MAGNA PARK
LUTTERWORTH

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Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Main Report plus All Appendices (except Appendix B – LLITM Technical Note+Appendices – which has been split into 8 parts)

Final Report

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APPENDICES

1 INTRODUCTION

General

1.1 This second Supplementary Transport Assessment has been prepared to consider the impact of the proposed expansion at Magna Park that has been tested using the Leicester and Leicestershire Integrated Transport Model (LLITM). For a development on the scale of that being promoted by the hybrid planning application, Leicestershire County Council (LCC) required the impact of the development on the surrounding highway network to be tested using LLITM.

1.2 AECOM (Bedford) raised concerns about the accuracy of the LLITM traffic flows particularly on the western side of the study area. These concerns were communicated to LCC via email during October 2015 and it was agreed with LCC that adjustments were required to overcome some of the 'edge of model' effects that were affecting the predicted flows. The adjustments, which are based on a methodology devised by LCC, have resulted in revised turning flows at all the junctions in the study area and these flows have been used as the basis for detailed capacity assessments undertaken at each junction.

1.3 The original Transport Assessment was submitted as part of the supporting information for the hybrid application that was validated by Harborough District Council on 2 October 2015. The application is for the proposed extension of Magna Park near Lutterworth onto 220 hectares of land adjoining Magna Park to the north west and onto seven hectares of land adjoining Magna Park to the south of the A4303. The site location is shown on a plan in **Appendix A**. The development proposal is described in detail in Section 3 of the original Transport Assessment.

1.4 The original Transport Assessment was based on an assessment of the manual assignment of development trips associated with the hybrid proposals and was based on the scope that was agreed for the Transport Assessment that was prepared in support of the detailed application for DHL Supply Chain. That application received a resolution to grant planning approval from Harborough District Council at an Extraordinary Planning Committee meeting on 28 January 2016.

1.5 Highways England has reviewed the original Transport Assessment prepared for the hybrid application and requested some further information to help in its consideration of the traffic impact.

1.6 The additional information requested by Highways England can be summarised as follows:

- To recalculate the trip generation for students attending the Logistics Institute based on 50% travelling by bus rather than 75% that was assumed in the original Transport Assessment. The remaining trips to be allocated to car driver and escorted car passenger trips.
- To provide a plan showing the distribution of student trips referenced in paragraph 6.52 of the original Transport Assessment.
- To reassess junction impacts based on the revised trip generation, at the A5 northern site access, A5 Cross in Hand roundabout, A5 Gibbet Hill roundabout, A426/ A4303 roundabout and M1 Junction 20.

– To provide a suitable mitigation scheme at the Gibbet Hill roundabout in the event that the conditioned improvements as part of DIRFT III is delayed; or accept a condition that no more than 100,844m^2 of B8 (DHL detailed application) will be occupied at Magna Park before the improvements to Gibbet Hill as part of DIRFT III have been delivered.

1.7 The additional information was presented in a Supplementary Transport Assessment that was submitted on 8 February 2016. It should be noted that in its response, Highways England made no mention of a requirement to test the impact of the hybrid in LLITM inferring that it is satisfied with the manual approach adopted in the original Transport Assessment.

Report Layout

1.8 Following this Introduction Section 2 presents a summary of the overall LLITM results.

1.9 Section 3 discusses the adjustments that have been made to the LLITM flows to allow detailed junction capacity assessments to be undertaken.

1.10 Section 4 presents the revised 2026 assessments for three scenarios; Scenario 1 ‘Without Development’; Scenario 2 ‘With Development’; Scenario 3 ‘With Development plus symmetry park’.

1.11 In Section 5 an update to the provision of sustainable transport at Magna Park is provided including commitments to new bus services, car sharing initiatives and a site wide travel survey.

1.12 The conclusions are set out in Section 6.

1.13 Due to the size of the appendices the printed version of this report has been presented in three separate volumes. Volume I contains the report, Appendix A, Appendices C to K and Appendices M to Q. Volume II contains Appendix B only (LLITM Technical Note). Volume III contains Appendix L only (Output from Capacity Assessments).

2 SUMMARY OF OVERALL LLITM RESULTS

2.1 AECOM (St Albans) was commissioned by LCC to undertake transport modelling work using LLITM for the proposed extension at Magna Park. Within the forecast modelling of the proposed extension there were five model scenarios produced. These were:

- The validated 2008 Base Year Model;
- The 2026 forecast without the proposed development;
- The 2026 forecast with the proposed development without any mitigation measures;
- The 2026 forecast with the proposed development and proposed mitigation measures:
- The 2026 forecast with the proposed development and mitigation measures and the proposed symmetry park development.

2.2 AECOM (St Albans) has provided a technical note containing a detailed explanation of the methodology used to produce the model output listed above. The technical note also presents a range of output information from LLITM which helps to determine the scale of the impact from the development. The technical note and accompanying appendices are presented in **Appendix B**.

2.3 To allow an informed judgement to be made on the scale of the impact from the proposed expansion at Magna Park, some of the results presented in the technical note have been extracted and are summarised below.

Total Forecast Highway Flows

2.4 The first set of results from LLITM relate to information presented in Tables 4.1 and 4.2 of the technical note which show forecast total highway flows at selected locations in pcus and HGVs respectively. For the purposes of this report the 2026 ‘without development’ flows have been compared with the 2026 ‘with development and mitigation’ flows to establish the forecast increases in traffic at certain key locations on the surrounding highway network. The locations are shown on a plan presented in **Appendix C**.

2.5 The first two tables (Tables 2.1 and 2.2) show the increases in pcus in the AM and PM peaks respectively while the second two tables (Tables 2.3 and 2.4) show the same information for HGVs.

Table 2-1: Forecast Total Highway Flows During AM Peak (PCUs)

Location	Direction	2026 Without Development	2026 With Development & Mitigation	Change in Flow
A – Hunter Boulevard	Northbound	1,048	868	-180
	Southbound	477	513	+36
B – A4303 (between Hunter Boulevard & A5)	Eastbound	1,596	1,261	-335
	Westbound	1,481	1,393	-88
C – A5 (south of A4303)	Northbound	820	869	+49
	Southbound	939	965	+26

Table 2-1: Forecast Total Highway Flows During AM Peak (PCUs)

Location	Direction	2026 Without Development	2026 With Development & Mitigation	Change in Flow
D – B4027 Lutterworth Road	Northbound	745	796	+51
	Southbound	1,213	1,213	0
E – Coal Pit Lane	Eastbound	241	179	-62
	Westbound	52	44	-8
F – A5 (north of A4303)	Northbound	589	667	+78
	Southbound	1,104	912	-192
G – A5 (north of Mere Lane)	Northbound	532	524	-8
	Southbound	997	1,025	+28
H – Mere Lane (east of A5)	Northbound	67	486	+419
	Southbound	116	231	+115
I – Mere Lane (east of Magna Park)	Northbound	44	67	+23
	Southbound	116	225	+109
J – A4303 (between Hunter Bld & Coventry Road)	Eastbound	931	1,010	+79
	Westbound	1,591	1,700	+109
K – Coventry Way (between A4303 & Brookfield Way)	Northbound	324	327	+3
	Southbound	793	754	-39
L – A4303 (between Coventry Road & A426)	Eastbound	735	806	+71
	Westbound	926	1,070	+144
M – A426 (north of A4303)	Northbound	1,049	1,059	+10
	Southbound	997	1,018	+21
N - A4303 (between A426 & M1 J20)	Eastbound	1,609	1,686	+77
	Westbound	1,962	2,093	+131
O - A4304 (east of M1 J20)	Eastbound	526	535	+9
	Westbound	740	743	+3

Table 2-2: Forecast Total Highway Flows During PM Peak (PCUs)

Location	Direction	2026 Without Development	2026 With Development & Mitigation	Change in Flow
A – Hunter Boulevard	Northbound	393	360	-33
	Southbound	821	689	-132
B – A4303 (between Hunter Boulevard & A5)	Eastbound	1,245	1,124	-121
	Westbound	1,390	1,107	-283
C – A5 (south of A4303)	Northbound	819	831	+12
	Southbound	712	742	+30
D – B4027 Lutterworth Road	Northbound	982	994	+12
	Southbound	986	1,022	+36
E – Coal Pit Lane	Eastbound	77	100	+23
	Westbound	96	58	-38
F – A5 (north of A4303)	Northbound	947	793	-154
	Southbound	718	707	-11
G – A5 (north of Mere Lane)	Northbound	871	873	+2
	Southbound	617	556	-61
H – Mere Lane (east of A5)	Northbound	94	256	+162
	Southbound	120	487	+367
I – Mere Lane (east of Magna Park)	Northbound	92	182	+90
	Southbound	85	115	+30
J – A4303 (between Hunter Bld & Coventry Road)	Eastbound	1,389	1,495	+106
	Westbound	897	942	+45
K – Coventry Way (between A4303 & Brookfield Way)	Northbound	592	577	-15
	Southbound	407	381	-26
L – A4303 (between Coventry Road & A426)	Eastbound	924	1,055	+131
	Westbound	618	698	+80
M – A426 (north of A4303)	Northbound	1,051	1,067	+16
	Southbound	969	999	+30
N - A4303 (between A426 & M1 J20)	Eastbound	1,567	1,679	+112
	Westbound	1,224	1,277	+53
O - A4304 (east of M1 J20)	Eastbound	686	691	+5
	Westbound	498	496	-2

Table 2-3: Forecast Total Highway Flows During AM Peak (HGVs)

Location	Direction	2026 Without Development	2026 With Development & Mitigation	Change in Flow
A – Hunter Boulevard	Northbound	176	167	-9
	Southbound	169	189	+20
B – A4303 (between Hunter Boulevard & A5)	Eastbound	159	125	-34
	Westbound	156	151	-5
C – A5 (south of A4303)	Northbound	144	157	+13
	Southbound	196	213	-17
D – B4027 Lutterworth Road	Northbound	44	45	+1
	Southbound	24	27	+3
E – Coal Pit Lane	Eastbound	4	4	0
	Westbound	1	0	-1
F – A5 (north of A4303)	Northbound	83	95	+12
	Southbound	114	103	-11
G – A5 (north of Mere Lane)	Northbound	81	80	-1
	Southbound	109	108	-1
H – Mere Lane (east of A5)	Northbound	2	52	+50
	Southbound	5	32	+27
I – Mere Lane (east of Magna Park)	Northbound	2	2	0
	Southbound	5	5	0
J – A4303 (between Hunter Bld & Coventry Road)	Eastbound	87	110	+23
	Westbound	87	110	+23
K – Coventry Way (between A4303 & Brookfield Way)	Northbound	0	0	0
	Southbound	0	0	0
L – A4303 (between Coventry Road & A426)	Eastbound	87	109	+22
	Westbound	87	110	+23
M – A426 (north of A4303)	Northbound	71	72	+1
	Southbound	53	55	+2
N - A4303 (between A426 & M1 J20)	Eastbound	157	180	+23
	Westbound	172	192	+20
O - A4304 (east of M1 J20)	Eastbound	43	44	+1
	Westbound	42	43	+1

Table 2-4: Forecast Total Highway Flows During PM Peak (HGVs)

Location	Direction	2026 Without Development	2026 With Development & Mitigation	Change in Flow
A – Hunter Boulevard	Northbound	115	112	-3
	Southbound	90	95	+5
B – A4303 (between Hunter Boulevard & A5)	Eastbound	84	62	-22
	Westbound	74	59	-15
C – A5 (south of A4303)	Northbound	72	92	+20
	Southbound	38	62	+24
D – B4027 Lutterworth Road	Northbound	16	17	+1
	Southbound	31	34	+3
E – Coal Pit Lane	Eastbound	1	1	0
	Westbound	5	3	-2
F – A5 (north of A4303)	Northbound	51	62	+11
	Southbound	47	55	+8
G – A5 (north of Mere Lane)	Northbound	50	54	+4
	Southbound	47	48	+1
H – Mere Lane (east of A5)	Northbound	1	46	+45
	Southbound	1	44	+43
I – Mere Lane (east of Magna Park)	Northbound	1	1	0
	Southbound	1	1	0
J – A4303 (between Hunter Bld & Coventry Road)	Eastbound	53	72	+19
	Westbound	75	93	+18
K – Coventry Way (between A4303 & Brookfield Way)	Northbound	0	0	0
	Southbound	0	0	0
L – A4303 (between Coventry Road & A426)	Eastbound	53	72	+19
	Westbound	75	93	+18
M – A426 (north of A4303)	Northbound	18	19	+1
	Southbound	47	48	+1
N - A4303 (between A426 & M1 J20)	Eastbound	104	122	+18
	Westbound	90	108	+18
O - A4304 (east of M1 J20)	Eastbound	20	21	+1
	Westbound	18	19	+1

2.6 Table 2.1 shows the forecast change in flow during the AM peak as a result of the proposed development. The most significant increase in traffic is predicted on the section of Mere Lane between the A5 and the new roundabout on Mere Lane where the two-way flow is expected to increase by 534 pcus. However this short section of Mere Lane is being upgraded to accommodate increases in traffic associated with the existing Magna Park, the consented DHL development and the proposed Magna Park extension.

2.7 Traffic is forecast to increase on the section of Mere Lane to the north east of Magna Park albeit by a much smaller amount, 132 pcus (two-way). This is not considered to be at a level that will result in severe harm to the network and overall traffic volumes on Mere Lane even at their peak are considered to be well within acceptable levels.

2.8 Traffic is also forecast to increase on the A4303 between Hunter Boulevard and the M1 with two-way increases of around 200 pcus along this section of the A4303. The impact of these increases on the performance of the roundabouts on the A4303 is considered in more detail in Section 4.

2.9 There are certain sections of the network where traffic flows are forecast to decrease, most notably on Hunter Boulevard, on the A4303 between Hunter Boulevard and the A5 and on the A5 to the north of the A4303. These reductions are a result of some traffic from the existing Magna Park using the new access route via Mere Lane thus avoiding the A5/A4303 (Cross in Hand) roundabout completely. This demonstrates a wider benefit of the consented access arrangements for DHL.

2.10 Table 2.2 shows the corresponding information for the PM peak and as can be seen that the changes in two-way traffic flows are very similar to those that are forecast during the AM peak. On the section of Mere Lane to the north east of Magna Park the two-way flow is predicted to increase by 120 pcus. However in common with the AM peak this is not considered to be at a level that will result in severe harm to the network and overall traffic volumes on Mere Lane even at their peak are considered to be within acceptable levels.

2.11 Tables 2.3 and 2.4 show the forecast change in the number of HGVs in the AM and PM peaks respectively. The most significant increases are forecast to occur on the section of Mere Lane that is being upgraded between the A5 and the new roundabout on Mere Lane where during both peaks the two-way HGV flow is predicted to increase by around 80.

2.12 The two-way flow of HGVs on the A4303 is predicted to increase by around 45 in the AM peak and by around 35 in the PM peak. HGV flows are predicted to decrease on the sections of Hunter Boulevard, the A4303 and the A5 that are expected to experience general decreases in traffic flows as a result of the consented access arrangements for DHL.

2.13 There are a number of routes in the vicinity of Magna Park that are considered sensitive to an increase in HGVs. Most of the minor road network to the north and east of Magna Park is controlled by a 7.5 tonne weight restriction and it is noted that LLITM does not predict any increase in HGVs on Mere Lane to the north east of the new access roundabout.

2.14 Other routes that could be considered sensitive to an increase in HGVs are the B4027 (Lutterworth Road) where the number of HGVs is predicted to increase by only four during both peaks, Coal Pit Lane where small reductions in HGVs are predicted during both peaks and on the A426 though Lutterworth town centre where the number of HGVs is predicted to increase by three in the AM peak and two in the PM peak.

Forecast Journey Times for Selected Routes

2.15 The second set of results from LLITM relates to information presented in Table 4.3 of the technical note which shows forecast journey times for selected routes for the five model scenarios listed in paragraph 2.1. Rather than replicate the information below, Table 4.3 can be found on page 50 of the technical note.

2.16 The top half of the table shows journey times for three local routes, the most important of which in relation to this development proposal is the A4303 between the M1 and the A5.

2.17 Referring to Table 4.3 it can be seen that travelling in an eastbound direction the average journey time during the AM peak will reduce from 3 minutes 19 seconds without development to 3 minutes 16 seconds with development and mitigation. The corresponding journey times in a westbound direction show a slight increase from 3 minutes 26 seconds without development to 3 minutes 29 seconds with development and mitigation.

2.18 During the PM peak there is no change in journey time predicted when travelling in an eastbound direction and a slight improvement when travelling in a westbound direction.

2.19 The overall improvement in journey times that are predicted on the A4303 when the 'without development' scenario is compared to the 'with development and mitigation' scenario is a reflection of the benefits of the junction improvements at the A4303/A426 roundabout. These improvements have been secured through the planning consent for the DHL Supply Chain and are a further demonstration of potential wider benefits of the highway improvements that have already been approved.

2.20 The table also shows the additional impact of the proposed symmetry park development and it can be seen that the impact of that development would be to increase the journey time significantly on the A4303. With symmetry park the average increase in journey time ranges from 11 seconds in an eastbound direction during the AM peak to 18 seconds in a westbound direction also during the AM peak.

2.21 The other two local routes are the A426 between Shawell Lane just north of Cotesbach and Hall Lane just to the north of Lutterworth town centre, and the unofficial Lutterworth western bypass connecting the A4303 to the A426 via Brookfield Way and Bill Crane Way. In both cases it can be seen that the proposed development is not expected to increase the journey time on either route and in most cases the journey would actually improve in the 'with development and mitigation' scenario.

2.22 The bottom half of the table shows comparative journey times on four strategic routes, namely the M1, the A5, the M6 and the M69. The impact of the development on the motorway routes is expected to be small and this is supported by the information in Table 4.3 which shows very small increases in journey times on these routes as a result of the development.

2.23 The impact of the development on journey times on the A5 is more significant ranging from an increase of 30 seconds in a northbound direction during the PM peak to 59 seconds also in a northbound direction during the AM peak. However this needs to be considered within the context of the distance over which the journey time is measured, almost 45 kilometres between the M1 and the M42.

Junction Delay

2.24 The third set of results from LLITM relates to information presented in Appendices D to K of the technical note which show the volume to capacity ratio, delay and 'arrive' flow at each junction for the five modelled scenarios listed in paragraph 2.1. In this instance the information presented in the diagrams that show delay and 'arrive' flow have been used to establish the average delay per vehicle by arm at each junction for various modelled scenarios. The full calculation worksheets for this process are presented in **Appendix D** while a summary of the impact of the development on delay at the most critical junctions is presented in the tables below.

A5/A4303 (Cross in Hand)

2.25 Table 2-5 shows the impact of the proposed development and symmetry park at the Cross in Hand roundabout in the AM and PM peaks.

Table 2-5: Average Delay Per Vehicle (seconds)

	2026 Without Development		**2026 With Development & Mitigation**		**2026 With Development & symmetry park**	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 North	39.6	12.8	15.3	12.7	17.2	8.4
A4303	14.4	14.8	13.2	13.0	13.1	13.1
A5 South	17.1	18.1	18.2	15.8	18.2	17.5
B4027 Lutterworth Rd	16.5	20.5	16.2	18.5	16.2	18.3
Coal Pit Lane	12.0	13.1	12.0	13.1	13.0	13.0
Average Delay/Vehicle	**21.5**	**16.5**	**15.2**	**15.0**	**15.7**	**14.5**

2.26 Table 2-5 indicates that the level of delay will reduce at the Cross In Hand roundabout as a result of the proposed development. The improvement is more pronounced during the AM peak where at the junction as a whole the average delay per vehicle is predicted to fall from 21.5 seconds without development to 15.2 seconds with development. The most significant improvement is expected on the A5 north where the average delay is expected to fall from 39.6 seconds per vehicle without development to 15.3 seconds per vehicle with development.

2.27 The improvement in the performance of this junction is a result of some traffic from the existing Magna Park using the new access route via Mere Lane thus avoiding the Cross in Hand roundabout completely. The improvements in the performance of this junction demonstrate the wider benefits of the approved access arrangements for DHL.

A4303/ Hunter Boulevard

2.28 Table 2-6 shows the impact of the proposed development and symmetry park at the A4303/ Hunter Boulevard roundabout in the AM and PM peaks.

Table 2-6: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Hunter Boulevard	13.9	14.2	12.8	11.9	12.7	12.5
A4303 East	15.8	12.6	17.0	12.8	16.7	12.8
Access to George	12.9	11.1	13.0	11.1	13.2	11.8
A4303 West	13.6	10.3	12.6	12.6	13.3	12.6
Average Delay/Vehicle	**14.6**	**12.7**	**14.8**	**12.4**	**14.8**	**12.6**

2.29 Table 2-6 indicates that the proposed development will have very little impact on the level of delay at this junction with a slight increase predicted during the AM peak and a slight decrease during the PM peak.

A4303/ Coventry Road

2.30 Table 2-7 shows the impact of the proposed development and symmetry park at the A4303/ Coventry Road roundabout in the AM and PM peaks.

Table 2-7: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Coventry Road	15.3	14.8	15.3	14.6	15.3	14.6
A4303 East	10.1	9.2	13.4	9.2	11.1	9.2
Mobile Home Park	-	-	-	-	-	-
A4303 West	12.4	13.0	13.5	14.2	13.5	14.2
Average Delay/Vehicle	**12.4**	**12.3**	**13.9**	**12.9**	**13.0**	**12.9**

2.31 Table 2-7 indicates that the proposed development will have a minor adverse impact on the level of delay at this junction with small increases predicted during both peaks. The most significant impact is expected on the A4303 east during the AM peak where the average delay per vehicle is predicted to increase from 10.1 seconds per vehicle without development to 13.4 seconds per vehicle with development. Referring forward to Section 4, it can be seen however that this junction is predicted to be operating within capacity with the addition of the proposed development traffic.

A4303/ A426

2.32 Table 2-8 shows the impact of the proposed development and symmetry park at the A4303/ A426 roundabout in the AM and PM peaks.

Table 2-8: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A426 North	18.5	17.1	13.3	13.2	13.4	13.3
A4303 East	14.2	13.0	14.9	11.8	15.2	11.8
A426 South	23.5	16.6	18.5	14.6	19.5	14.6
A4303 West	13.6	13.0	11.9	11.4	12.4	12.4
Average Delay/Vehicle	**16.5**	**14.7**	**14.6**	**12.6**	**14.9**	**12.9**

2.33 Table 2-8 indicates that as a result of the proposed development there will be significant reductions in the level of delay at this junction during both peaks. At the junction as a whole the average delay per vehicle is predicted to fall from 16.5 seconds without development to 14.6 seconds with development during the AM peak. The corresponding reduction in delay during the PM peak is from 14.7 seconds to 12.6 seconds. It is apparent therefore that the improvements to this junction that have been secured as part of the planning consent for DHL will provide significant capacity enhancements during both peaks.

M1 Junction 20

2.34 Table 2-9 shows the impact of the proposed development and symmetry park at M1 Junction 20 in the AM and PM peaks.

Table 2-9: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
M1 North	7.4	5.5	7.4	7.1	7.5	7.1
A4304	3.7	6.1	9.7	6.1	9.9	6.1
M1 South	0.3	0.2	0.3	0.2	0.3	0.2
A4303	5.4	4.9	5.4	4.9	5.4	4.9
Average Delay/Vehicle	**4.7**	**4.6**	**5.8**	**5.0**	**5.8**	**5.0**

2.35 Table 2-9 indicates that there will be small increases in delay as a result of the development at this junction. The most significant increase is on the A4304 during the AM peak where the average delay per vehicle is predicted to increase from 3.7 seconds per vehicle without development to 9.7 seconds per vehicle with development. However this needs to be viewed within the context of the delays on all other arms at the junction which are predicted to be small.

A5/ A426 (Gibbet Hill)

2.36 Table 2-10 shows the impact of the proposed development and symmetry park at the Gibbet Hill roundabout in the AM and PM peaks.

Table 2-10: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 North	14.7	6.7	15.0	18.8	15.7	15.7
A426 North	25.3	12.7	26.2	12.7	26.6	28.1
Gibbet Lane	0.3	0.6	0.3	0.5	0.3	0.3
A5 South	15.1	14.1	17.4	14.0	16.1	16.1
A426 South	2.2	2.2	2.5	2.5	2.6	2.8
Average Delay/Vehicle	**12.6**	**8.0**	**13.5**	**10.7**	**13.4**	**13.9**

2.37 Table 2-10 indicates that there will be small increases in delay as a result of the proposed development at this junction. The increase during the AM peak is relatively small at just under one second per vehicle while the increase is slightly more significant during the PM peak at just below three seconds per vehicle.

M6 Junction 1

2.38 Table 2-11 shows the impact of the proposed development and symmetry park at M6 Junction 1 in the AM and PM peaks.

Table 2-11: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A426 North	11.8	7.4	7.4	7.0	7.4	7.4
M6 East	30.0	74.6	30.0	73.8	30.0	76.6
A426 South	8.4	8.4	8.4	8.4	8.7	8.4
M6 West	30.3	17.9	28.5	18.4	28.4	17.2
Average Delay/Vehicle	**18.2**	**15.8**	**16.0**	**15.2**	**16.1**	**15.2**

2.39 Table 2-11 indicates that the level of delay will decrease as a result of the proposed development at this junction. The decrease is most pronounced during the AM peak when the delay per vehicle on the A426 north is predicted to fall from 11.8 seconds without development to 7.4 seconds with development.

M69 Junction 1

2.40 Table 2-12 shows the impact of the proposed development and symmetry park at M69 Junction 1 in the AM and PM peaks.

Table 2-12: Average Delay Per Vehicle (seconds)

	2026 Without Development		2026 With Development & Mitigation		2026 With Development & symmetry park	
Approach Arm	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 North	10.4	8.2	10.5	7.9	10.6	8.1
B4109 North Entry	14.1	10.9	14.1	11.0	14.1	10.9
M69 East Entry	14.0	15.9	14.0	16.0	14.0	16.0
A5 South	5.8	7.9	5.9	7.8	6.0	8.0
B4109 South	1.1	1.5	1.1	1.5	1.1	1.5
M69 West Entry	10.3	14.0	10.3	14.0	10.3	13.9
Average Delay/Vehicle	**6.5**	**6.8**	**6.6**	**6.7**	**6.6**	**6.8**

2.41 Table 2-12 indicates that the proposed development will have very little impact on the level of delay at this junction with a slight increase predicted during the AM peak and a slight decrease during the PM peak.

3 ADJUSTMENTS MADE TO LLITM TRAFFIC FLOWS

Correspondence with LCC

3.1 When the LLITM output was first received in September 2015 an exercise was undertaken to compare the 2014 traffic count data with the 2026 model flows to establish the level of correlation between the two sets of traffic flows. The expectation was that the 2026 model data would in general be higher to account for both background traffic growth between 2014 and 2026 and the completion of several committed developments.

3.2 Presented in **Appendix E** is the table comparing the 2014 traffic counts with the 2026 LLITM 'without development' flows. The table shows the inflows and outflows by arm at each junction that was to be tested as part of the Transport Assessment for the proposed development.

3.3 With the exception of the Cross in Hand roundabout and MI Junction 20 in the PM peak, the junctions on the A4303 showed a reasonable level of compatibility although it was evident that the AM peak was generally better than the PM peak.

3.4 The flows at the Cross in Hand roundabout were the greatest cause for concern on the basis that any anomaly in the LLITM output at this junction would have a knock on effect at the Gibbet Hill roundabout, M6 Junction 1 and potentially at M69 Junction 1. The issue appeared to be that most traffic travelling between the A4303 and Rugby was shown to be using the B4027 through Pailton rather than the A5 and the A426 as would be expected. As a result, the LLITM flows on the A426 south of the Gibbet Hill roundabout and at M6 Junction 1 generally, are substantially lower than the observed 2014 counts.

3.5 The other junction where there appeared to be an anomaly was M69 Junction 1 where LLITM predicts large increases on the B4109 south at the expense of the A5 south where the 2026 LLITM flows are significantly lower than the 2014 observed counts. This implies that in LLITM, vehicles are avoiding the A5 south of the M69 and are instead choosing to use the minor road network to the west of the A5.

3.6 An email was sent to LCC on 13 October 2015 highlighting these apparent anomalies and to suggest four possible courses of action. These were:

- Accept the LLITM flows and model the junctions accordingly noting that we have 'furnessed' the LLITM inflows and outflows using the turning proportions recorded during the 2014 traffic counts as a starting point.
- AECOM (St Albans) revisits the model to investigate the attractiveness of the B4207 and the B4112 and to consider introducing penalties to make this route less attractive to reflect the traffic calming and circuitous nature of the route through Pailton, Harborough Magna and Newbold on Avon.
- Make a manual adjustment to the LLITM output to better reflect the observed turning count data. This would involve transferring traffic from the B4027 to the A5 and the A426 as the primary route to/from Rugby and from the B4109 south to the A5 south at Junction 1 of the M69. It is acknowledged that any changes would need to be supported by evidence and agreed with LCC in advance of the detailed junction modelling.

- At the extremities of the model (M6 J1, M69 J1) rely on the traffic flows already submitted as part of the manual assessment for the Hybrid Application. Make manual adjustments to the LLITM flows at the Cross In Hand and Gibbet Hill roundabouts as in bullet 3. Use output from LLITM as the basis for the assessment at all other junctions.

3.7 On 23 October 2015, a further email was sent to LCC to further highlight the differences between the LLITM flows and the flows from the 2026 manual assessment that formed the basis of the original Transport Assessment for the hybrid application. The relevant traffic flow diagrams that were sent to LCC to highlight discrepancies between the flows are presented in **Appendix F**. Both sets of flows are for the 2026 'without development' scenario.

3.8 The first two diagrams highlighted links where the LLITM flows are either 20% higher or 20% lower than the manual assessment. The orange boxes denote where LLITM flows are greater than 20% higher and the blue boxes where the LLITM flows are greater than 20% lower. The third and fourth diagrams show the corresponding information based on a 40% difference.

3.9 Focusing on the first two diagrams it can be seen that the main discrepancy occurs on the A5 and areas to the west of the A5, i.e. at the extremity of the model. Particular areas of concern that were highlighted were the M69 Junction 1, the B4027 at the Cross in Hand roundabout, the A426 and the A5 south at the Gibbet Hill roundabout and the knock on effect that this has on the flows at M6 Junction 1. It was acknowledged that in general the flows on the A4303 showed a much higher level of correlation.

3.10 Reference to the diagrams that highlight a 40% difference reinforces the issues on the A5 and areas to the west as identified above.

3.11 In the earlier email of 13 October it was suggested that it may be possible to make a manual adjustment to the LLITM output to better reflect the observed turning count data. This would have involved transferring traffic from certain key routes, an example being from the B4027 to the A5 and the A426 as the primary route to and from Rugby.

3.12 However upon further inspection it was apparent that this would not resolve the issue as there is a reasonable match between the two sets of flows on the A5 between the Cross in Hand and Gibbet Hill roundabouts. Switching traffic between the B4027 and the A426 would therefore simply transfer the issue to the A5.

3.13 Similarly although the flows on the A5 immediately south of M69 Junction 1 were found to be incompatible, by the time the Cross in Hand roundabout is reached they had recovered to provide a reasonable match. Transferring traffic from the B4109 (Hinckley Road) to the A5 south may therefore have improved the situation at the M69 junction but would have led to a deterioration in the level of compatibility at the Cross in Hand roundabout.

3.14 In view of the apparent discrepancies between the LLITM flows and the flows that were used for the manual assessment, for the purposes of undertaking detailed junction capacity assessments, AECOM (formerly URS) suggested a dual approach using a combination of the LLITM flows and the flows from the manual assessment. The proposal was to use the LLITM flows to test all the junctions on the A4303 corridor (with the exception of the Cross in Hand roundabout) and both new roundabouts on the A5 and the site access roundabout on Mere Lane.

3.15 At the same time capacity assessments based upon the manual approach were suggested at the Cross in Hand and Gibbet Hill roundabouts and at junction 1 of both the M6 and M69.

Local Recalibration of the LLITM Output

3.16 On 11 January 2016, LCC provided a spreadsheet and an explanatory technical note to allow the local recalibration of the LLITM output in the vicinity of junctions using observed turning count data. The methodology, as described in LCC's technical note and presented in **Appendix G**, takes into account the fact that LLITM is:

- Most robust at reporting total vehicles entering and exiting a junction;
- Less robust at reporting total vehicles entering or exiting each arm of a junction
- Least robust at reporting the turning movements of vehicles at a junction

3.17 For the purposes of this assessment, at the majority of junctions, the turning movements from the 'Largest Growth in Turning Movement' matrices have been used. This ensures a robust assessment as it takes the higher of the two turning movements calculated from the two methodologies described in LCC's technical note.

3.18 When comparing the 'Largest Growth in Turning Movement' matrices with the surveyed flows, it highlighted significant discrepancies in some of the turning movements particularly at junctions towards the edge of the model. The two junctions of greatest concern are the Gibbet Hill roundabout and M69 Junction 1. At these junctions an average of the two methodologies described in LCC's technical note has been taken and is used as the basis for assessment at these two junctions.

3.19 At each junction, the 2008 and 2026 LLITM model flows together with the 2014 observed turning counts have been entered into LCC's spreadsheet to produce recalibrated matrices upon which the capacity assessments presented in the following section are based. As stated above, with the exception of the Gibbet Hill roundabout and M69 Junction 1, the 'Largest Growth in Turning Movement' matrices have been used for assessment purposes.

3.20 A copy of the spreadsheet for each junction is presented in **Appendix H** for three modelled scenarios, 2026 'without development', 2026 'with development & mitigation' and 2026 'with development & symmetry park'.

Manual Flow Adjustments

3.21 Three further manual adjustments have been made to the traffic flows and these are described below.

3.22 The first adjustment has been made to the 2026 'without development' flows to reflect the fact that the DHL application has now been approved and is therefore a committed scheme. To make this adjustment the development flows that were agreed as part of the Transport Assessment prepared for the DHL application have been added to the 2026 'without development' flows from LLITM to produce updated 2026 'without development' flows. The spreadsheets setting out this calculation are presented in **Appendix I**.

3.23 The second adjustment has been made to the 2026 'with development & mitigation' flows and the 2026 'with development & symmetry park' flows to manually add the development trips associated with the Logistics Institute of Technology. Due to the bespoke nature of this development including a reliance on public transport for the majority of student trips, it was agreed with LCC that the trip generation and distribution could be based on first principles and considered outside LLITM. This was agreed on the basis that a manual adjustment would be required to add the flows from the Logistics Institute to the LLITM output to produce the final 'with development' matrices to be used in the assessment. The first principles approach to the trip generation and distribution for the Logistics Institute is set out in Section 6 of the original Transport Assessment for the hybrid application.

3.24 The final adjustment has been made to the 2026 'with development & mitigation' flows and the 2026 'with development & symmetry park' flows to adjust the distribution of development related flows at the two new roundabouts on the A5 and the new site access roundabout on Mere Lane. The adjustment is required because the LLITM output assumes that all development related traffic approaching/departing on the A5 from the south will use the new A5/ Mere Lane roundabout and access the development from the new roundabout on Mere Lane. Similarly LLITM assumes that all traffic approaching/departing on the A5 from the north will access/egress the site via the proposed northern access roundabout.

3.25 The provision of two points of access, one at both ends of the development, will allow an internal highway connection to be provided within the site. This will allow flexibility in terms of access and egress options allowing the impact of the development to be dispersed more evenly across the external highway network. In the original Transport Assessment prepared for the hybrid application it was assumed that for the units to the north of the Hub (containing the Logistics Institute) all vehicles would enter and leave the site via the new roundabout on the A5 at the northern end of the development.

3.26 For the units to the south of the Hub it was assumed that all vehicles to/from the east (i.e. towards Lutterworth and the M1) would enter and leave the site via the existing access roundabout on the A4303 (Hunter Boulevard) while all vehicles to/from the north, south and west would use the proposed new roundabout at the A5/ Mere Lane junction.

3.27 The LLITM output has been adjusted accordingly and the revised matrices for the 'with development & mitigation' and 'with development & symmetry park' scenarios are presented in **Appendix J** and **Appendix K** respectively.

4 REVISED HIGHWAY IMPACT ASSESSMENTS

General

4.1 In this section the impact of the hybrid proposals on the performance of individual junctions within the study area is assessed. Assessments have been undertaken in 2026 when the development is expected to be complete and fully operational. Assessments are based on the output from LLITM using the adjusted traffic flows described in the previous section. Assessments are undertaken for three modelled scenarios using proprietary junction modelling software ARCADY, PICADY and TRANSYT. The three scenarios are:

- 2026 without development
- 2026 with development & mitigation
- 2026 with development & symmetry park

New Roundabout on Mere Lane (Southern Access to Magna Park Extension)

4.2 As part of the planning consent for DHL a new roundabout will be constructed on Mere Lane that will provide a connection to the existing Magna Park to the south and the A5 to the west. To access the DHL unit, a new access road will be constructed to form the north western arm of the roundabout. This access road will be extended to provide access to the proposed development.

4.3 A drawing showing the proposed roundabout was presented as Appendix D of the original Transport Assessment (Drawing No. 47066811/A008/SK12).

4.4 The results of the ARCADY assessments for the 'with development' and 'with development & symmetry park' scenarios are summarised in the tables below. This roundabout was not modelled in LLITM in the 'without development' scenario as when the modelling was undertaken DHL was not a consented development. Full model printouts for the two modelled scenarios are presented in **Appendix L**.

Table 4-1: Summary of the Main Performance Indicators at New Roundabout on Mere Lane – 2026 With Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Site Access Road	0.141	0	0.244	0
Mere Lane East	0.296	0	0.188	0
Argosy Way	0.172	0	0.201	0
Mere Lane West	0.540	1	0.324	0

4.5 Table 4-1 indicates that with the development the new roundabout on Mere Lane would operate within capacity in 2026 with a maximum of RFC of 0.54 on Mere Lane west during the AM peak.

Table 4-2: Summary of the Main Performance Indicators at New Roundabout on Mere Lane – 2026 With Development & symmetry park

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Site Access Road	0.138	0	0.245	0
Mere Lane East	0.335	1	0.186	0
Argosy Way	0.174	0	0.202	0
Mere Lane West	0.511	1	0.325	0

4.6 Table 4-2 indicates that the new roundabout on Mere Lane would continue to operate within capacity with the addition of traffic associated with symmetry park.

A5/ Mere Lane

4.7 This is currently a ghost island priority junction, however as part of the planning consent for DHL the junction will be upgraded to a roundabout.

4.8 The results of the ARCADY assessments for the three modelled scenarios are summarised in the tables below. The 'without development' includes traffic associated with the consented DHL development. Full model printouts are presented in **Appendix L**.

Table 4-3: Summary of the Main Performance Indicators at New Roundabout A5/ Mere Lane – 2026 Without Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.593	1	0.325	0
Mere Lane	0.140	0	0.101	0
A5 South	0.430	1	0.620	2

4.9 Table 4-3 indicates that the new roundabout at the A5/ Mere Lane junction would operate within capacity during both peaks without development.

Table 4-4: Summary of the Main Performance Indicators at New Roundabout A5/ Mere Lane – 2026 With Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.748	3	0.494	1
Mere Lane	0.231	0	0.262	0
A5 South	0.490	1	0.643	2

4.10 Table 4-4 indicates that with the addition of the proposed development, the new roundabout at the A5/ Mere Lane junction would continue to operate within capacity.

Table 4-5: Summary of the Main Performance Indicators at New Roundabout A5/ Mere Lane – 2026 With Development & symmetry park				
	AM Peak		PM Peak	
Approach Arm	RFC	Queue	RFC	Queue
A5 North	0.748	3	0.494	1
Mere Lane	0.231	0	0.262	0
A5 South	0.490	1	0.643	2

4.11 Table 4-5 indicates that the A5/ Mere Land roundabout would continue to operate within capacity with the addition of symmetry park.

Proposed Roundabout on the A5 (Northern Access to Magna Park Extension)

4.12 Access to the northern part of the development is proposed via a new roundabout on the A5 approximately 260 metres south of White House Farm. The provision of two points of access, one at both ends of the development, will allow an internal highway connection to be provided within the site. This is beneficial in highway terms as it provides flexibility in terms of access and egress options allowing the impact of the development to be dispersed more evenly across the external highway network.

4.13 However for the purposes of this assessment it is assumed that all traffic generated by development that is situated within and to the south of the Magna Park Hub, including the Logistics Institute, the Innovation Centre, Holovis and four B8 units, will use the southern access route, while all traffic generated by the four B8 units to the north of the Magna Park Hub will use the northern access route. Manual adjustments were made to the LLITM output to reflect these assumptions.

4.14 This is considered to present the worst case as in practise some development related traffic will use the internal road network within Magna Park (both proposed and existing) rather than joining the external highway network at the access that is closest to the point of origin/destination.

4.15 The results of the ARCADY assessment in 2026 in the ‘with development’ scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

Table 4-6: Summary of the Main Performance Indicators at New A5 North Access – 2026 With Development				
	AM Peak		PM Peak	
Approach Arm	RFC	Queue	RFC	Queue
A5 North	0.713	2	0.354	1
Proposed Access	0.089	0	0.099	0
A5 South	0.444	1	0.661	2

4.16 Table 4-6 indicates that the proposed roundabout on the A5 would operate within capacity in 2026 with development.

Table 4-7: Summary of the Main Performance Indicators at New A5 North Access – 2026 With Development & symmetry park

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A5 North	0.717	3	0.355	1
Proposed Access	0.089	0	0.098	0
A5 South	0.450	1	0.678	2

4.17 Table 4-7 indicates that the proposed roundabout on the A5 would continue to operate within capacity with the addition of symmetry park.

A4303/ Hunter Boulevard

4.18 The results of the ARCADY assessment in 2026 for the three modelled scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

4.19 Peter Brett Associates (PBA) has proposed the following improvements at this junction to accommodate the symmetry park development. The ARCADY model for the 'with development & symmetry park' scenario (Table 4-10) has been updated accordingly.

- A4303 West – entry width increased to 11.0m
- A4303 West - Flare length increased to 45.0m

Table 4-8: Summary of the Main Performance Indicators at the A4303/ Hunter Boulevard Roundabout – 2026 Without Development

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Hunter Boulevard	0.328	0	0.482	1
A4303 East	0.800	4	0.455	1
Access to George	0.035	0	0.248	0
A4303 West	0.823	5	0.512	1

4.20 Table 4-8 indicates that the A4303/ Hunter Boulevard junction would operate within capacity in 2026 without development.

Table 4-9: Summary of the Main Performance Indicators at the A4303/ Hunter Boulevard Roundabout – 2026 With Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Hunter Boulevard	0.336	1	0.427	1
A4303 East	0.819	4	0.446	1
Access to George	0.031	0	0.251	0
A4303 West	0.723	3	0.489	1

4.21 Table 4-9 indicates that the A4303/ Hunter Boulevard junction would continue to operate within capacity with the addition of the development traffic. The reduction in RFC predicted on the A4303 west arm is a result of some traffic from the existing Magna Park using the new access route via Mere Lane.

Table 4-10: Summary of the Main Performance Indicators at the A4303/ Hunter Boulevard Roundabout – 2026 With Development & symmetry park

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Hunter Boulevard	0.382	1	0.453	1
A4303 East	0.822	5	0.500	1
Access to George	0.034	0	0.282	0
A4303 West	0.638	2	0.415	1

4.22 Table 4-10 indicates that the A4303/ Hunter Boulevard junction would operate within capacity with the addition of symmetry park.

Cross In Hand Roundabout

4.23 The results of the ARCADY assessment in 2026 for the three modelled scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

4.24 PBA has proposed the following improvements at this junction to accommodate the symmetry park development. The ARCADY model for the 'with development & symmetry park' scenario (Table 4-13) has been updated accordingly.

- A5 north – entry width increased to 8.6m
- A5 north – flare length increased to 60.0m
- A4303 – entry width increased to 8.6m

Table 4-11: Summary of the Main Performance Indicators at the Cross In Hand Roundabout – 2026 Without Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.960	15	0.536	1
A4303	0.837	5	0.776	3
A5 South	0.686	2	0.795	4
B4027 Lutterworth Rd	0.481	1	0.825	4
Coal Pit Lane	0.685	2	0.509	1

4.25 Table 4-11 indicates that the Cross In Hand roundabout would operate within capacity in the AM peak without development albeit with an RFC above the desirable maximum value of 0.85 on the A5 north. The junction is predicted to be operating below the 0.85 threshold during the PM peak.

Table 4-12: Summary of the Main Performance Indicators at the Cross In Hand Roundabout – 2026 With Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.830	5	0.536	1
A4303	0.826	5	0.671	2
A5 South	0.710	2	0.746	3
B4027 Lutterworth Rd	0.528	1	0.752	3
Coal Pit Lane	0.595	1	0.522	1

4.26 Table 4-12 indicates that there would be improvements in the performance of the Cross in Hand roundabout with the proposed development. The most significant improvement is expected on the A5 north approach during the AM peak where the RFC is predicted to fall from 0.960 without development to 0.830 with development. The corresponding impact on the queue length is for it to reduce from 15 to five vehicles. During the PM peak, capacity improvements are predicted on three of the five arms at the junction.

4.27 The improvement at this junction is a result of some traffic from the existing Magna Park using the new access route via Mere Lane thus avoiding the Cross in Hand roundabout completely. The improvements at this junction demonstrate the wider benefits of the consented access arrangements for DHL.

Table 4-13: Summary of the Main Performance Indicators at the Cross In Hand Roundabout – 2026 With Development & symmetry park

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.773	3	0.475	1
A4303	0.815	4	0.715	2
A5 South	0.803	4	0.857	6
B4027 Lutterworth Rd	0.504	1	0.676	2
Coal Pit Lane	0.733	3	0.622	2

4.28 Table 4-13 indicates that the Cross in Hand roundabout would operate within capacity with symmetry park albeit with an RFC in excess of 0.85 on the A5 south during the PM peak.

A4303/ Coventry Road

4.29 The results of the ARCADY assessment in 2026 for the three modelled scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

Table 4-14: Summary of the Main Performance Indicators at the A4303/ Coventry Road Roundabout – 2026 Without Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Coventry Road	0.816	4	0.556	1
A4303 East	0.752	3	0.493	1
Mobile Home Park	0.069	0	0.020	0
A4303 West	0.445	1	0.742	3

4.30 Table 4-14 indicates that the A4303/ Coventry Road roundabout would operate within capacity during both peaks in 2026 without development.

Table 4-15: Summary of the Main Performance Indicators at the A4303/ Coventry Road Roundabout – 2026 With Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Coventry Road	0.792	4	0.569	1
A4303 East	0.806	4	0.536	1
Mobile Home Park	0.077	0	0.021	0
A4303 West	0.466	1	0.776	3

4.31 Table 4-15 indicates that the A4303/ Coventry Road roundabout would continue to operate within capacity in 2026 with the addition of the development traffic.

Table 4-16: Summary of the Main Performance Indicators at the A4303/ Coventry Road Roundabout – 2026 With Development & symmetry park

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
Coventry Road	0.797	4	0.593	1
A4303 East	0.839	5	0.548	1
Mobile Home Park	0.089	0	0.021	0
A4303 West	0.472	1	0.812	4

4.32 Table 4-16 indicates that the A4303/ Coventry Road roundabout would continue to operate within capacity in 2026 with the addition of symmetry park

A4303/ A426

4.33 As part of the planning consent for DHL this junction will be improved to enhance capacity. A drawing showing the roundabout improvements was presented in Appendix X of the original Transport Assessment (Drawing No. 47066811/A008/SK14).

4.34 The results of the ARCADY assessment in 2026 for the three modelled scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

Table 4-17: Summary of the Main Performance Indicators at the A4303/ A426 Roundabout – 2026 Without Development

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A426 North	0.823	5	0.803	4
A4303 East	0.967	20	0.773	3
A426 South	0.687	2	0.742	3
A4303 West	0.554	1	0.743	3

4.35 Table 4-17 indicates that the A4303/ A426 roundabout would operate within capacity without development in 2026 albeit with an RFC in excess of the desirable maximum value of 0.85 on the A4303 east during the AM peak.

Table 4-18: Summary of the Main Performance Indicators at the A4303/ A426 Roundabout – 2026 With Development

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A426 North	0.850	5	0.863	6
A4303 East	1.010	41	0.813	4
A426 South	0.716	2	0.769	3
A4303 West	0.587	1	0.818	4

4.36 Table 4-18 indicates that during the AM peak the A4303/ A426 roundabout would be operating just above capacity with development. The critical arm is the A4303 east where an RFC of just over 1.00 is predicted. The remaining arms are predicted to be operating within capacity. During the PM peak the junction is predicted to be operating within capacity with a maximum RFC of 0.863 on the A426 north.

Table 4-19: Summary of the Main Performance Indicators at the A4303/ A426 Roundabout – 2026 With Development & symmetry park

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
A426 North	0.862	6	0.883	7
A4303 East	1.030	58	0.824	5
A426 South	0.737	3	0.786	4
A4303 West	0.599	1	0.853	6

4.37 Table 4-19 indicates that during the AM peak the A4303/ A426 roundabout would be operating above capacity with symmetry park. The critical arm is the A4303 east where an RFC of 1.03 and a queue of 58 vehicles is predicted. During the PM peak the junction is predicted to be operating within capacity with a maximum RFC of 0.883 on the A426 north

M1 Junction 20

4.38 The results of the ARCADY assessment in 2026 for the three modelled scenarios are summarised in the tables below. Full model printouts from this analysis are presented in **Appendix L**.

4.39 PBA has proposed the following improvements at this junction to accommodate the symmetry park development. The ARCADY model for the 'with development & symmetry park' scenario (Table 4-22) has been updated accordingly.

- A4304 – entry width increased to 9.0m
- A4304 – flare length increased to 150m

Table 4-20: Summary of the Main Performance Indicators at M1 Junction 20 – 2026 Without Development

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
M1 Southbound off-slip	0.571	1	0.451	1
A4304	0.887	7	0.516	1
M1 Northbound off-slip	0.543	1	0.474	1
A4303	0.682	2	0.714	2

4.40 Table 4-20 indicates that without development M1 Junction 20 would operate within capacity during both peaks albeit with an RFC above 0.85 on the A4304 during the AM peak. During the PM peak all arms are predicted to be operating within 0.85.

Table 4-21: Summary of the Main Performance Indicators at M1 Junction 20 – 2026 With Development

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
M1 Southbound off-slip	0.622	2	0.474	1
A4304	0.961	14	0.533	1
M1 Northbound off-slip	0.586	1	0.492	1
A4303	0.706	2	0.753	3

4.41 Table 4-21 indicates that with development M1 Junction 20 would continue to operate within capacity albeit with an RFC in excess of 0.85 on the A4304 during the AM peak. During the PM peak all arms are predicted to be operating within the 0.85 threshold.

Table 4-22: Summary of the Main Performance Indicators at M1 Junction 20 – 2026 With Development & symmetry park

Approach Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
M1 Southbound off-slip	0.830	5	0.628	2
A4304	0.785	4	0.446	1
M1 Northbound off-slip	0.668	2	0.538	1
A4303	0.790	4	0.855	6

4.42 Table 4-22 indicates that with symmetry park M1 Junction 20 would operate within capacity albeit with an RFC in excess of 0.85 on the A4303 during the PM peak. During the AM peak all arms are predicted to be operating within 0.85 although the M1 southbound off-slip is approaching the 0.85 threshold.

M69 Junction 1

4.43 The results of the TRANSYT assessment in 2026 for the three modelled scenarios are summarised in the tables below. Approach links are shown in italics. A TRANSYT link/node diagram is presented in **Appendix M**. Full model printouts from this analysis are presented in **Appendix L.**

Table 4-23: Summary of the Main Performance Indicators at M69 Junction 1 – 2026 Without Development

Link		AM Peak		PM Peak	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M69 eastbound off-slip – inside/middle lanes*	80	12	88	20
11	*M69 eastbound off-slip – outside lane*	46	3	62	6
12	Circulating – inside lane	54	4	46	5
13	Circulating – middle lane	47	2	48	6
14	Circulating – outside lane	41	3	46	5
20	*A5 North – inside lane*	59	2	60	7
21	*A5 North – middle/outside lanes*	85	15	89	18
22	Circulating – Inside/middle lane	48	8	62	11
23	Circulating – outside lane	19	0	28	0
30	*B4109 Rugby Rd – inside lane*	30	2	23	1
31	*B4109 Rugby Rd – middle/outside lanes*	120	142	90	14
32	Circulating – inside lane	65	10	44	4
33	Circulating – middle lane	65	11	58	7
34	Circulating – outside lane	25	0	18	0
40	*M69 westbound off-slip – inside lane*	148	73	124	65
41	*M69 westbound off-slip – middle/outside lanes*	91	13	42	7
42	Circulating – inside lane	94	18	94	24
43	Circulating – outside lane	63	5	37	3
50	*A5 South – inside lane*	70	5	47	3
51	*A5 South – middle/outside lanes*	85	13	89	17
52	Circulating – inside lane	51	3	59	7
53	Circulating – middle lane	62	6	33	5
54	Circulating – middle/outside lanes	22	0	15	1
60	*B4109 Hinckley Road – inside/outside lanes*	52	3	47	3
61	Circulating – all lanes	39	0	28	0

4.44 Table 4-23 indicates that without development M69 Junction 1 would operate well above capacity in 2026 during both peaks. During the AM peak the critical parts of the junction are the B4109 (Rugby Road) and the M69 westbound off-slip where high degrees of saturation and long queues are predicted on the approach arms. During the PM peak the M69 westbound off-slip is predicted to be operating above capacity with a queue of 65 pcus on the inside lane of the slip road and 24 pcus on the inside lane of the circulatory carriageway.

Table 4-24: Summary of the Main Performance Indicators at M69 Junction 1 – 2026 With Development

Link		AM Peak		PM Peak	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M69 eastbound off-slip – inside/middle lanes*	86	13	88	20
11	*M69 eastbound off-slip – outside lane*	55	4	64	6
12	Circulating – inside lane	51	3	46	5
13	Circulating – middle lane	45	2	48	6
14	Circulating – outside lane	39	3	46	5
20	*A5 North – inside lane*	54	6	59	7
21	*A5 North – middle/outside lanes*	85	15	88	17
22	Circulating – Inside/middle lane	49	8	62	11
23	Circulating – outside lane	21	0	28	0
30	*B4109 Rugby Rd – inside lane*	32	2	22	1
31	*B4109 Rugby Rd – middle/outside lanes*	138	216	86	14
32	Circulating – inside lane	60	7	45	4
33	Circulating – middle lane	64	6	59	7
34	Circulating – outside lane	24	0	18	0
40	*M69 westbound off-slip – inside lane*	138	65	137	87
41	*M69 westbound off-slip – middle/outside lanes*	81	10	46	7
42	Circulating – inside lane	95	18	94	23
43	Circulating – outside lane	59	5	36	4
50	*A5 South – inside lane*	73	5	48	3
51	*A5 South – middle/outside lanes*	84	13	89	17
52	Circulating – inside lane	51	3	58	7
53	Circulating – middle lane	57	5	34	5
54	Circulating – middle/outside lanes	21	0	15	1
60	*B4109 Hinckley Road – inside/outside lanes*	50	2	48	3
61	Circulating – all lanes	38	0	29	0

4.45 Table 4-24 indicates that with development M69 Junction 1 would operate above capacity during both peaks. Comparing the 'without development' scenario and the 'with development' scenario during the AM peak it is apparent that with the addition of the development there would be a deterioration in performance at the B4109 (Rugby Road) but an improvement at the M69 westbound off-slip. During the PM peak the degree of saturation on the westbound off-slip is predicted to increase from 124% without development to 137% with development.

Table 4-25: Summary of the Main Performance Indicators at M69 Junction 1 – 2026 With Development & symmetry park

Link		AM Peak		PM Peak	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M69 eastbound off-slip – inside/middle lanes*	85	13	87	20
11	*M69 eastbound off-slip – outside lane*	55	4	64	6
12	Circulating – inside lane	51	3	46	7
13	Circulating – middle lane	45	2	49	9
14	Circulating – outside lane	39	3	46	6
20	*A5 North – inside lane*	52	5	59	7
21	*A5 North – middle/outside lanes*	83	15	89	18
22	Circulating – Inside/middle lane	50	9	62	10
23	Circulating – outside lane	22	0	28	0
30	*B4109 Rugby Rd – inside lane*	35	2	23	1
31	*B4109 Rugby Rd – middle/outside lanes*	150	257	91	15
32	Circulating – inside lane	58	6	44	4
33	Circulating – middle lane	64	6	59	8
34	Circulating – outside lane	23	0	18	1
40	*M69 westbound off-slip – inside lane*	140	68	147	103
41	*M69 westbound off-slip – middle/outside lanes*	80	10	50	7
42	Circulating – inside lane	93	16	92	16
43	Circulating – outside lane	56	3	35	1
50	*A5 South – inside lane*	74	6	48	3
51	*A5 South – middle/outside lanes*	84	13	90	18
52	Circulating – inside lane	50	3	55	6
53	Circulating – middle lane	55	5	33	7
54	Circulating – middle/outside lanes	21	0	15	0
60	*B4109 Hinckley Road – inside/outside lanes*	49	2	48	3
61	Circulating – all lanes	49	2	29	0

4.46 Table 4-25 indicates that the performance of M69 Junction 1 would deteriorate further with the addition of symmetry park. During the AM peak the degree of saturation of the B4109 (Rugby Road) is predicted to increase from 138% with development to 150% with development & symmetry park. The corresponding increase on the M69 westbound off-slip during the PM peak is from 140% with development to 147% with development & symmetry park.

Gibbet Hill Roundabout

4.47 There is a committed scheme as part of DIRFT III to upgrade Gibbet Hill to a signalised roundabout. It is understood that the scheme has been approved by Highways England. It is also understood that the Development Consent Order for DIRFT III stipulates that the improvements are to be implemented prior to the occupation of no more than 305,000m^2 of the development. This is less than half of the total floorspace (731,000m^2) and based on completion of the first building at the end of 2016[1], and a 17-year build out programme, the expectation is that the junction will have been upgraded by 2023.

4.48 The DIRFT III scheme includes carriageway widening, improved carriageway markings and the signalisation of the approach and circulatory carriageways of the A426 north, A5 north and A5 south. The improvements are shown on a drawing prepared by Vectos (Drawing No. 110041/PD/08 Rev D). The drawing was presented in the original Transport Assessment as Appendix Y.

4.49 At the beginning of February 2016 the first Supplementary Transport Assessment was prepared for the hybrid application in response to comments received by Highways England. One of the comments related to the Gibbet Hill roundabout to provide a suitable mitigation scheme in the event that the conditioned improvements as part of DIRFT III are delayed; or accept a condition that no more than 100,844m^2 of B8 (DHL detailed application) will be occupied at Magna Park before the improvements to Gibbet Hill as part of DIRFT III have been delivered.

4.50 IDI Gazeley does not wish to accept a condition that limits the amount of development that can be occupied at Magna Park prior to improvements being made to the junction. At the same time IDI Gazeley does not wish to rely on other developers to provide the necessary improvements at Gibbet Hill as this may delay the desired rate of occupation at Magna Park. IDI Gazeley is therefore proposing to partially signalise the Gibbet Hill roundabout to accommodate the proposed extension at Magna Park. A copy of the proposed layout is presented in **Appendix N**.

4.51 As part of the symmetry park development there is also a proposal to upgrade the Gibbet Hill roundabout to partial signalisation as part of its proposals for development to the south of the A4303. The Transport Assessment prepared in support of the application does not identify when the improvement would be provided should planning permission be granted. However in its formal response to the planning application to Harborough District Council,

[1] ProLogis Website (http://www.dirft.com

Highways England proposes a condition whereby the Gibbet Hill junction improvements must be constructed prior to first occupation of the development.

4.52 Both the symmetry park and IDI Gazeley proposals would involve the signalisation of the A426 south arm as well as the three arms that will be signalised as part of the DIRFT III scheme.

4.53 There is the potential in 2026 in the 'without development' scenario that the rate of development at DIRFT III will not have triggered the need to upgrade the junction. At the same time symmetry park may not achieve its planning consent and therefore the need to upgrade the junction as part of that development will also not have been triggered. To reflect the uncertainty surrounding the status of the Gibbet Hill roundabout in 2026, it has been modelled both in its current form and with the DIRFT III improvement in the 'without development' scenario.

4.54 The results of the ARCADY and TRANSYT assessments in 2026 for the three modelled scenarios are summarised in the tables below. In the TRANSYT summary tables, approach links are shown in italics. Full model printouts from this analysis are presented in **Appendix L**. The TRANSYT link/node diagrams for both the DIRFT III scheme and the proposed IDI Gazeley scheme are presented in **Appendix M**.

Table 4-26: Summary of the Main Performance Indicators at the Gibbet Hill Roundabout – 2026 Without Development – Existing Junction Layout

	AM Peak		PM Peak	
Approach Arm	**RFC**	**Queue**	**RFC**	**Queue**
A5 North	0.284	0	0.240	0
A426 North	0.412	1	0.636	2
Gibbet Lane	1.121	94	1.098	71
A5 South	0.745	3	0.621	2
A426 South	0.625	2	0.615	2

4.55 Table 4-26 indicates that in 2026 without development the Gibbet Hill roundabout would be operating above capacity if no improvements are made to the junction. The critical arm is the A426 south where RFC values in excess of 1.00 and long queues are predicted during both peaks.

Table 4-27: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 Without Development – DIRFT III Improved Junction Layout

Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*A5 north – inside lane*	94	13	83	8
11	*A5 north – outside lane*	66	6	92	12
12	Circulating – inside lane	81	9	81	14

Table 4-27: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 Without Development – DIRFT III Improved Junction Layout					
Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
13	Circulating – outside lane	17	1	14	1
20	*A426 north – inside lane*	78	5	64	6
21	*A426 north – outside lane*	73	5	60	6
22	Circulating – inside lane	66	7	49	5
23	Circulating – outside lane	40	4	40	7
30	*Gibbet Lane – all lanes*	23	1	19	1
31	Circulating – all lanes	29	0	25	0
40	*A5 south – inside lane*	84	7	87	13
41	*A5 south – outside lane*	19	1	23	2
42	Circulating – inside lane	48	4	58	5
43	Circulating – outside lane	43	3	52	4
50	*A426 south – all lanes*	93	17	89	18
51	Circulating – all lanes	13	0	19	0

4.56 Table 4-27 indicates that in 2026 without development the Gibbet Hill roundabout would be operating within capacity if the DIRFT III improvements have been implemented at the junction.

Table 4-28: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 With Development – IDI Gazeley Proposed Junction Layout					
Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*A5 north – inside lane*	92	12	78	6
11	*A5 north – outside lane*	66	6	93	11
12	Circulating – inside lane	72	4	80	11
13	Circulating – outside lane	15	1	13	1
20	*A426 north – inside lane*	71	5	71	5
21	*A426 north – outside lane*	66	5	66	5
22	Circulating – inside lane	60	3	44	2
23	Circulating – outside lane	36	3	38	3
30	*Gibbet Lane – all lanes*	22	1	19	0

Table 4-28: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 With Development – IDI Gazeley Proposed Junction Layout

Link		AM Peak		PM Peak	
No.	Description	Sat %	Queue	Sat %	Queue
31	Circulating – all lanes	29	0	26	0
40	*A5 south – inside lane*	77	6	84	9
41	*A5 south – outside lane*	16	1	24	2
42	Circulating – inside lane	44	2	60	3
43	Circulating – outside lane	39	2	50	2
50	*A426 south – all lanes*	94	23	91	18
51	Circulating – inside lane	57	1	68	1
52	Circulating – outside lane	17	0	22	0

4.57 Table 4-28 indicates that the Gibbet Hill roundabout would operate within capacity during both peaks with the development traffic. It is apparent therefore that the proposed roundabout improvements would provide the necessary capacity to accommodate the traffic associated with all committed development and the proposed development.

Table 4-29: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 With Development & symmetry park – IDI Gazeley Proposed Junction Layout

Link		AM Peak		PM Peak	
No.	Description	Sat %	Queue	Sat %	Queue
10	*A5 north – inside lane*	92	12	90	10
11	*A5 north – outside lane*	66	6	74	6
12	Circulating – inside lane	73	5	82	8
13	Circulating – outside lane	15	1	18	1
20	*A426 north – inside lane*	78	5	76	6
21	*A426 north – outside lane*	73	5	71	5
22	Circulating – inside lane	58	2	59	3
23	Circulating – outside lane	35	3	36	3
30	*Gibbet Lane – all lanes*	22	1	13	0
31	Circulating – all lanes	29	0	29	0
40	*A5 south – inside lane*	84	7	88	10
41	*A5 south – outside lane*	17	1	10	1
42	Circulating – inside lane	43	2	50	2
43	Circulating – outside lane	38	2	46	2

Table 4-29: Summary of the Main Performance Indicators at Gibbet Hill Roundabout – 2026 With Development & symmetry park – IDI Gazeley Proposed Junction Layout

Link		AM Peak		PM Peak	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
50	*A426 south – all lanes*	95	24	102	48
51	Circulating – inside lane	61	1	86	4
52	Circulating – outside lane	17	0	12	0

4.58 Table 4-29 indicates that the Gibbet Hill roundabout would operate above capacity during the PM peak with symmetry park. The critical part of the junction is the A426 south where a degree of saturation of 102% and a queue of 48 pcus is predicted on the approach arm.

M6 Junction 1

4.59 The results of the TRANSYT assessment in 2026 for the three modelled scenarios are summarised in the tables below. Approach links are shown in italics. A TRANSYT link/node diagram is presented in **Appendix M.** Full model printouts from this analysis are presented in **Appendix L**.

Table 4-30: Summary of Main Performance Indicators at M6 J1 – 2026 Without Development

Link		AM Peak		PM Peak	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M6 eastbound off-slip – inside lane*	91	9	85	7
11	*M6 eastbound off-slip – middle/outside lanes*	70	9	52	5
12	Circulating – inside/middle lanes	53	9	42	7
13	Circulating – outside lane	31	3	28	2
20	*A426 north – inside/outside lanes*	66	4	65	4
21	Circulating – all lanes	24	0	18	0
30	*M6 westbound off-slip – inside lane*	96	13	87	8
31	*M6 westbound off-slip - middle/outside lanes*	39	5	38	4
32	Circulating – inside/middle lanes	80	13	68	11
33	Circulating – outside lane	30	2	30	2
40	*A426 south – inside/outside lanes*	91	10	73	1
41	Circulating – all lanes	10	0	10	0

4.60 Table 4-30 indicates that in 2026 without development M6 Junction 1 would operate within capacity during both peaks.

Table 4-31: Summary of Main Performance Indicators at M6 J1 – 2026 With Development					
Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M6 eastbound off-slip – inside lane*	87	8	86	7
11	*M6 eastbound off-slip – middle/outside lanes*	62	8	53	6
12	Circulating – inside/middle lanes	53	11	41	6
13	Circulating – outside lane	31	3	28	2
20	*A426 north – inside/outside lanes*	66	5	69	4
21	Circulating – all lanes	24	0	19	0
30	*M6 westbound off-slip – inside lane*	91	11	90	9
31	*M6 westbound off-slip - middle/outside lanes*	37	5	36	4
32	Circulating – inside/middle lanes	77	12	72	11
33	Circulating – outside lane	29	3	31	3
40	*A426 south – inside/outside lanes*	92	13	74	1
41	Circulating – all lanes	10	0	10	0

4.61 Table 4-31 indicates that with the addition of the development traffic M6 Junction 1 would continue to operate within capacity during both peaks.

Table 4-32: Summary of Main Performance Indicators at M6 J1 – 2026 With Development & symmetry park					
Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
10	*M6 eastbound off-slip – inside lane*	91	10	89	8
11	*M6 eastbound off-slip – middle/outside lanes*	62	8	52	5
12	Circulating – inside/middle lanes	55	11	42	7
13	Circulating – outside lane	31	3	28	2
20	*A426 north – inside/outside lanes*	66	5	72	5
21	Circulating – all lanes	24	0	18	0
30	*M6 westbound off-slip – inside lane*	90	10	93	10
31	*M6 westbound off-slip - middle/outside lanes*	37	5	42	4
32	Circulating – inside/middle lanes	77	12	71	11
33	Circulating – outside lane	30	3	30	2
40	*A426 south – inside/outside lanes*	94	15	75	1

Table 4-32: Summary of Main Performance Indicators at M6 J1 – 2026 With Development & symmetry park					
Link		**AM Peak**		**PM Peak**	
No.	**Description**	**Sat %**	**Queue**	**Sat %**	**Queue**
41	Circulating – all lanes	10	0	11	0

4.62 Table 4-32 indicates that with the addition of symmetry park M6 Junction 1 would continue to operate within capacity during both peaks.

5 UPDATE ON SUSTAINABLE MEANS OF TRANSPORT

Public Transport Improvements

5.1 Since the hybrid application was submitted in October 2015 there has been significant progress towards improving the public transport offer at Magna Park. Following a meeting with Arriva on 4 February 2016 it was confirmed that they will be introducing a new bus service between Leicester and Magna Park from the beginning of April 2016. Route X45, which will operate between Thurmaston and Magna Park via Leicester city centre and Lutterworth High Street, will in the first instance operate one return service at each shift changeover at 6am, 2pm and 10pm. A route map and timetable for the X45 are presented in **Appendix O**.

5.2 In discussion with Arriva it is apparent that should the service prove to be successful there is scope to operate additional services both to satisfy additional demand at the shift changeover if it exists and to extend the service to other parts of the day most notably the traditional peak hours. There may also be opportunities to introduce other new services and/or to enhance the existing Route 8 between Hinckley and Lutterworth. One option that was discussed in relation to Route 8 was providing an extension to Nuneaton where based on Census data and on recent surveys undertaken at Magna Park, a significant proportion of the Magna Park workforce resides.

5.3 On 2 March 2016 there was a meeting with Stagecoach to discuss public transport improvements at Magna Park. Stagecoach confirmed that it will be introducing a new bus service between Rugby and Magna Park from the beginning of May 2016. The service will be introduced on a trial basis for a minimum of six months. The details of the service are still to be finalised but Stagecoach has produced a draft timetable which is presented in **Appendix P.** The draft timetable indicates that the service will be focused on the main shift changeover times with the potential to provide additional services to cater for the more traditional peak hours.

5.4 In common with the new Arriva service it was suggested by Stagecoach that should the service prove to be successful there is scope to operate additional services from Rugby and the potential of introducing services from other locations such as Nuneaton and Coventry.

5.5 In order to promote the new service Stagecoach indicated that it would also be willing to offer introductory concessions for any new employee using the service. A typical example would be a half price weekly ticket for the first week of employment.

5.6 To support the public transport improvements at Magna Park, IDI Gazeley is currently reviewing the bus stop provision with a view to providing additional stops and to upgrade existing facilities. As a minimum the intention is for each stop to have a flag, a pole and updated timetable information together with shelters and seating. IDI Gazeley will work closely with the bus operators and LCC to ensure that bus stops are located in optimum locations and that the most appropriate facilities are provided.

Magna Park Travel Survey

5.7 IDI Gazeley is continuing to work closely with the Sustainable Travel Team at LCC with the overriding objective of promoting sustainable transport opportunities at Magna Park. One of the first tasks is to undertake a site wide employee travel survey where the prime objective is to identify the specific travel requirements of Magna Park employees. Once these are established, tailored measures can be introduced to maximise the opportunities for everyone employed at Magna Park to travel by sustainable means.

5.8 The site wide travel survey began during the week commencing Monday 29 February 2016 and will continue until the end of March 2016. The survey has been designed and will be analysed by LCC and is seen as the vital first step in understanding the travel needs of existing employees and to help identify the measures that are most likely to encourage employees to make sustainable transport choices. A copy of the Travel Survey is presented in **Appendix P**.

5.9 To encourage employees to complete the survey IDI Gazeley has provided three prizes that all participants will have an opportunity to win in a prize draw. The prizes are an iPad, a hamper and a voucher for a night for two people in a London hotel. The quality of the prizes emphasises the commitment of IDI Gazeley to the travel survey and more generally to the range of travel planning initiatives that are being pursued at Magna Park. Banners and signs have also been erected at roundabouts and on lamp columns around Magna Park to advertise the survey and to remind employees that prizes are on offer for those that choose to complete it.

5.10 The travel surveys are not a requirement of the hybrid application but are a further demonstration of the commitment from IDI Gazeley to promote the use of sustainable means of transport at Magna Park. Should the hybrid application be consented, the occupier of each new unit would be obliged to undertake their own staff travel surveys as part of the travel planning process. This will increase the opportunities for car sharing across Magna Park as a whole and add to the viability of the new bus services that are in the process of being introduced and help to secure their future.

Car Sharing

5.11 An important part of the travel survey is to establish where employees live and how they currently travel to work. This information can then be plotted on a map allowing clusters of employee residence locations to be identified which can then be used to plan new bus services and identify the potential for car sharing. At distribution parks where large numbers of employees work fixed shift patterns, car sharing is seen as having great potential in encouraging a reduction in single car occupancy.

5.12 IDI Gazeley recognises the potential of car sharing at Magna Park and in collaboration with LCC is committed to introducing a site wide car sharing scheme operated by Liftshare. The scheme will enable all employees to submit their names to a car sharing database with the objective of identifying individual travel patterns and making the opportunity for car sharing more visible. The introduction of a site wide scheme expands the opportunity for car sharing between employees of different businesses at Magna Park.

5.13 Liftshare will start to formally engage with Magna Park businesses in April/May 2016 and will use the results of the travel survey as the basis of the car sharing scheme. The database will be reviewed on a regular basis to make sure that it is kept up to date.

Other Initiatives

5.14 IDI Gazeley is currently considering a proposal from Go Travel Solutions aimed at enhancing sustainable travel options for employees at Magna Park. There are two distinct elements to the proposal. The first is to introduce a Smartgo travel network which would provide Magna Park employers and their staff with a range of travel discounts and incentives. The second is an assessment on the location and scale of the potential labour market for Magna Park that could be unlocked by for example new public transport links or a car sharing scheme. The focus of the study would be on Leicester, Coventry, Hinckley, Rugby and their surroundings.

5.15 Although there is no evidence to indicate that Magna Park HGVs are in breach of the routing agreement, IDI Gazeley is working closely with the School of Engineering and Applied Science at Aston University to develop a satellite navigation system for HGV drivers to comply with prescribed routing agreements. This work is in its very early stages but demonstrates a commitment from IDI Gazeley to address local concerns regarding the inappropriate use by HGVs of roads covered by the existing routing agreement.

5.16 The ongoing travel planning initiatives at Magna Park are helping to foster a culture of collaboration between public transport operators, Liftshare, LCC, IDI Gazeley and the Magna Park businesses and demonstrate the shared determination that exists to improve the opportunities for sustainable travel at Magna Park.

6 CONCLUSIONS

6.1 This second Supplementary Transport Assessment has been prepared to consider the impact of the proposed expansion at Magna Park that has been tested using the Leicester and Leicestershire Integrated Transport Model (LLITM). For a development on the scale of that being promoted by the hybrid planning application, Leicestershire County Council (LCC) required the impact of the development on the surrounding highway network to be tested using LLITM.

6.2 Highways England has reviewed the original Transport Assessment prepared for the hybrid application and requested some further information to help in its consideration of the traffic impact. The original Transport Assessment was based on a manual assessment of the traffic impact of the hybrid proposals and was based on the scope that was agreed for the Transport Assessment that was prepared in support of the detailed application for DHL Supply Chain.

6.3 The additional information was presented in a Supplementary Transport Assessment that was submitted on 8 February 2016. It should be noted that in its response, Highways England made no mention of a requirement to test the impact of the hybrid in LLITM inferring that it is satisfied with the manual approach adopted in the original Transport Assessment.

6.4 The LLITM results have been reviewed in detail and the impact of the development has been found to be acceptable in terms of the increase in forecast highway flows, the increase in forecast journey times for a selection of routes and the increase in overall journey delay at the most critical junctions.

6.5 There are certain sections of the network where traffic flows are forecast to decrease, most notably on Hunter Boulevard, on the A4303 between Hunter Boulevard and the A5 and on the A5 to the north of the A4303. These reductions are a result of some existing Magna Park traffic using the new access route via Mere Lane thus avoiding the A5/A4303 (Cross in Hand) roundabout completely. This demonstrates the wider benefits of the consented access arrangements for DHL

6.6 The increase in HGVs has also been considered and it has been found that the impact on routes that are most sensitive to an increase in HGVs is very small. For example LLITM does not predict any increase in HGVs on Mere Lane to the north east of the new access roundabout.

6.7 Other routes that could be considered sensitive to an increase in HGVs are the B4027 (Lutterworth Road) where the number of HGVs is predicted to increase by only four during both peaks, Coal Pit Lane where small reductions in HGVs are predicted during both peaks and on the A426 though Lutterworth town centre where the number of HGVs is predicted to increase by three in the AM peak and two in the PM peak.

6.8 When considering the impact of the development on journey times, the most significant route is the A4303 between the A5 and the M1. The overall improvement in journey times that are predicted on the A4303 when the ‘without development’ scenario is compared to the ‘with development and mitigation’ scenario is a reflection of the benefits of the junction improvements at the A4303/A426 roundabout. These improvements have been secured through the planning consent for the DHL Supply Chain and demonstrate the potential wider benefits of the highway improvements that have already been approved.

6.9 The additional impact of the proposed symmetry park development has also been considered and LLITM predicts that this development would increase the journey time significantly on the A4303. With symmetry park the average increase in journey time ranges from 11 seconds in an eastbound direction during the AM peak to 18 seconds in a westbound direction also during the AM peak.

6.10 In terms of junction delay the average delay per vehicle at the junction as a whole has been reported and the impact of the development at any of the critical junctions has been found to be small. The most notable impact is predicted at the Gibbet Hill roundabout where IDI Gazeley is proposing to enhance capacity at the junction through partial signalisation. At the Cross in Hand roundabout and the A4303/Hunter Boulevard roundabout, overall delay is predicted to fall with the development as a consequence of the consented access arrangements for DHL.

6.11 LCC acknowledges that LLITM is least robust at reporting the turning movements of vehicles at a junction. As a result local recalibration of the LLITM output in the vicinity of junctions using observed turning count data has been undertaken using a methodology devised by LCC. For the purposes of this assessment, at the majority of junctions, the turning movements from the ‘Largest Growth in Turning Movement’ matrices have been used. This ensures a robust assessment as it takes the higher of the two turning movements calculated from the two methodologies described in LCC’s technical note.

6.12 Three further manual adjustments have been made to the LLITM flows; the first to include the DHL development flows as a committed development in the ‘without development’ scenario; the second to add the development flows associated with the Logistics Institute as it was agreed with LCC that the trip generation and distribution could be based on first principles and considered outside LLITM; and the third to manually adjust the flows at the site access junctions to reflect the flexibility in access and egress arrangements as a result of having more than one point of access.

6.13 Junction capacity assessments have been undertaken based on the recalibrated and manually adjusted traffic flows and the results indicate that the proposed development would not result in a severe impact at any of the junctions under consideration.

6.14 There are only two junctions that are predicted to be operating above capacity as a result of the proposed development. Capacity at the A4303/A426 junction is marginally exceeded on the eastern arm of the A4303 during the AM peak. However this needs to be viewed in the context of the performance of the existing junction which without the improvement secured as part of the DHL planning consent would be operating well above capacity even without any further development.

6.15 Junction 1 of the M69 is predicted to be operating above capacity both with and without development. However the impact of the development is small and on one of the critical arms, the M69 westbound off-slip, performance is predicted to improve as a result of the development.

6.16 With the addition of trips generated by symmetry park, the network is also expected generally to be operating within capacity with the exception of the A4303/ A426 roundabout and M69 Junction 1 where conditions are predicted to deteriorate compared with the scenario without symmetry park. The Gibbet Hill roundabout is also predicted to be operating above capacity with symmetry park. The assessment is based on the junction improvement being proposed by IDI Gazeley and the critical arm is the A426 south where a queue of 48 pcus is predicted.

6.17 Since the hybrid application was submitted in October 2015 there has been significant progress towards improving the public transport offer at Magna Park. Both Arriva and Stagecoach have confirmed that they will be introducing new bus services in April and May 2016 respectively. Both services will operate at the shift changeover times of 6am, 2pm and 10pm and should the services prove to be successful there is scope to operate additional services including peak hour services and the potential of introducing services from other locations such as Nuneaton and Coventry.

6.18 To support the public transport improvements at Magna Park, IDI Gazeley is currently reviewing the bus stop provision with a view to providing additional stops and to upgrade existing facilities to include the provision of shelters and seating at each stop.

6.19 IDI Gazeley is continuing to work closely with the Sustainable Travel Team at LCC with the overriding objective of promoting sustainable transport opportunities at Magna Park. One of the first tasks is to undertake a site wide employee travel survey where the prime objective is to identify the specific travel requirements of Magna Park employees.

6.20 IDI Gazeley recognises the potential of car sharing at Magna Park and in collaboration with LCC is committed to introducing a site wide car sharing scheme operated by Liftshare. Liftshare will start to formally engage with Magna Park businesses in April/May 2016 and will use the results of the travel survey as the basis of the car sharing scheme.

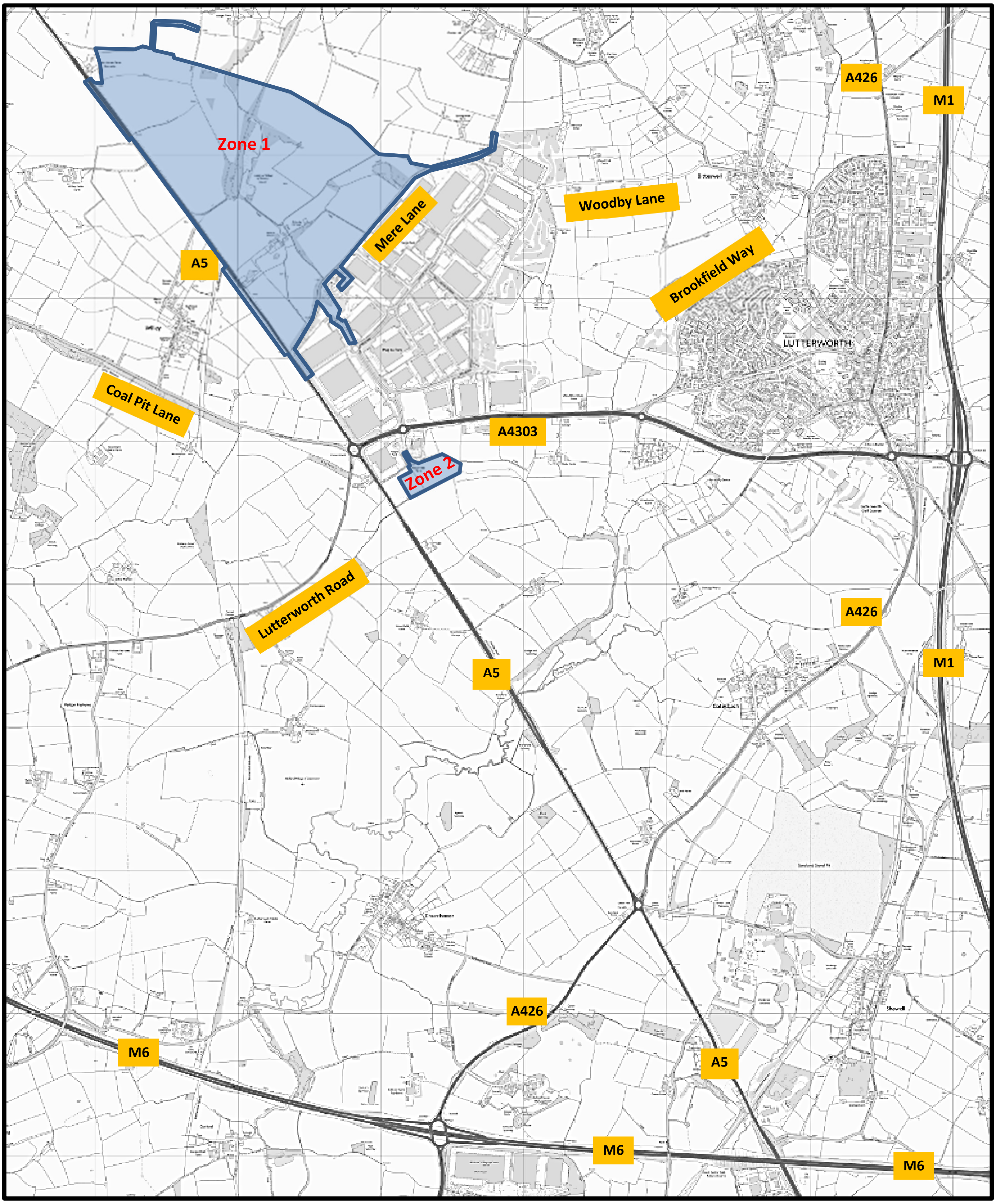
6.21 The ongoing travel planning initiatives at Magna Park are helping to foster a culture of collaboration between public transport operators, Liftshare, LCC, IDI Gazeley and the Magna Park businesses and demonstrate the shared determination that exists to improve the opportunities for sustainable travel at Magna Park.

6.22 In summary it is concluded that the proposed development will provide a catalyst to encourage and maintain modal shift with less environmental impact in accordance with the Government’s key aims and objectives promoted at central and local levels.

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix A – Site Location Plan

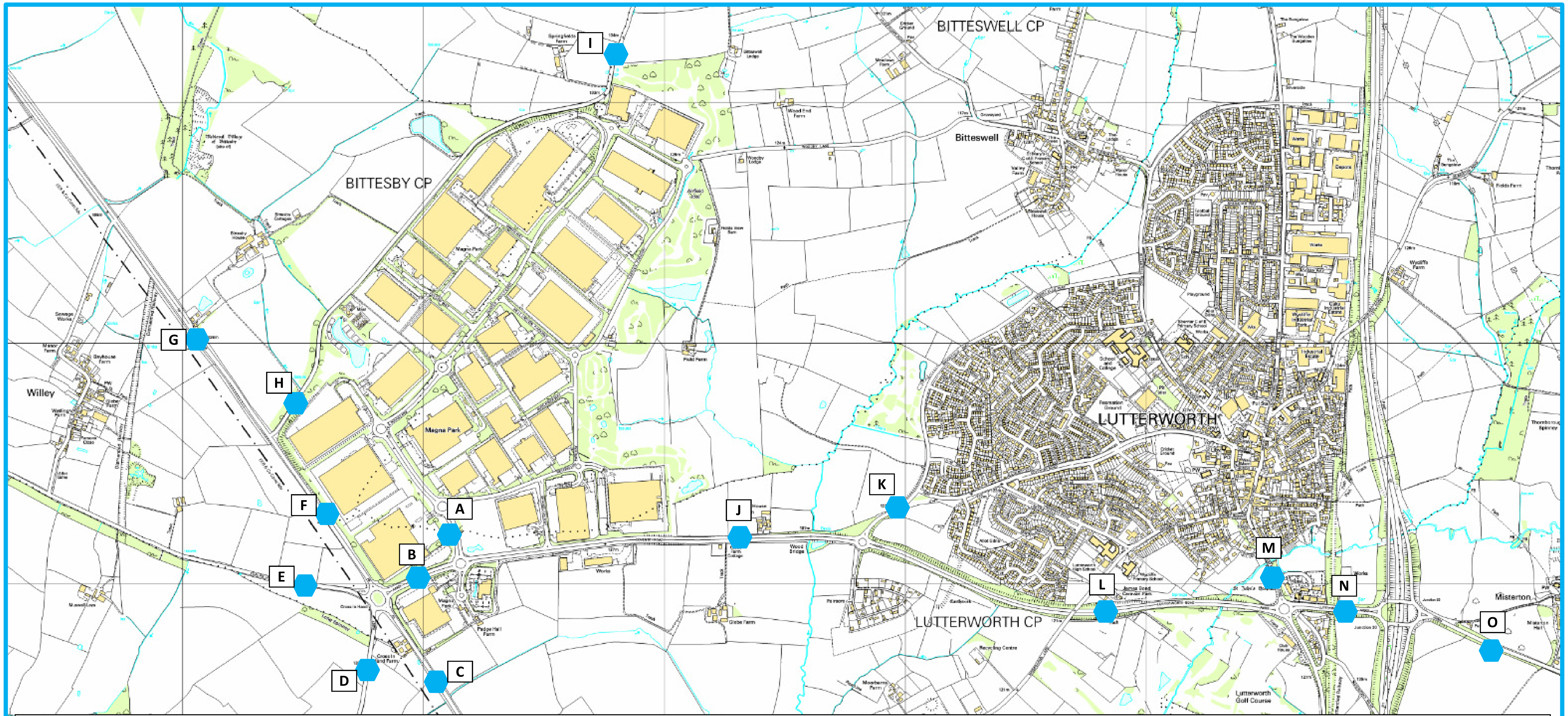


Appendix A- Site Location Plan

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix C – Traffic Flow Locations



Key:

A	Hunter Boulevard	F	A5 north of A4303	K	Coventry Rd between A4303 & Brookfield Way
B	A4303 between Hunter Boulevard & A5	G	A5 north of Mere Lane	L	A4303 between Coventry Road & A426
C	A5 south of A4303	H	Mere Lane east of A5	M	A426 Rugby Road north of A4303
D	B4027 Lutterworth Road	I	Mere Lane east of Magna Park	N	A4303 between A426 & M1 J20
E	Coal Pit Lane	J	A4303 between Hunter Bld & Coventry Road	O	A4304 east of M1 J20

Appendix C: Traffic Flow Locations

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix D – Calculation of Junction Delay

2026 Without Development AM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	6	8
A4304	4	0	6	3
M1 (South)	1	2	0	0
A4303	4	5	7	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	16	20	24
A4303 (East)	18	0	10	14
A426	21	25	0	17
A4303 (West)	11	14	18	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	15	0	10
A4303 (West)	9	14	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	9	12	16
A4303 (East)	19	0	11	15
Coventry Road	14	17	0	10
A4303 (West)	11	15	18	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	38	41	44	47
A4303	20	0	11	14	17
A5 (South)	18	21	0	12	15
B4027 Lutterworth Road	13	16	19	0	10
Coal Pit Lane	9	12	15	18	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	3	3
Mere Lane	8	0	6
A5 (South)	1	6	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	7	20
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	15	13
M69 (E) Exit	2	1	0
M69 (E) Entry	0	7	27
A5 (S)	4	2	26
B1049 (S)	0	0	5
M69 (W) Exit	2	0	0
M69 (W) Entry	0	5	23

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	9	30
A426 (North)	0	0	86
Gibbet Lane	0	0	8
A5 (South)	0	5	41
A426 (South)	0	1	5

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	12	11
M6 (East)	36	0	30	28
A426 (South)	12	14	0	5
M6 (West)	23	26	32	0

2026 Without Development PM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	5	6
A4304	7	0	5	6
M1 (South)	1	2	0	0
A4303	4	5	6	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	15	19	22
A4303 (East)	20	0	8	12
A426	15	19	0	12
A4303 (West)	10	14	18	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	14	0	9
A4303 (West)	10	15	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	10	14	17
A4303 (East)	16	0	9	12
Coventry Road	13	17	0	9
A4303 (West)	9	13	16	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	11	14	17	20
A4303	19	0	10	13	16
A5 (South)	19	22	0	13	16
B4027 Lutterworth Road	17	20	23	0	14
Coal Pit Lane	10	13	16	19	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	2	2
Mere Lane	7	0	5
A5 (South)	1	5	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	4	26
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	9	15
M69 (E) Exit	2	1	0
M69 (E) Entry	0	8	26
A5 (S)	4	2	27
B1049 (S)	0	0	5
M69 (W) Exit	1	0	0
M69 (W) Entry	0	9	22

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	8	11
A426 (North)	6	9	25
Gibbet Lane	0	0	7
A5 (South)	0	9	29
A426 (South)	0	1	9

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	11	10
M6 (East)	41	0	75	29
A426 (South)	16	19	0	5
M6 (West)	14	15	20	0

2026 With Development Including the Proposed Mitigation Measures AM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	6	8
A4304	11	0	6	10
M1 (South)	1	2	0	0
A4303	4	5	7	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	11	15	18
A4303 (East)	18	0	11	15
A426	16	20	0	12
A4303 (West)	6	13	17	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	160	0	11
A4303 (West)	10	15	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	9	13	16
A4303 (East)	20	0	12	16
Coventry Road	14	17	0	10
A4303 (West)	10	13	17	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	13	16	19	22
A4303	19	0	10	13	16
A5 (South)	19	22	0	13	16
B4027 Lutterworth Road	13	16	19	0	10
Coal Pit Lane	9	12	15	18	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	10	15
Mere Lane	15	0	10
A5 (South)	10	15	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	7	20
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	15	13
M69 (E) Exit	2	1	0
M69 (E) Entry	0	7	27
A5 (S)	5	2	26
B1049 (S)	0	0	5
M69 (W) Exit	2	0	0
M69 (W) Entry	0	5	23

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	9	31
A426 (North)	0	4	84
Gibbet Lane	0	0	8
A5 (South)	0	5	47
A426 (South)	0	1	6

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	11	10
M6 (East)	36	0	30	28
A426 (South)	12	14	0	5
M6 (West)	23	26	30	0

2026 With Development Including the Proposed Mitigation Measures PM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	6	8
A4304	7	0	5	6
M1 (South)	1	2	0	0
A4303	4	5	6	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	11	15	18
A4303 (East)	16	0	8	12
A426	13	17	0	10
A4303 (West)	6	13	17	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	14	0	9
A4303 (West)	11	16	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	9	13	17
A4303 (East)	16	0	8	12
Coventry Road	13	16	0	9
A4303 (West)	9	13	16	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	10	13	16	19
A4303	18	0	9	12	15
A5 (South)	17	20	0	11	14
B4027 Lutterworth Road	15	18	21	0	12
Coal Pit Lane	10	13	16	19	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	9	14
Mere Lane	15	0	10
A5 (South)	10	15	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	4	25
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	9	15
M69 (E) Exit	2	1	0
M69 (E) Entry	0	8	26
A5 (S)	4	2	27
B1049 (S)	0	0	5
M69 (W) Exit	1	0	0
M69 (W) Entry	0	9	22

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	8	47
A426 (North)	6	9	25
Gibbet Lane	0	0	7
A5 (South)	0	9	29
A426 (South)	0	1	9

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	11	10
M6 (East)	41	0	74	29
A426 (South)	16	19	0	5
M6 (West)	14	15	20	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park AM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	6	8
A4304	11	0	7	10
M1 (South)	1	2	0	0
A4303	4	5	7	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	11	15	18
A4303 (East)	19	0	11	15
A426	17	21	0	13
A4303 (West)	9	13	17	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	16	0	11
A4303 (West)	10	15	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	9	13	16
A4303 (East)	19	0	12	16
Coventry Road	14	17	0	10
A4303 (West)	10	14	18	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	15	18	21	24
A4303	19	0	10	13	16
A5 (South)	19	22	0	13	16
B4027 Lutterworth Road	13	16	19	0	10
Coal Pit Lane	10	13	16	19	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	10	15
Mere Lane	15	0	10
A5 (South)	10	15	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	7	20
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	15	13
M69 (E) Exit	2	1	0
M69 (E) Entry	0	7	27
A5 (S)	5	2	26
B1049 (S)	0	0	5
M69 (W) Exit	2	0	0
M69 (W) Entry	0	5	23

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	9	33
A426 (North)	0	4	86
Gibbet Lane	0	0	9
A5 (South)	0	5	44
A426 (South)	0	1	6

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	11	10
M6 (East)	36	0	30	28
A426 (South)	12	14	0	5
M6 (West)	23	26	30	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park PM Peak

Delay (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	4	6	8
A4304	7	0	5	6
M1 (South)	1	2	0	0
A4303	4	5	6	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	11	15	19
A4303 (East)	16	0	8	12
A426	13	17	0	10
A4303 (West)	10	13	17	

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	11	16
A4303 (East)	14	0	9
A4303 (West)	11	16	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	10	13	17
A4303 (East)	16	0	9	12
Coventry Road	13	17	0	9
A4303 (West)	9	13	16	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	11	14	17	20
A4303	18	0	9	12	15
A5 (South)	19	21	0	12	15
B4027 Lutterworth Road	15	18	21	0	12
Coal Pit Lane	10	13	16	19	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	9	14
Mere Lane	15	0	10
A5 (South)	11	16	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4	4	26
B4109 (N) Exit	1	1	0
B4109 (N) Entry	0	9	15
M69 (E) Exit	2	1	0
M69 (E) Entry	0	8	26
A5 (S)	4	2	27
B1049 (S)	0	0	5
M69 (W) Exit	1	0	0
M69 (W) Entry	0	9	22

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	2	9	33
A426 (North)	6	4	86
Gibbet Lane	0	0	9
A5 (South)	0	5	44
A426 (South)	0	1	9

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	4	11	10
M6 (East)	41	0	77	29
A426 (South)	16	19	0	5
M6 (West)	14	15	19	0

2026 Without Development AM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	162	0	899
A4304	233	0	104	404
M1 (South)	0	95	0	644
A4303	669	271	669	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	581	209	207
A4303 (East)	685	0	563	714
A426	236	435	0	5
A4303 (West)	128	593	14	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	111	681
A4303 (East)	17	0	909
A4303 (West)	307	624	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	143	1	333
A4303 (East)	380	0	80	1131
Coventry Road	0	12	0	17
A4303 (West)	668	776	152	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	551	500	53	0
A4303	216	0	289	924	52
A5 (South)	345	239	0	236	0
B4027 Lutterworth Road	28	567	150	0	0
Coal Pit Lane	0	241	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	8	989
Mere Lane	2	0	115
A5 (South)	530	59	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	708	1187	905
B4109 (N) Exit	650	1442	0
B4109 (N) Entry	0	1442	1102
M69 (E) Exit	777	1767	0
M69 (E) Entry	0	1767	954
A5 (S)	620	2101	445
B1049 (S)	1056	1491	742
M69 (W) Exit	899	1334	0
M69 (W) Entry	0	1334	561

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	820	680	939
A426 (North)	568	1051	676
Gibbet Lane	139	1587	60
A5 (South)	1376	271	909
A426 (South)	253	927	573

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	0	202	51
M6 (East)	0	0	123	0
A426 (South)	379	175	0	674
M6 (West)	194	0	806	0

2026 Without Development PM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	198	0	624
A4304	183	0	120	194
M1 (South)	0	52	0	403
A4303	639	436	492	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	564	273	133
A4303 (East)	347	0	397	480
A426	463	332	0	5
A4303 (West)	241	671	12	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	97	309
A4303 (East)	30	0	588
A4303 (West)	562	826	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	330	0	491
A4303 (East)	146	0	18	733
Coventry Road	2	60	0	166
A4303 (West)	245	78	21	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	316	357	35	0
A4303	429	0	140	725	96
A5 (South)	477	176	0	226	0
B4027 Lutterworth Road	41	738	202	0	0
Coal Pit Lane	0	75	2	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	2	614
Mere Lane	16	0	103
A5 (South)	855	92	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	1245	1772	711
B4109 (N) Exit	1177	1306	0
B4109 (N) Entry	0	1306	613
M69 (E) Exit	775	1143	0
M69 (E) Entry	0	1143	891
A5 (S)	451	1584	579
B1049 (S)	775	1388	962
M69 (W) Exit	483	1867	0
M69 (W) Entry	0	1867	1149

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	819	650	712
A426 (North)	587	774	549
Gibbet Lane	81	1243	114
A5 (South)	1015	338	1073
A426 (South)	343	1099	313

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	313	275	38
M6 (East)	2	0	191	0
A426 (South)	130	154	0	766
M6 (West)	239	0	460	0

2026 With Development Including the Proposed Mitigation Measures AM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	159	0	994
A4304	220	0	102	421
M1 (South)	0	101	0	674
A4303	705	275	706	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	593	208	217
A4303 (East)	684	0	561	847
A426	241	434	0	5
A4303 (West)	134	659	13	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	107	647
A4303 (East)	17	0	1053
A4303 (West)	310	699	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	232	8	272
A4303 (East)	515	0	79	1105
Coventry Road	1	12	0	16
A4303 (West)	352	765	144	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	294	537	82	0
A4303	166	0	285	898	44
A5 (South)	404	231	0	234	0
B4027 Lutterworth Road	97	557	142	0	0
Coal Pit Lane	0	179	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	289	735
Mere Lane	54	0	177
A5 (South)	470	197	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	711	1184	932
B4109 (N) Exit	649	1467	0
B4109 (N) Entry	0	1467	1104
M69 (E) Exit	756	1815	0
M69 (E) Entry	0	1815	974
A5 (S)	674	2115	448
B1049 (S)	1075	1489	738
M69 (W) Exit	890	1337	0
M69 (W) Entry	0	1337	558

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	869	683	965
A426 (North)	573	1076	674
Gibbet Lane	139	1611	59
A5 (South)	1392	278	933
A426 (South)	260	951	601

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	260	209	51
M6 (East)	0	0	122	0
A426 (South)	395	170	0	684
M6 (West)	206	0	771	0

2026 With Development Including the Proposed Mitigation Measures PM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	194	0	665
A4304	180	0	119	197
M1 (South)	0	52	0	411
A4303	710	445	524	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	570	275	154
A4303 (East)	344	0	393	540
A426	466	330	0	5
A4303 (West)	257	778	20	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	108	273
A4303 (East)	29	0	669
A4303 (West)	545	947	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	442	1	246
A4303 (East)	216	0	18	708
Coventry Road	10	64	0	153
A4303 (West)	133	970	21	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	177	435	95	0
A4303	222	0	124	703	58
A5 (South)	493	113	0	225	0
B4027 Lutterworth Road	18	736	180	0	0
Coal Pit Lane	0	98	2	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	99	456
Mere Lane	237	0	251
A5 (South)	636	157	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	1265	1783	690
B4109 (N) Exit	1182	1291	0
B4109 (N) Entry	0	1291	656
M69 (E) Exit	793	1154	0
M69 (E) Entry	0	1154	919
A5 (S)	457	1616	584
B1049 (S)	801	1405	970
M69 (W) Exit	491	1884	0
M69 (W) Entry	0	1884	1165

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	831	651	742
A426 (North)	588	804	556
Gibbet Lane	80	1280	110
A5 (South)	1025	365	1076
A426 (South)	342	1098	383

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	342	302	40
M6 (East)	1	0	190	0
A426 (South)	139	156	0	792
M6 (West)	155	0	416	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park AM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	158	0	1041
A4304	219	0	104	404
M1 (South)	0	100	0	690
A4303	723	274	705	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	587	210	228
A4303 (East)	679	0	561	898
A426	248	435	0	6
A4303 (West)	136	680	15	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	109	645
A4303 (East)	16	0	1116
A4303 (West)	309	722	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	240	8	273
A4303 (East)	485	0	79	1112
Coventry Road	1	13	0	16
A4303 (West)	384	889	144	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	349	525	82	0
A4303	172	0	312	883	34
A5 (South)	413	250	0	241	0
B4027 Lutterworth Road	97	589	144	0	0
Coal Pit Lane	0	229	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	268	781
Mere Lane	54	0	175
A5 (South)	482	199	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	706	1173	942
B4109 (N) Exit	648	1467	0
B4109 (N) Entry	0	1467	1119
M69 (E) Exit	756	1830	0
M69 (E) Entry	0	1830	981
A5 (S)	688	2123	451
B1049 (S)	1089	1486	728
M69 (W) Exit	891	1323	0
M69 (W) Entry	0	1323	557

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	903	692	981
A426 (North)	582	1092	676
Gibbet Lane	138	1630	60
A5 (South)	1403	287	926
A426 (South)	269	944	651

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	268	216	52
M6 (East)	0	0	121	0
A426 (South)	431	172	0	628
M6 (West)	220	0	770	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park PM Peak

Traffic flow (pcus)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	194	0	691
A4304	175	0	118	195
M1 (South)	0	51	0	411
A4303	750	448	535	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	568	282	146
A4303 (East)	342	0	396	562
A426	476	333	0	6
A4303 (West)	261	832	20	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	105	282
A4303 (East)	29	0	685
A4303 (West)	582	1008	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	447	1	252
A4303 (East)	221	0	18	848
Coventry Road	10	81	0	156
A4303 (West)	139	1007	21	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	193	427	95	0
A4303	279	0	167	725	86
A5 (South)	481	138	0	224	0
B4027 Lutterworth Road	78	728	165	0	0
Coal Pit Lane	0	108	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	98	466
Mere Lane	233	0	249
A5 (South)	681	157	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	1280	1791	706
B4109 (N) Exit	1189	1308	0
B4109 (N) Entry	0	1308	626
M69 (E) Exit	776	1159	0
M69 (E) Entry	0	1159	923
A5 (S)	467	1614	601
B1049 (S)	792	1424	972
M69 (W) Exit	480	1916	0
M69 (W) Entry	0	1916	1155

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	903	692	981
A426 (North)	582	1092	676
Gibbet Lane	138	1630	60
A5 (South)	1403	287	926
A426 (South)	269	944	651

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	379	329	50
M6 (East)	2	0	191	0
A426 (South)	144	152	0	794
M6 (West)	259	0	453	0

2026 Without Development AM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	648	0	7192
A4304	932	0	624	1212
M1 (South)	0	190	0	0
A4303	2676	1355	4683	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	9296	4180	4968
A4303 (East)	12330	0	5630	9996
A426	4956	10875	0	85
A4303 (West)	1408	8302	252	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1221	10896
A4303 (East)	255	0	9090
A4303 (West)	2763	8736	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	1287	12	5328
A4303 (East)	7220	0	880	16965
Coventry Road	0	204	0	170
A4303 (West)	7348	11640	2736	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	20938	20500	2332	0
A4303	4320	0	3179	12936	884
A5 (South)	6210	5019	0	2832	0
B4027 Lutterworth Road	364	9072	2850	0	0
Coal Pit Lane	0	2892	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	24	2967
Mere Lane	16	0	690
A5 (South)	530	354	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	2832	8309	18100
B4109 (N) Exit	650	1442	0
B4109 (N) Entry	0	21630	14326
M69 (E) Exit	1554	1767	0
M69 (E) Entry	0	12369	25758
A5 (S)	2480	4202	11570
B1049 (S)	0	0	3710
M69 (W) Exit	1798	0	0
M69 (W) Entry	0	6670	12903

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1640	6120	28170
A426 (North)	0	0	58136
Gibbet Lane	0	0	480
A5 (South)	0	1355	37269
A426 (South)	0	927	2865

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	0	2424	561
M6 (East)	0	0	3690	0
A426 (South)	4548	2450	0	3370
M6 (West)	4462	0	25792	0

2026 Without Development PM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	792	0	3744
A4304	1281	0	600	1164
M1 (South)	0	104	0	0
A4303	2556	2180	2952	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	8460	5187	2926
A4303 (East)	6940	0	3176	5760
A426	6945	6308	0	60
A4303 (West)	2410	9394	216	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1067	4944
A4303 (East)	420	0	5292
A4303 (West)	5620	12390	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	3300	0	8347
A4303 (East)	2336	0	162	8796
Coventry Road	26	1020	0	1494
A4303 (West)	2205	1014	336	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	3476	4998	595	0
A4303	8151	0	1400	9425	1536
A5 (South)	9063	3872	0	2938	0
B4027 Lutterworth Road	697	14760	4646	0	0
Coal Pit Lane	0	975	32	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	4	1228
Mere Lane	112	0	515
A5 (South)	855	460	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	4980	7088	18486
B4109 (N) Exit	1177	1306	0
B4109 (N) Entry	0	11754	9195
M69 (E) Exit	1550	1143	0
M69 (E) Entry	0	9144	23166
A5 (S)	1804	3168	15633
B1049 (S)	0	0	4810
M69 (W) Exit	483	0	0
M69 (W) Entry	0	16803	25278

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1638	5200	7832
A426 (North)	3522	6966	13725
Gibbet Lane	0	0	798
A5 (South)	0	3042	31117
A426 (South)	0	1099	2817

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	1252	3025	380
M6 (East)	82	0	14325	0
A426 (South)	2080	2926	0	3830
M6 (West)	3346	0	9200	0

2026 With Development Including the Proposed Mitigation Measures AM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	636	0	7952
A4304	2420	0	612	4210
M1 (South)	0	202	0	0
A4303	2820	1375	4942	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	6523	3120	3906
A4303 (East)	12312	0	6171	12705
A426	3856	8680	0	60
A4303 (West)	804	8567	221	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1177	10352
A4303 (East)	2720	0	11583
A4303 (West)	3100	10485	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	2088	104	4352
A4303 (East)	10300	0	948	17680
Coventry Road	14	204	0	160
A4303 (West)	3520	9945	2448	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	3822	8592	1558	0
A4303	3154	0	2850	11674	704
A5 (South)	7676	5082	0	3042	0
B4027 Lutterworth Road	1261	8912	2698	0	0
Coal Pit Lane	0	2148	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	2890	11025
Mere Lane	810	0	1770
A5 (South)	4700	2955	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	2844	8288	18640
B4109 (N) Exit	649	1467	0
B4109 (N) Entry	0	22005	14352
M69 (E) Exit	1512	1815	0
M69 (E) Entry	0	12705	26298
A5 (S)	3370	4230	11648
B1049 (S)	0	0	3690
M69 (W) Exit	1780	0	0
M69 (W) Entry	0	6685	12834

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1738	6147	29915
A426 (North)	0	4304	56616
Gibbet Lane	0	0	472
A5 (South)	0	1390	43851
A426 (South)	0	951	3606

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	1040	2299	510
M6 (East)	0	0	3660	0
A426 (South)	4740	2380	0	3420
M6 (West)	4738	0	23130	0

2026 With Development Including the Proposed Mitigation Measures PM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	776	0	5320
A4304	1260	0	595	1182
M1 (South)	0	104	0	0
A4303	2840	2225	3144	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	6270	4125	2772
A4303 (East)	5504	0	3144	6480
A426	6058	5610	0	50
A4303 (West)	1542	10114	340	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1188	4368
A4303 (East)	406	0	6021
A4303 (West)	5995	15152	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	3978	13	4182
A4303 (East)	3456	0	144	8496
Coventry Road	130	1024	0	1377
A4303 (West)	1197	12610	336	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	1770	5655	1520	0
A4303	3996	0	1116	8436	870
A5 (South)	8381	2260	0	2475	0
B4027 Lutterworth Road	270	13248	3780	0	0
Coal Pit Lane	0	1274	32	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	891	6384
Mere Lane	3555	0	2510
A5 (South)	6360	2355	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	5060	7132	17250
B4109 (N) Exit	1182	1291	0
B4109 (N) Entry	0	11619	9840
M69 (E) Exit	1586	1154	0
M69 (E) Entry	0	9232	23894
A5 (S)	1828	3232	15768
B1049 (S)	0	0	4850
M69 (W) Exit	491	0	0
M69 (W) Entry	0	16956	25630

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1662	5208	34874
A426 (North)	3528	7236	13900
Gibbet Lane	0	0	770
A5 (South)	0	3285	31204
A426 (South)	0	1098	3447

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	1368	3025	380
M6 (East)	41	0	14060	0
A426 (South)	2224	2964	0	3960
M6 (West)	2170	0	8320	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park AM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	632	0	8328
A4304	2409	0	728	4040
M1 (South)	0	200	0	0
A4303	2892	1370	4935	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	6457	3150	4104
A4303 (East)	12901	0	6171	13470
A426	4216	9135	0	78
A4303 (West)	1224	8840	255	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1199	10320
A4303 (East)	256	0	12276
A4303 (West)	3090	10830	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	2160	104	4368
A4303 (East)	9215	0	948	17792
Coventry Road	14	221	0	160
A4303 (West)	3840	12446	2592	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	5235	9450	1722	0
A4303	3268	0	3120	11479	544
A5 (South)	7847	5500	0	3133	0
B4027 Lutterworth Road	1261	9424	2736	0	0
Coal Pit Lane	0	2977	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	2680	11715
Mere Lane	810	0	1750
A5 (South)	4820	2985	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	2824	8211	18840
B4109 (N) Exit	648	1467	0
B4109 (N) Entry	0	22005	14547
M69 (E) Exit	1512	1830	0
M69 (E) Entry	0	12810	26487
A5 (S)	3440	4246	11726
B1049 (S)	0	0	3640
M69 (W) Exit	1782	0	0
M69 (W) Entry	0	6615	12811

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1806	6228	32373
A426 (North)	0	4368	58136
Gibbet Lane	0	0	540
A5 (South)	0	1435	40744
A426 (South)	0	944	3906

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	1072	2376	520
M6 (East)	0	0	3630	0
A426 (South)	5172	2408	0	3140
M6 (West)	5060	0	23100	0

2026 With Development Inc Proposed Mitigation Measures & Symmetry Park PM Peak

Total delay by turning movement (seconds)

M1 Junction 20	M1 (North)	A4304	M1 (South)	A4303
M1 (North)	0	776	0	5528
A4304	1225	0	590	1170
M1 (South)	0	102	0	0
A4303	3000	2240	3210	0

A4303/A426	Rugby Road	A4303 (East)	A426	A4303 (West)
Rugby Road	0	6248	4230	2774
A4303 (East)	5472	0	3168	6744
A426	6188	5661	0	60
A4303 (West)	2610	10816	340	0

A4303/Coventry Road	Coventry Road	A4303 (East)	A4303 (West)
Coventry Road	0	1155	4512
A4303 (East)	406	0	6165
A4303 (West)	6402	16128	0

A4303/Hunter Boulevard	Hunter Boulevard	A4303 (East)	Coventry Road	A4303 (West)
Hunter Boulevard	0	4470	13	4284
A4303 (East)	3536	0	162	10176
Coventry Road	130	1377	0	1404
A4303 (West)	1251	13091	336	0

A5/A4303 (Cross in Hand)	A5 (North)	A4303	A5 (South)	B4027 L'worth Rd	Coal Pit Lane
A5 (North)	0	4697	1330	0	0
A4303	5022	0	1503	8700	1290
A5 (South)	9139	2898	0	2688	0
B4027 Lutterworth Road	1170	13104	3465	0	0
Coal Pit Lane	0	1404	0	0	0

A5/Mere Lane	A5 (North)	Mere Lane	A5 (South)
A5 (North)	0	882	6524
Mere Lane	3495	0	2490
A5 (South)	7491	2512	0

M69 Junction 1	Exit	Circulating	Entry
A5 (N)	5120	7164	18356
B4109 (N) Exit	1189	1308	0
B4109 (N) Entry	0	11772	9390
M69 (E) Exit	1552	1159	0
M69 (E) Entry	0	9272	23998
A5 (S)	1868	3228	16227
B1049 (S)	0	0	4860
M69 (W) Exit	480	0	0
M69 (W) Entry	0	17244	25410

A5/A426 (Gibbet Hill)	Exit	Circulating	Entry
A5 (North)	1806	6228	32373
A426 (North)	3492	4368	58136
Gibbet Lane	0	0	540
A5 (South)	0	1435	40744
A426 (South)	0	944	5859

M6 Junction 1	A426 (North)	M6 (East)	A426 (South)	M6 (West)
A426 (North)	0	1516	3619	500
M6 (East)	82	0	14707	0
A426 (South)	2304	2888	0	3970
M6 (West)	3626	0	8607	0

AVERAGE DELAY PER VEHICLE

M1 Junction 20

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
M1 (North)	7.4	5.5	7.4	7.1	7.5	7.1
A4304	3.7	6.1	9.7	6.1	9.9	6.1
M1 (South)	0.3	0.2	0.3	0.2	0.3	0.2
A4303	5.4	4.9	5.4	4.9	5.4	4.9
Average delay per vehicle	**4.7**	**4.6**	**5.8**	**5.0**	**5.8**	**5.0**

A4303/A426

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Rugby Road	18.5	17.1	13.3	13.2	13.4	13.3
A4303 (East)	14.2	13.0	14.9	11.8	15.2	11.8
A426	23.5	16.6	18.5	14.6	19.5	14.6
A4303 (West)	13.6	13.0	11.9	11.4	12.4	12.4
Average delay per vehicle	**16.5**	**14.7**	**14.6**	**12.6**	**14.9**	**12.9**

A4303/Coventry Road

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Coventry Road	15.3	14.8	15.3	14.6	15.3	14.6
A4303 (East)	10.1	9.2	13.4	9.2	11.1	9.2
A4303 (West)	12.4	13.0	13.5	14.2	13.5	14.2
Average delay per vehicle	**12.4**	**12.3**	**13.9**	**12.9**	**13.0**	**12.9**

A4303/Hunter Boulevard

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Hunter Boulevard	13.9	14.2	12.8	11.9	12.7	12.5
A4303 (East)	15.8	12.6	17.0	12.8	16.7	12.8
Coventry Road	12.9	11.1	13.0	11.1	13.2	11.8
A4303 (West)	13.6	10.3	12.6	12.6	13.3	12.6
Average delay per vehicle	**14.6**	**12.7**	**14.8**	**12.4**	**14.8**	**12.6**

A5/A4303 (Cross in Hand)

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 (North)	39.6	12.8	15.3	12.7	17.2	8.4
A4303	14.4	14.8	13.2	13.0	13.1	13.1
A5 (South)	17.1	18.1	18.2	15.8	18.2	17.5
B4027 Lutterworth Road	16.5	20.5	16.2	18.5	16.2	18.3
Coal Pit Lane	12.0	13.1	12.0	13.1	13.0	13.0
Average delay per vehicle	**21.5**	**16.5**	**15.2**	**15.0**	**15.7**	**14.5**

A5/Mere Lane

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 (North)	3.0	2.0	13.6	13.1	13.7	13.1
Mere Lane	6.0	5.3	11.2	12.4	11.2	12.4
A5 (South)	1.5	1.4	11.5	11.0	11.5	11.9
Average delay per vehicle	**2.7**	**1.9**	**12.6**	**12.0**	**12.6**	**12.4**

M69 Junction 1

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 (N)	10.4	8.2	10.5	7.9	10.6	8.1
B4109 (N) Exit	1.0	1.0	1.0	1.0	1.0	1.0
B4109 (N) Entry	14.1	10.9	14.1	11.0	14.1	10.9
M69 (E) Exit	1.3	1.4	1.3	1.4	1.3	1.4
M69 (E) Entry	14.0	15.9	14.0	16.0	14.0	16.0
A5 (S)	5.8	7.9	5.9	7.8	6.0	8.0
B1049 (S)	1.1	1.5	1.1	1.5	1.1	1.5
M69 (W) Exit	0.8	0.2	0.8	0.2	0.8	0.2
M69 (W) Entry	10.3	14.0	10.3	14.0	10.3	13.9
Average delay per vehicle	**6.5**	**6.8**	**6.6**	**6.7**	**6.6**	**6.8**

A5/A426 (Gibbet Hill)

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A5 (North)	14.7	6.7	15.0	18.8	15.7	15.7
A426 (North)	25.3	12.7	26.2	12.7	26.6	28.1
Gibbet Lane	0.3	0.6	0.3	0.5	0.3	0.3
A5 (South)	15.1	14.1	17.4	14.0	16.1	16.1
A426 (South)	2.2	2.2	2.5	2.5	2.6	3.6
Average delay per vehicle	**12.6**	**8.0**	**13.5**	**10.7**	**13.4**	**13.9**

M6 Junction 1

Arm	Average Delay Per Vehicle (Seconds)					
	2026 Without Development		2026 With Development		2026 With Development and Symmetry Park	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A426 (North)	11.8	7.4	7.4	7.0	7.4	7.4
M6 (East)	30.0	74.6	30.0	73.8	30.0	76.6
A426 (South)	8.4	8.4	8.4	8.4	8.7	8.4
M6 (West)	30.3	17.9	28.5	18.4	28.4	17.2
Average delay per vehicle	**18.2**	**15.8**	**16.0**	**15.2**	**16.1**	**15.2**

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix E – Comparison of 2014 Counts & 2026 LLITM 'Without Development' Flows

Magna Park Hybrid Application

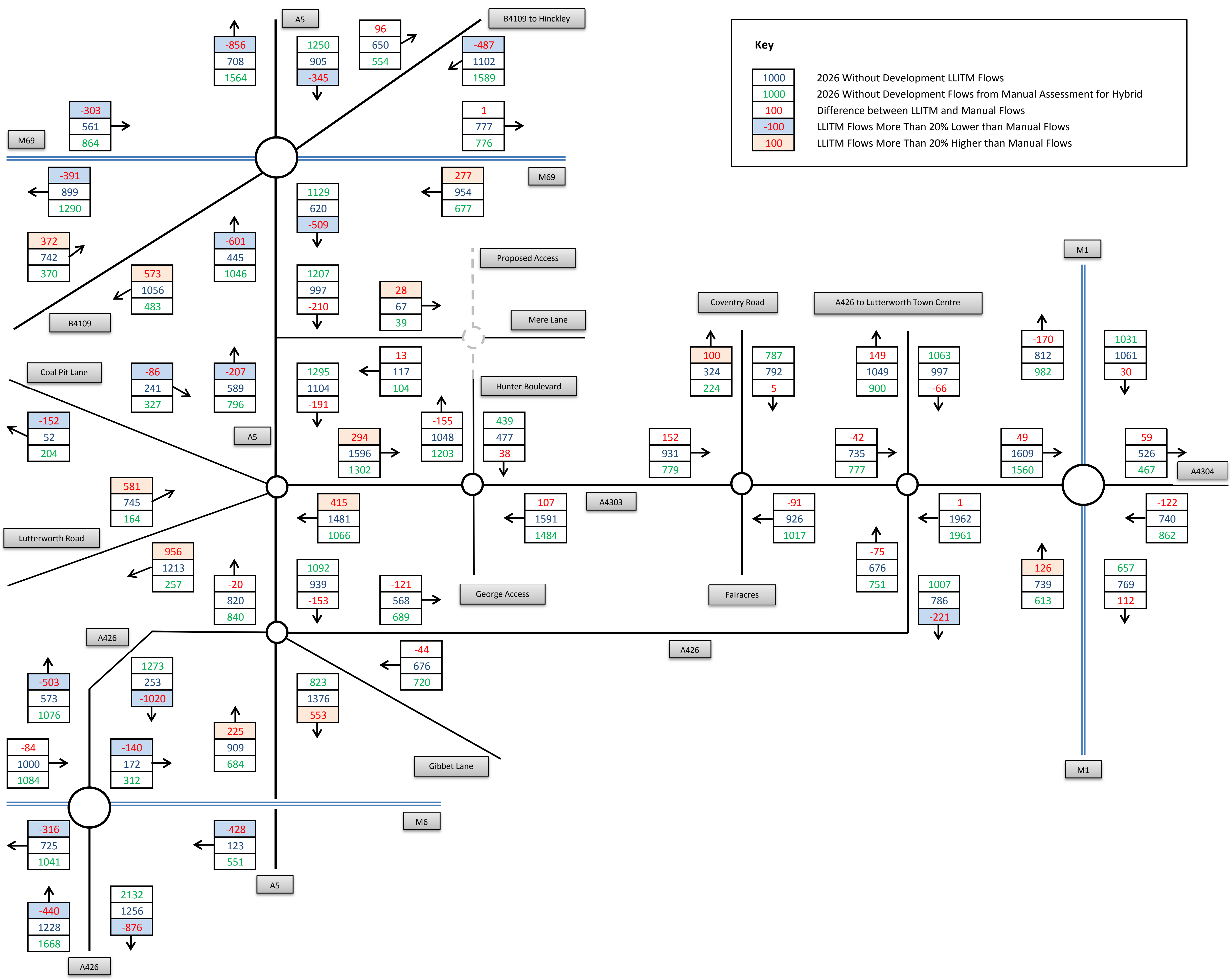
Comparison of Junction Inflows and Outflows by Arm (2014 Counts v LLITM 2026 No Development)

	AM Peak						PM Peak					
	Inflow			Outflow			Inflow			Outflow		
Junction / Arm	Count	LLTIM	Increase	Count	LLTIM	Increase	Count	LLTIM	Increase	Count	LLTIM	Increase
M69 Junction 1												
A5 North	1136	905	-231	1379	708	-671	1093	711	-382	1111	1245	134
B4109 North	1466	1102	-364	509	650	141	561	613	52	1038	1177	139
M69 East	611	954	343	712	777	65	603	891	288	516	775	259
A5 South	933	445	-488	1018	620	-398	845	579	-266	917	451	-466
B4109 South	365	742	377	481	1056	575	431	962	531	491	775	284
M69 West	788	561	-227	1200	899	-301	1186	1149	-37	646	483	-163
Total	*5299*	*4709*	*-590*	*5299*	*4710*	*-589*	*4719*	*4905*	*186*	*4719*	*4906*	*187*
A5/ Mere Lane												
A5 North	1095	997	-98	660	532	-128	572	616	44	949	871	-78
Mere Lane	104	117	13	39	67	28	49	119	70	71	94	23
A5 South	682	589	-93	1182	1104	-78	1004	947	-57	605	717	112
Total	*1881*	*1703*	*-178*	*1881*	*1703*	*-178*	*1625*	*1682*	*57*	*1625*	*1682*	*57*
Cross In Hand Roundabout												
A5 North	1183	1104	-79	730	589	-141	649	718	69	1102	947	-155
A4303	983	1481	498	1219	1598	379	1109	1390	281	820	1245	425
A5 South	737	820	83	987	939	-48	801	819	18	634	711	77
B4027	163	745	582	252	1213	961	273	981	708	173	986	813
Coal Pit Lane	310	241	-69	188	52	-136	172	77	-95	275	96	-179
Total	*3376*	*4391*	*1015*	*3376*	*4391*	*1015*	*3004*	*3985*	*981*	*3004*	*3985*	*981*
Gibbet Hill Roundabout												
A5 North	1014	939	-75	733	820	87	704	712	8	894	819	-75
A426 North	687	676	-11	618	568	-50	684	549	-135	704	587	-117
Gibbet Lane	116	60	-56	109	139	30	91	114	23	107	81	-26
A5 South	613	909	296	763	1376	613	784	1073	289	609	1019	410
A426 South	976	573	-403	1183	254	-929	1028	370	-658	977	312	-665
Total	*3406*	*3157*	*-249*	*3406*	*3157*	*-249*	3291	*2818*	*-473*	3291	*2818*	*-473*
M6 Junction 1												
A426 North	1221	253	-968	990	573	-417	985	313	-672	1066	370	-696
M6 East	545	123	-422	298	172	-126	308	193	-115	271	153	-118
A426 South	1499	1228	-271	2071	1256	-815	1524	1050	-474	1525	1112	-413
M6 West	1069	1000	-69	975	725	-250	926	699	-227	881	804	-77
Total	*4334*	*2604*	*-1730*	*4334*	*2726*	*-1608*	*3743*	*2255*	*-1488*	*3743*	*2439*	*-1304*
M1 Junction 20												
M1 North	964	1061	97	901	812	-89	841	822	-19	859	822	-37
A4304	843	740	-103	458	526	68	627	498	-129	867	686	-181
M1 South	589	739	150	634	769	135	573	455	-118	486	610	124
A4303	1429	1609	180	1832	1962	130	1648	1566	-82	1477	1224	-253
Total	*3825*	*4149*	*324*	*3825*	*4069*	*244*	*3689*	*3341*	*-348*	*3689*	*3342*	*-347*
A4303/A426 Roundabout												
A426 North	965	997	32	877	1049	172	862	970	108	940	1051	111
A4303 East	1833	1962	129	1443	1609	166	1439	1224	-215	1592	1567	-25
A426 South	682	676	-6	973	786	-187	735	800	65	769	682	-87
A4303 West	695	735	40	882	926	44	949	924	-25	684	618	-66
Total	*4175*	*4370*	*195*	*4175*	*4370*	*195*	*3985*	*3918*	*-67*	*3985*	*3918*	*-67*
A4303/Coventry Road Roundabout												
Coventry Road	250	792	542	206	324	118	355	406	51	589	592	3
A4303 East	953	926	-27	681	735	54	667	618	-49	960	923	-37
Fairacres	19	0	-19	4	0	-4	12	0	-12	15	0	-15
A4303 West	701	931	230	1032	1590	558	1365	1388	23	835	897	62
Total	*1923*	*2649*	*726*	*1923*	*2649*	*726*	*2399*	*2412*	*13*	*2399*	*2412*	*13*
A4303/Hunter Boulevard Roundabout												
Hunter Bld	423	477	54	1170	1048	-122	799	821	22	389	393	4
A4303 East	1367	1591	224	719	931	212	706	897	191	1107	1388	281
George Access	23	29	6	148	233	85	268	248	-20	38	39	1
A4303 West	1212	1596	384	988	1481	493	829	1244	415	1068	1390	322
Total	*3025*	*3693*	*668*	*3025*	*3693*	*668*	*2602*	*3210*	*608*	*2602*	*3210*	*608*
A5/Northern Site Access												
A5 North	1095	997	-98	660	532	-128	572	616	44	949	871	-78
Site Access	0	0	0	0	0	0	0	0	0	0	0	0
A5 South	660	532	-128	1095	997	-98	949	871	-78	572	616	44
Total	*1755*	*1529*	*-226*	*1755*	*1529*	*-226*	*1521*	*1487*	*-34*	*1521*	*1487*	*-34*
Mere Lane/Site Access												
Site Access	0	0	0	0	0	0	0	0	0	0	0	0
Mere Lane East	104	117	13	39	67	28	49	119	70	71	94	23
Argosy Way	0	0	0	0	0	0	0	0	0	0	0	0
Mere Lane West	39	67	28	104	117	13	71	94	23	49	119	70
Total	*143*	*184*	*41*	*143*	*184*	*41*	*120*	*213*	*93*	*120*	*213*	*93*
A4303/ Shackleton Way Junction												
A4303 West	715	931	216	1367	1591	224	1098	1389	291	706	897	191
Shackleton Way	97	0	-97	71	0	-71	200	0	-200	19	0	-19
A4303 East	1367	1591	224	741	931	190	706	897	191	1279	1389	110
Roral	*2179*	*2522*	*343*	*2179*	*2522*	*343*	*2004*	*2286*	*282*	*2004*	*2286*	*282*

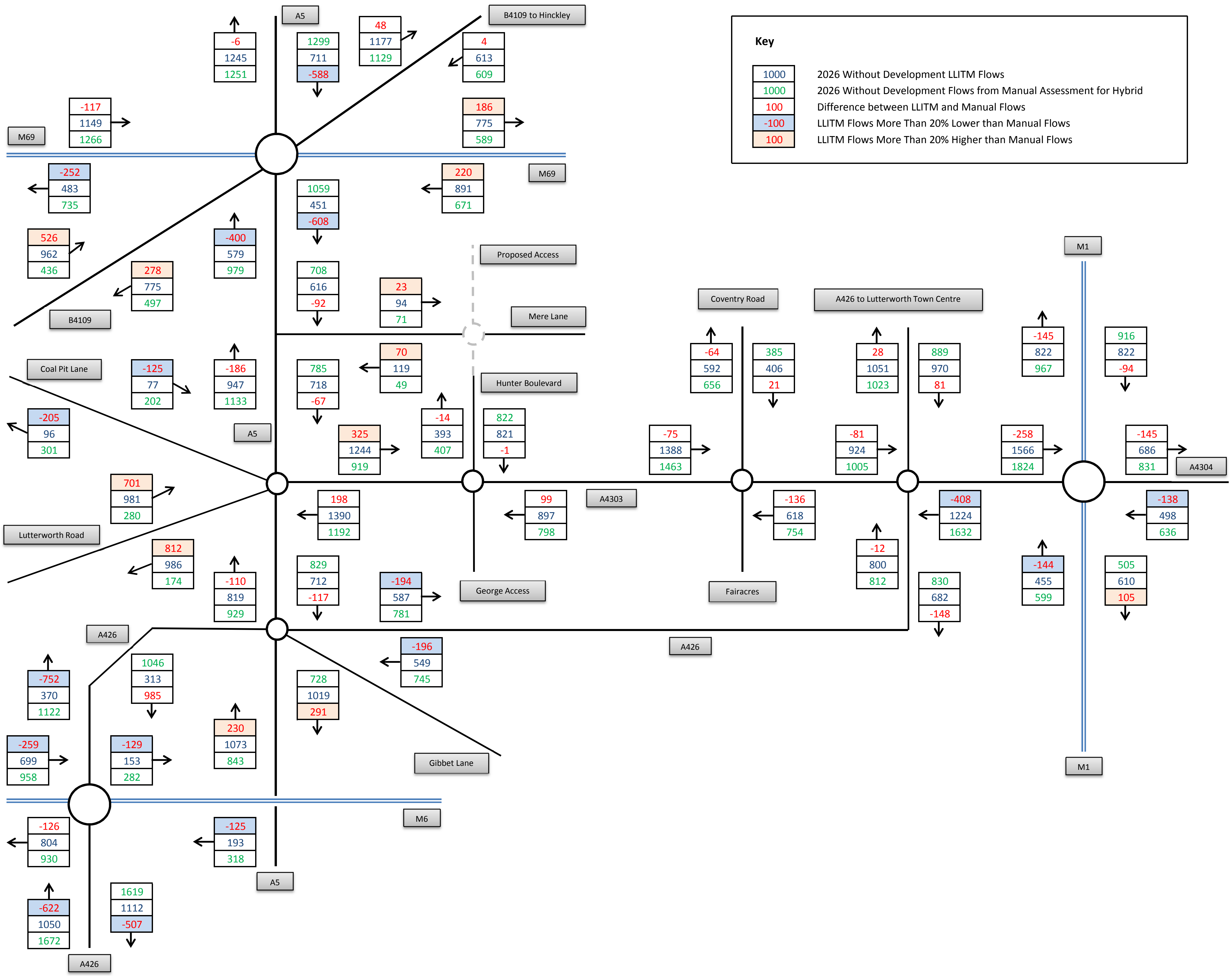
Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

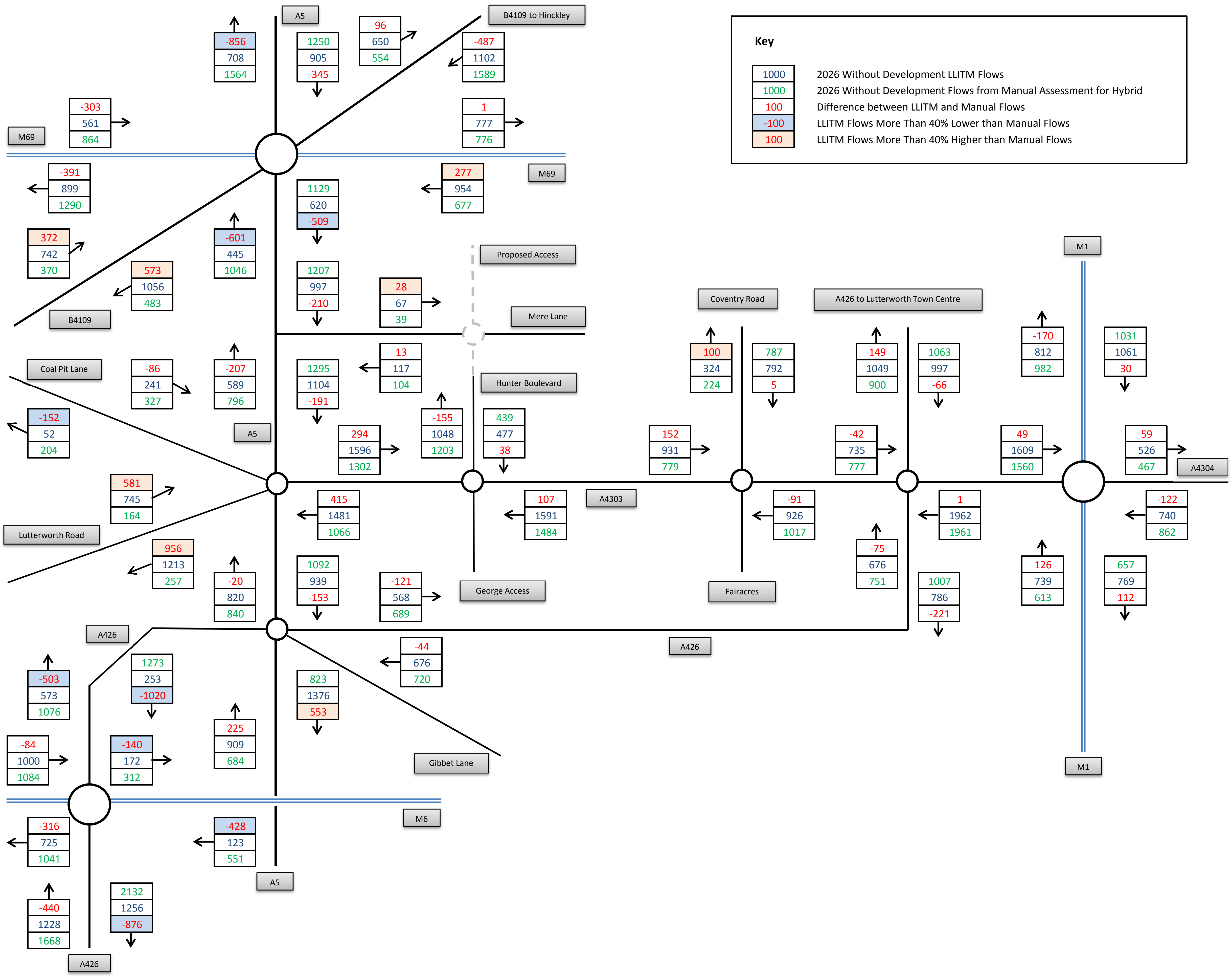
Appendix F – Comparison of 'Manual' 2026 'Without Development' Flows & LLITM 2026 'Without Development' Flows



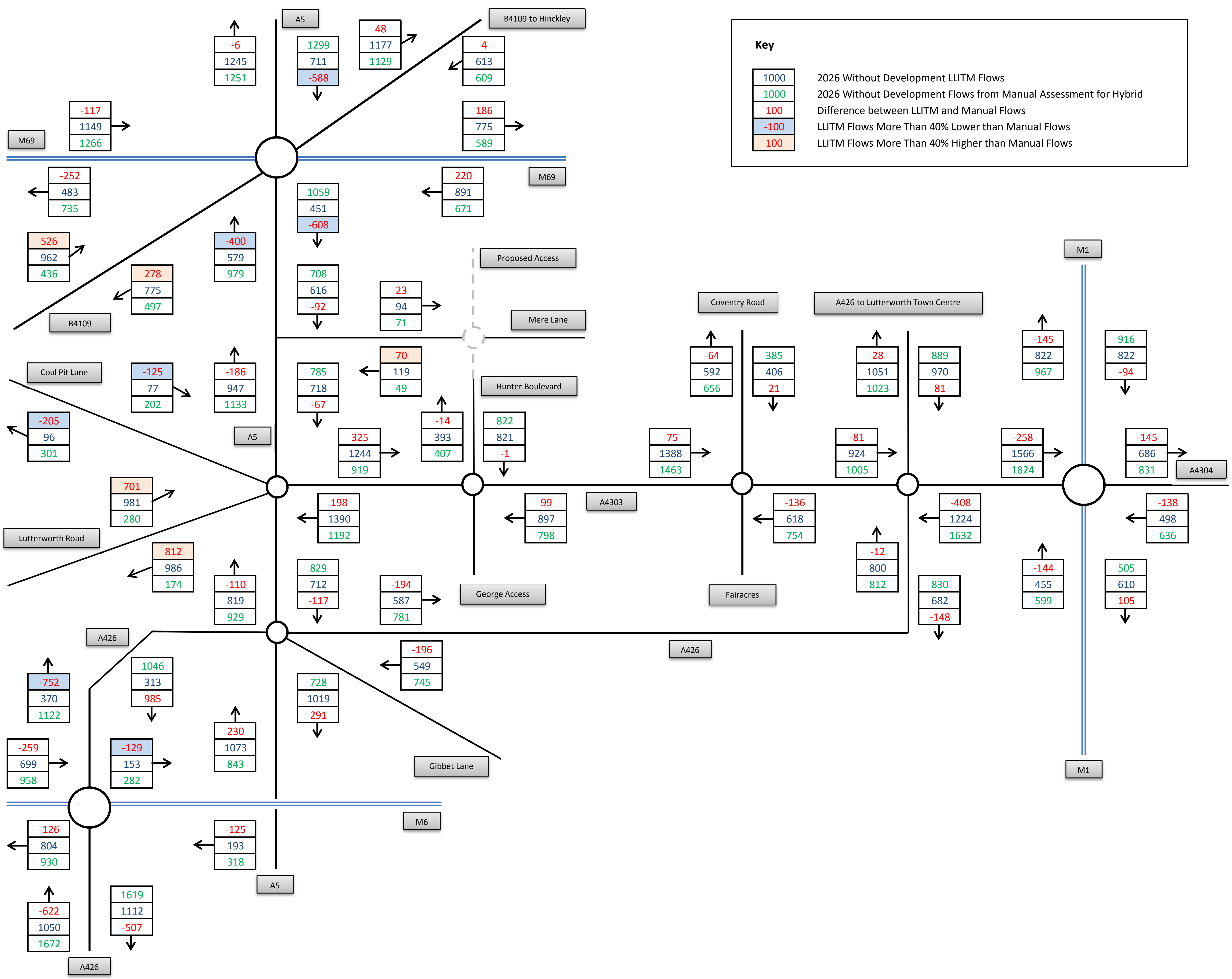
Comparison of LLITM Flows and Flows from Maunual Assessment - 2026 AM Peak (+/- 20%)



Comparison of LLITM Flows and Flows from Maunual Assessment - 2026 PM Peak (+/- 20%)



Comparison of LLITM Flows and Flows from Maunual Assessment - 2026 AM Peak (+/- 40%)



Comparison of LLITM Flows and Flows from Maunual Assessment - 2026 PM Peak (+/- 40%)

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix G – LCC Technical Note for Local Calibration of LLITM Output

Future Year Turning Movements

Ver	Date	Author	Review	Approve	Comments
1	19 May 2014	*Duncan Forbes*			Initial Draft for comments
2	10 June 2014	*Duncan Forbes*			Following Sonny review (email 10/6/14)
3	12 June 2014	Duncan Forbes			Following further discussion regarding actual and demand flows (email 12/6/14)

1 Summary

1.1.1 This note sets out a methodology (and an accompanying spreadsheet) for estimating 2026 traffic volumes using:

- Turning movement counts obtained in 2014
- Turning[1] volumes from existing LLITM model runs for 2016 and 2026

1.1.2 It is directed towards the work packages relating to A50/New Parks Way, A50/County Hall and New Parks Way/Aikman Ave junctions. However the approach described is valid for any junction within Leicestershire.

1.1.3 LLITM is a land-use and transport model that has been calibrated, and with forecasts that are consistent with NTEM6.2

1.1.4 In particular note that LLITM has not been specifically *recalibrated* in the vicinity of the junctions in order to match observed turning counts, and therefore *may* not closely match the counts observed in 2014.

1.1.5 The purpose of this note is to ensure that a robust methodology is followed that takes into account the fact that LLITM is

- Most robust at reporting total vehicles entering and exiting a junction
- Less robust at reporting total vehicles entering or exiting each arm of a junction
- Least robust at reporting the turning movements of vehicles at a junction

1.1.6 Bearing this in mind, this note sets out two methodologies for estimating 2026 turning movements. The first simple method can be used if the traffic counts and LLITM flows are similar.

