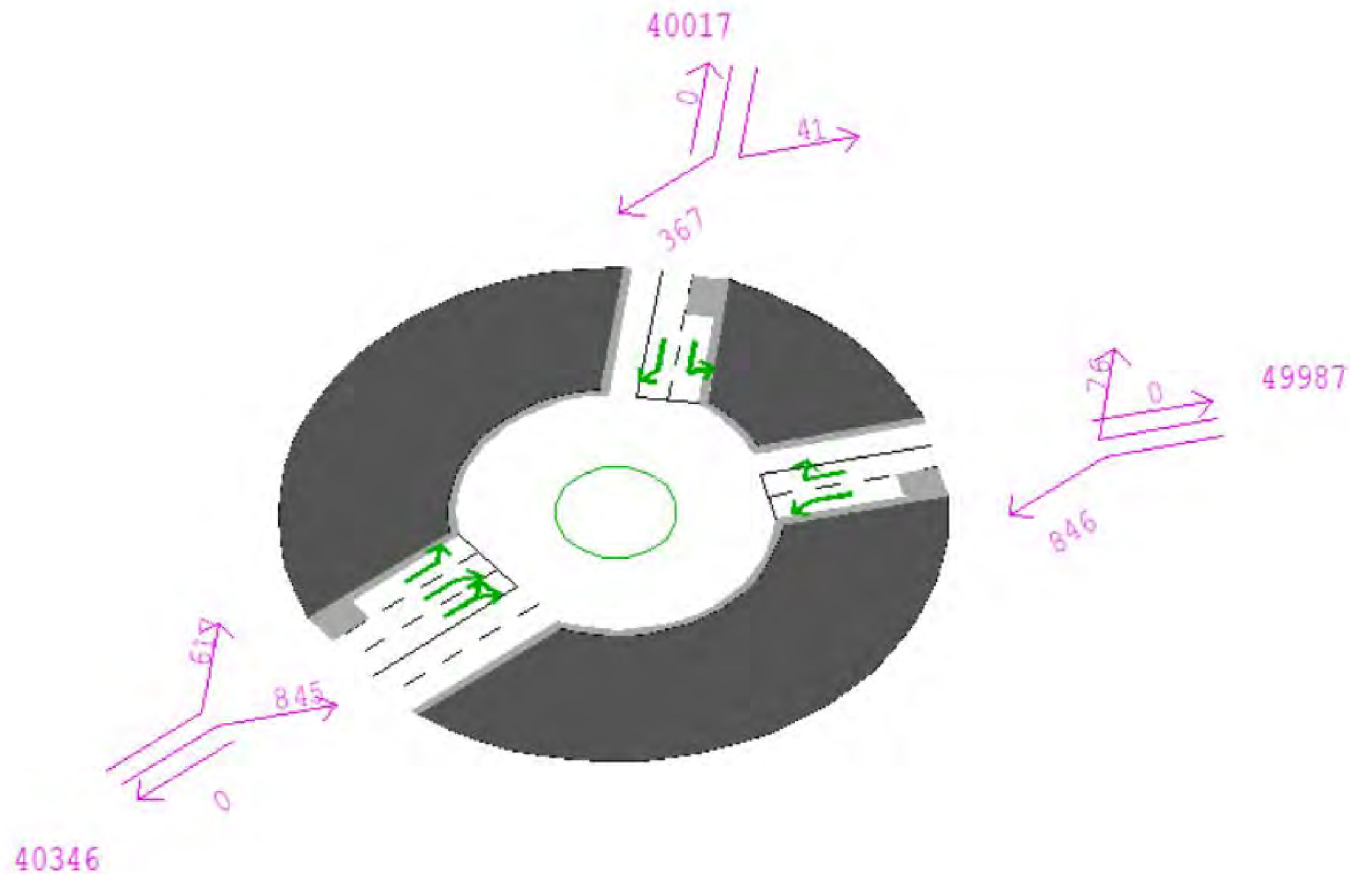


2021 DM

PM Peak

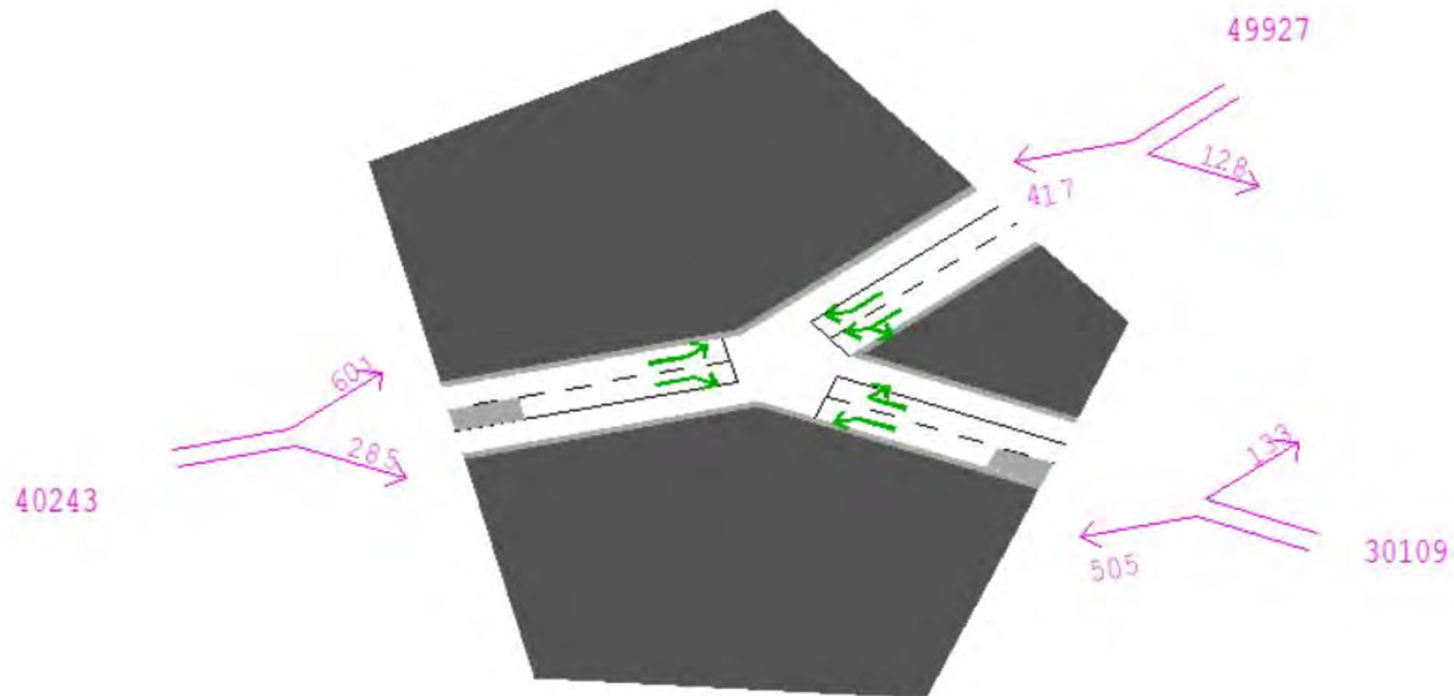
1. A47/ LEICESTER ROAD JUNCTION

2021 DM Scenario - PM Peak



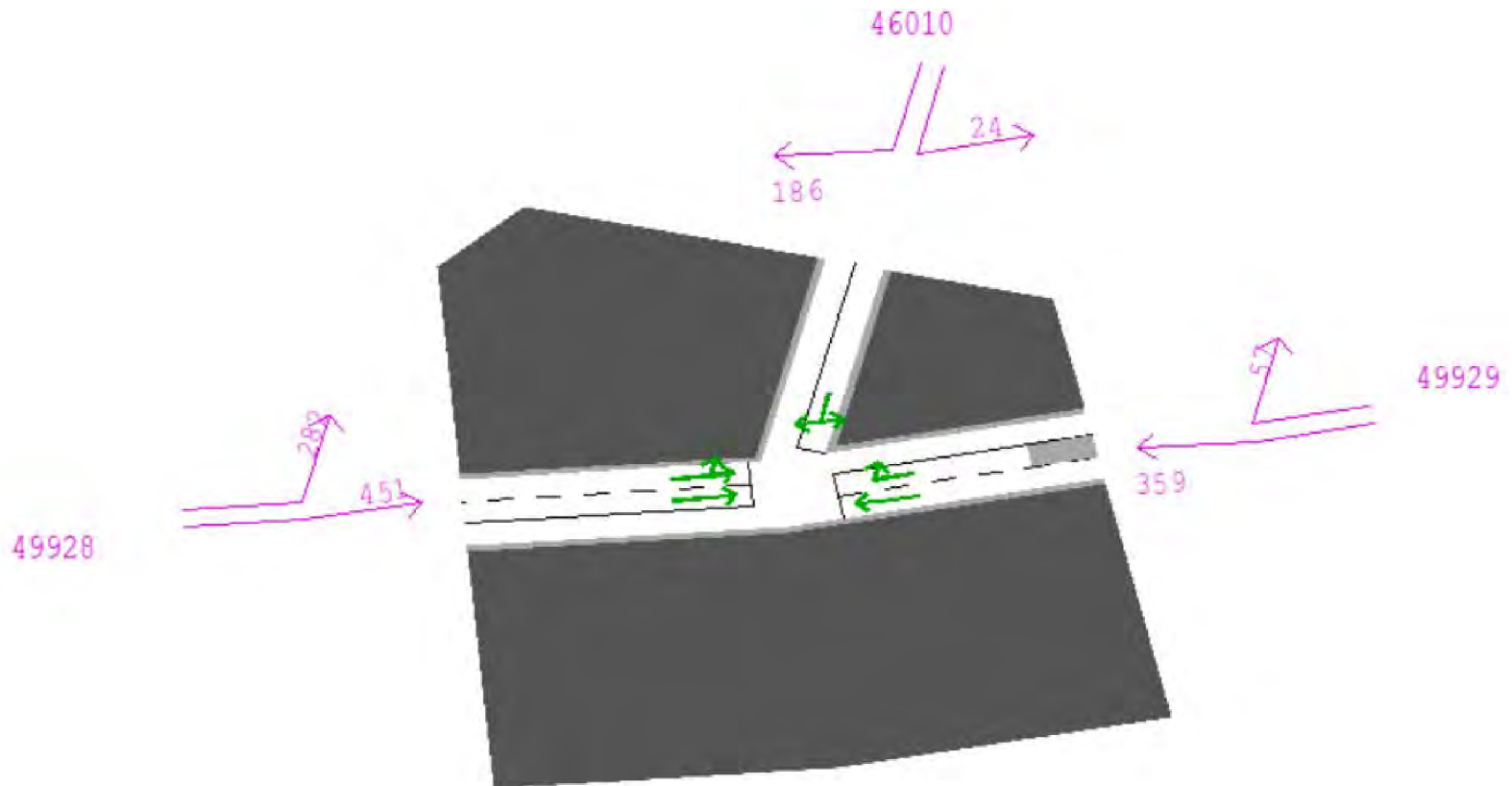
2. A47 / A581 STATION ROAD JUNCTION

2021 DM Scenario - PM Peak



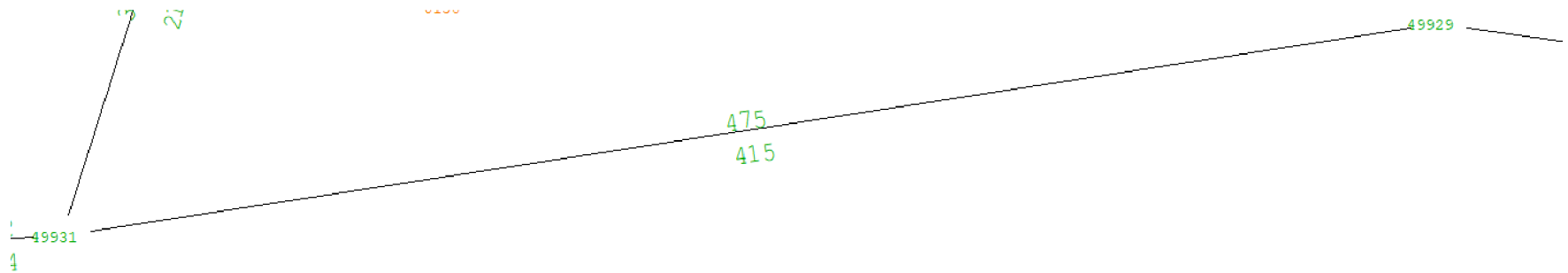
3. A47 / WILKINSON LANE JUNCTION

2021 DM Scenario - PM Peak



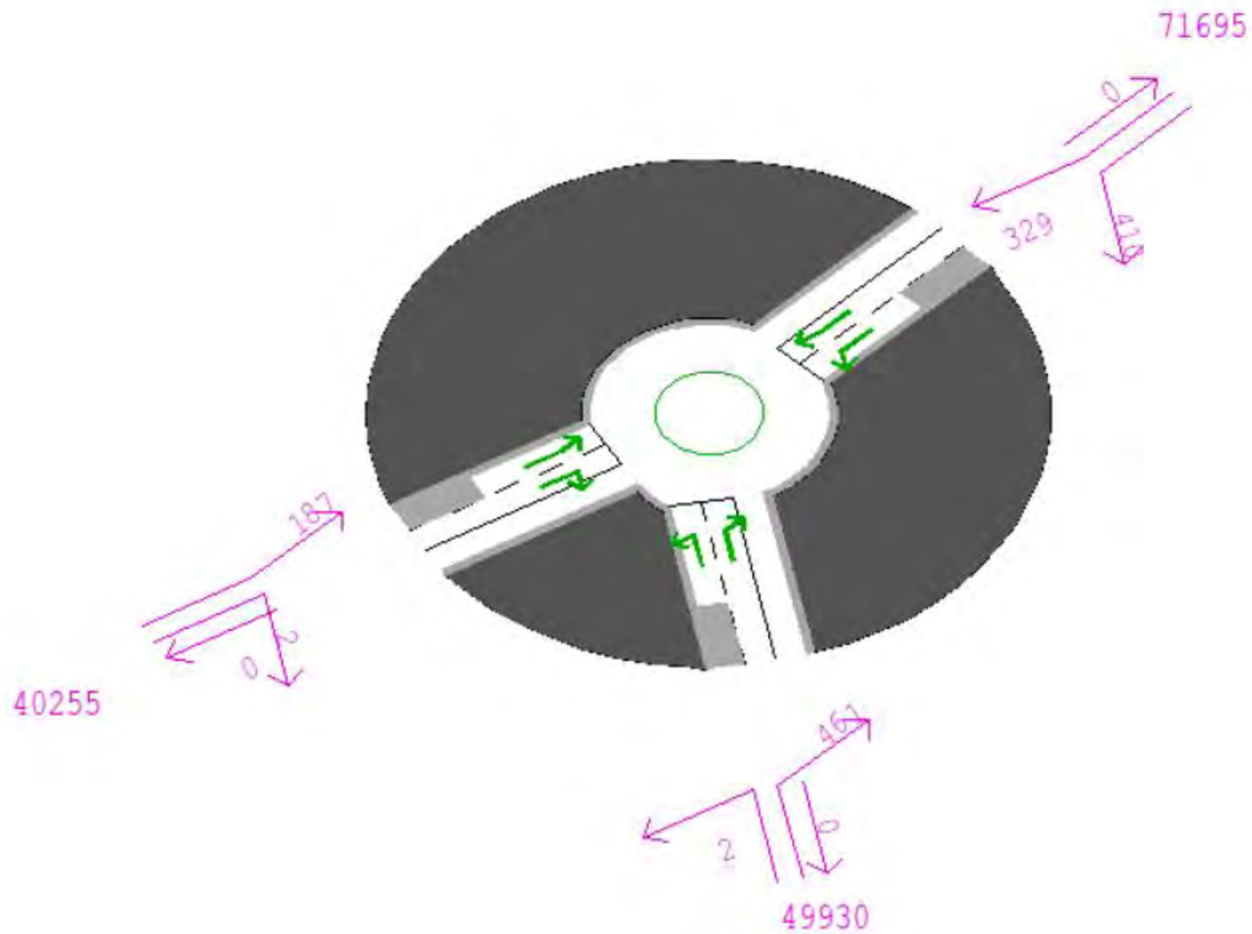
4. A47 / MASEFIELD DRIVE JUNCTION

2021 DM Scenario - PM Peak



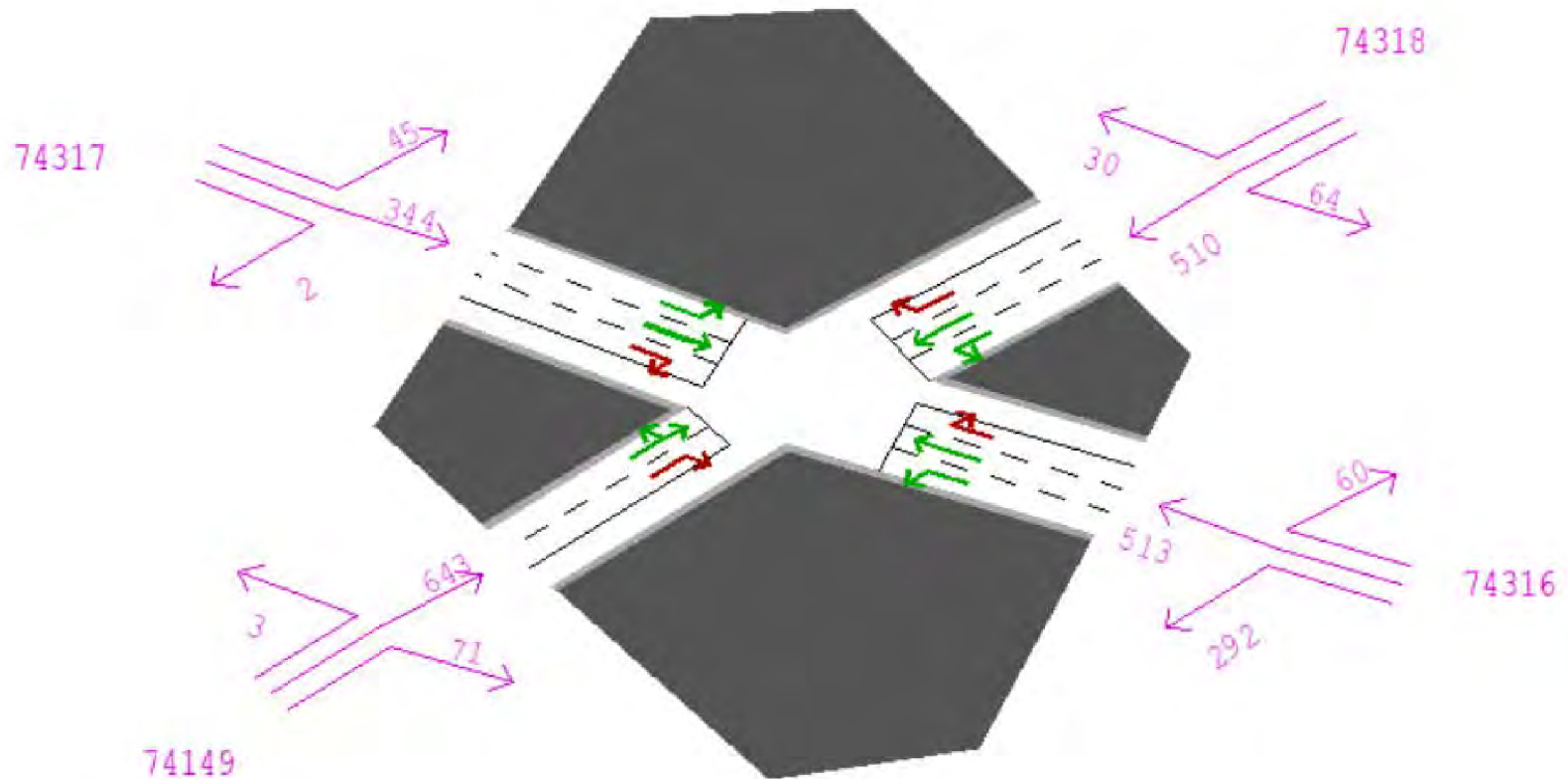
5. A47 / LEICESTER ROAD JUNCTION

2021 DM Scenario - PM Peak



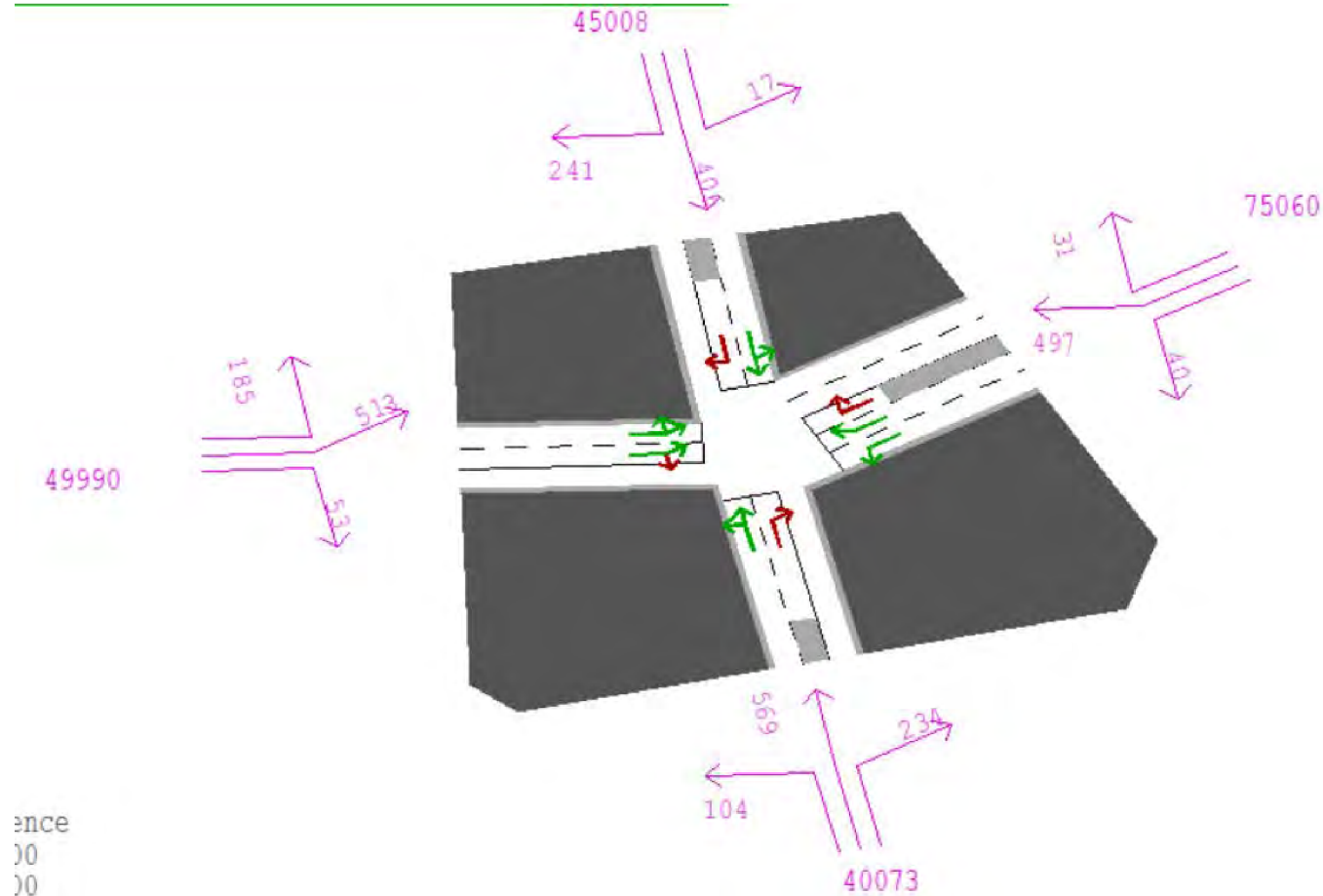
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2021 DM Scenario - PM Peak



7. A47 / A447 ASHBY ROAD JUNCTION

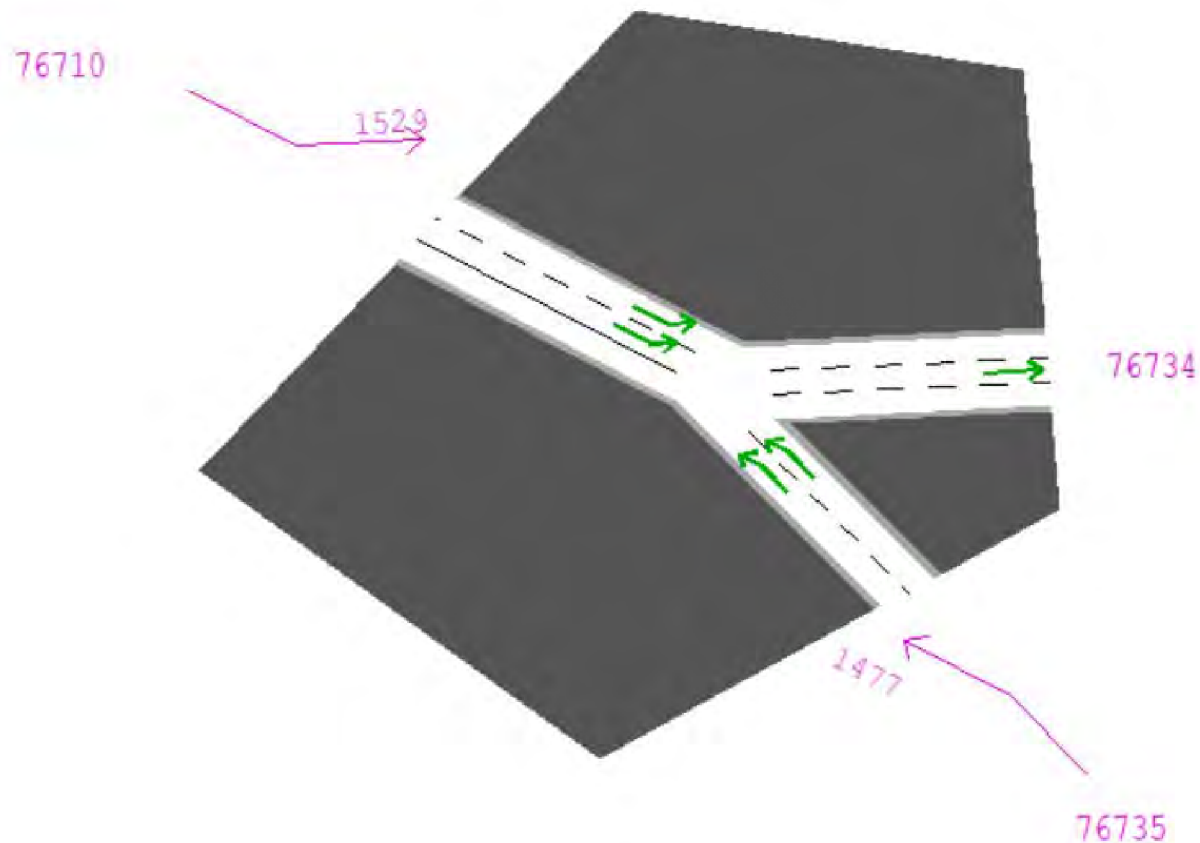
2021 DM Scenario - PM Peak



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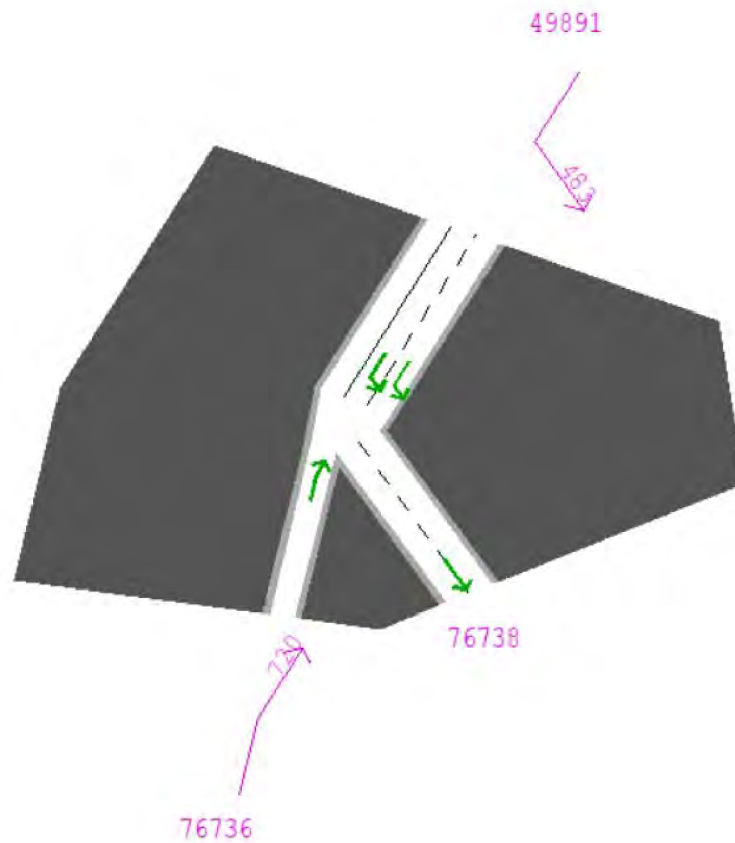
8. DODWELLS ROUNDABOUT

