Immingham Green Energy Terminal

TR030008

9.65 Report on traffic matters related to IGET for National Highways

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)

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1 Relevant Representation Response

1.1.1 National Highways has provided a number of comments relating to the Immingham Green Energy Terminal ("the Project") in two technical memorandums dated 16 November 2023 [RR-018] and 12 March 2024 [REP1-082]. The points raised in the memorandum are set out below using the same headings as given by National Highways for ease of reference.

1.2 Collision data analysis

1.2.1 It is noted and welcomed that National Highways agrees with the conclusion that there is no existing road safety issue at the A180 / A1173 junction, as set out in **Environmental Statement ("ES") Chapter 11: Traffic & Transport [APP-053]**.

1.2.2 It is therefore considered that this is now agreed.

1.3 ES Chapter 11: Traffic & Transport

1.3.1 It is noted and welcomed that National Highways agrees that a separate Transport Assessment is not required as ES Chapter 11: Traffic and Transport [APP-053] provides sufficient information.

1.4 Construction vehicle trip generation and distribution. Vehicle trip generation

1.4.1 It is noted and welcomed that National Highways states that the construction vehicle generation has been derived appropriately.

1.4.2 National Highways considers that the weekday peak hours periods should be 07:00–08:00 and 16:00–17:00 rather than 08:00–09:00 and 17:00–18:00 as set out in **Paragraph 11.8.17** in **ES Chapter 11: Traffic and Transport [APP-053]** which states "*during the weekday AM peak,08:00 to 09:00 there is anticipated to be 53 worker trips and during the weekday PM peak 17:00 to 18:00 there is anticipated to be 137 worker trips on the road network*".

1.4.3 The peak hours as specified by National Highways above are noted and agreed. With reference to **Table 11-13** in **ES Chapter 11: Traffic and Transport [APP-053]**, during the hours National Highways considers are the peak hours, there are a total of 205 construction worker trips between 07:00 and 08:00 and 53 between 16:00 and 17:00.

1.4.4 In their Technical Memorandum dated 16 November 2023 **[RR-018]**, National Highways has determined the number of car trips on the network during the peak hours by dividing the above number by 1.5 to reflect the assumed level of car sharing. This is not the correct approach as the 205 trips between 07:00 and 08:00 and the 53 trips between 16:00 and 17:00 already take account of car sharing.

1.4.5 National Highways further considers that these trips have the potential to result in a material impact upon the Strategic Road Network ("SRN"). However, as demonstrated in the section below which considers construction worker vehicle trip distribution, there will not be a severe impact on the SRN during the construction phase of the Project.

1.4.6 Within their most recent Technical Memorandum dated 12 March 2024, National Highways has now accepted that the construction trip generation is appropriate. It is therefore considered that this is now agreed.

1.5 Construction worker vehicle trip distribution

1.5.1 It is noted and welcomed that National Highways considers that the methodology adopted for the distribution of traffic is appropriate.

1.6 Overall Impacts

1.6.1 National Highways considers that there will be an impact on the A180 / A1173 junction due to construction worker trips. However, the overall conclusion set out in **Paragraph 11.13.1** in **ES Chapter 11: Traffic and Transport [APP-053]** is that the additional level of trips associated with the construction workers during the weekday AM and PM peak periods is not material in terms of junction operation and the impact is not considered to be substantial (National Policy Statement for Ports, Section 5.4) or severe (National Planning Policy Framework, Section 9).

1.6.2 In addition, the results of the capacity assessment of the A180 / A1173 junction as set out in the Transport Assessment submitted in support of the Immingham Eastern Ro-Ro Terminal ("IERRT") development, shows that this junction is predicted to operate well within capacity in all scenarios up to a design year of 2032, which is beyond the 2026 peak year of THE PROJECT construction.

1.6.3 Any impact from the Project construction phase is temporary, with a peak year of activity in 2026, and given the above, it is not considered that there will be a severe impact upon the SRN. Subject to some further clarifications, as referred to under the heading **Assessments** below, this conclusion has now been accepted by National Highways.

1.7 HGV trip distribution

1.7.1 National Highways has set out the Heavy Goods Vehicle ("HGV") trip generation and distribution, but as no comment has been made, it is understood that this is acceptable to National Highways.

1.8 Total construction vehicle trip generation

1.8.1 Within their Technical Memorandum dated 12 March 2024, National Highways confirms this has been accepted, therefore no further information is required.

1.9 Assessments

1.9.1 National Highways considers that a junction capacity assessment of the A180 / A1173 junction should be provided. Whilst it is considered by the Applicant that there is no requirement for this as stated above, it has been provided as a Sensitivity Test based upon the traffic flows as set out in the IERRT Transport Assessment Addendum Report ("the IERRT TA Addendum Report") prepared by DTA dated December 2023 (Ref Document 8.4.17(a).1). The IERRT TA Addendum Report was submitted at Deadline 7 of the IERRT Examination and was given the reference REP7-013.

1.9.2 The modelling output included within the Sensitivity Test is based on the traffic flow information presented in the IERRT TA Addendum Report. These traffic flows are agreed with National Highways (as reported in the **Statement of Common Ground [REP1-049]**) and as such include the relevant Passenger Car Units ("PCU") factors as requested.

1.9.3 The results of the modelling output are included with **Appendix 1** of this Relevant Representation Response, with the JUNCTIONS output being included within **Appendix 6** of this Relevant Representation Response. The conclusion of the assessment is that the junction will continue to operate within capacity with the addition of construction traffic from the Project and committed development, including IERRT, in 2026.

1.9.4 The following scenarios have been modelled based upon the impact during the construction phase only, and these have been accepted by National Highways.

- Base 2026
- Base 2026 + Committed Development
- Base 2026 + Committed Development + IERRT
- Base 2026 + Committed Development + IERRT + the Project (07:00–08:00 and 16:00–17:00)
- Base 2026 + Committed Development + IERRT + the Project (Sensitivity Test 06:00–07:00 and 18:00–19:00)

1.9.5 National Highways has now accepted, subject to some clarification regarding the derivation of the traffic data used in the assessments, that the A180 / A1173 operates within capacity on all of the arms with negligible increases in queue and delay during the PROJECT construction phase.

1.9.6 The traffic flows and turning movements used in the assessment of the A1173 / A180 junction are included in **Appendix 2** of this Relevant Representation Response for reference, with the derivation of these being set out as follows.

1.10 Base 2026

1.10.1 This has been derived from the IERRT Base 2021 traffic flows and then growthed to the 2026 peak of construction year using the agreed TEMPRO factors.

1.10.2 The agreed IERRT 2021 traffic flows are taken from the IERRT TA Addendum dated 8 December 2023, and the traffic flows from Appendix TN2 A from that report are included in **Appendix 3** of this Relevant Representation Response below for reference.

1.11 Base 2026 + Committed Development

1.11.1 The committed development traffic is taken from the IERRT TA Addendum dated 8 December 2023, and the traffic flows from Appendix TN2 A from that report are included in **Appendix 3** of this Relevant Representation Response below for reference.

1.12 Base 2026 + Committed Development + IERRT

1.12.1 The IERRT development traffic is taken from the IERRT TA Addendum dated 8 December 2023, and the traffic flows from Appendix TN2 A from that report are included in **Appendix 3** of this Relevant Representation Response below for reference.

1.13 Base 2026 + Committed Development + IERRT + the Project (07:00–0800 and 16:00–17:00)

1.13.1 The PROJECT construction traffic flows have been taken from ES Chapter 11: Traffic and Transport [**APP-053**] with the daily profile of construction workers being shown in Table 11-13 and the HGV profile shown in Table 11-14. Key figures are:

- Construction workers – 190 arrivals and 15 departures between 07:00 and 08:00 and 15 arrivals and 38 departures between 16:00 and 17:00.
- Construction HGVs – 10 arrivals and eight departures between 07:00 and 08:00 and nine arrivals and nine departures between 16:00 and 17:00.

1.13.2 This is illustrated on **Figures 2** and **3** within **Appendix 4** of this Relevant Representation Response.

1.14 Base 2026 + Committed Development + IERRT + the Project (Sensitivity Test, Project construction traffic between 06:00 and 07:00 and between 18:00 and 19:00)

1.14.1 The PROJECT construction traffic flows have been taken from ES Chapter 11: Traffic and Transport [**APP-053**] with the daily profile of construction workers being shown in Table 11-13 and the HGV profile shown in Table 11-14. Key figures are:

- Construction workers – 258 arrivals and 15 departures between 06:00 and 07:00 and 23 arrivals and 266 departures between 18:00 and 19:00.
- Construction HGVs – zero arrivals and zero departures between 06:00 and 07:00 and zero arrivals and 10 departures between 18:00 and 19:00.

1.14.2 This is illustrated on **Figures 1** and **4** within **Appendix 5** of this Relevant Representation Response.

1.14.3 As National Highways has not specifically commented on the above in its response of 12 March 2024, it is understood that this element is agreed.

1.15 Viking CCS Traffic Flows

1.15.1 Traffic flows for the Viking CCS project have been taken from Table 12-36 in Section 12.7: Construction Traffic Distribution of Chapter 12: Traffic and Transport of the Viking CCS Environmental Statement. They show that at the peak of construction there are anticipated to be:

- 1073 construction vehicles on the A180 (W) per day
- 471 construction vehicles on the A180 (E) per day
- 1155 construction vehicles on the A1173 (S) per day

1.15.2 It should be noted that these do not necessarily correlate as, with reference to Section 12.7 of the Viking CCS ES, the peak traffic flow at each link has been used, however the peak flow does not necessarily occur at the same time for each link. Therefore, the total peak traffic flows at a junction may not necessarily 'add up'.

1.15.3 With reference to Section 12.6 / Table 12-31, 9% of inbound and 8% of outbound construction trips will occur in the peak hours (0700 to 0800 and 1600 to 1700), and these have then been assigned to the A180 / A1173 junction as follows.

Where:

A is A1173 N

B is A180 E

C is A1173 S

D is A180 W

Table 1: Viking CCS Traffic Peak Hour Turning Flows at the A180/ A1173 Junction

	A	B	C	D
A	0	1	3	3
B	2	0	260	26
C	7	38	0	114
D	7	38	115	0

The above has then been used to assess the impact of the Viking CCS construction traffic in the following scenarios.

1.16 Committed / Cumulative developments

1.16.1 National Highways recommended that the following emerging developments be considered within the **ES** cumulative assessment, with an additional request received via an email dated 3 April 2024 to also include the Viking CCS scheme.

- IERRT: roll-on/roll-off ("Ro-Ro") facility at Immingham Port
- Station Road South Killingholme, works on land to the east of Rosper Road, Killingholme (planning reference: PA/SCO/2022/7)
- Viking CCS

1.16.2 The IERRT project has been included within the cumulative assessment as set out in ES Chapter 25: Cumulative and In-Combination Effects [**APP-067**] and also ES Appendix 11.B: Traffic and Transport Cumulative Effects Assessment [**APP-190**]. IERRT is also considered within the assessment of the A180 / A1173 interchange as set out below. It is therefore considered these requests have been addressed within the assessments of the A180 / A1173 junction.

1.16.3 National Highways has also requested that enabling works on land east of Rosper Road, Killingholme (PA/2023/502) are considered. As stated previously, it has not been possible to obtain any details regarding the enabling works on land to the east of Rosper Road, Killingholme (PA/SCO/2022/7). However, the Transport Statement and Construction Traffic Management Plan prepared for this scheme (prepared by Sanderson Associates in March 2023) have been reviewed to establish the trip generation, distribution and assignment associated with the development.

1.16.4 Based on the information provided all trips will access the site via the A160 / A180 interchange, travel along the A160 and enter Rosper Road via the A160 / A1173 roundabout. Both of these routes are outside of the assessment area for the Project and as such any cumulative impact is not likely to be material.

1.16.5 No further comments were received from National Highways in its response dated 12 March 2024 and it is therefore understood that this is now agreed.

1.16.6 In terms of the Viking CCS scheme and with reference to the supporting ES Chapter (APP-054) submitted as part of the application for that project, all construction workers will arrive before 0700 and depart after 1900 and therefore will not be on the highway network during the agreed peak hours of between 07:00 and 08:00 and between 16:00 and 17:00. There will, however, be HGVs using the A180 / A1173 junction, and the impact from these additional trips has been assessed and this is set out as follows.

1.17 A180 / A1173 Junction Assessment WITH Viking CCS

1.17.1 As requested an assessment including the peak Viking CCS traffic flows has been undertaken, and the results of the modelling are set out in the table below.

Table 2: A180 / A1173 Modelling Results: Base 2026 + Committed Development + IERRT Development + PROJECT (Actual) + Viking

ARM	Base 2026 + Committed Development + IERRT Development + PROJECT (Actual) + Viking					
	AM (0700 to 0800)			PM (1600 to 1700)		
	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.6	3.00	0.29	2.8	5.60	0.71
B – A180 E	1.2	3.59	0.53	0.7	3.96	0.40
C – A1173 S	2.0	9.35	0.65	0.5	3.82	0.29
D – A180 W	4.6	17.03	0.77	1.1	4.31	0.40

1.17.2 As can be seen there are increases in RFC and queuing when compared to the scenarios without Viking CCS, but the junction is still predicted to operate within capacity and therefore is able to accommodate the cumulative traffic flows at the year of peak impact for IGET, 2026.