1.1.7 A second **preferred** approach is then proposed that scales the observed traffic flows based upon proportional, rather than absolute, changes to the LLITM flows. This second approach will provide similar results to the first when the observed and modelled flows are similar. However the second approach is more robust if the LLITM and observed flows do not match

1.1.8 Note that is either case it is essential to '*critically*' check the results of the scaling in order to ensure that the traffic growth is sensible and appropriate, in particular relating to local traffic generators such as the hospital or County Hall. It may then be necessary to make manual adjustments.

[1] Note that whilst it is normal to use SATURN **actual** flows for reporting traffic volumes. In this instance the SATURN **demand** flows should be used in order to ensure that junctions are designed for the maximum level of traffic.

1.1.9 A spreadsheet has been provided and setup for County Hall (CH), New Parks Way (NPW) and New Parks Way/Aikman Ave which provide 2026 turning movements based upon both methods described.

2 Methodology 1: Using Absolute LLITM pcu changes

2.1.1 The forecast 2016 and 2026 turning movements are processed in order to obtain the change in volume of each movement over the 10 years. This is then linearly extrapolated to 12 years, and the 12 year change in volume is added to the observed 2014 turning movements to give 2026 turning movements.

2.1.2 This method can be described by the following steps:

- Obtain 2016 turning movements:
  - $Vol2016_{xy}$
- Obtain 2026 turning movements:
  - $Vol2026_{xy}$
- Obtain 2014 observed traffic movements:
  - $VolObs_{xy}$
- Linearly extrapolate the difference in volumes to 12 years:
  - $1.2*(Vol2026_{xy}-Vol2016_{xy})$
- Add this to the 2014 observed counts to give a predicted 2026 flows:
  - $VolObs_{xy} + 1.2*(Vol2026_{xy}-Vol2016_{xy})$

3 Methodology 2: Using Relative LLITM pcu changes

3.1.1 This methodology assumes that the LLITM forecast of total traffic growth at the junction is the most robust element, followed by the growth of vehicles entering the junction, with the change in individual turning movements being the least reliable.

3.1.2 This method sequentially scales the individual turning movements, then scales these results in order to match the growth in vehicles entering the junction, and then finally scales these results in order to scale the total growth to match that of LLITM.

3.1.3 The approach therefore takes account of the growth in turning movements, the growth in vehicles entering each arm, and the total growth at the junction and results in the total % growth matching LLITM.

3.1.4 The method can be described by:

- Obtain 2016 turning movements:
  - $Vol2016_{xy}$
- Obtain 2026 turning movements:
  - $Vol2026_{xy}$
- Obtain 2014 observed traffic movements:
  - $VolObs_{xy}$
- Linearly extrapolate the difference in volumes to 12 years:
  - $1.2*(Vol2026_{xy}-Vol2016_{xy})$
- Scale the observed individual turning movements by the LLITM % change over 12 years
- Scale the output of the previous stage to match the total % growth in vehicles entering each arm of the junction

- Scale the output of the previous stage to match the total % growth in vehicles entering all arms of the junction.

4 Calculation spreadsheet

4.1.1 The spreadsheet 03 LLITM change in flows .xlsx contains a sheet for each junction and time period. (eg CH roundabout in AMpeak)

4.1.2 Figure 1 shows a worksheet with the key tables of input and output values. Within the spreadsheet the LLITM turning movements have already been added, however the traffic counts have not yet been undertaken, and therefore the ‘green’ cells are populated with dummy data.

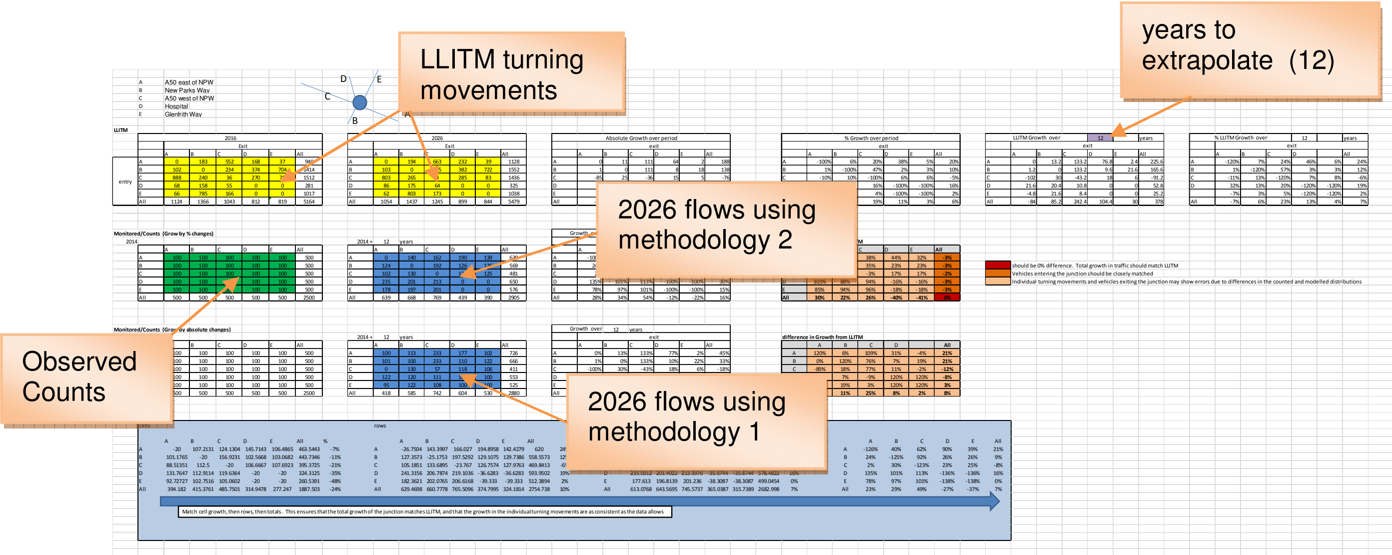


Figure 1: Key data areas for inputting and outputting information from the spreadsheet

4.1.3 Within the methodology there are various subtleties that have been built into the spreadsheet:

- Where the 2016 LLITM or observed volumes for any movement are recorded as 0, the % change is calculated based upon the volume being 1. This is used to avoid any infinities in the calculation.
- Where LLITM predicts a fall in traffic volume then if the model predicts a volume of less than 0 then the volume will be capped at 0

5 Notes

5.1.1 The observed traffic counts have not yet been obtained, and therefore the how close they will be to the LLITM volumes is not known

5.1.2 This note describes a mechanical process for determining the possible future year traffic volumes. However it will still require human intervention in order to compare the outputs of the two methodologies

5.1.3 Assumptions regarding changes to employment and county hall and also access to the hospital needs to be checked within LLITM

5.1.4 Assumptions regarding highways and other transport mitigation need to be assessed to determine whether they will have an impact on the junction

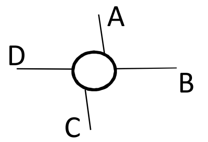
Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix H – Revised Junction Matrices from LLITM Local Calibration – LLITM Change in Flows 'Without Development'

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	119	0	773		892
	B	208	0	87	389		684
	C	0	76	0	406		482
	D	605	230	364	0		1199
	E						0
	All	813	425	451	1568	0	3257

2026						
	Exit					
	A	B	C	D	E	All
A	0	158	0	1041		1199
B	219	0	104	404		727
C	0	101	0	689		790
D	723	273	705	0		1701
E						0
All	942	532	809	2134	0	4417

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	124	0	840		964
B	248	0	114	481		843
C	0	45	33	511		589
D	653	289	487	0		1429
E						0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	151	0	1035	0	1186
B	257	0	129	493	0	879
C	0	57	11	772	0	840
D	728	321	780	0	0	1829
E	0	0	0	0	0	0
All	984	528	920	2300	0	4733

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	124	0	840	0	964
B	248	0	114	481	0	843
C	0	45	33	511	0	589
D	653	289	487	0	0	1429
E	0	0	0	0	0	0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	150	0	1019	0	1169
B	255	0	125	491	0	872
C	0	62	33	700	0	794
D	732	318	714	0	0	1764
E	0	0	0	0	0	0
All	987	529	873	2209	0	4598

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	0	67	0	72
B	40	0	27	92	0	159
C	0	-31	33	105	0	107
D	48	59	123	0	0	230
E	0	0	0	0	0	0
All	88	33	183	264	0	568

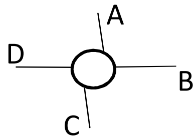
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	151	0	1035	0	1186
B	257	0	129	493	0	879
C	0	62	33	772	0	867
D	732	321	780	0	0	1832
E	0	0	0	0	0	0
All	988	533	942	2300	0	4764

	A	B	C	D	E	All
A	0%	4%	0%	9%	0%	8%
B	19%	0%	31%	24%	0%	23%
C	0%	-41%	0%	26%	0%	22%
D	8%	26%	34%	0%	0%	19%
E	0%	0%	0%	0%	0%	0%
All	11%	8%	41%	17%	0%	17%

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	173	0	575		748
	B	167	0	89	133		389
	C	0	59	0	195		254
	D	426	372	395	0		1193
	E						0
	All	593	604	484	903	0	2584

2026						
	Exit					
	A	B	C	D	E	All
A	0	194	0	691		885
B	175	0	118	195		488
C	0	52	0	410		462
D	750	448	535	0		1733
E						0
All	925	694	653	1296	0	3568

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	239	0	602		841
B	151	0	57	419		627
C	0	92	25	456		573
D	708	483	404	0		1595
E						0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	255	0	673	0	927
B	145	0	65	511	0	721
C	0	83	8	779	0	871
D	1029	529	482	0	0	2040
E	0	0	0	0	0	0
All	1174	867	555	1963	0	4559

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	239	0	602	0	841
B	151	0	57	419	0	627
C	0	92	25	456	0	573
D	708	483	404	0	0	1595
E	0	0	0	0	0	0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	253	0	679	0	932
B	156	0	76	460	0	693
C	0	87	25	599	0	712
D	924	534	497	0	0	1955
E	0	0	0	0	0	0
All	1080	874	599	1739	0	4292

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	66	0	27	0	93
B	-16	0	-32	286	0	238
C	0	33	25	261	0	319
D	282	111	9	0	0	402
E	0	0	0	0	0	0
All	266	210	2	574	0	1052

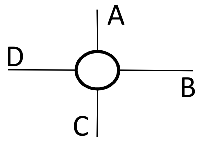
	A	B	C	D	E	All
A	0%	38%	0%	5%	0%	12%
B	-10%	0%	-36%	215%	0%	61%
C	0%	56%	0%	134%	0%	126%
D	66%	30%	2%	0%	0%	34%
E	0%	0%	0%	0%	0%	0%
All	45%	35%	0%	64%	0%	41%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	255	0	679	0	934
B	156	0	76	511	0	744
C	0	87	25	779	0	891
D	1029	534	497	0	0	2060
E	0	0	0	0	0	0
All	1186	876	599	1969	0	4629

A	A426 North
B	A4303 East
C	A426 South
D	A4303 West
E	

A4303/A426 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	429	232	144		805
	B	515	0	490	565		1570
	C	223	374	0	3		600
	D	98	398	12	0		508
	E						0
	All	836	1201	734	712	0	3483

	2026					
	Exit					
	A	B	C	D	E	All
A	0	587	210	228		1025
B	679	0	561	898		2138
C	248	435	0	6		689
D	136	680	15	0		831
E						0
All	1063	1702	786	1132	0	4683

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	516	350	99		965
B	502	0	582	749		1833
C	305	343	0	34		682
D	70	584	41	0		695
E						0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	659	336	141	0	1136
B	602	0	631	1032	0	2266
C	320	371	0	55	0	746
D	87	851	47	0	0	986
E	0	0	0	0	0	0
All	1009	1881	1015	1229	0	5134

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	516	350	99	0	965
B	502	0	582	749	0	1833
C	305	343	0	34	0	682
D	70	584	41	0	0	695
E	0	0	0	0	0	0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	621	335	155	0	1112
B	611	0	629	971	0	2212
C	322	384	0	36	0	741
D	95	772	43	0	0	910
E	0	0	0	0	0	0
All	1028	1777	1008	1162	0	4975

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	87	118	-45	0	160
B	-13	0	92	184	0	263
C	82	-31	0	31	0	82
D	-28	186	29	0	0	187
E	0	0	0	0	0	0
All	41	242	239	170	0	692

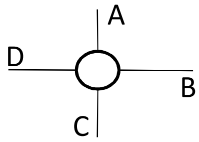
	A	B	C	D	E	All
A	0%	20%	51%	-31%	0%	20%
B	-3%	0%	19%	33%	0%	17%
C	37%	-8%	0%	1033%	0%	14%
D	-29%	47%	242%	0%	0%	37%
E	0%	0%	0%	0%	0%	0%
All	5%	20%	33%	24%	0%	20%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	659	336	155	0	1150
B	611	0	631	1032	0	2275
C	322	384	0	55	0	761
D	95	851	47	0	0	994
E	0	0	0	0	0	0
All	1028	1894	1015	1243	0	5180

A A426 North
B A4303 East
C A426 South
D A4303 West
E

A4303/A426 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	464	246	116		826
	B	308	0	346	283		937
	C	425	185	0	3		613
	D	138	544	6	0		688
	E						0
	All	871	1193	598	402	0	3064

2026						
	Exit					
	A	B	C	D	E	All
A	0	568	282	146		996
B	342	0	396	562		1300
C	476	333	0	6		815
D	261	832	20	0		1113
E						0
All	1079	1733	698	714	0	4224

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	426	314	122		862
B	489	0	417	533		1439
C	358	348	0	29		735
D	93	818	38	0		949
E						0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	488	343	142	0	973
B	506	0	441	851	0	1798
C	355	490	0	44	0	890
D	146	1089	96	0	0	1330
E	0	0	0	0	0	0
All	1007	2067	879	1038	0	4991

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	426	314	122	0	862
B	489	0	417	533	0	1439
C	358	348	0	29	0	735
D	93	818	38	0	0	949
E	0	0	0	0	0	0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	495	338	142	0	975
B	512	0	450	719	0	1681
C	392	447	0	31	0	870
D	175	1010	47	0	0	1232
E	0	0	0	0	0	0
All	1079	1952	836	892	0	4758

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-38	68	6	0	36
B	181	0	71	250	0	502
C	-67	163	0	26	0	122
D	-45	274	32	0	0	261
E	0	0	0	0	0	0
All	69	399	171	282	0	921

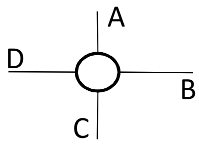
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	495	343	142	0	981
B	512	0	450	851	0	1813
C	392	490	0	44	0	927
D	175	1089	96	0	0	1359
E	0	0	0	0	0	0
All	1079	2074	889	1038	0	5080

	A	B	C	D	E	All
A	0%	-8%	28%	5%	0%	4%
B	59%	0%	21%	88%	0%	54%
C	-16%	88%	0%	867%	0%	20%
D	-33%	50%	533%	0%	0%	38%
E	0%	0%	0%	0%	0%	0%
All	8%	33%	29%	70%	0%	30%

A	Coventry Road
B	A4303 East
C	Fairacres
D	A4303 West
E	

A4303/Coventry Rd Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	101	0	542		643
	B	7	0	0	705		712
	C	0	0	0	0		0
	D	218	407	0	0		625
	E						0
	All	225	508	0	1247	0	1980

2026						
	Exit					
	A	B	C	D	E	All
A	0	109	0	645		754
B	16	0	0	1116		1132
C	0	0	0	0		0
D	309	722	0	0		1031
E						0
All	325	831	0	1761	0	2917

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	151	0	560		711
B	30	0	0	923		953
C	8	8	0	3		19
D	168	522	4	7		701
E						0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	160	0	634	0	794
B	55	0	0	1274	0	1330
C	3	3	0	1	0	6
D	214	788	1	2	0	1006
E	0	0	0	0	0	0
All	272	951	1	1912	0	3136

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	151	0	560	0	711
B	30	0	0	923	0	953
C	8	8	0	3	0	19
D	168	522	4	7	0	701
E	0	0	0	0	0	0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	156	0	629	0	785
B	36	0	0	1197	0	1233
C	8	8	0	3	0	19
D	229	732	4	7	0	972
E	0	0	0	0	0	0
All	273	896	4	1836	0	3009

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	50	0	18	0	68
B	23	0	0	218	0	241
C	8	8	0	3	0	19
D	-50	115	4	7	0	76
E	0	0	0	0	0	0
All	-19	173	4	246	0	404

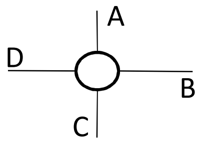
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	160	0	634	0	794
B	55	0	0	1274	0	1330
C	8	8	0	3	0	19
D	229	788	4	7	0	1028
E	0	0	0	0	0	0
All	292	956	4	1919	0	3171

	A	B	C	D	E	All
A	0%	50%	0%	3%	0%	11%
B	329%	0%	0%	31%	0%	34%
C	0%	0%	0%	0%	0%	0%
D	-23%	28%	0%	0%	0%	12%
E	0%	0%	0%	0%	0%	0%
All	-8%	34%	0%	20%	0%	20%

A	Coventry Road
B	A4303 East
C	Fairacres
D	A4303 West
E	

A4303/Coventry Rd Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	49	0	211		260
	B	22	0	0	381		403
	C	0	0	0	0		0
	D	468	639	0	0		1107
	E						0
	All	490	688	0	592	0	1770

2026						
	Exit					
	A	B	C	D	E	All
A	0	105	0	282		387
B	29	0	0	685		714
C	0	0	0	0		0
D	582	1008	0	0		1590
E						0
All	611	1113	0	967	0	2691

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	116	4	235		355
B	67	0	6	594		667
C	7	1	0	4		12
D	515	843	5	2		1365
E						0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	194	1	273	0	468
B	82	0	2	921	0	1005
C	2	0	0	1	0	4
D	594	1158	2	1	0	1754
E	0	0	0	0	0	0
All	678	1352	5	1196	0	3231

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	116	4	235	0	355
B	67	0	6	594	0	667
C	7	1	0	4	0	12
D	515	843	5	2	0	1365
E	0	0	0	0	0	0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	153	4	282	0	440
B	72	0	6	797	0	874
C	7	1	0	4	0	12
D	591	1089	5	2	0	1687
E	0	0	0	0	0	0
All	670	1243	15	1085	0	3013

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	67	4	24	0	95
B	45	0	6	213	0	264
C	7	1	0	4	0	12
D	47	204	5	2	0	258
E	0	0	0	0	0	0
All	99	272	15	243	0	629

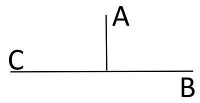
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	194	4	282	0	480
B	82	0	6	921	0	1009
C	7	1	0	4	0	12
D	594	1158	5	2	0	1758
E	0	0	0	0	0	0
All	683	1353	15	1209	0	3260

	A	B	C	D	E	All
A	0%	137%	0%	11%	0%	37%
B	205%	0%	0%	56%	0%	66%
C	0%	0%	0%	0%	0%	0%
D	10%	32%	0%	0%	0%	23%
E	0%	0%	0%	0%	0%	0%
All	20%	40%	0%	41%	0%	36%

A	Shackelton Way
B	A4303 East
C	A4303 West
D	
E	

A4303/Shackleton Way Junction AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	1247			1247
	C	0	625	0			625
	D						0
	E						0
	All	0	625	1247	0	0	1872

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	1676			1676
C	0	1149	0			1149
D						0
E						0
All	0	1149	1676	0	0	2825

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	97	0			97
B	0	0	1367			1367
C	71	644	0			715
D						0
E						0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	33	0	0	0	33
B	0	0	1735	0	0	1735
C	26	1124	0	0	0	1151
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	26	1157	1735	0	0	2919

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1367	0	0	1367
C	71	644	0	0	0	715
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1653	0	0	1653
C	71	993	0	0	0	1064
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	1090	1653	0	0	2814

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	120	0	0	120
C	71	19	0	0	0	90
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	116	120	0	0	307

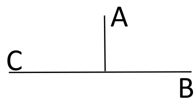
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1735	0	0	1735
C	71	1124	0	0	0	1195
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	1221	1735	0	0	3027

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	10%	0%	0%	10%
C	0%	3%	0%	0%	0%	14%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	19%	10%	0%	0%	16%

A Shackelton Way
B A4303 East
C A4303 West
D
E

A4303/Shackleton Way Junction PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	592			592
	C	0	1108	0			1108
	D						0
	E						0
	All	0	1108	592	0	0	1700

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	1087			1087
C	0	1535	0			1535
D						0
E						0
All	0	1535	1087	0	0	2622

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	200	0			200
B	0	0	706			706
C	19	1079	0			1098
D						0
E						0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	71	0	0	0	71
B	0	0	1178	0	0	1178
C	7	1472	0	0	0	1479
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	7	1543	1178	0	0	2729

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	706	0	0	706
C	19	1079	0	0	0	1098
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	1036	0	0	1036
C	19	1364	0	0	0	1383
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1564	1036	0	0	2619

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	114	0	0	114
C	19	-29	0	0	0	-10
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	171	114	0	0	304

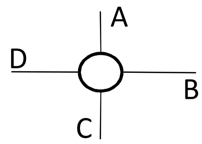
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	1178	0	0	1178
C	19	1472	0	0	0	1491
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1672	1178	0	0	2869

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	19%	0%	0%	19%
C	0%	-3%	0%	0%	0%	-1%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	15%	19%	0%	0%	18%

A	Hunter Boulevard
B	A4303 East
C	George Access
D	A4303 West
E	

A4303/Hunter Boulevard Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	162	1	155		318
	B	331	0	65	851		1247
	C	0	11	0	16		27
	D	601	452	139	0		1192
	E						0
	All	932	625	205	1022	0	2784

2026						
	Exit					
	A	B	C	D	E	All
A	0	240	8	273		521
B	485	0	79	1112		1676
C	1	13	0	16		30
D	384	889	144	0		1417
E						0
All	870	1142	231	1401	0	3644

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	154	0	269		423
B	516	61	81	709		1367
C	8	5	0	10		23
D	646	499	67	0		1212
E						0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	200	0	399	0	599
B	687	21	94	868	0	1669
C	8	6	0	10	0	25
D	482	806	67	0	0	1355
E	0	0	0	0	0	0
All	1177	1033	161	1277	0	3648

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	154	0	269	0	423
B	516	61	81	709	0	1367
C	8	5	0	10	0	23
D	646	499	67	0	0	1212
E	0	0	0	0	0	0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	206	5	348	0	558
B	619	61	90	883	0	1653
C	9	6	0	10	0	25
D	501	790	70	0	0	1362
E	0	0	0	0	0	0
All	1129	1064	165	1241	0	3598

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-8	-1	114	0	105
B	185	61	16	-142	0	120
C	8	-6	0	-6	0	-4
D	45	47	-72	0	0	20
E	0	0	0	0	0	0
All	238	94	-57	-34	0	241

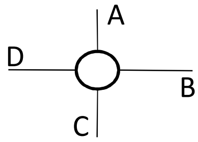
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	206	5	399	0	610
B	687	61	94	883	0	1725
C	9	6	0	10	0	25
D	501	806	70	0	0	1378
E	0	0	0	0	0	0
All	1197	1079	169	1292	0	3738

	A	B	C	D	E	All
A	0%	-5%	-100%	74%	0%	33%
B	56%	0%	25%	-17%	0%	10%
C	0%	-55%	0%	-38%	0%	-15%
D	7%	10%	-52%	0%	0%	2%
E	0%	0%	0%	0%	0%	0%
All	26%	15%	-28%	-3%	0%	9%

A	Hunter Boulevard
B	A4303 East
C	George Access
D	A4303 West
E	

A4303/Hunter Boulevard Roundabout PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	321	0	507		828
	B	152	0	17	423		592
	C	2	73	0	149		224
	D	212	713	19	0		944
	E						0
	All	366	1107	36	1079	0	2588

2026						
	Exit					
	A	B	C	D	E	All
A	0	447	1	252		700
B	221	0	18	848		1087
C	10	81	0	156		247
D	139	1007	21	0		1167
E						0
All	370	1535	40	1256	0	3201

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	273	6	520		799
B	200	28	21	457		706
C	16	161	0	91		268
D	173	645	11	0		829
E						0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	349	6	350	0	705
B	267	10	22	783	0	1082
C	51	150	0	81	0	282
D	130	803	11	0	0	944
E	0	0	0	0	0	0
All	448	1311	40	1214	0	3013

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	273	6	520	0	799
B	200	28	21	457	0	706
C	16	161	0	91	0	268
D	173	645	11	0	0	829
E	0	0	0	0	0	0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	357	7	350	0	714
B	246	28	22	740	0	1036
C	21	166	0	96	0	283
D	124	841	12	0	0	978
E	0	0	0	0	0	0
All	392	1392	41	1186	0	3011

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-48	6	13	0	-29
B	48	28	4	34	0	114
C	14	88	0	-58	0	44
D	-39	-68	-8	0	0	-115
E	0	0	0	0	0	0
All	23	0	2	-11	0	14

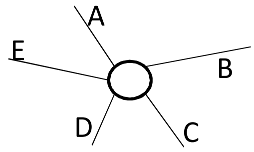
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	357	7	350	0	714
B	267	28	22	783	0	1100
C	51	166	0	96	0	313
D	130	841	12	0	0	983
E	0	0	0	0	0	0
All	448	1392	41	1229	0	3110

	A	B	C	D	E	All
A	0%	-15%	0%	3%	0%	-4%
B	32%	0%	24%	8%	0%	19%
C	700%	121%	0%	-39%	0%	20%
D	-18%	-10%	-42%	0%	0%	-12%
E	0%	0%	0%	0%	0%	0%
All	6%	0%	6%	-1%	0%	1%

A	A5 (North)
B	A4303
C	A5 (South)
D	B4027
E	Coal Pit Lane

A5/A4303 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	488	591	45	0	1124
	B	184	0	111	574	153	1022
	C	357	164	0	164	0	685
	D	13	327	117	0	0	457
	E	0	213	0	0	0	213
	All	554	1192	819	783	153	3501

2026						
	Exit					
	A	B	C	D	E	All
A	0	349	525	82	0	956
B	172	0	312	883	34	1401
C	413	250	0	241	0	904
D	97	589	144	0	0	830
E	0	229	0	0	0	229
All	682	1417	981	1206	34	4320

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	473	555	74	1	1105
B	345	0	639	235	53	1272
C	389	486	0	27	24	927
D	93	161	7	0	0	261
E	3	287	46	2	0	338
All	830	1407	1247	339	79	3903

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	466	530	71	4	1071
B	372	0	439	388	37	1236
C	359	386	0	70	67	883
D	78	307	26	0	1	412
E	6	210	100	5	0	321
All	815	1369	1095	534	109	3922

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	71	-17	1	4	59
B	196	0	194	-392	-37	-39
C	-35	165	0	-145	67	52
D	9	-195	-109	0	1	-294
E	6	-14	100	5	0	97
All	176	27	168	-531	35	-125

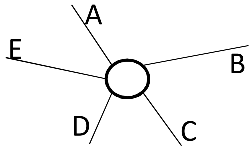
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	473	555	74	4	1107
B	372	0	639	388	53	1452
C	389	486	0	70	67	1013
D	93	307	26	0	1	426
E	6	287	100	5	0	398
All	860	1553	1320	538	125	4396

	A	B	C	D	E	All
A	0%	15%	-3%	2%	0%	5%
B	107%	0%	175%	-68%	-24%	-4%
C	-10%	101%	0%	-88%	0%	8%
D	69%	-60%	-93%	0%	0%	-64%
E	0%	-7%	0%	0%	0%	46%
All	32%	2%	21%	-68%	23%	-4%

A	A5 (North)
B	A4303
C	A5 (South)
D	B4027
E	Coal Pit Lane

A5/A403 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	303	316	20	0	639
	B	371	0	165	320	224	1080
	C	462	76	0	173	0	711
	D	37	511	90	0	0	638
	E	0	55	4	0	0	59
	All	870	945	575	513	224	3127

	2026					
	Exit					
	A	B	C	D	E	All
A	0	193	427	95	0	715
B	279	0	167	725	86	1257
C	481	138	0	224	0	843
D	78	728	165	0	0	971
E	0	108	1	0	0	109
All	838	1167	760	1044	86	3895

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	260	394	51	1	706
B	495	0	319	306	120	1240
C	559	305	0	11	32	907
D	115	242	12	0	2	371
E	3	236	30	3	0	271
All	1171	1044	755	371	155	3496

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	255	379	64	2	700
B	453	0	275	414	85	1227
C	528	228	0	43	90	889
D	94	337	58	0	6	495
E	6	148	45	6	0	205
All	1081	968	757	527	183	3516

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	25	-11	-6	2	10
B	143	0	109	-176	-47	29
C	53	111	0	-164	90	90
D	30	-319	-82	0	6	-365
E	6	58	43	6	0	113
All	232	-125	59	-340	51	-123

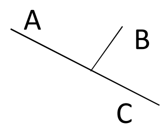
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	260	394	64	2	720
B	495	0	319	414	120	1348
C	559	305	0	43	90	997
D	115	337	58	0	6	515
E	6	236	45	6	0	293
All	1175	1138	816	527	218	3874

	A	B	C	D	E	All
A	0%	8%	-3%	-30%	0%	2%
B	39%	0%	66%	-55%	-21%	3%
C	11%	146%	0%	-95%	0%	13%
D	81%	-62%	-91%	0%	0%	-57%
E	0%	105%	1075%	0%	0%	192%
All	27%	-13%	10%	-66%	23%	-4%

A	A5 North
B	Mere Lane
C	A5 South
D	
E	

A5/Mere Lane Junction AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	4	1003			1007
	B	0	0	121			121
	C	515	38	0			553
	D						0
	E						0
	All	515	42	1124	0	0	1681

2026						
	Exit					
	A	B	C	D	E	All
A	0	261	781			1042
B	54	0	176			230
C	482	199	0			681
D						0
E						0
All	536	460	957	0	0	1953

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	8	1087			1095
B	9	0	95			104
C	651	31	0			682
D						0
E						0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	309	817	0	0	1126
B	121	0	46	0	0	167
C	665	126	0	0	0	791
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	786	435	863	0	0	2084

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	8	1087	0	0	1095
B	9	0	95	0	0	104
C	651	31	0	0	0	682
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	179	939	0	0	1118
B	45	0	132	0	0	177
C	629	138	0	0	0	767
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	674	318	1071	0	0	2062

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	4	84	0	0	88
B	9	0	-26	0	0	-17
C	136	-7	0	0	0	129
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	-3	58	0	0	200

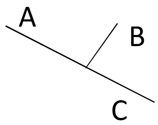
	A	B	C	D	E	All
A	0%	100%	8%	0%	0%	9%
B	0%	0%	-21%	0%	0%	-14%
C	26%	-18%	0%	0%	0%	23%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	-7%	5%	0%	0%	12%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	309	939	0	0	1248
B	121	0	132	0	0	253
C	665	138	0	0	0	803
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	786	447	1071	0	0	2304

A	A5 North
B	Mere Lane
C	A5 South
D	
E	

A5/Mere Lane Junction PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	7	0	77			84
	C	782	87	0			869
	D						0
	E						0
	All	789	87	639	0	0	1515

	2026					
	Exit					
	A	B	C	D	E	All
A	0	98	466			564
B	233	0	249			482
C	681	157	0			838
D						0
E						0
All	914	255	715	0	0	1884

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	7	565			572
B	9	0	40			49
C	940	64	0			1004
D						0
E						0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	295	321	0	0	616
B	147	0	72	0	0	219
C	945	108	0	0	0	1054
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1092	403	393	0	0	1889

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	7	565	0	0	572
B	9	0	40	0	0	49
C	940	64	0	0	0	1004
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	72	501	0	0	573
B	160	0	155	0	0	314
C	873	111	0	0	0	983
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1032	183	656	0	0	1871

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	7	3	0	0	10
B	2	0	-37	0	0	-35
C	158	-23	0	0	0	135
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	-16	-34	0	0	110

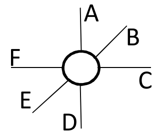
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	295	501	0	0	796
B	160	0	155	0	0	314
C	945	111	0	0	0	1056
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1105	406	656	0	0	2166

	A	B	C	D	E	All
A	0%	0%	1%	0%	0%	2%
B	29%	0%	-48%	0%	0%	-42%
C	20%	-26%	0%	0%	0%	16%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	-18%	-5%	0%	0%	7%

A	A5 North
B	B4109 North
C	M69 East
D	A5 South
E	B4109 South
F	M69 West

M69 Junction 1 AM



LLITM

	2008								
		Exit							
		A	B	C	D	E	F	All	*model*
entry	A	0	8	215	306	77	200	806	*805*
	B	33	0	96	219	229	487	1064	*1064*
	C	220	48	0	54	229	0	551	*551*
	D	186	98	18	0	3	182	487	*487*
	E	63	125	252	0	0	20	460	*461*
	F	143	205	0	147	4	0	499	*500*
	All	645	484	581	726	542	889	3867	*3868*
	model	*628*	*470*	*586*	*734*	*546*	*904*	*3868*	

2026								
	Exit							
	A	B	C	D	E	F	All	*model*
A	0	11	248	301	152	231	942	*942*
B	29	0	90	175	366	458	1119	*1119*
C	282	74	0	66	559	0	981	*981*
D	158	98	17	0	5	172	451	*451*
E	89	209	398	0	0	33	728	*728*
F	149	254	0	146	8	0	557	*557*
All	706	646	753	688	1090	894	4778	*4778*
model	*706*	*648*	*756*	*688*	*1089*	*891*	*4778*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	11	384	460	138	309	1302
B	86	0	155	295	355	671	1562
C	490	63	0	66	338	0	957
D	475	140	33	0	6	259	914
E	104	120	278	0	0	19	522
F	364	297	0	207	7	0	875
All	1520	632	850	1028	844	1258	6131

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	11	356	442	130	289	1227
B	86	0	149	294	332	643	1503
C	407	59	0	59	373	0	898
D	487	134	32	0	6	251	909
E	96	136	290	0	0	22	544
F	344	278	0	198	7	0	827
All	1420	617	827	993	847	1203	5906

Obs (2014)-LLITM (2016)

	A	B	C	D	E	F	All
A	0	1	119	139	3	68	330
B	55	0	57	104	11	175	402
C	146	-7	0	-3	-76	0	60
D	320	36	14	0	1	75	446
E	16	-45	-59	0	0	-7	-95
F	197	40	0	52	0	0	289
All	734	25	131	292	-61	311	1432

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	11	384	460	138	309	1302
B	86	0	155	295	355	671	1562
C	490	63	0	66	373	0	992
D	487	140	33	0	6	259	925
E	104	136	290	0	0	22	552
F	364	297	0	207	7	0	875
All	1531	647	862	1028	879	1261	6208

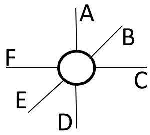
	A	B	C	D	E	F	All
A	0%	13%	55%	45%	4%	34%	41%
B	167%	0%	59%	47%	5%	36%	38%
C	66%	-15%	0%	-6%	-33%	0%	11%
D	172%	37%	78%	0%	33%	41%	92%
E	25%	-36%	-23%	0%	0%	-35%	-21%
F	138%	20%	0%	35%	0%	0%	58%
All	114%	5%	23%	40%	-11%	35%	37%

Average of Methods 1 and 2

	A	B	C	D	E	F	All
A	0	11	370	451	134	299	1264
B	86	0	152	294	343	657	1532
C	448	61	0	63	355	0	927
D	481	137	32	0	6	255	911
E	100	128	284	0	0	20	533
F	354	287	0	202	7	0	851
All	1470	624	838	1011	845	1231	6019

A A5 North
B B4109 North
C M69 East
D A5 South
E B4109 South
F M69 West

M69 Junction 1 PM



LLITM

2008 (Exit)

		A	B	C	D	E	F	All	model
entry	A	0	21	214	216	24	172	647	*648*
	B	44	0	74	79	108	237	542	*542*
	C	255	69	0	24	140	0	488	*487*
	D	319	139	26	0	8	79	571	*570*
	E	154	240	216	2	0	24	636	*636*
	F	332	591	0	215	12	0	1150	*1150*
	All	1104	1060	530	536	292	512	4034	*4033*
	model	*1110*	*1066*	*529*	*530*	*292*	*506*	*4033*	

2026 (Exit)

	A	B	C	D	E	F	All	model
A	0	21	273	188	58	165	706	*706*
B	39	0	86	61	233	206	626	*626*
C	351	93	0	27	451	0	923	*923*
D	328	141	34	0	21	77	601	*601*
E	220	334	383	2	0	33	972	*972*
F	340	599	0	188	28	0	1155	*1155*
All	1279	1189	777	467	791	480	4983	*4983*
model	*1280*	*1189*	*776*	*467*	*792*	*480*	*4984*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	31	334	433	112	265	1175
B	28	0	64	80	260	195	627
C	292	83	0	39	561	0	974
D	454	205	45	0	45	137	886
E	125	218	220	3	0	24	591
F	300	578	0	293	35	0	1205
All	1198	1115	664	848	1013	621	5459

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	30	316	445	79	262	1132
B	28	0	68	85	235	200	617
C	314	88	0	40	450	0	893
D	450	204	43	0	30	137	865
E	140	233	254	3	0	25	655
F	296	568	0	297	29	0	1189
All	1228	1124	681	871	824	625	5352

Obs (2014)-LLITM (2016)

	A	B	C	D	E	F	All
A	0	9	62	248	32	95	446
B	-13	0	-14	18	44	-16	19
C	-5	3	0	14	103	0	115
D	125	64	11	0	14	60	274
E	-58	-70	-73	1	0	-5	-205
F	-42	-28	0	100	6	0	36
All	7	-22	-14	381	199	134	685

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	31	334	445	112	265	1187
B	28	0	68	85	260	200	642
C	314	88	0	40	561	0	1004
D	454	205	45	0	45	137	887
E	140	233	254	3	0	25	655
F	300	578	0	297	35	0	1209
All	1236	1135	702	871	1013	628	5584

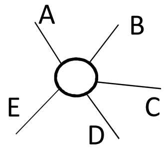
	A	B	C	D	E	F	All
A	0%	43%	29%	115%	133%	55%	69%
B	-30%	0%	-19%	23%	41%	-7%	4%
C	-2%	4%	0%	58%	74%	0%	24%
D	39%	46%	42%	0%	175%	76%	48%
E	-38%	-29%	-34%	50%	0%	-21%	-32%
F	-13%	-5%	0%	47%	50%	0%	3%
All	1%	-2%	-3%	71%	68%	26%	17%

Average of Methods 1 and 2

	A	B	C	D	E	F	All
A	0	31	325	439	95	264	1154
B	28	0	66	82	248	198	622
C	303	86	0	40	506	0	934
D	452	205	44	0	38	137	876
E	132	225	237	3	0	24	623
F	298	573	0	295	32	0	1197
All	1213	1119	672	860	918	623	5405

A	A5 North
B	A426 North
C	Gibbet Lane
D	A5 South
E	A426 South

A5/A426 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	19	718	81	818
	B	0	0	0	357	300	657
	C	13	0	0	15	16	44
	D	615	377	21	0	0	1013
	E	57	125	56	0	0	238
	All	685	502	96	1090	397	2770

	2026						
	Exit						
	A	B	C	D	E	All	*model*
A	*0*	*0*	*15*	*915*	*51*	*981*	*981*
B	*0*	*0*	*0*	*471*	*205*	*676*	*676*
C	*25*	*0*	*0*	*22*	*13*	*60*	*60*
D	*653*	*262*	*11*	*0*	*0*	*926*	*926*
E	*221*	*318*	*111*	*0*	*0*	*651*	*651*
All	*900*	*580*	*138*	*1408*	*269*	*3294*	*3294*
model	*903*	*582*	*138*	*1403*	*268*	*3294*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	3	14	541	384	942
B	1	0	11	182	381	574
C	36	12	0	25	45	118
D	329	85	19	4	37	474
E	890	765	42	30	0	1727
All	1256	865	85	782	848	3836

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	10	13	599	500	1123
B	2	0	33	230	434	700
C	28	33	0	22	44	127
D	364	37	22	13	119	555
E	483	590	68	111	0	1251
All	876	670	137	975	1098	3755

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	10	-3	-250	439	196
B	2	0	33	-203	198	30
C	7	33	0	2	30	72
D	-277	-263	8	13	119	-400
E	316	336	-25	111	0	738
All	48	116	13	-327	786	636

	A	B	C	D	E	All
A	0%	0%	-16%	-35%	542%	24%
B	0%	0%	0%	-57%	66%	5%
C	54%	0%	0%	13%	188%	164%
D	-45%	-70%	38%	0%	0%	-39%
E	554%	269%	-45%	0%	0%	310%
All	7%	23%	14%	-30%	198%	23%

Largest Growth in Turning movement

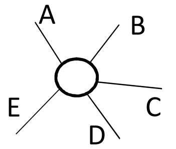
	A	B	C	D	E	All
A	0	10	14	599	500	1123
B	2	0	33	230	434	700
C	36	33	0	25	45	139
D	364	85	22	13	119	603
E	890	765	68	111	0	1833
All	1291	892	137	978	1099	4398

Average of Methods 1 and 2

	A	B	C	D	E	All
A	0	7	13	570	442	1032
B	1	0	22	206	408	637
C	32	23	0	24	44	122
D	347	61	20	9	78	515
E	686	677	55	71	0	1489
All	1066	767	111	879	973	3795

A	A5 North
B	A426 North
C	Gibbet Lane
D	A5 South
E	A426 South

A5/A426 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	13	502	60	575
	B	0	0	0	383	112	495
	C	15	0	0	27	28	70
	D	676	285	21	0	0	982
	E	19	194	17	0	0	230
	All	710	479	51	912	200	2352

2026							
	Exit						
	A	B	C	D	E	All	*model*
A	0	0	32	852	97	981	*981*
B	0	0	0	529	147	676	*676*
C	12	0	0	24	24	60	*60*
D	845	40	41	0	0	926	*926*
E	46	540	65	0	0	651	*651*
All	904	580	138	1404	268	3294	*3294*
model	*903*	*582*	*138*	*1403*	*268*	*3294*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	1	24	387	446	858
B	4	0	7	182	512	705
C	18	6	0	13	32	68
D	467	63	26	3	25	585
E	661	1061	135	34	0	1891
All	1149	1132	192	618	1015	4106

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	5	27	545	398	975
B	12	0	25	262	506	805
C	19	18	0	13	34	84
D	566	5	31	10	85	697
E	376	744	82	107	0	1309
All	973	772	165	937	1022	3869

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	1	-190	313	129
B	12	0	25	-218	370	189
C	6	18	0	-12	9	21
D	-223	-117	-3	10	85	-248
E	339	319	33	107	0	798
All	134	225	56	-303	777	889

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	5	27	545	446	1023
B	12	0	25	262	512	811
C	19	18	0	13	34	85
D	566	63	31	10	85	755
E	661	1061	135	107	0	1964
All	1258	1148	218	937	1077	4638

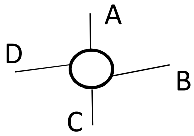
	A	B	C	D	E	All
A	0%	0%	8%	-38%	522%	22%
B	0%	0%	0%	-57%	330%	38%
C	40%	0%	0%	-44%	32%	30%
D	-33%	-41%	-14%	0%	0%	-25%
E	1784%	164%	194%	0%	0%	347%
All	19%	47%	110%	-33%	389%	38%

Average of Methods 1 and 2

	A	B	C	D	E	All
A	0	3	25	466	422	916
B	8	0	16	222	509	755
C	19	12	0	13	33	76
D	517	34	29	6	55	641
E	518	903	108	70	0	1600
All	1061	952	179	778	1019	3988

A A426 North
B M6 East
C A426 South
D M6 West

M6 Junction 1 AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	317	81		398
	B	0	0	62	0		62
	C	121	73	0	858		1052
	D	118	0	970	0		1088
	E						0
	All	239	73	1349	939	0	2600

	2026					
	Exit					
	A	B	C	D	E	All
A	0	0	216	52		268
B	0	0	121	0		121
C	431	172	0	658		1261
D	220	0	770	0		990
E						0
All	651	172	1107	710	0	2640

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	42	878	301		1221
B	31	77	437	0		545
C	646	179	0	674		1499
D	313	0	756	0		1069
E						0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	14	680	225	0	919
B	12	29	816	0	0	858
C	1075	209	0	350	0	1634
D	417	0	551	0	0	967
E	0	0	0	0	0	0
All	1503	253	2047	575	0	4378

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	42	878	301	0	1221
B	31	77	437	0	0	545
C	646	179	0	674	0	1499
D	313	0	756	0	0	1069
E	0	0	0	0	0	0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	42	811	282	0	1134
B	31	77	476	0	0	584
C	853	245	0	541	0	1638
D	381	0	623	0	0	1004
E	0	0	0	0	0	0
All	1265	364	1910	822	0	4361

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	42	561	220	0	823
B	31	77	375	0	0	483
C	525	106	0	-184	0	447
D	195	0	-214	0	0	-19
E	0	0	0	0	0	0
All	751	225	722	36	0	1734

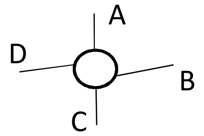
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	42	811	282	0	1134
B	31	77	816	0	0	924
C	1075	245	0	541	0	1861
D	417	0	623	0	0	1039
E	0	0	0	0	0	0
All	1523	364	2250	822	0	4959

	A	B	C	D	E	All
A	0%	0%	177%	272%	0%	207%
B	0%	0%	605%	0%	0%	779%
C	434%	145%	0%	-21%	0%	42%
D	165%	0%	-22%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	314%	308%	54%	4%	0%	67%

A	A426 North
B	M6 East
C	A426 South
D	M6 West

M6 Junction 1 PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	152	47		199
	B	0	0	45	0		45
	C	61	68	0	1032		1161
	D	169	0	773	0		942
	E						0
	All	230	68	970	1079	0	2347

	2026					
	Exit					
	A	B	C	D	E	All
A	0	0	329	50		379
B	2	0	191	0		193
C	144	152	0	794		1090
D	259	0	453	0		712
E						0
All	405	152	973	844	0	2374

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	28	656	301		985
B	58	24	226	0		308
C	725	219	0	580		1524
D	283	0	643	0		926
E						0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	8	971	262	0	1241
B	91	8	674	0	0	773
C	699	202	0	248	0	1149
D	275	0	334	0	0	609
E	0	0	0	0	0	0
All	1065	217	1980	510	0	3772

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	28	656	301	0	985
B	58	24	226	0	0	308
C	725	219	0	580	0	1524
D	283	0	643	0	0	926
E	0	0	0	0	0	0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	28	774	303	0	1105
B	59	24	323	0	0	407
C	780	275	0	421	0	1477
D	343	0	430	0	0	773
E	0	0	0	0	0	0
All	1183	327	1527	724	0	3761

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	28	504	254	0	786
B	58	24	181	0	0	263
C	664	151	0	-452	0	363
D	114	0	-130	0	0	-16
E	0	0	0	0	0	0
All	836	203	555	-198	0	1396

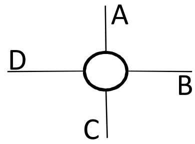
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	28	971	303	0	1302
B	91	24	674	0	0	789
C	780	275	0	421	0	1477
D	343	0	430	0	0	773
E	0	0	0	0	0	0
All	1214	327	2075	724	0	4341

	A	B	C	D	E	All
A	0%	0%	332%	540%	0%	395%
B	0%	0%	402%	0%	0%	584%
C	1089%	222%	0%	-44%	0%	31%
D	67%	0%	-17%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	363%	299%	57%	-18%	0%	59%

A New Access
B Mere Lane East
C Hunter Boulevard
D Mere Lane West
E

Mere Lane/Magna Park



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	121		121
	C	0	0	0	0		0
	D	0	42	0	0		42
	E						0
	All	0	42	0	121	0	163

	2026					
	Exit					
	A	B	C	D	E	All
A	0	24	103	95		222
B	78	0	99	82		259
C	178	21	0	52		251
D	159	46	255	0		460
E						0
All	415	91	457	229	0	1192

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	104		104
C	0	0	0	0		0
D	0	39	0	0		39
E						0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	284	0	284
C	0	0	0	0	0	0
D	0	461	0	0	0	461
E	0	0	0	0	0	0
All	0	461	0	284	0	745

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	104	0	104
C	0	0	0	0	0	0
D	0	39	0	0	0	39
E	0	0	0	0	0	0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	16	69	63	0	148
B	52	0	66	78	0	196
C	119	14	0	35	0	167
D	106	42	170	0	0	318
E	0	0	0	0	0	0
All	277	72	305	176	0	829

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-17	0	-17
C	0	0	0	0	0	0
D	0	-3	0	0	0	-3
E	0	0	0	0	0	0
All	0	-3	0	-17	0	-20

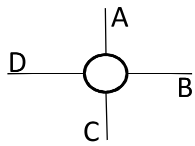
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	16	69	63	0	148
B	52	0	66	284	0	402
C	119	14	0	35	0	167
D	106	461	170	0	0	737
E	0	0	0	0	0	0
All	277	491	305	382	0	1454

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-14%	0%	-14%
C	0%	0%	0%	0%	0%	0%
D	0%	-7%	0%	0%	0%	-7%
E	0%	0%	0%	0%	0%	0%
All	0%	-7%	0%	-14%	0%	-12%

A	New Access
B	Mere Lane East
C	Hunter Boulevard
D	Mere Lane West
E	

Mere Lane/Magna Park access PM



LLITM

2008

		Exit					
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	84		84
	C	0	0	0	0		0
	D	0	87	0	0		87
	E						0
	All	0	87	0	84	0	171

2026

	Exit					
	A	B	C	D	E	All
A	0	75	151	175		401
B	30	0	29	89		148
C	100	46	0	218		364
D	91	67	97	0		255
E						0
All	221	188	277	482	0	1168

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	49		49
C	0	0	0	0		0
D	0	71	0	0		71
E						0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	183	0	183
C	0	0	0	0	0	0
D	0	403	0	0	0	403
E	0	0	0	0	0	0
All	0	403	0	183	0	586

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	49	0	49
C	0	0	0	0	0	0
D	0	71	0	0	0	71
E	0	0	0	0	0	0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	50	101	117	0	267
B	20	0	19	52	0	92
C	67	31	0	145	0	243
D	61	58	65	0	0	183
E	0	0	0	0	0	0
All	147	138	185	314	0	785

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-35	0	-35
C	0	0	0	0	0	0
D	0	-16	0	0	0	-16
E	0	0	0	0	0	0
All	0	-16	0	-35	0	-51

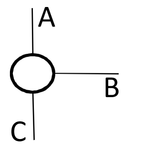
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	50	101	117	0	267
B	20	0	19	183	0	223
C	67	31	0	145	0	243
D	61	403	65	0	0	528
E	0	0	0	0	0	0
All	147	484	185	445	0	1261

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-42%	0%	-42%
C	0%	0%	0%	0%	0%	0%
D	0%	-18%	0%	0%	0%	-18%
E	0%	0%	0%	0%	0%	0%
All	0%	-18%	0%	-42%	0%	-30%

A A5 North
B Site Access
C A5 South
D
E

A5 Northern Site Access AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	1007			1007
	B	0	0	0			0
	C	515	0	0			515
	D						0
	E						0
	All	515	0	1007	0	0	1522

	2026					
	Exit					
	A	B	C	D	E	All
A	0	183	1042			1225
B	76	0	0			76
C	536	0	0			536
D						0
E						0
All	612	183	1042	0	0	1837

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	1095			1095
B	0	0	0			0
C	660	0	0			660
D						0
E						0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	0	1296	0	0	1296
B	0	0	0	0	0	0
C	701	0	0	0	0	701
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	701	0	1296	0	0	1997

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	1095	0	0	1095
B	0	0	0	0	0	0
C	660	0	0	0	0	660
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	122	1118	0	0	1240
B	51	0	0	0	0	51
C	674	0	0	0	0	674
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	725	122	1118	0	0	1965

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	88	0	0	88
B	0	0	0	0	0	0
C	145	0	0	0	0	145
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	0	88	0	0	233

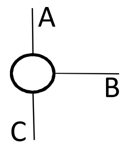
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	122	1296	0	0	1418
B	51	0	0	0	0	51
C	701	0	0	0	0	701
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	752	122	1296	0	0	2170

	A	B	C	D	E	All
A	0%	0%	9%	0%	0%	9%
B	0%	0%	0%	0%	0%	0%
C	28%	0%	0%	0%	0%	28%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	0%	9%	0%	0%	15%

A	A5 North
B	Site Access
C	A5 South
D	
E	

A5 Northern Site Access PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	0	0	0			0
	C	789	0	0			789
	D						0
	E						0
	All	789	0	562	0	0	1351

2026						
	Exit					
	A	B	C	D	E	All
A	0	77	564			641
B	159	0	0			159
C	914	0	0			914
D						0
E						0
All	1073	77	564	0	0	1714

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	572			572
B	0	0	0			0
C	949	0	0			949
D						0
E						0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	0	670	0	0	670
B	0	0	0	0	0	0
C	1124	0	0	0	0	1124
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1124	0	670	0	0	1793

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	572	0	0	572
B	0	0	0	0	0	0
C	949	0	0	0	0	949
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	51	573	0	0	625
B	106	0	0	0	0	106
C	1032	0	0	0	0	1032
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1138	51	573	0	0	1763

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	10	0	0	10
B	0	0	0	0	0	0
C	160	0	0	0	0	160
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	0	10	0	0	170

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	51	670	0	0	721
B	106	0	0	0	0	106
C	1124	0	0	0	0	1124
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1230	51	670	0	0	1951

	A	B	C	D	E	All
A	0%	0%	2%	0%	0%	2%
B	0%	0%	0%	0%	0%	0%
C	20%	0%	0%	0%	0%	20%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	0%	2%	0%	0%	13%

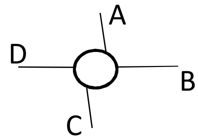
Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix H – Revised Junction Matrices from LLITM Local Calibration – LLITM Change in Flows 'With Development' & Mitigation

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	119	0	773		892
	B	208	0	87	389		684
	C	0	76	0	406		482
	D	605	230	364	0		1199
	E						0
	All	813	425	451	1568	0	3257

	2026					
	Exit					
	A	B	C	D	E	All
A	0	159	0	994		1153
B	220	0	102	421		743
C	0	101	0	674		775
D	705	276	706	0		1687
E						0
All	925	536	808	2089	0	4358

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	124	0	840		964
B	248	0	114	481		843
C	0	45	33	511		589
D	653	289	487	0		1429
E						0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	152	0	1000	0	1152
B	257	0	127	507	0	891
C	0	57	11	760	0	828
D	714	323	780	0	0	1816
E	0	0	0	0	0	0
All	971	531	918	2267	0	4687

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	124	0	840	0	964
B	248	0	114	481	0	843
C	0	45	33	511	0	589
D	653	289	487	0	0	1429
E	0	0	0	0	0	0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	151	0	987	0	1138
B	256	0	124	502	0	882
C	0	62	33	690	0	784
D	720	320	715	0	0	1754
E	0	0	0	0	0	0
All	976	532	872	2179	0	4559

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	0	67	0	72
B	40	0	27	92	0	159
C	0	-31	33	105	0	107
D	48	59	123	0	0	230
E	0	0	0	0	0	0
All	88	33	183	264	0	568

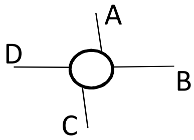
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	152	0	1000	0	1152
B	257	0	127	507	0	891
C	0	62	33	760	0	854
D	720	323	780	0	0	1822
E	0	0	0	0	0	0
All	977	536	940	2267	0	4719

	A	B	C	D	E	All
A	0%	4%	0%	9%	0%	8%
B	19%	0%	31%	24%	0%	23%
C	0%	-41%	0%	26%	0%	22%
D	8%	26%	34%	0%	0%	19%
E	0%	0%	0%	0%	0%	0%
All	11%	8%	41%	17%	0%	17%

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	173	0	575		748
	B	167	0	89	133		389
	C	0	59	0	195		254
	D	426	372	395	0		1193
	E						0
	All	593	604	484	903	0	2584

2026						
	Exit					
	A	B	C	D	E	All
A	0	194	0	665		859
B	180	0	119	197		496
C	0	52	0	411		463
D	710	445	524	0		1679
E						0
All	890	691	643	1273	0	3497

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	239	0	602		841
B	151	0	57	419		627
C	0	92	25	456		573
D	708	483	404	0		1595
E						0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	254	0	653	0	906
B	148	0	65	515	0	728
C	0	83	8	779	0	870
D	987	527	475	0	0	1989
E	0	0	0	0	0	0
All	1135	864	548	1946	0	4492

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	239	0	602	0	841
B	151	0	57	419	0	627
C	0	92	25	456	0	573
D	708	483	404	0	0	1595
E	0	0	0	0	0	0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	253	0	662	0	915
B	160	0	77	462	0	698
C	0	87	25	600	0	712
D	897	532	490	0	0	1919
E	0	0	0	0	0	0
All	1057	872	592	1724	0	4245

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	66	0	27	0	93
B	-16	0	-32	286	0	238
C	0	33	25	261	0	319
D	282	111	9	0	0	402
E	0	0	0	0	0	0
All	266	210	2	574	0	1052

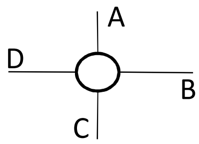
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	254	0	662	0	916
B	160	0	77	515	0	751
C	0	87	25	779	0	891
D	987	532	490	0	0	2009
E	0	0	0	0	0	0
All	1147	873	592	1955	0	4567

	A	B	C	D	E	All
A	0%	38%	0%	5%	0%	12%
B	-10%	0%	-36%	215%	0%	61%
C	0%	56%	0%	134%	0%	126%
D	66%	30%	2%	0%	0%	34%
E	0%	0%	0%	0%	0%	0%
All	45%	35%	0%	64%	0%	41%

A	A426 North
B	A4303 East
C	A426 South
D	A4303 West
E	

A4303/A426 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	429	232	144		805
	B	515	0	490	565		1570
	C	223	374	0	3		600
	D	98	398	12	0		508
	E						0
	All	836	1201	734	712	0	3483

	2026					
	Exit					
	A	B	C	D	E	All
A	0	593	208	217		1018
B	684	0	561	847		2092
C	241	434	0	5		680
D	134	659	13	0		806
E						0
All	1059	1686	782	1069	0	4596

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	516	350	99		965
B	502	0	582	749		1833
C	305	343	0	34		682
D	70	584	41	0		695
E						0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	662	333	135	0	1131
B	607	0	633	990	0	2231
C	317	374	0	48	0	740
D	87	834	43	0	0	963
E	0	0	0	0	0	0
All	1011	1870	1009	1174	0	5064

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	516	350	99	0	965
B	502	0	582	749	0	1833
C	305	343	0	34	0	682
D	70	584	41	0	0	695
E	0	0	0	0	0	0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	625	334	148	0	1107
B	615	0	629	937	0	2181
C	317	383	0	35	0	735
D	94	758	42	0	0	894
E	0	0	0	0	0	0
All	1026	1766	1005	1120	0	4917

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	87	118	-45	0	160
B	-13	0	92	184	0	263
C	82	-31	0	31	0	82
D	-28	186	29	0	0	187
E	0	0	0	0	0	0
All	41	242	239	170	0	692

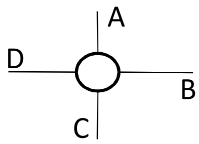
	A	B	C	D	E	All
A	0%	20%	51%	-31%	0%	20%
B	-3%	0%	19%	33%	0%	17%
C	37%	-8%	0%	1033%	0%	14%
D	-29%	47%	242%	0%	0%	37%
E	0%	0%	0%	0%	0%	0%
All	5%	20%	33%	24%	0%	20%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	662	334	148	0	1144
B	615	0	633	990	0	2238
C	317	383	0	48	0	748
D	94	834	43	0	0	971
E	0	0	0	0	0	0
All	1026	1879	1010	1187	0	5101

A A426 North
B A4303 East
C A426 South
D A4303 West
E

A4303/A426 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	464	246	116		826
	B	308	0	346	283		937
	C	425	185	0	3		613
	D	138	544	6	0		688
	E						0
	All	871	1193	598	402	0	3064

2026						
	Exit					
	A	B	C	D	E	All
A	0	570	275	153		998
B	344	0	393	540		1277
C	466	330	0	5		801
D	257	778	20	0		1055
E						0
All	1067	1678	688	698	0	4131

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	426	314	122		862
B	489	0	417	533		1439
C	358	348	0	29		735
D	93	818	38	0		949
E						0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	490	338	148	0	976
B	509	0	440	827	0	1776
C	352	489	0	39	0	880
D	144	1038	96	0	0	1279
E	0	0	0	0	0	0
All	1006	2018	873	1013	0	4910

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	426	314	122	0	862
B	489	0	417	533	0	1439
C	358	348	0	29	0	735
D	93	818	38	0	0	949
E	0	0	0	0	0	0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	497	333	147	0	977
B	513	0	448	704	0	1666
C	385	445	0	30	0	860
D	172	974	47	0	0	1194
E	0	0	0	0	0	0
All	1071	1915	829	881	0	4696

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-38	68	6	0	36
B	181	0	71	250	0	502
C	-67	163	0	26	0	122
D	-45	274	32	0	0	261
E	0	0	0	0	0	0
All	69	399	171	282	0	921

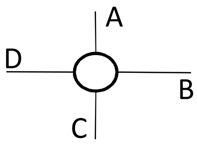
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	497	338	148	0	982
B	513	0	448	827	0	1788
C	385	489	0	39	0	913
D	172	1038	96	0	0	1306
E	0	0	0	0	0	0
All	1071	2024	882	1013	0	4990

	A	B	C	D	E	All
A	0%	-8%	28%	5%	0%	4%
B	59%	0%	21%	88%	0%	54%
C	-16%	88%	0%	867%	0%	20%
D	-33%	50%	533%	0%	0%	38%
E	0%	0%	0%	0%	0%	0%
All	8%	33%	29%	70%	0%	30%

A	Coventry Road
B	A4303 East
C	Fairacres
D	A4303 West
E	

A4303/Coventry Rd Roundabout AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	101	0	542		643
	B	7	0	0	705		712
	C	0	0	0	0		0
	D	218	407	0	0		625
	E						0
	All	225	508	0	1247	0	1980

2026						
	Exit					
	A	B	C	D	E	All
A	0	107	0	647		754
B	17	0	0	1053		1070
C	0	0	0	0		0
D	310	699	0	0		1009
E						0
All	327	806	0	1700	0	2833

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	151	0	560		711
B	30	0	0	923		953
C	8	8	0	3		19
D	168	522	4	7		701
E						0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	158	0	637	0	795
B	58	0	0	1218	0	1276
C	3	3	0	1	0	6
D	215	772	1	2	0	991
E	0	0	0	0	0	0
All	276	933	1	1858	0	3069

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	151	0	560	0	711
B	30	0	0	923	0	953
C	8	8	0	3	0	19
D	168	522	4	7	0	701
E	0	0	0	0	0	0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	155	0	630	0	785
B	37	0	0	1155	0	1192
C	8	8	0	3	0	19
D	229	717	4	7	0	957
E	0	0	0	0	0	0
All	274	880	4	1795	0	2953

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	50	0	18	0	68
B	23	0	0	218	0	241
C	8	8	0	3	0	19
D	-50	115	4	7	0	76
E	0	0	0	0	0	0
All	-19	173	4	246	0	404

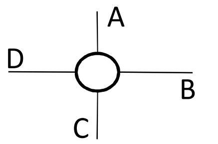
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	158	0	637	0	795
B	58	0	0	1218	0	1276
C	8	8	0	3	0	19
D	229	772	4	7	0	1012
E	0	0	0	0	0	0
All	295	938	4	1865	0	3103

	A	B	C	D	E	All
A	0%	50%	0%	3%	0%	11%
B	329%	0%	0%	31%	0%	34%
C	0%	0%	0%	0%	0%	0%
D	-23%	28%	0%	0%	0%	12%
E	0%	0%	0%	0%	0%	0%
All	-8%	34%	0%	20%	0%	20%

A Coventry Road
B A4303 East
C Fairacres
D A4303 West
E

A4303/Coventry Rd Roundabout PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	49	0	211		260
	B	22	0	0	381		403
	C	0	0	0	0		0
	D	468	639	0	0		1107
	E						0
	All	490	688	0	592	0	1770

2026						
	Exit					
	A	B	C	D	E	All
A	0	108	0	273		381
B	29	0	0	669		698
C	0	0	0	0		0
D	548	947	0	0		1495
E						0
All	577	1055	0	942	0	2574

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	116	4	235		355
B	67	0	6	594		667
C	7	1	0	4		12
D	515	843	5	2		1365
E						0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	197	1	264	0	462
B	82	0	2	902	0	986
C	2	0	0	1	0	4
D	568	1103	2	1	0	1673
E	0	0	0	0	0	0
All	652	1300	5	1168	0	3125

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	116	4	235	0	355
B	67	0	6	594	0	667
C	7	1	0	4	0	12
D	515	843	5	2	0	1365
E	0	0	0	0	0	0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	155	4	276	0	436
B	72	0	6	786	0	864
C	7	1	0	4	0	12
D	568	1048	5	2	0	1624
E	0	0	0	0	0	0
All	647	1205	15	1068	0	2935

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	67	4	24	0	95
B	45	0	6	213	0	264
C	7	1	0	4	0	12
D	47	204	5	2	0	258
E	0	0	0	0	0	0
All	99	272	15	243	0	629

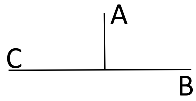
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	197	4	276	0	477
B	82	0	6	902	0	990
C	7	1	0	4	0	12
D	568	1103	5	2	0	1678
E	0	0	0	0	0	0
All	657	1301	15	1184	0	3157

	A	B	C	D	E	All
A	0%	137%	0%	11%	0%	37%
B	205%	0%	0%	56%	0%	66%
C	0%	0%	0%	0%	0%	0%
D	10%	32%	0%	0%	0%	23%
E	0%	0%	0%	0%	0%	0%
All	20%	40%	0%	41%	0%	36%

A Shackelton Way
B A4303 East
C A4303 West
D
E

A4303/Shackleton Way Junction AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	1247			1247
	C	0	625	0			625
	D						0
	E						0
	All	0	625	1247	0	0	1872

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	1700			1700
C	0	1010	0			1010
D						0
E						0
All	0	1010	1700	0	0	2710

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	97	0			97
B	0	0	1367			1367
C	71	644	0			715
D						0
E						0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	33	0	0	0	33
B	0	0	1754	0	0	1754
C	26	1015	0	0	0	1042
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	26	1049	1754	0	0	2829

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1367	0	0	1367
C	71	644	0	0	0	715
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1669	0	0	1669
C	71	901	0	0	0	972
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	998	1669	0	0	2738

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	120	0	0	120
C	71	19	0	0	0	90
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	116	120	0	0	307

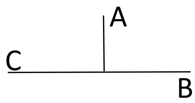
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1754	0	0	1754
C	71	1015	0	0	0	1086
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	1112	1754	0	0	2937

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	10%	0%	0%	10%
C	0%	3%	0%	0%	0%	14%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	19%	10%	0%	0%	16%

A Shackelton Way
B A4303 East
C A4303 West
D
E

A4303/Shackleton Way Junction PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	592			592
	C	0	1108	0			1108
	D						0
	E						0
	All	0	1108	592	0	0	1700

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	942			942
C	0	1495	0			1495
D						0
E						0
All	0	1495	942	0	0	2437

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	200	0			200
B	0	0	706			706
C	19	1079	0			1098
D						0
E						0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	72	0	0	0	72
B	0	0	1057	0	0	1057
C	7	1447	0	0	0	1454
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	7	1519	1057	0	0	2583

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	706	0	0	706
C	19	1079	0	0	0	1098
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	939	0	0	939
C	19	1337	0	0	0	1356
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1537	939	0	0	2495

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	114	0	0	114
C	19	-29	0	0	0	-10
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	171	114	0	0	304

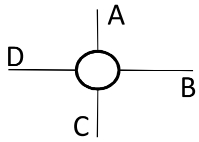
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	1057	0	0	1057
C	19	1447	0	0	0	1466
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1647	1057	0	0	2724

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	19%	0%	0%	19%
C	0%	-3%	0%	0%	0%	-1%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	15%	19%	0%	0%	18%

A	Hunter Boulevard
B	A4303 East
C	George Access
D	A4303 West
E	

A4303/Hunter Boulevard Roundabout AM



LLITM

		2008						
		Exit						
		A	B	C	D	E	All
entry	A	0	162	1	155		318
	B	331	0	65	851		1247
	C	0	11	0	16		27
	D	601	452	139	0		1192
	E						0
	All	932	625	205	1022	0	2784

2026						
	Exit					
	A	B	C	D	E	All
A	0	232	8	272		512
B	515	0	79	1105		1699
C	1	12	0	16		29
D	352	765	144	0		1261
E						0
All	868	1009	231	1393	0	3501

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	154	0	269		423
B	516	61	81	709		1367
C	8	5	0	10		23
D	646	499	67	0		1212
E						0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	194	0	396	0	590
B	712	20	93	856	0	1683
C	8	5	0	10	0	24
D	461	719	68	0	0	1248
E	0	0	0	0	0	0
All	1182	939	161	1262	0	3544

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	154	0	269	0	423
B	516	61	81	709	0	1367
C	8	5	0	10	0	23
D	646	499	67	0	0	1212
E	0	0	0	0	0	0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	201	5	347	0	552
B	639	61	90	878	0	1668
C	9	6	0	10	0	24
D	480	708	70	0	0	1258
E	0	0	0	0	0	0
All	1127	975	165	1235	0	3503

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-8	-1	114	0	105
B	185	61	16	-142	0	120
C	8	-6	0	-6	0	-4
D	45	47	-72	0	0	20
E	0	0	0	0	0	0
All	238	94	-57	-34	0	241

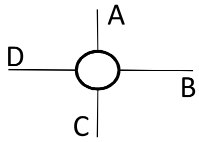
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	201	5	396	0	601
B	712	61	93	878	0	1745
C	9	6	0	10	0	25
D	480	719	70	0	0	1270
E	0	0	0	0	0	0
All	1201	987	168	1284	0	3640

	A	B	C	D	E	All
A	0%	-5%	-100%	74%	0%	33%
B	56%	0%	25%	-17%	0%	10%
C	0%	-55%	0%	-38%	0%	-15%
D	7%	10%	-52%	0%	0%	2%
E	0%	0%	0%	0%	0%	0%
All	26%	15%	-28%	-3%	0%	9%

A	Hunter Boulevard
B	A4303 East
C	George Access
D	A4303 West
E	

A4303/Hunter Boulevard Roundabout PM



LLITM

2008							
		Exit					
		A	B	C	D	E	All
entry	A	0	321	0	507		828
	B	152	0	17	423		592
	C	2	73	0	149		224
	D	212	713	19	0		944
	E						0
	All	366	1107	36	1079	0	2588

2026						
	Exit					
	A	B	C	D	E	All
A	0	442	1	246		689
B	216	0	18	708		942
C	10	84	0	153		247
D	133	970	21	0		1124
E						0
All	359	1496	40	1107	0	3002

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	273	6	520		799
B	200	28	21	457		706
C	16	161	0	91		268
D	173	645	11	0		829
E						0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	348	6	347	0	701
B	262	10	22	678	0	972
C	51	153	0	80	0	283
D	127	784	12	0	0	923
E	0	0	0	0	0	0
All	440	1294	40	1105	0	2879

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	273	6	520	0	799
B	200	28	21	457	0	706
C	16	161	0	91	0	268
D	173	645	11	0	0	829
E	0	0	0	0	0	0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	354	7	346	0	706
B	243	28	22	647	0	939
C	21	168	0	94	0	283
D	120	816	12	0	0	949
E	0	0	0	0	0	0
All	384	1366	41	1087	0	2878

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-48	6	13	0	-29
B	48	28	4	34	0	114
C	14	88	0	-58	0	44
D	-39	-68	-8	0	0	-115
E	0	0	0	0	0	0
All	23	0	2	-11	0	14

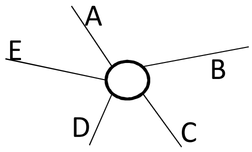
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	354	7	347	0	708
B	262	28	22	678	0	991
C	51	168	0	94	0	313
D	127	816	12	0	0	956
E	0	0	0	0	0	0
All	440	1366	41	1119	0	2967

	A	B	C	D	E	All
A	0%	-15%	0%	3%	0%	-4%
B	32%	0%	24%	8%	0%	19%
C	700%	121%	0%	-39%	0%	20%
D	-18%	-10%	-42%	0%	0%	-12%
E	0%	0%	0%	0%	0%	0%
All	6%	0%	6%	-1%	0%	1%

A A5 (North)
B A4303
C A5 (South)
D B4027
E Coal Pit Lane

A5/A4303 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	488	591	45	0	1124
	B	184	0	111	574	153	1022
	C	357	164	0	164	0	685
	D	13	327	117	0	0	457
	E	0	213	0	0	0	213
	All	554	1192	819	783	153	3501

	2026					
	Exit					
	A	B	C	D	E	All
A	0	294	537	82	0	913
B	166	0	286	898	44	1394
C	404	231	0	234	0	869
D	97	557	142	0	0	796
E	0	179	0	0	0	179
All	667	1261	965	1214	44	4151

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	433	568	75	1	1077
B	349	0	615	246	60	1271
C	388	464	0	27	25	904
D	92	154	7	0	0	253
E	3	239	45	2	0	288
All	833	1289	1235	351	86	3794

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	430	538	71	4	1042
B	368	0	422	398	43	1231
C	353	374	0	66	67	860
D	78	285	25	0	1	389
E	6	176	100	5	0	287
All	805	1265	1084	539	115	3809

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	71	-17	1	4	59
B	196	0	194	-392	-37	-39
C	-35	165	0	-145	67	52
D	9	-195	-109	0	1	-294
E	6	-14	100	5	0	97
All	176	27	168	-531	35	-125

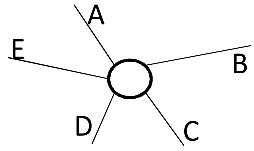
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	433	568	75	4	1079
B	368	0	615	398	60	1441
C	388	464	0	66	67	985
D	92	285	25	0	1	403
E	6	239	100	5	0	350
All	855	1421	1308	544	132	4259

	A	B	C	D	E	All
A	0%	15%	-3%	2%	0%	5%
B	107%	0%	175%	-68%	-24%	-4%
C	-10%	101%	0%	-88%	0%	8%
D	69%	-60%	-93%	0%	0%	-64%
E	0%	-7%	0%	0%	0%	46%
All	32%	2%	21%	-68%	23%	-4%

A	A5 (North)
B	A4303
C	A5 (South)
D	B4027
E	Coal Pit Lane

A5/A403 Roundabout PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	303	316	20	0	639
	B	371	0	165	320	224	1080
	C	462	76	0	173	0	711
	D	37	511	90	0	0	638
	E	0	55	4	0	0	59
	All	870	945	575	513	224	3127

2026						
	Exit					
	A	B	C	D	E	All
A	0	177	436	95	0	708
B	222	0	124	703	58	1107
C	493	113	0	225	0	831
D	78	736	180	0	0	994
E	0	98	2	0	0	100
All	793	1124	742	1023	58	3740

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	251	404	52	1	707
B	453	0	275	311	108	1146
C	590	272	0	12	33	906
D	117	249	13	0	2	381
E	2	212	39	2	0	256
All	1162	983	731	377	143	3397

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	244	385	64	2	695
B	415	0	247	399	66	1127
C	536	212	0	44	90	881
D	94	342	68	0	6	510
E	6	142	46	6	0	199
All	1051	939	745	513	164	3413

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	25	-11	-6	2	10
B	143	0	109	-176	-47	29
C	53	111	0	-164	90	90
D	30	-319	-82	0	6	-365
E	6	58	43	6	0	113
All	232	-125	59	-340	51	-123

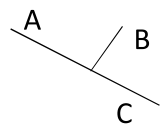
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	251	404	64	2	721
B	453	0	275	399	108	1234
C	590	272	0	44	90	995
D	117	342	68	0	6	533
E	6	212	46	6	0	270
All	1165	1076	793	513	206	3753

	A	B	C	D	E	All
A	0%	8%	-3%	-30%	0%	2%
B	39%	0%	66%	-55%	-21%	3%
C	11%	146%	0%	-95%	0%	13%
D	81%	-62%	-91%	0%	0%	-57%
E	0%	105%	1075%	0%	0%	192%
All	27%	-13%	10%	-66%	23%	-4%

A	A5 North
B	Mere Lane
C	A5 South
D	
E	

A5/Mere Lane Junction AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	4	1003			1007
	B	0	0	121			121
	C	515	38	0			553
	D						0
	E						0
	All	515	42	1124	0	0	1681

2026						
	Exit					
	A	B	C	D	E	All
A	0	289	735			1024
B	54	0	177			231
C	470	197	0			667
D						0
E						0
All	524	486	912	0	0	1922

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	8	1087			1095
B	9	0	95			104
C	651	31	0			682
D						0
E						0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	337	776	0	0	1113
B	122	0	46	0	0	168
C	654	125	0	0	0	780
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	776	462	822	0	0	2061

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	8	1087	0	0	1095
B	9	0	95	0	0	104
C	651	31	0	0	0	682
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	198	908	0	0	1106
B	45	0	132	0	0	177
C	621	137	0	0	0	758
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	666	335	1041	0	0	2042

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	4	84	0	0	88
B	9	0	-26	0	0	-17
C	136	-7	0	0	0	129
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	-3	58	0	0	200

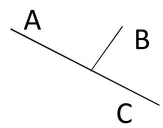
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	337	908	0	0	1245
B	122	0	132	0	0	254
C	654	137	0	0	0	791
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	776	474	1041	0	0	2291

	A	B	C	D	E	All
A	0%	100%	8%	0%	0%	9%
B	0%	0%	-21%	0%	0%	-14%
C	26%	-18%	0%	0%	0%	23%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	-7%	5%	0%	0%	12%

A A5 North
B Mere Lane
C A5 South
D
E

A5/Mere Lane Junction PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	7	0	77			84
	C	782	87	0			869
	D						0
	E						0
	All	789	87	639	0	0	1515

	2026					
	Exit					
	A	B	C	D	E	All
A	0	99	456			555
B	237	0	251			488
C	636	157	0			793
D						0
E						0
All	873	256	707	0	0	1836

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	7	565			572
B	9	0	40			49
C	940	64	0			1004
D						0
E						0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	297	315	0	0	612
B	150	0	73	0	0	222
C	911	109	0	0	0	1020
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1061	405	388	0	0	1855

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	7	565	0	0	572
B	9	0	40	0	0	49
C	940	64	0	0	0	1004
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	73	494	0	0	567
B	162	0	156	0	0	318
C	843	111	0	0	0	953
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1005	184	650	0	0	1839

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	7	3	0	0	10
B	2	0	-37	0	0	-35
C	158	-23	0	0	0	135
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	-16	-34	0	0	110

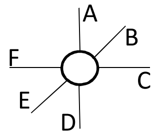
	A	B	C	D	E	All
A	0%	0%	1%	0%	0%	2%
B	29%	0%	-48%	0%	0%	-42%
C	20%	-26%	0%	0%	0%	16%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	-18%	-5%	0%	0%	7%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	297	494	0	0	791
B	162	0	156	0	0	318
C	911	111	0	0	0	1022
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1074	407	650	0	0	2131

M69 Junction 1 AM

A	A5 North
B	B4109 North
C	M69 East
D	A5 South
E	B4109 South
F	M69 West



LLITM

2008

		Exit							
		A	B	C	D	E	F	All	model
entry	A	0	8	215	306	77	200	806	*805*
	B	33	0	96	219	229	487	1064	*1064*
	C	220	48	0	54	229	0	551	*551*
	D	186	98	18	0	3	182	487	*487*
	E	63	125	252	0	0	20	460	*461*
	F	143	205	0	147	4	0	499	*500*
	All	645	484	581	726	542	889	3867	*3868*
	model	*628*	*470*	*586*	*734*	*546*	*904*	*3868*	

2026

	Exit							
	A	B	C	D	E	F	All	model
A	0	11	248	294	149	230	932	*932*
B	29	0	90	170	359	455	1104	*1104*
C	284	75	0	65	550	0	974	*974*
D	158	98	17	0	5	170	448	*448*
E	90	212	403	0	0	33	738	*738*
F	150	256	0	143	8	0	558	*558*
All	712	651	758	673	1072	887	4754	*4754*
model	*711*	*649*	*756*	*674*	*1075*	*890*	*4755*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	11	385	453	136	308	1293
B	86	0	155	290	350	668	1549
C	491	63	0	65	333	0	952
D	475	140	33	0	6	257	910
E	106	122	281	0	0	19	528
F	367	298	0	204	7	0	876
All	1525	635	853	1013	832	1252	6109

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	11	356	437	128	288	1220
B	86	0	149	291	327	640	1493
C	409	59	0	58	367	0	893
D	487	134	32	0	5	249	907
E	97	138	294	0	0	22	550
F	345	279	0	196	7	0	827
All	1424	621	830	983	835	1199	5890

Obs (2014)-LLITM (2016)

	A	B	C	D	E	F	All
A	0	1	119	139	3	68	330
B	55	0	57	104	11	175	402
C	146	-7	0	-3	-76	0	60
D	320	36	14	0	1	75	446
E	16	-45	-59	0	0	-7	-95
F	197	40	0	52	0	0	289
All	734	25	131	292	-61	311	1432

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	11	385	453	136	308	1293
B	86	0	155	291	350	668	1549
C	491	63	0	65	367	0	987
D	487	140	33	0	6	257	922
E	106	138	294	0	0	22	559
F	367	298	0	204	7	0	876
All	1537	651	866	1013	866	1254	6187

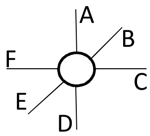
	A	B	C	D	E	F	All
A	0%	13%	55%	45%	4%	34%	41%
B	167%	0%	59%	47%	5%	36%	38%
C	66%	-15%	0%	-6%	-33%	0%	11%
D	172%	37%	78%	0%	33%	41%	92%
E	25%	-36%	-23%	0%	0%	-35%	-21%
F	138%	20%	0%	35%	0%	0%	58%
All	114%	5%	23%	40%	-11%	35%	37%

Average of Methods 1 and 2

	A	B	C	D	E	F	All
A	0	11	370	445	132	298	1257
B	86	0	152	291	338	654	1521
C	450	61	0	62	350	0	923
D	481	137	32	0	6	253	909
E	101	130	287	0	0	21	539
F	356	289	0	200	7	0	852
All	1474	628	842	998	833	1225	6000

A A5 North
B B4109 North
C M69 East
D A5 South
E B4109 South
F M69 West

M69 Junction 1 PM



LLITM

		2008 Exit							
		A	B	C	D	E	F	All	*model*
entry	A	0	21	214	216	24	172	647	*648*
	B	44	0	74	79	108	237	542	*542*
	C	255	69	0	24	140	0	488	*487*
	D	319	139	26	0	8	79	571	*570*
	E	154	240	216	2	0	24	636	*636*
	F	332	591	0	215	12	0	1150	*1150*
	All	1104	1060	530	536	292	512	4034	*4033*
	model	*1110*	*1066*	*529*	*530*	*292*	*506*	*4033*	

2026 Exit								
	A	B	C	D	E	F	All	*model*
A	0	20	272	178	57	163	690	*690*
B	41	0	92	62	244	217	656	*656*
C	347	92	0	27	453	0	919	*919*
D	318	136	34	0	20	76	584	*584*
E	216	329	390	2	0	33	970	*970*
F	345	604	0	187	29	0	1165	*1165*
All	1267	1181	788	455	804	489	4984	*4984*
model	*1265*	*1182*	*793*	*457*	*801*	*491*	*4989*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	30	334	420	110	264	1159
B	29	0	67	80	271	202	650
C	289	82	0	38	564	0	973
D	445	201	45	0	45	136	871
E	124	216	224	3	0	24	591
F	304	583	0	293	36	0	1215
All	1190	1112	671	835	1026	627	5460

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	30	315	439	78	261	1122
B	29	0	72	86	243	208	637
C	312	87	0	40	452	0	890
D	443	201	43	0	30	137	854
E	138	229	259	3	0	25	654
F	299	572	0	296	29	0	1196
All	1220	1119	688	863	832	631	5352

Obs (2014)-LLITM (2016)

	A	B	C	D	E	F	All
A	0	9	62	248	32	95	446
B	-13	0	-14	18	44	-16	19
C	-5	3	0	14	103	0	115
D	125	64	11	0	14	60	274
E	-58	-70	-73	1	0	-5	-205
F	-42	-28	0	100	6	0	36
All	7	-22	-14	381	199	134	685

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	30	334	439	110	264	1178
B	29	0	72	86	271	208	665
C	312	87	0	40	564	0	1003
D	445	201	45	0	45	137	872
E	138	229	259	3	0	25	654
F	304	583	0	296	36	0	1218
All	1226	1130	710	863	1026	634	5590

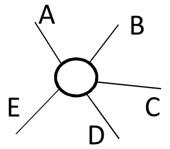
	A	B	C	D	E	F	All
A	0%	43%	29%	115%	133%	55%	69%
B	-30%	0%	-19%	23%	41%	-7%	4%
C	-2%	4%	0%	58%	74%	0%	24%
D	39%	46%	42%	0%	175%	76%	48%
E	-38%	-29%	-34%	50%	0%	-21%	-32%
F	-13%	-5%	0%	47%	50%	0%	3%
All	1%	-2%	-3%	71%	68%	26%	17%

Average of Methods 1 and 2

	A	B	C	D	E	F	All
A	0	30	324	429	94	262	1141
B	29	0	70	83	257	205	643
C	300	85	0	39	508	0	932
D	444	201	44	0	38	137	863
E	131	222	241	3	0	25	622
F	301	577	0	295	32	0	1206
All	1205	1115	679	849	929	629	5406

A	A5 North
B	A426 North
C	Gibbet Lane
D	A5 South
E	A426 South

A5/A426 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	19	718	81	818
	B	0	0	0	357	300	657
	C	13	0	0	15	16	44
	D	615	377	21	0	0	1013
	E	57	125	56	0	0	238
	All	685	502	96	1090	397	2770

	2026						
	Exit						
	A	B	C	D	E	All	
A	*0*	*0*	*16*	*901*	*49*	*965*	*965*
B	*0*	*0*	*0*	*475*	*199*	*674*	*674*
C	*23*	*0*	*0*	*23*	*13*	*59*	*59*
D	*647*	*274*	*12*	*0*	*0*	*933*	*933*
E	*194*	*296*	*111*	*0*	*0*	*601*	*601*
All	*864*	*570*	*138*	*1398*	*261*	*3232*	*3232*
	869	*573*	*139*	*1392*	*260*	*3233*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	3	14	549	384	950
B	1	0	11	187	386	584
C	35	13	0	26	45	119
D	334	89	20	4	38	486
E	824	747	43	31	0	1646
All	1194	852	88	798	852	3785

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	10	14	590	499	1112
B	2	0	33	232	431	698
C	27	33	0	22	44	126
D	359	45	23	13	119	560
E	465	575	67	111	0	1218
All	853	663	137	968	1092	3714

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	10	-3	-250	439	196
B	2	0	33	-203	198	30
C	7	33	0	2	30	72
D	-277	-263	8	13	119	-400
E	316	336	-25	111	0	738
All	48	116	13	-327	786	636

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	10	14	590	499	1112
B	2	0	33	232	431	698
C	35	33	0	26	45	140
D	359	89	23	13	119	603
E	824	747	67	111	0	1750
All	1220	879	138	972	1094	4304

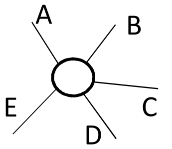
	A	B	C	D	E	All
A	0%	0%	-16%	-35%	542%	24%
B	0%	0%	0%	-57%	66%	5%
C	54%	0%	0%	13%	188%	164%
D	-45%	-70%	38%	0%	0%	-39%
E	554%	269%	-45%	0%	0%	310%
All	7%	23%	14%	-30%	198%	23%

Average of Methods 1 and 2

	A	B	C	D	E	All
A	0	7	14	569	441	1031
B	1	0	22	210	408	641
C	31	23	0	24	45	123
D	347	67	22	9	78	523
E	644	661	55	71	0	1432
All	1023	758	113	883	972	3749

A	A5 North
B	A426 North
C	Gibbet Lane
D	A5 South
E	A426 South

A5/A426 Roundabout PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	13	502	60	575
	B	0	0	0	383	112	495
	C	15	0	0	27	28	70
	D	676	285	21	0	0	982
	E	19	194	17	0	0	230
	All	710	479	51	912	200	2352

2026							
	Exit						
	A	B	C	D	E	All	*model*
A	0	0	20	610	112	742	*742*
B	0	0	0	384	172	556	*556*
C	11	0	0	38	61	110	*110*
D	810	216	50	0	0	1076	*1076*
E	6	367	10	0	0	383	*383*
All	827	583	80	1033	344	2867	*2867*
model	*831*	*588*	*80*	*1025*	*342*	*2866*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	1	15	290	479	786
B	3	0	7	138	544	692
C	19	7	0	21	71	118
D	520	143	35	3	29	730
E	245	1050	47	46	0	1388
All	787	1201	104	498	1124	3714

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	5	18	384	408	815
B	12	0	25	166	522	725
C	18	18	0	23	59	118
D	542	122	37	10	85	797
E	349	628	46	107	0	1130
All	922	773	126	689	1073	3584

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	1	-190	313	129
B	12	0	25	-218	370	189
C	6	18	0	-12	9	21
D	-223	-117	-3	10	85	-248
E	339	319	33	107	0	798
All	134	225	56	-303	777	889

	A	B	C	D	E	All
A	0%	0%	8%	-38%	522%	22%
B	0%	0%	0%	-57%	330%	38%
C	40%	0%	0%	-44%	32%	30%
D	-33%	-41%	-14%	0%	0%	-25%
E	1784%	164%	194%	0%	0%	347%
All	19%	47%	110%	-33%	389%	38%

Largest Growth in Turning movement

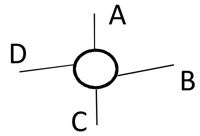
	A	B	C	D	E	All
A	0	5	18	384	479	887
B	12	0	25	166	544	747
C	19	18	0	23	71	131
D	542	143	37	10	85	818
E	349	1050	47	107	0	1554
All	922	1216	128	689	1180	4136

Average of Methods 1 and 2

	A	B	C	D	E	All
A	0	3	17	337	444	801
B	8	0	16	152	533	708
C	19	12	0	22	65	118
D	531	132	36	7	57	764
E	297	839	46	76	0	1259
All	855	987	115	594	1099	3649

A	A426 North
B	M6 East
C	A426 South
D	M6 West

M6 Junction 1 AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	317	81		398
	B	0	0	62	0		62
	C	121	73	0	858		1052
	D	118	0	970	0		1088
	E						0
	All	239	73	1349	939	0	2600

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	209	51		260
B	0	0	122	0		122
C	395	170	0	684		1249
D	206	0	771	0		977
E						0
All	601	170	1102	735	0	2608

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	42	878	301		1221
B	31	77	437	0		545
C	646	179	0	674		1499
D	313	0	756	0		1069
E						0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	14	666	223	0	902
B	12	29	821	0	0	862
C	1034	215	0	372	0	1621
D	400	0	557	0	0	958
E	0	0	0	0	0	0
All	1446	258	2044	594	0	4343

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	42	878	301	0	1221
B	31	77	437	0	0	545
C	646	179	0	674	0	1499
D	313	0	756	0	0	1069
E	0	0	0	0	0	0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	42	806	281	0	1129
B	31	77	477	0	0	585
C	829	244	0	558	0	1630
D	372	0	623	0	0	995
E	0	0	0	0	0	0
All	1231	363	1906	839	0	4339

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	42	561	220	0	823
B	31	77	375	0	0	483
C	525	106	0	-184	0	447
D	195	0	-214	0	0	-19
E	0	0	0	0	0	0
All	751	225	722	36	0	1734

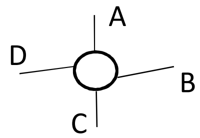
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	42	806	281	0	1129
B	31	77	821	0	0	929
C	1034	244	0	558	0	1836
D	400	0	623	0	0	1024
E	0	0	0	0	0	0
All	1465	363	2250	839	0	4917

	A	B	C	D	E	All
A	0%	0%	177%	272%	0%	207%
B	0%	0%	605%	0%	0%	779%
C	434%	145%	0%	-21%	0%	42%
D	165%	0%	-22%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	314%	308%	54%	4%	0%	67%

A	A426 North
B	M6 East
C	A426 South
D	M6 West

M6 Junction 1 PM



LLITM

		2008						
		Exit						
		A	B	C	D	E	All
entry	A	0	0	152	47		199
	B	0	0	45	0		45
	C	61	68	0	1032		1161
	D	169	0	773	0		942
	E						0
	All	230	68	970	1079	0	2347

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	303	40		343
B	1	0	190	0		191
C	139	156	0	792		1087
D	243	0	475	0		718
E						0
All	383	156	968	832	0	2339

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	28	656	301		985
B	58	24	226	0		308
C	725	219	0	580		1524
D	283	0	643	0		926
E						0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	8	928	231	0	1167
B	58	8	712	0	0	779
C	699	212	0	255	0	1166
D	270	0	353	0	0	623
E	0	0	0	0	0	0
All	1027	228	1993	486	0	3734

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	28	656	301	0	985
B	58	24	226	0	0	308
C	725	219	0	580	0	1524
D	283	0	643	0	0	926
E	0	0	0	0	0	0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	28	757	296	0	1081
B	59	24	323	0	0	405
C	777	278	0	420	0	1475
D	332	0	444	0	0	777
E	0	0	0	0	0	0
All	1168	330	1524	716	0	3738

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	28	504	254	0	786
B	58	24	181	0	0	263
C	664	151	0	-452	0	363
D	114	0	-130	0	0	-16
E	0	0	0	0	0	0
All	836	203	555	-198	0	1396

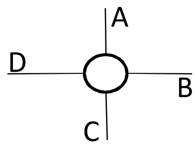
	A	B	C	D	E	All
A	0%	0%	332%	540%	0%	395%
B	0%	0%	402%	0%	0%	584%
C	1089%	222%	0%	-44%	0%	31%
D	67%	0%	-17%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	363%	299%	57%	-18%	0%	59%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	28	928	296	0	1253
B	59	24	712	0	0	795
C	777	278	0	420	0	1475
D	332	0	444	0	0	777
E	0	0	0	0	0	0
All	1168	330	2085	716	0	4299

A New Access
B Mere Lane East
C Hunter Boulevard
D Mere Lane West
E

Mere Lane/Magna Park access AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	121		121
	C	0	0	0	0		0
	D	0	42	0	0		42
	E						0
	All	0	42	0	121	0	163

2026						
	Exit					
	A	B	C	D	E	All
A	0	22	102	96		220
B	78	0	66	82		226
C	182	20	0	53		255
D	157	46	283	0		486
E						0
All	417	88	451	231	0	1187

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	104		104
C	0	0	0	0		0
D	0	39	0	0		39
E						0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	255	0	255
C	0	0	0	0	0	0
D	0	487	0	0	0	487
E	0	0	0	0	0	0
All	0	487	0	255	0	742

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	104	0	104
C	0	0	0	0	0	0
D	0	39	0	0	0	39
E	0	0	0	0	0	0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	15	68	64	0	147
B	52	0	44	78	0	174
C	121	13	0	35	0	170
D	105	42	189	0	0	335
E	0	0	0	0	0	0
All	278	70	301	177	0	826

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-17	0	-17
C	0	0	0	0	0	0
D	0	-3	0	0	0	-3
E	0	0	0	0	0	0
All	0	-3	0	-17	0	-20

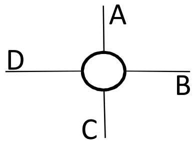
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	15	68	64	0	147
B	52	0	44	255	0	351
C	121	13	0	35	0	170
D	105	487	189	0	0	780
E	0	0	0	0	0	0
All	278	515	301	354	0	1448

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-14%	0%	-14%
C	0%	0%	0%	0%	0%	0%
D	0%	-7%	0%	0%	0%	-7%
E	0%	0%	0%	0%	0%	0%
All	0%	-7%	0%	-14%	0%	-12%

A New Access
B Mere Lane East
C Hunter Boulevard
D Mere Lane West
E

Mere Lane/Magna Park



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	84		84
	C	0	0	0	0		0
	D	0	87	0	0		87
	E						0
	All	0	87	0	84	0	171

2026						
	Exit					
	A	B	C	D	E	All
A	0	72	151	176		399
B	31	0	28	90		149
C	98	44	0	222		364
D	91	67	98	0		256
E						0
All	220	183	277	488	0	1168

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	49		49
C	0	0	0	0		0
D	0	71	0	0		71
E						0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	184	0	184
C	0	0	0	0	0	0
D	0	403	0	0	0	403
E	0	0	0	0	0	0
All	0	403	0	184	0	586

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	49	0	49
C	0	0	0	0	0	0
D	0	71	0	0	0	71
E	0	0	0	0	0	0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	48	101	117	0	266
B	21	0	19	53	0	92
C	65	29	0	148	0	243
D	61	58	65	0	0	184
E	0	0	0	0	0	0
All	147	135	185	318	0	785

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-35	0	-35
C	0	0	0	0	0	0
D	0	-16	0	0	0	-16
E	0	0	0	0	0	0
All	0	-16	0	-35	0	-51

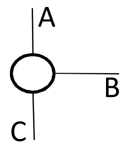
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	48	101	117	0	266
B	21	0	19	184	0	223
C	65	29	0	148	0	243
D	61	403	65	0	0	529
E	0	0	0	0	0	0
All	147	480	185	449	0	1260

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-42%	0%	-42%
C	0%	0%	0%	0%	0%	0%
D	0%	-18%	0%	0%	0%	-18%
E	0%	0%	0%	0%	0%	0%
All	0%	-18%	0%	-42%	0%	-30%

A A5 North
B Site Access
C A5 South
D
E

A5 Northern Site Access AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	1007			1007
	B	0	0	0			0
	C	515	0	0			515
	D						0
	E						0
	All	515	0	1007	0	0	1522

	2026					
	Exit					
	A	B	C	D	E	All
A	0	185	1025			1210
B	77	0	0			77
C	524	0	0			524
D						0
E						0
All	601	185	1025	0	0	1811

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	1095			1095
B	0	0	0			0
C	660	0	0			660
D						0
E						0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	0	1286	0	0	1286
B	0	0	0	0	0	0
C	691	0	0	0	0	691
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	691	0	1286	0	0	1977

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	1095	0	0	1095
B	0	0	0	0	0	0
C	660	0	0	0	0	660
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	123	1107	0	0	1230
B	51	0	0	0	0	51
C	666	0	0	0	0	666
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	717	123	1107	0	0	1948

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	88	0	0	88
B	0	0	0	0	0	0
C	145	0	0	0	0	145
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	0	88	0	0	233

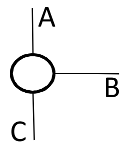
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	123	1286	0	0	1409
B	51	0	0	0	0	51
C	691	0	0	0	0	691
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	743	123	1286	0	0	2152

	A	B	C	D	E	All
A	0%	0%	9%	0%	0%	9%
B	0%	0%	0%	0%	0%	0%
C	28%	0%	0%	0%	0%	28%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	0%	9%	0%	0%	15%

A A5 North
B Site Access
C A5 South
D
E

A5 Northern Site Access PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	0	0	0			0
	C	789	0	0			789
	D						0
	E						0
	All	789	0	562	0	0	1351

2026						
	Exit					
	A	B	C	D	E	All
A	0	78	556			634
B	161	0	0			161
C	873	0	0			873
D						0
E						0
All	1034	78	556	0	0	1668

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	572			572
B	0	0	0			0
C	949	0	0			949
D						0
E						0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	0	667	0	0	667
B	0	0	0	0	0	0
C	1092	0	0	0	0	1092
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1092	0	667	0	0	1759

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	572	0	0	572
B	0	0	0	0	0	0
C	949	0	0	0	0	949
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	52	568	0	0	620
B	107	0	0	0	0	107
C	1005	0	0	0	0	1005
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1112	52	568	0	0	1732

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	10	0	0	10
B	0	0	0	0	0	0
C	160	0	0	0	0	160
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	0	10	0	0	170

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	52	667	0	0	719
B	107	0	0	0	0	107
C	1092	0	0	0	0	1092
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1199	52	667	0	0	1918

	A	B	C	D	E	All
A	0%	0%	2%	0%	0%	2%
B	0%	0%	0%	0%	0%	0%
C	20%	0%	0%	0%	0%	20%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	0%	2%	0%	0%	13%

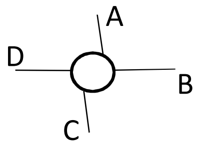
Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix H – Revised Junction Matrices from LLITM Local Calibration – LLITM Change in Flows 'With Development & symmetry park'

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	119	0	773		892
	B	208	0	87	389		684
	C	0	76	0	406		482
	D	605	230	364	0		1199
	E						0
	All	813	425	451	1568	0	3257

	2026					
	Exit					
	A	B	C	D	E	All
A	0	162	0	899		1061
B	223	0	104	414		741
C	0	94	0	644		738
D	669	270	670	0		1609
E						0
All	892	526	774	1957	0	4149

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	124	0	840		964
B	248	0	114	481		843
C	0	45	33	511		589
D	653	289	487	0		1429
E						0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	154	0	931	0	1085
B	260	0	129	501	0	889
C	0	54	11	732	0	797
D	688	317	748	0	0	1753
E	0	0	0	0	0	0
All	947	525	888	2163	0	4523

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	124	0	840	0	964
B	248	0	114	481	0	843
C	0	45	33	511	0	589
D	653	289	487	0	0	1429
E	0	0	0	0	0	0
All	901	458	634	1832	0	3825

2014 + 12 years

	A	B	C	D	E	All
A	0	153	0	924	0	1077
B	258	0	125	498	0	881
C	0	57	33	670	0	760
D	696	316	691	0	0	1702
E	0	0	0	0	0	0
All	954	525	849	2091	0	4420

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	0	67	0	72
B	40	0	27	92	0	159
C	0	-31	33	105	0	107
D	48	59	123	0	0	230
E	0	0	0	0	0	0
All	88	33	183	264	0	568

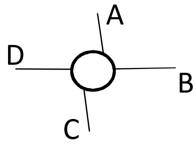
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	154	0	931	0	1085
B	260	0	129	501	0	889
C	0	57	33	732	0	822
D	696	317	748	0	0	1761
E	0	0	0	0	0	0
All	955	528	909	2163	0	4556

	A	B	C	D	E	All
A	0%	4%	0%	9%	0%	8%
B	19%	0%	31%	24%	0%	23%
C	0%	-41%	0%	26%	0%	22%
D	8%	26%	34%	0%	0%	19%
E	0%	0%	0%	0%	0%	0%
All	11%	8%	41%	17%	0%	17%

A	M1 North
B	A4304
C	M1 South
D	A4303

M1 Junction 20 PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	173	0	575		748
	B	167	0	89	133		389
	C	0	59	0	195		254
	D	426	372	395	0		1193
	E						0
	All	593	604	484	903	0	2584

2026						
	Exit					
	A	B	C	D	E	All
A	0	198	0	624		822
B	183	0	120	194		497
C	0	52	0	402		454
D	639	435	492	0		1566
E						0
All	822	685	612	1220	0	3339

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	239	0	602		841
B	151	0	57	419		627
C	0	92	25	456		573
D	708	483	404	0		1595
E						0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	256	0	621	0	877
B	150	0	66	511	0	727
C	0	83	8	764	0	855
D	912	519	454	0	0	1886
E	0	0	0	0	0	0
All	1062	858	528	1896	0	4344

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	239	0	602	0	841
B	151	0	57	419	0	627
C	0	92	25	456	0	573
D	708	483	404	0	0	1595
E	0	0	0	0	0	0
All	859	814	486	1477	0	3636

2014 + 12 years

	A	B	C	D	E	All
A	0	256	0	635	0	890
B	162	0	78	460	0	699
C	0	87	25	594	0	706
D	850	525	469	0	0	1844
E	0	0	0	0	0	0
All	1012	868	571	1688	0	4139

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	66	0	27	0	93
B	-16	0	-32	286	0	238
C	0	33	25	261	0	319
D	282	111	9	0	0	402
E	0	0	0	0	0	0
All	266	210	2	574	0	1052

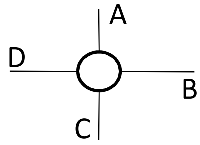
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	256	0	635	0	890
B	162	0	78	511	0	751
C	0	87	25	764	0	876
D	912	525	469	0	0	1906
E	0	0	0	0	0	0
All	1074	868	571	1909	0	4423

	A	B	C	D	E	All
A	0%	38%	0%	5%	0%	12%
B	-10%	0%	-36%	215%	0%	61%
C	0%	56%	0%	134%	0%	126%
D	66%	30%	2%	0%	0%	34%
E	0%	0%	0%	0%	0%	0%
All	45%	35%	0%	64%	0%	41%

A	A426 North
B	A4303 East
C	A426 South
D	A4303 West
E	

A4303/A426 Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	429	232	144		805
	B	515	0	490	565		1570
	C	223	374	0	3		600
	D	98	398	12	0		508
	E						0
	All	836	1201	734	712	0	3483

	2026					
	Exit					
	A	B	C	D	E	All
A	0	581	209	207		997
B	685	0	563	714		1962
C	236	435	0	5		676
D	128	593	14	0		735
E						0
All	1049	1609	786	926	0	4370

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	516	350	99		965
B	502	0	582	749		1833
C	305	343	0	34		682
D	70	584	41	0		695
E						0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	651	334	131	0	1115
B	612	0	639	880	0	2132
C	313	376	0	49	0	737
D	84	770	45	0	0	899
E	0	0	0	0	0	0
All	1009	1797	1018	1059	0	4884

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	516	350	99	0	965
B	502	0	582	749	0	1833
C	305	343	0	34	0	682
D	70	584	41	0	0	695
E	0	0	0	0	0	0
All	877	1443	973	882	0	4175

2014 + 12 years

	A	B	C	D	E	All
A	0	617	335	141	0	1093
B	615	0	631	848	0	2094
C	314	384	0	35	0	733
D	90	714	42	0	0	846
E	0	0	0	0	0	0
All	1019	1715	1008	1025	0	4766

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	87	118	-45	0	160
B	-13	0	92	184	0	263
C	82	-31	0	31	0	82
D	-28	186	29	0	0	187
E	0	0	0	0	0	0
All	41	242	239	170	0	692

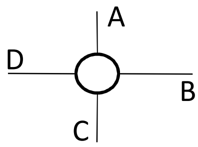
	A	B	C	D	E	All
A	0%	20%	51%	-31%	0%	20%
B	-3%	0%	19%	33%	0%	17%
C	37%	-8%	0%	1033%	0%	14%
D	-29%	47%	242%	0%	0%	37%
E	0%	0%	0%	0%	0%	0%
All	5%	20%	33%	24%	0%	20%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	651	335	141	0	1127
B	615	0	639	880	0	2135
C	314	384	0	49	0	746
D	90	770	45	0	0	906
E	0	0	0	0	0	0
All	1019	1805	1019	1070	0	4913

A	A426 North
B	A4303 East
C	A426 South
D	A4303 West
E	

A4303/A426 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	464	246	116		826
	B	308	0	346	283		937
	C	425	185	0	3		613
	D	138	544	6	0		688
	E						0
	All	871	1193	598	402	0	3064

	2026					
	Exit					
	A	B	C	D	E	All
A	0	564	273	133		970
B	347	0	397	480		1224
C	463	332	0	5		800
D	241	671	12	0		924
E						0
All	1051	1567	682	618	0	3918

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	426	314	122		862
B	489	0	417	533		1439
C	358	348	0	29		735
D	93	818	38	0		949
E						0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	487	337	134	0	958
B	517	0	447	761	0	1726
C	350	492	0	39	0	881
D	141	956	64	0	0	1161
E	0	0	0	0	0	0
All	1009	1935	848	934	0	4725

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	426	314	122	0	862
B	489	0	417	533	0	1439
C	358	348	0	29	0	735
D	93	818	38	0	0	949
E	0	0	0	0	0	0
All	940	1592	769	684	0	3985

2014 + 12 years

	A	B	C	D	E	All
A	0	493	332	133	0	958
B	515	0	451	664	0	1630
C	383	446	0	30	0	860
D	162	903	42	0	0	1106
E	0	0	0	0	0	0
All	1060	1841	825	828	0	4554

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-38	68	6	0	36
B	181	0	71	250	0	502
C	-67	163	0	26	0	122
D	-45	274	32	0	0	261
E	0	0	0	0	0	0
All	69	399	171	282	0	921

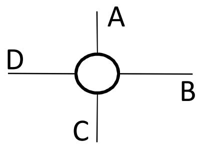
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	493	337	134	0	964
B	517	0	451	761	0	1730
C	383	492	0	39	0	914
D	162	956	64	0	0	1182
E	0	0	0	0	0	0
All	1062	1941	852	934	0	4789

	A	B	C	D	E	All
A	0%	-8%	28%	5%	0%	4%
B	59%	0%	21%	88%	0%	54%
C	-16%	88%	0%	867%	0%	20%
D	-33%	50%	533%	0%	0%	38%
E	0%	0%	0%	0%	0%	0%
All	8%	33%	29%	70%	0%	30%

A	Coventry Road
B	A4303 East
C	Fairacres
D	A4303 West
E	

A4303/Coventry Rd Roundabout AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	101	0	542		643
	B	7	0	0	705		712
	C	0	0	0	0		0
	D	218	407	0	0		625
	E						0
	All	225	508	0	1247	0	1980

	2026					
	Exit					
	A	B	C	D	E	All
A	0	111	0	681		792
B	17	0	0	909		926
C	0	0	0	0		0
D	307	624	0	0		931
E						0
All	324	735	0	1590	0	2649

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	151	0	560		711
B	30	0	0	923		953
C	8	8	0	3		19
D	168	522	4	7		701
E						0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	163	0	664	0	827
B	58	0	0	1094	0	1152
C	3	3	0	1	0	6
D	216	716	1	2	0	936
E	0	0	0	0	0	0
All	277	882	1	1761	0	2921

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	151	0	560	0	711
B	30	0	0	923	0	953
C	8	8	0	3	0	19
D	168	522	4	7	0	701
E	0	0	0	0	0	0
All	206	681	4	1493	0	2384

2014 + 12 years

	A	B	C	D	E	All
A	0	158	0	653	0	810
B	37	0	0	1059	0	1096
C	8	8	0	3	0	19
D	227	667	4	7	0	905
E	0	0	0	0	0	0
All	272	832	4	1722	0	2830

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	50	0	18	0	68
B	23	0	0	218	0	241
C	8	8	0	3	0	19
D	-50	115	4	7	0	76
E	0	0	0	0	0	0
All	-19	173	4	246	0	404

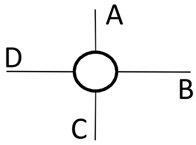
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	163	0	664	0	827
B	58	0	0	1094	0	1152
C	8	8	0	3	0	19
D	227	716	4	7	0	955
E	0	0	0	0	0	0
All	294	887	4	1767	0	2952

	A	B	C	D	E	All
A	0%	50%	0%	3%	0%	11%
B	329%	0%	0%	31%	0%	34%
C	0%	0%	0%	0%	0%	0%
D	-23%	28%	0%	0%	0%	12%
E	0%	0%	0%	0%	0%	0%
All	-8%	34%	0%	20%	0%	20%

A	Coventry Road
B	A4303 East
C	Fairacres
D	A4303 West
E	

A4303/Coventry Rd Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	49	0	211		260
	B	22	0	0	381		403
	C	0	0	0	0		0
	D	468	639	0	0		1107
	E						0
	All	490	688	0	592	0	1770

2026						
	Exit					
	A	B	C	D	E	All
A	0	97	0	309		406
B	30	0	0	588		618
C	0	0	0	0		0
D	562	826	0	0		1388
E						0
All	592	923	0	897	0	2412

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	116	4	235		355
B	67	0	6	594		667
C	7	1	0	4		12
D	515	843	5	2		1365
E						0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	186	1	298	0	486
B	84	0	2	814	0	900
C	2	0	0	1	0	4
D	582	1004	2	1	0	1589
E	0	0	0	0	0	0
All	668	1191	5	1115	0	2979

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	116	4	235	0	355
B	67	0	6	594	0	667
C	7	1	0	4	0	12
D	515	843	5	2	0	1365
E	0	0	0	0	0	0
All	589	960	15	835	0	2399

2014 + 12 years

	A	B	C	D	E	All
A	0	148	4	300	0	452
B	72	0	6	732	0	810
C	7	1	0	4	0	12
D	578	968	5	2	0	1552
E	0	0	0	0	0	0
All	657	1117	15	1038	0	2827

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	67	4	24	0	95
B	45	0	6	213	0	264
C	7	1	0	4	0	12
D	47	204	5	2	0	258
E	0	0	0	0	0	0
All	99	272	15	243	0	629

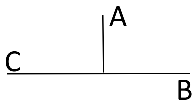
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	186	4	300	0	490
B	84	0	6	814	0	904
C	7	1	0	4	0	12
D	582	1004	5	2	0	1594
E	0	0	0	0	0	0
All	673	1191	15	1121	0	3000

	A	B	C	D	E	All
A	0%	137%	0%	11%	0%	37%
B	205%	0%	0%	56%	0%	66%
C	0%	0%	0%	0%	0%	0%
D	10%	32%	0%	0%	0%	23%
E	0%	0%	0%	0%	0%	0%
All	20%	40%	0%	41%	0%	36%

A	Shackelton Way
B	A4303 East
C	A4303 West
D	
E	

A4303/Shackleton Way Junction AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	1247			1247
	C	0	625	0			625
	D						0
	E						0
	All	0	625	1247	0	0	1872

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	1591			1591
C	0	931	0			931
D						0
E						0
All	0	931	1591	0	0	2522

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	97	0			97
B	0	0	1367			1367
C	71	644	0			715
D						0
E						0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	33	0	0	0	33
B	0	0	1671	0	0	1671
C	26	953	0	0	0	979
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	26	986	1671	0	0	2683

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1367	0	0	1367
C	71	644	0	0	0	715
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	741	1367	0	0	2179

2014 + 12 years

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1596	0	0	1596
C	71	848	0	0	0	919
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	945	1596	0	0	2612

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	120	0	0	120
C	71	19	0	0	0	90
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	116	120	0	0	307

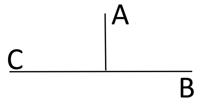
	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	10%	0%	0%	10%
C	0%	3%	0%	0%	0%	14%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	19%	10%	0%	0%	16%

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	97	0	0	0	97
B	0	0	1671	0	0	1671
C	71	953	0	0	0	1024
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	71	1050	1671	0	0	2792

A Shackelton Way
B A4303 East
C A4303 West
D
E

A4303/Shackleton Way Junction PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0			0
	B	0	0	592			592
	C	0	1108	0			1108
	D						0
	E						0
	All	0	1108	592	0	0	1700

	2026					
	Exit					
	A	B	C	D	E	All
A	0	0	0			0
B	0	0	897			897
C	0	1389	0			1389
D						0
E						0
All	0	1389	897	0	0	2286

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	200	0			200
B	0	0	706			706
C	19	1079	0			1098
D						0
E						0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	71	0	0	0	71
B	0	0	1017	0	0	1017
C	7	1369	0	0	0	1376
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	7	1441	1017	0	0	2465

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	706	0	0	706
C	19	1079	0	0	0	1098
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1279	706	0	0	2004

2014 + 12 years

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	909	0	0	909
C	19	1266	0	0	0	1285
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1466	909	0	0	2395

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	114	0	0	114
C	19	-29	0	0	0	-10
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	171	114	0	0	304

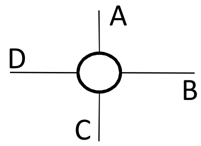
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	200	0	0	0	200
B	0	0	1017	0	0	1017
C	19	1369	0	0	0	1388
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	19	1569	1017	0	0	2605

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	19%	0%	0%	19%
C	0%	-3%	0%	0%	0%	-1%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	0%	15%	19%	0%	0%	18%

A	Hunter Boulevard
B	A4303 East
C	George Access
D	A4303 West
E	

A4303/Hunter Boulevard Roundabout AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	162	1	155		318
	B	331	0	65	851		1247
	C	0	11	0	16		27
	D	601	452	139	0		1192
	E						0
	All	932	625	205	1022	0	2784

2026						
	Exit					
	A	B	C	D	E	All
A	0	143	1	333		477
B	380	0	80	1131		1591
C	0	12	0	17		29
D	668	776	152	0		1596
E						0
All	1048	931	233	1481	0	3693

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	154	0	269		423
B	516	61	81	709		1367
C	8	5	0	10		23
D	646	499	67	0		1212
E						0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	129	0	433	0	563
B	592	21	98	903	0	1614
C	3	7	0	14	0	24
D	685	727	70	0	0	1482
E	0	0	0	0	0	0
All	1280	885	168	1350	0	3683

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	154	0	269	0	423
B	516	61	81	709	0	1367
C	8	5	0	10	0	23
D	646	499	67	0	0	1212
E	0	0	0	0	0	0
All	1170	719	148	988	0	3025

2014 + 12 years

	A	B	C	D	E	All
A	0	141	0	388	0	529
B	549	61	91	896	0	1596
C	8	6	0	11	0	24
D	691	715	76	0	0	1481
E	0	0	0	0	0	0
All	1247	923	167	1294	0	3631

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-8	-1	114	0	105
B	185	61	16	-142	0	120
C	8	-6	0	-6	0	-4
D	45	47	-72	0	0	20
E	0	0	0	0	0	0
All	238	94	-57	-34	0	241

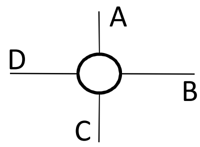
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	141	0	433	0	574
B	592	61	98	903	0	1654
C	8	7	0	14	0	29
D	691	727	76	0	0	1494
E	0	0	0	0	0	0
All	1291	937	173	1350	0	3751

	A	B	C	D	E	All
A	0%	-5%	-100%	74%	0%	33%
B	56%	0%	25%	-17%	0%	10%
C	0%	-55%	0%	-38%	0%	-15%
D	7%	10%	-52%	0%	0%	2%
E	0%	0%	0%	0%	0%	0%
All	26%	15%	-28%	-3%	0%	9%

A Hunter Boulevard
B A4303 East
C George Access
D A4303 West
E

A4303/Hunter Boulevard Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	321	0	507		828
	B	152	0	17	423		592
	C	2	73	0	149		224
	D	212	713	19	0		944
	E						0
	All	366	1107	36	1079	0	2588

	2026					
	Exit					
	A	B	C	D	E	All
A	0	330	0	491		821
B	146	0	18	733		897
C	2	80	0	166		248
D	245	978	21	0		1244
E						0
All	393	1388	39	1390	0	3210

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	273	6	520		799
B	200	28	21	457		706
C	16	161	0	91		268
D	173	645	11	0		829
E						0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	279	2	510	0	790
B	203	10	23	708	0	944
C	16	172	0	98	0	286
D	189	798	12	0	0	999
E	0	0	0	0	0	0
All	408	1258	36	1316	0	3019

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	273	6	520	0	799
B	200	28	21	457	0	706
C	16	161	0	91	0	268
D	173	645	11	0	0	829
E	0	0	0	0	0	0
All	389	1107	38	1068	0	2602

2014 + 12 years

	A	B	C	D	E	All
A	0	279	6	509	0	794
B	196	28	22	664	0	909
C	16	166	0	102	0	284
D	195	822	12	0	0	1029
E	0	0	0	0	0	0
All	407	1294	40	1275	0	3017

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	-48	6	13	0	-29
B	48	28	4	34	0	114
C	14	88	0	-58	0	44
D	-39	-68	-8	0	0	-115
E	0	0	0	0	0	0
All	23	0	2	-11	0	14

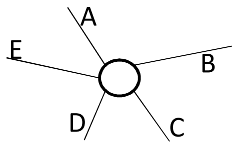
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	279	6	510	0	795
B	203	28	23	708	0	962
C	16	172	0	102	0	290
D	195	822	12	0	0	1029
E	0	0	0	0	0	0
All	414	1300	41	1320	0	3076

	A	B	C	D	E	All
A	0%	-15%	0%	3%	0%	-4%
B	32%	0%	24%	8%	0%	19%
C	700%	121%	0%	-39%	0%	20%
D	-18%	-10%	-42%	0%	0%	-12%
E	0%	0%	0%	0%	0%	0%
All	6%	0%	6%	-1%	0%	1%

A	A5 (North)
B	A4303
C	A5 (South)
D	B4027
E	Coal Pit Lane

A5/A4303 Roundabout AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	488	591	45	0	1124
	B	184	0	111	574	153	1022
	C	357	164	0	164	0	685
	D	13	327	117	0	0	457
	E	0	213	0	0	0	213
	All	554	1192	819	783	153	3501

2026						
	Exit					
	A	B	C	D	E	All
A	0	551	500	53	0	1104
B	216	0	289	924	52	1481
C	345	239	0	236	0	820
D	28	567	150	0	0	745
E	0	241	0	0	0	241
All	589	1598	939	1213	52	4391

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	620	526	53	1	1199
B	404	0	601	244	62	1310
C	340	464	0	27	24	855
D	38	190	9	0	0	237
E	3	295	45	2	0	346
All	785	1569	1181	325	88	3948

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	559	574	46	4	1183
B	380	0	305	182	116	983
C	322	329	0	19	67	737
D	22	132	8	0	1	163
E	6	199	100	5	0	310
All	730	1219	987	252	188	3376

2014 + 12 years

	A	B	C	D	E	All
A	0	601	513	51	4	1170
B	401	0	424	415	49	1289
C	314	379	0	67	67	827
D	32	292	30	0	1	355
E	6	218	100	5	0	329
All	753	1490	1067	539	121	3969

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	71	-17	1	4	59
B	196	0	194	-392	-37	-39
C	-35	165	0	-145	67	52
D	9	-195	-109	0	1	-294
E	6	-14	100	5	0	97
All	176	27	168	-531	35	-125

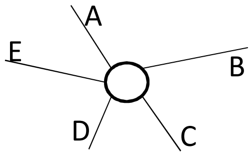
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	620	526	53	4	1202
B	404	0	601	415	62	1482
C	340	464	0	67	67	939
D	38	292	30	0	1	361
E	6	295	100	5	0	406
All	788	1671	1257	540	134	4389

	A	B	C	D	E	All
A	0%	15%	-3%	2%	0%	5%
B	107%	0%	175%	-68%	-24%	-4%
C	-10%	101%	0%	-88%	0%	8%
D	69%	-60%	-93%	0%	0%	-64%
E	0%	-7%	0%	0%	0%	46%
All	32%	2%	21%	-68%	23%	-4%

A	A5 (North)
B	A4303
C	A5 (South)
D	B4027
E	Coal Pit Lane

A5/A403 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	303	316	20	0	639
	B	371	0	165	320	224	1080
	C	462	76	0	173	0	711
	D	37	511	90	0	0	638
	E	0	55	4	0	0	59
	All	870	945	575	513	224	3127

2026						
	Exit					
	A	B	C	D	E	All
A	0	316	367	35	0	718
B	429	0	140	725	96	1390
C	477	116	0	226	0	819
D	41	738	202	0	0	981
E	0	75	2	0	0	77
All	947	1245	711	986	96	3985

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	347	347	22	1	717
B	643	0	279	301	124	1348
C	578	277	0	12	33	900
D	81	279	16	0	2	378
E	2	169	38	2	0	211
All	1304	1072	681	337	160	3554

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	328	305	14	2	649
B	514	0	274	144	177	1109
C	515	187	0	9	90	801
D	67	192	8	0	6	273
E	6	113	47	6	0	172
All	1102	820	634	173	275	3004

2014 + 12 years

	A	B	C	D	E	All
A	0	337	339	24	2	702
B	553	0	257	414	92	1316
C	525	214	0	44	90	873
D	70	343	83	0	6	502
E	6	126	46	6	0	184
All	1153	1020	725	488	190	3576

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	25	-11	-6	2	10
B	143	0	109	-176	-47	29
C	53	111	0	-164	90	90
D	30	-319	-82	0	6	-365
E	6	58	43	6	0	113
All	232	-125	59	-340	51	-123

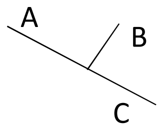
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	347	347	24	2	720
B	643	0	279	414	124	1461
C	578	277	0	44	90	989
D	81	343	83	0	6	513
E	6	169	46	6	0	226
All	1308	1136	755	488	222	3909

	A	B	C	D	E	All
A	0%	8%	-3%	-30%	0%	2%
B	39%	0%	66%	-55%	-21%	3%
C	11%	146%	0%	-95%	0%	13%
D	81%	-62%	-91%	0%	0%	-57%
E	0%	105%	1075%	0%	0%	192%
All	27%	-13%	10%	-66%	23%	-4%

A	A5 North
B	Mere Lane
C	A5 South
D	
E	

A5/Mere Lane Junction AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	4	1003			1007
	B	0	0	121			121
	C	515	38	0			553
	D						0
	E						0
	All	515	42	1124	0	0	1681

2026						
	Exit					
	A	B	C	D	E	All
A	0	8	989			997
B	2	0	115			117
C	530	59	0			589
D						0
E						0
All	532	67	1104	0	0	1703

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	8	1087			1095
B	9	0	95			104
C	651	31	0			682
D						0
E						0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	13	1072	0	0	1086
B	14	0	87	0	0	102
C	668	43	0	0	0	710
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	682	56	1160	0	0	1897

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	8	1087	0	0	1095
B	9	0	95	0	0	104
C	651	31	0	0	0	682
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	39	1182	0	0	1881

2014 + 12 years

	A	B	C	D	E	All
A	0	11	1078	0	0	1088
B	10	0	91	0	0	101
C	661	45	0	0	0	706
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	671	56	1169	0	0	1896

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	4	84	0	0	88
B	9	0	-26	0	0	-17
C	136	-7	0	0	0	129
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	-3	58	0	0	200

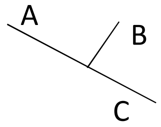
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	13	1078	0	0	1091
B	14	0	91	0	0	105
C	668	45	0	0	0	713
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	682	58	1169	0	0	1909

	A	B	C	D	E	All
A	0%	100%	8%	0%	0%	9%
B	0%	0%	-21%	0%	0%	-14%
C	26%	-18%	0%	0%	0%	23%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	-7%	5%	0%	0%	12%

A A5 North
B Mere Lane
C A5 South
D
E

A5/Mere Lane Junction PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	7	0	77			84
	C	782	87	0			869
	D						0
	E						0
	All	789	87	639	0	0	1515

2026						
	Exit					
	A	B	C	D	E	All
A	0	2	614			616
B	16	0	103			119
C	855	92	0			947
D						0
E						0
All	871	94	717	0	0	1682

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	7	565			572
B	9	0	40			49
C	940	64	0			1004
D						0
E						0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	12	600	0	0	612
B	16	0	47	0	0	63
C	1003	67	0	0	0	1070
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1019	78	647	0	0	1744

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	7	565	0	0	572
B	9	0	40	0	0	49
C	940	64	0	0	0	1004
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	71	605	0	0	1625

2014 + 12 years

	A	B	C	D	E	All
A	0	8	600	0	0	608
B	15	0	57	0	0	72
C	989	67	0	0	0	1056
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1004	76	657	0	0	1736

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	7	3	0	0	10
B	2	0	-37	0	0	-35
C	158	-23	0	0	0	135
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	-16	-34	0	0	110

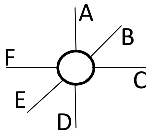
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	12	600	0	0	612
B	16	0	57	0	0	73
C	1003	67	0	0	0	1070
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1019	79	657	0	0	1755

	A	B	C	D	E	All
A	0%	0%	1%	0%	0%	2%
B	29%	0%	-48%	0%	0%	-42%
C	20%	-26%	0%	0%	0%	16%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	-18%	-5%	0%	0%	7%

A	A5 North
B	B4109 North
C	M69 East
D	A5 South
E	B4109 South
F	M69 West

M69 Junction 1 AM



LLITM

		2008							
		Exit							
		A	B	C	D	E	F	All	*model*
entry	A	0	8	215	306	77	200	806	*805*
	B	33	0	96	219	229	487	1064	*1064*
	C	220	48	0	54	229	0	551	*551*
	D	186	98	18	0	3	182	487	*487*
	E	63	125	252	0	0	20	460	*461*
	F	143	205	0	147	4	0	499	*500*
	All	645	484	581	726	542	889	3867	*3868*
	model	*628*	*470*	*586*	*734*	*546*	*904*	*3868*	

	2026							
	Exit							
	A	B	C	D	E	F	All	*model*
A	0	11	262	265	145	223	906	*905*
B	31	0	98	158	360	455	1102	*1102*
C	288	77	0	58	531	0	954	*954*
D	159	100	18	0	5	163	445	*445*
E	89	212	411	0	0	31	743	*742*
F	155	268	0	130	8	0	561	*561*
All	722	668	789	611	1049	872	4711	*4709*
model	*708*	*650*	*777*	*620*	*1056*	*899*	*4710*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	12	399	423	133	301	1268
B	89	0	164	277	350	668	1548
C	492	64	0	60	321	0	937
D	476	142	33	0	6	249	907
E	105	122	285	0	0	18	531
F	374	308	0	191	7	0	880
All	1537	647	882	952	816	1237	6070

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	9	334	445	80	268	1136
B	88	0	153	323	240	662	1466
C	366	41	0	51	153	0	611
D	506	134	32	0	4	257	933
E	79	80	193	0	0	13	365
F	340	245	0	199	4	0	788
All	1379	509	712	1018	481	1200	5299

2014 + 12 years

	A	B	C	D	E	F	All
A	0	11	365	418	125	283	1203
B	87	0	154	282	327	641	1491
C	411	60	0	54	354	0	880
D	488	135	32	0	5	244	905
E	96	138	299	0	0	20	554
F	348	287	0	188	7	0	829
All	1430	632	851	941	819	1189	5862

Obs (2014)-LLITM (2016)

	A	B	C	D	E	F	All
A	0	1	119	139	3	68	330
B	55	0	57	104	11	175	402
C	146	-7	0	-3	-76	0	60
D	320	36	14	0	1	75	446
E	16	-45	-59	0	0	-7	-95
F	197	40	0	52	0	0	289
All	734	25	131	292	-61	311	1432

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	12	399	423	133	301	1268
B	89	0	164	282	350	668	1552
C	492	64	0	60	354	0	971
D	488	142	33	0	6	249	918
E	105	138	299	0	0	20	562
F	374	308	0	191	7	0	880
All	1548	663	895	956	850	1239	6152

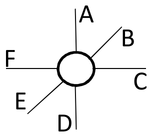
	A	B	C	D	E	F	All
A	0%	13%	55%	45%	4%	34%	41%
B	167%	0%	59%	47%	5%	36%	38%
C	66%	-15%	0%	-6%	-33%	0%	11%
D	172%	37%	78%	0%	33%	41%	92%
E	25%	-36%	-23%	0%	0%	-35%	-21%
F	138%	20%	0%	35%	0%	0%	58%
All	114%	5%	23%	40%	-11%	35%	37%

Average of methods 1 and 2

	A	B	C	D	E	F	All
A	0	11	382	420	129	292	1235
B	88	0	159	280	339	654	1519
C	452	62	0	57	338	0	908
D	482	138	33	0	6	247	906
E	101	130	292	0	0	19	542
F	361	297	0	189	7	0	855
All	1484	639	866	946	818	1213	5966

A	A5 North
B	B4109 North
C	M69 East
D	A5 South
E	B4109 South
F	M69 West

M69 Junction 1 PM



LLITM

		2008							
		Exit							
		A	B	C	D	E	F	All	*model*
entry	A	0	21	214	216	24	172	647	*648*
	B	44	0	74	79	108	237	542	*542*
	C	255	69	0	24	140	0	488	*487*
	D	319	139	26	0	8	79	571	*570*
	E	154	240	216	2	0	24	636	*636*
	F	332	591	0	215	12	0	1150	*1150*
	All	1104	1060	530	536	292	512	4034	*4033*
	model	*1110*	*1066*	*529*	*530*	*292*	*506*	*4033*	

2026								
	Exit							
	A	B	C	D	E	F	All	*model*
A	0	22	279	182	60	167	710	*711*
B	39	0	85	57	231	201	613	*613*
C	339	91	0	25	436	0	891	*891*
D	316	137	33	0	20	73	579	*579*
E	217	334	377	2	0	32	962	*962*
F	340	604	0	177	28	0	1149	*1149*
All	1251	1188	774	443	775	473	4904	*4905*
model	*1245*	*1177*	*775*	*451*	*775*	*483*	*4906*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	32	340	425	115	268	1180
B	28	0	64	76	258	192	618
C	284	81	0	36	546	0	948
D	443	202	44	0	44	132	864
E	124	218	217	3	0	24	586
F	301	583	0	283	35	0	1201
All	1179	1115	665	825	998	616	5397

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	F	All
A	0	30	276	464	56	267	1093
B	31	0	60	97	152	221	561
C	250	72	0	38	243	0	603
D	444	203	37	0	22	139	845
E	96	170	143	3	0	19	431
F	290	563	0	315	18	0	1186
All	1111	1038	516	917	491	646	4719

2014 + 12 years

	A	B	C	D	E	F	All
A	0	31	319	441	80	264	1135
B	28	0	67	82	234	197	608
C	306	87	0	39	440	0	872
D	442	202	42	0	30	135	850
E	138	233	250	3	0	24	648
F	295	572	0	290	29	0	1185
All	1209	1123	679	855	813	620	5299

Obs (2014)-LLITM (2016]

	A	B	C	D	E	F	All
A	0	9	62	248	32	95	446
B	-13	0	-14	18	44	-16	19
C	-5	3	0	14	103	0	115
D	125	64	11	0	14	60	274
E	-58	-70	-73	1	0	-5	-205
F	-42	-28	0	100	6	0	36
All	7	-22	-14	381	199	134	685

Largest Growth in Turning movement

	A	B	C	D	E	F	All
A	0	32	340	441	115	268	1196
B	28	0	67	82	258	197	633
C	306	87	0	39	546	0	977
D	443	202	44	0	44	135	867
E	138	233	250	3	0	24	648
F	301	583	0	290	35	0	1208
All	1215	1135	701	855	998	624	5529

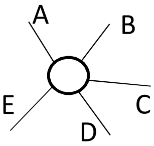
	A	B	C	D	E	F	All
A	0%	43%	29%	115%	133%	55%	69%
B	-30%	0%	-19%	23%	41%	-7%	4%
C	-2%	4%	0%	58%	74%	0%	24%
D	39%	46%	42%	0%	175%	76%	48%
E	-38%	-29%	-34%	50%	0%	-21%	-32%
F	-13%	-5%	0%	47%	50%	0%	3%
All	1%	-2%	-3%	71%	68%	26%	17%

Average of methods 1 and 2

	A	B	C	D	E	F	All
A	0	31	330	433	97	266	1157
B	28	0	66	79	246	194	613
C	295	84	0	38	493	0	910
D	442	202	43	0	37	134	857
E	131	225	234	3	0	24	617
F	298	577	0	287	32	0	1193
All	1194	1119	672	840	905	618	5348

A	A5 North
B	A426 North
C	Gibbet Lane
D	A5 South
E	A426 South

A5/A426 Roundabout AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	19	718	81	818
	B	0	0	0	357	300	657
	C	13	0	0	15	16	44
	D	615	377	21	0	0	1013
	E	57	125	56	0	0	238
	All	685	502	96	1090	397	2770

2026							
	Exit						
	A	B	C	D	E	All	
A	0	0	15	878	46	939	939
B	0	0	0	481	195	676	676
C	22	0	0	24	13	59	60
D	617	279	13	0	0	909	909
E	176	286	111	0	0	573	573
All	815	565	139	1383	254	3156	3157
	820	568	139	1376	253	3156	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	3	14	545	376	938
B	1	0	11	192	386	590
C	34	13	0	27	46	120
D	327	91	21	4	38	481
E	774	743	44	32	0	1593
All	1135	850	90	801	846	3722

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	10	16	468	520	1014
B	2	0	33	154	498	687
C	20	33	0	17	46	116
D	338	114	29	13	119	613
E	373	461	31	111	0	976
All	733	618	109	763	1183	3406

2014 + 12 years

	A	B	C	D	E	All
A	0	10	13	575	497	1095
B	2	0	33	237	428	700
C	26	33	0	23	44	126
D	339	49	24	13	119	544
E	452	568	68	111	0	1199
All	820	660	138	958	1088	3663

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	10	-3	-250	439	196
B	2	0	33	-203	198	30
C	7	33	0	2	30	72
D	-277	-263	8	13	119	-400
E	316	336	-25	111	0	738
All	48	116	13	-327	786	636

	A	B	C	D	E	All
A	0%	0%	-16%	-35%	542%	24%
B	0%	0%	0%	-57%	66%	5%
C	54%	0%	0%	13%	188%	164%
D	-45%	-70%	38%	0%	0%	-39%
E	554%	269%	-45%	0%	0%	310%
All	7%	23%	14%	-30%	198%	23%

Largest Growth in Turning movement

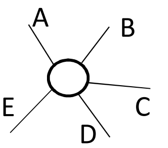
	A	B	C	D	E	All
A	0	10	14	575	497	1095
B	2	0	33	237	428	700
C	34	33	0	27	46	140
D	339	91	24	13	119	586
E	774	743	68	111	0	1696
All	1149	877	138	963	1090	4217

Average from methods 1 and 2

	A	B	C	D	E	All
A	0	7	14	560	436	1016
B	1	0	22	214	407	645
C	30	23	0	25	45	123
D	333	70	22	9	79	512
E	613	656	56	72	0	1396
All	977	755	114	880	967	3693

A A5 North
B A426 North
C Gibbet Lane
D A5 South
E A426 South

A5/A426 Roundabout PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	13	502	60	575
	B	0	0	0	383	112	495
	C	15	0	0	27	28	70
	D	676	285	21	0	0	982
	E	19	194	17	0	0	230
	All	710	479	51	912	200	2352

2026							
	Exit						
	A	B	C	D	E	All	*model*
A	0	0	19	594	99	712	*712*
B	0	0	0	391	158	549	*549*
C	12	0	0	42	60	114	*114*
D	822	199	51	0	0	1072	*1073*
E	6	353	11	0	0	370	*370*
All	840	552	81	1027	317	2817	*2818*
model	*819*	*587*	*81*	*1015*	*313*	*2815*	

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	1	16	297	453	767
B	3	0	7	145	534	690
C	20	7	0	23	72	121
D	527	137	36	3	29	732
E	249	1015	49	46	0	1358
All	800	1159	107	514	1087	3668

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	5	14	312	373	704
B	12	0	25	165	482	684
C	21	18	0	15	37	91
D	453	168	18	10	85	734
E	358	513	50	107	0	1028
All	844	704	107	609	977	3241

2014 + 12 years

	A	B	C	D	E	All
A	0	5	18	373	399	795
B	12	0	25	170	513	720
C	19	18	0	25	58	120
D	550	111	38	10	85	794
E	349	619	46	107	0	1121
All	931	753	127	686	1055	3551

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	5	1	-190	313	129
B	12	0	25	-218	370	189
C	6	18	0	-12	9	21
D	-223	-117	-3	10	85	-248
E	339	319	33	107	0	798
All	134	225	56	-303	777	889

	A	B	C	D	E	All
A	0%	0%	8%	-38%	522%	22%
B	0%	0%	0%	-57%	330%	38%
C	40%	0%	0%	-44%	32%	30%
D	-33%	-41%	-14%	0%	0%	-25%
E	1784%	164%	194%	0%	0%	347%
All	19%	47%	110%	-33%	389%	38%

Largest Growth in Turning movement

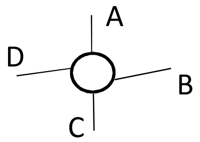
	A	B	C	D	E	All
A	0	5	18	373	453	849
B	12	0	25	170	534	741
C	20	18	0	25	72	135
D	550	137	38	10	85	820
E	349	1015	49	107	0	1520
All	932	1174	130	686	1144	4065

Average from methods 1 and 2

	A	B	C	D	E	All
A	0	3	17	335	426	781
B	8	0	16	158	523	705
C	20	12	0	24	65	121
D	539	124	37	7	57	763
E	299	817	47	76	0	1240
All	865	956	117	600	1071	3610

A A426 North
B M6 East
C A426 South
D M6 West

M6 Junction 1 AM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	317	81		398
	B	0	0	62	0		62
	C	121	73	0	858		1052
	D	118	0	970	0		1088
	E						0
	All	239	73	1349	939	0	2600

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	204	49		253
B	0	0	123	0		123
C	379	175	0	674		1228
D	194	0	806	0		1000
E						0
All	573	175	1133	723	0	2604

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	42	878	301		1221
B	31	77	437	0		545
C	646	179	0	674		1499
D	313	0	756	0		1069
E						0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	14	658	218	0	890
B	12	29	828	0	0	869
C	1009	223	0	373	0	1605
D	390	0	584	0	0	974
E	0	0	0	0	0	0
All	1411	266	2071	591	0	4338

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	42	878	301	0	1221
B	31	77	437	0	0	545
C	646	179	0	674	0	1499
D	313	0	756	0	0	1069
E	0	0	0	0	0	0
All	990	298	2071	975	0	4334

2014 + 12 years

	A	B	C	D	E	All
A	0	42	803	280	0	1124
B	31	77	478	0	0	586
C	818	247	0	551	0	1616
D	364	0	647	0	0	1010
E	0	0	0	0	0	0
All	1213	366	1927	831	0	4337

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	42	561	220	0	823
B	31	77	375	0	0	483
C	525	106	0	-184	0	447
D	195	0	-214	0	0	-19
E	0	0	0	0	0	0
All	751	225	722	36	0	1734

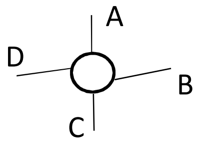
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	42	803	280	0	1124
B	31	77	828	0	0	936
C	1009	247	0	551	0	1807
D	390	0	647	0	0	1036
E	0	0	0	0	0	0
All	1430	366	2277	831	0	4904

	A	B	C	D	E	All
A	0%	0%	177%	272%	0%	207%
B	0%	0%	605%	0%	0%	779%
C	434%	145%	0%	-21%	0%	42%
D	165%	0%	-22%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	314%	308%	54%	4%	0%	67%

A	A426 North
B	M6 East
C	A426 South
D	M6 West

M6 Junction 1 PM



LLITM

	2008						
		Exit					
		A	B	C	D	E	All
entry	A	0	0	152	47		199
	B	0	0	45	0		45
	C	61	68	0	1032		1161
	D	169	0	773	0		942
	E						0
	All	230	68	970	1079	0	2347

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	274	38		312
B	2	0	191	0		193
C	130	154	0	766		1050
D	239	0	461	0		700
E						0
All	371	154	926	804	0	2255

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	28	656	301		985
B	58	24	226	0		308
C	725	219	0	580		1524
D	283	0	643	0		926
E						0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	8	859	224	0	1091
B	93	8	689	0	0	790
C	677	215	0	256	0	1147
D	268	0	349	0	0	617
E	0	0	0	0	0	0
All	1038	230	1897	480	0	3645