2021 DM Scenario - PM Peak



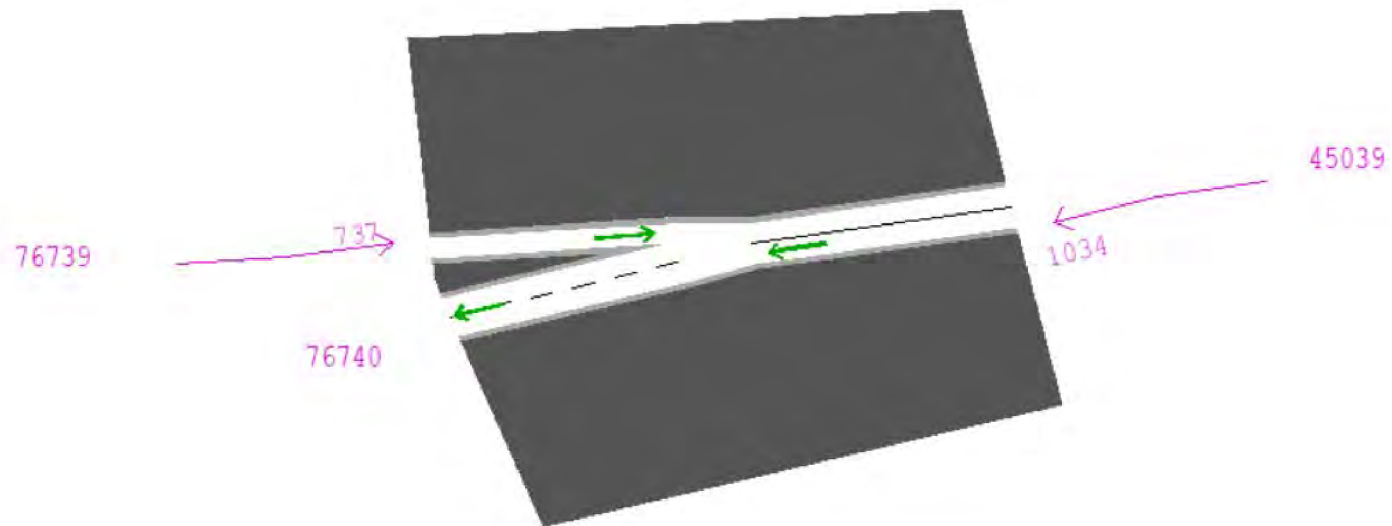
8. DODWELLS ROUNDABOUT

2021 DM Scenario - PM Peak



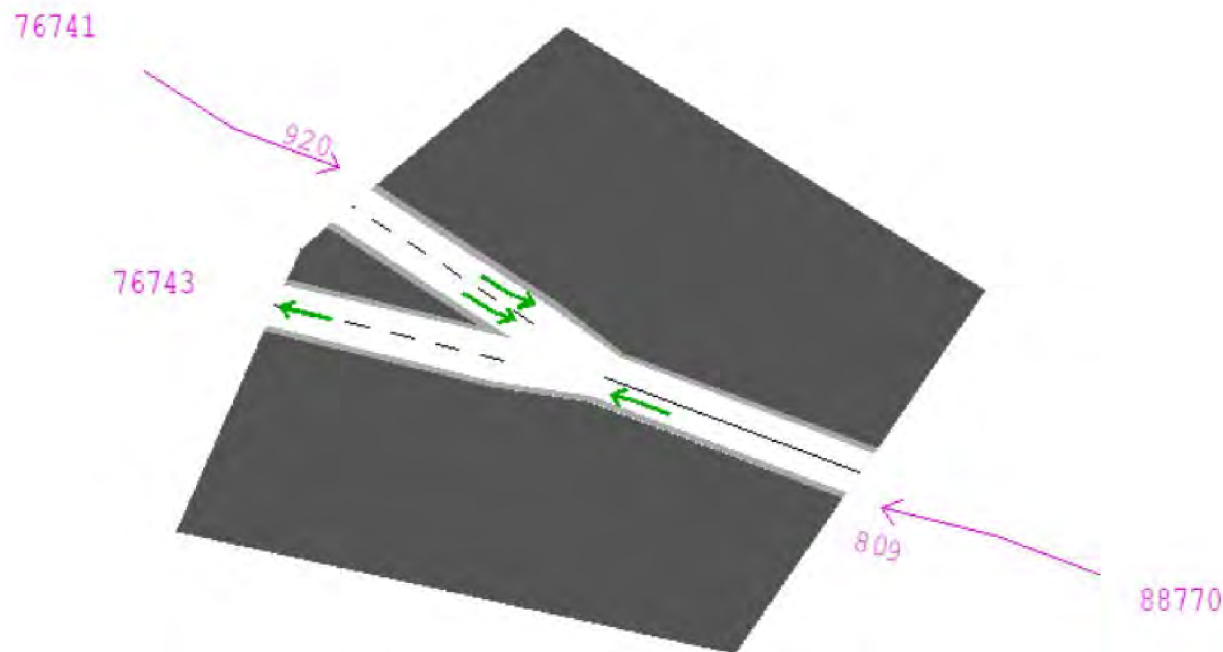
8. DODWELLS ROUNDABOUT

2021 DM Scenario - PM Peak



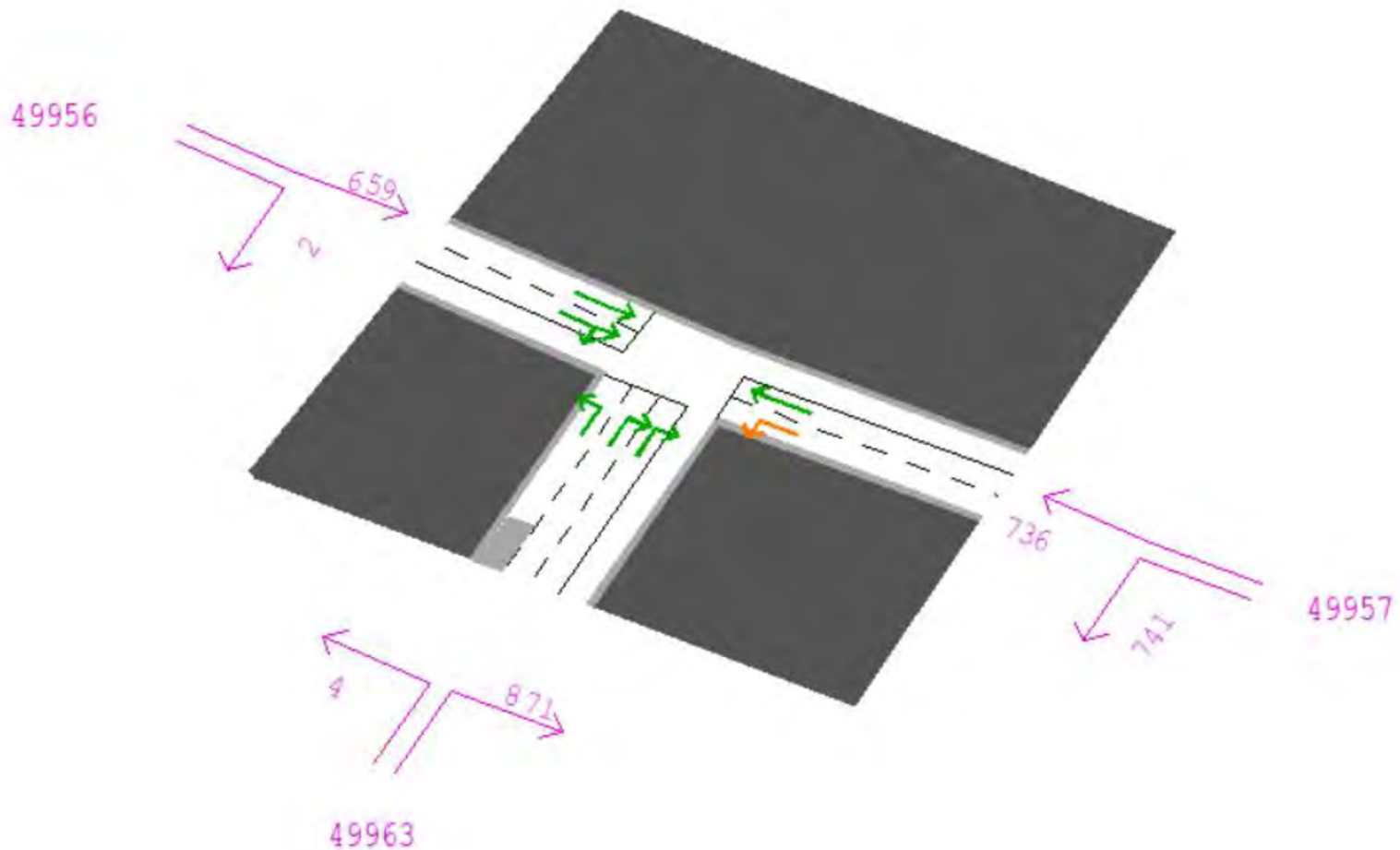
8. DODWELLS ROUNDABOUT

2021 DM Scenario - PM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2021 DM Scenario - PM Peak



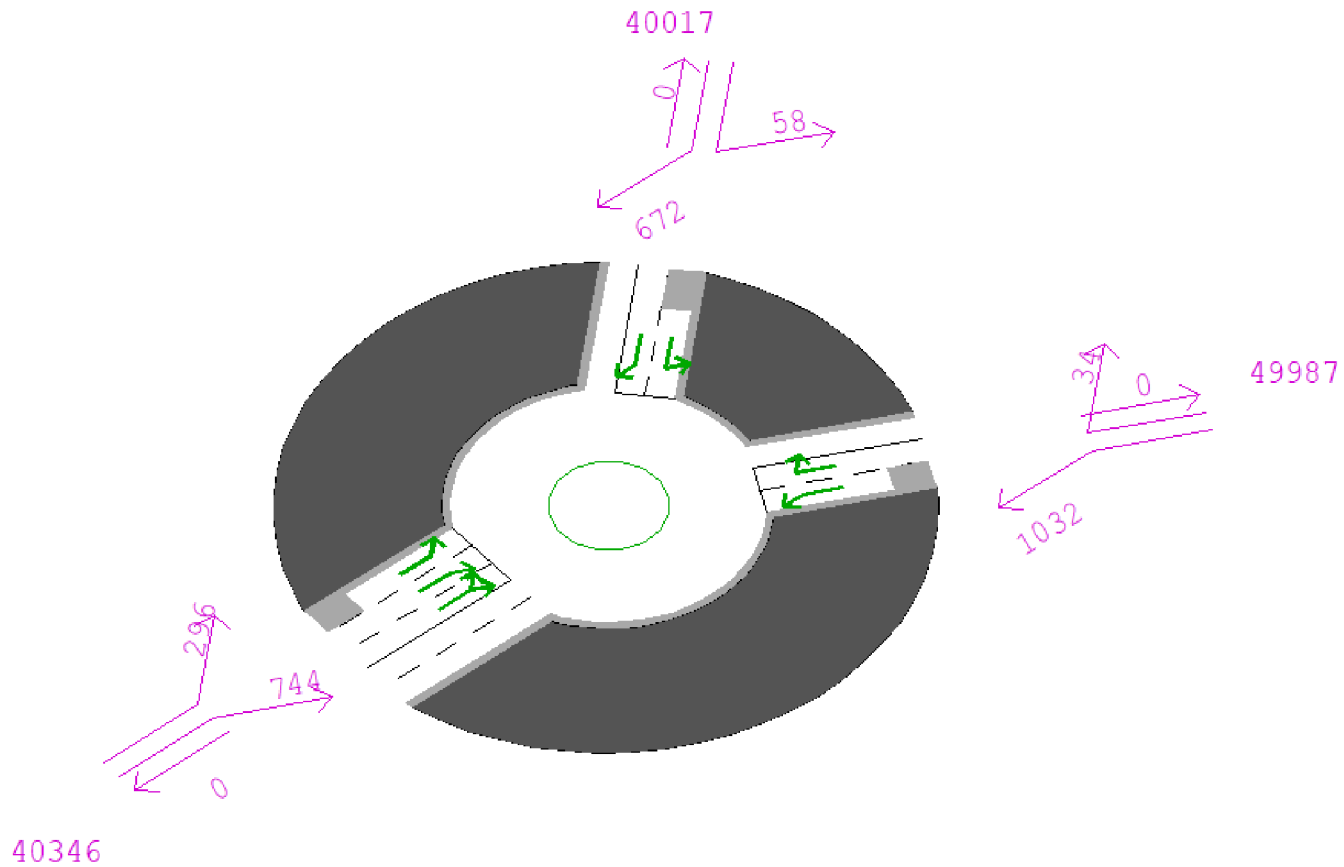


2026 DM

AM Peak

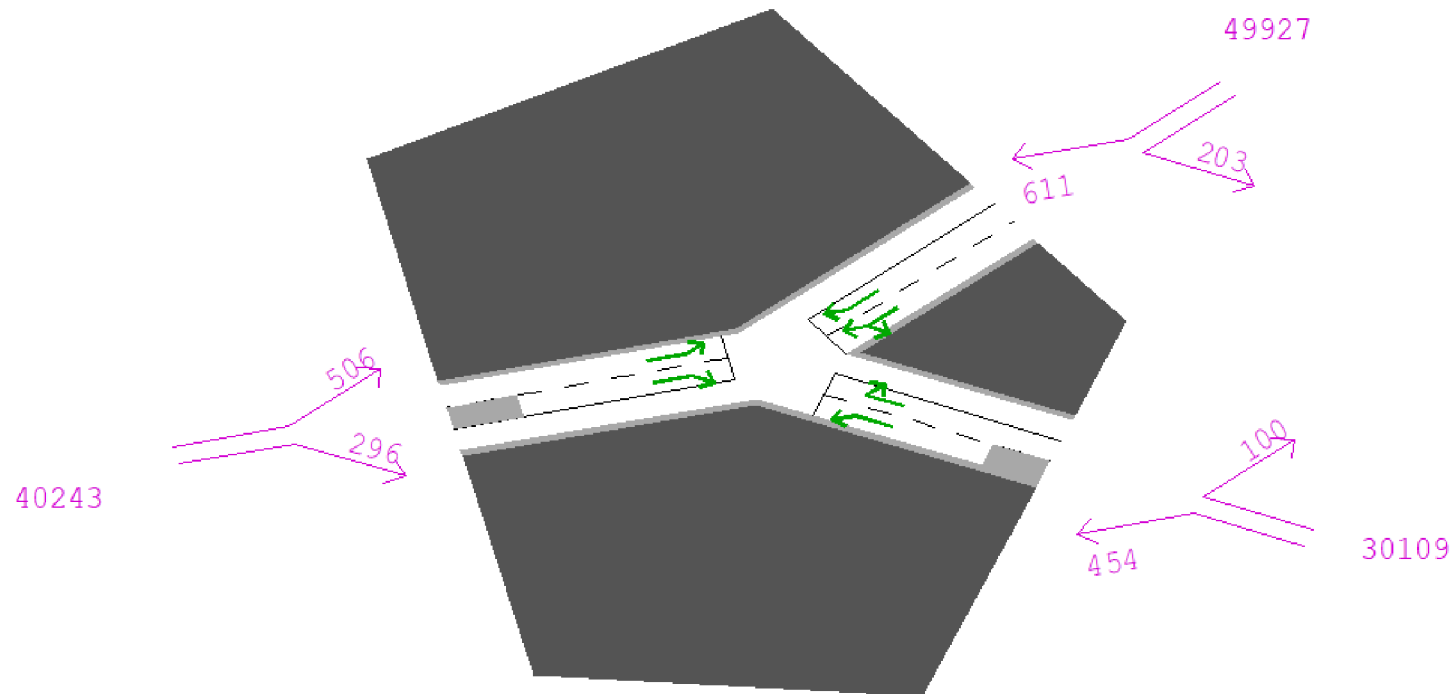
1. A47/ LEICESTER ROAD JUNCTION

2026 DM Scenario - AM Peak



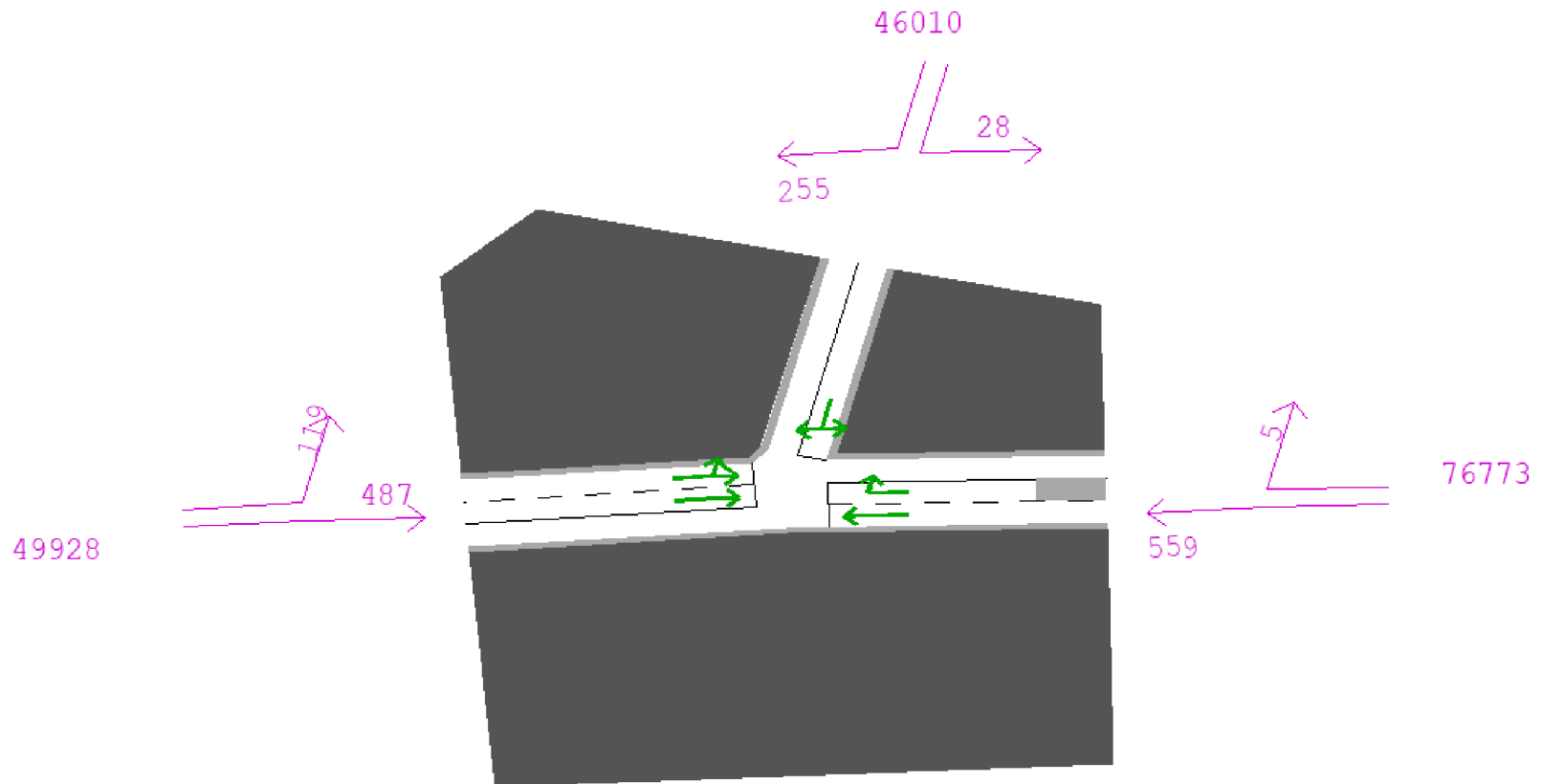
2. A47 / A581 STATION ROAD JUNCTION

2026 DM Scenario - AM Peak



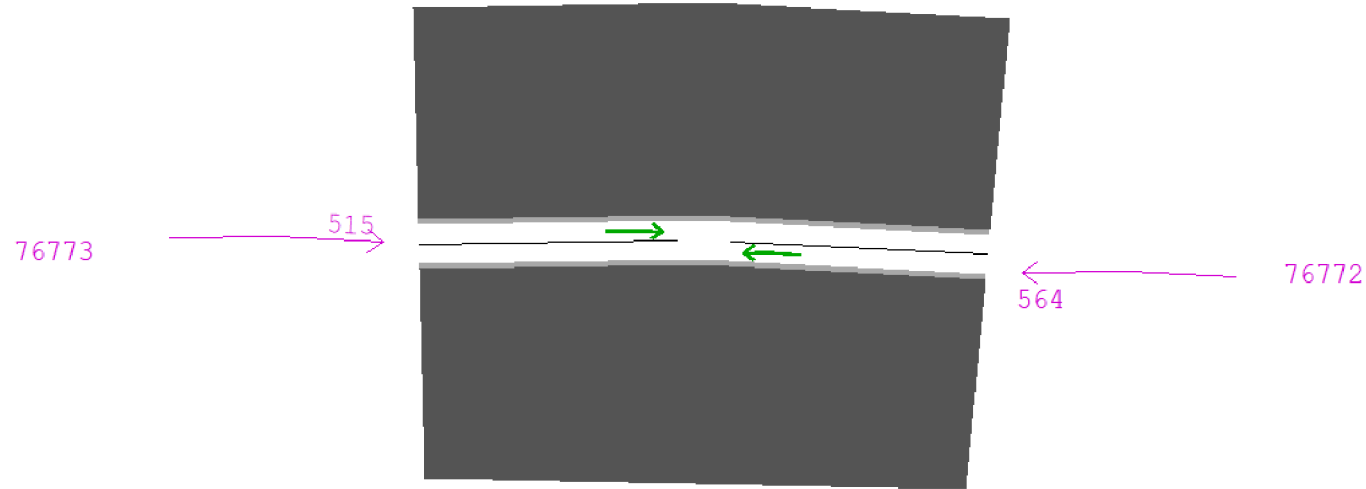
3. A47 / WILKINSON LANE JUNCTION

2026 DM Scenario - AM Peak



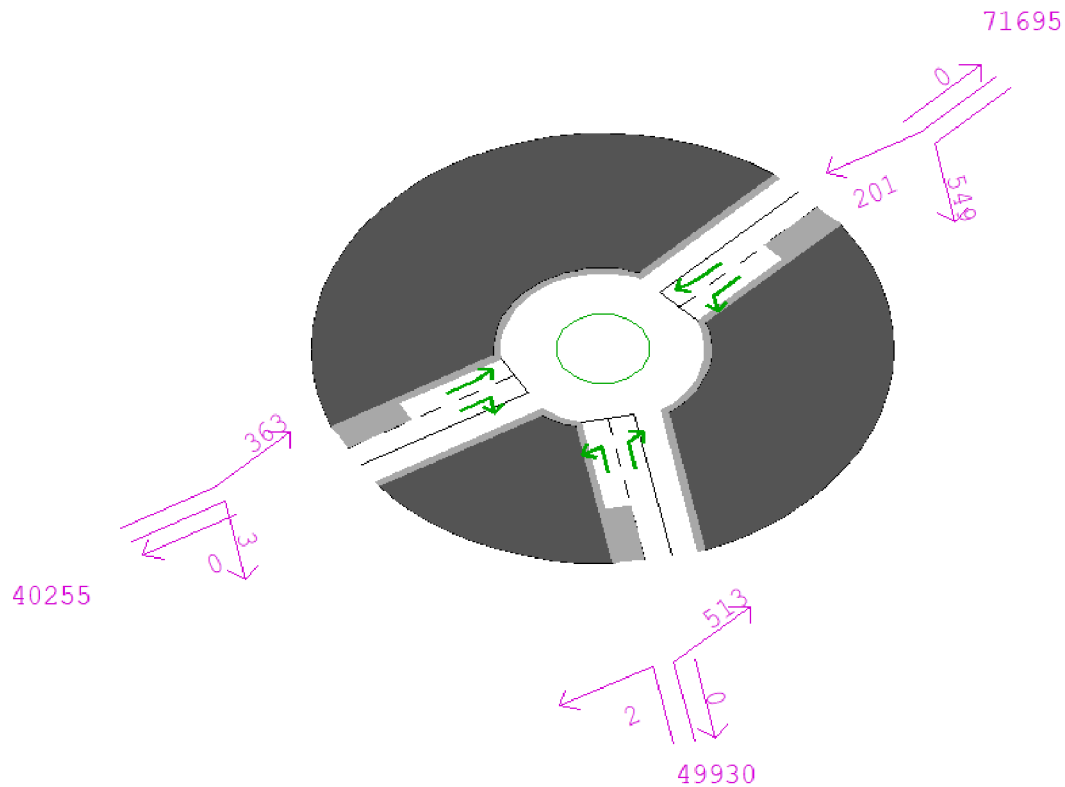
4. A47 / MASEFIELD DRIVE JUNCTION

2026 DM Scenario - AM Peak



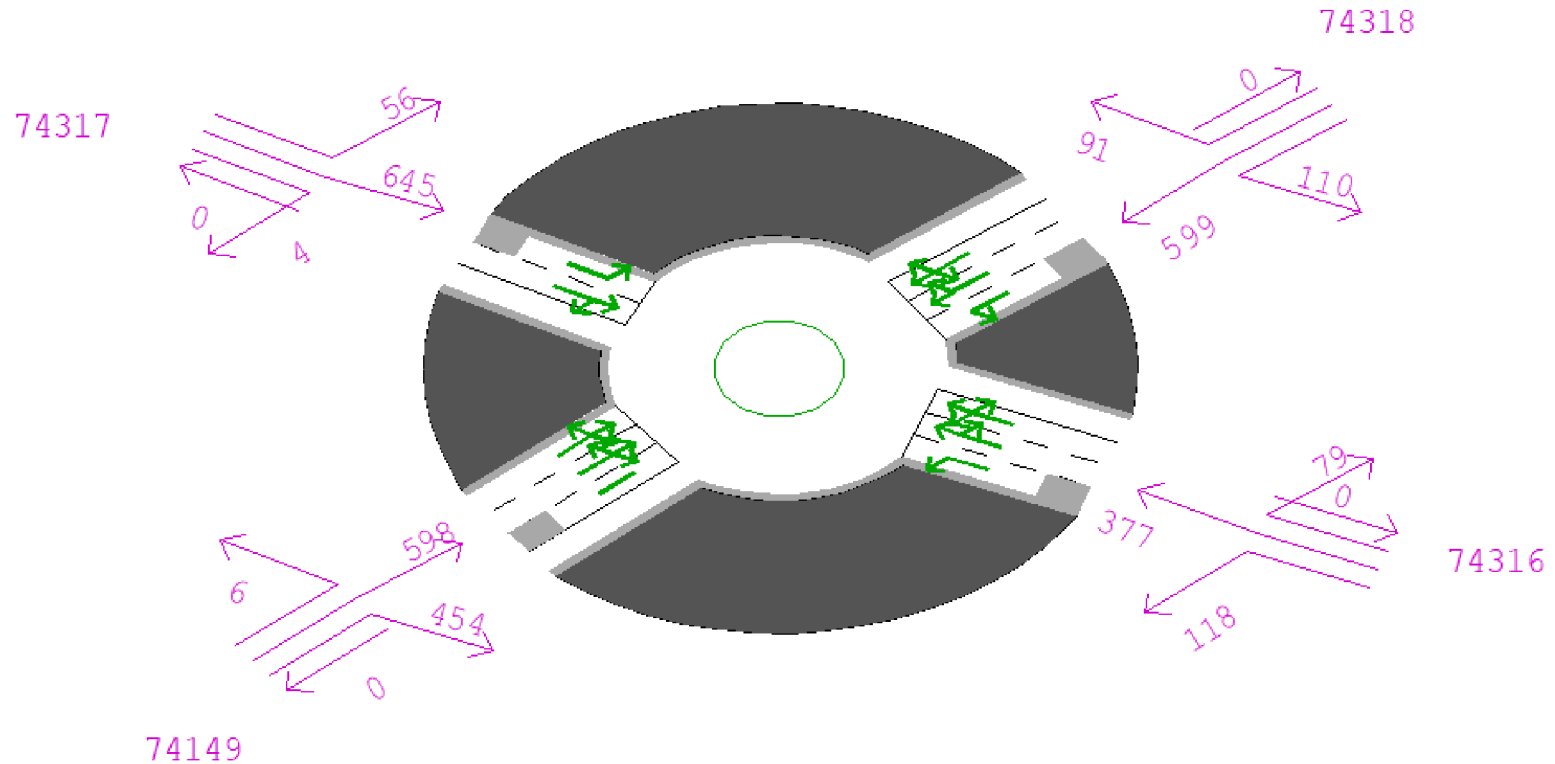
5. A47 / LEICESTER ROAD JUNCTION

2026 DM Scenario - AM Peak



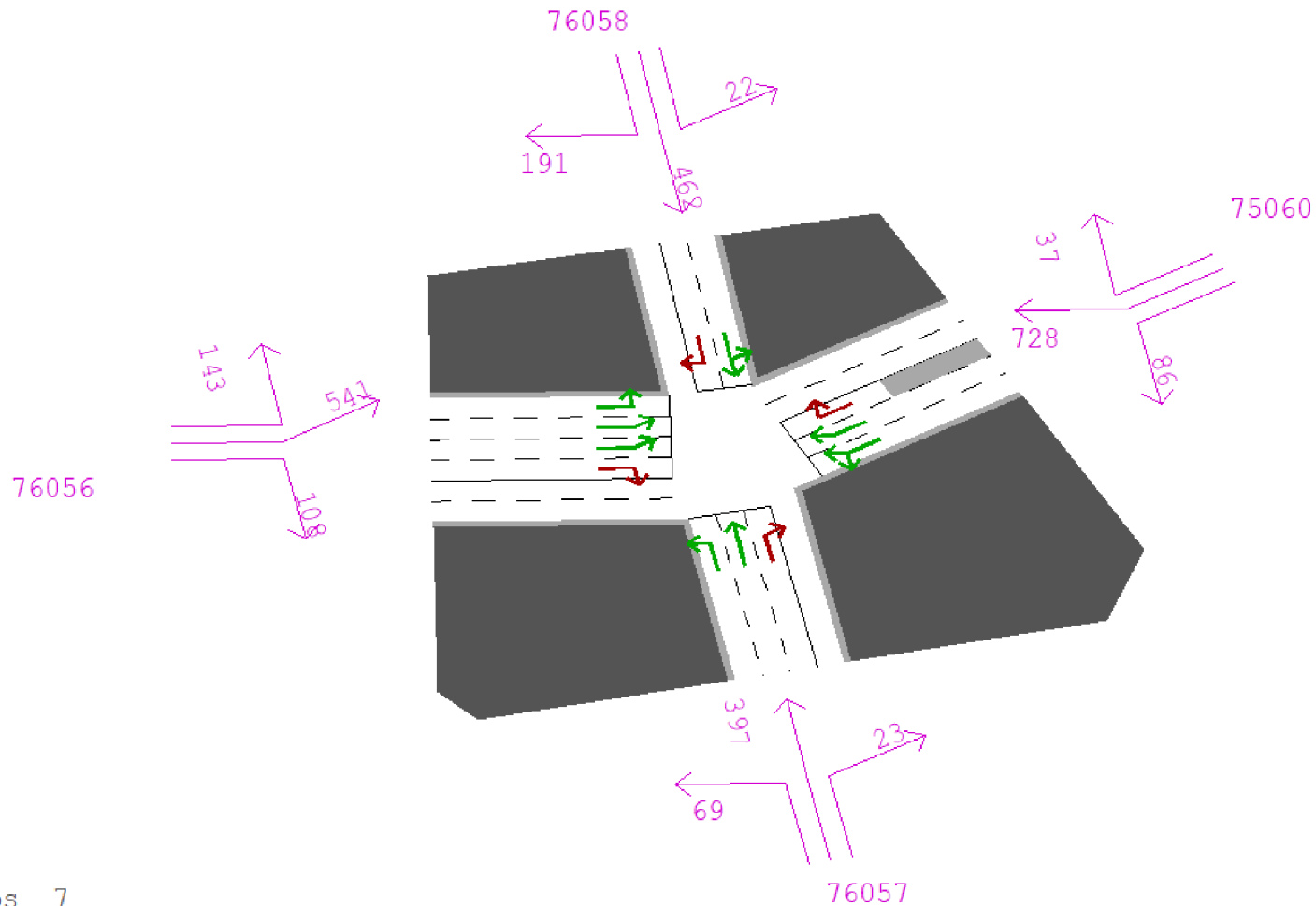
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2026 DM Scenario - AM Peak



7. A47 / A447 ASHBY ROAD JUNCTION

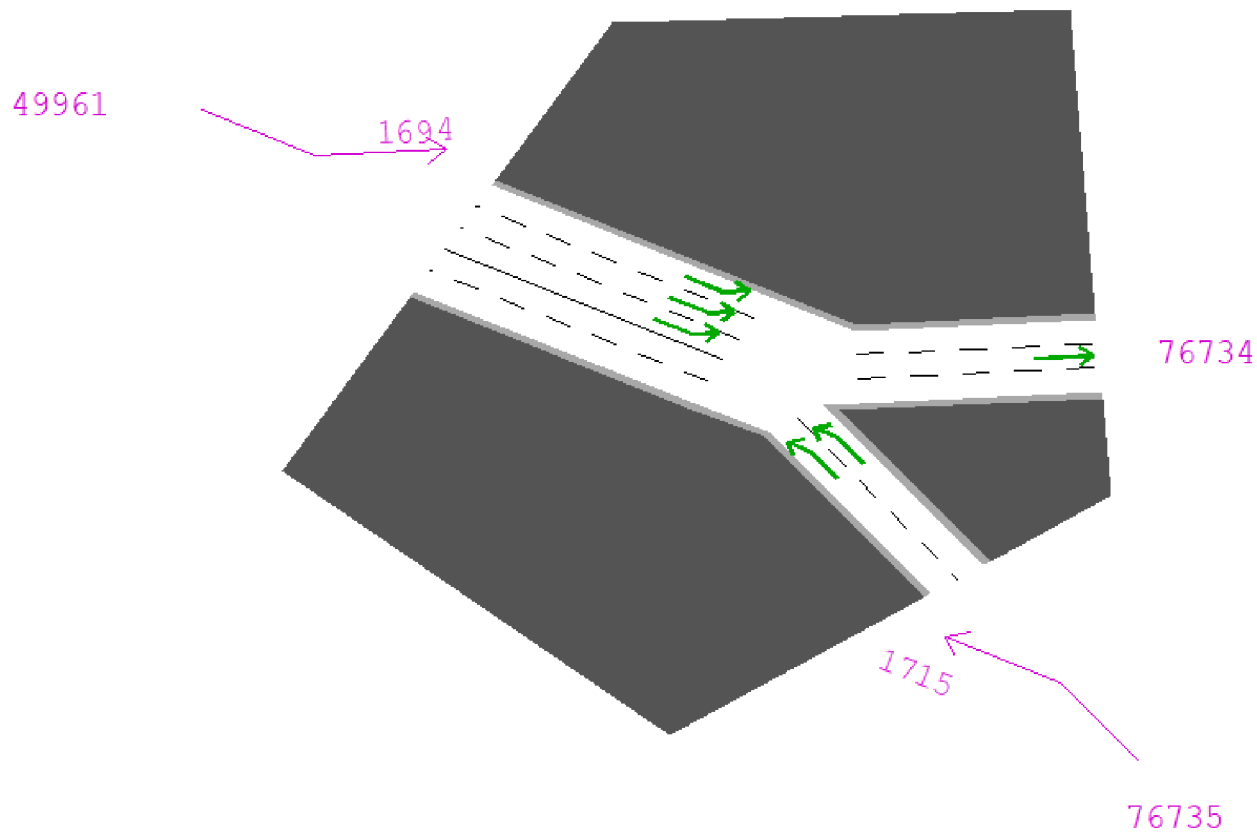
2026 DM Scenario - AM Peak



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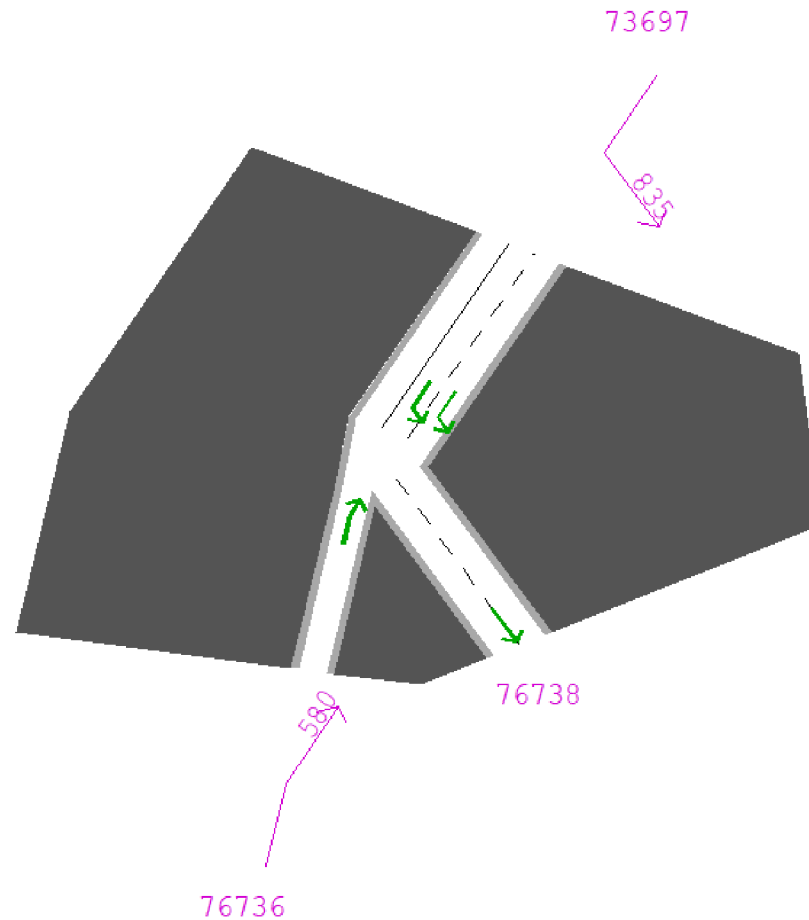
8. DODWELLS ROUNDABOUT