1.18 Operational vehicle trip generation and distribution. Vehicle trip generation

1.18.1 It is noted and welcomed that National Highways agrees with the operational vehicle trip generation. An **Outline Operational Travel Plan [REP1-067]** has been prepared and submitted into the Examination as part of the Deadline 1 submission on the 18 March 2024 and for ease of reference has also been included within this submission of information.

1.19 Vehicle trip distribution

1.19.1 As set out in Paragraph 11.8.35 of ES Chapter 11: Traffic and Transport [**APP-053**] there is anticipated to be a total of 120 staff on site during the operational phase. From the total of 120 staff, 53 will work a normal daytime 'nine to five' and 67 will work over two separate 12-hour shifts starting at 07:00 and 19:00 respectively.

1.19.2 Based on the above, a daily profile can be set out as follows, assuming a split of 33 and 34 workers across both shift patterns.

Table 3: Operational Staff Daily Profile

Time Period	Arrivals	Departures	Two Way
06:00 to 07:00	33	0	33
07:00 to 08:00	0	34	34
08:00 to 09:00	53	0	53
16:00 to 17:00	0	0	0
17:00 to 18:00	0	53	53
18:00 to 19:00	34	0	34
19:00 to 20:00	0	33	33

1.19.3 As illustrated, the number of trips during the agreed network peak hours of 07:00 to 08:00 and 16:00 to 17:00 is 34 in the AM period and zero in the PM period and is therefore not considered to be material.

1.19.4 The distribution of the 53 trips arriving between 08:00 and 09:00 and departing between 17:00 and 18:00 is set out below.

1.19.5 With reference to **Table 11-23** of **ES Chapter 11: Traffic and Transport [APP-053]**, the distribution for operational workers has been based upon the Census Journey To Work data and the impact is given below for ease of reference.

Table 4: Distribution of Operational Traffic

Route	Distribution	Operational traffic arriving between 08:00 and 09:00 and departing between 17:00 and 18:00
Laporte Road	21%	11
Manby Road	8%	4
Pelham Road	20%	11
A180 (W)	9%	5
A180 (E)	26%	14
A1173 (S)	16%	8
TOTAL	100%	53

1.19.6 As can be seen from the above table the operational phase workers on the 'normal nine to five' shift will add a total of five trips to the A180 (W) and 14 trips to the A180 (E). This is not considered to represent a material impact and would be well within any daily variation of traffic on the A180.

1.19.7 It is therefore considered that it can be agreed that the operational phase of the IGET development will not result in any material impact upon the SRN.

1.20 Decommissioning phase

1.20.1 It is noted and welcomed that National Highways agrees with the approach to secure a Decommissioning Environmental Management Plan ("DEMP") by a requirement of the Development Consent Order ("DCO"). An **Outline DEMP [APP-222]** is included with the DCO Application and the production of a final DEMP is secured by **Requirement 18** in **Schedule 2** of the **draft DCO [REP1-016]**.

1.21 Construction Traffic Management Plan

1.21.1 National Highways has requested that the **Outline Construction Traffic Management plan ("CTMP") [REP1-006]** should include the following:

- A dust management plan
- Noise management plan
- Pollution prevention measures
- Contractor parking

1.21.2 It should be noted that the management plans highlighted above have been included within the DCO Application in the Outline Construction Environmental Management Plan ("CEMP") [REP2-004] as set out below:

- A dust management plan is included in **Appendix C: Outline Dust Management Plan** of the **Outline CEMP [REP2-004]**.
- Noise and vibration mitigation and enhancement measures are included within **Table 4: Noise and Vibration** of the **Outline CEMP [REP2-004]**.

- Pollution prevention measures are included in:
  - **Table 5: Nature Conservation (Terrestrial Ecology)** of the **Outline CEMP [REP2-004]**
  - **Table 9: Marine Transport and Navigation** of the **Outline CEMP [REP2-004]**
  - **Table 14: Marine Water and Sediment Quality** of the **Outline CEMP [REP2-004]**
  - **Table 15: Water Quality, Coastal Protection, Flood Risk and Drainage** of the **Outline CEMP [REP2-004]**
- Contractor parking is addressed within **Section 2.5: Parking Provision** of the **Outline CEMP [REP2-004]**, with the Travel Plan Co-ordinator determining the number of spaces provided on site.

1.21.3 The development of the Outline CEMP into a Construction Environmental Management Plan is secured under Requirement 6 in Schedule 2 of the draft DCO [REP1-016]. This Construction Environmental Management Plan requires approval from the relevant planning authority following consultation with the Environment Agency and Natural England on matters related to their function.

1.21.4 The above has now been accepted by National Highways, and as such is taken as being agreed with no further information being required.

1.22 Outline Construction Worker Travel Plan

1.22.1 It is noted and welcomed that National Highways considers the measures included within the Outline Construction Worker Travel Plan ("CWTP"), which is an appendix to the **Outline CTMP [REP1-006]**, are appropriate.

1.23 Summary and Conclusions

1.23.1 A summary of the Applicant's response to National Highways' representations dated 16 November 2023 and 12 March 2024 is set out below.

National Highways Comment dated 16 November 2023	Summary of response
After a review of WebTRIS data for the A180, JSJV would consider 07:00-08:00 and 16:00-17:00 as more appropriate weekday peak hour periods than 08:00-09:00 and 17:00-18:00 for the SRN.	This is agreed. **ES Chapter 11: Traffic and Transport [APP-053]** concludes that there is not considered to be a severe impact upon the SRN during the AM and PM periods. The assessment provided above confirms that the overall conclusion remains the same.
The volume of construction worker vehicle trips has the potential to result in a material impact on the operation of the SRN.	This has been assessed above and it is confirmed that the volume of construction vehicle trips will have no material impact upon the SRN either in absolute terms (with a maximum increase of 49 trips on the A180 E) or proportional terms. The

National Highways Comment dated 16 November 2023	Summary of response
	junction modelling confirms the A180 / A1173 junction is forecast to operate well within capacity. This is now accepted, subject to clarification of the derivation of the traffic flows as set out in this Relevant Representation Response, by National Highways.
The number of workers per vehicle is incorrectly presented and National Highways recommend that construction worker vehicle distribution is reviewed and presents the results on flow diagrams.	It is not clear how National Highways has derived its numbers. The additional number of trips at the SRN set out above is based upon the approach outlined in **ES Chapter 11: Traffic and Transport [APP-053]** and clarified above. This is now accepted as appropriate by National Highways.
The volume of construction vehicle trips distributed has the potential to result in a material impact on the operation of the SRN. Consequently, National Highways recommend the provision of a junction capacity assessment for the A180 / A1173.	It is not considered that an assessment of the A180 / A1173 junction is required, given the relatively low number of additional trips in the peak hours and the existing capacity of the junction, which operates well within capacity. However, an assessment has been undertaken as a Sensitivity Test, with the junction predicted to operate well within capacity at the peak year of construction, 2026. This is now accepted, subject to clarification of the derivation of the traffic flows, by National Highways.
National Highways request that the PCU equivalent value of 2.5 is used in order to ensure an appropriate assessment of anticipated vehicular traffic associated with the development.	The base traffic has been taken from the IERRT TA Addendum Report, as was agreed with National Highways and reflects the required PCU values. This is now agreed with National Highways.
Subject to the impact at the SRN, there may be a requirement for National Highways to request mitigation measures,	Given the capacity of the A180 / A1173 junction, and the additional number of construction trips, it is not considered that

National Highways Comment dated 16 November 2023	Summary of response
e.g., that the arrivals and departures of construction staff occur outside of the SRN peak periods.	any mitigation measures are required beyond those already set out in the **Outline CEMP [REP2-004]**, **Outline CTMP [REP1-006]** and Outline CWTP (**Appendix A** in the **Outline CTMP**). No additional mitigation beyond those already included has been requested by National Highways; this is therefore considered to be agreed.
National Highways considers that construction traffic associated with the enabling works on land east of Rosper Road, Killingholme (PA/2023/502) should be considered.	This has been considered and assessed above. Based on the information provided in the application, all trips will access the site via the A160 / A180 interchange, travel along the A160 and enter Rosper Road via the A160 / A1173 roundabout. Both of these routes are outside of the assessment area for the Project and as such any cumulative impact is not likely to be material. No further request has been made by National Highways and this is therefore considered to be agreed.
National Highways would typically expect the operational trip generation methodology to be revised to reflect Circular 01/2022 policy. However, considering the predicted operational impact on the SRN as highlighted, it is not anticipated that the proposed development traffic generation will have a significant material impact on SRN junction capacity.	Agreed. The operational phase of the development will have no material impact upon the SRN. Further clarification was sought on derivation of operational trip generation by National Highways in its Technical Memorandum dated 12 March 2024 and further information has been provided in this updated Technical Note. The overall conclusion remains the same, in that no material impact upon the SRN as part of the operational phase is predicted.
National Highways would still expect a Travel Plan to be prepared for the operational stage of the project in order to manage down the traffic impact of	An **Outline Operational Travel Plan [REP1-067]** was submitted into the Examination at Deadline 1.

National Highways Comment dated 16 November 2023	Summary of response
development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport, and shared travel.	
National Highways consider the OCTMP should also include the following: – A dust management plan; – noise management plan; – Pollution prevention measures; – Contractor parking.	These measures are included within the **Outline CEMP [REP2-004]**. This has been accepted by National Highways.

National Highways Comment dated 12 March 2024	Summary of response
Traffic flow diagrams have not been provided, therefore, we cannot confirm whether or not the flows have been extracted from the IERRT TA correctly, or if they align with the modelling. As a result, JSJV would recommend the base and committed traffic flow diagrams are provided for review	Details of the traffic flows used within the assessments have been provided in **Appendices 2**,**3**, **4** and **5** of this Relevant Representation Response.
DTA notes the modelling results indicate that in all scenarios, the A180/A1173 operates within capacity at all of the arms, with negligible increases in the total queue and delay as a result of the development construction traffic. Although JSJV would agree with DTA that the modelling results show no significant impact forecast in association with the proposed development, we would note the results presented within the Response to National Highways (IGET Response) are different from those contained within the Junctions 10 output, the reason for this is not known and should be clarified.	There are minor differences due to some typographical errors in the summary tables, and as agreed by National Highways these do not affect any of the results. These have been corrected. The impact at the A180 / A1173 junction is not material during the construction phase, and it is now considered that this can be agreed with National Highways.
JSJV would recommend DTA presents the distribution of the 87 two-way vehicle trips on to the network, in order	There are 53 operational trips arriving between 08:00 and 09:00 and departing between 17:00 and 18:00 have been

to show the anticipated impact of vehicle trips on the SRN	distributed onto the SRN, and result in an additional five trips on the A180 (W) and 14 trips on the A180 (E). This is not considered to result in a material impact upon the SRN and no further assessment is proposed.

2 Appendix 1: A180 / A1173 Assessment

2.1.1 The following scenarios have been modelled based upon the impact during the construction phase only, and these, along with the geometric data have been accepted as appropriate by National Highways:

- Base 2026
- Base 2026 + Committed Development
- Base 2026 + Committed Development + IERRT
- Base 2026 + Committed + Development IERRT + the Project (07:00-08:00 and 16:00-17:00)
- Base 2026 + Committed + Development IERRT + the Project (Sensitivity Test 06:00-07:00 and 18:00-19:00)

Table 5: Base 2026

	AM			PM		
Arm	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.2	2.01	0.12	0.8	2.42	0.44
B – A180 E	0.4	1.92	0.30	0.3	2.10	0.19
C – A1173 S	0.3	2.85	0.25	0.1	2.14	0.10
D – A180 W	0.4	3.26	0.24	0.2	2.46	0.12

Source: AECOM

Table 6: Base 2026 plus Committed Development

	AM			PM		
Arm	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.4	2.41	0.22	1.5	3.38	0.57
B – A180 E	0.8	2.54	0.42	0.4	2.69	0.29
C – A1173 S	0.1	4.45	0.41	0.2	2.53	0.16
D – A180 W	1.0	5.51	0.43	0.4	2.93	0.21

Source: AECOM

Table 7: Base 2026 plus Committed Development plus IERRT

	AM			PM		
Arm	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.5	2.60	0.25	1.9	3.98	0.63
B – A180 E	0.8	2.77	0.44	0.5	3.06	0.32
C – A1173 S	0.8	5.05	0.44	0.2	2.80	0.18
D – A180 W	1.6	7.52	0.55	0.7	3.59	0.31

Source: AECOM

Table 8: Base 2026 plus Committed Development plus IERRT plus IGET Construction (07:00 to 08:00 and 16:00 to 17:00)

	AM			PM		
Arm	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.5	2.64	0.26	2.1	4.18	0.64
B – A180 E	0.9	2.96	0.47	0.5	3.19	0.34
C – A1173 S	1.0	5.84	0.49	0.2	2.86	0.18
D – A180 W	2.1	9.43	0.61	0.7	3.68	0.32

Source: AECOM

Table 9: Base 2026 plus Committed Development plus IERRT plus IGET Construction (Sensitivity Test 06:00 to 07:00 and 18:00 to 19:00)

	AM			PM		
Arm	Q	Delay	RFC	Q	Delay	RFC
A – A1173 N	0.5	2.59	0.26	2.5	4.78	0.69
B – A180 E	0.9	2.92	0.47	0.6	3.35	0.35
C – A1173 S	1.0	5.92	0.50	0.2	2.89	0.19
D – A180 W	2.1	9.53	0.61	0.7	3.62	0.31

Source: AECOM

2.1.2 As illustrated, the junction is predicted to operate well within capacity, with all RFC values below 0.85, which indicates that the junction is operating satisfactorily with limited queue lengths and delay.