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	28	656	301	0	985
B	58	24	226	0	0	308
C	725	219	0	580	0	1524
D	283	0	643	0	0	926
E	0	0	0	0	0	0
All	1066	271	1525	881	0	3743

2014 + 12 years

	A	B	C	D	E	All
A	0	28	737	295	0	1060
B	59	24	323	0	0	407
C	771	276	0	403	0	1450
D	330	0	435	0	0	765
E	0	0	0	0	0	0
All	1160	328	1496	698	0	3682

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	28	504	254	0	786
B	58	24	181	0	0	263
C	664	151	0	-452	0	363
D	114	0	-130	0	0	-16
E	0	0	0	0	0	0
All	836	203	555	-198	0	1396

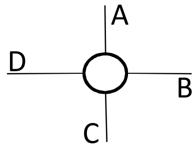
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	28	859	295	0	1182
B	93	24	689	0	0	807
C	771	276	0	403	0	1450
D	330	0	435	0	0	765
E	0	0	0	0	0	0
All	1194	328	1984	698	0	4204

	A	B	C	D	E	All
A	0%	0%	332%	540%	0%	395%
B	0%	0%	402%	0%	0%	584%
C	1089%	222%	0%	-44%	0%	31%
D	67%	0%	-17%	0%	0%	-2%
E	0%	0%	0%	0%	0%	0%
All	363%	299%	57%	-18%	0%	59%

A	New Access
B	Mere Lane East
C	Hunter Boulevard
D	Mere Lane West
E	

Mere Lane/Magna Park access AM



LLITM

		2008						
		Exit						
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	121		121
	C	0	0	0	0		0
	D	0	42	0	0		42
	E						0
	All	0	42	0	121	0	163

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	117		117
C	0	0	0	0		0
D	0	67	0	0		67
E						0
All	0	67	0	117	0	184

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	104		104
C	0	0	0	0		0
D	0	39	0	0		39
E						0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	101	0	101
C	0	0	0	0	0	0
D	0	54	0	0	0	54
E	0	0	0	0	0	0
All	0	54	0	101	0	155

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	104	0	104
C	0	0	0	0	0	0
D	0	39	0	0	0	39
E	0	0	0	0	0	0
All	0	39	0	104	0	143

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	101	0	101
C	0	0	0	0	0	0
D	0	56	0	0	0	56
E	0	0	0	0	0	0
All	0	56	0	101	0	157

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-17	0	-17
C	0	0	0	0	0	0
D	0	-3	0	0	0	-3
E	0	0	0	0	0	0
All	0	-3	0	-17	0	-20

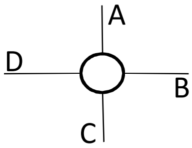
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	101	0	101
C	0	0	0	0	0	0
D	0	56	0	0	0	56
E	0	0	0	0	0	0
All	0	56	0	101	0	157

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-14%	0%	-14%
C	0%	0%	0%	0%	0%	0%
D	0%	-7%	0%	0%	0%	-7%
E	0%	0%	0%	0%	0%	0%
All	0%	-7%	0%	-14%	0%	-12%

A	New Access
B	Mere Lane East
C	Hunter Boulevard
D	Mere Lane West
E	

Mere Lane/Magna Park access PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	0	0		0
	B	0	0	0	84		84
	C	0	0	0	0		0
	D	0	87	0	0		87
	E						0
	All	0	87	0	84	0	171

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	119		119
C	0	0	0	0		0
D	0	94	0	0		94
E						0
All	0	94	0	119	0	213

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	0	0		0
B	0	0	0	49		49
C	0	0	0	0		0
D	0	71	0	0		71
E						0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	64	0	64
C	0	0	0	0	0	0
D	0	76	0	0	0	76
E	0	0	0	0	0	0
All	0	76	0	64	0	140

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	49	0	49
C	0	0	0	0	0	0
D	0	71	0	0	0	71
E	0	0	0	0	0	0
All	0	71	0	49	0	120

2014 + 12 years

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	72	0	72
C	0	0	0	0	0	0
D	0	76	0	0	0	76
E	0	0	0	0	0	0
All	0	76	0	72	0	148

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	-35	0	-35
C	0	0	0	0	0	0
D	0	-16	0	0	0	-16
E	0	0	0	0	0	0
All	0	-16	0	-35	0	-51

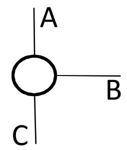
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	0	0	0	0	0
B	0	0	0	72	0	72
C	0	0	0	0	0	0
D	0	76	0	0	0	76
E	0	0	0	0	0	0
All	0	76	0	72	0	148

	A	B	C	D	E	All
A	0%	0%	0%	0%	0%	0%
B	0%	0%	0%	-42%	0%	-42%
C	0%	0%	0%	0%	0%	0%
D	0%	-18%	0%	0%	0%	-18%
E	0%	0%	0%	0%	0%	0%
All	0%	-18%	0%	-42%	0%	-30%

A	A5 North	
B	Site Access	
C	A5 South	
D		
E		

A5 Northern Site Access AM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	1007			1007
	B	0	0	0			0
	C	515	0	0			515
	D						0
	E						0
	All	515	0	1007	0	0	1522

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	997			997
B	0	0	0			0
C	532	0	0			532
D						0
E						0
All	532	0	997	0	0	1529

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	1095			1095
B	0	0	0			0
C	660	0	0			660
D						0
E						0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	0	1087	0	0	1087
B	0	0	0	0	0	0
C	674	0	0	0	0	674
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	674	0	1087	0	0	1760

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	1095	0	0	1095
B	0	0	0	0	0	0
C	660	0	0	0	0	660
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	660	0	1095	0	0	1755

2014 + 12 years

	A	B	C	D	E	All
A	0	0	1088	0	0	1088
B	0	0	0	0	0	0
C	671	0	0	0	0	671
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	671	0	1088	0	0	1760

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	88	0	0	88
B	0	0	0	0	0	0
C	145	0	0	0	0	145
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	145	0	88	0	0	233

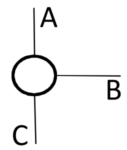
Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	0	1088	0	0	1088
B	0	0	0	0	0	0
C	674	0	0	0	0	674
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	674	0	1088	0	0	1762

	A	B	C	D	E	All
A	0%	0%	9%	0%	0%	9%
B	0%	0%	0%	0%	0%	0%
C	28%	0%	0%	0%	0%	28%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	28%	0%	9%	0%	0%	15%

A A5 North
B Site Access
C A5 South
D
E

A5 Northern Site Access PM



LLITM

		2008					
		Exit					
		A	B	C	D	E	All
entry	A	0	0	562			562
	B	0	0	0			0
	C	789	0	0			789
	D						0
	E						0
	All	789	0	562	0	0	1351

2026						
	Exit					
	A	B	C	D	E	All
A	0	0	616			616
B	0	0	0			0
C	871	0	0			871
D						0
E						0
All	871	0	616	0	0	1487

Monitored/Counts (Grow by % changes)

2014

	A	B	C	D	E	All
A	0	0	572			572
B	0	0	0			0
C	949	0	0			949
D						0
E						0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	0	609	0	0	609
B	0	0	0	0	0	0
C	1015	0	0	0	0	1015
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1015	0	609	0	0	1623

Monitored/Counts (Grow by absolute changes)

2014

	A	B	C	D	E	All
A	0	0	572	0	0	572
B	0	0	0	0	0	0
C	949	0	0	0	0	949
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	949	0	572	0	0	1521

2014 + 12 years

	A	B	C	D	E	All
A	0	0	608	0	0	608
B	0	0	0	0	0	0
C	1004	0	0	0	0	1004
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1004	0	608	0	0	1612

Obs (2014)-LLITM (2016)

	A	B	C	D	E	All
A	0	0	10	0	0	10
B	0	0	0	0	0	0
C	160	0	0	0	0	160
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	160	0	10	0	0	170

Largest Growth in Turning movement

	A	B	C	D	E	All
A	0	0	609	0	0	609
B	0	0	0	0	0	0
C	1015	0	0	0	0	1015
D	0	0	0	0	0	0
E	0	0	0	0	0	0
All	1015	0	609	0	0	1623

	A	B	C	D	E	All
A	0%	0%	2%	0%	0%	2%
B	0%	0%	0%	0%	0%	0%
C	20%	0%	0%	0%	0%	20%
D	0%	0%	0%	0%	0%	0%
E	0%	0%	0%	0%	0%	0%
All	20%	0%	2%	0%	0%	13%

Magna Park Extension: Hybrid Application
Second Supplementary Transport Assessment

Appendix I – 2026 'Without Development' Flows

DHL Committed Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	15	0	0
B4109 North	0	0	0	8	0	0
M69 East	0	0	0	0	0	0
A5 South	7	3	0	0	0	0
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	0	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	40	0
Mere Lane	13	0	32
A5 South	0	49	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	17	11	5
A4303	0	0	0	0	0
A5 South	16	0	0	0	0
Lutterworth Road	15	0	0	0	0
Coal Pit Lane	19	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	8	9
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	10	0	0	0	0
A426 South	6	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	8	1
M6 East	0	0	0	0
A426 South	4	0	0	0
M6 West	2	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	37	0	0
A4303 East	77	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	1	37	45
Mere Lane East	3	0	0	0
Hunter Boulevard	77	0	0	0
Mere Lane West	90	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	0	0
A4303 East	0	0	0
A4303 West	0	37	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	23
A4303 East	0	0	0	54
Fairacres	0	0	0	0
A4303 West	8	29	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	13
A4303 East	0	0	0	42
A426 South	0	0	0	0
A4303 West	7	22	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	28
A4304	0	0	0	4
M1 South	0	0	0	9
A4303	19	1	2	0

Largest Growth in Turning Movement from LLITM - 2026 Without Development

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	382	420	129	292
B4109 North	88	0	159	280	339	654
M69 East	452	62	0	57	338	0
A5 South	482	138	33	0	6	247
B4109 South	101	130	292	0	0	19
M69 West	361	297	0	189	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	13	1078
Mere Lane	14	0	91
A5 South	668	45	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	620	526	53	4
A4303	404	0	601	415	62
A5 South	340	464	0	67	67
Lutterworth Road	38	292	30	0	1
Coal Pit Lane	6	295	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	14	560	436
A426 North	1	0	22	214	407
Gibbet Lane	30	23	0	25	45
A5 South	333	70	22	9	79
A426 South	613	656	56	72	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	803	280
M6 East	31	77	828	0
A426 South	1009	247	0	551
M6 West	390	0	647	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	141	0	433
A4303 East	592	61	98	903
George Access	8	7	0	14
A4303 West	691	727	76	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	0	0	0
Mere Lane East	0	0	0	101
Hunter Boulevard	0	0	0	0
Mere Lane West	0	56	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1671
A4303 West	71	953	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	163	0	664
A4303 East	58	0	0	1094
Fairacres	8	8	0	3
A4303 West	227	716	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	651	335	141
A4303 East	615	0	639	880
A426 South	314	384	0	49
A4303 West	90	770	45	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	154	0	931
A4304	260	0	129	501
M1 South	0	57	33	732
A4303	696	317	748	0

Final AM Peak 2026 Without Development Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	382	435	129	292
B4109 North	88	0	159	288	339	654
M69 East	452	62	0	57	338	0
A5 South	489	141	33	0	6	247
B4109 South	101	130	292	0	0	19
M69 West	361	297	0	189	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	53	1078
Mere Lane	27	0	123
A5 South	668	94	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	620	543	64	9
A4303	404	0	601	415	62
A5 South	356	464	0	67	67
Lutterworth Road	53	292	30	0	1
Coal Pit Lane	25	295	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	14	568	445
A426 North	1	0	22	214	407
Gibbet Lane	30	23	0	25	45
A5 South	343	70	22	9	79
A426 South	619	656	56	72	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	811	281
M6 East	31	77	828	0
A426 South	1013	247	0	551
M6 West	392	0	647	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	178	0	433
A4303 East	669	61	98	903
George Access	8	7	0	14
A4303 West	691	727	76	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	1	37	45
Mere Lane East	3	0	0	101
Hunter Boulevard	77	0	0	0
Mere Lane West	90	56	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1671
A4303 West	71	990	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	163	0	687
A4303 East	58	0	0	1148
Fairacres	8	8	0	3
A4303 West	235	745	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	651	335	154
A4303 East	615	0	639	922
A426 South	314	384	0	49
A4303 West	97	792	45	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	154	0	959
A4304	260	0	129	505
M1 South	0	57	33	741
A4303	715	318	750	0

DHL Committed Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	2	0	0
B4109 North	0	0	0	2	0	0
M69 East	0	0	0	0	0	0
A5 South	10	3	0	0	0	0
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	0	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	10	0
Mere Lane	25	0	39
A5 South	0	22	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	12	19	9
A4303	0	0	0	0	0
A5 South	7	0	0	0	0
Lutterworth Road	9	0	0	0	0
Coal Pit Lane	7	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	8	4
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	5	0	0	0	0
A426 South	1	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	3	1
M6 East	0	0	0	0
A426 South	1	0	0	0
M6 West	1	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	51	0	0
A4303 East	18	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	3	51	64
Mere Lane East	3	0	0	0
Hunter Boulevard	18	0	0	0
Mere Lane West	32	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way		0	
A4303 East			
A4303 West	0	51	

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	7
A4303 East	0	0	0	11
Fairacres	0	0	0	0
A4303 West	18	33	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	3
A4303 East	0	0	0	9
A426 South	0	0	0	0
A4303 West	6	27	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	7
A4304	0	0	0	1
M1 South	0	0	0	1
A4303	20	3	4	0

Largest Growth in Turning Movement from LLITM - 2026 Without Development

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	31	330	433	97	266
B4109 North	28	0	66	79	246	194
M69 East	295	84	0	38	493	0
A5 South	442	202	43	0	37	134
B4109 South	131	225	234	3	0	24
M69 West	298	577	0	287	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	12	600
Mere Lane	16	0	57
A5 South	1003	67	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	347	347	24	2
A4303	643	0	279	414	124
A5 South	578	277	0	44	90
Lutterworth Road	81	343	83	0	6
Coal Pit Lane	6	169	46	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	17	335	426
A426 North	8	0	16	158	523
Gibbet Lane	20	12	0	24	65
A5 South	539	124	37	7	57
A426 South	299	817	47	76	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	859	295
M6 East	93	24	689	0
A426 South	771	276	0	403
M6 West	330	0	435	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	279	6	510
A4303 East	203	28	23	708
George Access	16	172	0	102
A4303 West	195	822	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	0	0	0
Mere Lane East	0	0	0	72
Hunter Boulevard	0	0	0	0
Mere Lane West	0	76	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1017
A4303 West	19	1369	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	186	4	300
A4303 East	84	0	6	814
Fairacres	7	1	0	4
A4303 West	582	1004	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	493	337	134
A4303 East	517	0	451	761
A426 South	383	492	0	39
A4303 West	162	956	64	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	256	0	635
A4304	162	0	78	511
M1 South	0	87	25	764
A4303	912	525	469	0

Final PM Peak 2026 Without Development Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	31	330	435	97	266
B4109 North	28	0	66	81	246	194
M69 East	295	84	0	38	493	0
A5 South	452	205	43	0	37	134
B4109 South	131	225	234	3	0	24
M69 West	298	577	0	287	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	22	600
Mere Lane	41	0	96
A5 South	1003	89	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	347	359	43	11
A4303	643	0	279	414	124
A5 South	585	277	0	44	90
Lutterworth Road	90	343	83	0	6
Coal Pit Lane	13	169	46	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	17	343	430
A426 North	8	0	16	158	523
Gibbet Lane	20	12	0	24	65
A5 South	544	124	37	7	57
A426 South	300	817	47	76	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	862	296
M6 East	93	24	689	0
A426 South	772	276	0	403
M6 West	331	0	435	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	330	6	510
A4303 East	221	28	23	708
George Access	16	172	0	102
A4303 West	195	822	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	3	51	64
Mere Lane East	3	0	0	72
Hunter Boulevard	18	0	0	0
Mere Lane West	32	76	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1017
A4303 West	19	1420	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	186	4	307
A4303 East	84	0	6	825
Fairacres	7	1	0	4
A4303 West	600	1037	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	493	337	137
A4303 East	517	0	451	770
A426 South	383	492	0	39
A4303 West	168	983	64	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	256	0	642
A4304	162	0	78	512
M1 South	0	87	25	765
A4303	932	528	473	0

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix J – 2026 ‘With Development & Mitigation’ Flows

Logistics Institute Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	9	0	0
B4109 North	0	0	0	6	0	0
M69 East	0	0	0	0	0	0
A5 South	4	4	0	0	0	6
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	6	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	32	0
Mere Lane	18	0	14
A5 South	0	31	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	10	3	3
A4303	0	0	0	0	0
A5 South	17	0	0	0	0
Lutterworth Road	8	0	0	0	0
Coal Pit Lane	8	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	0	10
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	2	0	0	0	0
A426 South	15	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	6	4
M6 East	0	0	0	0
A426 South	8	0	0	0
M6 West	7	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	26	0	0
A4303 East	51	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	0	26	34
Mere Lane East	2	0	0	0
Hunter Boulevard	51	0	0	0
Mere Lane West	65	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	0	0
A4303 East	0	0	0
A4303 West	0	8	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	9
A4303 East	0	0	0	42
Fairacres	0	0	0	0
A4303 West	3	23	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	3
A4303 East	0	0	0	38
A426 South	0	0	0	0
A4303 West	0	23	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	28
A4304	0	0	0	5
M1 South	0	0	0	6
A4303	17	3	2	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	0	32
Site Access	0	0	0
A5 South	18	0	0

Largest Growth in Turning Movement from LLITM - 2026 With Development

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	370	445	132	298
B4109 North	86	0	152	291	338	654
M69 East	450	61	0	62	350	0
A5 South	481	137	32	0	6	253
B4109 South	101	130	287	0	0	21
M69 West	356	289	0	200	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	337	908
Mere Lane	122	0	132
A5 South	654	137	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	433	568	75	4
A4303	368	0	615	398	60
A5 South	388	464	0	66	67
Lutterworth Road	92	285	25	0	1
Coal Pit Lane	6	239	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	14	569	441
A426 North	1	0	22	210	408
Gibbet Lane	31	23	0	24	45
A5 South	347	67	22	9	78
A426 South	644	661	55	71	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	806	281
M6 East	31	77	821	0
A426 South	1034	244	0	558
M6 West	400	0	623	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	201	5	396
A4303 East	712	61	93	878
George Access	9	6	0	10
A4303 West	480	719	70	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	15	68	64
Mere Lane East	52	0	44	255
Hunter Boulevard	121	13	0	35
Mere Lane West	105	487	189	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1754
A4303 West	71	1015	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	158	0	637
A4303 East	58	0	0	1218
Fairacres	8	8	0	3
A4303 West	229	772	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	662	334	148
A4303 East	615	0	633	990
A426 South	317	383	0	48
A4303 West	94	834	43	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	152	0	1000
A4304	257	0	127	507
M1 South	0	62	33	760
A4303	720	323	780	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	123	1286
Site Access	51	0	0
A5 South	691	0	0

Final AM Peak 2026 With Development Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	370	454	132	298
B4109 North	86	0	152	297	338	654
M69 East	450	61	0	62	350	0
A5 South	485	141	32	0	6	259
B4109 South	101	130	287	0	0	21
M69 West	356	289	0	206	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	471	971
Mere Lane	179	0	83
A5 South	758	64	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	433	578	78	7
A4303	368	0	615	398	60
A5 South	405	464	0	66	67
Lutterworth Road	100	285	25	0	1
Coal Pit Lane	14	239	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	14	569	451
A426 North	1	0	22	210	408
Gibbet Lane	31	23	0	24	45
A5 South	349	67	22	9	78
A426 South	659	661	55	71	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	812	285
M6 East	31	77	821	0
A426 South	1042	244	0	558
M6 West	407	0	623	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	227	5	396
A4303 East	763	61	93	878
George Access	9	6	0	10
A4303 West	480	719	70	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	15	94	74
Mere Lane East	54	0	44	255
Hunter Boulevard	172	13	0	35
Mere Lane West	168	487	189	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1754
A4303 West	71	1023	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	158	0	646
A4303 East	58	0	0	1260
Fairacres	8	8	0	3
A4303 West	232	795	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	662	334	151
A4303 East	615	0	633	1028
A426 South	317	383	0	48
A4303 West	94	857	43	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	152	0	1028
A4304	257	0	127	512
M1 South	0	62	33	766
A4303	737	326	782	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	21	1420
Site Access	12	0	63
A5 South	748	104	0

Manual Adjustment

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		102	63
Mere Lane	39		-63
A5 South	104	-104	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-24
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-2			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-102	102
Site Access	-39		63
A5 South	39	104	

Logistics Institute Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	2	0	0
B4109 North	0	0	0	2	0	0
M69 East	0	0	0	0	0	0
A5 South	7	3	0	0	0	0
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	0	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	8	0
Mere Lane	21	0	32
A5 South	0	14	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	16	10	7
A4303	0	0	0	0	0
A5 South	8	0	0	0	0
Lutterworth Road	3	0	0	0	0
Coal Pit Lane	3	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	2	13
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	0	0	0	0	0
A426 South	8	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	6	7
M6 East	0	0	0	0
A426 South	4	0	0	0
M6 West	4	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	43	0	0
A4303 East	18	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	2	43	53
Mere Lane East	0	0	0	0
Hunter Boulevard	18	0	0	0
Mere Lane West	22	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	0	0
A4303 East	0	0	0
A4303 West	0	16	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	3
A4303 East	0	0	0	15
Fairacres	0	0	0	0
A4303 West	10	33	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	0
A4303 East	0	0	0	15
A426 South	0	0	0	0
A4303 West	3	30	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	11
A4304	0	0	0	1
M1 South	0	0	0	2
A4303	23	3	5	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	0	8
Site Access	0	0	0
A5 South	21	0	0

Largest Growth in Turning Movement from LLITM - 2026 With Development

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	30	324	429	94	262
B4109 North	29	0	70	83	257	205
M69 East	300	85	0	39	508	0
A5 South	444	201	44	0	38	137
B4109 South	131	222	241	3	0	25
M69 West	301	577	0	295	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	297	494
Mere Lane	162	0	156
A5 South	911	111	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	251	404	64	2
A4303	453	0	275	399	108
A5 South	590	272	0	44	90
Lutterworth Road	117	342	68	0	6
Coal Pit Lane	6	212	46	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	17	337	444
A426 North	8	0	16	152	533
Gibbet Lane	19	12	0	22	65
A5 South	531	132	36	7	57
A426 South	297	839	46	76	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	928	296
M6 East	59	24	712	0
A426 South	777	278	0	420
M6 West	332	0	444	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	354	7	347
A4303 East	262	28	22	678
George Access	51	168	0	94
A4303 West	127	816	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	48	101	117
Mere Lane East	21	0	19	184
Hunter Boulevard	65	29	0	148
Mere Lane West	61	403	65	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1057
A4303 West	19	1447	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	197	4	276
A4303 East	82	0	6	902
Fairacres	7	1	0	4
A4303 West	568	1103	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	497	338	148
A4303 East	513	0	448	827
A426 South	385	489	0	39
A4303 West	172	1038	96	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	254	0	662
A4304	160	0	77	515
M1 South	0	87	25	779
A4303	987	532	490	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	52	667
Site Access	107	0	0
A5 South	1092	0	0

Final PM Peak 2026 With Development Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	30	324	431	94	262
B4109 North	29	0	70	85	257	205
M69 East	300	85	0	39	508	0
A5 South	451	204	44	0	38	137
B4109 South	131	222	241	3	0	25
M69 West	301	577	0	295	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	340	612
Mere Lane	283	0	70
A5 South	968	68	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	251	420	74	9
A4303	453	0	275	399	108
A5 South	598	272	0	44	90
Lutterworth Road	120	342	68	0	6
Coal Pit Lane	9	212	46	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	17	339	457
A426 North	8	0	16	152	533
Gibbet Lane	19	12	0	22	65
A5 South	531	132	36	7	57
A426 South	305	839	46	76	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	934	303
M6 East	59	24	712	0
A426 South	781	278	0	420
M6 West	336	0	444	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	397	7	347
A4303 East	280	28	22	678
George Access	51	168	0	94
A4303 West	127	816	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	50	144	152
Mere Lane East	21	0	19	184
Hunter Boulevard	83	29	0	148
Mere Lane West	61	403	65	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1057
A4303 West	19	1463	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	197	4	279
A4303 East	82	0	6	917
Fairacres	7	1	0	4
A4303 West	578	1136	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	497	338	148
A4303 East	513	0	448	842
A426 South	385	489	0	39
A4303 West	175	1068	96	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	254	0	673
A4304	160	0	77	516
M1 South	0	87	25	781
A4303	1010	535	495	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	17	710
Site Access	7	0	118
A5 South	1213	57	0

Manual Adjustment

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		35	118
Mere Lane	100		-118
A5 South	57	-57	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-18
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-22			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-35	35
Site Access	-100		118
A5 South	100	57	

From Manual Assessment

AM Peak

From South to Mere Lane	34%	53
From South to A5 North	66%	104
To South From Mere Lane	34%	33
To South From A5 North	66%	63

PM Peak

From South to Mere Lane	37%	34
From South to A5 North	63%	57
To South From Mere Lane	33%	58
To South From A5 North	67%	118

From LLITM

AM Peak

From South	157
To South	96

PM Peak

From South	91
To South	176

From Manual Assessment

AM Peak

From North to Mere Lane	55%	102
From North to Northern Access	45%	83
To North From Mere Lane	51%	39
To North From Northern Access	49%	38

PM Peak

From North to Mere Lane	45%	35
From North to Northern Access	55%	43
To North From Mere Lane	62%	100
To North From Northern Access	38%	61

From LLITM

AM Peak

From North	185
To North	77

PM Peak

From North	78
To North	161

AM Peak Adjustments

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		102	63
Mere Lane	39		-63
A5 South	104	-104	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-24
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-2			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-102	102
Site Access	-39		63
A5 South	39	104	

PM Peak Adjustments

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		35	118
Mere Lane	100		-118
A5 South	57	-57	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-18
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-22			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-35	35
Site Access	-100		118
A5 South	100	57	

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix K – 2026 'With Development & symmetry park' Flows

Logistics Institute Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	9	0	0
B4109 North	0	0	0	6	0	0
M69 East	0	0	0	0	0	0
A5 South	4	4	0	0	0	6
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	6	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	32	0
Mere Lane	18	0	14
A5 South	0	31	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	10	3	3
A4303	0	0	0	0	0
A5 South	17	0	0	0	0
Lutterworth Road	8	0	0	0	0
Coal Pit Lane	8	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	0	10
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	2	0	0	0	0
A426 South	15	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	6	4
M6 East	0	0	0	0
A426 South	8	0	0	0
M6 West	7	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	26	0	0
A4303 East	51	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	0	26	34
Mere Lane East	2	0	0	0
Hunter Boulevard	51	0	0	0
Mere Lane West	65	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	0	0
A4303 East	0	0	0
A4303 West	0	8	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	9
A4303 East	0	0	0	42
Fairacres	0	0	0	0
A4303 West	3	23	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	3
A4303 East	0	0	0	38
A426 South	0	0	0	0
A4303 West	0	23	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	28
A4304	0	0	0	5
M1 South	0	0	0	6
A4303	17	3	2	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	0	32
Site Access	0	0	0
A5 South	18	0	0

Largest Growth in Turning Movement from LLITM - 2026 With Development + Symmetry Park

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	370	451	134	299
B4109 North	86	0	152	294	343	657
M69 East	448	61	0	63	355	0
A5 South	481	137	32	0	6	255
B4109 South	100	128	284	0	0	20
M69 West	354	287	0	202	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	309	939
Mere Lane	121	0	132
A5 South	665	138	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	473	555	74	4
A4303	372	0	639	388	53
A5 South	389	486	0	70	67
Lutterworth Road	93	307	26	0	1
Coal Pit Lane	6	287	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	13	570	442
A426 North	1	0	22	206	408
Gibbet Lane	32	23	0	24	44
A5 South	347	61	20	9	78
A426 South	686	677	55	71	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	811	282
M6 East	31	77	816	0
A426 South	1075	245	0	541
M6 West	417	0	623	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	206	5	399
A4303 East	687	61	94	883
George Access	9	6	0	10
A4303 West	501	806	70	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	16	69	63
Mere Lane East	52	0	66	284
Hunter Boulevard	119	14	0	35
Mere Lane West	106	461	170	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1735
A4303 West	71	1124	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	160	0	634
A4303 East	55	0	0	1274
Fairacres	8	8	0	3
A4303 West	229	788	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	659	336	155
A4303 East	611	0	631	1032
A426 South	322	384	0	55
A4303 West	95	851	47	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	151	0	1035
A4304	257	0	129	493
M1 South	0	62	33	772
A4303	732	321	780	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	122	1296
Site Access	51	0	0
A5 South	701	0	0

Final AM Peak 2026 With Development Flows + Symmetry Park

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	11	370	460	134	299
B4109 North	86	0	152	300	343	657
M69 East	448	61	0	63	355	0
A5 South	485	141	32	0	6	261
B4109 South	100	128	284	0	0	20
M69 West	354	287	0	208	7	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	443	1002
Mere Lane	178	0	83
A5 South	769	65	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	473	565	77	7
A4303	372	0	639	388	53
A5 South	406	486	0	70	67
Lutterworth Road	101	307	26	0	1
Coal Pit Lane	14	287	100	5	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	7	13	570	452
A426 North	1	0	22	206	408
Gibbet Lane	32	23	0	24	44
A5 South	349	61	20	9	78
A426 South	701	677	55	71	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	42	817	286
M6 East	31	77	816	0
A426 South	1083	245	0	541
M6 West	424	0	623	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	232	5	399
A4303 East	738	61	94	883
George Access	9	6	0	10
A4303 West	501	806	70	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	16	95	73
Mere Lane East	54	0	66	284
Hunter Boulevard	170	14	0	35
Mere Lane West	169	461	170	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	97	0
A4303 East	0	0	1735
A4303 West	71	1132	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	160	0	643
A4303 East	55	0	0	1316
Fairacres	8	8	0	3
A4303 West	232	811	4	7

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	659	336	158
A4303 East	611	0	631	1070
A426 South	322	384	0	55
A4303 West	95	874	47	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	151	0	1063
A4304	257	0	129	498
M1 South	0	62	33	778
A4303	749	324	782	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	20	1430
Site Access	12	0	63
A5 South	758	104	0

Manual Adjustment

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		102	63
Mere Lane	39		-63
A5 South	104	-104	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-24
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-2			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-102	102
Site Access	-39		63
A5 South	39	104	

Logistics Institute Flows

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	0	0	2	0	0
B4109 North	0	0	0	2	0	0
M69 East	0	0	0	0	0	0
A5 South	7	3	0	0	0	0
B4109 South	0	0	0	0	0	0
M69 West	0	0	0	0	0	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	8	0
Mere Lane	21	0	32
A5 South	0	14	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	0	16	10	7
A4303	0	0	0	0	0
A5 South	8	0	0	0	0
Lutterworth Road	3	0	0	0	0
Coal Pit Lane	3	0	0	0	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	0	0	2	13
A426 North	0	0	0	0	0
Gibbet Lane	0	0	0	0	0
A5 South	0	0	0	0	0
A426 South	8	0	0	0	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	0	6	7
M6 East	0	0	0	0
A426 South	4	0	0	0
M6 West	4	0	0	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	43	0	0
A4303 East	18	0	0	0
George Access	0	0	0	0
A4303 West	0	0	0	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	2	43	53
Mere Lane East	0	0	0	0
Hunter Boulevard	18	0	0	0
Mere Lane West	22	0	0	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	0	0
A4303 East	0	0	0
A4303 West	0	16	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	0	0	3
A4303 East	0	0	0	15
Fairacres	0	0	0	0
A4303 West	10	33	0	0

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	0	0	0
A4303 East	0	0	0	15
A426 South	0	0	0	0
A4303 West	3	30	0	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	0	0	11
A4304	0	0	0	1
M1 South	0	0	0	2
A4303	23	3	5	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	0	8
Site Access	0	0	0
A5 South	21	0	0

Largest Growth in Turning Movement from LLITM - 2026 With Development + Symmetry Park

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	31	325	439	95	264
B4109 North	28	0	66	82	248	198
M69 East	303	86	0	40	506	0
A5 South	452	205	44	0	38	137
B4109 South	132	225	237	3	0	24
M69 West	298	573	0	295	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	295	501
Mere Lane	160	0	155
A5 South	945	111	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	260	394	64	2
A4303	495	0	319	414	120
A5 South	559	305	0	43	90
Lutterworth Road	115	337	58	0	6
Coal Pit Lane	6	236	45	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	25	466	422
A426 North	8	0	16	222	509
Gibbet Lane	19	12	0	13	33
A5 South	517	34	29	6	55
A426 South	518	903	108	70	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	971	303
M6 East	91	24	674	0
A426 South	780	275	0	421
M6 West	343	0	430	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	357	7	350
A4303 East	267	28	22	783
George Access	51	166	0	96
A4303 West	130	841	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	50	101	117
Mere Lane East	20	0	19	183
Hunter Boulevard	67	31	0	145
Mere Lane West	61	403	65	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1178
A4303 West	19	1472	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	194	4	282
A4303 East	82	0	6	921
Fairacres	7	1	0	4
A4303 West	594	1158	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	495	343	142
A4303 East	512	0	450	851
A426 South	392	490	0	44
A4303 West	175	1089	96	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	255	0	679
A4304	156	0	76	511
M1 South	0	87	25	779
A4303	1029	534	497	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	51	670
Site Access	106	0	0
A5 South	1124	0	0

Final PM Peak 2026 With Development Flows + Symmetry Park

PCUs

M69 Junction 1

	A5 North	B4109 North	M69 East	A5 South	B4109 South	M69 West
A5 North	0	31	325	441	95	264
B4109 North	28	0	66	84	248	198
M69 East	303	86	0	40	506	0
A5 South	459	208	44	0	38	137
B4109 South	132	225	237	3	0	24
M69 West	298	573	0	295	32	0

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North	0	338	619
Mere Lane	281	0	69
A5 South	1002	68	0

Cross in Hand Roundabout

	A5 North	A4303	A5 South	Lutterworth Road	Coal Pit Lane
A5 North	0	260	410	74	9
A4303	495	0	319	414	120
A5 South	567	305	0	43	90
Lutterworth Road	118	337	58	0	6
Coal Pit Lane	9	236	45	6	0

A5/ A426/ Gibbet Lane Roundabout

	A5 North	A426 North	Gibbet Lane	A5 South	A426 South
A5 North	0	3	25	468	435
A426 North	8	0	16	222	509
Gibbet Lane	19	12	0	13	33
A5 South	517	34	29	6	55
A426 South	526	903	108	70	0

M6 Junction 1

	A426 North	M6 East	A426 South	M6 West
A426 North	0	28	977	310
M6 East	91	24	674	0
A426 South	784	275	0	421
M6 West	347	0	430	0

Magna Park Access Roundabout

	Hunter Boulevard	A4303 East	George Access	A4303 West
Hunter Boulevard	0	400	7	350
A4303 East	285	28	22	783
George Access	51	166	0	96
A4303 West	130	841	12	0

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access	0	52	144	152
Mere Lane East	20	0	19	183
Hunter Boulevard	85	31	0	145
Mere Lane West	61	403	65	0

Magna Park Left In Left Out

	Shackelton Way	A4303 East	A4303 West
Shackelton Way	0	200	0
A4303 East	0	0	1178
A4303 West	19	1488	0

A4303/ Coventry Road Roundabout

	Coventry Road	A4303 East	Fairacres	A4303 West
Coventry Road	0	194	4	285
A4303 East	82	0	6	936
Fairacres	7	1	0	4
A4303 West	604	1191	5	2

A4303/ A426 Roundabout

	A426 North	A4303 East	A426 South	A4303 West
A426 North	0	495	343	142
A4303 East	512	0	450	866
A426 South	392	490	0	44
A4303 West	178	1119	96	0

M1 Junction 20

	M1 North	A4304	M1 South	A4303
M1 North	0	255	0	690
A4304	156	0	76	512
M1 South	0	87	25	781
A4303	1052	537	502	0

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North	0	16	713
Site Access	6	0	118
A5 South	1245	57	0

Manual Adjustment

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		35	118
Mere Lane	100		-118
A5 South	57	-57	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-18
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-22			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-35	35
Site Access	-100		118
A5 South	100	57	

From Manual Assessment

AM Peak

From South to Mere Lane	34%	53
From South to A5 North	66%	104
To South From Mere Lane	34%	33
To South From A5 North	66%	63

PM Peak

From South to Mere Lane	37%	34
From South to A5 North	63%	57
To South From Mere Lane	33%	58
To South From A5 North	67%	118

From LLITM

AM Peak

From South	157
To South	96

PM Peak

From South	91
To South	176

From Manual Assessment

AM Peak

From North to Mere Lane	55%	102
From North to Northern Access	45%	83
To North From Mere Lane	51%	39
To North From Northern Access	49%	38

PM Peak

From North to Mere Lane	45%	35
From North to Northern Access	55%	43
To North From Mere Lane	62%	100
To North From Northern Access	38%	61

From LLITM

AM Peak

From North	185
To North	77

PM Peak

From North	78
To North	161

AM Peak Adjustments

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		102	63
Mere Lane	39		-63
A5 South	104	-104	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-24
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-2			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-102	102
Site Access	-39		63
A5 South	39	104	

PM Peak Adjustments

A5/ Mere Lane

	A5 North	Mere Lane	A5 South
A5 North		35	118
Mere Lane	100		-118
A5 South	57	-57	

Proposed Access at Mere Lane

	New Access	Mere Lane East	Hunter Boulevard	Mere Lane West
New Access				-18
Mere Lane East				
Hunter Boulevard				
Mere Lane West	-22			

Northern A5 Access

	A5 North	Site Access	A5 South
A5 North		-35	35
Site Access	-100		118
A5 South	100	57	

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix L – Output from Capacity Assessments

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New Rbt on Mere Lane\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev.vai"
(drive-on-the-left) at 10:52:36 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New Access Roundabout on Mere Lane AM Peak 2026 + Dev
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Site Access
ARM B - Mere Lane East
ARM C - Hunter Bld
ARM D - Mere Lane West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	8.00	8.00	30.00	52.00	55.0	0.617	31.686
ARM B	3.00	6.00	22.00	60.00	52.00	40.0	0.569	25.644
ARM C	5.50	6.00	5.00	20.00	52.00	52.0	0.568	27.422
ARM D	3.65	7.50	23.00	65.00	52.00	36.0	0.638	31.499

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.29	3.43	2.29
ARM B	15.00	45.00	75.00	4.41	6.62	4.41
ARM C	15.00	45.00	75.00	2.75	4.13	2.75
ARM D	15.00	45.00	75.00	10.55	15.83	10.55

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.082	0.514	0.404
		0.0	15.0	94.0	74.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.153	0.000	0.125	0.722
		54.0	0.0	44.0	255.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.782	0.059	0.000	0.159
		172.0	13.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.199	0.577	0.224	0.000
		168.0	487.0	189.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	2.30	26.37	0.087	- - -	0.0	0.1	1.4	-	0.042
ARM B	4.43	23.10	0.192	- - -	0.0	0.2	3.5	-	0.053
ARM C	2.76	24.70	0.112	- - -	0.0	0.1	1.9	-	0.046
ARM D	10.59	29.59	0.358	- - -	0.0	0.6	8.1	-	0.052

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	2.74	25.32	0.108	- - -	0.1	0.1	1.8	-	0.044
ARM B	5.29	22.60	0.234	- - -	0.2	0.3	4.5	-	0.058
ARM C	3.30	24.17	0.136	- - -	0.1	0.2	2.3	-	0.048
ARM D	12.65	29.21	0.433	- - -	0.6	0.8	11.2	-	0.060

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	3.36	23.90	0.141	- - -	0.1	0.2	2.4	-	0.049
ARM B	6.48	21.92	0.295	- - -	0.3	0.4	6.1	-	0.065
ARM C	4.04	23.44	0.172	- - -	0.2	0.2	3.1	-	0.052
ARM D	15.49	28.70	0.540	- - -	0.8	1.2	16.9	-	0.075

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	3.36	23.89	0.141	- - -	0.2	0.2	2.4	-	0.049
ARM B	6.48	21.92	0.296	- - -	0.4	0.4	6.3	-	0.065
ARM C	4.04	23.43	0.172	- - -	0.2	0.2	3.1	-	0.052
ARM D	15.49	28.70	0.540	- - -	1.2	1.2	17.5	-	0.076

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	2.74	25.30	0.108	- - -	0.2	0.1	1.9	-	0.044
ARM B	5.29	22.60	0.234	- - -	0.4	0.3	4.7	-	0.058
ARM C	3.30	24.16	0.136	- - -	0.2	0.2	2.4	-	0.048
ARM D	12.65	29.21	0.433	- - -	1.2	0.8	11.8	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	2.30	26.35	0.087	- - -	0.1	0.1	1.5	-	0.042
ARM B	4.43	23.09	0.192	- - -	0.3	0.2	3.6	-	0.054
ARM C	2.76	24.69	0.112	- - -	0.2	0.1	1.9	-	0.046
ARM D	10.59	29.58	0.358	- - -	0.8	0.6	8.6	-	0.053

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.2
08.15	0.2
08.30	0.1
08.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.2
07.45	0.3
08.00	0.4
08.15	0.4
08.30	0.3
08.45	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.2
08.00	0.2
08.15	0.2
08.30	0.2
08.45	0.1

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	0.8	*
08.00	1.2	*
08.15	1.2	*
08.30	0.8	*
08.45	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	251.9	167.9	11.4	0.05	11.4	0.05
B	485.9	323.9	28.7	0.06	28.7	0.06
C	302.8	201.9	14.7	0.05	14.7	0.05
D	1161.7	774.5	74.0	0.06	74.0	0.06
ALL	2202.3	1468.2	128.7	0.06	128.8	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 15:50:06 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New Rbt on Mere Lane\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev.vai"
(drive-on-the-left) at 10:54:02 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New Access Roundabout on Mere Lane PM Peak 2026 + Dev
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Site Access
ARM B - Mere Lane East
ARM C - Hunter Bld
ARM D - Mere Lane West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	8.00	8.00	30.00	52.00	55.0	0.617	31.686
ARM B	3.00	6.00	22.00	60.00	52.00	40.0	0.569	25.644
ARM C	5.50	6.00	5.00	20.00	52.00	52.0	0.568	27.422
ARM D	3.65	7.50	23.00	65.00	52.00	36.0	0.638	31.499

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.32	6.49	4.32
ARM B	15.00	45.00	75.00	2.80	4.20	2.80
ARM C	15.00	45.00	75.00	3.25	4.88	3.25
ARM D	15.00	45.00	75.00	6.61	9.92	6.61

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.145	0.416	0.439
		0.0	50.0	144.0	152.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.094	0.000	0.085	0.821
		21.0	0.0	19.0	184.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.319	0.112	0.000	0.569
		83.0	29.0	0.0	148.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.115	0.762	0.123	0.000
		61.0	403.0	65.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	4.34	27.84	0.156	- - -	0.0	0.2	2.7	-	0.043
ARM B	2.81	23.07	0.122	- - -	0.0	0.1	2.0	-	0.049
ARM C	3.26	24.88	0.131	- - -	0.0	0.2	2.2	-	0.046
ARM D	6.64	30.43	0.218	- - -	0.0	0.3	4.1	-	0.042

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	5.18	27.09	0.191	- - -	0.2	0.2	3.5	-	0.046
ARM B	3.36	22.57	0.149	- - -	0.1	0.2	2.6	-	0.052
ARM C	3.90	24.39	0.160	- - -	0.2	0.2	2.8	-	0.049
ARM D	7.93	30.23	0.262	- - -	0.3	0.4	5.2	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	6.35	26.06	0.244	- - -	0.2	0.3	4.7	-	0.051
ARM B	4.11	21.88	0.188	- - -	0.2	0.2	3.4	-	0.056
ARM C	4.77	23.71	0.201	- - -	0.2	0.3	3.7	-	0.053
ARM D	9.71	29.94	0.324	- - -	0.4	0.5	7.1	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	6.35	26.06	0.244	- - -	0.3	0.3	4.8	-	0.051
ARM B	4.11	21.88	0.188	- - -	0.2	0.2	3.5	-	0.056
ARM C	4.77	23.70	0.201	- - -	0.3	0.3	3.8	-	0.053
ARM D	9.71	29.94	0.324	- - -	0.5	0.5	7.2	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	5.18	27.09	0.191	- - -	0.3	0.2	3.6	-	0.046
ARM B	3.36	22.56	0.149	- - -	0.2	0.2	2.7	-	0.052
ARM C	3.90	24.38	0.160	- - -	0.3	0.2	2.9	-	0.049
ARM D	7.93	30.22	0.262	- - -	0.5	0.4	5.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	4.34	27.82	0.156	- - -	0.2	0.2	2.8	-	0.043
ARM B	2.81	23.06	0.122	- - -	0.2	0.1	2.1	-	0.049
ARM C	3.26	24.87	0.131	- - -	0.2	0.2	2.3	-	0.046
ARM D	6.64	30.43	0.218	- - -	0.4	0.3	4.3	-	0.042

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.4
17.30	0.5
17.45	0.5
18.00	0.4
18.15	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	476.2	317.5	22.2	0.05	22.2	0.05
B	308.3	205.5	16.3	0.05	16.3	0.05
C	357.9	238.6	17.7	0.05	17.7	0.05
D	728.1	485.4	33.3	0.05	33.3	0.05
ALL	1870.6	1247.0	89.4	0.05	89.4	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 15:50:39 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New Rbt on Mere Lane\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev+SP.vai"
(drive-on-the-left) at 10:55:13 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New Access Roundabout on Mere Lane AM Peak 2026 + Dev + SP
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Site Access
ARM B - Mere Lane East
ARM C - Hunter Bld
ARM D - Mere Lane West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	8.00	8.00	30.00	52.00	55.0	0.617	31.686
ARM B	3.00	6.00	22.00	60.00	52.00	40.0	0.569	25.644
ARM C	5.50	6.00	5.00	20.00	52.00	52.0	0.568	27.422
ARM D	3.65	7.50	23.00	65.00	52.00	36.0	0.638	31.499

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.30	3.45	2.30
ARM B	15.00	45.00	75.00	5.05	7.58	5.05
ARM C	15.00	45.00	75.00	2.74	4.11	2.74
ARM D	15.00	45.00	75.00	10.00	15.00	10.00

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
07.15 - 08.45	ARM A	0.000	0.087	0.516	0.397
		0.0	16.0	95.0	73.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.134	0.000	0.163	0.703
		54.0	0.0	66.0	284.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.776	0.064	0.000	0.160
		170.0	14.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.211	0.576	0.213	0.000
		169.0	461.0	170.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	2.31	26.71	0.086	- - -	0.0	0.1	1.4	-	0.041
ARM B	5.07	23.24	0.218	- - -	0.0	0.3	4.1	-	0.055
ARM C	2.75	24.50	0.112	- - -	0.0	0.1	1.9	-	0.046
ARM D	10.04	29.60	0.339	- - -	0.0	0.5	7.5	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	2.76	25.73	0.107	- - -	0.1	0.1	1.8	-	0.044
ARM B	6.05	22.77	0.266	- - -	0.3	0.4	5.3	-	0.060
ARM C	3.28	23.93	0.137	- - -	0.1	0.2	2.3	-	0.048
ARM D	11.99	29.22	0.410	- - -	0.5	0.7	10.2	-	0.058

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	3.38	24.39	0.138	- - -	0.1	0.2	2.4	-	0.048
ARM B	7.41	22.12	0.335	- - -	0.4	0.5	7.4	-	0.068
ARM C	4.02	23.15	0.174	- - -	0.2	0.2	3.1	-	0.052
ARM D	14.68	28.71	0.511	- - -	0.7	1.0	15.2	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	3.38	24.38	0.138	- - -	0.2	0.2	2.4	-	0.048
ARM B	7.41	22.12	0.335	- - -	0.5	0.5	7.5	-	0.068
ARM C	4.02	23.14	0.174	- - -	0.2	0.2	3.1	-	0.052
ARM D	14.68	28.71	0.511	- - -	1.0	1.0	15.6	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	2.76	25.71	0.107	- - -	0.2	0.1	1.8	-	0.044
ARM B	6.05	22.76	0.266	- - -	0.5	0.4	5.6	-	0.060
ARM C	3.28	23.92	0.137	- - -	0.2	0.2	2.4	-	0.048
ARM D	11.99	29.22	0.410	- - -	1.0	0.7	10.7	-	0.058

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	2.31	26.69	0.087	- - -	0.1	0.1	1.4	-	0.041
ARM B	5.07	23.23	0.218	- - -	0.4	0.3	4.3	-	0.055
ARM C	2.75	24.49	0.112	- - -	0.2	0.1	1.9	-	0.046
ARM D	10.04	29.59	0.339	- - -	0.7	0.5	7.9	-	0.051

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.2
08.15	0.2
08.30	0.1
08.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.3
07.45	0.4
08.00	0.5 *
08.15	0.5 *
08.30	0.4
08.45	0.3

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.2
08.00	0.2
08.15	0.2
08.30	0.2
08.45	0.1

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.7	*
08.00	1.0	*
08.15	1.0	*
08.30	0.7	*
08.45	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	253.3	168.8	11.2	0.04	11.2	0.04
B	556.1	370.7	34.1	0.06	34.1	0.06
C	301.4	201.0	14.8	0.05	14.8	0.05
D	1101.1	734.1	67.0	0.06	67.0	0.06
ALL	2211.9	1474.6	127.1	0.06	127.2	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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[Printed at 15:51:06 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New Rbt on Mere Lane\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev+SP.vai"
(drive-on-the-left) at 10:55:58 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New Access Roundabout on Mere Lane PM Peak 2026 + Dev + SP
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Site Access
ARM B - Mere Lane East
ARM C - Hunter Bld
ARM D - Mere Lane West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	8.00	8.00	30.00	52.00	55.0	0.617	31.686
ARM B	3.00	6.00	22.00	60.00	52.00	40.0	0.569	25.644
ARM C	5.50	6.00	5.00	20.00	52.00	52.0	0.568	27.422
ARM D	3.65	7.50	23.00	65.00	52.00	36.0	0.638	31.499

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.35	6.52	4.35
ARM B	15.00	45.00	75.00	2.78	4.16	2.78
ARM C	15.00	45.00	75.00	3.26	4.89	3.26
ARM D	15.00	45.00	75.00	6.61	9.92	6.61

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.149	0.414	0.437
		0.0	52.0	144.0	152.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.090	0.000	0.086	0.824
		20.0	0.0	19.0	183.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.326	0.119	0.000	0.556
		85.0	31.0	0.0	145.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.115	0.762	0.123	0.000
		61.0	403.0	65.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	4.37	27.82	0.157	- - -	0.0	0.2	2.7	-	0.043
ARM B	2.79	23.07	0.121	- - -	0.0	0.1	2.0	-	0.049
ARM C	3.27	24.89	0.132	- - -	0.0	0.2	2.2	-	0.046
ARM D	6.64	30.41	0.218	- - -	0.0	0.3	4.1	-	0.042

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	5.21	27.08	0.193	- - -	0.2	0.2	3.5	-	0.046
ARM B	3.33	22.57	0.147	- - -	0.1	0.2	2.6	-	0.052
ARM C	3.91	24.40	0.160	- - -	0.2	0.2	2.8	-	0.049
ARM D	7.93	30.20	0.262	- - -	0.3	0.4	5.3	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	6.39	26.04	0.245	- - -	0.2	0.3	4.8	-	0.051
ARM B	4.07	21.88	0.186	- - -	0.2	0.2	3.4	-	0.056
ARM C	4.79	23.73	0.202	- - -	0.2	0.3	3.7	-	0.053
ARM D	9.71	29.91	0.325	- - -	0.4	0.5	7.1	-	0.050

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	6.39	26.04	0.245	- - -	0.3	0.3	4.9	-	0.051
ARM B	4.07	21.88	0.186	- - -	0.2	0.2	3.4	-	0.056
ARM C	4.79	23.72	0.202	- - -	0.3	0.3	3.8	-	0.053
ARM D	9.71	29.91	0.325	- - -	0.5	0.5	7.2	-	0.050

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	5.21	27.07	0.193	- - -	0.3	0.2	3.6	-	0.046
ARM B	3.33	22.56	0.147	- - -	0.2	0.2	2.6	-	0.052
ARM C	3.91	24.40	0.160	- - -	0.3	0.2	2.9	-	0.049
ARM D	7.93	30.20	0.262	- - -	0.5	0.4	5.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	4.37	27.81	0.157	- - -	0.2	0.2	2.8	-	0.043
ARM B	2.79	23.06	0.121	- - -	0.2	0.1	2.1	-	0.049
ARM C	3.27	24.88	0.132	- - -	0.2	0.2	2.3	-	0.046
ARM D	6.64	30.40	0.218	- - -	0.4	0.3	4.3	-	0.042

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.4
17.30	0.5
17.45	0.5
18.00	0.4
18.15	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	479.0	319.3	22.4	0.05	22.4	0.05
B	305.6	203.7	16.1	0.05	16.1	0.05
C	359.2	239.5	17.8	0.05	17.8	0.05
D	728.1	485.4	33.3	0.05	33.3	0.05
ALL	1871.9	1248.0	89.5	0.05	89.5	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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[Printed at 15:51:30 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 AM No Dev.vai"
(drive-on-the-left) at 17:40:43 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout AM Peak 2026 Without Development
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.14	21.21	14.14
ARM B	15.00	45.00	75.00	1.88	2.81	1.88
ARM C	15.00	45.00	75.00	9.52	14.29	9.52

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C
07.15 - 08.45				
	ARM A	0.000	0.047	0.953
		0.0	53.0	1078.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.180	0.000	0.820
		27.0	0.0	123.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.877	0.123	0.000
		668.0	94.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.19	35.38	0.401	- - -	0.0	0.7	9.8	-	0.047
ARM B	1.88	23.36	0.081	- - -	0.0	0.1	1.3	-	0.047
ARM C	9.56	32.58	0.293	- - -	0.0	0.4	6.1	-	0.043

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	16.95	35.23	0.481	- - -	0.7	0.9	13.5	-	0.055
ARM B	2.25	21.78	0.103	- - -	0.1	0.1	1.7	-	0.051
ARM C	11.42	32.54	0.351	- - -	0.4	0.5	8.0	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	20.75	35.03	0.593	- - -	0.9	1.4	20.9	-	0.070
ARM B	2.75	19.62	0.140	- - -	0.1	0.2	2.4	-	0.059
ARM C	13.98	32.49	0.430	- - -	0.5	0.8	11.1	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.75	35.02	0.593	- - -	1.4	1.4	21.6	-	0.070
ARM B	2.75	19.60	0.140	- - -	0.2	0.2	2.4	-	0.059
ARM C	13.98	32.49	0.430	- - -	0.8	0.8	11.3	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	16.95	35.23	0.481	- - -	1.4	0.9	14.3	-	0.055
ARM B	2.25	21.75	0.103	- - -	0.2	0.1	1.8	-	0.051
ARM C	11.42	32.54	0.351	- - -	0.8	0.5	8.3	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.19	35.38	0.401	- - -	0.9	0.7	10.3	-	0.047
ARM B	1.88	23.32	0.081	- - -	0.1	0.1	1.3	-	0.047
ARM C	9.56	32.58	0.293	- - -	0.5	0.4	6.3	-	0.043

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.7	*
07.45	0.9	*
08.00	1.4	*
08.15	1.4	*
08.30	0.9	*
08.45	0.7	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.2
08.15	0.2
08.30	0.1
08.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.5	*
08.00	0.8	*
08.15	0.8	*
08.30	0.5	*
08.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1556.7	1037.8	90.5	0.06	90.5	0.06
B	206.5	137.6	10.9	0.05	10.9	0.05
C	1048.8	699.2	51.0	0.05	51.0	0.05
ALL	2812.0	1874.7	152.5	0.05	152.5	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 15:52:25 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 PM No Dev.vai"
(drive-on-the-left) at 17:41:10 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout PM Peak 2026 Without Development
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.78	11.66	7.78
ARM B	15.00	45.00	75.00	1.71	2.57	1.71
ARM C	15.00	45.00	75.00	13.65	20.47	13.65

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.035	0.965
		0.0	22.0	600.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.299	0.000	0.701
		41.0	0.0	96.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.918	0.082	0.000
		1003.0	89.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	7.80	35.42	0.220	- - -	0.0	0.3	4.2	-	0.036
ARM B	1.72	26.92	0.064	- - -	0.0	0.1	1.0	-	0.040
ARM C	13.70	32.47	0.422	- - -	0.0	0.7	10.6	-	0.053

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	9.32	35.28	0.264	- - -	0.3	0.4	5.3	-	0.039
ARM B	2.05	26.04	0.079	- - -	0.1	0.1	1.3	-	0.042
ARM C	16.36	32.41	0.505	- - -	0.7	1.0	14.8	-	0.062

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	11.41	35.09	0.325	- - -	0.4	0.5	7.1	-	0.042
ARM B	2.51	24.84	0.101	- - -	0.1	0.1	1.7	-	0.045
ARM C	20.04	32.33	0.620	- - -	1.0	1.6	23.3	-	0.081

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	11.41	35.08	0.325	- - -	0.5	0.5	7.2	-	0.042
ARM B	2.51	24.83	0.101	- - -	0.1	0.1	1.7	-	0.045
ARM C	20.04	32.33	0.620	- - -	1.6	1.6	24.2	-	0.081

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	9.32	35.28	0.264	- - -	0.5	0.4	5.5	-	0.039
ARM B	2.05	26.04	0.079	- - -	0.1	0.1	1.3	-	0.042
ARM C	16.36	32.41	0.505	- - -	1.6	1.0	15.8	-	0.063

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	7.80	35.42	0.220	- - -	0.4	0.3	4.3	-	0.036
ARM B	1.72	26.91	0.064	- - -	0.1	0.1	1.0	-	0.040
ARM C	13.70	32.47	0.422	- - -	1.0	0.7	11.2	-	0.053

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.4
17.30	0.5
17.45	0.5
18.00	0.4
18.15	0.3

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.6	**
17.45	1.6	**
18.00	1.0	*
18.15	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	856.1	570.8	33.6	0.04	33.6	0.04
B	188.6	125.7	8.0	0.04	8.0	0.04
C	1503.1	1002.0	100.1	0.07	100.1	0.07
ALL	2547.8	1698.5	141.6	0.06	141.6	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
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* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 15:52:54 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited   Tel: +44 (0) 1344 770758
Crowthorne House   Fax: +44 (0) 1344 770356
Nine Mile Ride   Email: software@trl.co.uk
Wokingham, Berks.   Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 AM+Dev.vai"
(drive-on-the-left) at 10:48:40 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout AM Peak 2026 With Development
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width   L = effective flare length   D = inscribed circle diameter
E = entry width   R = entry radius   PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.02	27.04	18.02
ARM B	15.00	45.00	75.00	3.28	4.91	3.28
ARM C	15.00	45.00	75.00	10.27	15.41	10.27

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	0.000	0.327	0.673
		0.0	471.0	971.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.683	0.000	0.317
		179.0	0.0	83.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.922	0.078	0.000
		758.0	64.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	18.09	35.63	0.508	- - -	0.0	1.0	14.9	-	0.057
ARM B	3.29	24.16	0.136	- - -	0.0	0.2	2.3	-	0.048
ARM C	10.31	31.41	0.328	- - -	0.0	0.5	7.2	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	21.61	35.52	0.608	- - -	1.0	1.5	22.3	-	0.071
ARM B	3.93	22.74	0.173	- - -	0.2	0.2	3.1	-	0.053
ARM C	12.32	31.14	0.396	- - -	0.5	0.7	9.6	-	0.053

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	26.46	35.38	0.748	- - -	1.5	2.9	40.8	-	0.110
ARM B	4.81	20.81	0.231	- - -	0.2	0.3	4.4	-	0.062
ARM C	15.08	30.77	0.490	- - -	0.7	1.0	14.0	-	0.064

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	26.46	35.38	0.748	- - -	2.9	2.9	43.6	-	0.112
ARM B	4.81	20.77	0.231	- - -	0.3	0.3	4.5	-	0.063
ARM C	15.08	30.76	0.490	- - -	1.0	1.0	14.3	-	0.064

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	21.61	35.52	0.608	- - -	2.9	1.6	24.4	-	0.073
ARM B	3.93	22.69	0.173	- - -	0.3	0.2	3.2	-	0.053
ARM C	12.32	31.13	0.396	- - -	1.0	0.7	10.1	-	0.053

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	18.09	35.62	0.508	- - -	1.6	1.0	16.0	-	0.057
ARM B	3.29	24.12	0.136	- - -	0.2	0.2	2.4	-	0.048
ARM C	10.31	31.40	0.328	- - -	0.7	0.5	7.5	-	0.047

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.5	**
08.00	2.9	***
08.15	2.9	***
08.30	1.6	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.2
07.45	0.2
08.00	0.3
08.15	0.3
08.30	0.2
08.45	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.7	*
08.00	1.0	*
08.15	1.0	*
08.30	0.7	*
08.45	0.5	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1984.8	1323.2	162.1	0.08	162.1	0.08
B	360.6	240.4	19.9	0.06	19.9	0.06
C	1131.4	754.3	62.6	0.06	62.6	0.06
ALL	3476.9	2317.9	244.7	0.07	244.7	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ===

[Printed at 15:53:29 on 03/03/2016]

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 PM+Dev.vai"
(drive-on-the-left) at 10:49:29 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout PM Peak 2026 With Development
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.90	17.85	11.90
ARM B	15.00	45.00	75.00	4.41	6.62	4.41
ARM C	15.00	45.00	75.00	12.95	19.42	12.95

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)		
16.45 - 18.15	ARM A	0.000	0.357	0.643
		0.0	340.0	612.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.802	0.000	0.198
		283.0	0.0	70.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.934	0.066	0.000
		968.0	68.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	11.95	35.59	0.336	- - -	0.0	0.5	7.4	-	0.042
ARM B	4.43	26.84	0.165	- - -	0.0	0.2	2.9	-	0.045
ARM C	13.00	30.61	0.425	- - -	0.0	0.7	10.7	-	0.057

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.26	35.49	0.402	- - -	0.5	0.7	9.9	-	0.047
ARM B	5.29	25.94	0.204	- - -	0.2	0.3	3.8	-	0.048
ARM C	15.52	30.17	0.514	- - -	0.7	1.0	15.4	-	0.068

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.47	35.34	0.494	- - -	0.7	1.0	14.3	-	0.056
ARM B	6.48	24.71	0.262	- - -	0.3	0.4	5.2	-	0.055
ARM C	19.01	29.59	0.643	- - -	1.0	1.8	25.5	-	0.094

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.47	35.34	0.494	- - -	1.0	1.0	14.6	-	0.056
ARM B	6.48	24.70	0.262	- - -	0.4	0.4	5.3	-	0.055
ARM C	19.01	29.58	0.643	- - -	1.8	1.8	26.6	-	0.095

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.26	35.48	0.402	- - -	1.0	0.7	10.3	-	0.047
ARM B	5.29	25.93	0.204	- - -	0.4	0.3	3.9	-	0.048
ARM C	15.52	30.17	0.515	- - -	1.8	1.1	16.5	-	0.069

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	11.95	35.59	0.336	- - -	0.7	0.5	7.7	-	0.042
ARM B	4.43	26.82	0.165	- - -	0.3	0.2	3.0	-	0.045
ARM C	13.00	30.60	0.425	- - -	1.1	0.7	11.4	-	0.057

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.7	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.4
17.45	0.4
18.00	0.3
18.15	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.8	**
17.45	1.8	**
18.00	1.1	*
18.15	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1310.4	873.6	64.2	0.05	64.2	0.05
B	485.9	323.9	24.1	0.05	24.1	0.05
C	1426.0	950.7	106.1	0.07	106.1	0.07
ALL	3222.2	2148.1	194.4	0.06	194.4	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

================ end of file ================

[Printed at 15:53:55 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 AM+Dev+SP.vai"
(drive-on-the-left) at 10:50:17 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout AM Peak 2026 With Dev + SP
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.06	27.09	18.06
ARM B	15.00	45.00	75.00	3.26	4.89	3.26
ARM C	15.00	45.00	75.00	10.43	15.64	10.43

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
		TURNING PROPORTIONS		
		TURNING COUNTS		
		(PERCENTAGE OF H.V.S)		
07.15 - 08.45	ARM A	0.000	0.307	0.693
		0.0	443.0	1002.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.682	0.000	0.318
		178.0	0.0	83.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.922	0.078	0.000
		769.0	65.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	18.13	35.62	0.509	- - -	0.0	1.0	15.0	-	0.057
ARM B	3.27	23.93	0.137	- - -	0.0	0.2	2.3	-	0.048
ARM C	10.46	31.42	0.333	- - -	0.0	0.5	7.3	-	0.048

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	21.65	35.51	0.610	- - -	1.0	1.5	22.5	-	0.072
ARM B	3.91	22.46	0.174	- - -	0.2	0.2	3.1	-	0.054
ARM C	12.50	31.15	0.401	- - -	0.5	0.7	9.8	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	26.52	35.37	0.750	- - -	1.5	2.9	41.2	-	0.111
ARM B	4.79	20.47	0.234	- - -	0.2	0.3	4.5	-	0.064
ARM C	15.30	30.78	0.497	- - -	0.7	1.0	14.4	-	0.064

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	26.52	35.37	0.750	- - -	2.9	3.0	44.0	-	0.113
ARM B	4.79	20.43	0.234	- - -	0.3	0.3	4.6	-	0.064
ARM C	15.30	30.77	0.497	- - -	1.0	1.0	14.8	-	0.065

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	21.65	35.51	0.610	- - -	3.0	1.6	24.6	-	0.073
ARM B	3.91	22.41	0.175	- - -	0.3	0.2	3.2	-	0.054
ARM C	12.50	31.14	0.401	- - -	1.0	0.7	10.3	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	18.13	35.62	0.509	- - -	1.6	1.0	16.1	-	0.057
ARM B	3.27	23.89	0.137	- - -	0.2	0.2	2.4	-	0.049
ARM C	10.46	31.41	0.333	- - -	0.7	0.5	7.6	-	0.048

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.5	**
08.00	2.9	***
08.15	3.0	***
08.30	1.6	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.2	
07.45	0.2	
08.00	0.3	
08.15	0.3	
08.30	0.2	
08.45	0.2	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.7	*
08.00	1.0	*
08.15	1.0	*
08.30	0.7	*
08.45	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1988.9	1326.0	163.3	0.08	163.3	0.08
B	359.2	239.5	20.1	0.06	20.1	0.06
C	1147.9	765.3	64.2	0.06	64.2	0.06
ALL	3496.1	2330.7	247.7	0.07	247.7	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 15:54:22 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A5_Mere Lane\
LCC LLITM Flows Feb 2016\2026 PM+Dev+SP.vai"
(drive-on-the-left) at 10:51:09 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5/ Mere Lane Roundabout PM Peak 2026 With Dev + SP
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Mere Lane
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	7.50	5.00	30.00	56.00	47.0	0.652	36.148
ARM B	3.65	8.00	29.00	25.00	56.00	49.0	0.597	31.407
ARM C	4.50	7.50	28.00	30.00	56.00	45.0	0.617	32.791

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.96	17.94	11.96
ARM B	15.00	45.00	75.00	4.38	6.56	4.38
ARM C	15.00	45.00	75.00	13.38	20.06	13.38

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.353	0.647
		0.0	338.0	619.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.803	0.000	0.197
		281.0	0.0	69.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.936	0.064	0.000
		1002.0	68.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	12.01	35.59	0.337	- - -	0.0	0.5	7.5	-	0.042
ARM B	4.39	26.78	0.164	- - -	0.0	0.2	2.9	-	0.045
ARM C	13.43	30.62	0.438	- - -	0.0	0.8	11.3	-	0.058

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.34	35.49	0.404	- - -	0.5	0.7	10.0	-	0.047
ARM B	5.24	25.88	0.203	- - -	0.2	0.3	3.8	-	0.048
ARM C	16.03	30.19	0.531	- - -	0.8	1.1	16.4	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.56	35.34	0.497	- - -	0.7	1.0	14.4	-	0.056
ARM B	6.42	24.63	0.261	- - -	0.3	0.4	5.2	-	0.055
ARM C	19.63	29.61	0.663	- - -	1.1	1.9	27.7	-	0.099

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.56	35.34	0.497	- - -	1.0	1.0	14.7	-	0.056
ARM B	6.42	24.63	0.261	- - -	0.4	0.4	5.3	-	0.055
ARM C	19.63	29.61	0.663	- - -	1.9	1.9	29.1	-	0.100

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.34	35.48	0.404	- - -	1.0	0.7	10.4	-	0.047
ARM B	5.24	25.86	0.203	- - -	0.4	0.3	3.9	-	0.049
ARM C	16.03	30.19	0.531	- - -	1.9	1.1	17.7	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	12.01	35.59	0.337	- - -	0.7	0.5	7.8	-	0.042
ARM B	4.39	26.77	0.164	- - -	0.3	0.2	3.0	-	0.045
ARM C	13.43	30.61	0.439	- - -	1.1	0.8	12.1	-	0.058

QUEUE AT ARM A

```
 TIME SEGMENT NO. OF
  ENDING      VEHICLES
              IN QUEUE

  17.00           0.5  *
  17.15           0.7  *
  17.30           1.0  *
  17.45           1.0  *
  18.00           0.7  *
  18.15           0.5  *
```

QUEUE AT ARM B

```
 TIME SEGMENT NO. OF
  ENDING      VEHICLES
              IN QUEUE

  17.00           0.2
  17.15           0.3
  17.30           0.4
  17.45           0.4
  18.00           0.3
  18.15           0.2
```

QUEUE AT ARM C

```
 TIME SEGMENT NO. OF
  ENDING      VEHICLES
              IN QUEUE

  17.00           0.8  *
  17.15           1.1  *
  17.30           1.9  **
  17.45           1.9  **
  18.00           1.1  *
  18.15           0.8  *
```

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1317.2	878.2	64.8	0.05	64.8	0.05
B	481.7	321.2	24.0	0.05	24.0	0.05
C	1472.8	981.9	114.3	0.08	114.3	0.08
ALL	3271.8	2181.2	203.1	0.06	203.1	0.06

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* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 15:54:42 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New A5 North Rbt\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev.vai"
(drive-on-the-left) at 11:01:22 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5 North Access- 2026 AM With Development
LOCATION: New A5 North Roundabout
DATE: 09/01/15
CLIENT: IDI Gazeley
ENUMERATOR: JM
JOB NUMBER: 47071103
STATUS: Final Version
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Proposed Access
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	8.00	5.00	26.00	58.00	40.0	0.668	38.386
ARM B	4.00	7.00	25.00	30.00	58.00	36.0	0.595	31.006
ARM C	7.30	7.50	5.00	18.00	58.00	47.0	0.625	35.328

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.01	27.02	18.01
ARM B	15.00	45.00	75.00	0.94	1.41	0.94
ARM C	15.00	45.00	75.00	10.65	15.97	10.65

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T		ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	Proportion	0.000	0.015	0.985
		Count	0.0	21.0	1420.0
		% H.V.	(0.0)	(0.0)	(0.0)
	ARM B	Proportion	0.160	0.000	0.840
		Count	12.0	0.0	63.0
		% H.V.	(0.0)	(0.0)	(0.0)
	ARM C	Proportion	0.878	0.122	0.000
		Count	748.0	104.0	0.0
		% H.V.	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	18.08	37.52	0.482	- - -	0.0	0.9	13.5	-	0.051
ARM B	0.94	20.44	0.046	- - -	0.0	0.0	0.7	-	0.051
ARM C	10.69	35.23	0.303	- - -	0.0	0.4	6.4	-	0.041

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	21.59	37.35	0.578	- - -	0.9	1.4	19.8	-	0.063
ARM B	1.12	18.36	0.061	- - -	0.0	0.1	1.0	-	0.058
ARM C	12.77	35.22	0.362	- - -	0.4	0.6	8.4	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	26.44	37.11	0.713	- - -	1.4	2.4	34.7	-	0.093
ARM B	1.38	15.54	0.089	- - -	0.1	0.1	1.4	-	0.071
ARM C	15.63	35.19	0.444	- - -	0.6	0.8	11.7	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	26.44	37.11	0.713	- - -	2.4	2.5	36.6	-	0.094
ARM B	1.38	15.50	0.089	- - -	0.1	0.1	1.5	-	0.071
ARM C	15.63	35.19	0.444	- - -	0.8	0.8	11.9	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	21.59	37.34	0.578	- - -	2.5	1.4	21.4	-	0.064
ARM B	1.12	18.30	0.061	- - -	0.1	0.1	1.0	-	0.058
ARM C	12.77	35.22	0.363	- - -	0.8	0.6	8.7	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	18.08	37.51	0.482	- - -	1.4	0.9	14.4	-	0.052
ARM B	0.94	20.38	0.046	- - -	0.1	0.0	0.7	-	0.051
ARM C	10.69	35.23	0.303	- - -	0.6	0.4	6.6	-	0.041

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.4	*
08.00	2.4	**
08.15	2.5	**
08.30	1.4	*
08.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.0

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	0.8	*
08.15	0.8	*
08.30	0.6	*
08.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1983.4	1322.3	140.5	0.07	140.5	0.07
B	103.2	68.8	6.3	0.06	6.3	0.06
C	1172.7	781.8	53.8	0.05	53.8	0.05
ALL	3259.4	2172.9	200.6	0.06	200.6	0.06

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END OF JOB

==================== end of file ====================

[Printed at 15:55:27 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New A5 North Rbt\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev.vai"
(drive-on-the-left) at 11:03:50 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5 North Access- 2026 PM With Development
LOCATION: New A5 North Roundabout
DATE: 09/01/15
CLIENT: IDI Gazeley
ENUMERATOR: JM
JOB NUMBER: 47071103
STATUS: Final Version
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Proposed Access
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	8.00	5.00	26.00	58.00	40.0	0.668	38.386
ARM B	4.00	7.00	25.00	30.00	58.00	36.0	0.595	31.006
ARM C	7.30	7.50	5.00	18.00	58.00	47.0	0.625	35.328

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.09	13.63	9.09
ARM B	15.00	45.00	75.00	1.56	2.34	1.56
ARM C	15.00	45.00	75.00	15.88	23.81	15.88

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO		ARM A	ARM B	ARM C
16.45 - 18.15	ARM A		0.000	0.023	0.977
			0.0	17.0	710.0
			(0.0)	(0.0)	(0.0)
	ARM B		0.056	0.000	0.944
			7.0	0.0	118.0
			(0.0)	(0.0)	(0.0)
	ARM C		0.955	0.045	0.000
			1213.0	57.0	0.0
			(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.12	37.91	0.241	- - -	0.0	0.3	4.7	-	0.035
ARM B	1.57	25.71	0.061	- - -	0.0	0.1	1.0	-	0.041
ARM C	15.94	35.27	0.452	- - -	0.0	0.8	12.0	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	10.89	37.82	0.288	- - -	0.3	0.4	6.0	-	0.037
ARM B	1.87	24.68	0.076	- - -	0.1	0.1	1.2	-	0.044
ARM C	19.03	35.26	0.540	- - -	0.8	1.2	17.0	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.34	37.69	0.354	- - -	0.4	0.5	8.1	-	0.041
ARM B	2.29	23.26	0.099	- - -	0.1	0.1	1.6	-	0.048
ARM C	23.30	35.25	0.661	- - -	1.2	1.9	27.7	-	0.083

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.34	37.69	0.354	- - -	0.5	0.5	8.2	-	0.041
ARM B	2.29	23.25	0.099	- - -	0.1	0.1	1.6	-	0.048
ARM C	23.30	35.25	0.661	- - -	1.9	1.9	28.9	-	0.084

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	10.89	37.81	0.288	- - -	0.5	0.4	6.2	-	0.037
ARM B	1.87	24.67	0.076	- - -	0.1	0.1	1.3	-	0.044
ARM C	19.03	35.26	0.540	- - -	1.9	1.2	18.2	-	0.062

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.12	37.91	0.241	- - -	0.4	0.3	4.8	-	0.035
ARM B	1.57	25.70	0.061	- - -	0.1	0.1	1.0	-	0.041
ARM C	15.94	35.27	0.452	- - -	1.2	0.8	12.7	-	0.052

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.5	*
17.45	0.5	*
18.00	0.4	
18.15	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	1.9	**
17.45	1.9	**
18.00	1.2	*
18.15	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1000.7	667.1	37.9	0.04	37.9	0.04
B	172.1	114.7	7.7	0.04	7.7	0.04
C	1748.1	1165.4	116.6	0.07	116.6	0.07
ALL	2920.8	1947.2	162.2	0.06	162.2	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 15:55:52 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New A5 North Rbt\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev+SP.vai"
(drive-on-the-left) at 11:08:15 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5 North Access- 2026 AM With Development + SP
LOCATION: New A5 North Roundabout
DATE: 09/01/15
CLIENT: IDI Gazeley
ENUMERATOR: JM
JOB NUMBER: 47071103
STATUS: Final Version
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Proposed Access
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	8.00	5.00	26.00	58.00	40.0	0.668	38.386
ARM B	4.00	7.00	25.00	30.00	58.00	36.0	0.595	31.006
ARM C	7.30	7.50	5.00	18.00	58.00	47.0	0.625	35.328

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.13	27.19	18.13
ARM B	15.00	45.00	75.00	0.94	1.41	0.94
ARM C	15.00	45.00	75.00	10.77	16.16	10.77

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
07.15 - 08.45		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
	ARM A	0.000	0.014	0.986
		0.0	20.0	1430.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.160	0.000	0.840
		12.0	0.0	63.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.879	0.121	0.000
		758.0	104.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	18.19	37.52	0.485	- - -	0.0	0.9	13.7	-	0.051
ARM B	0.94	20.36	0.046	- - -	0.0	0.0	0.7	-	0.051
ARM C	10.82	35.23	0.307	- - -	0.0	0.4	6.5	-	0.041

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	21.73	37.35	0.582	- - -	0.9	1.4	20.1	-	0.064
ARM B	1.12	18.27	0.062	- - -	0.0	0.1	1.0	-	0.058
ARM C	12.92	35.22	0.367	- - -	0.4	0.6	8.5	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	26.61	37.11	0.717	- - -	1.4	2.5	35.4	-	0.094
ARM B	1.38	15.43	0.089	- - -	0.1	0.1	1.4	-	0.071
ARM C	15.82	35.19	0.449	- - -	0.6	0.8	12.0	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	26.61	37.11	0.717	- - -	2.5	2.5	37.4	-	0.095
ARM B	1.38	15.39	0.089	- - -	0.1	0.1	1.5	-	0.071
ARM C	15.82	35.19	0.450	- - -	0.8	0.8	12.2	-	0.052

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	21.73	37.34	0.582	- - -	2.5	1.4	21.8	-	0.065
ARM B	1.12	18.21	0.062	- - -	0.1	0.1	1.0	-	0.059
ARM C	12.92	35.22	0.367	- - -	0.8	0.6	8.9	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	18.19	37.51	0.485	- - -	1.4	0.9	14.5	-	0.052
ARM B	0.94	20.31	0.046	- - -	0.1	0.0	0.7	-	0.052
ARM C	10.82	35.23	0.307	- - -	0.6	0.4	6.8	-	0.041

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.4	*
08.00	2.5	**
08.15	2.5	***
08.30	1.4	*
08.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.0

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	0.8	*
08.15	0.8	*
08.30	0.6	*
08.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1995.8	1330.5	143.0	0.07	143.0	0.07
B	103.2	68.8	6.3	0.06	6.3	0.06
C	1186.5	791.0	54.8	0.05	54.8	0.05
ALL	3285.5	2190.4	204.1	0.06	204.1	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 15:56:30 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\New A5 North Rbt\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev+SP.vai"
(drive-on-the-left) at 11:08:26 on Tuesday, 16 February 2016

FILE PROPERTIES
****

RUN TITLE: New A5 North Access- 2026 PM With Development + SP
LOCATION: New A5 North Roundabout
DATE: 09/01/15
CLIENT: IDI Gazeley
ENUMERATOR: JM
JOB NUMBER: 47071103
STATUS: Final Version
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - Proposed Access
ARM C - A5 South

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	8.00	5.00	26.00	58.00	40.0	0.668	38.386
ARM B	4.00	7.00	25.00	30.00	58.00	36.0	0.595	31.006
ARM C	7.30	7.50	5.00	18.00	58.00	47.0	0.625	35.328

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.11	13.67	9.11
ARM B	15.00	45.00	75.00	1.55	2.32	1.55
ARM C	15.00	45.00	75.00	16.27	24.41	16.27

DEMAND SET TITLE: New A5 North Access- S3 2026 Base Plus Proposed Development

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.022	0.978
		0.0	16.0	713.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.048	0.000	0.952
		6.0	0.0	118.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.956	0.044	0.000
		1245.0	57.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.15	37.91	0.241	- - -	0.0	0.3	4.7	-	0.035
ARM B	1.56	25.69	0.061	- - -	0.0	0.1	1.0	-	0.041
ARM C	16.34	35.28	0.463	- - -	0.0	0.9	12.5	-	0.052

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	10.92	37.82	0.289	- - -	0.3	0.4	6.0	-	0.037
ARM B	1.86	24.65	0.075	- - -	0.1	0.1	1.2	-	0.044
ARM C	19.51	35.27	0.553	- - -	0.9	1.2	18.0	-	0.063

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.38	37.69	0.355	- - -	0.4	0.5	8.1	-	0.041
ARM B	2.28	23.22	0.098	- - -	0.1	0.1	1.6	-	0.048
ARM C	23.89	35.26	0.678	- - -	1.2	2.1	29.7	-	0.087

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.38	37.69	0.355	- - -	0.5	0.5	8.2	-	0.041
ARM B	2.28	23.22	0.098	- - -	0.1	0.1	1.6	-	0.048
ARM C	23.89	35.26	0.678	- - -	2.1	2.1	31.1	-	0.088

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	10.92	37.81	0.289	- - -	0.5	0.4	6.2	-	0.037
ARM B	1.86	24.64	0.075	- - -	0.1	0.1	1.2	-	0.044
ARM C	19.51	35.27	0.553	- - -	2.1	1.2	19.3	-	0.064

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.15	37.91	0.241	- - -	0.4	0.3	4.8	-	0.035
ARM B	1.56	25.68	0.061	- - -	0.1	0.1	1.0	-	0.041
ARM C	16.34	35.28	0.463	- - -	1.2	0.9	13.3	-	0.053

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.5	*
17.45	0.5	*
18.00	0.4	
18.15	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.2	*
17.30	2.1	**
17.45	2.1	**
18.00	1.2	*
18.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1003.4	668.9	38.1	0.04	38.1	0.04
B	170.7	113.8	7.6	0.04	7.6	0.04
C	1792.1	1194.7	123.9	0.07	124.0	0.07
ALL	2966.2	1977.5	169.6	0.06	169.6	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 15:56:51 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 AM No Dev.vai"
(drive-on-the-left) at 17:39:33 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout AM Peak 2026 Without Development
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.20	10.70	31.00	19.00	67.00	57.0	0.654	44.594
ARM B	7.30	10.20	32.00	100.00	67.00	54.0	0.681	46.088
ARM C	7.30	8.50	10.00	25.00	67.00	62.0	0.579	37.067
ARM D	7.60	10.00	11.00	42.00	67.00	60.0	0.632	41.945

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.64	11.46	7.64
ARM B	15.00	45.00	75.00	21.64	32.46	21.64
ARM C	15.00	45.00	75.00	0.36	0.54	0.36
ARM D	15.00	45.00	75.00	18.67	28.01	18.67

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)				
07.15 - 08.45					
	ARM A	0.000	0.291	0.000	0.709
		0.0	178.0	0.0	433.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.386	0.035	0.057	0.522
		669.0	61.0	98.0	903.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.276	0.241	0.000	0.483
		8.0	7.0	0.0	14.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.463	0.487	0.051	0.000
		691.0	727.0	76.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	7.67	37.48	0.205	- - -	0.0	0.3	3.8	-	0.034
ARM B	21.72	41.75	0.520	- - -	0.0	1.1	15.7	-	0.050
ARM C	0.36	22.09	0.016	- - -	0.0	0.0	0.2	-	0.046
ARM D	18.75	36.05	0.520	- - -	0.0	1.1	15.7	-	0.057

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	9.15	36.08	0.254	- - -	0.3	0.3	5.0	-	0.037
ARM B	25.94	40.90	0.634	- - -	1.1	1.7	24.9	-	0.066
ARM C	0.43	19.16	0.023	- - -	0.0	0.0	0.3	-	0.053
ARM D	22.38	34.90	0.641	- - -	1.1	1.8	25.5	-	0.079

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	11.21	34.21	0.328	- - -	0.3	0.5	7.2	-	0.043
ARM B	31.76	39.74	0.799	- - -	1.7	3.8	53.3	-	0.121
ARM C	0.53	15.18	0.035	- - -	0.0	0.0	0.5	-	0.068
ARM D	27.42	33.34	0.822	- - -	1.8	4.4	59.6	-	0.159

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	11.21	34.15	0.328	- - -	0.5	0.5	7.3	-	0.044
ARM B	31.76	39.73	0.800	- - -	3.8	3.9	58.2	-	0.125
ARM C	0.53	15.10	0.035	- - -	0.0	0.0	0.5	-	0.069
ARM D	27.42	33.30	0.823	- - -	4.4	4.5	66.8	-	0.169

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	9.15	36.00	0.254	- - -	0.5	0.3	5.2	-	0.037
ARM B	25.94	40.88	0.634	- - -	3.9	1.8	27.5	-	0.068
ARM C	0.43	19.05	0.023	- - -	0.0	0.0	0.4	-	0.054
ARM D	22.38	34.85	0.642	- - -	4.5	1.8	28.8	-	0.082

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	7.67	37.43	0.205	- - -	0.3	0.3	3.9	-	0.034
ARM B	21.72	41.74	0.520	- - -	1.8	1.1	16.8	-	0.050
ARM C	0.36	22.02	0.017	- - -	0.0	0.0	0.3	-	0.046
ARM D	18.75	36.02	0.520	- - -	1.8	1.1	16.8	-	0.058

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.3
07.45	0.3
08.00	0.5
08.15	0.5
08.30	0.3
08.45	0.3

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.7	**
08.00	3.8	****
08.15	3.9	****
08.30	1.8	**
08.45	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.8	**
08.00	4.4	****
08.15	4.5	*****
08.30	1.8	**
08.45	1.1	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	841.0	560.7	32.4	0.04	32.4	0.04
B	2382.6	1588.4	196.4	0.08	196.4	0.08
C	39.9	26.6	2.3	0.06	2.3	0.06
D	2056.4	1370.9	213.3	0.10	213.3	0.10
ALL	5319.9	3546.6	444.3	0.08	444.4	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 15:57:26 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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TRL Limited Tel: +44 (0) 1344 770758
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Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 PM No Dev.vai"
(drive-on-the-left) at 17:40:00 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout PM Peak 2026 Without Development
LOCATION: Magna Park Site Access
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.20	10.70	31.00	19.00	67.00	57.0	0.654	44.594
ARM B	7.30	10.20	32.00	100.00	67.00	54.0	0.681	46.088
ARM C	7.30	8.50	10.00	25.00	67.00	62.0	0.579	37.067
ARM D	7.60	10.00	11.00	42.00	67.00	60.0	0.632	41.945

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.57	15.86	10.57
ARM B	15.00	45.00	75.00	12.25	18.38	12.25
ARM C	15.00	45.00	75.00	3.63	5.44	3.63
ARM D	15.00	45.00	75.00	12.86	19.29	12.86

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
16.45 - 18.15					
	ARM A	0.000	0.390	0.007	0.603
		0.0	330.0	6.0	510.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.226	0.029	0.023	0.722
		221.0	28.0	23.0	708.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.055	0.593	0.000	0.352
		16.0	172.0	0.0	102.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.190	0.799	0.012	0.000
		195.0	822.0	12.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	10.62	36.14	0.294	- - -	0.0	0.4	6.1	-	0.039
ARM B	12.30	41.59	0.296	- - -	0.0	0.4	6.2	-	0.034
ARM C	3.64	26.43	0.138	- - -	0.0	0.2	2.3	-	0.044
ARM D	12.91	38.49	0.335	- - -	0.0	0.5	7.4	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	12.68	34.47	0.368	- - -	0.4	0.6	8.5	-	0.046
ARM B	14.68	40.71	0.361	- - -	0.4	0.6	8.3	-	0.038
ARM C	4.35	24.34	0.179	- - -	0.2	0.2	3.2	-	0.050
ARM D	15.42	37.81	0.408	- - -	0.5	0.7	10.1	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	15.52	32.21	0.482	- - -	0.6	0.9	13.5	-	0.060
ARM B	17.98	39.50	0.455	- - -	0.6	0.8	12.2	-	0.046
ARM C	5.32	21.49	0.248	- - -	0.2	0.3	4.8	-	0.062
ARM D	18.88	36.88	0.512	- - -	0.7	1.0	15.3	-	0.055

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	15.52	32.19	0.482	- - -	0.9	0.9	13.9	-	0.060
ARM B	17.98	39.49	0.455	- - -	0.8	0.8	12.5	-	0.046
ARM C	5.32	21.47	0.248	- - -	0.3	0.3	4.9	-	0.062
ARM D	18.88	36.87	0.512	- - -	1.0	1.0	15.7	-	0.056

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	12.68	34.45	0.368	- - -	0.9	0.6	8.9	-	0.046
ARM B	14.68	40.69	0.361	- - -	0.8	0.6	8.6	-	0.039
ARM C	4.35	24.31	0.179	- - -	0.3	0.2	3.3	-	0.050
ARM D	15.42	37.80	0.408	- - -	1.0	0.7	10.6	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	10.62	36.10	0.294	- - -	0.6	0.4	6.4	-	0.039
ARM B	12.30	41.57	0.296	- - -	0.6	0.4	6.4	-	0.034
ARM C	3.64	26.39	0.138	- - -	0.2	0.2	2.4	-	0.044
ARM D	12.91	38.47	0.336	- - -	0.7	0.5	7.7	-	0.039

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.9	*
17.45	0.9	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.8	*
17.45	0.8	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.7	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1164.5	776.3	57.4	0.05	57.4	0.05
B	1348.9	899.3	54.3	0.04	54.3	0.04
C	399.2	266.1	21.1	0.05	21.1	0.05
D	1416.3	944.2	66.8	0.05	66.8	0.05
ALL	4328.9	2885.9	199.5	0.05	199.5	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 15:57:48 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 AM+Dev.vai"
(drive-on-the-left) at 17:39:41 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout AM Peak 2026 With Development
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.20	10.70	31.00	19.00	67.00	57.0	0.654	44.594
ARM B	7.30	10.20	32.00	100.00	67.00	54.0	0.681	46.088
ARM C	7.30	8.50	10.00	25.00	67.00	62.0	0.579	37.067
ARM D	7.60	10.00	11.00	42.00	67.00	60.0	0.632	41.945

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.85	11.77	7.85
ARM B	15.00	45.00	75.00	22.44	33.66	22.44
ARM C	15.00	45.00	75.00	0.31	0.47	0.31
ARM D	15.00	45.00	75.00	15.86	23.79	15.86

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.361	0.008	0.631
		0.0	227.0	5.0	396.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.425	0.034	0.052	0.489
		763.0	61.0	93.0	878.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.360	0.240	0.000	0.400
		9.0	6.0	0.0	10.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.378	0.567	0.055	0.000
		480.0	719.0	70.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	7.88	37.60	0.210	- - -	0.0	0.3	3.9	-	0.034
ARM B	22.52	42.07	0.535	- - -	0.0	1.1	16.7	-	0.051
ARM C	0.31	21.86	0.014	- - -	0.0	0.0	0.2	-	0.046
ARM D	15.92	35.31	0.451	- - -	0.0	0.8	11.9	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	9.41	36.22	0.260	- - -	0.3	0.3	5.2	-	0.037
ARM B	26.89	41.29	0.651	- - -	1.1	1.8	26.8	-	0.069
ARM C	0.37	18.88	0.020	- - -	0.0	0.0	0.3	-	0.054
ARM D	19.01	34.01	0.559	- - -	0.8	1.3	18.3	-	0.066

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	11.52	34.36	0.335	- - -	0.3	0.5	7.4	-	0.044
ARM B	32.94	40.21	0.819	- - -	1.8	4.3	59.6	-	0.131
ARM C	0.46	14.85	0.031	- - -	0.0	0.0	0.5	-	0.069
ARM D	23.29	32.26	0.722	- - -	1.3	2.5	35.9	-	0.109

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	11.52	34.33	0.336	- - -	0.5	0.5	7.6	-	0.044
ARM B	32.94	40.20	0.819	- - -	4.3	4.4	65.8	-	0.137
ARM C	0.46	14.76	0.031	- - -	0.0	0.0	0.5	-	0.070
ARM D	23.29	32.21	0.723	- - -	2.5	2.6	38.3	-	0.112

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	9.41	36.17	0.260	- - -	0.5	0.4	5.4	-	0.037
ARM B	26.89	41.28	0.652	- - -	4.4	1.9	29.8	-	0.071
ARM C	0.37	18.76	0.020	- - -	0.0	0.0	0.3	-	0.054
ARM D	19.01	33.95	0.560	- - -	2.6	1.3	19.9	-	0.068

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	7.88	37.56	0.210	- - -	0.4	0.3	4.0	-	0.034
ARM B	22.52	42.06	0.535	- - -	1.9	1.2	17.8	-	0.051
ARM C	0.31	21.78	0.014	- - -	0.0	0.0	0.2	-	0.047
ARM D	15.92	35.27	0.451	- - -	1.3	0.8	12.7	-	0.052

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.3	
07.45	0.3	
08.00	0.5	*
08.15	0.5	*
08.30	0.4	
08.45	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.8	**
08.00	4.3	****
08.15	4.4	****
08.30	1.9	**
08.45	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.3	*
08.00	2.5	***
08.15	2.6	***
08.30	1.3	*
08.45	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	864.4	576.3	33.5	0.04	33.5	0.04
B	2470.7	1647.1	216.5	0.09	216.5	0.09
C	34.4	22.9	2.0	0.06	2.0	0.06
D	1746.7	1164.5	137.2	0.08	137.2	0.08
ALL	5116.2	3410.8	389.1	0.08	389.1	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ===

[Printed at 15:58:18 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 PM+Dev.vai"
(drive-on-the-left) at 17:40:09 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout PM Peak 2026 With Development
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.20	10.70	31.00	19.00	67.00	57.0	0.654	44.594
ARM B	7.30	10.20	32.00	100.00	67.00	54.0	0.681	46.088
ARM C	7.30	8.50	10.00	25.00	67.00	62.0	0.579	37.067
ARM D	7.60	10.00	11.00	42.00	67.00	60.0	0.632	41.945

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.39	14.08	9.39
ARM B	15.00	45.00	75.00	12.60	18.90	12.60
ARM C	15.00	45.00	75.00	3.91	5.87	3.91
ARM D	15.00	45.00	75.00	11.94	17.91	11.94

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
16.45 - 18.15					
	ARM A	0.000	0.529	0.009	0.462
		0.0	397.0	7.0	347.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.278	0.028	0.022	0.673
		280.0	28.0	22.0	678.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.163	0.537	0.000	0.300
		51.0	168.0	0.0	94.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.133	0.854	0.013	0.000
		127.0	816.0	12.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.42	36.22	0.260	- - -	0.0	0.4	5.2	-	0.037
ARM B	12.65	42.97	0.294	- - -	0.0	0.4	6.1	-	0.033
ARM C	3.93	27.40	0.143	- - -	0.0	0.2	2.5	-	0.043
ARM D	11.98	37.77	0.317	- - -	0.0	0.5	6.8	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	11.25	34.57	0.325	- - -	0.4	0.5	7.1	-	0.043
ARM B	15.10	42.36	0.357	- - -	0.4	0.6	8.2	-	0.037
ARM C	4.69	25.50	0.184	- - -	0.2	0.2	3.3	-	0.048
ARM D	14.31	36.96	0.387	- - -	0.5	0.6	9.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.78	32.33	0.426	- - -	0.5	0.7	10.9	-	0.054
ARM B	18.50	41.52	0.445	- - -	0.6	0.8	11.8	-	0.043
ARM C	5.74	22.91	0.251	- - -	0.2	0.3	4.9	-	0.058
ARM D	17.52	35.84	0.489	- - -	0.6	1.0	14.0	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.78	32.31	0.427	- - -	0.7	0.7	11.1	-	0.054
ARM B	18.50	41.52	0.446	- - -	0.8	0.8	12.0	-	0.043
ARM C	5.74	22.89	0.251	- - -	0.3	0.3	5.0	-	0.058
ARM D	17.52	35.83	0.489	- - -	1.0	1.0	14.3	-	0.055

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	11.25	34.55	0.326	- - -	0.7	0.5	7.4	-	0.043
ARM B	15.10	42.35	0.357	- - -	0.8	0.6	8.5	-	0.037
ARM C	4.69	25.48	0.184	- - -	0.3	0.2	3.4	-	0.048
ARM D	14.31	36.95	0.387	- - -	1.0	0.6	9.7	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.42	36.19	0.260	- - -	0.5	0.4	5.4	-	0.037
ARM B	12.65	42.96	0.294	- - -	0.6	0.4	6.4	-	0.033
ARM C	3.93	27.37	0.144	- - -	0.2	0.2	2.6	-	0.043
ARM D	11.98	37.76	0.317	- - -	0.6	0.5	7.1	-	0.039

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	
17.30	0.7	*
17.45	0.7	*
18.00	0.5	
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.8	*
17.45	0.8	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.6	*
17.30	1.0	*
17.45	1.0	*
18.00	0.6	*
18.15	0.5	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1033.7	689.1	47.0	0.05	47.0	0.05
B	1387.4	925.0	52.9	0.04	52.9	0.04
C	430.8	287.2	21.7	0.05	21.7	0.05
D	1314.5	876.3	61.2	0.05	61.2	0.05
ALL	4166.4	2777.6	182.8	0.04	182.8	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
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END OF JOB

============ end of file ============

[Printed at 15:58:36 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 AM+Dev+SP.vai"
(drive-on-the-left) at 17:39:51 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout AM Peak 2026 With Dev + SP
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	9.00	29.00	22.50	66.50	45.0	0.640	41.590
ARM B	7.00	9.50	26.50	36.00	66.50	32.0	0.695	45.714
ARM C	7.00	7.50	15.50	20.00	66.50	44.0	0.583	35.810
ARM D	7.50	11.00	45.00	39.00	66.50	45.0	0.732	50.559

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	7.95	11.92	7.95
ARM B	15.00	45.00	75.00	22.20	33.30	22.20
ARM C	15.00	45.00	75.00	0.31	0.47	0.31
ARM D	15.00	45.00	75.00	17.21	25.82	17.21

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/T	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.365	0.008	0.627
		0.0	232.0	5.0	399.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.416	0.034	0.053	0.497
		738.0	61.0	94.0	883.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.360	0.240	0.000	0.400
		9.0	6.0	0.0	10.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.364	0.585	0.051	0.000
		501.0	806.0	70.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	7.98	34.04	0.234	- - -	0.0	0.3	4.5	-	0.038
ARM B	22.28	41.59	0.536	- - -	0.0	1.1	16.7	-	0.051
ARM C	0.31	20.64	0.015	- - -	0.0	0.0	0.2	-	0.049
ARM D	17.28	43.11	0.401	- - -	0.0	0.7	9.8	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	9.53	32.56	0.293	- - -	0.3	0.4	6.1	-	0.043
ARM B	26.61	40.78	0.652	- - -	1.1	1.9	26.9	-	0.070
ARM C	0.37	17.66	0.021	- - -	0.0	0.0	0.3	-	0.058
ARM D	20.63	41.65	0.495	- - -	0.7	1.0	14.4	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	11.67	30.54	0.382	- - -	0.4	0.6	9.1	-	0.053
ARM B	32.59	39.68	0.821	- - -	1.9	4.4	60.3	-	0.135
ARM C	0.46	13.65	0.034	- - -	0.0	0.0	0.5	-	0.076
ARM D	25.27	39.69	0.637	- - -	1.0	1.7	25.1	-	0.069

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	11.67	30.52	0.382	- - -	0.6	0.6	9.2	-	0.053
ARM B	32.59	39.67	0.822	- - -	4.4	4.5	66.7	-	0.141
ARM C	0.46	13.55	0.034	- - -	0.0	0.0	0.5	-	0.076
ARM D	25.27	39.63	0.638	- - -	1.7	1.7	26.1	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	9.53	32.53	0.293	- - -	0.6	0.4	6.3	-	0.044
ARM B	26.61	40.77	0.653	- - -	4.5	1.9	30.0	-	0.072
ARM C	0.37	17.53	0.021	- - -	0.0	0.0	0.3	-	0.058
ARM D	20.63	41.58	0.496	- - -	1.7	1.0	15.2	-	0.048

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	7.98	34.01	0.235	- - -	0.4	0.3	4.7	-	0.038
ARM B	22.28	41.58	0.536	- - -	1.9	1.2	17.9	-	0.052
ARM C	0.31	20.56	0.015	- - -	0.0	0.0	0.2	-	0.049
ARM D	17.28	43.07	0.401	- - -	1.0	0.7	10.3	-	0.039

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.3	
07.45	0.4	
08.00	0.6	*
08.15	0.6	*
08.30	0.4	
08.45	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.9	**
08.00	4.4	****
08.15	4.5	****
08.30	1.9	**
08.45	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.7	*
07.45	1.0	*
08.00	1.7	**
08.15	1.7	**
08.30	1.0	*
08.45	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	875.4	583.6	39.9	0.05	39.9	0.05
B	2444.5	1629.7	218.5	0.09	218.5	0.09
C	34.4	22.9	2.1	0.06	2.1	0.06
D	1895.3	1263.6	100.9	0.05	100.9	0.05
ALL	5249.7	3499.8	361.4	0.07	361.4	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 15:58:58 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Hunter Bld\
LCC LLITM Flows Feb 2016\2026 PM+Dev+SP.vai"
(drive-on-the-left) at 17:40:19 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Magna Park Access Roundabout PM Peak 2026 With Dev + SP
LOCATION: Magna Park Site Access
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Hunter Bld
ARM B - A4303 East
ARM C - Site Access
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	9.00	29.00	22.50	66.50	32.0	0.670	43.558
ARM B	7.00	9.50	26.50	36.00	66.50	32.0	0.695	45.714
ARM C	7.00	7.50	15.50	20.00	66.50	44.0	0.583	35.810
ARM D	7.50	11.00	45.00	39.00	66.50	45.0	0.732	50.559

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.46	14.19	9.46
ARM B	15.00	45.00	75.00	13.98	20.96	13.98
ARM C	15.00	45.00	75.00	3.91	5.87	3.91
ARM D	15.00	45.00	75.00	12.29	18.43	12.29

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.528	0.009	0.462
		0.0	400.0	7.0	350.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.255	0.025	0.020	0.700
		285.0	28.0	22.0	783.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.163	0.530	0.000	0.307
		51.0	166.0	0.0	96.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.132	0.856	0.012	0.000
		130.0	841.0	12.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.50	34.78	0.273	- - -	0.0	0.4	5.5	-	0.039
ARM B	14.03	42.50	0.330	- - -	0.0	0.5	7.2	-	0.035
ARM C	3.93	25.26	0.155	- - -	0.0	0.2	2.7	-	0.047
ARM D	12.33	45.71	0.270	- - -	0.0	0.4	5.5	-	0.030

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	11.34	33.05	0.343	- - -	0.4	0.5	7.7	-	0.046
ARM B	16.75	41.87	0.400	- - -	0.5	0.7	9.8	-	0.040
ARM C	4.69	23.19	0.202	- - -	0.2	0.3	3.7	-	0.054
ARM D	14.73	44.75	0.329	- - -	0.4	0.5	7.3	-	0.033

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.89	30.70	0.453	- - -	0.5	0.8	12.0	-	0.059
ARM B	20.52	41.01	0.500	- - -	0.7	1.0	14.6	-	0.049
ARM C	5.74	20.36	0.282	- - -	0.3	0.4	5.7	-	0.068
ARM D	18.04	43.45	0.415	- - -	0.5	0.7	10.4	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.89	30.69	0.453	- - -	0.8	0.8	12.3	-	0.060
ARM B	20.52	41.01	0.500	- - -	1.0	1.0	14.9	-	0.049
ARM C	5.74	20.34	0.282	- - -	0.4	0.4	5.9	-	0.068
ARM D	18.04	43.44	0.415	- - -	0.7	0.7	10.6	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	11.34	33.04	0.343	- - -	0.8	0.5	8.0	-	0.046
ARM B	16.75	41.86	0.400	- - -	1.0	0.7	10.2	-	0.040
ARM C	4.69	23.16	0.202	- - -	0.4	0.3	3.9	-	0.054
ARM D	14.73	44.74	0.329	- - -	0.7	0.5	7.5	-	0.033

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.50	34.75	0.273	- - -	0.5	0.4	5.7	-	0.040
ARM B	14.03	42.49	0.330	- - -	0.7	0.5	7.5	-	0.035
ARM C	3.93	25.22	0.156	- - -	0.3	0.2	2.8	-	0.047
ARM D	12.33	45.69	0.270	- - -	0.5	0.4	5.6	-	0.030

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.8	*
17.45	0.8	*
18.00	0.5	*
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.4
17.45	0.4
18.00	0.3
18.15	0.2

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	
17.30	0.7	*
17.45	0.7	*
18.00	0.5	
18.15	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1042.0	694.6	51.4	0.05	51.4	0.05
B	1538.8	1025.9	64.4	0.04	64.4	0.04
C	430.8	287.2	24.8	0.06	24.8	0.06
D	1353.0	902.0	46.9	0.03	46.9	0.03
ALL	4364.6	2909.8	187.3	0.04	187.4	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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[Printed at 15:59:26 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 AM Peak No Dev.vai"
(drive-on-the-left) at 17:41:48 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout AM Peak 2026 Without Development
LOCATION: Cross In Hand Roundabout
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.70	7.50	47.00	45.00	98.00	48.0	0.494	34.354
ARM B	7.10	8.80	25.00	35.00	79.00	54.0	0.566	40.232
ARM C	5.10	7.50	50.00	37.00	98.00	54.0	0.486	34.056
ARM D	3.20	6.20	24.00	40.00	88.00	64.0	0.405	24.458
ARM E	3.50	7.20	9.00	19.00	88.00	64.0	0.384	22.641

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	15.45	23.17	15.45
ARM B	15.00	45.00	75.00	18.52	27.79	18.52
ARM C	15.00	45.00	75.00	11.93	17.89	11.93
ARM D	15.00	45.00	75.00	4.70	7.05	4.70
ARM E	15.00	45.00	75.00	5.31	7.97	5.31

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D	ARM E
07.15 - 08.45						
	ARM A	0.000	0.502	0.439	0.052	0.007
		0.0	620.0	543.0	64.0	9.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.273	0.000	0.406	0.280	0.042
		404.0	0.0	601.0	415.0	62.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.373	0.486	0.000	0.070	0.070
		356.0	464.0	0.0	67.0	67.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.141	0.777	0.080	0.000	0.003
		53.0	292.0	30.0	0.0	1.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.059	0.694	0.235	0.012	0.000
		25.0	295.0	100.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	15.51	27.05	0.573	- - -	0.0	1.3	19.1	-	0.085
ARM B	18.60	34.93	0.532	- - -	0.0	1.1	16.4	-	0.061
ARM C	11.97	28.24	0.424	- - -	0.0	0.7	10.7	-	0.061
ARM D	4.72	17.56	0.269	- - -	0.0	0.4	5.3	-	0.078
ARM E	5.33	14.98	0.356	- - -	0.0	0.5	7.9	-	0.103

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	18.52	25.60	0.723	- - -	1.3	2.5	35.7	-	0.138
ARM B	22.20	33.89	0.655	- - -	1.1	1.9	27.0	-	0.085
ARM C	14.29	27.09	0.528	- - -	0.7	1.1	16.1	-	0.078
ARM D	5.63	16.21	0.348	- - -	0.4	0.5	7.7	-	0.094
ARM E	6.37	13.47	0.473	- - -	0.5	0.9	12.7	-	0.140

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	22.68	23.67	0.958	- - -	2.5	12.3	136.7	-	0.486
ARM B	27.20	32.62	0.834	- - -	1.9	4.7	63.4	-	0.173
ARM C	17.51	25.58	0.684	- - -	1.1	2.1	30.0	-	0.122
ARM D	6.90	14.39	0.480	- - -	0.5	0.9	13.1	-	0.133
ARM E	7.80	11.43	0.682	- - -	0.9	2.0	27.9	-	0.264

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	22.68	23.61	0.960	- - -	12.3	15.3	209.1	-	0.710
ARM B	27.20	32.49	0.837	- - -	4.7	4.9	72.6	-	0.187
ARM C	17.51	25.52	0.686	- - -	2.1	2.2	32.1	-	0.125
ARM D	6.90	14.34	0.481	- - -	0.9	0.9	13.7	-	0.134
ARM E	7.80	11.39	0.685	- - -	2.0	2.1	31.2	-	0.277

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	18.52	25.52	0.726	- - -	15.3	2.7	57.8	-	0.184
ARM B	22.20	33.61	0.661	- - -	4.9	2.0	31.5	-	0.091
ARM C	14.29	27.00	0.529	- - -	2.2	1.1	17.7	-	0.080
ARM D	5.63	16.14	0.349	- - -	0.9	0.5	8.4	-	0.096
ARM E	6.37	13.40	0.475	- - -	2.1	0.9	14.6	-	0.145

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	15.51	26.99	0.575	- - -	2.7	1.4	21.4	-	0.089
ARM B	18.60	34.87	0.533	- - -	2.0	1.2	17.8	-	0.062
ARM C	11.97	28.19	0.425	- - -	1.1	0.7	11.4	-	0.062
ARM D	4.72	17.52	0.269	- - -	0.5	0.4	5.7	-	0.078
ARM E	5.33	14.92	0.357	- - -	0.9	0.6	8.7	-	0.105

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.5	***
08.00	12.3	************
08.15	15.3	***************
08.30	2.7	***
08.45	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.9	**
08.00	4.7	*****
08.15	4.9	*****
08.30	2.0	**
08.45	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.7	*
07.45	1.1	*
08.00	2.1	**
08.15	2.2	**
08.30	1.1	*
08.45	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.5	*
08.00	0.9	*
08.15	0.9	*
08.30	0.5	*
08.45	0.4	

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.9	*
08.00	2.0	**
08.15	2.1	**
08.30	0.9	*
08.45	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1701.3	1134.2	479.7	0.28	479.7	0.28
B	2039.9	1359.9	228.7	0.11	228.7	0.11
C	1313.1	875.4	118.0	0.09	118.0	0.09
D	517.5	345.0	53.9	0.10	53.9	0.10
E	585.0	390.0	103.0	0.18	103.0	0.18
ALL	6156.8	4104.5	983.2	0.16	983.3	0.16

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

==================== end of file ====================

[Printed at 16:00:49 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 PM No Dev.vai"
(drive-on-the-left) at 17:42:17 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout PM Peak 2026 Without Development
LOCATION: Cross In Hand Roundabout
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.70	7.50	47.00	45.00	98.00	48.0	0.494	34.354
ARM B	7.10	8.80	25.00	35.00	79.00	54.0	0.566	40.232
ARM C	5.10	7.50	50.00	37.00	98.00	54.0	0.486	34.056
ARM D	3.20	6.20	24.00	40.00	88.00	64.0	0.405	24.458
ARM E	3.50	7.20	9.00	19.00	88.00	64.0	0.384	22.641

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.50	14.25	9.50
ARM B	15.00	45.00	75.00	18.25	27.38	18.25
ARM C	15.00	45.00	75.00	12.45	18.67	12.45
ARM D	15.00	45.00	75.00	6.53	9.79	6.53
ARM E	15.00	45.00	75.00	2.92	4.39	2.92

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D	ARM E
16.45 - 18.15						
	ARM A	0.000	0.457	0.472	0.057	0.014
		0.0	347.0	359.0	43.0	11.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.440	0.000	0.191	0.284	0.085
		643.0	0.0	279.0	414.0	124.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.587	0.278	0.000	0.044	0.090
		585.0	277.0	0.0	44.0	90.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.172	0.657	0.159	0.000	0.011
		90.0	343.0	83.0	0.0	6.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.056	0.722	0.197	0.026	0.000
		13.0	169.0	46.0	6.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.54	28.67	0.333	- - -	0.0	0.5	7.3	-	0.052
ARM B	18.32	36.36	0.504	- - -	0.0	1.0	14.7	-	0.055
ARM C	12.50	26.52	0.471	- - -	0.0	0.9	12.8	-	0.071
ARM D	6.55	15.70	0.417	- - -	0.0	0.7	10.2	-	0.108
ARM E	2.94	12.96	0.227	- - -	0.0	0.3	4.2	-	0.099

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	11.39	27.55	0.413	- - -	0.5	0.7	10.3	-	0.062
ARM B	21.88	35.59	0.615	- - -	1.0	1.6	22.9	-	0.073
ARM C	14.92	25.04	0.596	- - -	0.9	1.5	21.0	-	0.098
ARM D	7.82	13.98	0.559	- - -	0.7	1.2	17.7	-	0.160
ARM E	3.51	11.06	0.317	- - -	0.3	0.5	6.7	-	0.132

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.95	26.10	0.534	- - -	0.7	1.1	16.5	-	0.082
ARM B	26.79	34.57	0.775	- - -	1.6	3.3	46.5	-	0.125
ARM C	18.28	23.04	0.793	- - -	1.5	3.6	49.0	-	0.198
ARM D	9.58	11.68	0.820	- - -	1.2	4.0	50.4	-	0.409
ARM E	4.29	8.56	0.502	- - -	0.5	1.0	13.8	-	0.231

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.95	26.00	0.536	- - -	1.1	1.1	17.1	-	0.083
ARM B	26.79	34.54	0.776	- - -	3.3	3.4	50.5	-	0.129
ARM C	18.28	23.00	0.795	- - -	3.6	3.7	55.3	-	0.211
ARM D	9.58	11.60	0.825	- - -	4.0	4.3	62.6	-	0.476
ARM E	4.29	8.43	0.509	- - -	1.0	1.0	15.0	-	0.241

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	11.39	27.40	0.416	- - -	1.1	0.7	11.0	-	0.063
ARM B	21.88	35.55	0.615	- - -	3.4	1.6	25.3	-	0.074
ARM C	14.92	24.98	0.597	- - -	3.7	1.5	24.0	-	0.102
ARM D	7.82	13.88	0.564	- - -	4.3	1.3	22.1	-	0.176
ARM E	3.51	10.88	0.322	- - -	1.0	0.5	7.5	-	0.137

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.54	28.60	0.333	- - -	0.7	0.5	7.7	-	0.052
ARM B	18.32	36.33	0.504	- - -	1.6	1.0	15.7	-	0.056
ARM C	12.50	26.48	0.472	- - -	1.5	0.9	13.9	-	0.072
ARM D	6.55	15.64	0.419	- - -	1.3	0.7	11.4	-	0.111
ARM E	2.94	12.88	0.228	- - -	0.5	0.3	4.6	-	0.101

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.1	*
17.45	1.1	*
18.00	0.7	*
18.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	3.3	***
17.45	3.4	***
18.00	1.6	**
18.15	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.5	*
17.30	3.6	****
17.45	3.7	****
18.00	1.5	**
18.15	0.9	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.2	*
17.30	4.0	****
17.45	4.3	****
18.00	1.3	*
18.15	0.7	*

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	
17.30	1.0	*
17.45	1.0	*
18.00	0.5	
18.15	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1046.1	697.4	69.9	0.07	69.9	0.07
B	2009.6	1339.7	175.6	0.09	175.6	0.09
C	1370.9	913.9	176.0	0.13	176.0	0.13
D	718.5	479.0	174.3	0.24	174.3	0.24
E	322.1	214.7	51.8	0.16	51.8	0.16
ALL	5467.2	3644.8	647.6	0.12	647.7	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:01:14 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 AM Peak+ Dev.vai"
(drive-on-the-left) at 17:41:57 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout AM Peak 2026 With Development
LOCATION: Cross In Hand Roundabout
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.70	7.50	47.00	45.00	98.00	48.0	0.494	34.354
ARM B	7.10	8.80	25.00	35.00	79.00	54.0	0.566	40.232
ARM C	5.10	7.50	50.00	37.00	98.00	54.0	0.486	34.056
ARM D	3.20	6.20	24.00	40.00	88.00	64.0	0.405	24.458
ARM E	3.50	7.20	9.00	19.00	88.00	64.0	0.384	22.641

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	13.70	20.55	13.70
ARM B	15.00	45.00	75.00	18.01	27.02	18.01
ARM C	15.00	45.00	75.00	12.52	18.79	12.52
ARM D	15.00	45.00	75.00	5.14	7.71	5.14
ARM E	15.00	45.00	75.00	4.47	6.71	4.47

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T		ARM A	ARM B	ARM C	ARM D	ARM E
07.15 - 08.45							
	ARM A		0.000	0.395	0.527	0.071	0.006
			0.0	433.0	578.0	78.0	7.0
			(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B		0.255	0.000	0.427	0.276	0.042
			368.0	0.0	615.0	398.0	60.0
			(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C		0.404	0.463	0.000	0.066	0.067
			405.0	464.0	0.0	66.0	67.0
			(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D		0.243	0.693	0.061	0.000	0.002
			100.0	285.0	25.0	0.0	1.0
			(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E		0.039	0.668	0.279	0.014	0.000
			14.0	239.0	100.0	5.0	0.0
			(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	13.75	27.47	0.501	- - -	0.0	1.0	14.4	-	0.072
ARM B	18.08	34.63	0.522	- - -	0.0	1.1	15.8	-	0.060
ARM C	12.57	28.50	0.441	- - -	0.0	0.8	11.4	-	0.062
ARM D	5.16	17.52	0.294	- - -	0.0	0.4	6.0	-	0.080
ARM E	4.49	14.75	0.305	- - -	0.0	0.4	6.3	-	0.097

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	16.42	26.10	0.629	- - -	1.0	1.7	24.0	-	0.102
ARM B	21.59	33.52	0.644	- - -	1.1	1.8	25.8	-	0.083
ARM C	15.01	27.40	0.548	- - -	0.8	1.2	17.4	-	0.080
ARM D	6.16	16.15	0.381	- - -	0.4	0.6	8.9	-	0.100
ARM E	5.36	13.19	0.407	- - -	0.4	0.7	9.8	-	0.127

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	20.11	24.28	0.828	- - -	1.7	4.4	59.2	-	0.221
ARM B	26.44	32.07	0.825	- - -	1.8	4.4	60.1	-	0.168
ARM C	18.39	25.95	0.709	- - -	1.2	2.4	33.4	-	0.130
ARM D	7.54	14.32	0.527	- - -	0.6	1.1	15.6	-	0.146
ARM E	6.57	11.10	0.592	- - -	0.7	1.4	19.6	-	0.216

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.11	24.23	0.830	- - -	4.4	4.7	68.6	-	0.240
ARM B	26.44	32.00	0.826	- - -	4.4	4.6	67.9	-	0.178
ARM C	18.39	25.90	0.710	- - -	2.4	2.4	35.9	-	0.133
ARM D	7.54	14.27	0.528	- - -	1.1	1.1	16.5	-	0.148
ARM E	6.57	11.05	0.595	- - -	1.4	1.4	21.4	-	0.223

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	16.42	26.03	0.631	- - -	4.7	1.7	28.0	-	0.108
ARM B	21.59	33.43	0.646	- - -	4.6	1.9	29.4	-	0.087
ARM C	15.01	27.33	0.549	- - -	2.4	1.2	19.2	-	0.082
ARM D	6.16	16.09	0.383	- - -	1.1	0.6	9.7	-	0.101
ARM E	5.36	13.12	0.409	- - -	1.4	0.7	11.0	-	0.131

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	13.75	27.41	0.502	- - -	1.7	1.0	15.7	-	0.074
ARM B	18.08	34.58	0.523	- - -	1.9	1.1	17.0	-	0.061
ARM C	12.57	28.46	0.442	- - -	1.2	0.8	12.3	-	0.063
ARM D	5.16	17.47	0.295	- - -	0.6	0.4	6.5	-	0.081
ARM E	4.49	14.69	0.306	- - -	0.7	0.4	6.9	-	0.098

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.7	**
08.00	4.4	****
08.15	4.7	*****
08.30	1.7	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.8	**
08.00	4.4	****
08.15	4.6	*****
08.30	1.9	**
08.45	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.2	*
08.00	2.4	**
08.15	2.4	**
08.30	1.2	*
08.45	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	1.1	*
08.15	1.1	*
08.30	0.6	*
08.45	0.4	

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.7	*
08.00	1.4	*
08.15	1.4	*
08.30	0.7	*
08.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1508.6	1005.7	209.9	0.14	210.0	0.14
B	1983.4	1322.3	215.9	0.11	215.9	0.11
C	1379.2	919.5	129.6	0.09	129.6	0.09
D	565.7	377.1	63.3	0.11	63.3	0.11
E	492.8	328.5	74.9	0.15	75.0	0.15
ALL	5929.6	3953.1	693.6	0.12	693.7	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 PM+Dev.vai"
(drive-on-the-left) at 17:42:35 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout PM Peak 2026 With Development
LOCATION: Cross In Hand Roundabout
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.70	7.50	47.00	45.00	98.00	48.0	0.494	34.354
ARM B	7.10	8.80	25.00	35.00	79.00	54.0	0.566	40.232
ARM C	5.10	7.50	50.00	37.00	98.00	54.0	0.486	34.056
ARM D	3.20	6.20	24.00	40.00	88.00	64.0	0.405	24.458
ARM E	3.50	7.20	9.00	19.00	88.00	64.0	0.384	22.641

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.43	14.14	9.43
ARM B	15.00	45.00	75.00	15.44	23.16	15.44
ARM C	15.00	45.00	75.00	12.55	18.83	12.55
ARM D	15.00	45.00	75.00	6.70	10.05	6.70
ARM E	15.00	45.00	75.00	3.41	5.12	3.41

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) FROM/T	ARM A	ARM B	ARM C	ARM D	ARM E
16.45 - 18.15						
	ARM A	0.000	0.333	0.557	0.098	0.012
		0.0	251.0	420.0	74.0	9.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.367	0.000	0.223	0.323	0.087
		453.0	0.0	275.0	399.0	108.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.596	0.271	0.000	0.044	0.090
		598.0	272.0	0.0	44.0	90.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.224	0.638	0.127	0.000	0.011
		120.0	342.0	68.0	0.0	6.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.033	0.777	0.168	0.022	0.000
		9.0	212.0	46.0	6.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.46	28.53	0.332	- - -	0.0	0.5	7.2	-	0.052
ARM B	15.50	35.82	0.433	- - -	0.0	0.8	11.1	-	0.049
ARM C	12.60	27.68	0.455	- - -	0.0	0.8	12.1	-	0.066
ARM D	6.73	16.71	0.402	- - -	0.0	0.7	9.6	-	0.099
ARM E	3.43	13.76	0.249	- - -	0.0	0.3	4.8	-	0.096

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	11.30	27.38	0.413	- - -	0.5	0.7	10.3	-	0.062
ARM B	18.50	34.96	0.529	- - -	0.8	1.1	16.3	-	0.061
ARM C	15.04	26.43	0.569	- - -	0.8	1.3	18.9	-	0.087
ARM D	8.03	15.19	0.529	- - -	0.7	1.1	15.8	-	0.139
ARM E	4.09	12.01	0.340	- - -	0.3	0.5	7.4	-	0.126

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.84	25.86	0.535	- - -	0.7	1.1	16.5	-	0.083
ARM B	22.66	33.78	0.671	- - -	1.1	2.0	28.8	-	0.089
ARM C	18.42	24.73	0.745	- - -	1.3	2.8	39.2	-	0.154
ARM D	9.84	13.14	0.749	- - -	1.1	2.8	37.3	-	0.284
ARM E	5.01	9.68	0.517	- - -	0.5	1.0	14.7	-	0.211

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.84	25.79	0.536	- - -	1.1	1.1	17.2	-	0.084
ARM B	22.66	33.76	0.671	- - -	2.0	2.0	30.2	-	0.090
ARM C	18.42	24.71	0.746	- - -	2.8	2.9	42.7	-	0.159
ARM D	9.84	13.09	0.752	- - -	2.8	2.9	42.8	-	0.306
ARM E	5.01	9.60	0.522	- - -	1.0	1.1	15.9	-	0.217

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	11.30	27.28	0.414	- - -	1.1	0.7	10.9	-	0.063
ARM B	18.50	34.92	0.530	- - -	2.0	1.1	17.5	-	0.061
ARM C	15.04	26.40	0.570	- - -	2.9	1.3	21.0	-	0.090
ARM D	8.03	15.12	0.531	- - -	2.9	1.2	18.5	-	0.146
ARM E	4.09	11.90	0.344	- - -	1.1	0.5	8.3	-	0.129

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.46	28.47	0.332	- - -	0.7	0.5	7.6	-	0.053
ARM B	15.50	35.80	0.433	- - -	1.1	0.8	11.7	-	0.049
ARM C	12.60	27.65	0.456	- - -	1.3	0.8	13.0	-	0.067
ARM D	6.73	16.66	0.404	- - -	1.2	0.7	10.6	-	0.101
ARM E	3.43	13.69	0.250	- - -	0.5	0.3	5.2	-	0.098

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.1	*
17.45	1.1	*
18.00	0.7	*
18.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.1	*
17.30	2.0	**
17.45	2.0	**
18.00	1.1	*
18.15	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	2.8	***
17.45	2.9	***
18.00	1.3	*
18.15	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.1	*
17.30	2.8	***
17.45	2.9	***
18.00	1.2	*
18.15	0.7	*

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	*
17.30	1.0	*
17.45	1.1	*
18.00	0.5	*
18.15	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1037.8	691.9	69.8	0.07	69.8	0.07
B	1699.9	1133.3	115.7	0.07	115.8	0.07
C	1381.9	921.3	146.9	0.11	146.9	0.11
D	737.8	491.8	134.6	0.18	134.6	0.18
E	375.8	250.5	56.3	0.15	56.3	0.15
ALL	5233.2	3488.8	523.3	0.10	523.4	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

==================== end of file ====================

[Printed at 16:02:15 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 AM Peak+ Dev+SP.vai"
(drive-on-the-left) at 17:42:08 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout AM Peak 2026 With Dev + SP
LOCATION: Cross In Hand Roundabout
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.00	8.60	60.00	60.00	73.00	44.0	0.596	39.854
ARM B	7.00	8.60	29.50	48.00	80.00	47.0	0.577	40.948
ARM C	4.50	7.00	23.00	48.00	80.00	41.0	0.500	31.782
ARM D	3.50	6.00	18.00	70.00	80.00	20.0	0.487	28.255
ARM E	3.00	7.00	14.00	23.00	73.00	56.0	0.430	23.547

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.02	21.04	14.02
ARM B	15.00	45.00	75.00	18.15	27.22	18.15
ARM C	15.00	45.00	75.00	12.86	19.29	12.86
ARM D	15.00	45.00	75.00	5.44	8.16	5.44
ARM E	15.00	45.00	75.00	5.07	7.61	5.07

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D	ARM E
07.15 - 08.45						
	ARM A	0.000	0.422	0.504	0.069	0.006
		0.0	473.0	565.0	77.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.256	0.000	0.440	0.267	0.037
		372.0	0.0	639.0	388.0	53.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.395	0.472	0.000	0.068	0.065
		406.0	486.0	0.0	70.0	67.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.232	0.706	0.060	0.000	0.002
		101.0	307.0	26.0	0.0	1.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.034	0.707	0.246	0.012	0.000
		14.0	287.0	100.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.08	30.85	0.456	- - -	0.0	0.8	12.2	-	0.059
ARM B	18.22	35.33	0.516	- - -	0.0	1.1	15.4	-	0.058
ARM C	12.91	26.14	0.494	- - -	0.0	1.0	14.0	-	0.075
ARM D	5.46	19.79	0.276	- - -	0.0	0.4	5.5	-	0.070
ARM E	5.09	14.43	0.353	- - -	0.0	0.5	7.8	-	0.106

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	16.81	29.08	0.578	- - -	0.8	1.4	19.7	-	0.081
ARM B	21.76	34.23	0.636	- - -	1.1	1.7	24.9	-	0.080
ARM C	15.42	25.03	0.616	- - -	1.0	1.6	22.7	-	0.103
ARM D	6.52	18.13	0.359	- - -	0.4	0.6	8.1	-	0.086
ARM E	6.08	12.64	0.481	- - -	0.5	0.9	13.1	-	0.151

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	20.59	26.74	0.770	- - -	1.4	3.2	44.3	-	0.157
ARM B	26.64	32.76	0.813	- - -	1.7	4.1	56.6	-	0.155
ARM C	18.88	23.55	0.802	- - -	1.6	3.8	51.4	-	0.202
ARM D	7.98	15.92	0.502	- - -	0.6	1.0	14.3	-	0.125
ARM E	7.45	10.24	0.727	- - -	0.9	2.5	32.9	-	0.334

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.59	26.63	0.773	- - -	3.2	3.3	49.1	-	0.165
ARM B	26.64	32.70	0.815	- - -	4.1	4.3	63.2	-	0.164
ARM C	18.88	23.50	0.803	- - -	3.8	3.9	58.2	-	0.215
ARM D	7.98	15.83	0.504	- - -	1.0	1.0	15.0	-	0.127
ARM E	7.45	10.16	0.733	- - -	2.5	2.6	38.4	-	0.365

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	16.81	28.93	0.581	- - -	3.3	1.4	22.1	-	0.084
ARM B	21.76	34.15	0.637	- - -	4.3	1.8	28.1	-	0.083
ARM C	15.42	24.97	0.618	- - -	3.9	1.6	26.2	-	0.108
ARM D	6.52	18.01	0.362	- - -	1.0	0.6	8.8	-	0.087
ARM E	6.08	12.53	0.486	- - -	2.6	1.0	15.5	-	0.161

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.08	30.77	0.458	- - -	1.4	0.8	13.1	-	0.060
ARM B	18.22	35.29	0.516	- - -	1.8	1.1	16.6	-	0.059
ARM C	12.91	26.10	0.495	- - -	1.6	1.0	15.3	-	0.076
ARM D	5.46	19.73	0.277	- - -	0.6	0.4	5.9	-	0.070
ARM E	5.09	14.36	0.355	- - -	1.0	0.6	8.6	-	0.109

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.4	*
08.00	3.2	***
08.15	3.3	***
08.30	1.4	*
08.45	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.7	**
08.00	4.1	****
08.15	4.3	****
08.30	1.8	**
08.45	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.6	**
08.00	3.8	****
08.15	3.9	****
08.30	1.6	**
08.45	1.0	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	1.0	*
08.15	1.0	*
08.30	0.6	*
08.45	0.4	

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.9	*
08.00	2.5	**
08.15	2.6	***
08.30	1.0	*
08.45	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1544.4	1029.6	160.4	0.10	160.4	0.10
B	1998.6	1332.4	204.8	0.10	204.8	0.10
C	1416.3	944.2	187.8	0.13	187.8	0.13
D	598.7	399.2	57.7	0.10	57.7	0.10
E	558.8	372.6	116.4	0.21	116.4	0.21
ALL	6116.8	4077.9	727.0	0.12	727.1	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:02:46 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Cross in Hand A5_A4303\
LCC LLITM Flows Feb 2016\2026 PM+Dev+SP.vai"
(drive-on-the-left) at 17:42:44 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: Cross in Hand Roundabout PM Peak 2026 With Dev + SP
LOCATION: Cross In Hand Roundabout
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - A5 North
ARM B - A4303
ARM C - A5 South
ARM D - B4027
ARM E - Coal Pit Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.00	8.60	60.00	60.00	73.00	44.0	0.596	39.854
ARM B	7.00	8.60	29.50	48.00	80.00	47.0	0.577	40.948
ARM C	4.50	7.00	23.00	48.00	80.00	41.0	0.500	31.782
ARM D	3.50	6.00	18.00	70.00	80.00	20.0	0.487	28.255
ARM E	3.00	7.00	14.00	23.00	73.00	56.0	0.430	23.547

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.41	14.12	9.41
ARM B	15.00	45.00	75.00	16.85	25.28	16.85
ARM C	15.00	45.00	75.00	12.56	18.84	12.56
ARM D	15.00	45.00	75.00	6.49	9.73	6.49
ARM E	15.00	45.00	75.00	3.70	5.55	3.70

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D	ARM E
16.45 - 18.15						
	ARM A	0.000	0.345	0.544	0.098	0.012
		0.0	260.0	410.0	74.0	9.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.367	0.000	0.237	0.307	0.089
		495.0	0.0	319.0	414.0	120.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.564	0.303	0.000	0.043	0.090
		567.0	305.0	0.0	43.0	90.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.227	0.649	0.112	0.000	0.012
		118.0	337.0	58.0	0.0	6.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.030	0.797	0.152	0.020	0.000
		9.0	236.0	45.0	6.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.45	32.52	0.291	- - -	0.0	0.4	6.0	-	0.043
ARM B	16.91	36.61	0.462	- - -	0.0	0.9	12.5	-	0.050
ARM C	12.61	24.79	0.509	- - -	0.0	1.0	14.8	-	0.081
ARM D	6.51	18.61	0.350	- - -	0.0	0.5	7.8	-	0.082
ARM E	3.71	13.46	0.276	- - -	0.0	0.4	5.5	-	0.102

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	11.28	31.07	0.363	- - -	0.4	0.6	8.4	-	0.050
ARM B	20.20	35.75	0.565	- - -	0.9	1.3	18.8	-	0.064
ARM C	15.06	23.41	0.643	- - -	1.0	1.8	25.3	-	0.118
ARM D	7.78	16.71	0.465	- - -	0.5	0.9	12.4	-	0.111
ARM E	4.43	11.47	0.387	- - -	0.4	0.6	9.0	-	0.142

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.82	29.18	0.474	- - -	0.6	0.9	13.1	-	0.065
ARM B	24.74	34.60	0.715	- - -	1.3	2.5	35.0	-	0.100
ARM C	18.44	21.55	0.856	- - -	1.8	5.3	67.9	-	0.282
ARM D	9.52	14.21	0.670	- - -	0.9	2.0	27.1	-	0.207
ARM E	5.43	8.85	0.613	- - -	0.6	1.5	20.8	-	0.282

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.82	29.08	0.475	- - -	0.9	0.9	13.5	-	0.065
ARM B	24.74	34.58	0.715	- - -	2.5	2.5	37.1	-	0.101
ARM C	18.44	21.52	0.857	- - -	5.3	5.6	81.8	-	0.318
ARM D	9.52	14.09	0.676	- - -	2.0	2.0	30.0	-	0.219
ARM E	5.43	8.74	0.622	- - -	1.5	1.6	23.5	-	0.301

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	11.28	30.93	0.365	- - -	0.9	0.6	8.8	-	0.051
ARM B	20.20	35.73	0.565	- - -	2.5	1.3	20.3	-	0.065
ARM C	15.06	23.37	0.644	- - -	5.6	1.9	30.5	-	0.128
ARM D	7.78	16.55	0.470	- - -	2.0	0.9	14.1	-	0.116
ARM E	4.43	11.30	0.392	- - -	1.6	0.7	10.4	-	0.148

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.45	32.45	0.291	- - -	0.6	0.4	6.3	-	0.044
ARM B	16.91	36.59	0.462	- - -	1.3	0.9	13.3	-	0.051
ARM C	12.61	24.75	0.510	- - -	1.9	1.1	16.3	-	0.083
ARM D	6.51	18.53	0.351	- - -	0.9	0.5	8.4	-	0.083
ARM E	3.71	13.37	0.278	- - -	0.7	0.4	6.0	-	0.104

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	0.9	*
17.45	0.9	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.3	*
17.30	2.5	**
17.45	2.5	**
18.00	1.3	*
18.15	0.9	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.8	**
17.30	5.3	*****
17.45	5.6	******
18.00	1.9	**
18.15	1.1	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.9	*
17.30	2.0	**
17.45	2.0	**
18.00	0.9	*
18.15	0.5	*

QUEUE AT ARM E

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.5	**
17.45	1.6	**
18.00	0.7	*
18.15	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1036.4	691.0	56.0	0.05	56.0	0.05
B	1855.4	1236.9	136.9	0.07	136.9	0.07
C	1383.3	922.2	236.5	0.17	236.5	0.17
D	714.4	476.2	99.9	0.14	99.9	0.14
E	407.4	271.6	75.1	0.18	75.2	0.18
ALL	5397.0	3598.0	604.5	0.11	604.5	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:03:09 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\AM 2026 No Dev.vai"
(drive-on-the-left) at 17:38:28 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout AM Peak 2026 Without Dev
LOCATION: A4303_Coventry Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.63	15.94	10.63
ARM B	15.00	45.00	75.00	15.07	22.61	15.07
ARM C	15.00	45.00	75.00	0.24	0.36	0.24
ARM D	15.00	45.00	75.00	12.39	18.58	12.39

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.192	0.000	0.808
		0.0	163.0	0.0	687.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.048	0.000	0.000	0.952
		58.0	0.0	0.0	1148.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.421	0.421	0.000	0.158
		8.0	8.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.237	0.752	0.004	0.007
		235.0	745.0	4.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	10.67	21.44	0.497	- - -	0.0	1.0	14.1	-	0.092
ARM B	15.13	32.15	0.471	- - -	0.0	0.9	12.9	-	0.058
ARM C	0.24	10.60	0.022	- - -	0.0	0.0	0.3	-	0.096
ARM D	12.43	41.22	0.302	- - -	0.0	0.4	6.4	-	0.035

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	12.74	20.46	0.622	- - -	1.0	1.6	23.1	-	0.128
ARM B	18.07	31.01	0.583	- - -	0.9	1.4	20.1	-	0.077
ARM C	0.28	8.26	0.034	- - -	0.0	0.0	0.5	-	0.125
ARM D	14.85	41.09	0.361	- - -	0.4	0.6	8.3	-	0.038

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	15.60	19.12	0.816	- - -	1.6	4.1	53.8	-	0.261
ARM B	22.13	29.52	0.750	- - -	1.4	2.9	40.6	-	0.132
ARM C	0.35	5.14	0.068	- - -	0.0	0.1	1.0	-	0.208
ARM D	18.19	40.92	0.444	- - -	0.6	0.8	11.7	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	15.60	19.11	0.816	- - -	4.1	4.2	62.4	-	0.281
ARM B	22.13	29.44	0.752	- - -	2.9	3.0	44.1	-	0.137
ARM C	0.35	5.03	0.069	- - -	0.1	0.1	1.1	-	0.214
ARM D	18.19	40.91	0.445	- - -	0.8	0.8	12.0	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	12.74	20.45	0.623	- - -	4.2	1.7	27.3	-	0.135
ARM B	18.07	30.90	0.585	- - -	3.0	1.4	22.3	-	0.079
ARM C	0.28	8.11	0.035	- - -	0.1	0.0	0.6	-	0.128
ARM D	14.85	41.08	0.361	- - -	0.8	0.6	8.6	-	0.038

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	10.67	21.42	0.498	- - -	1.7	1.0	15.6	-	0.094
ARM B	15.13	32.09	0.472	- - -	1.4	0.9	13.8	-	0.059
ARM C	0.24	10.51	0.023	- - -	0.0	0.0	0.4	-	0.097
ARM D	12.43	41.22	0.302	- - -	0.6	0.4	6.6	-	0.035

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.6	**
08.00	4.1	****
08.15	4.2	****
08.30	1.7	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.4	*
08.00	2.9	***
08.15	3.0	***
08.30	1.4	*
08.45	0.9	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.1
08.15	0.1
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	0.8	*
08.15	0.8	*
08.30	0.6	*
08.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	1170.0	780.0	196.3	0.17	196.3	0.17
B	1660.0	1106.6	153.7	0.09	153.7	0.09
C	26.2	17.4	3.9	0.15	3.9	0.15
D	1364.0	909.4	53.6	0.04	53.6	0.04
ALL	4220.1	2813.4	407.5	0.10	407.5	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 16:03:45 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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TRL Limited — Tel: +44 (0) 1344 770758
Crowthorne House — Fax: +44 (0) 1344 770356
Nine Mile Ride — Email: software@trl.co.uk
Wokingham, Berks. — Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\PM 2026 No Dev.vai"
(drive-on-the-left) at 17:38:57 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout PM Peak 2026 Without Dev
LOCATION: A4303_Coventry Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 7071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width   L = effective flare length   D = inscribed circle diameter
E = entry width   R = entry radius   PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.21	9.32	6.21
ARM B	15.00	45.00	75.00	11.44	17.16	11.44
ARM C	15.00	45.00	75.00	0.15	0.23	0.15
ARM D	15.00	45.00	75.00	20.55	30.82	20.55

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.374	0.008	0.618
		0.0	186.0	4.0	307.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.092	0.000	0.007	0.902
		84.0	0.0	6.0	825.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.583	0.083	0.000	0.333
		7.0	1.0	0.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.365	0.631	0.003	0.001
		600.0	1037.0	5.0	2.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	6.24	19.61	0.318	- - -	0.0	0.5	6.8	-	0.074
ARM B	11.48	35.28	0.325	- - -	0.0	0.5	7.1	-	0.042
ARM C	0.15	14.86	0.010	- - -	0.0	0.0	0.1	-	0.068
ARM D	20.63	41.06	0.502	- - -	0.0	1.0	14.7	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	7.45	18.27	0.408	- - -	0.5	0.7	10.0	-	0.092
ARM B	13.71	34.76	0.394	- - -	0.5	0.6	9.6	-	0.047
ARM C	0.18	13.36	0.013	- - -	0.0	0.0	0.2	-	0.076
ARM D	24.63	40.90	0.602	- - -	1.0	1.5	21.9	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	9.12	16.45	0.555	- - -	0.7	1.2	17.5	-	0.135
ARM B	16.79	34.06	0.493	- - -	0.6	1.0	14.2	-	0.058
ARM C	0.22	11.31	0.019	- - -	0.0	0.0	0.3	-	0.090
ARM D	30.17	40.67	0.742	- - -	1.5	2.8	40.0	-	0.094

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	9.12	16.42	0.556	- - -	1.2	1.2	18.5	-	0.137
ARM B	16.79	34.05	0.493	- - -	1.0	1.0	14.5	-	0.058
ARM C	0.22	11.29	0.020	- - -	0.0	0.0	0.3	-	0.090
ARM D	30.17	40.67	0.742	- - -	2.8	2.8	42.4	-	0.095

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	7.45	18.23	0.409	- - -	1.2	0.7	10.8	-	0.093
ARM B	13.71	34.74	0.395	- - -	1.0	0.7	10.0	-	0.048
ARM C	0.18	13.32	0.013	- - -	0.0	0.0	0.2	-	0.076
ARM D	24.63	40.89	0.602	- - -	2.8	1.5	23.7	-	0.062

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	6.24	19.57	0.319	- - -	0.7	0.5	7.2	-	0.075
ARM B	11.48	35.26	0.326	- - -	0.7	0.5	7.4	-	0.042
ARM C	0.15	14.82	0.010	- - -	0.0	0.0	0.2	-	0.068
ARM D	20.63	41.05	0.502	- - -	1.5	1.0	15.6	-	0.049