2026 DM Scenario - AM Peak



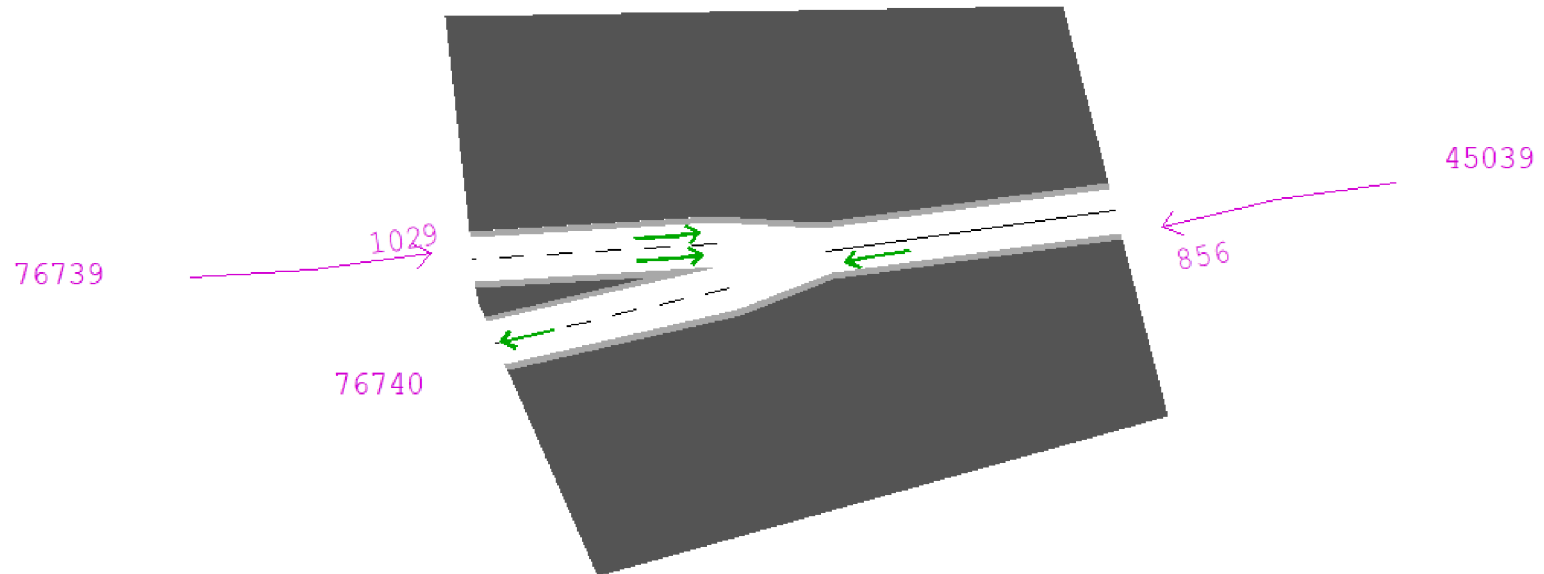
8. DODWELLS ROUNDABOUT

2026 DM Scenario - AM Peak



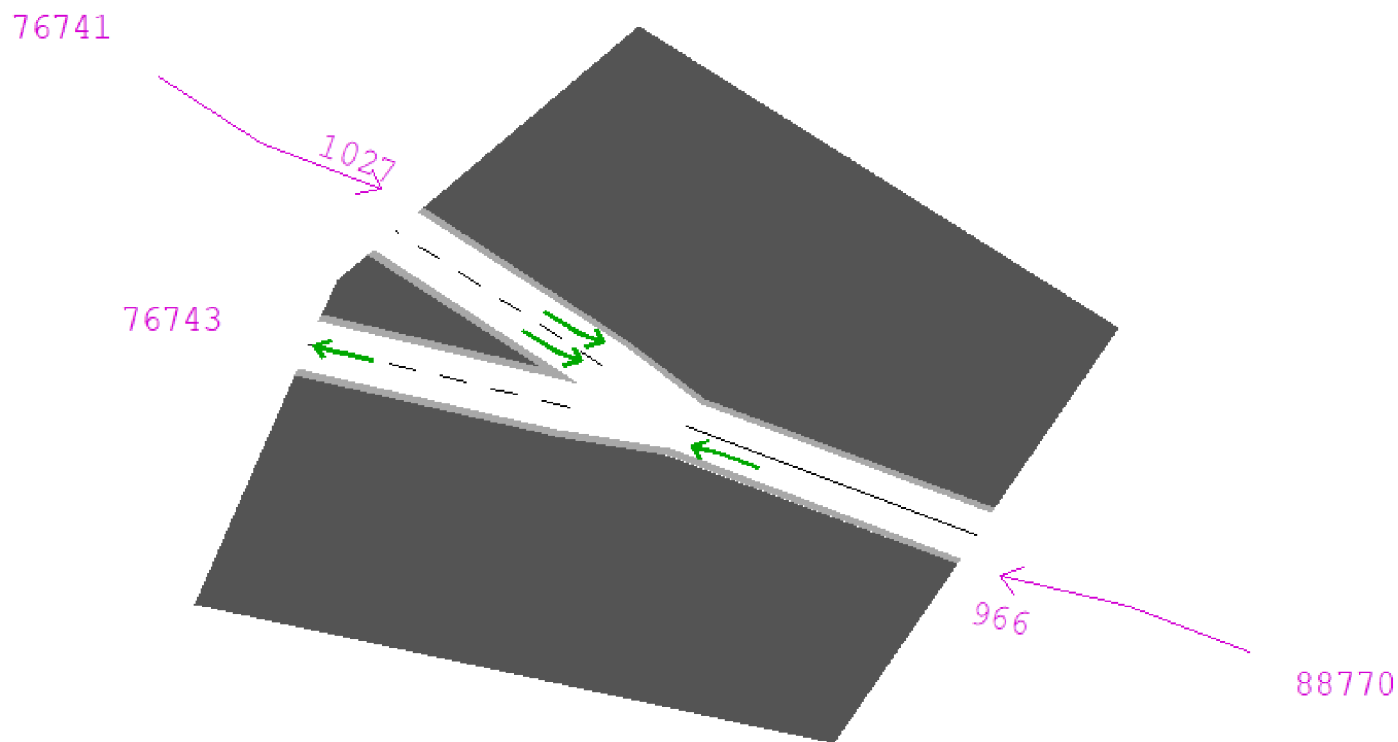
8. DODWELLS ROUNDABOUT

2026 DM Scenario - AM Peak



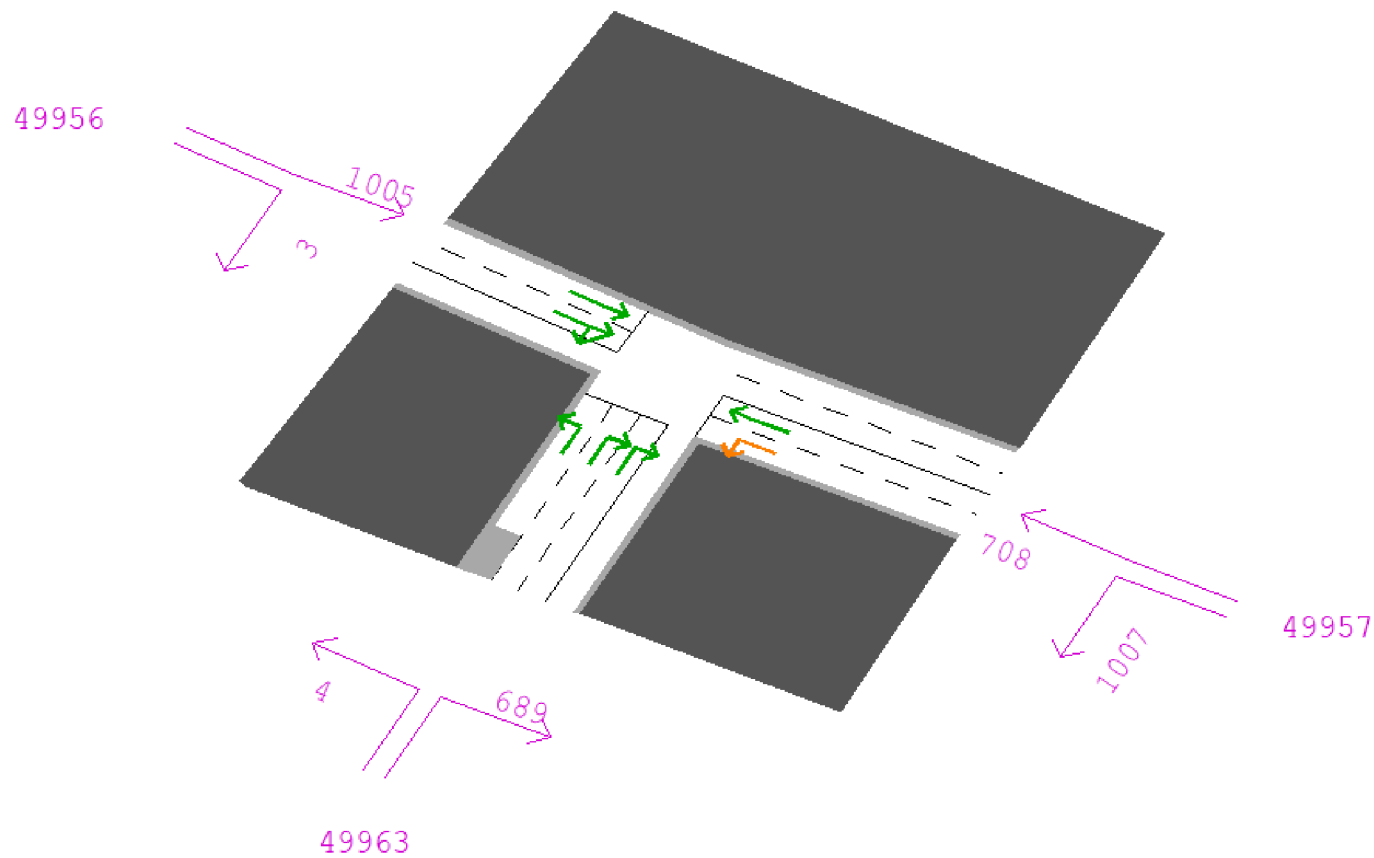
8. DODWELLS ROUNDABOUT

2026 DM Scenario - AM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2026 DM Scenario - AM Peak



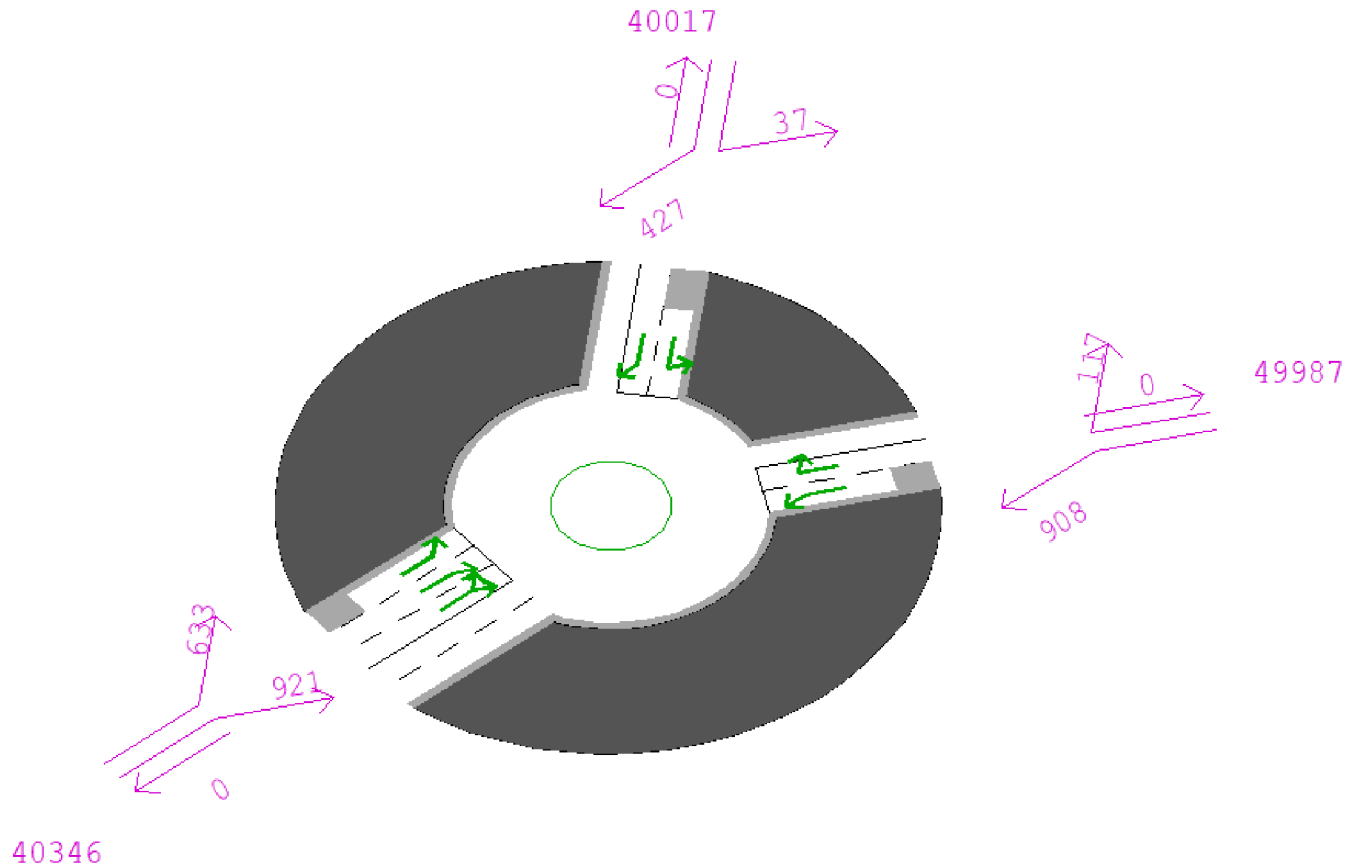


2026 DM

PM Peak

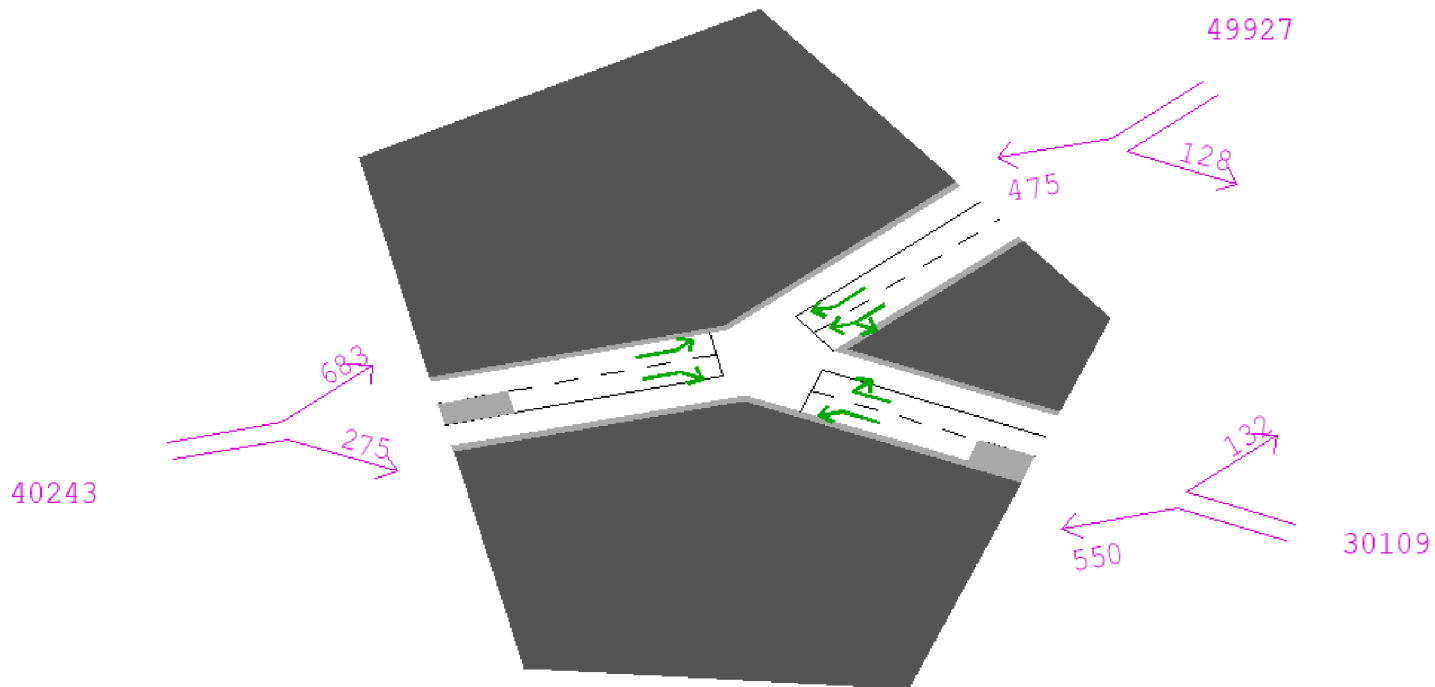
1. A47/ LEICESTER ROAD JUNCTION

2026 DM Scenario - PM Peak



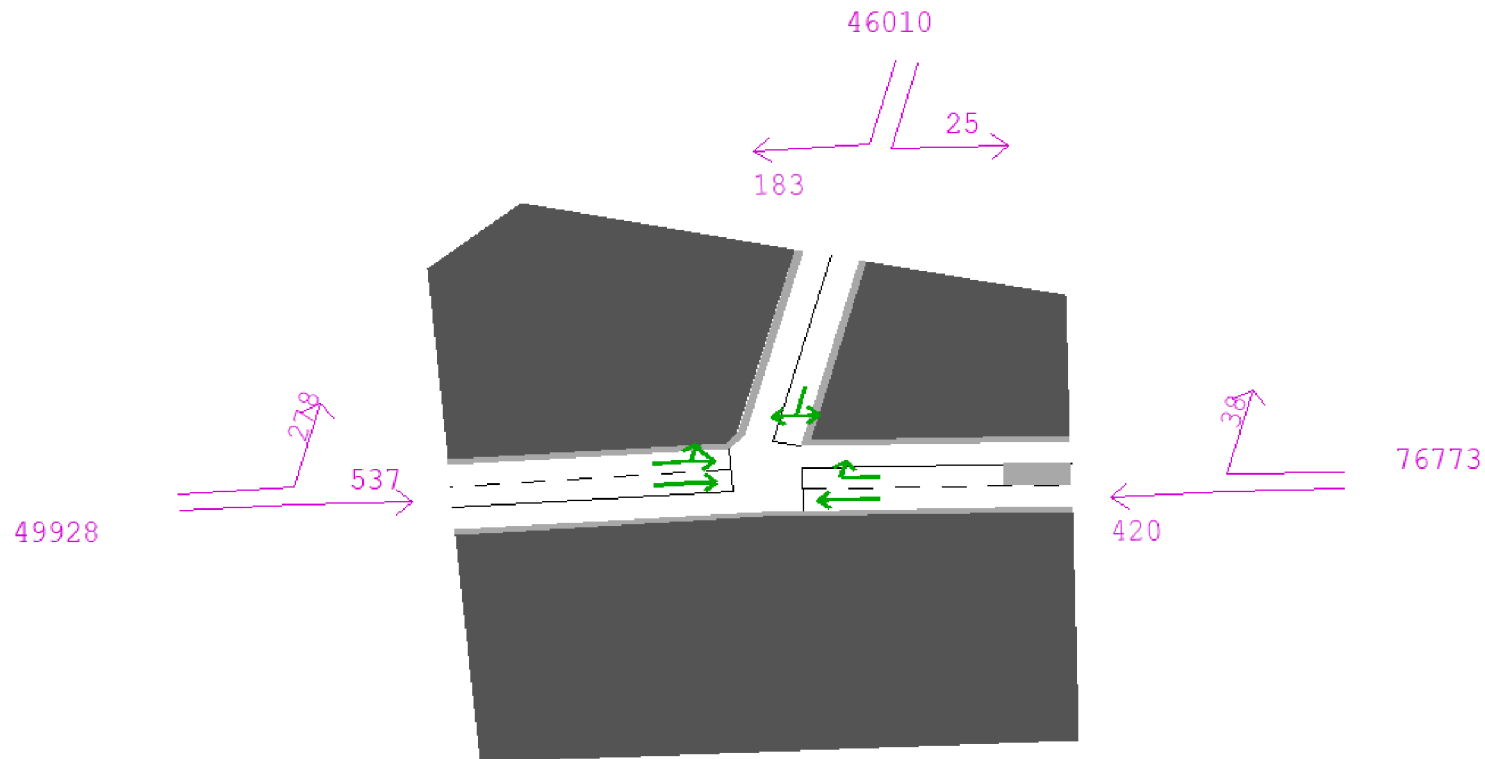
2. A47 / A581 STATION ROAD JUNCTION

2026 DM Scenario - PM Peak



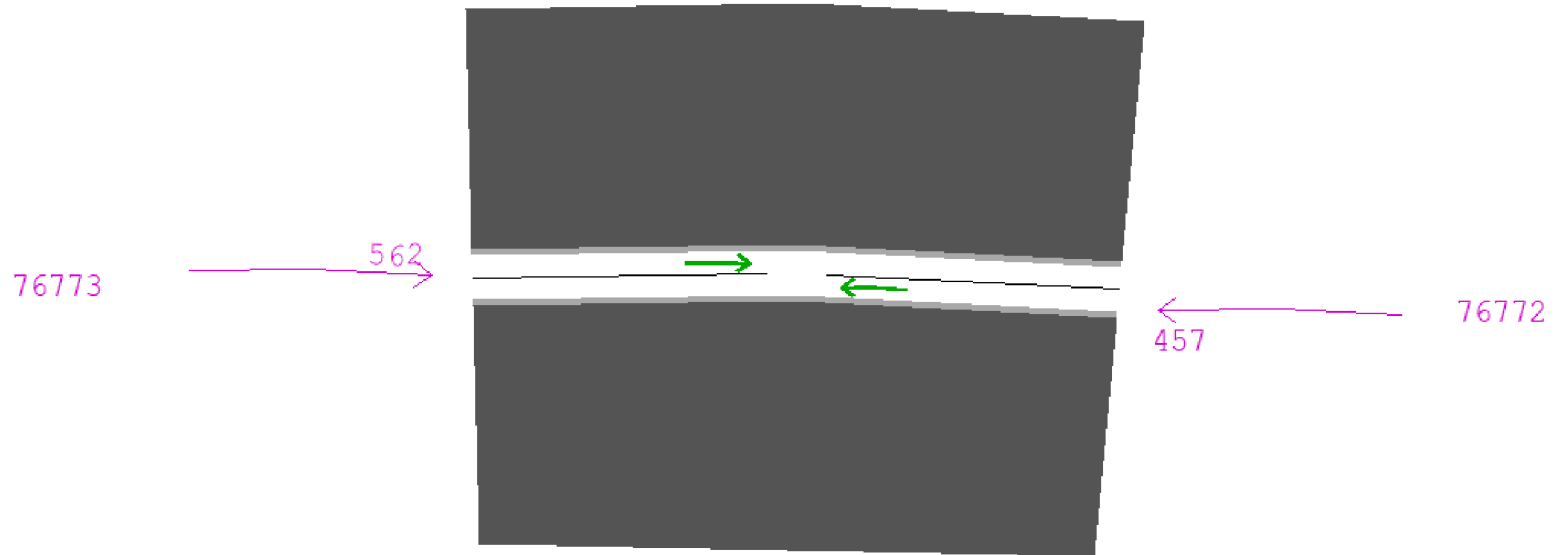
3. A47 / WILKINSON LANE JUNCTION

2026 DM Scenario - PM Peak



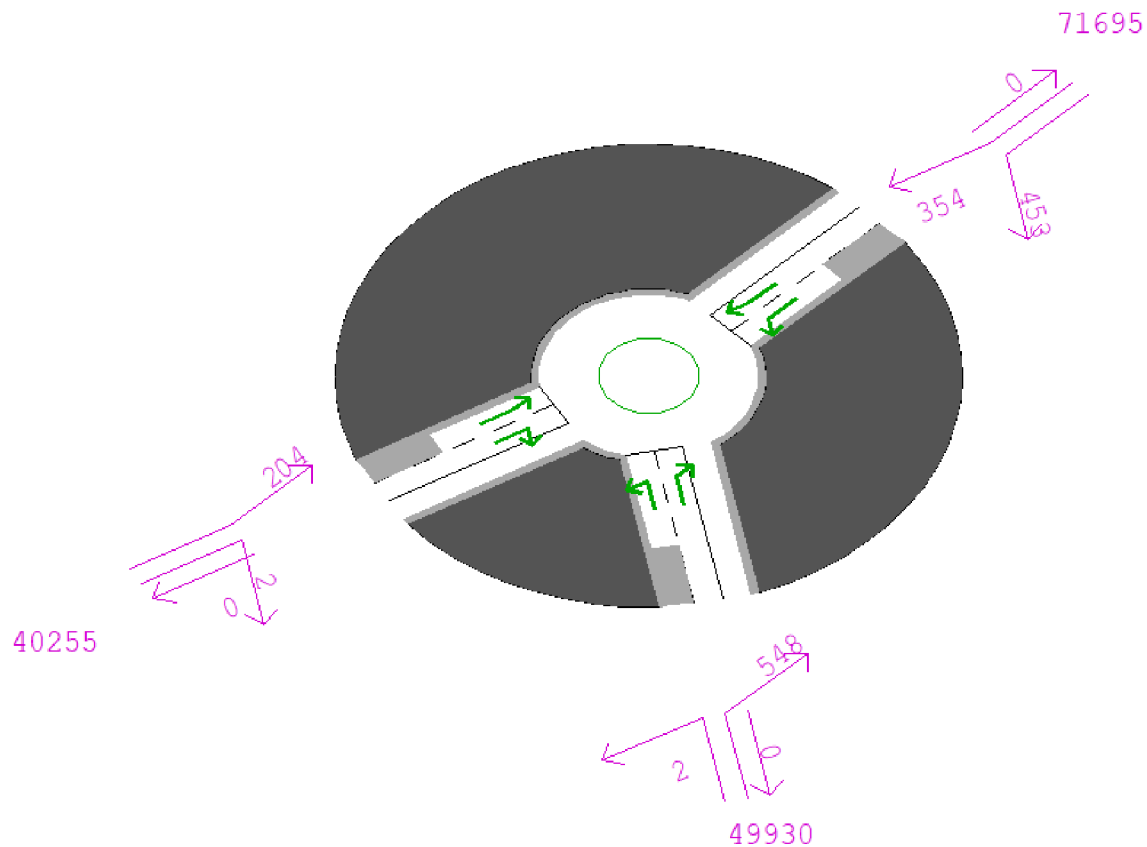
4. A47 / MASEFIELD DRIVE JUNCTION

2026 DM Scenario - PM Peak



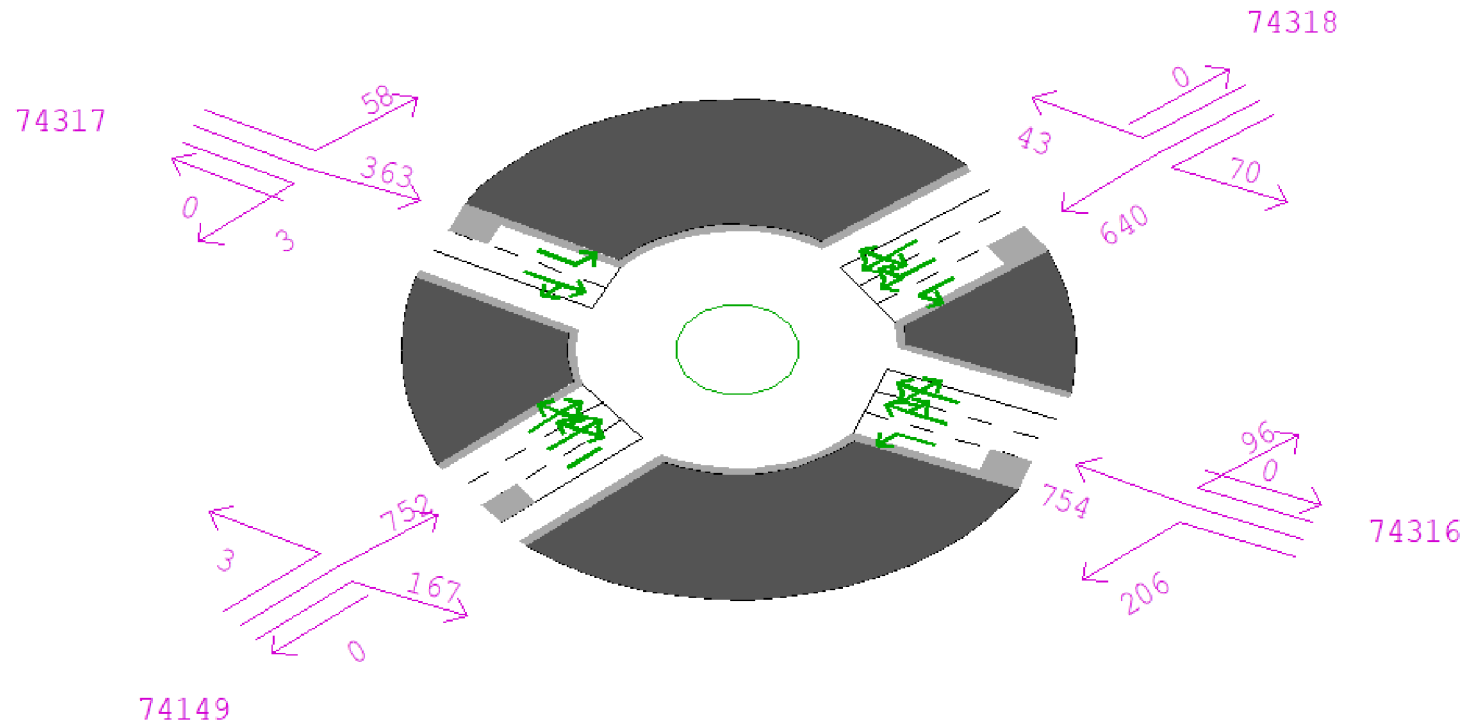
5. A47 / LEICESTER ROAD JUNCTION

2026 DM Scenario - PM Peak



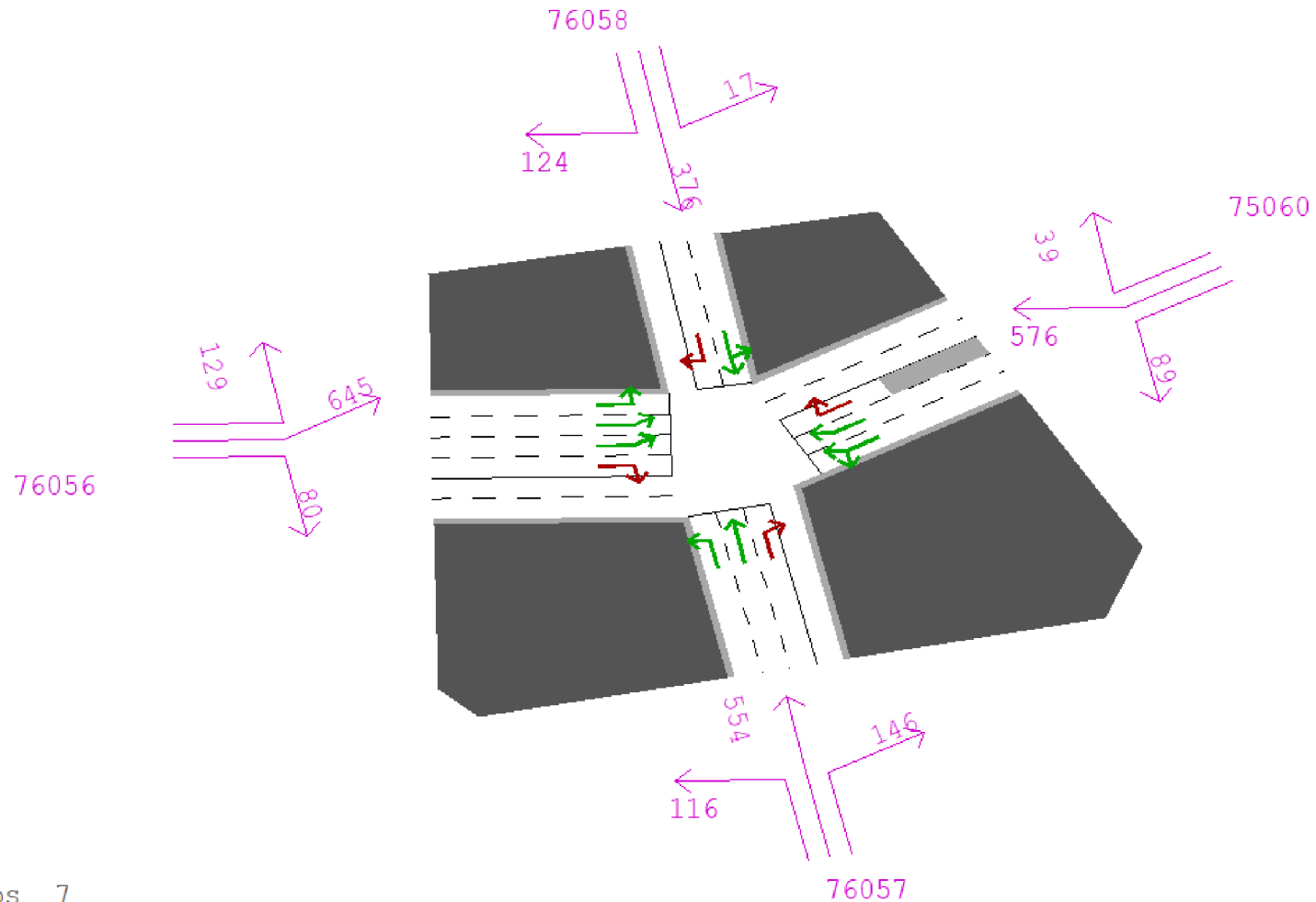
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2026 DM Scenario - PM Peak



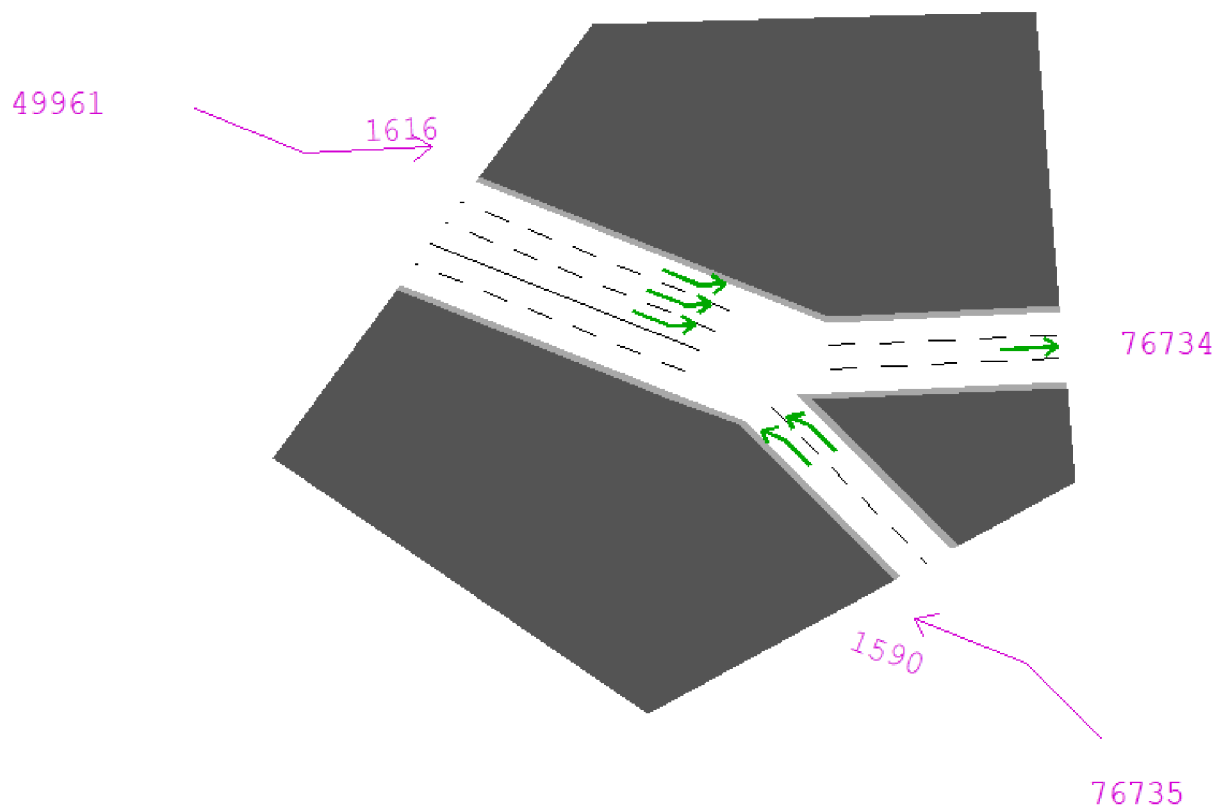
7. A47 / A447 ASHBY ROAD JUNCTION

2026 DM Scenario - PM Peak



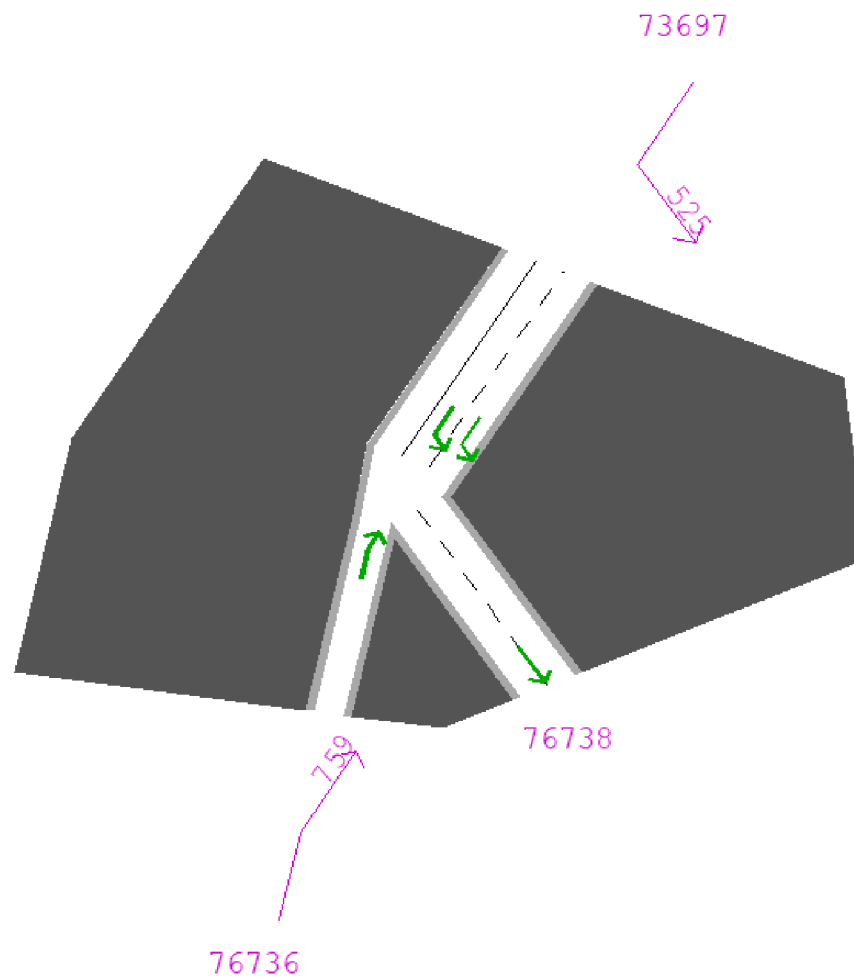
8. DODWELLS ROUNDABOUT

2026 DM Scenario - PM Peak



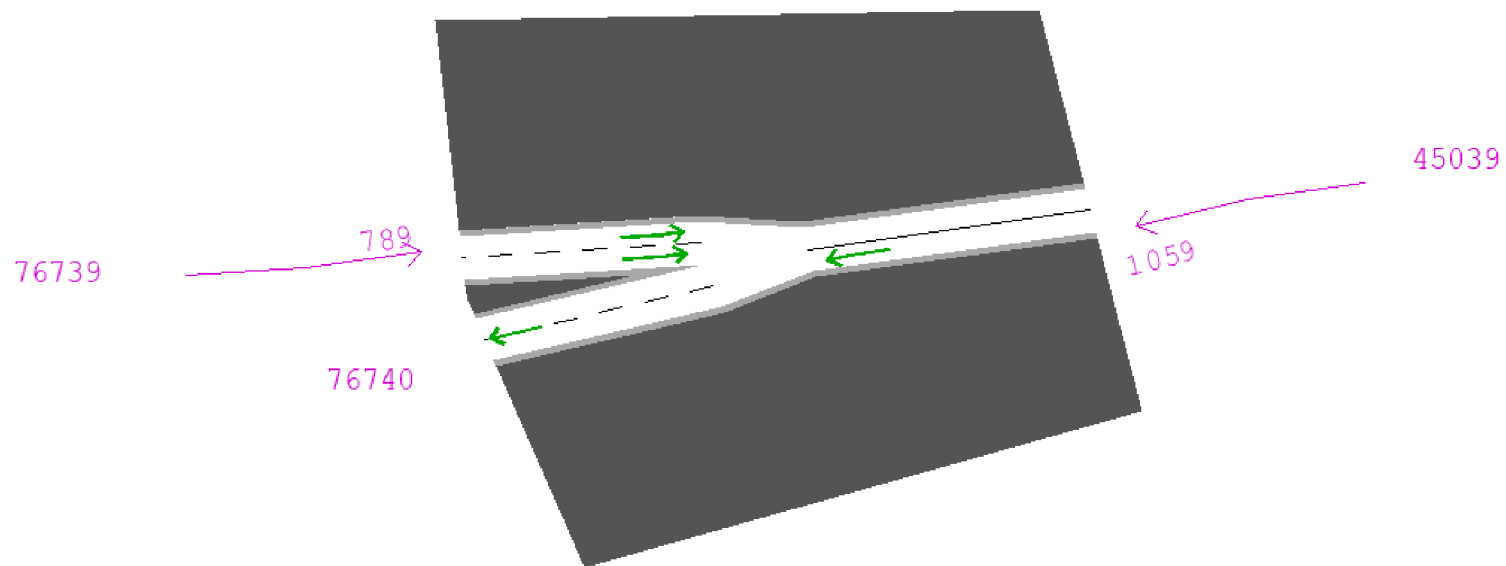
8. DODWELLS ROUNDABOUT

2026 DM Scenario - PM Peak



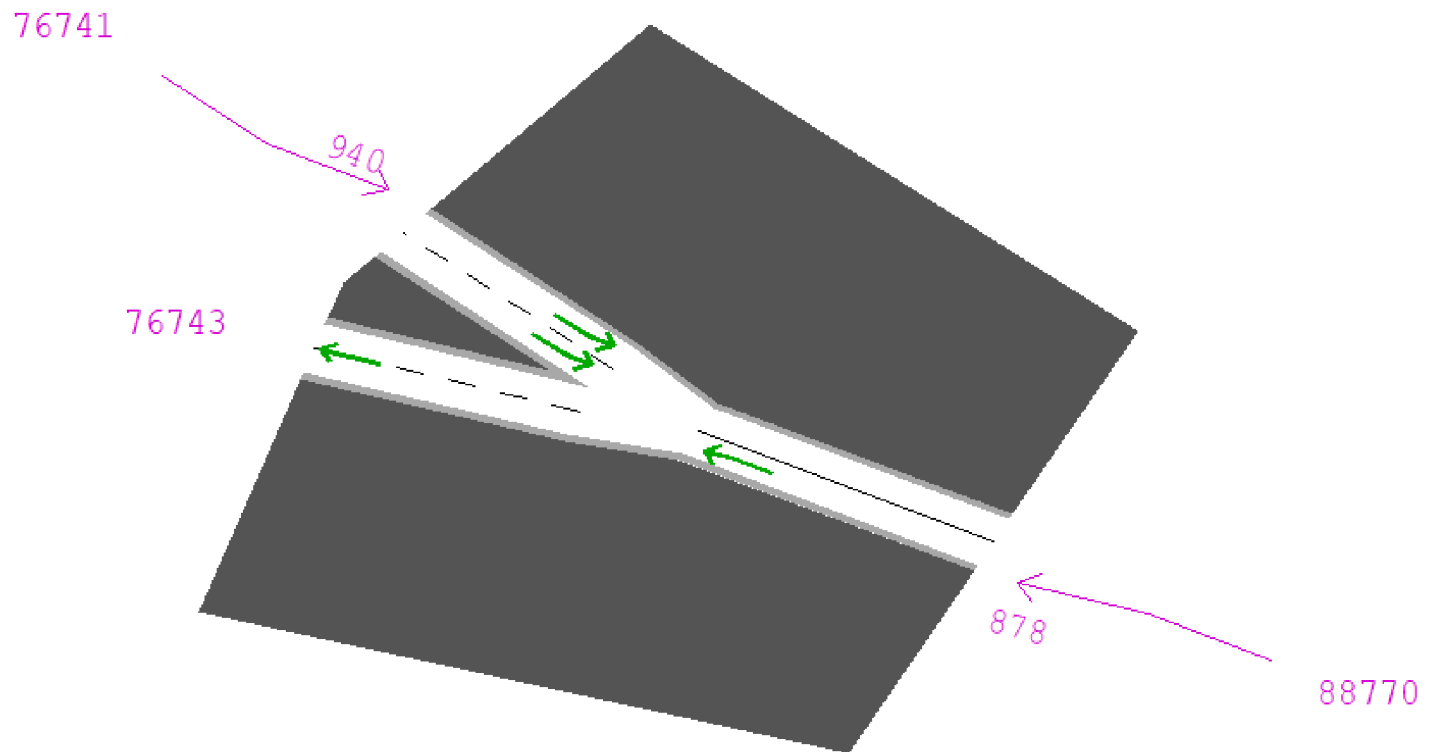
8. DODWELLS ROUNDABOUT

2026 DM Scenario - PM Peak



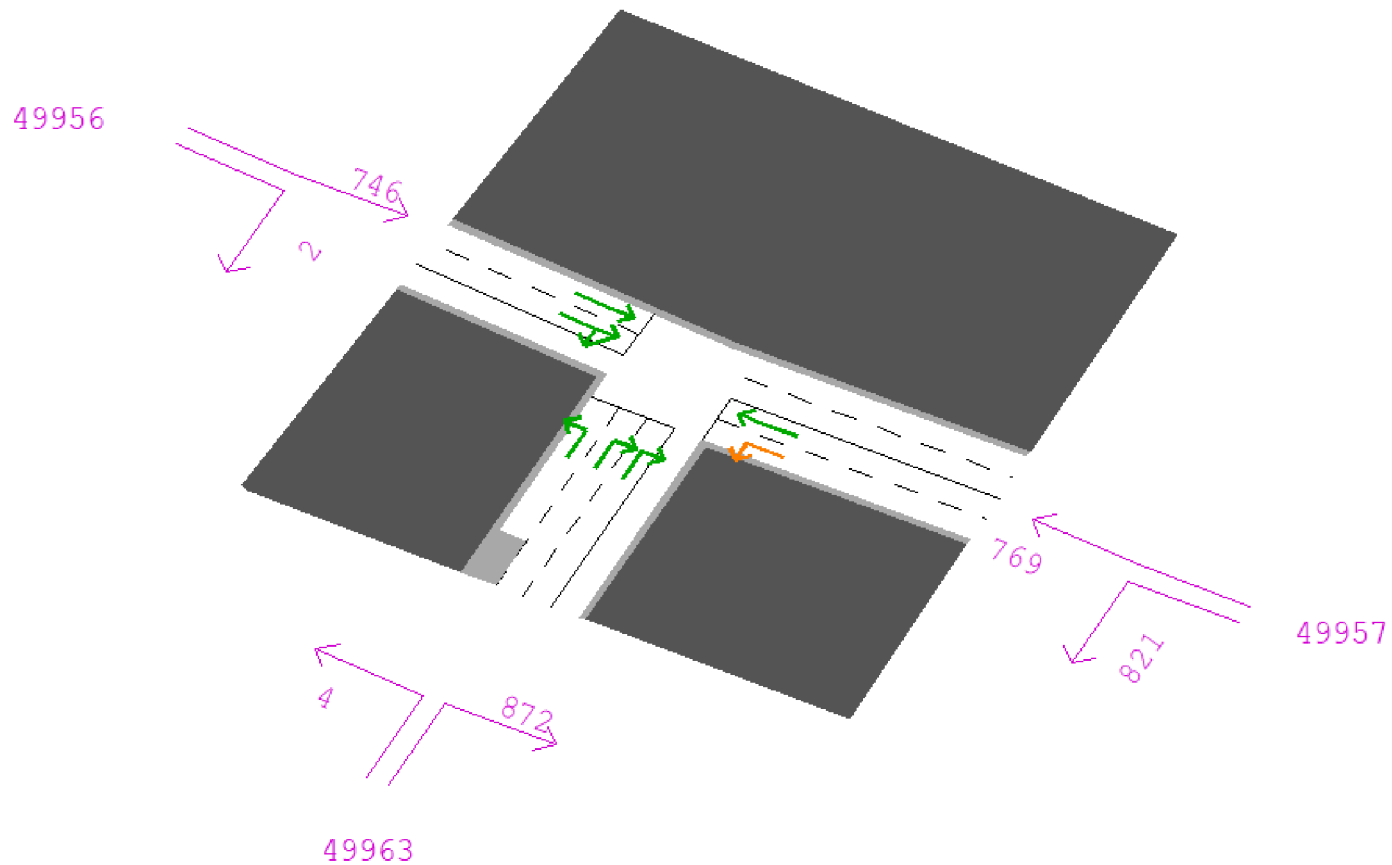
8. DODWELLS ROUNDABOUT

2026 DM Scenario - PM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2026 DM Scenario - PM Peak



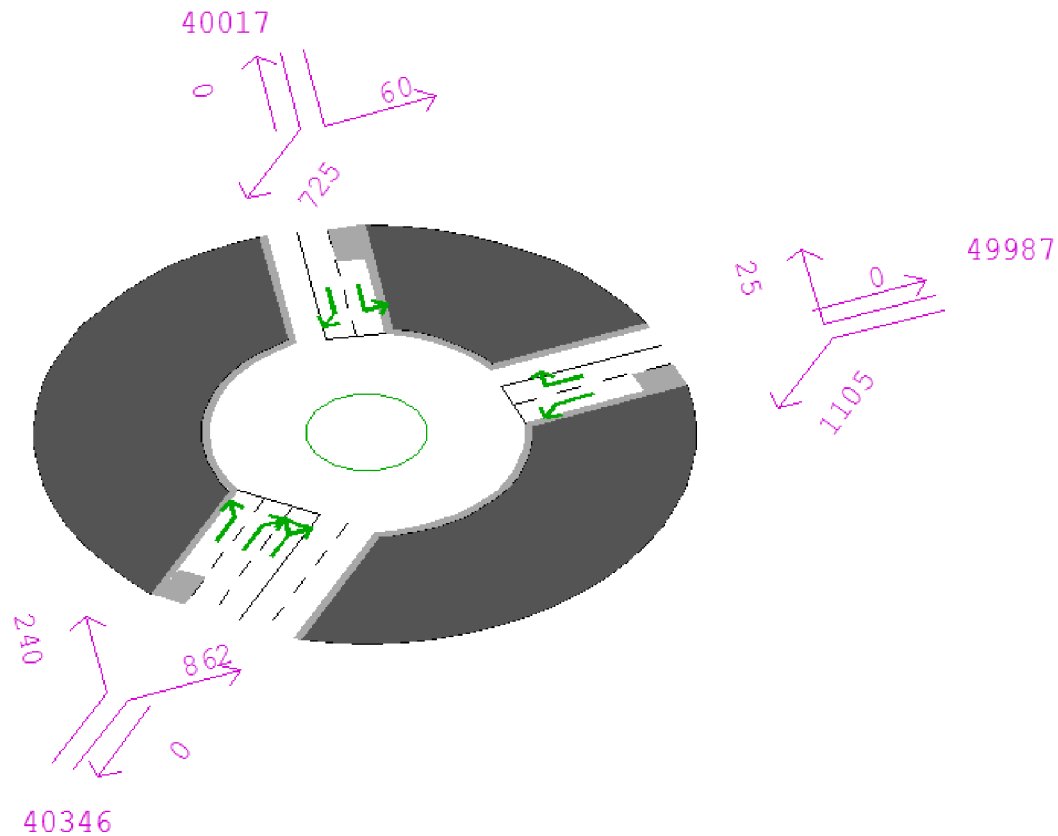


2026 DS

AM Peak

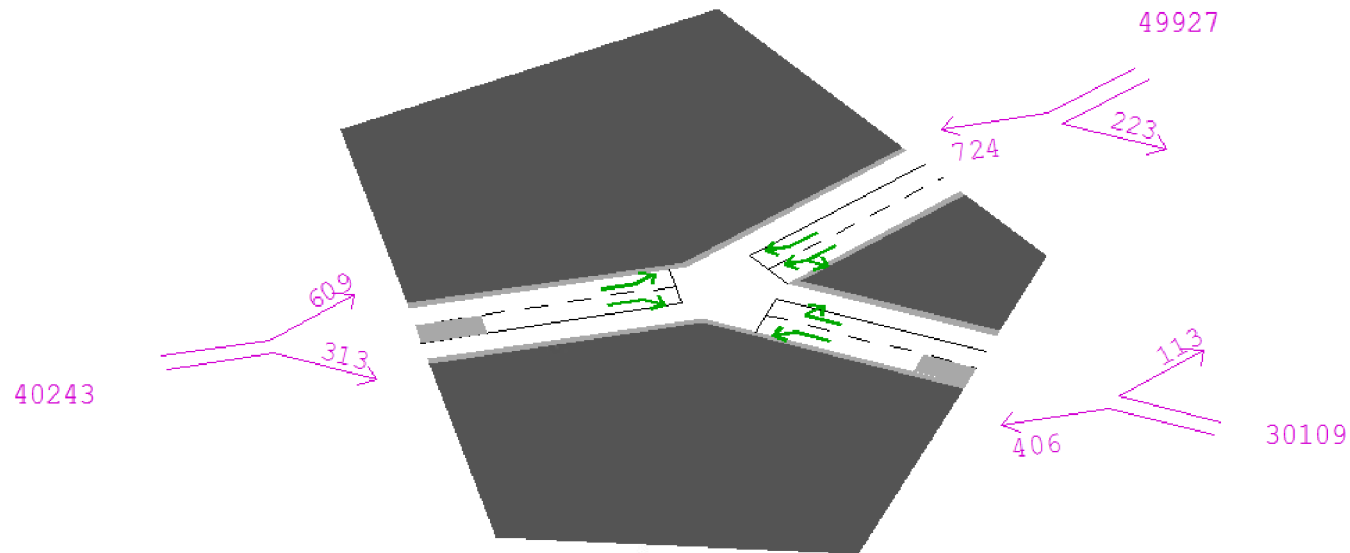
1. A47/ LEICESTER ROAD JUNCTION

2026 DS Scenario - AM Peak



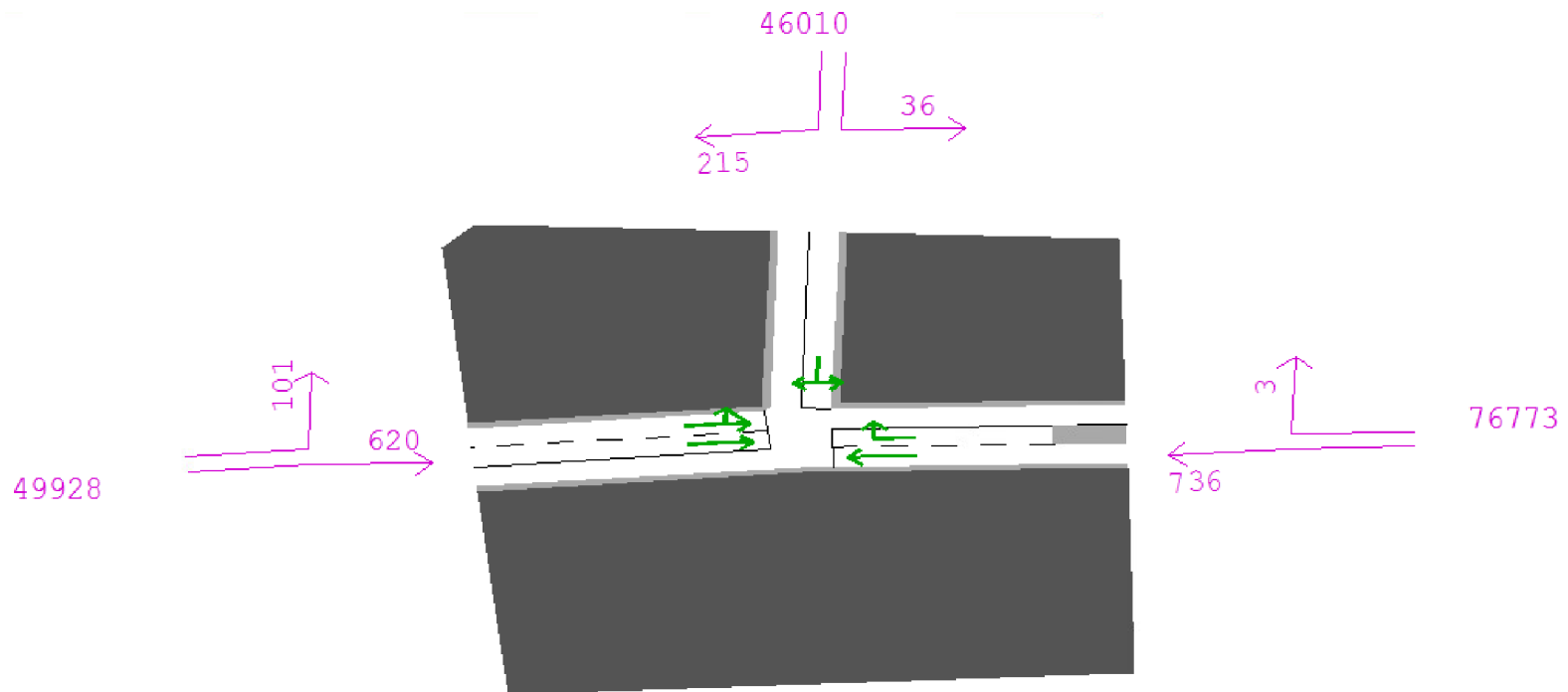
2. A47 / A581 STATION ROAD JUNCTION

2026 DS Scenario - AM Peak



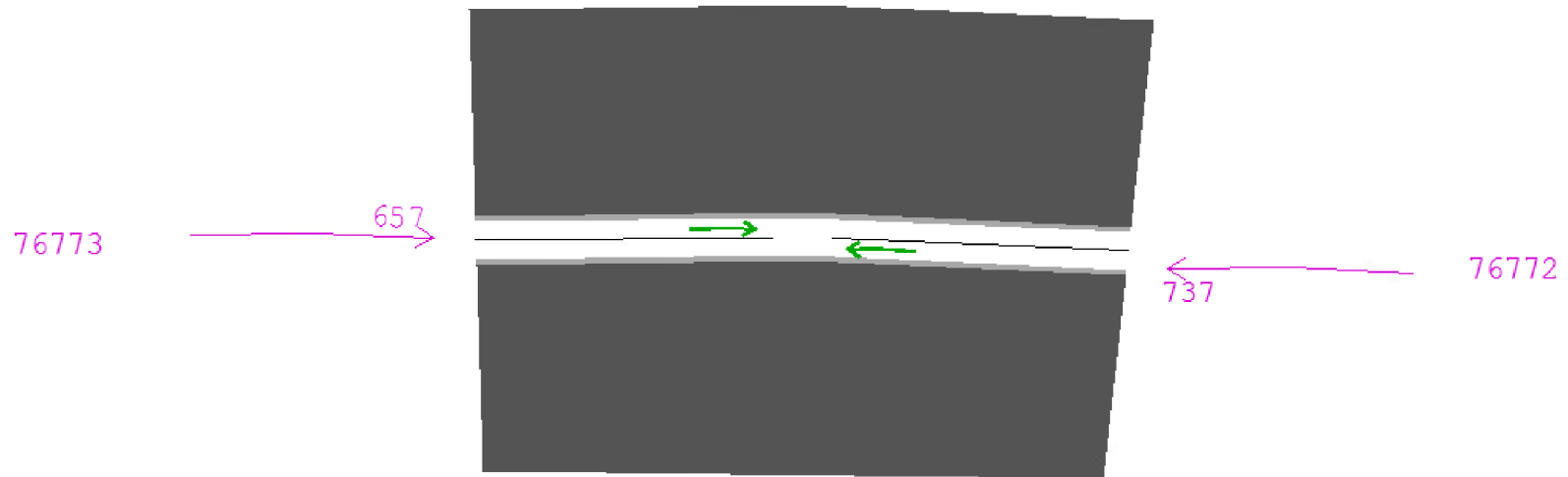
3. A47 / WILKINSON LANE JUNCTION

2026 DS Scenario - AM Peak



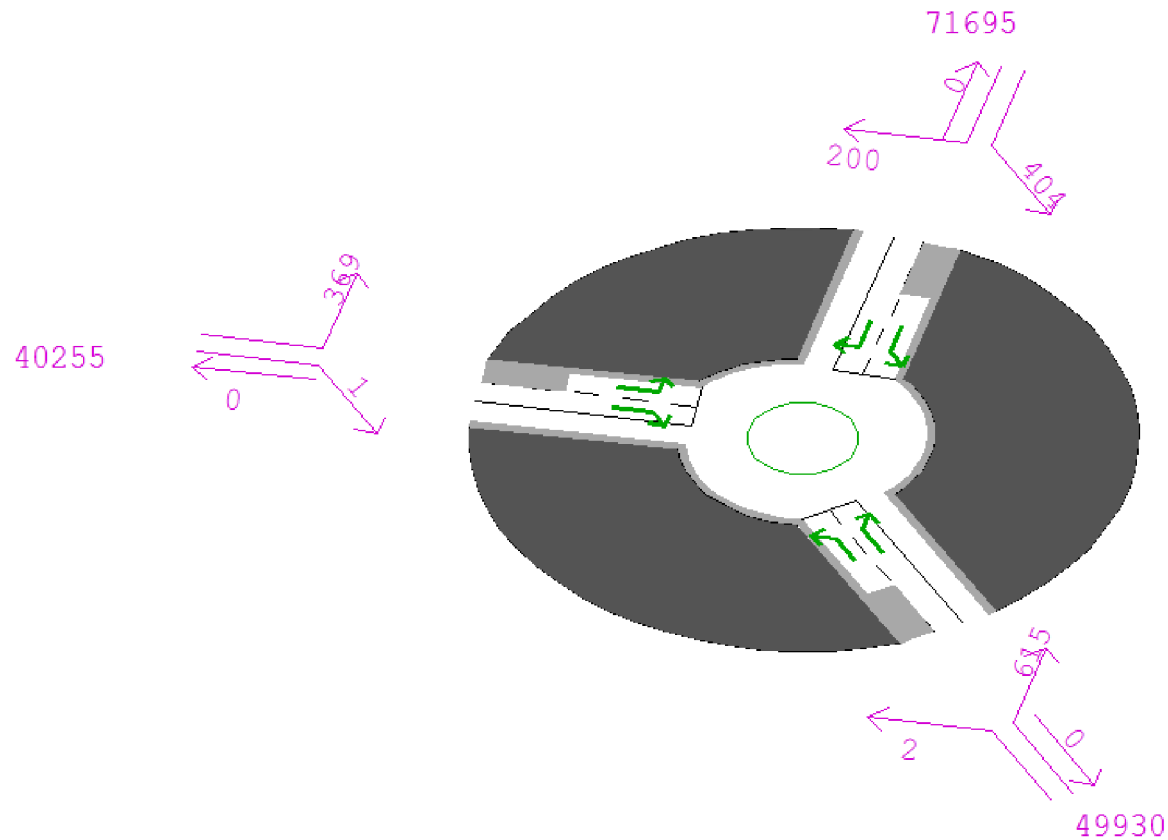
4. A47 / MASEFIELD DRIVE JUNCTION

2026 DS Scenario - AM Peak



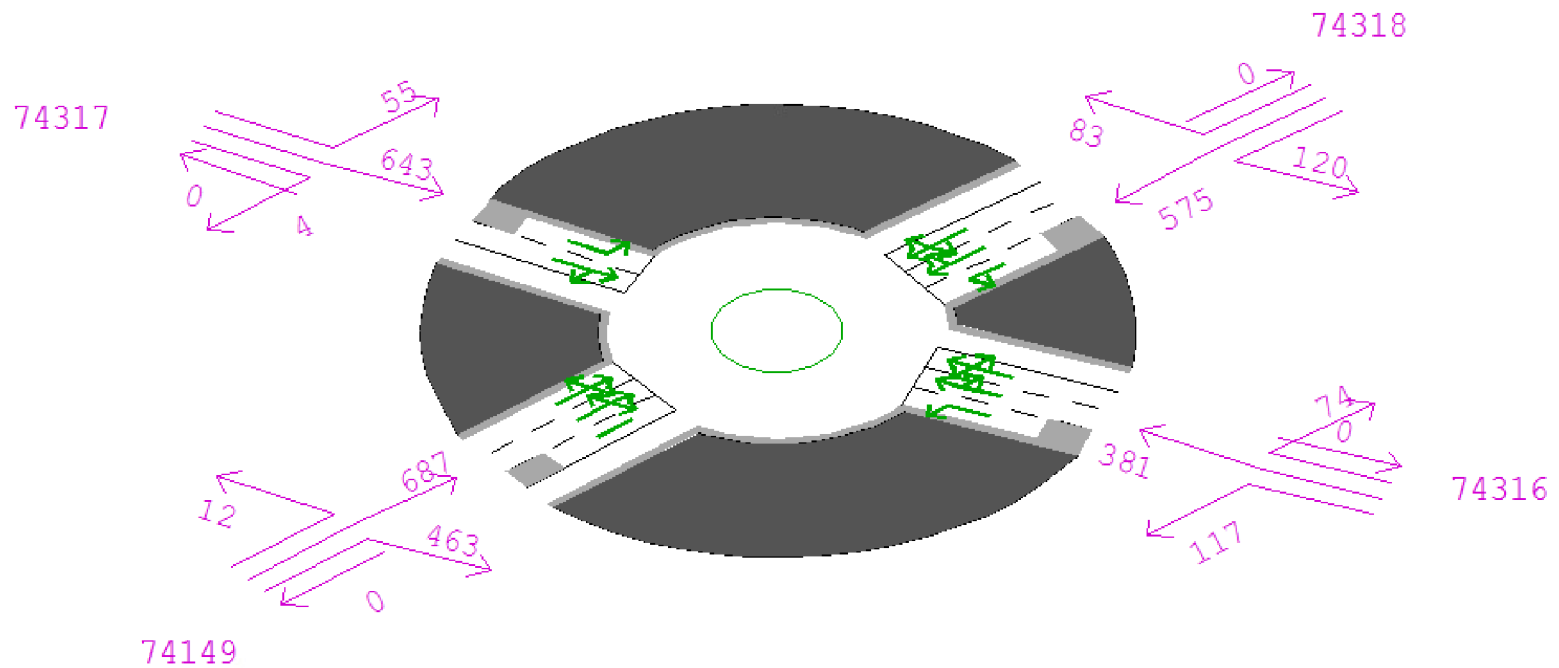
5. A47 / LEICESTER ROAD JUNCTION

2026 DS Scenario - AM Peak



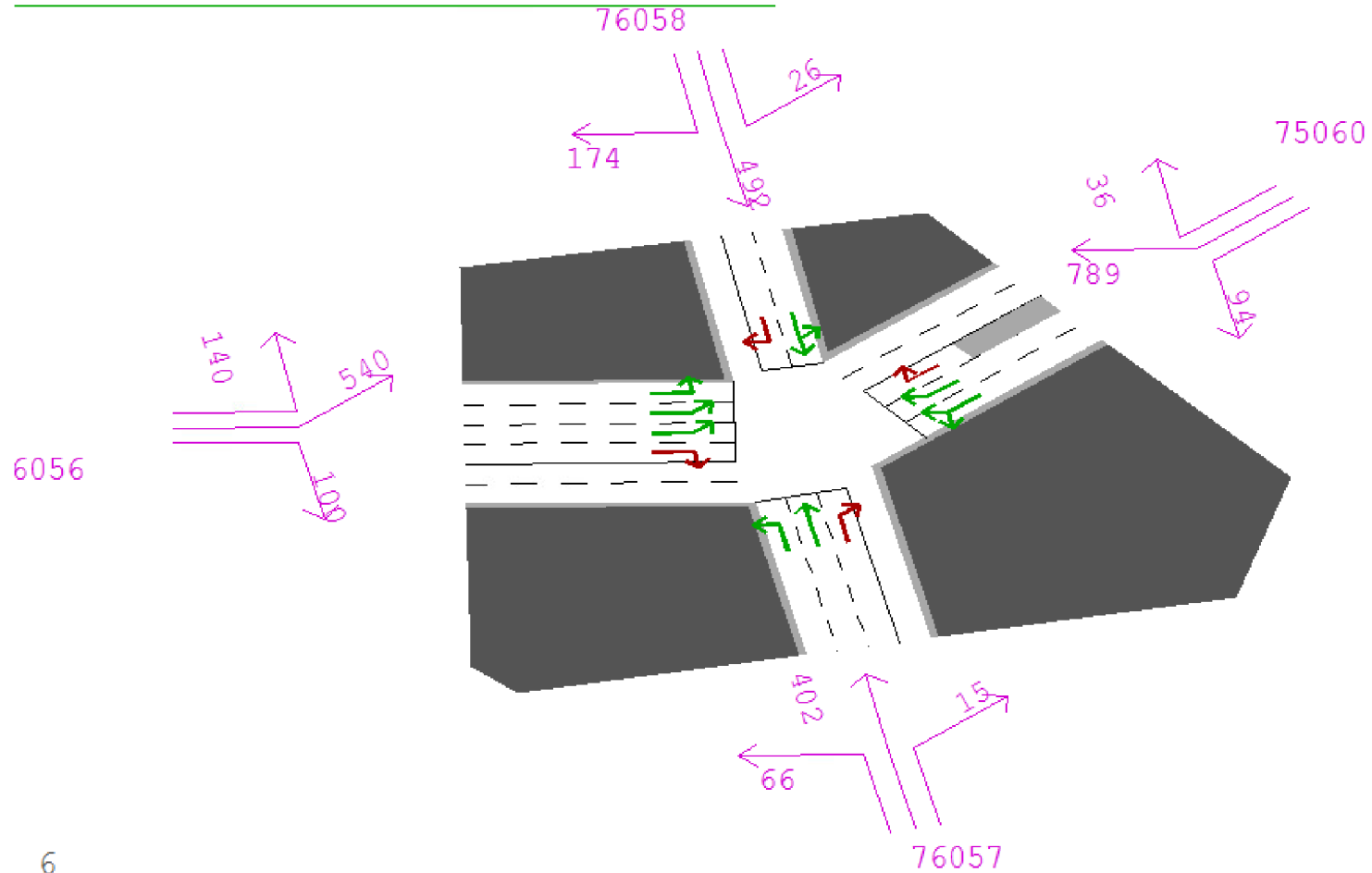
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2026 DS Scenario - AM Peak