2.1.3 It is therefore considered that it can be agreed with National Highways that the A180 / A1173 junction will continue to operate within capacity during the construction phase of the IGET development.

3 Appendix 2: JUNCTIONS Traffic data

2021 Baseline

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	132	28	134
A180 E	636	0	91	2
A1173 S	119	178	0	89
A180 W	369	0	14	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	602	158	337
A180 E	174	0	213	0
A1173 S	30	125	0	28
A180 W	188	1	69	0

2021 Committed Development

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	90	12	136
A180 E	214	0	17	0
A1173 S	21	69	0	32
A180 W	162	0	8	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	165	22	127
A180 E	76	0	67	0
A1173 S	16	40	0	18
A180 W	149	0	31	0

2021 IERRT Development

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	3	4	89
A180 E	3	0	0	0
A1173 S	7	0	0	0
A180 W	154	0	0	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	3	5	124
A180 E	3	0	0	0
A1173 S	9	0	0	0
A180 W	207	0	0	0

IGET (Actual 7-8 AM, 4-5PM)

PCUS WORKERS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	4	2	1
A180 E	50	0	0	0
A1173 S	29	0	0	0
A180 W	18	0	0	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	10	6	4
A180 E	4	0	0	0
A1173 S	2	0	0	0
A180 W	1	0	0	0

PCUS HGVs

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	8	0	10
A180 E	10	0	0	0
A1173 S	0	0	0	0
A180 W	13	0	0	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	9	0	11
A180 E	9	0	0	0
A1173 S	0	0	0	0
A180 W	11	0	0	0

PCUS ALL VEHICLES

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	12	2	11
A180 E	60	0	0	0
A1173 S	29	0	0	0
A180 W	31	0	0	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	19	6	15
A180 E	13	0	0	0
A1173 S	2	0	0	0
A180 W	13	0	0	0

HGV %

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0%	68%	0%	91%
A180 E	17%	0%	0%	0%
A1173 S	0%	0%	0%	0%
A180 W	41%	0%	0%	0%

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0%	49%	0%	76%
A180 E	70%	0%	0%	0%
A1173 S	0%	0%	0%	0%
A180 W	89%	0%	0%	0%

IGET (Sensitivity 6-7AM, 18-19PM)

PCUS WORKERS

AM (6-7)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	4	2	1
A180 E	67	0	0	0
A1173 S	40	0	0	0
A180 W	24	0	0	0

PM (18-19)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	69	41	25
A180 E	6	0	0	0
A1173 S	4	0	0	0
A180 W	2	0	0	0

PCUS HGVs

AM (6-7)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	0	0	0
A180 E	0	0	0	0
A1173 S	0	0	0	0
A180 W	0	0	0	0

PM (18-19)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0%	10	0	13
A180 E	0	0%	0	0
A1173 S	0	0	0%	0
A180 W	0	0	0	0%

PCUS ALL VEHICLES

AM (6-7)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	4	2	1
A180 E	67	0	0	0
A1173 S	40	0	0	0
A180 W	24	0	0	0

PM (18-19)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	80	41	38
A180 E	6	0	0	0
A1173 S	4	0	0	0
A180 W	2	0	0	0

HGV %

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0%	0%	0%	0%
A180 E	0%	0%	0%	0%
A1173 S	0%	0%	0%	0%
A180 W	0%	0%	0%	0%

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0%	13%	0%	33%
A180 E	0%	0%	0%	0%
A1173 S	0%	0%	0%	0%
A180 W	0%	0%	0%	0%

North East Lincolnshire 007

2021-2026

AM	1.0367
PM	1.0359

2026 Baseline

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	137	29	139
A180 E	659	0	94	2
A1173 S	123	185	0	92
A180 W	383	0	15	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	624	164	349
A180 E	180	0	221	0
A1173 S	31	129	0	29
A180 W	195	1	71	0

2026 Baseline + Committed Development

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	227	41	275
A180 E	873	0	111	2
A1173 S	144	254	0	124
A180 W	545	0	23	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	789	186	476
A180 E	256	0	288	0
A1173 S	47	169	0	47
A180 W	344	1	102	0

2026 Baseline + Committed + IERRT Development

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	230	45	364
A180 E	876	0	111	2
A1173 S	151	254	0	124
A180 W	699	0	23	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	792	191	600
A180 E	259	0	288	0
A1173 S	56	169	0	47
A180 W	551	1	102	0

2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)

PCUS WORKERS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	242	47	375
A180 E	937	0	111	2
A1173 S	180	254	0	124
A180 W	729	0	23	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	811	197	615
A180 E	273	0	288	0
A1173 S	58	169	0	47
A180 W	563	1	102	0

Baseline + Commited + IERRT Development + IGET (Sensitivity 6-7 AM, 6-7PM)

PCUS

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	234	47	365
A180 E	943	0	111	2
A1173 S	191	254	0	124
A180 W	723	0	23	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	871	232	638
A180 E	265	0	288	0
A1173 S	60	169	0	47
A180 W	553	1	102	0

4 Appendix 3: IERRT Traffic data (Appendix TN2 A from the Addendum TA dated 8 December 2023)

Baseline

Veh

AM (7-8)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	105	18	69
A180 E	597	0	86	2
A1173 S	114	175	0	85
A180 W	281	0	11	0

PM (16-17)

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	584	146	255
A180 E	151	0	204	0
A1173 S	21	124	0	25
A180 W	93	1	62	0

HGVs

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		21	8	50
A180 E	30		4	0
A1173 S	4	2		3
A180 W	68		2	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	14	9	63
A180 E	18	0	7	0
A1173 S	7	1	0	2
A180 W	73	0	5	0

PCUs

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	132	28	134
A180 E	636	0	91	2
A1173 S	119	178	0	89
A180 W	369	0	14	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	602	158	337
A180 E	174	0	213	0
A1173 S	30	125	0	28
A180 W	188	1	69	0

Committed Development

Veh

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		63	9	70
A180 E	185		17	
A1173 S	20	69		32
A180 W	101		8	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		154	20	80
A180 E	63		67	
A1173 S	11	40		18
A180 W	80		31	

HGVs

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		21	2	50
A180 E	22			
A1173 S	1			
A180 W	46			

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		9	2	36
A180 E	11			
A1173 S	4			
A180 W	53			

PCUs

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	90	12	136
A180 E	214	0	17	0
A1173 S	21	69	0	32
A180 W	162	0	8	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	165	22	127
A180 E	76	0	67	0
A1173 S	16	40	0	18
A180 W	149	0	31	0

Proposed Development

Veh

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3	2	44
A180 E	3			
A1173 S	3			
A180 W	72			

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3	2	59
A180 E	3			
A1173 S	4			
A180 W	95			

HGVs

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N			2	35
A180 E				
A1173 S	3			
A180 W	63			

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N			2	50
A180 E				
A1173 S	4			
A180 W	86			

PCU

AM (7-8) Immingham

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	3	4	89
A180 E	3	0	0	0
A1173 S	7	0	0	0
A180 W	154	0	0	0

PM (16-18) Stena

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	3	5	124
A180 E	3	0	0	0
A1173 S	9	0	0	0
A180 W	207	0	0	0

North East Lincolnshire 007

	2021-2025	2021-2032
AM	1.0269	1.0683
PM	1.0255	1.0649

A180/ A1173

2025 Baseline

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	136	29	138
A180 E	653	0	94	2
A1173 S	122	182	0	91
A180 W	379	0	14	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	618	162	345
A180 E	179	0	219	0
A1173 S	31	128	0	28
A180 W	193	1	70	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		20%	44%	72%
A180 E	5%		5%	0%
A1173 S	4%	1%		4%
A180 W	24%		18%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		2%	6%	25%
A180 E	12%		3%	
A1173 S	33%	1%		8%
A180 W	78%	0%	8%	

2025 Baseline + Committed

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	226	41	274
A180 E	867	0	111	2
A1173 S	144	251	0	123
A180 W	541	0	22	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	783	184	473
A180 E	255	0	286	0
A1173 S	47	168	0	46
A180 W	342	1	101	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		25%	37%	72%
A180 E	7%		4%	0%
A1173 S	4%	1%		3%
A180 W	30%		11%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3%	7%	30%
A180 E	13%		3%	
A1173 S	34%	1%		5%
A180 W	73%	0%	5%	

2025 Baseline + Committed + Development

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	229	45	363
A180 E	870	0	111	2
A1173 S	150	251	0	123
A180 W	695	0	22	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	786	189	596
A180 E	258	0	286	0
A1173 S	56	168	0	46
A180 W	549	1	101	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		25%	41%	74%
A180 E	7%		4%	0%
A1173 S	6%	1%		3%
A180 W	39%		11%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3%	8%	38%
A180 E	13%		3%	
A1173 S	42%	1%		5%
A180 W	79%	0%	5%	

2032 Baseline

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	141	30	143
A180 E	679	0	97	2
A1173 S	127	190	0	95
A180 W	395	0	15	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	641	168	359
A180 E	186	0	227	0
A1173 S	32	133	0	29
A180 W	200	1	73	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		20%	44%	72%
A180 E	5%		5%	0%
A1173 S	4%	1%		4%
A180 W	24%		18%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		2%	6%	25%
A180 E	12%		3%	
A1173 S	33%	1%		8%
A180 W	78%	0%	8%	

2032 Baseline + Committed

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	231	42	279
A180 E	893	0	114	2
A1173 S	149	259	0	127
A180 W	556	0	23	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	807	190	486
A180 E	262	0	294	0
A1173 S	48	173	0	47
A180 W	349	1	104	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		25%	37%	72%
A180 E	7%		4%	0%
A1173 S	4%	1%		3%
A180 W	30%		11%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3%	7%	30%
A180 E	13%		3%	
A1173 S	34%	1%		5%
A180 W	73%	0%	5%	

2032 Baseline + Committed + Development

PCU

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	234	46	368
A180 E	896	0	114	2
A1173 S	155	259	0	127
A180 W	710	0	23	0

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N	0	810	195	610
A180 E	265	0	294	0
A1173 S	58	173	0	47
A180 W	556	1	104	0

HGV %

AM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		25%	41%	74%
A180 E	7%		4%	0%
A1173 S	6%	1%		3%
A180 W	39%		11%	

PM

	A1173 N	A180 E	A1173 S	A180 W
A1173 N		3%	8%	38%
A180 E	13%		3%	
A1173 S	42%	1%		5%
A180 W	79%	0%	5%	

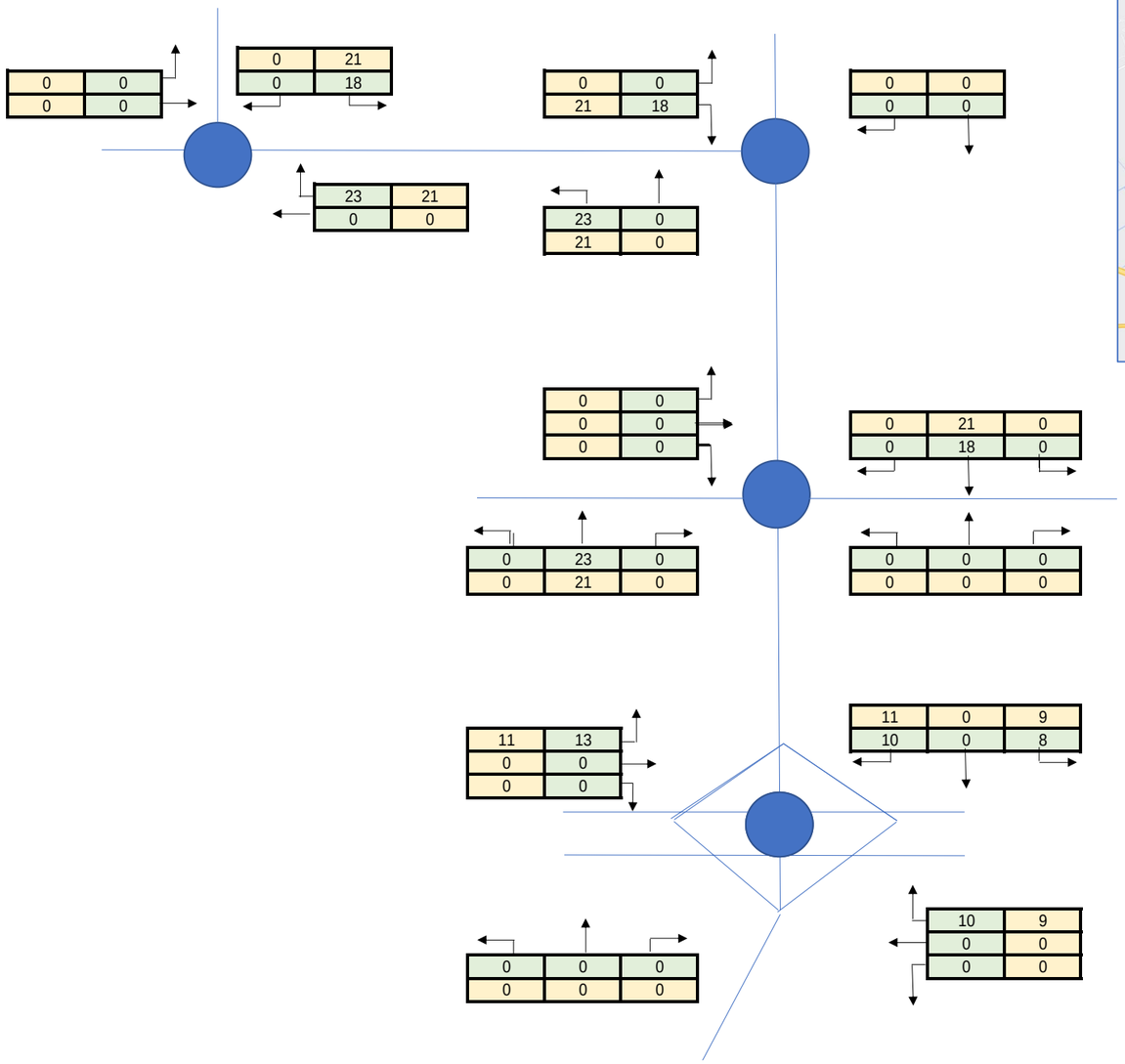
5 Appendix 4: IGET Construction traffic (07:00–08:00 and 16:00–17:00)