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.2	*
17.45	1.2	*
18.00	0.7	*
18.15	0.5	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.6	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.5	*
17.30	2.8	***
17.45	2.8	***
18.00	1.5	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	684.1	456.1	70.7	0.10	70.7	0.10
B	1259.4	839.6	62.7	0.05	62.7	0.05
C	16.5	11.0	1.3	0.08	1.3	0.08
D	2262.8	1508.6	158.2	0.07	158.2	0.07
ALL	4222.9	2815.3	292.9	0.07	292.9	0.07

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* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ===

[Printed at 16:04:06 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Nine Mile Ride Email: software@trl.co.uk
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\AM 2026+Dev.vai"
(drive-on-the-left) at 17:38:38 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout AM Peak 2026 With Dev
LOCATION: A4303_Coventry Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.05	15.08	10.05
ARM B	15.00	45.00	75.00	16.48	24.71	16.48
ARM C	15.00	45.00	75.00	0.24	0.36	0.24
ARM D	15.00	45.00	75.00	12.98	19.46	12.98

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.197	0.000	0.803
		0.0	158.0	0.0	646.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.044	0.000	0.000	0.956
		58.0	0.0	0.0	1260.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.421	0.421	0.000	0.158
		8.0	8.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.224	0.766	0.004	0.007
		232.0	795.0	4.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	10.09	21.11	0.478	- - -	0.0	0.9	13.1	-	0.090
ARM B	16.54	32.49	0.509	- - -	0.0	1.0	15.0	-	0.062
ARM C	0.24	10.16	0.023	- - -	0.0	0.0	0.3	-	0.101
ARM D	13.02	41.22	0.316	- - -	0.0	0.5	6.8	-	0.035

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45										
ARM A	12.05	20.07	0.600	- -	-	0.9	1.5	21.1	-	0.123
ARM B	19.75	31.42	0.629	- -	-	1.0	1.7	24.1	-	0.085
ARM C	0.28	7.73	0.037	- -	-	0.0	0.0	0.6	-	0.134
ARM D	15.55	41.09	0.378	- -	-	0.5	0.6	9.0	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00										
ARM A	14.75	18.64	0.792	- -	-	1.5	3.5	47.5	-	0.241
ARM B	24.19	30.01	0.806	- -	-	1.7	3.9	53.9	-	0.164
ARM C	0.35	4.51	0.077	- -	-	0.0	0.1	1.2	-	0.240
ARM D	19.05	40.92	0.466	- -	-	0.6	0.9	12.8	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15										
ARM A	14.75	18.63	0.792	- -	-	3.5	3.7	54.1	-	0.256
ARM B	24.19	29.94	0.808	- -	-	3.9	4.1	60.3	-	0.173
ARM C	0.35	4.38	0.080	- -	-	0.1	0.1	1.3	-	0.248
ARM D	19.05	40.91	0.466	- -	-	0.9	0.9	13.0	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30										
ARM A	12.05	20.06	0.601	- -	-	3.7	1.5	24.6	-	0.129
ARM B	19.75	31.32	0.630	- -	-	4.1	1.7	27.4	-	0.089
ARM C	0.28	7.56	0.038	- -	-	0.1	0.0	0.6	-	0.138
ARM D	15.55	41.08	0.379	- -	-	0.9	0.6	9.3	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45										
ARM A	10.09	21.10	0.478	- -	-	1.5	0.9	14.4	-	0.091
ARM B	16.54	32.43	0.510	- -	-	1.7	1.0	16.2	-	0.063
ARM C	0.24	10.06	0.024	- -	-	0.0	0.0	0.4	-	0.102
ARM D	13.02	41.22	0.316	- -	-	0.6	0.5	7.0	-	0.035

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.5	*
08.00	3.5	****
08.15	3.7	****
08.30	1.5	**
08.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.7	**
08.00	3.9	****
08.15	4.1	****
08.30	1.7	**
08.45	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.1
08.15	0.1
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.6	*
08.00	0.9	*
08.15	0.9	*
08.30	0.6	*
08.45	0.5	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1106.6	737.8	174.8	0.16	174.8	0.16
B	1814.1	1209.4	196.9	0.11	196.9	0.11
C	26.2	17.4	4.3	0.17	4.3	0.17
D	1428.7	952.5	57.9	0.04	57.9	0.04
ALL	4375.7	2917.1	433.9	0.10	433.9	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ===

[Printed at 16:04:33 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\PM 2026+Dev.vai"
(drive-on-the-left) at 17:39:05 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout PM Peak 2026 With Dev
LOCATION: A4303_Coventry Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 7071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.00	9.00	6.00
ARM B	15.00	45.00	75.00	12.56	18.84	12.56
ARM C	15.00	45.00	75.00	0.15	0.23	0.15
ARM D	15.00	45.00	75.00	21.51	32.27	21.51

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.410	0.008	0.581
		0.0	197.0	4.0	279.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.082	0.000	0.006	0.912
		82.0	0.0	6.0	917.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.583	0.083	0.000	0.333
		7.0	1.0	0.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.336	0.660	0.003	0.001
		578.0	1136.0	5.0	2.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	6.02	18.96	0.318	- - -	0.0	0.5	6.7	-	0.077
ARM B	12.61	35.52	0.355	- - -	0.0	0.5	8.1	-	0.044
ARM C	0.15	14.47	0.010	- - -	0.0	0.0	0.2	-	0.070
ARM D	21.59	41.08	0.526	- - -	0.0	1.1	16.1	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	7.19	17.49	0.411	- - -	0.5	0.7	10.1	-	0.097
ARM B	15.06	35.04	0.430	- - -	0.5	0.7	11.0	-	0.050
ARM C	0.18	12.89	0.014	- - -	0.0	0.0	0.2	-	0.079
ARM D	25.79	40.92	0.630	- - -	1.1	1.7	24.5	-	0.066

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	8.81	15.51	0.568	- - -	0.7	1.3	18.4	-	0.148
ARM B	18.44	34.41	0.536	- - -	0.7	1.1	16.8	-	0.062
ARM C	0.22	10.75	0.020	- - -	0.0	0.0	0.3	-	0.095
ARM D	31.58	40.70	0.776	- - -	1.7	3.4	47.3	-	0.107

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	8.81	15.47	0.569	- - -	1.3	1.3	19.5	-	0.150
ARM B	18.44	34.39	0.536	- - -	1.1	1.2	17.2	-	0.063
ARM C	0.22	10.72	0.021	- - -	0.0	0.0	0.3	-	0.095
ARM D	31.58	40.70	0.776	- - -	3.4	3.4	50.8	-	0.110

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	7.19	17.44	0.412	- - -	1.3	0.7	11.0	-	0.098
ARM B	15.06	35.02	0.430	- - -	1.2	0.8	11.6	-	0.050
ARM C	0.18	12.86	0.014	- - -	0.0	0.0	0.2	-	0.079
ARM D	25.79	40.91	0.630	- - -	3.4	1.7	26.8	-	0.067

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	6.02	18.92	0.318	- - -	0.7	0.5	7.2	-	0.078
ARM B	12.61	35.50	0.355	- - -	0.8	0.6	8.4	-	0.044
ARM C	0.15	14.43	0.010	- - -	0.0	0.0	0.2	-	0.070
ARM D	21.59	41.07	0.526	- - -	1.7	1.1	17.1	-	0.052

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.5
17.15	0.7 *
17.30	1.3 *
17.45	1.3 *
18.00	0.7 *
18.15	0.5

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.7	*
17.30	1.1	*
17.45	1.2	*
18.00	0.8	*
18.15	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	1.7	**
17.30	3.4	***
17.45	3.4	***
18.00	1.7	**
18.15	1.1	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	660.7	440.5	72.9	0.11	72.9	0.11
B	1383.3	922.2	73.1	0.05	73.1	0.05
C	16.5	11.0	1.4	0.08	1.4	0.08
D	2368.8	1579.2	182.7	0.08	182.7	0.08
ALL	4429.3	2952.9	330.1	0.07	330.1	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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[Printed at 16:04:56 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\AM 2026+Dev+SP.vai"
(drive-on-the-left) at 17:38:47 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout AM Peak 2026 With Dev + SP
LOCATION: A4303_Coventry Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.04	15.06	10.04
ARM B	15.00	45.00	75.00	17.14	25.71	17.14
ARM C	15.00	45.00	75.00	0.24	0.36	0.24
ARM D	15.00	45.00	75.00	13.18	19.76	13.18

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.199	0.000	0.801
		0.0	160.0	0.0	643.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.040	0.000	0.000	0.960
		55.0	0.0	0.0	1316.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.421	0.421	0.000	0.158
		8.0	8.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.220	0.769	0.004	0.007
		232.0	811.0	4.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	10.08	21.01	0.480	- - -	0.0	0.9	13.1	-	0.091
ARM B	17.20	32.51	0.529	- - -	0.0	1.1	16.2	-	0.065
ARM C	0.24	9.85	0.024	- - -	0.0	0.0	0.4	-	0.104
ARM D	13.23	41.25	0.321	- - -	0.0	0.5	6.9	-	0.036

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	12.03	19.94	0.603	- - -	0.9	1.5	21.4	-	0.125
ARM B	20.54	31.45	0.653	- - -	1.1	1.9	26.7	-	0.091
ARM C	0.28	7.36	0.039	- - -	0.0	0.0	0.6	-	0.141
ARM D	15.79	41.12	0.384	- - -	0.5	0.6	9.2	-	0.039

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	14.74	18.49	0.797	- - -	1.5	3.6	48.8	-	0.248
ARM B	25.16	30.05	0.837	- - -	1.9	4.8	64.1	-	0.190
ARM C	0.35	4.07	0.086	- - -	0.0	0.1	1.3	-	0.268
ARM D	19.34	40.96	0.472	- - -	0.6	0.9	13.1	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	14.74	18.48	0.797	- - -	3.6	3.8	55.8	-	0.264
ARM B	25.16	29.97	0.839	- - -	4.8	5.0	73.7	-	0.205
ARM C	0.35	3.93	0.089	- - -	0.1	0.1	1.4	-	0.279
ARM D	19.34	40.95	0.472	- - -	0.9	0.9	13.4	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	12.03	19.93	0.604	- - -	3.8	1.6	25.0	-	0.132
ARM B	20.54	31.35	0.655	- - -	5.0	1.9	30.9	-	0.096
ARM C	0.28	7.16	0.040	- - -	0.1	0.0	0.7	-	0.146
ARM D	15.79	41.11	0.384	- - -	0.9	0.6	9.5	-	0.040

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	10.08	20.99	0.480	- - -	1.6	0.9	14.5	-	0.092
ARM B	17.20	32.46	0.530	- - -	1.9	1.1	17.6	-	0.066
ARM C	0.24	9.74	0.024	- - -	0.0	0.0	0.4	-	0.105
ARM D	13.23	41.24	0.321	- - -	0.6	0.5	7.2	-	0.036

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.5	*
08.00	3.6	****
08.15	3.8	****
08.30	1.6	**
08.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.9	**
08.00	4.8	*****
08.15	5.0	*****
08.30	1.9	**
08.45	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.1
08.15	0.1
08.30	0.0
08.45	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.6	*
08.00	0.9	*
08.15	0.9	*
08.30	0.6	*
08.45	0.5	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1105.3	736.8	178.5	0.16	178.6	0.16
B	1887.1	1258.1	229.2	0.12	229.2	0.12
C	26.2	17.4	4.7	0.18	4.7	0.18
D	1450.8	967.2	59.3	0.04	59.3	0.04
ALL	4469.3	2979.5	471.8	0.11	471.9	0.11

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END OF JOB

== end of file ==

[Printed at 16:05:17 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_Coventry Road\
LCC LLITM Flows Feb 2016\PM 2026+Dev+SP.vai"
(drive-on-the-left) at 17:39:14 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/Coventry Road Roundabout PM Peak 2026 + Dev + SP
LOCATION: A4303_Coventry Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 7071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Coventry Road
ARM B - A4303 East
ARM C - Mobile Home Park
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.20	7.20	31.00	14.00	56.00	62.0	0.523	26.437
ARM B	7.20	8.40	13.00	35.00	56.00	58.0	0.662	37.911
ARM C	3.65	5.50	8.00	28.00	56.00	50.0	0.501	22.482
ARM D	7.20	8.80	29.00	35.00	56.00	45.0	0.717	41.883

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

```
----------------------- T13
IARM  I FLOW SCALE(%) I
-----------------------
I A   I      100      I
I B   I      100      I
I C   I      100      I
I D   I      100      I
-----------------------
```

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

```
------------------------------------------------------------------------------ T15
I        I   NUMBER OF MINUTES FROM START WHEN    I   RATE OF FLOW (VEH/MIN) I
I  ARM   I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP  I AFTER I
I        I             I             I            I        I         I       I
I        I   TO RISE   I  IS REACHED I FALLING    I  PEAK  I OF PEAK I PEAK  I
------------------------------------------------------------------------------
I ARM  A I     15.00   I     45.00   I    75.00   I  6.04  I   9.06  I  6.04 I
I ARM  B I     15.00   I     45.00   I    75.00   I 12.80  I  19.20  I 12.80 I
I ARM  C I     15.00   I     45.00   I    75.00   I  0.15  I   0.23  I  0.15 I
I ARM  D I     15.00   I     45.00   I    75.00   I 22.52  I  33.79  I 22.52 I
------------------------------------------------------------------------------
```

DEMAND SET TITLE: AM Peak 2006 Base Flows

```
-------------------------------------------------------------------- T33
I                    I         TURNING PROPORTIONS                 I
I                    I         TURNING COUNTS                      I
I                    I        (PERCENTAGE OF H.V.S)                I
I                    ----------------------------------------------
I      TIME          I FROM/T  I  ARM A I  ARM B I  ARM C I  ARM D I
--------------------------------------------------------------------
I   16.45 - 18.15    I         I        I        I        I        I
I                    I  ARM  A I  0.000 I  0.402 I  0.008 I  0.590 I
I                    I         I    0.0 I  194.0 I    4.0 I  285.0 I
I                    I         I (  0.0)I (  0.0)I (  0.0)I (  0.0)I
I                    I         I        I        I        I        I
I                    I  ARM  B I  0.080 I  0.000 I  0.006 I  0.914 I
I                    I         I   82.0 I    0.0 I    6.0 I  936.0 I
I                    I         I (  0.0)I (  0.0)I (  0.0)I (  0.0)I
I                    I         I        I        I        I        I
I                    I  ARM  C I  0.583 I  0.083 I  0.000 I  0.333 I
I                    I         I    7.0 I    1.0 I    0.0 I    4.0 I
I                    I         I (  0.0)I (  0.0)I (  0.0)I (  0.0)I
I                    I         I        I        I        I        I
I                    I  ARM  D I  0.335 I  0.661 I  0.003 I  0.001 I
I                    I         I  604.0 I 1191.0 I    5.0 I    2.0 I
I                    I         I (  0.0)I (  0.0)I (  0.0)I (  0.0)I
I                    I         I        I        I        I        I
--------------------------------------------------------------------
```

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

```
-------------------------------------------------------------------------------------------------------------------- T70
I  TIME       DEMAND  CAPACITY  DEMAND/    PEDESTRIAN  START   END        DELAY      GEOMETRIC DELAY   AVERAGE DELAY I
I          (VEH/MIN) (VEH/MIN) CAPACITY      FLOW      QUEUE  QUEUE    (VEH.MIN/       (VEH.MIN/       PER ARRIVING  I
I                                (RFC)    (PEDS/MIN) (VEHS) (VEHS)  TIME SEGMENT)  TIME SEGMENT)     VEHICLE (MIN) I
-                                                                                                                    -
I 16.45-17.00                                                                                                        I
I ARM A       6.06     18.60   0.326   - -       -     0.0    0.5        7.0              -               0.079      I
I ARM B      12.85     35.47   0.362   - -       -     0.0    0.6        8.3              -               0.044      I
I ARM C       0.15     14.31   0.011   - -       -     0.0    0.0        0.2              -               0.071      I
I ARM D      22.61     41.08   0.550   - -       -     0.0    1.2       17.7              -               0.054      I
I                                                                                                                    I
--------------------------------------------------------------------------------------------------------------------
```

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	7.24	17.07	0.424	- - -	0.5	0.7	10.6	-	0.101
ARM B	15.34	34.98	0.439	- - -	0.6	0.8	11.4	-	0.051
ARM C	0.18	12.70	0.014	- - -	0.0	0.0	0.2	-	0.080
ARM D	27.00	40.92	0.660	- - -	1.2	1.9	27.8	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	8.86	14.99	0.591	- - -	0.7	1.4	20.0	-	0.161
ARM B	18.79	34.34	0.547	- - -	0.8	1.2	17.5	-	0.064
ARM C	0.22	10.52	0.021	- - -	0.0	0.0	0.3	-	0.097
ARM D	33.07	40.70	0.812	- - -	1.9	4.1	57.5	-	0.126

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	8.86	14.94	0.593	- - -	1.4	1.4	21.4	-	0.164
ARM B	18.79	34.32	0.548	- - -	1.2	1.2	18.0	-	0.064
ARM C	0.22	10.49	0.021	- - -	0.0	0.0	0.3	-	0.097
ARM D	33.07	40.70	0.812	- - -	4.1	4.2	63.0	-	0.130

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	7.24	17.00	0.426	- - -	1.4	0.8	11.7	-	0.103
ARM B	15.34	34.96	0.439	- - -	1.2	0.8	12.0	-	0.051
ARM C	0.18	12.67	0.014	- - -	0.0	0.0	0.2	-	0.080
ARM D	27.00	40.91	0.660	- - -	4.2	2.0	30.8	-	0.073

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	6.06	18.56	0.327	- - -	0.8	0.5	7.5	-	0.080
ARM B	12.85	35.45	0.362	- - -	0.8	0.6	8.7	-	0.044
ARM C	0.15	14.27	0.011	- - -	0.0	0.0	0.2	-	0.071
ARM D	22.61	41.07	0.551	- - -	2.0	1.2	19.0	-	0.055

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.4	*
17.45	1.4	*
18.00	0.8	*
18.15	0.5	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.8	*
17.30	1.2	*
17.45	1.2	*
18.00	0.8	*
18.15	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.2	*
17.15	1.9	**
17.30	4.1	****
17.45	4.2	****
18.00	2.0	**
18.15	1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	664.8	443.2	78.2	0.12	78.2	0.12
B	1409.5	939.6	76.0	0.05	76.1	0.05
C	16.5	11.0	1.4	0.08	1.4	0.08
D	2480.3	1653.5	215.9	0.09	215.9	0.09
ALL	4571.1	3047.4	371.5	0.08	371.5	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 16:05:39 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\AM 2026 No Dev+Imps.vai"
(drive-on-the-left) at 17:37:05 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout AM Peak 2026 Without Dev + Improvements
LOCATION: A4303_Rugby Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.25	21.38	14.25
ARM B	15.00	45.00	75.00	27.20	40.80	27.20
ARM C	15.00	45.00	75.00	9.34	14.01	9.34
ARM D	15.00	45.00	75.00	11.68	17.51	11.68

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.571	0.294	0.135
		0.0	651.0	335.0	154.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.283	0.000	0.294	0.424
		615.0	0.0	639.0	922.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.420	0.514	0.000	0.066
		314.0	384.0	0.0	49.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.104	0.848	0.048	0.000
		97.0	792.0	45.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.30	29.48	0.485	- - -	0.0	0.9	13.6	-	0.065
ARM B	27.30	43.34	0.630	- - -	0.0	1.7	24.3	-	0.062
ARM C	9.37	25.38	0.369	- - -	0.0	0.6	8.5	-	0.062
ARM D	11.72	35.86	0.327	- - -	0.0	0.5	7.1	-	0.041

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	17.08	27.78	0.615	- - -	0.9	1.6	22.7	-	0.093
ARM B	32.60	42.48	0.768	- - -	1.7	3.2	45.5	-	0.099
ARM C	11.19	23.08	0.485	- - -	0.6	0.9	13.6	-	0.084
ARM D	13.99	33.79	0.414	- - -	0.5	0.7	10.4	-	0.050

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	20.92	25.46	0.822	- - -	1.6	4.3	57.4	-	0.205
ARM B	39.93	41.33	0.966	- - -	3.2	15.9	178.9	-	0.356
ARM C	13.71	20.21	0.678	- - -	0.9	2.0	28.8	-	0.150
ARM D	17.14	31.12	0.551	- - -	0.7	1.2	17.7	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.92	25.42	0.823	- - -	4.3	4.5	65.8	-	0.220
ARM B	39.93	41.28	0.967	- - -	15.9	19.5	269.3	-	0.515
ARM C	13.71	19.96	0.687	- - -	2.0	2.1	31.7	-	0.159
ARM D	17.14	30.96	0.554	- - -	1.2	1.2	18.4	-	0.072

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	17.08	27.72	0.616	- - -	4.5	1.6	26.1	-	0.097
ARM B	32.60	42.41	0.769	- - -	19.5	3.4	70.6	-	0.128
ARM C	11.19	22.60	0.495	- - -	2.1	1.0	15.5	-	0.089
ARM D	13.99	33.52	0.417	- - -	1.2	0.7	11.0	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.30	29.44	0.486	- - -	1.6	1.0	14.7	-	0.066
ARM B	27.30	43.30	0.630	- - -	3.4	1.7	26.8	-	0.063
ARM C	9.37	25.28	0.371	- - -	1.0	0.6	9.1	-	0.063
ARM D	11.72	35.78	0.328	- - -	0.7	0.5	7.4	-	0.042

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.6	**
08.00	4.3	****
08.15	4.5	****
08.30	1.6	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.7	**
07.45	3.2	***
08.00	15.9	****************
08.15	19.5	********************
08.30	3.4	***
08.45	1.7	**

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	0.9	*
08.00	2.0	**
08.15	2.1	**
08.30	1.0	*
08.45	0.6	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.7	*
08.00	1.2	*
08.15	1.2	*
08.30	0.7	*
08.45	0.5	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1569.1	1046.1	200.3	0.13	200.4	0.13
B	2995.1	1996.7	615.6	0.21	615.6	0.21
C	1028.2	685.5	107.1	0.10	107.1	0.10
D	1285.6	857.1	72.0	0.06	72.0	0.06
ALL	6878.0	4585.3	995.0	0.14	995.1	0.14

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* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ===

[Printed at 16:13:25 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\PM 2026 No Dev+Imps.vai"
(drive-on-the-left) at 17:37:42 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout PM Peak 2026 Without Dev + Improvements
LOCATION: A4303_Rugby Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.09	18.13	12.09
ARM B	15.00	45.00	75.00	21.73	32.59	21.73
ARM C	15.00	45.00	75.00	11.43	17.14	11.43
ARM D	15.00	45.00	75.00	15.19	22.78	15.19

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.510	0.349	0.142
		0.0	493.0	337.0	137.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.297	0.000	0.259	0.443
		517.0	0.0	451.0	770.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.419	0.538	0.000	0.043
		383.0	492.0	0.0	39.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.138	0.809	0.053	0.000
		168.0	983.0	64.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	12.13	27.22	0.446	- - -	0.0	0.8	11.6	-	0.066
ARM B	21.81	43.30	0.504	- - -	0.0	1.0	14.8	-	0.046
ARM C	11.47	27.23	0.421	- - -	0.0	0.7	10.5	-	0.063
ARM D	15.25	35.22	0.433	- - -	0.0	0.8	11.1	-	0.050

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.49	25.07	0.578	- - -	0.8	1.3	19.5	-	0.094
ARM B	26.04	42.44	0.614	- - -	1.0	1.6	22.9	-	0.061
ARM C	13.69	25.28	0.542	- - -	0.7	1.2	17.0	-	0.086
ARM D	18.20	33.03	0.551	- - -	0.8	1.2	17.8	-	0.067

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.74	22.18	0.800	- - -	1.3	3.7	50.3	-	0.210
ARM B	31.89	41.29	0.772	- - -	1.6	3.3	46.5	-	0.104
ARM C	16.77	22.66	0.740	- - -	1.2	2.7	38.0	-	0.164
ARM D	22.30	30.07	0.741	- - -	1.2	2.8	39.0	-	0.125

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.74	22.10	0.803	- - -	3.7	3.9	57.7	-	0.227
ARM B	31.89	41.24	0.773	- - -	3.3	3.4	50.0	-	0.107
ARM C	16.77	22.60	0.742	- - -	2.7	2.8	41.8	-	0.171
ARM D	22.30	29.99	0.743	- - -	2.8	2.8	42.3	-	0.130

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.49	24.96	0.580	- - -	3.9	1.4	22.4	-	0.098
ARM B	26.04	42.37	0.615	- - -	3.4	1.6	25.0	-	0.062
ARM C	13.69	25.20	0.543	- - -	2.8	1.2	18.9	-	0.088
ARM D	18.20	32.91	0.553	- - -	2.8	1.3	19.5	-	0.069

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	12.13	27.16	0.447	- - -	1.4	0.8	12.5	-	0.067
ARM B	21.81	43.27	0.504	- - -	1.6	1.0	15.7	-	0.047
ARM C	11.47	27.18	0.422	- - -	1.2	0.7	11.3	-	0.064
ARM D	15.25	35.15	0.434	- - -	1.3	0.8	11.8	-	0.050

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	3.7	****
17.45	3.9	****
18.00	1.4	*
18.15	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	3.3	***
17.45	3.4	***
18.00	1.6	**
18.15	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.2	*
17.30	2.7	***
17.45	2.8	***
18.00	1.2	*
18.15	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.8	***
17.45	2.8	***
18.00	1.3	*
18.15	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1331.0	887.3	174.1	0.13	174.1	0.13
B	2392.2	1594.8	174.9	0.07	174.9	0.07
C	1258.1	838.7	137.4	0.11	137.5	0.11
D	1672.4	1114.9	141.4	0.08	141.4	0.08
ALL	6653.6	4435.8	627.8	0.09	627.8	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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TRL Limited Tel: +44 (0) 1344 770758
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\AM 2026+Dev+Imps.vai"
(drive-on-the-left) at 17:37:22 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout AM Peak 2026 With Dev + Improvements
LOCATION: A4303_Rugby Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.34	21.51	14.34
ARM B	15.00	45.00	75.00	28.45	42.68	28.45
ARM C	15.00	45.00	75.00	9.35	14.03	9.35
ARM D	15.00	45.00	75.00	12.43	18.64	12.43

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.577	0.291	0.132
		0.0	662.0	334.0	151.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.270	0.000	0.278	0.452
		615.0	0.0	633.0	1028.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.424	0.512	0.000	0.064
		317.0	383.0	0.0	48.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.095	0.862	0.043	0.000
		94.0	857.0	43.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.39	29.04	0.496	- - -	0.0	1.0	14.1	-	0.068
ARM B	28.56	43.39	0.658	- - -	0.0	1.9	27.4	-	0.066
ARM C	9.39	24.67	0.381	- - -	0.0	0.6	8.9	-	0.065
ARM D	12.47	35.85	0.348	- - -	0.0	0.5	7.8	-	0.043

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	17.19	27.25	0.631	- - -	1.0	1.7	24.2	-	0.099
ARM B	34.10	42.54	0.802	- - -	1.9	3.9	54.5	-	0.115
ARM C	11.21	22.23	0.504	- - -	0.6	1.0	14.6	-	0.090
ARM D	14.89	33.78	0.441	- - -	0.5	0.8	11.5	-	0.053

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	21.05	24.82	0.848	- - -	1.7	5.1	66.3	-	0.238
ARM B	41.77	41.42	1.008	- - -	3.9	27.7	273.9	-	0.524
ARM C	13.73	19.47	0.705	- - -	1.0	2.3	32.1	-	0.169
ARM D	18.24	31.22	0.584	- - -	0.8	1.4	20.2	-	0.077

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	21.05	24.78	0.850	- - -	5.1	5.3	78.3	-	0.265
ARM B	41.77	41.36	1.010	- - -	27.7	41.4	522.5	-	0.957
ARM C	13.73	19.18	0.716	- - -	2.3	2.4	36.0	-	0.183
ARM D	18.24	31.06	0.587	- - -	1.4	1.4	21.1	-	0.078

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	17.19	27.19	0.632	- - -	5.3	1.7	28.4	-	0.105
ARM B	34.10	42.45	0.803	- - -	41.4	4.3	161.2	-	0.244
ARM C	11.21	21.17	0.530	- - -	2.4	1.1	17.9	-	0.102
ARM D	14.89	33.26	0.448	- - -	1.4	0.8	12.5	-	0.055

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.39	28.99	0.496	- - -	1.7	1.0	15.4	-	0.069
ARM B	28.56	43.35	0.659	- - -	4.3	2.0	30.6	-	0.069
ARM C	9.39	24.54	0.382	- - -	1.1	0.6	9.6	-	0.066
ARM D	12.47	35.75	0.349	- - -	0.8	0.5	8.2	-	0.043

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.7	**
08.00	5.1	*****
08.15	5.3	*****
08.30	1.7	**
08.45	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.9	**
07.45	3.9	****
08.00	27.7	****************************
08.15	41.4	***
08.30	4.3	****
08.45	2.0	**

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	1.0	*
08.00	2.3	**
08.15	2.4	**
08.30	1.1	*
08.45	0.6	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.8	*
08.00	1.4	*
08.15	1.4	*
08.30	0.8	*
08.45	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1578.8	1052.5	226.6	0.14	226.7	0.14
B	3132.7	2088.5	1070.1	0.34	1070.1	0.34
C	1029.6	686.4	119.1	0.12	119.1	0.12
D	1368.2	912.1	81.3	0.06	81.3	0.06
ALL	7109.2	4739.5	1497.1	0.21	1497.2	0.21

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 16:14:25 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\PM 2026+Dev+Imps.vai"
(drive-on-the-left) at 17:37:58 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout PM Peak 2026 With Dev + Improvements
LOCATION: A4303_Rugby Road
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.29	18.43	12.29
ARM B	15.00	45.00	75.00	22.54	33.81	22.54
ARM C	15.00	45.00	75.00	11.41	17.12	11.41
ARM D	15.00	45.00	75.00	16.74	25.11	16.74

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.506	0.344	0.151
		0.0	497.0	338.0	148.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.285	0.000	0.248	0.467
		513.0	0.0	448.0	842.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.422	0.536	0.000	0.043
		385.0	489.0	0.0	39.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.131	0.798	0.072	0.000
		175.0	1068.0	96.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	12.33	26.41	0.467	- - -	0.0	0.9	12.6	-	0.070
ARM B	22.62	42.94	0.527	- - -	0.0	1.1	16.2	-	0.049
ARM C	11.46	26.68	0.429	- - -	0.0	0.7	10.9	-	0.065
ARM D	16.80	35.27	0.476	- - -	0.0	0.9	13.2	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.73	24.11	0.611	- - -	0.9	1.5	22.2	-	0.106
ARM B	27.01	42.01	0.643	- - -	1.1	1.8	25.9	-	0.066
ARM C	13.68	24.63	0.555	- - -	0.7	1.2	17.9	-	0.091
ARM D	20.06	33.08	0.607	- - -	0.9	1.5	22.1	-	0.076

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	18.04	21.03	0.858	- - -	1.5	5.3	68.0	-	0.289
ARM B	33.09	40.79	0.811	- - -	1.8	4.1	57.0	-	0.125
ARM C	16.75	21.87	0.766	- - -	1.2	3.1	42.6	-	0.186
ARM D	24.57	30.15	0.815	- - -	1.5	4.2	56.4	-	0.169

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	18.04	20.91	0.863	- - -	5.3	5.8	83.8	-	0.337
ARM B	33.09	40.71	0.813	- - -	4.1	4.2	62.8	-	0.131
ARM C	16.75	21.79	0.769	- - -	3.1	3.2	47.7	-	0.198
ARM D	24.57	30.05	0.818	- - -	4.2	4.3	63.9	-	0.182

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.73	23.95	0.615	- - -	5.8	1.6	26.9	-	0.115
ARM B	27.01	41.89	0.645	- - -	4.2	1.8	28.8	-	0.069
ARM C	13.68	24.52	0.558	- - -	3.2	1.3	20.2	-	0.094
ARM D	20.06	32.94	0.609	- - -	4.3	1.6	25.0	-	0.080

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	12.33	26.34	0.468	- - -	1.6	0.9	13.7	-	0.072
ARM B	22.62	42.90	0.527	- - -	1.8	1.1	17.2	-	0.050
ARM C	11.46	26.62	0.430	- - -	1.3	0.8	11.7	-	0.066
ARM D	16.80	35.19	0.477	- - -	1.6	0.9	14.1	-	0.055

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.5	**
17.30	5.3	*****
17.45	5.8	******
18.00	1.6	**
18.15	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	1.8	**
17.30	4.1	****
17.45	4.2	****
18.00	1.8	**
18.15	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.2	*
17.30	3.1	***
17.45	3.2	***
18.00	1.3	*
18.15	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.5	**
17.30	4.2	****
17.45	4.3	****
18.00	1.6	**
18.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1353.0	902.0	227.3	0.17	227.3	0.17
B	2481.7	1654.5	207.9	0.08	207.9	0.08
C	1256.7	837.8	151.0	0.12	151.0	0.12
D	1843.0	1228.7	194.8	0.11	194.8	0.11
ALL	6934.4	4623.0	781.0	0.11	781.0	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ===

[Printed at 16:14:50 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\AM 2026+Dev+SP+Imps.vai"
(drive-on-the-left) at 17:37:32 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout AM Peak 2026 With Dev + SP + Imps
LOCATION: A4303_Rugby Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.41	21.62	14.41
ARM B	15.00	45.00	75.00	28.90	43.35	28.90
ARM C	15.00	45.00	75.00	9.51	14.27	9.51
ARM D	15.00	45.00	75.00	12.70	19.05	12.70

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.572	0.291	0.137
		0.0	659.0	336.0	158.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.264	0.000	0.273	0.463
		611.0	0.0	631.0	1070.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.423	0.505	0.000	0.072
		322.0	384.0	0.0	55.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.094	0.860	0.046	0.000
		95.0	874.0	47.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.47	28.89	0.501	- - -	0.0	1.0	14.4	-	0.069
ARM B	29.01	43.28	0.670	- - -	0.0	2.0	28.8	-	0.069
ARM C	9.55	24.36	0.392	- - -	0.0	0.6	9.3	-	0.067
ARM D	12.75	35.83	0.356	- - -	0.0	0.5	8.1	-	0.043

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	17.28	27.06	0.638	- - -	1.0	1.7	24.9	-	0.101
ARM B	34.64	42.41	0.817	- - -	2.0	4.3	59.2	-	0.124
ARM C	11.40	21.87	0.521	- - -	0.6	1.1	15.6	-	0.095
ARM D	15.22	33.77	0.451	- - -	0.5	0.8	12.0	-	0.054

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	21.16	24.59	0.860	- - -	1.7	5.5	71.1	-	0.255
ARM B	42.43	41.27	1.028	- - -	4.3	35.4	332.6	-	0.628
ARM C	13.96	19.21	0.727	- - -	1.1	2.5	35.2	-	0.184
ARM D	18.64	31.28	0.596	- - -	0.8	1.5	21.1	-	0.079

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	21.16	24.55	0.862	- - -	5.5	5.8	85.4	-	0.289
ARM B	42.43	41.21	1.030	- - -	35.4	57.8	702.6	-	1.252
ARM C	13.96	18.95	0.737	- - -	2.5	2.7	39.8	-	0.199
ARM D	18.64	31.13	0.599	- - -	1.5	1.5	22.1	-	0.080

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	17.28	27.00	0.640	- - -	5.8	1.8	29.7	-	0.109
ARM B	34.64	42.32	0.819	- - -	57.8	4.9	277.2	-	0.437
ARM C	11.40	20.35	0.560	- - -	2.7	1.3	20.4	-	0.114
ARM D	15.22	33.07	0.460	- - -	1.5	0.9	13.2	-	0.056

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.47	28.83	0.502	- - -	1.8	1.0	15.7	-	0.070
ARM B	29.01	43.24	0.671	- - -	4.9	2.1	32.6	-	0.072
ARM C	9.55	24.22	0.394	- - -	1.3	0.7	10.1	-	0.069
ARM D	12.75	35.73	0.357	- - -	0.9	0.6	8.5	-	0.044

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.7	**
08.00	5.5	*****
08.15	5.8	******
08.30	1.8	**
08.45	1.0	*

```
 QUEUE AT ARM B
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           2.0  **
   07.45           4.3  ****
   08.00          35.4  ***********************************
   08.15          57.8  **********************************************************
   08.30           4.9  *****
   08.45           2.1  **



 QUEUE AT ARM C
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           0.6  *
   07.45           1.1  *
   08.00           2.5  ***
   08.15           2.7  ***
   08.30           1.3  *
   08.45           0.7  *



 QUEUE AT ARM D
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           0.5  *
   07.45           0.8  *
   08.00           1.5  *
   08.15           1.5  *
   08.30           0.9  *
   08.45           0.6  *

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
                ---------------------------------------------

 ----------------------------------------------------------------------------- T75
 I  ARM  I   TOTAL DEMAND  I     * QUEUEING *     I  * INCLUSIVE QUEUEING *  I
 I       I                 I      * DELAY *       I         * DELAY *        I
 I       I-----------------------------------------------------------------I
 I       I  (VEH)  (VEH/H) I  (MIN)     (MIN/VEH) I    (MIN)      (MIN/VEH)  I
 -----------------------------------------------------------------------------
 I   A   I 1587.0 I 1058.0 I   241.2 I    0.15    I     241.2  I     0.15    I
 I   B   I 3182.3 I 2121.5 I  1432.9 I    0.45    I    1432.9  I     0.45    I
 I   C   I 1047.5 I  698.3 I   130.5 I    0.12    I     130.5  I     0.12    I
 I   D   I 1398.4 I  932.3 I    85.0 I    0.06    I      85.0  I     0.06    I
 -----------------------------------------------------------------------------
 I  ALL  I 7215.2 I 4810.2 I  1889.6 I    0.26    I    1889.7  I     0.26    I
 -----------------------------------------------------------------------------
 * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

 END OF JOB

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A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\A4303_A426\
LCC LLITM Flows Feb 2016\PM 2026+Dev+SP+Imps.vai"
(drive-on-the-left) at 17:38:08 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: A4303/ A426 Roundabout PM Peak 2026 + Dev + SP + Imps
LOCATION: A4303_Rugby Road
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Rugby Road
ARM B - A4303 East
ARM C - A426 South
ARM D - A4303 West

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.30	10.50	41.00	22.00	74.00	44.0	0.570	38.181
ARM B	7.30	10.50	41.00	20.00	74.00	42.0	0.657	47.722
ARM C	3.20	10.50	40.00	22.00	74.00	48.0	0.557	37.146
ARM D	7.30	10.50	30.00	22.00	74.00	46.0	0.643	46.415

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.25	18.38	12.25
ARM B	15.00	45.00	75.00	22.85	34.28	22.85
ARM C	15.00	45.00	75.00	11.57	17.36	11.57
ARM D	15.00	45.00	75.00	17.41	26.12	17.41

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
16.45 - 18.15					
	ARM A	0.000	0.505	0.350	0.145
		0.0	495.0	343.0	142.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.280	0.000	0.246	0.474
		512.0	0.0	450.0	866.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.423	0.529	0.000	0.048
		392.0	490.0	0.0	44.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.128	0.803	0.069	0.000
		178.0	1119.0	96.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	12.30	26.04	0.472	- - -	0.0	0.9	12.9	-	0.072
ARM B	22.94	42.95	0.534	- - -	0.0	1.1	16.6	-	0.050
ARM C	11.62	26.56	0.437	- - -	0.0	0.8	11.2	-	0.066
ARM D	17.48	35.21	0.496	- - -	0.0	1.0	14.3	-	0.056

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.68	23.67	0.620	- - -	0.9	1.6	23.0	-	0.110
ARM B	27.39	42.02	0.652	- - -	1.1	1.8	26.8	-	0.068
ARM C	13.87	24.49	0.567	- - -	0.8	1.3	18.7	-	0.094
ARM D	20.87	33.01	0.632	- - -	1.0	1.7	24.5	-	0.082

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.98	20.52	0.876	- - -	1.6	6.0	75.4	-	0.324
ARM B	33.54	40.82	0.822	- - -	1.8	4.4	60.6	-	0.131
ARM C	16.99	21.71	0.783	- - -	1.3	3.4	46.1	-	0.201
ARM D	25.56	30.08	0.850	- - -	1.7	5.2	68.8	-	0.202

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.98	20.37	0.883	- - -	6.0	6.7	96.5	-	0.396
ARM B	33.54	40.73	0.824	- - -	4.4	4.5	67.3	-	0.139
ARM C	16.99	21.62	0.786	- - -	3.4	3.5	52.3	-	0.215
ARM D	25.56	29.97	0.853	- - -	5.2	5.5	80.7	-	0.224

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.68	23.46	0.626	- - -	6.7	1.7	28.9	-	0.123
ARM B	27.39	41.88	0.654	- - -	4.5	1.9	30.1	-	0.071
ARM C	13.87	24.36	0.569	- - -	3.5	1.3	21.3	-	0.098
ARM D	20.87	32.86	0.635	- - -	5.5	1.8	28.5	-	0.087

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	12.30	25.96	0.474	- - -	1.7	0.9	14.0	-	0.074
ARM B	22.94	42.91	0.535	- - -	1.9	1.2	17.8	-	0.050
ARM C	11.62	26.50	0.438	- - -	1.3	0.8	12.1	-	0.067
ARM D	17.48	35.13	0.498	- - -	1.8	1.0	15.4	-	0.057

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.6	**
17.30	6.0	******
17.45	6.7	*******
18.00	1.7	**
18.15	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	1.8	**
17.30	4.4	****
17.45	4.5	*****
18.00	1.9	**
18.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	3.4	***
17.45	3.5	****
18.00	1.3	*
18.15	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.7	**
17.30	5.2	*****
17.45	5.5	******
18.00	1.8	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1348.9	899.3	250.7	0.19	250.7	0.19
B	2516.1	1677.4	219.2	0.09	219.2	0.09
C	1274.6	849.7	161.8	0.13	161.8	0.13
D	1917.4	1278.2	232.1	0.12	232.1	0.12
ALL	7056.9	4704.6	863.7	0.12	863.8	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:17:42 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 AM Peak No Dev.vai"
(drive-on-the-left) at 17:43:40 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 AM Peak 2026 Without Development
LOCATION: M1 Junction 20
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	12.70	35.00	45.00	103.00	43.0	1.171	60.667
ARM B	3.50	7.70	51.00	45.00	176.00	40.0	0.749	42.425
ARM C	7.30	12.00	49.00	50.00	103.00	41.0	0.920	57.132
ARM D	7.30	8.90	7.00	50.00	176.00	35.0	1.125	55.156

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	16.0	120.0
B	27.0	0.0
C	33.0	120.0
D	6.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	13.91	20.87	13.91
ARM B	15.00	45.00	75.00	11.18	16.76	11.18
ARM C	15.00	45.00	75.00	10.39	15.58	10.39
ARM D	15.00	45.00	75.00	22.29	33.43	22.29

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.138	0.000	0.862
		0.0	154.0	0.0	959.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.291	0.000	0.144	0.565
		260.0	0.0	129.0	505.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.069	0.040	0.892
		0.0	57.0	33.0	741.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.401	0.178	0.421	0.000
		715.0	318.0	750.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	13.97	43.69	0.320	- - -	0.0	0.5	6.9	-	0.034
ARM B	11.22	26.10	0.430	- - -	0.0	0.7	10.9	-	0.067
ARM C	10.43	37.30	0.280	- - -	0.0	0.4	5.7	-	0.037
ARM D	22.37	50.23	0.445	- - -	0.0	0.8	11.8	-	0.036

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	16.68	40.37	0.413	- - -	0.5	0.7	10.3	-	0.042
ARM B	13.39	22.90	0.585	- - -	0.7	1.4	20.0	-	0.104
ARM C	12.45	33.41	0.373	- - -	0.4	0.6	8.7	-	0.048
ARM D	26.71	49.27	0.542	- - -	0.8	1.2	17.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	20.42	35.83	0.570	- - -	0.7	1.3	19.1	-	0.065
ARM B	16.41	18.54	0.885	- - -	1.4	6.3	77.2	-	0.368
ARM C	15.25	28.33	0.538	- - -	0.6	1.2	16.8	-	0.076
ARM D	32.72	48.05	0.681	- - -	1.2	2.1	30.5	-	0.065

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.42	35.79	0.571	- - -	1.3	1.3	19.8	-	0.065
ARM B	16.41	18.49	0.887	- - -	6.3	6.9	100.1	-	0.450
ARM C	15.25	28.07	0.543	- - -	1.2	1.2	17.6	-	0.078
ARM D	32.72	47.95	0.682	- - -	2.1	2.1	31.8	-	0.066

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	16.68	40.30	0.414	- - -	1.3	0.7	10.8	-	0.042
ARM B	13.39	22.84	0.587	- - -	6.9	1.4	24.8	-	0.115
ARM C	12.45	33.05	0.377	- - -	1.2	0.6	9.3	-	0.049
ARM D	26.71	49.13	0.544	- - -	2.1	1.2	18.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	13.97	43.63	0.320	- - -	0.7	0.5	7.2	-	0.034
ARM B	11.22	26.04	0.431	- - -	1.4	0.8	11.8	-	0.068
ARM C	10.43	37.18	0.280	- - -	0.6	0.4	5.9	-	0.037
ARM D	22.37	50.20	0.446	- - -	1.2	0.8	12.3	-	0.036

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.7	*
08.00	1.3	*
08.15	1.3	*
08.30	0.7	*
08.45	0.5	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.7	*
07.45	1.4	*
08.00	6.3	******
08.15	6.9	*******
08.30	1.4	*
08.45	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.6	*
08.00	1.2	*
08.15	1.2	*
08.30	0.6	*
08.45	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.2	*
08.00	2.1	**
08.15	2.1	**
08.30	1.2	*
08.45	0.8	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1532.0	1021.3	74.2	0.05	74.2	0.05
B	1230.5	820.4	244.7	0.20	244.7	0.20
C	1143.8	762.5	64.0	0.06	64.0	0.06
D	2454.2	1636.1	122.2	0.05	122.2	0.05
ALL	6360.5	4240.3	505.0	0.08	505.1	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

============ end of file ============

[Printed at 16:18:18 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 PM Peak No Dev.vai"
(drive-on-the-left) at 17:44:12 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 PM Peak 2026 Without Development
LOCATION: M1 Junction 20
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	12.70	35.00	45.00	103.00	43.0	1.217	61.363
ARM B	3.50	7.70	51.00	45.00	176.00	40.0	0.817	43.817
ARM C	7.30	12.00	49.00	50.00	103.00	41.0	1.027	58.756
ARM D	7.30	8.90	7.00	50.00	176.00	35.0	1.138	55.388

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	13.0	120.0
B	21.0	0.0
C	26.0	120.0
D	5.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.23	16.84	11.23
ARM B	15.00	45.00	75.00	9.40	14.10	9.40
ARM C	15.00	45.00	75.00	10.96	16.44	10.96
ARM D	15.00	45.00	75.00	24.16	36.24	24.16

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.285	0.000	0.715
		0.0	256.0	0.0	642.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.215	0.000	0.104	0.681
		162.0	0.0	78.0	512.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.099	0.029	0.872
		0.0	87.0	25.0	765.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.482	0.273	0.245	0.000
		932.0	528.0	473.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	11.27	44.41	0.254	- - -	0.0	0.3	5.0	-	0.030
ARM B	9.44	32.16	0.293	- - -	0.0	0.4	6.1	-	0.044
ARM C	11.00	41.84	0.263	- - -	0.0	0.4	5.3	-	0.032
ARM D	24.25	51.48	0.471	- - -	0.0	0.9	13.0	-	0.037

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	13.45	41.09	0.327	- - -	0.3	0.5	7.2	-	0.036
ARM B	11.27	29.88	0.377	- - -	0.4	0.6	8.9	-	0.054
ARM C	13.14	38.52	0.341	- - -	0.4	0.5	7.6	-	0.039
ARM D	28.96	50.72	0.571	- - -	0.9	1.3	19.4	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	16.48	36.57	0.451	- - -	0.5	0.8	12.0	-	0.050
ARM B	13.80	26.76	0.516	- - -	0.6	1.1	15.3	-	0.077
ARM C	16.09	33.99	0.473	- - -	0.5	0.9	13.1	-	0.056
ARM D	35.47	49.68	0.714	- - -	1.3	2.5	35.4	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	16.48	36.52	0.451	- - -	0.8	0.8	12.3	-	0.050
ARM B	13.80	26.73	0.516	- - -	1.1	1.1	15.9	-	0.077
ARM C	16.09	33.95	0.474	- - -	0.9	0.9	13.4	-	0.056
ARM D	35.47	49.67	0.714	- - -	2.5	2.5	37.1	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	13.45	41.02	0.328	- - -	0.8	0.5	7.5	-	0.036
ARM B	11.27	29.84	0.378	- - -	1.1	0.6	9.4	-	0.054
ARM C	13.14	38.46	0.342	- - -	0.9	0.5	7.9	-	0.040
ARM D	28.96	50.70	0.571	- - -	2.5	1.3	20.6	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	11.27	44.35	0.254	- - -	0.5	0.3	5.2	-	0.030
ARM B	9.44	32.12	0.294	- - -	0.6	0.4	6.4	-	0.044
ARM C	11.00	41.77	0.263	- - -	0.5	0.4	5.4	-	0.033
ARM D	24.25	51.47	0.471	- - -	1.3	0.9	13.7	-	0.037

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	
17.30	0.8	*
17.45	0.8	*
18.00	0.5	
18.15	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.1	*
17.45	1.1	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.9	*
17.45	0.9	*
18.00	0.5	*
18.15	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.3	*
17.30	2.5	**
17.45	2.5	**
18.00	1.3	*
18.15	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1236.0	824.0	49.1	0.04	49.1	0.04
B	1035.1	690.0	61.9	0.06	61.9	0.06
C	1207.1	804.8	52.8	0.04	52.8	0.04
D	2660.6	1773.8	139.2	0.05	139.2	0.05
ALL	6138.9	4092.6	303.0	0.05	303.1	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:18:40 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev.vai"
(drive-on-the-left) at 17:43:50 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 AM Peak 2026 With Development
LOCATION: M1 Junction 20
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	12.70	35.00	45.00	103.00	43.0	1.171	60.667
ARM B	3.50	7.70	51.00	45.00	176.00	40.0	0.749	42.425
ARM C	7.30	12.00	49.00	50.00	103.00	41.0	0.920	57.132
ARM D	7.30	8.90	7.00	50.00	176.00	35.0	1.125	55.156

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	16.0	120.0
B	27.0	0.0
C	33.0	120.0
D	6.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.75	22.13	14.75
ARM B	15.00	45.00	75.00	11.20	16.80	11.20
ARM C	15.00	45.00	75.00	10.76	16.14	10.76
ARM D	15.00	45.00	75.00	23.06	34.59	23.06

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.129	0.000	0.871
		0.0	152.0	0.0	1028.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.287	0.000	0.142	0.571
		257.0	0.0	127.0	512.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.072	0.038	0.890
		0.0	62.0	33.0	766.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.399	0.177	0.424	0.000
		737.0	326.0	782.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	14.81	43.03	0.344	- - -	0.0	0.5	7.7	-	0.035
ARM B	11.24	25.15	0.447	- - -	0.0	0.8	11.6	-	0.071
ARM C	10.80	36.46	0.296	- - -	0.0	0.4	6.2	-	0.039
ARM D	23.15	50.21	0.461	- - -	0.0	0.9	12.5	-	0.037

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	17.68	39.58	0.447	- - -	0.5	0.8	11.8	-	0.046
ARM B	13.42	21.77	0.617	- - -	0.8	1.6	22.5	-	0.118
ARM C	12.90	32.42	0.398	- - -	0.4	0.7	9.7	-	0.051
ARM D	27.64	49.24	0.561	- - -	0.9	1.3	18.7	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	21.65	34.87	0.621	- - -	0.8	1.6	23.4	-	0.075
ARM B	16.44	17.16	0.958	- - -	1.6	10.9	118.9	-	0.584
ARM C	15.80	27.33	0.578	- - -	0.7	1.4	19.5	-	0.086
ARM D	33.86	48.09	0.704	- - -	1.3	2.3	33.8	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	21.65	34.82	0.622	- - -	1.6	1.6	24.4	-	0.076
ARM B	16.44	17.11	0.961	- - -	10.9	14.0	189.2	-	0.888
ARM C	15.80	26.96	0.586	- - -	1.4	1.4	20.8	-	0.090
ARM D	33.86	47.95	0.706	- - -	2.3	2.4	35.5	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	17.68	39.50	0.448	- - -	1.6	0.8	12.5	-	0.046
ARM B	13.42	21.69	0.619	- - -	14.0	1.7	37.1	-	0.149
ARM C	12.90	31.67	0.407	- - -	1.4	0.7	10.6	-	0.054
ARM D	27.64	48.95	0.565	- - -	2.4	1.3	20.1	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	14.81	42.97	0.345	- - -	0.8	0.5	8.0	-	0.036
ARM B	11.24	25.09	0.448	- - -	1.7	0.8	12.7	-	0.073
ARM C	10.80	36.33	0.297	- - -	0.7	0.4	6.5	-	0.039
ARM D	23.15	50.17	0.461	- - -	1.3	0.9	13.1	-	0.037

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.8	*
08.00	1.6	**
08.15	1.6	**
08.30	0.8	*
08.45	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.6	**
08.00	10.9	***********
08.15	14.0	**************
08.30	1.7	**
08.45	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.4	
07.45	0.7	*
08.00	1.4	*
08.15	1.4	*
08.30	0.7	*
08.45	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.9	*
07.45	1.3	*
08.00	2.3	**
08.15	2.4	**
08.30	1.3	*
08.45	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1624.2	1082.8	87.9	0.05	87.9	0.05
B	1233.3	822.2	392.2	0.32	392.2	0.32
C	1185.1	790.1	73.3	0.06	73.3	0.06
D	2539.5	1693.0	133.7	0.05	133.7	0.05
ALL	6582.1	4388.0	687.0	0.10	687.1	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:19:03 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev.vai"
(drive-on-the-left) at 17:44:22 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 PM Peak 2026 With Development
LOCATION: M1 Junction 20
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	12.70	35.00	45.00	103.00	43.0	1.217	61.363
ARM B	3.50	7.70	51.00	45.00	176.00	40.0	0.817	43.817
ARM C	7.30	12.00	49.00	50.00	103.00	41.0	1.027	58.756
ARM D	7.30	8.90	7.00	50.00	176.00	35.0	1.138	55.388

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	13.0	120.0
B	21.0	0.0
C	26.0	120.0
D	5.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.59	17.38	11.59
ARM B	15.00	45.00	75.00	9.41	14.12	9.41
ARM C	15.00	45.00	75.00	11.16	16.74	11.16
ARM D	15.00	45.00	75.00	25.50	38.25	25.50

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TIME	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.274	0.000	0.726
		0.0	254.0	0.0	673.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.212	0.000	0.102	0.685
		160.0	0.0	77.0	516.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.097	0.028	0.875
		0.0	87.0	25.0	781.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.495	0.262	0.243	0.000
		1010.0	535.0	495.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	11.63	43.97	0.265	- - -	0.0	0.4	5.3	-	0.031
ARM B	9.45	31.62	0.299	- - -	0.0	0.4	6.2	-	0.045
ARM C	11.20	41.41	0.271	- - -	0.0	0.4	5.5	-	0.033
ARM D	25.60	51.51	0.497	- - -	0.0	1.0	14.4	-	0.038

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	13.89	40.57	0.342	- - -	0.4	0.5	7.7	-	0.037
ARM B	11.28	29.23	0.386	- - -	0.4	0.6	9.2	-	0.056
ARM C	13.38	38.01	0.352	- - -	0.4	0.5	8.0	-	0.041
ARM D	30.57	50.75	0.602	- - -	1.0	1.5	22.0	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.01	35.93	0.473	- - -	0.5	0.9	13.1	-	0.053
ARM B	13.82	25.97	0.532	- - -	0.6	1.1	16.3	-	0.082
ARM C	16.39	33.38	0.491	- - -	0.5	1.0	14.0	-	0.059
ARM D	37.43	49.72	0.753	- - -	1.5	3.0	42.6	-	0.080

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.01	35.87	0.474	- - -	0.9	0.9	13.4	-	0.053
ARM B	13.82	25.94	0.533	- - -	1.1	1.1	16.9	-	0.083
ARM C	16.39	33.33	0.492	- - -	1.0	1.0	14.4	-	0.059
ARM D	37.43	49.71	0.753	- - -	3.0	3.0	45.1	-	0.081

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	13.89	40.48	0.343	- - -	0.9	0.5	8.0	-	0.038
ARM B	11.28	29.18	0.387	- - -	1.1	0.6	9.7	-	0.056
ARM C	13.38	37.94	0.353	- - -	1.0	0.5	8.3	-	0.041
ARM D	30.57	50.74	0.602	- - -	3.0	1.5	23.6	-	0.050

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	11.63	43.91	0.265	- - -	0.5	0.4	5.5	-	0.031
ARM B	9.45	31.58	0.299	- - -	0.6	0.4	6.5	-	0.045
ARM C	11.20	41.35	0.271	- - -	0.5	0.4	5.7	-	0.033
ARM D	25.60	51.50	0.497	- - -	1.5	1.0	15.2	-	0.039

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.9	*
17.45	0.9	*
18.00	0.5	*
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.1	*
17.45	1.1	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	1.0	*
17.45	1.0	*
18.00	0.5	*
18.15	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.5	**
17.30	3.0	***
17.45	3.0	***
18.00	1.5	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1275.9	850.6	53.0	0.04	53.0	0.04
B	1036.4	691.0	65.0	0.06	65.0	0.06
C	1229.1	819.4	55.9	0.05	55.9	0.05
D	2807.9	1871.9	162.9	0.06	162.9	0.06
ALL	6349.5	4233.0	336.8	0.05	336.8	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

==================== end of file ====================

[Printed at 16:19:26 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 AM Peak+Dev+SP.vai"
(drive-on-the-left) at 17:44:01 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 AM Peak 2026 With Development + SP
LOCATION: M1 Junction 20
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	13.00	6.50	50.00	98.00	42.0	1.005	48.972
ARM B	3.25	9.00	150.00	70.00	100.00	45.0	0.846	49.806
ARM C	6.00	11.00	70.00	70.00	100.00	41.0	0.879	53.264
ARM D	7.00	8.00	2.00	70.00	100.00	45.0	1.033	49.758

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	16.0	120.0
B	27.0	0.0
C	33.0	120.0
D	6.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	15.18	22.76	15.18
ARM B	15.00	45.00	75.00	11.05	16.58	11.05
ARM C	15.00	45.00	75.00	10.91	16.37	10.91
ARM D	15.00	45.00	75.00	23.19	34.78	23.19

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.124	0.000	0.876
		0.0	151.0	0.0	1063.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.291	0.000	0.146	0.563
		257.0	0.0	129.0	498.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.071	0.038	0.891
		0.0	62.0	33.0	778.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.404	0.175	0.422	0.000
		749.0	324.0	782.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	15.23	33.88	0.450	- - -	0.0	0.8	11.9	-	0.053
ARM B	11.09	29.94	0.371	- - -	0.0	0.6	8.6	-	0.053
ARM C	10.95	33.28	0.329	- - -	0.0	0.5	7.2	-	0.045
ARM D	23.28	45.21	0.515	- - -	0.0	1.1	15.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	18.19	30.92	0.588	- - -	0.8	1.4	20.5	-	0.078
ARM B	13.24	26.05	0.509	- - -	0.6	1.0	14.9	-	0.078
ARM C	13.08	29.37	0.445	- - -	0.5	0.8	11.7	-	0.061
ARM D	27.79	44.32	0.627	- - -	1.1	1.7	24.3	-	0.060

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	22.28	26.92	0.827	- - -	1.4	4.5	59.5	-	0.198
ARM B	16.22	20.86	0.778	- - -	1.0	3.3	44.6	-	0.203
ARM C	16.02	24.23	0.661	- - -	0.8	1.9	27.1	-	0.120
ARM D	34.04	43.15	0.789	- - -	1.7	3.6	50.8	-	0.107

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	22.28	26.84	0.830	- - -	4.5	4.7	68.8	-	0.217
ARM B	16.22	20.67	0.785	- - -	3.3	3.5	51.4	-	0.223
ARM C	16.02	23.98	0.668	- - -	1.9	2.0	29.3	-	0.125
ARM D	34.04	43.10	0.790	- - -	3.6	3.7	54.9	-	0.110

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	18.19	30.81	0.590	- - -	4.7	1.5	23.3	-	0.082
ARM B	13.24	25.79	0.514	- - -	3.5	1.1	16.9	-	0.082
ARM C	13.08	29.03	0.451	- - -	2.0	0.8	12.8	-	0.063
ARM D	27.79	44.25	0.628	- - -	3.7	1.7	26.6	-	0.062

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	15.23	33.81	0.451	- - -	1.5	0.8	12.7	-	0.054
ARM B	11.09	29.82	0.372	- - -	1.1	0.6	9.1	-	0.054
ARM C	10.95	33.16	0.330	- - -	0.8	0.5	7.6	-	0.045
ARM D	23.28	45.19	0.515	- - -	1.7	1.1	16.4	-	0.046

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.4	*
08.00	4.5	****
08.15	4.7	*****
08.30	1.5	*
08.45	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	1.0	*
08.00	3.3	***
08.15	3.5	****
08.30	1.1	*
08.45	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.8	*
08.00	1.9	**
08.15	2.0	**
08.30	0.8	*
08.45	0.5	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.1	*
07.45	1.7	**
08.00	3.6	****
08.15	3.7	****
08.30	1.7	**
08.45	1.1	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1671.0	1114.0	196.6	0.12	196.6	0.12
B	1216.8	811.2	145.6	0.12	145.6	0.12
C	1201.6	801.1	95.7	0.08	95.7	0.08
D	2553.3	1702.2	188.4	0.07	188.4	0.07
ALL	6642.6	4428.4	626.2	0.09	626.3	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:19:47 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Nine Mile Ride Email: software@trl.co.uk
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RG40 3GA,UK

Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\M1 Junction 20\
LCC LLITM Flows Feb 2016\2026 PM Peak+Dev+SP.vai"
(drive-on-the-left) at 17:44:33 on Monday, 15 February 2016

FILE PROPERTIES
****

RUN TITLE: M1 Junction 20 PM Peak 2026 With Development + SP
LOCATION: M1 Junction 20
DATE: 14/07/31
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - M1 North
ARM B - A4304
ARM C - M1 South
ARM D - A4303

GEOMETRIC DATA

GRADE SEPARATED / MOTORWAY FACTORS APPLY TO ALL ARMS

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	13.00	6.50	50.00	98.00	42.0	1.044	49.668
ARM B	3.25	9.00	150.00	70.00	100.00	45.0	0.923	51.198
ARM C	6.00	11.00	70.00	70.00	100.00	41.0	0.982	54.888
ARM D	7.00	8.00	2.00	70.00	100.00	45.0	1.045	49.990

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

DATA FOR VERY LARGE ROUNDABOUTS

ARM	CIRFLO	SEP
A	13.0	120.0
B	21.0	0.0
C	26.0	120.0
D	5.0	0.0

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.81	17.72	11.81
ARM B	15.00	45.00	75.00	9.30	13.95	9.30
ARM C	15.00	45.00	75.00	11.16	16.74	11.16
ARM D	15.00	45.00	75.00	26.14	39.21	26.14

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					
	ARM A	0.000	0.270	0.000	0.730
		0.0	255.0	0.0	690.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.210	0.000	0.102	0.688
		156.0	0.0	76.0	512.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.097	0.028	0.875
		0.0	87.0	25.0	781.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.503	0.257	0.240	0.000
		1052.0	537.0	502.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	11.86	34.64	0.342	- - -	0.0	0.5	7.6	-	0.044
ARM B	9.34	37.15	0.251	- - -	0.0	0.3	4.9	-	0.036
ARM C	11.20	38.21	0.293	- - -	0.0	0.4	6.1	-	0.037
ARM D	26.24	46.49	0.564	- - -	0.0	1.3	18.8	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	14.16	31.70	0.447	- - -	0.5	0.8	11.8	-	0.057
ARM B	11.15	34.40	0.324	- - -	0.3	0.5	7.1	-	0.043
ARM C	13.38	34.94	0.383	- - -	0.4	0.6	9.1	-	0.046
ARM D	31.33	45.80	0.684	- - -	1.3	2.1	30.9	-	0.069

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	17.34	27.75	0.625	- - -	0.8	1.6	23.6	-	0.095
ARM B	13.65	30.68	0.445	- - -	0.5	0.8	11.7	-	0.059
ARM C	16.39	30.49	0.537	- - -	0.6	1.2	16.8	-	0.070
ARM D	38.37	44.86	0.855	- - -	2.1	5.5	75.1	-	0.144

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	17.34	27.63	0.628	- - -	1.6	1.7	24.9	-	0.097
ARM B	13.65	30.59	0.446	- - -	0.8	0.8	12.0	-	0.059
ARM C	16.39	30.43	0.538	- - -	1.2	1.2	17.3	-	0.071
ARM D	38.37	44.85	0.855	- - -	5.5	5.7	84.8	-	0.153

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	14.16	31.54	0.449	- - -	1.7	0.8	12.6	-	0.058
ARM B	11.15	34.28	0.325	- - -	0.8	0.5	7.4	-	0.043
ARM C	13.38	34.86	0.384	- - -	1.2	0.6	9.6	-	0.047
ARM D	31.33	45.79	0.684	- - -	5.7	2.2	34.9	-	0.071

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	11.86	34.56	0.343	- - -	0.8	0.5	8.0	-	0.044
ARM B	9.34	37.08	0.252	- - -	0.5	0.3	5.1	-	0.036
ARM C	11.20	38.14	0.294	- - -	0.6	0.4	6.3	-	0.037
ARM D	26.24	46.47	0.565	- - -	2.2	1.3	20.1	-	0.050

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.8	*
17.30	1.6	**
17.45	1.7	**
18.00	0.8	*
18.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	
17.30	0.8	*
17.45	0.8	*
18.00	0.5	
18.15	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.2	*
17.45	1.2	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.3	*
17.15	2.1	**
17.30	5.5	******
17.45	5.7	******
18.00	2.2	**
18.15	1.3	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * * DELAY *		* INCLUSIVE QUEUEING * * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1300.7	867.1	88.4	0.07	88.4	0.07
B	1024.1	682.7	48.2	0.05	48.2	0.05
C	1229.1	819.4	65.2	0.05	65.3	0.05
D	2878.1	1918.7	264.5	0.09	264.5	0.09
ALL	6432.0	4288.0	466.4	0.07	466.4	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

==================== end of file ====================

[Printed at 16:20:45 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

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Run with file:- "2026 AM PEAK NO DEV.DAT" at 15:36 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 AM Peak Without Development

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	60
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 11409 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	M69 Junction 1 2026 AM Peak Without Development

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	60	60	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0

56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
72)=	32	10	658	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	196	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	101	0	60	101	43	0	0	0	0	0	0	0	0
75)=	32	13	130	0	60	130	43	0	0	0	0	0	0	0	0
76)=	32	14	292	0	60	292	43	0	0	0	0	0	0	0	0
77)=	32	15	244	0	61	244	43	0	0	0	0	0	0	0	0
78)=	32	16	226	0	64	226	43	0	0	0	0	0	0	0	0
79)=	32	17	88	0	63	88	43	0	0	0	0	0	0	0	0
80)=	32	18	245	0	61	245	43	0	0	0	0	0	0	0	0
81)=	32	19	226	0	64	226	43	0	0	0	0	0	0	0	0
82)=	32	20	393	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	856	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	297	0	10	297	43	0	0	0	0	0	0	0	0
85)=	32	23	196	0	11	196	43	0	0	0	0	0	0	0	0
86)=	32	24	422	0	14	292	43	13	130	43	0	0	0	0	0
87)=	32	25	174	0	192	174	43	0	0	0	0	0	0	0	0
88)=	32	26	62	0	191	62	43	0	0	0	0	0	0	0	0
89)=	32	30	159	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	1369	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	382	0	20	382	43	0	0	0	0	0	0	0	0
92)=	32	33	564	0	21	564	43	0	0	0	0	0	0	0	0
93)=	32	34	292	0	21	292	43	0	0	0	0	0	0	0	0
94)=	32	35	292	0	24	292	43	0	0	0	0	0	0	0	0
95)=	32	36	33	0	25	33	43	0	0	0	0	0	0	0	0
96)=	32	37	196	0	23	196	43	0	0	0	0	0	0	0	0
97)=	32	40	395	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	514	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	627	0	31	627	43	0	0	0	0	0	0	0	0
100)=	32	43	742	0	31	742	43	0	0	0	0	0	0	0	0
101)=	32	44	564	0	33	564	43	0	0	0	0	0	0	0	0
102)=	32	45	196	0	37	196	43	0	0	0	0	0	0	0	0
103)=	32	46	292	0	34	292	43	0	0	0	0	0	0	0	0
104)=	32	50	253	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	663	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	338	0	40	338	43	0	0	0	0	0	0	0	0
107)=	32	53	292	0	46	292	43	0	0	0	0	0	0	0	0
108)=	32	54	514	0	41	514	43	0	0	0	0	0	0	0	0
109)=	32	55	339	0	42	339	43	0	0	0	0	0	0	0	0
110)=	32	56	129	0	44	129	43	0	0	0	0	0	0	0	0
111)=	32	57	10	0	45	10	43	0	0	0	0	0	0	0	0
112)=	32	58	654	0	43	654	43	0	0	0	0	0	0	0	0
113)=	32	59	88	0	43	88	43	0	0	0	0	0	0	0	0
114)=	32	60	542	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	909	0	51	663	43	50	246	43	0	0	0	0	0
116)=	32	62	292	0	53	292	43	0	0	0	0	0	0	0	0
117)=	32	63	742	0	58	654	43	59	88	43	0	0	0	0	0
118)=	32	64	514	0	54	514	43	0	0	0	0	0	0	0	0
119)=	32	191	62	0	64	62	43	0	0	0	0	0	0	0	0
120)=	32	192	174	0	61	174	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

60 SECOND CYCLE 60 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	21								
2	2	0	33								
3	2	0	28								
4	2	0	16								
5	2	0	18								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	658	4100	60	16.7	23.3	3.5 +	0.8	(60.6)*	90	(15.2)	10		36.4	1	6	21
11	196	2120	35	16.7	22.7	1.0 +	0.3	(17.5)*	85	(4.3)	3		10.5	1	6	21
12	101	1892S	61	9.2	11.1	0.2 +	0.1	(4.4)*	57	(1.5)	6	(0.0)*	23.6	1	27	0
13	130	2029S	52	9.2	9.4	0.2 +	0.1	(4.8)*	48	(1.6)	5	(0.0)*	25.8	1	27	0
14	292	2029S	46	9.2	9.4	0.5 +	0.2	(10.9)*	50	(3.7)	5	(0.0)*	58.1	1	27	0
15	244	12L	61	9.2	7.9	0.2 +	0.3	(7.6)	76	(4.8)	6		12.4	1	27	0
16	226	12L	61	9.2	4.8	0.0 +	0.3	(4.3)	9	(0.5)	6		4.8	1	27	0
17	88	12L	61	9.2	16.3	0.3 +	0.1	(5.7)	68	(1.6)	6		7.2	1	27	0
18	245	13L	52	9.2	5.5	0.1 +	0.2	(5.3)	58	(3.6)	5		8.9	1	27	0
19	226	13L	52	9.2	3.7	0.0 +	0.2	(3.3)	7	(0.4)	5		3.7	1	27	0
20	393	2015	42	16.7	13.9	1.2 +	0.4	(21.5)*	67	(6.8)	5		12.9	2	6	33
21	856	2772f	66	16.7	14.8	2.5 +	1.0	(49.9)*	69	(15.1)	10		29.9	2	6	33
22	297	3989S	65	8.4	26.7	1.9 +	0.3	(31.3)*	106	(8.1)	15	(0.9)*	206.0	2	39	0
23	196	2063	26	8.4	27.2	1.3 +	0.2	(21.0)*	105	(5.3)	3	(0.0)*	110.4	2	39	0
24	422	22L	65	8.4	14.8	1.3 +	0.4	(24.6)	85	(9.3)	15	+	33.9	2	39	0
25	174	22L	65	8.4	10.5	0.3 +	0.2	(7.2)	94	(4.2)	15	+	11.5	2	39	0
26	62	22L	65	8.4	9.5	0.1 +	0.1	(2.3)	34	(0.5)	15	+	2.9	2	39	0
30	159	2015	21	16.7	15.3	0.5 +	0.1	(9.6)*	68	(2.8)	2		5.8	3	6	28
31	1369	4270	84	16.7	23.4	6.4 +	2.5	(126.3)*	96	(33.9)	23		75.8	3	6	28
32	382	1926S	82	10.9	28.0	1.8 +	1.2	(42.2)*	115	(11.3)	11	(1.6)*	293.6	3	34	0
33	563	2063S	82	10.9	26.1	2.5 +	1.6	(58.0)*	115	(16.7)	14	(0.5)*	328.7	3	34	0
34	293	2063	32	10.9	14.5	0.9 +	0.2	(16.7)*	93	(7.0)	5	(0.0)*	90.7	3	34	0
35	292	32L	82	10.9	22.2	0.9 +	0.9	(25.6)	58	(4.4)	11	+	30.0	3	34	0
36	33	32L	82	10.9	23.4	0.1 +	0.1	(3.0)	58	(0.5)	11	+	3.5	3	34	0
37	196	33L	82	10.9	12.6	0.1 +	0.6	(9.8)	42	(2.1)	14	+	11.9	3	34	0
40	395	1995	108	16.7	207.1	3.1 +	19.7	(322.6)*	247	(25.1)	26		193.6	4	6	16
41	514	4230	66	16.7	29.6	3.3 +	1.0	(60.1)*	100	(13.2)	9		36.0	4	6	16
42	627	1941S	110	11.7	190.6	2.7 +	30.5	(471.3)*	253	(40.9)	92	(70.6)*	5575.0	4	22	0
43	742	2077S	77	11.7	9.7	0.8 +	1.2	(28.3)*	87	(16.7)	14	(0.3)*	171.8	4	22	0
44	563	42L	110	11.7	189.2	2.2 +	27.4	(420.1)	227	(33.0)	92	+	453.1	4	22	0
45	196	42L	110	11.7	198.0	1.2 +	9.5	(153.1)	252	(12.7)	92	+	165.8	4	22	0
46	293	43L	77	11.7	6.6	0.1 +	0.5	(7.7)	15	(1.1)	14	+	8.8	4	22	0
50	253	1975	59	16.7	31.3	1.5 +	0.7	(31.3)*	102	(6.6)	4		6.3	5	6	18
51	663	4250	72	16.7	28.7	4.0 +	1.3	(75.1)*	100	(17.0)	11		15.0	5	6	18
52	313<	1936S	64	10.5	14.4	0.9 +	0.4	(17.8)*	97	(8.4)	9	(0.0)*	97.4	5	24	0
53	293	2072S	74	10.5	15.8	0.8 +	0.4	(18.3)*	59	(4.5)	4	(0.0)*	95.8	5	24	0
54	514	4144S	24	10.5	8.1	1.0 +	0.1	(16.5)*	92	(12.2)	9	(0.0)*	94.8	5	24	0
55	337	52L	64	10.5	8.7	0.4 +	0.4	(11.5)	28	(2.5)	9		14.0	5	24	0
56	101<	52L	64	10.5	13.7	0.3 +	0.1	(5.5)	60	(2.0)	9		7.5	5	24	0
57	10	52L	64	10.5	5.6	0.0 +	0.0	(0.2)	22	(0.1)	9		0.3	5	24	0
58	654	53L	74	10.5	5.7	0.1 +	1.0	(14.7)	10	(1.7)	4		16.4	5	24	0
59	88	54L	24	10.5	1.2	0.0 +	0.0	(0.4)	3	(0.1)	9		0.5	5	24	0
60	542	2108	55	10.5	5.6	0.2 +	0.6	(11.9)	43	(6.0)	3		17.9			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q)	RANDOM+ OVERSAT (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	909	6000S	41	10.5	0.5	0.0 +	0.1	(1.8)	1	(0.2)	0		2.0		
62	293	61L	41	10.5	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7		
63	742	61L	41	10.5	0.5	0.0 +	0.1	(1.5)	1	(0.2)	0		1.6		
64	514	61L	41	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1		
191	62	14L	46	9.2	3.3	0.0 +	0.0	(0.8)	7	(0.1)	5		0.9	1	27 0
192	175	14L	46	9.2	5.9	0.1 +	0.1	(4.1)	65	(2.9)	5		7.0	1	27 0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	219.9	12.0	50.9	107.5	(4863.7)	+	(232.6)	+	(3325.8)	=	8422.1	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	141.6	+	182.2	+	169.8	=	493.6

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 49

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9
- (SECONDS)

1	2	9	30
2	2	0	33
3	2	0	28
4	2	51	7
5	2	0	18

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	220.4	12.0	51.5	107.5	(4804.8)	+	(230.0)	+	(3267.2)	=	8302.1	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 387

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24
- (SECONDS)

1	2	33	54
2	2	24	57
3	2	0	28
4	2	51	7
5	2	48	6

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	220.0	12.0	51.0	107.6	(4527.0)	+	(227.2)	+	(3320.8)	=	8075.0	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 414

```
     60 SECOND CYCLE  60 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    9  24  -1
  - (SECONDS)

     1       2      38      58
     2       2      30      57
     3       2       9      28
     4       2      53       7
     5       2      50       5

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED         DELAY   OVERSAT     OF           OF           EXCESS        INDEX
                                                   DELAY    DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

  2641.0         374.6        7.1         50.0    263.1    (3209.8) + (  113.4)  +  ( 139.6)   =    3462.8      TOTALS

 NO. OF ENTRIES TO SUBPT  =   49
 NO. OF LINKS RECALCULATED= 1268



     60 SECOND CYCLE  60 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    9  24  -1   9
  - (SECONDS)

     1       2      47       7
     2       2      21      48
     3       2       9      28
     4       2       2      16
     5       2      50       5

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED         DELAY   OVERSAT     OF           OF           EXCESS        INDEX
                                                   DELAY    DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

  2641.0         372.9        7.1         48.4    263.1    (3100.4) + (   97.8)  +  (  42.6)   =    3240.9      TOTALS

 NO. OF ENTRIES TO SUBPT  =   12
 NO. OF LINKS RECALCULATED=  434



     60 SECOND CYCLE  60 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    9  24  -1   9  24
  - (SECONDS)

     1       2      47       7
     2       2      21      48
     3       2       9      28
     4       2       2      16
     5       2      50       5

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED         DELAY   OVERSAT     OF           OF           EXCESS        INDEX
                                                   DELAY    DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

  2641.0         372.9        7.1         48.4    263.1    (3100.4) + (   97.8)  +  (  42.6)   =    3240.9      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  417
```

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1
- (SECONDS)

1	2	44	4
2	2	22	49
3	2	8	27
4	2	2	16
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	371.8	7.1	47.3	263.1	(3075.3)	+	(88.1)	+	(33.8)	=	3197.3	TOTALS

NO. OF ENTRIES TO SUBPT = 15
NO. OF LINKS RECALCULATED= 544

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1 -1
- (SECONDS)

1	2	46	3
2	2	23	48
3	2	6	27
4	2	3	16
5	2	49	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	320.5	8.2	46.7	212.4	(2731.3)	+	(92.8)	+	(60.8)	=	2884.8	TOTALS

NO. OF ENTRIES TO SUBPT = 24
NO. OF LINKS RECALCULATED= 868

60 SECOND CYCLE 60 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 9 24 -1 9 24 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	47	4								
2	2	22	47								
3	2	6	27								
4	2	3	16								
5	2	50	6								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	658	4100	80	16.7	33.7	4.2 + 2.0	(87.5)*	108	(18.4)	12		52.5	1	53	4
11	196	2120	46	16.7	29.0	1.2 + 0.4	(22.4)*	96	(4.9)	3		13.5	1	53	4
12	101	1892S	54	9.2	8.4	0.1 + 0.1	(3.3)*	46	(1.2)	4	(0.0)*	17.8	1	10	47
13	130	2029S	47	9.2	7.4	0.2 + 0.1	(3.8)*	42	(1.4)	2	(0.0)*	20.4	1	10	47
14	292	2029S	41	9.2	7.2	0.4 + 0.2	(8.3)*	43	(3.3)	3	(0.0)*	44.9	1	10	47
15	244	12L	54	9.2	3.4	0.0 + 0.2	(3.3)	12	(0.8)	4		4.1	1	10	47
16	226	12L	54	9.2	7.0	0.2 + 0.2	(6.3)	26	(1.5)	4		7.8	1	10	47
17	73<	12L	54	9.2	12.1	0.2 + 0.1	(3.5)	68	(1.5)	4		5.0	1	10	47
18	245	13L	47	9.2	2.7	0.0 + 0.2	(2.6)	6	(0.4)	2		2.9	1	10	47
19	226	13L	47	9.2	6.4	0.2 + 0.2	(5.7)	25	(1.4)	2		7.1	1	10	47
20	393	2015	59	16.7	23.0	1.8 + 0.7	(35.7)*	89	(9.0)	6		21.4	2	28	47
21	856	3030f	85	16.7	28.1	4.0 + 2.7	(95.0)*	100	(22.0)	15		57.0	2	28	47
22	297	3989S	48	8.4	1.8	0.0 + 0.1	(2.1)*	3	(0.3)	8	(0.0)*	10.6	2	53	22
23	196	2063	19	8.4	2.2	0.0 + 0.1	(1.7)*	4	(0.2)	0	(0.0)*	8.5	2	53	22
24	422	22L	48	8.4	12.4	1.2 + 0.2	(20.6)	62	(6.8)	8		27.4	2	53	22
25	175	22L	48	8.4	23.2	1.0 + 0.1	(16.0)	90	(4.0)	8		20.0	2	53	22
26	62	22L	48	8.4	9.5	0.1 + 0.0	(2.3)	78	(1.2)	8		3.6	2	53	22
30	159	2015	30	16.7	22.3	0.8 + 0.2	(14.0)*	83	(3.4)	2		8.4	3	12	27
31	1369	4270	120	16.7	338.9	10.8 +118.1	(999.9)*	268	(94.6)	142	+	1098.2	3	12	27
32	382	1926S	65	10.9	5.7	0.1 + 0.5	(8.6)*	45	(4.4)	10	(0.3)*	60.4	3	33	6
33	563	2063S	65	10.9	5.0	0.1 + 0.7	(11.1)*	33	(4.8)	11	(0.1)*	62.8	3	33	6
34	293	2063	25	10.9	2.2	0.0 + 0.2	(2.5)*	4	(0.3)	0	(0.0)*	12.7	3	33	6
35	292	32L	65	10.9	17.7	1.1 + 0.4	(20.4)	85	(6.4)	10	+	26.8	3	33	6
36	33	32L	65	10.9	14.0	0.1 + 0.0	(1.8)	54	(0.5)	10	+	2.3	3	33	6
37	196	33L	65	10.9	23.9	1.1 + 0.2	(18.5)	107	(5.4)	11	+	23.8	3	33	6
40	395	1995	148	16.7	642.3	4.5 + 66.0	(999.9)*	266	(27.1)	73	+	600.5	4	9	16
41	514	4230	91	16.7	56.3	3.7 + 4.4	(114.1)*	140	(18.5)	13		68.5	4	9	16
42	522<	1941S	94	11.7	21.7	0.3 + 2.8	(44.7)*	75	(12.1)	18	(1.0)*	281.6	4	22	3
43	617<	2077S	63	11.7	3.5	0.0 + 0.6	(8.6)*	13	(2.4)	5	(0.0)*	45.3	4	22	3
44	563	42L	94	11.7	24.4	0.7 + 3.1	(54.1)	65	(9.4)	18	+	63.5	4	22	3
45	196	42L	94	11.7	19.8	0.0 + 1.1	(15.3)	32	(1.6)	18	+	16.9	4	22	3
46	293	43L	63	11.7	7.1	0.3 + 0.3	(8.2)	33	(2.5)	5		10.7	4	22	3
50	253	1975	70	16.7	39.1	1.6 + 1.1	(39.0)*	115	(7.5)	5		7.8	5	56	6
51	663	4250	85	16.7	38.5	4.4 + 2.7	(100.7)*	115	(19.7)	13		20.1	5	56	6
52	228<	1936S	51	10.5	2.9	0.0 + 0.2	(2.6)*	3	(0.3)	3	(0.0)*	13.5	5	12	50
53	293	2072S	62	10.5	10.7	0.6 + 0.3	(12.3)*	75	(5.6)	6	(0.0)*	67.3	5	12	50
54	514	4144S	22	10.5	0.9	0.0 + 0.1	(1.7)*	1	(0.2)	0	(0.0)*	8.9	5	12	50
55	282<	52L	51	10.5	6.7	0.3 + 0.2	(7.4)	21	(1.9)	3		9.3	5	12	50
56	128	52L	51	10.5	8.2	0.2 + 0.1	(4.1)	64	(2.1)	3		6.2	5	12	50
57	10	52L	51	10.5	17.1	0.0 + 0.0	(0.7)	104	(0.3)	3		0.9	5	12	50
58	544<	53L	62	10.5	6.4	0.4 + 0.5	(13.7)	18	(3.0)	6		16.8	5	12	50
59	73<	54L	22	10.5	3.5	0.1 + 0.0	(1.0)	14	(0.3)	0		1.3	5	12	50
60	542	2108	52	10.5	4.5	0.1 + 0.5	(9.7)	29	(4.1)	3		13.7			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
61	909	6000S	39	10.5	0.5	0.0 +	0.1	(1.8)	1	(0.2)	0		2.0			
62	293	61L	39	10.5	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.6			
63	617<	61L	39	10.5	0.5	0.0 +	0.1	(1.2)	1	(0.1)	0		1.3			
64	514	61L	39	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1			
191	62	14L	41	9.2	6.1	0.1 +	0.0	(1.5)	24	(0.4)	3		1.9	1	10	47
192	175	14L	41	9.2	2.5	0.0 +	0.1	(1.7)	7	(0.3)	3		2.0	1	10	47

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2641.0	320.1	8.2	46.3	212.4	(2727.8)	+	(92.7)	+	(61.2)	=	2881.7	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	141.6	+	297.5	+	144.7	=	583.9

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 465

PROGRAM TRANSYT FINISHED

=== end of file ==

[Printed at 16:21:40 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK NO DEV.DAT" at 15:48 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 PM Peak Without Development

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	70
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 12019 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
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CARD NO.	CARD TYPE
(1)=	TITLE:- M69 Junction 1 2026 PM Peak Without Development

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CRUISE-SPEEDS CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	70	70	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET.................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0
~~~~

56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

					ENTRY 1			ENTRY 2			ENTRY 3			ENTRY 4	
CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW
72)=	32	10	875	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	319	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	131	0	60	131	43	0	0	0	0	0	0	0	0
75)=	32	13	225	0	60	225	43	0	0	0	0	0	0	0	0
76)=	32	14	237	0	60	237	43	0	0	0	0	0	0	0	0
77)=	32	15	226	0	61	226	43	0	0	0	0	0	0	0	0
78)=	32	16	147	0	64	147	43	0	0	0	0	0	0	0	0
79)=	32	17	28	0	63	28	43	0	0	0	0	0	0	0	0
80)=	32	18	226	0	61	226	43	0	0	0	0	0	0	0	0
81)=	32	19	148	0	64	148	43	0	0	0	0	0	0	0	0
82)=	32	20	361	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	798	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	577	0	10	577	43	0	0	0	0	0	0	0	0
85)=	32	23	319	0	11	319	43	0	0	0	0	0	0	0	0
86)=	32	24	462	0	14	237	43	13	225	43	0	0	0	0	0
87)=	32	25	248	0	192	248	43	0	0	0	0	0	0	0	0
88)=	32	26	84	0	191	84	43	0	0	0	0	0	0	0	0
89)=	32	30	66	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	549	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	330	0	20	330	43	0	0	0	0	0	0	0	0
92)=	32	33	532	0	21	532	43	0	0	0	0	0	0	0	0
93)=	32	34	266	0	21	266	43	0	0	0	0	0	0	0	0
94)=	32	35	237	0	24	237	43	0	0	0	0	0	0	0	0
95)=	32	36	43	0	25	43	43	0	0	0	0	0	0	0	0
96)=	32	37	319	0	23	319	43	0	0	0	0	0	0	0	0
97)=	32	40	531	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	379	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	327	0	31	327	43	0	0	0	0	0	0	0	0
100)=	32	43	222	0	31	222	43	0	0	0	0	0	0	0	0
101)=	32	44	532	0	33	532	43	0	0	0	0	0	0	0	0
102)=	32	45	319	0	37	319	43	0	0	0	0	0	0	0	0
103)=	32	46	266	0	34	266	43	0	0	0	0	0	0	0	0
104)=	32	50	171	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	700	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	493	0	40	493	43	0	0	0	0	0	0	0	0
107)=	32	53	266	0	46	266	43	0	0	0	0	0	0	0	0
108)=	32	54	379	0	41	379	43	0	0	0	0	0	0	0	0
109)=	32	55	246	0	42	246	43	0	0	0	0	0	0	0	0
110)=	32	56	97	0	44	97	43	0	0	0	0	0	0	0	0
111)=	32	57	32	0	45	32	43	0	0	0	0	0	0	0	0
112)=	32	58	194	0	43	194	43	0	0	0	0	0	0	0	0
113)=	32	59	28	0	43	28	43	0	0	0	0	0	0	0	0
114)=	32	60	617	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	834	0	51	700	43	50	134	43	0	0	0	0	0
116)=	32	62	266	0	53	266	43	0	0	0	0	0	0	0	0
117)=	32	63	222	0	58	194	43	59	28	43	0	0	0	0	0
118)=	32	64	379	0	54	379	43	0	0	0	0	0	0	0	0
119)=	32	191	84	0	64	84	43	0	0	0	0	0	0	0	0
120)=	32	192	248	0	61	248	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

70 SECOND CYCLE 70 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	30								
2	2	0	32								
3	2	0	20								
4	2	0	23								
5	2	0	21								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	875	4100	60	16.7	21.4	4.5 +	0.7	(74.0)*	82	(18.5)	15		44.4	1	6	30
11	319	2120	42	16.7	21.1	1.5 +	0.4	(26.6)*	77	(6.4)	5		16.0	1	6	30
12	131	1892S	56	9.2	14.7	0.4 +	0.2	(7.6)*	70	(2.4)	9	(0.0)*	40.2	1	36	0
13	225	2029S	59	9.2	15.1	0.7 +	0.3	(13.4)*	74	(4.3)	10	(0.0)*	71.8	1	36	0
14	237	2029S	56	9.2	15.2	0.7 +	0.3	(14.2)*	74	(4.5)	10	(0.0)*	75.3	1	36	0
15	225	12L	56	9.2	14.7	0.7 +	0.3	(13.1)	102	(5.9)	9		19.0	1	36	0
16	147	12L	56	9.2	5.4	0.0 +	0.2	(3.2)	39	(1.5)	9		4.6	1	36	0
17	28	12L	56	9.2	8.0	0.0 +	0.0	(0.9)	18	(0.1)	9		1.0	1	36	0
18	225	13L	59	9.2	15.4	0.7 +	0.3	(13.7)	103	(6.0)	10		19.7	1	36	0
19	148	13L	59	9.2	6.2	0.1 +	0.2	(3.6)	55	(2.1)	10		5.7	1	36	0
20	361	2015	46	16.7	20.4	1.6 +	0.4	(29.1)*	77	(7.2)	6		17.4	2	6	32
21	798	2796f	74	16.7	22.7	3.6 +	1.4	(71.5)*	83	(17.0)	14		42.9	2	6	32
22	577	3989S	73	8.4	25.1	3.5 +	0.6	(57.1)*	105	(15.6)	25	(3.4)*	455.9	2	38	0
23	319	2063	33	8.4	25.0	2.0 +	0.2	(31.5)*	104	(8.5)	6	(0.0)*	166.1	2	38	0
24	462	22L	73	8.4	9.8	0.8 +	0.5	(17.9)	64	(7.7)	25	+	25.5	2	38	0
25	249	22L	73	8.4	6.5	0.2 +	0.2	(6.4)	73	(4.7)	25	+	11.1	2	38	0
26	84	22L	73	8.4	5.0	0.0 +	0.1	(1.6)	26	(0.6)	25	+	2.2	2	38	0
30	66	2015	15	16.7	27.3	0.4 +	0.1	(7.1)*	84	(1.4)	1		4.3	3	6	20
31	549	4270	60	16.7	29.7	3.8 +	0.7	(64.3)*	93	(13.2)	10		38.6	3	6	20
32	330	1926S	49	10.9	11.5	0.8 +	0.3	(14.9)*	90	(7.7)	8	(0.2)*	90.5	3	26	0
33	531	2063S	64	10.9	12.5	1.3 +	0.6	(26.1)*	97	(13.3)	11	(0.0)*	145.7	3	26	0
34	267	2063	20	10.9	6.7	0.4 +	0.1	(7.1)*	73	(5.0)	4	(0.0)*	40.3	3	26	0
35	236	32L	49	10.9	8.6	0.4 +	0.2	(8.0)	31	(1.9)	8	+	9.9	3	26	0
36	43	32L	49	10.9	6.3	0.0 +	0.0	(1.1)	19	(0.2)	8	+	1.3	3	26	0
37	319	33L	64	10.9	3.9	0.0 +	0.3	(4.9)	6	(0.5)	11	+	5.4	3	26	0
40	531	1995	104	16.7	142.2	4.1 +	16.9	(297.8)*	206	(28.2)	27		178.7	4	6	23
41	379	4230	35	16.7	23.8	2.2 +	0.3	(35.5)*	82	(8.0)	6		21.3	4	6	23
42	327	1941S	101	11.7	78.3	1.3 +	5.8	(101.0)*	173	(14.5)	44	(19.9)*	1414.4	4	29	0
43	222	2077S	39	11.7	10.9	0.5 +	0.1	(9.6)*	96	(5.5)	5	(0.0)*	53.3	4	29	0
44	531	42L	101	11.7	69.6	0.9 +	9.4	(145.9)	162	(22.2)	44	+	168.1	4	29	0
45	319	42L	101	11.7	74.0	0.9 +	5.6	(93.1)	144	(11.9)	44	+	104.9	4	29	0
46	267	43L	39	11.7	2.4	0.0 +	0.2	(2.6)	4	(0.2)	5		2.8	4	29	0
50	171	1975	38	16.7	29.2	1.1 +	0.3	(19.7)*	90	(4.0)	3		3.9	5	6	21
51	700	4250	72	16.7	31.5	4.9 +	1.3	(87.0)*	98	(17.6)	14		17.4	5	6	21
52	476<	1936S	70	10.5	16.1	1.5 +	0.6	(30.2)*	102	(13.0)	15	(0.8)*	202.4	5	27	0
53	267	2072S	35	10.5	2.9	0.1 +	0.2	(3.0)*	6	(0.4)	0	(0.0)*	15.6	5	27	0
54	379	4144S	16	10.5	10.1	1.0 +	0.1	(15.1)*	93	(9.1)	7	(0.0)*	84.7	5	27	0
55	246	52L	70	10.5	6.0	0.1 +	0.3	(5.8)	42	(2.7)	15	+	8.5	5	27	0
56	97	52L	70	10.5	9.6	0.1 +	0.1	(3.7)	28	(0.7)	15	+	4.4	5	27	0
57	31	52L	70	10.5	18.6	0.1 +	0.0	(2.3)	94	(0.8)	15	+	3.1	5	27	0
58	194	53L	35	10.5	2.1	0.0 +	0.1	(1.6)	3	(0.2)	0		1.8	5	27	0
59	28	54L	16	10.5	0.8	0.0 +	0.0	(0.1)	1	(0.0)	7		0.1	5	27	0
60	617	2108	47	10.5	3.6	0.2 +	0.4	(8.8)	25	(3.9)	3		12.7			

```
     70 SECOND CYCLE  70 STEPS

 LINK    FLOW   SAT   DEGREE  MEAN TIMES  -------DELAY--------   ----STOPS----   ----QUEUE----  PERFORMANCE   EXIT   GREEN
NUMBER   INTO   FLOW    OF     PER PCU    UNIFORM RANDOM+ COST    MEAN   COST    MEAN            INDEX.       NODE   START
         LINK          SAT    CRUISE              OVERSAT  OF    STOPS    OF     MAX.  AVERAGE  WEIGHTED SUM            END
                                    DELAY  (U+R+O=MEAN Q) DELAY   /PCU   STOPS          EXCESS  OF ( ) VALUES           1ST
      (PCU/H) (PCU/H)  (%)   (SEC) (SEC)    (PCU-H/H)    ($/H)    (%)    ($/H)    (PCU)  (PCU)     ($/H)                (SEC

   61     834   6000S    28  10.5   0.4    0.0 +  0.1  (  1.4)     1  (  0.1)     0               1.5
   62     267     61L    28  10.5   0.4    0.0 +  0.0  (  0.4)     1  (  0.0)     0               0.5
   63     222     61L    28  10.5   0.4    0.0 +  0.0  (  0.4)     1  (  0.0)     0               0.4
   64     379     61L    28  10.5   0.4    0.0 +  0.0  (  0.6)     1  (  0.1)     0               0.7
  191      84     14L    56   9.2   6.2    0.0 +  0.1  (  2.0)    54  (  1.2)    10               3.2         1      36   0
  192     249     14L    56   9.2  15.7    0.8 +  0.3  ( 15.4)   104  (  6.6)    10              22.0         1      36   0
                 *** f - average saturation flow for flared link ***

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY        TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM   RANDOM+     COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED           DELAY   OVERSAT      OF           OF          EXCESS         INDEX
                                                      DELAY     DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)          ($/H)

  2270.2         151.5       15.0          47.9      50.8    (2397.0) + (  185.6)  +  (1098.6)   =    3681.2      TOTALS

*****************************************************************************************************************************
                                 CRUISE              DELAY               STOPS               TOTALS
                             LITRES PER HOUR     LITRES PER HOUR     LITRES PER HOUR     LITRES PER HOUR

FUEL CONSUMPTION PREDICTIONS       121.8         +     113.5         +     139.9         =     375.2

NO. OF ENTRIES TO SUBPT  =    1
NO. OF LINKS RECALCULATED=   49



     70 SECOND CYCLE  70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   10
 - (SECONDS)

    1       2      10      40
    2       2       0      32
    3       2       0      20
    4       2      10      33
    5       2       0      21

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY        TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM   RANDOM+     COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED           DELAY   OVERSAT      OF           OF          EXCESS         INDEX
                                                      DELAY     DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)          ($/H)

  2270.2         153.7       14.8          50.1      50.8    (2289.4) + (  182.4)  +  (1068.1)   =    3540.0      TOTALS

NO. OF ENTRIES TO SUBPT  =   11
NO. OF LINKS RECALCULATED=  359



     70 SECOND CYCLE  70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   10  28
 - (SECONDS)

    1       2      38      68
    2       2       0      32
    3       2      28      48
    4       2      10      33
    5       2      42      63

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY        TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM   RANDOM+     COST         COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED           DELAY   OVERSAT      OF           OF          EXCESS         INDEX
                                                      DELAY     DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)          ($/H)

  2270.2         154.0       14.7          50.4      50.7    (2054.1) + (  164.1)  +  (1098.2)   =    3316.4      TOTALS

NO. OF ENTRIES TO SUBPT  =   12
NO. OF LINKS RECALCULATED=  423
```

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1
- (SECONDS)

1	2	39	62
2	2	2	29
3	2	33	50
4	2	14	33
5	2	45	63

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	195.1	11.6	50.5	91.8	(1789.4)	+	(125.2)	+	(291.0)	=	2205.7	TOTALS

NO. OF ENTRIES TO SUBPT = 45
NO. OF LINKS RECALCULATED= 1331

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10
- (SECONDS)

1	2	29	52
2	2	2	29
3	2	33	50
4	2	14	33
5	2	55	3

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	190.2	11.9	45.7	91.8	(1645.5)	+	(105.0)	+	(123.2)	=	1873.7	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 427

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28
- (SECONDS)

1	2	29	52
2	2	2	29
3	2	33	50
4	2	14	33
5	2	55	3

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	190.2	11.9	45.7	91.8	(1645.5)	+	(105.0)	+	(123.2)	=	1873.7	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 404

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1
- (SECONDS)

1	2	29	52
2	2	3	30
3	2	37	54
4	2	13	32
5	2	59	7

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	190.1	11.9	45.6	91.8	(1607.9)	+	(103.0)	+	(123.0)	=	1833.9	TOTALS

NO. OF ENTRIES TO SUBPT = 18
NO. OF LINKS RECALCULATED= 621

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1 -1
- (SECONDS)

1	2	30	52
2	2	4	30
3	2	39	54
4	2	12	32
5	2	59	7

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	181.8	12.5	45.0	84.0	(1535.5)	+	(100.0)	+	(148.9)	=	1784.5	TOTALS

NO. OF ENTRIES TO SUBPT = 25
NO. OF LINKS RECALCULATED= 852

70 SECOND CYCLE 70 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 10 28 -1 10 28 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	30	52								
2	2	4	30								
3	2	39	54								
4	2	12	32								
5	2	59	7								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	875	4100	88	16.7	39.6	6.2 +	3.4	(136.8)*	111	(25.1)	20		82.1	1	36	52
11	319	2120	62	16.7	32.7	2.1 +	0.8	(41.2)*	98	(8.1)	6		24.7	1	36	52
12	131	1892S	46	9.2	10.4	0.3 +	0.1	(5.4)*	54	(1.8)	5	(0.0)*	28.6	1	58	30
13	225	2029S	48	9.2	10.2	0.5 +	0.2	(9.1)*	54	(3.1)	6	(0.0)*	48.5	1	58	30
14	237	2029S	46	9.2	9.8	0.5 +	0.2	(9.1)*	51	(3.1)	5	(0.0)*	48.8	1	58	30
15	225	12L	46	9.2	3.9	0.1 +	0.2	(3.5)	8	(0.5)	5		4.0	1	58	30
16	147	12L	46	9.2	13.8	0.4 +	0.1	(8.0)	98	(3.7)	5		11.7	1	58	30
17	28	12L	46	9.2	22.8	0.2 +	0.0	(2.5)	97	(0.7)	5		3.2	1	58	30
18	225	13L	48	9.2	3.9	0.1 +	0.2	(3.4)	8	(0.5)	6		3.9	1	58	30
19	148	13L	48	9.2	13.5	0.4 +	0.1	(7.9)	98	(3.7)	6		11.6	1	58	30
20	361	2015	60	16.7	28.2	2.1 +	0.7	(40.2)*	92	(8.5)	7		24.1	2	10	30
21	798	2987f	89	16.7	38.5	4.8 +	3.8	(121.3)*	110	(22.7)	18		72.8	2	10	30
22	578	3989S	62	8.4	2.2	0.0 +	0.3	(5.1)*	8	(1.2)	11	(0.1)*	33.2	2	36	4
23	319	2063	28	8.4	2.2	0.0 +	0.2	(2.7)*	3	(0.3)	0	(0.0)*	13.9	2	36	4
24	462	22L	62	8.4	10.9	1.1 +	0.3	(19.9)	52	(6.2)	11	+	26.1	2	36	4
25	249	22L	62	8.4	14.2	0.8 +	0.1	(14.0)	97	(6.2)	11	+	20.2	2	36	4
26	84	22L	62	8.4	4.9	0.1 +	0.0	(1.6)	13	(0.3)	11	+	1.9	2	36	4
30	66	2015	23	16.7	34.7	0.5 +	0.1	(9.0)*	97	(1.6)	1		5.4	3	45	54
31	549	4270	90	16.7	55.6	4.5 +	4.0	(120.4)*	128	(18.2)	14		72.3	3	45	54
32	330	1926S	44	10.9	3.3	0.1 +	0.2	(4.3)*	9	(0.8)	4	(0.0)*	22.4	3	60	39
33	531	2063S	58	10.9	4.3	0.2 +	0.4	(9.0)*	23	(3.1)	7	(0.0)*	48.0	3	60	39
34	267	2063	18	10.9	2.6	0.1 +	0.1	(2.8)*	9	(0.6)	0	(0.0)*	14.4	3	60	39
35	236	32L	44	10.9	8.2	0.4 +	0.2	(7.6)	52	(3.2)	4		10.8	3	60	39
36	43	32L	44	10.9	12.9	0.1 +	0.0	(2.2)	97	(1.1)	4		3.3	3	60	39
37	319	33L	58	10.9	7.8	0.4 +	0.3	(9.9)	83	(6.8)	7		16.7	3	60	39
40	531	1995	124	16.7	403.3	5.3 +	54.2	(844.8)*	266	(36.4)	65	+	506.9	4	18	32
41	379	4230	42	16.7	27.2	2.5 +	0.4	(40.6)*	88	(8.6)	7		24.4	4	18	32
42	327	1941S	94	11.7	23.4	0.2 +	1.9	(30.2)*	87	(7.3)	24	(3.2)*	300.9	4	38	12
43	222	2077S	37	11.7	2.2	0.0 +	0.1	(1.9)*	3	(0.2)	3	(0.0)*	9.8	4	38	12
44	531	42L	94	11.7	28.6	1.1 +	3.2	(59.9)	116	(15.9)	24	+	75.8	4	38	12
45	319	42L	94	11.7	27.0	0.5 +	1.9	(34.0)	54	(4.4)	24	+	38.5	4	38	12
46	266	43L	37	11.7	3.7	0.1 +	0.2	(3.9)	37	(2.6)	3		6.5	4	38	12
50	171	1975	47	16.7	34.6	1.2 +	0.4	(23.3)*	98	(4.3)	3		4.7	5	65	7
51	700	4250	89	16.7	46.4	5.4 +	3.6	(128.2)*	119	(21.4)	17		25.6	5	65	7
52	397<	1936S	59	10.5	3.4	0.0 +	0.4	(5.3)*	4	(0.5)	7	(0.0)*	27.2	5	13	59
53	267	2072S	33	10.5	5.5	0.3 +	0.1	(5.8)*	24	(1.6)	5	(0.0)*	30.5	5	13	59
54	379	4144S	15	10.5	0.8	0.0 +	0.1	(1.1)*	1	(0.1)	1	(0.0)*	5.8	5	13	59
55	246	52L	59	10.5	16.8	0.9 +	0.2	(16.3)	103	(6.6)	7		22.9	5	13	59
56	97	52L	59	10.5	13.4	0.3 +	0.1	(5.1)	61	(1.5)	7		6.6	5	13	59
57	32	52L	59	10.5	7.6	0.0 +	0.0	(1.0)	63	(0.5)	7		1.5	5	13	59
58	194	53L	33	10.5	15.8	0.7 +	0.1	(12.1)	100	(5.0)	5		17.1	5	13	59
59	28	54L	15	10.5	10.7	0.1 +	0.0	(1.2)	89	(0.6)	1		1.8	5	13	59
60	617	2108	47	10.5	3.7	0.2 +	0.4	(8.9)	21	(3.4)	3		12.3			

70 SECOND CYCLE 70 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	834	6000S	28	10.5	0.4	0.0 +	0.1	(1.4)	1	(0.1)	0		1.5		
62	267	61L	28	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.5		
63	222	61L	28	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.4		
64	379	61L	28	10.5	0.4	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7		
191	84	14L	46	9.2	12.6	0.2 +	0.1	(4.2)	95	(2.0)	5		6.2	1	58 30
192	249	14L	46	9.2	3.7	0.1 +	0.2	(3.7)	8	(0.5)	5		4.2	1	58 30

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2270.2	181.8	12.5	45.0	84.0	(1535.5)	+	(100.0)	+	(148.9)	=	1784.5	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	121.8	+	148.3	+	116.2	=	386.2

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 398

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:22:08 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

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Run with file:- "2026 AM PEAK+DEV.DAT" at 16:00 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 AM Peak With Development

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	60
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 11409 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:- M69 Junction 1 2026 AM Peak With Development	

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	60	60	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET.................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	GIVEWAY COEFFS. A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0

56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
72)=	32	10	645	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	213	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	101	0	60	101	43	0	0	0	0	0	0	0	0
75)=	32	13	130	0	60	130	43	0	0	0	0	0	0	0	0
76)=	32	14	287	0	60	287	43	0	0	0	0	0	0	0	0
77)=	32	15	242	0	61	242	43	0	0	0	0	0	0	0	0
78)=	32	16	225	0	64	225	43	0	0	0	0	0	0	0	0
79)=	32	17	86	0	63	86	43	0	0	0	0	0	0	0	0
80)=	32	18	243	0	61	243	43	0	0	0	0	0	0	0	0
81)=	32	19	225	0	64	225	43	0	0	0	0	0	0	0	0
82)=	32	20	381	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	884	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	289	0	10	289	43	0	0	0	0	0	0	0	0
85)=	32	23	213	0	11	213	43	0	0	0	0	0	0	0	0
86)=	32	24	417	0	14	287	43	13	130	43	0	0	0	0	0
87)=	32	25	173	0	192	173	43	0	0	0	0	0	0	0	0
88)=	32	26	61	0	191	61	43	0	0	0	0	0	0	0	0
89)=	32	30	152	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	1375	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	370	0	20	370	43	0	0	0	0	0	0	0	0
92)=	32	33	586	0	21	586	43	0	0	0	0	0	0	0	0
93)=	32	34	298	0	21	298	43	0	0	0	0	0	0	0	0
94)=	32	35	287	0	24	287	43	0	0	0	0	0	0	0	0
95)=	32	36	32	0	25	32	43	0	0	0	0	0	0	0	0
96)=	32	37	213	0	23	213	43	0	0	0	0	0	0	0	0
97)=	32	40	412	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	511	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	635	0	31	635	43	0	0	0	0	0	0	0	0
100)=	32	43	740	0	31	740	43	0	0	0	0	0	0	0	0
101)=	32	44	586	0	33	586	43	0	0	0	0	0	0	0	0
102)=	32	45	213	0	37	213	43	0	0	0	0	0	0	0	0
103)=	32	46	298	0	34	298	43	0	0	0	0	0	0	0	0
104)=	32	50	265	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	658	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	350	0	40	350	43	0	0	0	0	0	0	0	0
107)=	32	53	298	0	46	298	43	0	0	0	0	0	0	0	0
108)=	32	54	511	0	41	511	43	0	0	0	0	0	0	0	0
109)=	32	55	338	0	42	338	43	0	0	0	0	0	0	0	0
110)=	32	56	132	0	44	132	43	0	0	0	0	0	0	0	0
111)=	32	57	10	0	45	10	43	0	0	0	0	0	0	0	0
112)=	32	58	654	0	43	654	43	0	0	0	0	0	0	0	0
113)=	32	59	86	0	43	86	43	0	0	0	0	0	0	0	0
114)=	32	60	539	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	917	0	51	658	43	50	259	43	0	0	0	0	0
116)=	32	62	298	0	53	298	43	0	0	0	0	0	0	0	0
117)=	32	63	740	0	58	654	43	59	86	43	0	0	0	0	0
118)=	32	64	511	0	54	511	43	0	0	0	0	0	0	0	0
119)=	32	191	61	0	64	61	43	0	0	0	0	0	0	0	0
120)=	32	192	173	0	61	173	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

60 SECOND CYCLE 60 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	21								
2	2	0	34								
3	2	0	28								
4	2	0	16								
5	2	0	18								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY: UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	DELAY: COST OF DELAY ($/H)	STOPS: MEAN STOPS /PCU (%)	STOPS: COST OF STOPS ($/H)	QUEUE: MEAN MAX. (PCU)	QUEUE: AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	645	4100	59	16.7	23.2	3.4 + 0.7	(58.9)*	89	(14.8)	10		35.3	1	6	21
11	213	2120	38	16.7	23.0	1.1 + 0.3	(19.4)*	85	(4.7)	3		11.6	1	6	21
12	101	1892S	61	9.2	11.1	0.2 + 0.1	(4.4)*	57	(1.5)	6	(0.0)*	23.6	1	27	0
13	130	2029S	52	9.2	9.4	0.2 + 0.1	(4.8)*	48	(1.6)	5	(0.0)*	25.8	1	27	0
14	287	2029S	45	9.2	9.4	0.5 + 0.2	(10.6)*	49	(3.6)	5	(0.0)*	56.7	1	27	0
15	242	12L	61	9.2	7.8	0.2 + 0.3	(7.5)	75	(4.7)	6		12.2	1	27	0
16	225	12L	61	9.2	4.7	0.0 + 0.3	(4.2)	9	(0.5)	6		4.7	1	27	0
17	86	12L	61	9.2	16.3	0.3 + 0.1	(5.5)	69	(1.5)	6		7.1	1	27	0
18	242	13L	52	9.2	5.4	0.1 + 0.2	(5.2)	57	(3.5)	5		8.7	1	27	0
19	225	13L	52	9.2	3.7	0.0 + 0.2	(3.3)	7	(0.4)	5		3.7	1	27	0
20	381	2015	39	16.7	12.9	1.0 + 0.3	(19.4)*	64	(6.3)	4		11.6	2	6	34
21	884	2750f	66	16.7	14.1	2.5 + 1.0	(49.3)*	67	(15.3)	11		29.6	2	6	34
22	289	3989S	67	8.4	28.1	1.9 + 0.3	(32.0)*	106	(7.9)	15	(1.0)*	212.5	2	40	0
23	213	2063	29	8.4	28.6	1.5 + 0.2	(24.0)*	106	(5.8)	4	(0.0)*	125.9	2	40	0
24	417	22L	67	8.4	15.9	1.4 + 0.5	(26.2)	88	(9.4)	15	+	35.6	2	40	0
25	172	22L	67	8.4	11.8	0.4 + 0.2	(8.0)	97	(4.3)	15	+	12.3	2	40	0
26	61	22L	67	8.4	10.4	0.1 + 0.1	(2.5)	39	(0.6)	15	+	3.1	2	40	0
30	152	2015	20	16.7	15.2	0.5 + 0.1	(9.1)*	67	(2.6)	2		5.5	3	6	28
31	1375	4270	84	16.7	23.6	6.4 + 2.6	(127.9)*	96	(34.2)	23		76.7	3	6	28
32	370	1926S	80	10.9	27.1	1.8 + 1.0	(39.6)*	113	(10.8)	11	(1.5)*	275.9	3	34	0
33	585	2063S	86	10.9	29.1	2.6 + 2.2	(67.1)*	119	(18.0)	14	(0.9)*	391.8	3	34	0
34	299	2063	32	10.9	14.2	0.9 + 0.2	(16.8)*	91	(7.0)	5	(0.0)*	91.0	3	34	0
35	287	32L	80	10.9	23.2	1.1 + 0.8	(26.3)	61	(4.5)	11	+	30.8	3	34	0
36	32	32L	80	10.9	25.0	0.1 + 0.1	(3.2)	64	(0.5)	11	+	3.7	3	34	0
37	213	33L	86	10.9	16.1	0.2 + 0.8	(13.5)	43	(2.4)	14	+	15.9	3	34	0
40	412	1995	113	16.7	265.2	3.4 + 26.9	(431.0)*	260	(27.6)	34		258.6	4	6	16
41	511	4230	66	16.7	29.5	3.2 + 1.0	(59.5)*	99	(13.1)	9		35.7	4	6	16
42	635	1941S	114	11.7	244.1	3.2 + 39.8	(611.3)*	268	(43.9)	117	(95.2)*	7383.2	4	22	0
43	740	2077S	77	11.7	9.7	0.8 + 1.2	(28.4)*	87	(16.6)	14	(0.3)*	172.2	4	22	0
44	585	42L	114	11.7	243.4	2.9 + 36.7	(561.8)	240	(36.3)	117	+	598.0	4	22	0
45	213	42L	114	11.7	250.0	1.4 + 13.4	(210.1)	266	(14.6)	117	+	224.7	4	22	0
46	299	43L	77	11.7	6.8	0.1 + 0.5	(8.0)	15	(1.2)	14	+	9.2	4	22	0
50	265	1975	62	16.7	32.2	1.6 + 0.8	(33.7)*	104	(7.1)	5		6.7	5	6	18
51	658	4250	71	16.7	28.6	4.0 + 1.2	(74.2)*	99	(16.8)	11		14.8	5	6	18
52	311<	1936S	63	10.5	15.1	1.0 + 0.3	(18.5)*	93	(8.4)	9	(0.0)*	101.0	5	24	0
53	299	2072S	75	10.5	16.0	0.9 + 0.5	(18.8)*	60	(4.6)	4	(0.0)*	98.8	5	24	0
54	511	4144S	23	10.5	8.1	1.0 + 0.1	(16.4)*	92	(12.2)	9	(0.0)*	94.2	5	24	0
55	334	52L	63	10.5	11.4	0.7 + 0.4	(15.1)	42	(3.6)	9		18.7	5	24	0
56	97<	52L	63	10.5	10.5	0.2 + 0.1	(4.0)	49	(1.7)	9		5.7	5	24	0
57	9	52L	63	10.5	5.4	0.0 + 0.0	(0.2)	15	(0.0)	9		0.2	5	24	0
58	654	53L	75	10.5	5.8	0.1 + 1.0	(14.9)	10	(1.7)	4		16.6	5	24	0
59	86	54L	23	10.5	1.2	0.0 + 0.0	(0.4)	3	(0.1)	9		0.5	5	24	0
60	539	2108	55	10.5	5.6	0.2 + 0.6	(11.8)	43	(6.0)	3		17.8			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	917	6000S	41	10.5	0.5	0.0 + 0.1	(1.8)	1	(0.2)	0		2.0		
62	299	61L	41	10.5	0.5	0.0 + 0.0	(0.6)	1	(0.1)	0		0.7		
63	740	61L	41	10.5	0.5	0.0 + 0.1	(1.5)	1	(0.2)	0		1.6		
64	511	61L	41	10.5	0.5	0.0 + 0.1	(1.0)	1	(0.1)	0		1.1		
191	61	14L	45	9.2	3.3	0.0 + 0.0	(0.8)	7	(0.1)	5		0.9	1	27 0
192	172	14L	45	9.2	5.8	0.1 + 0.1	(4.0)	64	(2.8)	5		6.8	1	27 0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	253.2	10.5	53.3	138.0	(5891.4)	+	(243.0)	+	(4446.8)	=	10581.2	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	142.7	+	220.0	+	175.7	=	538.4

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 49

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9
- (SECONDS)

1	2	9	30
2	2	0	34
3	2	0	28
4	2	51	7
5	2	0	18

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	252.6	10.5	52.8	137.9	(5793.0)	+	(240.2)	+	(4343.3)	=	10376.5	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 387

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24
- (SECONDS)

1	2	33	54
2	2	24	58
3	2	0	28
4	2	51	7
5	2	48	6

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	252.3	10.5	52.4	138.0	(5531.5)	+	(238.8)	+	(4392.4)	=	10162.7	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 414

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1
- (SECONDS)

1	2	38	59
2	2	29	57
3	2	11	28
4	2	52	7
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	441.7	6.0	51.8	328.0	(3770.0)	+ (	114.4)	+	(147.1)	=	4031.5	TOTALS

NO. OF ENTRIES TO SUBPT = 50
NO. OF LINKS RECALCULATED= 1275

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9
- (SECONDS)

1	2	47	8
2	2	29	57
3	2	11	28
4	2	1	16
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	440.5	6.0	50.6	328.1	(3673.4)	+ (	104.0)	+	(146.2)	=	3923.5	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 402

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24
- (SECONDS)

1	2	47	8
2	2	29	57
3	2	11	28
4	2	1	16
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	440.5	6.0	50.6	328.1	(3673.4)	+ (	104.0)	+	(146.2)	=	3923.5	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 422

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1
- (SECONDS)

1	2	49	10
2	2	24	52
3	2	11	28
4	2	4	19
5	2	54	9

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	439.0	6.1	49.1	328.0	(3629.5)	+ (	87.0)	+ (	35.0)	=	3751.6	TOTALS

NO. OF ENTRIES TO SUBPT = 22
NO. OF LINKS RECALCULATED= 765

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1 -1
- (SECONDS)

1	2	53	9
2	2	24	50
3	2	9	28
4	2	5	19
5	2	53	9

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	385.7	6.9	47.6	276.3	(3251.6)	+ (	86.9)	+ (	45.2)	=	3383.7	TOTALS

NO. OF ENTRIES TO SUBPT = 28
NO. OF LINKS RECALCULATED= 1013

60 SECOND CYCLE 60 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 9 24 -1 9 24 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	51	7								
2	2	24	50								
3	2	9	28								
4	2	5	19								
5	2	52	8								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	645	4100	86	16.7	39.8	4.3 + 2.9	(101.2)*	118	(19.5)	13		60.7	1	57	7
11	213	2120	55	16.7	32.4	1.3 + 0.6	(27.3)*	103	(5.7)	4		16.4	1	57	7
12	101	1892S	51	9.2	7.5	0.1 + 0.1	(3.0)*	43	(1.1)	3	(0.0)*	16.1	1	13	51
13	130	2029S	45	9.2	6.7	0.2 + 0.1	(3.5)*	39	(1.3)	2	(0.0)*	18.6	1	13	51
14	287	2029S	39	9.2	6.6	0.3 + 0.2	(7.5)*	41	(3.0)	3	(0.0)*	40.5	1	13	51
15	242	12L	51	9.2	3.2	0.0 + 0.2	(3.1)	13	(0.8)	3		3.9	1	13	51
16	225	12L	51	9.2	5.4	0.1 + 0.2	(4.8)	19	(1.1)	3		5.9	1	13	51
17	62<	12L	51	9.2	12.0	0.2 + 0.1	(2.9)	60	(1.3)	3		4.3	1	13	51
18	242	13L	45	9.2	2.5	0.0 + 0.2	(2.4)	6	(0.4)	2		2.8	1	13	51
19	225	13L	45	9.2	4.9	0.1 + 0.2	(4.3)	18	(1.0)	2		5.3	1	13	51
20	381	2015	54	16.7	21.2	1.7 + 0.6	(31.8)*	84	(8.3)	6		19.1	2	30	50
21	884	2987f	85	16.7	27.0	4.0 + 2.6	(94.0)*	98	(22.3)	15		56.4	2	30	50
22	289	3989S	49	8.4	1.9	0.0 + 0.1	(2.1)*	3	(0.2)	8	(0.0)*	10.9	2	56	24
23	213	2063	21	8.4	2.3	0.0 + 0.1	(2.0)*	4	(0.2)	0	(0.0)*	10.0	2	56	24
24	417	22L	49	8.4	13.6	1.4 + 0.2	(22.4)	67	(7.2)	8		29.6	2	56	24
25	172	22L	49	8.4	24.6	1.1 + 0.1	(16.7)	90	(4.0)	8		20.7	2	56	24
26	61	22L	49	8.4	10.8	0.2 + 0.0	(2.6)	86	(1.4)	8		4.0	2	56	24
30	152	2015	32	16.7	24.7	0.8 + 0.2	(14.8)*	88	(3.4)	2		8.9	3	15	28
31	1375	4270	138	16.7	533.5	12.6 +191.1	(999.9)*	269	(95.4)	216	+	1736.0	3	15	28
32	370	1926S	60	10.9	4.2	0.0 + 0.4	(6.1)*	16	(1.5)	7	(0.0)*	32.5	3	34	9
33	585	2063S	64	10.9	4.4	0.1 + 0.7	(10.2)*	20	(3.0)	6	(0.0)*	54.3	3	34	9
34	299	2063	24	10.9	2.0	0.0 + 0.2	(2.4)*	4	(0.3)	0	(0.0)*	12.1	3	34	9
35	287	32L	60	10.9	16.2	1.0 + 0.3	(18.3)	81	(6.0)	7	+	24.3	3	34	9
36	32	32L	60	10.9	12.3	0.1 + 0.0	(1.6)	51	(0.4)	7	+	2.0	3	34	9
37	213	33L	64	10.9	20.7	1.0 + 0.2	(17.4)	106	(5.8)	6		23.2	3	34	9
40	412	1995	138	16.7	545.3	4.3 + 58.1	(886.2)*	270	(28.6)	65	+	531.7	4	11	19
41	511	4230	81	16.7	38.8	3.5 + 2.0	(78.1)*	114	(15.0)	10		46.9	4	11	19
42	460<	1941S	95	11.7	24.2	0.3 + 2.8	(43.9)*	70	(11.4)	18	(1.0)*	274.7	4	25	5
43	536<	2077S	59	11.7	3.3	0.0 + 0.5	(7.0)*	11	(2.2)	5	(0.0)*	37.3	4	25	5
44	585	42L	95	11.7	26.8	0.8 + 3.5	(61.7)	67	(10.2)	18	+	71.9	4	25	5
45	213	42L	95	11.7	21.9	0.0 + 1.3	(18.4)	35	(1.9)	18	+	20.3	4	25	5
46	299	43L	59	11.7	7.4	0.4 + 0.3	(8.7)	34	(2.6)	5		11.3	4	25	5
50	265	1975	73	16.7	41.2	1.7 + 1.3	(43.0)*	118	(8.1)	5		8.6	5	58	8
51	658	4250	84	16.7	37.9	4.3 + 2.6	(98.4)*	114	(19.4)	13		19.7	5	58	8
52	254<	1936S	51	10.5	2.9	0.0 + 0.2	(2.9)*	3	(0.3)	3	(0.0)*	14.9	5	14	52
53	299	2072S	57	10.5	9.7	0.5 + 0.3	(11.4)*	71	(5.5)	5	(0.0)*	62.7	5	14	52
54	511	4144S	21	10.5	0.9	0.0 + 0.1	(1.7)*	1	(0.2)	0	(0.0)*	8.8	5	14	52
55	245<	52L	51	10.5	6.5	0.2 + 0.2	(6.3)	18	(1.6)	3		7.9	5	14	52
56	132	52L	51	10.5	8.1	0.2 + 0.1	(4.2)	64	(2.2)	3		6.4	5	14	52
57	10	52L	51	10.5	16.6	0.0 + 0.0	(0.7)	99	(0.3)	3		0.9	5	14	52
58	474<	53L	57	10.5	5.7	0.3 + 0.4	(10.6)	14	(2.4)	5		13.0	5	14	52
59	62<	54L	21	10.5	3.3	0.0 + 0.0	(0.8)	11	(0.3)	0		1.1	5	14	52
60	539	2108	50	10.5	4.2	0.1 + 0.5	(9.0)	22	(3.0)	2		12.0			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY: UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	STOPS: MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE: MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
61	917	6000S	38	10.5	0.5	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
62	299	61L	38	10.5	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.6			
63	536<	61L	38	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1			
64	511	61L	38	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1			
191	61	14L	39	9.2	4.7	0.0 +	0.0	(1.1)	17	(0.3)	3		1.4	1	13	51
192	172	14L	39	9.2	2.4	0.0 +	0.1	(1.6)	9	(0.4)	3		2.0	1	13	51

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2660.8	385.5	6.9	47.4	276.3	(3246.7)	+	(85.2)	+	(44.6)	=	3376.5	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	142.7	+	372.2	+	141.7	=	656.6

NO. OF ENTRIES TO SUBPT = 14
NO. OF LINKS RECALCULATED= 510

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:22:41 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK+DEV.DAT" at 16:13 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 PM Peak With Development

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	70
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 12019 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
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CARD NO.	CARD TYPE	
(1)=	TITLE:-	M69 Junction 1 2026 PM Peak With Development

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	70	70	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0
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56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
72)=	32	10	878	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	327	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	131	0	60	131	43	0	0	0	0	0	0	0	0
75)=	32	13	222	0	60	222	43	0	0	0	0	0	0	0	0
76)=	32	14	244	0	60	244	43	0	0	0	0	0	0	0	0
77)=	32	15	225	0	61	225	43	0	0	0	0	0	0	0	0
78)=	32	16	150	0	64	150	43	0	0	0	0	0	0	0	0
79)=	32	17	29	0	63	29	43	0	0	0	0	0	0	0	0
80)=	32	18	226	0	61	226	43	0	0	0	0	0	0	0	0
81)=	32	19	150	0	64	150	43	0	0	0	0	0	0	0	0
82)=	32	20	354	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	787	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	577	0	10	577	43	0	0	0	0	0	0	0	0
85)=	32	23	327	0	11	327	43	0	0	0	0	0	0	0	0
86)=	32	24	466	0	14	244	43	13	222	43	0	0	0	0	0
87)=	32	25	248	0	192	248	43	0	0	0	0	0	0	0	0
88)=	32	26	85	0	191	85	43	0	0	0	0	0	0	0	0
89)=	32	30	70	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	576	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	324	0	20	324	43	0	0	0	0	0	0	0	0
92)=	32	33	525	0	21	525	43	0	0	0	0	0	0	0	0
93)=	32	34	262	0	21	262	43	0	0	0	0	0	0	0	0
94)=	32	35	241	0	24	241	43	0	0	0	0	0	0	0	0
95)=	32	36	44	0	25	44	43	0	0	0	0	0	0	0	0
96)=	32	37	327	0	23	327	43	0	0	0	0	0	0	0	0
97)=	32	40	547	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	385	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	342	0	31	342	43	0	0	0	0	0	0	0	0
100)=	32	43	234	0	31	234	43	0	0	0	0	0	0	0	0
101)=	32	44	525	0	33	525	43	0	0	0	0	0	0	0	0
102)=	32	45	327	0	37	327	43	0	0	0	0	0	0	0	0
103)=	32	46	262	0	34	262	43	0	0	0	0	0	0	0	0
104)=	32	50	175	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	699	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	508	0	40	508	43	0	0	0	0	0	0	0	0
107)=	32	53	262	0	46	262	43	0	0	0	0	0	0	0	0
108)=	32	54	385	0	41	385	43	0	0	0	0	0	0	0	0
109)=	32	55	257	0	42	257	43	0	0	0	0	0	0	0	0
110)=	32	56	94	0	44	94	43	0	0	0	0	0	0	0	0
111)=	32	57	32	0	45	32	43	0	0	0	0	0	0	0	0
112)=	32	58	205	0	43	205	43	0	0	0	0	0	0	0	0
113)=	32	59	29	0	43	29	43	0	0	0	0	0	0	0	0
114)=	32	60	622	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	836	0	51	699	43	50	137	43	0	0	0	0	0
116)=	32	62	262	0	53	262	43	0	0	0	0	0	0	0	0
117)=	32	63	234	0	58	205	43	59	29	43	0	0	0	0	0
118)=	32	64	385	0	54	385	43	0	0	0	0	0	0	0	0
119)=	32	191	85	0	64	85	43	0	0	0	0	0	0	0	0
120)=	32	192	248	0	61	248	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

70 SECOND CYCLE 70 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	30								
2	2	0	32								
3	2	0	20								
4	2	0	24								
5	2	0	21								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	878	4100	60	16.7	21.5	4.5 +	0.7	(74.4)*	82	(18.6)	15		44.6	1	6	30
11	327	2120	43	16.7	21.3	1.6 +	0.4	(27.5)*	78	(6.6)	5		16.5	1	6	30
12	131	1892S	57	9.2	14.7	0.4 +	0.2	(7.6)*	70	(2.4)	9	(0.0)*	40.4	1	36	0
13	221	2029S	59	9.2	15.1	0.7 +	0.3	(13.2)*	73	(4.2)	10	(0.0)*	70.6	1	36	0
14	244	2029S	57	9.2	15.2	0.8 +	0.3	(14.7)*	74	(4.6)	10	(0.0)*	78.0	1	36	0
15	226	12L	57	9.2	14.8	0.7 +	0.3	(13.2)	103	(6.0)	9		19.2	1	36	0
16	150	12L	57	9.2	5.5	0.0 +	0.2	(3.3)	40	(1.5)	9		4.8	1	36	0
17	29	12L	57	9.2	9.1	0.0 +	0.0	(1.0)	21	(0.2)	9		1.2	1	36	0
18	226	13L	59	9.2	15.4	0.7 +	0.3	(13.7)	103	(6.0)	10		19.7	1	36	0
19	150	13L	59	9.2	6.2	0.1 +	0.2	(3.7)	54	(2.1)	10		5.7	1	36	0
20	354	2015	46	16.7	20.3	1.6 +	0.4	(28.3)*	77	(7.0)	6		17.0	2	6	32
21	787	2796f	73	16.7	22.4	3.6 +	1.3	(69.6)*	82	(16.6)	13		41.7	2	6	32
22	578	3989S	73	8.4	25.1	3.5 +	0.6	(57.2)*	105	(15.6)	25	(3.4)*	456.6	2	38	0
23	327	2063	34	8.4	25.1	2.0 +	0.3	(32.4)*	104	(8.7)	7	(0.0)*	170.8	2	38	0
24	465	22L	73	8.4	9.8	0.8 +	0.5	(18.0)	64	(7.7)	25	+	25.7	2	38	0
25	247	22L	73	8.4	6.5	0.2 +	0.2	(6.4)	73	(4.6)	25	+	11.0	2	38	0
26	85	22L	73	8.4	5.0	0.0 +	0.1	(1.7)	25	(0.5)	25	+	2.2	2	38	0
30	70	2015	16	16.7	27.4	0.4 +	0.1	(7.6)*	84	(1.5)	1		4.5	3	6	20
31	576	4270	63	16.7	30.3	4.0 +	0.8	(68.8)*	95	(14.0)	11		41.3	3	6	20
32	324	1926S	49	10.9	11.5	0.8 +	0.3	(14.7)*	91	(7.6)	8	(0.2)*	88.9	3	26	0
33	526	2063S	64	10.9	12.4	1.3 +	0.6	(25.8)*	97	(13.1)	11	(0.0)*	143.9	3	26	0
34	261	2063	20	10.9	6.7	0.4 +	0.1	(6.9)*	72	(4.9)	4	(0.0)*	39.4	3	26	0
35	241	32L	49	10.9	8.6	0.4 +	0.2	(8.2)	32	(2.0)	8	+	10.1	3	26	0
36	44	32L	49	10.9	6.3	0.0 +	0.0	(1.1)	19	(0.2)	8	+	1.3	3	26	0
37	327	33L	64	10.9	4.0	0.0 +	0.3	(5.1)	6	(0.5)	11	+	5.6	3	26	0
40	547	1995	101	16.7	112.6	4.0 +	13.1	(242.9)*	188	(26.5)	24		145.7	4	6	24
41	385	4230	34	16.7	22.8	2.2 +	0.3	(34.6)*	80	(7.9)	6		20.8	4	6	24
42	342	1941S	105	11.7	129.4	1.7 +	10.6	(174.5)*	210	(18.5)	61	(37.9)*	2597.1	4	30	0
43	234	2077S	41	11.7	12.0	0.6 +	0.2	(11.1)*	98	(5.9)	5	(0.0)*	61.5	4	30	0
44	526	42L	105	11.7	121.1	1.4 +	16.3	(251.2)	206	(27.9)	61	+	279.1	4	30	0
45	327	42L	105	11.7	128.4	1.5 +	10.1	(165.6)	187	(15.8)	61	+	181.4	4	30	0
46	261	43L	41	11.7	2.6	0.0 +	0.2	(2.7)	7	(0.5)	5		3.2	4	30	0
50	175	1975	39	16.7	29.4	1.1 +	0.3	(20.3)*	90	(4.1)	3		4.1	5	6	21
51	699	4250	72	16.7	31.5	4.8 +	1.3	(86.8)*	98	(17.6)	14		17.4	5	6	21
52	503	1936S	72	10.5	16.7	1.6 +	0.7	(33.2)*	105	(13.8)	14	(0.8)*	215.5	5	27	0
53	261	2072S	36	10.5	2.9	0.1 +	0.2	(3.0)*	6	(0.4)	0	(0.0)*	15.3	5	27	0
54	385	4144S	16	10.5	10.0	1.0 +	0.1	(15.1)*	92	(9.1)	7	(0.0)*	84.8	5	27	0
55	257	52L	72	10.5	5.7	0.0 +	0.4	(5.8)	20	(1.3)	14	+	7.2	5	27	0
56	93	52L	72	10.5	13.5	0.2 +	0.1	(4.9)	44	(1.1)	14	+	6.0	5	27	0
57	27	52L	72	10.5	15.2	0.1 +	0.0	(1.6)	76	(0.6)	14	+	2.2	5	27	0
58	205	53L	36	10.5	2.2	0.0 +	0.1	(1.7)	3	(0.2)	0		1.9	5	27	0
59	29	54L	16	10.5	0.8	0.0 +	0.0	(0.1)	1	(0.0)	7		0.1	5	27	0
60	622	2108	48	10.5	3.7	0.2 +	0.5	(9.0)	25	(4.0)	3		13.0			

70 SECOND CYCLE 70 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	836	6000S	29	10.5	0.4	0.0 + 0.1	(1.4)	1	(0.1)	0		1.5		
62	261	61L	29	10.5	0.4	0.0 + 0.0	(0.4)	1	(0.0)	0		0.5		
63	234	61L	29	10.5	0.4	0.0 + 0.0	(0.4)	1	(0.0)	0		0.4		
64	385	61L	29	10.5	0.4	0.0 + 0.0	(0.6)	1	(0.1)	0		0.7		
191	85	14L	57	9.2	6.2	0.1 + 0.1	(2.1)	54	(1.2)	10		3.3	1	36 0
192	247	14L	57	9.2	15.9	0.8 + 0.3	(15.5)	104	(6.6)	10		22.1	1	36 0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	166.6	13.8	49.6	63.6	(2939.0)	+	(199.6)	+	(1906.8)	=	5045.4	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	123.0	+	130.3	+	145.8	=	399.0

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 49

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10
- (SECONDS)

1	2	10	40
2	2	0	32
3	2	0	20
4	2	10	34
5	2	0	21

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	168.7	13.6	51.8	63.6	(2829.6)	+	(195.6)	+	(1876.4)	=	4901.6	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 359

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28
- (SECONDS)

1	2	38	68
2	2	0	32
3	2	28	48
4	2	10	34
5	2	42	63

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	168.5	13.6	51.7	63.5	(2571.4)	+	(176.4)	+	(1909.8)	=	4657.7	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 423

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     70 SECOND CYCLE  70 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   10  28  -1
  - (SECONDS)

     1       2      39      62
     2       2       2      28
     3       2      32      49
     4       2      15      34
     5       2      45      63

  TOTAL           TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE          TIME     JOURNEY       UNIFORM   RANDOM+   COST        COST           FOR       PERFORMANCE
TRAVELLED         SPENT      SPEED          DELAY   OVERSAT    OF          OF           EXCESS        INDEX
                                                     DELAY    DELAY       STOPS          QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)         ($/H)

  2292.5         206.3       11.1          51.4    101.5    (1916.0) + (  128.7)  +  ( 327.8)   =    2372.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   45
 NO. OF LINKS RECALCULATED= 1330



     70 SECOND CYCLE  70 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   10  28  -1  10
  - (SECONDS)

     1       2      29      52
     2       2       2      28
     3       2      42      59
     4       2      15      34
     5       2      55       3

  TOTAL           TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE          TIME     JOURNEY       UNIFORM   RANDOM+   COST        COST           FOR       PERFORMANCE
TRAVELLED         SPENT      SPEED          DELAY   OVERSAT    OF          OF           EXCESS        INDEX
                                                     DELAY    DELAY       STOPS          QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)         ($/H)

  2292.5         201.5       11.4          46.7    101.5    (1708.4) + (  106.2)  +  ( 199.2)   =    2013.8      TOTALS

 NO. OF ENTRIES TO SUBPT  =   12
 NO. OF LINKS RECALCULATED=  427



     70 SECOND CYCLE  70 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   10  28  -1  10  28
  - (SECONDS)

     1       2      29      52
     2       2       2      28
     3       2      42      59
     4       2      15      34
     5       2      55       3

  TOTAL           TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE          TIME     JOURNEY       UNIFORM   RANDOM+   COST        COST           FOR       PERFORMANCE
TRAVELLED         SPENT      SPEED          DELAY   OVERSAT    OF          OF           EXCESS        INDEX
                                                     DELAY    DELAY       STOPS          QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)         ($/H)

  2292.5         201.5       11.4          46.7    101.5    (1708.4) + (  106.2)  +  ( 199.2)   =    2013.8      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  404
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70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1
- (SECONDS)

1	2	28	51
2	2	3	29
3	2	39	56
4	2	15	34
5	2	58	6

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	200.9	11.4	46.0	101.5	(1706.1)	+	(104.9)	+	(151.9)	=	1962.9	TOTALS

NO. OF ENTRIES TO SUBPT = 17
NO. OF LINKS RECALCULATED= 569

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1 -1
- (SECONDS)

1	2	29	51
2	2	3	29
3	2	40	56
4	2	15	34
5	2	58	6

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	202.9	11.3	45.9	103.7	(1699.7)	+	(102.3)	+	(146.0)	=	1948.0	TOTALS