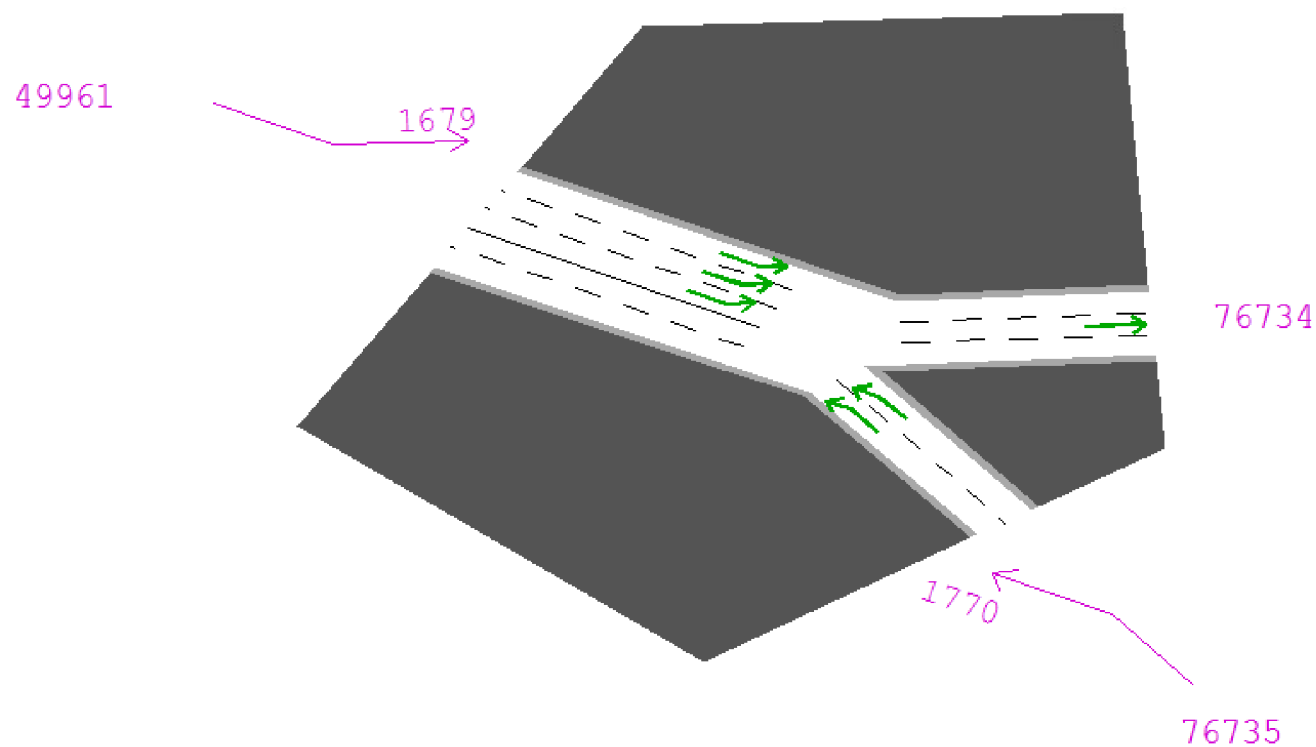
7. A47 / A447 ASHBY ROAD JUNCTION

2026 DS Scenario - AM Peak



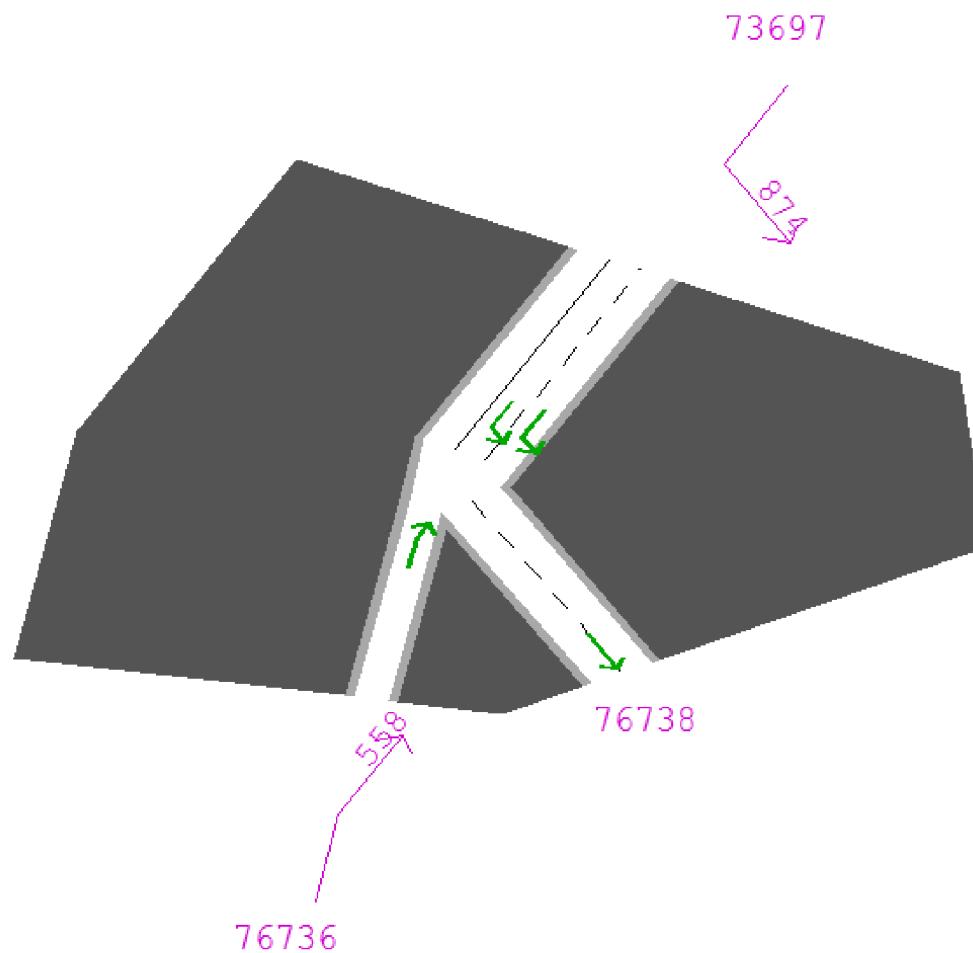
8. DODWELLS ROUNDABOUT

2026 DS Scenario - AM Peak



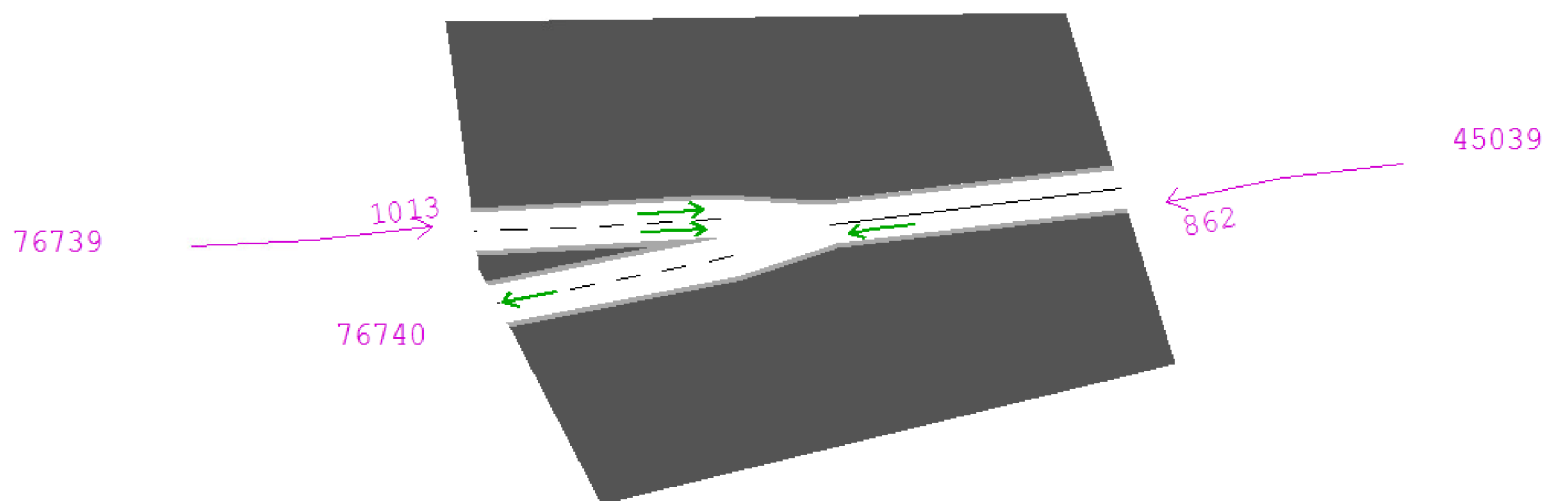
8. DODWELLS ROUNDABOUT

2026 DS Scenario - AM Peak



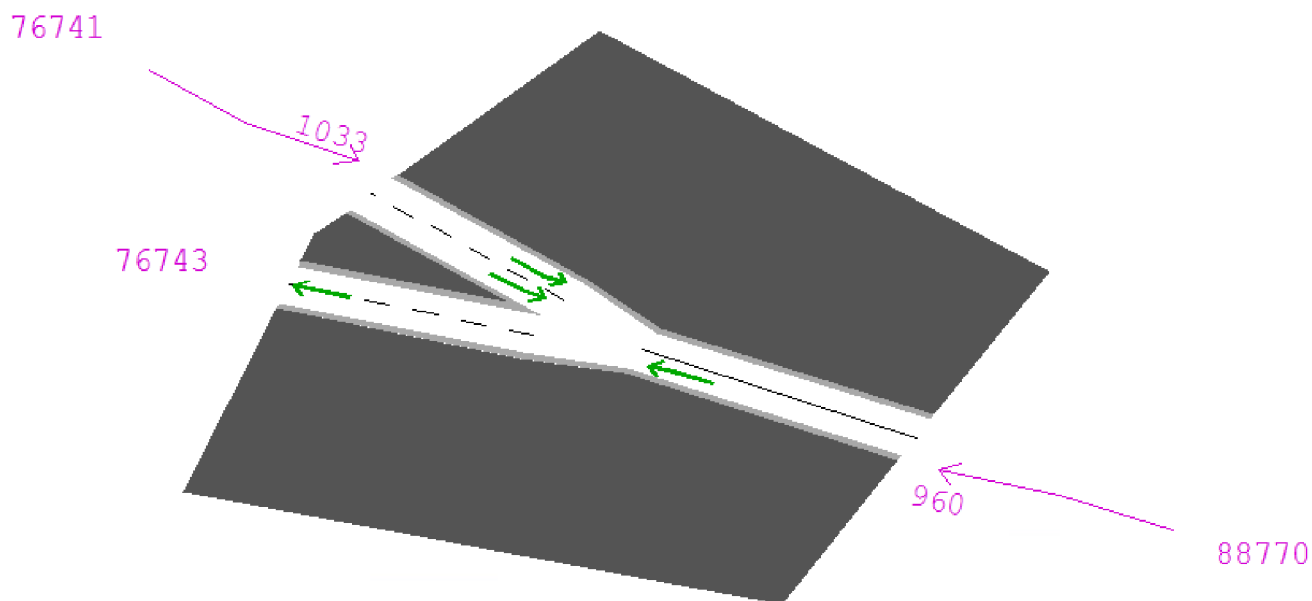
8. DODWELLS ROUNDABOUT

2026 DS Scenario - AM Peak



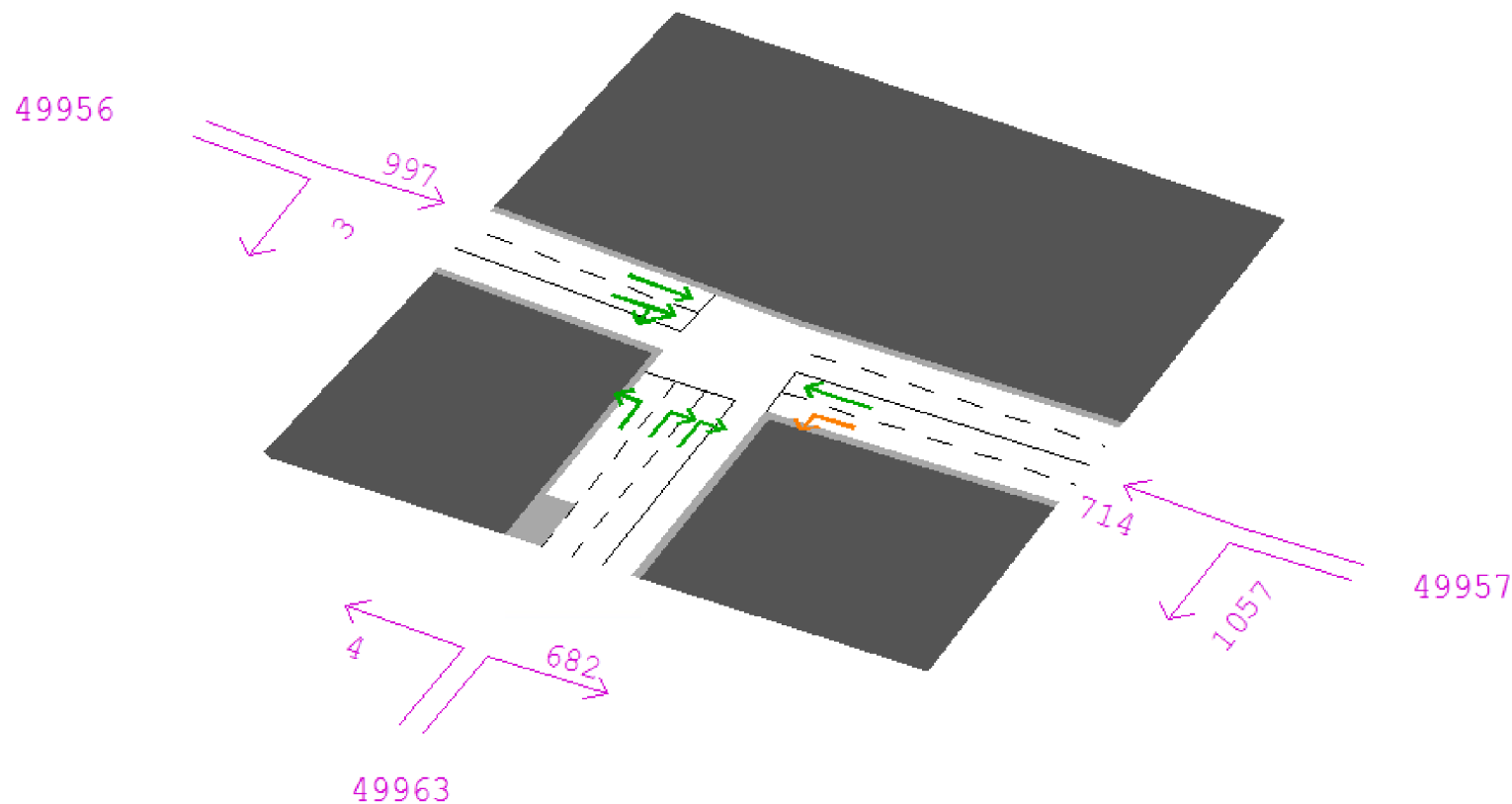
8. DODWELLS ROUNDABOUT

2026 DS Scenario - AM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2026 DS Scenario - AM Peak



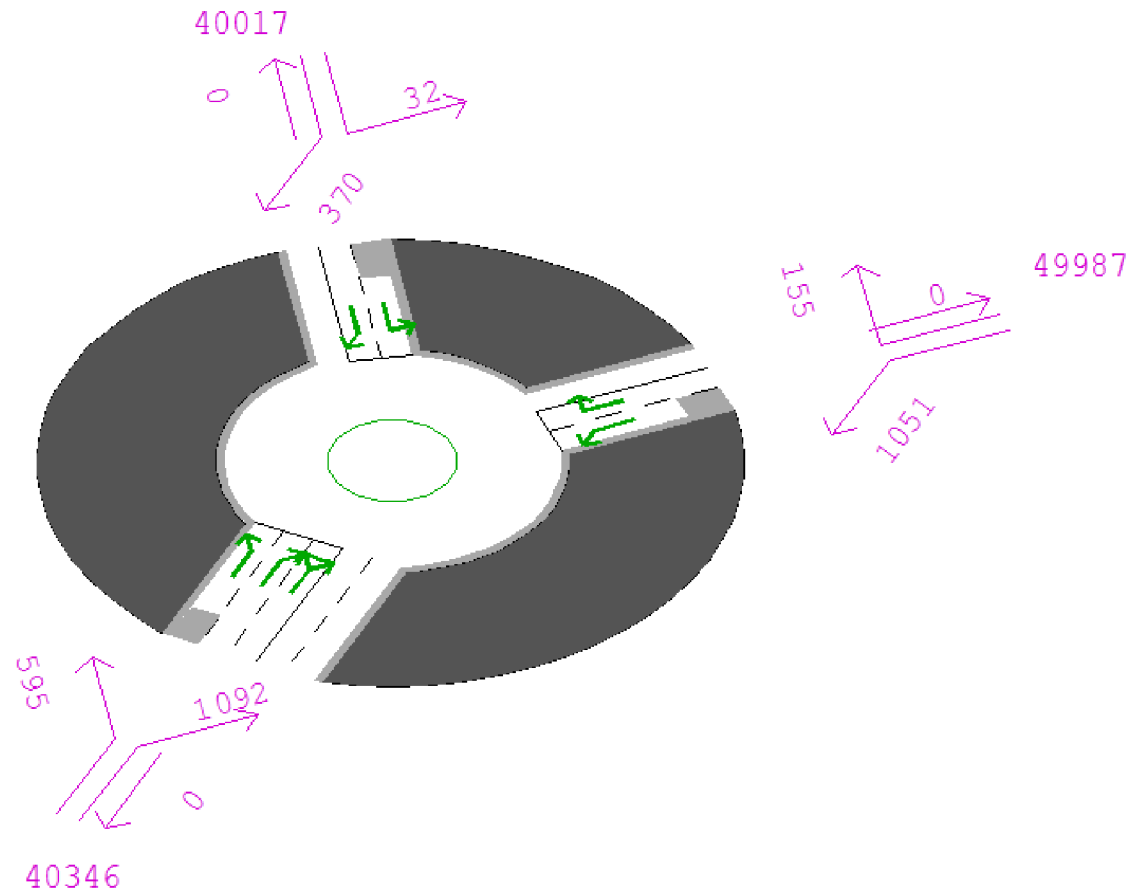


2026 DS

PM Peak

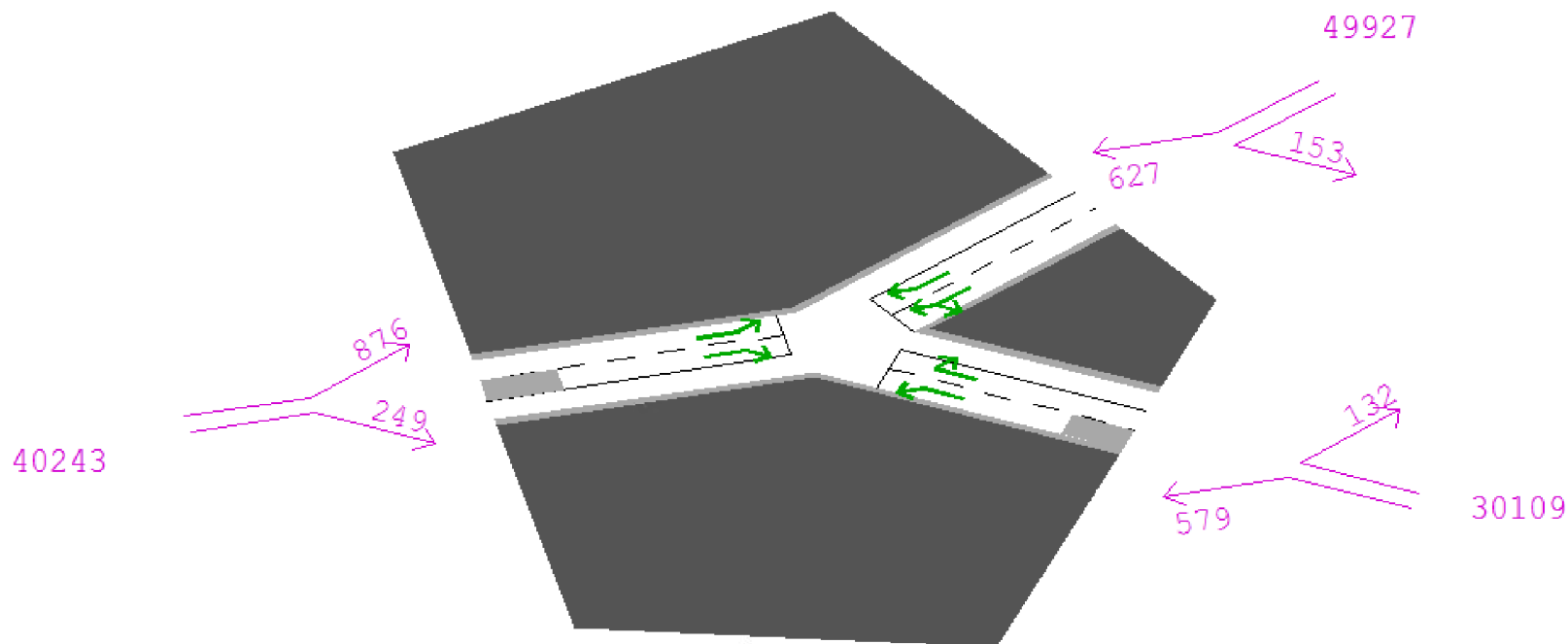
1. A47/ LEICESTER ROAD JUNCTION

2026 DS Scenario - PM Peak



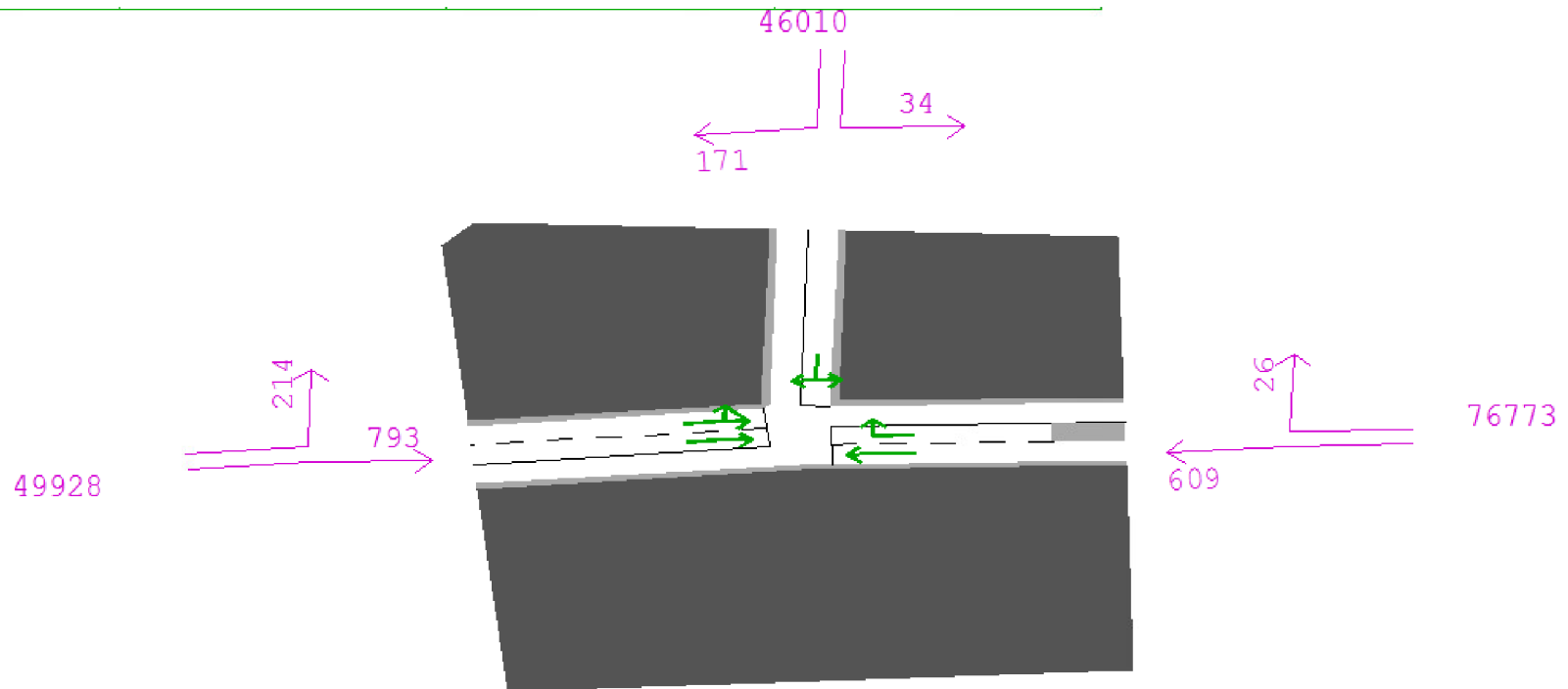
2. A47 / A581 STATION ROAD JUNCTION

2026 DS Scenario - PM Peak



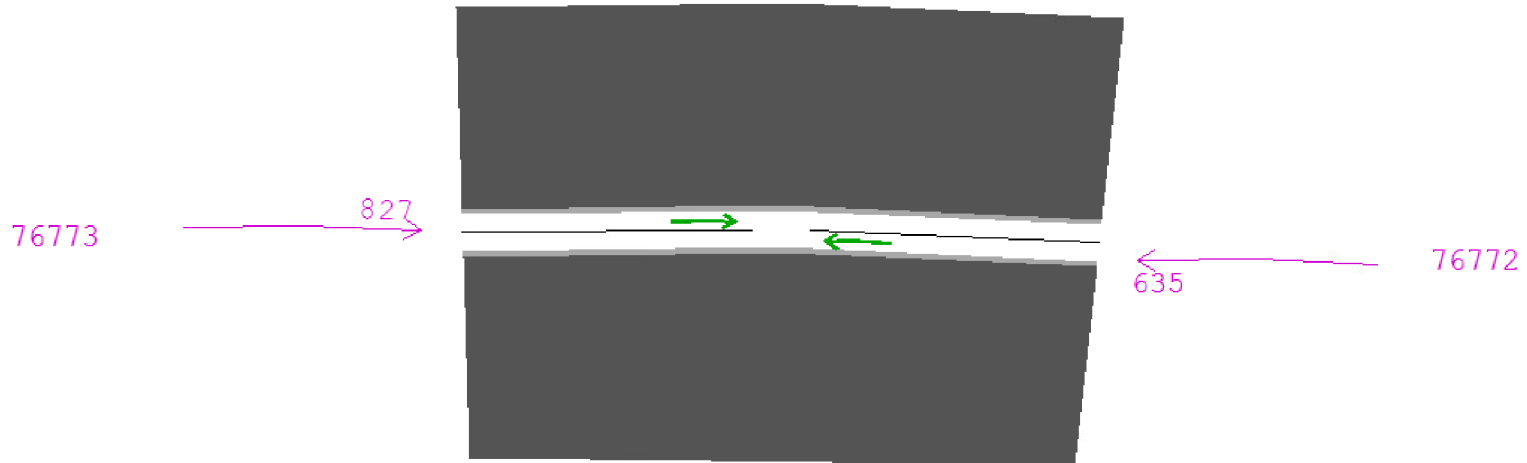
3. A47 / WILKINSON LANE JUNCTION

2026 DS Scenario - PM Peak



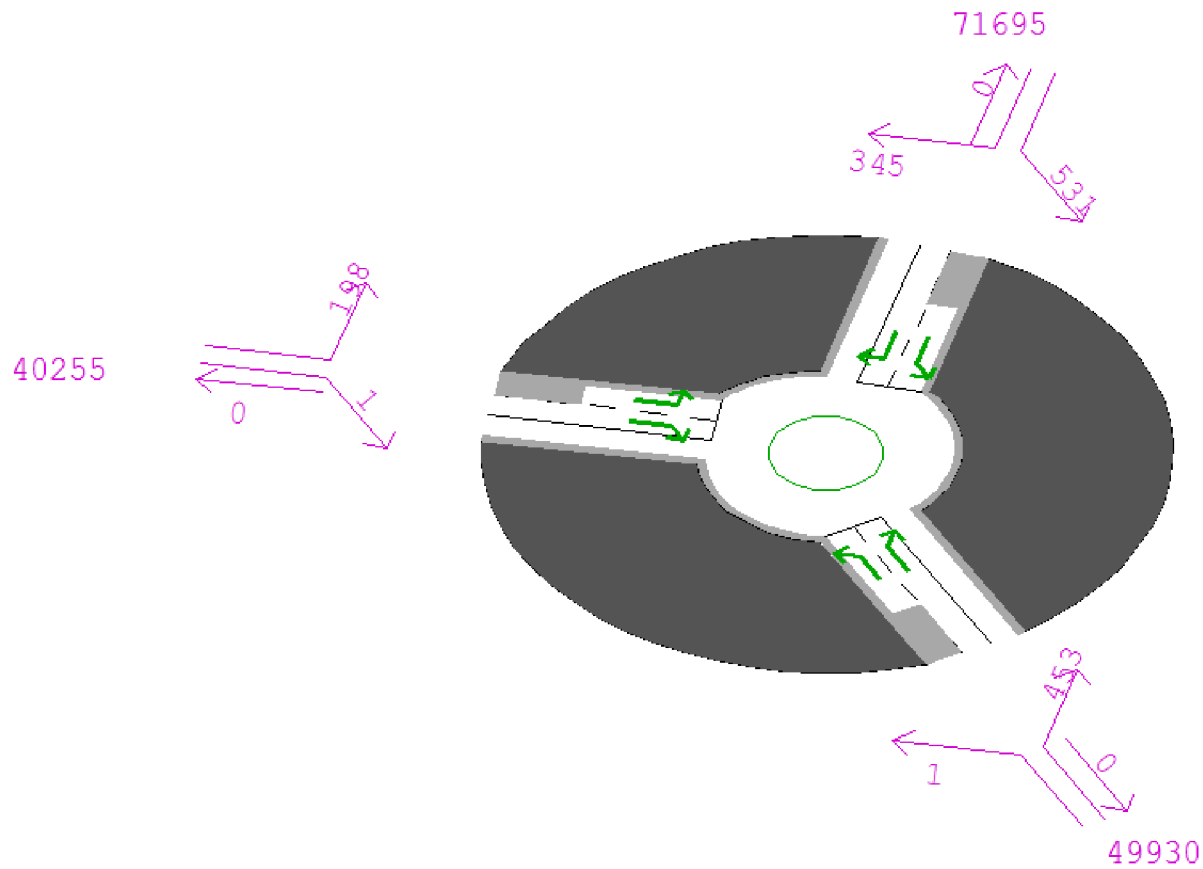
4. A47 / MASEFIELD DRIVE JUNCTION

2026 DS Scenario - PM Peak



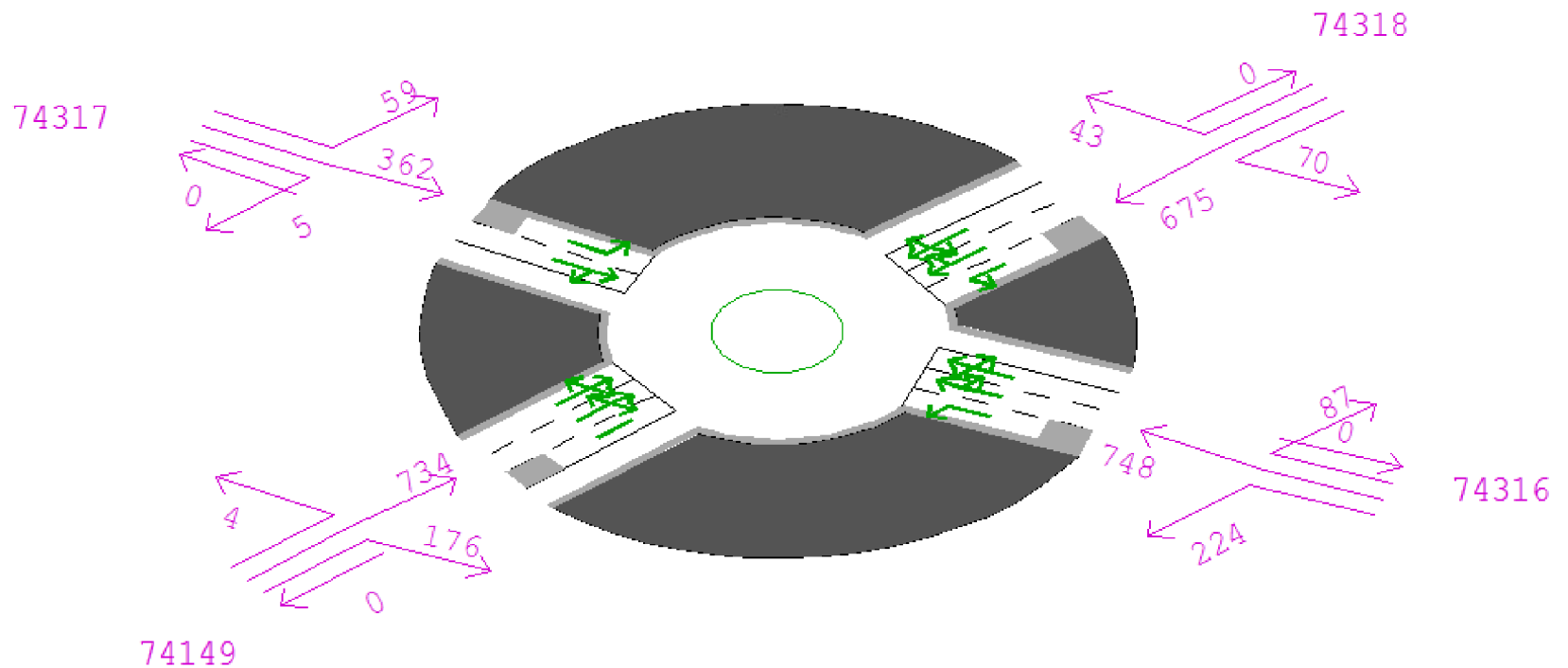
5. A47 / LEICESTER ROAD JUNCTION

2026 DS Scenario - PM Peak



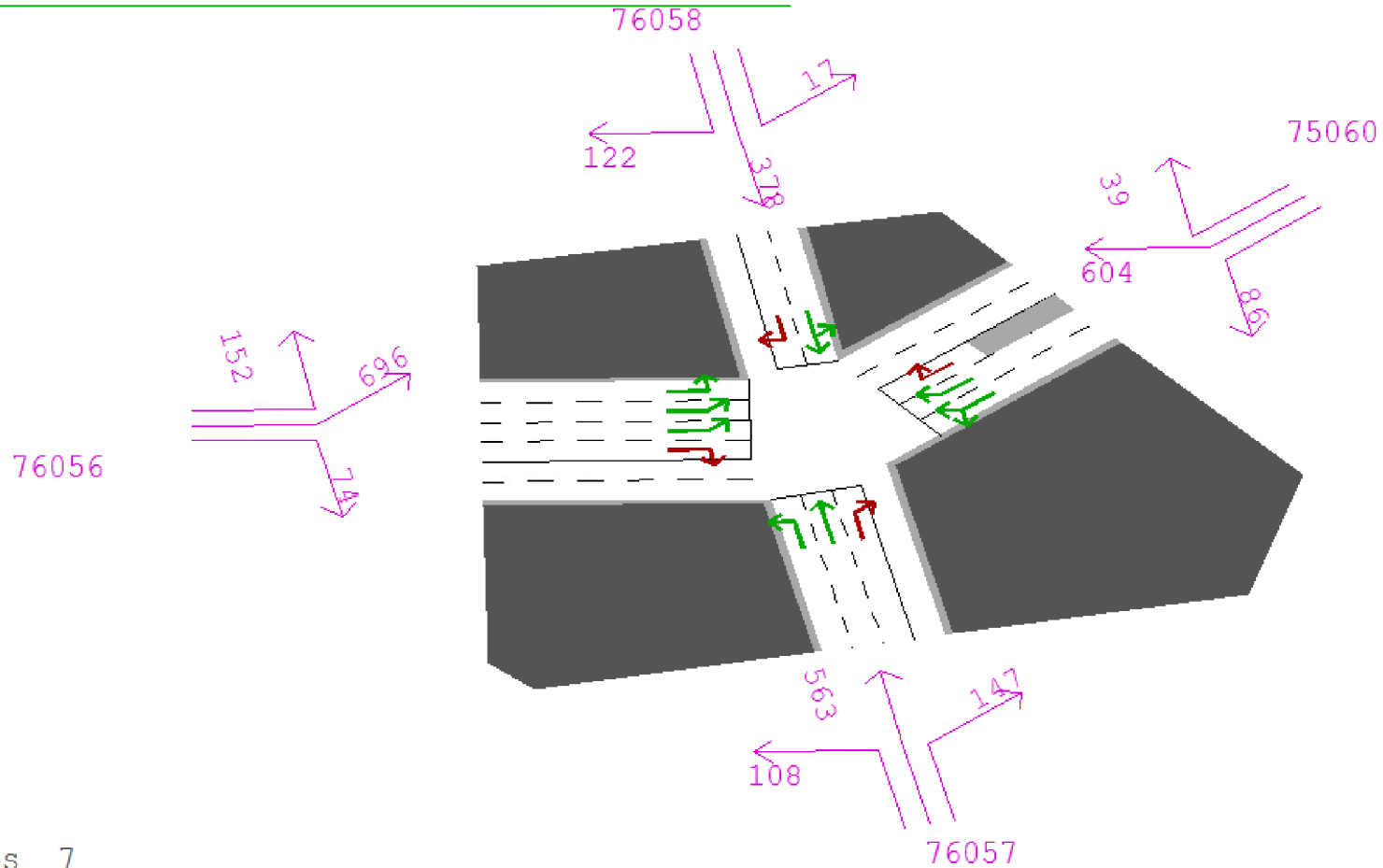
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2026 DS Scenario - PM Peak