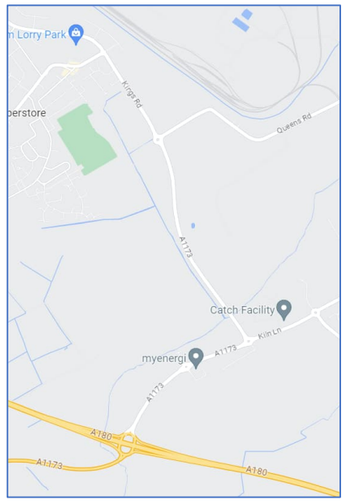
AM
PM

This has been converted to PCUS = 1 hgv = 2.3cpus 2.3

PCUS	In	Out	Two-Way
AM	23	18	41
PM	21	21	41

10	8
9	9



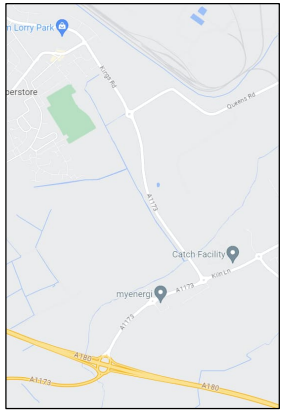


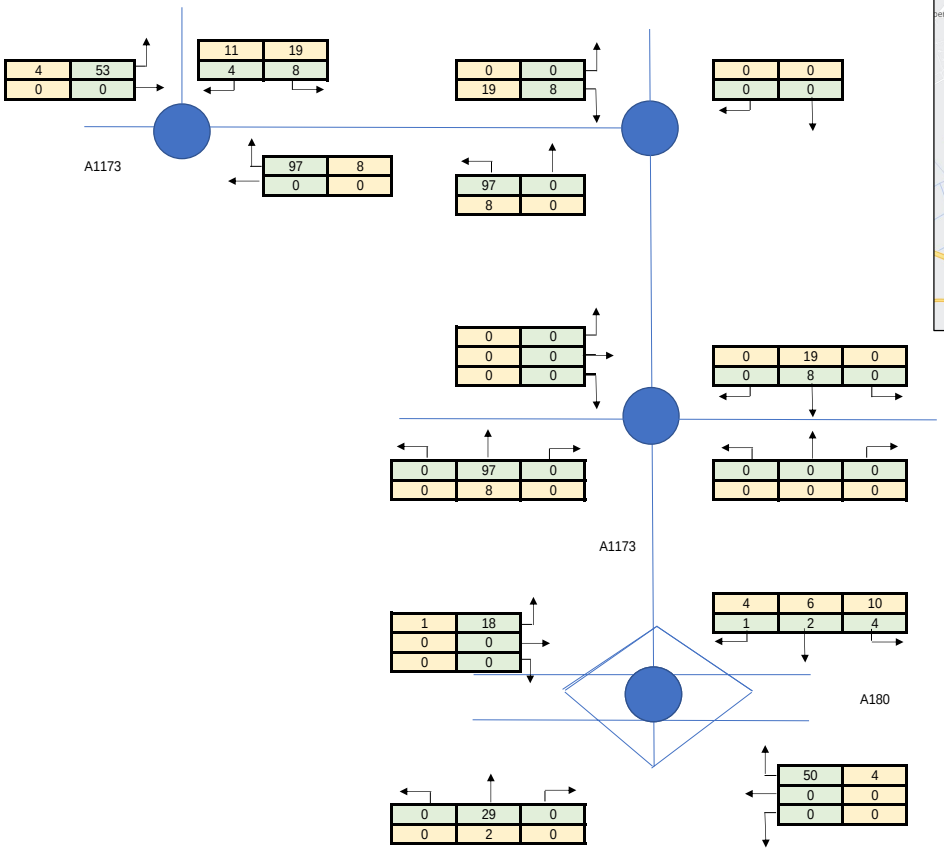
Client:	Project:	Title:		Number:	Rev	Date:	Feb-24
						Design:	DG
	IGET	IGET CONSTRUCTION HGV 0700 to 0800 1600 to 1700	AECOM	FIGURE 3		Checked:	DC
						Approved:	SM

AM
PM

		In	Out	Two-Way
0700-0800	AM	190	15	205
1600 to 1700	PM	15	38	53

21% Entering via Laporte Road - therefore discounted from assessment.





Client:	Project:	Title:		Drawing Number:	Rev
	IGET	IGET CONSTRUCTION 0700 to 0800 1600 to 1700	AECOM	FIGURE 2	

Date:	Feb-23
Design:	DG
Checked:	DC
Approved:	SM

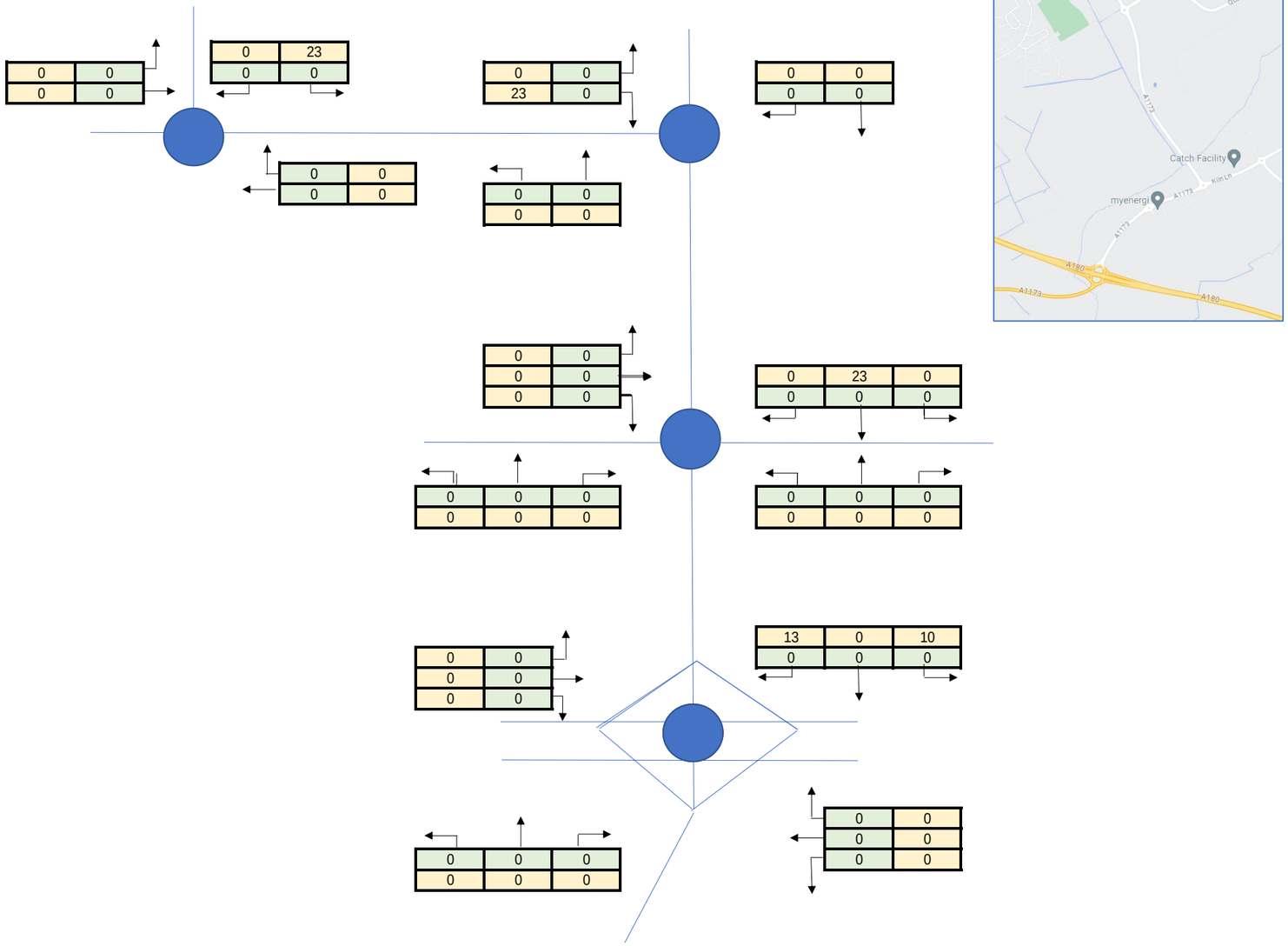
6 Appendix 5: IGET Construction Traffic (Sensitivity Test, 06:00–07:00 and 18:00–19:00)

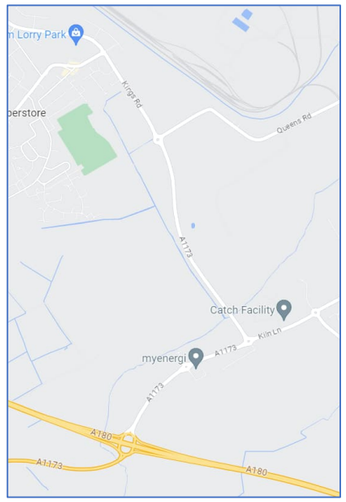
AM
PM

This has been converted to PCUS = 1 hgv = 2.3cpus 2.3

PCUS	In	Out	Two-Way
AM	0	0	0
PM	0	23	23

0	0
0	10



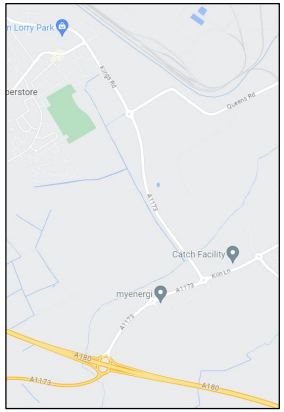


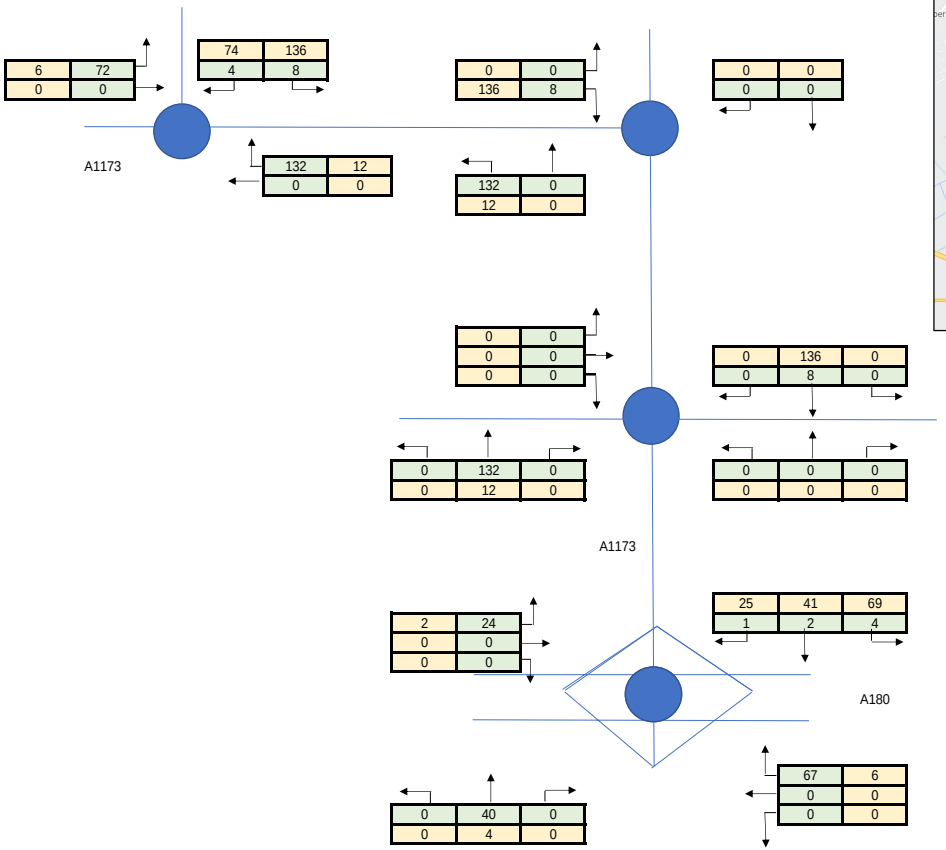
					Date:	Feb-24
					Design:	DG
Client:	**Project:**	**Title:**		**Number:**	**Rev**	Checked: DC
	IGET	IGET CONSTRUCTION HGV 0600 to 0700 1800 to 1900	AECOM	FIGURE 4		Approved: SM

AM
PM

		In	Out	Two-Way
0600-0700	AM	258	15	273
1800 to 1900	PM	23	266	288

21% Entering via Laporte Road - therefore discounted from assessment.