NO. OF ENTRIES TO SUBPT = 23
NO. OF LINKS RECALCULATED= 798

70 SECOND CYCLE 70 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 10 28 -1 10 28 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	29	51								
2	2	3	29								
3	2	40	56								
4	2	15	34								
5	2	58	6								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	GREEN END
10	878	4100	88	16.7	40.0	6.2 +	3.5	(138.4)*	112	(25.3)	20		83.0	1	35	51
11	327	2120	64	16.7	33.2	2.2 +	0.9	(42.9)*	99	(8.3)	6		25.7	1	35	51
12	131	1892S	46	9.2	10.1	0.3 +	0.1	(5.2)*	54	(1.8)	5	(0.0)*	28.0	1	57	29
13	221	2029S	48	9.2	10.0	0.4 +	0.2	(8.7)*	54	(3.1)	6	(0.0)*	46.6	1	57	29
14	244	2029S	46	9.2	9.7	0.5 +	0.2	(9.3)*	51	(3.2)	5	(0.0)*	49.8	1	57	29
15	226	12L	46	9.2	3.9	0.1 +	0.2	(3.5)	9	(0.5)	5		4.0	1	57	29
16	150	12L	46	9.2	10.4	0.3 +	0.1	(6.2)	90	(3.5)	5		9.7	1	57	29
17	29	12L	46	9.2	22.7	0.2 +	0.0	(2.6)	98	(0.7)	5		3.3	1	57	29
18	226	13L	48	9.2	3.8	0.1 +	0.2	(3.4)	8	(0.5)	6		3.9	1	57	29
19	150	13L	48	9.2	10.2	0.3 +	0.1	(6.0)	90	(3.5)	6		9.5	1	57	29
20	354	2015	59	16.7	28.0	2.0 +	0.7	(39.0)*	91	(8.3)	7		23.4	2	9	29
21	787	2987f	88	16.7	36.9	4.7 +	3.4	(114.6)*	108	(21.9)	17		68.8	2	9	29
22	578	3989S	62	8.4	2.2	0.0 +	0.3	(5.1)*	8	(1.2)	11	(0.1)*	33.3	2	35	3
23	327	2063	28	8.4	2.2	0.0 +	0.2	(2.8)*	3	(0.3)	0	(0.0)*	14.4	2	35	3
24	465	22L	62	8.4	10.7	1.1 +	0.3	(19.6)	51	(6.1)	11	+	25.7	2	35	3
25	247	22L	62	8.4	14.3	0.8 +	0.1	(13.9)	97	(6.2)	11	+	20.1	2	35	3
26	85	22L	62	8.4	6.0	0.1 +	0.0	(2.0)	17	(0.4)	11	+	2.4	2	35	3
30	70	2015	22	16.7	33.1	0.5 +	0.1	(9.1)*	94	(1.7)	1		5.5	3	46	56
31	576	4270	86	16.7	46.6	4.6 +	2.9	(105.9)*	118	(17.5)	14		63.6	3	46	56
32	324	1926S	45	10.9	3.0	0.1 +	0.2	(3.9)*	7	(0.6)	4	(0.0)*	19.9	3	62	40
33	526	2063S	59	10.9	4.0	0.1 +	0.4	(8.3)*	21	(2.8)	7	(0.0)*	44.1	3	62	40
34	261	2063	18	10.9	2.2	0.0 +	0.1	(2.3)*	6	(0.4)	0	(0.0)*	11.7	3	62	40
35	241	32L	45	10.9	9.5	0.5 +	0.2	(9.0)	53	(3.3)	4		12.3	3	62	40
36	44	32L	45	10.9	15.5	0.2 +	0.0	(2.7)	98	(1.1)	4		3.8	3	62	40
37	327	33L	59	10.9	10.4	0.7 +	0.3	(13.4)	94	(7.9)	7		21.3	3	62	40
40	547	1995	137	16.7	537.9	5.9 +	75.8	(999.9)*	267	(37.7)	87	+	696.3	4	21	34
41	385	4230	46	16.7	28.6	2.6 +	0.4	(43.4)*	90	(8.9)	7		26.0	4	21	34
42	342	1941S	94	11.7	21.8	0.2 +	1.8	(29.4)*	90	(7.9)	23	(3.1)*	294.5	4	40	15
43	234	2077S	36	11.7	2.1	0.0 +	0.1	(1.9)*	3	(0.2)	4	(0.0)*	9.9	4	40	15
44	526	42L	94	11.7	28.6	1.4 +	2.8	(59.3)	120	(16.2)	23	+	75.4	4	40	15
45	327	42L	94	11.7	23.1	0.3 +	1.8	(29.7)	44	(3.7)	23	+	33.4	4	40	15
46	261	43L	36	11.7	5.6	0.3 +	0.2	(5.7)	61	(4.1)	4		9.9	4	40	15
50	175	1975	48	16.7	34.8	1.2 +	0.5	(24.0)*	99	(4.5)	3		4.8	5	64	6
51	699	4250	89	16.7	46.3	5.4 +	3.6	(127.5)*	118	(21.3)	17		25.5	5	64	6
52	370<	1936S	58	10.5	3.3	0.0 +	0.3	(4.9)*	3	(0.5)	7	(0.0)*	24.7	5	12	58
53	261	2072S	34	10.5	6.4	0.3 +	0.1	(6.5)*	27	(1.8)	5	(0.0)*	34.5	5	12	58
54	385	4144S	15	10.5	0.8	0.0 +	0.1	(1.2)*	1	(0.1)	1	(0.0)*	6.0	5	12	58
55	257	52L	58	10.5	14.6	0.8 +	0.2	(14.8)	102	(6.8)	7		21.6	5	12	58
56	95	52L	58	10.5	14.8	0.3 +	0.1	(5.5)	72	(1.7)	7		7.3	5	12	58
57	32	52L	58	10.5	6.4	0.0 +	0.0	(0.8)	56	(0.5)	7		1.3	5	12	58
58	205	53L	34	10.5	14.2	0.7 +	0.1	(11.5)	99	(5.2)	5		16.7	5	12	58
59	29	54L	15	10.5	8.7	0.1 +	0.0	(1.0)	82	(0.6)	1		1.6	5	12	58
60	622	2108	48	10.5	3.7	0.2 +	0.5	(9.1)	21	(3.4)	3		12.6			

70 SECOND CYCLE 70 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
61	836	6000S	29	10.5	0.4	0.0 +	0.1	(1.4)	1	(0.1)	0		1.5			
62	261	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.5			
63	234	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.4			
64	385	61L	29	10.5	0.4	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7			
191	85	14L	46	9.2	9.4	0.2 +	0.1	(3.2)	84	(1.8)	5		5.0	1	57	29
192	247	14L	46	9.2	3.8	0.1 +	0.2	(3.7)	8	(0.5)	5		4.2	1	57	29

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2292.5	202.9	11.3	45.9	103.7	(1699.7)	+	(102.3)	+	(146.0)	=	1948.0	TOTALS

ROUTE

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	123.0	+	172.0	+	117.4	=	412.4

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 420

PROGRAM TRANSYT FINISHED

================ end of file ================

[Printed at 16:23:11 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 AM PEAK+DEV+SP.DAT" at 16:27 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 AM Peak With Development + Symmetry Park

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	60
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 11409 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	M69 Junction 1 2026 AM Peak With Development + Symmetry Park

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CRUISE-SPEEDS CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	60	60	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET.................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	GIVEWAY COEFFS. A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0

56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
72)=	32	10	641	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	215	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	100	0	60	100	43	0	0	0	0	0	0	0	0
75)=	32	13	128	0	60	128	43	0	0	0	0	0	0	0	0
76)=	32	14	284	0	60	284	43	0	0	0	0	0	0	0	0
77)=	32	15	242	0	61	242	43	0	0	0	0	0	0	0	0
78)=	32	16	224	0	64	224	43	0	0	0	0	0	0	0	0
79)=	32	17	86	0	63	86	43	0	0	0	0	0	0	0	0
80)=	32	18	243	0	61	243	43	0	0	0	0	0	0	0	0
81)=	32	19	224	0	64	224	43	0	0	0	0	0	0	0	0
82)=	32	20	381	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	893	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	287	0	10	287	43	0	0	0	0	0	0	0	0
85)=	32	23	215	0	11	215	43	0	0	0	0	0	0	0	0
86)=	32	24	412	0	14	284	43	13	128	43	0	0	0	0	0
87)=	32	25	173	0	192	173	43	0	0	0	0	0	0	0	0
88)=	32	26	61	0	191	61	43	0	0	0	0	0	0	0	0
89)=	32	30	152	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	1386	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	370	0	20	370	43	0	0	0	0	0	0	0	0
92)=	32	33	594	0	21	594	43	0	0	0	0	0	0	0	0
93)=	32	34	299	0	21	299	43	0	0	0	0	0	0	0	0
94)=	32	35	284	0	24	284	43	0	0	0	0	0	0	0	0
95)=	32	36	32	0	25	32	43	0	0	0	0	0	0	0	0
96)=	32	37	215	0	23	215	43	0	0	0	0	0	0	0	0
97)=	32	40	418	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	509	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	643	0	31	643	43	0	0	0	0	0	0	0	0
100)=	32	43	743	0	31	743	43	0	0	0	0	0	0	0	0
101)=	32	44	594	0	33	594	43	0	0	0	0	0	0	0	0
102)=	32	45	215	0	37	215	43	0	0	0	0	0	0	0	0
103)=	32	46	299	0	34	299	43	0	0	0	0	0	0	0	0
104)=	32	50	267	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	658	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	355	0	40	355	43	0	0	0	0	0	0	0	0
107)=	32	53	299	0	46	299	43	0	0	0	0	0	0	0	0
108)=	32	54	509	0	41	509	43	0	0	0	0	0	0	0	0
109)=	32	55	343	0	42	343	43	0	0	0	0	0	0	0	0
110)=	32	56	134	0	44	134	43	0	0	0	0	0	0	0	0
111)=	32	57	10	0	45	10	43	0	0	0	0	0	0	0	0
112)=	32	58	657	0	43	657	43	0	0	0	0	0	0	0	0
113)=	32	59	86	0	43	86	43	0	0	0	0	0	0	0	0
114)=	32	60	532	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	919	0	51	658	43	50	261	43	0	0	0	0	0
116)=	32	62	299	0	53	299	43	0	0	0	0	0	0	0	0
117)=	32	63	743	0	58	657	43	59	86	43	0	0	0	0	0
118)=	32	64	509	0	54	509	43	0	0	0	0	0	0	0	0
119)=	32	191	61	0	64	61	43	0	0	0	0	0	0	0	0
120)=	32	192	173	0	61	173	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

60 SECOND CYCLE 60 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	21								
2	2	0	34								
3	2	0	28								
4	2	0	16								
5	2	0	18								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	641	4100	59	16.7	23.1	3.4 +	0.7	(58.4)*	89	(14.7)	10		35.0	1	6	21
11	215	2120	38	16.7	23.1	1.1 +	0.3	(19.6)*	85	(4.7)	3		11.7	1	6	21
12	100	1892S	61	9.2	11.0	0.2 +	0.1	(4.4)*	56	(1.5)	6	(0.0)*	23.2	1	27	0
13	128	2029S	52	9.2	9.3	0.2 +	0.1	(4.7)*	48	(1.6)	5	(0.0)*	25.2	1	27	0
14	284	2029S	45	9.2	9.4	0.5 +	0.2	(10.5)*	49	(3.6)	5	(0.0)*	56.1	1	27	0
15	243	12L	61	9.2	7.8	0.2 +	0.3	(7.5)	75	(4.7)	6		12.2	1	27	0
16	224	12L	61	9.2	4.7	0.0 +	0.3	(4.2)	9	(0.5)	6		4.7	1	27	0
17	86	12L	61	9.2	16.4	0.3 +	0.1	(5.6)	69	(1.5)	6		7.1	1	27	0
18	243	13L	52	9.2	5.4	0.1 +	0.2	(5.1)	56	(3.5)	5		8.7	1	27	0
19	224	13L	52	9.2	3.7	0.0 +	0.2	(3.2)	7	(0.4)	5		3.7	1	27	0
20	381	2015	39	16.7	12.9	1.0 +	0.3	(19.4)*	64	(6.3)	4		11.6	2	6	34
21	893	2750f	67	16.7	14.2	2.5 +	1.0	(50.2)*	67	(15.5)	11		30.1	2	6	34
22	287	3989S	67	8.4	28.0	1.9 +	0.3	(31.7)*	106	(7.9)	15	(1.0)*	209.6	2	40	0
23	215	2063	30	8.4	28.6	1.5 +	0.2	(24.3)*	106	(5.9)	4	(0.0)*	127.2	2	40	0
24	412	22L	67	8.4	15.7	1.4 +	0.4	(25.6)	87	(9.3)	15	+	34.9	2	40	0
25	173	22L	67	8.4	11.6	0.4 +	0.2	(7.9)	97	(4.3)	15	+	12.3	2	40	0
26	61	22L	67	8.4	10.2	0.1 +	0.1	(2.5)	39	(0.6)	15	+	3.1	2	40	0
30	152	2015	20	16.7	15.2	0.5 +	0.1	(9.1)*	67	(2.6)	2		5.5	3	6	28
31	1386	4270	85	16.7	23.9	6.5 +	2.7	(130.8)*	97	(34.7)	23		78.5	3	6	28
32	370	1926S	79	10.9	26.9	1.8 +	1.0	(39.2)*	113	(10.8)	10	(1.4)*	272.1	3	34	0
33	595	2063S	87	10.9	30.3	2.6 +	2.4	(71.1)*	121	(18.5)	15	(1.1)*	425.3	3	34	0
34	298	2063	32	10.9	14.2	0.9 +	0.2	(16.7)*	91	(7.0)	5	(0.0)*	90.6	3	34	0
35	284	32L	79	10.9	22.9	1.0 +	0.8	(25.6)	60	(4.4)	10	+	30.0	3	34	0
36	32	32L	79	10.9	24.5	0.1 +	0.1	(3.1)	63	(0.5)	10	+	3.6	3	34	0
37	215	33L	87	10.9	17.5	0.2 +	0.9	(14.8)	52	(2.9)	15	+	17.7	3	34	0
40	418	1995	114	16.7	285.7	3.5 +	29.6	(471.1)*	263	(28.4)	37		282.7	4	6	16
41	509	4230	66	16.7	29.5	3.2 +	0.9	(59.2)*	99	(13.0)	9		35.5	4	6	16
42	643	1941S	115	11.7	265.2	3.4 +	43.9	(672.6)*	272	(45.0)	127	(**.4)*	8151.6	4	22	0
43	743	2077S	77	11.7	9.8	0.8 +	1.2	(28.6)*	87	(16.7)	14	(0.3)*	173.6	4	22	0
44	595	42L	115	11.7	264.7	3.1 +	40.6	(621.2)	246	(37.7)	127	+	658.9	4	22	0
45	215	42L	115	11.7	270.9	1.5 +	14.7	(229.8)	267	(14.8)	127	+	244.5	4	22	0
46	298	43L	77	11.7	6.8	0.1 +	0.5	(8.0)	15	(1.2)	14	+	9.2	4	22	0
50	267	1975	62	16.7	32.4	1.6 +	0.8	(34.1)*	104	(7.2)	5		6.8	5	6	18
51	658	4250	71	16.7	28.6	4.0 +	1.2	(74.2)*	99	(16.8)	11		14.8	5	6	18
52	311<	1936S	63	10.5	15.4	1.0 +	0.4	(18.9)*	92	(8.4)	9	(0.0)*	103.5	5	24	0
53	298	2072S	75	10.5	16.0	0.9 +	0.5	(18.8)*	60	(4.6)	4	(0.0)*	98.8	5	24	0
54	509	4144S	23	10.5	8.1	1.0 +	0.1	(16.3)*	92	(12.1)	8	(0.0)*	93.7	5	24	0
55	335	52L	63	10.5	12.4	0.8 +	0.4	(16.3)	46	(4.0)	9	+	20.4	5	24	0
56	99<	52L	63	10.5	9.7	0.2 +	0.1	(3.8)	46	(1.6)	9	+	5.4	5	24	0
57	9	52L	63	10.5	4.5	0.0 +	0.0	(0.2)	10	(0.0)	9	+	0.2	5	24	0
58	657	53L	75	10.5	5.8	0.1 +	1.0	(15.1)	10	(1.8)	4		16.8	5	24	0
59	86	54L	23	10.5	1.2	0.0 +	0.0	(0.4)	3	(0.1)	8		0.5	5	24	0
60	532	2108	54	10.5	5.5	0.2 +	0.6	(11.5)	42	(5.8)	3		17.3			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
61	919	6000S	41	10.5	0.5	0.0 +	0.1	(1.8)	1	(0.2)	0		2.0			
62	298	61L	41	10.5	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7			
63	743	61L	41	10.5	0.5	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
64	509	61L	41	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1			
191	61	14L	45	9.2	3.3	0.0 +	0.0	(0.8)	7	(0.1)	5		0.9	1	27	0
192	173	14L	45	9.2	5.8	0.1 +	0.1	(3.9)	64	(2.8)	5		6.8	1	27	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2669.7	266.7	10.0	54.1	150.4	(6323.0) +	(246.5) +	(4917.6) =	11487.1	TOTALS

****

	CRUISE LITRES PER HOUR	DELAY LITRES PER HOUR	STOPS LITRES PER HOUR	TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	143.2 +	235.3 +	177.9 =	556.4

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 49

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9
- (SECONDS)

1	2	9	30
2	2	0	34
3	2	0	28
4	2	51	7
5	2	0	18

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2669.7	265.7	10.0	53.2	150.4	(6211.9) +	(243.2) +	(4784.2) =	11239.3	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 387

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24
- (SECONDS)

1	2	33	54
2	2	24	58
3	2	0	28
4	2	51	7
5	2	48	6

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2669.7	265.5	10.1	52.9	150.5	(5950.2) +	(241.7) +	(4830.0) =	11021.9	TOTALS

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 414

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1
- (SECONDS)

1	2	38	59
2	2	27	57
3	2	11	28
4	2	52	7
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2669.7	451.4	5.9	52.5	336.8	(3879.4)	+	(117.4)	+	(181.1)	=	4177.8	TOTALS

NO. OF ENTRIES TO SUBPT = 48
NO. OF LINKS RECALCULATED= 1219

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9
- (SECONDS)

1	2	47	8
2	2	27	57
3	2	11	28
4	2	1	16
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2669.7	449.2	5.9	50.3	336.8	(3762.0)	+	(102.2)	+	(116.6)	=	3980.8	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 405

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24
- (SECONDS)

1	2	47	8
2	2	27	57
3	2	11	28
4	2	1	16
5	2	50	5

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2669.7	449.2	5.9	50.3	336.8	(3762.0)	+	(102.2)	+	(116.6)	=	3980.8	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 420

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1
- (SECONDS)

1	2	47	8
2	2	23	53
3	2	10	27
4	2	2	17
5	2	53	8

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2669.7	448.4	6.0	49.5	336.8	(3743.0) +	(92.5) +	(61.6) =	3897.1	TOTALS

NO. OF ENTRIES TO SUBPT = 18
NO. OF LINKS RECALCULATED= 636

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1 -1
- (SECONDS)

1	2	52	8
2	2	24	51
3	2	9	27
4	2	3	17
5	2	52	8

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2669.7	428.8	6.2	48.8	317.9	(3555.4) +	(82.7) +	(34.7) =	3672.7	TOTALS

NO. OF ENTRIES TO SUBPT = 29
NO. OF LINKS RECALCULATED= 1023

60 SECOND CYCLE 60 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 9 24 -1 9 24 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	50	6								
2	2	23	50								
3	2	9	27								
4	2	4	18								
5	2	51	7								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	641	4100	85	16.7	39.2	4.2 +	2.8	(99.1)*	116	(19.2)	13		59.5	1	56	6
11	215	2120	55	16.7	32.6	1.3 +	0.6	(27.6)*	103	(5.7)	4		16.6	1	56	6
12	100	1892S	51	9.2	7.4	0.1 +	0.1	(2.9)*	42	(1.1)	3	(0.0)*	15.8	1	12	50
13	128	2029S	45	9.2	6.7	0.1 +	0.1	(3.4)*	39	(1.3)	2	(0.0)*	18.1	1	12	50
14	284	2029S	39	9.2	6.6	0.3 +	0.2	(7.4)*	41	(3.0)	3	(0.0)*	40.1	1	12	50
15	243	12L	51	9.2	3.1	0.0 +	0.2	(3.0)	12	(0.7)	3		3.7	1	12	50
16	224	12L	51	9.2	5.4	0.1 +	0.2	(4.7)	18	(1.1)	3		5.8	1	12	50
17	58<	12L	51	9.2	11.6	0.1 +	0.0	(2.6)	55	(1.2)	3		3.9	1	12	50
18	243	13L	45	9.2	2.5	0.0 +	0.2	(2.4)	6	(0.4)	2		2.8	1	12	50
19	224	13L	45	9.2	4.8	0.1 +	0.2	(4.3)	18	(1.0)	2		5.3	1	12	50
20	381	2015	52	16.7	19.9	1.6 +	0.5	(29.8)*	81	(8.0)	5		17.9	2	29	50
21	893	2948f	83	16.7	24.7	3.8 +	2.3	(87.1)*	93	(21.5)	15		52.2	2	29	50
22	287	3989S	50	8.4	2.0	0.0 +	0.2	(2.3)*	5	(0.4)	9	(0.0)*	11.8	2	56	23
23	215	2063	22	8.4	2.4	0.0 +	0.1	(2.1)*	4	(0.2)	0	(0.0)*	10.5	2	56	23
24	412	22L	50	8.4	14.3	1.4 +	0.2	(23.3)	68	(7.2)	9		30.5	2	56	23
25	173	22L	50	8.4	25.4	1.1 +	0.1	(17.4)	91	(4.0)	9		21.4	2	56	23
26	61	22L	50	8.4	11.8	0.2 +	0.0	(2.8)	87	(1.4)	9		4.2	2	56	23
30	152	2015	35	16.7	26.2	0.8 +	0.3	(15.7)*	91	(3.5)	2		9.4	3	15	27
31	1386	4270	150	16.7	638.2	13.8 +	231.9	(999.9)*	265	(94.8)	257	+	2093.3	3	15	27
32	370	1926S	58	10.9	3.8	0.0 +	0.4	(5.6)*	14	(1.4)	6	(0.0)*	29.5	3	33	9
33	595	2063S	64	10.9	4.2	0.1 +	0.6	(10.0)*	21	(3.2)	6	(0.0)*	53.0	3	33	9
34	298	2063	23	10.9	1.9	0.0 +	0.2	(2.3)*	3	(0.3)	0	(0.0)*	11.6	3	33	9
35	284	32L	58	10.9	15.4	0.9 +	0.3	(17.2)	81	(5.9)	6		23.1	3	33	9
36	32	32L	58	10.9	11.7	0.1 +	0.0	(1.5)	51	(0.4)	6		1.9	3	33	9
37	215	33L	64	10.9	20.5	1.0 +	0.2	(17.4)	106	(5.8)	6		23.3	3	33	9
40	418	1995	140	16.7	564.1	4.4 +	61.1	(930.1)*	269	(29.0)	68	+	558.0	4	10	18
41	509	4230	80	16.7	38.5	3.5 +	2.0	(77.4)*	114	(14.9)	10		46.4	4	10	18
42	429<	1941S	93	11.7	19.9	0.2 +	2.2	(33.8)*	56	(9.3)	16	(0.5)*	199.5	4	24	4
43	496<	2077S	56	11.7	2.9	0.0 +	0.4	(5.7)*	5	(1.0)	3	(0.0)*	29.7	4	24	4
44	595	42L	93	11.7	23.3	0.9 +	3.0	(54.6)	64	(9.8)	16	+	64.4	4	24	4
45	215	42L	93	11.7	18.2	0.0 +	1.1	(15.5)	30	(1.6)	16	+	17.1	4	24	4
46	298	43L	56	11.7	7.3	0.4 +	0.2	(8.5)	34	(2.7)	3		11.2	4	24	4
50	267	1975	74	16.7	41.6	1.7 +	1.4	(43.8)*	118	(8.2)	6		8.8	5	57	7
51	658	4250	84	16.7	37.9	4.3 +	2.6	(98.4)*	114	(19.4)	13		19.7	5	57	7
52	254<	1936S	50	10.5	2.9	0.0 +	0.2	(2.9)*	3	(0.3)	3	(0.0)*	14.6	5	13	51
53	298	2072S	55	10.5	9.4	0.5 +	0.2	(11.0)*	69	(5.4)	5	(0.0)*	60.5	5	13	51
54	509	4144S	21	10.5	0.8	0.0 +	0.1	(1.7)*	1	(0.2)	0	(0.0)*	8.7	5	13	51
55	229<	52L	50	10.5	6.2	0.2 +	0.2	(5.6)	16	(1.4)	3		7.0	5	13	51
56	134	52L	50	10.5	7.8	0.2 +	0.1	(4.1)	62	(2.2)	3		6.3	5	13	51
57	10	52L	50	10.5	16.6	0.0 +	0.0	(0.7)	100	(0.3)	3		0.9	5	13	51
58	438<	53L	55	10.5	5.6	0.3 +	0.4	(9.8)	13	(2.3)	5		12.0	5	13	51
59	58<	54L	21	10.5	3.4	0.0 +	0.0	(0.8)	11	(0.2)	0		1.0	5	13	51
60	532	2108	49	10.5	4.1	0.1 +	0.5	(8.5)	21	(2.9)	2		11.4			

60 SECOND CYCLE 60 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	919	6000S	37	10.5	0.5	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9		
62	298	61L	37	10.5	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.6		
63	496<	61L	37	10.5	0.5	0.0 +	0.1	(0.9)	1	(0.1)	0		1.0		
64	509	61L	37	10.5	0.5	0.0 +	0.1	(1.0)	1	(0.1)	0		1.1		
191	61	14L	39	9.2	4.6	0.0 +	0.0	(1.1)	17	(0.3)	3		1.4	1	12 50
192	173	14L	39	9.2	2.4	0.0 +	0.1	(1.6)	9	(0.4)	3		2.0	1	12 50

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2669.7	428.3	6.2	48.4	317.9	(3548.7)	+	(80.4)	+	(21.6)	=	3650.6	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	143.2	+	421.2	+	138.8	=	703.1

NO. OF ENTRIES TO SUBPT = 15
NO. OF LINKS RECALCULATED= 555

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:25:18 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
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Run with file:- "2026 PM PEAK+DEV+SP.DAT" at 16:36 on 20160222

TRANSYT 12.0

M69 Junction 1 2026 PM Peak With Development + Symmetry Park

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	5
NUMBER OF LINKS	=	49
NUMBER OF OPTIMISED NODES	=	5
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	70
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	12

CORE REQUESTED = 12019 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	M69 Junction 1 2026 PM Peak With Development + Symmetry Park

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CRUISE-SPEEDS CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	70	70	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	3	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	15	16	17	0	13	19	18	0	0	14	191	192	0
5)=	7	22	24	25	26	0	32	35	36	0	0	33	37	0	0
6)=	7	42	44	45	0	0	43	46	0	0	0	52	55	56	57
7)=	7	53	58	0	0	0	54	59	0	0	0	61	62	63	64

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	10	1	7	7								
9)=	10	2	7	7								
10)=	10	3	7	7								
11)=	10	4	7	7								
12)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	11	1	6	6								
14)=	11	2	6	6								
15)=	11	3	6	6								
16)=	11	4	6	6								
17)=	11	5	6	6								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
18)=	12	1	1	0	0								
19)=	12	2	1	0	0								
20)=	12	3	1	0	0								
21)=	12	4	1	0	0								
22)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
23)=	30	60	61	0	0	47	100	0	0	0	0	125	0	2108	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
24)=	31	10	1	1	6	2	0	0	0	0	0	200	-9999	4100	60
25)=	31	11	1	1	6	2	0	0	0	0	0	200	-9999	2120	60
26)=	31	12	1	2	6	1	0	0	0	0	0	110	0	1892	500
27)=	31	13	1	2	6	1	0	0	0	0	0	110	0	2029	500
28)=	31	14	1	2	6	1	0	0	0	0	0	110	0	2029	500
29)=	31	15	1	1	0	1	0	0	0	0	0	110	0	0	0
30)=	31	16	1	1	0	1	0	0	0	0	0	110	0	0	0
31)=	31	17	1	1	0	1	0	0	0	0	0	110	0	0	0
32)=	31	18	1	1	0	1	0	0	0	0	0	110	0	0	0
33)=	31	19	1	1	0	1	0	0	0	0	0	110	0	0	0
34)=	31	20	2	1	6	2	0	0	0	0	0	200	-9999	2015	60
35)=	31	21	2	1	6	2	0	0	0	0	0	200	-9999	2130	60
36)=	31	22	2	2	6	1	0	0	0	0	0	100	0	3989	500
37)=	31	23	2	2	6	1	0	0	0	0	0	100	0	2063	500
38)=	31	24	2	1	0	1	0	0	0	0	0	100	0	0	0
39)=	31	25	2	1	0	1	0	0	0	0	0	100	0	0	0
40)=	31	26	2	1	0	1	0	0	0	0	0	100	0	0	0
41)=	31	30	3	1	6	2	0	0	0	0	0	200	-9999	2015	60
42)=	31	31	3	1	6	2	0	0	0	0	0	200	-9999	4270	60
43)=	31	32	3	2	6	1	0	0	0	0	0	130	0	1926	500
44)=	31	33	3	2	6	1	0	0	0	0	0	130	0	2063	500
45)=	31	34	3	2	6	1	0	0	0	0	0	130	0	2063	500
46)=	31	35	3	1	0	1	0	0	0	0	0	130	0	0	0
47)=	31	36	3	1	0	1	0	0	0	0	0	130	0	0	0
48)=	31	37	3	1	0	1	0	0	0	0	0	130	0	0	0
49)=	31	40	4	1	6	2	0	0	0	0	0	200	-9999	1995	60
50)=	31	41	4	1	6	2	0	0	0	0	0	200	-9999	4230	60
51)=	31	42	4	2	6	1	0	0	0	0	0	140	0	1941	500
52)=	31	43	4	2	6	1	0	0	0	0	0	140	0	2077	500
53)=	31	44	4	1	0	1	0	0	0	0	0	140	0	0	0
54)=	31	45	4	1	0	1	0	0	0	0	0	140	0	0	0
55)=	31	46	4	1	0	1	0	0	0	0	0	140	0	0	0

56)=	31	50	5	1	6	2	0	0	0	0	0	200	-9999	1975	20
57)=	31	51	5	1	6	2	0	0	0	0	0	200	-9999	4250	20
58)=	31	52	5	2	6	1	0	0	0	0	0	125	0	1936	500
59)=	31	53	5	2	6	1	0	0	0	0	0	125	0	2072	500
60)=	31	54	5	2	6	1	0	0	0	0	0	125	0	4144	500
61)=	31	55	5	1	0	1	0	0	0	0	0	125	0	0	0
62)=	31	56	5	1	0	1	0	0	0	0	0	125	0	0	0
63)=	31	57	5	1	0	1	0	0	0	0	0	125	0	0	0
64)=	31	58	5	1	0	1	0	0	0	0	0	125	0	0	0
65)=	31	59	5	1	0	1	0	0	0	0	0	125	0	0	0
66)=	31	61	0	0	0	0	0	0	0	0	0	125	0	6000	0
67)=	31	62	0	0	0	0	0	0	0	0	0	125	0	0	0
68)=	31	63	0	0	0	0	0	0	0	0	0	125	0	0	0
69)=	31	64	0	0	0	0	0	0	0	0	0	125	0	0	0
70)=	31	191	1	1	0	1	0	0	0	0	0	110	0	0	0
71)=	31	192	1	1	0	1	0	0	0	0	0	110	0	0	0

LINK CARDS: FLOW DATA

					ENTRY 1			ENTRY 2			ENTRY 3			ENTRY 4	
CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW	CRUISE SPEED	LINK NO.	FLOW
72)=	32	10	871	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	11	327	0	0	0	43	0	0	0	0	0	0	0	0
74)=	32	12	132	0	60	132	43	0	0	0	0	0	0	0	0
75)=	32	13	225	0	60	225	43	0	0	0	0	0	0	0	0
76)=	32	14	240	0	60	240	43	0	0	0	0	0	0	0	0
77)=	32	15	229	0	61	229	43	0	0	0	0	0	0	0	0
78)=	32	16	151	0	64	151	43	0	0	0	0	0	0	0	0
79)=	32	17	28	0	63	28	43	0	0	0	0	0	0	0	0
80)=	32	18	230	0	61	230	43	0	0	0	0	0	0	0	0
81)=	32	19	152	0	64	152	43	0	0	0	0	0	0	0	0
82)=	32	20	359	0	0	0	43	0	0	0	0	0	0	0	0
83)=	32	21	797	0	0	0	43	0	0	0	0	0	0	0	0
84)=	32	22	573	0	10	573	43	0	0	0	0	0	0	0	0
85)=	32	23	327	0	11	327	43	0	0	0	0	0	0	0	0
86)=	32	24	465	0	14	240	43	13	225	43	0	0	0	0	0
87)=	32	25	252	0	192	252	43	0	0	0	0	0	0	0	0
88)=	32	26	86	0	191	86	43	0	0	0	0	0	0	0	0
89)=	32	30	66	0	0	0	43	0	0	0	0	0	0	0	0
90)=	32	31	558	0	0	0	43	0	0	0	0	0	0	0	0
91)=	32	32	325	0	20	325	43	0	0	0	0	0	0	0	0
92)=	32	33	536	0	21	536	43	0	0	0	0	0	0	0	0
93)=	32	34	264	0	21	264	43	0	0	0	0	0	0	0	0
94)=	32	35	237	0	24	237	43	0	0	0	0	0	0	0	0
95)=	32	36	44	0	25	44	43	0	0	0	0	0	0	0	0
96)=	32	37	327	0	23	327	43	0	0	0	0	0	0	0	0
97)=	32	40	546	0	0	0	43	0	0	0	0	0	0	0	0
98)=	32	41	389	0	0	0	43	0	0	0	0	0	0	0	0
99)=	32	42	332	0	31	332	43	0	0	0	0	0	0	0	0
100)=	32	43	226	0	31	226	43	0	0	0	0	0	0	0	0
101)=	32	44	536	0	33	536	43	0	0	0	0	0	0	0	0
102)=	32	45	327	0	37	327	43	0	0	0	0	0	0	0	0
103)=	32	46	264	0	34	264	43	0	0	0	0	0	0	0	0
104)=	32	50	175	0	0	0	43	0	0	0	0	0	0	0	0
105)=	32	51	711	0	0	0	43	0	0	0	0	0	0	0	0
106)=	32	52	506	0	40	506	43	0	0	0	0	0	0	0	0
107)=	32	53	264	0	46	264	43	0	0	0	0	0	0	0	0
108)=	32	54	389	0	41	389	43	0	0	0	0	0	0	0	0
109)=	32	55	248	0	42	248	43	0	0	0	0	0	0	0	0
110)=	32	56	95	0	44	95	43	0	0	0	0	0	0	0	0
111)=	32	57	32	0	45	32	43	0	0	0	0	0	0	0	0
112)=	32	58	198	0	43	198	43	0	0	0	0	0	0	0	0
113)=	32	59	28	0	43	28	43	0	0	0	0	0	0	0	0
114)=	32	60	621	0	0	0	43	0	0	0	0	0	0	0	0
115)=	32	61	848	0	51	711	43	50	137	43	0	0	0	0	0
116)=	32	62	264	0	53	264	43	0	0	0	0	0	0	0	0
117)=	32	63	226	0	58	198	43	59	28	43	0	0	0	0	0
118)=	32	64	389	0	54	389	43	0	0	0	0	0	0	0	0
119)=	32	191	86	0	64	86	43	0	0	0	0	0	0	0	0
120)=	32	192	252	0	61	252	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
121)=	33	21	2130	5	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
122)=	38	12	10	4500	13	10	4500	14	10	4500	22	9	4500	23	7
123)=	38	32	6	4500	33	10	4500	34	10	4500	42	11	4500	43	11
124)=	38	52	9	4500	53	9	4500	54	18	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

70 SECOND CYCLE 70 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	30								
2	2	0	32								
3	2	0	20								
4	2	0	24								
5	2	0	21								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	871	4100	59	16.7	21.4	4.4 + 0.7	(73.5)*	82	(18.4)	15		44.1	1	6	30
11	327	2120	43	16.7	21.3	1.6 + 0.4	(27.5)*	78	(6.6)	5		16.5	1	6	30
12	132	1892S	57	9.2	14.8	0.4 + 0.2	(7.7)*	71	(2.4)	9	(0.0)*	40.8	1	36	0
13	225	2029S	60	9.2	15.3	0.7 + 0.3	(13.5)*	74	(4.3)	11	(0.0)*	72.7	1	36	0
14	240	2029S	57	9.2	15.2	0.7 + 0.3	(14.4)*	74	(4.6)	10	(0.0)*	76.8	1	36	0
15	229	12L	57	9.2	14.8	0.7 + 0.3	(13.4)	103	(6.1)	9		19.5	1	36	0
16	151	12L	57	9.2	5.6	0.1 + 0.2	(3.3)	41	(1.6)	9		5.0	1	36	0
17	28	12L	57	9.2	9.0	0.0 + 0.0	(1.0)	21	(0.2)	9		1.2	1	36	0
18	231	13L	60	9.2	15.5	0.7 + 0.3	(14.1)	104	(6.2)	11	+	20.3	1	36	0
19	152	13L	60	9.2	6.4	0.1 + 0.2	(3.9)	56	(2.2)	11	+	6.1	1	36	0
20	359	2015	46	16.7	20.4	1.6 + 0.4	(28.8)*	77	(7.1)	6		17.3	2	6	32
21	797	2796f	74	16.7	22.7	3.6 + 1.4	(71.3)*	83	(17.0)	14		42.8	2	6	32
22	573	3989S	73	8.4	25.1	3.4 + 0.6	(56.8)*	105	(15.5)	25	(3.4)*	452.6	2	38	0
23	327	2063	34	8.4	25.1	2.0 + 0.3	(32.4)*	104	(8.7)	7	(0.0)*	170.8	2	38	0
24	465	22L	73	8.4	9.8	0.8 + 0.5	(17.9)	63	(7.6)	25	+	25.5	2	38	0
25	253	22L	73	8.4	6.4	0.2 + 0.2	(6.4)	72	(4.7)	25	+	11.1	2	38	0
26	86	22L	73	8.4	5.0	0.0 + 0.1	(1.7)	23	(0.5)	25	+	2.2	2	38	0
30	66	2015	15	16.7	27.3	0.4 + 0.1	(7.1)*	84	(1.4)	1		4.3	3	6	20
31	558	4270	61	16.7	29.9	3.9 + 0.8	(65.8)*	94	(13.5)	11		39.5	3	6	20
32	325	1926S	49	10.9	11.4	0.8 + 0.3	(14.6)*	90	(7.6)	8	(0.2)*	88.6	3	26	0
33	536	2063S	65	10.9	12.6	1.3 + 0.6	(26.7)*	97	(13.4)	11	(0.1)*	149.2	3	26	0
34	265	2063	20	10.9	6.7	0.4 + 0.1	(7.0)*	73	(4.9)	4	(0.0)*	39.9	3	26	0
35	237	32L	49	10.9	8.6	0.4 + 0.2	(8.1)	32	(1.9)	8	+	10.0	3	26	0
36	44	32L	49	10.9	6.2	0.0 + 0.0	(1.1)	19	(0.2)	8	+	1.3	3	26	0
37	327	33L	65	10.9	4.0	0.0 + 0.4	(5.2)	6	(0.5)	11	+	5.7	3	26	0
40	546	1995	101	16.7	110.7	3.9 + 12.9	(238.5)*	186	(26.2)	23		143.1	4	6	24
41	389	4230	34	16.7	22.8	2.2 + 0.3	(35.0)*	80	(8.0)	6		21.0	4	6	24
42	331	1941S	105	11.7	128.4	1.6 + 10.2	(167.7)*	209	(17.9)	61	(37.5)*	2542.4	4	30	0
43	227	2077S	40	11.7	12.0	0.6 + 0.2	(10.8)*	98	(5.7)	5	(0.0)*	59.5	4	30	0
44	536	42L	105	11.7	119.7	1.4 + 16.5	(253.1)	205	(28.3)	61	+	281.4	4	30	0
45	327	42L	105	11.7	127.3	1.5 + 10.0	(164.3)	186	(15.7)	61	+	180.0	4	30	0
46	265	43L	40	11.7	2.6	0.0 + 0.2	(2.7)	6	(0.4)	5		3.1	4	30	0
50	175	1975	39	16.7	29.4	1.1 + 0.3	(20.3)*	90	(4.1)	3		4.1	5	6	21
51	711	4250	73	16.7	31.9	4.9 + 1.4	(89.3)*	98	(18.0)	14		17.9	5	6	21
52	501	1936S	71	10.5	16.6	1.6 + 0.7	(32.7)*	105	(13.7)	13	(0.7)*	209.1	5	27	0
53	265	2072S	36	10.5	2.9	0.1 + 0.2	(3.0)*	6	(0.4)	0	(0.0)*	15.5	5	27	0
54	389	4144S	16	10.5	10.0	1.0 + 0.1	(15.3)*	92	(9.2)	7	(0.0)*	85.8	5	27	0
55	247	52L	71	10.5	5.6	0.0 + 0.4	(5.4)	20	(1.3)	13	+	6.7	5	27	0
56	94	52L	71	10.5	13.0	0.2 + 0.1	(4.8)	42	(1.0)	13	+	5.9	5	27	0
57	27	52L	71	10.5	15.2	0.1 + 0.0	(1.6)	75	(0.6)	13	+	2.2	5	27	0
58	198	53L	36	10.5	2.2	0.0 + 0.1	(1.7)	3	(0.2)	0		1.8	5	27	0
59	28	54L	16	10.5	0.8	0.0 + 0.0	(0.1)	1	(0.0)	7		0.1	5	27	0
60	621	2108	48	10.5	3.7	0.2 + 0.5	(9.1)	26	(4.1)	3		13.2			

70 SECOND CYCLE 70 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
61	848	6000S	29	10.5	0.4	0.0 +	0.1	(1.4)	1	(0.1)	0		1.5			
62	265	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.5			
63	227	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.4			
64	389	61L	29	10.5	0.4	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7			
191	86	14L	57	9.2	6.4	0.1 +	0.1	(2.2)	55	(1.2)	10		3.4	1	36	0
192	253	14L	57	9.2	15.8	0.8 +	0.3	(15.8)	104	(6.8)	10		22.5	1	36	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	166.0	13.8	49.5	63.1	(2903.3)	+	(199.9)	+	(1882.3)	=	4985.4	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	123.1	+	129.5	+	145.9	=	398.5

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 49

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10
- (SECONDS)

1	2	10	40
2	2	0	32
3	2	0	20
4	2	10	34
5	2	0	21

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	168.2	13.6	51.8	63.1	(2793.1)	+	(195.9)	+	(1858.3)	=	4847.4	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 359

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28
- (SECONDS)

1	2	38	68
2	2	28	60
3	2	0	20
4	2	38	62
5	2	0	21

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	166.4	13.8	50.0	63.1	(2599.1)	+	(163.2)	+	(1922.0)	=	4684.2	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 394

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1
- (SECONDS)

1	2	47	1
2	2	35	59
3	2	7	20
4	2	43	62
5	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	241.8	9.5	48.7	139.6	(2093.5)	+	(98.1)	+	(128.0)	=	2319.6	TOTALS

NO. OF ENTRIES TO SUBPT = 52
NO. OF LINKS RECALCULATED= 1358

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10
- (SECONDS)

1	2	57	11
2	2	35	59
3	2	67	10
4	2	33	52
5	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	240.9	9.5	47.9	139.6	(2016.6)	+	(91.6)	+	(48.1)	=	2156.3	TOTALS

NO. OF ENTRIES TO SUBPT = 13
NO. OF LINKS RECALCULATED= 457

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28
- (SECONDS)

1	2	57	11
2	2	35	59
3	2	67	10
4	2	33	52
5	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	240.9	9.5	47.9	139.6	(2016.6)	+	(91.6)	+	(48.1)	=	2156.3	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 408

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1
- (SECONDS)

1	2	58	12
2	2	34	58
3	2	65	8
4	2	37	56
5	2	0	18

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	240.3	9.5	47.3	139.6	(2012.5)	+	(89.6)	+	(18.2)	=	2120.4	TOTALS

NO. OF ENTRIES TO SUBPT = 18
NO. OF LINKS RECALCULATED= 622

70 SECOND CYCLE 70 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 10 28 -1 10 28 1 -1
- (SECONDS)

1	2	59	11
2	2	33	59
3	2	63	8
4	2	37	55
5	2	0	18

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	218.6	10.5	47.1	118.1	(1862.7)	+	(93.2)	+	(31.4)	=	1987.3	TOTALS

NO. OF ENTRIES TO SUBPT = 24
NO. OF LINKS RECALCULATED= 848

70 SECOND CYCLE 70 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 10 28 -1 10 28 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	58	10								
2	2	33	59								
3	2	64	9								
4	2	38	56								
5	2	66	14								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	871	4100	87	16.7	39.2	6.2 +	3.3	(134.6)*	111	(24.9)	20		80.8	1	64	10
11	327	2120	64	16.7	33.2	2.2 +	0.9	(42.9)*	99	(8.3)	6		25.7	1	64	10
12	132	1892S	46	9.2	9.5	0.2 +	0.1	(4.9)*	49	(1.7)	7	(0.0)*	26.4	1	16	58
13	225	2029S	49	9.2	9.6	0.4 +	0.2	(8.6)*	50	(2.9)	9	(0.0)*	45.7	1	16	58
14	240	2029S	46	9.2	9.1	0.4 +	0.2	(8.7)*	48	(3.0)	6	(0.0)*	46.3	1	16	58
15	229	12L	46	9.2	4.1	0.1 +	0.2	(3.7)	39	(2.3)	7		6.0	1	16	58
16	151	12L	46	9.2	14.5	0.5 +	0.1	(8.6)	97	(3.8)	7		12.4	1	16	58
17	28	12L	46	9.2	5.4	0.0 +	0.0	(0.6)	15	(0.1)	7		0.7	1	16	58
18	231	13L	49	9.2	4.5	0.1 +	0.2	(4.1)	48	(2.8)	9		7.0	1	16	58
19	152	13L	49	9.2	14.8	0.5 +	0.1	(8.9)	98	(3.8)	9		12.7	1	16	58
20	359	2015	59	16.7	28.2	2.1 +	0.7	(39.9)*	91	(8.5)	7		23.9	2	39	59
21	797	2987f	89	16.7	38.4	4.8 +	3.7	(120.7)*	110	(22.6)	18		72.4	2	39	59
22	573	3989S	62	8.4	2.3	0.0 +	0.3	(5.1)*	8	(1.2)	10	(0.0)*	28.0	2	65	33
23	327	2063	28	8.4	2.2	0.0 +	0.2	(2.8)*	3	(0.3)	0	(0.0)*	14.4	2	65	33
24	464	22L	62	8.4	13.1	1.4 +	0.3	(23.9)	58	(6.9)	10	+	30.8	2	65	33
25	253	22L	62	8.4	19.2	1.2 +	0.1	(19.1)	65	(4.2)	10	+	23.4	2	65	33
26	86	22L	62	8.4	4.3	0.1 +	0.1	(1.4)	11	(0.3)	10	+	1.7	2	65	33
30	66	2015	23	16.7	34.7	0.5 +	0.1	(9.0)*	97	(1.6)	1		5.4	3	0	9
31	558	4270	91	16.7	59.0	4.6 +	4.6	(129.9)*	133	(19.1)	15		78.0	3	0	9
32	325	1926S	44	10.9	4.6	0.2 +	0.2	(5.9)*	17	(1.4)	4	(0.0)*	31.1	3	15	64
33	536	2063S	59	10.9	6.1	0.5 +	0.4	(12.9)*	35	(4.8)	8	(0.0)*	69.4	3	15	64
34	265	2063	18	10.9	4.3	0.2 +	0.1	(4.4)*	19	(1.3)	1	(0.0)*	23.5	3	15	64
35	237	32L	44	10.9	6.7	0.3 +	0.2	(6.3)	54	(3.3)	4		9.6	3	15	64
36	44	32L	44	10.9	8.0	0.1 +	0.0	(1.4)	62	(0.7)	4		2.1	3	15	64
37	327	33L	59	10.9	6.8	0.4 +	0.3	(8.8)	76	(6.4)	8		15.2	3	15	64
40	546	1995	147	16.7	634.4	6.9 +	89.3	(999.9)*	265	(37.3)	103	+	819.8	4	44	56
41	389	4230	50	16.7	30.1	2.8 +	0.5	(46.2)*	92	(9.3)	7		27.7	4	44	56
42	331	1941S	92	11.7	15.4	0.0 +	1.4	(20.1)*	32	(2.7)	16	(0.6)*	132.2	4	62	38
43	227	2077S	35	11.7	2.0	0.0 +	0.1	(1.8)*	3	(0.2)	1	(0.0)*	9.3	4	62	38
44	536	42L	92	11.7	18.3	0.5 +	2.2	(38.8)	84	(11.6)	16	+	50.4	4	62	38
45	327	42L	92	11.7	21.6	0.6 +	1.4	(27.8)	53	(4.5)	16	+	32.3	4	62	38
46	265	43L	35	11.7	2.2	0.0 +	0.1	(2.3)	7	(0.5)	1		2.8	4	62	38
50	175	1975	48	16.7	34.8	1.2 +	0.5	(24.0)*	99	(4.5)	3		4.8	5	2	14
51	711	4250	90	16.7	48.7	5.5 +	4.1	(136.5)*	122	(22.3)	18		27.3	5	2	14
52	343<	1936S	55	10.5	5.4	0.2 +	0.3	(7.4)*	11	(1.4)	6	(0.0)*	38.3	5	20	66
53	265	2072S	33	10.5	12.8	0.8 +	0.1	(13.4)*	85	(5.8)	7	(0.0)*	72.8	5	20	66
54	389	4144S	15	10.5	1.6	0.1 +	0.1	(2.4)*	5	(0.5)	0	(0.0)*	12.7	5	20	66
55	247	52L	55	10.5	4.2	0.1 +	0.2	(4.1)	37	(2.4)	6		6.5	5	20	66
56	95	52L	55	10.5	10.5	0.2 +	0.1	(3.9)	80	(2.0)	6		5.9	5	20	66
57	32	52L	55	10.5	8.5	0.0 +	0.0	(1.1)	36	(0.3)	6		1.4	5	20	66
58	198	53L	33	10.5	4.6	0.1 +	0.1	(3.6)	59	(3.0)	7		6.6	5	20	66
59	28	54L	15	10.5	0.8	0.0 +	0.0	(0.1)	3	(0.0)	0		0.1	5	20	66
60	621	2108	48	10.5	3.8	0.2 +	0.5	(9.3)	22	(3.5)	3		12.8			

70 SECOND CYCLE 70 STEPS

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START END 1ST (SEC
61	848	6000S	29	10.5	0.4	0.0 +	0.1	(1.4)	1	(0.1)	0		1.5		
62	265	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.5		
63	226	61L	29	10.5	0.4	0.0 +	0.0	(0.4)	1	(0.0)	0		0.4		
64	389	61L	29	10.5	0.4	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7		
191	86	14L	46	9.2	13.9	0.3 +	0.1	(4.7)	97	(2.1)	6		6.9	1	16 58
192	253	14L	46	9.2	3.4	0.0 +	0.2	(3.4)	26	(1.7)	6		5.1	1	16 58

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2294.5	218.0	10.5	46.5	118.1	(1847.4)	+	(93.5)	+	(30.1)	=	1971.1	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	123.1	+	189.3	+	114.7	=	427.1

NO. OF ENTRIES TO SUBPT = 16
NO. OF LINKS RECALCULATED= 577

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:25:47 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Nine Mile Ride Email: software@trl.co.uk
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Gibbet Hill A5_A426\
LCC LLITM Flows Feb 2016\2026 AM No Dev.vai"
(drive-on-the-left) at 16:39:47 on Thursday, 18 February 2016

FILE PROPERTIES
****

RUN TITLE: Gibbet Hill Roundabout AM Peak 2026 Without Development
LOCATION: Gibbet Hill Roundabout
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Gibbet Lane
ARM B - A5 South
ARM C - A426 South
ARM D - A5 North
ARM E - Rugby Road

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.90	8.00	10.00	19.00	66.00	68.0	0.421	21.146
ARM B	4.70	7.30	25.00	24.00	70.00	40.0	0.540	32.695
ARM C	3.65	6.90	20.00	44.00	70.00	56.0	0.481	27.373
ARM D	4.00	8.80	36.00	15.00	70.00	54.0	0.530	33.487
ARM E	3.65	7.20	27.00	100.00	70.00	52.0	0.511	29.895

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.54	2.31	1.54
ARM B	15.00	45.00	75.00	6.54	9.81	6.54
ARM C	15.00	45.00	75.00	17.54	26.31	17.54
ARM D	15.00	45.00	75.00	12.93	19.39	12.93
ARM E	15.00	45.00	75.00	8.05	12.08	8.05

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D	ARM E
07.15 - 08.45						
	ARM A	0.000	0.203	0.366	0.244	0.187
		0.0	25.0	45.0	30.0	23.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.042	0.017	0.151	0.656	0.134
		22.0	9.0	79.0	343.0	70.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.040	0.051	0.000	0.441	0.468
		56.0	72.0	0.0	619.0	656.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.014	0.549	0.430	0.000	0.007
		14.0	568.0	445.0	0.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.034	0.332	0.632	0.002	0.000
		22.0	214.0	407.0	1.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	1.54	12.12	0.127	- - -	0.0	0.1	2.1	-	0.094
ARM B	6.56	26.28	0.250	- - -	0.0	0.3	4.9	-	0.051
ARM C	17.60	24.38	0.722	- - -	0.0	2.5	34.8	-	0.141
ARM D	12.97	27.50	0.472	- - -	0.0	0.9	12.9	-	0.068
ARM E	8.08	22.32	0.362	- - -	0.0	0.6	8.2	-	0.070

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	1.84	10.35	0.178	- - -	0.1	0.2	3.1	-	0.117
ARM B	7.84	25.01	0.313	- - -	0.3	0.5	6.7	-	0.058
ARM C	21.02	23.79	0.884	- - -	2.5	6.5	82.7	-	0.306
ARM D	15.49	26.35	0.588	- - -	0.9	1.4	20.4	-	0.092
ARM E	9.65	20.84	0.463	- - -	0.6	0.9	12.4	-	0.089

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	2.26	8.01	0.282	- - -	0.2	0.4	5.6	-	0.173
ARM B	9.60	23.31	0.412	- - -	0.5	0.7	10.2	-	0.073
ARM C	25.75	22.98	1.120	- - -	6.5	51.6	447.8	-	1.451
ARM D	18.97	25.54	0.743	- - -	1.4	2.8	39.0	-	0.148
ARM E	11.82	18.95	0.624	- - -	0.9	1.6	23.0	-	0.138

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	2.26	7.95	0.284	- - -	0.4	0.4	5.9	-	0.176
ARM B	9.60	23.27	0.412	- - -	0.7	0.7	10.5	-	0.073
ARM C	25.75	22.97	1.121	- - -	51.6	93.6	1089.6	-	3.279
ARM D	18.97	25.48	0.745	- - -	2.8	2.9	42.4	-	0.154
ARM E	11.82	18.90	0.625	- - -	1.6	1.6	24.5	-	0.141

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	1.84	10.21	0.180	- - -	0.4	0.2	3.4	-	0.120
ARM B	7.84	24.95	0.314	- - -	0.7	0.5	7.0	-	0.059
ARM C	21.02	23.77	0.884	- - -	93.6	56.1	1123.4	-	3.203
ARM D	15.49	25.53	0.607	- - -	2.9	1.6	24.6	-	0.101
ARM E	9.65	20.65	0.467	- - -	1.6	0.9	13.8	-	0.092

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	1.54	11.98	0.129	- - -	0.2	0.1	2.3	-	0.096
ARM B	6.56	26.23	0.250	- - -	0.5	0.3	5.1	-	0.051
ARM C	17.60	24.36	0.723	- - -	56.1	2.8	268.2	-	0.704
ARM D	12.97	26.39	0.492	- - -	1.6	1.0	15.1	-	0.075
ARM E	8.08	22.10	0.366	- - -	0.9	0.6	8.9	-	0.072

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.2
08.00	0.4
08.15	0.4
08.30	0.2
08.45	0.1

```
 QUEUE AT ARM B
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           0.3
   07.45           0.5
   08.00           0.7  *
   08.15           0.7  *
   08.30           0.5
   08.45           0.3



 QUEUE AT ARM C
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           2.5  ***
   07.45           6.5  ******
   08.00          51.6  ****************************************************
   08.15          93.6  ******************************************************************************************
   08.30          56.1  ********************************************************
   08.45           2.8  ***



 QUEUE AT ARM D
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           0.9  *
   07.45           1.4  *
   08.00           2.8  ***
   08.15           2.9  ***
   08.30           1.6  **
   08.45           1.0  *



 QUEUE AT ARM E
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   07.30           0.6  *
   07.45           0.9  *
   08.00           1.6  **
   08.15           1.6  **
   08.30           0.9  *
   08.45           0.6  *
```

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	169.3	112.9	22.4	0.13	22.4	0.13
B	719.9	479.9	44.3	0.06	44.3	0.06
C	1931.1	1287.4	3046.6	1.58	3046.8	1.58
D	1423.2	948.8	154.3	0.11	154.4	0.11
E	886.4	590.9	90.9	0.10	90.9	0.10
ALL	5129.9	3420.0	3358.6	0.65	3358.8	0.65

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

=== end of file ==

[Printed at 16:31:08 on 03/03/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

For sales and distribution information,
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Run with file:-
"j:\Gazeley UK Ltd\47071103 Magna Park Phase 4\Technical\11 Junction Assessments Outline\Gibbet Hill A5_A426\
LCC LLITM Flows Feb 2016\2026 PM No Dev.vai"
(drive-on-the-left) at 16:43:19 on Thursday, 18 February 2016

FILE PROPERTIES
****

RUN TITLE: Gibbet Hill Roundabout PM Peak 2026 Without Development
LOCATION: Gibbet Hill Roundabout
DATE: 31/07/14
CLIENT: IDI Gazeley
ENUMERATOR: jon_ashcroft [UKBEDFLT06027]
JOB NUMBER: 47071103
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Gibbet Lane
ARM B - A5 South
ARM C - A426 South
ARM D - A5 North
ARM E - Rugby Road

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.90	8.00	10.00	19.00	66.00	68.0	0.421	21.146
ARM B	4.70	7.30	25.00	24.00	70.00	40.0	0.540	32.695
ARM C	3.65	6.90	20.00	44.00	70.00	56.0	0.481	27.373
ARM D	4.00	8.80	36.00	15.00	70.00	54.0	0.530	33.487
ARM E	3.65	7.20	27.00	100.00	70.00	52.0	0.511	29.895

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100
E	100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM Peak 2006 Base Flows

T15

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.51	2.27	1.51
ARM B	15.00	45.00	75.00	9.61	14.42	9.61
ARM C	15.00	45.00	75.00	15.50	23.25	15.50
ARM D	15.00	45.00	75.00	9.91	14.87	9.91
ARM E	15.00	45.00	75.00	8.81	13.22	8.81

DEMAND SET TITLE: AM Peak 2006 Base Flows

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D	ARM E
16.45 - 18.15						
	ARM A	0.000	0.198	0.537	0.165	0.099
		0.0	24.0	65.0	20.0	12.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.048	0.009	0.074	0.707	0.161
		37.0	7.0	57.0	544.0	124.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.038	0.061	0.000	0.242	0.659
		47.0	76.0	0.0	300.0	817.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.021	0.433	0.542	0.000	0.004
		17.0	343.0	430.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	ARM E	0.023	0.224	0.742	0.011	0.000
		16.0	158.0	523.0	8.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	1.52	13.02	0.117	- - -	0.0	0.1	1.9	-	0.087
ARM B	9.65	25.55	0.378	- - -	0.0	0.6	8.8	-	0.063
ARM C	15.56	22.85	0.681	- - -	0.0	2.1	29.0	-	0.132
ARM D	9.95	26.09	0.381	- - -	0.0	0.6	8.9	-	0.062
ARM E	8.85	23.78	0.372	- - -	0.0	0.6	8.6	-	0.067

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	1.81	11.42	0.159	- - -	0.1	0.2	2.7	-	0.104
ARM B	11.52	24.14	0.477	- - -	0.6	0.9	13.2	-	0.079
ARM C	18.58	21.96	0.846	- - -	2.1	4.9	65.0	-	0.267
ARM D	11.88	24.67	0.482	- - -	0.6	0.9	13.4	-	0.078
ARM E	10.56	22.58	0.468	- - -	0.6	0.9	12.7	-	0.083

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	2.22	9.31	0.239	- - -	0.2	0.3	4.5	-	0.141
ARM B	14.11	22.24	0.635	- - -	0.9	1.7	24.3	-	0.122
ARM C	22.75	20.76	1.096	- - -	4.9	39.9	351.7	-	1.285
ARM D	14.55	23.52	0.619	- - -	0.9	1.6	22.9	-	0.110
ARM E	12.94	21.06	0.614	- - -	0.9	1.6	22.3	-	0.122

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	2.22	9.27	0.240	- - -	0.3	0.3	4.7	-	0.142
ARM B	14.11	22.20	0.636	- - -	1.7	1.7	25.7	-	0.124
ARM C	22.75	20.73	1.098	- - -	39.9	71.1	832.9	-	2.814
ARM D	14.55	23.42	0.621	- - -	1.6	1.6	24.2	-	0.113
ARM E	12.94	21.02	0.615	- - -	1.6	1.6	23.6	-	0.124

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	1.81	11.29	0.161	- - -	0.3	0.2	3.0	-	0.106
ARM B	11.52	24.10	0.478	- - -	1.7	0.9	14.3	-	0.080
ARM C	18.58	21.92	0.847	- - -	71.1	25.4	723.8	-	2.289
ARM D	11.88	23.36	0.509	- - -	1.6	1.0	16.2	-	0.088
ARM E	10.56	22.39	0.472	- - -	1.6	0.9	14.0	-	0.085

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	1.52	12.93	0.117	- - -	0.2	0.1	2.1	-	0.088
ARM B	9.65	25.50	0.378	- - -	0.9	0.6	9.4	-	0.063
ARM C	15.56	22.82	0.682	- - -	25.4	2.2	77.0	-	0.226
ARM D	9.95	25.41	0.392	- - -	1.0	0.6	10.0	-	0.065
ARM E	8.85	23.66	0.374	- - -	0.9	0.6	9.2	-	0.068

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.1

```
 QUEUE AT ARM B
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   17.00           0.6  *
   17.15           0.9  *
   17.30           1.7  **
   17.45           1.7  **
   18.00           0.9  *
   18.15           0.6  *



 QUEUE AT ARM C
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   17.00           2.1  **
   17.15           4.9  *****
   17.30          39.9  ****************************************
   17.45          71.1  ***********************************************************************
   18.00          25.4  *************************
   18.15           2.2  **



 QUEUE AT ARM D
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   17.00           0.6  *
   17.15           0.9  *
   17.30           1.6  **
   17.45           1.6  **
   18.00           1.0  *
   18.15           0.6  *



 QUEUE AT ARM E
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   17.00           0.6  *
   17.15           0.9  *
   17.30           1.6  **
   17.45           1.6  **
   18.00           0.9  *
   18.15           0.6  *

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
                ----------------------------------------------
```

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY * (MIN)	* QUEUEING * * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN/VEH)
A	166.5	111.0	18.9	0.11	18.9	0.11
B	1058.5	705.6	95.7	0.09	95.7	0.09
C	1706.8	1137.8	2079.4	1.22	2079.5	1.22
D	1091.5	727.7	95.6	0.09	95.6	0.09
E	970.4	646.9	90.5	0.09	90.5	0.09
ALL	4993.7	3329.1	2380.0	0.48	2380.2	0.48

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

== end of file ==

[Printed at 16:31:52 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
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RG40 3GA,UK

Run with file:- "2026 AM PEAK NO DEV.DAT" at 15:51 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 AM Peak Without Development - DIRFT Imps

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	3
NUMBER OF LINKS	=	30
NUMBER OF OPTIMISED NODES	=	3
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	8

CORE REQUESTED = 8028 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
~~~~ ~~~~~

CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 AM Peak Without Development - DIRFT Imps

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

CARD NO.	CARD TYPE	LIST OF NODES TO BE OPTIMISED													
3)=	2	1	2	4	0	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	52	53	0	0	0	0	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
10)=	11	1	5	5								
11)=	11	2	5	5								
12)=	11	4	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	12	1	1	0	0								
14)=	12	2	1	0	0								
15)=	12	4	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
16)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0
17)=	30	50	51	0	0	50	100	0	0	0	0	200	0	1766	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
18)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2015	60
19)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2155	60
20)=	31	12	1	2	5	1	0	0	0	0	0	55	0	1800	500
21)=	31	13	1	2	5	1	0	0	0	0	0	55	0	1800	500
22)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
23)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
24)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2065	60
26)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2205	60
27)=	31	22	2	2	5	1	0	0	0	0	0	31	0	1800	500
28)=	31	23	2	2	5	1	0	0	0	0	0	31	0	1800	500
29)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
30)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
31)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
32)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
33)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
34)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2065	60
36)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2205	60
37)=	31	42	4	2	5	1	0	0	0	0	0	25	0	1800	500
38)=	31	43	4	2	5	1	0	0	0	0	0	25	0	1800	500
39)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
40)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
41)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	51	0	0	0	0	0	0	0	0	0	40	0	4000	0
44)=	31	52	0	0	0	0	0	0	0	0	0	40	0	0	0
45)=	31	53	0	0	0	0	0	0	0	0	0	40	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
46)=	32	10	589	0	0	0	43	0	0	0	0	0	0	0	0
47)=	32	11	445	0	0	0	43	0	0	0	0	0	0	0	0
48)=	32	12	656	0	50	656	43	0	0	0	0	0	0	0	0
49)=	32	13	128	0	50	128	43	0	0	0	0	0	0	0	0
50)=	32	14	23	0	53	23	43	0	0	0	0	0	0	0	0
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51)=	32	15	70	0	51	70	43	0	0	0	0	0	0	0	0
52)=	32	16	31	0	51	31	43	0	0	0	0	0	0	0	0
53)=	32	20	322	0	0	0	43	0	0	0	0	0	0	0	0
54)=	32	21	322	0	0	0	43	0	0	0	0	0	0	0	0
55)=	32	22	582	0	10	582	43	0	0	0	0	0	0	0	0
56)=	32	23	445	0	11	445	43	0	0	0	0	0	0	0	0
57)=	32	24	31	0	16	31	43	0	0	0	0	0	0	0	0
58)=	32	25	128	0	13	128	43	0	0	0	0	0	0	0	0
59)=	32	30	123	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	31	622	0	20	300	43	21	322	43	0	0	0	0	0
61)=	32	32	1013	0	22	568	43	23	445	43	0	0	0	0	0
62)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
63)=	32	34	72	0	25	72	43	0	0	0	0	0	0	0	0
64)=	32	40	422	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	41	101	0	0	0	43	0	0	0	0	0	0	0	0
66)=	32	42	75	0	30	75	43	0	0	0	0	0	0	0	0
67)=	32	43	23	0	30	23	43	0	0	0	0	0	0	0	0
68)=	32	44	223	0	32	223	43	0	0	0	0	0	0	0	0
69)=	32	45	204	0	31	204	43	0	0	0	0	0	0	0	0
70)=	32	46	222	0	32	222	43	0	0	0	0	0	0	0	0
71)=	32	47	204	0	31	204	43	0	0	0	0	0	0	0	0
72)=	32	50	1403	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	51	444	0	40	343	43	41	101	43	0	0	0	0	0
74)=	32	52	10	0	47	10	43	0	0	0	0	0	0	0	0
75)=	32	53	53	0	43	23	43	42	30	43	0	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
76)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
77)=	38	43	2	4500	0	0	0	0	0	0	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	19								
2	2	0	14								
4	2	0	20								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	589	2015	88	16.7	34.3	2.3 +	3.3	(79.7)*	127	(19.3)	10		47.8	1	5	19
11	445	2155	62	16.7	19.2	1.6 +	0.8	(33.6)*	92	(10.5)	5		20.2	1	5	19
12	657	1800S	85	4.6	22.2	1.6 +	2.4	(57.6)*	103	(17.4)	11	(1.8)*	385.3	1	24	0
13	129	1800S	18	4.6	8.3	0.2 +	0.1	(4.2)*	50	(1.7)	1	(0.0)*	22.7	1	24	0
14	23	12L	85	4.6	21.3	0.1 +	0.1	(1.9)	93	(0.5)	11	+	2.5	1	24	0
15	70	12L	85	4.6	25.9	0.2 +	0.3	(7.1)	126	(2.3)	11	+	9.4	1	24	0
16	31	13L	18	4.6	10.2	0.1 +	0.0	(1.2)	91	(0.7)	1		2.0	1	24	0
20	322	2065	70	16.7	29.1	1.4 +	1.2	(36.9)*	113	(9.4)	5		22.2	2	5	14
21	322	2205	66	16.7	26.5	1.4 +	0.9	(33.7)*	107	(8.9)	5		20.2	2	5	14
22	582	1800S	69	2.6	17.4	2.0 +	0.9	(40.0)*	111	(16.7)	10	(4.0)*	396.8	2	19	0
23	445	1800	41	2.6	14.6	1.5 +	0.4	(25.6)*	106	(12.1)	6	(1.9)*	223.9	2	19	0
24	31	22L	69	2.6	12.1	0.1 +	0.0	(1.5)	104	(0.8)	10	+	2.3	2	19	0
25	129	22L	69	2.6	10.6	0.2 +	0.2	(5.4)	78	(2.6)	10	+	7.9	2	19	0
30	123	1169	22	16.7	6.5	0.1 +	0.1	(3.1)	55	(1.7)	1		4.9			
31	622	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1013	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	73	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	422	2065	57	16.7	17.5	1.4 +	0.7	(29.1)*	87	(9.5)	5		17.5	4	5	20
41	101	2205	13	16.7	12.5	0.3 +	0.1	(5.0)*	68	(1.8)	1		3.0	4	5	20
42	75	1800S	60	2.1	13.1	0.2 +	0.1	(3.9)*	67	(1.3)	6	(0.9)*	63.1	4	25	0
43	23	1800S	54	2.1	12.2	0.0 +	0.0	(1.1)*	65	(0.4)	5	(0.6)*	32.3	4	25	0
44	223	42L	60	2.1	7.4	0.1 +	0.3	(6.5)	58	(3.4)	6	+	9.9	4	25	0
45	204	42L	60	2.1	18.1	0.7 +	0.3	(14.5)	111	(5.8)	6	+	20.4	4	25	0
46	223	43L	54	2.1	6.2	0.1 +	0.3	(5.4)	48	(2.8)	5	+	8.2	4	25	0
47	204	43L	54	2.1	17.0	0.7 +	0.3	(13.7)	110	(5.8)	5	+	19.5	4	25	0
50	1403	1766	93	16.7	16.2	0.5 +	5.8	(89.8)	69	(24.9)	17		114.7			
51	444	4000S	13	3.3	0.5	0.0 +	0.1	(0.9)	1	(0.1)	0		1.0			
52	10	51L	13	3.3	0.5	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	53	51L	13	3.3	0.5	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
962.0	57.9	16.6	16.7	18.8	(947.1)	+	(101.5)	+	(412.3)	=	1460.9	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.6	+	40.9	+	73.3	=	165.8

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 53

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6
- (SECONDS)

1	2	18	37
2	2	0	14
4	2	0	20

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
962.0	55.1	17.5	13.9	18.8	(749.6)	+	(76.8)	+	(212.0)	=	1038.3	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 225

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     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

    1       2      18      37
    2       2       0      14
    4       2      18      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST         COST           FOR      PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF           OF          EXCESS        INDEX
                                                    DELAY   DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

   962.0          54.3       17.7         13.1     18.8    ( 706.7) + (   75.6)  +  ( 183.8)   =     966.2      TOTALS

 NO. OF ENTRIES TO SUBPT  =    7
 NO. OF LINKS RECALCULATED=  200



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

    1       2      19      37
    2       2       1      14
    4       2      23      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST         COST           FOR      PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF           OF          EXCESS        INDEX
                                                    DELAY   DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

   962.0          58.7       16.4         13.3     23.1    ( 678.6) + (   69.9)  +  ( 122.6)   =     871.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =   20
 NO. OF LINKS RECALCULATED=  518



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

    1       2      19      37
    2       2       1      14
    4       2      23      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST         COST           FOR      PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF           OF          EXCESS        INDEX
                                                    DELAY   DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

   962.0          58.7       16.4         13.3     23.1    ( 678.6) + (   69.9)  +  ( 122.6)   =     871.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =    7
 NO. OF LINKS RECALCULATED=  203



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

    1       2      19      37
    2       2       1      14
    4       2      23      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST         COST           FOR      PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF           OF          EXCESS        INDEX
                                                    DELAY   DELAY        STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

   962.0          58.7       16.4         13.3     23.1    ( 678.6) + (   69.9)  +  ( 122.6)   =     871.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =    7
 NO. OF LINKS RECALCULATED=  213
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45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1
- (SECONDS)

1	2	19	37
2	2	2	15
4	2	23	38

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
962.0	58.7	16.4	13.3	23.1	(678.4)	+	(69.8)	+	(121.4)	=	869.5	TOTALS

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1 -1
- (SECONDS)

1	2	19	37
2	2	2	15
4	2	23	38

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
962.0	58.7	16.4	13.3	23.1	(678.4)	+	(69.8)	+	(121.4)	=	869.5	TOTALS

NO. OF ENTRIES TO SUBPT = 13
NO. OF LINKS RECALCULATED= 353

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	19	37								
2	2	2	15								
4	2	23	38								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	589	2015	94	16.7	51.3	2.5 +	5.9	(119.2)*	156	(23.7)	13		71.5	1	24	37
11	445	2155	66	16.7	21.4	1.7 +	1.0	(37.5)*	97	(11.1)	6		22.5	1	24	37
12	657	1800S	81	4.6	18.4	1.5 +	1.9	(47.7)*	89	(15.1)	9	(1.0)*	299.3	1	42	19
13	129	1800S	17	4.6	7.9	0.2 +	0.1	(4.0)*	48	(1.6)	1	(0.0)*	21.7	1	42	19
14	23	12L	81	4.6	15.7	0.0 +	0.1	(1.4)	71	(0.4)	9	+	1.8	1	42	19
15	70	12L	81	4.6	19.8	0.2 +	0.2	(5.5)	118	(2.1)	9	+	7.6	1	42	19
16	31	13L	17	4.6	6.2	0.0 +	0.0	(0.8)	71	(0.6)	1		1.3	1	42	19
20	322	2065	78	16.7	36.1	1.5 +	1.7	(45.9)*	127	(10.5)	5		27.5	2	7	15
21	322	2205	73	16.7	31.7	1.5 +	1.3	(40.2)*	118	(9.8)	5		24.1	2	7	15
22	582	1800S	66	2.6	5.2	0.1 +	0.8	(11.8)*	30	(4.6)	7	(1.0)*	107.7	2	20	2
23	445	1800	40	2.6	3.0	0.0 +	0.3	(5.3)*	24	(2.7)	4	(0.3)*	44.4	2	20	2
24	31	22L	66	2.6	7.2	0.0 +	0.0	(0.9)	26	(0.2)	7	+	1.1	2	20	2
25	129	22L	66	2.6	9.2	0.2 +	0.2	(4.7)	55	(1.8)	7	+	6.5	2	20	2
30	123	1169	23	16.7	6.6	0.1 +	0.1	(3.2)	55	(1.8)	1		5.0			
31	622	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1013	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	73	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	422	2065	84	16.7	36.7	1.9 +	2.4	(61.1)*	129	(14.1)	7		36.7	4	28	38
41	101	2205	19	16.7	17.6	0.4 +	0.1	(7.0)*	83	(2.2)	1		4.2	4	28	38
42	75	1800S	48	2.1	7.4	0.1 +	0.1	(2.2)*	51	(1.0)	4	(0.2)*	22.4	4	43	23
43	23	1800S	43	2.1	6.8	0.0 +	0.0	(0.6)*	46	(0.3)	3	(0.1)*	9.6	4	43	23
44	223	42L	48	2.1	9.9	0.4 +	0.2	(8.7)	95	(5.4)	4	+	14.2	4	43	23
45	204	42L	48	2.1	3.6	0.0 +	0.2	(2.9)	9	(0.5)	4	+	3.4	4	43	23
46	223	43L	43	2.1	9.3	0.4 +	0.2	(8.2)	92	(5.3)	3	+	13.5	4	43	23
47	204	43L	43	2.1	3.3	0.0 +	0.2	(2.7)	8	(0.4)	3	+	3.1	4	43	23
50	1403	1766	93	16.7	16.4	0.6 +	5.8	(90.6)	70	(25.4)	17		116.1			
51	444	4000S	13	3.3	0.5	0.0 +	0.1	(0.9)	1	(0.1)	0		1.0			
52	10	51L	13	3.3	0.5	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	53	51L	13	3.3	0.5	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
962.0	58.7	16.4	13.3	23.1	(678.4)	+	(69.8)	+	(121.4)	=	869.5	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.6	+	41.8	+	64.3	=	157.7

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

PROGRAM TRANSYT FINISHED
=== end of file ==

[Printed at 16:32:42 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK NO DEV.DAT" at 15:58 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak Without Development - DIRFT Imps

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	3
NUMBER OF LINKS	=	30
NUMBER OF OPTIMISED NODES	=	3
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	60
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	8

CORE REQUESTED = 8658 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:- Gibbet Hill Rbout 2026 PM Peak Without Development - DIRFT Imps	

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	60	60	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	0	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET.......................					SECOND SET.......................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	52	53	0	0	0	0	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
10)=	11	1	5	5								
11)=	11	2	5	5								
12)=	11	4	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	12	1	1	0	0								
14)=	12	2	1	0	0								
15)=	12	4	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 GIVEWAY ONLY % FLOW	COEFFS. A1 X100	COEFFS. A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
16)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0
17)=	30	50	51	0	0	50	100	0	0	0	0	200	0	1766	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	START LAG	END STAGE	END LAG	SECOND GREEN START STAGE	START LAG	END STAGE	END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
18)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2015	60
19)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2155	60
20)=	31	12	1	2	5	1	0	0	0	0	0	55	0	1800	500
21)=	31	13	1	2	5	1	0	0	0	0	0	55	0	1800	500
22)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
23)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
24)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2065	60
26)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2205	60
27)=	31	22	2	2	5	1	0	0	0	0	0	31	0	1800	500
28)=	31	23	2	2	5	1	0	0	0	0	0	31	0	1800	500
29)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
30)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
31)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
32)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
33)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
34)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2065	60
36)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2205	60
37)=	31	42	4	2	5	1	0	0	0	0	0	25	0	1800	500
38)=	31	43	4	2	5	1	0	0	0	0	0	25	0	1800	500
39)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
40)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
41)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	51	0	0	0	0	0	0	0	0	0	40	0	4000	0
44)=	31	52	0	0	0	0	0	0	0	0	0	40	0	0	0
45)=	31	53	0	0	0	0	0	0	0	0	0	40	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 LINK NO.	ENTRY 1 FLOW	ENTRY 1 CRUISE SPEED	ENTRY 2 LINK NO.	ENTRY 2 FLOW	ENTRY 2 CRUISE SPEED	ENTRY 3 LINK NO.	ENTRY 3 FLOW	ENTRY 3 CRUISE SPEED	ENTRY 4 LINK NO.	ENTRY 4 FLOW
46)=	32	10	363	0	0	0	43	0	0	0	0	0	0	0	0
47)=	32	11	430	0	0	0	43	0	0	0	0	0	0	0	0
48)=	32	12	817	0	50	817	43	0	0	0	0	0	0	0	0
49)=	32	13	123	0	50	123	43	0	0	0	0	0	0	0	0
50)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0

51)=	32	15	124	0	51	124	43	0	0	0	0	0	0	0
52)=	32	16	44	0	51	44	43	0	0	0	0	0	0	0
53)=	32	20	353	0	0	0	43	0	0	0	0	0	0	0
54)=	32	21	352	0	0	0	43	0	0	0	0	0	0	0
55)=	32	22	360	0	10	360	43	0	0	0	0	0	0	0
56)=	32	23	430	0	11	430	43	0	0	0	0	0	0	0
57)=	32	24	44	0	16	44	43	0	0	0	0	0	0	0
58)=	32	25	123	0	13	123	43	0	0	0	0	0	0	0
59)=	32	30	121	0	0	0	43	0	0	0	0	0	0	0
60)=	32	31	689	0	20	337	43	21	352	43	0	0	0	0
61)=	32	32	733	0	22	343	43	23	430	43	0	0	0	0
62)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0
63)=	32	34	76	0	25	76	43	0	0	0	0	0	0	0
64)=	32	40	601	0	0	0	43	0	0	0	0	0	0	0
65)=	32	41	168	0	0	0	43	0	0	0	0	0	0	0
66)=	32	42	85	0	30	85	43	0	0	0	0	0	0	0
67)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0
68)=	32	44	215	0	32	215	43	0	0	0	0	0	0	0
69)=	32	45	261	0	31	261	43	0	0	0	0	0	0	0
70)=	32	46	215	0	32	215	43	0	0	0	0	0	0	0
71)=	32	47	270	0	31	270	43	0	0	0	0	0	0	0
72)=	32	50	1240	0	0	0	43	0	0	0	0	0	0	0
73)=	32	51	712	0	40	544	43	41	168	43	0	0	0	0
74)=	32	52	10	0	47	10	43	0	0	0	0	0	0	0
75)=	32	53	32	0	43	12	43	42	20	43	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
76)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
77)=	38	43	2	4500	0	0	0	0	0	0	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

60 SECOND CYCLE 60 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	18								
2	2	0	23								
4	2	0	29								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	363	2015	77	16.7	37.8	2.2 +	1.6	(54.1)*	114	(10.7)	7		32.5	1	5	18
11	430	2155	86	16.7	45.0	2.6 +	2.7	(76.4)*	126	(14.0)	10		45.8	1	5	18
12	816	1800S	84	4.6	15.7	1.4 +	2.1	(50.4)*	73	(15.4)	14	(2.4)*	376.6	1	23	0
13	124	1800S	15	4.6	5.5	0.1 +	0.1	(2.7)*	30	(1.0)	1	(0.0)*	14.4	1	23	0
14	12	12L	84	4.6	13.3	0.0 +	0.0	(0.6)	42	(0.1)	14	+	0.8	1	23	0
15	124	12L	84	4.6	20.1	0.4 +	0.3	(9.8)	111	(3.6)	14	+	13.4	1	23	0
16	44	13L	15	4.6	6.4	0.1 +	0.0	(1.1)	63	(0.7)	1		1.8	1	23	0
20	353	2065	54	16.7	22.9	1.7 +	0.6	(31.8)*	88	(8.0)	5		19.1	2	5	23
21	352	2205	50	16.7	21.9	1.6 +	0.5	(30.4)*	85	(7.7)	5		18.2	2	5	23
22	360	1800S	53	2.6	24.9	2.1 +	0.4	(35.3)*	106	(9.9)	9	(3.4)*	338.3	2	28	0
23	430	1800	43	2.6	24.6	2.6 +	0.4	(41.8)*	105	(11.7)	8	(3.1)*	359.3	2	28	0
24	44	22L	53	2.6	17.0	0.2 +	0.0	(2.9)	105	(1.2)	9	+	4.1	2	28	0
25	124	22L	53	2.6	11.3	0.3 +	0.1	(5.5)	65	(2.1)	9	+	7.6	2	28	0
30	121	1169	19	16.7	5.8	0.1 +	0.1	(2.8)	45	(1.4)	1		4.2			
31	689	6000S	25	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.1)	0		1.2			
32	733	31L	25	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.1)	0		1.3			
33	10	31L	25	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	77	31L	25	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	601	2065	70	16.7	21.3	2.4 +	1.1	(50.5)*	88	(13.7)	9		30.3	4	5	29
41	168	2205	18	16.7	13.5	0.5 +	0.1	(8.9)*	63	(2.7)	2		5.4	4	5	29
42	85	1800S	69	2.1	19.7	0.3 +	0.2	(6.6)*	86	(1.9)	10	(3.0)*	170.6	4	34	0
43	12	1800S	61	2.1	17.9	0.0 +	0.0	(0.8)*	77	(0.2)	9	(2.3)*	107.5	4	34	0
44	216	42L	69	2.1	13.6	0.4 +	0.4	(11.6)	101	(5.6)	10	+	17.1	4	34	0
45	260	42L	69	2.1	28.6	1.5 +	0.5	(29.4)	111	(7.5)	10	+	36.8	4	34	0
46	216	43L	61	2.1	11.1	0.3 +	0.3	(9.4)	93	(5.1)	9	+	14.6	4	34	0
47	270	43L	61	2.1	26.8	1.6 +	0.4	(28.5)	109	(7.6)	9	+	36.1	4	34	0
50	1240	1766	89	16.7	14.6	1.1 +	3.9	(71.6)	72	(23.0)	18		94.6			
51	713	4000S	19	3.3	0.6	0.0 +	0.1	(1.6)	1	(0.2)	0		1.7			
52	10	51L	19	3.3	0.6	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	32	51L	19	3.3	0.6	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
948.9	62.0	15.3	23.4	16.5	(1016.8) +	(98.4) +	(638.4) =	1753.6	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	50.9	+	45.9	+	70.7	=	167.5

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 53

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9
- (SECONDS)

1	2	27	45
2	2	0	23
4	2	51	20

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
948.9	57.3	16.6	18.7	16.5	(762.5) +	(76.5) +	(326.4) =	1165.4	TOTALS

NO. OF ENTRIES TO SUBPT = 10
NO. OF LINKS RECALCULATED= 232

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24
- (SECONDS)

1	2	27	45
2	2	0	23
4	2	27	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	55.8	17.0	17.2	16.5	(669.2)	+	(69.9)	+	(253.9)	=	993.1	TOTALS

NO. OF ENTRIES TO SUBPT = 8
NO. OF LINKS RECALCULATED= 228

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1
- (SECONDS)

1	2	28	45
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	61.7	15.4	18.4	21.2	(664.9)	+	(64.6)	+	(177.3)	=	906.8	TOTALS

NO. OF ENTRIES TO SUBPT = 23
NO. OF LINKS RECALCULATED= 583

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9
- (SECONDS)

1	2	37	54
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.9	15.6	17.6	21.2	(650.1)	+	(67.2)	+	(185.0)	=	902.3	TOTALS

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24
- (SECONDS)

1	2	37	54
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.9	15.6	17.6	21.2	(650.1)	+	(67.2)	+	(185.0)	=	902.3	TOTALS

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1
- (SECONDS)

1	2	36	53
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	61.0	15.6	17.7	21.2	(650.5)	+	(66.9)	+	(179.1)	=	896.6	TOTALS

NO. OF ENTRIES TO SUBPT = 8
NO. OF LINKS RECALCULATED= 229

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1 -1
- (SECONDS)

1	2	36	53
2	2	2	22
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.0	15.8	17.4	20.5	(646.5)	+	(67.3)	+	(182.7)	=	896.5	TOTALS

NO. OF ENTRIES TO SUBPT = 14
NO. OF LINKS RECALCULATED= 377

60 SECOND CYCLE 60 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 9 24 -1 9 24 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	36	53								
2	2	3	23								
4	2	32	56								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START (SEC	END 1ST
10	363	2015	83	16.7	45.5	2.3 +	2.3	(65.1)*	126	(11.8)	8		39.1	1	41	53
11	430	2155	92	16.7	61.9	2.7 +	4.7	(105.1)*	149	(16.5)	12		63.0	1	41	53
12	816	1800S	81	4.6	13.7	1.3 +	1.8	(44.0)*	71	(15.0)	14	(2.2)*	333.2	1	58	36
13	124	1800S	14	4.6	4.7	0.1 +	0.1	(2.3)*	26	(0.8)	1	(0.0)*	12.4	1	58	36
14	12	12L	81	4.6	11.6	0.0 +	0.0	(0.5)	66	(0.2)	14	+	0.8	1	58	36
15	124	12L	81	4.6	20.3	0.4 +	0.3	(9.9)	112	(3.6)	14	+	13.5	1	58	36
16	44	13L	14	4.6	8.7	0.1 +	0.0	(1.5)	80	(0.9)	1		2.4	1	58	36
20	353	2065	64	16.7	28.5	1.9 +	0.9	(39.7)*	98	(8.9)	6		23.8	2	8	23
21	352	2205	60	16.7	26.8	1.9 +	0.7	(37.2)*	95	(8.6)	6		22.3	2	8	23
22	360	1800S	49	2.6	3.6	0.0 +	0.3	(5.0)*	19	(1.8)	5	(0.4)*	44.0	2	28	3
23	430	1800	40	2.6	3.5	0.1 +	0.3	(6.0)*	36	(4.0)	7	(0.6)*	61.5	2	28	3
24	44	22L	49	2.6	6.7	0.0 +	0.0	(1.2)	20	(0.2)	5	+	1.4	2	28	3
25	124	22L	49	2.6	10.5	0.2 +	0.1	(5.1)	60	(1.9)	5	+	7.0	2	28	3
30	121	1169	19	16.7	5.6	0.1 +	0.1	(2.7)	43	(1.4)	1		4.0			
31	689	6000S	25	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.1)	0		1.2			
32	733	31L	25	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.1)	0		1.3			
33	10	31L	25	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	77	31L	25	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	601	2065	87	16.7	38.0	3.1 +	3.2	(90.1)*	118	(18.3)	13		54.1	4	37	56
41	168	2205	23	16.7	17.6	0.7 +	0.1	(11.7)*	74	(3.2)	2		7.0	4	37	56
42	85	1800S	58	2.1	11.8	0.2 +	0.1	(3.9)*	62	(1.4)	5	(0.5)*	45.2	4	1	32
43	12	1800S	52	2.1	10.9	0.0 +	0.0	(0.5)*	59	(0.2)	4	(0.3)*	17.7	4	1	32
44	216	42L	58	2.1	13.2	0.5 +	0.3	(11.3)	103	(5.7)	5	+	16.9	4	1	32
45	260	42L	58	2.1	4.6	0.0 +	0.3	(4.7)	8	(0.5)	5	+	5.2	4	1	32
46	216	43L	52	2.1	11.8	0.5 +	0.2	(10.1)	100	(5.5)	4	+	15.6	4	1	32
47	270	43L	52	2.1	4.0	0.0 +	0.3	(4.2)	7	(0.5)	4	+	4.7	4	1	32
50	1240	1766	89	16.7	14.8	1.2 +	3.9	(72.3)	72	(23.1)	18		95.5			
51	713	4000S	19	3.3	0.6	0.0 +	0.1	(1.6)	1	(0.2)	0		1.7			
52	10	51L	19	3.3	0.6	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	32	51L	19	3.3	0.6	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.0	15.8	17.4	20.5	(646.0)	+	(67.2)	+	(181.6)	=	894.7	TOTALS

ROUTE

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	50.9	+	43.6	+	61.3	=	155.8

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

PROGRAM TRANSYT FINISHED

end of file

[Printed at 16:33:44 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
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Run with file:- "2026 AM PEAK+DEV.DAT" at 16:07 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 AM Peak + Development - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 AM Peak + Development - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	20								
16)=	12	2	1	0	15								
17)=	12	4	1	0	21								
18)=	12	5	1	0	30								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	ONLY % FLOW	LINK1 GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW

51)=	32	10	590	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	451	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	661	0	50	661	43	0	0	0	0	0	0	0	0
54)=	32	13	126	0	50	126	43	0	0	0	0	0	0	0	0
55)=	32	14	23	0	53	23	43	0	0	0	0	0	0	0	0
56)=	32	15	67	0	51	67	43	0	0	0	0	0	0	0	0
57)=	32	16	31	0	51	31	43	0	0	0	0	0	0	0	0
58)=	32	20	321	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	320	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	583	0	10	583	43	0	0	0	0	0	0	0	0
61)=	32	23	451	0	11	451	43	0	0	0	0	0	0	0	0
62)=	32	24	31	0	16	31	43	0	0	0	0	0	0	0	0
63)=	32	25	126	0	13	126	43	0	0	0	0	0	0	0	0
64)=	32	30	123	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	619	0	20	299	43	21	320	43	0	0	0	0	0
66)=	32	32	1020	0	22	569	43	23	451	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	71	0	25	71	43	0	0	0	0	0	0	0	0
69)=	32	40	427	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	98	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	76	0	30	76	43	0	0	0	0	0	0	0	0
72)=	32	43	23	0	30	23	43	0	0	0	0	0	0	0	0
73)=	32	44	225	0	32	225	43	0	0	0	0	0	0	0	0
74)=	32	45	204	0	31	204	43	0	0	0	0	0	0	0	0
75)=	32	46	226	0	32	226	43	0	0	0	0	0	0	0	0
76)=	32	47	205	0	31	205	43	0	0	0	0	0	0	0	0
77)=	32	50	1446	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	349	0	40	349	43	0	0	0	0	0	0	0	0
79)=	32	52	98	0	41	98	43	0	0	0	0	0	0	0	0
80)=	32	53	23	0	43	23	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	31	0	42	31	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	20								
2	2	0	15								
4	2	0	21								
5	2	0	30								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START (SEC	END 1ST
10	590	2065	80	16.7	25.2	2.1 +	2.0	(58.7)*	109	(16.5)	9		35.2	1	5	20
11	451	2205	58	16.7	17.1	1.5 +	0.7	(30.5)*	86	(10.1)	5		18.3	1	5	20
12	662	2050S	79	4.6	21.5	2.4 +	1.6	(56.2)*	116	(19.8)	10	(2.0)*	391.5	1	25	0
13	127	2100S	16	4.6	9.7	0.3 +	0.1	(4.9)*	79	(2.6)	1	(0.0)*	26.9	1	25	0
14	23	12L	79	4.6	15.4	0.0 +	0.1	(1.4)	51	(0.3)	10	+	1.7	1	25	0
15	67	12L	79	4.6	14.9	0.1 +	0.2	(3.9)	48	(0.8)	10	+	4.8	1	25	0
16	31	13L	16	4.6	8.3	0.1 +	0.0	(1.0)	32	(0.3)	1		1.3	1	25	0
20	321	2040	64	16.7	25.3	1.4 +	0.9	(32.0)*	105	(8.7)	4		19.2	2	5	15
21	320	2180	60	16.7	23.5	1.3 +	0.7	(29.6)*	100	(8.3)	4		17.8	2	5	15
22	583	2050S	63	2.6	16.4	2.0 +	0.7	(37.6)*	109	(16.3)	10	(3.6)*	367.5	2	20	0
23	451	2100	37	2.6	14.2	1.5 +	0.3	(25.3)*	104	(12.1)	6	(1.7)*	216.9	2	20	0
24	31	22L	63	2.6	11.4	0.1 +	0.0	(1.4)	65	(0.5)	10	+	1.9	2	20	0
25	127	22L	63	2.6	8.7	0.2 +	0.1	(4.3)	87	(2.8)	10	+	7.1	2	20	0
30	123	1169	21	16.7	6.2	0.1 +	0.1	(3.0)	54	(1.7)	1		4.7			
31	619	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1020	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	72	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	54	16.7	15.9	1.3 +	0.6	(26.8)*	83	(9.1)	5		16.1	4	5	21
41	98	2230	12	16.7	11.6	0.2 +	0.1	(4.5)*	66	(1.7)	1		2.7	4	5	21
42	76	2050S	55	2.1	12.6	0.2 +	0.1	(3.8)*	66	(1.3)	5	(0.8)*	55.6	4	26	0
43	23	2100S	49	2.1	11.6	0.1 +	0.0	(1.1)*	64	(0.4)	5	(0.5)*	29.5	4	26	0
44	224	42L	55	2.1	6.2	0.1 +	0.3	(5.5)	53	(3.1)	5	+	8.6	4	26	0
45	204	42L	55	2.1	17.7	0.8 +	0.3	(14.3)	109	(5.8)	5	+	20.0	4	26	0
46	226	43L	49	2.1	5.1	0.1 +	0.2	(4.5)	43	(2.5)	5	+	7.0	4	26	0
47	206	43L	49	2.1	16.7	0.7 +	0.2	(13.5)	108	(5.7)	5	+	19.2	4	26	0
50	1446	2985f	84	16.7	12.4	2.4 +	2.5	(70.6)*	70	(26.0)	14		42.4	5	5	30
51	349	2050S	78	2.7	41.5	2.5 +	1.5	(57.1)*	132	(11.9)	7	(3.7)*	466.2	5	35	0
52	98	2100S	24	2.7	29.3	0.7 +	0.1	(11.3)*	110	(2.8)	2	(0.2)*	67.9	5	35	0
53	23	52L	24	2.7	10.4	0.0 +	0.0	(0.9)	67	(0.4)	2	+	1.3	5	35	0
54	10	51L	78	2.7	27.2	0.0 +	0.0	(1.1)	130	(0.3)	7	+	1.4	5	35	0
55	31	51L	78	2.7	25.1	0.1 +	0.1	(3.1)	110	(0.9)	7	+	3.9	5	35	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	58.5	16.6	22.2	13.8	(1199.5)	+	(92.7)	+	(567.9)	=	1860.0	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.9	+	41.4	+	78.8	=	172.1

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	51.6	18.8	15.2	13.8	(680.3)	+	(42.4)	+	(135.5)	=	858.2	TOTALS

NO. OF ENTRIES TO SUBPT = 15
NO. OF LINKS RECALCULATED= 338

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	51.6	18.8	15.2	13.8	(680.3)	+	(42.4)	+	(135.5)	=	858.2	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 237

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1
- (SECONDS)

1	2	20	38
2	2	1	15
4	2	24	39
5	2	42	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	57.4	16.9	15.3	19.6	(563.6)	+	(32.6)	+	(28.5)	=	624.7	TOTALS

NO. OF ENTRIES TO SUBPT = 28
NO. OF LINKS RECALCULATED= 602

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6
- (SECONDS)

1	2	26	44
2	2	1	15
4	2	24	39
5	2	42	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	56.6	17.1	14.5	19.6	(525.9)	+	(26.1)	+	(24.0)	=	576.0	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 261

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

     1       2      26      44
     2       2       1      15
     4       2      24      39
     5       2      42      24

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY      UNIFORM  RANDOM+    COST        COST          FOR        PERFORMANCE
 TRAVELLED        SPENT      SPEED        DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY   DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)    (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)         ($/H)

    968.4          56.6       17.1         14.5     19.6    ( 525.9) + (   26.1)  +  (  24.0)   =     576.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  271



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

     1       2      26      44
     2       2       3      17
     4       2      23      38
     5       2      42      24

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY      UNIFORM  RANDOM+    COST        COST          FOR        PERFORMANCE
 TRAVELLED        SPENT      SPEED        DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY   DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)    (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)         ($/H)

    968.4          56.6       17.1         14.4     19.6    ( 519.5) + (   24.9)  +  (  23.1)   =     567.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  319



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

     1       2      26      44
     2       2       3      17
     4       2      22      38
     5       2      42      23

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY      UNIFORM  RANDOM+    COST        COST          FOR        PERFORMANCE
 TRAVELLED        SPENT      SPEED        DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY   DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)    (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)         ($/H)

    968.4          58.0       16.7         14.6     20.9    ( 520.2) + (   24.6)  +  (  20.8)   =     565.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  460
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :-   6 18 -1   6 18   1 -1   1
 - (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	27	0								
2	2	3	17								
4	2	22	38								
5	2	42	23								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	590	2065	92	16.7	44.0	2.5 +	4.8	(102.4)*	145	(22.0)	12		61.4	1	32	0
11	451	2205	66	16.7	21.0	1.7 +	1.0	(37.4)*	96	(11.2)	6		22.4	1	32	0
12	662	2050S	72	4.6	6.8	0.1 +	1.1	(17.7)*	20	(3.4)	4	(0.0)*	92.1	1	5	27
13	127	2100S	15	4.6	2.6	0.0 +	0.1	(1.3)*	8	(0.2)	1	(0.0)*	6.8	1	5	27
14	23	12L	72	4.6	22.7	0.1 +	0.0	(2.1)	113	(0.7)	4		2.7	1	5	27
15	67	12L	72	4.6	18.0	0.2 +	0.1	(4.8)	111	(1.9)	4		6.7	1	5	27
16	31	13L	15	4.6	12.6	0.1 +	0.0	(1.5)	100	(0.8)	1		2.3	1	5	27
20	321	2040	71	16.7	29.5	1.4 +	1.2	(37.4)*	114	(9.4)	5		22.4	2	8	17
21	320	2180	66	16.7	26.8	1.4 +	1.0	(33.8)*	108	(8.9)	5		20.3	2	8	17
22	583	2050S	60	2.6	3.9	0.0 +	0.6	(8.9)*	9	(1.4)	3	(0.4)*	62.0	2	22	3
23	451	2100	36	2.6	2.4	0.0 +	0.3	(4.3)*	8	(0.9)	3	(0.1)*	25.5	2	22	3
24	31	22L	60	2.6	17.9	0.1 +	0.0	(2.2)	107	(0.9)	3	+	3.0	2	22	3
25	127	22L	60	2.6	10.4	0.2 +	0.1	(5.2)	85	(2.8)	3	+	8.0	2	22	3
30	123	1169	22	16.7	6.2	0.1 +	0.1	(3.0)	53	(1.7)	1		4.7			
31	619	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1020	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	72	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	77	16.7	28.7	1.8 +	1.6	(48.3)*	114	(12.5)	6		29.0	4	27	38
41	98	2230	16	16.7	16.3	0.3 +	0.1	(6.3)*	80	(2.0)	1		3.8	4	27	38
42	76	2050S	44	2.1	7.8	0.1 +	0.1	(2.3)*	47	(0.9)	2	(0.0)*	12.8	4	43	22
43	23	2100S	39	2.1	7.4	0.0 +	0.0	(0.7)*	46	(0.3)	2	(0.0)*	3.6	4	43	22
44	224	42L	44	2.1	3.7	0.1 +	0.2	(3.3)	29	(1.7)	2		5.0	4	43	22
45	204	42L	44	2.1	4.1	0.1 +	0.2	(3.3)	13	(0.7)	2		3.9	4	43	22
46	226	43L	39	2.1	3.2	0.0 +	0.2	(2.8)	23	(1.4)	2		4.2	4	43	22
47	206	43L	39	2.1	3.7	0.1 +	0.1	(3.0)	12	(0.6)	2		3.7	4	43	22
50	1446	3136f	94	16.7	26.7	3.6 +	7.1	(152.3)*	110	(41.1)	23		91.4	5	2	23
51	349	2050S	57	2.7	6.2	0.0 +	0.6	(8.5)*	13	(1.2)	1	(0.0)*	45.1	5	28	42
52	98	2100S	17	2.7	3.2	0.0 +	0.1	(1.2)*	7	(0.2)	0	(0.0)*	6.3	5	28	42
53	23	52L	17	2.7	21.9	0.1 +	0.0	(2.0)	103	(0.6)	0		2.6	5	28	42
54	10	51L	57	2.7	15.1	0.0 +	0.0	(0.6)	105	(0.3)	1	+	0.9	5	28	42
55	31	51L	57	2.7	25.0	0.2 +	0.1	(3.1)	110	(0.9)	1	+	3.9	5	28	42

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	57.9	16.7	14.5	20.9	(515.2)	+	(23.8)	+	(21.0)	=	559.9	TOTALS

ROUTE

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.9	+	40.7	+	59.7	=	152.3

NO. OF ENTRIES TO SUBPT =   9
NO. OF LINKS RECALCULATED= 276

PROGRAM TRANSYT FINISHED

=== end of file ==

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK+DEV.DAT" at 16:14 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak + Development - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :
~~~~~~

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS
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DATA INPUT :-
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CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 PM Peak + Development - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	ONLY % FLOW	LINK1 GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
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51)=	32	10	359	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	457	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	839	0	50	839	43	0	0	0	0	0	0	0	0
54)=	32	13	122	0	50	122	43	0	0	0	0	0	0	0	0
55)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0
56)=	32	15	132	0	51	132	43	0	0	0	0	0	0	0	0
57)=	32	16	43	0	51	43	43	0	0	0	0	0	0	0	0
58)=	32	20	355	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	354	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	356	0	10	356	43	0	0	0	0	0	0	0	0
61)=	32	23	457	0	11	457	43	0	0	0	0	0	0	0	0
62)=	32	24	43	0	16	43	43	0	0	0	0	0	0	0	0
63)=	32	25	122	0	13	122	43	0	0	0	0	0	0	0	0
64)=	32	30	118	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	693	0	20	339	43	21	354	43	0	0	0	0	0
66)=	32	32	796	0	22	339	43	23	457	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	76	0	25	76	43	0	0	0	0	0	0	0	0
69)=	32	40	588	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	175	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	84	0	30	84	43	0	0	0	0	0	0	0	0
72)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0	0
73)=	32	44	228	0	32	228	43	0	0	0	0	0	0	0	0
74)=	32	45	286	0	31	286	43	0	0	0	0	0	0	0	0
75)=	32	46	229	0	32	229	43	0	0	0	0	0	0	0	0
76)=	32	47	275	0	31	275	43	0	0	0	0	0	0	0	0
77)=	32	50	1266	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	531	0	40	531	43	0	0	0	0	0	0	0	0
79)=	32	52	175	0	41	175	43	0	0	0	0	0	0	0	0
80)=	32	53	12	0	43	12	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	19	0	42	19	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	15								
2	2	0	19								
4	2	0	22								
5	2	0	26								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	359	2065	71	16.7	27.7	1.6 +	1.2	(39.2)*	111	(10.2)	5		23.5	1	5	15
11	457	2205	85	16.7	36.8	2.1 +	2.6	(66.4)*	130	(15.3)	8		39.8	1	5	15
12	838	2050S	83	4.6	20.2	2.7 +	2.0	(66.9)*	117	(25.4)	14	(3.5)*	519.2	1	20	0
13	122	2100S	14	4.6	6.1	0.1 +	0.1	(2.9)*	67	(2.1)	1	(0.0)*	16.7	1	20	0
14	12	12L	83	4.6	13.5	0.0 +	0.0	(0.6)	60	(0.2)	14	+	0.8	1	20	0
15	132	12L	83	4.6	12.3	0.1 +	0.3	(6.4)	51	(1.7)	14	+	8.2	1	20	0
16	43	13L	14	4.6	4.8	0.0 +	0.0	(0.8)	22	(0.2)	1		1.1	1	20	0
20	355	2040	52	16.7	17.6	1.2 +	0.5	(24.7)*	87	(7.9)	4		14.8	2	5	19
21	354	2180	49	16.7	16.8	1.2 +	0.5	(23.4)*	84	(7.6)	4		14.0	2	5	19
22	356	2050S	52	2.6	20.1	1.6 +	0.4	(28.2)*	108	(9.9)	7	(2.4)*	258.2	2	24	0
23	457	2100	45	2.6	19.7	2.1 +	0.4	(35.4)*	107	(12.6)	6	(2.3)*	294.9	2	24	0
24	43	22L	52	2.6	10.4	0.1 +	0.0	(1.8)	48	(0.5)	7	+	2.3	2	24	0
25	122	22L	52	2.6	11.9	0.3 +	0.1	(5.7)	99	(3.1)	7	+	8.9	2	24	0
30	118	1169	19	16.7	5.3	0.1 +	0.1	(2.4)	46	(1.4)	0		3.8			
31	693	6000S	26	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.2)	0		1.3			
32	796	31L	26	4.2	0.4	0.0 +	0.1	(1.3)	1	(0.2)	0		1.5			
33	10	31L	26	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	76	31L	26	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	588	2090	70	16.7	18.5	1.8 +	1.2	(42.8)*	92	(13.9)	7		25.7	4	5	22
41	175	2230	20	16.7	11.3	0.4 +	0.1	(7.8)*	66	(3.0)	2		4.7	4	5	22
42	84	2050S	69	2.1	16.3	0.2 +	0.2	(5.4)*	79	(1.7)	8	(1.7)*	107.1	4	27	0
43	12	2100S	58	2.1	14.1	0.0 +	0.0	(0.7)*	75	(0.2)	6	(0.9)*	44.8	4	27	0
44	228	42L	69	2.1	8.5	0.1 +	0.4	(7.7)	65	(3.8)	8	+	11.5	4	27	0
45	285	42L	69	2.1	21.1	1.1 +	0.5	(23.7)	114	(8.4)	8	+	32.1	4	27	0
46	229	43L	58	2.1	5.7	0.1 +	0.3	(5.1)	37	(2.2)	6	+	7.3	4	27	0
47	274	43L	58	2.1	18.6	1.0 +	0.4	(20.1)	109	(7.8)	6	+	27.9	4	27	0
50	1266	3136f	83	16.7	14.9	2.9 +	2.3	(74.6)*	80	(25.9)	14		44.8	5	5	26
51	532	2050S	82	2.7	36.5	3.3 +	2.1	(76.6)*	129	(17.7)	9	(5.5)*	650.4	5	31	0
52	175	2100S	27	2.7	24.4	1.0 +	0.2	(16.8)*	108	(4.8)	2	(0.6)*	116.8	5	31	0
53	12	52L	27	2.7	7.0	0.0 +	0.0	(0.3)	40	(0.1)	2	+	0.5	5	31	0
54	10	51L	82	2.7	23.8	0.0 +	0.0	(0.9)	125	(0.3)	9	+	1.3	5	31	0
55	19	51L	82	2.7	22.6	0.0 +	0.1	(1.7)	104	(0.5)	9	+	2.2	5	31	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
958.4	64.0	15.0	25.4	16.3	(1412.3)	+	(105.1)	+	(768.7)	=	2286.1	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.4	+	47.9	+	86.1	=	185.5

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

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     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6
  - (SECONDS)

    1       2       0      15
    2       2      27       1
    4       2      24       1
    5       2      12      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY    DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   958.4          55.9       17.1          17.3     16.3    ( 832.2) + (   73.5)  +  ( 390.7)  =    1296.4      TOTALS

 NO. OF ENTRIES TO SUBPT  =   16
 NO. OF LINKS RECALCULATED=  338



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

    1       2       0      15
    2       2      27       1
    4       2      42      19
    5       2      12      38

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY    DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   958.4          56.6       16.9          18.0     16.3    ( 827.7) + (   65.1)  +  ( 368.5)  =    1261.4      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  262



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

    1       2       1      15
    2       2      25      40
    4       2      41      14
    5       2      16      39

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY    DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   958.4          62.6       15.3          16.7     23.6    ( 631.3) + (   44.5)  +  ( 106.7)  =     782.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   33
 NO. OF LINKS RECALCULATED=  691



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

    1       2       1      15
    2       2      19      34
    4       2      41      14
    5       2      16      39

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                   DELAY    DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   958.4          61.4       15.6          15.5     23.6    ( 610.4) + (   38.2)  +  (  76.1)  =     724.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   10
 NO. OF LINKS RECALCULATED=  286
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```
      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

     1       2       1      15
     2       2      19      34
     4       2      41      14
     5       2      16      39

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+     COST        COST           FOR     PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT      OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)        ($/H)

    958.4          61.4       15.6          15.5     23.6    ( 610.4) + (   38.2)  +  (  76.1)   =     724.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  274



      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

     1       2       2      16
     2       2      20      35
     4       2      39      12
     5       2      17      40

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+     COST        COST           FOR     PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT      OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)        ($/H)

    958.4          61.5       15.6          15.6     23.6    ( 607.4) + (   35.3)  +  (  66.7)   =     709.3      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  327



      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

     1       2       2      16
     2       2      19      34
     4       2      38      12
     5       2      17      40

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+     COST        COST           FOR     PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT      OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)       ($/H)          ($/H)        ($/H)

    958.4          60.0       16.0          15.6     22.1    ( 598.8) + (   36.0)  +  (  67.0)   =     701.8      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  473
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45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	2	16								
2	2	19	34								
4	2	39	13								
5	2	17	40								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	-------DELAY-------- UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	359	2065	78	16.7	33.9	1.6 +	1.7	(48.0)*	123	(11.4)	6		28.8	1	7	16
11	457	2205	93	16.7	58.5	2.2 +	5.3	(105.5)*	165	(19.5)	11		63.3	1	7	16
12	838	2050S	80	4.6	8.5	0.3 +	1.7	(27.9)*	56	(12.1)	11	(0.9)*	192.2	1	21	2
13	122	2100S	13	4.6	1.7	0.0 +	0.1	(0.8)*	4	(0.1)	1	(0.0)*	4.3	1	21	2
14	12	12L	80	4.6	22.8	0.1 +	0.0	(1.1)	115	(0.4)	11	+	1.4	1	21	2
15	132	12L	80	4.6	16.5	0.3 +	0.3	(8.6)	109	(3.7)	11	+	12.3	1	21	2
16	43	13L	13	4.6	9.6	0.1 +	0.0	(1.6)	90	(1.0)	1		2.6	1	21	2
20	355	2040	71	16.7	27.9	1.5 +	1.2	(39.0)*	111	(10.2)	5		23.4	2	24	34
21	354	2180	66	16.7	25.3	1.5 +	1.0	(35.3)*	105	(9.6)	5		21.2	2	24	34
22	356	2050S	44	2.6	2.9	0.0 +	0.3	(4.1)*	7	(0.6)	2	(0.2)*	29.0	2	39	19
23	457	2100	38	2.6	2.8	0.1 +	0.3	(5.0)*	11	(1.3)	3	(0.1)*	32.2	2	39	19
24	43	22L	44	2.6	17.8	0.2 +	0.0	(3.0)	105	(1.2)	2	+	4.2	2	39	19
25	122	22L	44	2.6	7.5	0.2 +	0.1	(3.6)	74	(2.3)	2	+	5.9	2	39	19
30	118	1169	19	16.7	5.1	0.1 +	0.1	(2.4)	44	(1.3)	0		3.7			
31	693	6000S	26	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.2)	0		1.3			
32	796	31L	26	4.2	0.4	0.0 +	0.1	(1.3)	1	(0.2)	0		1.5			
33	10	31L	26	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	76	31L	26	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	588	2090	84	16.7	29.7	2.3 +	2.6	(69.0)*	118	(17.9)	9		41.4	4	44	13
41	175	2230	24	16.7	14.0	0.5 +	0.2	(9.7)*	74	(3.3)	2		5.8	4	44	13
42	84	2050S	60	2.1	11.0	0.2 +	0.1	(3.6)*	57	(1.2)	3	(0.1)*	23.0	4	18	39
43	12	2100S	50	2.1	9.9	0.0 +	0.0	(0.5)*	55	(0.2)	2	(0.0)*	2.9	4	18	39
44	228	42L	60	2.1	6.0	0.1 +	0.3	(5.4)	50	(3.0)	3	+	8.4	4	18	39
45	285	42L	60	2.1	5.7	0.1 +	0.4	(6.4)	15	(1.1)	3	+	7.5	4	18	39
46	229	43L	50	2.1	4.6	0.1 +	0.2	(4.1)	36	(2.1)	2		6.2	4	18	39
47	274	43L	50	2.1	4.8	0.1 +	0.3	(5.2)	13	(0.9)	2		6.1	4	18	39
50	1266	3291f	91	16.7	24.2	3.8 +	4.7	(120.7)*	104	(34.0)	18		72.4	5	22	40
51	532	2050S	68	2.7	7.0	0.0 +	1.0	(14.6)*	15	(2.1)	1	(0.2)*	83.7	5	0	17
52	175	2100S	22	2.7	2.8	0.0 +	0.1	(1.9)*	6	(0.3)	0	(0.0)*	10.0	5	0	17
53	12	52L	22	2.7	20.7	0.1 +	0.0	(1.0)	103	(0.3)	0		1.3	5	0	17
54	10	51L	68	2.7	16.1	0.0 +	0.0	(0.6)	107	(0.3)	1	+	0.9	5	0	17
55	19	51L	68	2.7	24.6	0.1 +	0.0	(1.8)	111	(0.5)	1	+	2.4	5	0	17

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
958.4	59.8	16.0	15.4	22.1	(596.4)	+	(36.4)	+	(66.9)	=	699.7	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.4	+	43.2	+	64.8	=	159.4

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 268

PROGRAM TRANSYT FINISHED

=== end of file ===

[Printed at 16:35:31 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
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Run with file:- "2026 AM PEAK+DEV+SP.DAT" at 16:27 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 AM Peak + Development+ SP - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
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CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 AM Peak + Development+ SP - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
~~~~

51)=	32	10	590	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	452	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	677	0	50	677	43	0	0	0	0	0	0	0	0
54)=	32	13	126	0	50	126	43	0	0	0	0	0	0	0	0
55)=	32	14	23	0	53	23	43	0	0	0	0	0	0	0	0
56)=	32	15	61	0	51	61	43	0	0	0	0	0	0	0	0
57)=	32	16	29	0	51	29	43	0	0	0	0	0	0	0	0
58)=	32	20	319	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	318	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	583	0	10	583	43	0	0	0	0	0	0	0	0
61)=	32	23	452	0	11	452	43	0	0	0	0	0	0	0	0
62)=	32	24	29	0	16	29	43	0	0	0	0	0	0	0	0
63)=	32	25	126	0	13	126	43	0	0	0	0	0	0	0	0
64)=	32	30	123	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	615	0	20	297	43	21	318	43	0	0	0	0	0
66)=	32	32	1022	0	22	570	43	23	452	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	71	0	25	71	43	0	0	0	0	0	0	0	0
69)=	32	40	427	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	90	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	76	0	30	76	43	0	0	0	0	0	0	0	0
72)=	32	43	23	0	30	23	43	0	0	0	0	0	0	0	0
73)=	32	44	226	0	32	226	43	0	0	0	0	0	0	0	0
74)=	32	45	204	0	31	204	43	0	0	0	0	0	0	0	0
75)=	32	46	226	0	32	226	43	0	0	0	0	0	0	0	0
76)=	32	47	205	0	31	205	43	0	0	0	0	0	0	0	0
77)=	32	50	1504	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	349	0	40	349	43	0	0	0	0	0	0	0	0
79)=	32	52	90	0	41	90	43	0	0	0	0	0	0	0	0
80)=	32	53	23	0	43	23	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	32	0	42	32	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

	CARD TYPE	LINK NO.	..LANE 1.. SAT. FLOW	CAPAC VEH.	..LANE 2.. SAT. FLOW	CAPAC VEH.	..LANE 3.. SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	20								
2	2	0	15								
4	2	0	21								
5	2	0	31								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	590	2065	80	16.7	25.2	2.1 +	2.0	(58.7)*	109	(16.5)	9		35.2	1	5	20
11	452	2205	58	16.7	17.2	1.5 +	0.7	(30.6)*	87	(10.1)	5		18.4	1	5	20
12	677	2050S	79	4.6	21.7	2.4 +	1.7	(57.9)*	116	(20.3)	11	(2.1)*	404.5	1	25	0
13	126	2100S	16	4.6	9.5	0.3 +	0.1	(4.7)*	77	(2.5)	1	(0.0)*	26.0	1	25	0
14	23	12L	79	4.6	16.3	0.0 +	0.1	(1.5)	52	(0.3)	11	+	1.8	1	25	0
15	61	12L	79	4.6	17.9	0.2 +	0.2	(4.3)	59	(0.9)	11	+	5.2	1	25	0
16	29	13L	16	4.6	11.2	0.1 +	0.0	(1.3)	45	(0.3)	1		1.6	1	25	0
20	319	2040	64	16.7	25.2	1.4 +	0.9	(31.7)*	105	(8.6)	4		19.0	2	5	15
21	318	2180	60	16.7	23.4	1.3 +	0.7	(29.3)*	100	(8.2)	4		17.6	2	5	15
22	583	2050S	62	2.6	16.3	2.0 +	0.7	(37.5)*	109	(16.3)	10	(3.6)*	366.6	2	20	0
23	452	2100	37	2.6	14.3	1.5 +	0.3	(25.4)*	104	(12.2)	6	(1.7)*	217.5	2	20	0
24	29	22L	62	2.6	12.1	0.1 +	0.0	(1.4)	77	(0.6)	10	+	2.0	2	20	0
25	126	22L	62	2.6	8.5	0.2 +	0.1	(4.2)	84	(2.7)	10	+	7.0	2	20	0
30	123	1169	21	16.7	6.2	0.1 +	0.1	(3.0)	54	(1.7)	1		4.7			
31	615	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1022	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	71	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	54	16.7	15.9	1.3 +	0.6	(26.8)*	83	(9.1)	5		16.1	4	5	21
41	90	2230	11	16.7	11.5	0.2 +	0.1	(4.1)*	65	(1.5)	1		2.5	4	5	21
42	76	2050S	56	2.1	12.6	0.2 +	0.1	(3.8)*	66	(1.3)	6	(0.8)*	55.9	4	26	0
43	23	2100S	49	2.1	11.7	0.1 +	0.0	(1.1)*	64	(0.4)	5	(0.5)*	29.5	4	26	0
44	227	42L	56	2.1	6.3	0.1 +	0.3	(5.6)	54	(3.1)	6	+	8.8	4	26	0
45	204	42L	56	2.1	17.8	0.8 +	0.3	(14.3)	109	(5.8)	6	+	20.1	4	26	0
46	227	43L	49	2.1	5.1	0.1 +	0.2	(4.5)	43	(2.5)	5	+	7.1	4	26	0
47	206	43L	49	2.1	16.7	0.7 +	0.2	(13.6)	108	(5.7)	5	+	19.3	4	26	0
50	1504	2955f	85	16.7	12.1	2.3 +	2.7	(71.7)*	68	(26.3)	14		43.0	5	5	31
51	349	2050S	86	2.7	52.5	2.6 +	2.5	(72.3)*	150	(13.5)	8	(4.9)*	597.7	5	36	0
52	90	2100S	24	2.7	30.8	0.6 +	0.1	(10.9)*	111	(2.6)	1	(0.1)*	63.9	5	36	0
53	23	52L	24	2.7	11.4	0.0 +	0.0	(1.0)	70	(0.4)	1	+	1.4	5	36	0
54	10	51L	86	2.7	38.1	0.0 +	0.1	(1.5)	148	(0.4)	8	+	1.9	5	36	0
55	32	51L	86	2.7	36.1	0.1 +	0.2	(4.6)	133	(1.1)	8	+	5.7	5	36	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
977.9	60.1	16.3	22.2	15.2	(1283.8) +	(95.0) +	(624.3) =	2003.0	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	52.4	+	42.9	+	79.9	=	175.2

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	25

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	53.1	18.4	15.2	15.2	(768.1)	+	(46.1)	+	(199.8)	=	1014.0	TOTALS

NO. OF ENTRIES TO SUBPT = 15
NO. OF LINKS RECALCULATED= 338

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	25

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	53.1	18.4	15.2	15.2	(768.1)	+	(46.1)	+	(199.8)	=	1014.0	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 237

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1
- (SECONDS)

1	2	20	38
2	2	1	15
4	2	25	41
5	2	42	25

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	57.8	16.9	15.5	19.6	(597.0)	+	(34.9)	+	(46.6)	=	678.5	TOTALS

NO. OF ENTRIES TO SUBPT = 27
NO. OF LINKS RECALCULATED= 587

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6
- (SECONDS)

1	2	26	44
2	2	7	21
4	2	25	41
5	2	42	25

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	57.1	17.1	14.7	19.6	(553.9)	+	(30.5)	+	(38.8)	=	623.1	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 266

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

    1       2      26      44
    2       2       7      21
    4       2      25      41
    5       2      42      25

  TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   977.9          57.1       17.1          14.7     19.6    ( 553.9) + (   30.5)  +  (  38.8)   =     623.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  284



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

    1       2      26      44
    2       2       6      20
    4       2      24      40
    5       2      42      25

  TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   977.9          56.9       17.2          14.6     19.6    ( 546.6) + (   29.3)  +  (  34.2)   =     610.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  338



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

    1       2      26      44
    2       2       6      19
    4       2      24      39
    5       2      42      24

  TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   977.9          61.2       16.0          14.9     23.6    ( 558.3) + (   26.3)  +  (  20.1)   =     604.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  473
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	27	0								
2	2	4	17								
4	2	23	38								
5	2	42	24								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	590	2065	92	16.7	44.0	2.5 +	4.8	(102.4)*	145	(22.0)	12		61.4	1	32	0
11	452	2205	66	16.7	21.1	1.7 +	1.0	(37.5)*	96	(11.2)	6		22.5	1	32	0
12	677	2050S	73	4.6	7.5	0.2 +	1.2	(19.9)*	25	(4.4)	5	(0.0)*	104.4	1	5	27
13	126	2100S	15	4.6	3.1	0.0 +	0.1	(1.5)*	10	(0.3)	1	(0.0)*	8.0	1	5	27
14	23	12L	73	4.6	22.3	0.1 +	0.0	(2.0)	113	(0.7)	5		2.7	1	5	27
15	61	12L	73	4.6	17.4	0.2 +	0.1	(4.2)	111	(1.7)	5		5.9	1	5	27
16	29	13L	15	4.6	11.9	0.1 +	0.0	(1.4)	100	(0.7)	1		2.1	1	5	27
20	319	2040	78	16.7	36.6	1.5 +	1.7	(46.0)*	128	(10.5)	5		27.6	2	9	17
21	318	2180	73	16.7	31.8	1.5 +	1.3	(39.9)*	118	(9.7)	5		23.9	2	9	17
22	583	2050S	58	2.6	3.4	0.0 +	0.5	(7.9)*	8	(1.2)	2	(0.3)*	52.7	2	22	4
23	452	2100	35	2.6	2.2	0.0 +	0.3	(3.9)*	7	(0.9)	3	(0.1)*	23.8	2	22	4
24	29	22L	58	2.6	17.9	0.1 +	0.0	(2.0)	108	(0.8)	2	+	2.9	2	22	4
25	126	22L	58	2.6	10.1	0.2 +	0.1	(5.0)	82	(2.7)	2	+	7.7	2	22	4
30	123	1169	22	16.7	6.2	0.1 +	0.1	(3.0)	53	(1.7)	1		4.7			
31	615	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1022	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	71	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	84	16.7	36.4	1.9 +	2.4	(61.4)*	129	(14.2)	7		36.8	4	28	38
41	90	2230	17	16.7	17.4	0.3 +	0.1	(6.2)*	82	(1.9)	1		3.7	4	28	38
42	76	2050S	43	2.1	7.2	0.1 +	0.1	(2.1)*	44	(0.9)	2	(0.0)*	11.6	4	43	23
43	23	2100S	38	2.1	6.8	0.0 +	0.0	(0.6)*	43	(0.3)	2	(0.0)*	3.3	4	43	23
44	227	42L	43	2.1	3.4	0.0 +	0.2	(3.0)	27	(1.6)	2		4.6	4	43	23
45	204	42L	43	2.1	3.6	0.1 +	0.2	(2.9)	11	(0.6)	2		3.5	4	43	23
46	227	43L	38	2.1	2.9	0.0 +	0.1	(2.6)	21	(1.2)	2		3.9	4	43	23
47	206	43L	38	2.1	3.3	0.1 +	0.1	(2.7)	10	(0.6)	2		3.2	4	43	23
50	1504	3094f	95	16.7	27.7	3.5 +	8.0	(164.5)*	113	(43.6)	24		98.7	5	2	24
51	349	2050S	61	2.7	7.4	0.0 +	0.7	(10.2)*	16	(1.4)	1	(0.1)*	55.6	5	29	42
52	90	2100S	17	2.7	3.4	0.0 +	0.1	(1.2)*	8	(0.2)	0	(0.0)*	6.2	5	29	42
53	23	52L	17	2.7	22.6	0.1 +	0.0	(2.1)	103	(0.6)	0		2.7	5	29	42
54	10	51L	61	2.7	16.0	0.0 +	0.0	(0.6)	107	(0.3)	1	+	0.9	5	29	42
55	32	51L	61	2.7	26.7	0.2 +	0.1	(3.4)	112	(0.9)	1	+	4.3	5	29	42

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
977.9	61.0	16.0	14.7	23.6	(549.5) +	(23.9) +	(19.1) =	592.6	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	52.4	+	44.0	+	62.5	=	158.9

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 355

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:35:58 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK+DEV+SP.DAT" at 16:34 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak + Development+ SP - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :
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```
NUMBER OF NODES                     =    4
NUMBER OF LINKS                     =   32
NUMBER OF OPTIMISED NODES           =    4
MAXIMUM NUMBER OF GRAPHIC PLOTS     =    0
NUMBER OF STEPS IN CYCLE            =   45
MAXIMUM NUMBER OF SHARED STOPLINES =    4
MAXIMUM NUMBER OF TIMING POINTS     =    2
MAXIMUM LINKS AT ANY NODE           =   11


CORE REQUESTED =   8366 WORDS
CORE AVAILABLE =  72000 WORDS
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DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 PM Peak + Development+ SP - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE													
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	ONLY % FLOW	LINK1 GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW

51)=	32	10	496	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	435	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	903	0	50	903	43	0	0	0	0	0	0	0	0
54)=	32	13	178	0	50	178	43	0	0	0	0	0	0	0	0
55)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0
56)=	32	15	34	0	51	34	43	0	0	0	0	0	0	0	0
57)=	32	16	35	0	51	35	43	0	0	0	0	0	0	0	0
58)=	32	20	378	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	377	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	493	0	10	493	43	0	0	0	0	0	0	0	0
61)=	32	23	435	0	11	435	43	0	0	0	0	0	0	0	0
62)=	32	24	35	0	16	35	43	0	0	0	0	0	0	0	0
63)=	32	25	178	0	13	178	43	0	0	0	0	0	0	0	0
64)=	32	30	77	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	739	0	20	362	43	21	377	43	0	0	0	0	0
66)=	32	32	903	0	22	468	43	23	435	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	70	0	25	70	43	0	0	0	0	0	0	0	0
69)=	32	40	572	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	69	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	52	0	30	52	43	0	0	0	0	0	0	0	0
72)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0	0
73)=	32	44	217	0	32	217	43	0	0	0	0	0	0	0	0
74)=	32	45	254	0	31	254	43	0	0	0	0	0	0	0	0
75)=	32	46	218	0	32	218	43	0	0	0	0	0	0	0	0
76)=	32	47	263	0	31	263	43	0	0	0	0	0	0	0	0
77)=	32	50	1607	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	517	0	40	517	43	0	0	0	0	0	0	0	0
79)=	32	52	69	0	41	69	43	0	0	0	0	0	0	0	0
80)=	32	53	12	0	43	12	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	19	0	42	19	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	17								
2	2	0	17								
4	2	0	23								
5	2	0	28								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	496	2065	83	16.7	32.1	2.1 +	2.4	(62.8)*	121	(15.5)	8		37.7	1	5	17
11	435	2205	68	16.7	23.0	1.7 +	1.1	(39.5)*	101	(11.3)	6		23.7	1	5	17
12	903	2050S	87	4.6	24.0	3.0 +	3.0	(85.6)*	124	(28.9)	15	(4.5)*	657.6	1	22	0
13	177	2100S	19	4.6	7.0	0.2 +	0.1	(4.9)*	67	(3.1)	2	(0.0)*	27.6	1	22	0
14	12	12L	87	4.6	18.4	0.0 +	0.0	(0.9)	89	(0.3)	15	+	1.1	1	22	0
15	34	12L	87	4.6	19.3	0.1 +	0.1	(2.6)	80	(0.7)	15	+	3.3	1	22	0
16	35	13L	19	4.6	8.4	0.1 +	0.0	(1.2)	38	(0.3)	2		1.5	1	22	0
20	378	2040	64	16.7	22.4	1.5 +	0.9	(33.4)*	99	(9.7)	5		20.1	2	5	17
21	377	2180	60	16.7	20.8	1.4 +	0.7	(31.0)*	95	(9.2)	5		18.6	2	5	17
22	493	2050S	64	2.6	19.0	2.0 +	0.6	(37.0)*	110	(14.0)	9	(3.8)*	372.0	2	22	0
23	435	2100	39	2.6	16.9	1.7 +	0.3	(29.0)*	106	(11.8)	6	(2.0)*	244.9	2	22	0
24	35	22L	64	2.6	12.2	0.1 +	0.0	(1.7)	66	(0.6)	9	+	2.3	2	22	0
25	177	22L	64	2.6	11.9	0.4 +	0.2	(8.3)	99	(4.5)	9	+	12.8	2	22	0
30	77	1169	13	16.7	5.4	0.0 +	0.1	(1.7)	47	(0.9)	0		2.6			
31	739	6000S	29	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.2)	0		1.4			
32	903	31L	29	4.2	0.4	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	70	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	572	2090	65	16.7	16.1	1.6 +	0.9	(36.3)*	85	(12.5)	6		21.8	4	5	23
41	69	2230	7	16.7	9.9	0.1 +	0.0	(2.7)*	58	(1.0)	1		1.6	4	5	23
42	52	2050S	64	2.1	15.7	0.1 +	0.1	(3.2)*	75	(1.0)	7	(1.4)*	79.7	4	28	0
43	12	2100S	59	2.1	14.7	0.0 +	0.0	(0.7)*	72	(0.2)	6	(1.1)*	54.0	4	28	0
44	217	42L	64	2.1	8.9	0.2 +	0.4	(7.7)	76	(4.3)	7	+	11.9	4	28	0
45	254	42L	64	2.1	21.0	1.1 +	0.4	(21.1)	113	(7.4)	7	+	28.5	4	28	0
46	219	43L	59	2.1	7.6	0.1 +	0.3	(6.6)	68	(3.8)	6	+	10.4	4	28	0
47	263	43L	59	2.1	20.0	1.1 +	0.4	(20.7)	111	(7.5)	6	+	28.2	4	28	0
50	1607	3055f	99	16.7	42.4	3.7 +	15.2	(268.5)*	142	(58.7)	34		161.1	5	5	28
51	517	2050S	92	2.7	56.4	3.5 +	4.6	(115.0)*	160	(21.3)	12	(8.3)*	968.0	5	33	0
52	69	2100S	13	2.7	25.3	0.4 +	0.1	(6.9)*	107	(1.9)	1	(0.0)*	36.3	5	33	0
53	12	52L	13	2.7	6.3	0.0 +	0.0	(0.3)	32	(0.1)	1		0.4	5	33	0
54	10	51L	92	2.7	43.1	0.0 +	0.1	(1.7)	159	(0.4)	12	+	2.1	5	33	0
55	19	51L	92	2.7	41.3	0.0 +	0.2	(3.1)	144	(0.7)	12	+	3.8	5	33	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	83.0	12.5	26.4	32.5	(1776.5)	+	(114.3)	+	(946.0)	=	2836.8	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	55.4	+	67.8	+	105.8	=	229.0

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 54

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6
  - (SECONDS)

     1       2      24      41
     2       2       6      23
     4       2       6      29
     5       2      39      22

   TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   1033.0          74.8       13.8          18.3     32.6    (1191.7) + (   65.6)  +  ( 436.8)   =    1694.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =   13
 NO. OF LINKS RECALCULATED=  303



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

     1       2      24      41
     2       2       6      23
     4       2      24       2
     5       2      39      22

   TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   1033.0          74.2       13.9          17.6     32.6    (1155.5) + (   54.1)  +  ( 360.1)   =    1569.6      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  253



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

     1       2      26      42
     2       2       6      21
     4       2      23      41
     5       2      41      23

   TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   1033.0          87.8       11.8          17.4     46.4    ( 993.8) + (   41.6)  +  ( 163.9)   =    1199.3      TOTALS

 NO. OF ENTRIES TO SUBPT  =   29
 NO. OF LINKS RECALCULATED=  621



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

     1       2      26      42
     2       2       0      15
     4       2      23      41
     5       2      41      23

   TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)         ($/H)

   1033.0          86.9       11.9          16.5     46.4    ( 980.6) + (   37.6)  +  ( 150.8)   =    1169.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =   10
 NO. OF LINKS RECALCULATED=  277
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```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

     1       2      26      42
     2       2       0      15
     4       2      23      41
     5       2      41      23

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   1033.0         86.9       11.9          16.5     46.4    ( 980.6) + (   37.6)  +  ( 150.8)   =    1169.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =   10
 NO. OF LINKS RECALCULATED=  303
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```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

     1       2      27      43
     2       2       1      16
     4       2      21      39
     5       2      41      23

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   1033.0         86.4       12.0          16.0     46.4    ( 944.9) + (   33.3)  +  ( 132.5)   =    1110.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  314
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```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

     1       2      27      43
     2       2       1      16
     4       2      21      39
     5       2      41      23

  TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME     JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                     DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

   1033.0         86.4       12.0          16.0     46.4    ( 944.9) + (   33.3)  +  ( 132.5)   =    1110.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  467
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	28	44								
2	2	2	17								
4	2	21	39								
5	2	41	23								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	496	2065	90	16.7	44.7	2.2 +	4.0	(87.4)*	145	(18.5)	10		52.5	1	33	44
11	435	2205	74	16.7	26.6	1.8 +	1.4	(45.7)*	109	(12.2)	6		27.4	1	33	44
12	889<	2050S	82	4.6	9.4	0.2 +	2.1	(32.8)*	33	(7.7)	8	(0.2)*	182.9	1	4	28
13	174	2100S	18	4.6	2.3	0.0 +	0.1	(1.6)*	6	(0.3)	1	(0.0)*	8.3	1	4	28
14	12	12L	82	4.6	24.3	0.1 +	0.0	(1.2)	118	(0.4)	8	+	1.5	1	4	28
15	34	12L	82	4.6	18.8	0.1 +	0.1	(2.5)	114	(1.0)	8	+	3.5	1	4	28
16	35	13L	18	4.6	11.4	0.1 +	0.0	(1.6)	97	(0.9)	1		2.5	1	4	28
20	378	2040	76	16.7	30.3	1.7 +	1.5	(45.2)*	116	(11.3)	6		27.1	2	7	17
21	377	2180	71	16.7	26.9	1.6 +	1.2	(40.0)*	109	(10.6)	5		24.0	2	7	17
22	493	2050S	59	2.6	3.9	0.0 +	0.5	(7.7)*	9	(1.2)	3	(0.5)*	63.3	2	22	2
23	435	2100	36	2.6	2.5	0.0 +	0.3	(4.3)*	9	(1.0)	3	(0.1)*	25.7	2	22	2
24	35	22L	59	2.6	19.2	0.2 +	0.0	(2.7)	109	(1.0)	3	+	3.6	2	22	2
25	174	22L	59	2.6	10.9	0.3 +	0.2	(7.5)	82	(3.8)	3	+	11.2	2	22	2
30	77	1169	13	16.7	5.4	0.0 +	0.1	(1.6)	47	(0.9)	0		2.6			
31	739	6000S	29	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.2)	0		1.4			
32	903	31L	29	4.2	0.4	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	69	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	572	2090	88	16.7	35.9	2.3 +	3.4	(81.0)*	130	(19.1)	10		48.6	4	26	39
41	69	2230	10	16.7	13.9	0.2 +	0.1	(3.8)*	71	(1.3)	1		2.3	4	26	39
42	52	2050S	50	2.1	10.1	0.1 +	0.0	(2.1)*	56	(0.7)	2	(0.0)*	11.7	4	44	21
43	12	2100S	46	2.1	9.6	0.0 +	0.0	(0.5)*	55	(0.2)	2	(0.0)*	2.4	4	44	21
44	217	42L	50	2.1	4.5	0.1 +	0.2	(3.9)	37	(2.1)	2	+	5.9	4	44	21
45	254	42L	50	2.1	5.6	0.2 +	0.2	(5.6)	18	(1.2)	2	+	6.8	4	44	21
46	219	43L	46	2.1	4.0	0.1 +	0.2	(3.4)	30	(1.7)	2		5.1	4	44	21
47	263	43L	46	2.1	5.3	0.2 +	0.2	(5.5)	17	(1.2)	2		6.6	4	44	21
50	1607	3094f	102	16.7	71.0	4.3 +	27.4	(450.0)*	184	(76.3)	48	+	270.0	5	1	23
51	517	2050S	86	2.7	19.2	0.1 +	2.7	(39.2)*	42	(5.6)	4	(2.1)*	295.0	5	28	41
52	69	2100S	12	2.7	3.6	0.0 +	0.1	(1.0)*	8	(0.1)	0	(0.0)*	5.1	5	28	41
53	12	52L	12	2.7	23.1	0.1 +	0.0	(1.1)	105	(0.3)	0		1.4	5	28	41
54	10	51L	86	2.7	29.0	0.0 +	0.1	(1.1)	132	(0.3)	4	+	1.5	5	28	41
55	19	51L	86	2.7	38.3	0.1 +	0.1	(2.9)	135	(0.7)	4	+	3.5	5	28	41

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
1033.0	86.4	12.0	16.0	46.4	(940.6) +	(32.5) +	(132.3) =	1105.5	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	55.4	+	71.7	+	82.9	=	210.0

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 284

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:36:25 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

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Run with file:- "2026 AM NO DEV.DAT" at 16:15 on 20160216

TRANSYT 12.0

M6 Junction 1 2026 AM Peak Without Development

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	2
NUMBER OF LINKS	=	18
NUMBER OF OPTIMISED NODES	=	2
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	3
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	6

CORE REQUESTED = 6456 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
~~~~ ~~~~~