7. A47 / A447 ASHBY ROAD JUNCTION

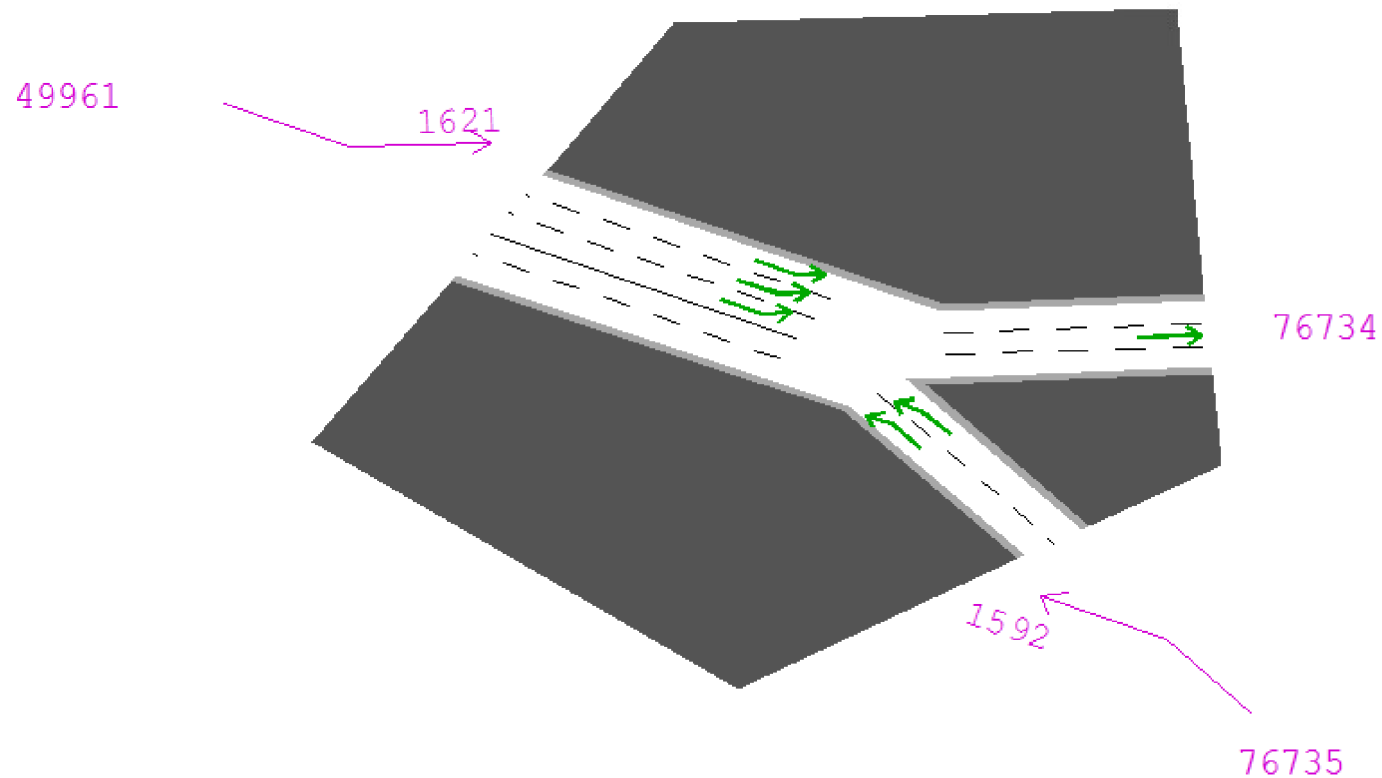
2026 DS Scenario - PM Peak



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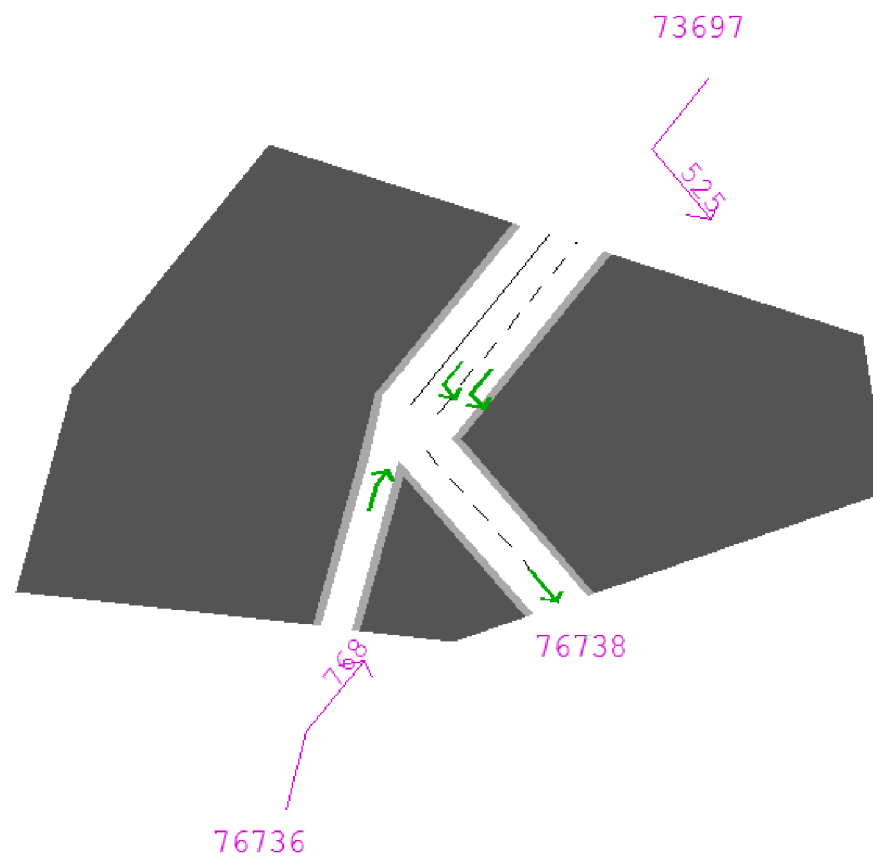
8. DODWELLS ROUNDABOUT

2026 DS Scenario - PM Peak



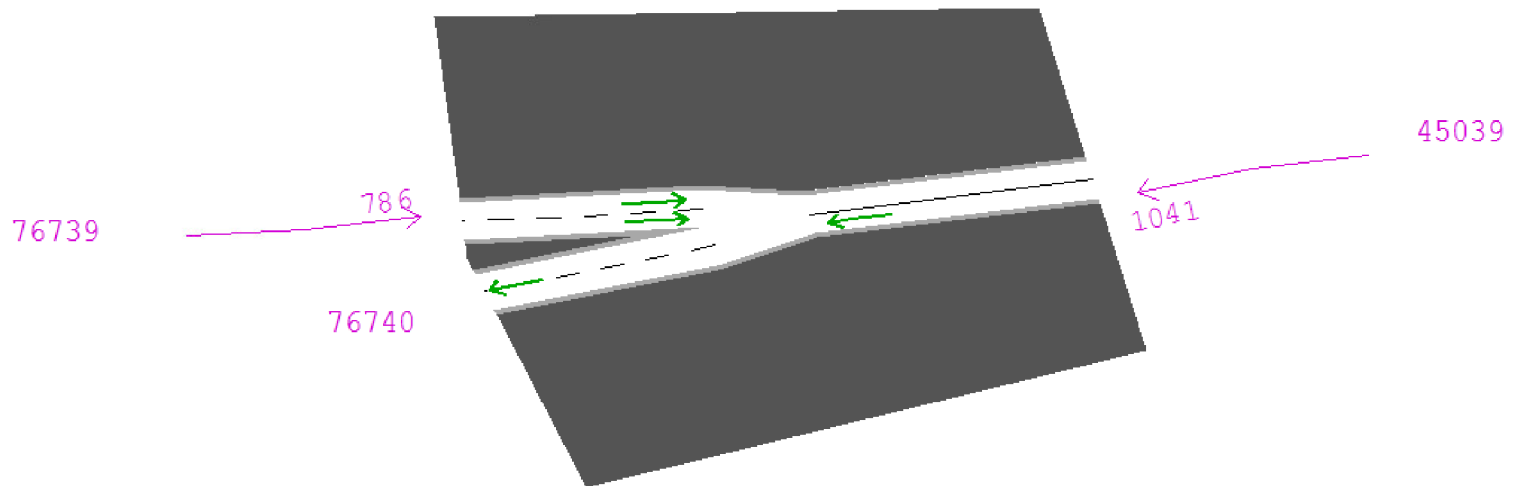
8. DODWELLS ROUNDABOUT

2026 DS Scenario - PM Peak



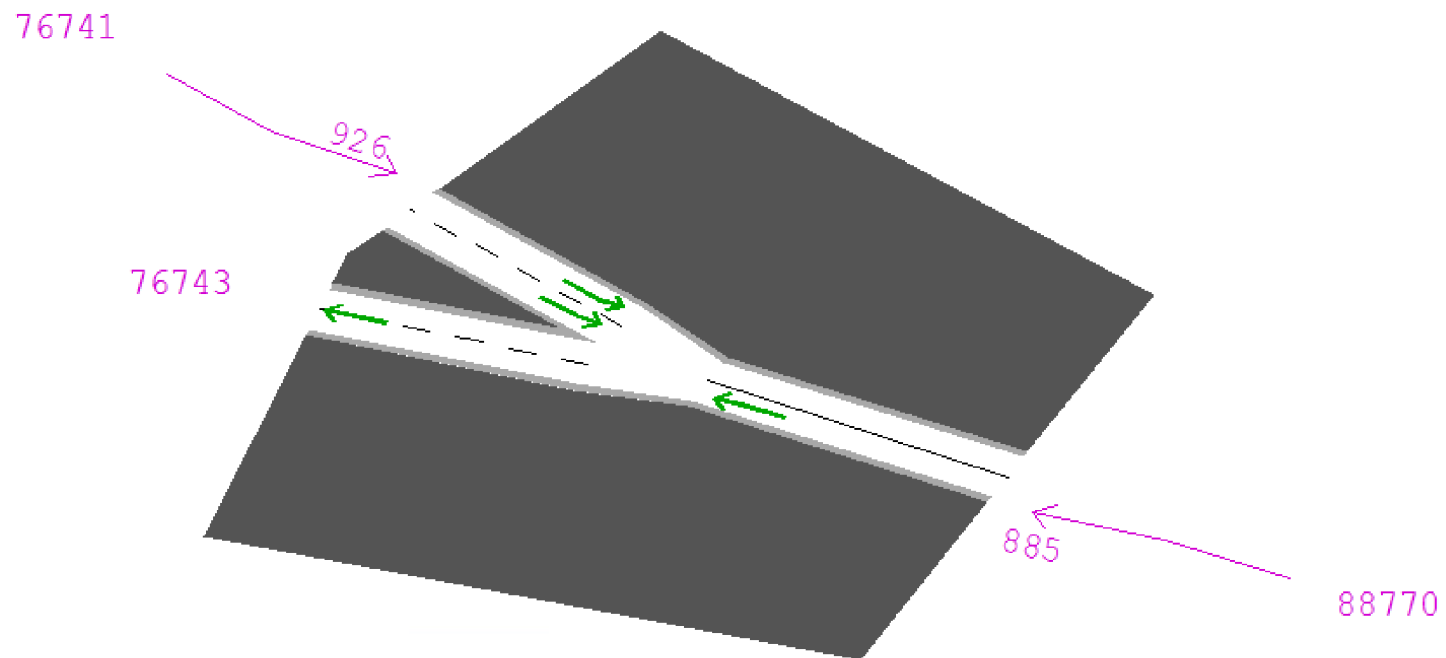
8. DODWELLS ROUNDABOUT

2026 DS Scenario - PM Peak



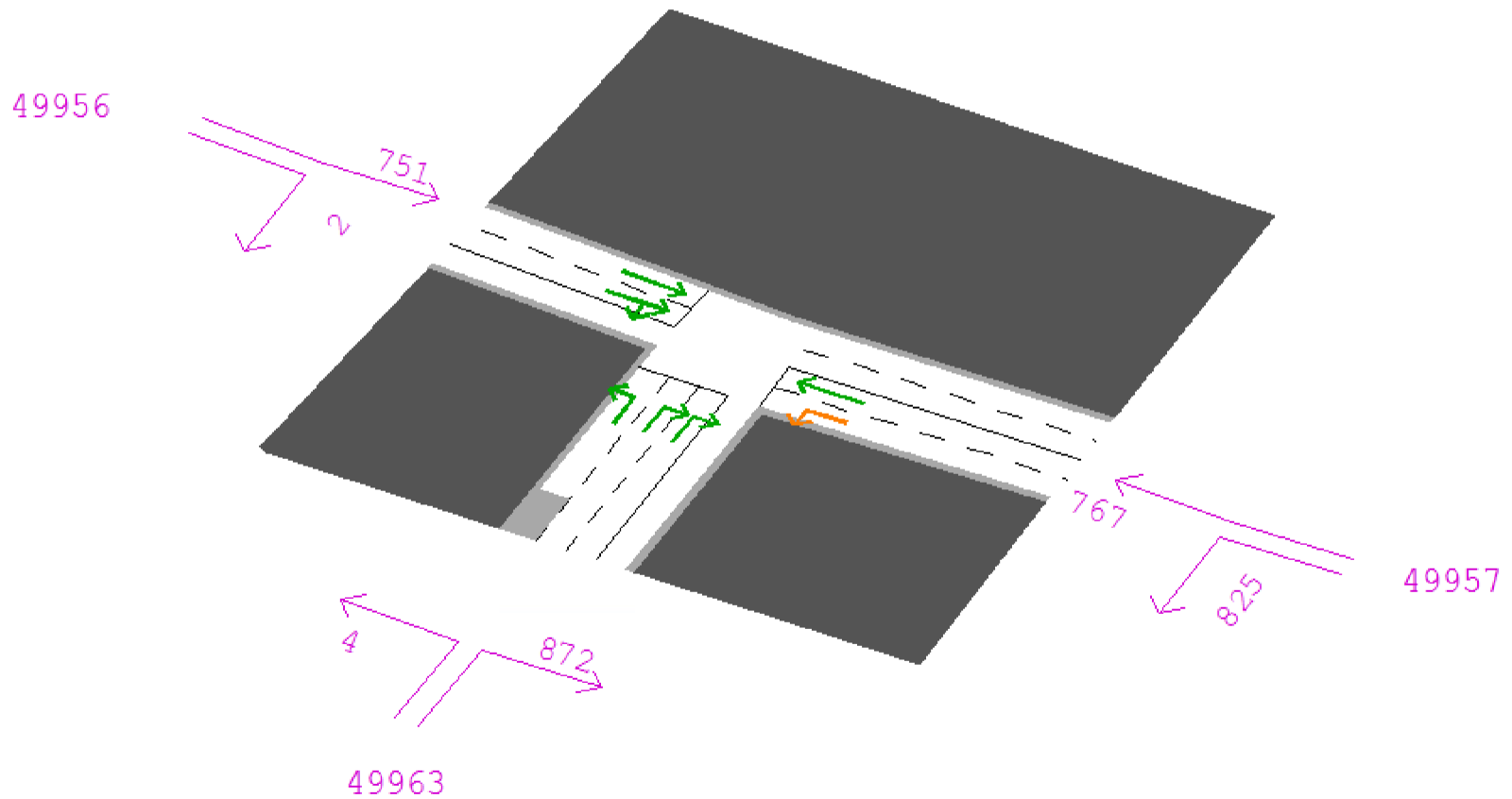
8. DODWELLS ROUNDABOUT

2026 DS Scenario - PM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2026 DS Scenario - PM Peak



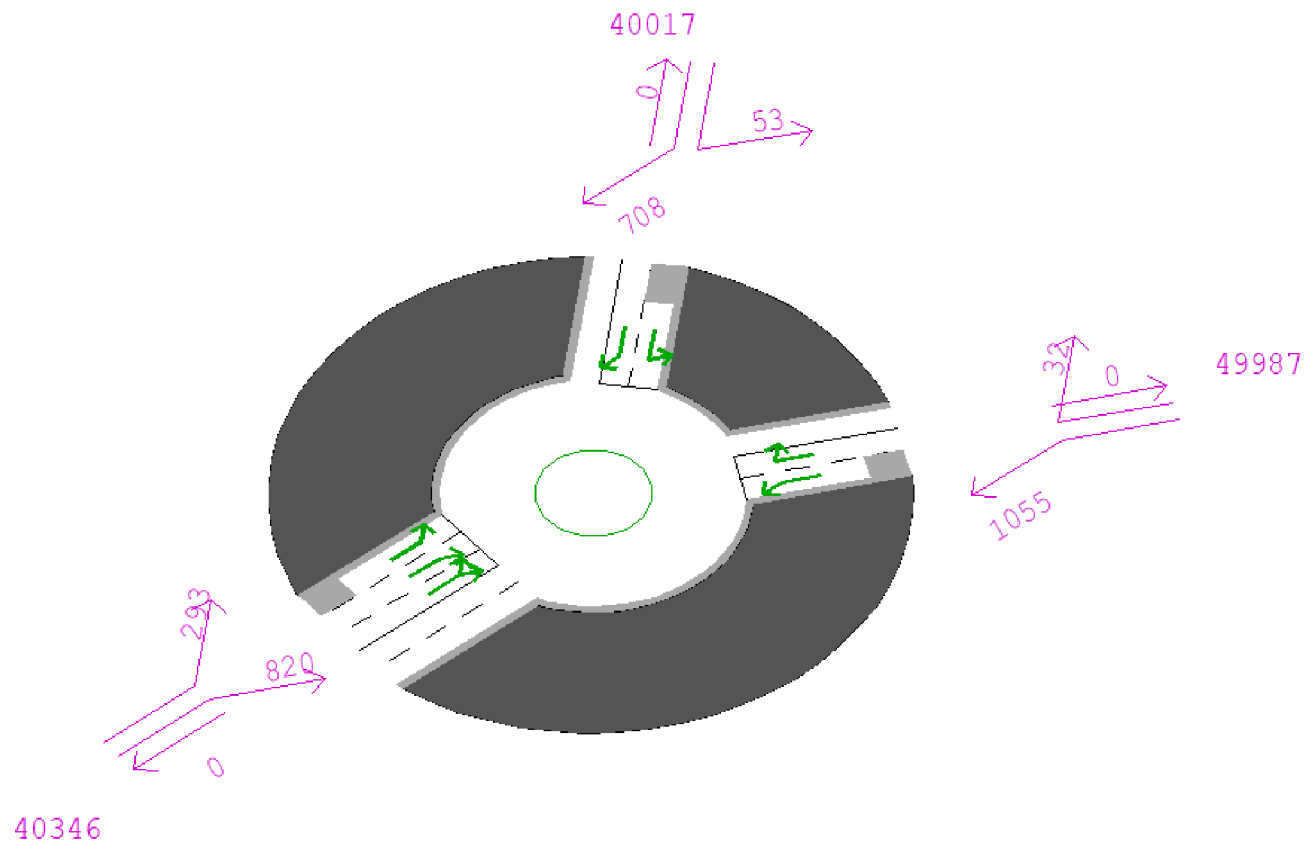


2036 DM

AM Peak

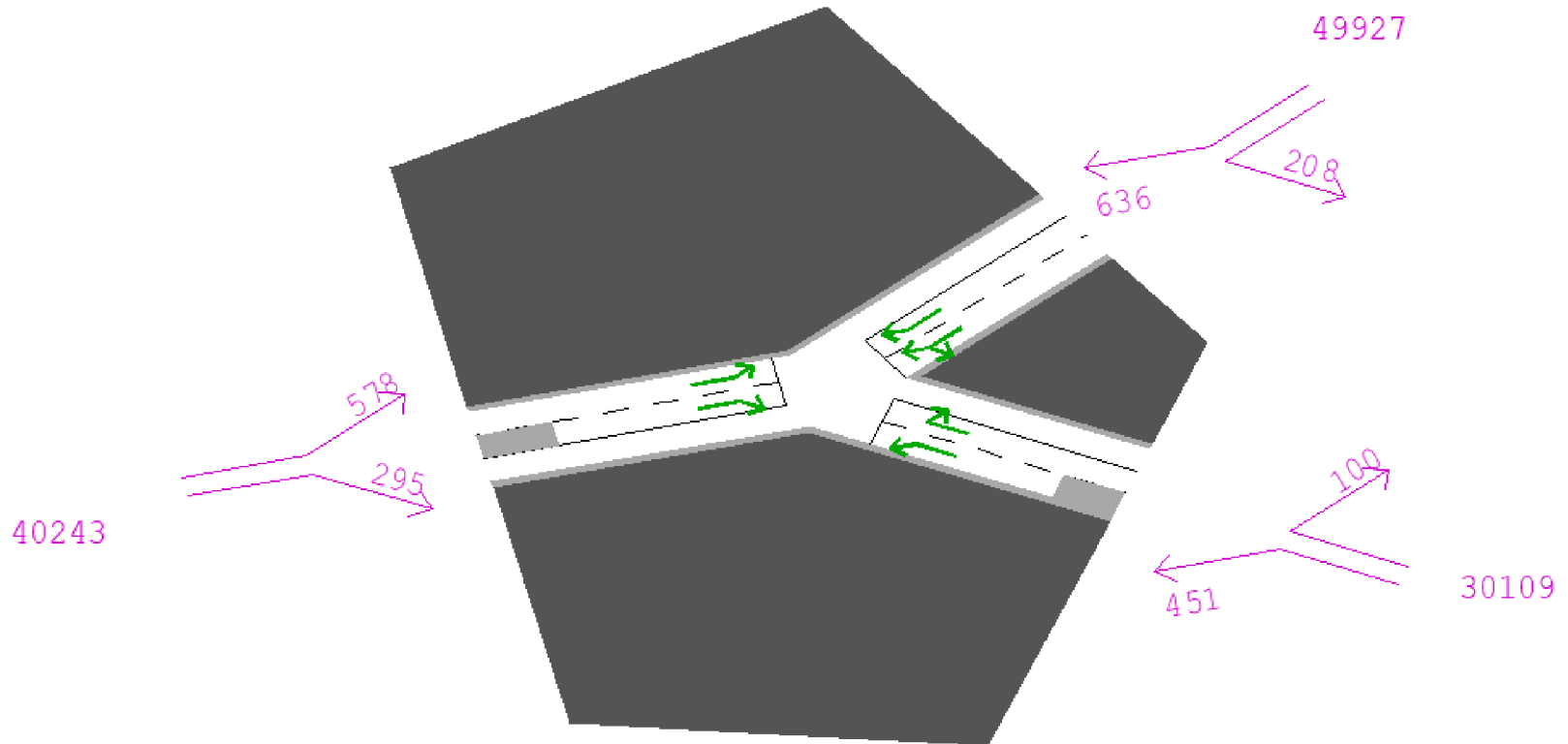
1. A47/ LEICESTER ROAD JUNCTION

2036 DM Scenario - AM Peak



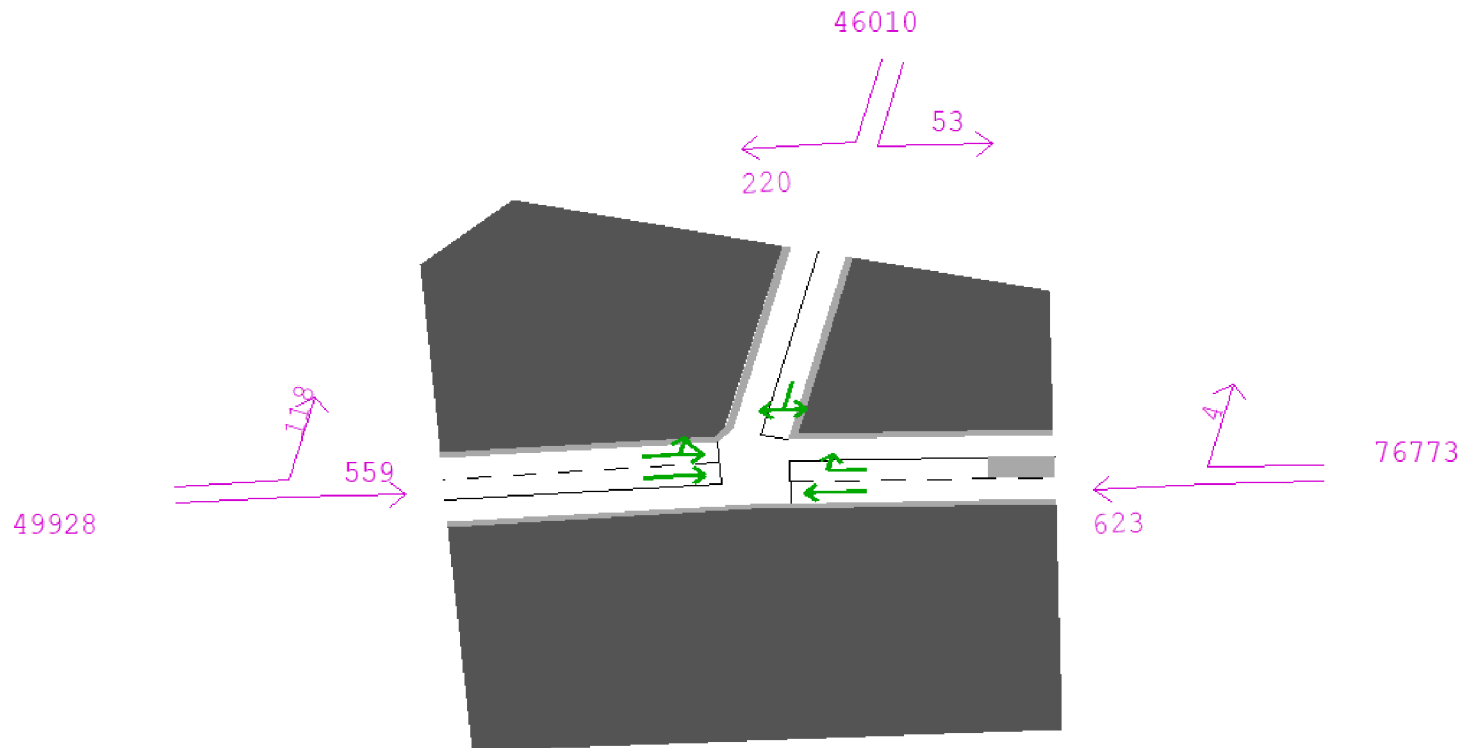
2. A47 / A581 STATION ROAD JUNCTION

2036 DM Scenario - AM Peak



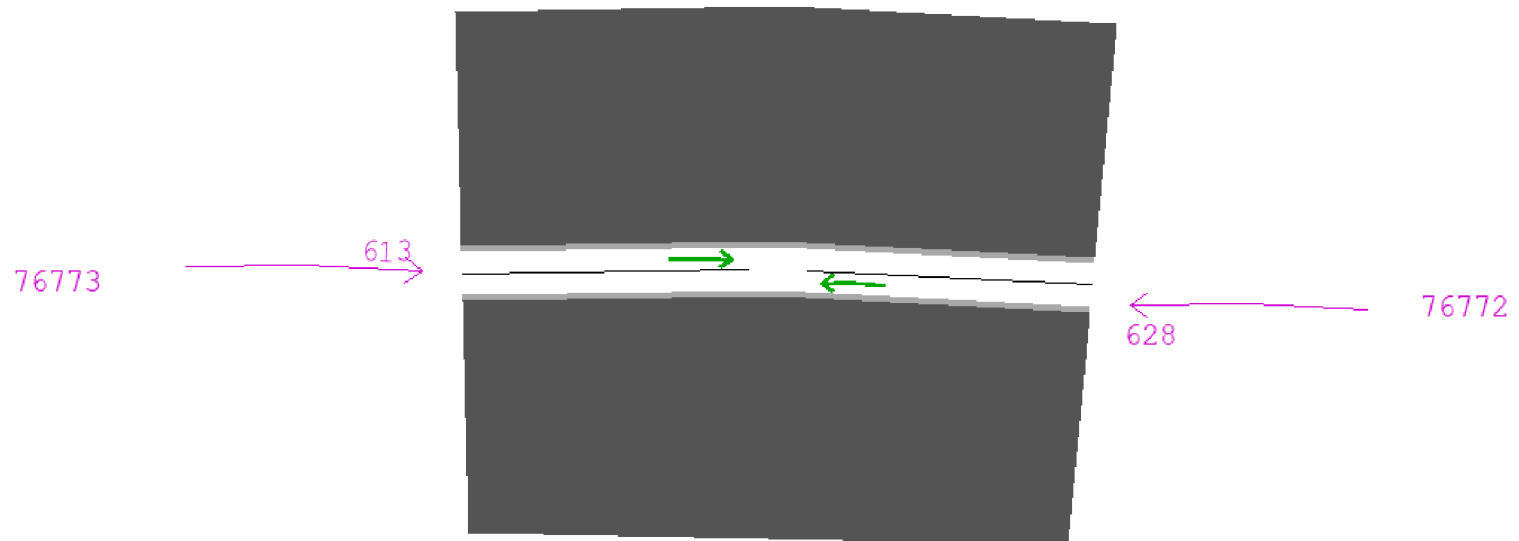
3. A47 / WILKINSON LANE JUNCTION

2036 DM Scenario - AM Peak



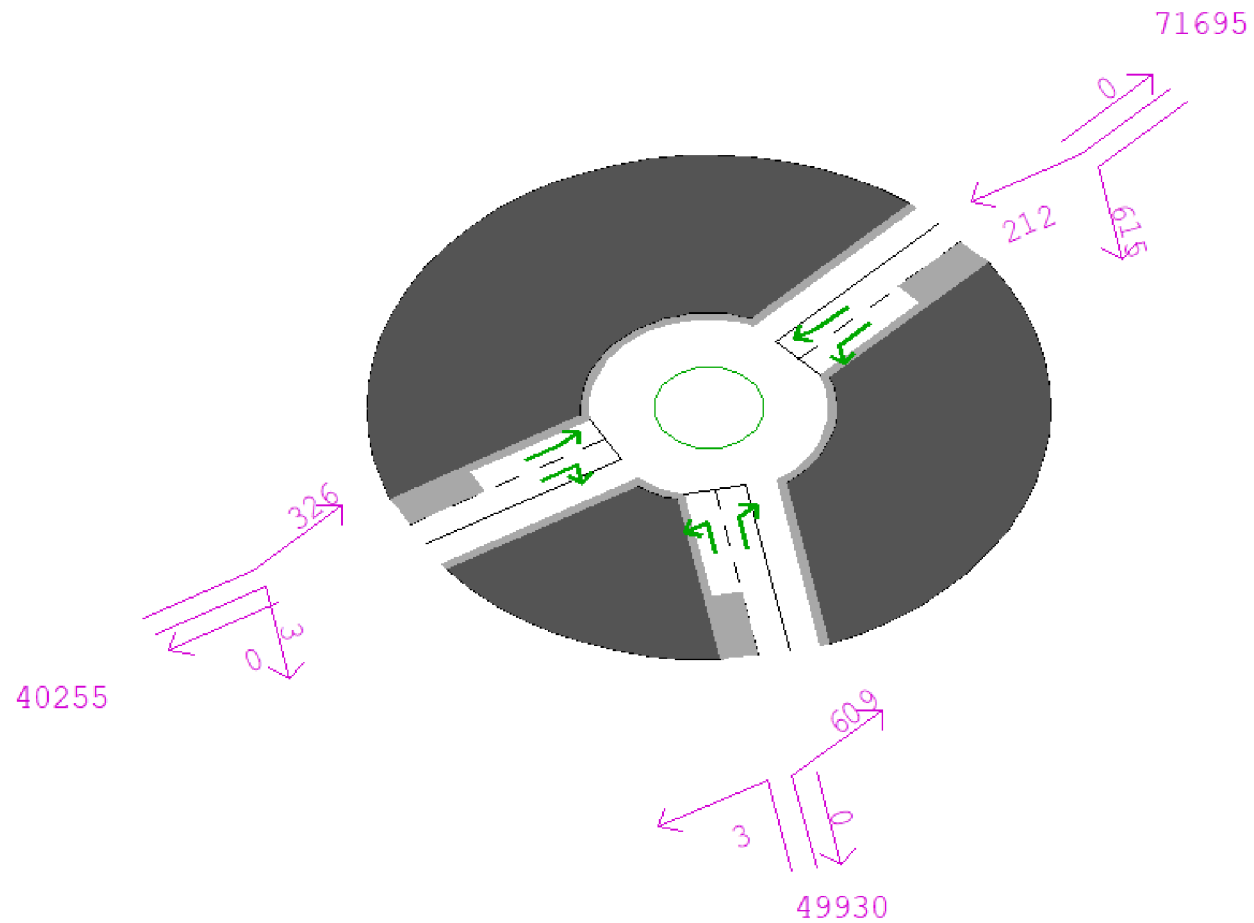
4. A47 / MASEFIELD DRIVE JUNCTION

2036 DM Scenario - AM Peak



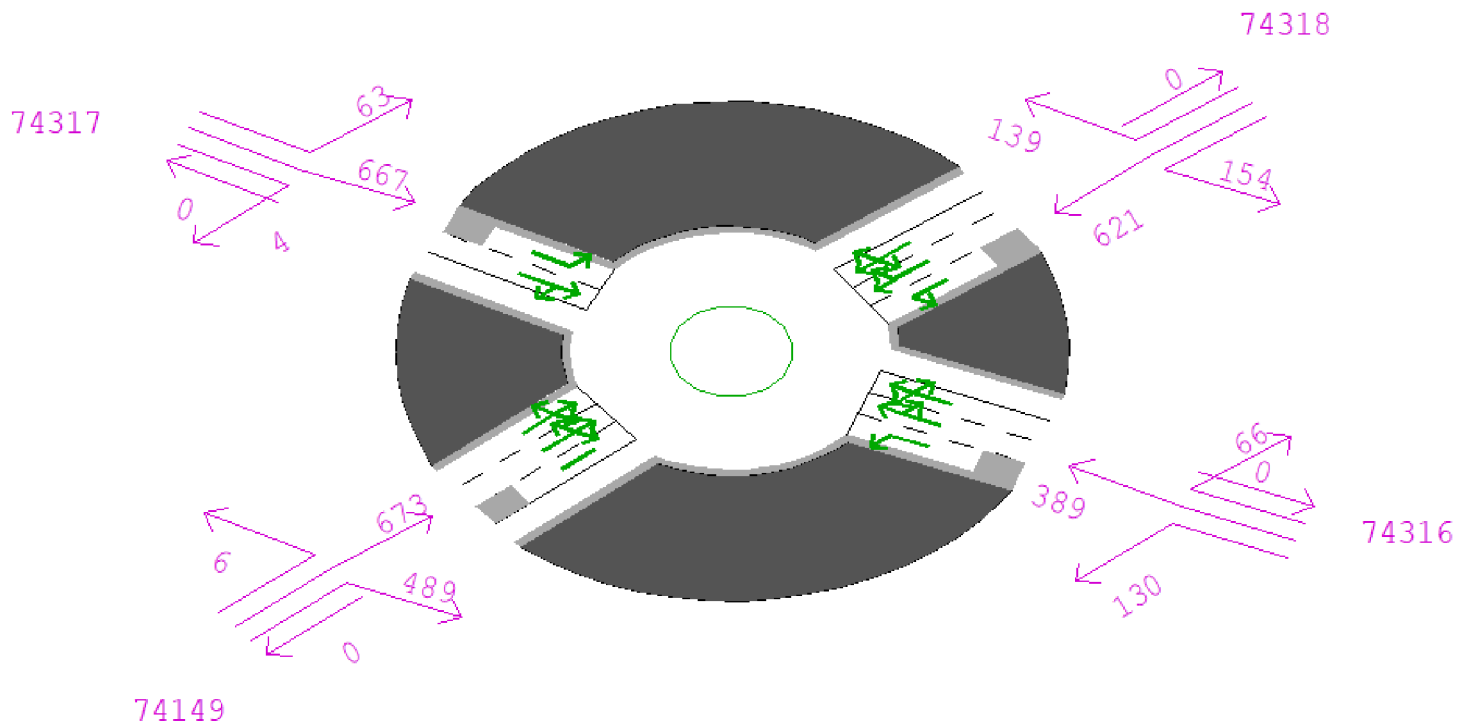
5. A47 / LEICESTER ROAD JUNCTION

2036 DM Scenario - AM Peak



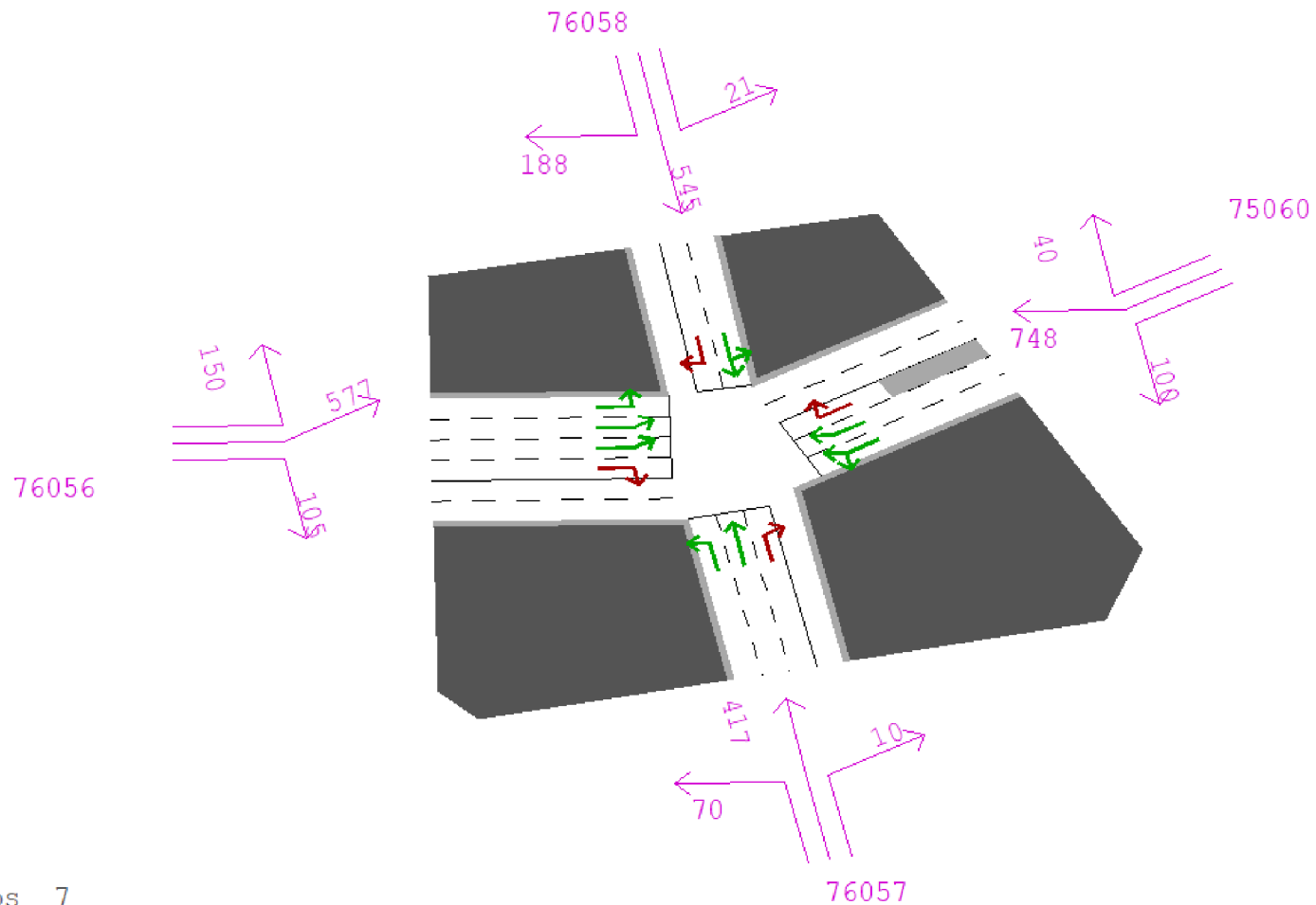
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2036 DM Scenario - AM Peak