Client:	Project:	Title:		Drawing Number:	Rev
	IGET	IGET CONSTRUCTION 0600 to 0700 1800 to 1900	AECOM	FIGURE 1	

Date:	Feb-23
Design:	DG
Checked:	DC
Approved:	SM

7 Appendix 6: A180 / A1173 JUNCTIONS output

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: 3.A180_A1173_v2.j10
Path: \\na.aecomnet.com\lfs\EMEA\Leeds-UKLDS2\Legacy\UKLDS2PFPSW001\WIP\LE_Projects\Newproje\60673509 - AP Ammonia Terminal\400_Technical\Transport\Post Submission November 23\Junctions 10
Report generation date: 15/03/2024 14:26:29

»2026 Baseline , AM
»2026 Baseline , PM
»2026 Baseline + Committed Development , AM
»2026 Baseline + Committed Development , PM
»2026 Baseline + Committed + IERRT Development , AM
»2026 Baseline + Committed + IERRT Development , PM
»2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM
»2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM
»2026 Baseline + Committed + IGET (Sensitivity) , AM
»2026 Baseline + Committed + IGET (Sensitivity), PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Baseline									
1 - A1173 N	D11	0.2	2.01	0.12	A	D12	0.8	2.42	0.44	A
2 - A180 E		0.4	1.92	0.30	A		0.3	2.10	0.19	A
3 - A1173 S		0.3	2.85	0.25	A		0.1	2.14	0.10	A
4 - A180 W		0.4	3.26	0.24	A		0.2	2.46	0.12	A
	2026 Baseline + Committed Development									
1 - A1173 N	D13	0.4	2.41	0.22	A	D14	1.5	3.38	0.57	A
2 - A180 E		0.8	2.54	0.42	A		0.4	2.69	0.29	A
3 - A1173 S		0.7	4.45	0.41	A		0.2	2.53	0.16	A
4 - A180 W		1.0	5.51	0.43	A		0.4	2.93	0.21	A
	2026 Baseline + Committed + IERRT Development									
1 - A1173 N	D15	0.5	2.60	0.25	A	D16	1.9	3.98	0.63	A
2 - A180 E		0.8	2.77	0.44	A		0.5	3.06	0.32	A
3 - A1173 S		0.8	5.05	0.44	A		0.2	2.80	0.18	A
4 - A180 W		1.6	7.52	0.55	A		0.7	3.59	0.31	A
	2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)									
1 - A1173 N	D17	0.5	2.64	0.26	A	D18	2.1	4.18	0.64	A
2 - A180 E		0.9	2.96	0.47	A		0.5	3.19	0.34	A
3 - A1173 S		1.0	5.84	0.49	A		0.2	2.86	0.18	A
4 - A180 W		2.1	9.43	0.61	A		0.7	3.68	0.32	A
	2026 Baseline + Committed + IGET (Sensitivity)									
1 - A1173 N	D19	0.5	2.59	0.26	A	D20	2.5	4.78	0.69	A
2 - A180 E		0.9	2.92	0.47	A		0.6	3.35	0.35	A
3 - A1173 S		1.0	5.92	0.50	A		0.2	2.89	0.19	A
4 - A180 W		2.1	9.53	0.61	A		0.7	3.62	0.31	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

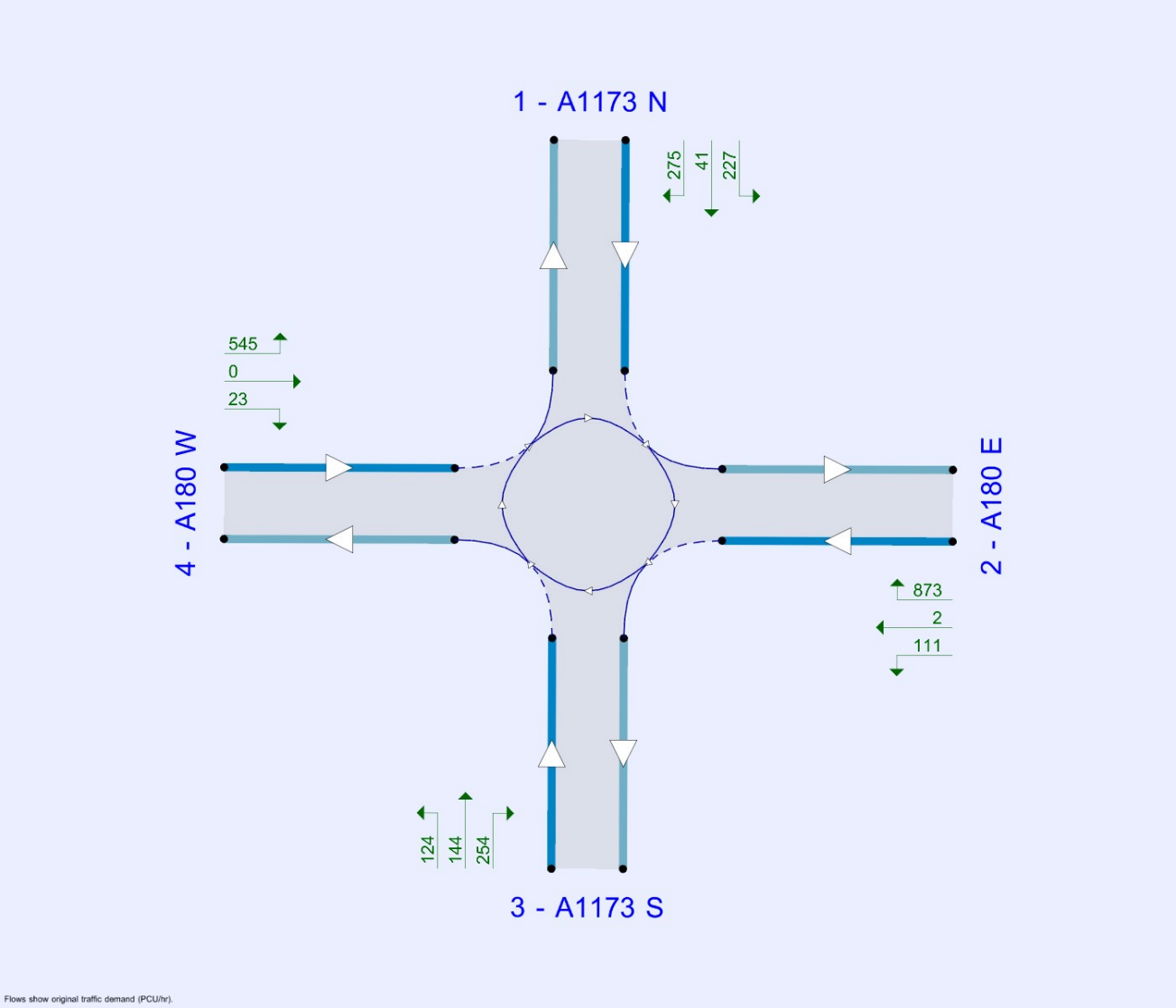
File summary

File Description

Title	
Location	
Site number	
Date	14/11/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CleasbyD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type
D1	2021	AM	ONE HOUR	07:00	08:30	15		
D2	2021	PM	ONE HOUR	17:00	18:30	15		
D3	2021 Committed Development	AM	ONE HOUR	07:00	08:30	15		
D4	2021 Committed Development	PM	ONE HOUR	17:00	18:30	15		
D5	2021 IERRT Development	AM	ONE HOUR	07:00	08:30	15		
D6	2021 IERRT Development	PM	ONE HOUR	17:00	18:30	15		
D7	IGET (Actual)	AM	ONE HOUR	07:00	08:30	15		
D8	IGET (Actual)	PM	ONE HOUR	17:00	18:30	15		
D9	IGET (Sensitivity)	AM	ONE HOUR	07:00	08:30	15		
D10	IGET (Sensitivity)	PM	ONE HOUR	17:00	18:30	15		
D11	2026 Baseline	AM	ONE HOUR	07:00	08:30	15	✓	Simple
D12	2026 Baseline	PM	ONE HOUR	17:00	18:30	15	✓	Simple
D13	2026 Baseline + Committed Development	AM	ONE HOUR	07:00	08:30	15	✓	Simple
D14	2026 Baseline + Committed Development	PM	ONE HOUR	17:00	18:30	15	✓	Simple
D15	2026 Baseline + Committed + IERRT Development	AM	ONE HOUR	07:00	08:30	15	✓	Simple
D16	2026 Baseline + Committed + IERRT Development	PM	ONE HOUR	17:00	18:30	15	✓	Simple
D17	2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)	AM	ONE HOUR	07:00	08:30	15	✓	Simple
D18	2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)	PM	ONE HOUR	17:00	18:30	15	✓	Simple
D19	2026 Baseline + Committed + IGET (Sensitivity)	AM	ONE HOUR	07:00	08:30	15	✓	Simple
D20	2026 Baseline + Committed + IGET (Sensitivity)	PM	ONE HOUR	17:00	18:30	15	✓	Simple

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2026 Baseline , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	2.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.42	A

Arms

Arms

Arm	Name	Description	No give-way line
1	A1173 N		
2	A180 E		
3	A1173 S		
4	A180 W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - A1173 N	3.65	8.60	49.0	42.5	100.0	16.0		
2 - A180 E	6.70	7.40	15.0	47.0	100.0	11.0		
3 - A1173 S	3.65	8.50	21.0	22.0	100.0	43.0		
4 - A180 W	6.80	8.00	10.0	31.0	100.0	15.0		

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A1173 N	1.163	3128
2 - A180 E	1.198	3042
3 - A1173 S	0.864	2496
4 - A180 W	1.014	2885

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026 Baseline	AM	ONE HOUR	07:00	08:30	15	✓	Simple	D1 * 1.0367

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	305	100.000
2 - A180 E		ONE HOUR	✓	756	100.000
3 - A1173 S		ONE HOUR	✓	400	100.000
4 - A180 W		ONE HOUR	✓	397	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	137	29	139
	2 - A180 E	659	0	94	2
	3 - A1173 S	123	185	0	92
	4 - A180 W	383	0	15	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.45	0.10	0.46
	2 - A180 E	0.87	0.00	0.12	0.00
	3 - A1173 S	0.31	0.46	0.00	0.23
	4 - A180 W	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	20	44	72
	2 - A180 E	5	0	5	0
	3 - A1173 S	4	1	0	4
	4 - A180 W	24	0	18	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.200	1.440	1.720
	2 - A180 E	1.050	1.000	1.050	1.000
	3 - A1173 S	1.040	1.010	1.000	1.040
	4 - A180 W	1.240	1.000	1.180	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	07:00-07:15	229	229
	07:15-07:30	274	274
	07:30-07:45	336	336
	07:45-08:00	336	336
	08:00-08:15	274	274
	08:15-08:30	229	229
2 - A180 E	07:00-07:15	569	569
	07:15-07:30	679	679
	07:30-07:45	832	832
	07:45-08:00	832	832
	08:00-08:15	679	679
	08:15-08:30	569	569
3 - A1173 S	07:00-07:15	301	301
	07:15-07:30	360	360
	07:30-07:45	441	441
	07:45-08:00	441	441
	08:00-08:15	360	360
	08:15-08:30	301	301
4 - A180 W	07:00-07:15	299	299
	07:15-07:30	357	357
	07:30-07:45	437	437
	07:45-08:00	437	437
	08:00-08:15	357	357
	08:15-08:30	299	299

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.12	2.01	0.2	A	280	420
2 - A180 E	0.30	1.92	0.4	A	693	1040
3 - A1173 S	0.25	2.85	0.3	A	367	551
4 - A180 W	0.24	3.26	0.4	A	364	547

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	229	57	149	2954	0.078	229	875	0.0	0.1	1.872	A
2 - A180 E	569	142	137	2878	0.198	568	241	0.0	0.3	1.636	A
3 - A1173 S	301	75	601	1976	0.152	301	104	0.0	0.2	2.202	A
4 - A180 W	299	75	727	2148	0.139	298	175	0.0	0.2	2.407	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	274	68	179	2920	0.094	274	1047	0.1	0.1	1.929	A
2 - A180 E	679	170	164	2845	0.239	679	289	0.3	0.3	1.744	A
3 - A1173 S	360	90	719	1875	0.192	360	124	0.2	0.2	2.437	A
4 - A180 W	357	89	869	2004	0.178	357	210	0.2	0.3	2.705	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	336	84	219	2873	0.117	335	1282	0.1	0.2	2.011	A
2 - A180 E	832	208	201	2801	0.297	832	354	0.3	0.4	1.918	A
3 - A1173 S	441	110	881	1735	0.254	440	152	0.2	0.3	2.852	A
4 - A180 W	437	109	1064	1806	0.242	437	257	0.3	0.4	3.254	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	336	84	219	2873	0.117	336	1283	0.2	0.2	2.011	A
2 - A180 E	832	208	201	2801	0.297	832	354	0.4	0.4	1.918	A
3 - A1173 S	441	110	881	1735	0.254	441	152	0.3	0.3	2.853	A
4 - A180 W	437	109	1065	1805	0.242	437	257	0.4	0.4	3.256	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	274	68	179	2919	0.094	274	1049	0.2	0.1	1.929	A
2 - A180 E	679	170	164	2845	0.239	680	289	0.4	0.3	1.747	A
3 - A1173 S	360	90	720	1874	0.192	360	124	0.3	0.2	2.439	A
4 - A180 W	357	89	870	2003	0.178	357	210	0.4	0.3	2.708	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	229	57	150	2953	0.078	230	878	0.1	0.1	1.873	A
2 - A180 E	569	142	137	2877	0.198	569	242	0.3	0.3	1.637	A
3 - A1173 S	301	75	603	1975	0.153	302	104	0.2	0.2	2.206	A
4 - A180 W	299	75	729	2146	0.139	299	176	0.3	0.2	2.414	A