CARD NO.	CARD TYPE	
(1)=	TITLE:-	M6 Junction 1 2026 AM Peak Without Development

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE													
3)=	2	1	3	0	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	0	0	0	13	15	0	0	0	21	22	23	0
5)=	7	32	34	0	0	0	41	42	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
6)=	10	1	7	7								
7)=	10	3	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	11	1	7	7								
9)=	11	3	7	7								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
10)=	12	1	1	0	0								
11)=	12	3	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	GIVEWAY COEFFS. A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
12)=	30	20	21	0	0	51	100	0	0	0	0	200	0	2207	0
13)=	30	40	41	0	0	51	100	0	0	0	0	200	0	2197	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
14)=	31	10	1	1	7	2	0	0	0	0	0	200	-9999	1945	60
15)=	31	11	1	1	7	2	0	0	0	0	0	200	-9999	4170	60
16)=	31	12	1	2	7	1	0	0	0	0	0	158	0	3885	500
17)=	31	13	1	2	7	1	0	0	0	0	0	158	0	2010	500
18)=	31	14	1	1	0	1	0	0	0	0	0	158	0	0	0
19)=	31	15	1	1	0	1	0	0	0	0	0	158	0	0	0
20)=	31	21	0	0	0	0	0	0	0	0	0	84	0	4000	0
21)=	31	22	0	0	0	0	0	0	0	0	0	84	0	0	0
22)=	31	23	0	0	0	0	0	0	0	0	0	84	0	0	0
23)=	31	30	3	1	7	2	0	0	0	0	0	200	-9999	1945	60
24)=	31	31	3	1	7	2	0	0	0	0	0	200	-9999	4170	60
25)=	31	32	3	2	7	1	0	0	0	0	0	147	0	3896	500
26)=	31	33	3	2	7	1	0	0	0	0	0	147	0	2016	500
27)=	31	34	3	1	0	1	0	0	0	0	0	147	0	0	0
28)=	31	41	0	0	0	0	0	0	0	0	0	84	0	4000	0
29)=	31	42	0	0	0	0	0	0	0	0	0	84	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 LINK NO.	ENTRY 1 FLOW	ENTRY 1 CRUISE SPEED	ENTRY 2 LINK NO.	ENTRY 2 FLOW	ENTRY 2 CRUISE SPEED	ENTRY 3 LINK NO.	ENTRY 3 FLOW	ENTRY 3 CRUISE SPEED	ENTRY 4 LINK NO.	ENTRY 4 FLOW
30)=	32	10	392	0	0	0	43	0	0	0	0	0	0	0	0
31)=	32	11	647	0	0	0	43	0	0	0	0	0	0	0	0
32)=	32	12	1013	0	40	1013	43	0	0	0	0	0	0	0	0
33)=	32	13	247	0	40	247	43	0	0	0	0	0	0	0	0
34)=	32	14	31	0	41	31	43	0	0	0	0	0	0	0	0
35)=	32	15	77	0	41	77	43	0	0	0	0	0	0	0	0
36)=	32	20	1133	0	0	0	43	0	0	0	0	0	0	0	0
37)=	32	21	647	0	11	647	43	0	0	0	0	0	0	0	0
38)=	32	22	77	0	15	77	43	0	0	0	0	0	0	0	0
39)=	32	23	247	0	13	247	43	0	0	0	0	0	0	0	0
40)=	32	30	497	0	0	0	43	0	0	0	0	0	0	0	0
41)=	32	31	439	0	0	0	43	0	0	0	0	0	0	0	0
42)=	32	32	811	0	20	811	43	0	0	0	0	0	0	0	0
43)=	32	33	281	0	20	281	43	0	0	0	0	0	0	0	0
44)=	32	34	647	0	21	647	43	0	0	0	0	0	0	0	0
45)=	32	40	1811	0	0	0	43	0	0	0	0	0	0	0	0
46)=	32	41	108	0	31	108	43	0	0	0	0	0	0	0	0
47)=	32	42	281	0	33	281	43	0	0	0	0	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD	CARD	LINK	LIMIT	QUEUE	LINK	LIMIT	QUEUE	LINK	LIMIT	QUEUE	LINK	LIMIT	QUEUE	LINK	LIMIT
~~~~

NO.	TYPE	NO.	QUEUE	WEIGHT	NO.	QUEUE	WEIGHT	NO.	QUEUE	WEIGHT	NO.	QUEUE	WEIGHT	NO.	QUEUE
48)=	38	12	28	4500	13	14	4500	32	24	4500	33	12	4500	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	20								
3	2	0	19								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	----DELAY---- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	392	1945	65	16.7	21.8	1.5 +	0.9	(33.6)*	98	(9.9)	5		20.2	1	7	20
11	647	4170	50	16.7	15.4	2.3 +	0.5	(39.3)*	82	(13.6)	7		23.6	1	7	20
12	1014	3885S	64	13.2	13.3	2.9 +	0.8	(53.1)*	79	(20.7)	11	(0.0)*	286.3	1	27	0
13	246	2010S	38	13.2	12.1	0.6 +	0.2	(11.8)*	69	(4.4)	3	(0.0)*	63.2	1	27	0
14	31	12L	64	13.2	7.6	0.0 +	0.0	(0.9)	74	(0.6)	11		1.5	1	27	0
15	77	13L	38	13.2	5.5	0.0 +	0.1	(1.7)	47	(0.9)	3		2.6	1	27	0
20	1133	2207	66	16.7	3.4	0.1 +	1.0	(15.4)	19	(5.4)	4		20.8			
21	647	4000S	24	7.0	0.6	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
22	77	21L	24	7.0	0.6	0.0 +	0.0	(0.2)	1	(0.0)	0		0.2			
23	246	21L	24	7.0	0.6	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7			
30	497	1945	88	16.7	40.3	2.1 +	3.5	(79.1)*	137	(17.6)	9		47.5	3	7	19
31	439	4170	36	16.7	15.1	1.6 +	0.3	(26.1)*	79	(8.9)	5		15.7	3	7	19
32	811	3896S	84	12.3	16.1	2.2 +	1.5	(51.5)*	92	(19.3)	19	(0.0)*	276.7	3	26	0
33	281	2016	31	12.3	11.0	0.6 +	0.2	(12.2)*	63	(4.6)	2	(0.0)*	65.5	3	26	0
34	647	32L	84	12.3	10.9	0.8 +	1.2	(27.9)	89	(14.8)	19		42.8	3	26	0
40	1811	2197	91	16.7	9.2	0.0 +	4.6	(66.0)	24	(11.1)	10		77.2			
41	108	4000S	10	7.0	0.5	0.0 +	0.0	(0.2)	1	(0.0)	0		0.2			
42	281	41L	10	7.0	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.6			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	66.2	23.7	14.7	15.0	(864.6)	+	(82.4)	+	(0.0)	=	947.0	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	84.2	+	34.2	+	60.3	=	178.6

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 26

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6
- (SECONDS)

1	2	0	20
3	2	0	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	66.2	23.7	14.7	15.0	(864.6)	+	(82.4)	+	(0.0)	=	947.0	TOTALS

NO. OF ENTRIES TO SUBPT = 6
NO. OF LINKS RECALCULATED= 116

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18
- (SECONDS)

1	2	0	20
3	2	0	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	66.2	23.7	14.7	15.0	(864.6)	+	(82.4)	+	(0.0)	=	947.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 86

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1
- (SECONDS)

1	2	4	20
3	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(791.0)	+	(69.7)	+	(0.0)	=	860.7	TOTALS

NO. OF ENTRIES TO SUBPT = 14
NO. OF LINKS RECALCULATED= 234

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6
- (SECONDS)

1	2	4	20
3	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(791.0)	+	(69.7)	+	(0.0)	=	860.7	TOTALS

NO. OF ENTRIES TO SUBPT = 6
NO. OF LINKS RECALCULATED= 112

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18
- (SECONDS)

1	2	4	20
3	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(791.0)	+	(69.7)	+	(0.0)	=	860.7	TOTALS

NO. OF ENTRIES TO SUBPT = 6
NO. OF LINKS RECALCULATED= 112

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1
- (SECONDS)

1	2	6	22
3	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(793.6)	+	(65.8)	+	(0.0)	=	859.4	TOTALS

NO. OF ENTRIES TO SUBPT = 6
NO. OF LINKS RECALCULATED= 110

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1 -1
- (SECONDS)

1	2	6	22
3	2	1	19

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(793.6)	+	(65.8)	+	(0.0)	=	859.4	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 158

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
 - (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	6	22								
3	2	1	19								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST	END (SEC
10	392	1945	91	16.7	54.3	1.9 +	4.1	(84.0)*	159	(16.0)	9		50.4	1	13	22
11	647	4170	70	16.7	22.5	2.9 +	1.1	(57.4)*	100	(16.7)	9		34.5	1	13	22
12	1014	3885S	53	13.2	9.5	2.1 +	0.5	(37.9)*	66	(17.2)	9	(0.0)*	206.7	1	29	6
13	246	2010S	31	13.2	9.0	0.4 +	0.2	(8.7)*	59	(3.7)	3	(0.0)*	47.3	1	29	6
14	31	12L	53	13.2	6.0	0.0 +	0.0	(0.7)	70	(0.6)	9		1.3	1	29	6
15	77	13L	31	13.2	4.6	0.0 +	0.1	(1.4)	49	(1.0)	3		2.4	1	29	6
20	1133	2207	66	16.7	3.6	0.1 +	1.0	(15.9)	21	(6.1)	4		22.0			
21	647	4000S	24	7.0	0.6	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
22	77	21L	24	7.0	0.6	0.0 +	0.0	(0.2)	1	(0.0)	0		0.2			
23	246	21L	24	7.0	0.6	0.0 +	0.0	(0.6)	1	(0.1)	0		0.7			
30	497	1945	96	16.7	66.8	2.2 +	7.0	(130.9)*	178	(22.8)	13		78.6	3	8	19
31	439	4170	39	16.7	16.2	1.7 +	0.3	(28.1)*	82	(9.3)	5		16.8	3	8	19
32	811	3896S	80	12.3	13.7	2.0 +	1.1	(43.7)*	76	(15.9)	13	(0.0)*	234.3	3	26	1
33	281	2016	30	12.3	10.4	0.6 +	0.2	(11.6)*	63	(4.6)	2	(0.0)*	62.3	3	26	1
34	647	32L	80	12.3	6.6	0.3 +	0.9	(17.0)	31	(5.2)	13		22.2	3	26	1
40	1811	2197	91	16.7	9.2	0.0 +	4.6	(66.0)	24	(11.2)	10		77.2			
41	108	4000S	10	7.0	0.5	0.0 +	0.0	(0.2)	1	(0.0)	0		0.2			
42	281	41L	10	7.0	0.5	0.0 +	0.0	(0.6)	1	(0.1)	0		0.6			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1569.8	72.2	21.8	14.4	21.3	(793.6)	+	(65.8)	+	(0.0)	=	859.4	TOTALS

ROUTE

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	84.2	+	41.0	+	59.5	=	184.7

NO. OF ENTRIES TO SUBPT = 6
NO. OF LINKS RECALCULATED= 112

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:37:09 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
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Run with file:- "2026 PM PEAK NO DEV.DAT" at 15:58 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak Without Development - DIRFT Imps

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	3
NUMBER OF LINKS	=	30
NUMBER OF OPTIMISED NODES	=	3
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	60
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	8

CORE REQUESTED = 8658 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 PM Peak Without Development - DIRFT Imps

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	60	60	60	2	3	1	0	0	0	1	2	0	0	1420

CARD NO.	CARD TYPE	LIST OF NODES TO BE OPTIMISED													
3)=	2	1	2	4	0	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	52	53	0	0	0	0	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
10)=	11	1	5	5								
11)=	11	2	5	5								
12)=	11	4	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
13)=	12	1	1	0	0								
14)=	12	2	1	0	0								
15)=	12	4	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	PRIORITY LINKS LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
16)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0
17)=	30	50	51	0	0	50	100	0	0	0	0	200	0	1766	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
18)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2015	60
19)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2155	60
20)=	31	12	1	2	5	1	0	0	0	0	0	55	0	1800	500
21)=	31	13	1	2	5	1	0	0	0	0	0	55	0	1800	500
22)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
23)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
24)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2065	60
26)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2205	60
27)=	31	22	2	2	5	1	0	0	0	0	0	31	0	1800	500
28)=	31	23	2	2	5	1	0	0	0	0	0	31	0	1800	500
29)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
30)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
31)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
32)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
33)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
34)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2065	60
36)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2205	60
37)=	31	42	4	2	5	1	0	0	0	0	0	25	0	1800	500
38)=	31	43	4	2	5	1	0	0	0	0	0	25	0	1800	500
39)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
40)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
41)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	51	0	0	0	0	0	0	0	0	0	40	0	4000	0
44)=	31	52	0	0	0	0	0	0	0	0	0	40	0	0	0
45)=	31	53	0	0	0	0	0	0	0	0	0	40	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 LINK NO.	ENTRY 1 FLOW	ENTRY 1 CRUISE SPEED	ENTRY 2 LINK NO.	ENTRY 2 FLOW	ENTRY 2 CRUISE SPEED	ENTRY 3 LINK NO.	ENTRY 3 FLOW	ENTRY 3 CRUISE SPEED	ENTRY 4 LINK NO.	ENTRY 4 FLOW
46)=	32	10	363	0	0	0	43	0	0	0	0	0	0	0	0
47)=	32	11	430	0	0	0	43	0	0	0	0	0	0	0	0
48)=	32	12	817	0	50	817	43	0	0	0	0	0	0	0	0
49)=	32	13	123	0	50	123	43	0	0	0	0	0	0	0	0
50)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0

51)=	32	15	124	0	51	124	43	0	0	0	0	0	0	0	0
52)=	32	16	44	0	51	44	43	0	0	0	0	0	0	0	0
53)=	32	20	353	0	0	0	43	0	0	0	0	0	0	0	0
54)=	32	21	352	0	0	0	43	0	0	0	0	0	0	0	0
55)=	32	22	360	0	10	360	43	0	0	0	0	0	0	0	0
56)=	32	23	430	0	11	430	43	0	0	0	0	0	0	0	0
57)=	32	24	44	0	16	44	43	0	0	0	0	0	0	0	0
58)=	32	25	123	0	13	123	43	0	0	0	0	0	0	0	0
59)=	32	30	121	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	31	689	0	20	337	43	21	352	43	0	0	0	0	0
61)=	32	32	733	0	22	343	43	23	430	43	0	0	0	0	0
62)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
63)=	32	34	76	0	25	76	43	0	0	0	0	0	0	0	0
64)=	32	40	601	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	41	168	0	0	0	43	0	0	0	0	0	0	0	0
66)=	32	42	85	0	30	85	43	0	0	0	0	0	0	0	0
67)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0	0
68)=	32	44	215	0	32	215	43	0	0	0	0	0	0	0	0
69)=	32	45	261	0	31	261	43	0	0	0	0	0	0	0	0
70)=	32	46	215	0	32	215	43	0	0	0	0	0	0	0	0
71)=	32	47	270	0	31	270	43	0	0	0	0	0	0	0	0
72)=	32	50	1240	0	0	0	43	0	0	0	0	0	0	0	0
73)=	32	51	712	0	40	544	43	41	168	43	0	0	0	0	0
74)=	32	52	10	0	47	10	43	0	0	0	0	0	0	0	0
75)=	32	53	32	0	43	12	43	42	20	43	0	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
76)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
77)=	38	43	2	4500	0	0	0	0	0	0	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

60 SECOND CYCLE 60 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	18								
2	2	0	23								
4	2	0	29								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	363	2015	77	16.7	37.8	2.2 +	1.6	(54.1)*	114	(10.7)	7		32.5	1	5	18
11	430	2155	86	16.7	45.0	2.6 +	2.7	(76.4)*	126	(14.0)	10		45.8	1	5	18
12	816	1800S	84	4.6	15.7	1.4 +	2.1	(50.4)*	73	(15.4)	14	(2.4)*	376.6	1	23	0
13	124	1800S	15	4.6	5.5	0.1 +	0.1	(2.7)*	30	(1.0)	1	(0.0)*	14.4	1	23	0
14	12	12L	84	4.6	13.3	0.0 +	0.0	(0.6)	42	(0.1)	14	+	0.8	1	23	0
15	124	12L	84	4.6	20.1	0.4 +	0.3	(9.8)	111	(3.6)	14	+	13.4	1	23	0
16	44	13L	15	4.6	6.4	0.1 +	0.0	(1.1)	63	(0.7)	1		1.8	1	23	0
20	353	2065	54	16.7	22.9	1.7 +	0.6	(31.8)*	88	(8.0)	5		19.1	2	5	23
21	352	2205	50	16.7	21.9	1.6 +	0.5	(30.4)*	85	(7.7)	5		18.2	2	5	23
22	360	1800S	53	2.6	24.9	2.1 +	0.4	(35.3)*	106	(9.9)	9	(3.4)*	338.3	2	28	0
23	430	1800	43	2.6	24.6	2.6 +	0.4	(41.8)*	105	(11.7)	8	(3.1)*	359.3	2	28	0
24	44	22L	53	2.6	17.0	0.2 +	0.0	(2.9)	105	(1.2)	9	+	4.1	2	28	0
25	124	22L	53	2.6	11.3	0.3 +	0.1	(5.5)	65	(2.1)	9	+	7.6	2	28	0
30	121	1169	19	16.7	5.8	0.1 +	0.1	(2.8)	45	(1.4)	1		4.2			
31	689	6000S	25	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.1)	0		1.2			
32	733	31L	25	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.1)	0		1.3			
33	10	31L	25	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	77	31L	25	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	601	2065	70	16.7	21.3	2.4 +	1.1	(50.5)*	88	(13.7)	9		30.3	4	5	29
41	168	2205	18	16.7	13.5	0.5 +	0.1	(8.9)*	63	(2.7)	2		5.4	4	5	29
42	85	1800S	69	2.1	19.7	0.3 +	0.2	(6.6)*	86	(1.9)	10	(3.0)*	170.6	4	34	0
43	12	1800S	61	2.1	17.9	0.0 +	0.0	(0.8)*	77	(0.2)	9	(2.3)*	107.5	4	34	0
44	216	42L	69	2.1	13.6	0.4 +	0.4	(11.6)	101	(5.6)	10	+	17.1	4	34	0
45	260	42L	69	2.1	28.6	1.5 +	0.5	(29.4)	111	(7.5)	10	+	36.8	4	34	0
46	216	43L	61	2.1	11.1	0.3 +	0.3	(9.4)	93	(5.1)	9	+	14.6	4	34	0
47	270	43L	61	2.1	26.8	1.6 +	0.4	(28.5)	109	(7.6)	9	+	36.1	4	34	0
50	1240	1766	89	16.7	14.6	1.1 +	3.9	(71.6)	72	(23.0)	18		94.6			
51	713	4000S	19	3.3	0.6	0.0 +	0.1	(1.6)	1	(0.2)	0		1.7			
52	10	51L	19	3.3	0.6	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	32	51L	19	3.3	0.6	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	62.0	15.3	23.4	16.5	(1016.8)	+	(98.4)	+	(638.4)	=	1753.6	TOTALS

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	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	50.9	+	45.9	+	70.7	=	167.5

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 53

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9
- (SECONDS)

1	2	27	45
2	2	0	23
4	2	51	20

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	57.3	16.6	18.7	16.5	(762.5)	+	(76.5)	+	(326.4)	=	1165.4	TOTALS

NO. OF ENTRIES TO SUBPT = 10
NO. OF LINKS RECALCULATED= 232

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24
- (SECONDS)

1	2	27	45
2	2	0	23
4	2	27	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	55.8	17.0	17.2	16.5	(669.2)	+	(69.9)	+	(253.9)	=	993.1	TOTALS

NO. OF ENTRIES TO SUBPT = 8
NO. OF LINKS RECALCULATED= 228

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1
- (SECONDS)

1	2	28	45
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	61.7	15.4	18.4	21.2	(664.9)	+	(64.6)	+	(177.3)	=	906.8	TOTALS

NO. OF ENTRIES TO SUBPT = 23
NO. OF LINKS RECALCULATED= 583

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9
- (SECONDS)

1	2	37	54
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.9	15.6	17.6	21.2	(650.1)	+	(67.2)	+	(185.0)	=	902.3	TOTALS

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24
- (SECONDS)

1	2	37	54
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.9	15.6	17.6	21.2	(650.1)	+	(67.2)	+	(185.0)	=	902.3	TOTALS

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1
- (SECONDS)

1	2	36	53
2	2	3	21
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	61.0	15.6	17.7	21.2	(650.5)	+	(66.9)	+	(179.1)	=	896.6	TOTALS

NO. OF ENTRIES TO SUBPT = 8
NO. OF LINKS RECALCULATED= 229

60 SECOND CYCLE 60 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 24 -1 9 24 1 -1
- (SECONDS)

1	2	36	53
2	2	2	22
4	2	32	56

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.0	15.8	17.4	20.5	(646.5)	+	(67.3)	+	(182.7)	=	896.5	TOTALS

NO. OF ENTRIES TO SUBPT = 14
NO. OF LINKS RECALCULATED= 377

60 SECOND CYCLE 60 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 9 24 -1 9 24 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	36	53								
2	2	3	23								
4	2	32	56								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	363	2015	83	16.7	45.5	2.3 +	2.3	(65.1)*	126	(11.8)	8		39.1	1	41	53
11	430	2155	92	16.7	61.9	2.7 +	4.7	(105.1)*	149	(16.5)	12		63.0	1	41	53
12	816	1800S	81	4.6	13.7	1.3 +	1.8	(44.0)*	71	(15.0)	14	(2.2)*	333.2	1	58	36
13	124	1800S	14	4.6	4.7	0.1 +	0.1	(2.3)*	26	(0.8)	1	(0.0)*	12.4	1	58	36
14	12	12L	81	4.6	11.6	0.0 +	0.0	(0.5)	66	(0.2)	14	+	0.8	1	58	36
15	124	12L	81	4.6	20.3	0.4 +	0.3	(9.9)	112	(3.6)	14	+	13.5	1	58	36
16	44	13L	14	4.6	8.7	0.1 +	0.0	(1.5)	80	(0.9)	1		2.4	1	58	36
20	353	2065	64	16.7	28.5	1.9 +	0.9	(39.7)*	98	(8.9)	6		23.8	2	8	23
21	352	2205	60	16.7	26.8	1.9 +	0.7	(37.2)*	95	(8.6)	6		22.3	2	8	23
22	360	1800S	49	2.6	3.6	0.0 +	0.3	(5.0)*	19	(1.8)	5	(0.4)*	44.0	2	28	3
23	430	1800	40	2.6	3.5	0.1 +	0.3	(6.0)*	36	(4.0)	7	(0.6)*	61.5	2	28	3
24	44	22L	49	2.6	6.7	0.0 +	0.0	(1.2)	20	(0.2)	5	+	1.4	2	28	3
25	124	22L	49	2.6	10.5	0.2 +	0.1	(5.1)	60	(1.9)	5	+	7.0	2	28	3
30	121	1169	19	16.7	5.6	0.1 +	0.1	(2.7)	43	(1.4)	1		4.0			
31	689	6000S	25	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.1)	0		1.2			
32	733	31L	25	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.1)	0		1.3			
33	10	31L	25	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	77	31L	25	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	601	2065	87	16.7	38.0	3.1 +	3.2	(90.1)*	118	(18.3)	13		54.1	4	37	56
41	168	2205	23	16.7	17.6	0.7 +	0.1	(11.7)*	74	(3.2)	2		7.0	4	37	56
42	85	1800S	58	2.1	11.8	0.2 +	0.1	(3.9)*	62	(1.4)	5	(0.5)*	45.2	4	1	32
43	12	1800S	52	2.1	10.9	0.0 +	0.0	(0.5)*	59	(0.2)	4	(0.3)*	17.7	4	1	32
44	216	42L	58	2.1	13.2	0.5 +	0.3	(11.3)	103	(5.7)	5	+	16.9	4	1	32
45	260	42L	58	2.1	4.6	0.0 +	0.3	(4.7)	8	(0.5)	5	+	5.2	4	1	32
46	216	43L	52	2.1	11.8	0.5 +	0.2	(10.1)	100	(5.5)	4	+	15.6	4	1	32
47	270	43L	52	2.1	4.0	0.0 +	0.3	(4.2)	7	(0.5)	4	+	4.7	4	1	32
50	1240	1766	89	16.7	14.8	1.2 +	3.9	(72.3)	72	(23.1)	18		95.5			
51	713	4000S	19	3.3	0.6	0.0 +	0.1	(1.6)	1	(0.2)	0		1.7			
52	10	51L	19	3.3	0.6	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
53	32	51L	19	3.3	0.6	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
948.9	60.0	15.8	17.4	20.5	(646.0)	+	(67.2)	+	(181.6)	=	894.7	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	50.9	+	43.6	+	61.3	=	155.8

NO. OF ENTRIES TO SUBPT = 7
NO. OF LINKS RECALCULATED= 203

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:37:37 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 AM PEAK+DEV.DAT" at 16:07 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 AM Peak + Development - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 AM Peak + Development - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET.................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	20								
16)=	12	2	1	0	15								
17)=	12	4	1	0	21								
18)=	12	5	1	0	30								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 GIVEWAY ONLY % FLOW	COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW

51)=	32	10	590	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	451	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	661	0	50	661	43	0	0	0	0	0	0	0	0
54)=	32	13	126	0	50	126	43	0	0	0	0	0	0	0	0
55)=	32	14	23	0	53	23	43	0	0	0	0	0	0	0	0
56)=	32	15	67	0	51	67	43	0	0	0	0	0	0	0	0
57)=	32	16	31	0	51	31	43	0	0	0	0	0	0	0	0
58)=	32	20	321	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	320	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	583	0	10	583	43	0	0	0	0	0	0	0	0
61)=	32	23	451	0	11	451	43	0	0	0	0	0	0	0	0
62)=	32	24	31	0	16	31	43	0	0	0	0	0	0	0	0
63)=	32	25	126	0	13	126	43	0	0	0	0	0	0	0	0
64)=	32	30	123	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	619	0	20	299	43	21	320	43	0	0	0	0	0
66)=	32	32	1020	0	22	569	43	23	451	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	71	0	25	71	43	0	0	0	0	0	0	0	0
69)=	32	40	427	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	98	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	76	0	30	76	43	0	0	0	0	0	0	0	0
72)=	32	43	23	0	30	23	43	0	0	0	0	0	0	0	0
73)=	32	44	225	0	32	225	43	0	0	0	0	0	0	0	0
74)=	32	45	204	0	31	204	43	0	0	0	0	0	0	0	0
75)=	32	46	226	0	32	226	43	0	0	0	0	0	0	0	0
76)=	32	47	205	0	31	205	43	0	0	0	0	0	0	0	0
77)=	32	50	1446	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	349	0	40	349	43	0	0	0	0	0	0	0	0
79)=	32	52	98	0	41	98	43	0	0	0	0	0	0	0	0
80)=	32	53	23	0	43	23	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	31	0	42	31	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	20								
2	2	0	15								
4	2	0	21								
5	2	0	30								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM	RANDOM+ OVERSAT (U+R+O=MEAN Q) (PCU-H/H)	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	590	2065	80	16.7	25.2	2.1 +	2.0	(58.7)*	109	(16.5)	9		35.2	1	5	20
11	451	2205	58	16.7	17.1	1.5 +	0.7	(30.5)*	86	(10.1)	5		18.3	1	5	20
12	662	2050S	79	4.6	21.5	2.4 +	1.6	(56.2)*	116	(19.8)	10	(2.0)*	391.5	1	25	0
13	127	2100S	16	4.6	9.7	0.3 +	0.1	(4.9)*	79	(2.6)	1	(0.0)*	26.9	1	25	0
14	23	12L	79	4.6	15.4	0.0 +	0.1	(1.4)	51	(0.3)	10	+	1.7	1	25	0
15	67	12L	79	4.6	14.9	0.1 +	0.2	(3.9)	48	(0.8)	10	+	4.8	1	25	0
16	31	13L	16	4.6	8.3	0.1 +	0.0	(1.0)	32	(0.3)	1		1.3	1	25	0
20	321	2040	64	16.7	25.3	1.4 +	0.9	(32.0)*	105	(8.7)	4		19.2	2	5	15
21	320	2180	60	16.7	23.5	1.3 +	0.7	(29.6)*	100	(8.3)	4		17.8	2	5	15
22	583	2050S	63	2.6	16.4	2.0 +	0.7	(37.6)*	109	(16.3)	10	(3.6)*	367.5	2	20	0
23	451	2100	37	2.6	14.2	1.5 +	0.3	(25.3)*	104	(12.1)	6	(1.7)*	216.9	2	20	0
24	31	22L	63	2.6	11.4	0.1 +	0.0	(1.4)	65	(0.5)	10	+	1.9	2	20	0
25	127	22L	63	2.6	8.7	0.2 +	0.1	(4.3)	87	(2.8)	10	+	7.1	2	20	0
30	123	1169	21	16.7	6.2	0.1 +	0.1	(3.0)	54	(1.7)	1		4.7			
31	619	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1020	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	72	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	54	16.7	15.9	1.3 +	0.6	(26.8)*	83	(9.1)	5		16.1	4	5	21
41	98	2230	12	16.7	11.6	0.2 +	0.1	(4.5)*	66	(1.7)	1		2.7	4	5	21
42	76	2050S	55	2.1	12.6	0.2 +	0.1	(3.8)*	66	(1.3)	5	(0.8)*	55.6	4	26	0
43	23	2100S	49	2.1	11.6	0.1 +	0.0	(1.1)*	64	(0.4)	5	(0.5)*	29.5	4	26	0
44	224	42L	55	2.1	6.2	0.1 +	0.3	(5.5)	53	(3.1)	5	+	8.6	4	26	0
45	204	42L	55	2.1	17.7	0.8 +	0.3	(14.3)	109	(5.8)	5	+	20.0	4	26	0
46	226	43L	49	2.1	5.1	0.1 +	0.2	(4.5)	43	(2.5)	5	+	7.0	4	26	0
47	206	43L	49	2.1	16.7	0.7 +	0.2	(13.5)	108	(5.7)	5	+	19.2	4	26	0
50	1446	2985f	84	16.7	12.4	2.4 +	2.5	(70.6)*	70	(26.0)	14		42.4	5	5	30
51	349	2050S	78	2.7	41.5	2.5 +	1.5	(57.1)*	132	(11.9)	7	(3.7)*	466.2	5	35	0
52	98	2100S	24	2.7	29.3	0.7 +	0.1	(11.3)*	110	(2.8)	2	(0.2)*	67.9	5	35	0
53	23	52L	24	2.7	10.4	0.0 +	0.0	(0.9)	67	(0.4)	2	+	1.3	5	35	0
54	10	51L	78	2.7	27.2	0.0 +	0.0	(1.1)	130	(0.3)	7	+	1.4	5	35	0
55	31	51L	78	2.7	25.1	0.1 +	0.1	(3.1)	110	(0.9)	7	+	3.9	5	35	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	58.5	16.6	22.2	13.8	(1199.5)	+	(92.7)	+	(567.9)	=	1860.0	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.9	+	41.4	+	78.8	=	172.1

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	51.6	18.8	15.2	13.8	(680.3)	+	(42.4)	+	(135.5)	=	858.2	TOTALS

NO. OF ENTRIES TO SUBPT = 15
NO. OF LINKS RECALCULATED= 338

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18
- (SECONDS)

1	2	18	38
2	2	0	15
4	2	24	0
5	2	39	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	51.6	18.8	15.2	13.8	(680.3)	+	(42.4)	+	(135.5)	=	858.2	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 237

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1
- (SECONDS)

1	2	20	38
2	2	1	15
4	2	24	39
5	2	42	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	57.4	16.9	15.3	19.6	(563.6)	+	(32.6)	+	(28.5)	=	624.7	TOTALS

NO. OF ENTRIES TO SUBPT = 28
NO. OF LINKS RECALCULATED= 602

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6
- (SECONDS)

1	2	26	44
2	2	1	15
4	2	24	39
5	2	42	24

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
968.4	56.6	17.1	14.5	19.6	(525.9)	+	(26.1)	+	(24.0)	=	576.0	TOTALS

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 261

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

     1       2      26      44
     2       2       1      15
     4       2      24      39
     5       2      42      24

   TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
  DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)        ($/H)

    968.4          56.6       17.1         14.5     19.6    ( 525.9) + (   26.1)  +  (  24.0)   =    576.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  271



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

     1       2      26      44
     2       2       3      17
     4       2      23      38
     5       2      42      24

   TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
  DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)        ($/H)

    968.4          56.6       17.1         14.4     19.6    ( 519.5) + (   24.9)  +  (  23.1)   =    567.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  319



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

     1       2      26      44
     2       2       3      17
     4       2      22      38
     5       2      42      23

   TOTAL          TOTAL      MEAN         TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
  DISTANCE         TIME    JOURNEY       UNIFORM  RANDOM+    COST        COST          FOR      PERFORMANCE
 TRAVELLED        SPENT     SPEED         DELAY   OVERSAT     OF          OF          EXCESS       INDEX
                                                   DELAY    DELAY       STOPS        QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)        ($/H)        ($/H)

    968.4          58.0       16.7         14.6     20.9    ( 520.2) + (   24.6)  +  (  20.8)   =    565.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  460
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	27	0								
2	2	3	17								
4	2	22	38								
5	2	42	23								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	590	2065	92	16.7	44.0	2.5 +	4.8	(102.4)*	145	(22.0)	12		61.4	1	32	0
11	451	2205	66	16.7	21.0	1.7 +	1.0	(37.4)*	96	(11.2)	6		22.4	1	32	0
12	662	2050S	72	4.6	6.8	0.1 +	1.1	(17.7)*	20	(3.4)	4	(0.0)*	92.1	1	5	27
13	127	2100S	15	4.6	2.6	0.0 +	0.1	(1.3)*	8	(0.2)	1	(0.0)*	6.8	1	5	27
14	23	12L	72	4.6	22.7	0.1 +	0.0	(2.1)	113	(0.7)	4		2.7	1	5	27
15	67	12L	72	4.6	18.0	0.2 +	0.1	(4.8)	111	(1.9)	4		6.7	1	5	27
16	31	13L	15	4.6	12.6	0.1 +	0.0	(1.5)	100	(0.8)	1		2.3	1	5	27
20	321	2040	71	16.7	29.5	1.4 +	1.2	(37.4)*	114	(9.4)	5		22.4	2	8	17
21	320	2180	66	16.7	26.8	1.4 +	1.0	(33.8)*	108	(8.9)	5		20.3	2	8	17
22	583	2050S	60	2.6	3.9	0.0 +	0.6	(8.9)*	9	(1.4)	3	(0.4)*	62.0	2	22	3
23	451	2100	36	2.6	2.4	0.0 +	0.3	(4.3)*	8	(0.9)	3	(0.1)*	25.5	2	22	3
24	31	22L	60	2.6	17.9	0.1 +	0.0	(2.2)	107	(0.9)	3	+	3.0	2	22	3
25	127	22L	60	2.6	10.4	0.2 +	0.1	(5.2)	85	(2.8)	3	+	8.0	2	22	3
30	123	1169	22	16.7	6.2	0.1 +	0.1	(3.0)	53	(1.7)	1		4.7			
31	619	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1020	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	72	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	77	16.7	28.7	1.8 +	1.6	(48.3)*	114	(12.5)	6		29.0	4	27	38
41	98	2230	16	16.7	16.3	0.3 +	0.1	(6.3)*	80	(2.0)	1		3.8	4	27	38
42	76	2050S	44	2.1	7.8	0.1 +	0.1	(2.3)*	47	(0.9)	2	(0.0)*	12.8	4	43	22
43	23	2100S	39	2.1	7.4	0.0 +	0.0	(0.7)*	46	(0.3)	2	(0.0)*	3.6	4	43	22
44	224	42L	44	2.1	3.7	0.1 +	0.2	(3.3)	29	(1.7)	2		5.0	4	43	22
45	204	42L	44	2.1	4.1	0.1 +	0.2	(3.3)	13	(0.7)	2		3.9	4	43	22
46	226	43L	39	2.1	3.2	0.0 +	0.2	(2.8)	23	(1.4)	2		4.2	4	43	22
47	206	43L	39	2.1	3.7	0.1 +	0.1	(3.0)	12	(0.6)	2		3.7	4	43	22
50	1446	3136f	94	16.7	26.7	3.6 +	7.1	(152.3)*	110	(41.1)	23		91.4	5	2	23
51	349	2050S	57	2.7	6.2	0.0 +	0.6	(8.5)*	13	(1.2)	1	(0.0)*	45.1	5	28	42
52	98	2100S	17	2.7	3.2	0.0 +	0.1	(1.2)*	7	(0.2)	0	(0.0)*	6.3	5	28	42
53	23	52L	17	2.7	21.9	0.1 +	0.0	(2.0)	103	(0.6)	0		2.6	5	28	42
54	10	51L	57	2.7	15.1	0.0 +	0.0	(0.6)	105	(0.3)	1	+	0.9	5	28	42
55	31	51L	57	2.7	25.0	0.2 +	0.1	(3.1)	110	(0.9)	1	+	3.9	5	28	42

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
968.4	57.9	16.7	14.5	20.9	(515.2) +	(23.8) +	(21.0) =	559.9	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.9	+	40.7	+	59.7	=	152.3

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 276

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:38:11 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Run with file:- "2026 PM PEAK+DEV.DAT" at 16:14 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak + Development - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
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CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 PM Peak + Development - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE													
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
~~~~

51)=	32	10	359	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	457	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	839	0	50	839	43	0	0	0	0	0	0	0	0
54)=	32	13	122	0	50	122	43	0	0	0	0	0	0	0	0
55)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0
56)=	32	15	132	0	51	132	43	0	0	0	0	0	0	0	0
57)=	32	16	43	0	51	43	43	0	0	0	0	0	0	0	0
58)=	32	20	355	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	354	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	356	0	10	356	43	0	0	0	0	0	0	0	0
61)=	32	23	457	0	11	457	43	0	0	0	0	0	0	0	0
62)=	32	24	43	0	16	43	43	0	0	0	0	0	0	0	0
63)=	32	25	122	0	13	122	43	0	0	0	0	0	0	0	0
64)=	32	30	118	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	693	0	20	339	43	21	354	43	0	0	0	0	0
66)=	32	32	796	0	22	339	43	23	457	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	76	0	25	76	43	0	0	0	0	0	0	0	0
69)=	32	40	588	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	175	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	84	0	30	84	43	0	0	0	0	0	0	0	0
72)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0	0
73)=	32	44	228	0	32	228	43	0	0	0	0	0	0	0	0
74)=	32	45	286	0	31	286	43	0	0	0	0	0	0	0	0
75)=	32	46	229	0	32	229	43	0	0	0	0	0	0	0	0
76)=	32	47	275	0	31	275	43	0	0	0	0	0	0	0	0
77)=	32	50	1266	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	531	0	40	531	43	0	0	0	0	0	0	0	0
79)=	32	52	175	0	41	175	43	0	0	0	0	0	0	0	0
80)=	32	53	12	0	43	12	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	19	0	42	19	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	15								
2	2	0	19								
4	2	0	22								
5	2	0	26								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	359	2065	71	16.7	27.7	1.6 +	1.2	(39.2)*	111	(10.2)	5		23.5	1	5	15
11	457	2205	85	16.7	36.8	2.1 +	2.6	(66.4)*	130	(15.3)	8		39.8	1	5	15
12	838	2050S	83	4.6	20.2	2.7 +	2.0	(66.9)*	117	(25.4)	14	(3.5)*	519.2	1	20	0
13	122	2100S	14	4.6	6.1	0.1 +	0.1	(2.9)*	67	(2.1)	1	(0.0)*	16.7	1	20	0
14	12	12L	83	4.6	13.5	0.0 +	0.0	(0.6)	60	(0.2)	14	+	0.8	1	20	0
15	132	12L	83	4.6	12.3	0.1 +	0.3	(6.4)	51	(1.7)	14	+	8.2	1	20	0
16	43	13L	14	4.6	4.8	0.0 +	0.0	(0.8)	22	(0.2)	1		1.1	1	20	0
20	355	2040	52	16.7	17.6	1.2 +	0.5	(24.7)*	87	(7.9)	4		14.8	2	5	19
21	354	2180	49	16.7	16.8	1.2 +	0.5	(23.4)*	84	(7.6)	4		14.0	2	5	19
22	356	2050S	52	2.6	20.1	1.6 +	0.4	(28.2)*	108	(9.9)	7	(2.4)*	258.2	2	24	0
23	457	2100	45	2.6	19.7	2.1 +	0.4	(35.4)*	107	(12.6)	6	(2.3)*	294.9	2	24	0
24	43	22L	52	2.6	10.4	0.1 +	0.0	(1.8)	48	(0.5)	7	+	2.3	2	24	0
25	122	22L	52	2.6	11.9	0.3 +	0.1	(5.7)	99	(3.1)	7	+	8.9	2	24	0
30	118	1169	19	16.7	5.3	0.1 +	0.1	(2.4)	46	(1.4)	0		3.8			
31	693	6000S	26	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.2)	0		1.3			
32	796	31L	26	4.2	0.4	0.0 +	0.1	(1.3)	1	(0.2)	0		1.5			
33	10	31L	26	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	76	31L	26	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	588	2090	70	16.7	18.5	1.8 +	1.2	(42.8)*	92	(13.9)	7		25.7	4	5	22
41	175	2230	20	16.7	11.3	0.4 +	0.1	(7.8)*	66	(3.0)	2		4.7	4	5	22
42	84	2050S	69	2.1	16.3	0.2 +	0.2	(5.4)*	79	(1.7)	8	(1.7)*	107.1	4	27	0
43	12	2100S	58	2.1	14.1	0.0 +	0.0	(0.7)*	75	(0.2)	6	(0.9)*	44.8	4	27	0
44	228	42L	69	2.1	8.5	0.1 +	0.4	(7.7)	65	(3.8)	8	+	11.5	4	27	0
45	285	42L	69	2.1	21.1	1.1 +	0.5	(23.7)	114	(8.4)	8	+	32.1	4	27	0
46	229	43L	58	2.1	5.7	0.1 +	0.3	(5.1)	37	(2.2)	6	+	7.3	4	27	0
47	274	43L	58	2.1	18.6	1.0 +	0.4	(20.1)	109	(7.8)	6	+	27.9	4	27	0
50	1266	3136f	83	16.7	14.9	2.9 +	2.3	(74.6)*	80	(25.9)	14		44.8	5	5	26
51	532	2050S	82	2.7	36.5	3.3 +	2.1	(76.6)*	129	(17.7)	9	(5.5)*	650.4	5	31	0
52	175	2100S	27	2.7	24.4	1.0 +	0.2	(16.8)*	108	(4.8)	2	(0.6)*	116.8	5	31	0
53	12	52L	27	2.7	7.0	0.0 +	0.0	(0.3)	40	(0.1)	2	+	0.5	5	31	0
54	10	51L	82	2.7	23.8	0.0 +	0.0	(0.9)	125	(0.3)	9	+	1.3	5	31	0
55	19	51L	82	2.7	22.6	0.0 +	0.1	(1.7)	104	(0.5)	9	+	2.2	5	31	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
958.4	64.0	15.0	25.4	16.3	(1412.3)	+	(105.1)	+	(768.7)	=	2286.1	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.4	+	47.9	+	86.1	=	185.5

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6
  - (SECONDS)

    1       2       0      15
    2       2      27       1
    4       2      24       1
    5       2      12      38

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
  DISTANCE        TIME     JOURNEY        UNIFORM   RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED       SPENT      SPEED          DELAY    OVERSAT     OF           OF           EXCESS        INDEX
                                                     DELAY     DELAY        STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)        ($/H)          ($/H)         ($/H)

    958.4          55.9       17.1          17.3      16.3    ( 832.2) + (    73.5)   +   ( 390.7)   =    1296.4      TOTALS

 NO. OF ENTRIES TO SUBPT  =   16
 NO. OF LINKS RECALCULATED=  338


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

    1       2       0      15
    2       2      27       1
    4       2      42      19
    5       2      12      38

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
  DISTANCE        TIME     JOURNEY        UNIFORM   RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED       SPENT      SPEED          DELAY    OVERSAT     OF           OF           EXCESS        INDEX
                                                     DELAY     DELAY        STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)        ($/H)          ($/H)         ($/H)

    958.4          56.6       16.9          18.0      16.3    ( 827.7) + (    65.1)   +   ( 368.5)   =    1261.4      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  262


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

    1       2       1      15
    2       2      25      40
    4       2      41      14
    5       2      16      39

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
  DISTANCE        TIME     JOURNEY        UNIFORM   RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED       SPENT      SPEED          DELAY    OVERSAT     OF           OF           EXCESS        INDEX
                                                     DELAY     DELAY        STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)        ($/H)          ($/H)         ($/H)

    958.4          62.6       15.3          16.7      23.6    ( 631.3) + (    44.5)   +   ( 106.7)   =     782.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   33
 NO. OF LINKS RECALCULATED=  691


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

    1       2       1      15
    2       2      19      34
    4       2      41      14
    5       2      16      39

  TOTAL          TOTAL       MEAN          TOTAL     TOTAL     TOTAL        TOTAL         PENALTY       TOTAL
  DISTANCE        TIME     JOURNEY        UNIFORM   RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED       SPENT      SPEED          DELAY    OVERSAT     OF           OF           EXCESS        INDEX
                                                     DELAY     DELAY        STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)    ($/H)        ($/H)          ($/H)         ($/H)

    958.4          61.4       15.6          15.5      23.6    ( 610.4) + (    38.2)   +   (  76.1)   =     724.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   10
 NO. OF LINKS RECALCULATED=  286
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```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

     1       2       1      15
     2       2      19      34
     4       2      41      14
     5       2      16      39

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST           FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)          ($/H)        ($/H)

    958.4          61.4       15.6          15.5     23.6    ( 610.4) + (   38.2)  +  (  76.1)   =     724.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  274


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

     1       2       2      16
     2       2      20      35
     4       2      39      12
     5       2      17      40

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST           FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)          ($/H)        ($/H)

    958.4          61.5       15.6          15.6     23.6    ( 607.4) + (   35.3)  +  (  66.7)   =     709.3      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  327


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

     1       2       2      16
     2       2      19      34
     4       2      38      12
     5       2      17      40

   TOTAL          TOTAL       MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY       TOTAL
  DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST           FOR      PERFORMANCE
 TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                     DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)          ($/H)        ($/H)

    958.4          60.0       16.0          15.6     22.1    ( 598.8) + (   36.0)  +  (  67.0)   =     701.8      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  473
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	2	16								
2	2	19	34								
4	2	39	13								
5	2	17	40								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	MEAN TIMES PER PCU DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	359	2065	78	16.7	33.9	1.6 +	1.7	(48.0)*	123	(11.4)	6		28.8	1	7	16
11	457	2205	93	16.7	58.5	2.2 +	5.3	(105.5)*	165	(19.5)	11		63.3	1	7	16
12	838	2050S	80	4.6	8.5	0.3 +	1.7	(27.9)*	56	(12.1)	11	(0.9)*	192.2	1	21	2
13	122	2100S	13	4.6	1.7	0.0 +	0.1	(0.8)*	4	(0.1)	1	(0.0)*	4.3	1	21	2
14	12	12L	80	4.6	22.8	0.1 +	0.0	(1.1)	115	(0.4)	11	+	1.4	1	21	2
15	132	12L	80	4.6	16.5	0.3 +	0.3	(8.6)	109	(3.7)	11	+	12.3	1	21	2
16	43	13L	13	4.6	9.6	0.1 +	0.0	(1.6)	90	(1.0)	1		2.6	1	21	2
20	355	2040	71	16.7	27.9	1.5 +	1.2	(39.0)*	111	(10.2)	5		23.4	2	24	34
21	354	2180	66	16.7	25.3	1.5 +	1.0	(35.3)*	105	(9.6)	5		21.2	2	24	34
22	356	2050S	44	2.6	2.9	0.0 +	0.3	(4.1)*	7	(0.6)	2	(0.2)*	29.0	2	39	19
23	457	2100	38	2.6	2.8	0.1 +	0.3	(5.0)*	11	(1.3)	3	(0.1)*	32.2	2	39	19
24	43	22L	44	2.6	17.8	0.2 +	0.0	(3.0)	105	(1.2)	2	+	4.2	2	39	19
25	122	22L	44	2.6	7.5	0.2 +	0.1	(3.6)	74	(2.3)	2	+	5.9	2	39	19
30	118	1169	19	16.7	5.1	0.1 +	0.1	(2.4)	44	(1.3)	0		3.7			
31	693	6000S	26	4.2	0.4	0.0 +	0.1	(1.1)	1	(0.2)	0		1.3			
32	796	31L	26	4.2	0.4	0.0 +	0.1	(1.3)	1	(0.2)	0		1.5			
33	10	31L	26	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	76	31L	26	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	588	2090	84	16.7	29.7	2.3 +	2.6	(69.0)*	118	(17.9)	9		41.4	4	44	13
41	175	2230	24	16.7	14.0	0.5 +	0.2	(9.7)*	74	(3.3)	2		5.8	4	44	13
42	84	2050S	60	2.1	11.0	0.2 +	0.1	(3.6)*	57	(1.2)	3	(0.1)*	23.0	4	18	39
43	12	2100S	50	2.1	9.9	0.0 +	0.0	(0.5)*	55	(0.2)	2	(0.0)*	2.9	4	18	39
44	228	42L	60	2.1	6.0	0.1 +	0.3	(5.4)	50	(3.0)	3	+	8.4	4	18	39
45	285	42L	60	2.1	5.7	0.1 +	0.4	(6.4)	15	(1.1)	3	+	7.5	4	18	39
46	229	43L	50	2.1	4.6	0.1 +	0.2	(4.1)	36	(2.1)	2		6.2	4	18	39
47	274	43L	50	2.1	4.8	0.1 +	0.3	(5.2)	13	(0.9)	2		6.1	4	18	39
50	1266	3291f	91	16.7	24.2	3.8 +	4.7	(120.7)*	104	(34.0)	18		72.4	5	22	40
51	532	2050S	68	2.7	7.0	0.0 +	1.0	(14.6)*	15	(2.1)	1	(0.2)*	83.7	5	0	17
52	175	2100S	22	2.7	2.8	0.0 +	0.1	(1.9)*	6	(0.3)	0	(0.0)*	10.0	5	0	17
53	12	52L	22	2.7	20.7	0.1 +	0.0	(1.0)	103	(0.3)	0		1.3	5	0	17
54	10	51L	68	2.7	16.1	0.0 +	0.0	(0.6)	107	(0.3)	1	+	0.9	5	0	17
55	19	51L	68	2.7	24.6	0.1 +	0.0	(1.8)	111	(0.5)	1	+	2.4	5	0	17

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
958.4	59.8	16.0	15.4	22.1	(596.4)	+	(36.4)	+	(66.9)	=	699.7	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	51.4	+	43.2	+	64.8	=	159.4

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 268

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:38:37 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
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Run with file:- "2026 AM PEAK+DEV+SP.DAT" at 16:27 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 AM Peak + Development+ SP - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-
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CARD NO.	CARD TYPE	
(1)=	TITLE:-	Gibbet Hill Rbout 2026 AM Peak + Development+ SP - Gazeley Improvements

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 ONLY % FLOW	GIVEWAY COEFFS. A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW
~~~~

51)=	32	10	590	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	452	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	677	0	50	677	43	0	0	0	0	0	0	0	0
54)=	32	13	126	0	50	126	43	0	0	0	0	0	0	0	0
55)=	32	14	23	0	53	23	43	0	0	0	0	0	0	0	0
56)=	32	15	61	0	51	61	43	0	0	0	0	0	0	0	0
57)=	32	16	29	0	51	29	43	0	0	0	0	0	0	0	0
58)=	32	20	319	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	318	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	583	0	10	583	43	0	0	0	0	0	0	0	0
61)=	32	23	452	0	11	452	43	0	0	0	0	0	0	0	0
62)=	32	24	29	0	16	29	43	0	0	0	0	0	0	0	0
63)=	32	25	126	0	13	126	43	0	0	0	0	0	0	0	0
64)=	32	30	123	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	615	0	20	297	43	21	318	43	0	0	0	0	0
66)=	32	32	1022	0	22	570	43	23	452	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	71	0	25	71	43	0	0	0	0	0	0	0	0
69)=	32	40	427	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	90	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	76	0	30	76	43	0	0	0	0	0	0	0	0
72)=	32	43	23	0	30	23	43	0	0	0	0	0	0	0	0
73)=	32	44	226	0	32	226	43	0	0	0	0	0	0	0	0
74)=	32	45	204	0	31	204	43	0	0	0	0	0	0	0	0
75)=	32	46	226	0	32	226	43	0	0	0	0	0	0	0	0
76)=	32	47	205	0	31	205	43	0	0	0	0	0	0	0	0
77)=	32	50	1504	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	349	0	40	349	43	0	0	0	0	0	0	0	0
79)=	32	52	90	0	41	90	43	0	0	0	0	0	0	0	0
80)=	32	53	23	0	43	23	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	32	0	42	32	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	20								
2	2	0	15								
4	2	0	21								
5	2	0	31								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	590	2065	80	16.7	25.2	2.1 +	2.0	(58.7)*	109	(16.5)	9		35.2	1	5	20
11	452	2205	58	16.7	17.2	1.5 +	0.7	(30.6)*	87	(10.1)	5		18.4	1	5	20
12	677	2050S	79	4.6	21.7	2.4 +	1.7	(57.9)*	116	(20.3)	11	(2.1)*	404.5	1	25	0
13	126	2100S	16	4.6	9.5	0.3 +	0.1	(4.7)*	77	(2.5)	1	(0.0)*	26.0	1	25	0
14	23	12L	79	4.6	16.3	0.0 +	0.1	(1.5)	52	(0.3)	11	+	1.8	1	25	0
15	61	12L	79	4.6	17.9	0.2 +	0.2	(4.3)	59	(0.9)	11	+	5.2	1	25	0
16	29	13L	16	4.6	11.2	0.1 +	0.0	(1.3)	45	(0.3)	1		1.6	1	25	0
20	319	2040	64	16.7	25.2	1.4 +	0.9	(31.7)*	105	(8.6)	4		19.0	2	5	15
21	318	2180	60	16.7	23.4	1.3 +	0.7	(29.3)*	100	(8.2)	4		17.6	2	5	15
22	583	2050S	62	2.6	16.3	2.0 +	0.7	(37.5)*	109	(16.3)	10	(3.6)*	366.6	2	20	0
23	452	2100	37	2.6	14.3	1.5 +	0.3	(25.4)*	104	(12.2)	6	(1.7)*	217.5	2	20	0
24	29	22L	62	2.6	12.1	0.1 +	0.0	(1.4)	77	(0.6)	10	+	2.0	2	20	0
25	126	22L	62	2.6	8.5	0.2 +	0.1	(4.2)	84	(2.7)	10	+	7.0	2	20	0
30	123	1169	21	16.7	6.2	0.1 +	0.1	(3.0)	54	(1.7)	1		4.7			
31	615	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1022	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	71	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	54	16.7	15.9	1.3 +	0.6	(26.8)*	83	(9.1)	5		16.1	4	5	21
41	90	2230	11	16.7	11.5	0.2 +	0.1	(4.1)*	65	(1.5)	1		2.5	4	5	21
42	76	2050S	56	2.1	12.6	0.2 +	0.1	(3.8)*	66	(1.3)	6	(0.8)*	55.9	4	26	0
43	23	2100S	49	2.1	11.7	0.1 +	0.0	(1.1)*	64	(0.4)	5	(0.5)*	29.5	4	26	0
44	227	42L	56	2.1	6.3	0.1 +	0.3	(5.6)	54	(3.1)	6	+	8.8	4	26	0
45	204	42L	56	2.1	17.8	0.8 +	0.3	(14.3)	109	(5.8)	6	+	20.1	4	26	0
46	227	43L	49	2.1	5.1	0.1 +	0.2	(4.5)	43	(2.5)	5	+	7.1	4	26	0
47	206	43L	49	2.1	16.7	0.7 +	0.2	(13.6)	108	(5.7)	5	+	19.3	4	26	0
50	1504	2955f	85	16.7	12.1	2.3 +	2.7	(71.7)*	68	(26.3)	14		43.0	5	5	31
51	349	2050S	86	2.7	52.5	2.6 +	2.5	(72.3)*	150	(13.5)	8	(4.9)*	597.7	5	36	0
52	90	2100S	24	2.7	30.8	0.6 +	0.1	(10.9)*	111	(2.6)	1	(0.1)*	63.9	5	36	0
53	23	52L	24	2.7	11.4	0.0 +	0.0	(1.0)	70	(0.4)	1	+	1.4	5	36	0
54	10	51L	86	2.7	38.1	0.0 +	0.1	(1.5)	148	(0.4)	8	+	1.9	5	36	0
55	32	51L	86	2.7	36.1	0.1 +	0.2	(4.6)	133	(1.1)	8	+	5.7	5	36	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	60.1	16.3	22.2	15.2	(1283.8)	+	(95.0)	+	(624.3)	=	2003.0	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	52.4	+	42.9	+	79.9	=	175.2

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 56

```
      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6
  - (SECONDS)

     1       2      18      38
     2       2       0      15
     4       2      24       0
     5       2      39      25

   TOTAL           TOTAL       MEAN          TOTAL    TOTAL    TOTAL        TOTAL          PENALTY       TOTAL
  DISTANCE          TIME     JOURNEY        UNIFORM  RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED         SPENT      SPEED          DELAY   OVERSAT     OF           OF            EXCESS        INDEX
                                                      DELAY    DELAY        STOPS          QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

    977.9          53.1       18.4          15.2      15.2    ( 768.1) + (    46.1)   +  ( 199.8)   =    1014.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =   15
 NO. OF LINKS RECALCULATED=  338



      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

     1       2      18      38
     2       2       0      15
     4       2      24       0
     5       2      39      25

   TOTAL           TOTAL       MEAN          TOTAL    TOTAL    TOTAL        TOTAL          PENALTY       TOTAL
  DISTANCE          TIME     JOURNEY        UNIFORM  RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED         SPENT      SPEED          DELAY   OVERSAT     OF           OF            EXCESS        INDEX
                                                      DELAY    DELAY        STOPS          QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

    977.9          53.1       18.4          15.2      15.2    ( 768.1) + (    46.1)   +  ( 199.8)   =    1014.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  237



      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

     1       2      20      38
     2       2       1      15
     4       2      25      41
     5       2      42      25

   TOTAL           TOTAL       MEAN          TOTAL    TOTAL    TOTAL        TOTAL          PENALTY       TOTAL
  DISTANCE          TIME     JOURNEY        UNIFORM  RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED         SPENT      SPEED          DELAY   OVERSAT     OF           OF            EXCESS        INDEX
                                                      DELAY    DELAY        STOPS          QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

    977.9          57.8       16.9          15.5      19.6    ( 597.0) + (    34.9)   +  (  46.6)   =     678.5      TOTALS

 NO. OF ENTRIES TO SUBPT  =   27
 NO. OF LINKS RECALCULATED=  587



      45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

     1       2      26      44
     2       2       7      21
     4       2      25      41
     5       2      42      25

   TOTAL           TOTAL       MEAN          TOTAL    TOTAL    TOTAL        TOTAL          PENALTY       TOTAL
  DISTANCE          TIME     JOURNEY        UNIFORM  RANDOM+    COST         COST            FOR       PERFORMANCE
 TRAVELLED         SPENT      SPEED          DELAY   OVERSAT     OF           OF            EXCESS        INDEX
                                                      DELAY    DELAY        STOPS          QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)        ($/H)          ($/H)         ($/H)

    977.9          57.1       17.1          14.7      19.6    ( 553.9) + (    30.5)   +  (  38.8)   =     623.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  266
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```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18
  - (SECONDS)

    1       2      26      44
    2       2       7      21
    4       2      25      41
    5       2      42      25

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT     SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

    977.9          57.1       17.1          14.7     19.6    ( 553.9) + (   30.5)  +  (  38.8)   =     623.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  284



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1
  - (SECONDS)

    1       2      26      44
    2       2       6      20
    4       2      24      40
    5       2      42      25

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT     SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

    977.9          56.9       17.2          14.6     19.6    ( 546.6) + (   29.3)  +  (  34.2)   =     610.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =   11
 NO. OF LINKS RECALCULATED=  338



     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6  18   1  -1
  - (SECONDS)

    1       2      26      44
    2       2       6      19
    4       2      24      39
    5       2      42      24

  TOTAL          TOTAL      MEAN          TOTAL    TOTAL    TOTAL       TOTAL        PENALTY      TOTAL
 DISTANCE         TIME    JOURNEY        UNIFORM  RANDOM+    COST        COST          FOR       PERFORMANCE
 TRAVELLED        SPENT     SPEED          DELAY  OVERSAT     OF          OF          EXCESS       INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
 (PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)   ($/H)       ($/H)         ($/H)        ($/H)

    977.9          61.2       16.0          14.9     23.6    ( 558.3) + (   26.3)  +  (  20.1)   =     604.7      TOTALS

 NO. OF ENTRIES TO SUBPT  =   17
 NO. OF LINKS RECALCULATED=  473
```

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	27	0								
2	2	4	17								
4	2	23	38								
5	2	42	24								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	-------DELAY-------- UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	----STOPS---- MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	----QUEUE---- MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START 1ST (SEC	END
10	590	2065	92	16.7	44.0	2.5 +	4.8	(102.4)*	145	(22.0)	12		61.4	1	32	0
11	452	2205	66	16.7	21.1	1.7 +	1.0	(37.5)*	96	(11.2)	6		22.5	1	32	0
12	677	2050S	73	4.6	7.5	0.2 +	1.2	(19.9)*	25	(4.4)	5	(0.0)*	104.4	1	5	27
13	126	2100S	15	4.6	3.1	0.0 +	0.1	(1.5)*	10	(0.3)	1	(0.0)*	8.0	1	5	27
14	23	12L	73	4.6	22.3	0.1 +	0.0	(2.0)	113	(0.7)	5		2.7	1	5	27
15	61	12L	73	4.6	17.4	0.2 +	0.1	(4.2)	111	(1.7)	5		5.9	1	5	27
16	29	13L	15	4.6	11.9	0.1 +	0.0	(1.4)	100	(0.7)	1		2.1	1	5	27
20	319	2040	78	16.7	36.6	1.5 +	1.7	(46.0)*	128	(10.5)	5		27.6	2	9	17
21	318	2180	73	16.7	31.8	1.5 +	1.3	(39.9)*	118	(9.7)	5		23.9	2	9	17
22	583	2050S	58	2.6	3.4	0.0 +	0.5	(7.9)*	8	(1.2)	2	(0.3)*	52.7	2	22	4
23	452	2100	35	2.6	2.2	0.0 +	0.3	(3.9)*	7	(0.9)	3	(0.1)*	23.8	2	22	4
24	29	22L	58	2.6	17.9	0.1 +	0.0	(2.0)	108	(0.8)	2	+	2.9	2	22	4
25	126	22L	58	2.6	10.1	0.2 +	0.1	(5.0)	82	(2.7)	2	+	7.7	2	22	4
30	123	1169	22	16.7	6.2	0.1 +	0.1	(3.0)	53	(1.7)	1		4.7			
31	615	6000S	29	4.2	0.4	0.0 +	0.1	(1.0)	1	(0.1)	0		1.2			
32	1022	31L	29	4.2	0.4	0.0 +	0.1	(1.7)	1	(0.2)	0		1.9			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	71	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	427	2090	84	16.7	36.4	1.9 +	2.4	(61.4)*	129	(14.2)	7		36.8	4	28	38
41	90	2230	17	16.7	17.4	0.3 +	0.1	(6.2)*	82	(1.9)	1		3.7	4	28	38
42	76	2050S	43	2.1	7.2	0.1 +	0.1	(2.1)*	44	(0.9)	2	(0.0)*	11.6	4	43	23
43	23	2100S	38	2.1	6.8	0.0 +	0.0	(0.6)*	43	(0.3)	2	(0.0)*	3.3	4	43	23
44	227	42L	43	2.1	3.4	0.0 +	0.2	(3.0)	27	(1.6)	2		4.6	4	43	23
45	204	42L	43	2.1	3.6	0.1 +	0.2	(2.9)	11	(0.6)	2		3.5	4	43	23
46	227	43L	38	2.1	2.9	0.0 +	0.1	(2.6)	21	(1.2)	2		3.9	4	43	23
47	206	43L	38	2.1	3.3	0.1 +	0.1	(2.7)	10	(0.6)	2		3.2	4	43	23
50	1504	3094f	95	16.7	27.7	3.5 +	8.0	(164.5)*	113	(43.6)	24		98.7	5	2	24
51	349	2050S	61	2.7	7.4	0.0 +	0.7	(10.2)*	16	(1.4)	1	(0.1)*	55.6	5	29	42
52	90	2100S	17	2.7	3.4	0.0 +	0.1	(1.2)*	8	(0.2)	0	(0.0)*	6.2	5	29	42
53	23	52L	17	2.7	22.6	0.1 +	0.0	(2.1)	103	(0.6)	0		2.7	5	29	42
54	10	51L	61	2.7	16.0	0.0 +	0.0	(0.6)	107	(0.3)	1	+	0.9	5	29	42
55	32	51L	61	2.7	26.7	0.2 +	0.1	(3.4)	112	(0.9)	1	+	4.3	5	29	42

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
977.9	61.0	16.0	14.7	23.6	(549.5)	+	(23.9)	+	(19.1)	=	592.6	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	52.4	+	44.0	+	62.5	=	158.9

NO. OF ENTRIES TO SUBPT = 12
NO. OF LINKS RECALCULATED= 355

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:38:59 on 03/03/2016]

T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 7 (July 2010)

For sales and distribution information,
program advice and maintenance, contact:

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Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
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RG40 3GA,UK

Run with file:- "2026 PM PEAK+DEV+SP.DAT" at 16:34 on 20160218

TRANSYT 12.0

Gibbet Hill Rbout 2026 PM Peak + Development+ SP - Gazeley Improvements

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	=	4
NUMBER OF LINKS	=	32
NUMBER OF OPTIMISED NODES	=	4
MAXIMUM NUMBER OF GRAPHIC PLOTS	=	0
NUMBER OF STEPS IN CYCLE	=	45
MAXIMUM NUMBER OF SHARED STOPLINES	=	4
MAXIMUM NUMBER OF TIMING POINTS	=	2
MAXIMUM LINKS AT ANY NODE	=	11

CORE REQUESTED = 8366 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE	
(1)=	TITLE:- Gibbet Hill Rbout 2026 PM Peak + Development+ SP - Gazeley Improvements	

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H
2)=	1	45	45	60	2	3	1	0	0	0	1	2	0	0	1420

LIST OF NODES TO BE OPTIMISED

CARD NO.	CARD TYPE														
3)=	2	1	2	4	5	0	0	0	0	0	0	0	0	0	0

LINKS HAVING SHARED STOPLINES

CARD NO.	CARD TYPE	FIRST SET........................					SECOND SET........................					THIRD SET................			
4)=	7	12	14	15	0	0	13	16	0	0	0	22	24	25	0
5)=	7	31	32	33	34	0	42	44	45	0	0	43	46	47	0
6)=	7	51	54	55	0	0	52	53	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
7)=	10	1	7	7								
8)=	10	2	7	7								
9)=	10	4	7	7								
10)=	10	5	7	7								

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
11)=	11	1	5	5								
12)=	11	2	5	5								
13)=	11	4	5	5								
14)=	11	5	5	5								

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
15)=	12	1	1	0	0								
16)=	12	2	1	0	0								
17)=	12	4	1	0	0								
18)=	12	5	1	0	0								

LINK CARDS: GIVEWAY DATA

CARD NO.	CARD TYPE	LINK NO.	PRIORITY LINKS LINK1 NO.	LINK2 NO.	LINK1 GIVEWAY COEFFS. ONLY % FLOW	A1 X100	A2 X100					LINK LENGTH	STOP WT.X100	MAX FLOW	DELAY WT.X100
19)=	30	30	31	0	0	41	100	0	0	0	0	200	0	1169	0

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	LAG	END STAGE	LAG	SECOND GREEN START STAGE	LAG	END STAGE	LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100
20)=	31	10	1	1	5	2	0	0	0	0	0	200	-9999	2065	60
21)=	31	11	1	1	5	2	0	0	0	0	0	200	-9999	2205	60
22)=	31	12	1	2	5	1	0	0	0	0	0	55	0	2050	500
23)=	31	13	1	2	5	1	0	0	0	0	0	55	0	2100	500
24)=	31	14	1	1	0	1	0	0	0	0	0	55	0	0	0
25)=	31	15	1	1	0	1	0	0	0	0	0	55	0	0	0
26)=	31	16	1	1	0	1	0	0	0	0	0	55	0	0	0
27)=	31	20	2	1	5	2	0	0	0	0	0	200	-9999	2040	60
28)=	31	21	2	1	5	2	0	0	0	0	0	200	-9999	2180	60
29)=	31	22	2	2	5	1	0	0	0	0	0	31	0	2050	500
30)=	31	23	2	2	5	1	0	0	0	0	0	31	0	2100	500
31)=	31	24	2	1	0	1	0	0	0	0	0	31	0	0	0
32)=	31	25	2	1	0	1	0	0	0	0	0	31	0	0	0
33)=	31	31	0	0	0	0	0	0	0	0	0	50	0	6000	0
34)=	31	32	0	0	0	0	0	0	0	0	0	50	0	0	0
35)=	31	33	0	0	0	0	0	0	0	0	0	50	0	0	0
36)=	31	34	0	0	0	0	0	0	0	0	0	50	0	0	0
37)=	31	40	4	1	5	2	0	0	0	0	0	200	-9999	2090	60
38)=	31	41	4	1	5	2	0	0	0	0	0	200	-9999	2230	60
39)=	31	42	4	2	5	1	0	0	0	0	0	25	0	2050	500
40)=	31	43	4	2	5	1	0	0	0	0	0	25	0	2100	500
41)=	31	44	4	1	0	1	0	0	0	0	0	25	0	0	0
42)=	31	45	4	1	0	1	0	0	0	0	0	25	0	0	0
43)=	31	46	4	1	0	1	0	0	0	0	0	25	0	0	0
44)=	31	47	4	1	0	1	0	0	0	0	0	25	0	0	0
45)=	31	50	5	1	5	2	0	0	0	0	0	200	-9999	2155	60
46)=	31	51	5	2	5	1	0	0	0	0	0	32	0	2050	500
47)=	31	52	5	2	5	1	0	0	0	0	0	32	0	2100	500
48)=	31	53	4	1	0	1	0	0	0	0	0	32	0	0	0
49)=	31	54	4	1	0	1	0	0	0	0	0	32	0	0	0
50)=	31	55	4	1	0	1	0	0	0	0	0	32	0	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 2 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 3 .... LINK NO.	FLOW	CRUISE SPEED	ENTRY 4 ..... LINK NO.	FLOW

51)=	32	10	496	0	0	0	43	0	0	0	0	0	0	0	0
52)=	32	11	435	0	0	0	43	0	0	0	0	0	0	0	0
53)=	32	12	903	0	50	903	43	0	0	0	0	0	0	0	0
54)=	32	13	178	0	50	178	43	0	0	0	0	0	0	0	0
55)=	32	14	12	0	53	12	43	0	0	0	0	0	0	0	0
56)=	32	15	34	0	51	34	43	0	0	0	0	0	0	0	0
57)=	32	16	35	0	51	35	43	0	0	0	0	0	0	0	0
58)=	32	20	378	0	0	0	43	0	0	0	0	0	0	0	0
59)=	32	21	377	0	0	0	43	0	0	0	0	0	0	0	0
60)=	32	22	493	0	10	493	43	0	0	0	0	0	0	0	0
61)=	32	23	435	0	11	435	43	0	0	0	0	0	0	0	0
62)=	32	24	35	0	16	35	43	0	0	0	0	0	0	0	0
63)=	32	25	178	0	13	178	43	0	0	0	0	0	0	0	0
64)=	32	30	77	0	0	0	43	0	0	0	0	0	0	0	0
65)=	32	31	739	0	20	362	43	21	377	43	0	0	0	0	0
66)=	32	32	903	0	22	468	43	23	435	43	0	0	0	0	0
67)=	32	33	10	0	24	10	43	0	0	0	0	0	0	0	0
68)=	32	34	70	0	25	70	43	0	0	0	0	0	0	0	0
69)=	32	40	572	0	0	0	43	0	0	0	0	0	0	0	0
70)=	32	41	69	0	0	0	43	0	0	0	0	0	0	0	0
71)=	32	42	52	0	30	52	43	0	0	0	0	0	0	0	0
72)=	32	43	12	0	30	12	43	0	0	0	0	0	0	0	0
73)=	32	44	217	0	32	217	43	0	0	0	0	0	0	0	0
74)=	32	45	254	0	31	254	43	0	0	0	0	0	0	0	0
75)=	32	46	218	0	32	218	43	0	0	0	0	0	0	0	0
76)=	32	47	263	0	31	263	43	0	0	0	0	0	0	0	0
77)=	32	50	1607	0	0	0	43	0	0	0	0	0	0	0	0
78)=	32	51	517	0	40	517	43	0	0	0	0	0	0	0	0
79)=	32	52	69	0	41	69	43	0	0	0	0	0	0	0	0
80)=	32	53	12	0	43	12	43	0	0	0	0	0	0	0	0
81)=	32	54	10	0	47	10	43	0	0	0	0	0	0	0	0
82)=	32	55	19	0	42	19	43	0	0	0	0	0	0	0	0

LINK CARDS : FLARE SATURATION FLOW DATA

			..LANE 1..		..LANE 2..		..LANE 3..	
	CARD TYPE	LINK NO.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.	SAT. FLOW	CAPAC VEH.
83)=	33	50	2155	6	0	0	0	0

LINK DATA: QUEUE CONSTRAINTS

CARD NO.	CARD TYPE	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE	QUEUE WEIGHT	LINK NO.	LIMIT QUEUE
84)=	38	12	5	4500	13	5	4500	22	1	4500	23	1	4500	42	2
85)=	38	43	2	4500	51	1	4500	52	1	4500	0	0	0	0	0

*****END OF SUBROUTINE TINPUT****

45 SECOND CYCLE 45 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	0	17								
2	2	0	17								
4	2	0	23								
5	2	0	28								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	496	2065	83	16.7	32.1	2.1 +	2.4	(62.8)*	121	(15.5)	8		37.7	1	5	17
11	435	2205	68	16.7	23.0	1.7 +	1.1	(39.5)*	101	(11.3)	6		23.7	1	5	17
12	903	2050S	87	4.6	24.0	3.0 +	3.0	(85.6)*	124	(28.9)	15	(4.5)*	657.6	1	22	0
13	177	2100S	19	4.6	7.0	0.2 +	0.1	(4.9)*	67	(3.1)	2	(0.0)*	27.6	1	22	0
14	12	12L	87	4.6	18.4	0.0 +	0.0	(0.9)	89	(0.3)	15	+	1.1	1	22	0
15	34	12L	87	4.6	19.3	0.1 +	0.1	(2.6)	80	(0.7)	15	+	3.3	1	22	0
16	35	13L	19	4.6	8.4	0.1 +	0.0	(1.2)	38	(0.3)	2		1.5	1	22	0
20	378	2040	64	16.7	22.4	1.5 +	0.9	(33.4)*	99	(9.7)	5		20.1	2	5	17
21	377	2180	60	16.7	20.8	1.4 +	0.7	(31.0)*	95	(9.2)	5		18.6	2	5	17
22	493	2050S	64	2.6	19.0	2.0 +	0.6	(37.0)*	110	(14.0)	9	(3.8)*	372.0	2	22	0
23	435	2100	39	2.6	16.9	1.7 +	0.3	(29.0)*	106	(11.8)	6	(2.0)*	244.9	2	22	0
24	35	22L	64	2.6	12.2	0.1 +	0.0	(1.7)	66	(0.6)	9	+	2.3	2	22	0
25	177	22L	64	2.6	11.9	0.4 +	0.2	(8.3)	99	(4.5)	9	+	12.8	2	22	0
30	77	1169	13	16.7	5.4	0.0 +	0.1	(1.7)	47	(0.9)	0		2.6			
31	739	6000S	29	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.2)	0		1.4			
32	903	31L	29	4.2	0.4	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	70	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	572	2090	65	16.7	16.1	1.6 +	0.9	(36.3)*	85	(12.5)	6		21.8	4	5	23
41	69	2230	7	16.7	9.9	0.1 +	0.0	(2.7)*	58	(1.0)	1		1.6	4	5	23
42	52	2050S	64	2.1	15.7	0.1 +	0.1	(3.2)*	75	(1.0)	7	(1.4)*	79.7	4	28	0
43	12	2100S	59	2.1	14.7	0.0 +	0.0	(0.7)*	72	(0.2)	6	(1.1)*	54.0	4	28	0
44	217	42L	64	2.1	8.9	0.2 +	0.4	(7.7)	76	(4.3)	7	+	11.9	4	28	0
45	254	42L	64	2.1	21.0	1.1 +	0.4	(21.1)	113	(7.4)	7	+	28.5	4	28	0
46	219	43L	59	2.1	7.6	0.1 +	0.3	(6.6)	68	(3.8)	6	+	10.4	4	28	0
47	263	43L	59	2.1	20.0	1.1 +	0.4	(20.7)	111	(7.5)	6	+	28.2	4	28	0
50	1607	3055f	99	16.7	42.4	3.7 +	15.2	(268.5)*	142	(58.7)	34		161.1	5	5	28
51	517	2050S	92	2.7	56.4	3.5 +	4.6	(115.0)*	160	(21.3)	12	(8.3)*	968.0	5	33	0
52	69	2100S	13	2.7	25.3	0.4 +	0.1	(6.9)*	107	(1.9)	1	(0.0)*	36.3	5	33	0
53	12	52L	13	2.7	6.3	0.0 +	0.0	(0.3)	32	(0.1)	1		0.4	5	33	0
54	10	51L	92	2.7	43.1	0.0 +	0.1	(1.7)	159	(0.4)	12	+	2.1	5	33	0
55	19	51L	92	2.7	41.3	0.0 +	0.2	(3.1)	144	(0.7)	12	+	3.8	5	33	0

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	83.0	12.5	26.4	32.5	(1776.5)	+	(114.3)	+	(946.0)	=	2836.8	TOTALS

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	55.4	+	67.8	+	105.8	=	229.0

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 54

```
     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6
  - (SECONDS)

     1       2      24      41
     2       2       6      23
     4       2       6      29
     5       2      39      22

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)  ($/H)       ($/H)          ($/H)         ($/H)

  1033.0          74.8       13.8         18.3     32.6    (1191.7) + (   65.6)  +  ( 436.8)   =    1694.1      TOTALS

 NO. OF ENTRIES TO SUBPT  =   13
 NO. OF LINKS RECALCULATED=  303


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18
  - (SECONDS)

     1       2      24      41
     2       2       6      23
     4       2      24       2
     5       2      39      22

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)  ($/H)       ($/H)          ($/H)         ($/H)

  1033.0          74.2       13.9         17.6     32.6    (1155.5) + (   54.1)  +  ( 360.1)   =    1569.6      TOTALS

 NO. OF ENTRIES TO SUBPT  =    9
 NO. OF LINKS RECALCULATED=  253


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1
  - (SECONDS)

     1       2      26      42
     2       2       6      21
     4       2      23      41
     5       2      41      23

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)  ($/H)       ($/H)          ($/H)         ($/H)

  1033.0          87.8       11.8         17.4     46.4    ( 993.8) + (   41.6)  +  ( 163.9)   =    1199.3      TOTALS

 NO. OF ENTRIES TO SUBPT  =   29
 NO. OF LINKS RECALCULATED=  621


     45 SECOND CYCLE  45 STEPS

 INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-    6  18  -1   6
  - (SECONDS)

     1       2      26      42
     2       2       0      15
     4       2      23      41
     5       2      41      23

  TOTAL          TOTAL       MEAN         TOTAL    TOTAL    TOTAL       TOTAL         PENALTY       TOTAL
 DISTANCE         TIME     JOURNEY       UNIFORM  RANDOM+    COST        COST           FOR       PERFORMANCE
TRAVELLED        SPENT      SPEED          DELAY  OVERSAT     OF          OF          EXCESS        INDEX
                                                    DELAY   DELAY       STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)    (KM/H)     (PCU-H/H)(PCU-H/H)  ($/H)       ($/H)          ($/H)         ($/H)