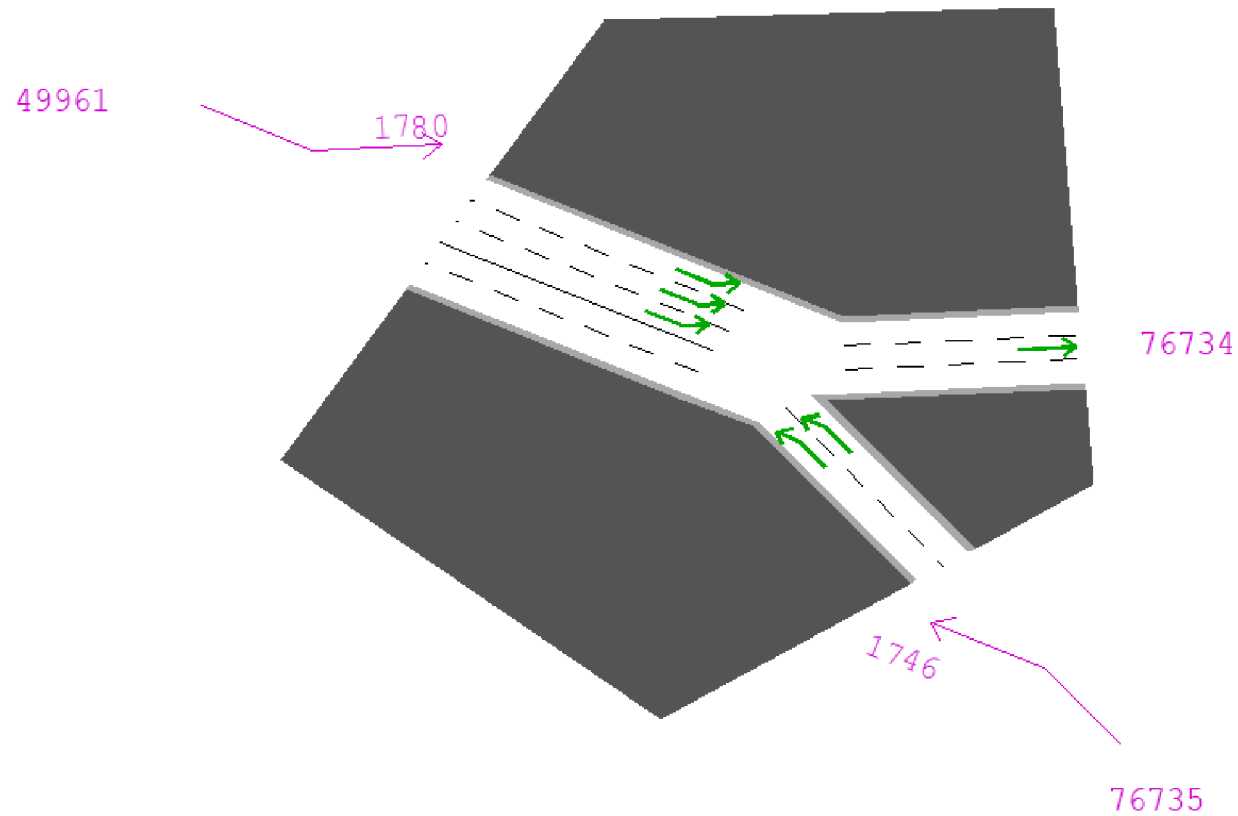
7. A47 / A447 ASHBY ROAD JUNCTION

2036 DM Scenario - AM Peak



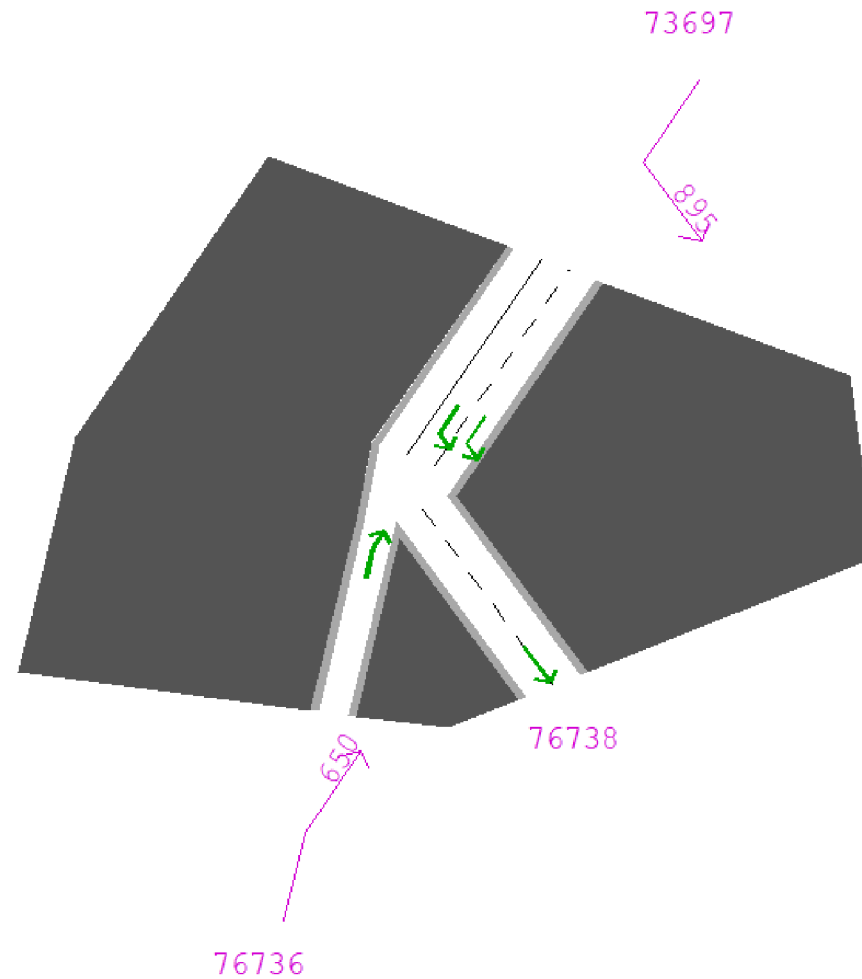
8. DODWELLS ROUNDABOUT

2036 DM Scenario - AM Peak



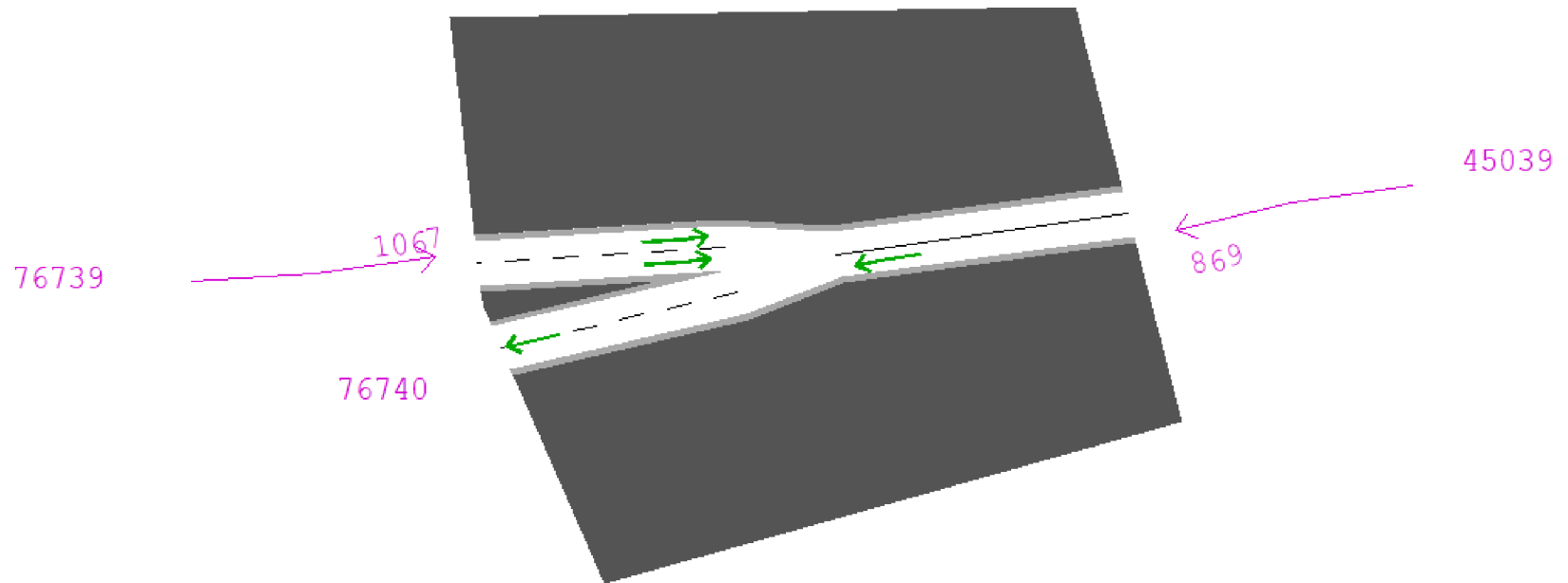
8. DODWELLS ROUNDABOUT

2036 DM Scenario - AM Peak



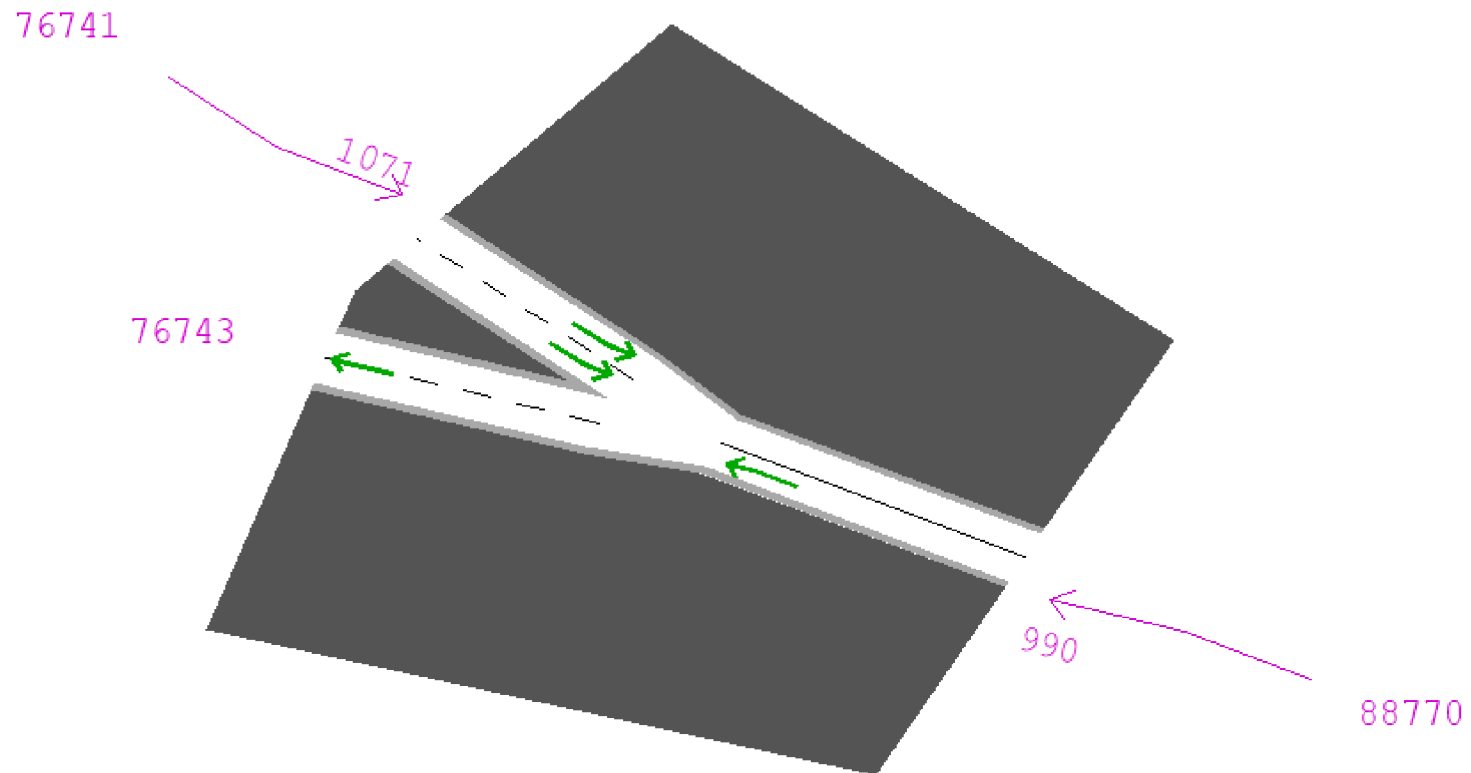
8. DODWELLS ROUNDABOUT

2036 DM Scenario - AM Peak



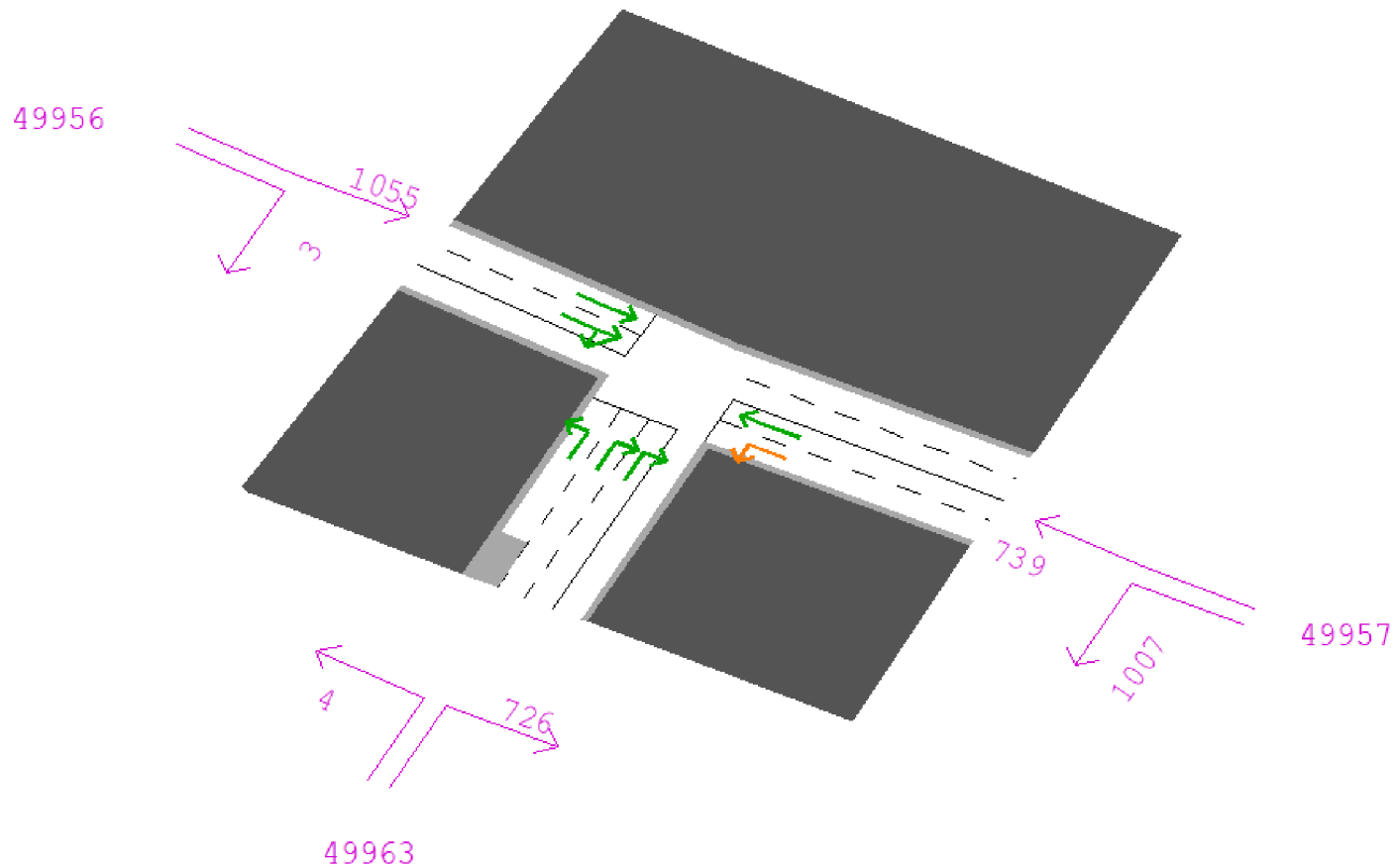
8. DODWELLS ROUNDABOUT

2036 DM Scenario - AM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2036 DM Scenario - AM Peak



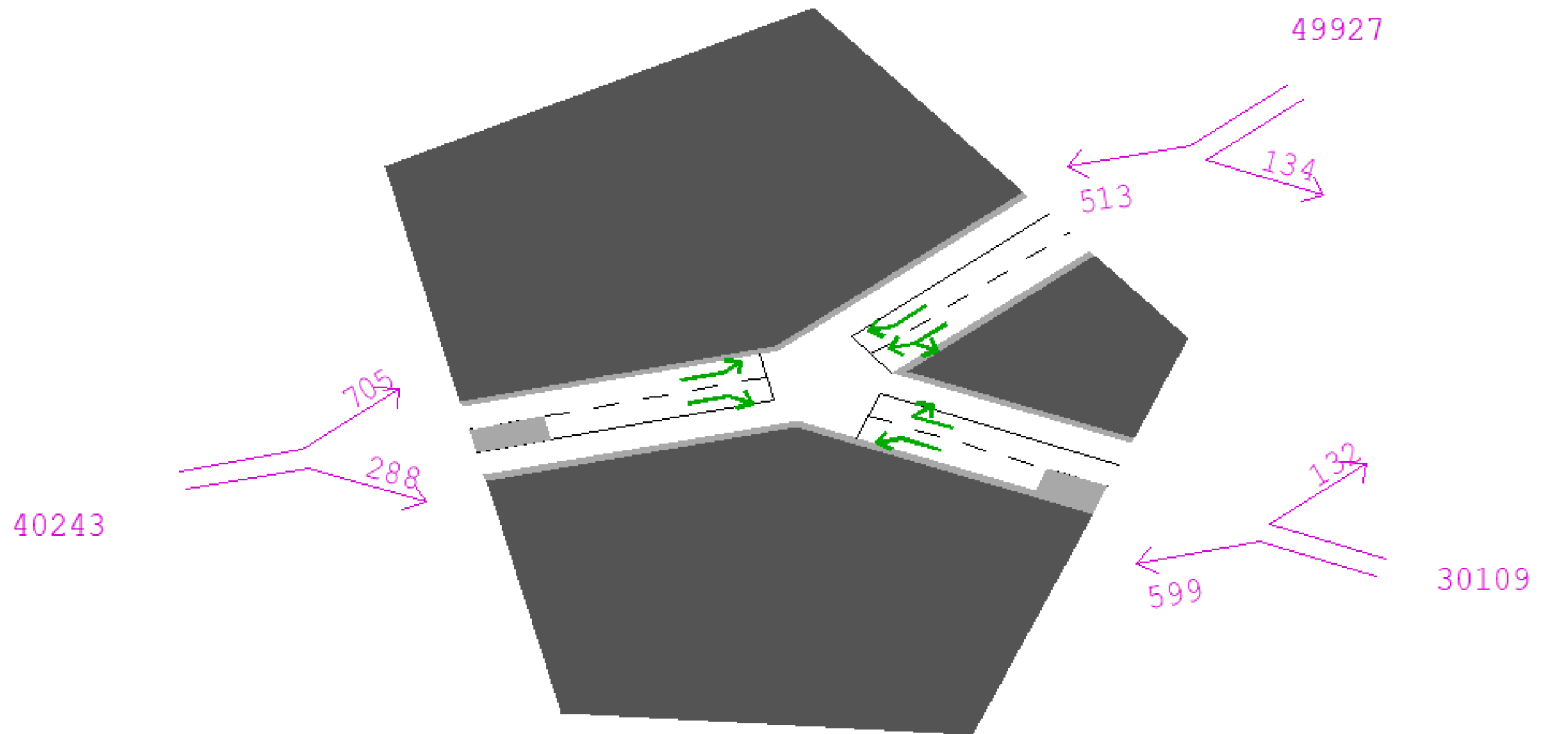


2036 DM

PM Peak

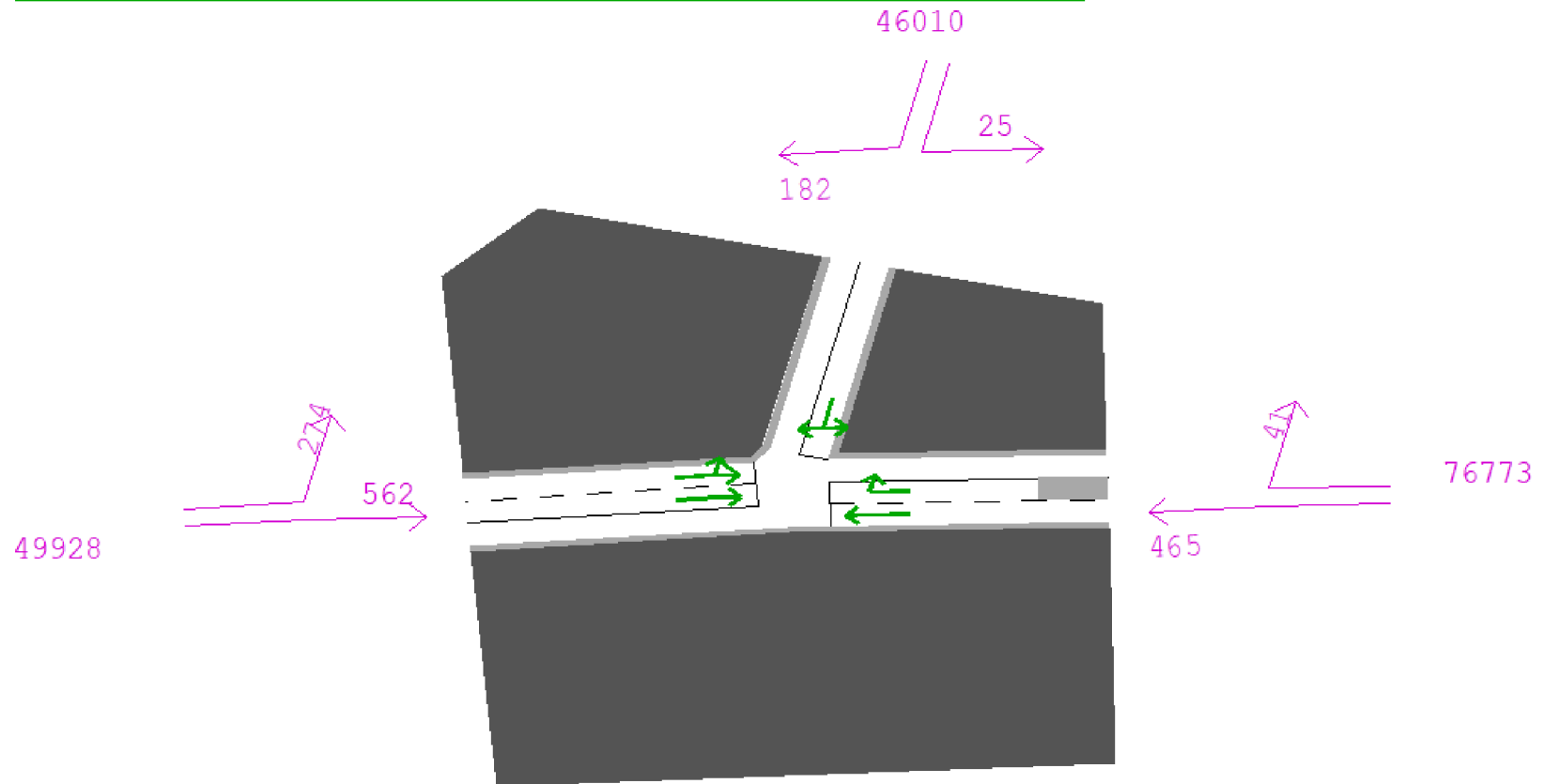
2. A47 / A581 STATION ROAD JUNCTION

2036 DM Scenario - PM Peak



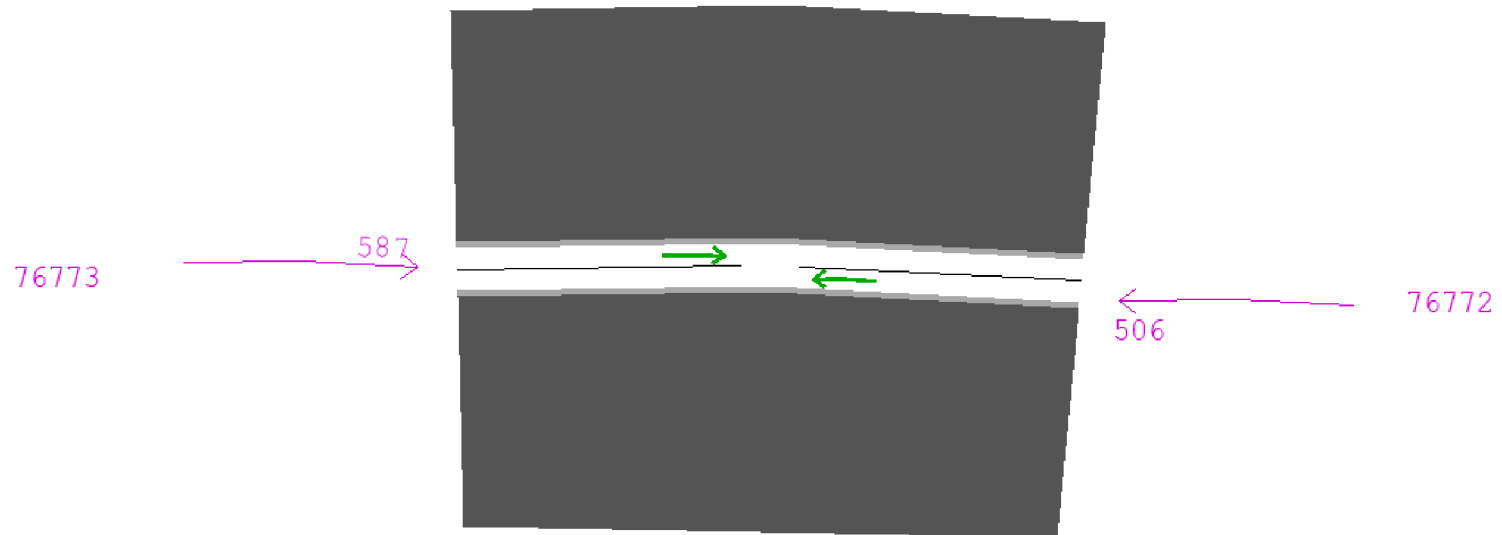
3. A47 / WILKINSON LANE JUNCTION

2036 DM Scenario - PM Peak



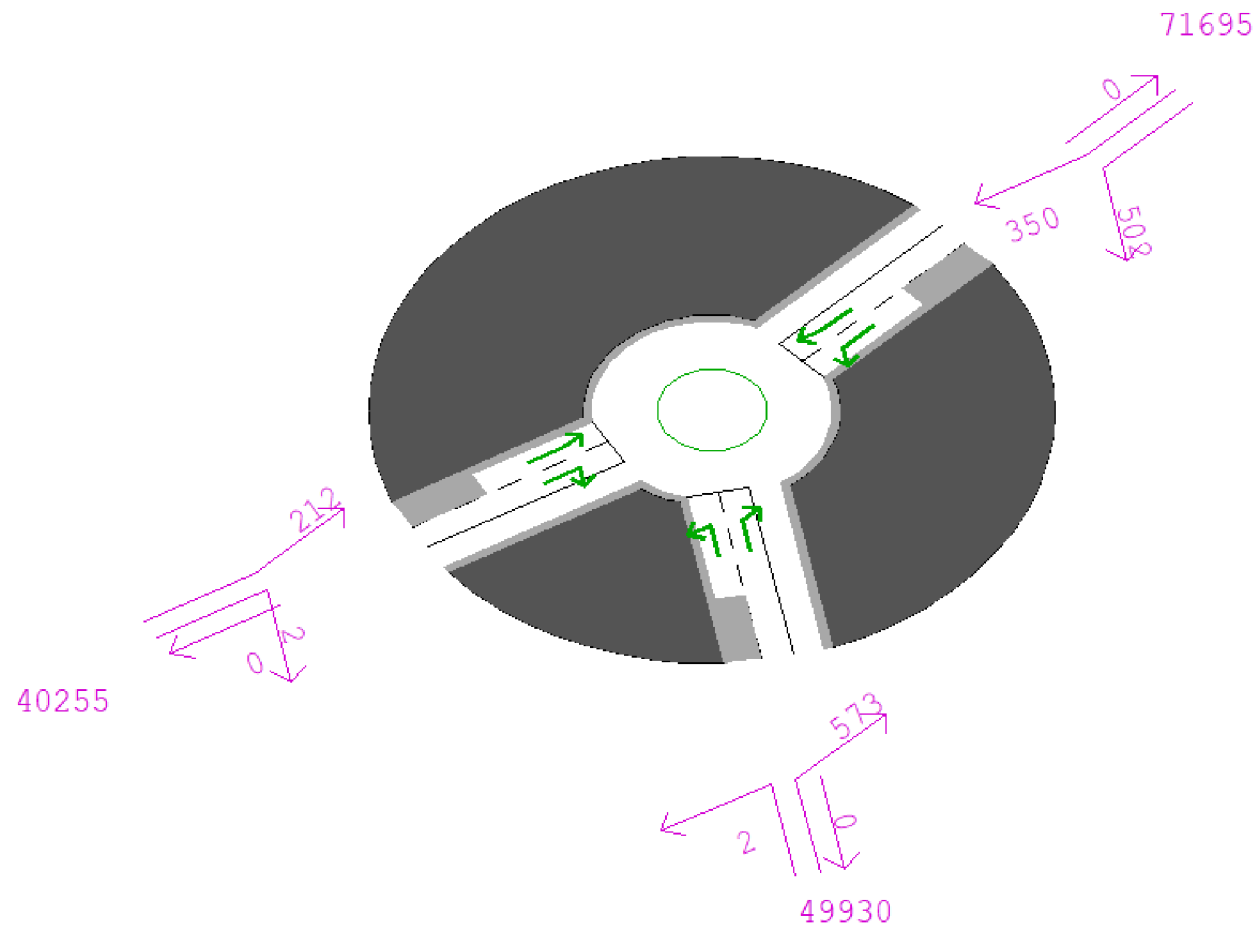
4. A47 / MASEFIELD DRIVE JUNCTION

2036 DM Scenario - PM Peak



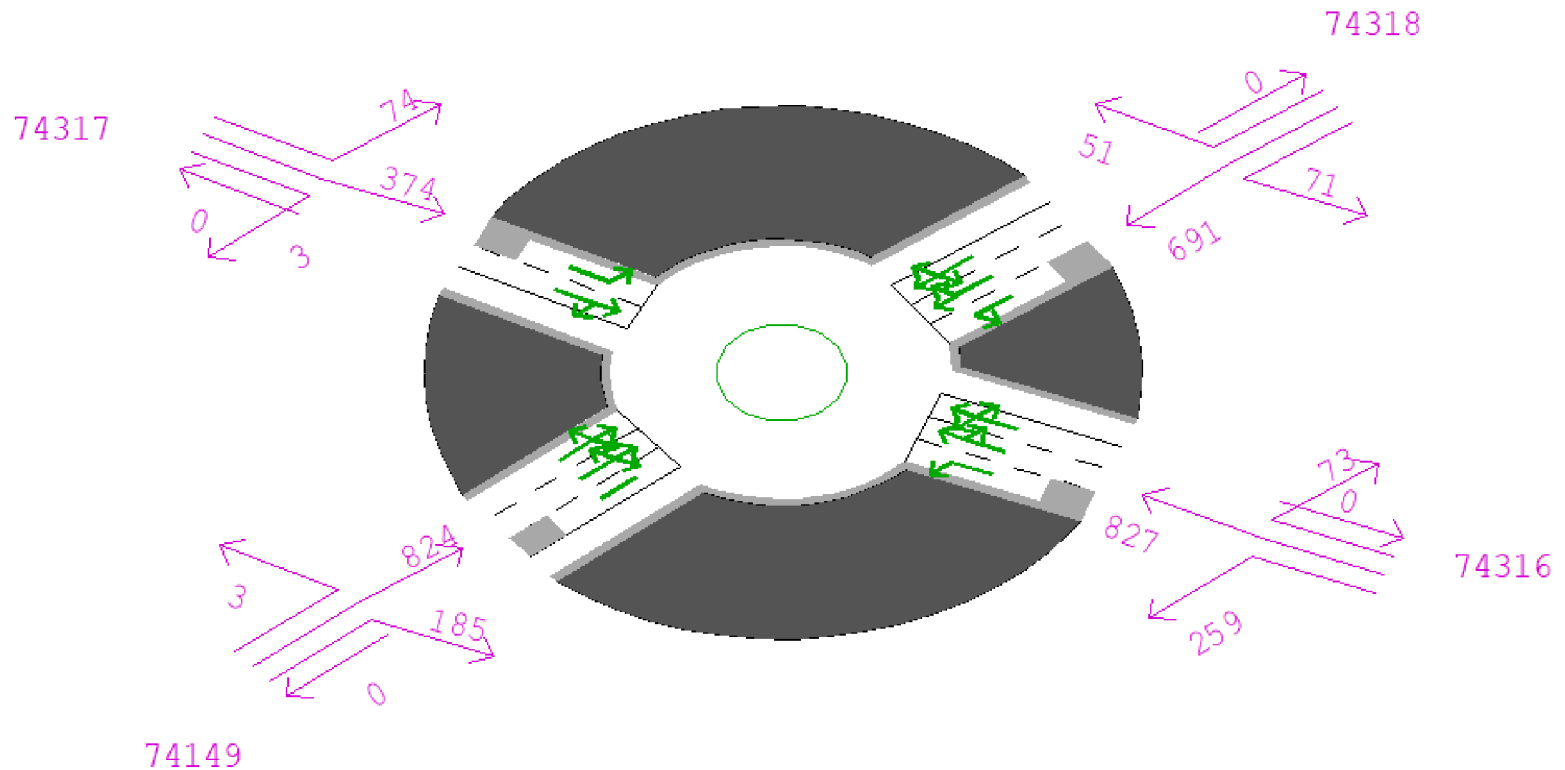
5. A47 / LEICESTER ROAD JUNCTION

2036 DM Scenario - PM Peak



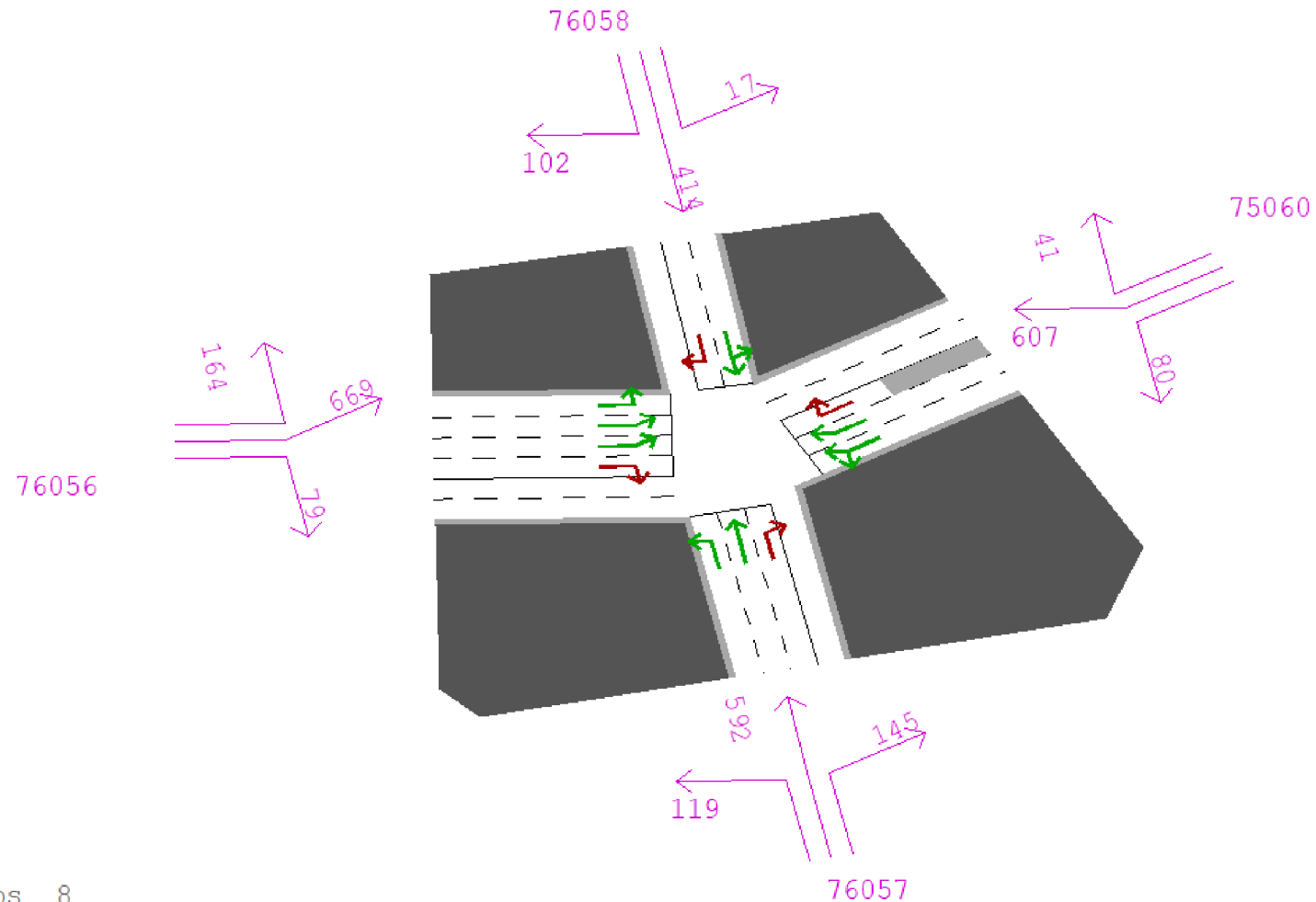
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2036 DM Scenario - PM Peak