2026 Baseline , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	2.33	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.33	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026 Baseline	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D2 * 1.0359

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	1136	100.000
2 - A180 E		ONE HOUR	✓	401	100.000
3 - A1173 S		ONE HOUR	✓	190	100.000
4 - A180 W		ONE HOUR	✓	267	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	624	164	349
	2 - A180 E	180	0	221	0
	3 - A1173 S	31	129	0	29
	4 - A180 W	195	1	71	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.55	0.14	0.31
	2 - A180 E	0.45	0.00	0.55	0.00
	3 - A1173 S	0.16	0.68	0.00	0.15
	4 - A180 W	0.73	0.00	0.27	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	2	6	25
	2 - A180 E	12	0	3	0
	3 - A1173 S	33	1	0	8
	4 - A180 W	78	0	8	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.020	1.060	1.250
	2 - A180 E	1.120	1.000	1.030	1.000
	3 - A1173 S	1.330	1.010	1.000	1.080
	4 - A180 W	1.780	1.000	1.080	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	17:00-17:15	856	856
	17:15-17:30	1022	1022
	17:30-17:45	1251	1251
	17:45-18:00	1251	1251
	18:00-18:15	1022	1022
	18:15-18:30	856	856
2 - A180 E	17:00-17:15	302	302
	17:15-17:30	360	360
	17:30-17:45	441	441
	17:45-18:00	441	441
	18:00-18:15	360	360
	18:15-18:30	302	302
3 - A1173 S	17:00-17:15	143	143
	17:15-17:30	170	170
	17:30-17:45	209	209
	17:45-18:00	209	209
	18:00-18:15	170	170
	18:15-18:30	143	143
4 - A180 W	17:00-17:15	201	201
	17:15-17:30	240	240
	17:30-17:45	294	294
	17:45-18:00	294	294
	18:00-18:15	240	240
	18:15-18:30	201	201

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.44	2.42	0.8	A	1043	1564
2 - A180 E	0.19	2.10	0.3	A	368	552
3 - A1173 S	0.10	2.14	0.1	A	174	261
4 - A180 W	0.12	2.46	0.2	A	245	368

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	856	214	152	2951	0.290	854	305	0.0	0.4	1.864	A
2 - A180 E	302	75	439	2516	0.120	301	567	0.0	0.1	1.736	A
3 - A1173 S	143	36	398	2152	0.066	142	342	0.0	0.1	1.902	A
4 - A180 W	201	50	256	2625	0.077	201	284	0.0	0.1	2.246	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1022	255	182	2917	0.350	1021	365	0.4	0.6	2.065	A
2 - A180 E	360	90	525	2413	0.149	360	678	0.1	0.2	1.873	A
3 - A1173 S	170	43	476	2085	0.082	170	410	0.1	0.1	1.997	A
4 - A180 W	240	60	306	2574	0.093	240	340	0.1	0.2	2.333	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1251	313	222	2869	0.436	1250	447	0.6	0.8	2.417	A
2 - A180 E	441	110	643	2272	0.194	441	830	0.2	0.3	2.101	A
3 - A1173 S	209	52	582	1993	0.105	209	501	0.1	0.1	2.143	A
4 - A180 W	294	74	375	2505	0.117	294	416	0.2	0.2	2.463	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1251	313	222	2869	0.436	1251	447	0.8	0.8	2.419	A
2 - A180 E	441	110	643	2271	0.194	441	830	0.3	0.3	2.101	A
3 - A1173 S	209	52	583	1993	0.105	209	502	0.1	0.1	2.143	A
4 - A180 W	294	74	375	2504	0.118	294	416	0.2	0.2	2.464	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1022	255	182	2916	0.350	1023	365	0.8	0.6	2.069	A
2 - A180 E	360	90	526	2412	0.149	361	679	0.3	0.2	1.874	A
3 - A1173 S	170	43	476	2085	0.082	171	410	0.1	0.1	1.998	A
4 - A180 W	240	60	307	2574	0.093	240	340	0.2	0.2	2.334	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	856	214	152	2951	0.290	856	306	0.6	0.4	1.871	A
2 - A180 E	302	75	440	2515	0.120	302	568	0.2	0.1	1.740	A
3 - A1173 S	143	36	399	2152	0.066	143	343	0.1	0.1	1.906	A
4 - A180 W	201	50	257	2625	0.077	201	285	0.2	0.1	2.249	A

2026 Baseline + Committed Development , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	3.54	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.54	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2026 Baseline + Committed Development	AM	ONE HOUR	07:00	08:30	15	✓	Simple	D11 + D3

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	543	100.000
2 - A180 E		ONE HOUR	✓	987	100.000
3 - A1173 S		ONE HOUR	✓	522	100.000
4 - A180 W		ONE HOUR	✓	567	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	227	41	275
	2 - A180 E	873	0	111	2
	3 - A1173 S	144	254	0	124
	4 - A180 W	545	0	23	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.42	0.08	0.51
	2 - A180 E	0.89	0.00	0.11	0.00
	3 - A1173 S	0.28	0.49	0.00	0.24
	4 - A180 W	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	25	37	72
	2 - A180 E	7	0	4	0
	3 - A1173 S	4	1	0	3
	4 - A180 W	30	0	11	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.248	1.368	1.715
	2 - A180 E	1.066	1.000	1.042	1.000
	3 - A1173 S	1.041	1.007	1.000	1.029
	4 - A180 W	1.298	1.000	1.109	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	07:00-07:15	409	409
	07:15-07:30	488	488
	07:30-07:45	598	598
	07:45-08:00	598	598
	08:00-08:15	488	488
	08:15-08:30	409	409
2 - A180 E	07:00-07:15	743	743
	07:15-07:30	887	887
	07:30-07:45	1086	1086
	07:45-08:00	1086	1086
	08:00-08:15	887	887
	08:15-08:30	743	743
3 - A1173 S	07:00-07:15	393	393
	07:15-07:30	469	469
	07:30-07:45	575	575
	07:45-08:00	575	575
	08:00-08:15	469	469
	08:15-08:30	393	393
4 - A180 W	07:00-07:15	427	427
	07:15-07:30	510	510
	07:30-07:45	624	624
	07:45-08:00	624	624
	08:00-08:15	510	510
	08:15-08:30	427	427

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.22	2.41	0.4	A	498	747
2 - A180 E	0.42	2.54	0.8	A	905	1358
3 - A1173 S	0.41	4.45	0.7	A	479	719
4 - A180 W	0.43	5.51	1.0	A	520	781

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	409	102	207	2887	0.142	408	1173	0.0	0.2	2.119	A
2 - A180 E	743	186	254	2737	0.271	741	361	0.0	0.4	1.915	A
3 - A1173 S	393	98	864	1749	0.225	392	131	0.0	0.3	2.707	A
4 - A180 W	427	107	955	1917	0.223	425	301	0.0	0.4	3.109	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	488	122	248	2839	0.172	488	1403	0.2	0.3	2.233	A
2 - A180 E	887	222	304	2678	0.331	887	432	0.4	0.5	2.137	A
3 - A1173 S	469	117	1034	1603	0.293	469	157	0.3	0.4	3.241	A
4 - A180 W	510	127	1142	1727	0.295	509	360	0.4	0.5	3.809	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	598	149	303	2775	0.215	597	1717	0.3	0.4	2.412	A
2 - A180 E	1086	272	372	2596	0.419	1085	528	0.5	0.8	2.533	A
3 - A1173 S	575	144	1266	1403	0.410	574	192	0.4	0.7	4.431	A
4 - A180 W	624	156	1398	1468	0.425	623	441	0.5	0.9	5.484	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	598	149	304	2774	0.215	598	1720	0.4	0.4	2.412	A
2 - A180 E	1086	272	373	2595	0.419	1086	529	0.8	0.8	2.536	A
3 - A1173 S	575	144	1267	1402	0.410	575	193	0.7	0.7	4.448	A
4 - A180 W	624	156	1400	1466	0.426	624	442	0.9	1.0	5.515	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	488	122	249	2838	0.172	488	1407	0.4	0.3	2.235	A
2 - A180 E	887	222	305	2677	0.331	888	433	0.8	0.5	2.142	A
3 - A1173 S	469	117	1035	1602	0.293	471	157	0.7	0.4	3.254	A
4 - A180 W	510	127	1145	1725	0.296	511	361	1.0	0.5	3.833	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	409	102	208	2886	0.142	409	1177	0.3	0.2	2.120	A
2 - A180 E	743	186	255	2736	0.271	743	362	0.5	0.4	1.921	A
3 - A1173 S	393	98	867	1747	0.225	394	132	0.4	0.3	2.719	A
4 - A180 W	427	107	958	1914	0.223	428	302	0.5	0.4	3.124	A

2026 Baseline + Committed Development , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	3.08	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.08	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2026 Baseline + Committed Development	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D12 + D4

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	1450	100.000
2 - A180 E		ONE HOUR	✓	544	100.000
3 - A1173 S		ONE HOUR	✓	264	100.000
4 - A180 W		ONE HOUR	✓	447	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	789	186	476
	2 - A180 E	256	0	288	0
	3 - A1173 S	47	169	0	47
	4 - A180 W	344	1	102	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.54	0.13	0.33
	2 - A180 E	0.47	0.00	0.53	0.00
	3 - A1173 S	0.18	0.64	0.00	0.18
	4 - A180 W	0.77	0.00	0.23	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	3	6	30
	2 - A180 E	13	0	2	0
	3 - A1173 S	34	1	0	5
	4 - A180 W	73	0	8	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.028	1.065	1.298
	2 - A180 E	1.134	1.000	1.023	1.000
	3 - A1173 S	1.340	1.008	1.000	1.048
	4 - A180 W	1.726	1.000	1.080	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	17:00-17:15	1092	1092
	17:15-17:30	1304	1304
	17:30-17:45	1597	1597
	17:45-18:00	1597	1597
	18:00-18:15	1304	1304
	18:15-18:30	1092	1092
2 - A180 E	17:00-17:15	409	409
	17:15-17:30	489	489
	17:30-17:45	599	599
	17:45-18:00	599	599
	18:00-18:15	489	489
	18:15-18:30	409	409
3 - A1173 S	17:00-17:15	198	198
	17:15-17:30	237	237
	17:30-17:45	290	290
	17:45-18:00	290	290
	18:00-18:15	237	237
	18:15-18:30	198	198
4 - A180 W	17:00-17:15	337	337
	17:15-17:30	402	402
	17:30-17:45	492	492
	17:45-18:00	492	492
	18:00-18:15	402	402
	18:15-18:30	337	337

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.57	3.38	1.5	A	1331	1996
2 - A180 E	0.29	2.69	0.4	A	499	749
3 - A1173 S	0.16	2.53	0.2	A	242	363
4 - A180 W	0.21	2.93	0.4	A	410	616

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1092	273	205	2889	0.378	1089	486	0.0	0.7	2.214	A
2 - A180 E	409	102	574	2354	0.174	409	720	0.0	0.2	1.983	A
3 - A1173 S	198	50	550	2021	0.098	198	432	0.0	0.1	2.097	A
4 - A180 W	337	84	355	2525	0.133	336	393	0.0	0.2	2.491	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1304	326	245	2842	0.459	1303	581	0.7	0.9	2.591	A
2 - A180 E	489	122	687	2220	0.220	489	862	0.2	0.3	2.230	A
3 - A1173 S	237	59	658	1928	0.123	237	517	0.1	0.1	2.260	A
4 - A180 W	402	101	425	2454	0.164	402	470	0.2	0.3	2.658	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1597	399	300	2778	0.575	1595	712	0.9	1.5	3.366	A
2 - A180 E	599	150	840	2035	0.294	598	1055	0.3	0.4	2.685	A
3 - A1173 S	290	73	805	1800	0.161	290	633	0.1	0.2	2.531	A
4 - A180 W	492	123	520	2358	0.209	492	575	0.3	0.4	2.924	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1597	399	301	2778	0.575	1597	712	1.5	1.5	3.377	A
2 - A180 E	599	150	841	2034	0.294	599	1056	0.4	0.4	2.689	A
3 - A1173 S	290	73	806	1799	0.161	290	634	0.2	0.2	2.532	A
4 - A180 W	492	123	521	2357	0.209	492	576	0.4	0.4	2.925	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1304	326	246	2842	0.459	1306	582	1.5	0.9	2.601	A
2 - A180 E	489	122	688	2218	0.220	490	864	0.4	0.3	2.236	A
3 - A1173 S	237	59	659	1926	0.123	237	518	0.2	0.1	2.264	A
4 - A180 W	402	101	425	2453	0.164	402	471	0.4	0.3	2.660	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1092	273	206	2888	0.378	1093	488	0.9	0.7	2.225	A
2 - A180 E	409	102	576	2352	0.174	410	723	0.3	0.2	1.988	A
3 - A1173 S	198	50	552	2019	0.098	199	434	0.1	0.1	2.099	A
4 - A180 W	337	84	356	2524	0.133	337	394	0.3	0.2	2.497	A

2026 Baseline + Committed + IERRT Development , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2026 Baseline + Committed + IERRT Development	AM	ONE HOUR	07:00	08:30	15	✓	Simple	D13 + D5