  1033.0          86.9       11.9         16.5     46.4    ( 980.6) + (   37.6)  +  ( 150.8)   =    1169.0      TOTALS

 NO. OF ENTRIES TO SUBPT  =   10
 NO. OF LINKS RECALCULATED=  277
```

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18
- (SECONDS)

1	2	26	42
2	2	0	15
4	2	23	41
5	2	41	23

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	86.9	11.9	16.5	46.4	(980.6)	+	(37.6)	+	(150.8)	=	1169.0	TOTALS

NO. OF ENTRIES TO SUBPT = 10
NO. OF LINKS RECALCULATED= 303

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1
- (SECONDS)

1	2	27	43
2	2	1	16
4	2	21	39
5	2	41	23

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	86.4	12.0	16.0	46.4	(944.9)	+	(33.3)	+	(132.5)	=	1110.7	TOTALS

NO. OF ENTRIES TO SUBPT = 11
NO. OF LINKS RECALCULATED= 314

45 SECOND CYCLE 45 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 6 18 -1 6 18 1 -1
- (SECONDS)

1	2	27	43
2	2	1	16
4	2	21	39
5	2	41	23

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	86.4	12.0	16.0	46.4	(944.9)	+	(33.3)	+	(132.5)	=	1110.7	TOTALS

NO. OF ENTRIES TO SUBPT = 17
NO. OF LINKS RECALCULATED= 467

45 SECOND CYCLE 45 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 6 18 -1 6 18 1 -1 1
 - (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	2	28	44								
2	2	2	17								
4	2	21	39								
5	2	41	23								

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	RANDOM+ OVERSAT	COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN START	END 1ST (SEC
10	496	2065	90	16.7	44.7	2.2 +	4.0	(87.4)*	145	(18.5)	10		52.5	1	33	44
11	435	2205	74	16.7	26.6	1.8 +	1.4	(45.7)*	109	(12.2)	6		27.4	1	33	44
12	889<	2050S	82	4.6	9.4	0.2 +	2.1	(32.8)*	33	(7.7)	8	(0.2)*	182.9	1	4	28
13	174	2100S	18	4.6	2.3	0.0 +	0.1	(1.6)*	6	(0.3)	1	(0.0)*	8.3	1	4	28
14	12	12L	82	4.6	24.3	0.1 +	0.0	(1.2)	118	(0.4)	8	+	1.5	1	4	28
15	34	12L	82	4.6	18.8	0.1 +	0.1	(2.5)	114	(1.0)	8	+	3.5	1	4	28
16	35	13L	18	4.6	11.4	0.1 +	0.0	(1.6)	97	(0.9)	1		2.5	1	4	28
20	378	2040	76	16.7	30.3	1.7 +	1.5	(45.2)*	116	(11.3)	6		27.1	2	7	17
21	377	2180	71	16.7	26.9	1.6 +	1.2	(40.0)*	109	(10.6)	5		24.0	2	7	17
22	493	2050S	59	2.6	3.9	0.0 +	0.5	(7.7)*	9	(1.2)	3	(0.5)*	63.3	2	22	2
23	435	2100	36	2.6	2.5	0.0 +	0.3	(4.3)*	9	(1.0)	3	(0.1)*	25.7	2	22	2
24	35	22L	59	2.6	19.2	0.2 +	0.0	(2.7)	109	(1.0)	3	+	3.6	2	22	2
25	174	22L	59	2.6	10.9	0.3 +	0.2	(7.5)	82	(3.8)	3	+	11.2	2	22	2
30	77	1169	13	16.7	5.4	0.0 +	0.1	(1.6)	47	(0.9)	0		2.6			
31	739	6000S	29	4.2	0.4	0.0 +	0.1	(1.2)	1	(0.2)	0		1.4			
32	903	31L	29	4.2	0.4	0.0 +	0.1	(1.5)	1	(0.2)	0		1.7			
33	10	31L	29	4.2	0.4	0.0 +	0.0	(0.0)	1	(0.0)	0		0.0			
34	69	31L	29	4.2	0.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
40	572	2090	88	16.7	35.9	2.3 +	3.4	(81.0)*	130	(19.1)	10		48.6	4	26	39
41	69	2230	10	16.7	13.9	0.2 +	0.1	(3.8)*	71	(1.3)	1		2.3	4	26	39
42	52	2050S	50	2.1	10.1	0.1 +	0.0	(2.1)*	56	(0.7)	2	(0.0)*	11.7	4	44	21
43	12	2100S	46	2.1	9.6	0.0 +	0.0	(0.5)*	55	(0.2)	2	(0.0)*	2.4	4	44	21
44	217	42L	50	2.1	4.5	0.1 +	0.2	(3.9)	37	(2.1)	2	+	5.9	4	44	21
45	254	42L	50	2.1	5.6	0.2 +	0.2	(5.6)	18	(1.2)	2	+	6.8	4	44	21
46	219	43L	46	2.1	4.0	0.1 +	0.2	(3.4)	30	(1.7)	2		5.1	4	44	21
47	263	43L	46	2.1	5.3	0.2 +	0.2	(5.5)	17	(1.2)	2		6.6	4	44	21
50	1607	3094f	102	16.7	71.0	4.3 +	27.4	(450.0)*	184	(76.3)	48	+	270.0	5	1	23
51	517	2050S	86	2.7	19.2	0.1 +	2.7	(39.2)*	42	(5.6)	4	(2.1)*	295.0	5	28	41
52	69	2100S	12	2.7	3.6	0.0 +	0.1	(1.0)*	8	(0.1)	0	(0.0)*	5.1	5	28	41
53	12	52L	12	2.7	23.1	0.1 +	0.0	(1.1)	105	(0.3)	0		1.4	5	28	41
54	10	51L	86	2.7	29.0	0.0 +	0.1	(1.1)	132	(0.3)	4	+	1.5	5	28	41
55	19	51L	86	2.7	38.3	0.1 +	0.1	(2.9)	135	(0.7)	4	+	3.5	5	28	41

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
1033.0	86.4	12.0	16.0	46.4	(940.6)	+	(32.5)	+	(132.3)	=	1105.5	TOTALS ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	55.4	+	71.7	+	82.9	=	210.0

NO. OF ENTRIES TO SUBPT = 9
NO. OF LINKS RECALCULATED= 284

PROGRAM TRANSYT FINISHED

== end of file ==

[Printed at 16:39:23 on 03/03/2016]

Magna Park Extension: Hybrid Application

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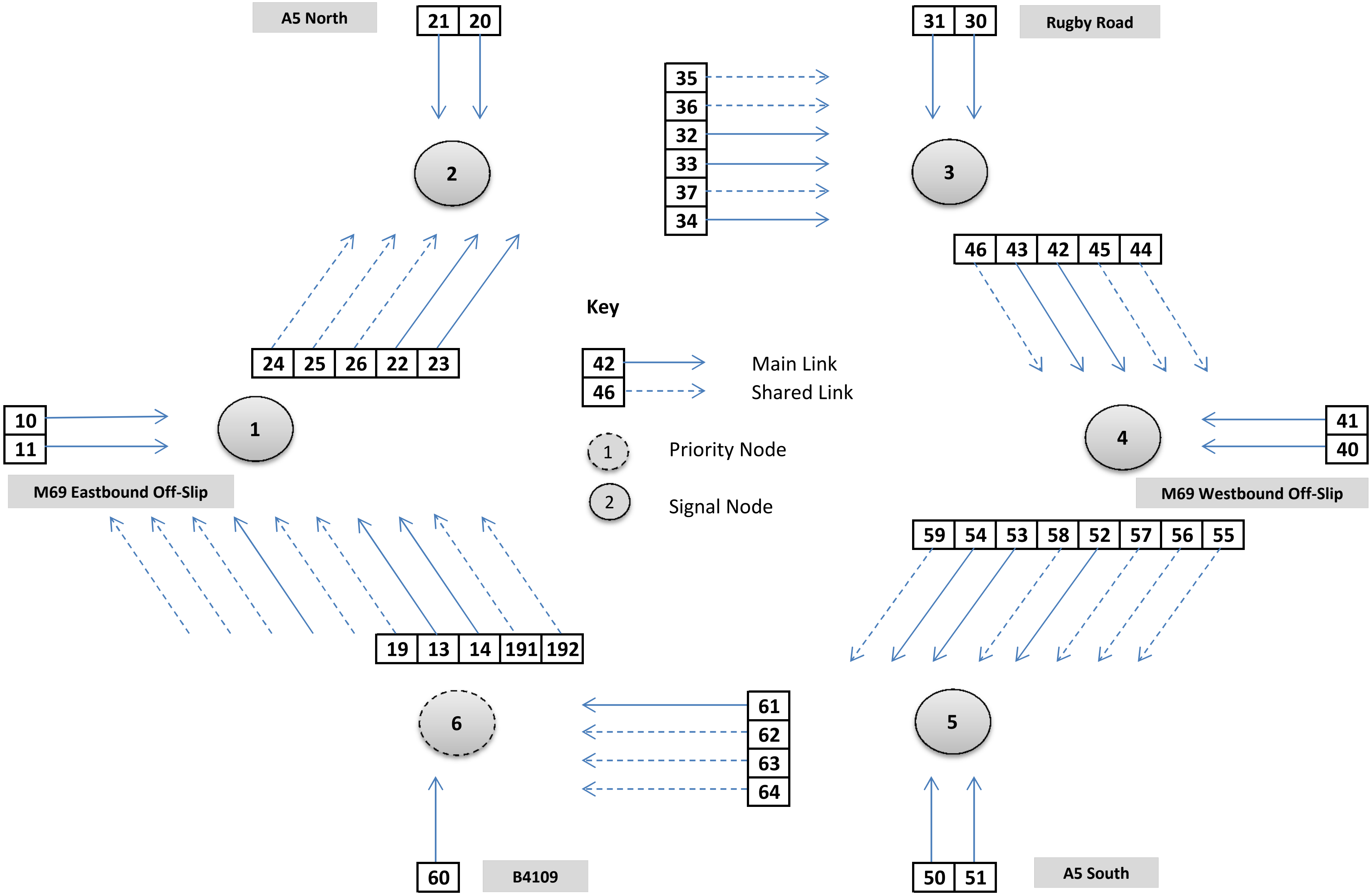
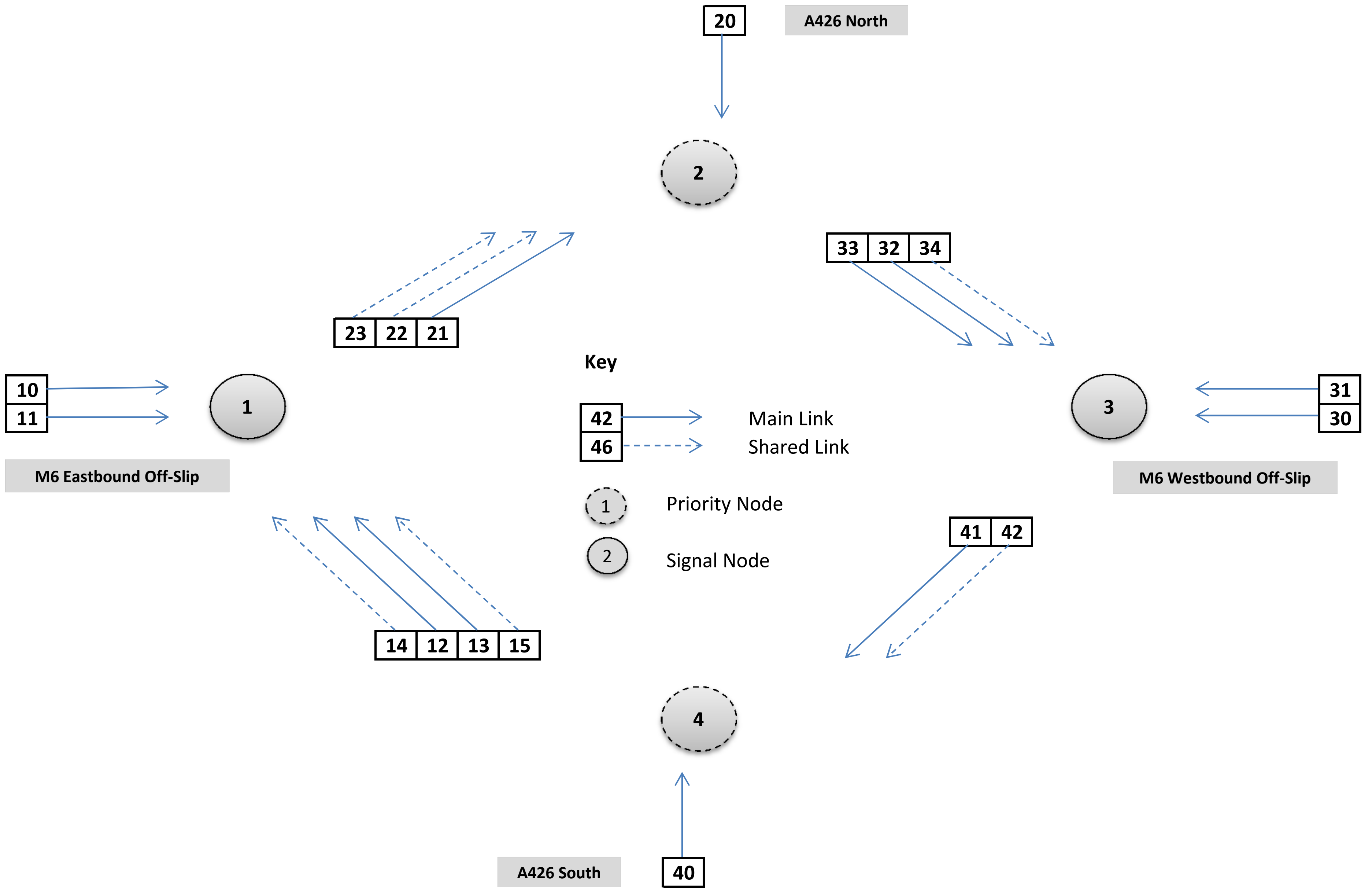
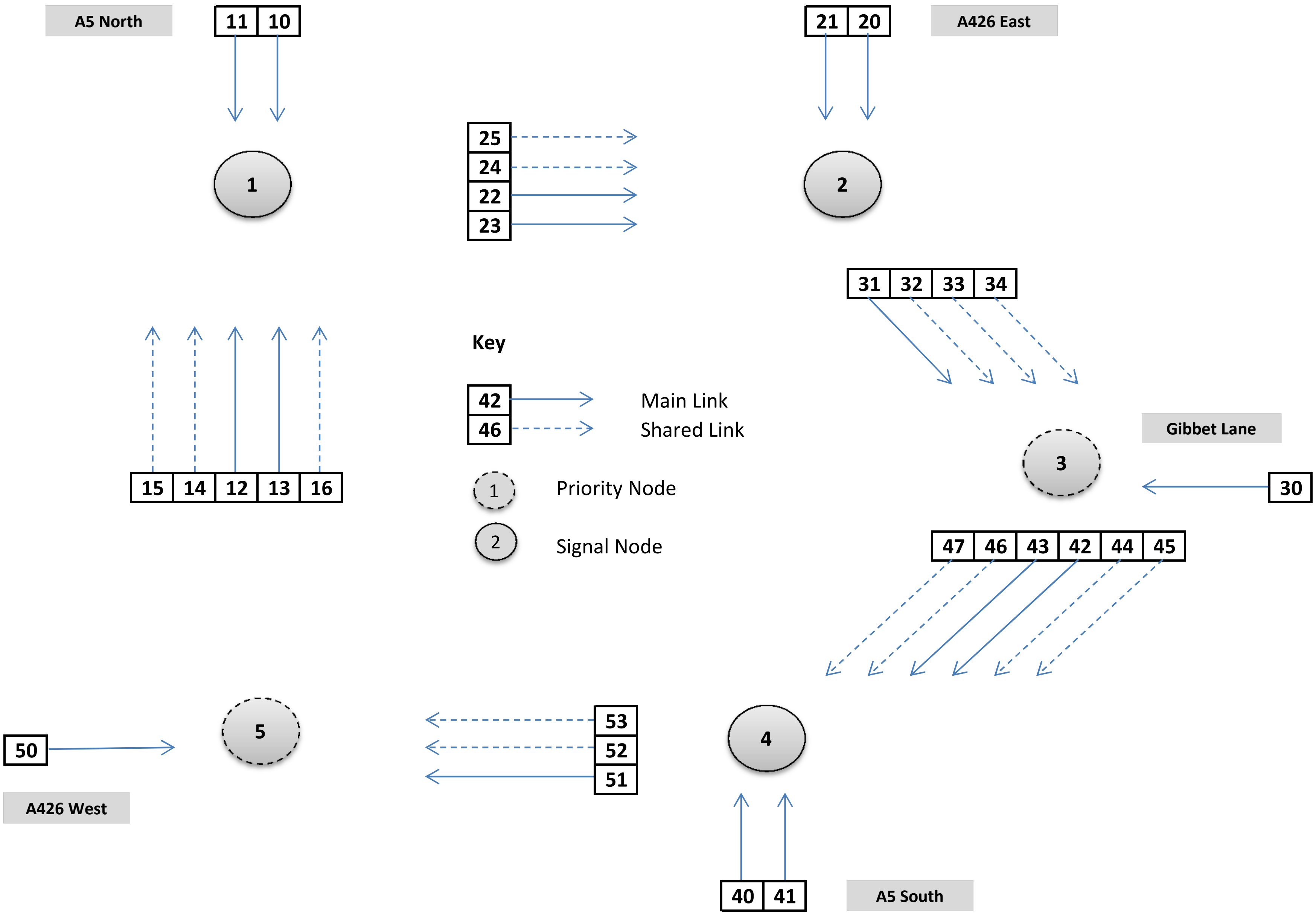
Appendix M – TRANSYT Link/Node Diagrams



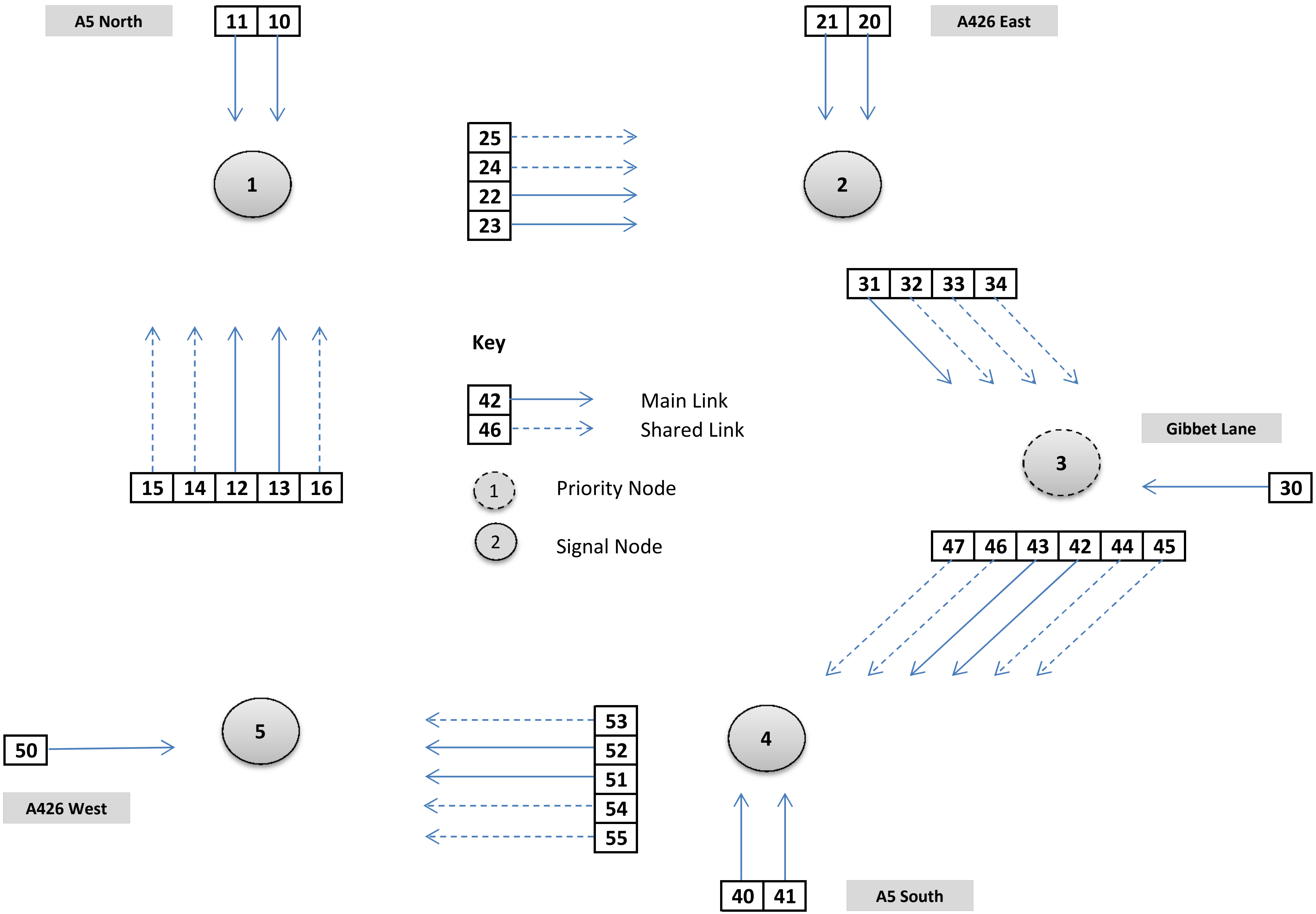
M69 Junction 1 - TRANSYT Link/Node Diagram



M6 Junction 1 - TRANSYT Link/Node Diagram



Gibbet Hill Roundabout DIRFT III Improvements - TRANSYT Link/Node Diagram

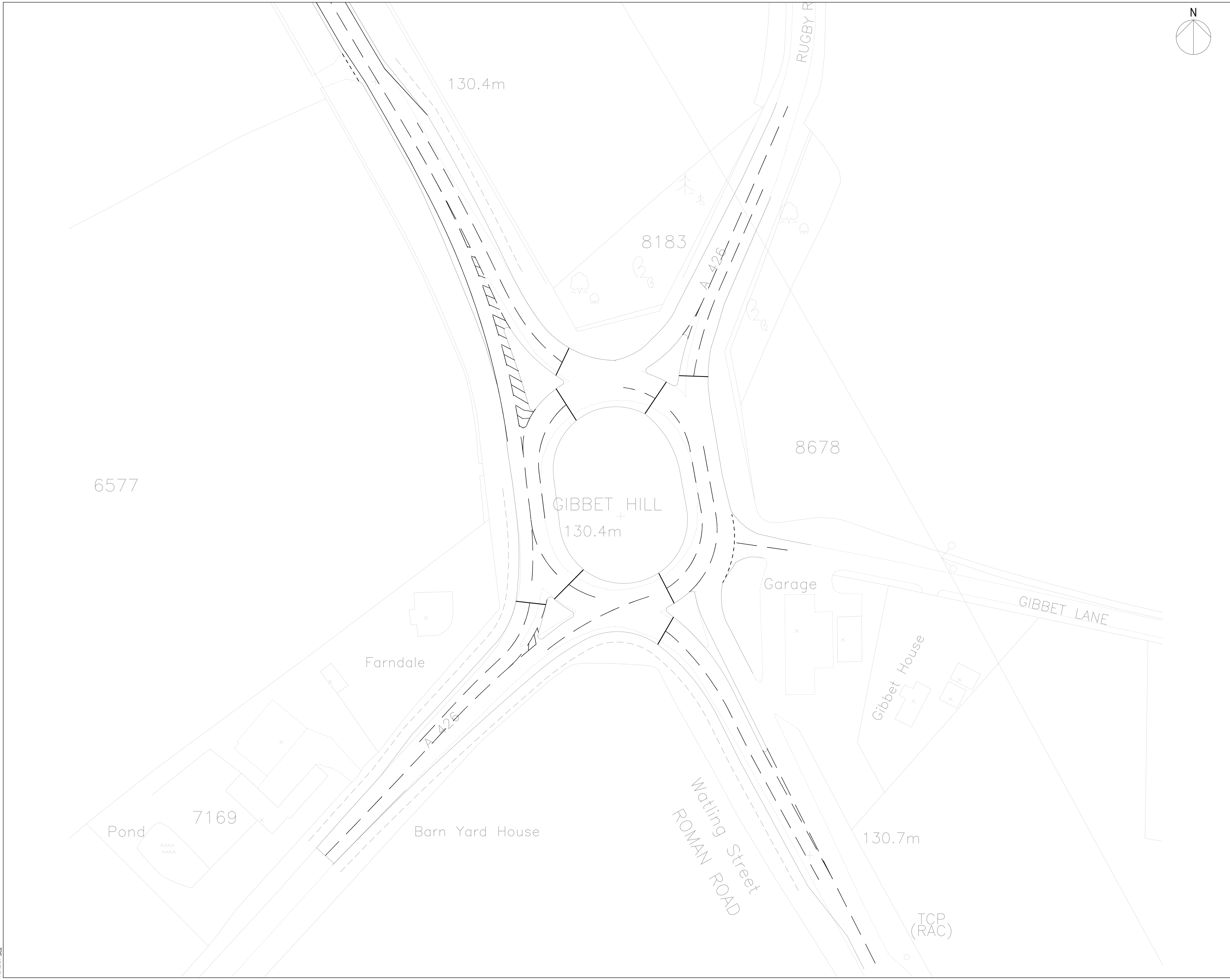


Gibbet Hill Junction Improvements Proposed by IDI Gazeley - TRANSYT Link/Node Diagram

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix N – Proposed Improvement Scheme at Gibbet Hill Roundabout



Plot Date : 2/1/2016 11:00 AM
File Name : SK32

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS IN MILLIMETRES, ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PROJECT HEALTH & SAFETY FILE FOR ANY IDENTIFIED POTENTIAL RISKS.

Revision Details	By / Check	Date	Suffix

Purpose of issue

INFORMATION

Client

IDI Gazeley
Brookfield Logistics Properties™

Project Title

MAGNA PARK EXTENSION
HYBRID APPLICATION

Drawing Title

GIBBET HILL ROUNDABOUT
PROPOSED IMPROVEMENTS

Designed	Drawn	Checked	Approved	Date
SDW	ASR	JRA	SCPF	01/02/16

AECOM Internal Project No.	Suitability
60470988	
Scale @ A1	Zone
1:500	

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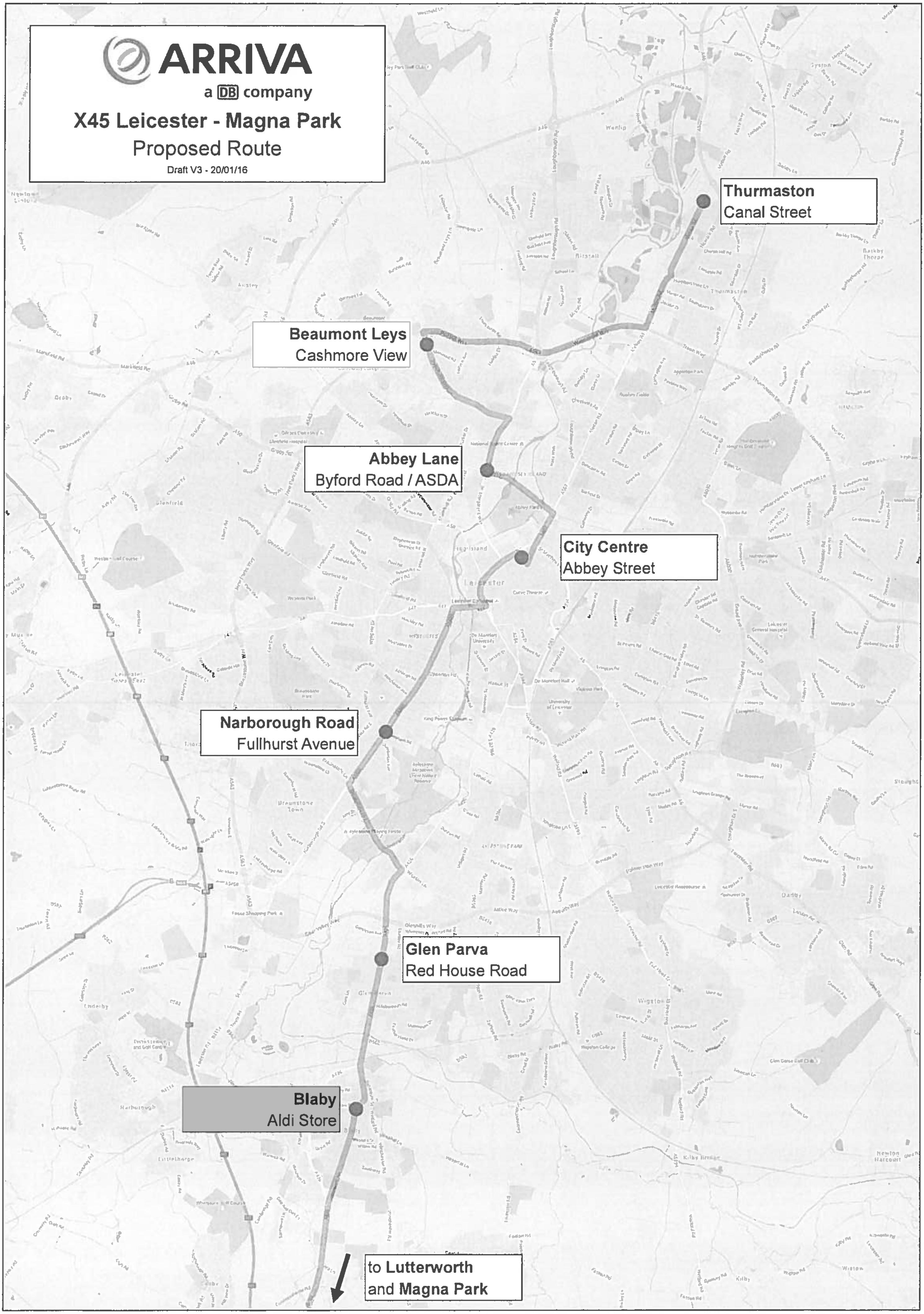
AECOM

Drawing Number	Rev
60470988/A001/SK32	

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix O – Route Map & Timetable for New Arriva X45 Bus Service


ARRIVA
a DB company
X45 Leicester - Magna Park
Proposed Route
Draft V3 - 20/01/16
Thurmaston
Canal Street
Beaumont Leys
Cashmore View
Abbey Lane
Byford Road / ASDA
City Centre
Abbey Street
Narborough Road
Fullhurst Avenue
Glen Parva
Red House Road
Blaby
Aldi Store
to Lutterworth
and Magna Park

Leicester - Lutterworth - Magna Park X45

Monday to Sunday

Draft - 21/01/16

	X45	X45	X45
Thurmaston, Canal Street	0420	1210	2020
Beaumont Leys, Cashmore View	0430	1222	2030
Abbey Lane, Byford Road	0435	1227	2035
City Centre, Abbey Street	0442	1236	2042
Narborough Road, Fullhurst Ave	0452	1250	2052
Glen Parva, Red House Road	0502	1302	2102
Blaby, Aldi	0509	1309	2109
Lutterworth, High Street	0524	1324	2124
Magna Park, George	0534	1334	2134
Magna Park, Hunter Boulevard	0536	1336	2136
Magna Park, Harrier Parkway	0542	1342	2142

	X45	X45	X45
Magna Park, George	0615	1415	2215
Magna Park, Hunter Boulevard	0617	1417	2217
Magna Park, Harrier Parkway	0623	1423	2223
Lutterworth, High Street	0633	1433	2233
Blaby, Aldi	0648	1448	2248
Glen Parva, Red House Road	0655	1455	2255
Narborough Road, Fullhurst Ave	0705	1505	2305
City Centre, Abbey Street	0720	1522	2320
Abbey Lane, Byford Road	0726	1530	2326
Beaumont Leys, Cashmore View	0731	1535	2331
Thurmaston, Canal Street	0743	1547	2341

Route Description

OUTWARD: Melton Road, Watermead Way, Redhill Way, Beaumont Leys Lane, Abbey Lane, Abbey Park Road, Belgrave Circle, Belgrave Gate, Abbey Street, Burleys Way, Vaughan Way, St Nicholas Circle, St Augustine Road, Narborough Road, Braunstone Lane East, Middleton Street, Lutterworth Road, Leicester Road, Lutterworth Road, Leicester Road, High Street, Rugby Road, Lutterworth Road, Coventry Road, Hunter Boulevard, Harrier Parkway, Wellington Parkway.

RETURN: Coventry Road, Hunter Boulevard, Harrier Parkway, Wellington Parkway, Hunter Boulevard, Coventry Road, then reverse of outward route

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix P – Draft Timetable for New Stagecoach Bus Service

Bilton May Green	0444	0544								
Admirals Estate Frobisher Road	0447	0547								
Bilton Main Street	0449	0549								
Bilton Road, Lidl Store	0453	0553								
			possible							
Rugby North Street	0500	0600	*0730*	1300			1655		2100	2200
Clifton Road The Jolly Brewers	0507	0607	*0737*	1307			1702		2107	2207
Brownsover Hollowell Shops	0513	0613	*0743*	1313			1708		2113	2213
Central Park	0519	0619	*0749*	1319			1714		2119	2219
Magna Park Hunter Boulevard	0534	0634	*0804*	1334			1734		2134	2234
Magna Park Wellington Parkway	0536	0636	*0806*	1336			1736		2136	2236
Lutterworth George Street	0548	0648		1348					2148	2248
Magna Park Hunter Boulevard	0554	0654		1354					2154	2254
Magna Park Wellington Parkway	0556	0656		1356					2156	2256
					possible					
Magna Park Hunter Boulevard	0615	0715		1415	*1515*	1715	1745	2015	2215	2315
Magna Park Wellington Parkway	0617	0717		1417	*1517*	1717	1747	2017	2217	2317
Central Park	0632	0732		1432	*1532*	1737	1807	2032	2232	2332
Brownsover Hollowell Way / Boughton Way	0635	0735		1435	*1535*	1740	1810	2035	2235	2335
Clifton Road Jolly Brewers	0641	0741		1441	*1541*	1746	1826	2041	2241	2341
Rugby North Street	0649	0749		1449	*1549*	1754	1834	2049	2249	2349
Bilton Buchanan Road									2252	2352
Bilton May Lane									2259	2359
Admirals Estate Frobsiher Road									2302	2402

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment

Appendix Q – Magna Park Employee Travel Survey

MAGNA PARK Lutterworth

www.Choose how you move.co.uk

Leicestershire County Council

Magna Park - Staff Travel Survey

Please read:

Data (including any comments) may be shared with your employer in order for them to plan a programme of initiatives which will improve, or raise awareness of alternative / sustainable travel options for staff. This information will be shared anonymously.

A full Data Protection statement can be found at the end of the survey.

Your employment at Magna Park

0.a) What organisation do you work for in Magna Park?

- ◯ Argos Ltd
- ◯ Armstrong Logistics
- ◯ Asda ADC
- ◯ Asda CDC
- ◯ Asda IDC
- ◯ Asda Service & Returns
- ◯ Britvic Soft Drinks Ltd
- ◯ BSS Group/pts plc
- ◯ BT
- ◯ C.Butt Ltd
- ◯ C.M.L. Ltd
- ◯ Concorde Logistics
- ◯ Culina
- ◯ D.H.L./ Lutterworth ISC
- ◯ D.H.L./Exel - BP
- ◯ D.H.L./Exel - Healthcare
- ◯ D.H.L./Lutterworth IBC
- ◯ Eddie Stobart
- ◯ Geodis
- ◯ George - clothing at asda
- ◯ Lidl UK GMBH
- ◯ Magna Park Management (includes Whitings)
- ◯ Nissan/ Renault
- ◯ Primark
- ◯ Syncreon
- ◯ Tech Data
- ◯ The Disney Store
- ◯ Toyota
- ◯ U.T.L.
- ◯ Vow
- ◯ VWR International

0.b) Which of the following best describes your employment contract at Magna Park?

- ☐ Permanent contract
- ☐ Temporary/Fixed-Term contract

0.c) How frequently do you work at Magna Park on:

	Always/Nearly always	Fairly frequently	Fairly infrequently	Never
Monday	☐	☐	☐	☐
Tuesday	☐	☐	☐	☐
Wednesday	☐	☐	☐	☐
Thursday	☐	☐	☐	☐
Friday	☐	☐	☐	☐
Saturday	☐	☐	☐	☐
Sunday	☐	☐	☐	☐

Section 1: About you

1.a) Gender. Please tick one option only

- ☐ Male
- ☐ Female

1.b) What is your home post code? Or departure post code if your journey does not start at home (e.g. child's school/nursery).

1.c) To the nearest mile, how far is your workplace from your home? Please tick one option only

- ☐ Less than 1 mile
- ☐ Between 1-2 miles
- ☐ Between 3-5 miles
- ☐ Between 6-10 miles
- ☐ Between 11-20 miles
- ☐ More than 20 miles

1.d) Do you normally travel during peak times? Please tick one option per row

	Always	Nearly always	Sometimes	Never
Morning (7:30am - 9:30am, Mon-Fri)	☐	☐	☐	☐
Evening (4:30pm - 6:30pm, Mon-Fri)	☐	☐	☐	☐

1.e) How long does your journey from home to your workplace usually take? Please tick one option only

- ☐ Less than 15 minutes
- ☐ 15-29 minutes
- ☐ 30-44 minutes
- ☐ 45-60 minutes
- ☐ Over an hour

Section 2: Your travel choices

2.a) How do you usually travel to work? If you use more than one of the options below choose the transport mode that covers the longest distance in your journey.
Please tick one option only

- ☐ Walk
- ☐ Car alone
- ☐ Car share (as a passenger)
- ☐ Car share (as the driver)
- ☐ Taxi
- ☐ Bus
- ☐ Train
- ☐ Cycle
- ☐ Motorcycle/Moped
- ☐ Other

2.b) If your primary mode of transport is unavailable (e.g. car breakdown, missing the bus) how would you to travel to work?
Please tick all that apply

- ☐ Walk
- ☐ Car alone
- ☐ Car (as a passenger)
- ☐ Car share (as the driver)
- ☐ Taxi
- ☐ Bus
- ☐ Train
- ☐ Cycle
- ☐ Motorcycle/Moped
- ☐ Arrange to work at home
- ☐ Arrange to work at other office
- ☐ Other

Section 3: Journey to work (for those who drive to work)

(Non-car users, please move to Section 4)

3.a) Where do you usually park your car? Please tick one option only

- ☐ Your workplace's own car park
- ☐ Another car park
- ☐ On street within 200m of your workplace
- ☐ On street more than 200m from your workplace
- ☐ Other (please specify below)

Other, please specify:

3.b) If your workplace has its own car park, how often have you had to park off-site (but within the vicinity of your workplace) because the car park is full? Please tick one option only

- ☐ Very often
- ☐ Often
- ☐ Not very often
- ☐ Never
- ☐ Not applicable/ No workplace car park

3.c) What modes of transport, other than driving, would you consider using to travel to work? **Please tick all that apply**

- ☐ Walk
- ☐ Car (as a passenger)
- ☐ Taxi
- ☐ Bus
- ☐ Train
- ☐ Cycle
- ☐ Motorcycle/Moped
- ☐ Other
- ☐ None

3.d) What do you consider are the main traffic problems, if any, on your way to/from work? **Please tick all that apply**

- ☐ Traffic congestion
- ☐ Parking problems on site
- ☐ Queuing traffic to access/exit the site
- ☐ Lack of alternatives to the car to reach the site
- ☐ Other (please specify below)
- ☐ None

Other, please specify:

3.e) Would any of the following encourage you to **car share**? Please tick all that apply

- ☐ Help in finding a suitable car share partner with similar work/travel patterns
- ☐ Guaranteed ride home service if circumstances change with your designated driver
- ☐ Reserved car parking for car sharers
- ☐ Incentives for car sharers
- ☐ Nothing would encourage me
- ☐ Other
- ☐ Already car share

3.f) Would any of the following encourage you to travel to work by **public transport**? Please tick all that apply

- ☐ A bus route between home and Magna Park
- ☐ Subsidised/cheaper fares
- ☐ Interest free loans for season ticket purchase
- ☐ Up to date travel information at work on routes, times and fares
- ☐ Guaranteed ride home service if there was a problem
- ☐ More secure/better quality waiting areas
- ☐ Pedestrian links
- ☐ Improved security on public transport
- ☐ More frequent/reliable services at the times I need to travel
- ☐ Less crowded services
- ☐ Nothing would encourage me
- ☐ Other
- ☐ Already travel to work by public transport

3.g) Would any of the following encourage you to travel to work by **bicycle**? Please tick all that apply

- ☐ Improved cycle network in local area
- ☐ Measures to improve cycle safety along the nearby roads
- ☐ Improved secure cycle parking facilities at work
- ☐ Guaranteed ride home service if there was a problem
- ☐ Improved showers/changing/locker facilities at work
- ☐ Discounts/loans towards the purchase of a cycle/cycle equipment
- ☐ Training, guidance on safer cycling and route planning advice
- ☐ On-site bicycle repair tools
- ☐ Provision and administration of pool bicycles scheme
- ☐ Nothing would encourage me
- ☐ Other
- ☐ Already cycle to work

3.h) Would any of the following encourage you to travel to work by **motorcycle/moped**? Please tick all that apply

- ☐ Improved covered parking area for motorcycles/mopeds
- ☐ Guaranteed ride home service if there was a problem
- ☐ Improved secure parking
- ☐ Improved showers/changing/locker facilities at work
- ☐ Training, advice or guidance on safer motorcycling
- ☐ Nothing would encourage me
- ☐ Other
- ☐ Already travel to work by motorcycle/moped

3.i) If you live approximately 1-2 miles from work, would any of the following encourage you to **walk** to work? Please tick <u>all</u> that apply

- ☐ Safer crossing facilities on route
- ☐ Guaranteed ride home service if there was a problem
- ☐ Improved lighting/security on route to work
- ☐ Improved showers/changing/locker facilities at work
- ☐ Less sharing of cycle lanes/ footpaths with cyclists
- ☐ Nothing would encourage me
- ☐ Other
- ☐ Not applicable/ live further than 2 miles from work

3.j) What else would encourage you to travel to work more sustainably than you do now?

Section 4: Journey to work (for those who don't drive to work)

(Car users please move to Section 5)

4.a) What are your main reasons for not driving a car to work?
Please tick all that apply

- ☐ No car available
- ☐ Cost savings
- ☐ Lack of parking spaces
- ☐ Enjoy using the alternatives
- ☐ No driving licence
- ☐ Other
- ☐ Environmental concerns
- ☐ Health/fitness
- ☐ Avoid congestion
- ☐ Other more practical method

Section 5: Other comments and prize draw

5.a) Do you have any other comments?

5.b) Finally, to help us with our marketing, please have a look at the logo below and tell us which of the following statements you most agree with? Please tick one option only

- ☐ I recognize the "Choose How You Move" brand and know what it signifies
- ☐ I recognize the "Choose How You Move" brand but am not sure what it signifies
- ☐ I do not recognize the "Choose How You Move" brand

Prize Draw and Further Information

Please provide us with your details below if you would like to be entered for our free prize draw AND/OR to receive further information on Choose How You Move.

Important information:

Personal information will only be shared for the purpose of selecting/notifying a prize winner. This information will be sent separately to the completed survey.

- ☐ I would like to be entered for the free prize draw
- ☐ I would like to receive further information on Choose How You Move scheme; such as events, activities, special offers, travel option ideas, help and advice on travelling more sustainably.

Name

Contact telephone number

Email

Company

Thank you for completing this survey. Your views are important to us.

Please return your survey as instructed when you collected it.

Data Protection: Data (including any comments) may be shared with your employer in order for them to plan a programme of initiatives which will improve, or raise awareness of alternative/sustainable travel options for staff. This Information will be shared anonymously. Personal data supplied on this form will be held on computer and will be used in accordance with the Data Protection Act 1998. The information you provide will be used for statistical analysis, management, planning and the provision of services by the County Council and its partners, Leicestershire County Council will not share any personal information collected as part of this survey with its partners. The information will be held in accordance with the Council's records management and retention policy.

If you complete a paper copy, staff at your employer will transfer the data to us by inputting it via our online form. All final data will be stored by LCC.

MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note Part 1

Final Report

LLITM | Magna Park Extension:

TN3: LLITM Magna Park Extension Forecasts

LLITM | Magna Park Extension:

TN3: LLITM Magna Park Extension Forecasts

Prepared by: Ian Stanness
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Rev No.	Comments	Checked by	Approved by	Date
1	Interim version excluding mitigation testing	MJD	MJD	2015-08-25
2	Updated to include ‘with mitigation’ scenario and Symmetry Park sensitivity test	AGC	MJD	2015-09-25

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Job No: 60328472 Reference: Task 030-Magna Park Date Created: 28th July 2015

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Section 1 – Overview

1.1 Introduction

1.1.1 AECOM has been commissioned by Leicestershire County Council (LCC) to undertake transport modelling work in relation to the proposed extension of the Magna Park development to the west of Lutterworth. This modelling work is to make use of the Leicester and Leicestershire Integrated Transport Model (LLITM), and in particular was proposed to use version 5.2 of the model suite developed in 2013.

1.1.2 The specification of the proposed development has been revised from that detailed in the brief for this commission. The development assumptions adopted as part of this assessment are that the proposed development consists of:

- up to 500,000m^2 of distribution warehousing (B8) with ancillary offices (B1a), which includes the DHL building for which a detailed planning application has been submitted;
- a logistics academy for 400 students with an age range of 16-22, including approximately 40 teaching / administration staff plus 30 maintenance staff;
- up to 6,500m^2 for Holovis, an existing occupier of buildings adjacent to Bittesby House;
- up to 2,325m^2 of B1a incubator space;
- a small estate office comprising a marketing suite, a meeting room, public exhibition space; and
- a road-based rail freight terminal and HGV parking facility to replace the consented HGV parking facility to the south of the A4303.

1.1.3 As requested by LCC, it has been assumed that the small estate office and the road-based rail freight terminal will not have a significant impact on the peak hour impacts of the development, and have therefore been excluded from this assessment.

1.1.4 The first stage of this commission was to undertake a review of the base year model performance in the vicinity of the proposed development. This review, detailed in *'TN1 - Magna Park LLITM v5 Base Year Highway Model Review'*, highlighted areas of potential improvement for the base year model performance. These related to the modelled trips to and from the existing Magna Park development and the trip distribution for HGV traffic to / from the existing Magna Park site.

1.1.5 As a result of this review it was agreed to undertake an update to LLITM v5.2. This included additional constraints on the highway trip matrices for trips to and from the existing Magna Park site, and the replacement of the prior demand matrices for HGV traffic with those derived from mobile phone data. The use of mobile phone data for HGV traffic has been possible for trips to and / or from Leicester and Leicestershire, with external-to-external trips using data from the existing prior matrices.

1.1.6 Details on this base year model update are given in *'PR101 - LLITM v5.3 Highway Model LMVR Addendum'* which should be considered in conjunction with the original local model validation report for the LLITM highway model, *'PR101 - LLITM Highway Model LMVR'*.

1.1.7 This base year model update produced LLITM v5.3, and it is this version of the LLITM suite which is used for the modelling work described in this Technical Note.

1.2 Model Scenarios

1.2.1 Within the forecast modelling of the proposed Magna Park extension there are five model scenarios which have been requested. These are:

- the validated 2008 Base Year model;
- the 2026 forecast without the proposed development;

- the 2026 forecast with the proposed development without any mitigation measures;
- the 2026 forecast with the proposed development and the proposed mitigation measures; and
- the 2026 forecast with the proposed development and mitigation measures, and the proposed Symmetry Park development.

1.2.2 The Symmetry Park development is an additional proposed warehousing development in the vicinity of Magna Park. It is proposed to be located to the south of the A4303, opposite the existing Magna Park development, and is forecast to consist of:

- 278,709 m^2 of B8 storage and distribution;
- a new roundabout access onto A4303; and
- a 52 space HGV park and amenity building.

As with the assumptions for the proposed Magna Park extension, the traffic associated with the HGV park and amenity building are not expected to have a significant impact on the peak hour traffic volumes, and have therefore been excluded from this assessment.

1.2.3 The land-use and network assumptions for the four forecast model scenarios are detailed in this Technical Note. The majority of the forecast year assumptions have been taken from the existing *'core scenario'* defined in September 2013 and detailed in *'PR104 - Revised Forecasting Report'*. Additional information on the forecasting assumptions underpinning this *'core scenario'* can be found in this Project Report.

1.2.4 An interim version of this Technical Note was produced covering the first three of the model scenarios detailed above. Using the forecasts contained within this interim version of the Technical Note, the proposed mitigation measures were defined and subsequently tested within LLITM. This updated version of the Technical Note includes the forecasts from the 'with mitigation' scenario and the additional sensitivity test including the proposed Symmetry Park development.

1.3 Technical Note Structure

1.3.1 This Technical Note contains the following Sections and Appendices:

- Section 2 – Land-Use Assumptions: this section details the land-use assumptions adopted for the 'without development' and 'with development' planning scenarios, including the demand forecasts developed for DIRFT II and III. Also included in this section are the land-use assumptions included within the Symmetry Park sensitivity test.
- Section 3 – Network Assumptions: this section details the network assumptions (both highway and public transport) contained within the forecast year model scenarios, focussing on the incremental changes applied from the existing *'core scenario'* assumptions.
- Section 4 – Model Forecasts: this section contains the model forecasts required as part of the brief for this LLITM application.
- Appendix A – Forecast Journey Time Graphs: this appendix contains the forecast journey time graphs produced as part of the requested model outputs.

1.3.2 In addition to these sections and appendices contained within the Technical Note, the following appendices are provided as accompanying documents:

- Appendix B: 2008 Base AM Peak Junction Node Data;
- Appendix C: 2008 Base PM Peak Junction Node Data;
- Appendix D: 2026 'without development' AM Peak Junction Node Data;
- Appendix E: 2026 'without development' PM Peak Junction Node Data;
- Appendix F: 2026 'with development', excluding the proposed mitigation measures, AM Peak Junction Node Data;

- Appendix G: 2026 ‘with development’, excluding the proposed mitigation measures, PM Peak Junction Node Data;
- Appendix H: 2026 ‘with development’, including the proposed mitigation measures, AM Peak Junction Node Data;
- Appendix I: 2026 ‘with development’, including the proposed mitigation measures, PM Peak Junction Node Data;
- Appendix J: 2026 ‘with development’ scenario, including the proposed mitigation measures and Symmetry Park, AM Peak Junction Node Data; and
- Appendix K: 2026 ‘with development’ scenario, including the proposed mitigation measures and Symmetry Park, PM Peak Junction Node Data.

Section 2 – Land-Use Assumptions

2.1 'Core Scenario'

2.1.1 As part of the development of LLITM v5, a *'core scenario'* was produced in late-2013 using the most up-to-date forecast assumptions at the time in terms of land-use development, highway network improvements, public transport service changes, investment in Smarter Choices initiatives and other model inputs. The land-use assumptions and forecasts which form part of this *'core scenario'* is referred to as planning scenario *'sp'*.

2.1.2 This *'sp'* land-use scenario has been forecast using the full land-use transport interaction (LUTI) model available within LLITM. This allows for iteration between the transport and land-use models whereby the forecast costs of travel influence the location of land-use, and the location of land-use changes influences the costs of travel.

2.1.3 As outlined in the approved proposal for this commission, this *'sp'* planning scenario forms the basis of the 'without development' land-use assumptions for LLITM. A review of these planning forecasts has been undertaken to assess if they contain significant employment growth relating to any assumed development in or around Magna Park.

2.1.4 Table 2.1 details the outturn employment forecasts from the *'sp'* planning scenario for four zones of interest for this application, with Figure 2.1 showing the definition of these zones within LLITM. This table demonstrates that within the *'core scenario'* planning forecasts there is not assumed to be significant employment growth in or around the existing Magna Park site.

Table 2.1: *'sp'* Employment Forecasts for zones in Vicinity of Magna Park

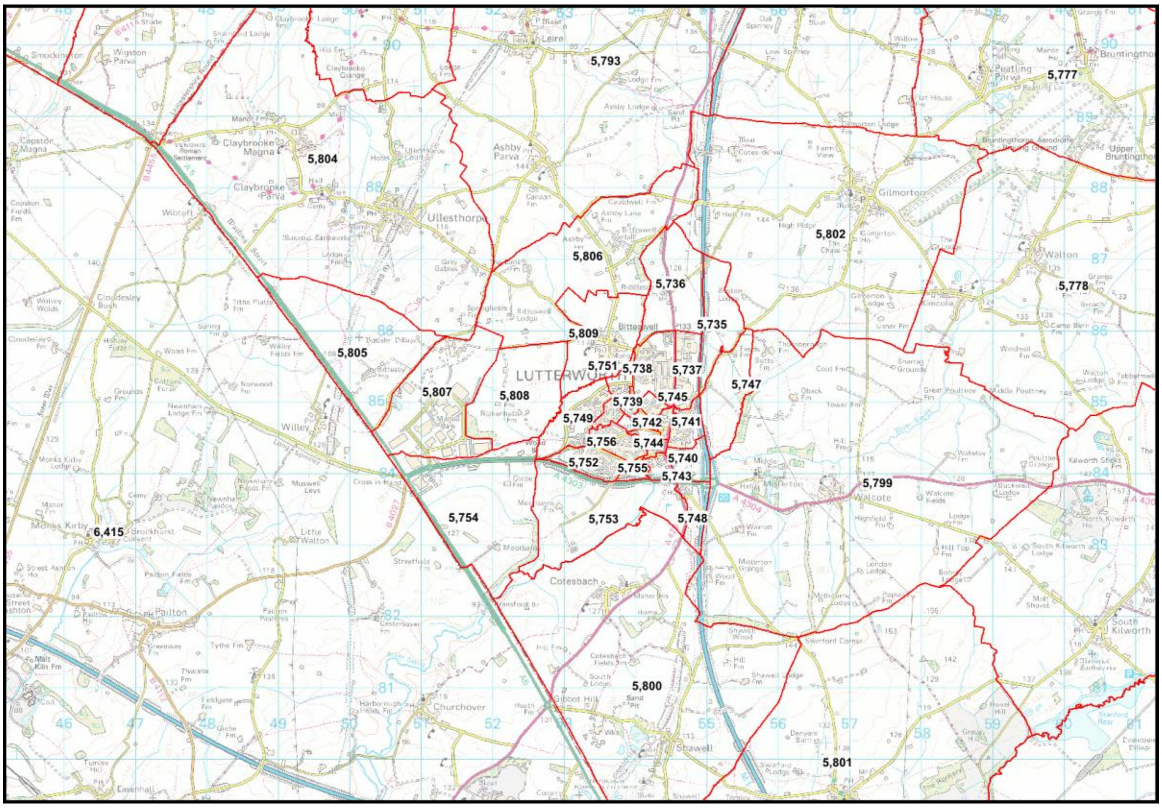
Model Zone	Description	2008	2026	Growth
5807	Zone containing Magna Park site	1,099	1,015	-84
5808	Rural zone to east of Magna Park	833	778	-55
5805	Rural zone to north of Magna Park	1,370	1,239	-131
5754	Zone to south of A4303 opposite Magna Park	297	297	0

2.1.5 It is worth noting the base year employment contained within the two rural zones to the north and east of the existing Magna Park site. As discussed in the base year model review, it is assumed that this employment has been misallocated as part of the development of the base year model. It was outside the scope of the base year model update to revise the base and future year planning data, and as such this assumed misallocation of employment is retained in the forecast year scenarios.

2.1.6 As part of the model update undertaken to produced LLITM v5.3, the demand to and from the two rural zones to the north and east of the existing Magna Park site has been reallocated. The revised base year model therefore contains a better representation of the likely trip generation and attraction for these three zones.

2.1.7 It is important to note that forecasting within Leicester and Leicestershire within the LLITM suite is based on the absolute change from base year to a given forecast year. Therefore it is the change in employment which is important to the forecasts detailed in this Technical Note and not the absolute level of employment assumed for the three zones assumed to contain Magna Park employment in the base year.

Figure 2.1: LLITM Zones in South Leicestershire



Contains Ordnance Survey data © Crown copyright and database right 2015

2.1.8 Based on this review, the *'sp'* planning forecasts have been adopted as the starting point for the forecasting work detailed in this Technical Note. One adjustment has been made to these forecasts to represent the planned expansion of the Daventry International Rail Freight Terminal (DIRFT) within the 2026 forecasts. Further details on the adjustments to the model forecasts in relation to DIRFT expansion is given in Section 2.5.

2.2 Magna Park Extension Land-Use Assumptions

2.2.1 The LLITM trip-end forecasting process uses the DfT's National Trip-End Model software (named CTripEnd) to forecast trip-ends based on the planning data inputs. These planning inputs are:

- population forecasts by zone categorised into 11 population types based on age, gender and employment status;
- household forecasts by zone;
- car ownership levels classified into three car ownership levels; and
- employment forecasts by zone, with employment categorised into 13 employment types.

2.2.2 The first three of the planning inputs defined above relate to residential developments, and are therefore not considered as part of this application. In order to add the proposed Magna Park development to the *'sp'* planning forecasts for 2026, it is therefore required to amend the input employment forecasts to the model.

2.2.3 Within the LLITM model two development zones have been used to represent the proposed development: one for the distribution centres contained within the proposed development; and one for the logistics academy. Employment forecasts are therefore required for these two zones.

2.2.4 The first stage of this is to estimate the total number of jobs generated by the proposed land-use. The number of jobs associated with the logistics academy has been given as part of the specification of the revised land-use assumptions for the development. This specification stated that it is expected that a total of 70 jobs will be created by the logistics academy, split between teaching, administration and maintenance staff.

2.2.5 No corresponding job estimate has been given for the distribution units contained within the proposed development. However, in the original brief for this commission it was stated that the original development proposals were expected to generate 7,330 jobs. Based on the reduction in the size of the development with the updated proposals (from around 560,000m^2 to around 509,000m^2), it has been assumed that this results in a corresponding reduction in employment at the site. Based on this an estimate of 6,660 jobs generated by the distribution element of the proposed development has been assumed.

2.2.6 The next stage in deriving employment inputs to LLITM is to categorise these job estimates into the 13 categories required by the trip-end model. These 13 categories are:

- primary & secondary schools;
- higher education;
- adult education;
- hotels, camp sites etc;
- retail trade;
- health / medical;
- services (business, other, postal/courier) & equipment rental;
- industry, construction and transport;
- restaurants and bars;
- recreation and sport;
- agriculture and fishing;
- business; and
- holiday accommodation and second residences.

2.2.7 For the logistics academy, all 70 assumed jobs associated with this element of the proposed development have been allocated into the ‘higher education’ category. For the distribution element of the proposed development, the split of employment between ‘services’, ‘industry, construction and transport’, and ‘business’ from 2026 *‘sp’* forecasts for the zones representing Magna Park has been taken and applied to the estimated total of 6,660 jobs. This therefore produces the following employment assumptions for the distribution element of the proposed development:

- 587 jobs (or 8.8%) within services (business, other, postal/courier) & equipment rental;
- 4,520 jobs (or 67.9%) within industry, construction and transport; and
- 1,553 jobs (or 23.3%) within business.

2.2.8 As development zones have been used to represent the proposed development, these employment forecasts can be added directly to the 2026 employment forecasts from the *‘sp’* planning scenario.

2.3 Trip Rates Assumptions

2.3.1 As discussed in Section 2.2, LLITM uses the DfT’s National Trip-End model software to forecast trip-ends based on the planning data inputs. This software contains assumptions on trip rates to apply for different trip purposes based on a limited number of geographical definitions. The software may not therefore represent local variations in these trip rates due to specific types of development, such as the distribution centre proposed as part of the Magna Park extension.

2.3.2 The CTripEnd software also only forecasts personal travel as a result of the proposed land-use. CTripEnd does not forecast freight demand based on the input land-use assumptions. To account for this, for development zones, LLITM contains the functionality to estimate freight trip-ends based on trip rates from the TRICS database. As with the personal trip rates contained within CTripEnd, these trip rates are an average for each of the 13 employment types and therefore may not account for the specific nature of the proposed Magna Park extension in terms of freight demand.

2.3.3 To account for this, forecast estimates of trip generation and attractions to and from the proposed development have been generated based on the observed trip rates at the existing Magna Park site and provided to AECOM. These provide AM Peak (08:00 – 09:00) and PM Peak (17:00 – 18:00) hour origin and destination estimates for the proposed development for HGV and light vehicle traffic, excluding highway traffic to / from the logistics academy.

2.3.4 The trip rates applied within both CTripEnd, and from TRICS for freight demand, are applied to produce estimates of 24-hour person (or vehicle in the case of freight) demand, and they do not provide estimates of AM Peak and PM Peak hour vehicle trip-ends. Functionality within LLITM exists to adjust these person trip rates at the 24-hour level, but not to adjust how the model allocates these to time periods and converts the person demand to vehicles.

2.3.5 These factors to allocate demand between time periods are firstly defined based on analysis of the roadside interview data collected as part of the model development, and are then adjusted by the demand model in response to the forecast costs of travel by different modes and time periods. Similarly, the conversion factors from person to vehicle demand are also based on analysis of the roadside interview data, and include the forecast change in average car occupancies over time detailed in WebTAG.

2.3.6 It is also worth noting that the trip-end model produces trip-ends by mode, and the implied mode split from these estimates form the starting point for the demand model. These trip-ends do not account for the accessibility or inaccessibility of a given zone in terms of travel by public transport or active modes (walking and cycling). Therefore, a development with substantial public transport provision and one with no public transport provision in the same location will have the same mode shares from the trip-end model.

2.3.7 The demand model takes these trip-ends as the starting point for the model and adjusts these based on the changes in cost from the base year. If there is no public transport provision in the base year and future year, the demand model will see there being no change in costs of travel by public transport and therefore will not significantly adjust the public transport mode share from that forecast by the trip-end model.

2.3.8 The focus of this assessment however is the impact of the proposed development on the highway network, and therefore the supplied highway vehicle trip-ends targets in the AM Peak and PM Peak hour have been used to generate adjustment factors to the trip rates. As discussed, these adjustment factors are applied at the 24-hour level, and so have been calculated to minimise the difference between the modelled and target trip-ends across the two peak hours. The modelled trip-ends have been calculated from the demand matrices prior to the application of the demand model, i.e. those based solely on the forecast trip-ends.

2.3.9 Table 2.2 details the target trip-ends agreed as part of the this application and the modelled trip-ends from the reference demand matrices. Trip-ends were only provided by HGV and light vehicle trips, but factors within LLITM are applied separately for LGV and car traffic. Therefore, based on the observed split of LGV and car traffic at the existing Magna Park site, an estimate of the trip-ends by the three required vehicle types has been produced.

Table 2.2: Target and Modelled (Reference) Peak Hour Vehicle Trip-Ends

		Target			Modelled		
		HGV	LGV	Cars	HGV	LGV	Cars
AM Peak hour	Origins	74	27	139	58	51	156
	Destinations	56	115	606	58	63	558
PM Peak Hour	Origins	56	44	507	58	43	527
	Destinations	42	15	172	55	44	187
Total		***228***	***201***	***1,424***	***228***	***201***	***1,428***

2.3.10 Table 2.2 shows that when adding the origins and destinations across the two peak hours there is a good fit between the target and modelled trip-ends. Given the limitation that trip rates can only be adjusted at the 24-hour level, no further adjustments can be made to influence the relative level of demand for origins and destinations in the two peak hours.

2.3.11 The factors required to be applied to the trip rates to achieve the results detailed in Table 2.2 are:

- a factor of 0.78 for HGV demand;
- a factor of 0.40 for LGV demand; and
- a factor of 0.70 for personal (non-freight) demand.

2.3.12 The above trip-ends and trip rate factors only apply to the development zone representing the distribution centres contained within the proposed development. No trip-end targets were provided for the logistics academy included as part of the development proposals, and so the trip rates assumed within CTripEnd have been applied without adjustment for this element of the proposed development.

2.4 Trip Distribution Assumptions

2.4.1 LLITM uses the distribution of trips contained within the base year matrices to define the starting point for the trip distribution in forecast years. However, there is no demand associated with development zones in the base year model and therefore no base year trip distribution on which to base the forecast year. There are two approaches available within LLITM to define the trip distribution for development zones:

- **Gravity Model:** apply LLITM's in-built gravity model to estimate the likely trip distribution of demand to and from a development zone based on the modelled travel costs.
- **Parent Zones:** use the distribution from a nearby similar zone to infer the likely trip distribution for the development zone.

2.4.2 As agreed within the proposal for this commission, for the trips to / from the development zone representing the distribution centres contained within the proposed Magna park extension, the base year trip distribution of trips to / from the existing Magna Park site has been used as a starting point for the trip distribution. For the trips associated with the logistics academy, as there is no similar zone near the proposed development, the LLITM in-built gravity model has been used.

2.4.3 As discussed within the proposal for this commission, no adjustments to the parameters used within the in-built gravity model process have applied within this application.

2.5 DIRFT II and III Expansion

2.5.1 The DIRFT II and DIRFT III expansions were not included in the *'core scenario'* developed for LLITM in late-2013; however, these developments are now classified as 'committed developments' and should therefore be included within this forecasting. This is of particular importance to Magna Park given the expected interaction between DIRFT and Magna Park.

2.5.2 In order to represent the DIRFT expansion within these model forecasts, two adjustments to the *'core scenario'* assumptions were required. The first was to add the additional employment growth to the zone containing DIRFT, and the second was to include the additional freight demand forecast to be generated by the DIRFT expansion.

2.5.3 The model zoning within this part of the model is relatively aggregate with DIRFT being located within an external zone with also contains Daventry. It is therefore not possible to distinguish demand produced by or attracted to DIRFT from demand produced by or attracted to other land-use within the zone such as Daventry. It is also worth noting that the demand to / from this zone is loaded onto the network within Daventry, and this is also the case for any additional forecast demand associated with DIRFT expansion.

Employment Forecasts

2.5.4 In terms of the land-use data used within the trip-end model, additional employment has been added to the zone containing DIRFT in all forecast scenarios. As with the employment at the proposed Magna Park extension, the first stage of this process is to estimate the total jobs generated by the DIRFT II and III proposals. The DIRFT III Environmental Statement (February 2013)[1] states that it is expected that this stage of the development will generate between 8,073 and 9,133 jobs.

2.5.5 Based on the relative sizes of the two stages of the DIRFT expansion (180,741m^2 for DIRFT II and up to 731,000m^2 for DIRFT III), it has been estimated that DIRFT II will generate between 1,998 and 2,258 jobs. This is consistent with the DIRFT III Planning for the Future (May 2012)[2] publication which states that DIRFT II is expected to generate around 2,000 jobs.

2.5.6 Using an average of the upper and lower estimates of employment at DIRFT II and III, the following total additional employment has been assumed for these developments:

- 2,128 jobs generated by DIRFT II; and
- 8,606 jobs generated by DIRFT III.

2.5.7 These additional jobs have been categorised into the required 13 employment classifications using the same assumptions as applied at the proposed Magna Park extension (see Paragraph 2.2.7). These employment estimates have been added to the 2026 *'sp'* forecasts for zone 6408.

HGV Demand Forecasts: Trip-Ends

2.5.8 Adjusting the employment forecasts within LLITM will influence non-freight demand within the forecasts, but there is no linkage between the land-use forecasts and the forecast year freight demand. The growth in freight demand from the base year is assumed to follow the forecast growth set out in the DfT's National Transport Model (NTM), and these growth rates are applied globally to the base year HGV and LGV demand matrices.

2.5.9 It is has been assumed that the growth in HGV traffic associated with DIRFT II and III is additional to the growth assumed within the NTM, and therefore additional HGV demand to / from DIRFT can be added to the 2026 forecast year matrices. The first stage in estimating the additional HGV traffic generated by DIRFT expansion is to estimate the trip-ends associated with the expansion.

2.5.10 Based on an Automatic Number Plate Recognition (ANPR) survey undertaken at the existing DIRFT site, it has been assumed that over 24-hours the existing development generates 149 HGV origins and 152 HGV

[1] http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/TR050001/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/DIRFT%20III%20ES%20-%20Chapter%20L%20-%20Socio-Economics.pdf

[2] http://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR050001/1.%20Pre-Submission/Superseded%20Documents/Other%20Documents/Doc%207.1%20Summary%20of%20Proposals%20Document.pdf

destinations. Using the current size of the DIRFT I site (assumed to be 60,385m^2) 24-hour HGV trip rates have been estimated. These estimated trip rates are around 0.25 HGV origins or destinations per 100m^2.

2.5.11 Applying these trip-rates to the assumed size of the DIRFT II and III developments gives an estimate of 2,247 HGV vehicles with an origin at DIRFT II and III, and 2,289 HGV vehicles with a destination at DIRFT II and DIRFT III on an average weekday.

HGV Demand Forecasts: Distribution

2.5.12 The final stage in defining the additional HGV demand is to estimate the likely distribution of the HGV trips generated by the DIRFT II and III developments. Of primary importance to this application is the forecast number of HGVs between the DIRFT expansion and the Magna Park site, both the existing and proposed development.

2.5.13 The DIRFT III Transport Assessment (February 2013)[3] gives forecasts for the number of HGVs produced by DIRFT III which are expected to travel to / from the A5 to the north of the A426. These are produced for the AM Peak period and hour and PM Peak period and hour, and are reproduced in Table 2.3. Based on observed trip rates at the existing DIRFT site, an estimate of the daily traffic volumes has been made, firstly based on the AM Peak and PM Peak period forecasts, and then based on an average of these two estimates.

Table 2.3: DIRFT III Traffic to / from A5 North of A426

	Arrivals	Departures	Two-Way
AM Period	116	86	202
PM Period	114	125	239
AM Peak Hour	39	29	67
PM Peak Hour	38	42	80
Estimated Daily (based on AM flows)	514	361	875
Estimated Daily (based on PM flows)	577	607	1,185
Average Daily Estimate	***546***	***484***	***1,030***

2.5.14 Based on the ANPR survey undertaken at DIRFT, around 78% of HGVs which are observed on the A5 north of the A426 have an origin / destination at Magna Park. Applying this proportion to the average daily estimate given in Table 2.3 provides an estimate of the HGVs produced by DIRFT III which will travel between DIRFT and the existing Magna Park development.

2.5.15 This takes account of only DIRFT III development, and assuming that DIRFT II will have a similar trip distribution this estimate has been uplifted based on the relative size of the DIRFT II and II developments. This results in an estimate of 531 HGV vehicles arriving at DIRFT II and III from Magna Park and 471 HGV vehicles departing DIRFT II and II for Magna Park in a 24-hour period.

2.5.16 For the ‘without development’ scenario, the above estimates of HGV traffic between Magna Park and DIRFT II and III are used directly within the model. For the remaining forecast HGVs generated by the DIRFT II and III developments, these are allocated to model zones (excluding the zone representing the existing Magna Park development) using the distribution of HGV demand present in the base year model.

2.5.17 For the ‘with development’ scenario, the assumed increase in the size of the development at Magna Park has been used to increase the number of HGV trips generated by DIRFT expansion which are attracted to the combined Magna Park site. The proposed Magna Park extension is assumed to result in a 66% increase

[3] http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/TR050001/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/DIRFT%20III%20ES%20Appendix%20D1%20-%20Transport%20Assessment.pdf

in development at the site, and so the HGV traffic between Magna Park and DIRFT is also assumed to increase by 66%.

2.5.18 This additional HGV demand to / from DIRFT is allocated to the development zone representing the distribution centres included in the proposed Magna Park extension. In order to preserve the forecast trip-ends for HGVs to / from DIRFT II and III, the HGV demand between DIRFT and non-Magna Park zones has been reduced pro-rata, retaining the base year trip distribution.

2.6 Symmetry Park Sensitivity Test Assumptions

2.6.1 As part of the Symmetry Park sensitivity test, alterations are required to a number of inputs to the model discussed in this Section. These are the employment forecasts used within the trip-end model, the trip rate assumptions for the proposed Symmetry Park development, and the DIRFT HGV demand.

Employment Forecasts

2.6.2 As with the introduction of the proposed Magna Park extension, employment forecasts for the proposed Symmetry Park development are required for the sensitivity test. The first stage in deriving these inputs is to estimate the total employment to be generated by the proposed Symmetry Park development.

2.6.3 The proposed Magna Park extension has been assumed to include 509,000m^2 of distribution development, and will generate 6,660 jobs. Using the relative sizes of the two proposed developments, this provides an estimate of the number of jobs generated by the proposed Symmetry Park development of 3,650.