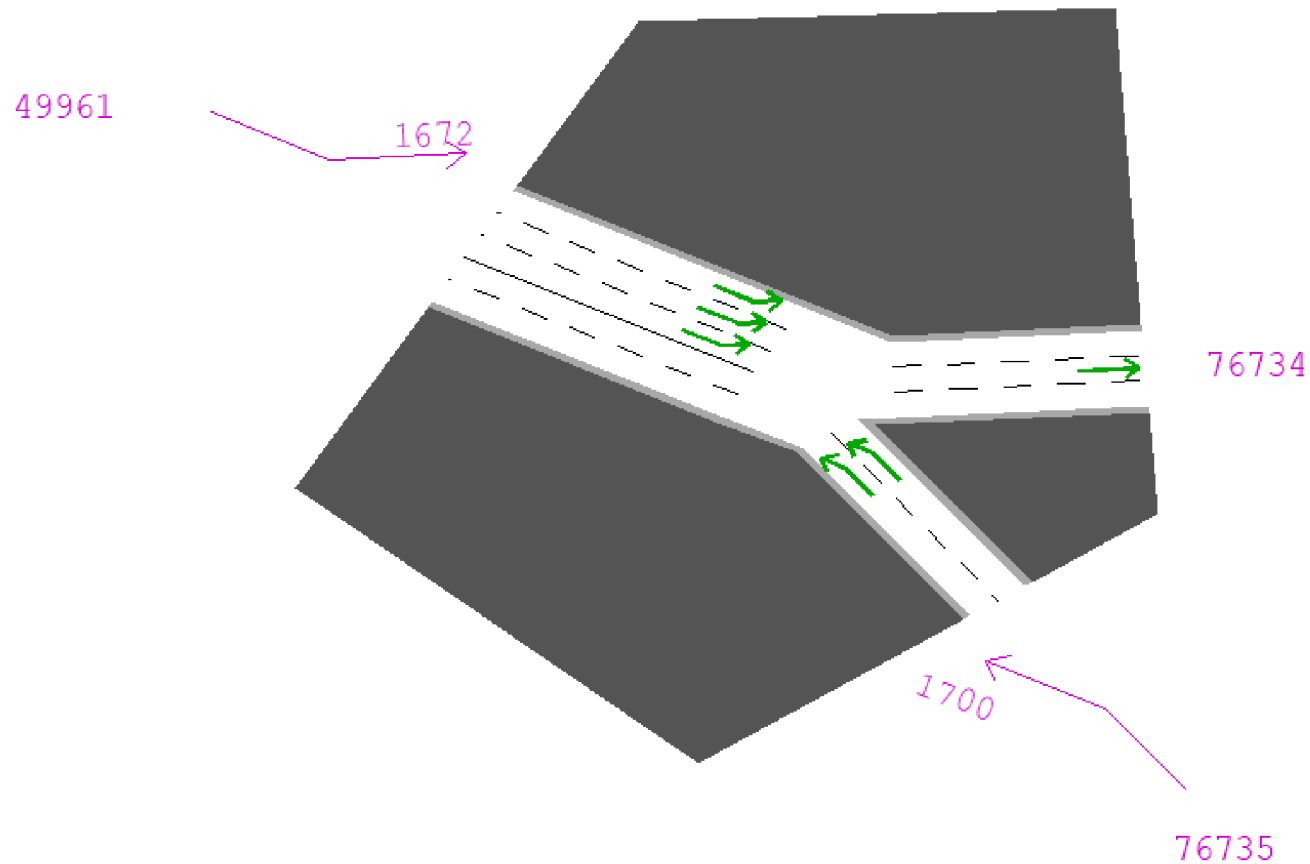
7. A47 / A447 ASHBY ROAD JUNCTION

2036 DM Scenario - PM Peak



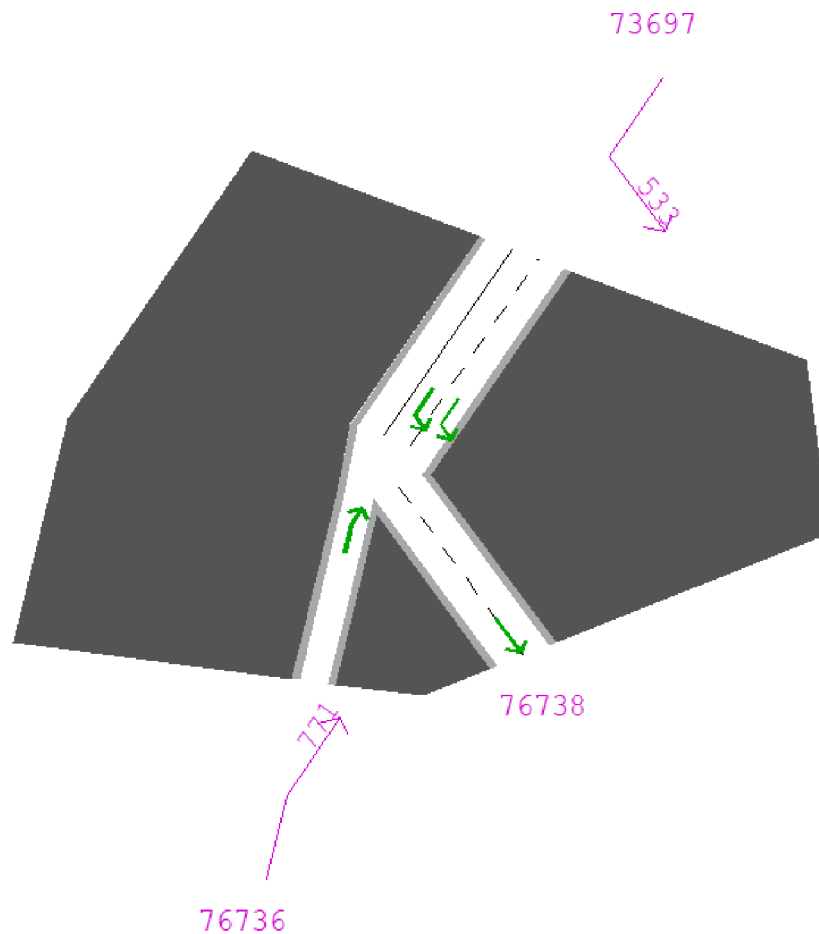
8. DODWELLS ROUNDABOUT

2036 DM Scenario - PM Peak



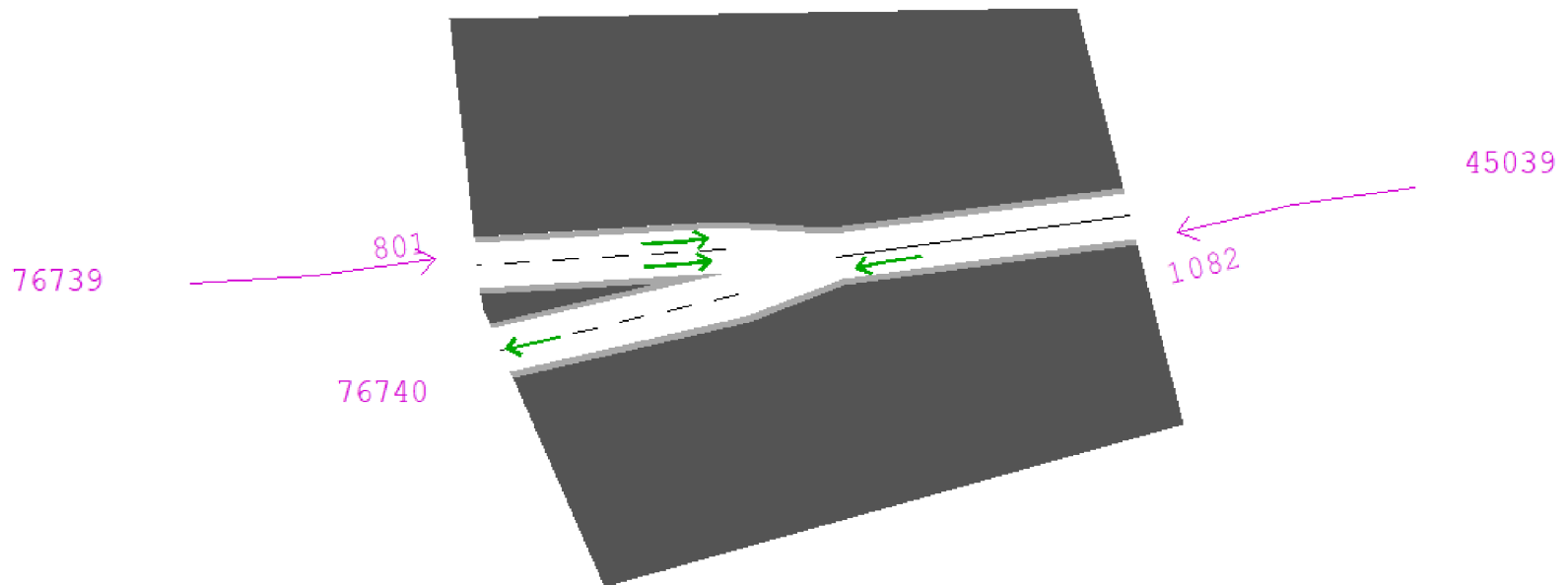
8. DODWELLS ROUNDABOUT

2036 DM Scenario - PM Peak



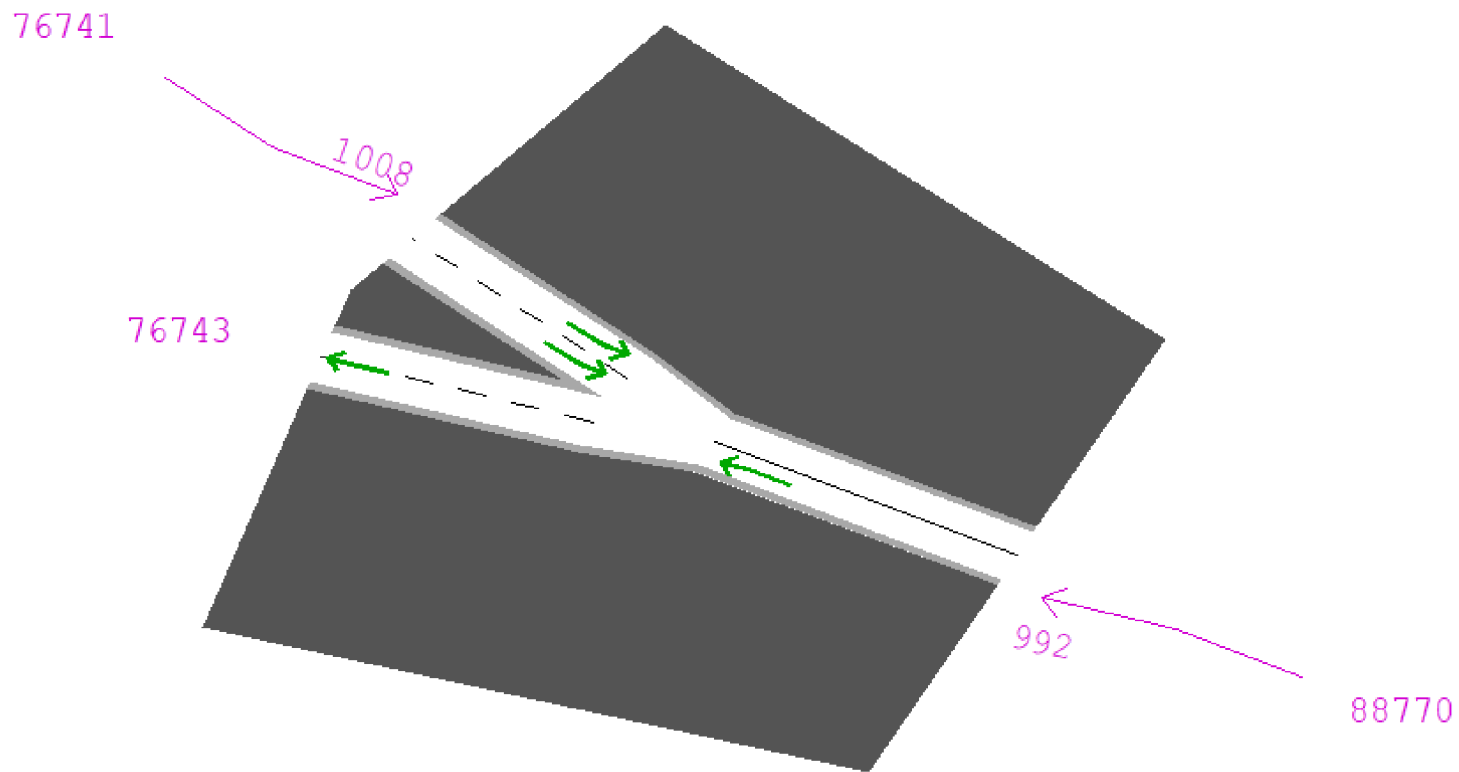
8. DODWELLS ROUNDABOUT

2036 DM Scenario - PM Peak



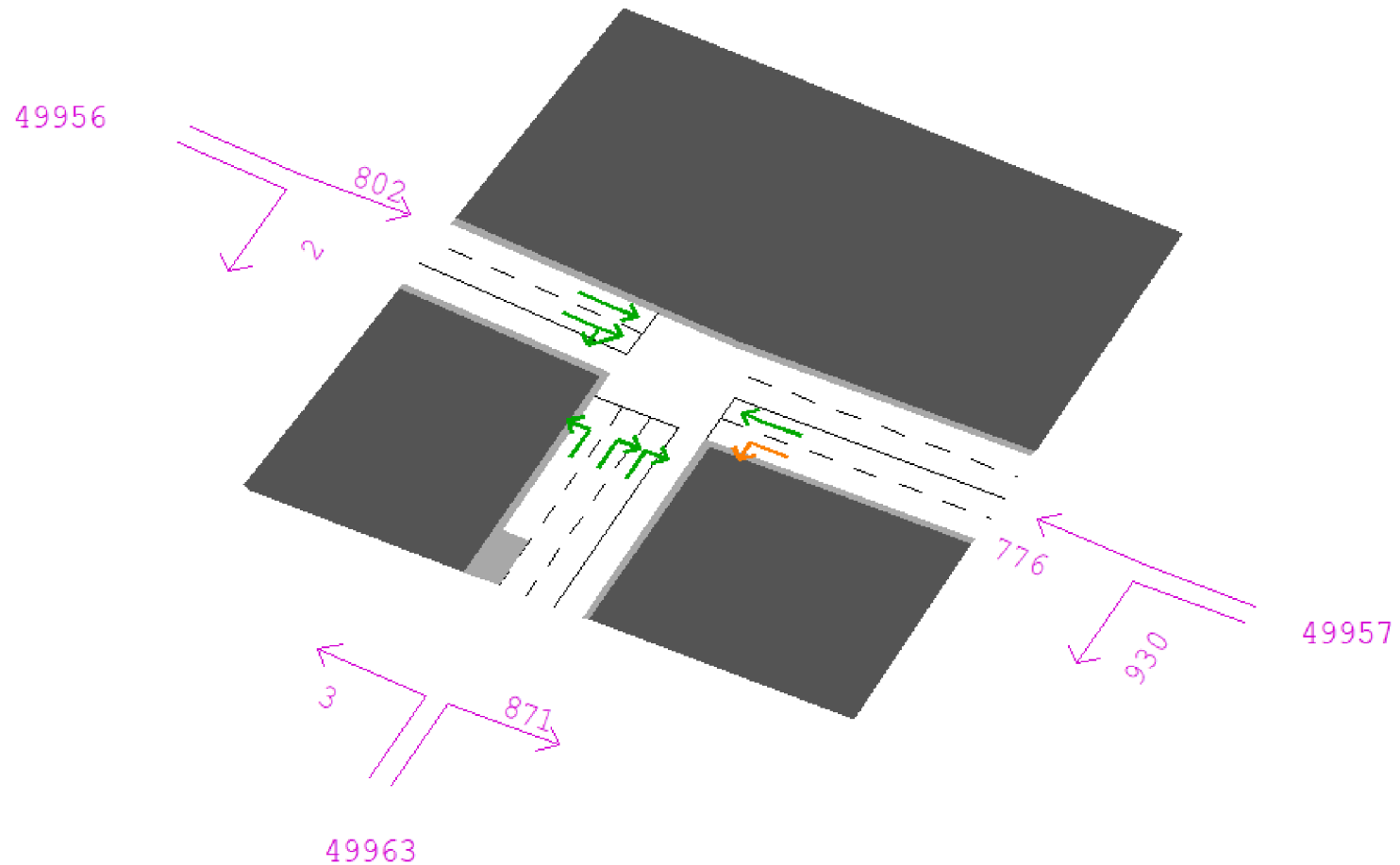
8. DODWELLS ROUNDABOUT

2036 DM Scenario - PM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2036 DM Scenario - PM Peak



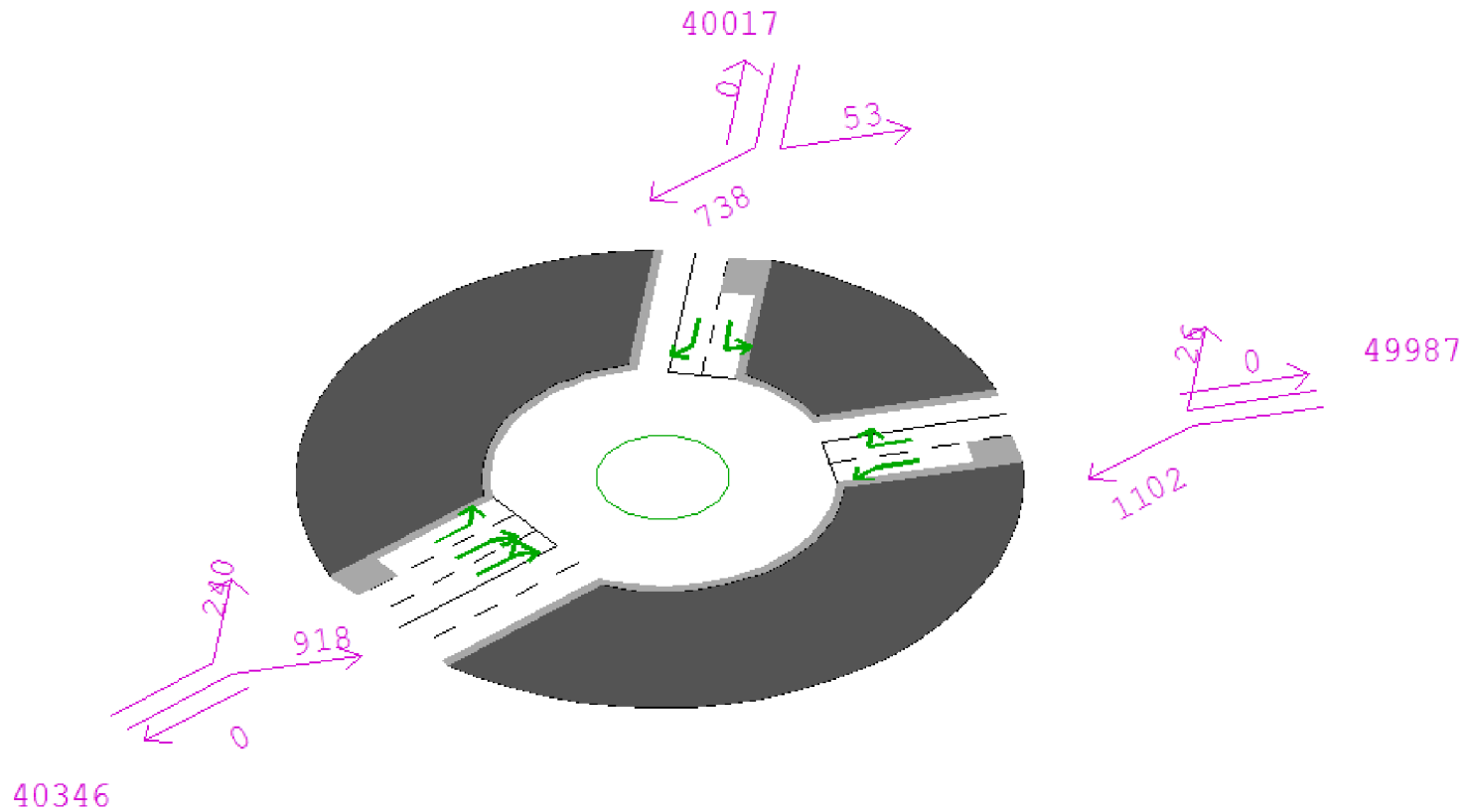


2036 DS

AM Peak

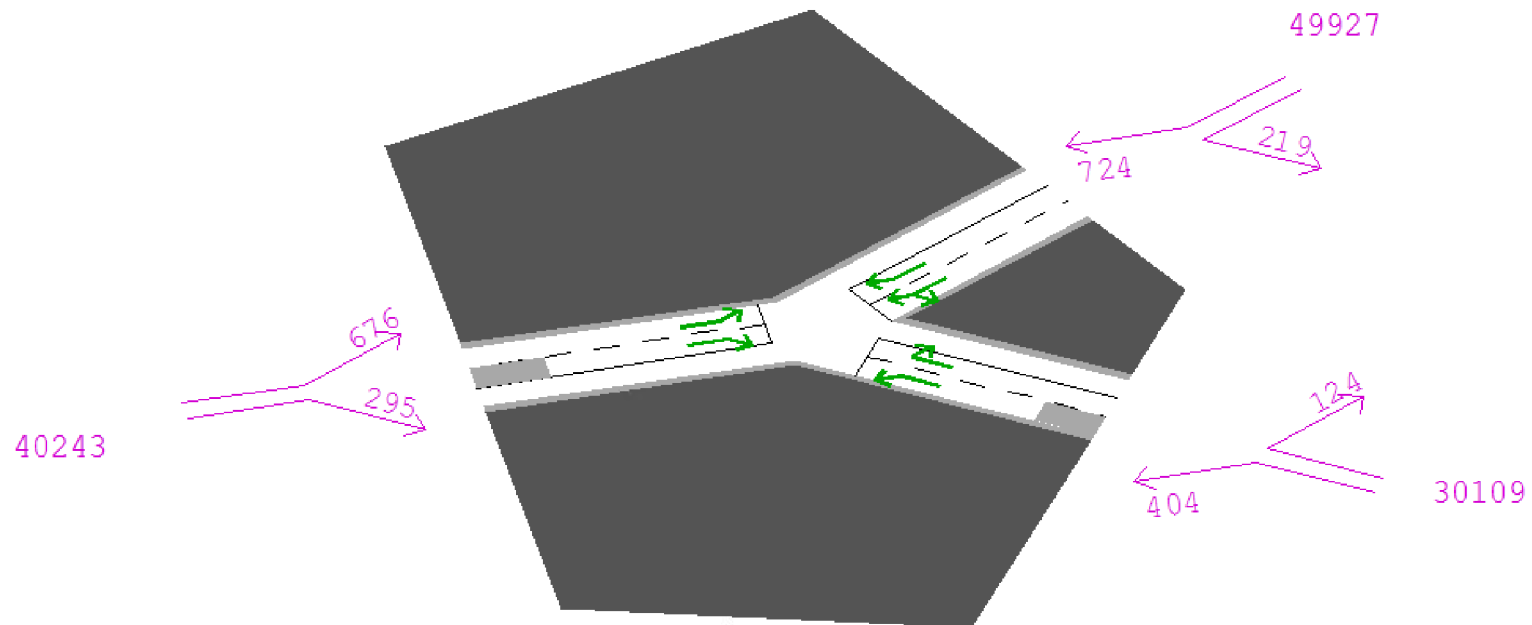
1. A47/ LEICESTER ROAD JUNCTION

2036 DS Scenario - AM Peak



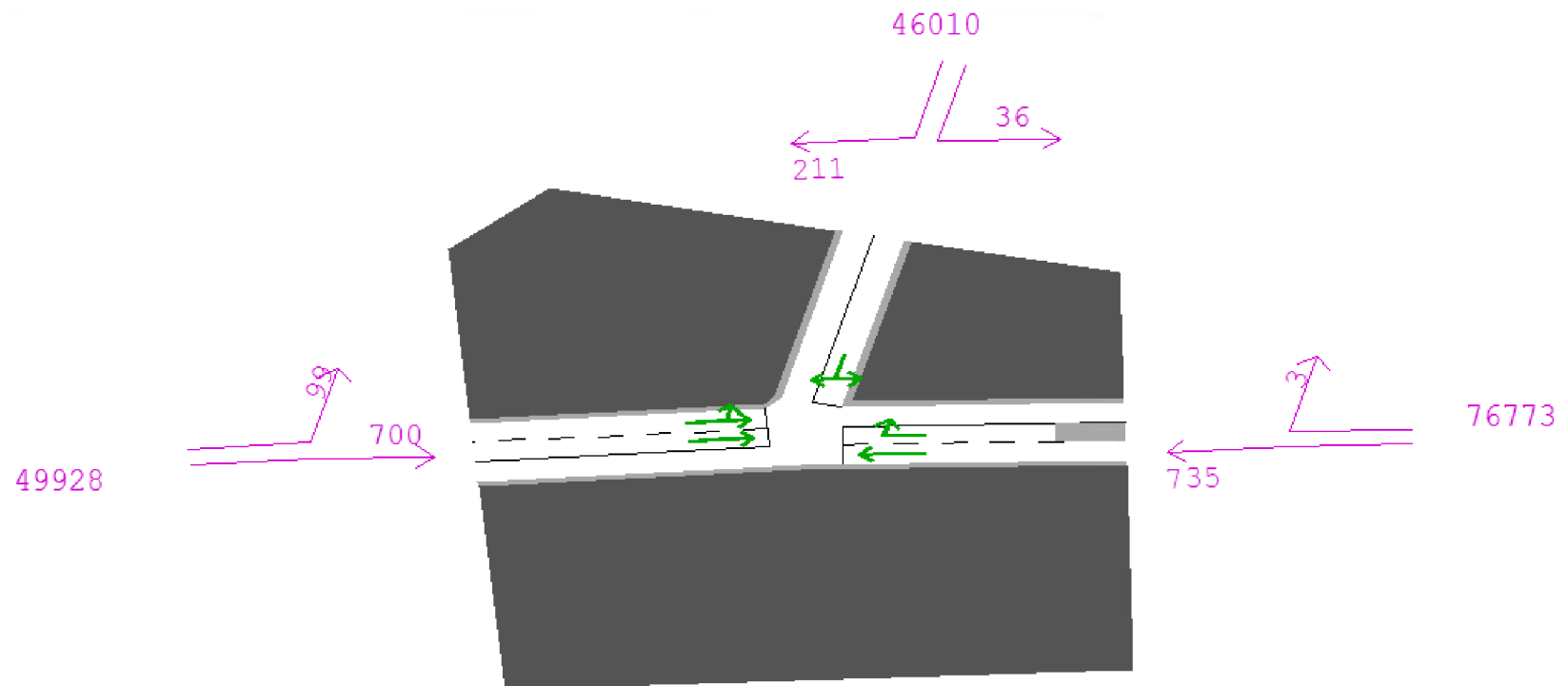
2. A47 / A581 STATION ROAD JUNCTION

2036 DS Scenario - AM Peak



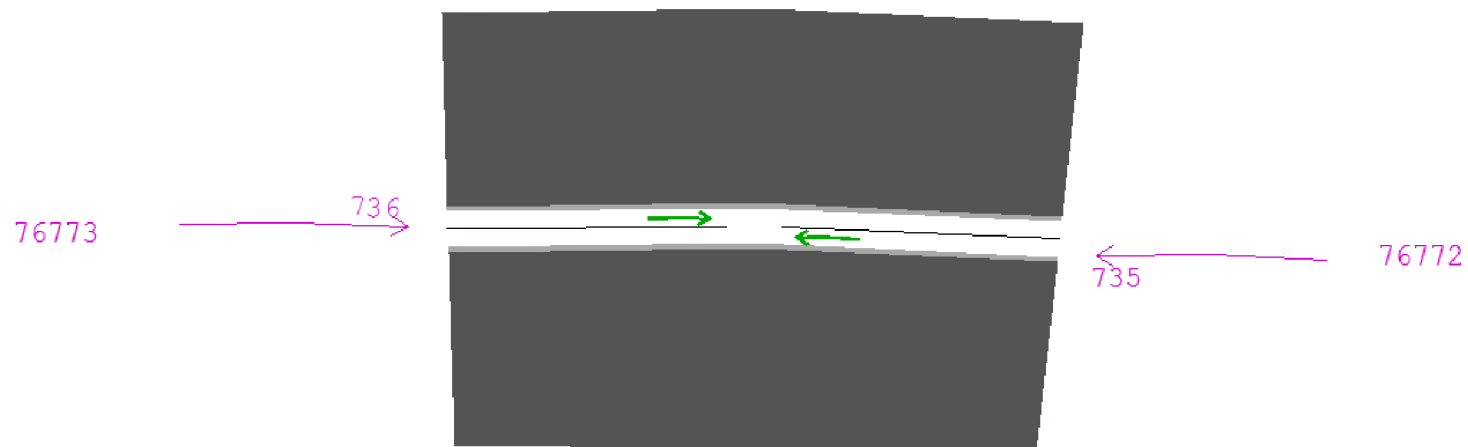
3. A47 / WILKINSON LANE JUNCTION

2036 DS Scenario - AM Peak



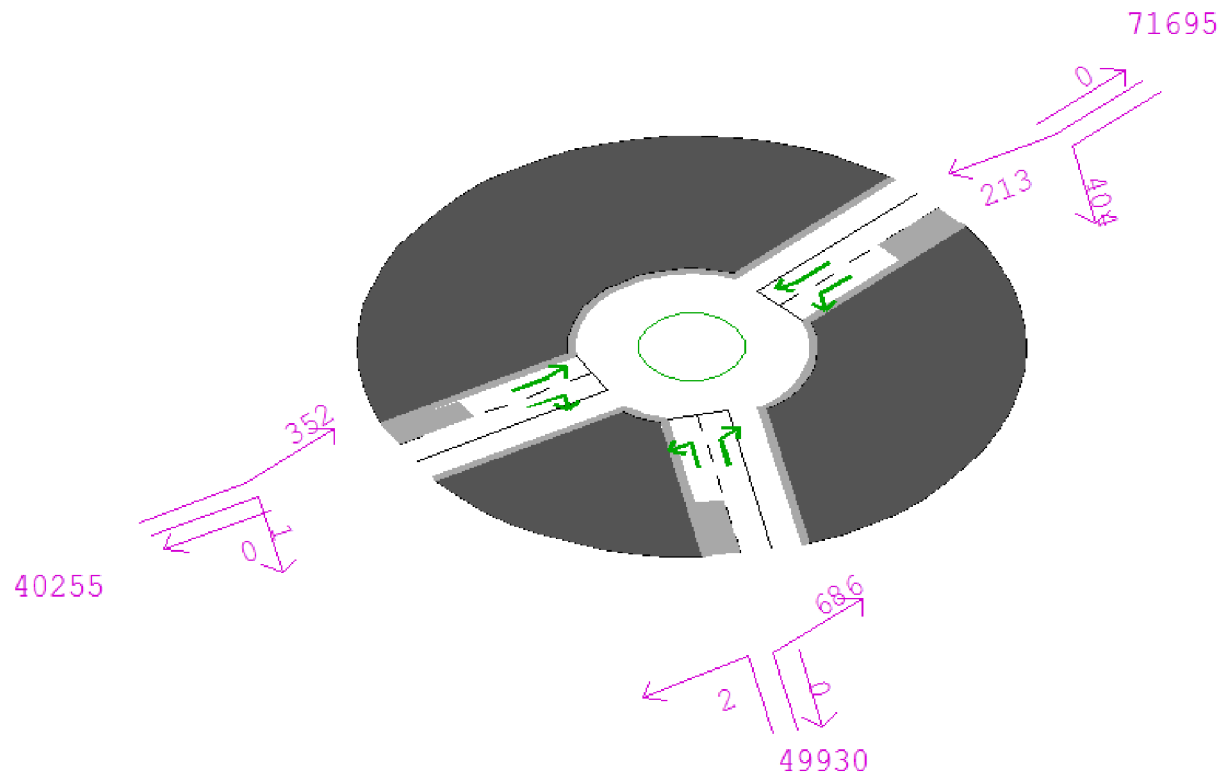
4. A47 / MASEFIELD DRIVE JUNCTION

2036 DS Scenario - AM Peak



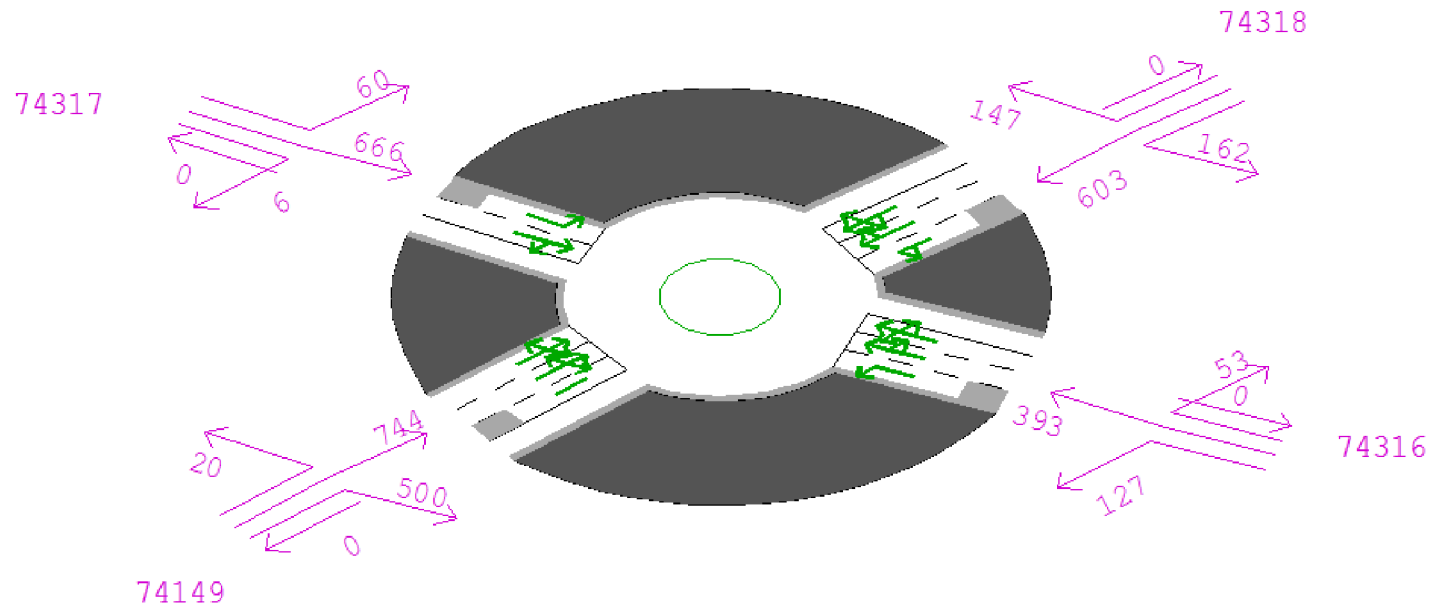
5. A47 / LEICESTER ROAD JUNCTION

2036 DS Scenario - AM Peak



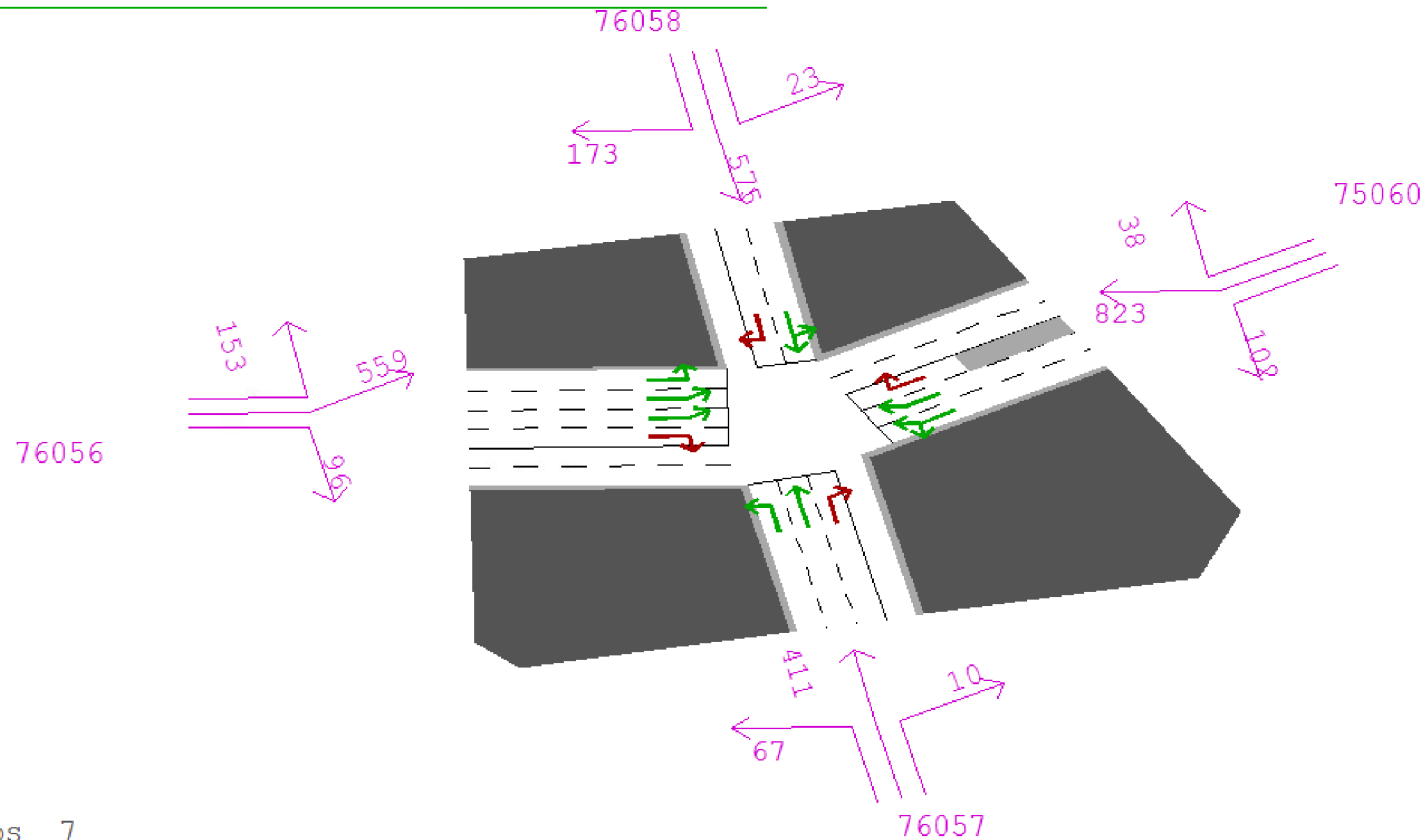
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2036 DS Scenario - AM Peak