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	639	100.000
2 - A180 E		ONE HOUR	✓	990	100.000
3 - A1173 S		ONE HOUR	✓	529	100.000
4 - A180 W		ONE HOUR	✓	721	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	230	45	364
	2 - A180 E	876	0	111	2
	3 - A1173 S	151	254	0	124
	4 - A180 W	699	0	23	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.36	0.07	0.57
	2 - A180 E	0.89	0.00	0.11	0.00
	3 - A1173 S	0.29	0.48	0.00	0.23
	4 - A180 W	0.97	0.00	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	24	38	74
	2 - A180 E	7	0	4	0
	3 - A1173 S	6	1	0	3
	4 - A180 W	39	0	11	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.244	1.379	1.735
	2 - A180 E	1.066	1.000	1.042	1.000
	3 - A1173 S	1.056	1.007	1.000	1.029
	4 - A180 W	1.393	1.000	1.109	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	07:00-07:15	481	481
	07:15-07:30	574	574
	07:30-07:45	703	703
	07:45-08:00	703	703
	08:00-08:15	574	574
	08:15-08:30	481	481
2 - A180 E	07:00-07:15	745	745
	07:15-07:30	890	890
	07:30-07:45	1090	1090
	07:45-08:00	1090	1090
	08:00-08:15	890	890
	08:15-08:30	745	745
3 - A1173 S	07:00-07:15	398	398
	07:15-07:30	476	476
	07:30-07:45	583	583
	07:45-08:00	583	583
	08:00-08:15	476	476
	08:15-08:30	398	398
4 - A180 W	07:00-07:15	543	543
	07:15-07:30	648	648
	07:30-07:45	794	794
	07:45-08:00	794	794
	08:00-08:15	648	648
	08:15-08:30	543	543

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.25	2.60	0.5	A	586	879
2 - A180 E	0.44	2.77	0.8	A	908	1362
3 - A1173 S	0.44	5.05	0.8	A	486	728
4 - A180 W	0.55	7.52	1.6	A	662	992

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	481	120	207	2887	0.167	480	1296	0.0	0.3	2.235	A
2 - A180 E	745	186	324	2654	0.281	743	363	0.0	0.4	2.002	A
3 - A1173 S	398	100	933	1690	0.236	397	134	0.0	0.3	2.855	A
4 - A180 W	543	136	962	1909	0.284	541	368	0.0	0.5	3.628	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	574	144	248	2839	0.202	574	1550	0.3	0.4	2.376	A
2 - A180 E	890	222	388	2577	0.345	889	434	0.4	0.6	2.267	A
3 - A1173 S	476	119	1116	1532	0.311	475	161	0.3	0.5	3.494	A
4 - A180 W	648	162	1151	1718	0.377	647	440	0.5	0.8	4.641	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	703	176	303	2775	0.253	703	1896	0.4	0.5	2.598	A
2 - A180 E	1090	272	475	2473	0.441	1089	531	0.6	0.8	2.761	A
3 - A1173 S	583	146	1367	1315	0.443	581	197	0.5	0.8	5.023	A
4 - A180 W	794	198	1409	1457	0.545	791	539	0.8	1.6	7.434	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	703	176	304	2774	0.254	703	1901	0.5	0.5	2.599	A
2 - A180 E	1090	272	475	2473	0.441	1090	532	0.8	0.8	2.766	A
3 - A1173 S	583	146	1368	1314	0.443	583	197	0.8	0.8	5.049	A
4 - A180 W	794	198	1411	1455	0.546	794	540	1.6	1.6	7.525	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	574	144	249	2838	0.202	575	1556	0.5	0.4	2.378	A
2 - A180 E	890	222	388	2577	0.345	891	435	0.8	0.6	2.273	A
3 - A1173 S	476	119	1118	1530	0.311	477	161	0.8	0.5	3.514	A
4 - A180 W	648	162	1154	1715	0.378	651	441	1.6	0.8	4.691	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	481	120	208	2886	0.167	481	1301	0.4	0.3	2.239	A
2 - A180 E	745	186	325	2652	0.281	746	364	0.6	0.4	2.009	A
3 - A1173 S	398	100	936	1687	0.236	399	135	0.5	0.3	2.870	A
4 - A180 W	543	136	966	1906	0.285	544	369	0.8	0.6	3.658	A

2026 Baseline + Committed + IERRT Development , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	3.63	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.63	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2026 Baseline + Committed + IERRT Development	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D14 + D6

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	1582	100.000
2 - A180 E		ONE HOUR	✓	547	100.000
3 - A1173 S		ONE HOUR	✓	273	100.000
4 - A180 W		ONE HOUR	✓	654	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	792	191	600
	2 - A180 E	259	0	288	0
	3 - A1173 S	56	169	0	47
	4 - A180 W	551	1	102	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.50	0.12	0.38
	2 - A180 E	0.47	0.00	0.53	0.00
	3 - A1173 S	0.21	0.62	0.00	0.17
	4 - A180 W	0.84	0.00	0.16	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	3	7	38
	2 - A180 E	13	0	2	0
	3 - A1173 S	36	1	0	5
	4 - A180 W	79	0	8	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.028	1.073	1.383
	2 - A180 E	1.133	1.000	1.023	1.000
	3 - A1173 S	1.363	1.008	1.000	1.048
	4 - A180 W	1.791	1.000	1.080	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	17:00-17:15	1191	1191
	17:15-17:30	1423	1423
	17:30-17:45	1742	1742
	17:45-18:00	1742	1742
	18:00-18:15	1423	1423
	18:15-18:30	1191	1191
2 - A180 E	17:00-17:15	412	412
	17:15-17:30	492	492
	17:30-17:45	602	602
	17:45-18:00	602	602
	18:00-18:15	492	492
	18:15-18:30	412	412
3 - A1173 S	17:00-17:15	205	205
	17:15-17:30	245	245
	17:30-17:45	300	300
	17:45-18:00	300	300
	18:00-18:15	245	245
	18:15-18:30	205	205
4 - A180 W	17:00-17:15	493	493
	17:15-17:30	588	588
	17:30-17:45	720	720
	17:45-18:00	720	720
	18:00-18:15	588	588
	18:15-18:30	493	493

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.63	3.98	1.9	A	1452	2178
2 - A180 E	0.32	3.06	0.5	A	502	753
3 - A1173 S	0.18	2.80	0.2	A	250	375
4 - A180 W	0.31	3.59	0.7	A	600	901

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1191	298	205	2889	0.412	1188	650	0.0	0.8	2.420	A
2 - A180 E	412	103	671	2239	0.184	411	722	0.0	0.2	2.110	A
3 - A1173 S	205	51	645	1939	0.106	205	436	0.0	0.1	2.226	A
4 - A180 W	493	123	364	2516	0.196	491	486	0.0	0.4	2.883	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1423	356	245	2842	0.500	1421	778	0.8	1.1	2.898	A
2 - A180 E	492	123	802	2081	0.236	491	864	0.2	0.3	2.428	A
3 - A1173 S	245	61	772	1829	0.134	245	522	0.1	0.2	2.436	A
4 - A180 W	588	147	436	2443	0.241	588	581	0.4	0.5	3.146	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1742	436	300	2778	0.627	1739	952	1.1	1.9	3.955	A
2 - A180 E	602	151	982	1866	0.323	601	1058	0.3	0.5	3.051	A
3 - A1173 S	300	75	945	1680	0.179	300	639	0.2	0.2	2.797	A
4 - A180 W	720	180	533	2344	0.307	720	711	0.5	0.7	3.591	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1742	436	301	2778	0.627	1742	954	1.9	1.9	3.979	A
2 - A180 E	602	151	983	1864	0.323	602	1059	0.5	0.5	3.058	A
3 - A1173 S	300	75	946	1679	0.179	300	639	0.2	0.2	2.799	A
4 - A180 W	720	180	534	2344	0.307	720	712	0.7	0.7	3.595	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1423	356	246	2842	0.501	1426	780	1.9	1.2	2.918	A
2 - A180 E	492	123	805	2078	0.237	492	867	0.5	0.3	2.436	A
3 - A1173 S	245	61	774	1827	0.134	245	523	0.2	0.2	2.440	A
4 - A180 W	588	147	436	2442	0.241	589	583	0.7	0.5	3.150	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1191	298	206	2888	0.412	1193	653	1.2	0.8	2.432	A
2 - A180 E	412	103	673	2235	0.184	412	725	0.3	0.2	2.118	A
3 - A1173 S	205	51	648	1936	0.106	205	438	0.2	0.1	2.229	A
4 - A180 W	493	123	365	2514	0.196	493	488	0.5	0.4	2.890	A

2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	5.03	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.03	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type
D17	2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)	AM	ONE HOUR	07:00	08:30	15	✓	Simple

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	664	100.000
2 - A180 E		ONE HOUR	✓	1050	100.000
3 - A1173 S		ONE HOUR	✓	558	100.000
4 - A180 W		ONE HOUR	✓	752	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	242	47	375
	2 - A180 E	936	0	111	2
	3 - A1173 S	180	254	0	124
	4 - A180 W	730	0	23	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.36	0.07	0.56
	2 - A180 E	0.89	0.00	0.11	0.00
	3 - A1173 S	0.32	0.45	0.00	0.22
	4 - A180 W	0.97	0.00	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	26	36	74
	2 - A180 E	7	0	4	0
	3 - A1173 S	5	1	0	3
	4 - A180 W	39	0	11	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.261	1.357	1.740
	2 - A180 E	1.072	1.000	1.042	1.000
	3 - A1173 S	1.047	1.007	1.000	1.029
	4 - A180 W	1.394	1.000	1.109	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	07:00-07:15	500	500
	07:15-07:30	597	597
	07:30-07:45	731	731
	07:45-08:00	731	731
	08:00-08:15	597	597
	08:15-08:30	500	500
2 - A180 E	07:00-07:15	790	790
	07:15-07:30	944	944
	07:30-07:45	1156	1156
	07:45-08:00	1156	1156
	08:00-08:15	944	944
	08:15-08:30	790	790
3 - A1173 S	07:00-07:15	420	420
	07:15-07:30	502	502
	07:30-07:45	615	615
	07:45-08:00	615	615
	08:00-08:15	502	502
	08:15-08:30	420	420
4 - A180 W	07:00-07:15	566	566
	07:15-07:30	676	676
	07:30-07:45	828	828
	07:45-08:00	828	828
	08:00-08:15	676	676
	08:15-08:30	566	566

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.26	2.64	0.5	A	609	914
2 - A180 E	0.47	2.96	0.9	A	963	1445
3 - A1173 S	0.49	5.84	1.0	A	512	768
4 - A180 W	0.61	9.43	2.1	A	690	1035

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	500	125	207	2887	0.173	498	1386	0.0	0.3	2.262	A
2 - A180 E	790	198	334	2642	0.299	788	372	0.0	0.5	2.074	A
3 - A1173 S	420	105	986	1644	0.256	419	136	0.0	0.4	3.009	A
4 - A180 W	566	142	1029	1842	0.307	564	376	0.0	0.6	3.890	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	597	149	248	2840	0.210	596	1658	0.3	0.4	2.410	A
2 - A180 E	944	236	399	2563	0.368	943	445	0.5	0.6	2.373	A
3 - A1173 S	502	125	1180	1477	0.340	501	162	0.4	0.5	3.780	A
4 - A180 W	676	169	1231	1637	0.413	675	450	0.6	1.0	5.166	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	731	183	303	2775	0.263	730	2027	0.4	0.5	2.643	A
2 - A180 E	1156	289	489	2456	0.471	1155	544	0.6	0.9	2.953	A
3 - A1173 S	615	154	1445	1248	0.492	613	199	0.5	1.0	5.792	A
4 - A180 W	828	207	1506	1358	0.610	823	551	1.0	2.1	9.237	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	731	183	304	2774	0.263	731	2033	0.5	0.5	2.645	A
2 - A180 E	1156	289	489	2456	0.471	1156	545	0.9	0.9	2.959	A
3 - A1173 S	615	154	1446	1247	0.493	615	199	1.0	1.0	5.835	A
4 - A180 W	828	207	1509	1355	0.611	828	552	2.1	2.1	9.434	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	597	149	249	2838	0.210	597	1666	0.5	0.4	2.414	A
2 - A180 E	944	236	400	2563	0.368	945	446	0.9	0.6	2.381	A
3 - A1173 S	502	125	1182	1475	0.340	504	163	1.0	0.5	3.805	A
4 - A180 W	676	169	1234	1633	0.414	681	451	2.1	1.0	5.251	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	500	125	208	2886	0.173	500	1392	0.4	0.3	2.266	A
2 - A180 E	790	198	335	2641	0.299	791	373	0.6	0.5	2.080	A
3 - A1173 S	420	105	990	1641	0.256	421	136	0.5	0.4	3.024	A
4 - A180 W	566	142	1033	1838	0.308	568	378	1.0	0.6	3.924	A

2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	3.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.78	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type
D18	2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM)	PM	ONE HOUR	17:00	18:30	15	✓	Simple

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	1622	100.000
2 - A180 E		ONE HOUR	✓	560	100.000
3 - A1173 S		ONE HOUR	✓	275	100.000
4 - A180 W		ONE HOUR	✓	667	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	811	197	615
	2 - A180 E	272	0	288	0
	3 - A1173 S	58	169	0	47
	4 - A180 W	564	1	102	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.50	0.12	0.38
	2 - A180 E	0.49	0.00	0.51	0.00
	3 - A1173 S	0.21	0.62	0.00	0.17
	4 - A180 W	0.84	0.00	0.15	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	4	7	39
	2 - A180 E	15	0	2	0
	3 - A1173 S	35	1	0	5
	4 - A180 W	79	0	8	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.036	1.070	1.390
	2 - A180 E	1.151	1.000	1.023	1.000
	3 - A1173 S	1.347	1.008	1.000	1.048
	4 - A180 W	1.793	1.000	1.080	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	17:00-17:15	1221	1221
	17:15-17:30	1458	1458
	17:30-17:45	1786	1786
	17:45-18:00	1786	1786
	18:00-18:15	1458	1458
	18:15-18:30	1221	1221
2 - A180 E	17:00-17:15	422	422
	17:15-17:30	503	503
	17:30-17:45	616	616
	17:45-18:00	616	616
	18:00-18:15	503	503
	18:15-18:30	422	422
3 - A1173 S	17:00-17:15	207	207
	17:15-17:30	247	247
	17:30-17:45	302	302
	17:45-18:00	302	302
	18:00-18:15	247	247
	18:15-18:30	207	207
4 - A180 W	17:00-17:15	502	502
	17:15-17:30	600	600
	17:30-17:45	735	735
	17:45-18:00	735	735
	18:00-18:15	600	600
	18:15-18:30	502	502

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.64	4.18	2.1	A	1489	2233
2 - A180 E	0.34	3.19	0.5	A	514	771
3 - A1173 S	0.18	2.86	0.2	A	252	378
4 - A180 W	0.32	3.68	0.7	A	612	918

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1221	305	205	2889	0.423	1218	671	0.0	0.8	2.475	A
2 - A180 E	422	105	686	2220	0.190	421	737	0.0	0.3	2.162	A
3 - A1173 S	207	52	666	1920	0.108	206	441	0.0	0.1	2.251	A
4 - A180 W	502	126	375	2504	0.201	501	497	0.0	0.4	2.918	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1458	365	245	2842	0.513	1457	803	0.8	1.2	2.989	A
2 - A180 E	503	126	821	2058	0.245	503	881	0.3	0.3	2.502	A
3 - A1173 S	247	62	797	1807	0.137	247	527	0.1	0.2	2.471	A
4 - A180 W	600	150	449	2430	0.247	599	595	0.4	0.5	3.198	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1786	447	300	2778	0.643	1783	983	1.2	2.0	4.149	A
2 - A180 E	616	154	1005	1838	0.335	616	1078	0.3	0.5	3.182	A
3 - A1173 S	302	76	975	1653	0.183	302	645	0.2	0.2	2.855	A
4 - A180 W	735	184	550	2328	0.316	734	728	0.5	0.7	3.671	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1786	447	301	2778	0.643	1786	984	2.0	2.1	4.179	A
2 - A180 E	616	154	1007	1836	0.336	616	1080	0.5	0.5	3.190	A
3 - A1173 S	302	76	977	1652	0.183	302	646	0.2	0.2	2.858	A
4 - A180 W	735	184	550	2327	0.316	735	729	0.7	0.7	3.675	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1458	365	246	2842	0.513	1462	805	2.1	1.2	3.010	A
2 - A180 E	503	126	824	2055	0.245	504	884	0.5	0.4	2.510	A
3 - A1173 S	247	62	799	1805	0.137	247	528	0.2	0.2	2.475	A
4 - A180 W	600	150	450	2429	0.247	601	597	0.7	0.5	3.205	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1221	305	206	2888	0.423	1223	674	1.2	0.8	2.490	A
2 - A180 E	422	105	689	2216	0.190	422	739	0.4	0.3	2.171	A
3 - A1173 S	207	52	669	1918	0.108	207	442	0.2	0.1	2.256	A
4 - A180 W	502	126	377	2503	0.201	503	499	0.5	0.4	2.926	A

2026 Baseline + Committed + IGET (Sensitivity) , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	5.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.05	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D19	2026 Baseline + Committed + IGET (Sensitivity)	AM	ONE HOUR	07:00	08:30	15	✓	Simple	D15 + D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	646	100.000
2 - A180 E		ONE HOUR	✓	1057	100.000
3 - A1173 S		ONE HOUR	✓	569	100.000
4 - A180 W		ONE HOUR	✓	745	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	234	47	365
	2 - A180 E	943	0	111	2
	3 - A1173 S	191	254	0	124
	4 - A180 W	723	0	23	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.36	0.07	0.57
	2 - A180 E	0.89	0.00	0.11	0.00
	3 - A1173 S	0.34	0.45	0.00	0.22
	4 - A180 W	0.97	0.00	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	24	36	73
	2 - A180 E	6	0	4	0
	3 - A1173 S	4	1	0	3
	4 - A180 W	38	0	11	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.239	1.357	1.732
	2 - A180 E	1.061	1.000	1.042	1.000
	3 - A1173 S	1.044	1.007	1.000	1.029
	4 - A180 W	1.375	1.000	1.109	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	07:00-07:15	486	486
	07:15-07:30	581	581
	07:30-07:45	711	711
	07:45-08:00	711	711
	08:00-08:15	581	581
	08:15-08:30	486	486
2 - A180 E	07:00-07:15	796	796
	07:15-07:30	950	950
	07:30-07:45	1164	1164
	07:45-08:00	1164	1164
	08:00-08:15	950	950
	08:15-08:30	796	796
3 - A1173 S	07:00-07:15	428	428
	07:15-07:30	512	512
	07:30-07:45	627	627
	07:45-08:00	627	627
	08:00-08:15	512	512
	08:15-08:30	428	428
4 - A180 W	07:00-07:15	561	561
	07:15-07:30	670	670
	07:30-07:45	820	820
	07:45-08:00	820	820
	08:00-08:15	670	670
	08:15-08:30	561	561

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.26	2.59	0.5	A	593	889
2 - A180 E	0.47	2.92	0.9	A	970	1455
3 - A1173 S	0.50	5.92	1.0	A	522	783
4 - A180 W	0.61	9.53	2.1	A	684	1026

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	486	122	207	2887	0.168	485	1394	0.0	0.3	2.228	A
2 - A180 E	796	199	326	2651	0.300	794	366	0.0	0.5	2.051	A
3 - A1173 S	428	107	984	1646	0.260	427	136	0.0	0.4	3.023	A
4 - A180 W	561	140	1042	1828	0.307	559	369	0.0	0.6	3.865	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	581	145	248	2840	0.204	580	1667	0.3	0.4	2.370	A
2 - A180 E	950	238	390	2574	0.369	949	438	0.5	0.6	2.344	A
3 - A1173 S	512	128	1177	1479	0.346	511	162	0.4	0.5	3.808	A
4 - A180 W	670	167	1247	1621	0.413	668	441	0.6	1.0	5.153	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	711	178	303	2775	0.256	711	2039	0.4	0.5	2.593	A
2 - A180 E	1164	291	478	2469	0.471	1162	536	0.6	0.9	2.914	A
3 - A1173 S	627	157	1441	1251	0.501	625	199	0.5	1.0	5.873	A
4 - A180 W	820	205	1526	1338	0.613	816	540	1.0	2.1	9.329	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	711	178	304	2774	0.256	711	2045	0.5	0.5	2.595	A
2 - A180 E	1164	291	478	2469	0.471	1163	537	0.9	0.9	2.919	A
3 - A1173 S	627	157	1443	1249	0.502	627	199	1.0	1.0	5.919	A
4 - A180 W	820	205	1528	1335	0.614	820	541	2.1	2.1	9.533	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	581	145	249	2838	0.205	581	1676	0.5	0.4	2.373	A
2 - A180 E	950	238	391	2573	0.369	951	439	0.9	0.6	2.353	A
3 - A1173 S	512	128	1179	1477	0.346	514	163	1.0	0.5	3.836	A
4 - A180 W	670	167	1251	1617	0.414	674	442	2.1	1.0	5.241	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	486	122	208	2886	0.168	487	1400	0.4	0.3	2.233	A
2 - A180 E	796	199	327	2650	0.300	796	367	0.6	0.5	2.058	A
3 - A1173 S	428	107	987	1643	0.261	429	136	0.5	0.4	3.041	A
4 - A180 W	561	140	1046	1824	0.308	562	370	1.0	0.6	3.899	A

2026 Baseline + Committed + IERRT (Sensitivity), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - A1173 N - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D17 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , AM	Demand Set 17: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D18 - 2026 Baseline + Committed + IERRT Development + IGET (Actual 7-8 AM, 4-5PM) , PM	Demand Set 18: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Set Relationship	D13 - 2026 Baseline + Committed Development , AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A180/A1773	Large Roundabout		1, 2, 3, 4	4.14	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.14	A

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - A1173 N	205	✓	47.00
2 - A180 E	108	✓	105.00
3 - A1173 S	735	✓	34.00
4 - A180 W	976	✓	113.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D20	2026 Baseline + Committed + IGET (Sensitivity)	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D16 + D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A1173 N		ONE HOUR	✓	1741	100.000
2 - A180 E		ONE HOUR	✓	553	100.000
3 - A1173 S		ONE HOUR	✓	277	100.000
4 - A180 W		ONE HOUR	✓	656	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	872	232	638
	2 - A180 E	265	0	288	0
	3 - A1173 S	60	169	0	47
	4 - A180 W	553	1	102	0

Proportions

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0.00	0.50	0.13	0.37
	2 - A180 E	0.48	0.00	0.52	0.00
	3 - A1173 S	0.22	0.61	0.00	0.17
	4 - A180 W	0.84	0.00	0.16	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	0	4	6	38
	2 - A180 E	13	0	2	0
	3 - A1173 S	33	1	0	5
	4 - A180 W	79	0	8	0

Average PCU Per Veh

		To			
		1 - A1173 N	2 - A180 E	3 - A1173 S	4 - A180 W
From	1 - A1173 N	1.000	1.037	1.059	1.378
	2 - A180 E	1.129	1.000	1.023	1.000
	3 - A1173 S	1.331	1.008	1.000	1.048
	4 - A180 W	1.786	1.000	1.080	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (PCU/hr)	Demand in PCU (PCU/hr)
1 - A1173 N	17:00-17:15	1311	1311
	17:15-17:30	1565	1565
	17:30-17:45	1917	1917
	17:45-18:00	1917	1917
	18:00-18:15	1565	1565
	18:15-18:30	1311	1311
2 - A180 E	17:00-17:15	416	416
	17:15-17:30	497	497
	17:30-17:45	609	609
	17:45-18:00	609	609
	18:00-18:15	497	497
	18:15-18:30	416	416
3 - A1173 S	17:00-17:15	208	208
	17:15-17:30	249	249
	17:30-17:45	305	305
	17:45-18:00	305	305
	18:00-18:15	249	249
	18:15-18:30	208	208
4 - A180 W	17:00-17:15	494	494
	17:15-17:30	590	590
	17:30-17:45	723	723
	17:45-18:00	723	723
	18:00-18:15	590	590
	18:15-18:30	494	494

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A1173 N	0.69	4.78	2.5	A	1598	2397
2 - A180 E	0.35	3.35	0.6	A	507	761
3 - A1173 S	0.19	2.89	0.2	A	254	381
4 - A180 W	0.31	3.62	0.7	A	602	903

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1311	328	205	2889	0.454	1307	659	0.0	0.9	2.596	A
2 - A180 E	416	104	730	2168	0.192	415	782	0.0	0.3	2.199	A
3 - A1173 S	208	52	678	1910	0.109	208	467	0.0	0.1	2.265	A
4 - A180 W	494	124	372	2508	0.197	492	514	0.0	0.4	2.891	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1565	391	245	2842	0.551	1564	789	0.9	1.4	3.216	A
2 - A180 E	497	124	873	1996	0.249	497	936	0.3	0.4	2.572	A
3 - A1173 S	249	62	811	1795	0.139	248	558	0.1	0.2	2.493	A
4 - A180 W	590	147	444	2434	0.242	589	615	0.4	0.5	3.158	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1917	479	300	2778	0.690	1913	966	1.4	2.5	4.732	A
2 - A180 E	609	152	1068	1763	0.345	608	1145	0.4	0.6	3.339	A
3 - A1173 S	305	76	993	1638	0.186	304	683	0.2	0.2	2.890	A
4 - A180 W	723	181	544	2333	0.310	722	753	0.5	0.7	3.614	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1917	479	301	2778	0.690	1917	967	2.5	2.5	4.782	A
2 - A180 E	609	152	1070	1760	0.346	609	1147	0.6	0.6	3.349	A
3 - A1173 S	305	76	995	1637	0.186	305	685	0.2	0.2	2.894	A
4 - A180 W	723	181	545	2333	0.310	723	754	0.7	0.7	3.618	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1565	391	246	2842	0.551	1570	791	2.5	1.4	3.247	A
2 - A180 E	497	124	876	1992	0.250	498	939	0.6	0.4	2.581	A
3 - A1173 S	249	62	814	1793	0.139	249	560	0.2	0.2	2.499	A
4 - A180 W	590	147	445	2433	0.242	591	618	0.7	0.5	3.165	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A1173 N	1311	328	206	2888	0.454	1313	662	1.4	1.0	2.617	A
2 - A180 E	416	104	733	2164	0.192	417	786	0.4	0.3	2.209	A
3 - A1173 S	208	52	681	1908	0.109	208	469	0.2	0.1	2.270	A
4 - A180 W	494	124	373	2507	0.197	495	516	0.5	0.4	2.895	A