7. A47 / A447 ASHBY ROAD JUNCTION

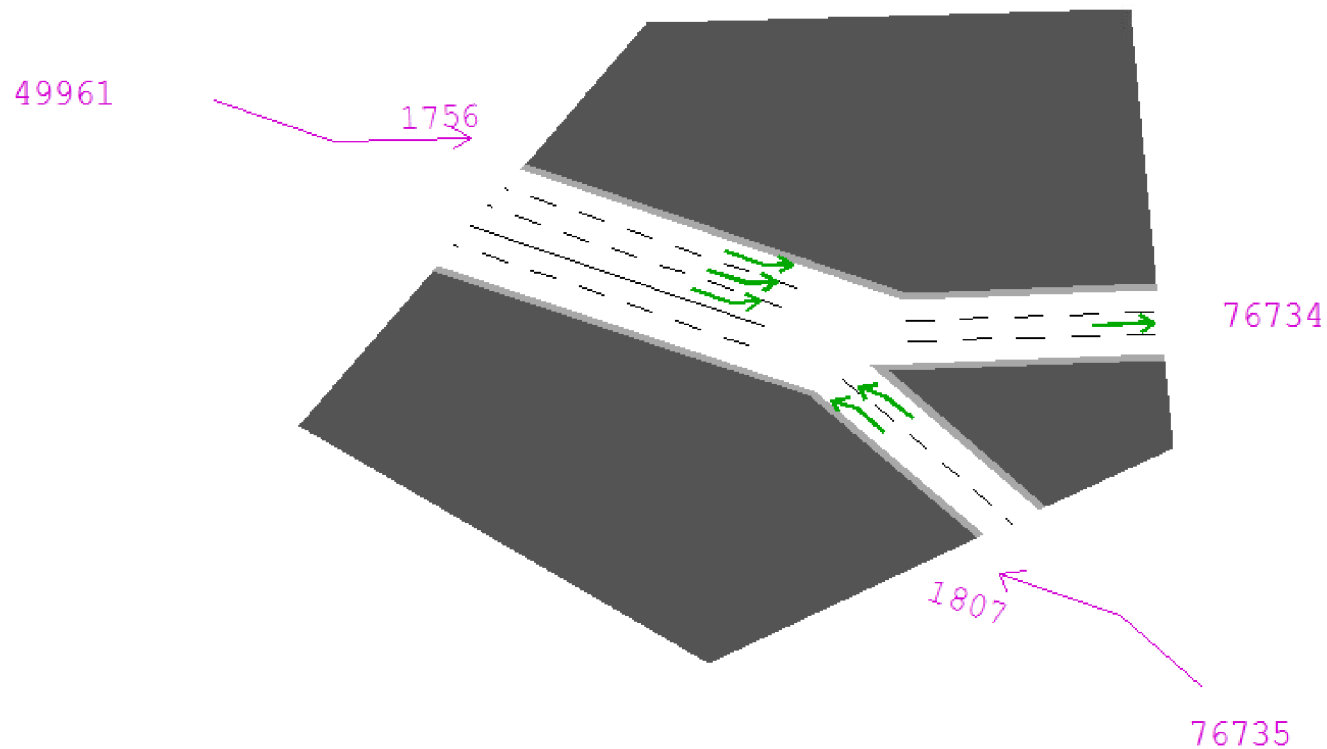
2036 DS Scenario - AM Peak



ps 7

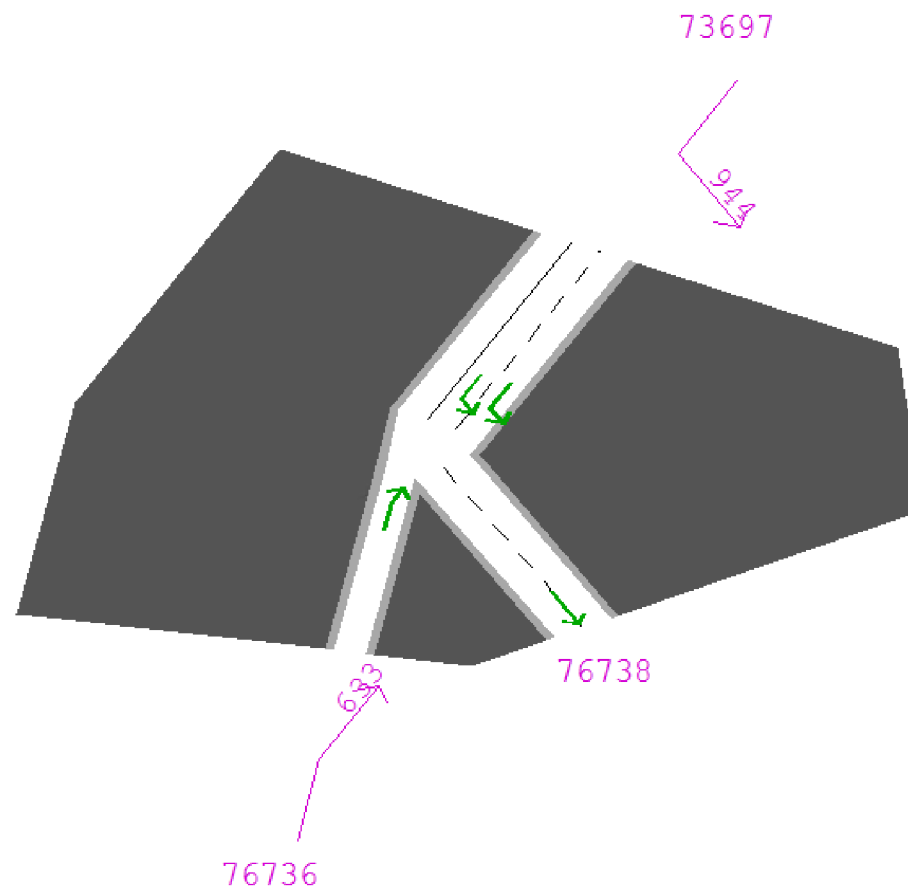
8. DODWELLS ROUNDABOUT

2036 DS Scenario - AM Peak



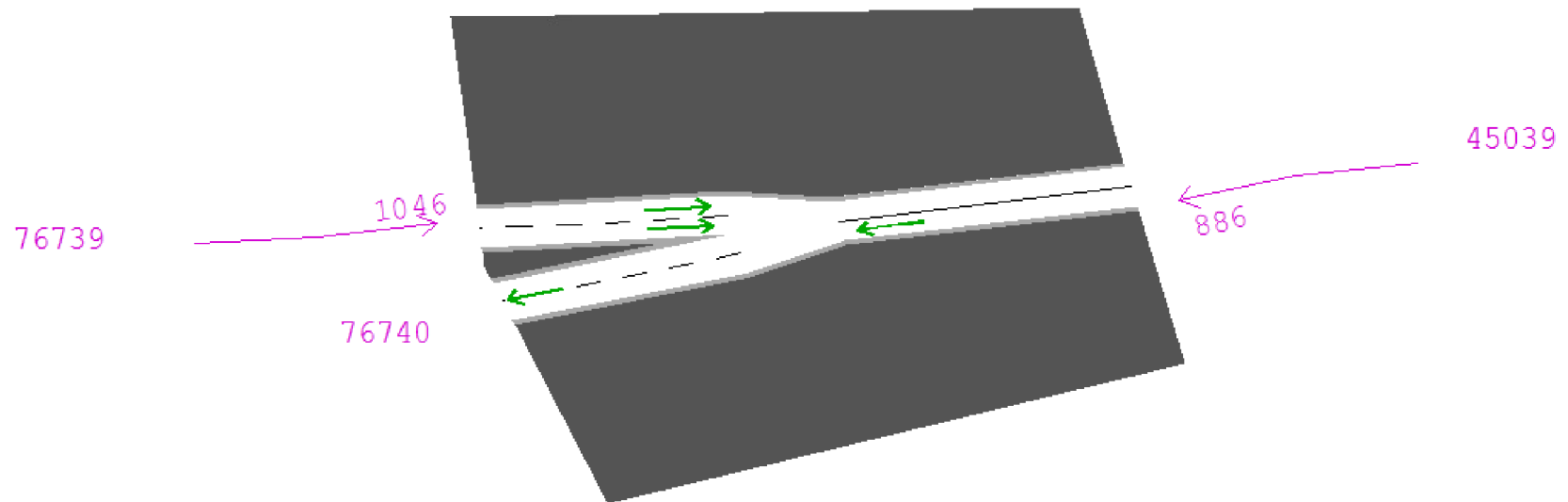
8. DODWELLS ROUNDABOUT

2036 DS Scenario - AM Peak



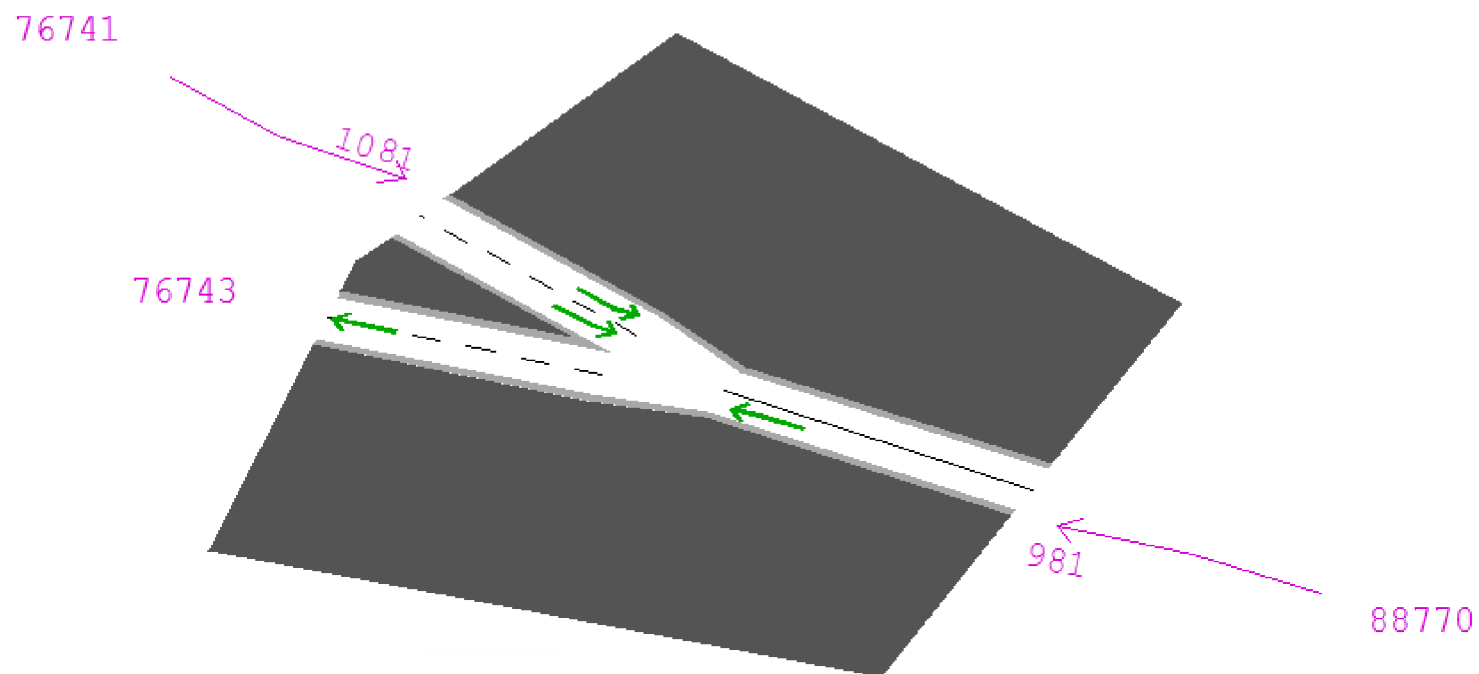
8. DODWELLS ROUNDABOUT

2036 DS Scenario - AM Peak



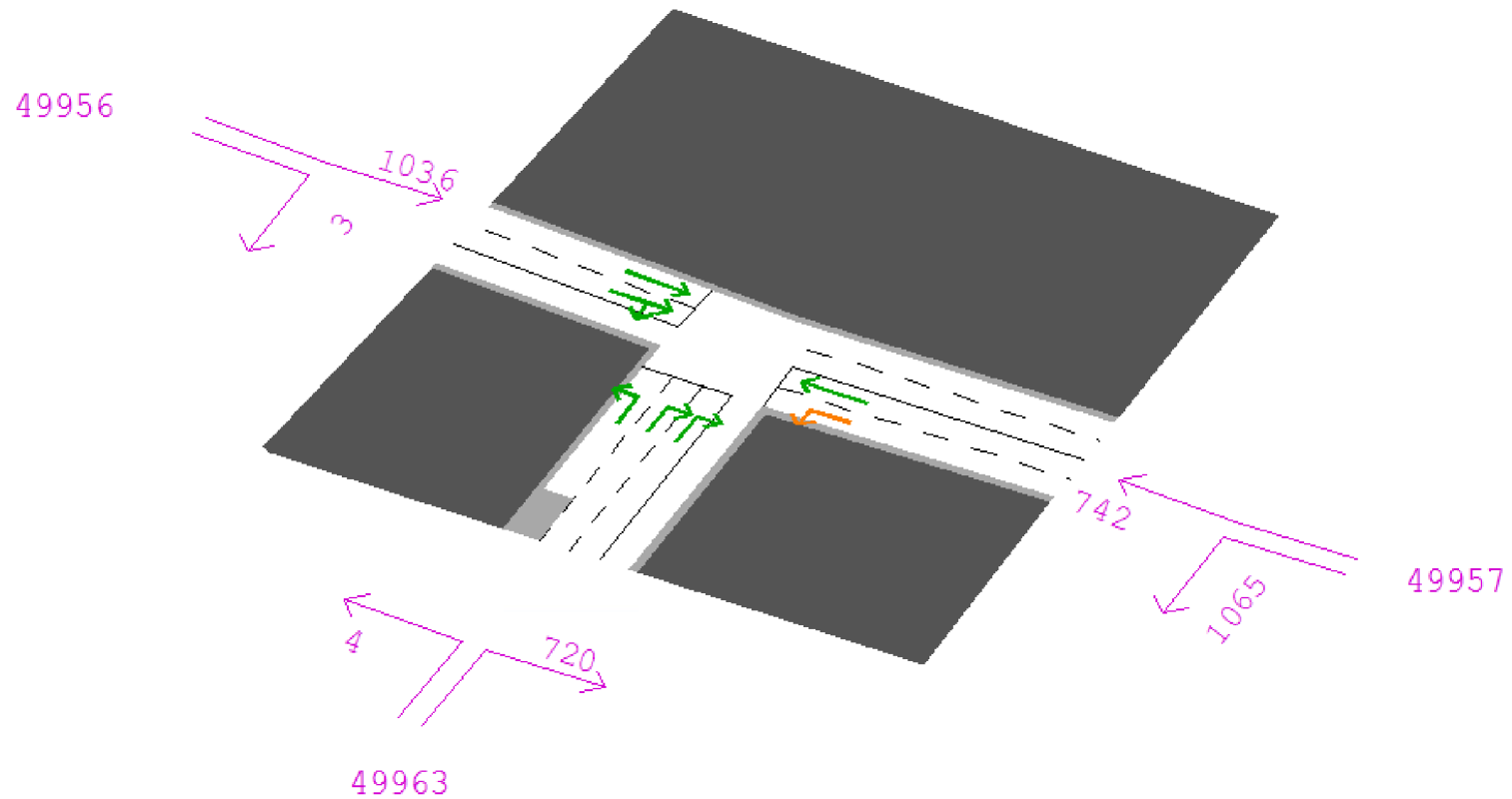
8. DODWELLS ROUNDABOUT

2036 DS Scenario - AM Peak



9. A5 / A47 THE LONG SHOOT JUNCTION

2036 DS Scenario - AM Peak



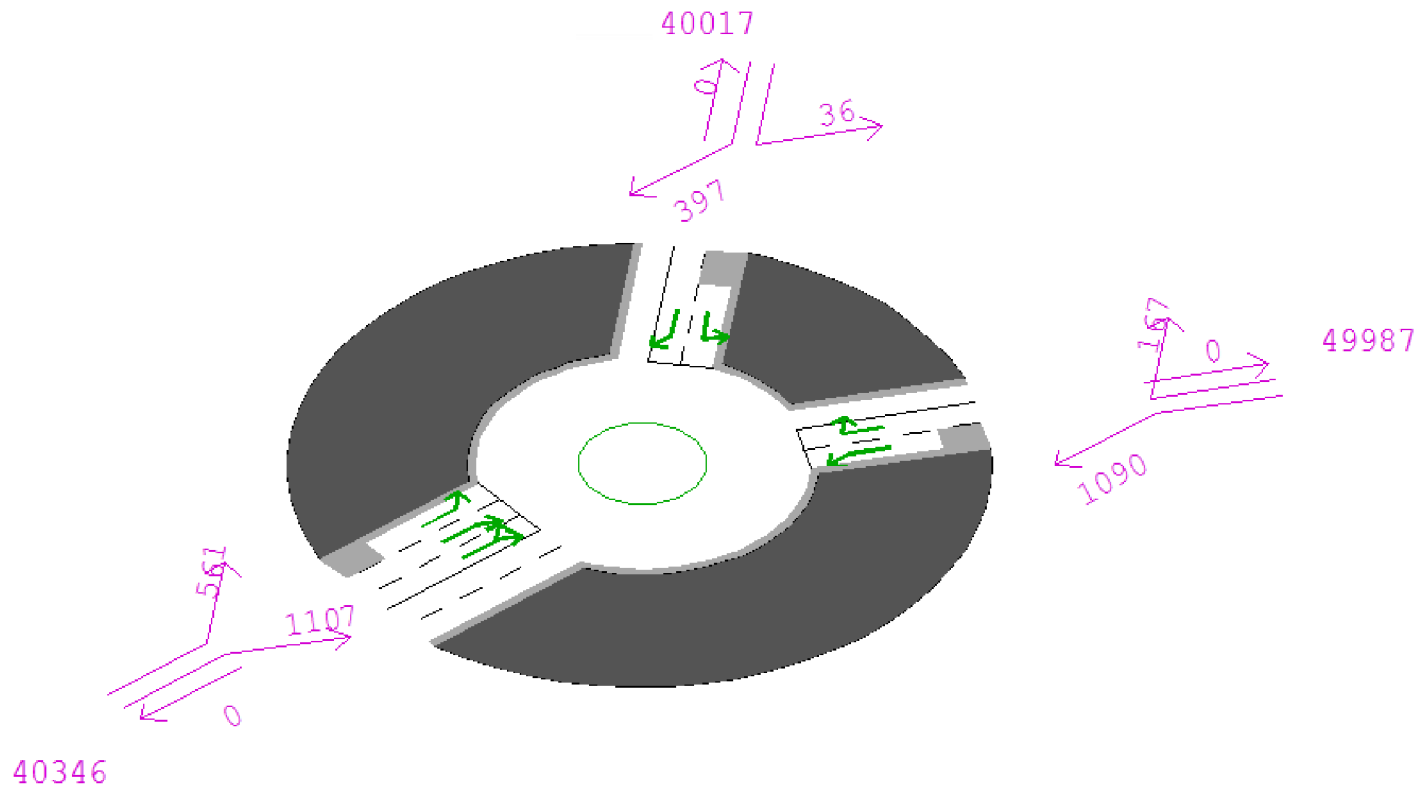


2036 DS

PM Peak

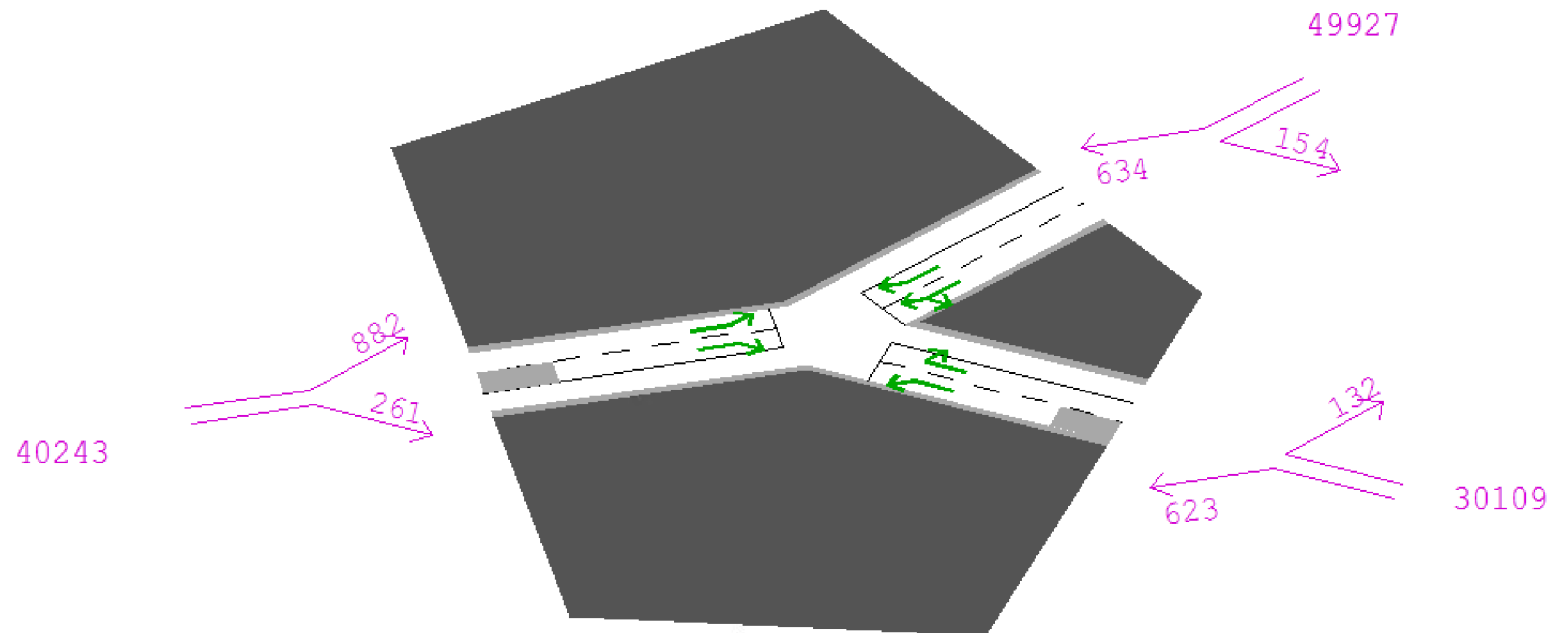
1. A47/ LEICESTER ROAD JUNCTION

2036 DS Scenario - PM Peak



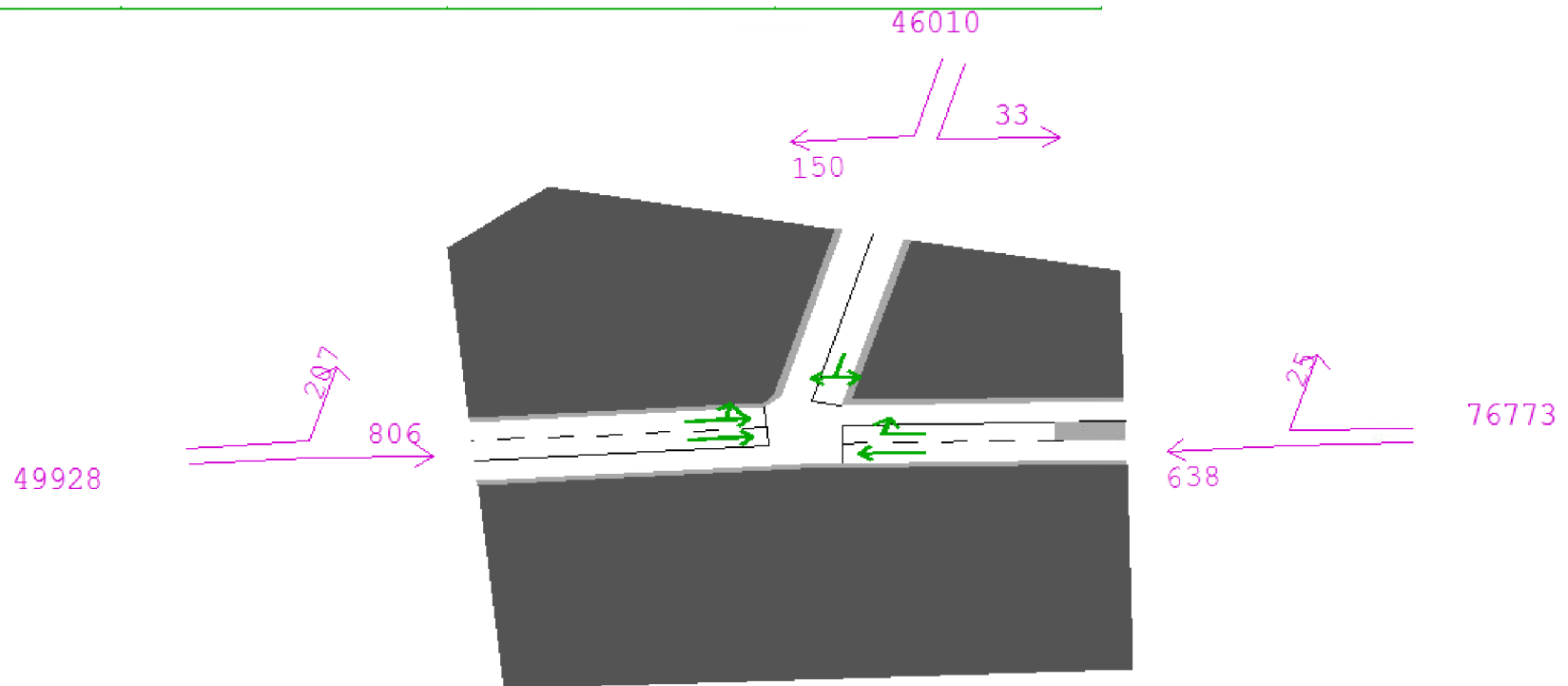
2. A47 / A581 STATION ROAD JUNCTION

2036 DS Scenario - PM Peak



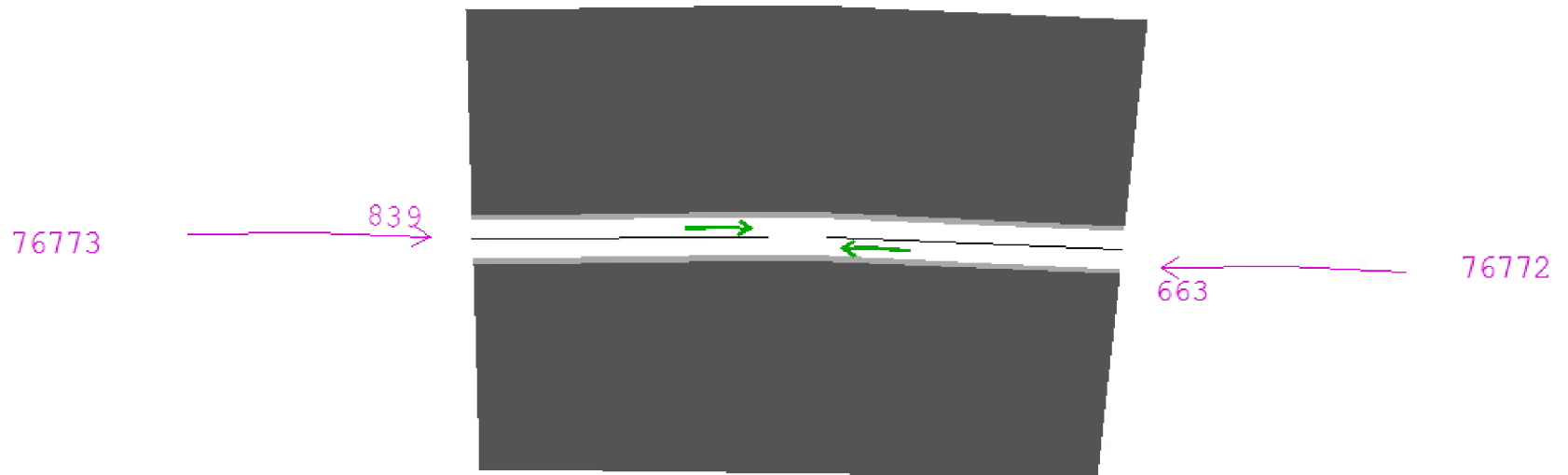
3. A47 / WILKINSON LANE JUNCTION

2036 DS Scenario - PM Peak



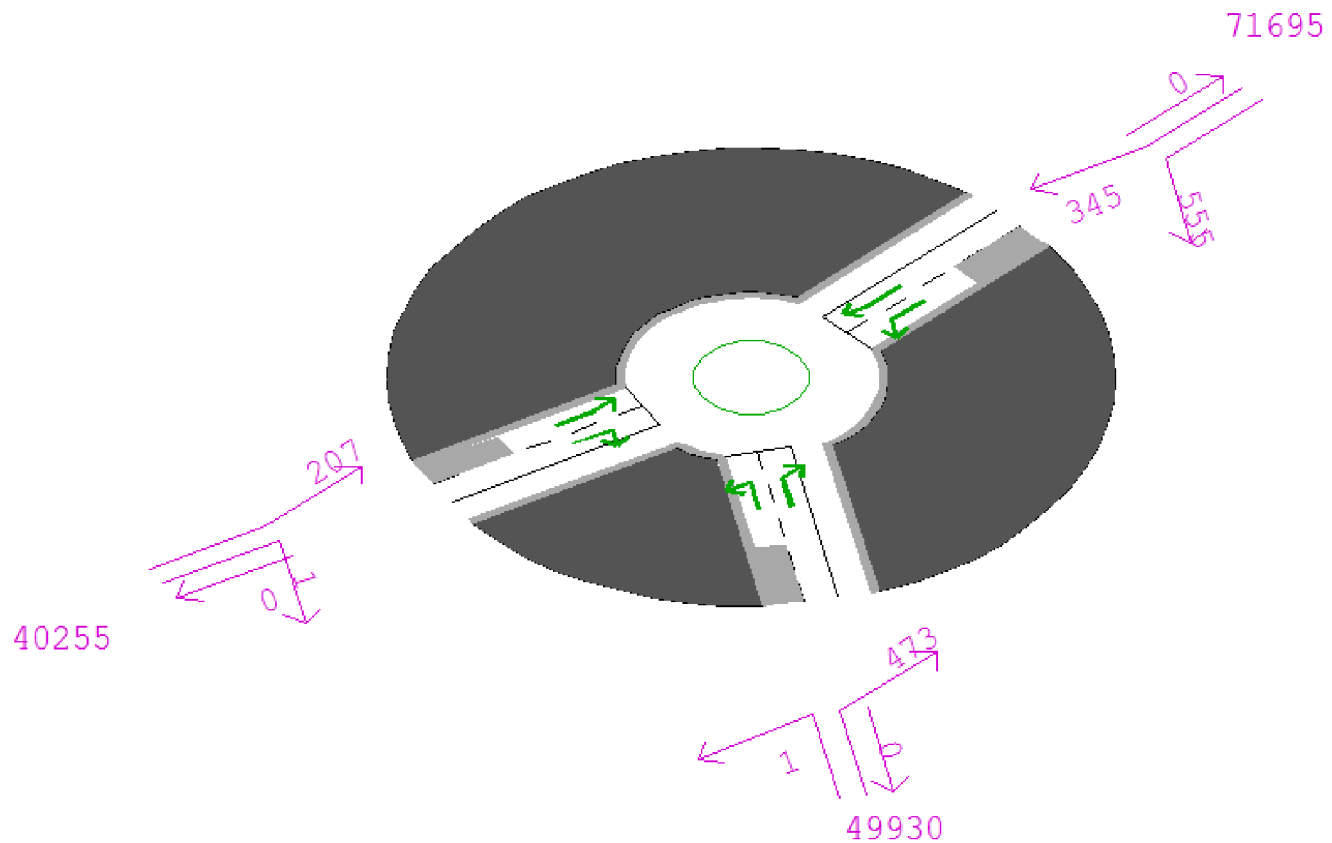
4. A47 / MASEFIELD DRIVE JUNCTION

2036 DS Scenario - PM Peak



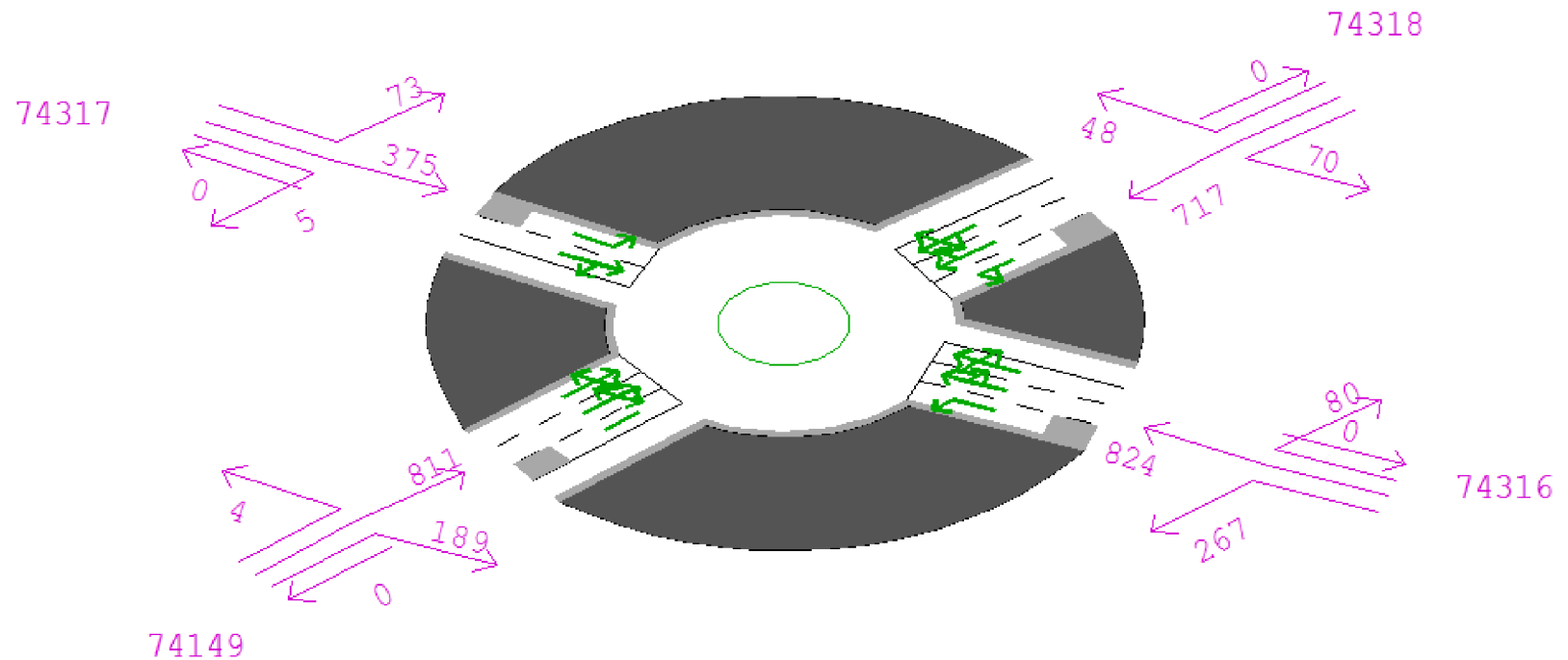
5. A47 / LEICESTER ROAD JUNCTION

2036 DS Scenario - PM Peak



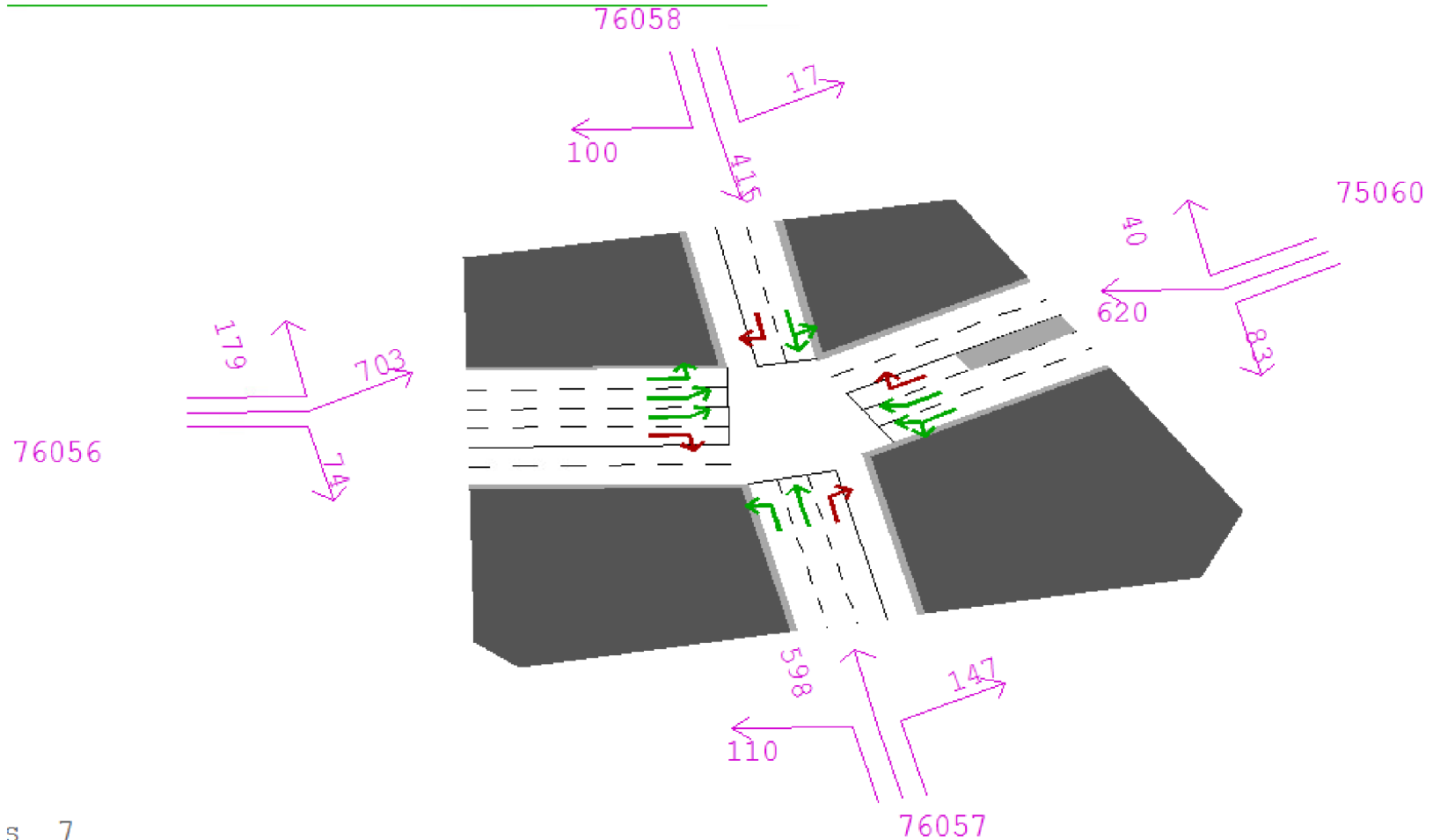
6. A47 HINCKLEY ROAD / B582 LEICESTER LANE / A582 DESFORD ROAD JUNCTION

2036 DS Scenario - PM Peak



7. A47 / A447 ASHBY ROAD JUNCTION

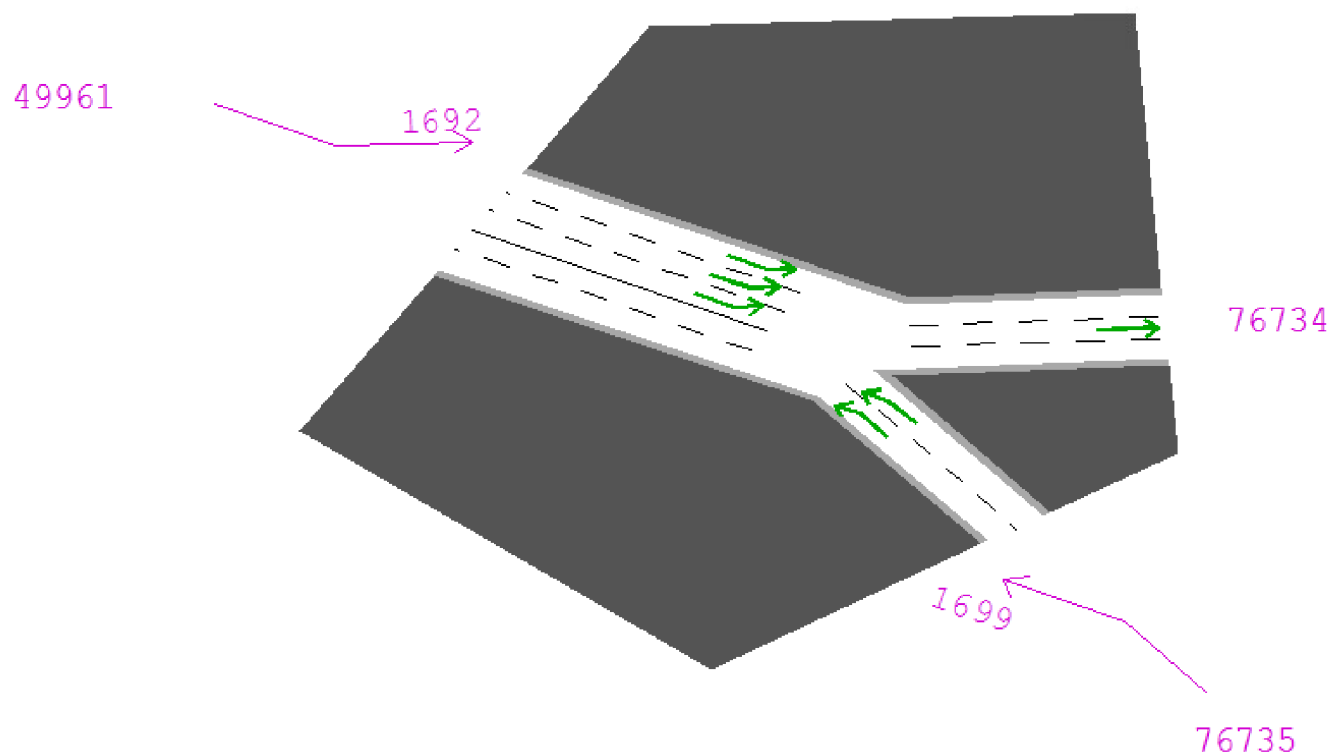
2036 DS Scenario - PM Peak



s 7

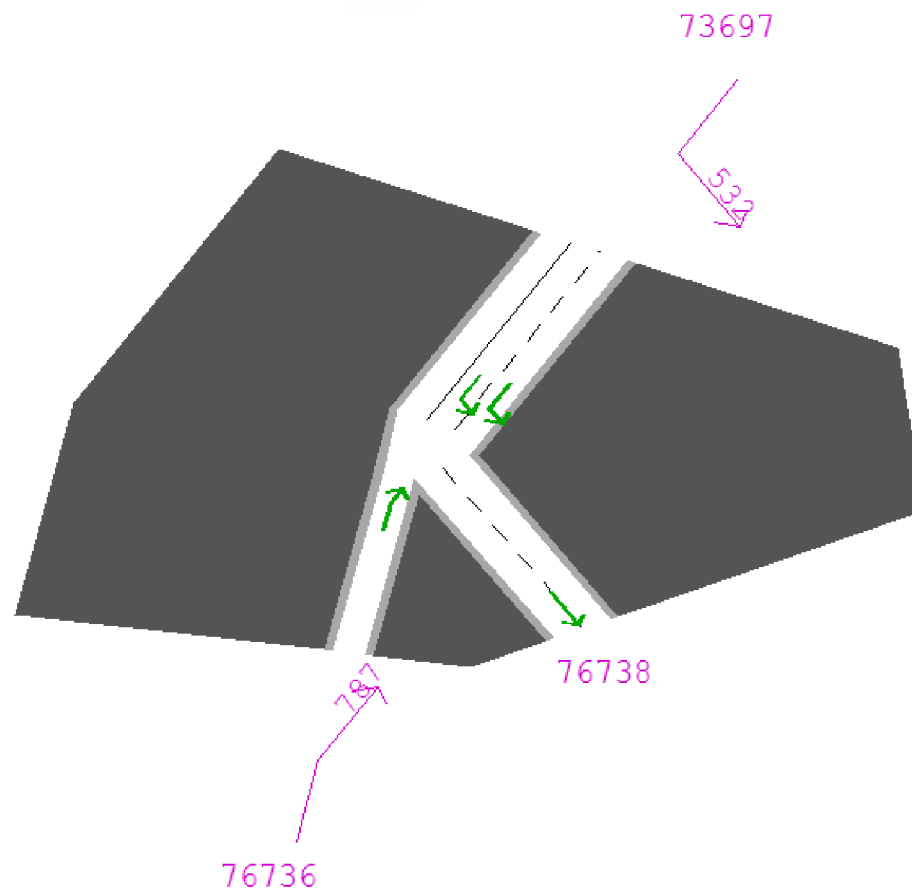
8. DODWELLS ROUNDABOUT

2036 DS Scenario - PM Peak



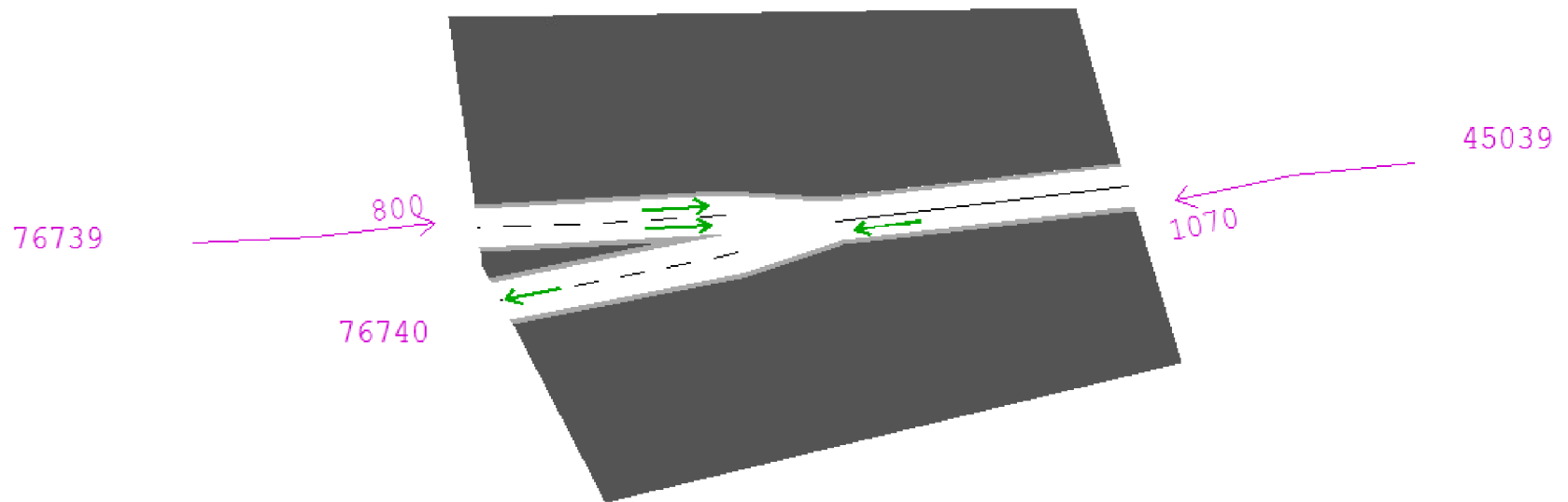
8. DODWELLS ROUNDABOUT

2036 DS Scenario - PM Peak



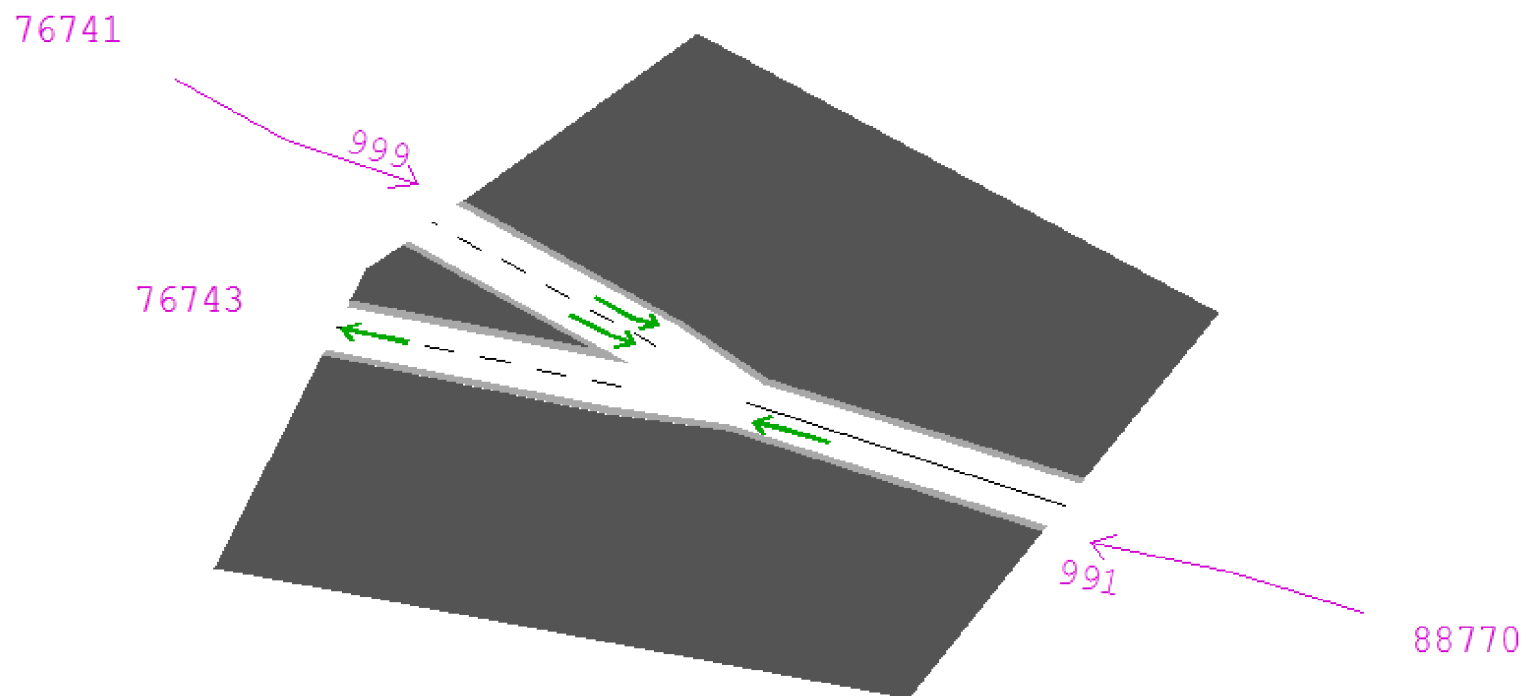
8. DODWELLS ROUNDABOUT

2036 DS Scenario - PM Peak



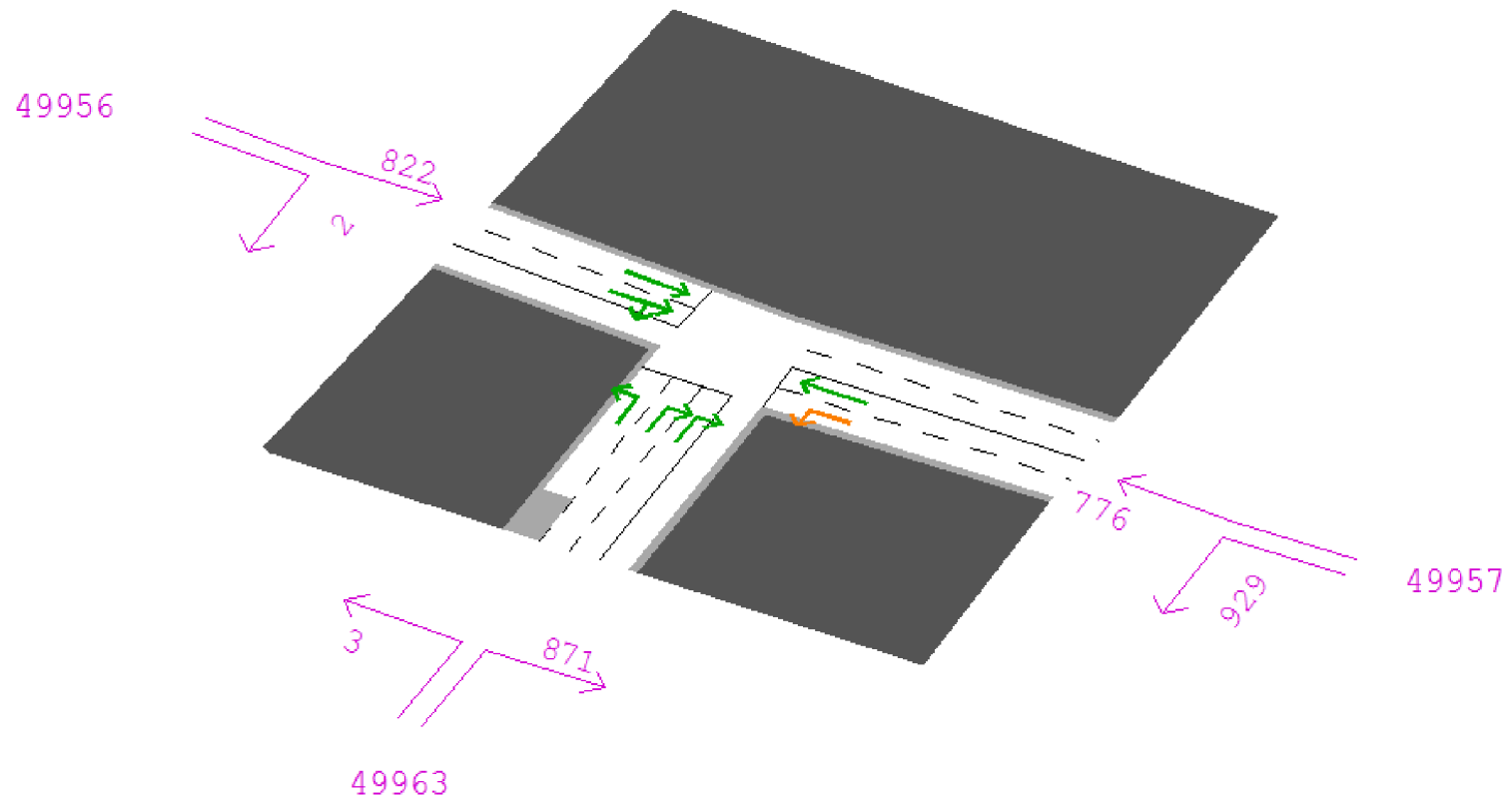
8. DODWELLS ROUNDABOUT

2036 DS Scenario - PM Peak



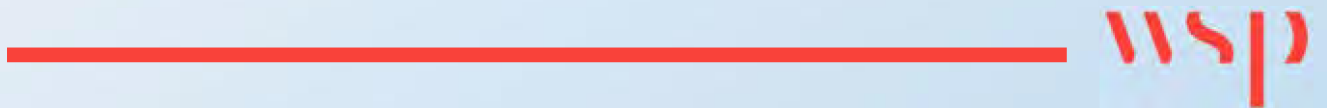
9. A5 / A47 THE LONG SHOOT JUNCTION

2036 DS Scenario - PM Peak



Appendix B

JUNCTION VOLUME CAPACITY RATIO



Sl no.	Junction	Turn	A Node	B Node	C Node	Turn ID	Turn ID (Change in network)	2021_DM_AM	2026_DM_AM	2036_DM_AM	2026_DS2_AM	2036_DS2_AM	2021_DM_PM	2026_DM_PM	2036_DM_PM	2026_DS2_PM	2036_DS2_PM
1	A47/ Leicester Road	Leicester Rd to A47 (East)	40017	40243	49987	40017_40243_49987		8.35	9.67	10.04	12.29	11.79	4.8	4.9	5.44	4.43	5.14
		Leicester Rd to A47 (West)	40017	40243	40346	40017_40243_40346		48.48	55.3	59.9	62.82	65.13	31.06	37.27	38.44	34.72	37.65
		Leicester Rd to Leicester Rd- u turn	40017	40243	40017	40017_40243_40017		0	0	0	0	0	0	0	0	0	0
		A47 (East) to A47 (West)	49987	40243	40346	49987_40243_40346		73.19	80.81	83.73	87.78	88.1	60.91	68.92	75.34	80.35	84.97
		A47 (East) to Leicester Rd	49987	40243	40017	49987_40243_40017		9.07	12.09	13.55	14.04	14.81	12.31	22.23	30.04	37.63	46.39
		A47 (East) to A47 (East)-u turn	49987	40243	49987	49987_40243_49987		0	0	0	0	0	0	0	0	0	0
		A47 (West) to Leicester Rd	40346	40243	40017	40346_40243_40017		12.89	14.98	15.42	12.86	13.25	33.52	36.58	36.58	38.96	37.35
		A47 (West) to A47 (East)	40346	40243	49987	40346_40243_49987		26.79	30.67	33.74	34.64	36.89	40.85	45.62	47.16	53.95	54.04
A47 (West) to A47 (West)-u turn	40346	40243	40346	40346_40243_40346		0	0	0	0	0	0	0	0	0	0		
2	A47 / A581 Station Road	Station Rd to A47 (West)	30109	49987	40243	30109_49987_40243		66.29	67.98	67.58	61.38	61.36	72.58	78.48	84.58	83.52	88.93
		Station Rd to A47 (East)	30109	49987	49927	30109_49987_49927		78.27	79.55	79.87	89.87	98.6	100.73	100.15	100.21	100.2	100.45
		A47 (West) to A47 (East)	40243	49987	49927	40243_49987_49927		46.29	58.64	66.9	70.51	78.24	64.25	73.09	75.37	93.64	94.29
		A47 (West) to Station Rd	40243	49987	30109	40243_49987_30109		76.93	74.93	76.3	80.22	78.31	69.92	70.12	72.99	70.84	73.17
		A47 (East) to Station Rd	49927	49987	30109	49927_49987_30109		37.15	46.88	49.12	57.1	56.4	30.92	33.04	36.06	46.55	47.03
		A47 (East) to A47 (West)	49927	49987	40243	49927_49987_40243		46.89	54.12	56.6	65.37	65.15	39.63	45.17	49.13	61.28	61.95
3	A47 / Wilkinson lane	A47 (West) to Wilkinson lane	49928	49931	46010	49928_49931_46010		25.05	27.62	29.78	27.98	30.57	51.66	55.04	55.78	59.47	59.03
		A47 (West) to A47 (East)	49928	49931	76773	49928_49931_76773	49928_49931_49929	32.08	41.35	47.45	51.8	58.35	42.78	50.77	52.92	70.33	71.01
		Wilkinson lane to A47 (East)	46010	49931	76773	46010_49931_76773	46010_49931_49929	39.47	26.06	37.59	24.73	24.12	16.13	16.11	16.14	20.48	17.84
		Wilkinson lane to A47 (West)	46010	49931	49928	46010_49931_49928		79.85	75.83	71	65.5	64.43	58.86	58.06	57.85	55.97	48.85
		A47 (East) to A47 (West)	76773	49931	49928	76773_49931_49928	49929_49931_49928	62.26	76.34	85.13	100.53	100.33	47.28	55.33	61.34	80.3	84.09
		A47 (East) to Wilkinson lane	76773	49931	46010	76773_49931_46010	49929_49931_46010	18.33	3.15	2.9	100.53	100.33	28.53	20.04	22.27	16.3	15.74
4	A47 / Masefield Drive	A47 (East) to A47 (West)	76772	76763	76773	76772_76763_76773	NA in 2021	#N/A	33.18	36.93	43.37	43.21	#N/A	26.9	29.76	37.37	38.97
		A47 (West) to A47 (East)	76773	76763	76772	76773_76763_76772	NA in 2021	#N/A	30.31	36.04	38.63	43.31	#N/A	33.07	34.53	48.64	49.37
5	A47 / Leicester Road	A47 (North) to A47 (South)	71695	49932	49930	71695_49932_49930		32.16	38.19	43.04	28.04	28.29	31.3	35.19	38.87	40.99	42.9
		A47 (North) to Leicester Rd	71695	49932	40255	71695_49932_40255		14.18	18.45	20.65	16.2	17.26	26.77	29.78	30.72	31.12	31.83
		A47 (North) to A47 (North)-u turn	71695	49932	71695	71695_49932_71695		0	0	0	0	0	0	0	0	0	0
		A47 (South) to Leicester Rd	49930	49932	40255	49930_49932_40255		0.14	0.18	0.41	0.19	0.23	0.25	0.27	0.33	0.1	0.1
		A47 (South) to A47 (North)	49930	49932	71695	49930_49932_71695		27.81	35.03	41.94	41.98	47.21	34.22	41.4	43.2	33.96	35.49
		A47 (South) to A47 (South)-u turn	49930	49932	49930	49930_49932_49930		0	0	0	0	0	0	0	0	0	0
		Leicester Rd to A47 (North)	40255	49932	71695	40255_49932_71695		22.32	30.86	29.89	34	34.47	15.28	17.77	18.88	16.07	17.02
		Leicester Rd to A47 (South)	40255	49932	49930	40255_49932_49930		0.25	0.31	0.34	0.12	0.13	0.21	0.24	0.26	0.09	0.09
Leicester Rd to Leicester Rd-u turn	40255	49932	40255	40255_49932_40255		0	0	0	0	0	0	0	0	0	0		
6	A47 Hinckley Road / B582 Leicester Lane / A582 Desford Road	Hinckley Rd (North) to A582 Desford Road	74318	30145	74316	74318_30145_74316		41.23	9.7	15.22	10.36	16	10.52	4.32	4.61	4.42	4.65
		Hinckley Rd (North) to Hinckley Rd (South)	74318	30145	74149	74318_30145_74149		92.26	37.03	42	35.72	41.53	76.8	29.23	32.06	30.96	33.29
		Hinckley Rd (North) to B582 Leicester Lane	74318	30145	74317	74318_30145_74317		28.03	8.15	13.94	7.44	14.8	33.66	2.67	3.36	2.81	3.2
		Hinckley Rd (North) to Hinckley Rd (North)- u turn	74318	30145	74318	74318_30145_74318	NA, since its signalised in 2021 and rdbt in 2026 and 2031 (U turn)	#N/A	0	0	0	0	#N/A	0	0	0	0
		A582 Desford Road to Hinckley Rd (South)	74316	30145	74149	74316_30145_74149		20.8	6.88	7.88	6.74	7.64	61.75	15.59	21.21	17.16	22.31
		A582 Desford Road to B582 Leicester Lane	74316	30145	74317	74316_30145_74317		59.17	19.15	20.38	19.05	20.32	99.04	40.3	46.19	40.88	46.98
		A582 Desford Road to Hinckley Rd (North)	74316	30145	74318	74316_30145_74318		42.12	4.71	4.18	4.37	3.36	66.08	7.91	7.09	7.41	7.87
		A582 Desford Road to A582 Desford Road- u turn	74316	30145	74316	74316_30145_74316	NA, since its signalised in 2021 and rdbt in 2026 and 2031 (U turn)	#N/A	0	0	0	0	#N/A	0	0	0	0
		Hinckley Rd (South) to B582 Leicester Lane	74149	30145	74317	74149_30145_74317		99.84	0.48	0.59	1.02	2.03	35.1	0.29	0.37	0.34	0.44
		Hinckley Rd (South) to Hinckley Rd (North)	74149	30145	74318	74149_30145_74318		99.85	32.7	38.39	37.68	43	97.21	41.16	46.81	40.12	46.26
		Hinckley Rd (South) to A582 Desford Road	74149	30145	74316	74149_30145_74316		95.31	26.93	31.15	28.95	33.63	78.87	13.41	16.5	13.85	16.71
		Hinckley Rd (South) to Hinckley Rd (South)- u turn	74149	30145	74149	74149_30145_74149	NA, since its signalised in 2021 and rdbt in 2026 and 2031 (U turn)	#N/A	0	0	0	0	#N/A	0	0	0	0
		B582 Leicester Lane to Hinckley Rd (North)	74317	30145	74318	74317_30145_74318		15.58	13.19	17.68	14.39	18.82	9.52	7.56	10.22	7.52	10.04
		B582 Leicester Lane to A582 Desford Road	74317	30145	74316	74317_30145_74316		100.42	63.46	69.48	66.23	71.92	66.36	33.74	36.52	33.44	36.56
B582 Leicester Lane to Hinckley Rd (South)	74317	30145	74149	74317_30145_74149		3.08	1.03	1.34	1.31	2.34	2.46	0.38	0.42	0.72	0.82		
B582 Leicester Lane to B582 Leicester Lane- u turn	74317	30145	74317	74317_30145_74317	NA, since its signalised in 2021 and rdbt in 2026 and 2031 (U turn)	#N/A	0	0	0	0	#N/A	0	0	0	0		
7	A47 / A447 Ashby Road	A447 Ashby Road (North) to A47 (East)	76058	40168	75060	76058_40168_75060	45008_40168_75060	10.5	12.71	22.11	17.87	34.74	6.57	5.54	6.39	5.59	6.49
		A447 Ashby Road (North) to A447															



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