2.6.4 These forecast 3,650 jobs have been allocated to the employment categories used within the LLITM trip-end model based on the splits between these categories at the existing Magna Park development. This is the same approach as has been adopted for the proposed Magna Park extension, and is discussed in Paragraph 2.2.7.

2.6.5 These additional jobs have been added to a development zone available within the model to represent the proposed Symmetry Park development. This development zone is not used within either the ‘without development’ or ‘with development’ scenarios, and therefore the additional land-use can be added directly to this zone within the 2026 planning data inputs for the Symmetry Park sensitivity test.

Trip Rate Assumptions

2.6.6 As with the proposed Magna Park extension, estimates of the trip arrivals and departures are required to adjust the assumed trip rates within LLITM. For this, the same trip rates assumed at the proposed Magna Park extension have been applied to the proposed Symmetry Park development. The estimated trip rates and the outturn estimates of trip arrivals and departures at the proposed Symmetry Park development are given in Table 2.4.

Table 2.4: Estimated Trip Generation at the proposed Symmetry Park development

		Vehicle Trip Rates (per 100m^2 per hour)		Trips (vehicles)	
		Arrivals	Departures	Arrivals	Departures
AM Peak Hour	Lights	0.129	0.032	360	89
	HGV	0.012	0.016	33	45
PM Peak Hour	Lights	0.036	0.100	100	279
	HGV	0.009	0.012	25	33

2.6.7 As with the proposed Magna Park extension, adjustment factors have been calibrated and applied to the 24-hour trip rates to best represent the assumed trip arrivals and departures in the two peak hours using the same process and assumptions as adopted for the proposed Magna Park extension. The results of this calibration exercise are given in Table 2.5.

Table 2.5: Target and Modelled (Reference) Peak Hour Vehicle Trip-Ends – Symmetry Park

		Target			Modelled		
		HGV	LGV	Cars	HGV	LGV	Cars
AM Peak hour	Origins	45	14	75	35	27	80
	Destinations	33	58	302	30	29	283
PM Peak Hour	Origins	33	22	257	37	22	268
	Destinations	25	8	92	34	25	97
Total		***136***	***102***	***726***	***136***	***102***	***726***

2.6.8 The factors required to be applied to the trip rates to achieve the results detailed in Table 2.5 for the proposed Symmetry Park development are:

- a factor of 0.95 for HGV demand;
- a factor of 0.36 for LGV demand; and
- a factor of 0.64 for personal (non-freight) demand.

2.6.9 As part of the input assumptions for the Symmetry Park sensitivity test, the calibrated adjustment factors applied at the proposed Magna Park extension remain unchanged from those detailed in Paragraph 2.3.11.

DIRFT HGV Demand

2.6.10 The assumptions underpinning the additional DIRFT HGV demand need to be adjusted for the Symmetry Park sensitivity test. The forecast HGV demand to / from DIRFT has been adjusted using the same assumptions as adopted for the 'with development' scenario. The 'with development' assumptions regarding DIRFT demand have been adjusted as follows to account for the proposed Symmetry Park development:

- HGV demand between DIRFT and the proposed Symmetry Park development has been based on the assumed relative size of the proposed Symmetry Park development and the existing Magna Park development (39%, compared to 66% for the proposed Magna Park extension);
- the forecast HGV trips to / from the existing Magna Park site and the proposed extension are unaltered from that assumed in the 'with development' scenario; and
- to retain the forecast trip-ends for DIRFT, the HGV trips to / from zones other than Magna Park, the proposed Magna Park extension, and the proposed Symmetry Park development have been reduced, pro rata.

Section 3 – Network Assumptions

3.1 Introduction

3.1.1 In addition to the assumptions on land-use data (detailed in Section 2), the other main input into a LLITM forecast is the network assumptions. These detail the assumed highway network infrastructure and the public transport service provision in the forecast year scenarios.

3.1.2 These network assumptions are in addition to a number of other forecast assumptions contained within the LLITM *'core scenario'*. These include assumptions on the changes to values of time, average car occupancies, public transport fares and parking provision in Leicester City and Loughborough. These *'core scenario'* assumptions are detailed in Table 3.1 within *'PR104 - Revised Forecasting Report'*.

3.2 'Without Development' Assumptions

3.2.1 As with the land-use assumptions, the assumptions regarding the changes to the highway network and the public transport service provisions from the base to a 2026 forecast year have been based on the assumptions underpinning the *'core scenario'* developed in late-2013.

3.2.2 The highway schemes assumed as part of this *'core scenario'* are detailed in Table 3.2 of *'PR104 - Revised Forecasting Report'*, with the corresponding assumptions regarding public transport service provision detailed in Table 3.3. These assumptions have been retained for the 'without development' scenario.

3.2.3 Given the assumption that the DIRFT expansion is a core assumption, there is an additional 'without development' highway scheme which has been included in this application. This is the part signalisation of the A5 Gibbet Hill roundabout, which, based on information provided by LCC, is assumed to be in place by 2025. This scheme has therefore been included in all 2026 forecast year scenarios.

3.3 'With Development' Assumptions without Proposed Mitigation

3.3.1 With the introduction of the proposed development a number of highway network changes are required to represent the access points to the proposed development. As defined within the brief for this LLITM application, the following changes to the highway network have been applied to account for the proposed access points to the development:

- a new four-arm roundabout connecting the proposed development with Mere Lane and an extension of Hunter Boulevard;
- a new roundabout on the A5 approximately 100m north of the existing A5 / Mere Lane junction connecting the A5 to the realigned Mere Lane; and
- a second new roundabout on the A5 at the northern end of the proposed development approximately 275m south of White House Farm.

3.3.2 In addition to the inclusion of these new access points, the dual carriageway section of the A5 up to the Emmanuel Cottages will be extended south to the new roundabout junction between the A5 and the realigned Mere Lane.

3.3.3 As part of the highway model it has been assumed that all new junctions are built to a good standard, and include flared approaches to the roundabouts for single-lane approaches to each junction.

3.3.4 In terms of public transport, no additional public transport services are assumed as part of the 'with development' scenario. However, Arriva Service 8 between Lutterworth and Hinckley, which calls at the existing Magna Park site, is assumed to reroute through the existing Magna Park site to Mere Lane, with an additional bus stop to the south of the proposed four-arm roundabout between the proposed development, the Hunter Boulevard Extension and Mere Lane.

3.4 Proposed 'With Development' Mitigation Measures

3.4.1 In response to the model forecasts from the 'without development' and 'with development' scenarios, mitigation measures have been proposed by the client for testing within LLITM. These are a number of junction improvements at the A4303 / A426 roundabout to the south of Lutterworth and travel planning measures for the proposed Magna Park extension.

3.4.2 The junction improvements at the A4303 / A426 roundabout are:

- the lengthening of the flare for the A4303 westbound approach;
- the addition of a second flare (to create three lanes at the stop-line) and lengthening of the existing flare for the northbound A426 approach;
- the addition of a flared approach for westbound traffic on the A4303; and
- the addition of a second flare (to create three lanes at the stop-line) and lengthening of the existing flare on the southbound A426 approach.

3.4.3 For the travel planning measures, it is has been prescribed that this element of the proposed mitigation measures will result in a 15% reduction in single occupancy car trips to the proposed Magna Park extension. LLITM does not isolate single occupancy vehicles within the modelling, and so, after agreement with LCC and the client, the assumed average vehicle occupancies have been adjusted to reflect this scheme.

3.4.4 The following provides details on the assumptions underpinning the adjustment to the average car commuting occupancies for trips attracted to the proposed Magna Park extension:

- Using the 'with development' forecasts, there are around 2,040 car person trips attracted to the proposed Magna Park extension and around 1,800 vehicle trips. This results in an average car occupancy of around 1.13.
- Using data from the National Travel Survey (NTS), this states that 85% of car commuting trips are in single occupancy vehicles, and therefore based on this assumption there are around 1,535 single occupancy vehicles and 270 multiple occupancy vehicles attracted to the proposed development.
- The scheme is assumed to result in a 15% reduction in single occupancy car trips (to around 1,300), which leaves around 230 car person trips to reallocate.
- A maximum and minimum impact scenario was then considered:
    - In the maximum impact scenario, all remaining car person trips would travel in existing multiple occupancy vehicles, resulting in an average car occupancy of around 1.3.
    - In the minimum impact scenario, all remaining car person trips would form new two-person car trips, resulting in an average car occupancy of around 1.21.
- It was agreed to take an average of these maximum and minimum impact scenarios, whereby half the remaining 230 car person trips joined existing multiple occupancy vehicles, and half formed new two-person car trips.

3.4.5 This average impact scenario results in a commuting car average occupancy of around 1.25, and this change in average occupancies has been applied for all car commuting trips attracted to the proposed Magna Park extension in the 'with mitigation' scenario.

3.4.6 In the AM Peak hour, the implementation of these travel planning measures results in a reduction of around 30 to 35 car vehicle trips (or around 8%) with a destination at the Magna Park extension in the AM Peak hour or with an origin at the Magna Park extension in the PM Peak hour.

3.5 Symmetry Park Sensitivity Test Assumptions

3.5.1 The Symmetry Park sensitivity test builds on the input assumptions for the ‘with mitigation’ scenario, and therefore includes the junction improvements at the A4303 / A426 roundabout and the proposed travel planning measures.

3.5.2 In order to represent the proposed access point for the Symmetry Park development, a new, three-arm roundabout has been included on the A4303 to allow access to / from the proposed development. It is assumed that this new roundabout will be built to a good standard, with a flared approach for traffic leaving the proposed Symmetry Park development.

Section 4 – Model Forecasts

4.1 Introduction

4.1.1 As part of the brief for this LLITM application, a number of model outputs were requested from the modelled scenarios. This section contains the majority of the model outputs requested, although due to the number of junction plots requested from the highway model for each scenario, these are provided in separate appendices to this Technical Note.

4.1.2 The majority of the analysis detailed in this section has been undertaken based on the 2026 forecast models in the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours. Where comparisons have been requested between two scenarios, comparisons have been undertaken between:

- the 2026 'without development' and 'with development' scenarios;
- the 2026 'with development' scenarios without and with the proposed mitigation measures; and
- the 2026 'with development' scenario with the proposed mitigation measures without and with the proposed Symmetry Park development.

4.1.3 A draft set of model outputs was provided to LCC prior to undertaking the model forecasting work. Comments and feedback on these example outputs have been addressed and incorporated into the final reporting contained within this Technical Note.

4.2 Highway Flow Change Plots

4.2.1 The first set of model outputs are the highway flow change plots between scenarios. These have been produced based on the change in total actual flows in passenger car units (PCUs). Within the highway model all car and LGV traffic is assigned with a PCU factor or 1, with HGV traffic being assigned with a PCU factor of 2.

4.2.2 These plots have been produced for an overview area, which roughly corresponds with the proposed area of influence contained within the brief for this LLITM application, for the local area around Magna Park and Lutterworth, and also for an area covering solely Lutterworth.

4.2.3 Note that where the network definition (i.e. the links and nodes rather than the link attributes) has changed between the two scenarios, SATURN does not show a flow change between the two scenarios. This is important when reviewing the model forecasts along the A5 to the north of the junction with the A4303 where the network has changed with the introduction of the proposed development, and around the A4303 / A426 roundabout with the introduction of the proposed mitigation measures.

4.2.4 Note that with any highway assignment model of this size, there is convergence noise between the 'without development' and 'with development' forecasts. This manifests itself as forecast flow changes between the two scenarios and can be seen within Leicester City in the AM Peak hour forecasts, but is more significant in the PM Peak hour forecasts in and around Atherstone.

Figure 4.1: Forecast Highway Flow Change between 'With' and 'Without' Development Scenarios (2026 AM Peak) – Overview

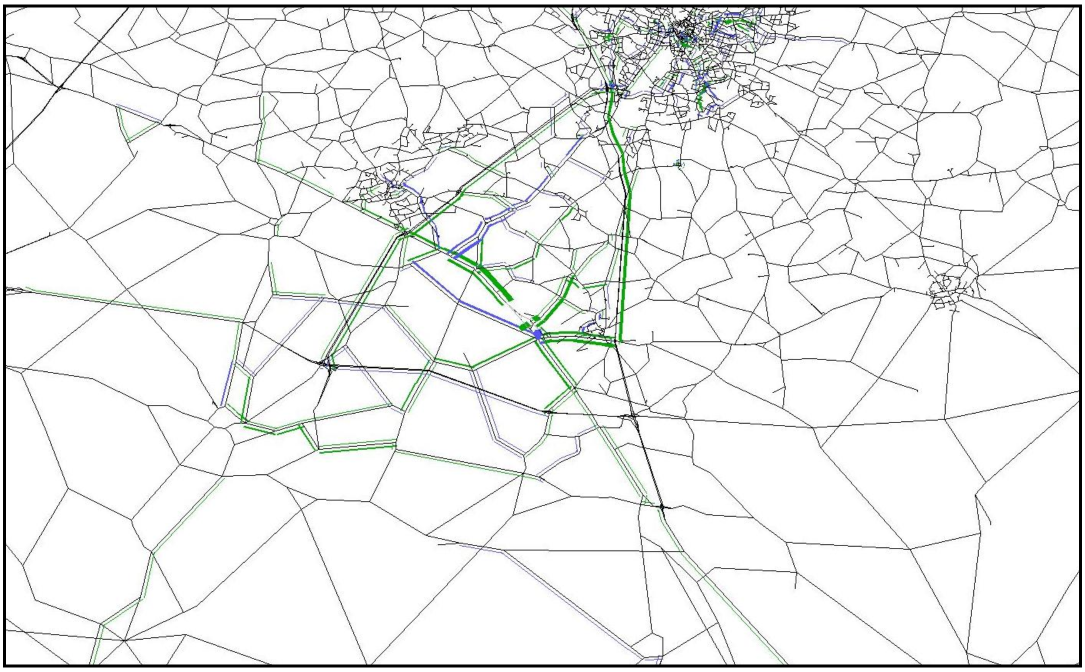


Figure 4.2: Forecast Highway Flow Change between 'With' and 'Without' Development Scenarios (2026 AM Peak) – Local Area

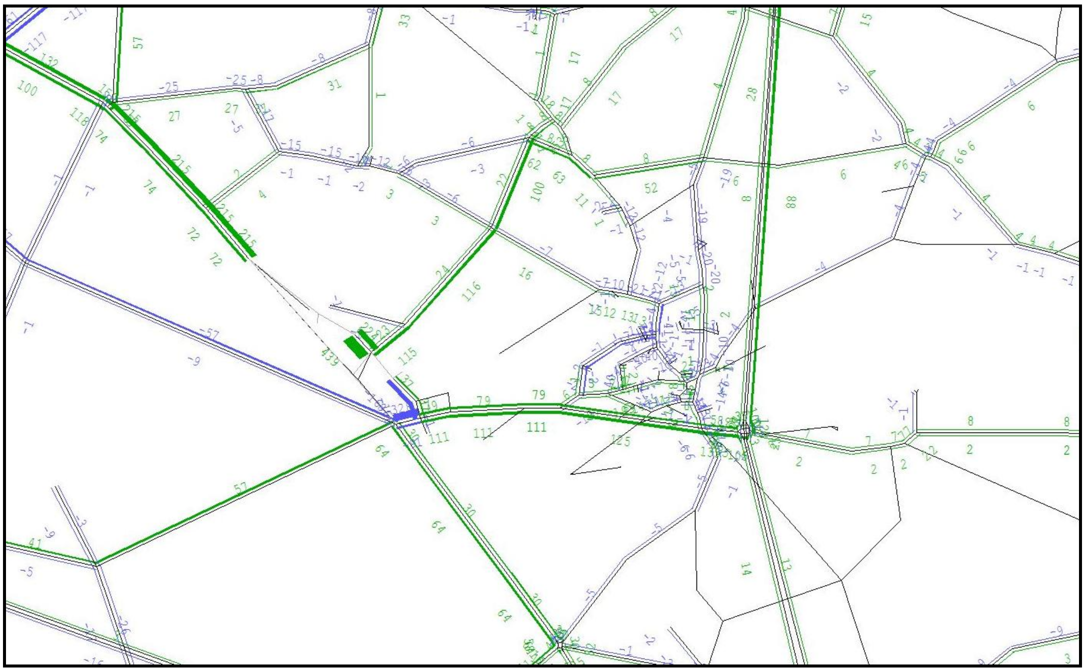


Figure 4.3: Forecast Highway Flow Change between ‘With’ and ‘Without’ Development Scenarios (2026 AM Peak) – Lutterworth

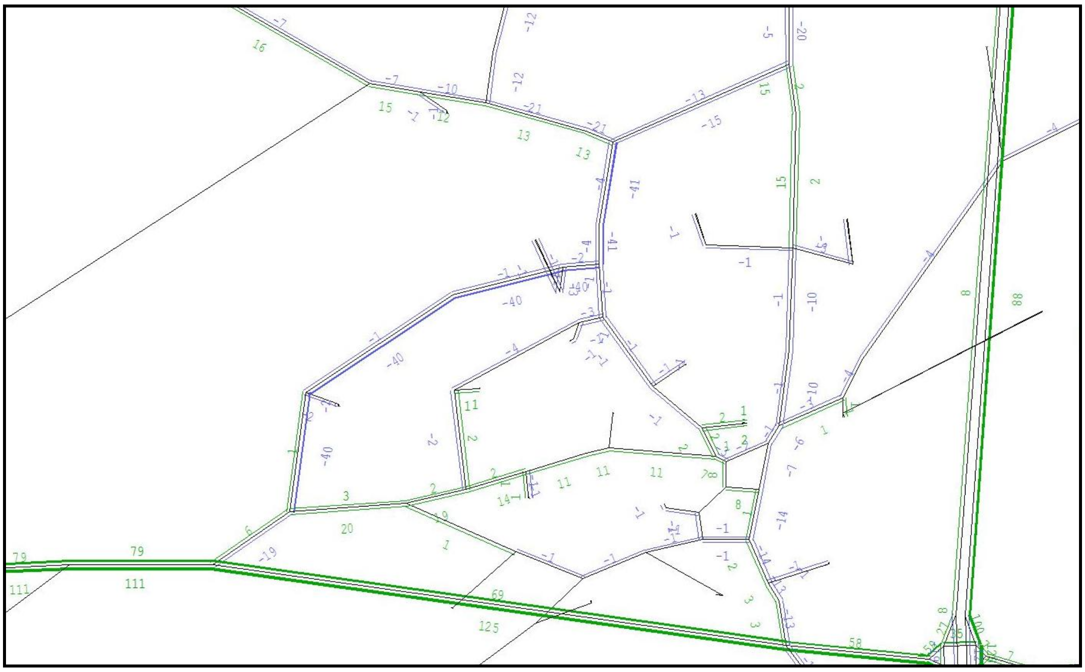


Figure 4.4: Forecast Highway Flow Change between ‘With’ and ‘Without’ Development Scenarios (2026 PM Peak) – Overview

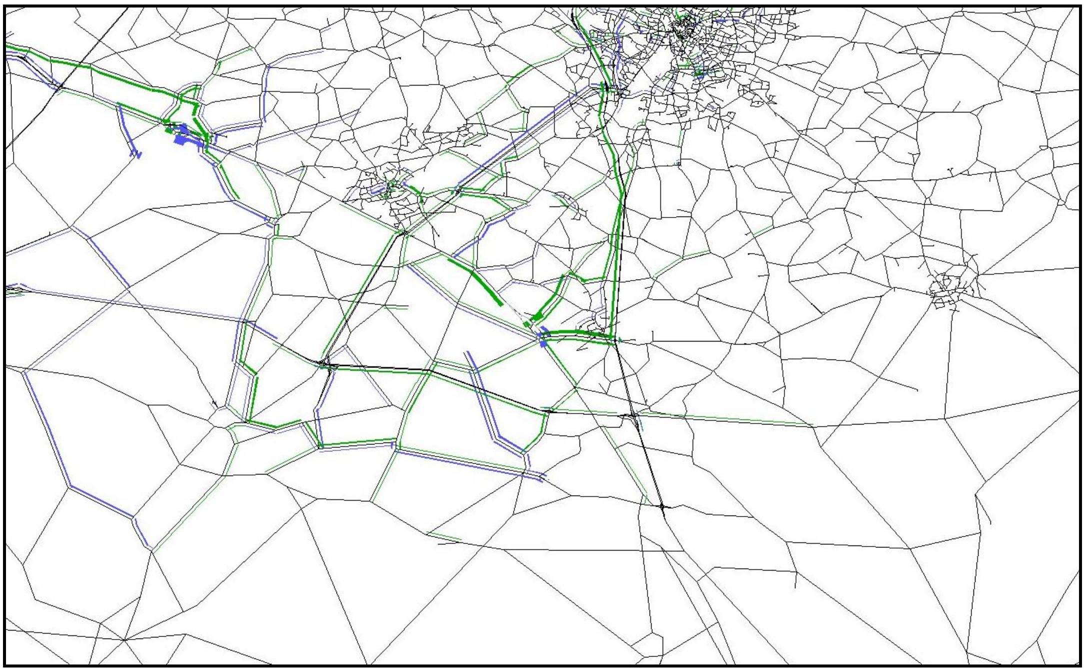


Figure 4.5: Forecast Highway Flow Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Local Area

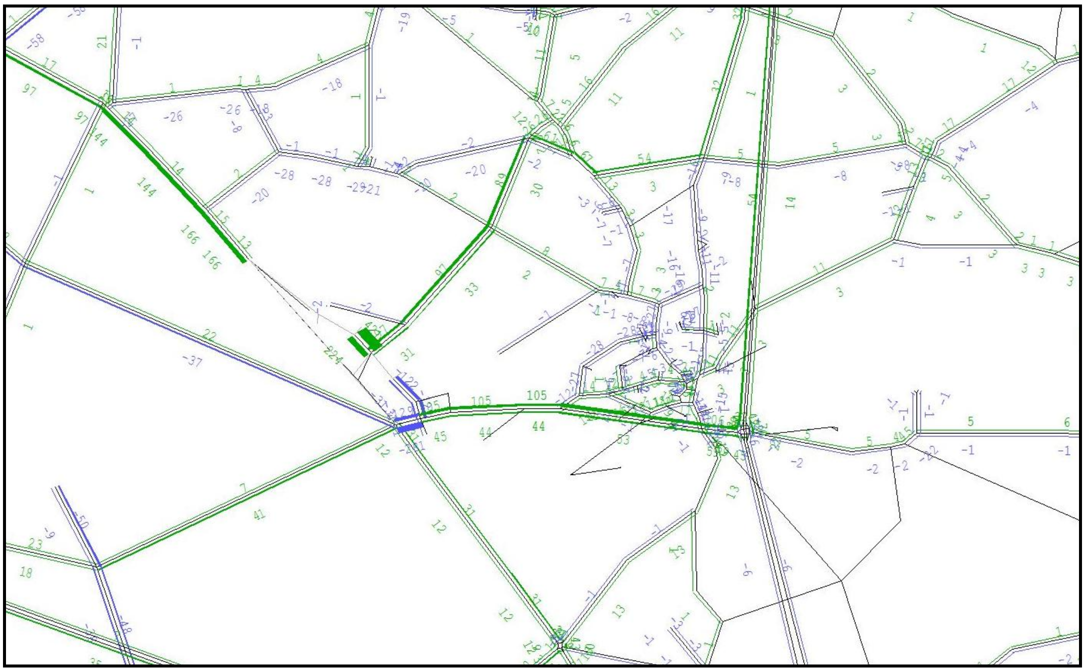


Figure 4.6: Forecast Highway Flow Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Lutterworth

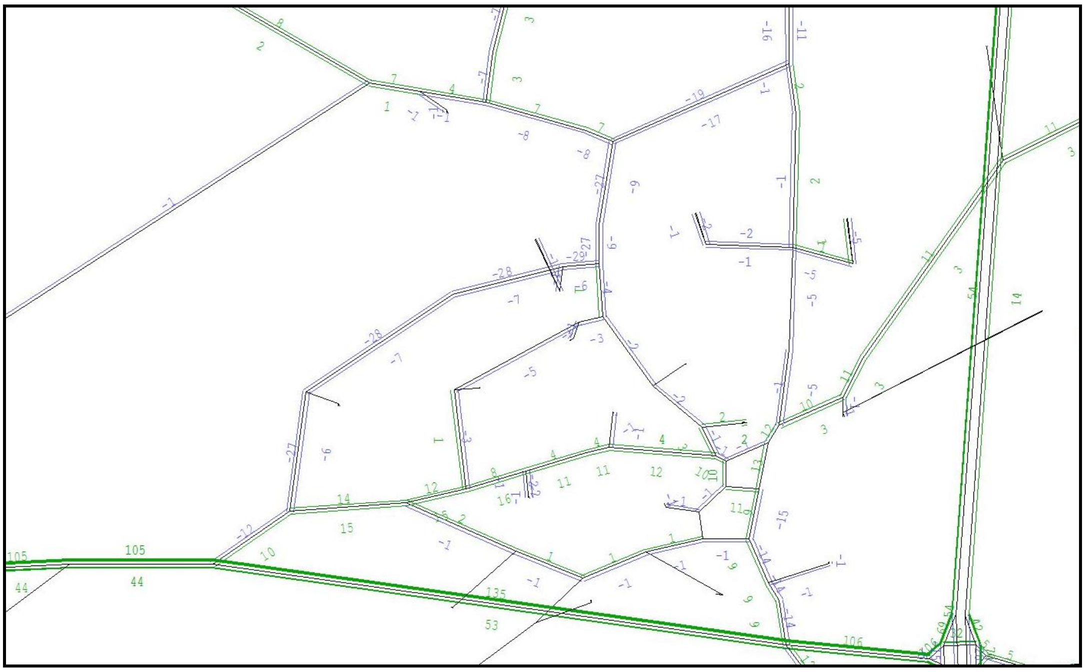


Figure 4.7: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 AM Peak) – Overview

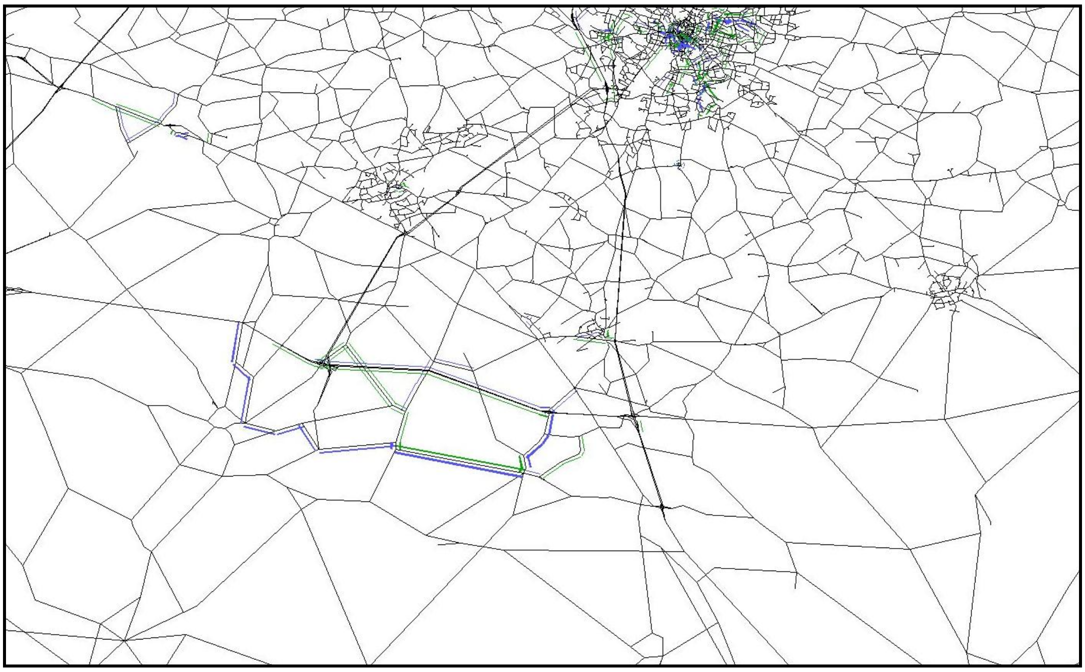


Figure 4.8: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 AM Peak) – Local Area

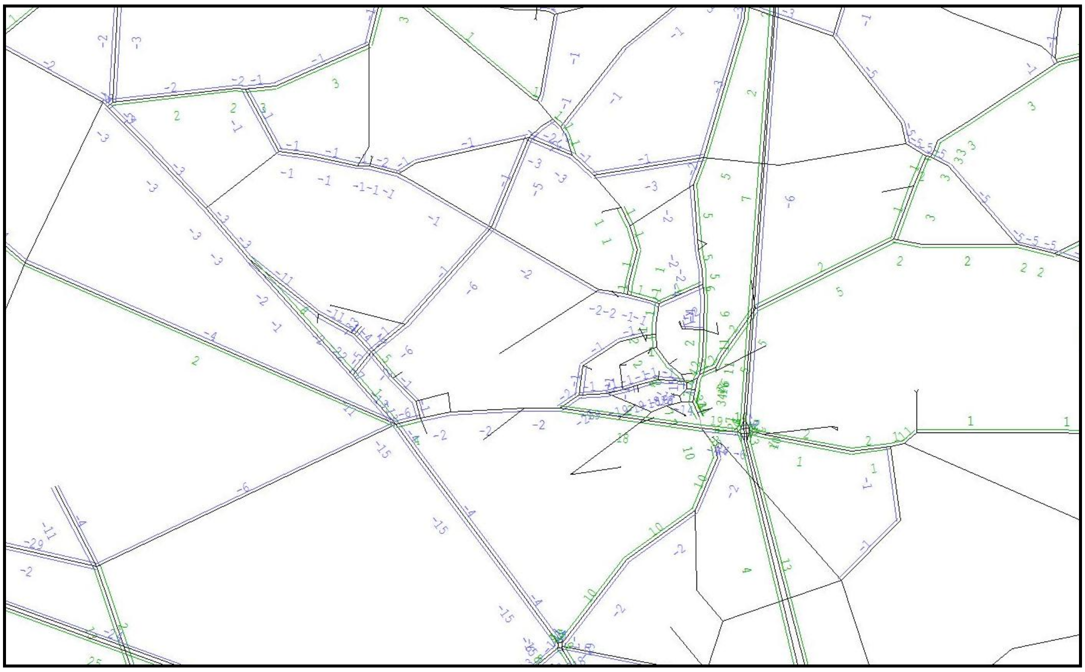


Figure 4.9: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 AM Peak) – Lutterworth

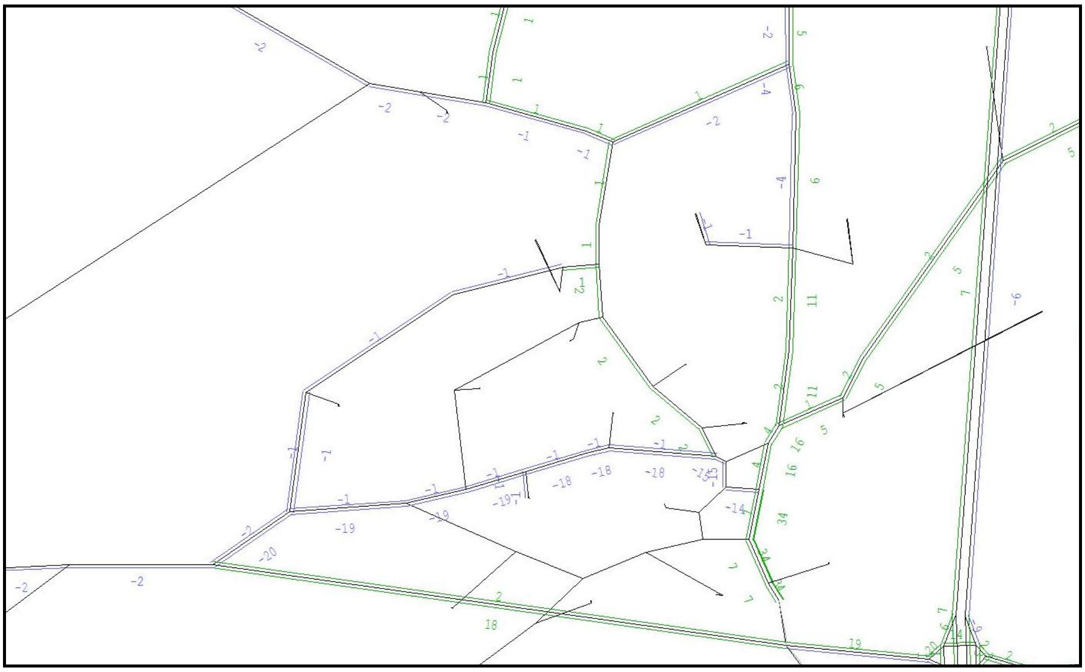


Figure 4.10: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 PM Peak) – Overview

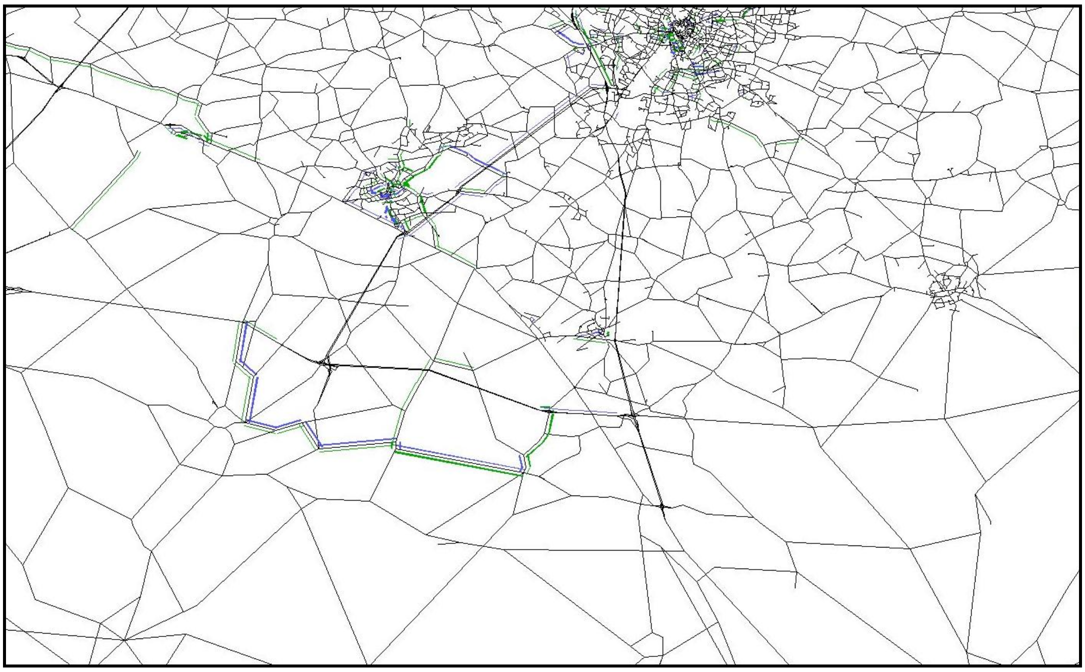


Figure 4.11: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 PM Peak) – Local Area

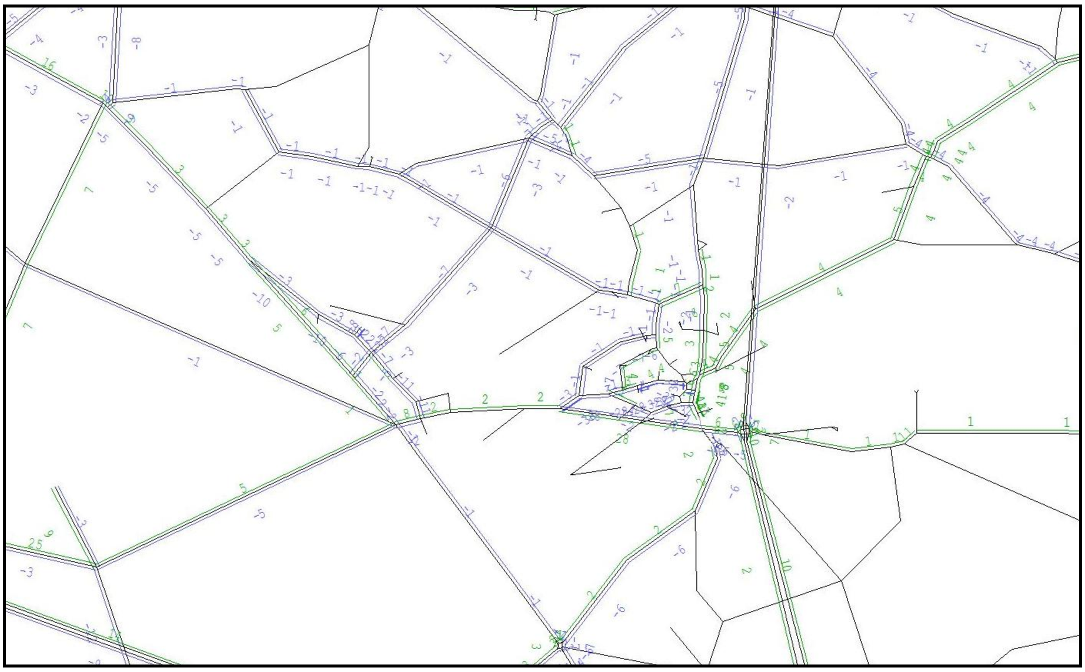


Figure 4.12: Forecast Highway Flow Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 PM Peak) – Lutterworth

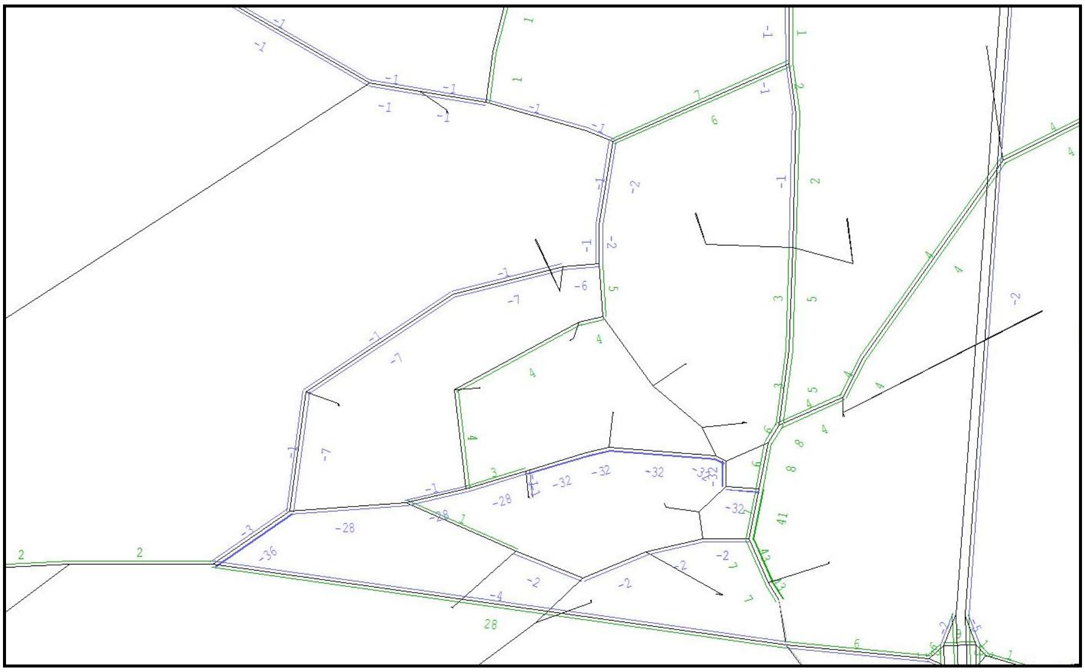


Figure 4.13: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 AM Peak) – Overview

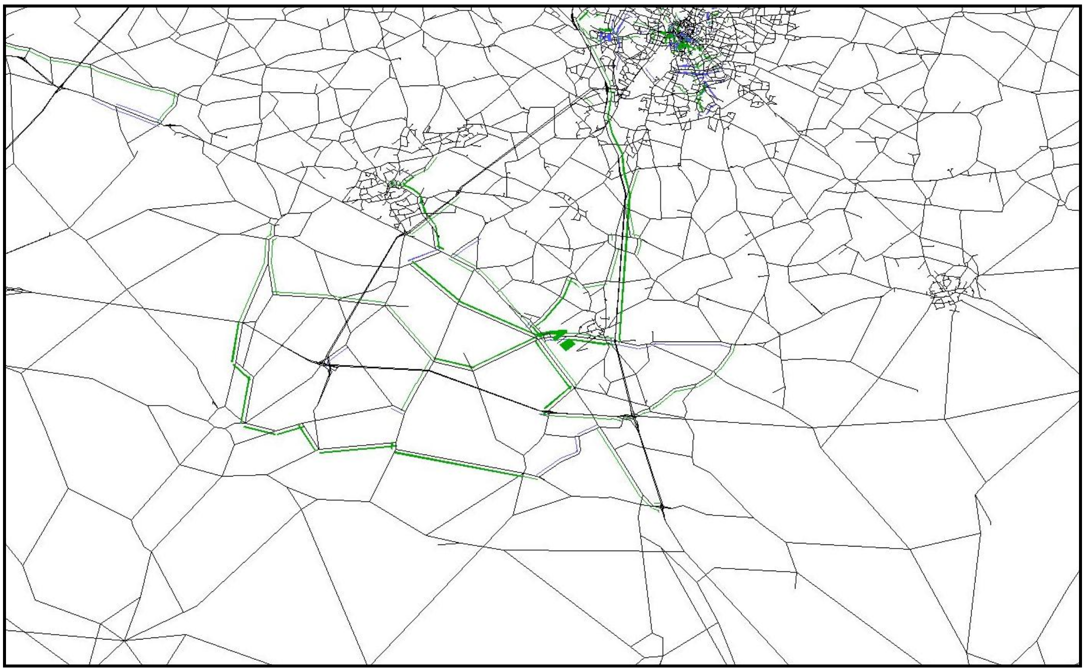


Figure 4.14: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 AM Peak) – Local Area

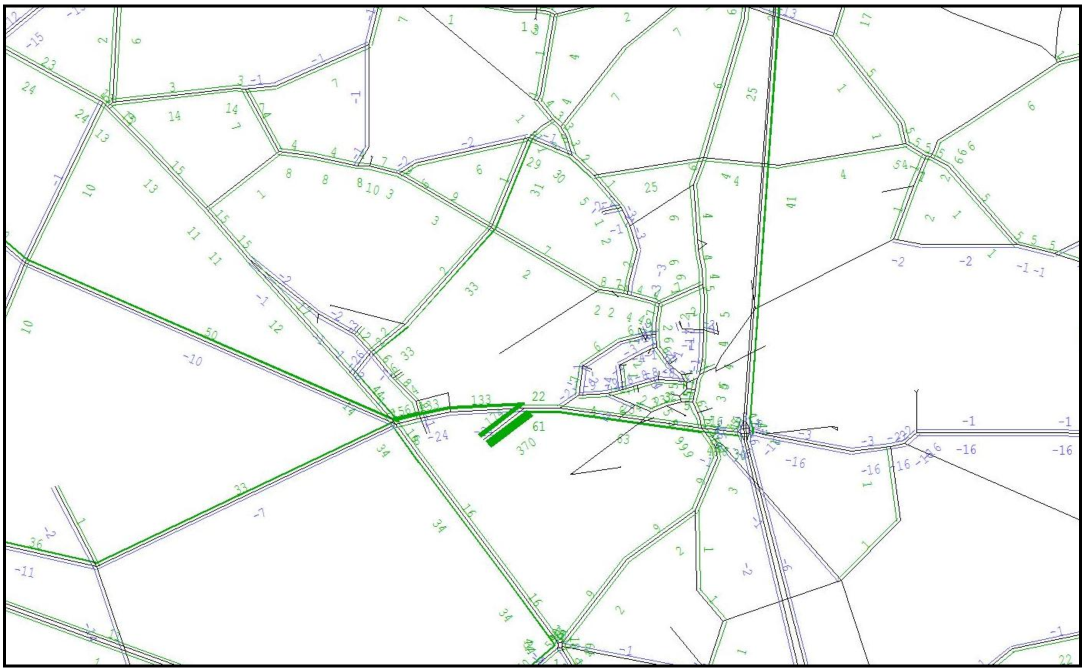


Figure 4.15: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 AM Peak) – Lutterworth

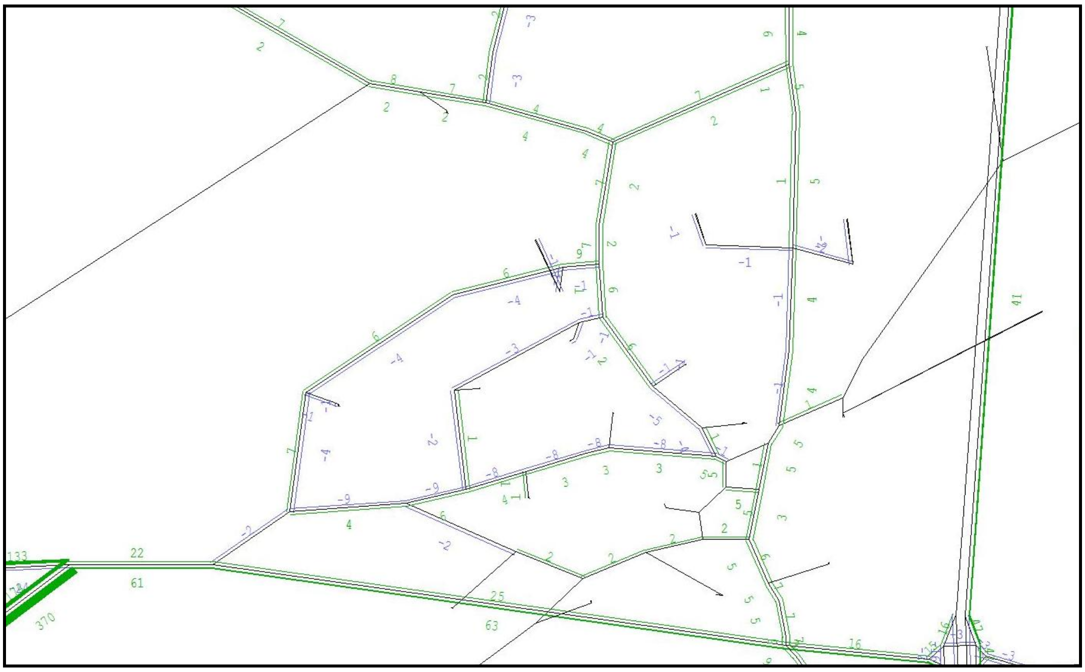


Figure 4.16: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 PM Peak) – Overview

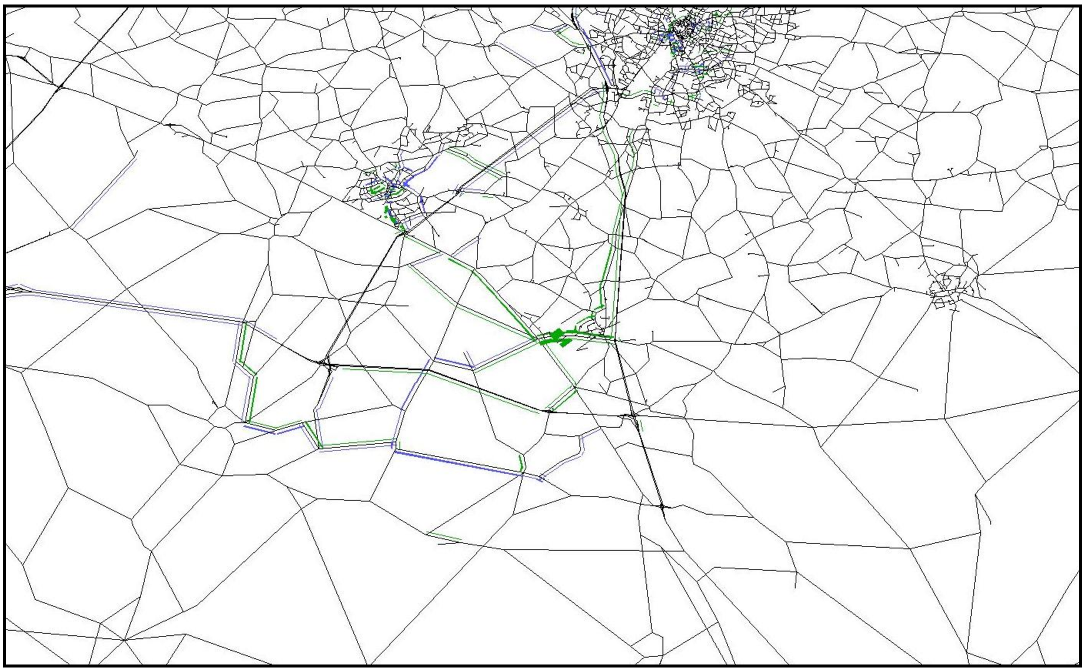


Figure 4.17: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 PM Peak) – Local Area

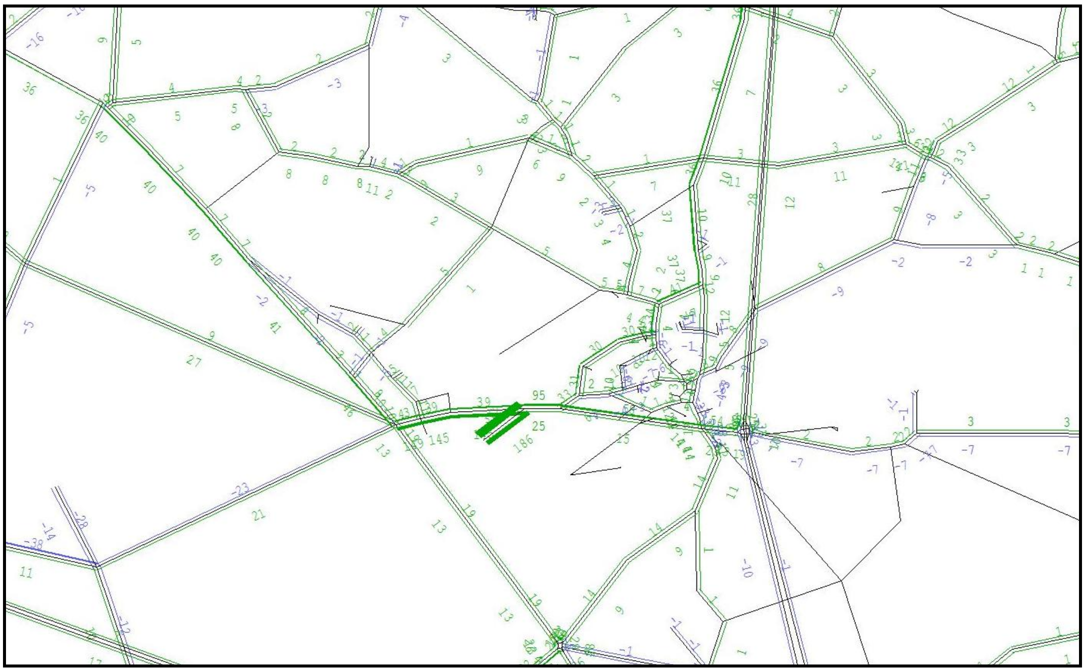
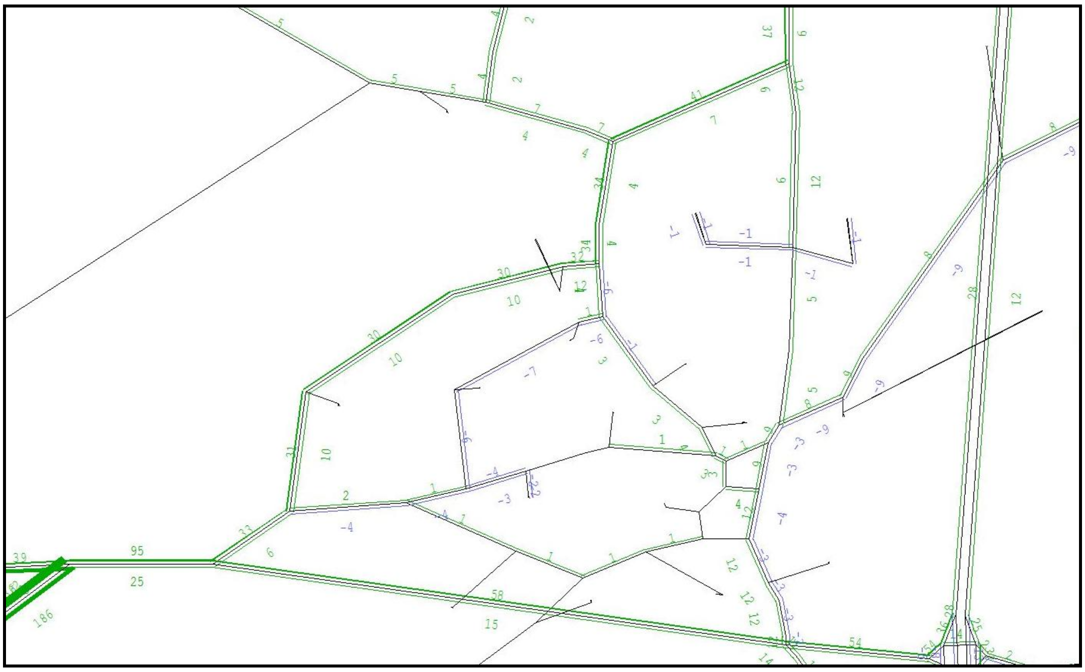


Figure 4.18: Forecast Highway Flow Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 PM Peak) – Lutterworth



4.3 Highway Delay Change Plots

4.3.1 Analogous to the highway flow change plots, outputs from the highway model showing the change in total delays between the forecast year scenarios have been produced. These show the change in link delays plus

MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

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the demand-weighted average junction delay at the end of each link, and the figures are reported in seconds.

4.3.2 These changes in forecast highway delays have been produced using the same reporting views as used in the reporting of the forecast change in highway flows for the overview and local area views. No change in the forecast highway delay is shown where the network definition changes between the two scenarios, which for this application impacts on the results shown on the A5 to the north of the A4303.

4.3.3 In addition to this, changes in forecast delay are not shown where new junctions are introduced to the network. This is of relevance to the two new access points to the proposed Magna Park extension and the access point for the proposed Symmetry Park development. At these three locations the forecast additional delays are:

- around 10 to 15 seconds on all approaches to the proposed access points to the Magna Park extension on the A5 and Mere Lane depending on the peak hour; and
- around 10 to 20 seconds on all approaches to the proposed Symmetry Park access point depending on the peak hour.

4.3.4 Note that there is forecast to be limited change in delays with the introduction of the proposed mitigation measures, and this is shown in the figures produced within this Technical Note. It is important to note when viewing these forecasts for the 'with mitigation' scenario that no change in delay is shown on the A5 to the north of the A4303 due to the change in network definition here.

Figure 4.19: Forecast Highway Delay Change between 'With' and 'Without' Development Scenarios (2026 AM Peak) – Overview

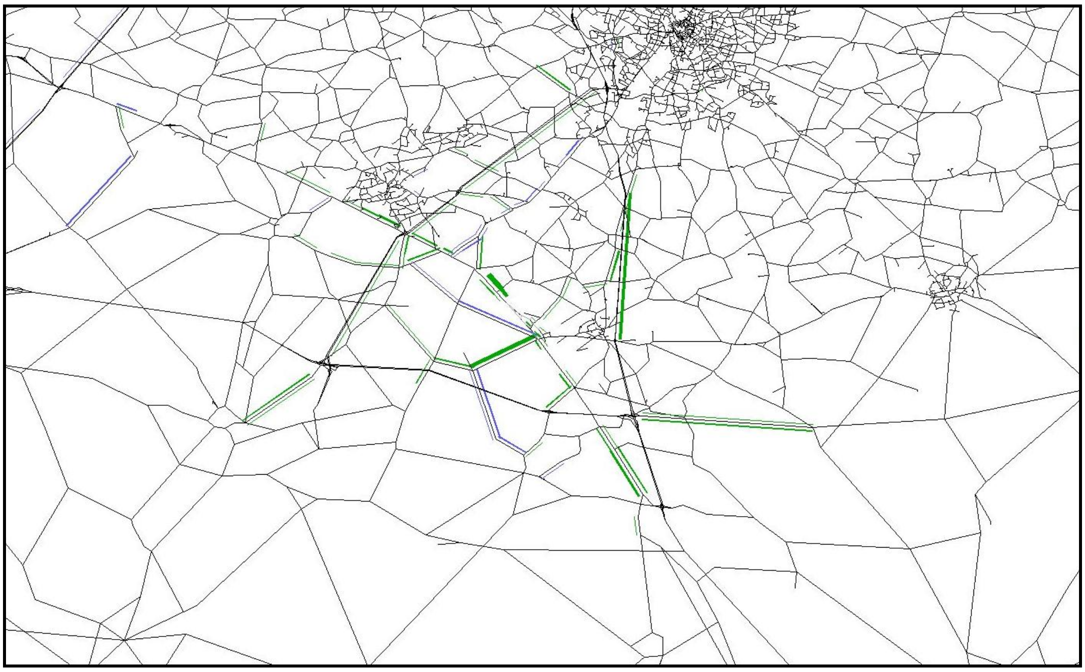


Figure 4.20: Forecast Highway Delay Change between 'With' and 'Without' Development Scenarios (2026 AM Peak) – Local Area

Figure 4.21: Forecast Highway Delay Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Overview

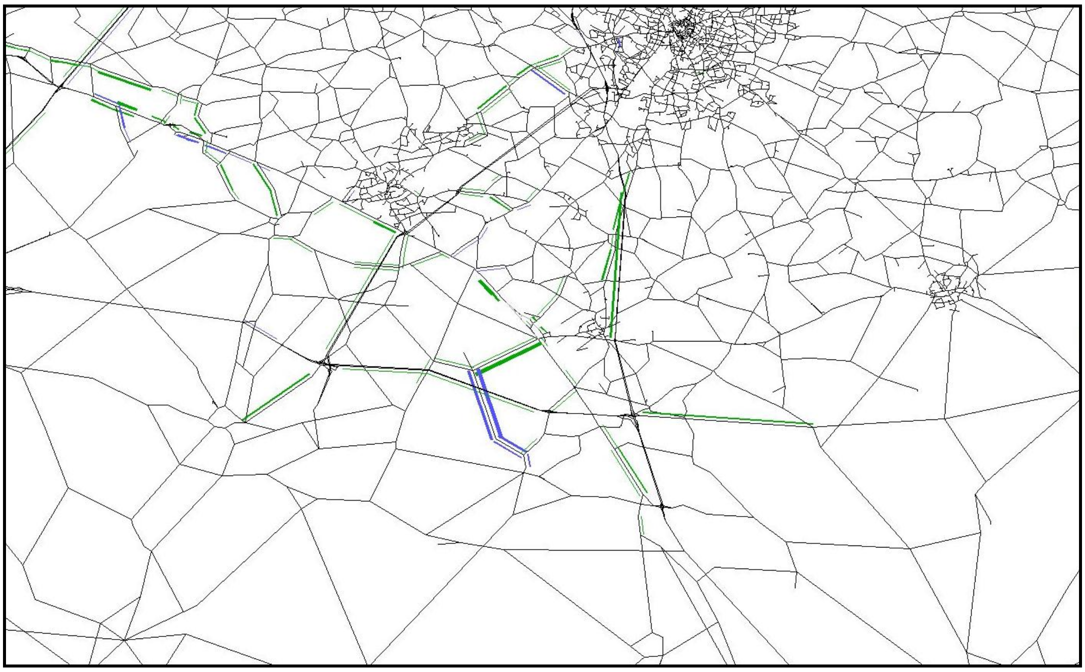


Figure 4.22: Forecast Highway Delay Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Local Area

Figure 4.23: Forecast Highway Delay Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 AM Peak) – Overview

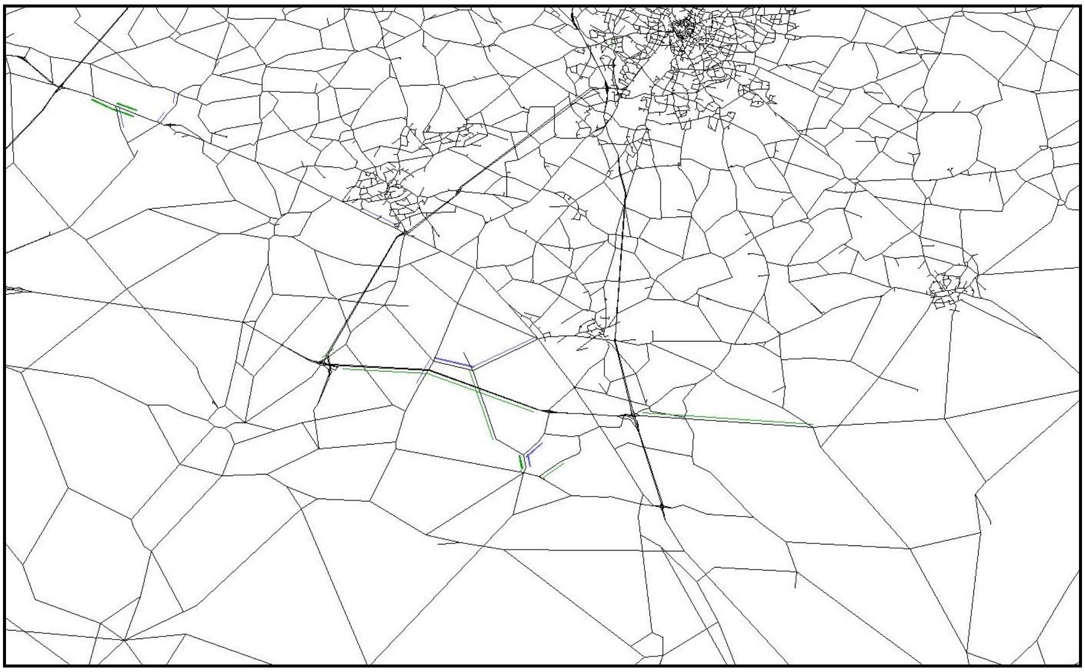


Figure 4.24: Forecast Highway Delay Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 AM Peak) – Local Area

Figure 4.25: Forecast Highway Delay Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 PM Peak) – Overview

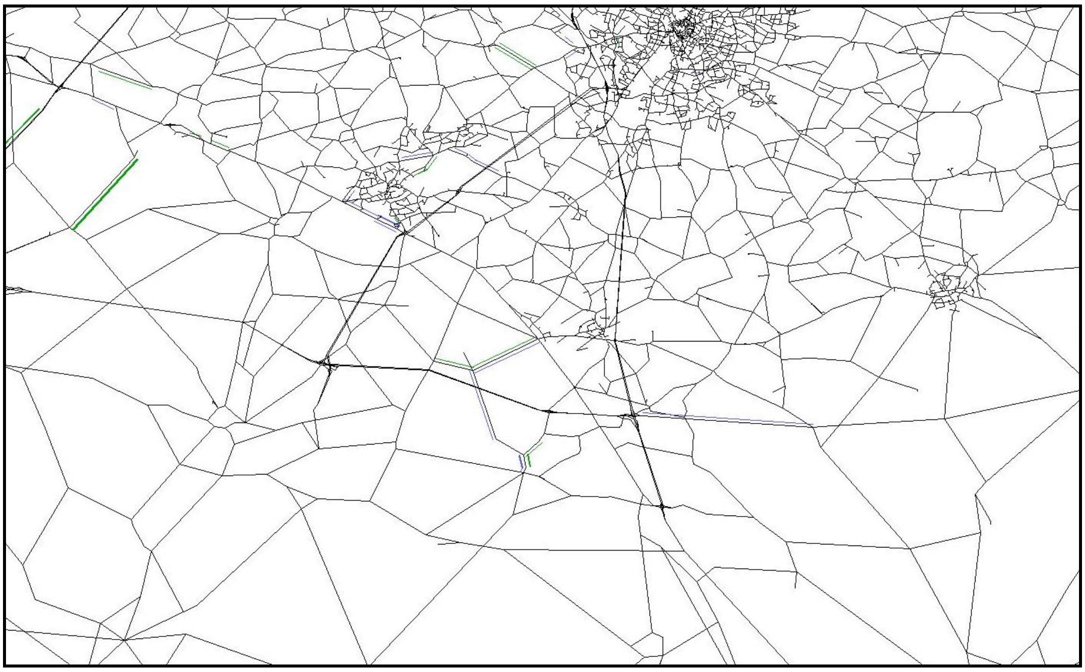


Figure 4.26: Forecast Highway Delay Change between 'Without' and 'With' Proposed Mitigation Scenarios (2026 PM Peak) – Local Area

Figure 4.27: Forecast Highway Delay Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 AM Peak) – Overview

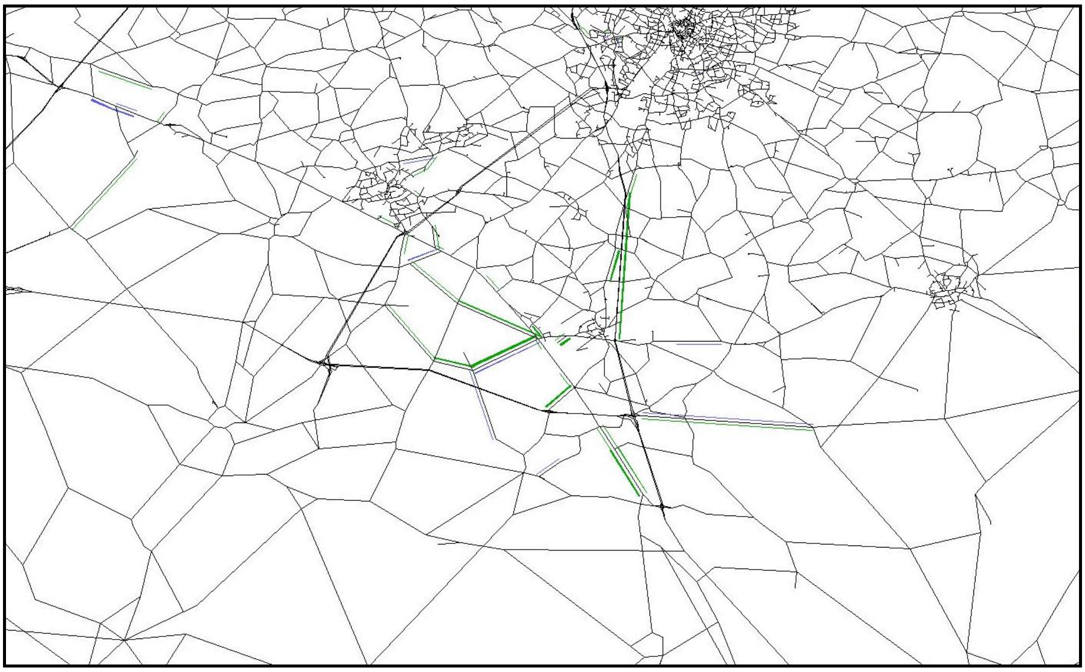


Figure 4.28: Forecast Highway Delay Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 AM Peak) – Local Area

Figure 4.29: Forecast Highway Delay Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 PM Peak) – Overview

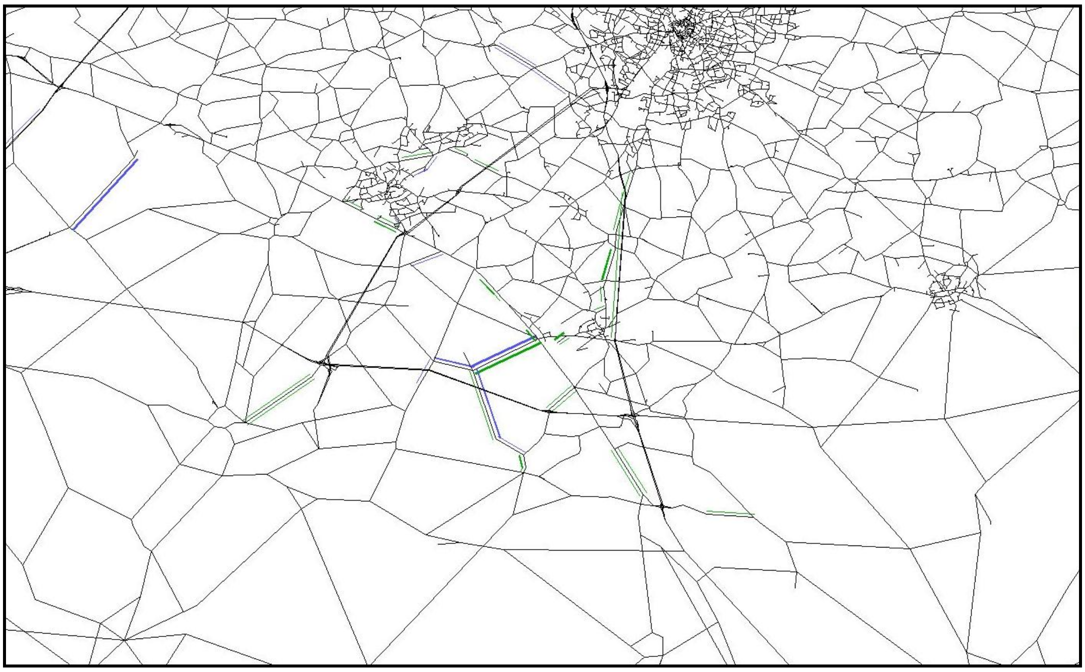


Figure 4.30: Forecast Highway Delay Change between 'Without' and 'With' Proposed Symmetry Park Development (2026 PM Peak) – Local Area

4.4 Schematic Highway Flows

4.4.1 In addition to the forecast highway flow change plots given in Section 4.2, schematic network plots showing the forecast link flows (in PCUs) at a number of key locations around the proposed Magna Park development have been produced. Two plots have been produced showing the forecast highway PCU flows at these key locations in the four forecast year scenarios in the AM Peak and PM Peak hours.

4.4.2 In addition to these schematic flow diagrams, the forecast highway flows for total vehicles (in PCUs) and for HGV flows (in vehicles) at 15 locations defined by the client have been provided. The forecast flows at these locations are given in Table 4.1 and Table 4.2 for forecast total flows and HGV flows respectively. Note that the forecast flows at Location J (A4303 between Shackleton Way and Coventry Road) have been taken to the west of the proposed Symmetry Park access point.

Figure 4.31: Schematic Highway Forecast PCU Flow Diagram for 2026 AM Peak Forecast Scenarios

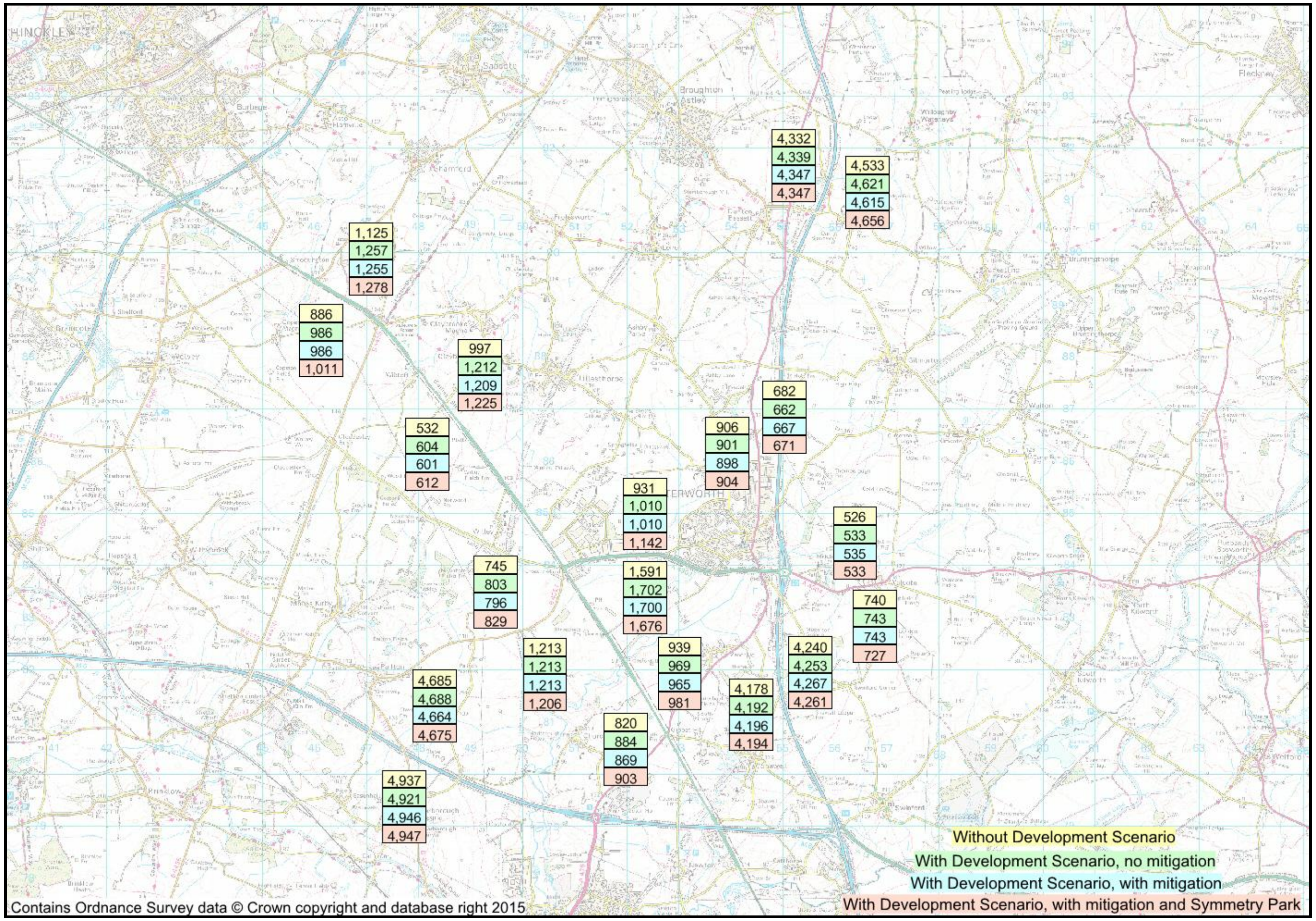


Figure 4.32: Schematic Highway Forecast PCU Flow Diagram for 2026 PM Peak Forecast Scenarios

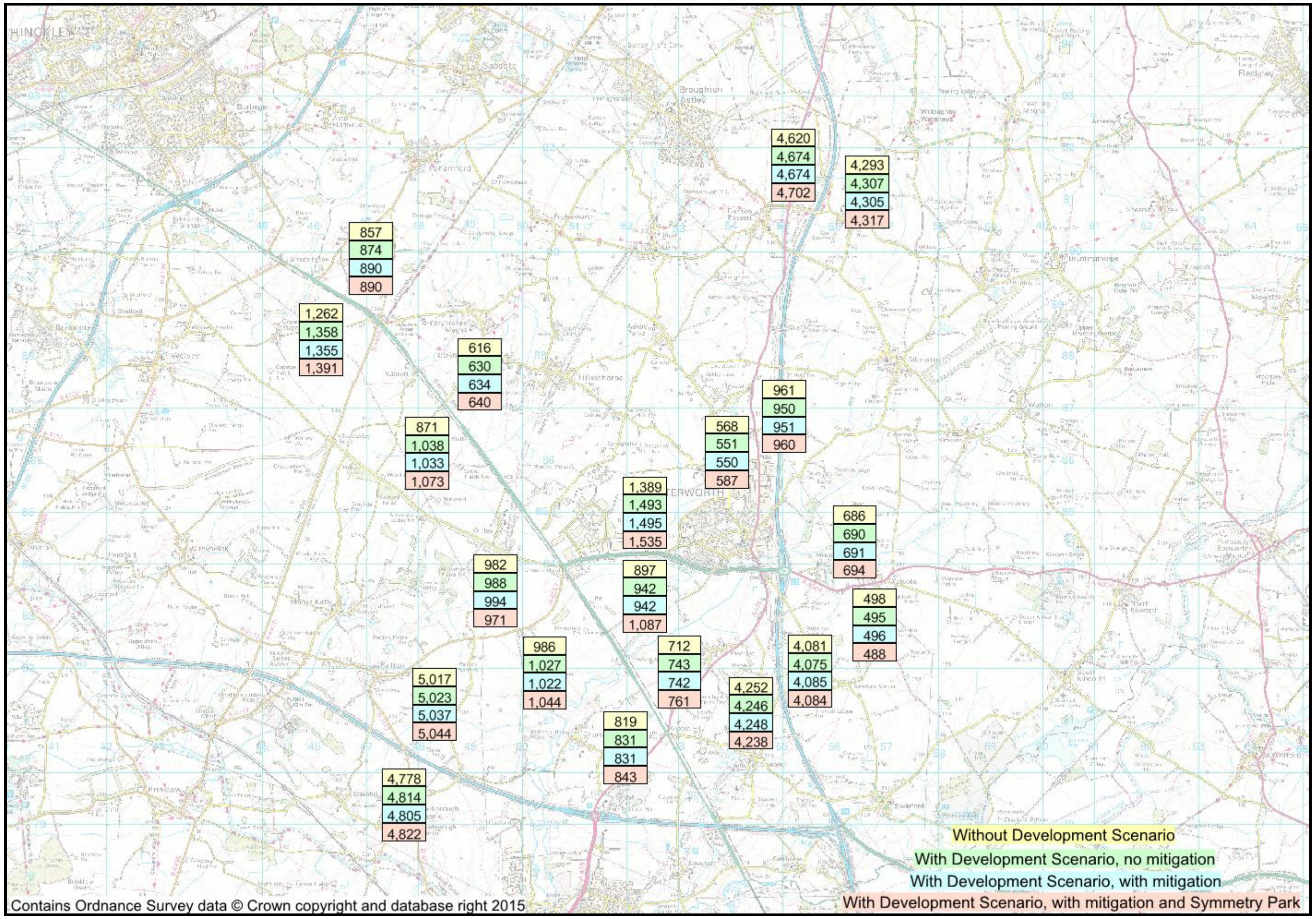


Table 4.1: Forecast Total Highway Flows (in PCUs) at Selected Locations

Location	Description	Direction	AM Peak: 2008 Base	AM Peak: 2026 Without Development	AM Peak: 2026 With Development	AM Peak: 2026 With Development and Mitigation	AM Peak: 2026 With Development, Mitigation and Symmetry Park	PM Peak: 2008 Base	PM Peak: 2026 Without Development	PM Peak: 2026 With Development	PM Peak: 2026 With Development and Mitigation	PM Peak: 2026 With Development, Mitigation and Symmetry Park
A	Hunter Boulevard	Northbound	932	1,048	880	868	869	366	393	362	360	370
		Southbound	318	477	514	513	521	829	821	700	689	700
B	A4303 (between Hunter Boulevard and A5)	Eastbound	1,192	1,596	1,268	1,261	1,418	944	1,245	1,116	1,124	1,167
		Westbound	1,022	1,481	1,390	1,393	1,401	1,079	1,390	1,109	1,107	1,256
C	A5 (south of A4303)	Northbound	685	820	884	869	903	710	819	831	831	843
		Southbound	818	939	969	965	981	575	712	743	742	761
D	B4027, Lutterworth Road	Northbound	457	745	803	796	829	637	982	988	994	971
		Southbound	784	1,213	1,213	1,213	1,206	514	986	1,027	1,022	1,044
E	Coal Pit Lane	Eastbound	213	241	183	179	229	59	77	99	100	109
		Westbound	153	52	43	44	34	224	96	59	58	86
F	A5 (north of A4303)	Northbound	553	589	678	667	681	869	947	792	793	838
		Southbound	1,124	1,104	911	912	956	640	718	709	707	715
G	A5 (north of Mere Lane)	Northbound	516	532	525	524	536	789	871	867	873	914
		Southbound	1,006	997	1,017	1,025	1,042	563	617	549	556	564
H	Mere Lane (east of A5)	Northbound	42	67	491	486	460	88	94	257	256	255
		Southbound	121	116	232	231	230	84	120	493	487	482
I	Mere Lane (east of Magna Park)	Northbound	35	44	68	67	69	88	92	189	182	187
		Southbound	121	116	231	225	258	73	85	118	115	116
J	A4303 (between Hunter Boulevard and Coventry Road)	Eastbound	625	931	1,010	1,010	1,142	1,108	1,389	1,493	1,495	1,535
		Westbound	1,247	1,591	1,702	1,700	1,676	592	897	942	942	1,087
K	Coventry Road (between A4303 and Brookfield Way)	Northbound	225	324	329	327	325	490	592	580	577	611
		Southbound	643	793	774	754	754	260	407	417	381	387
L	A4303 (between Coventry Road and A426)	Eastbound	508	735	804	806	831	688	924	1,059	1,055	1,113
		Westbound	712	926	1,051	1,070	1,132	403	618	670	698	714
M	A426 (north of A4303)	Northbound	836	1,049	1,052	1,059	1,064	870	1,051	1,060	1,067	1,079
		Southbound	804	997	984	1,018	1,025	826	969	956	999	996
N	A4303 (between A426 and M1 Junction 20)	Eastbound	1,201	1,609	1,667	1,686	1,702	1,193	1,567	1,673	1,679	1,733
		Westbound	1,570	1,962	2,097	2,093	2,139	938	1,224	1,283	1,277	1,300
O	A4304 (east of M1 Junction 20)	Eastbound	425	526	533	535	533	604	686	690	691	694
		Westbound	685	740	743	743	727	389	498	495	496	488

Table 4.2: Forecast Total HGV Flows (in vehicles) at Selected Locations

			AM Peak					PM Peak				
Location	**Description**	**Direction**	2008 Base	2026 Without Development	2026 With Development	2026 With Development and Mitigation	2026 With Development, Mitigation and Symmetry Park	2008 Base	2026 Without Development	2026 With Development	2026 With Development and Mitigation	2026 With Development, Mitigation and Symmetry Park
A	Hunter Boulevard	Northbound	155	176	167	167	171	111	115	112	112	115
		Southbound	98	169	189	189	192	117	90	97	95	100
B	A4303 (between Hunter Boulevard and A5)	Eastbound	134	159	124	125	132	71	84	62	62	80
		Westbound	70	156	151	151	169	89	74	61	59	81
C	A5 (south of A4303)	Northbound	102	144	158	157	160	49	72	92	92	102
		Southbound	116	196	213	213	225	40	38	62	62	75
D	B4027, Lutterworth Road	Northbound	38	44	45	45	47	15	16	17	17	19
		Southbound	26	24	27	27	28	36	31	34	34	37
E	Coal Pit Lane	Eastbound	4	4	4	4	5	2	1	1	1	2
		Westbound	0	1	0	0	2	7	5	4	3	6
F	A5 (north of A4303)	Northbound	85	83	95	95	98	52	51	62	62	64
		Southbound	146	114	102	103	104	51	47	54	55	57
G	A5 (north of Mere Lane)	Northbound	84	81	80	80	83	51	50	52	54	54
		Southbound	141	109	107	108	110	51	47	48	48	51
H	Mere Lane (east of A5)	Northbound	1	2	52	52	52	1	1	46	46	46
		Southbound	4	5	32	32	32	1	1	43	44	43
I	Mere Lane (east of Magna Park)	Northbound	1	2	2	2	2	1	1	1	1	1
		Southbound	4	5	5	5	5	1	1	1	1	1
J	A4303 (between Hunter Boulevard and Coventry Road)	Eastbound	108	87	108	110	118	65	53	72	72	93
		Westbound	98	87	110	110	131	84	75	93	93	116
K	Coventry Road (between A4303 and Brookfield Way)	Northbound	0	0	0	0	0	0	0	0	0	0
		Southbound	0	0	0	0	0	0	0	0	0	0
L	A4303 (between Coventry Road and A426)	Eastbound	108	87	108	109	119	65	53	72	72	85
		Westbound	98	87	110	110	127	84	75	93	93	105
M	A426 (north of A4303)	Northbound	65	71	71	72	76	16	18	19	19	25
		Southbound	52	53	55	55	60	41	47	48	48	53
N	A4303 (between A426 and M1 Junction 20)	Eastbound	172	157	179	180	184	110	104	122	122	130
		Westbound	184	172	193	192	206	98	90	108	108	115
O	A4304 (east of M1 Junction 20)	Eastbound	43	43	44	44	44	19	20	21	21	22
		Westbound	39	42	43	43	44	17	18	19	19	19

4.5 Highway 5% Flow Change Links

4.5.1 As part of the brief for this application, reporting was requested that shows the links which are forecast to see a 5% or more increase in highway volumes between the 'without development' and 'with development' scenarios. These model forecasts have been produced for the AM Peak and PM Peak hours, and are given in Figure 4.33 and Figure 4.34.

4.5.2 A lower bound on the absolute flow change has also been applied to these outputs to remove links with low forecast highway flows where a small absolute change in forecast flow can result in a large percentage change. In order for a link to be identified as part of this analysis, the forecast flow increase between the 'without development' and 'with development' has to be 5% or more and at least 10 PCUs.

4.5.3 Note that the highway assignment convergence noise influences the links which have been identified as part of this analysis. This is most significant in and around Atherstone in the PM Peak hour forecasts.

Figure 4.33: Links Forecast to have 5% or More Highway Flow Increase from 'Without' to 'With' Development Scenario (2026 AM Peak)

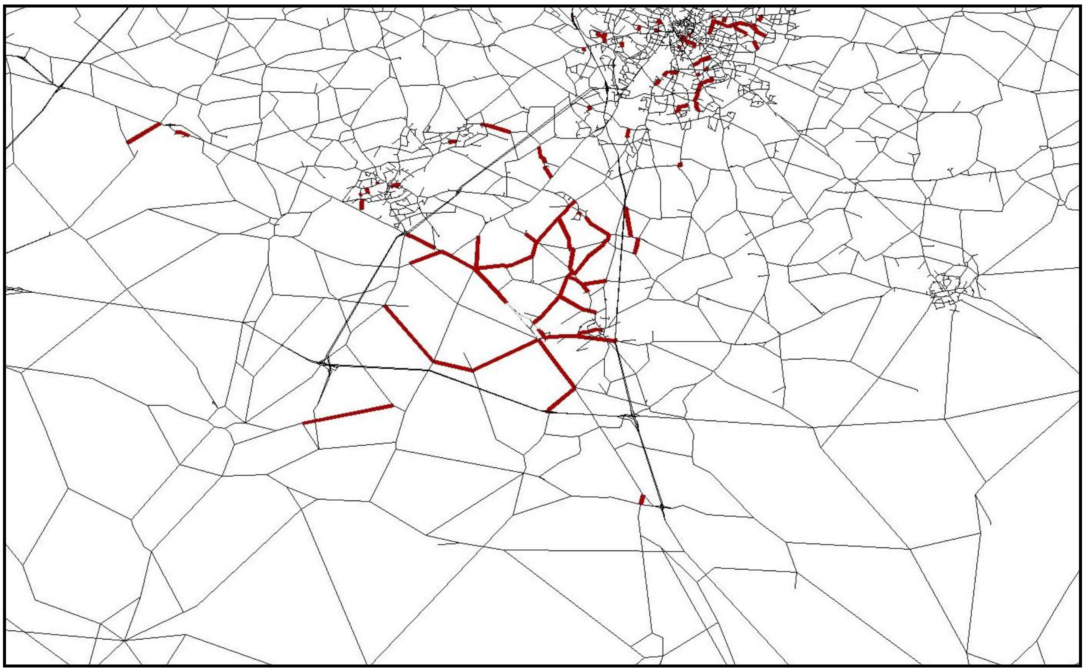
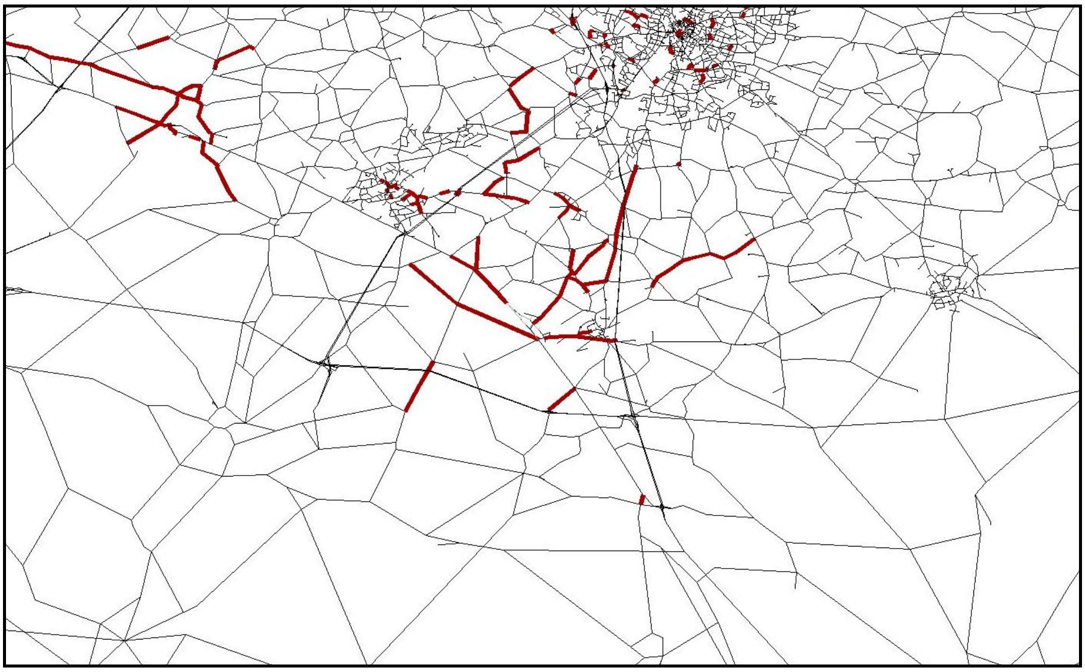


Figure 4.34: Links Forecast to have 5% or More Highway Flow Increase from 'Without' to 'With' Development Scenario (2026 PM Peak)



4.6 Development Select Link Analysis

4.6.1 In addition to the forecast highway flow change between the 2026 'without development' and 'with development' scenarios (as detailed in Section 4.2), the forecast trip distribution of trips to and from the proposed Magna Park extension has been requested. These have been produced by undertaking a select link on the origins from and destinations to the proposed development, including the logistics academy.

4.6.2 This select link process has been undertaken on the AM Peak and PM Peak forecasts from the 2026 'with development' scenario excluding the proposed mitigation measures. The figures produced show the forecast total demand flows and HGV demand flows relating to the proposed development in PCUs, and are produced for the same reporting areas as used for the highway flow and delay change plots.

Figure 4.35: Forecast Total Demand Flow (PCUs) for Magna Park Extension (2026 AM Peak 'with development') – Overview

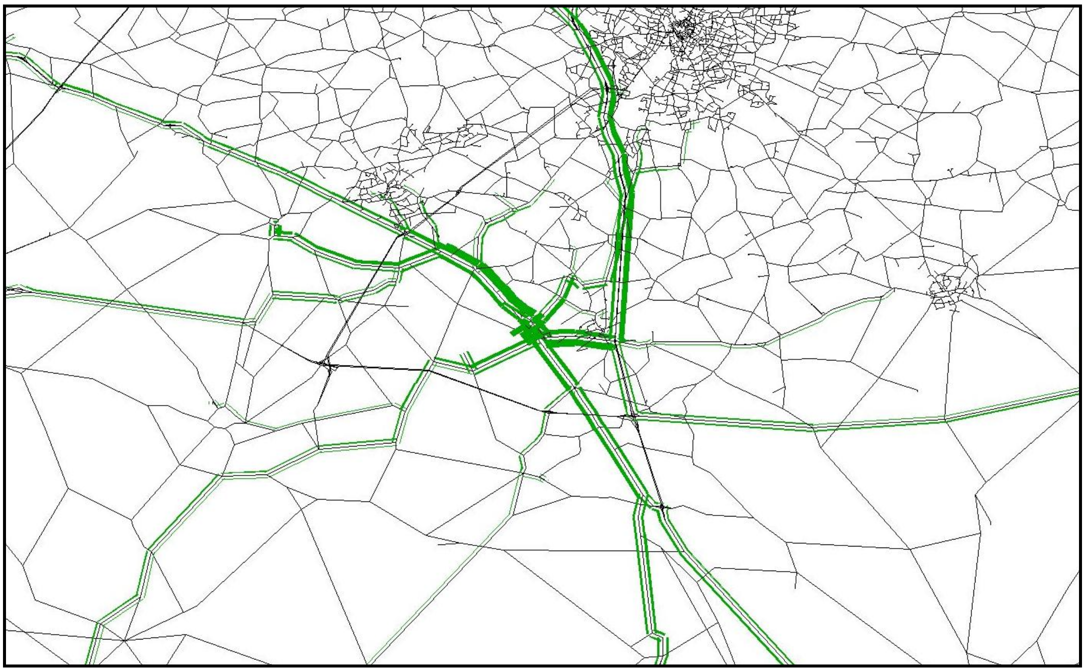
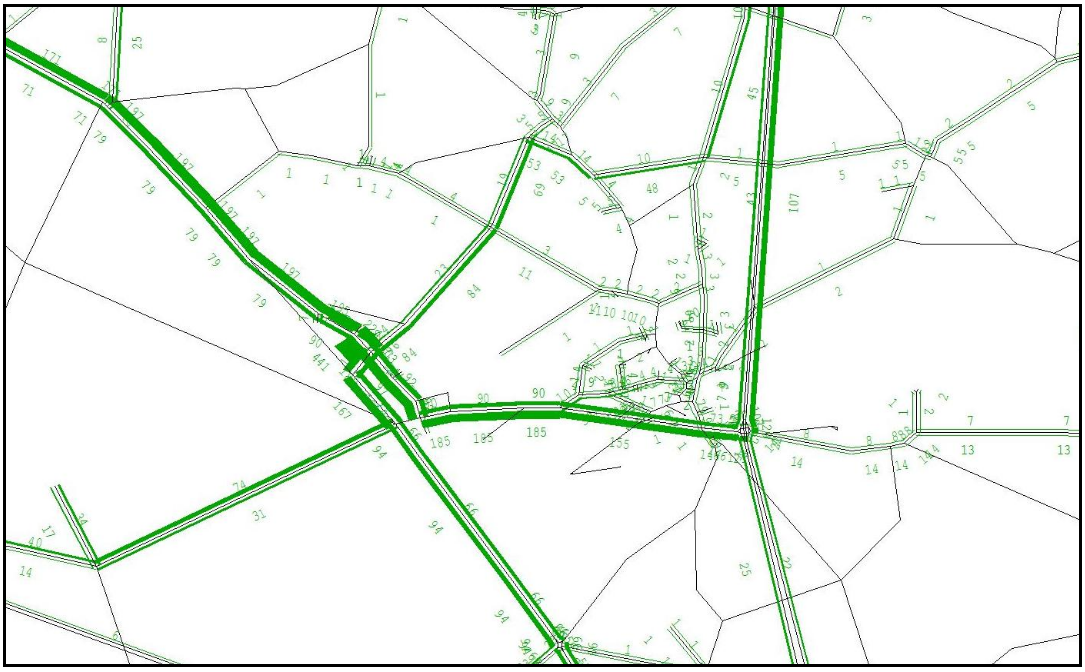


Figure 4.36: Forecast Total Demand Flow (PCUs) for Magna Park Extension (2026 AM Peak 'with development') – Local Area



MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

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Figure 4.37: Forecast Total Demand Flow (PCUs) for Magna Park Extension (2026 PM Peak 'with development') – Overview

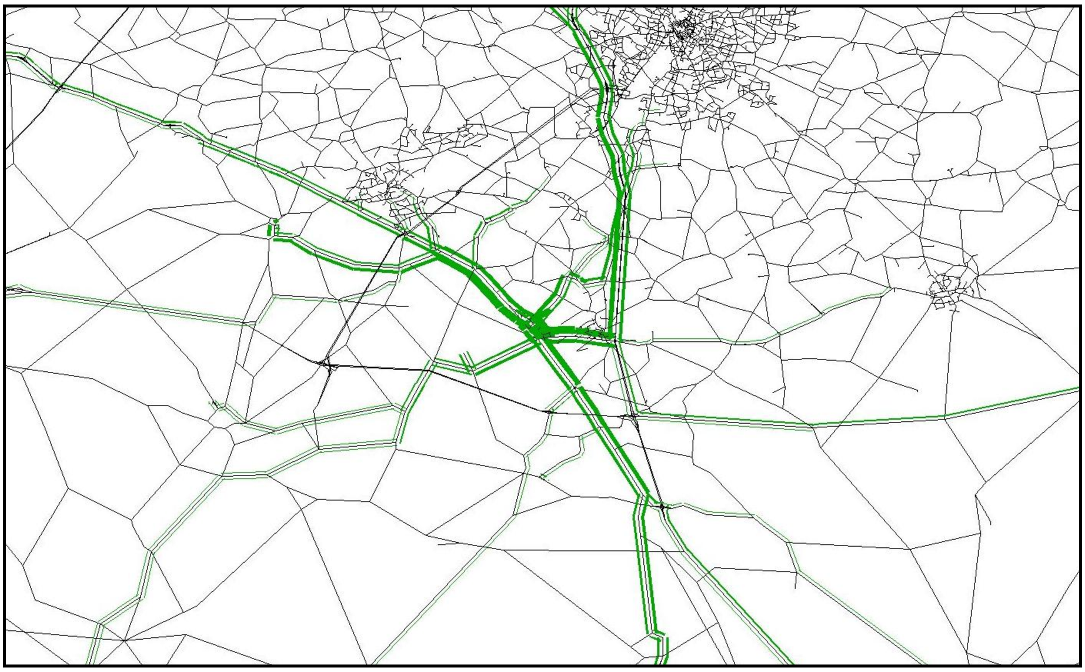


Figure 4.38: Forecast Total Demand Flow (PCUs) for Magna Park Extension (2026 PM Peak 'with development') – Local Area

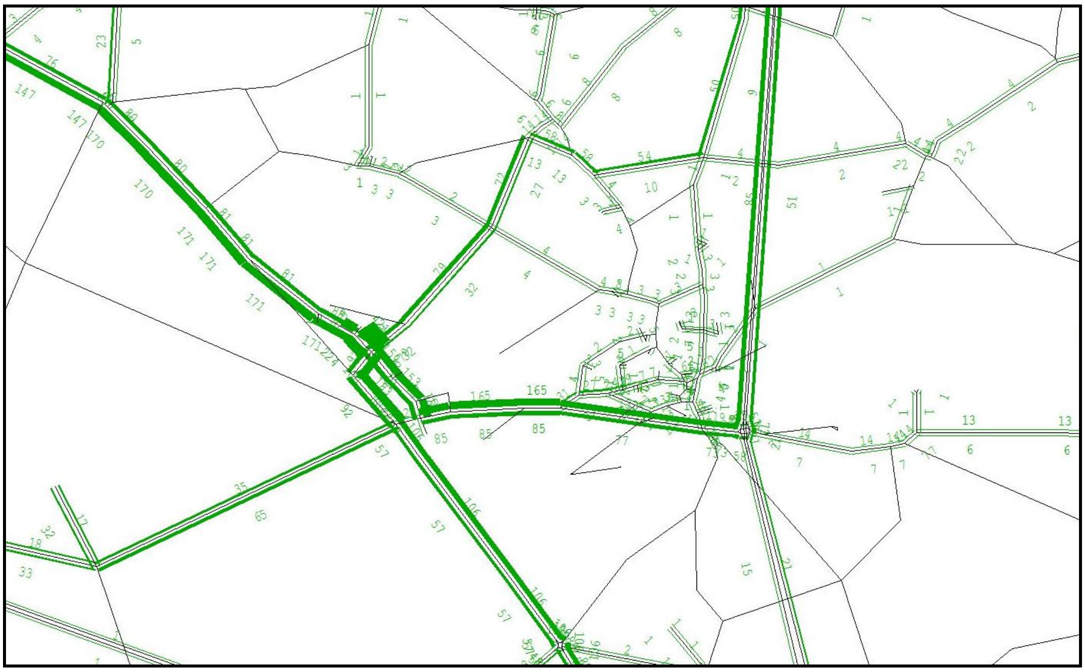


Figure 4.39: Forecast HGV Demand Flow (PCUs) for Magna Park Extension (2026 AM Peak 'with development') – Overview

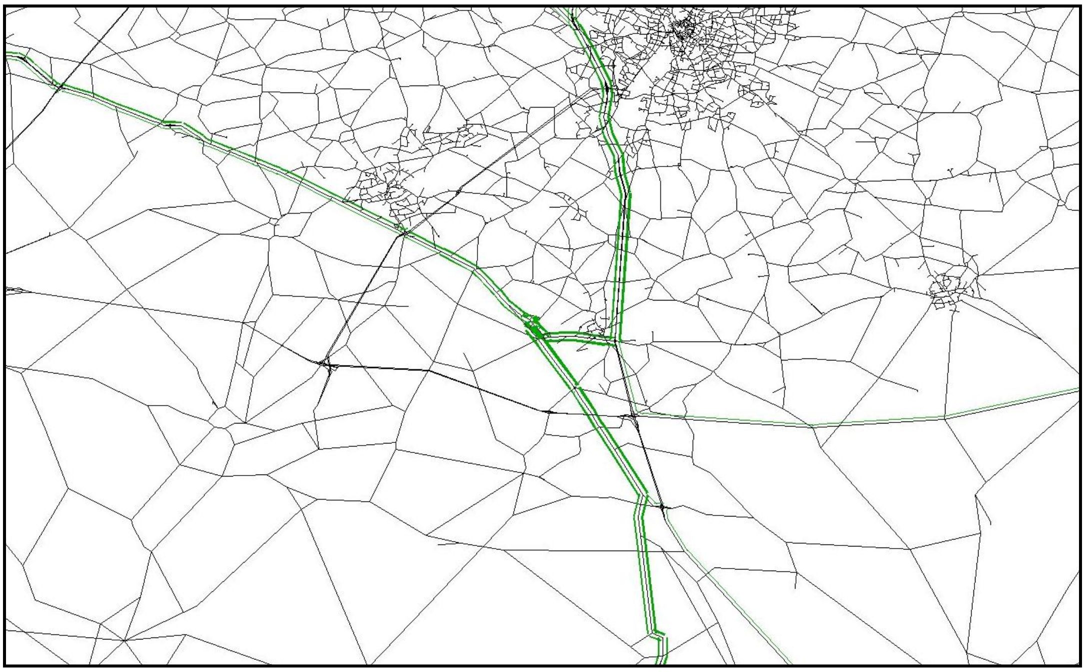


Figure 4.40: Forecast HGV Demand Flow (PCUs) for Magna Park Extension (2026 AM Peak 'with development') – Local Area

Figure 4.41: Forecast HGV Demand Flow (PCUs) for Magna Park Extension (2026 PM Peak 'with development') – Overview

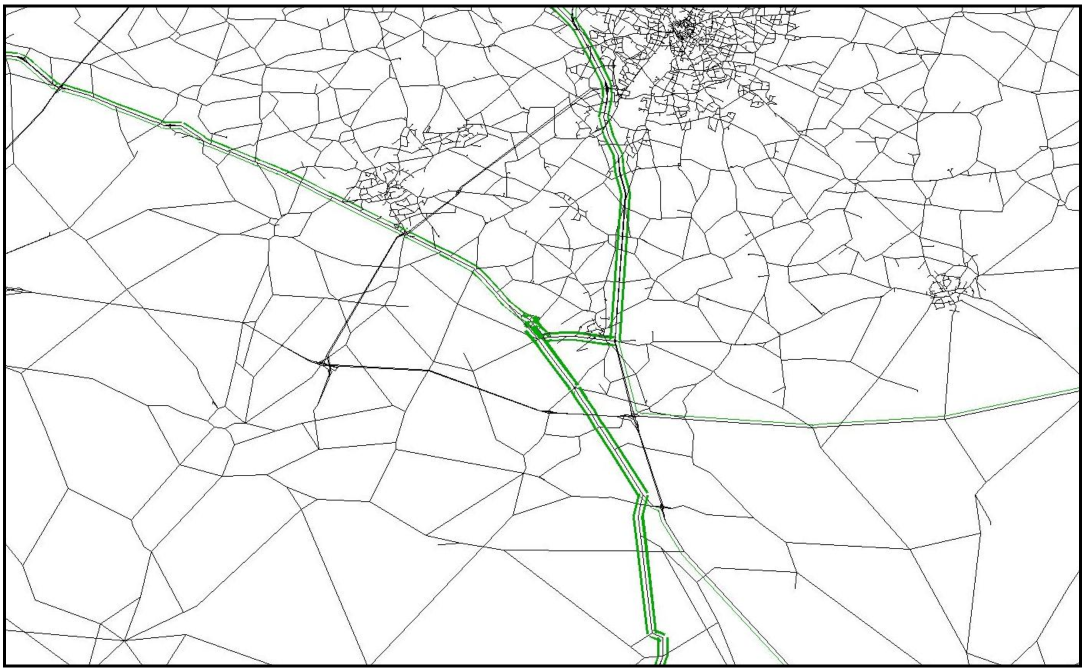


Figure 4.42: Forecast HGV Demand Flow (PCUs) for Magna Park Extension (2026 PM Peak 'with development') – Local Area

4.7 Highway Junction Plots

4.7.1 Model forecasts for a number of junctions have been requested as part of this LLITM application. At each of the specified junctions the forecast volume-to-capacity ratios, average delays (seconds) and arrival flows (PCUs) have been extracted from the assigned highway models.

4.7.2 These data have been extracted from the AM Peak and PM Peak hour models for all of the requested scenarios. Due to the quantity of the data resulting from this analysis, the node diagrams requested have been supplied in a series of separate appendices to this Technical Note. There are two appendices for each model scenario: one containing the AM Peak hour forecasts; and one containing the PM Peak hour forecasts.

4.7.3 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis both in the base year and in the forecast scenarios.

4.7.4 In addition to the above comment on the considerations which should be taken when reviewing the LLITM forecasts at a junction level, there are specific issues relating to this application. As discussed in *'PR101 - LLITM v5.3 Highway Model LMVR Addendum'*, due to the existing Magna Park site being represented by a single zone there is no modelled flow on Shackleton Way. The highway model has been calibrated such that the total flow into and out of the existing Magna Park site matches the observed count data, but it has not been possible to calibrate the routeing to and from the development.

4.7.5 The following is a list of the junctions for which forecast volume-to-capacity ratios, average delays and arrival flows have been produced:

- M1 Junction 20;
- A4303 / A426 roundabout;
- A4303 / Coventry Road roundabout;
- A4303 / Shackleton Way junction;
- A4303 / Hunter Boulevard roundabout;
- A5 / A4303 (Cross in Hand) roundabout;
- A5 / Mere Lane junction;
- M69 Junction 1;
- A5 / A426 (Gibbet Hill) roundabout;
- M6 Junction 1;
- A426 / Bill Crane Way;
- the proposed Magna Park extension access junction with the A5; and
- the proposed Magna Park extension access junction with Mere Lane.

4.7.6 The forecast node junction plots for the five model scenarios are given in the following accompanying appendices:

- Appendix B: 2008 Base AM Peak Junction Node Data;
- Appendix C: 2008 Base PM Peak Junction Node Data;
- Appendix D: 2026 'without development' AM Peak Junction Node Data;
- Appendix E: 2026 'without development' PM Peak Junction Node Data;
- Appendix F: 2026 'with development', excluding the proposed mitigation measures, AM Peak Junction Node Data;

- Appendix G: 2026 'with development', excluding the proposed mitigation measures, PM Peak Junction Node Data;
- Appendix H: 2026 'with development', including the proposed mitigation measures, AM Peak Junction Node Data;
- Appendix I: 2026 'with development', including the proposed mitigation measures, PM Peak Junction Node Data;
- Appendix J: 2026 'with development' scenario, including the proposed mitigation measures and Symmetry Park, AM Peak Junction Node Data; and
- Appendix K: 2026 'with development' scenario, including the proposed mitigation measures and Symmetry Park, PM Peak Junction Node Data.

4.8 Highway Journey Times

4.8.1 Forecast journey times have been calculated from the five model scenarios for a number of journey time routes. These routes have been based on routes used in the validation of the highway model, and are:

- A4303 between the A5 and the M1;
- A426 between Shawell Road and Hall Lane;
- Lutterworth Western Bypass between the A4303 and the A426;
- M1 between Junctions 16 and 26;
- A5 between the M1 and the M42;
- M6 between the M1 and M6 Junction 2; and
- M69 between the M6 and the M1.

4.8.2 The results of the forecast journey times are given in Table 4.3 for the AM Peak and PM Peak hours for the five model scenarios. In addition to this, journey time graphs for these seven routes in each of the model scenarios are given in Appendix A.

4.8.3 It is worth noting that for the strategic road network routes (the M1, A5, M6 and M69) the journey times are for the whole route. Therefore, there may be changes to the forecast journey times due to convergence noise away from the proposed developments and mitigation measures. This means that forecast changes in the total journey times between scenarios may not be wholly attributable to the change in model assumptions between the two scenarios in question.

Table 4.3: Forecast Journey Times for Selected Routes

		AM Peak					PM Peak				
Route	**Dist (km)**	2008 Base	2026 Without Development	2026 With Development	2026 With Development and Mitigation	2026 With Development, Mitigation and Symmetry Park	2008 Base	2026 Without Development	2026 With Development	2026 With Development and Mitigation	2026 With Development, Mitigation and Symmetry Park
A4303 (A5 to M1) - Eastbound	4.29	03:13	03:19	03:18	03:16	03:27	03:14	03:18	03:20	03:18	03:31
A4303 (A5 to M1) - Westbound	4.30	03:18	03:26	03:29	03:29	03:47	03:13	03:17	03:16	03:16	03:31
A426 (Shawell Rd to Hall Ln) - Northbound	4.91	05:40	06:07	06:11	06:02	06:04	05:23	05:45	05:45	05:43	05:45
A426 (Shawell Rd to Hall Ln) - Southbound	4.91	05:34	06:07	06:06	06:02	06:03	05:57	06:31	06:32	06:29	06:30
Lutterworth Western Bypass (A4303 to A426) - Northbound	2.87	03:23	03:26	03:26	03:26	03:26	03:24	03:28	03:27	03:27	03:29
Lutterworth Western Bypass (A4303 to A426) - Southbound	2.87	03:39	03:47	03:45	03:44	03:44	03:32	03:39	03:38	03:38	03:39
M1 (Junction 16 to 26) - Northbound	94.22	59:15	01:03:51	01:03:52	01:03:53	01:03:53	01:02:34	01:07:54	01:07:58	01:07:59	01:08:00
M1 (Junction 16 to 26) - Southbound	94.70	01:00:29	01:07:04	01:07:15	01:07:16	01:07:19	58:53	01:05:01	01:05:10	01:05:15	01:05:12
A5 (M1 to M42) - Northbound	44.94	46:51	51:25	52:04	52:24	52:07	47:10	49:49	50:05	50:19	50:28
A5 (M1 to M42) - Southbound	44.85	49:31	53:59	54:47	54:43	54:56	42:56	45:23	46:00	45:59	46:11
M6 (M1 to Junction 2) - Eastbound	18.52	10:55	11:34	11:34	11:34	11:34	11:07	12:07	12:08	12:09	12:10
M6 (M1 to Junction 2) - Westbound	17.81	11:02	12:06	12:04	12:09	12:08	10:53	11:46	11:48	11:47	11:48
M69 (M6 to M1) - Northbound	25.76	14:28	15:22	15:07	15:06	15:05	14:41	17:38	18:54	18:48	18:27
M69 (M6 to M1) - Southbound	26.31	14:50	16:11	16:14	16:13	16:14	14:32	14:45	14:45	14:45	14:44

4.9 Public Transport Flow Change Plots

4.9.1 Corresponding forecast flow change plots to that produced for the highway model have been produced based on the forecasts from the public transport assignment model. These show the forecast change in public transport person flows between the 2026 ‘without development’ and ‘with development’ forecasts in the AM Peak and PM Peak hours.

4.9.2 The results presented in Figure 4.43 to Figure 4.46 should be viewed in conjunction with the forecast mode share results presented in Table 4.4. This analysis of mode share suggests that the public transport mode share for the proposed Magna Park extension may be significantly overstated based on the base year public transport mode share at the existing Magna Park site.

4.9.3 This overstatement could be as large as a factor of 100. The base year public transport mode share for the existing Magna Park site is around 0.2%, whereas the forecast for the distribution centre within the proposed Magna Park extension is for a public transport mode share of around 20%. If a public transport mode share of around 0.2% is expected for the proposed extension, then the additional public transport flows relating to the distribution centre component of the proposed development should be reduced by a factor of 100.

Figure 4.43: Forecast Public Transport Flow Change between ‘With’ and ‘Without’ Development Scenarios (2026 AM Peak) – Overview

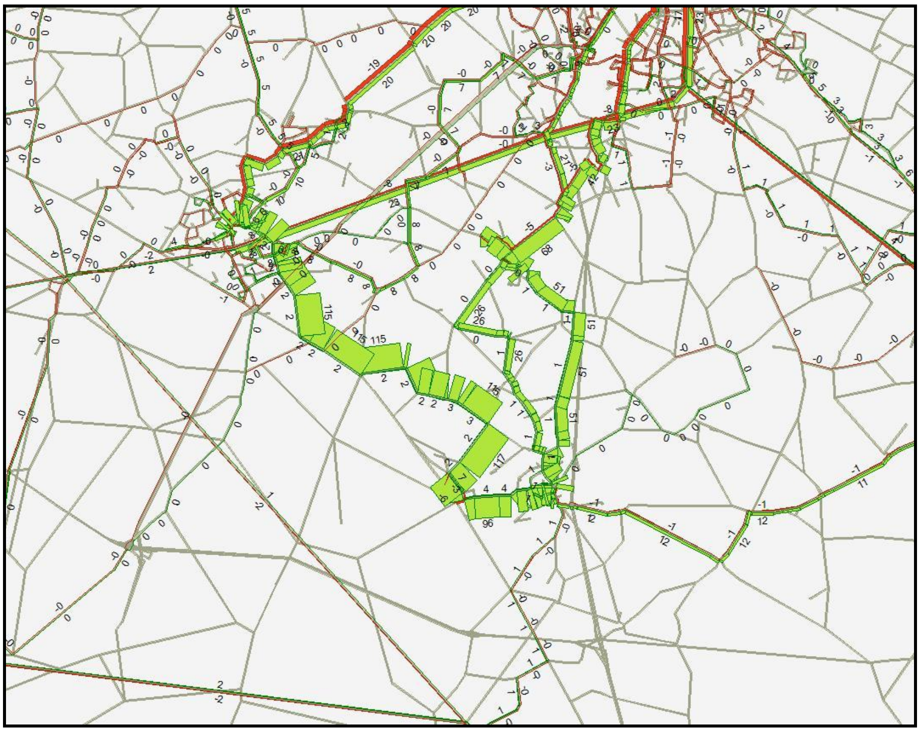


Figure 4.44: Forecast Public Transport Flow Change between 'With' and 'Without' Development Scenarios (2026 AM Peak) – Local Area

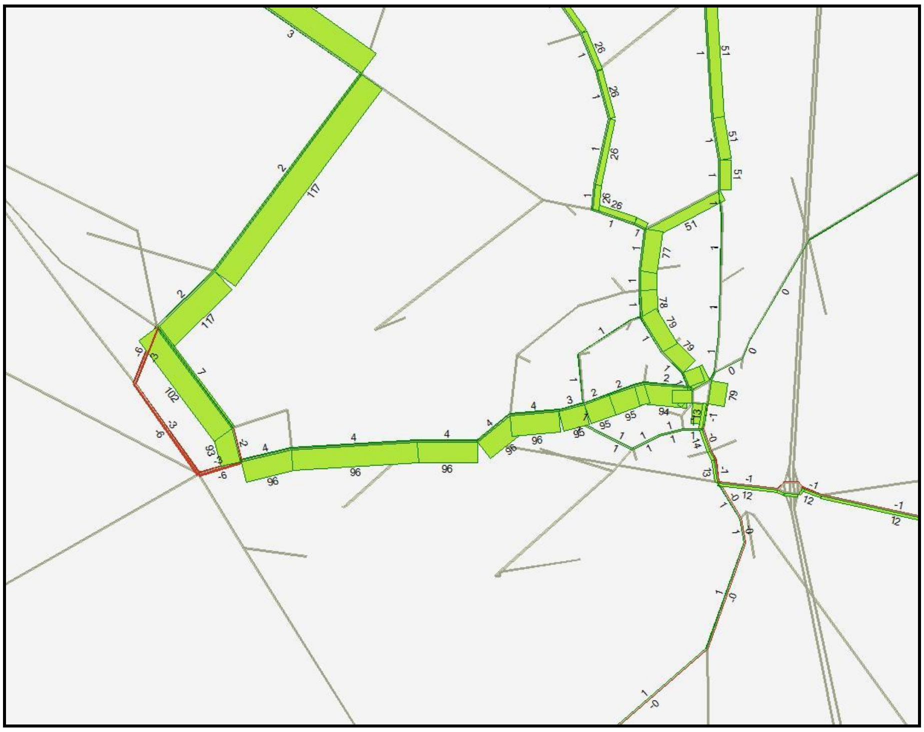


Figure 4.45: Forecast Public Transport Flow Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Overview

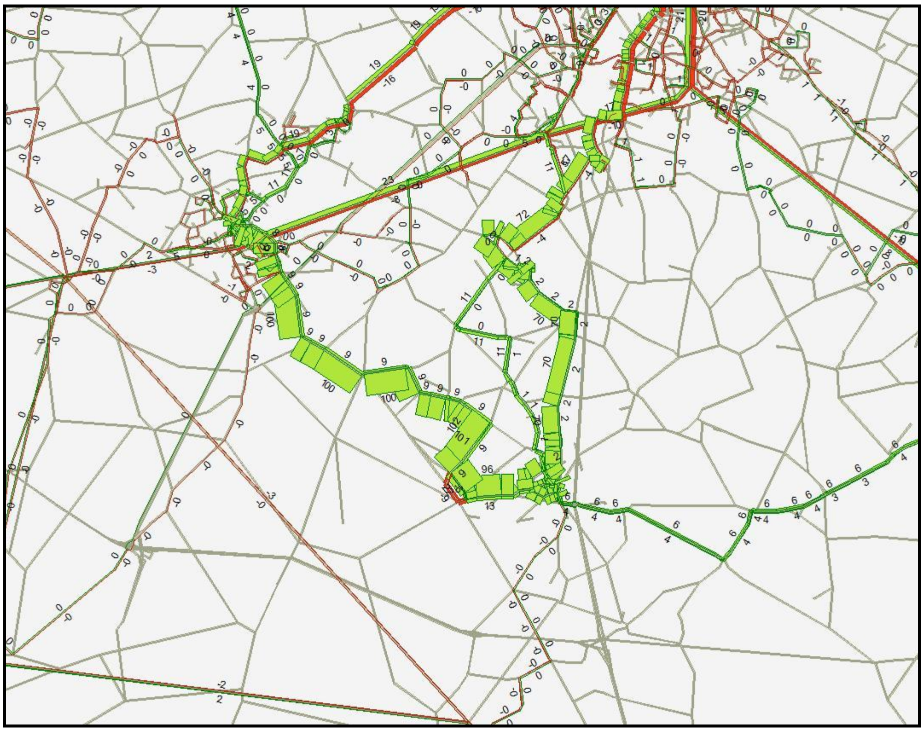


Figure 4.46: Forecast Public Transport Flow Change between 'With' and 'Without' Development Scenarios (2026 PM Peak) – Local Area

4.10 Forecast Mode Shares

4.10.1 The forecast mode shares from LLITM are to a large extent governed by the mode shares forecast in the trip-end model. The demand model will adjust these mode shares in response to travel costs, but this change will be incremental from the mode shares forecast by the trip-end model.

4.10.2 As discussed in Section 2.3 the trip-end model does not account for the accessibility of a given development by public transport and / or active modes. The forecasts from LLITM regarding mode shares for the proposed Magna Park site should be assessed taking account of this observation.

4.10.3 The forecast mode shares provided in Table 4.4 are for 24-hour person demand attracted to the existing Magna Park development, and the proposed Magna Park extension. In terms of the Magna Park extension, forecast mode shares have been provided separately for the distribution centres and the logistics academy.

Table 4.4: Forecast Mode Shares for Demand Attracted to Magna Park

		%Car	%Public Transport	%Active Modes
2008 Base Year	Existing Magna Park	93.5%	0.2%	6.3%
2026 'without development'	Existing Magna Park	94.2%	0.2%	5.6%
2026 'with development'	Existing Magna Park	93.1%	0.2%	6.7%
	Magna Park Extension (Distribution)	71.5%	20.9%	7.6%
	Magna Park Extension (Academy)	68.6%	29.1%	2.3%

4.10.4 Considering the forecast mode shares in the 2026 'with development' scenario, there is a significant difference between the public transport mode share for the existing Magna Park site and the distribution centres within the proposed development. This difference is driven by the assumptions within the trip-end model, which does not account for the accessibility of a given zone by public transport (see Section 2.3).

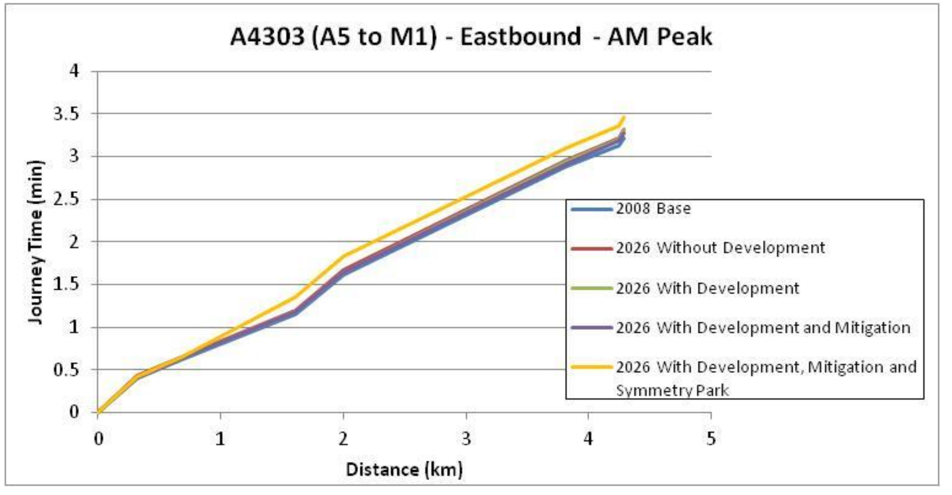
4.10.5 Given the limited changes to public transport provision assumed within the 'with development' scenario, it would be expected that the distribution centres within the proposed development would have a similar mode share to that forecast at the existing Magna Park site. Therefore, based on this assumption, the public transport mode share for the distribution element of the proposed development may be overstated by up to a factor of 100.

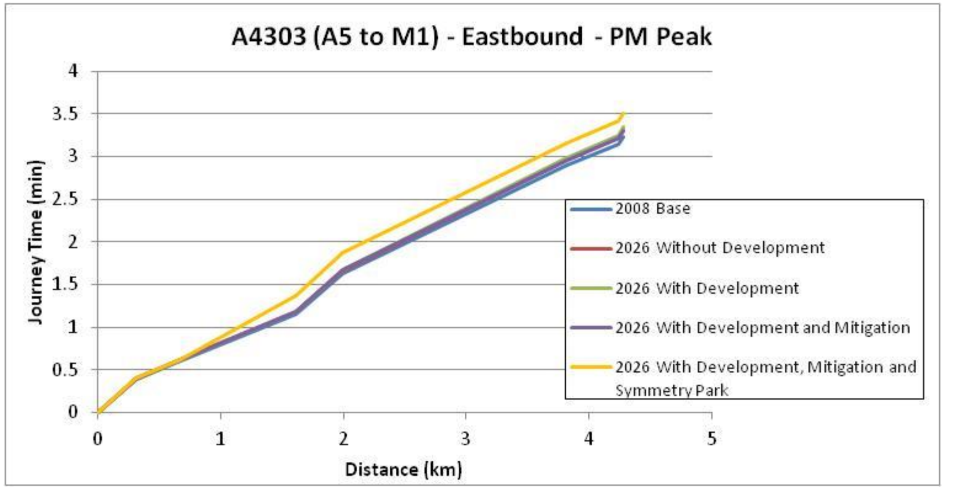
4.10.6 In terms of the highway assessment of this proposed development, this potential overstatement of public transport mode share for trips attracted to the distribution element of the proposed development is thought to not be significant. This is due to the fact that the AM Peak and PM Peak hour origins and destinations within the highway model have been controlled to the agreed target trip-ends (see Table 2.2). This potential overstatement will impact on the results of the public transport assignment model (see Section 4.9), where the additional public transport volumes may be overstated if there is an overestimate of the public transport mode share.

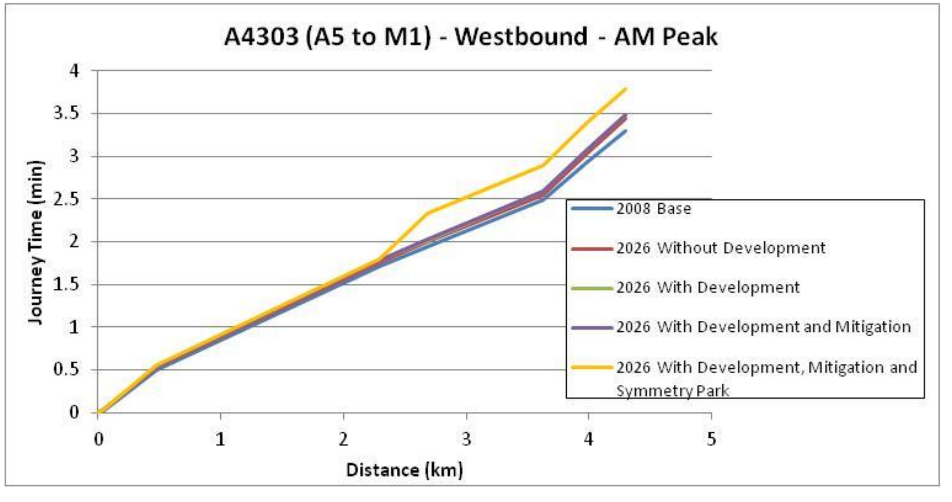
4.10.7 It is beyond the scope of this study to assess whether around 30% public transport model share for trips attracted to the logistics academy element of the proposed development is achievable. Certainly without additional public service provision it would seem unlikely that such a public transport mode share would be achieved. However, if bespoke bus services are put in place for students attending the proposed academy a public transport mode share higher than that forecast at the existing Magna Park site would be expected.

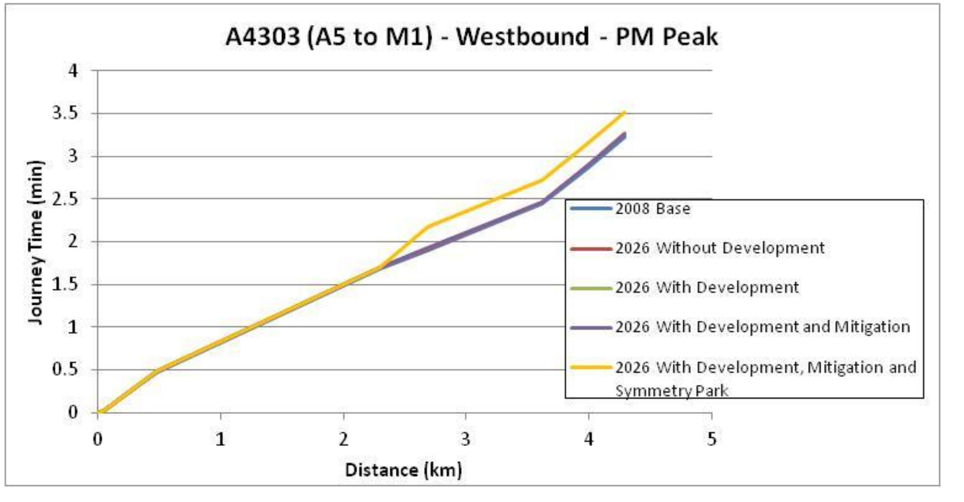
4.10.8 Should the public transport mode share for the logistics academy be over- or understated, then this may impact on the highway assessment of the proposed development. This is due to the fact that no highway trip-end targets have been agreed, and therefore controlled to, for trips to / from the proposed logistics academy. If the public transport mode share is overstated, then it is likely that these trips would travel by car to the site, increasing the additional volumes on the highway network. If the public transport mode share is understated, then the additional highway volumes may be overestimated.

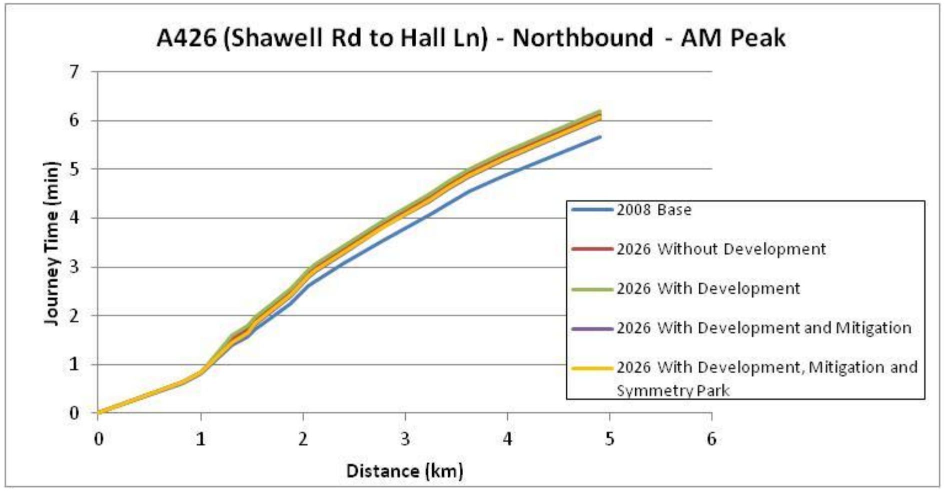
Appendix A Forecast Journey Time Graphs

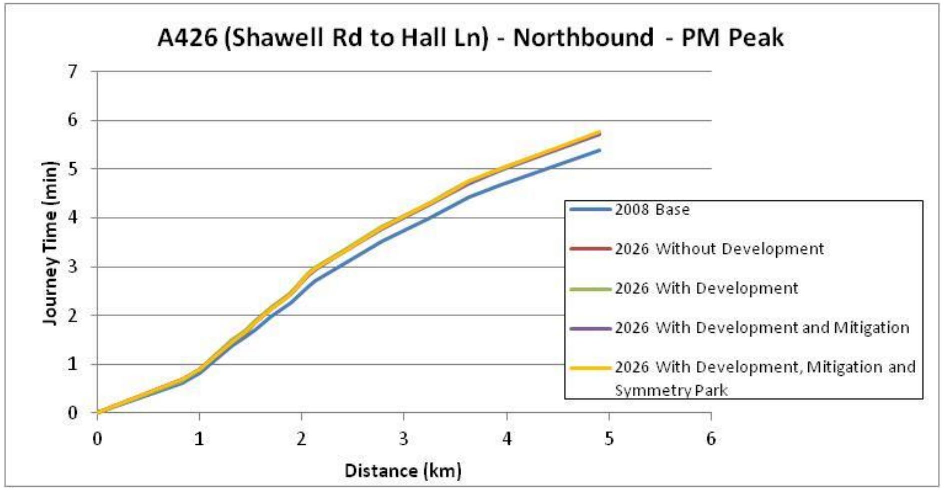


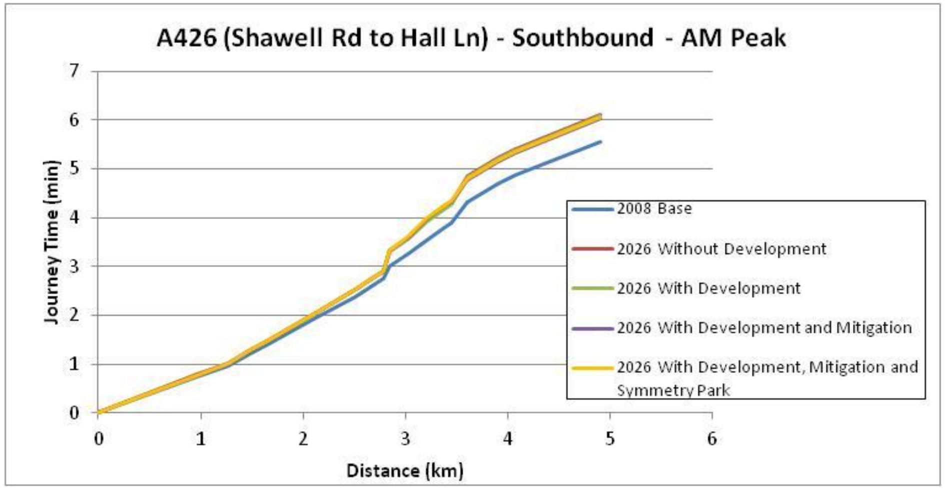


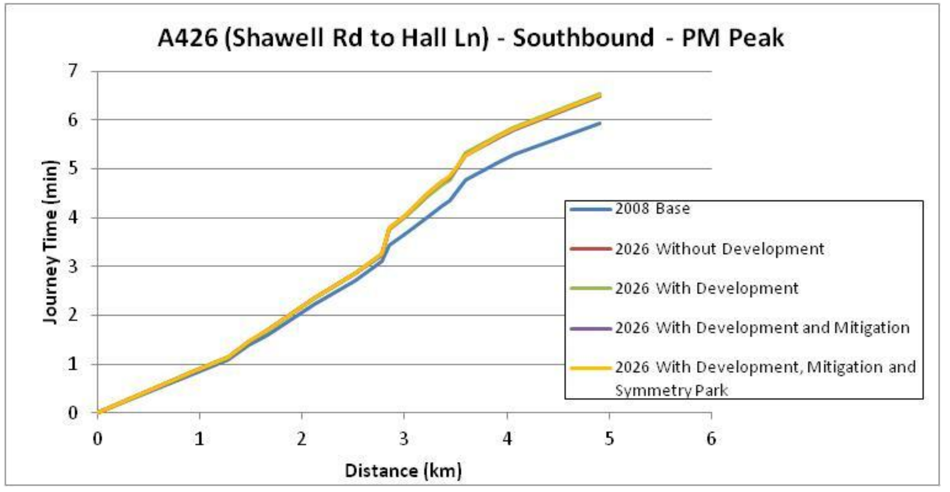


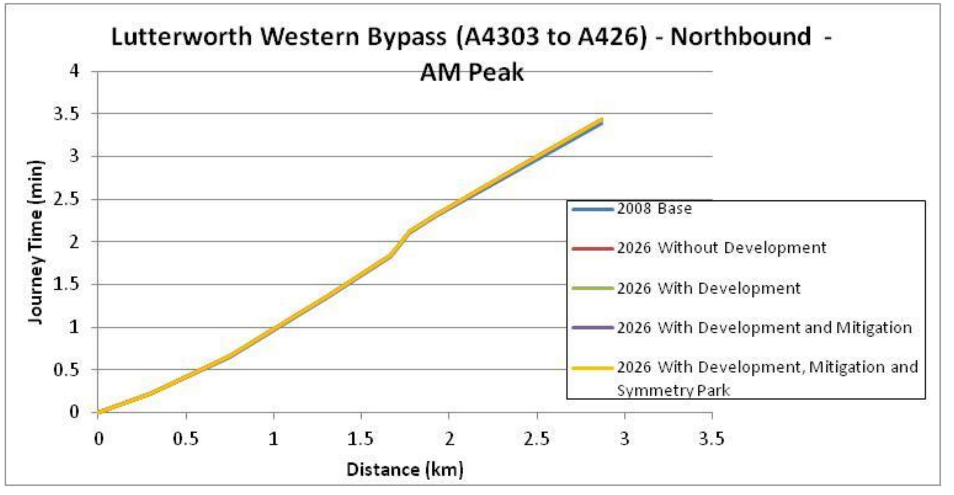


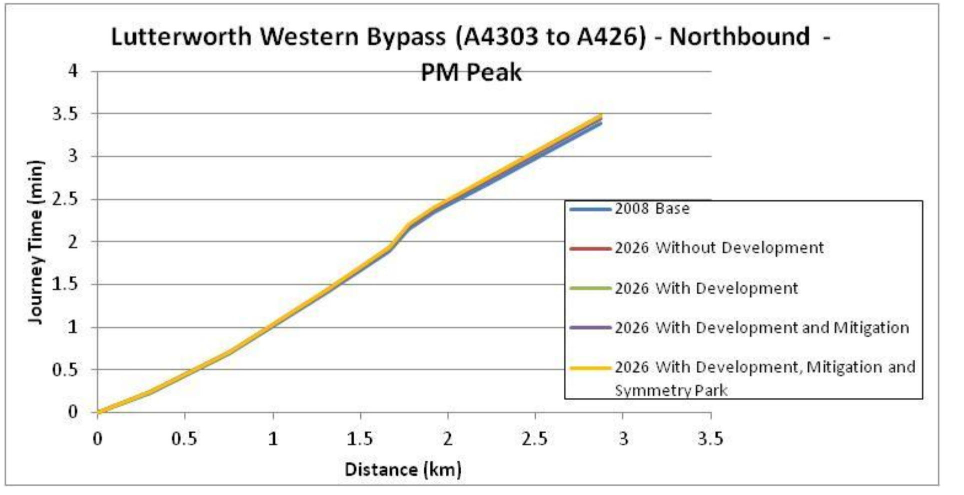

A426 (Shawell Rd to Hall Ln) - Northbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

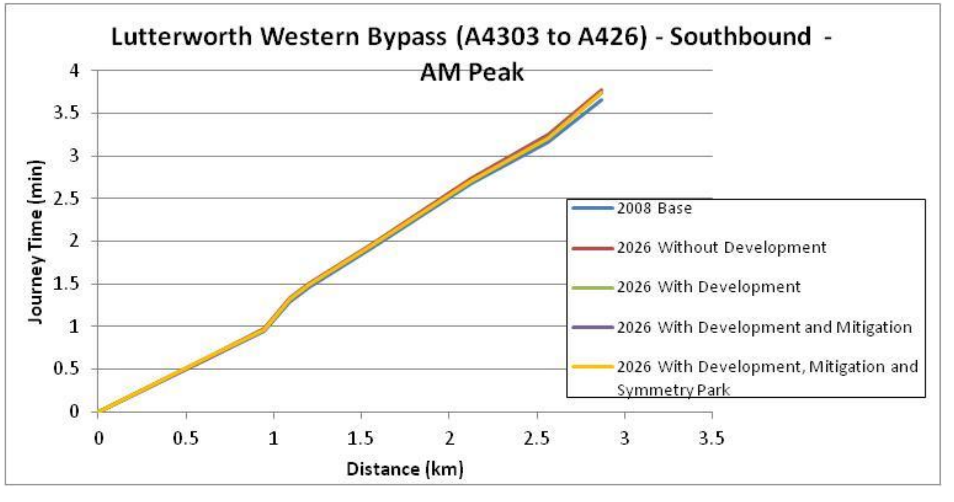

A426 (Shawell Rd to Hall Ln) - Northbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


A426 (Shawell Rd to Hall Ln) - Southbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


A426 (Shawell Rd to Hall Ln) - Southbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


Lutterworth Western Bypass (A4303 to A426) - Northbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


Lutterworth Western Bypass (A4303 to A426) - Northbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


Lutterworth Western Bypass (A4303 to A426) - Southbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
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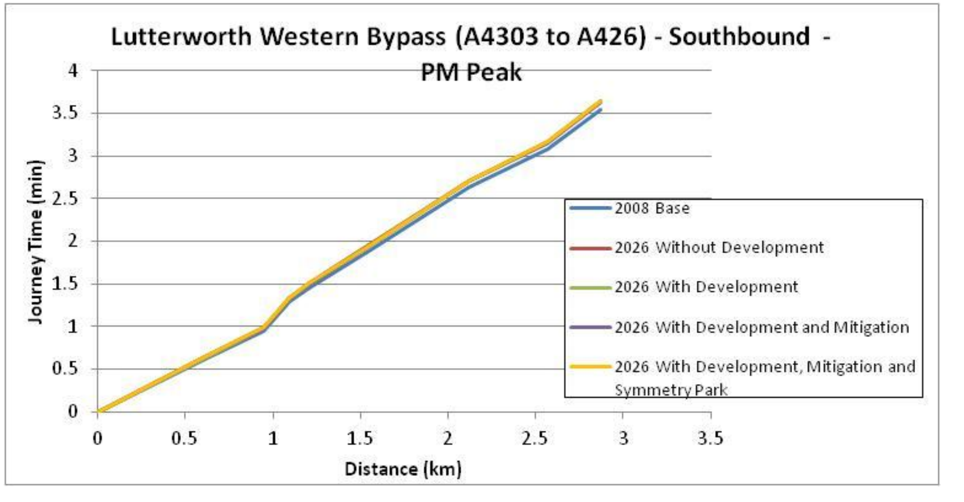
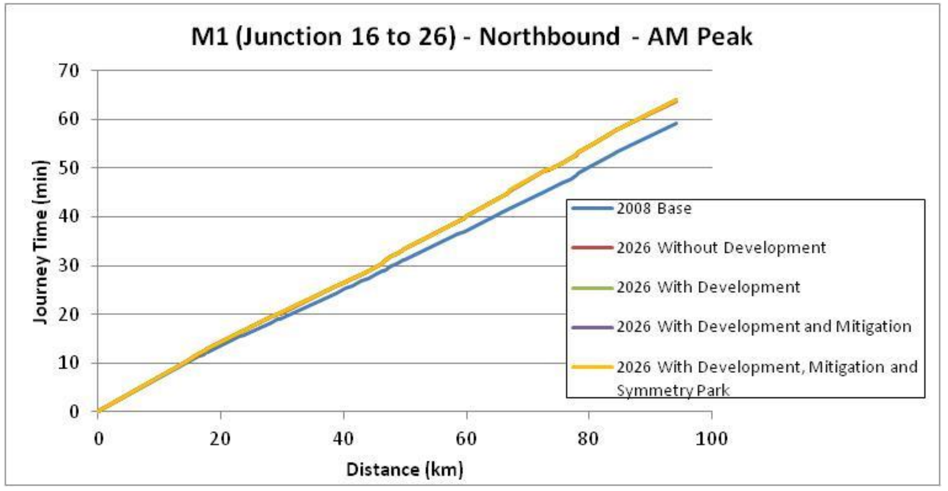
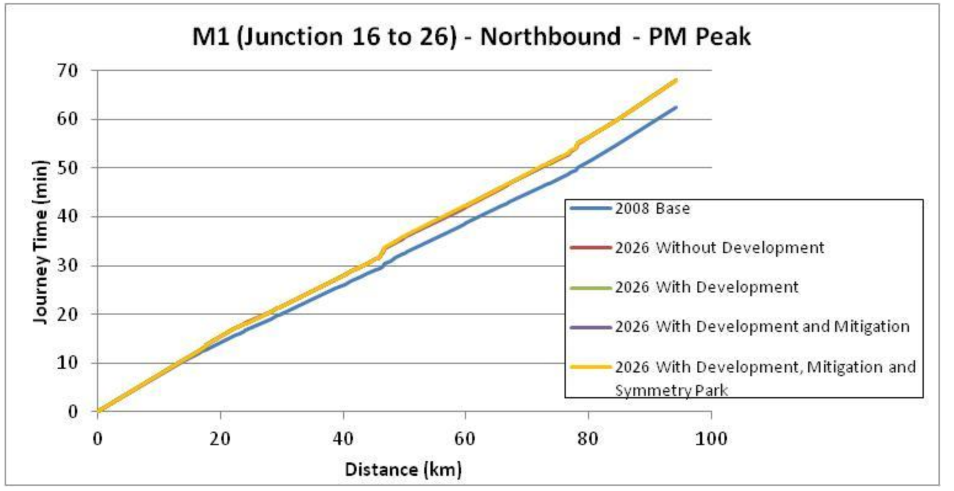
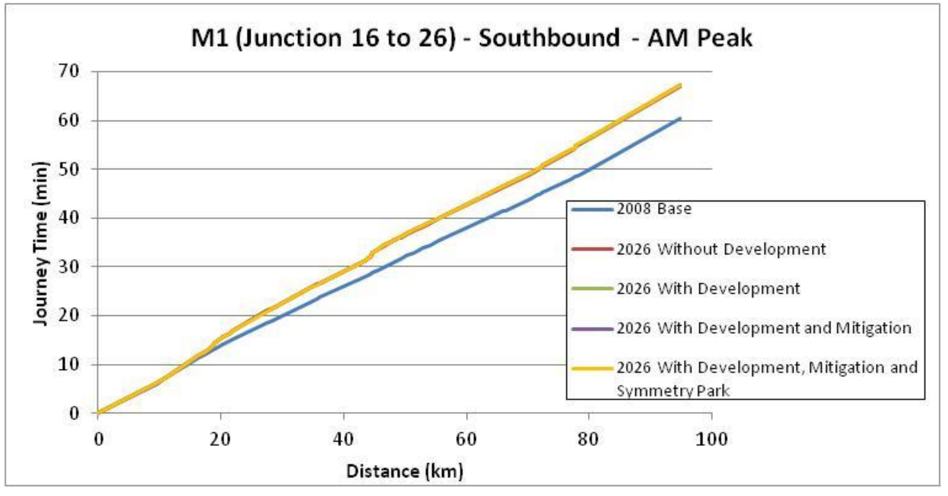
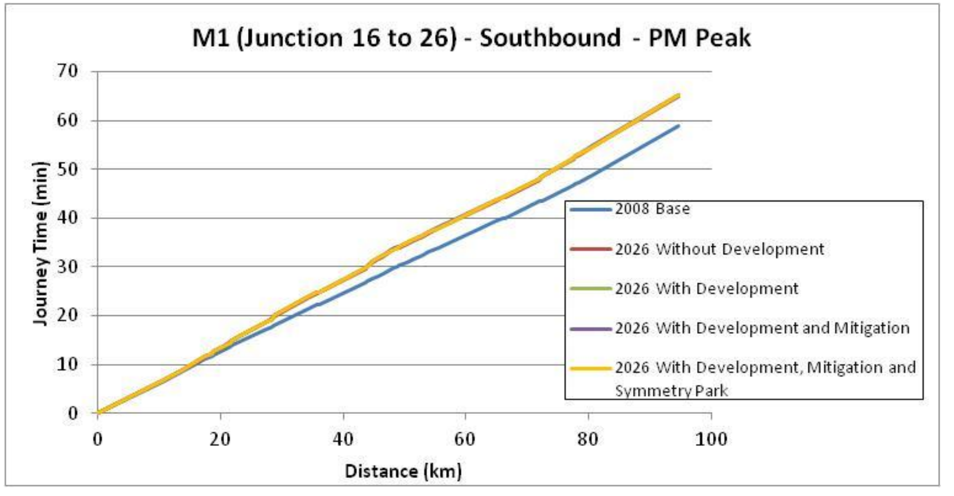
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

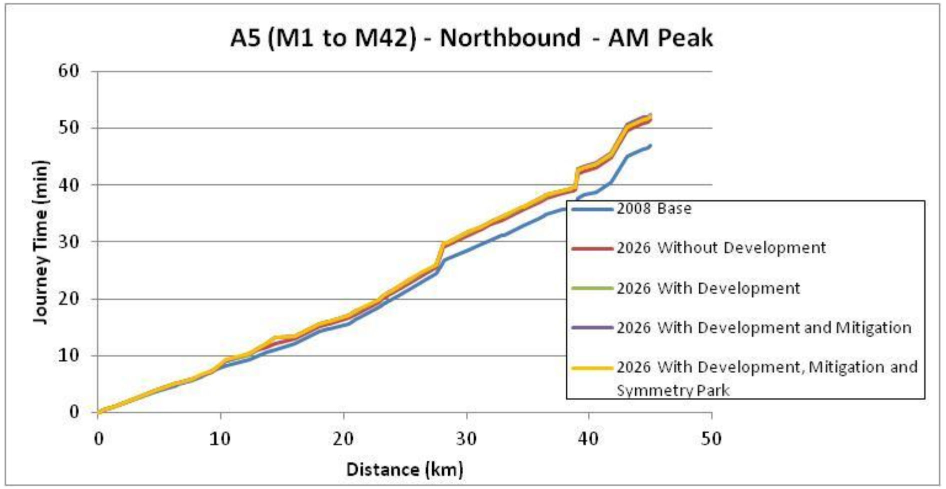

Lutterworth Western Bypass (A4303 to A426) - Southbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

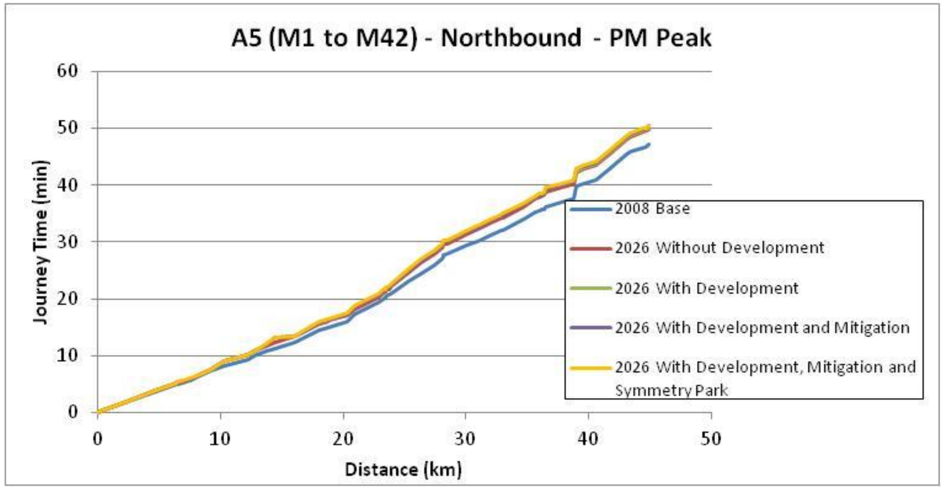

M1 (Junction 16 to 26) - Northbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

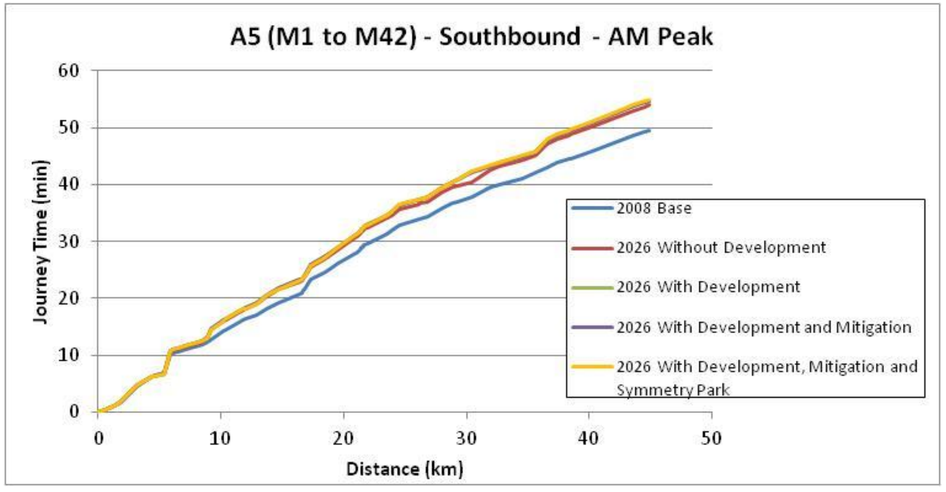

M1 (Junction 16 to 26) - Northbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M1 (Junction 16 to 26) - Southbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M1 (Junction 16 to 26) - Southbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


A5 (M1 to M42) - Northbound - AM Peak
Journey Time (min)
Distance (km)
0
10
20
30
40
50
60
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


A5 (M1 to M42) - Northbound - PM Peak
Journey Time (min)
Distance (km)
0
10
20
30
40
50
60
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park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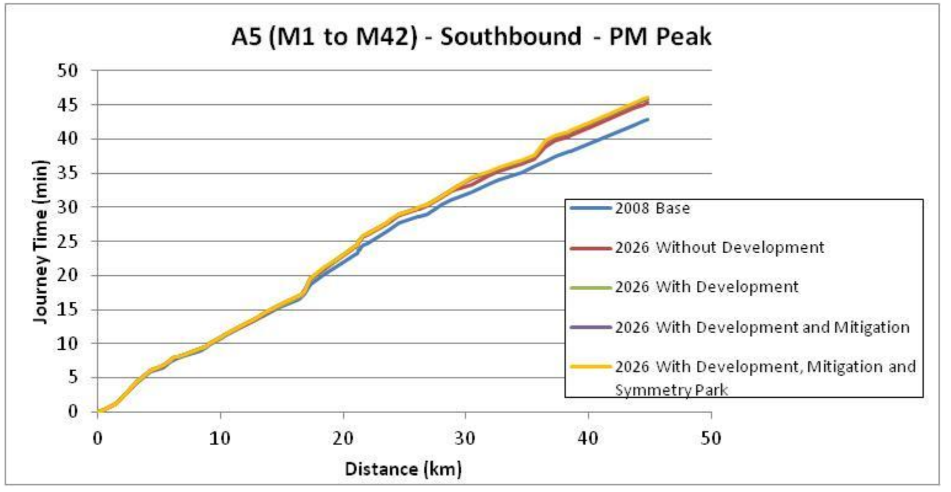
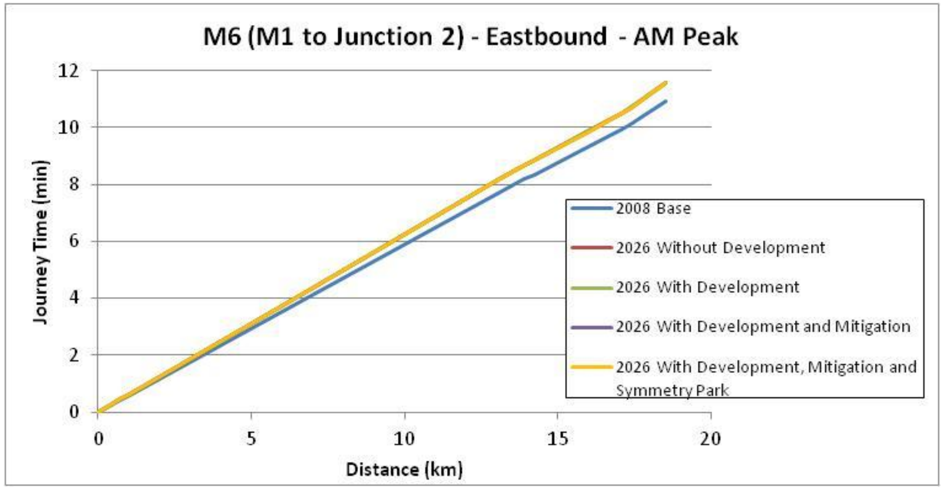
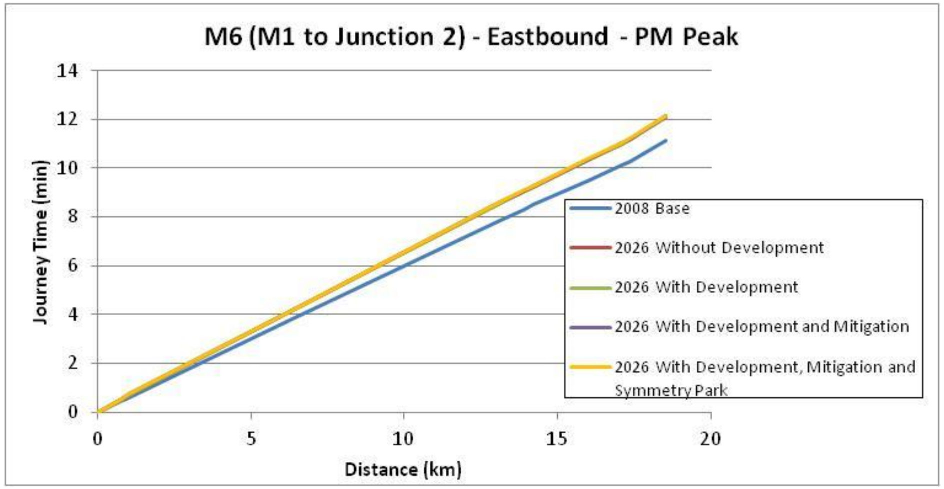
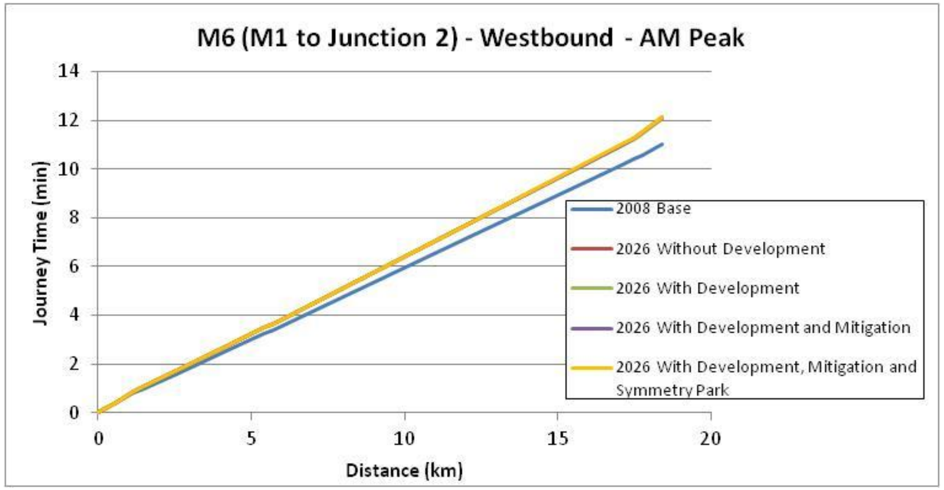
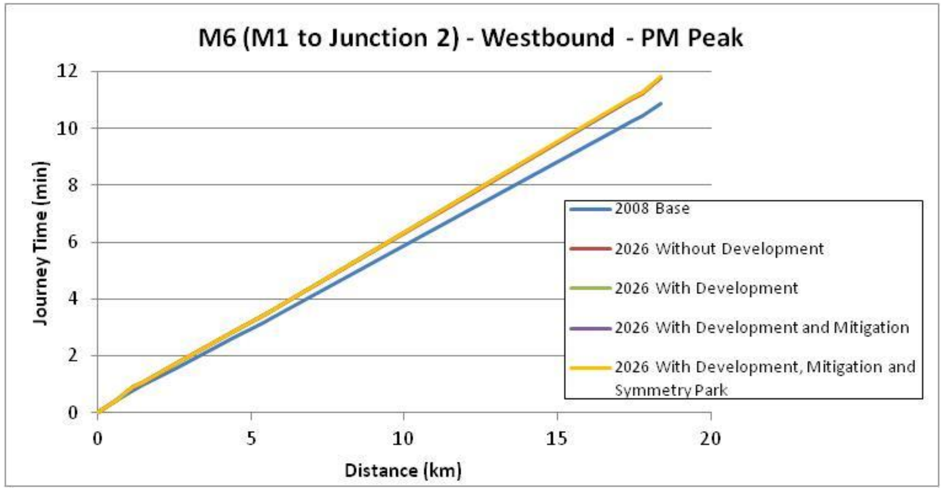
Journey Time (min)
Distance (km)
0
10
20
30
40
50
60
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

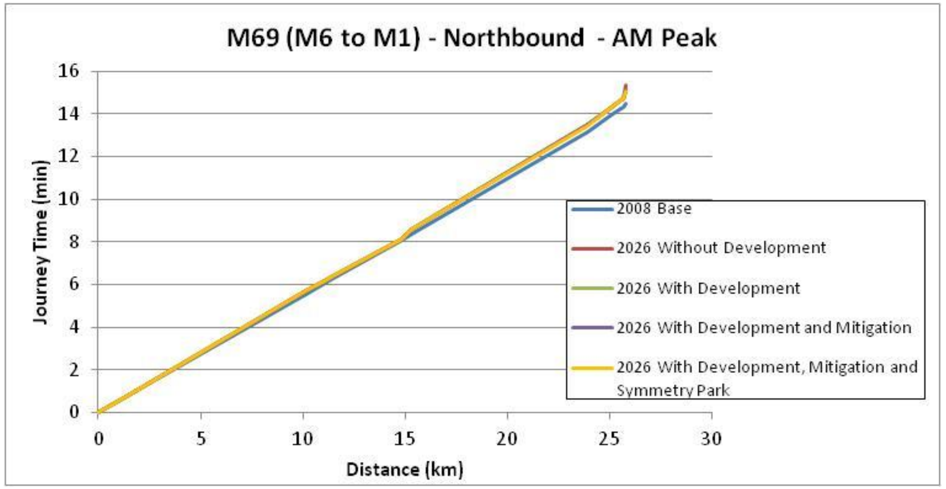

A5 (M1 to M42) - Southbound - PM Peak
Journey Time (min)
Distance (km)
0
5
10
15
20
25
30
35
40
45
50
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

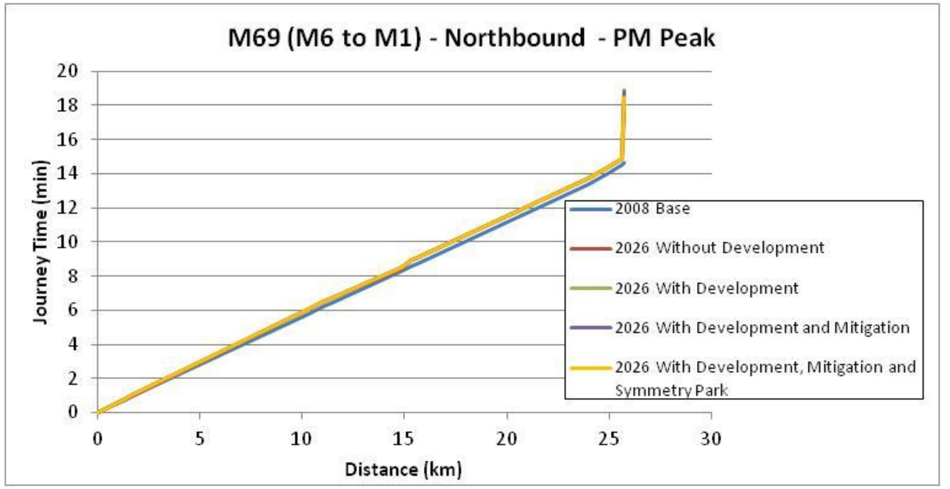

M6 (M1 to Junction 2) - Eastbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

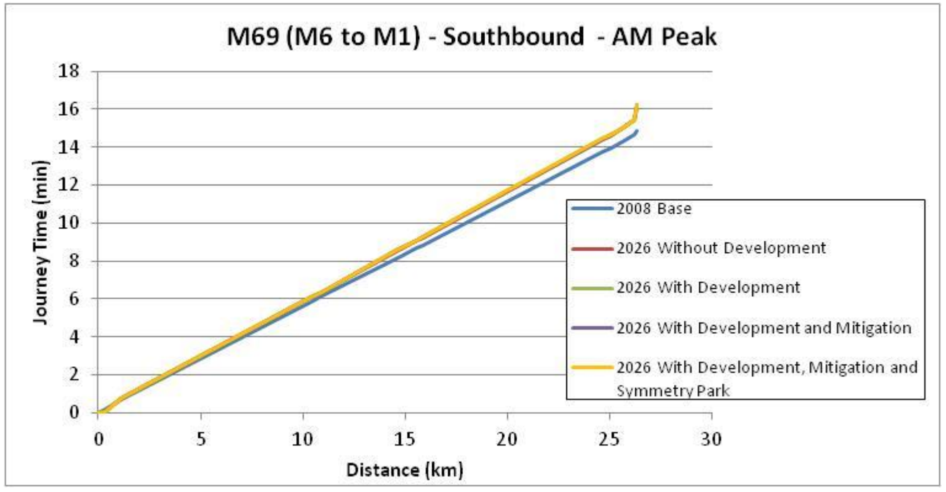

M6 (M1 to Junction 2) - Eastbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M6 (M1 to Junction 2) - Westbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M6 (M1 to Junction 2) - Westbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M69 (M6 to M1) - Northbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M69 (M6 to M1) - Northbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park


M69 (M6 to M1) - Southbound - AM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
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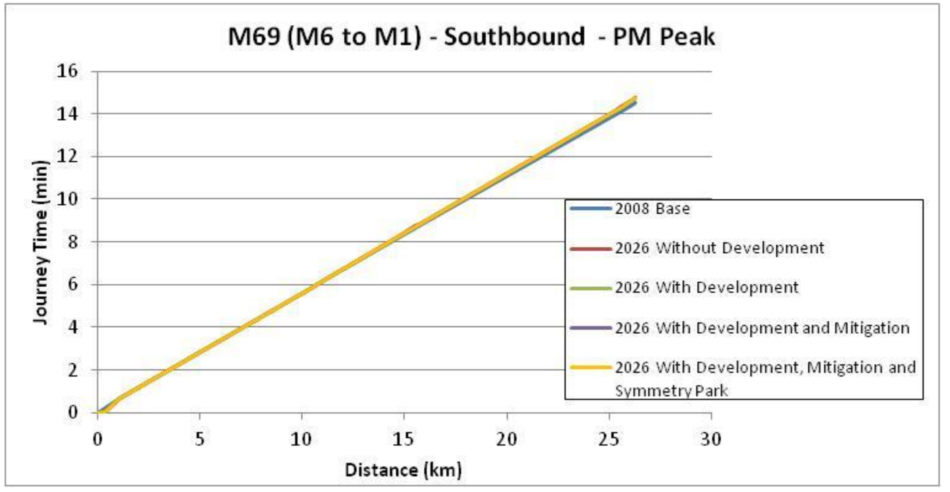
2026 With Development, Mitigation and Symmetry Park


M69 (M6 to M1) - Southbound - PM Peak
Journey Time (min)
Distance (km)
2008 Base
2026 Without Development
2026 With Development
2026 With Development and Mitigation
2026 With Development, Mitigation and Symmetry Park

MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note – Appendices B, C and D

Final Report

Appendix B 2008 Base AM Peak Junction Node Data

B.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure B.1: M1 Junction 20: Volume-to-Capacity Ratio

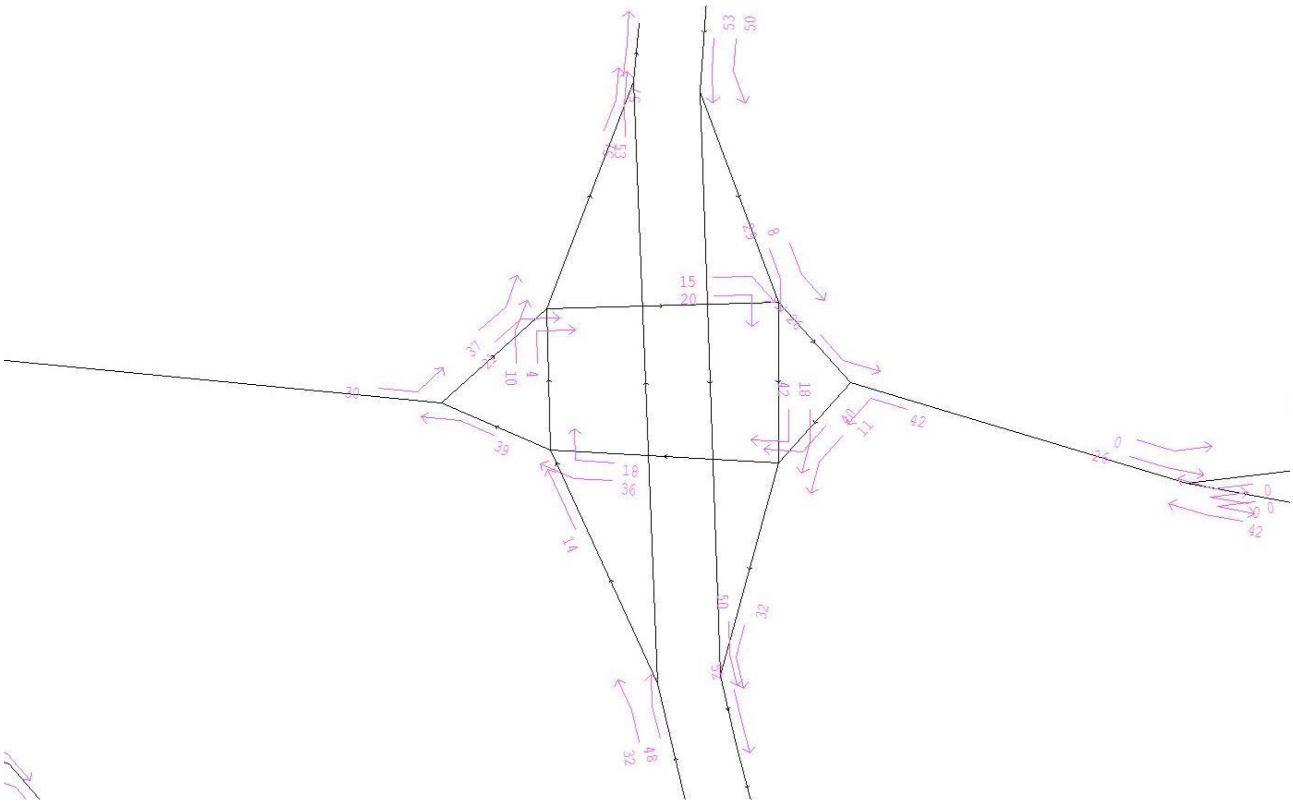


Figure B.2: M1 Junction 20: Delay (seconds)

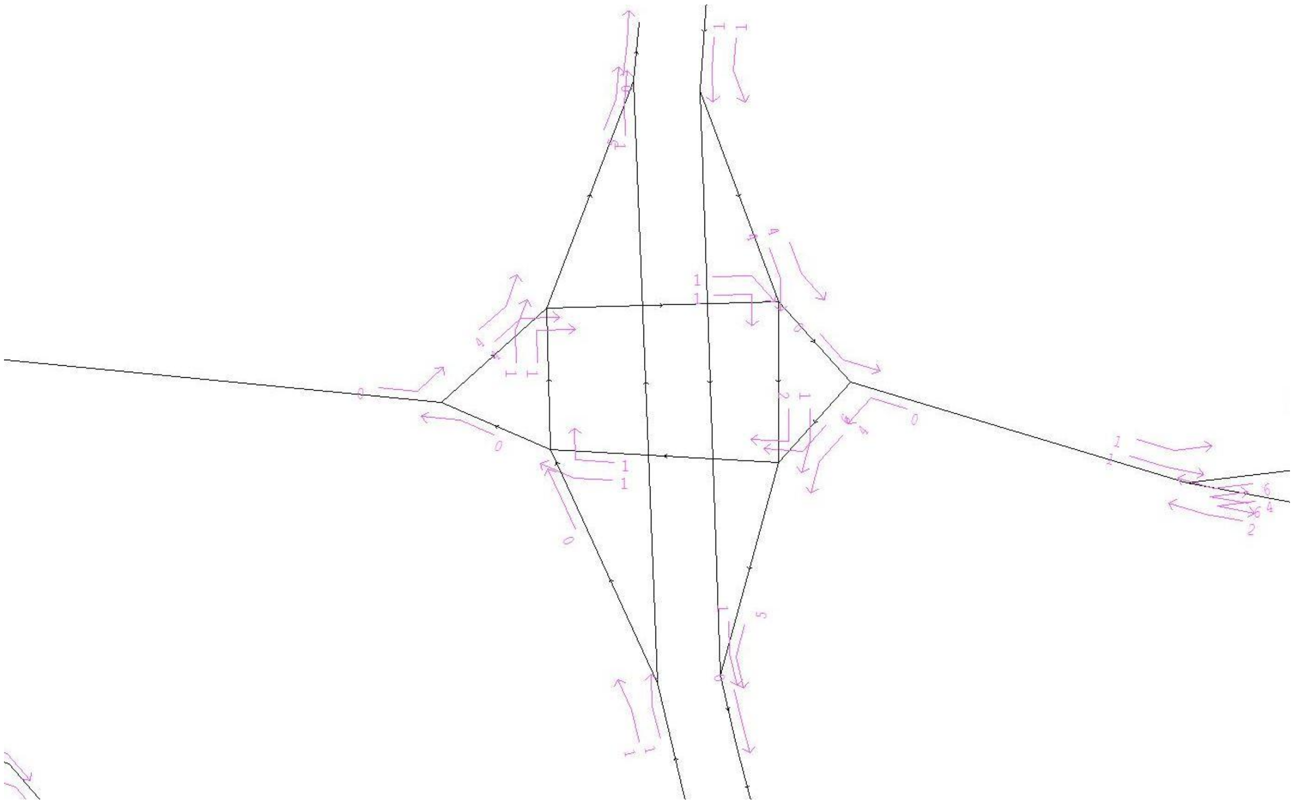


Figure B.3: M1 Junction 20: Arrive Flow (PCUs)

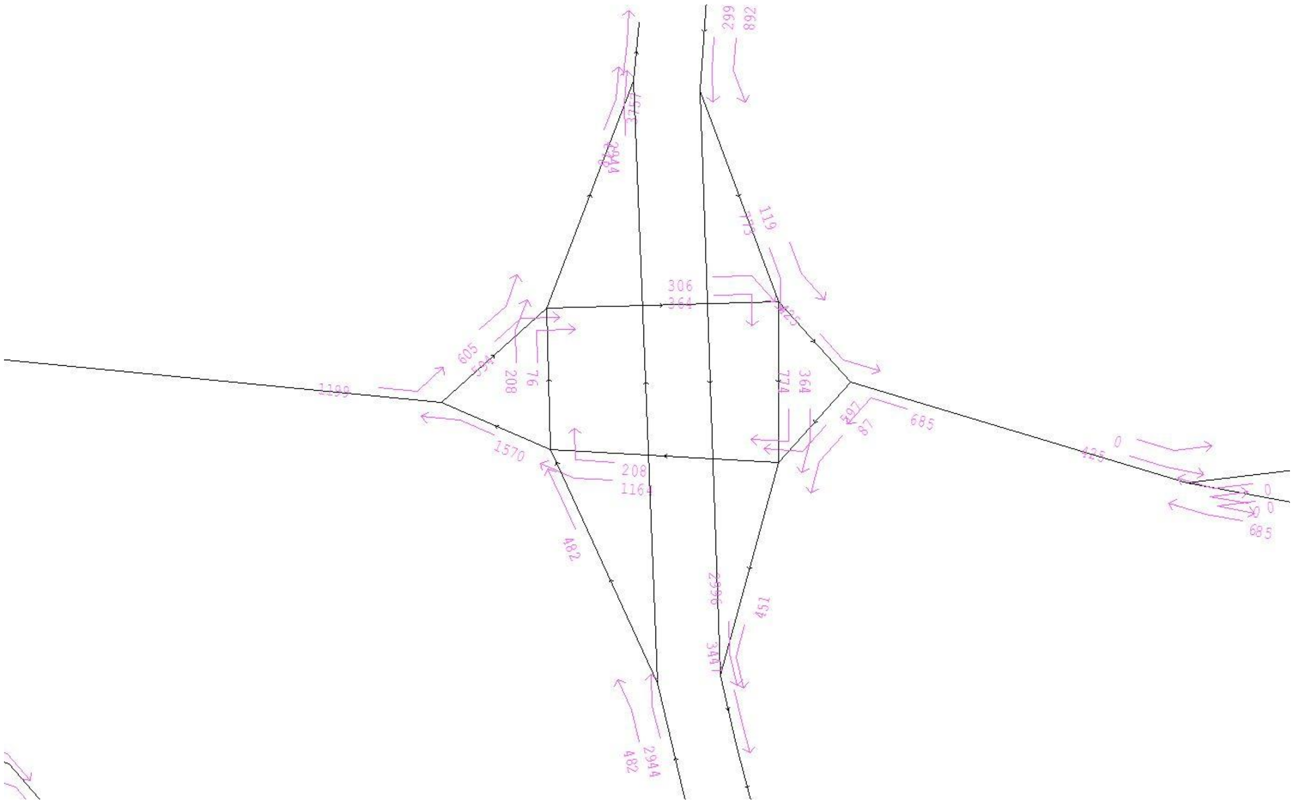


Figure B.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

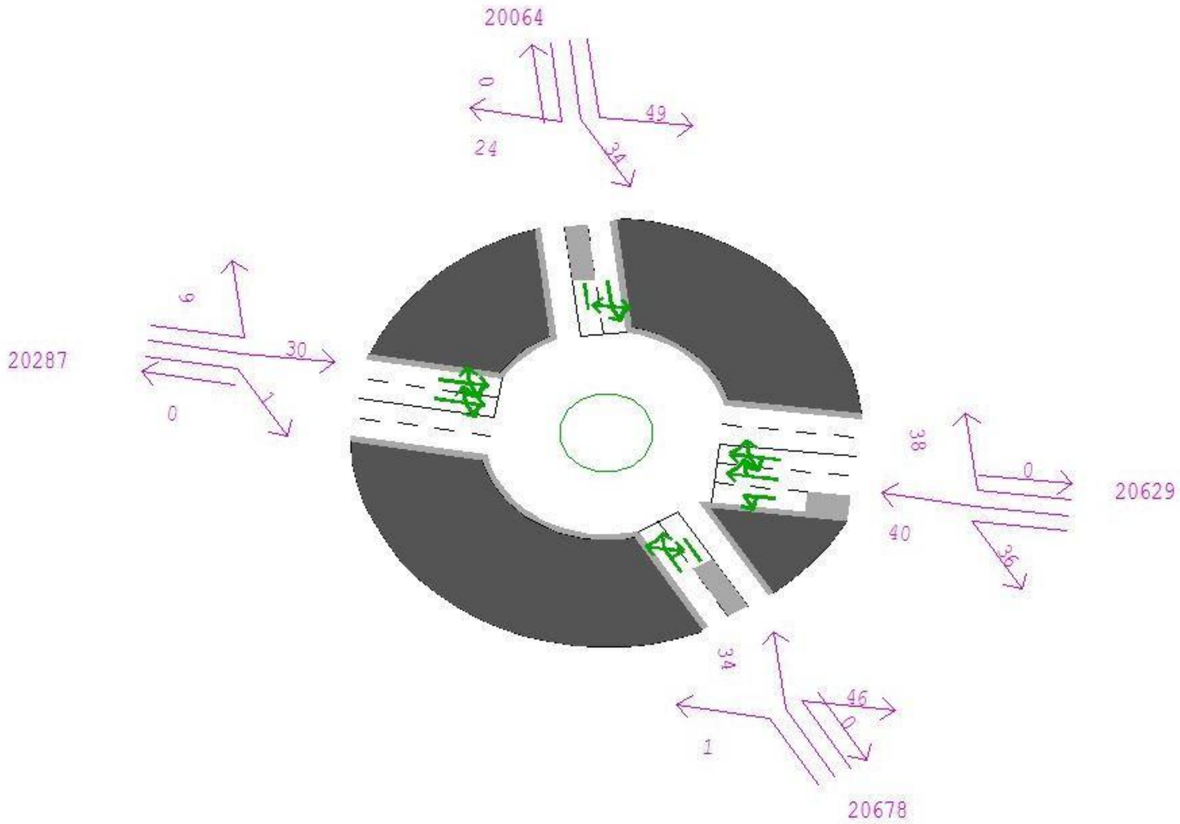


Figure B.5: A4303 / A426 Roundabout: Delay (seconds)

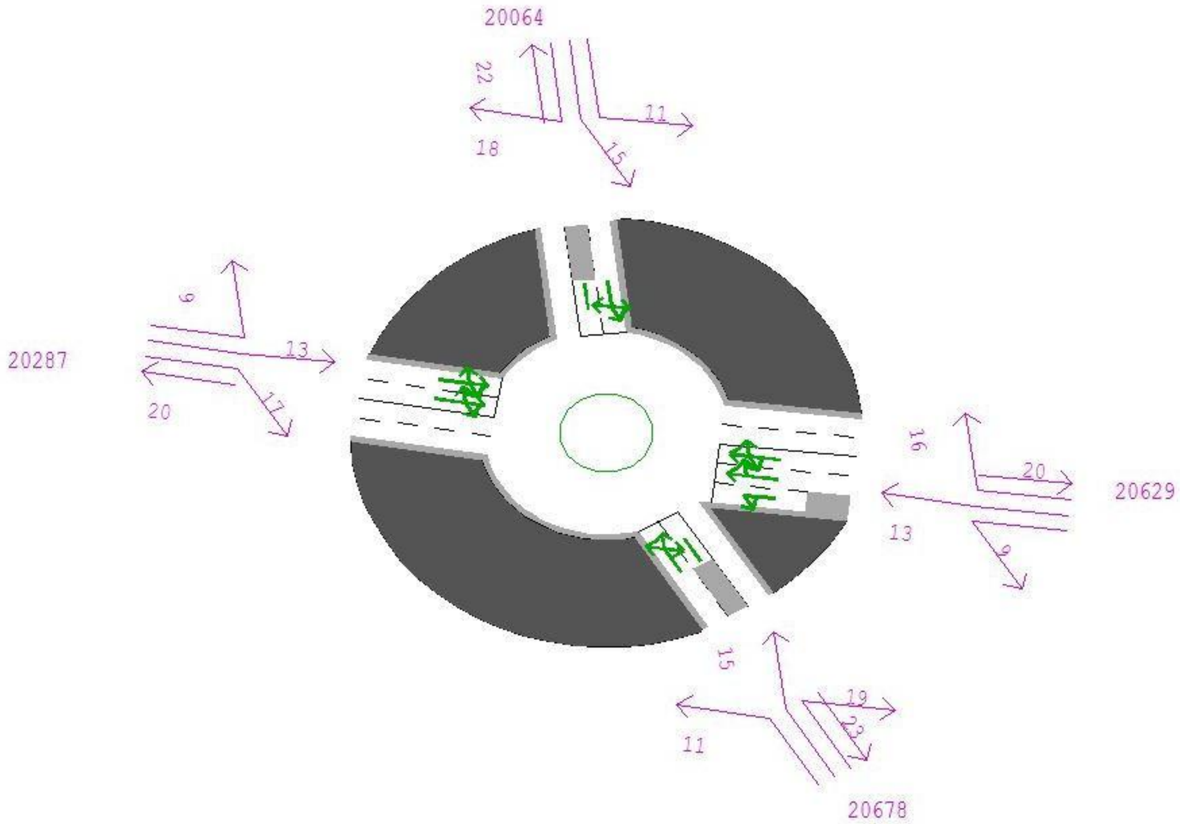


Figure B.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

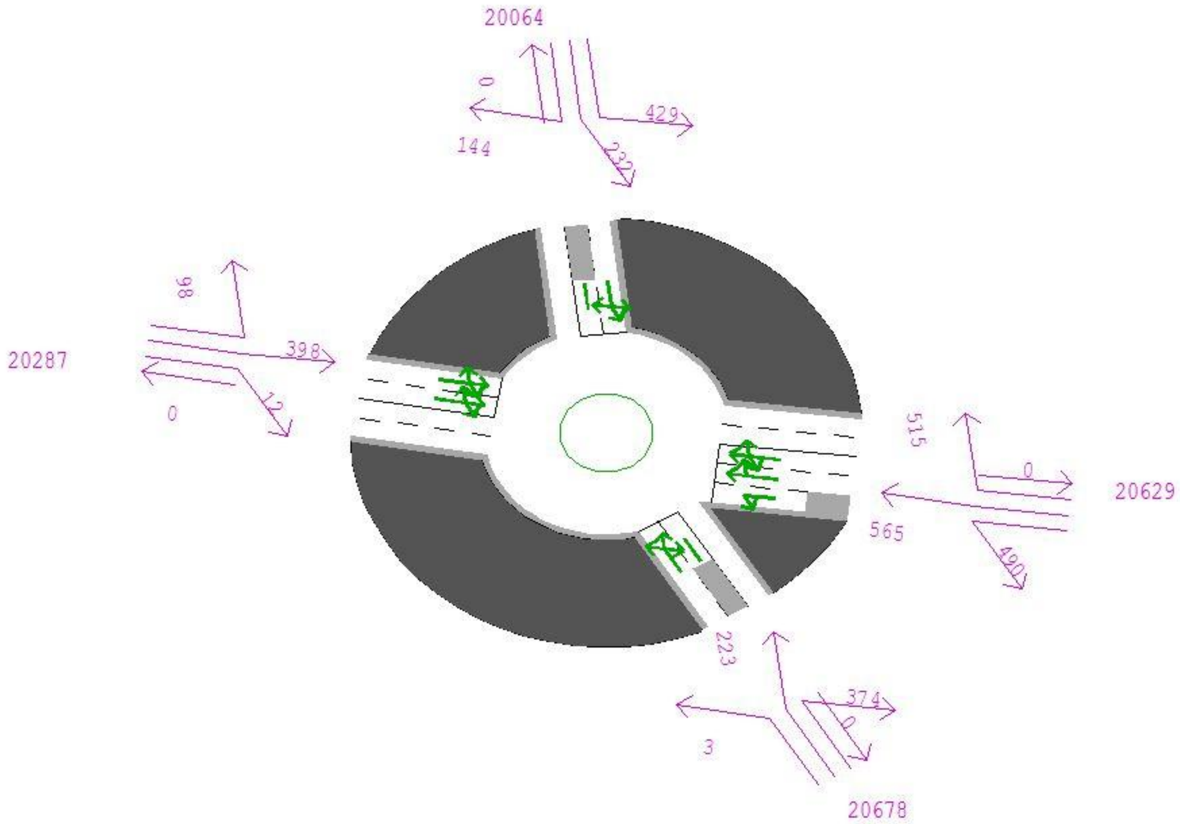


Figure B.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

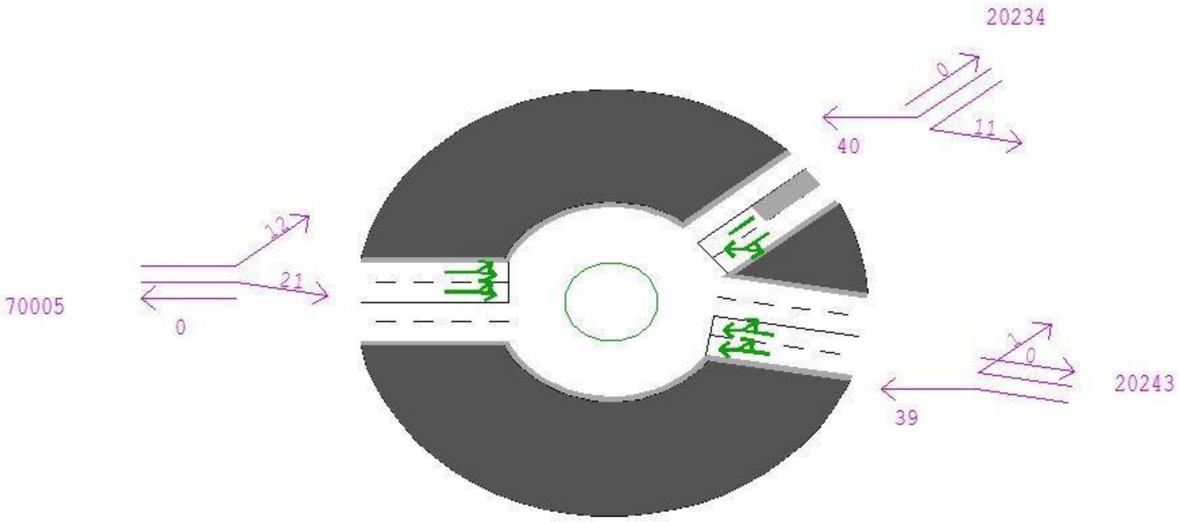


Figure B.8: A4303 / Coventry Road Roundabout: Delay (seconds)

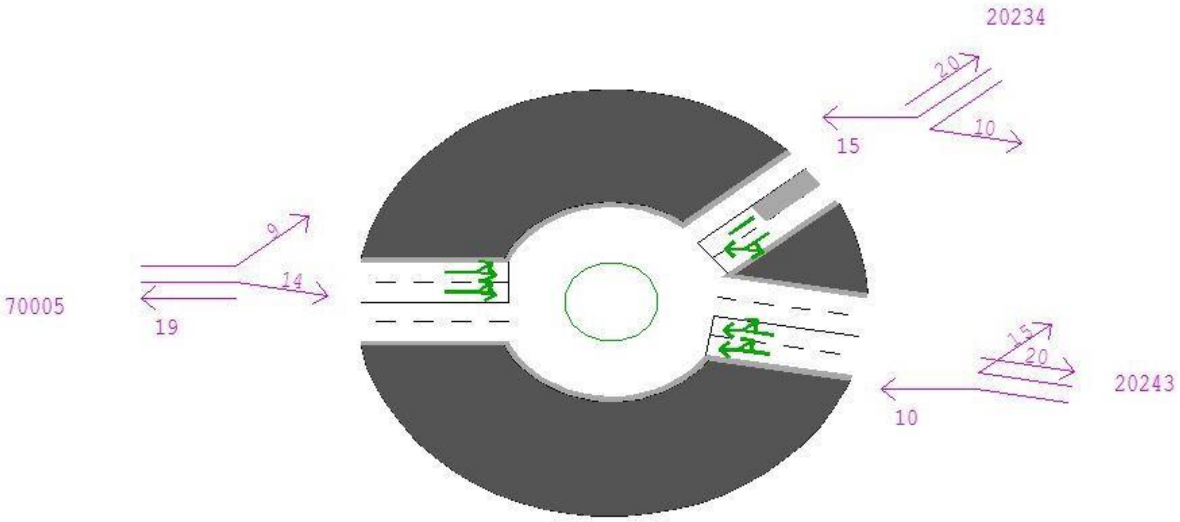


Figure B.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

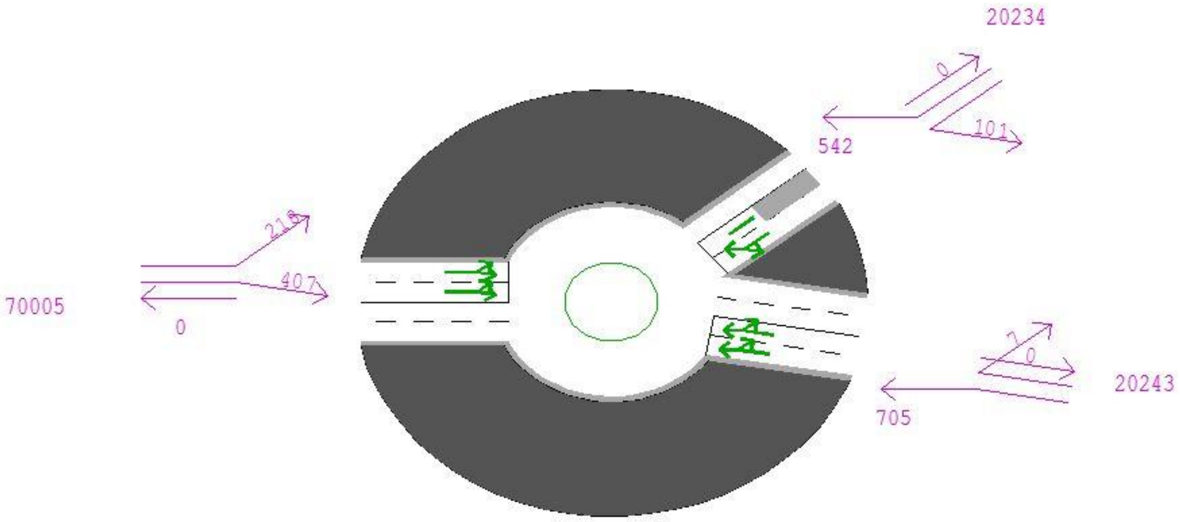


Figure B.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

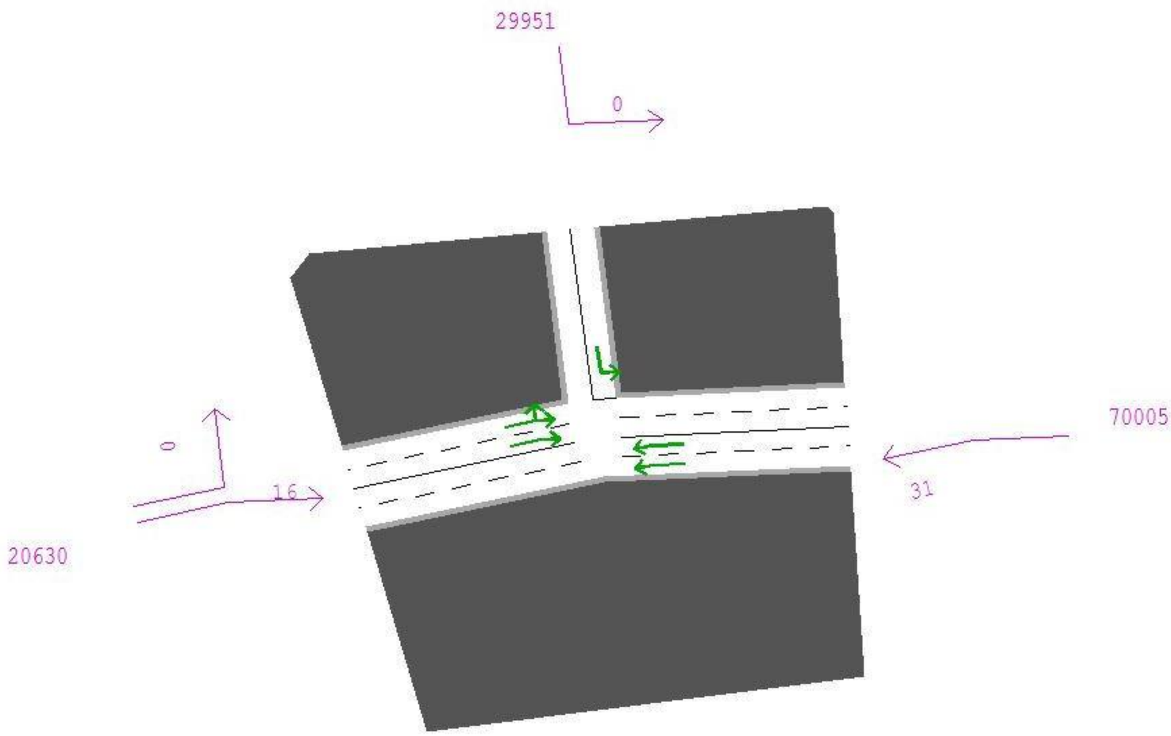


Figure B.11: A4303 / Shackleton Way Junction: Delay (seconds)

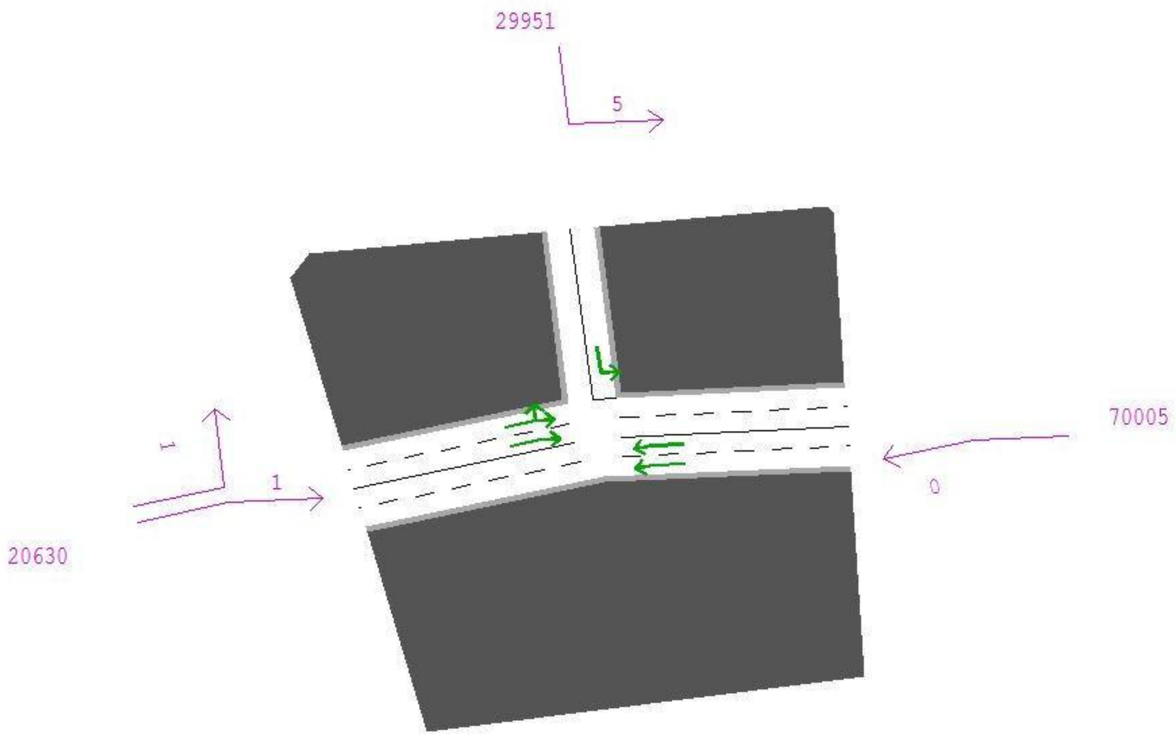


Figure B.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

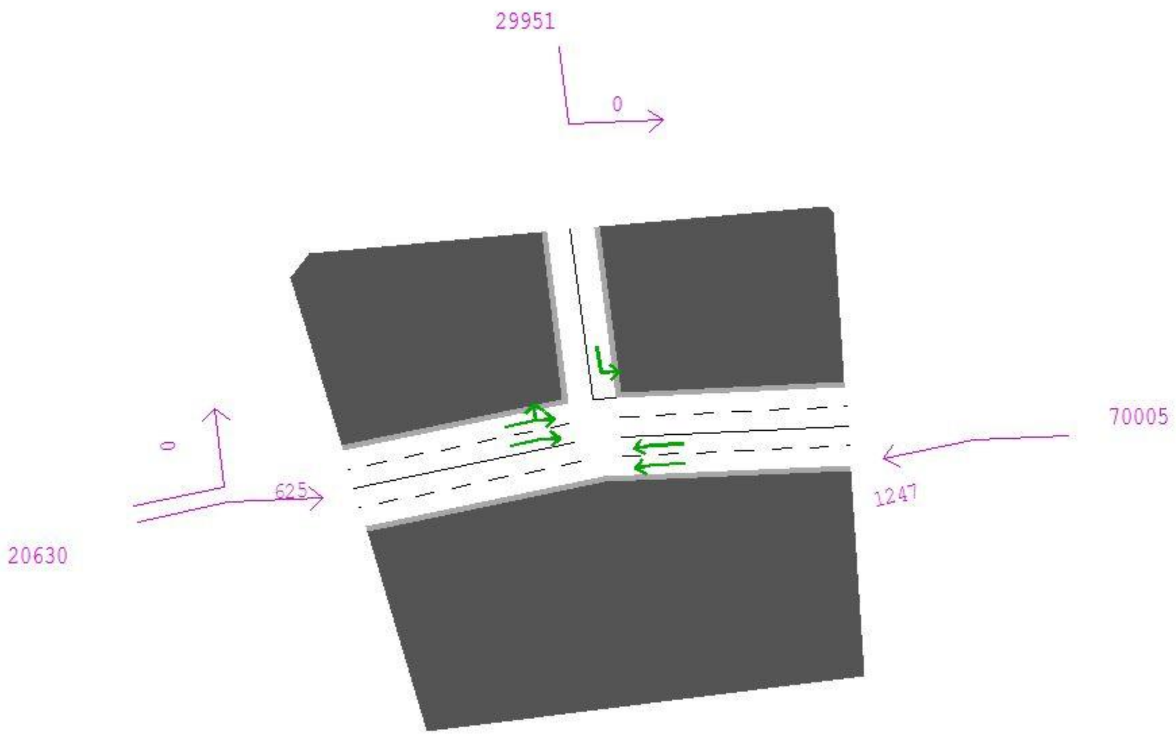


Figure B.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

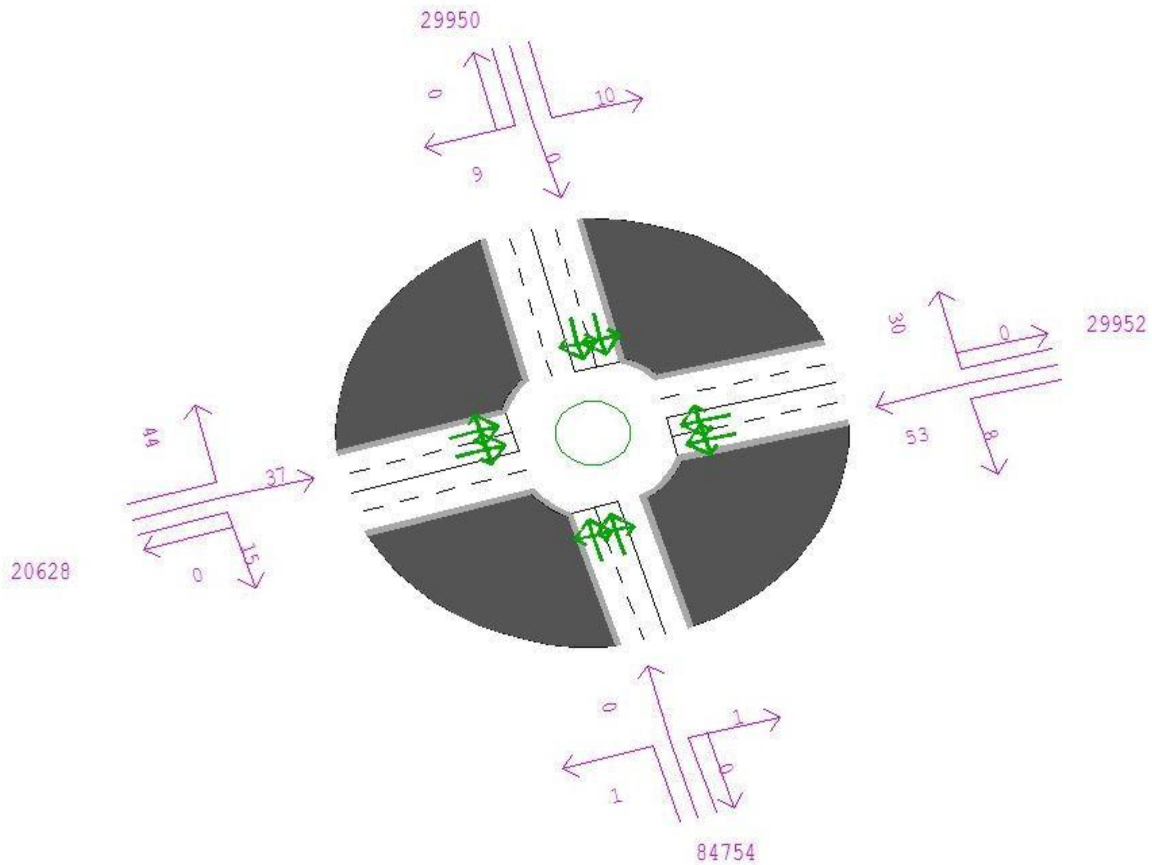


Figure B.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

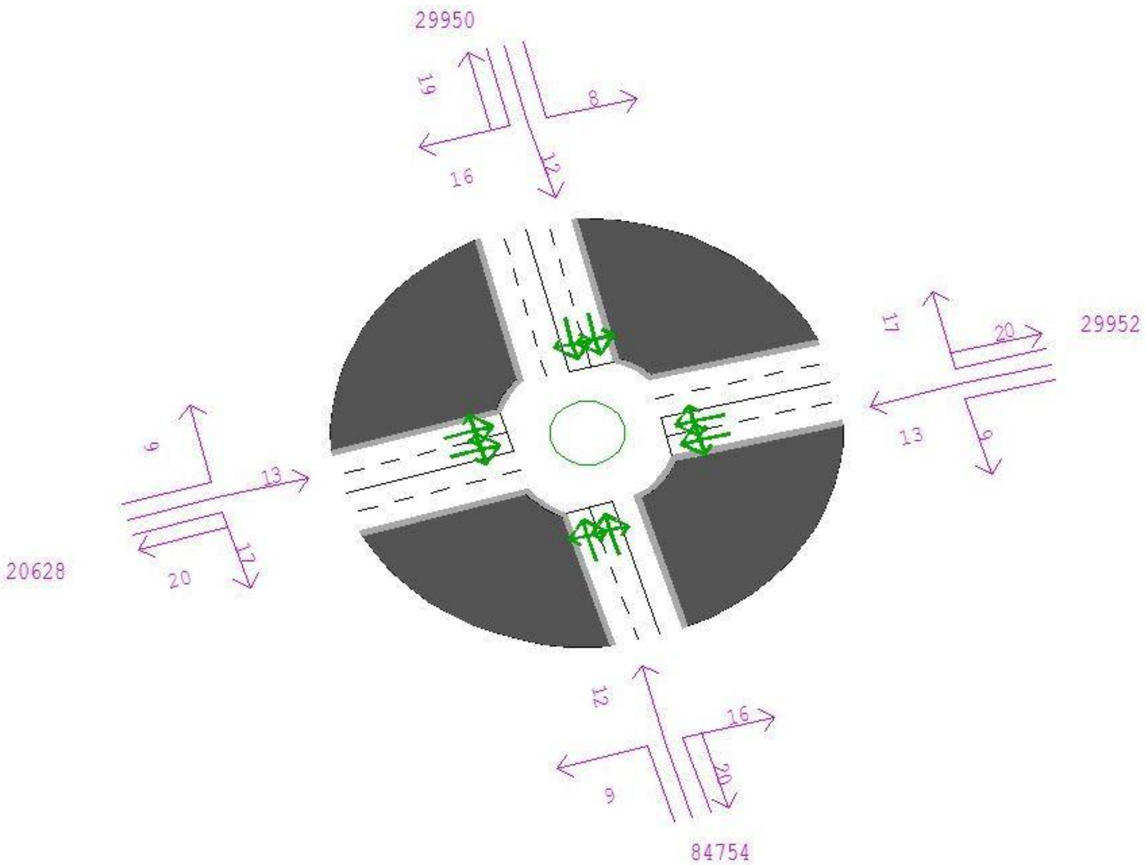


Figure B.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

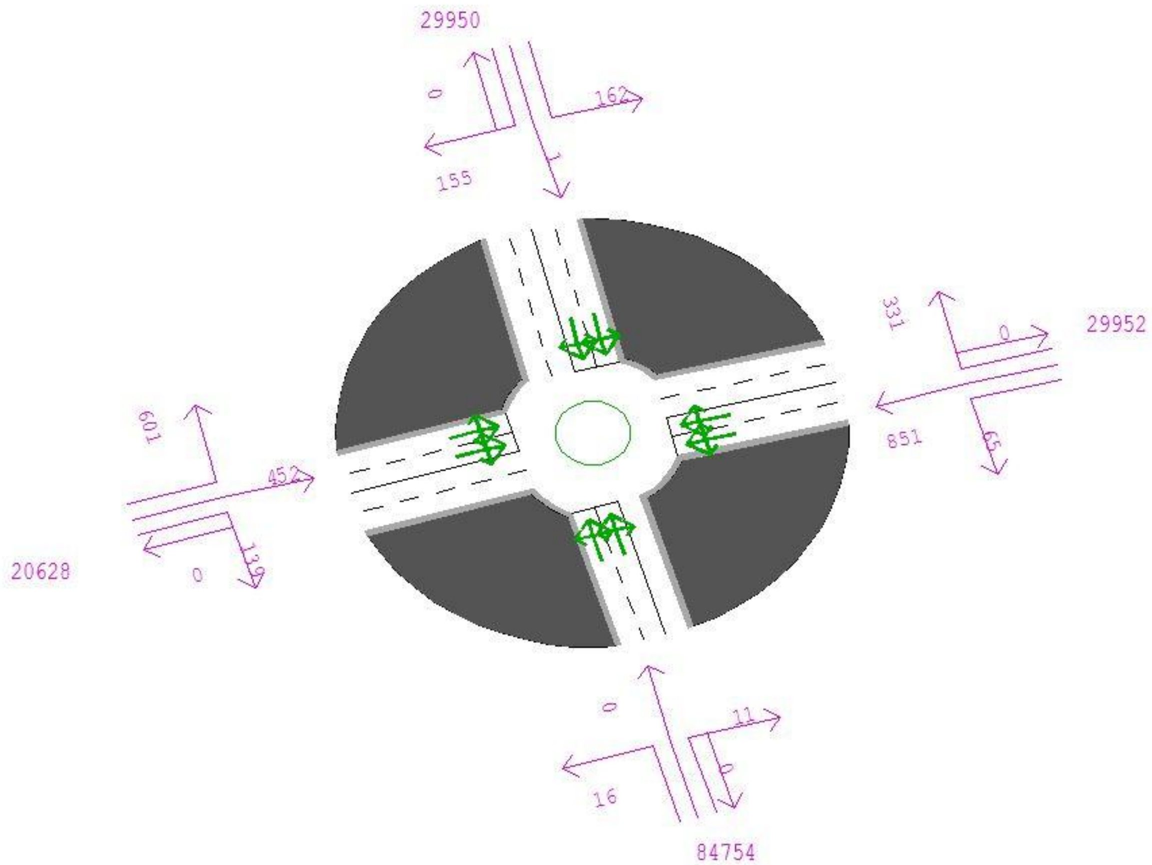


Figure B.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

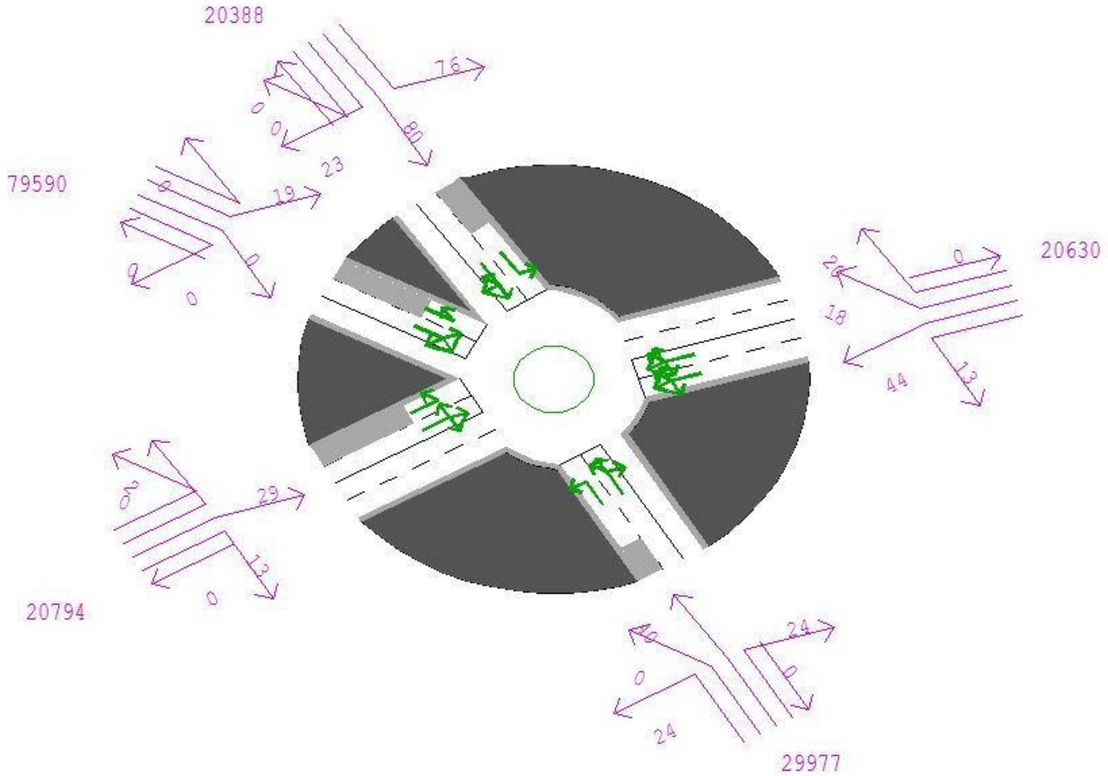


Figure B.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

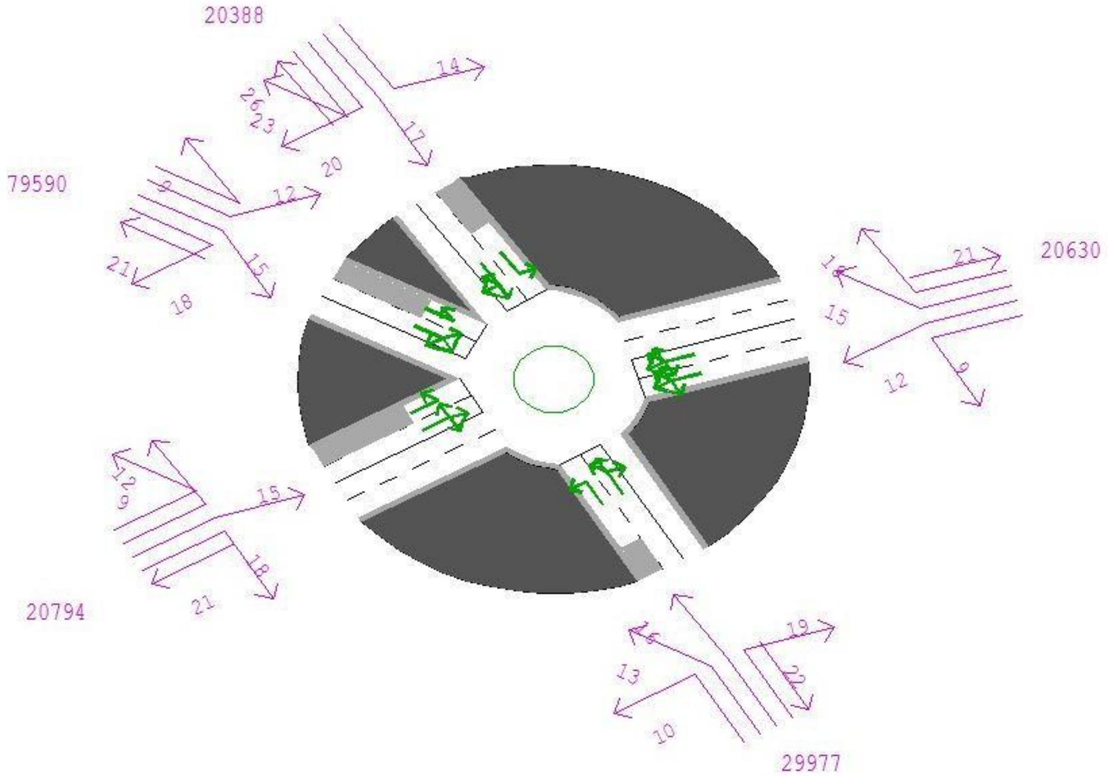


Figure B.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

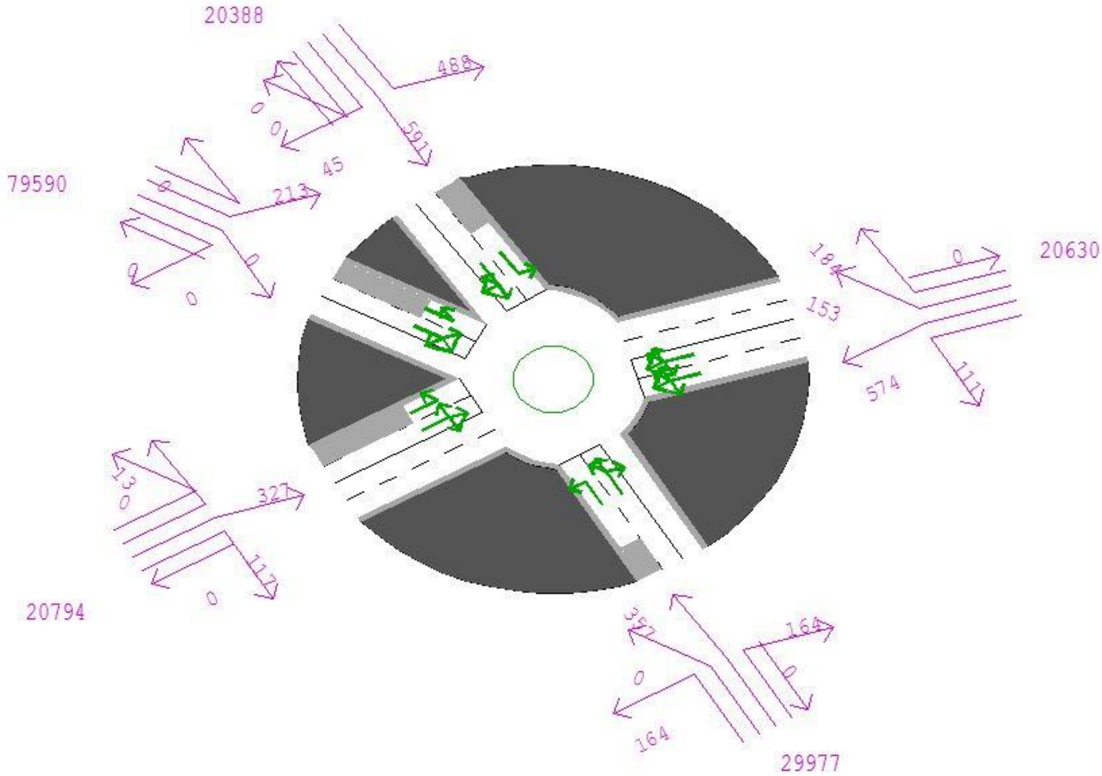


Figure B.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

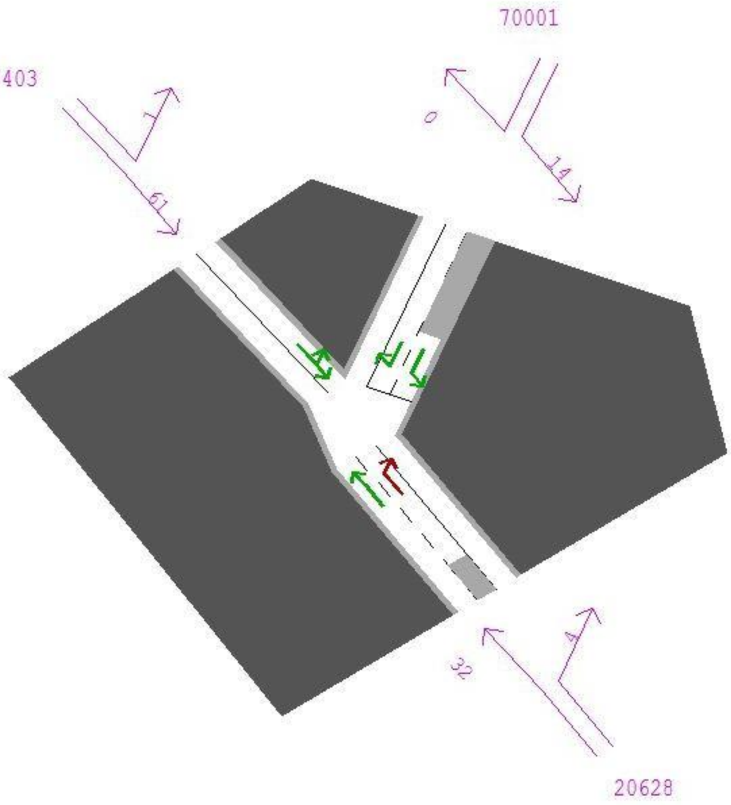


Figure B.20: A5 / Mere Lane Junction: Delay (seconds)

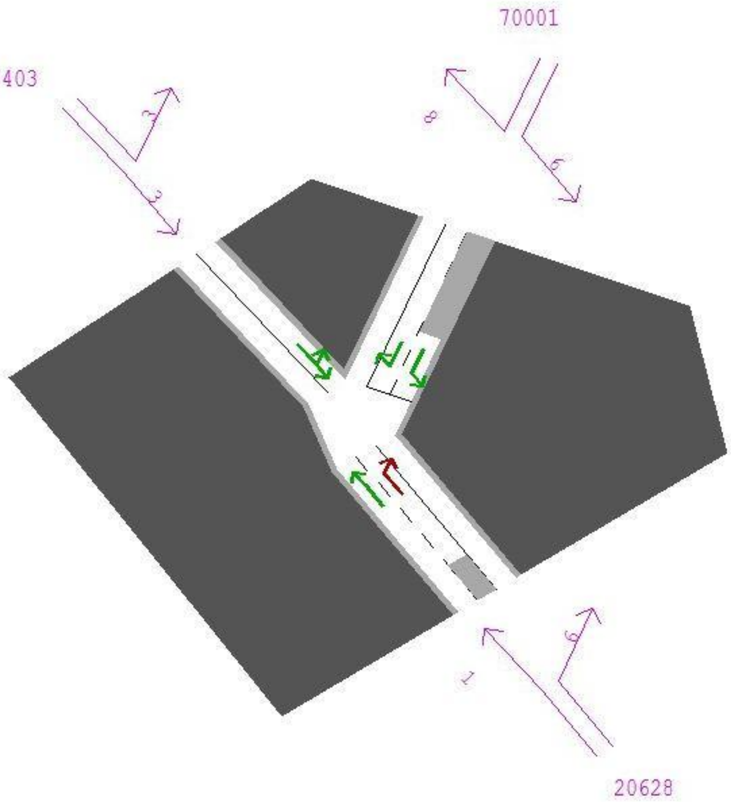


Figure B.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

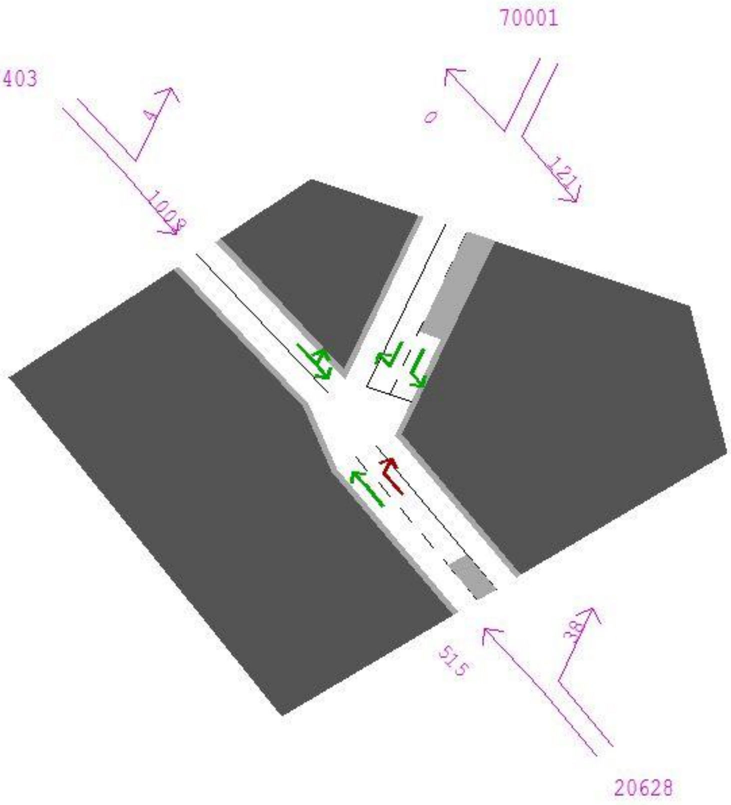


Figure B.22: M69 Junction 1: Volume-to-Capacity Ratio

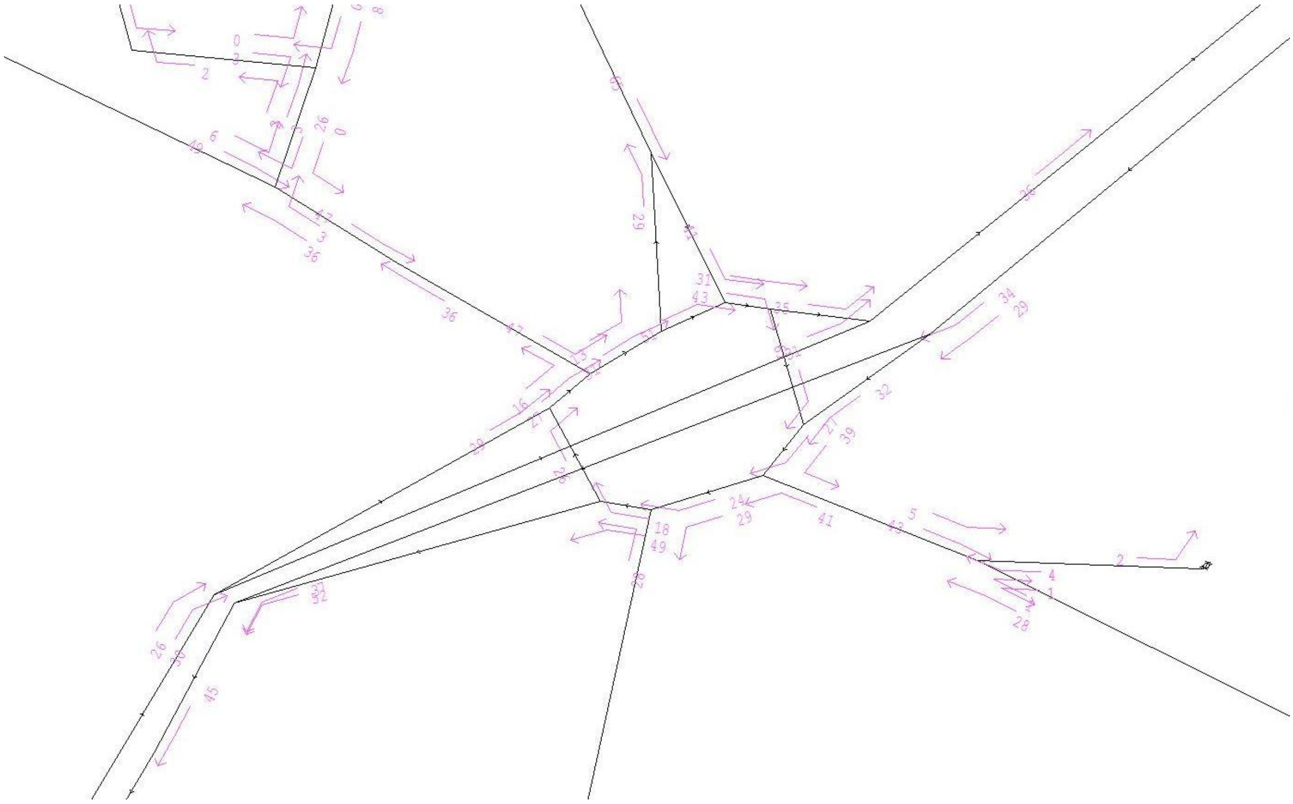


Figure B.23: M69 Junction 1: Delay (seconds)

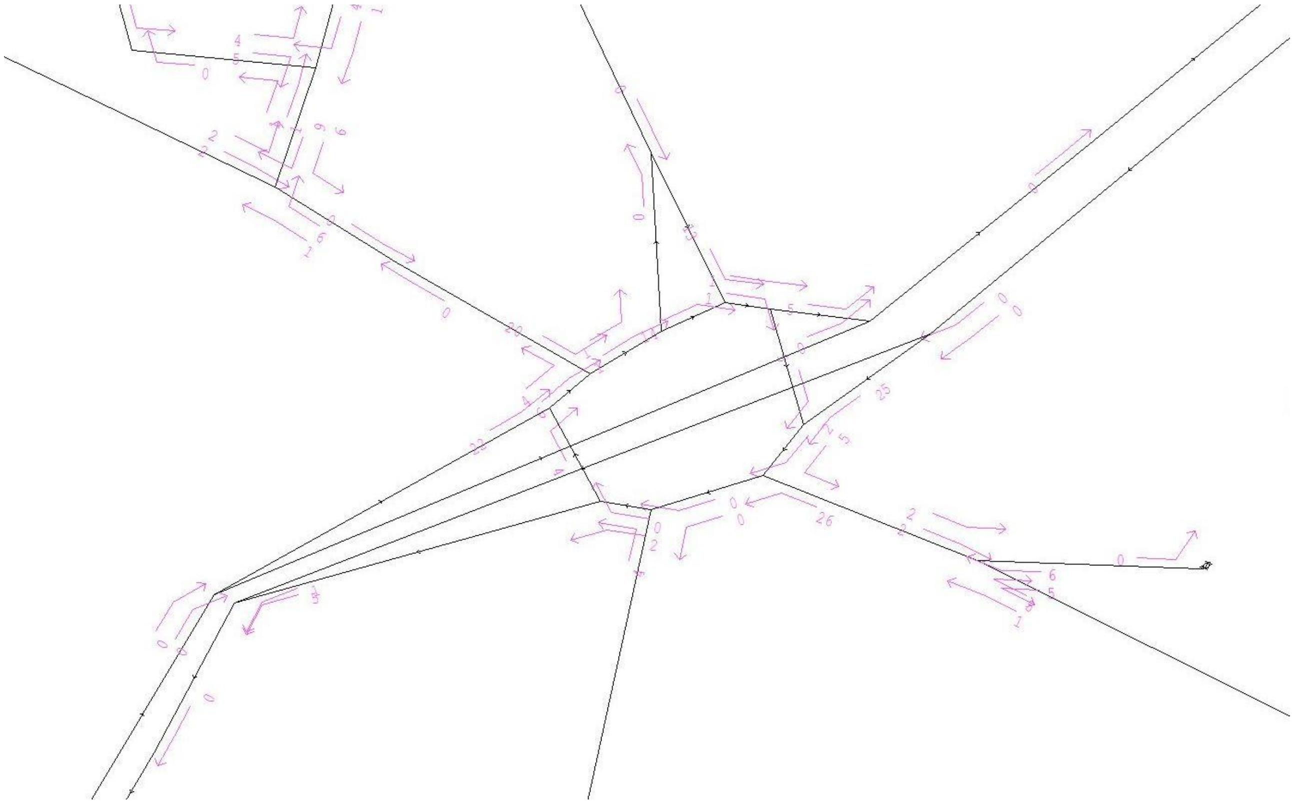


Figure B.24: M69 Junction 1: Arrive Flow (PCUs)

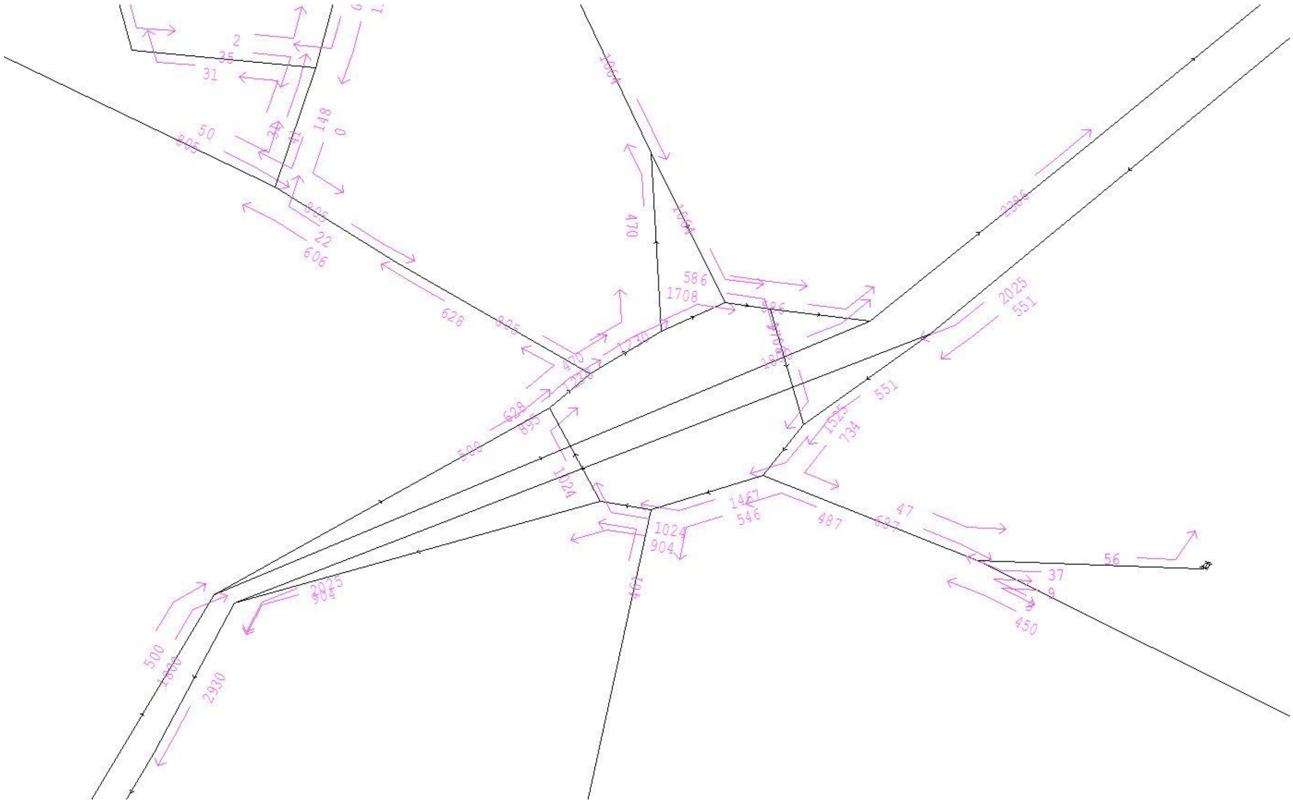


Figure B.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

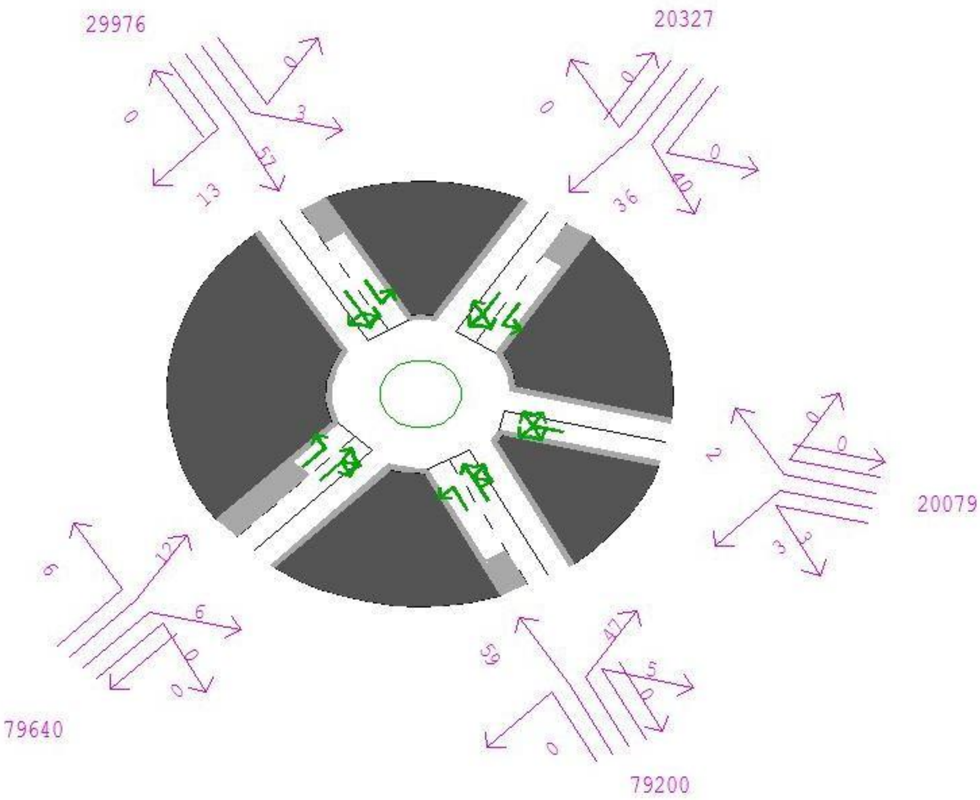


Figure B.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

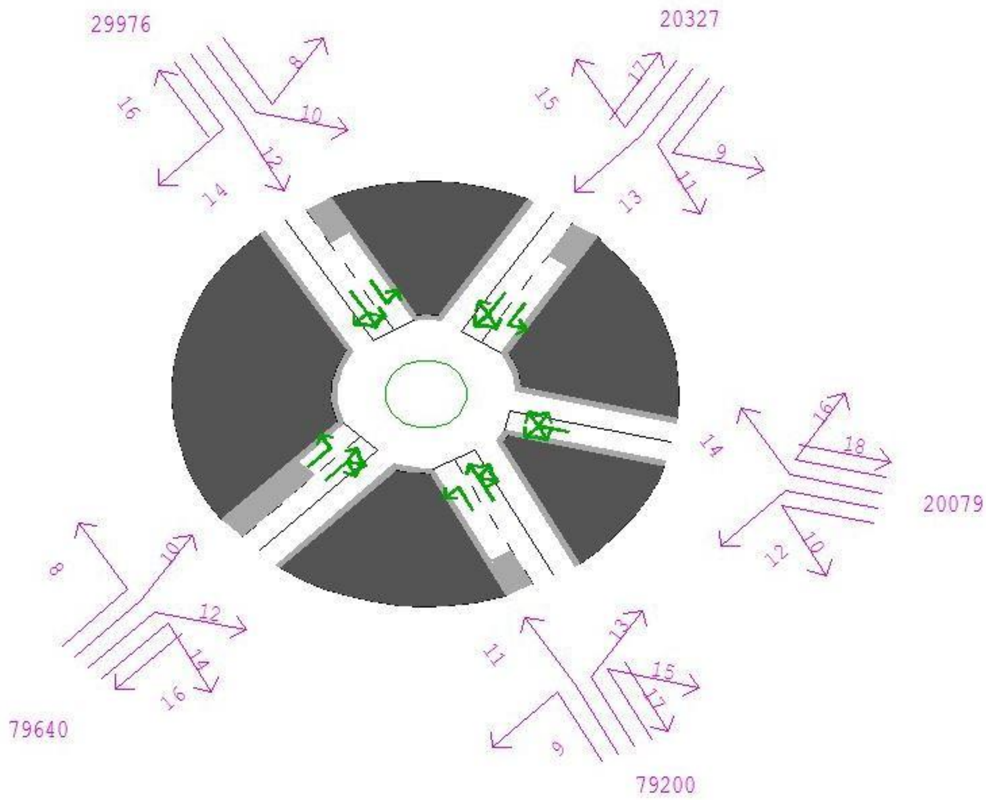


Figure B.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

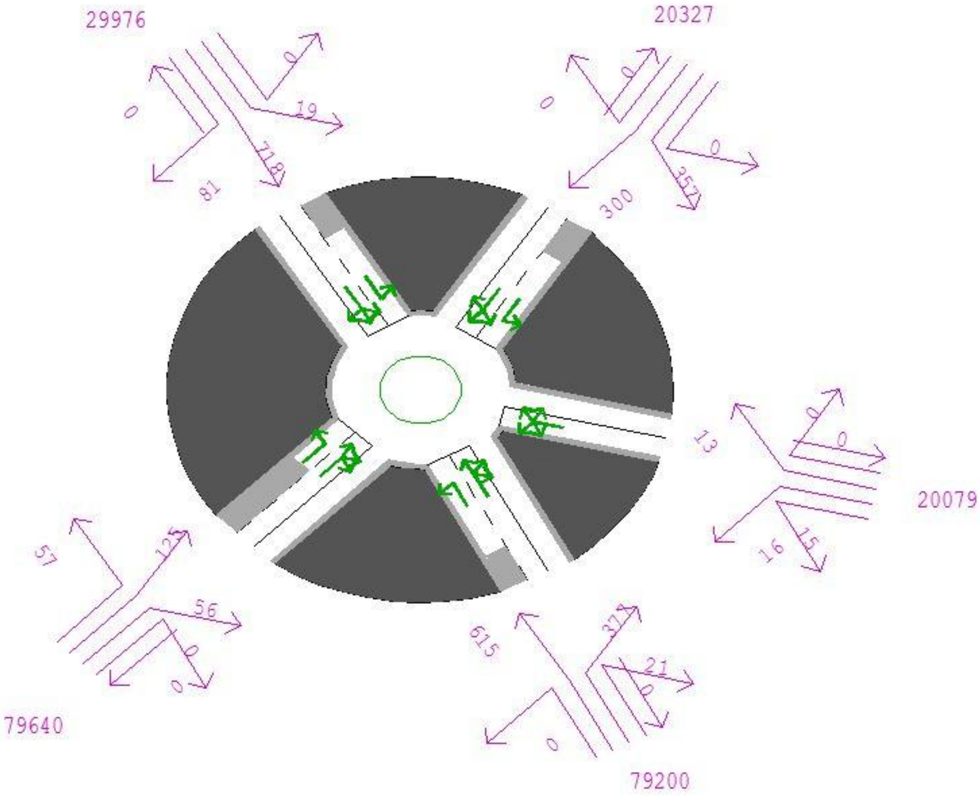


Figure B.28: M6 Junction 1: Volume-to-Capacity Ratio

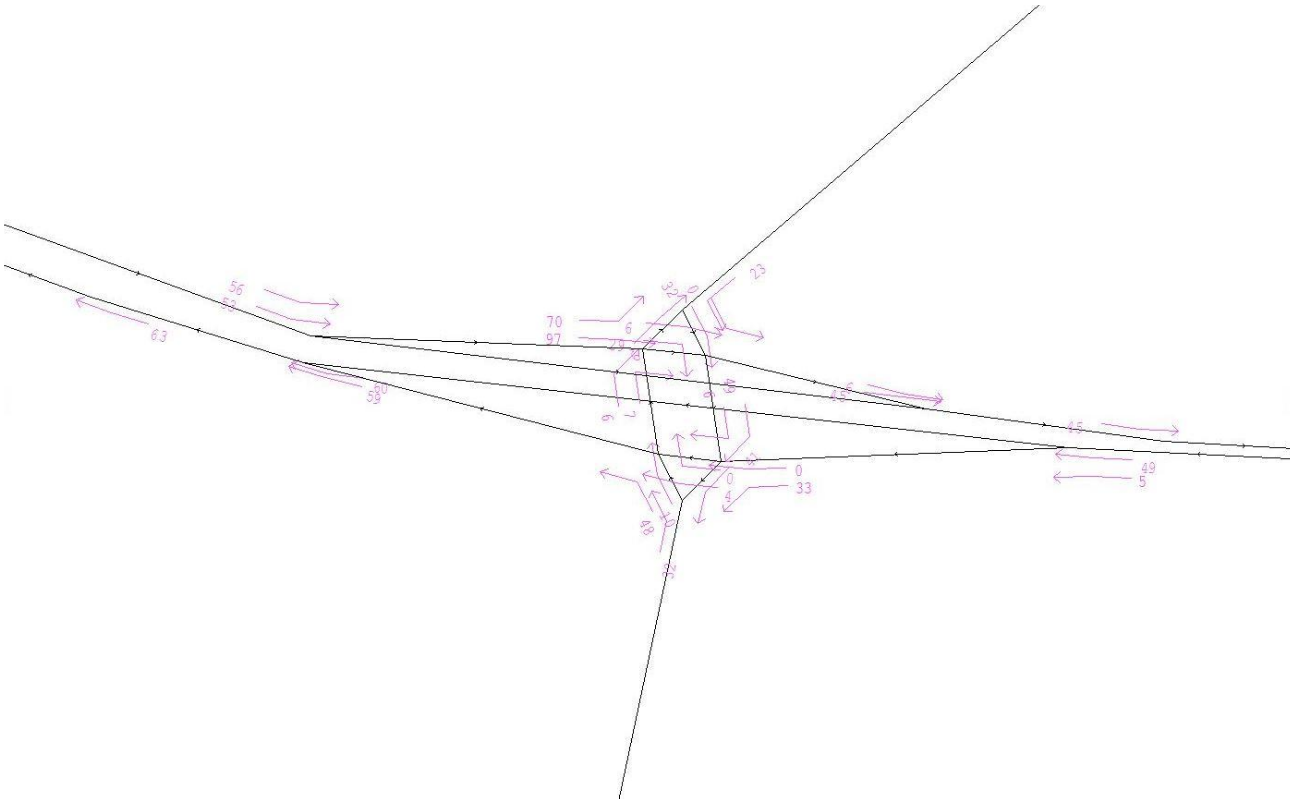


Figure B.29: M6 Junction 1: Delay (seconds)

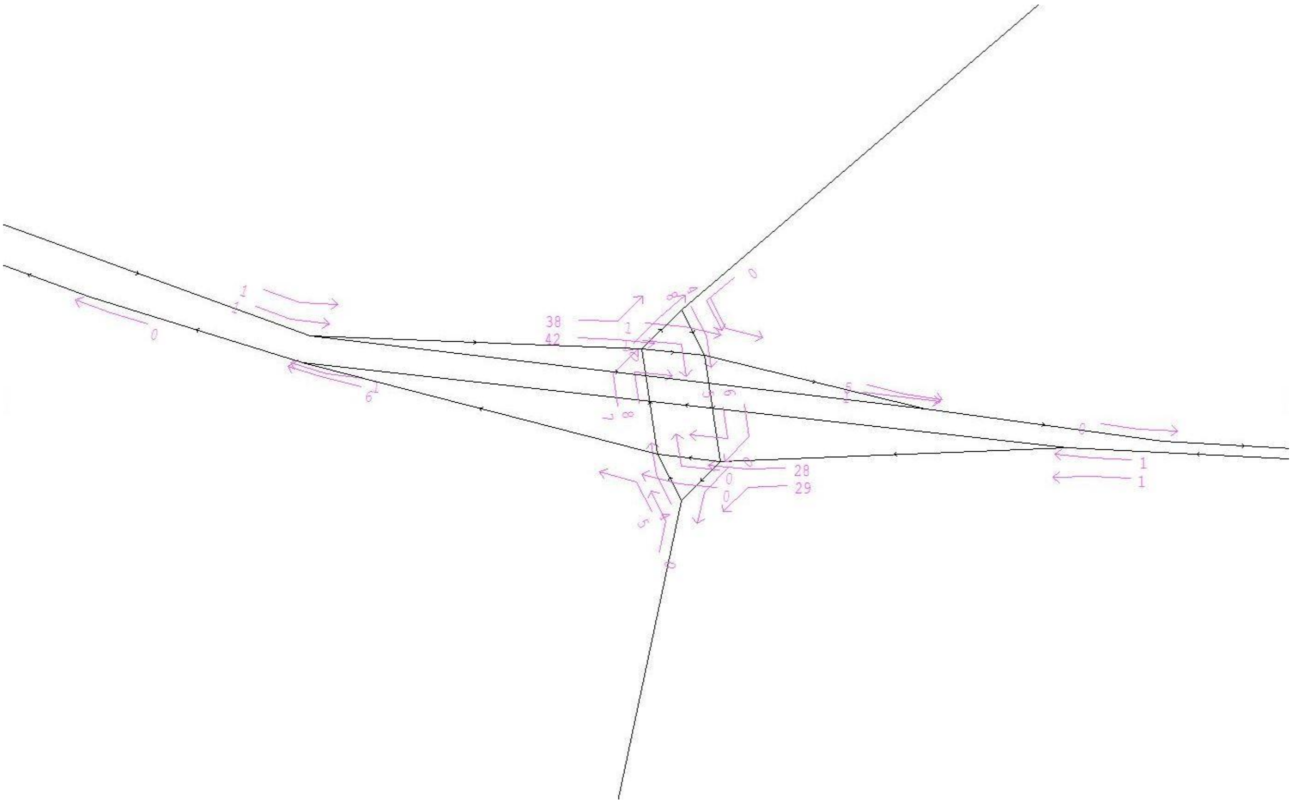


Figure B.30: M6 Junction 1: Arrive Flow (PCUs)

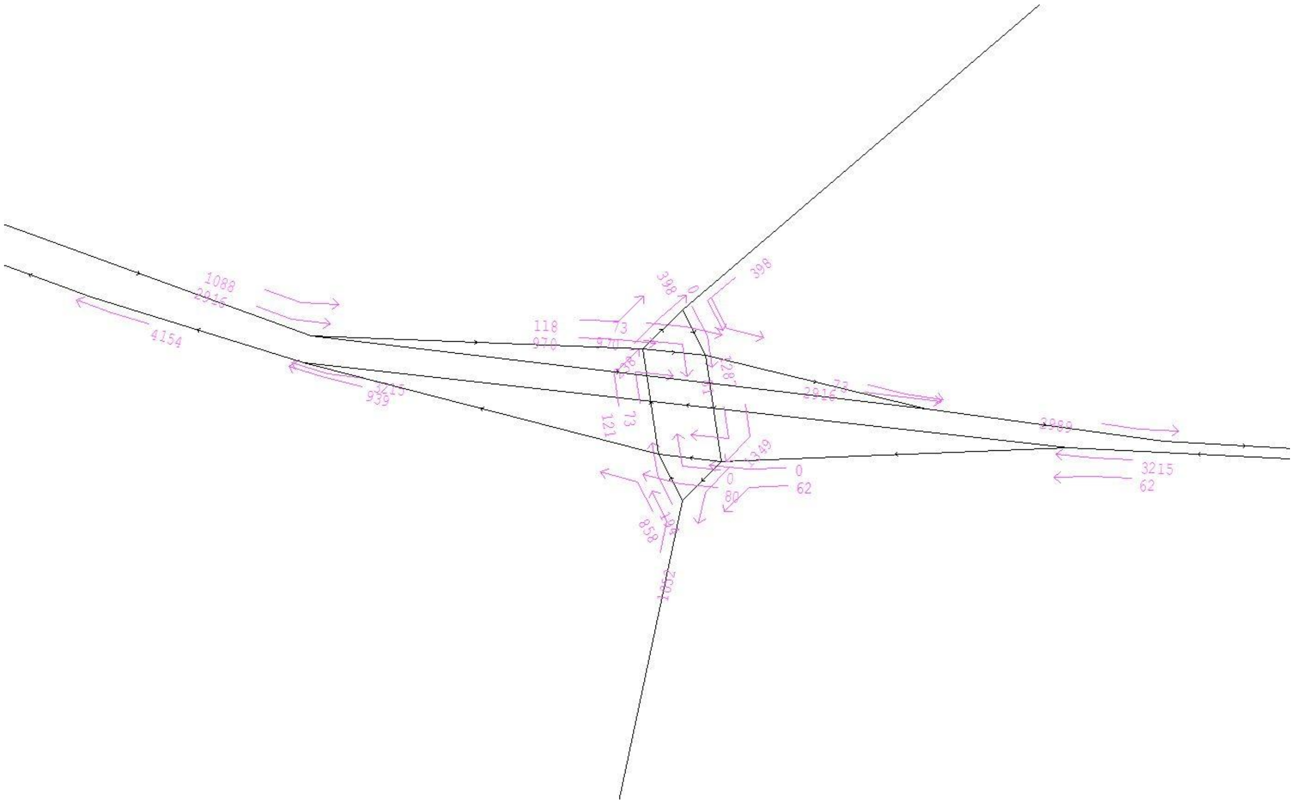


Figure B.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

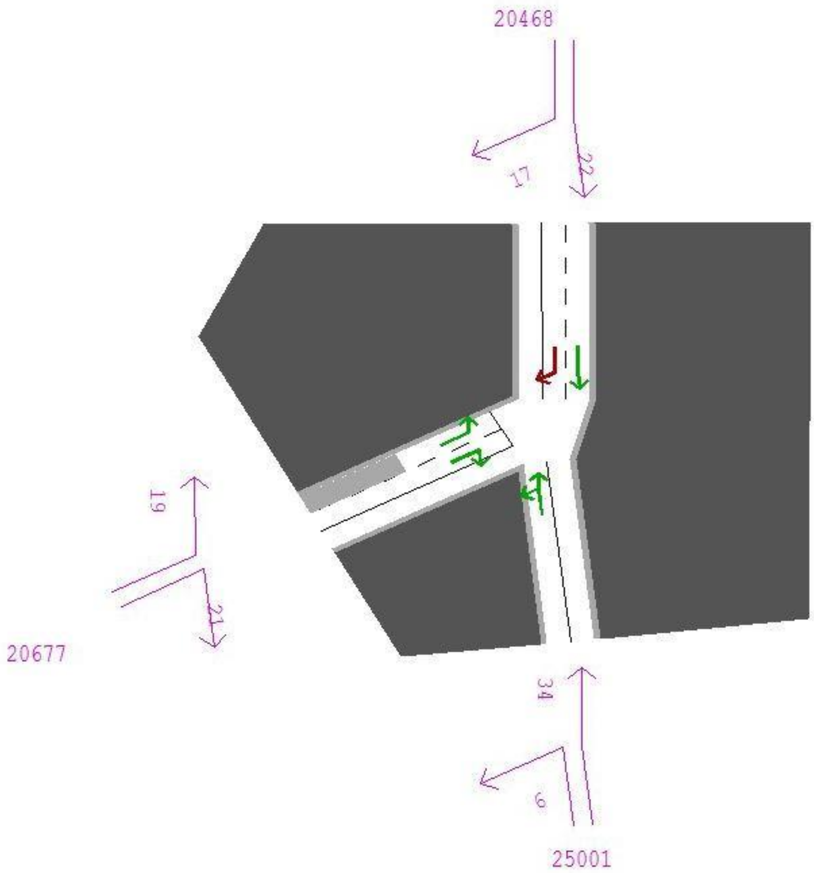


Figure B.32: A426 / Bill Crane Way Junction: Delay (seconds)

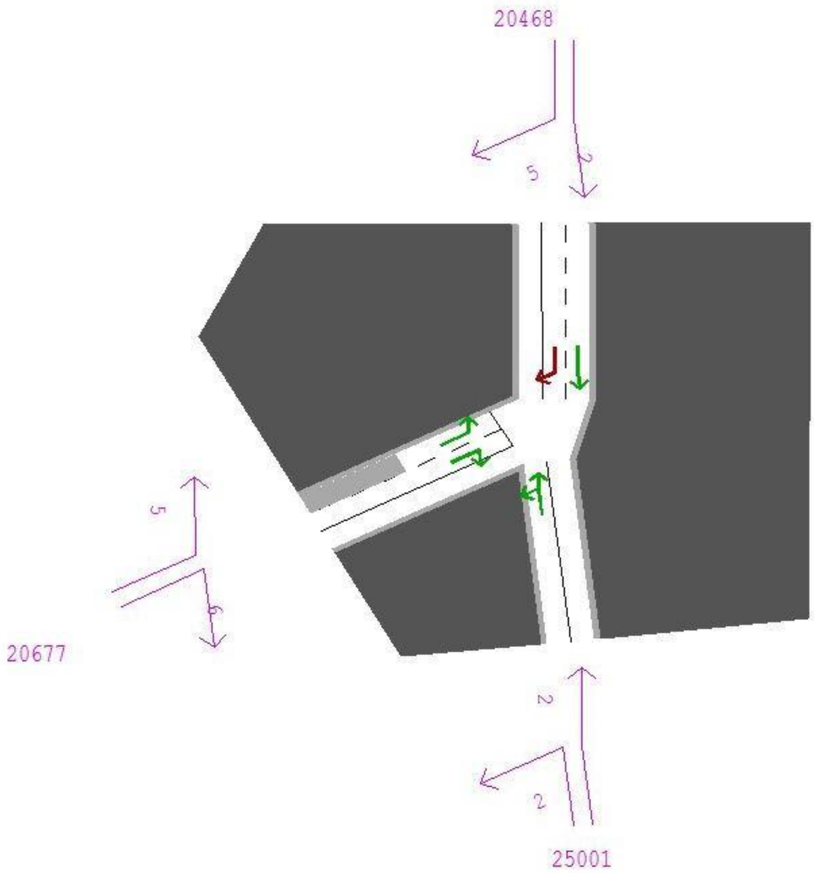
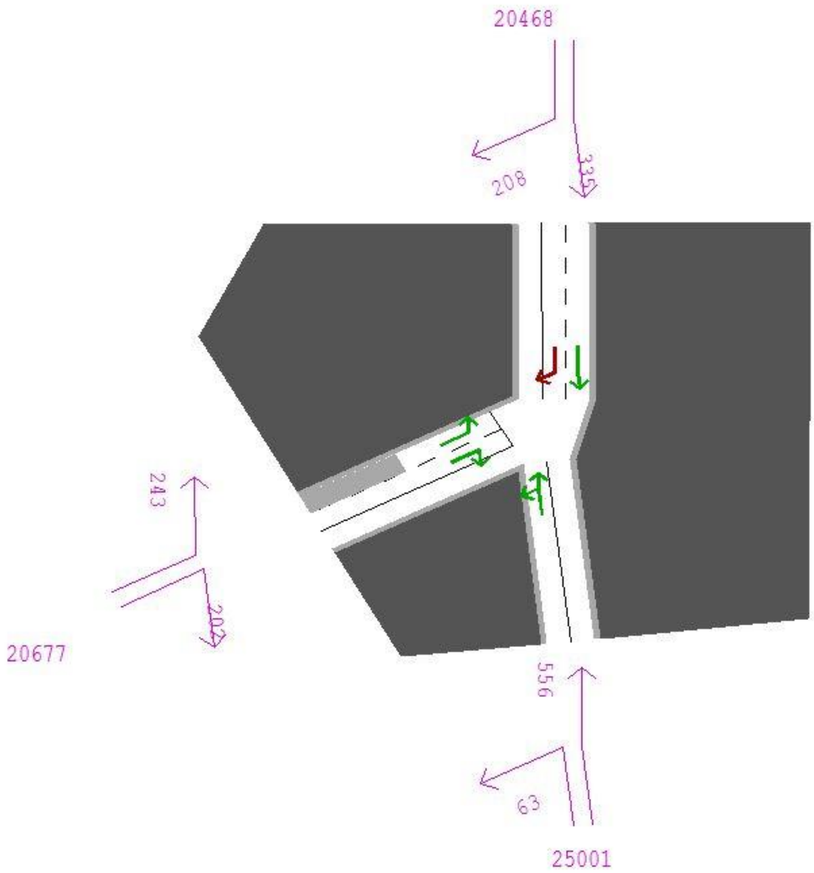


Figure B.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)



Appendix C 2008 Base PM Peak Junction Node Data

C.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure C.1: M1 Junction 20: Volume-to-Capacity Ratio

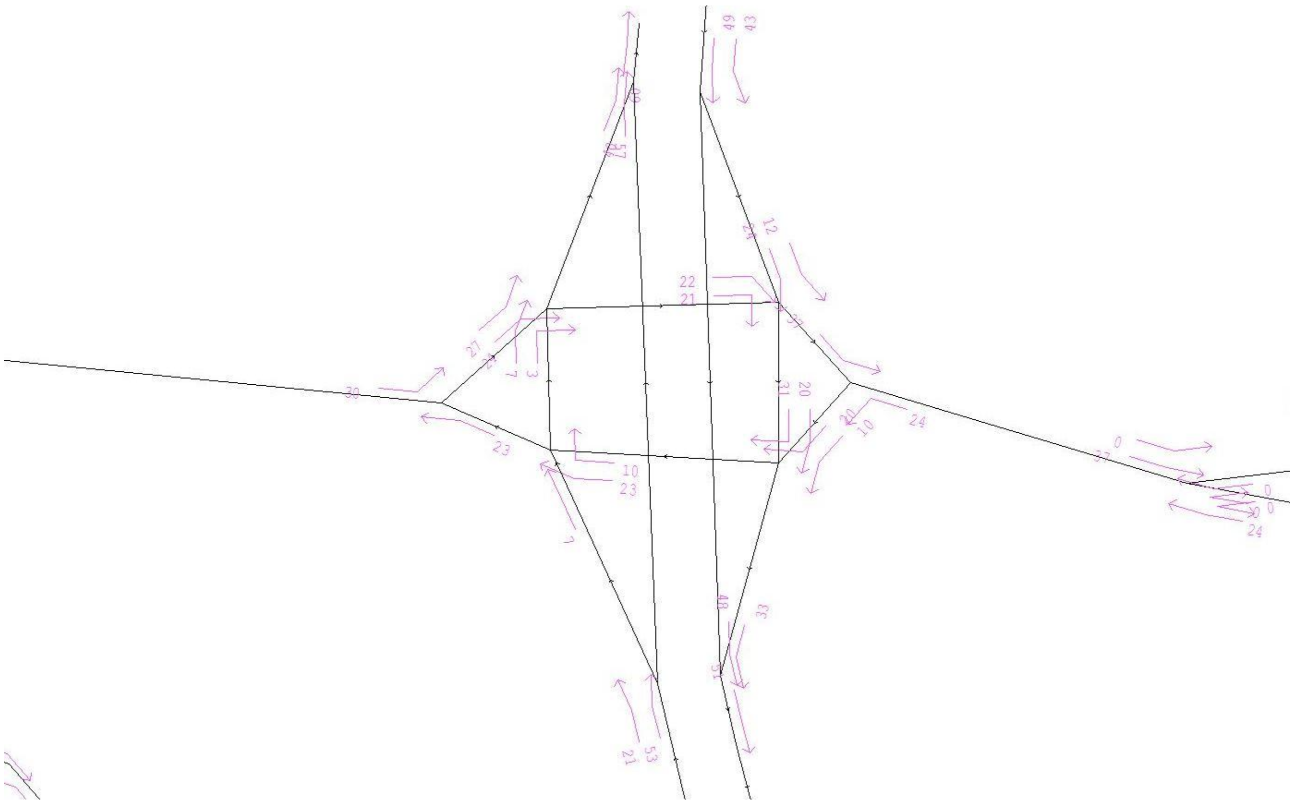


Figure C.2: M1 Junction 20: Delay (seconds)

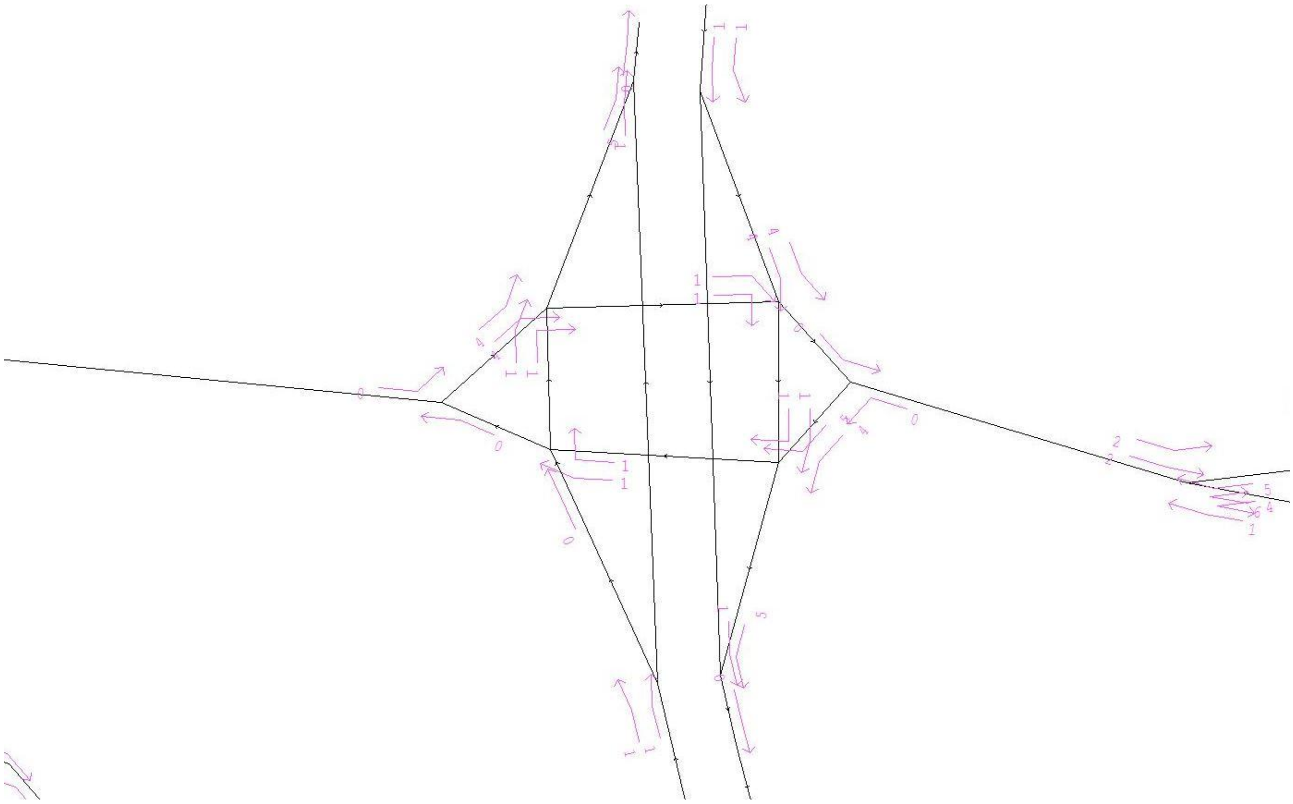


Figure C.3: M1 Junction 20: Arrive Flow (PCUs)

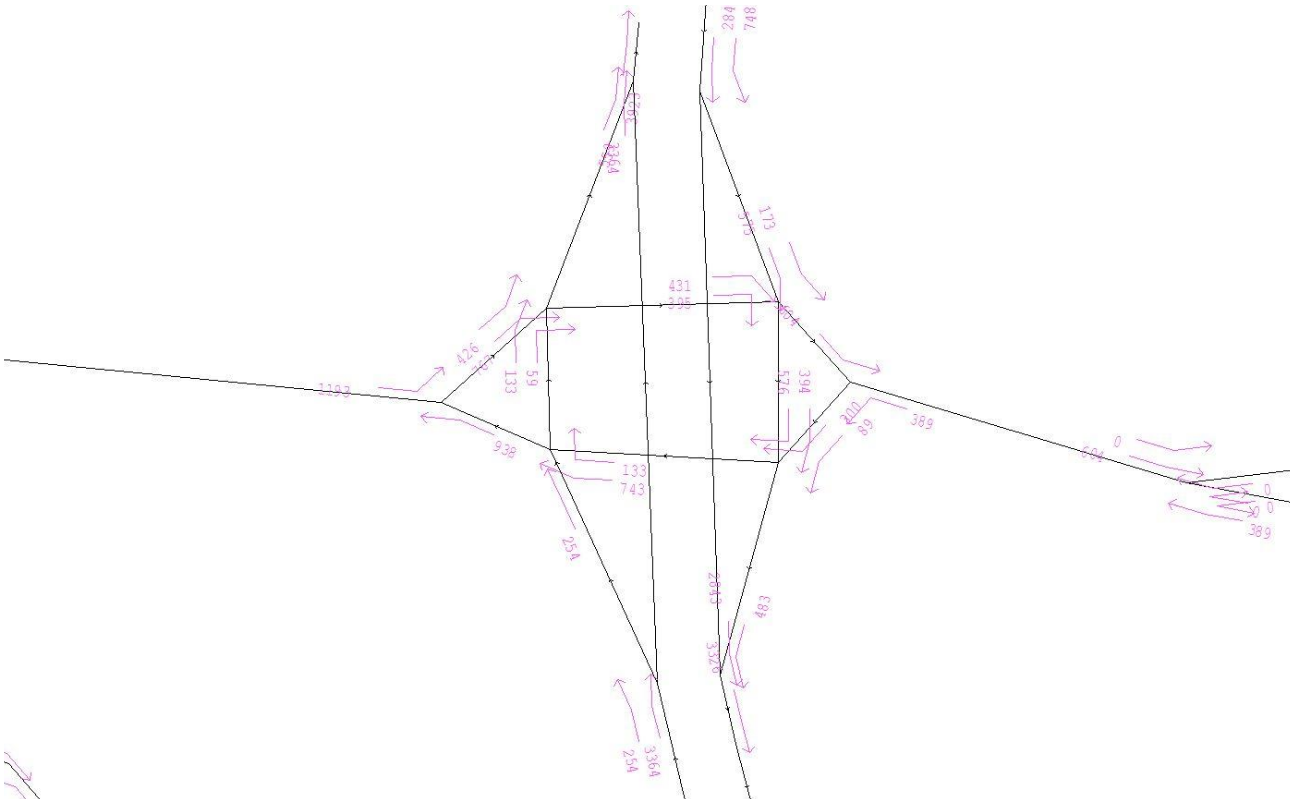


Figure C.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

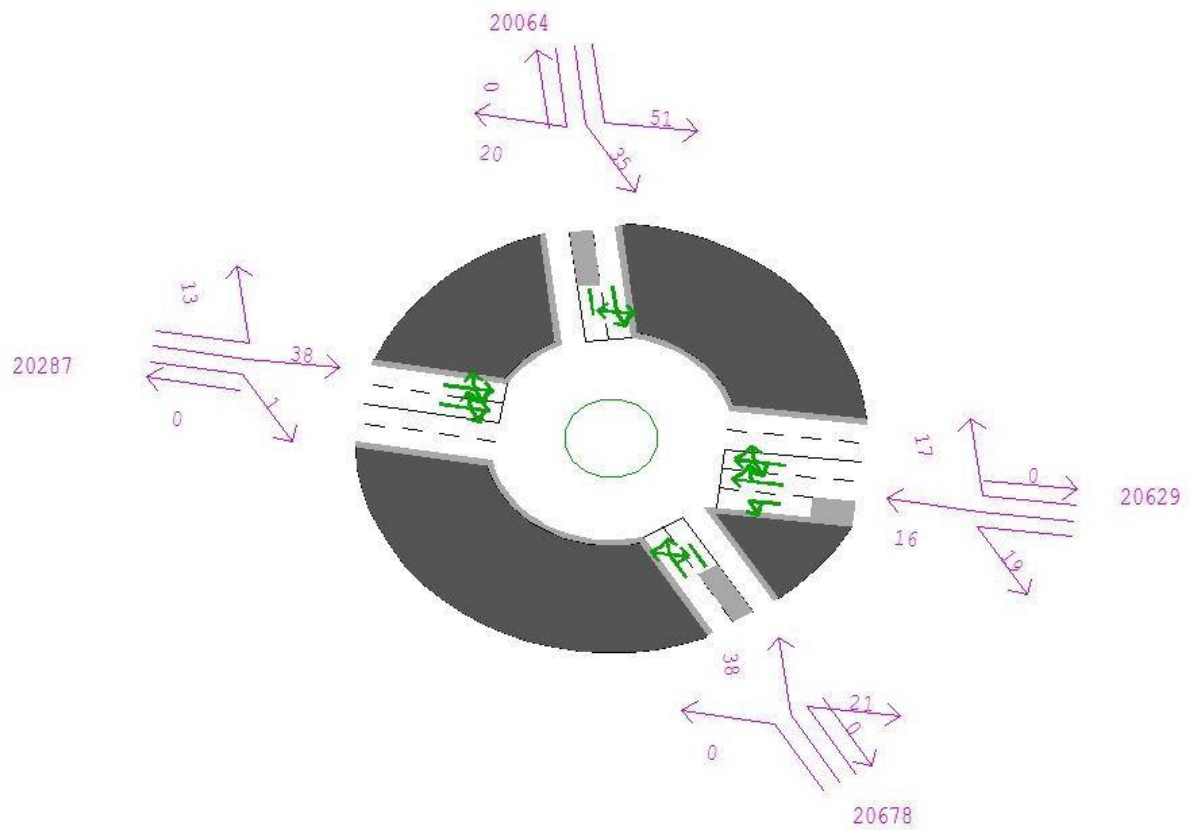


Figure C.5: A4303 / A426 Roundabout: Delay (seconds)

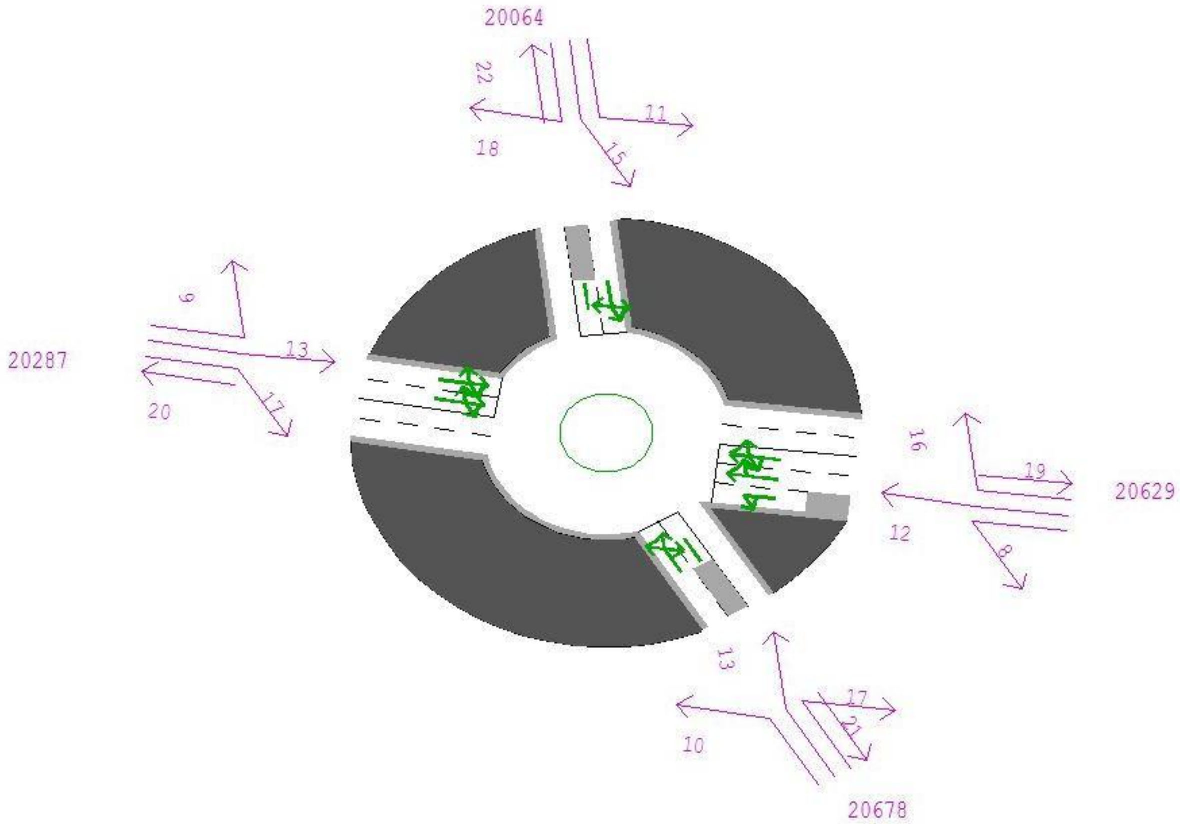


Figure C.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

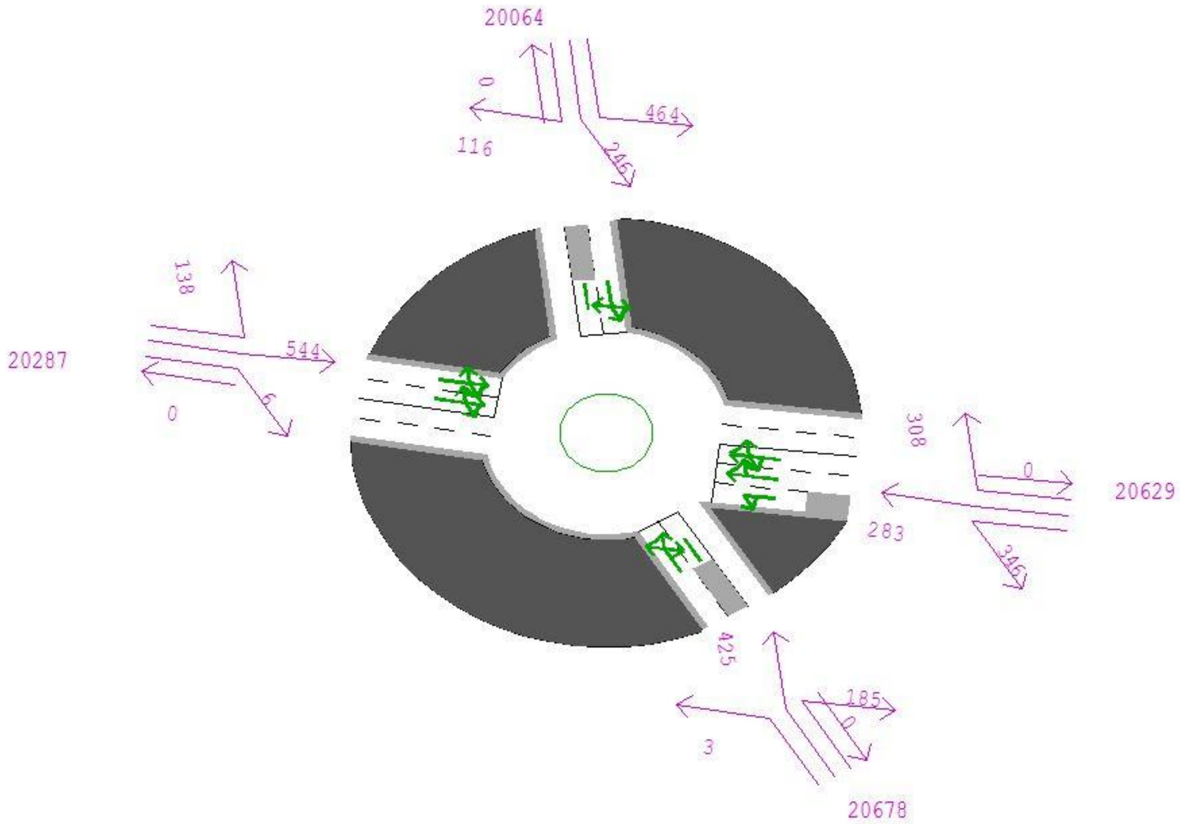


Figure C.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

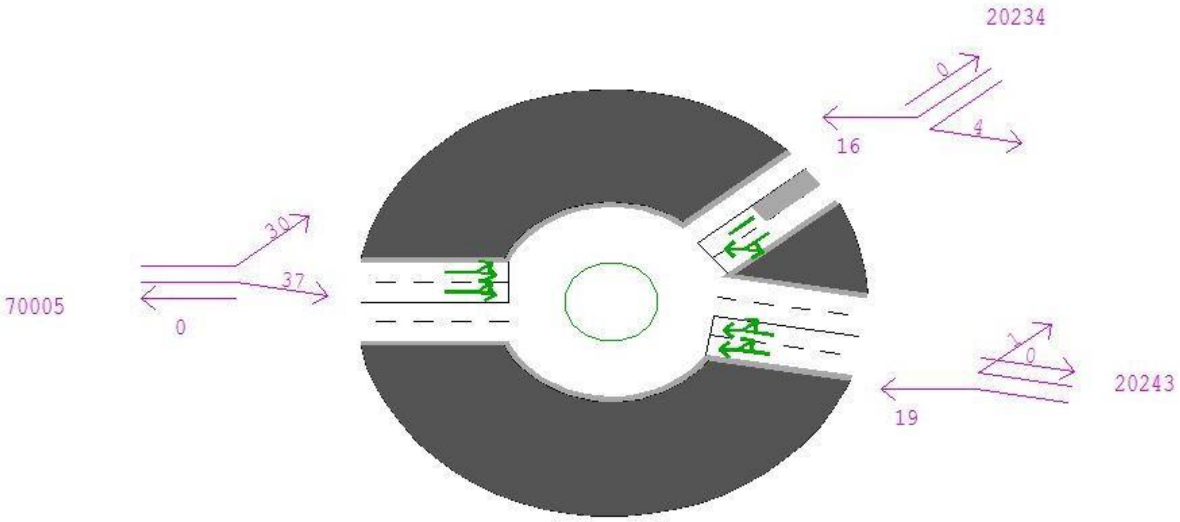


Figure C.8: A4303 / Coventry Road Roundabout: Delay (seconds)

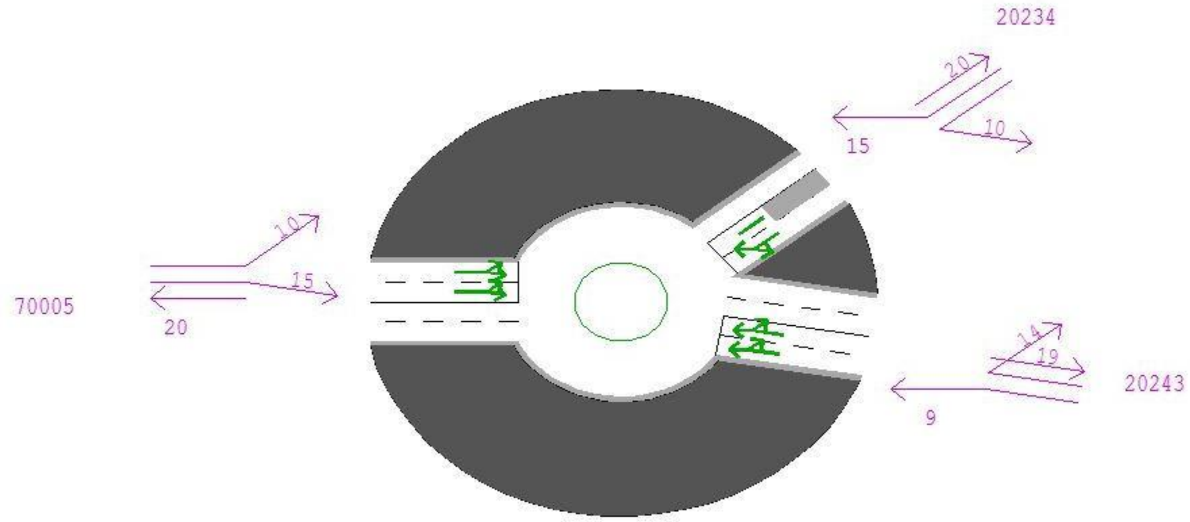


Figure C.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

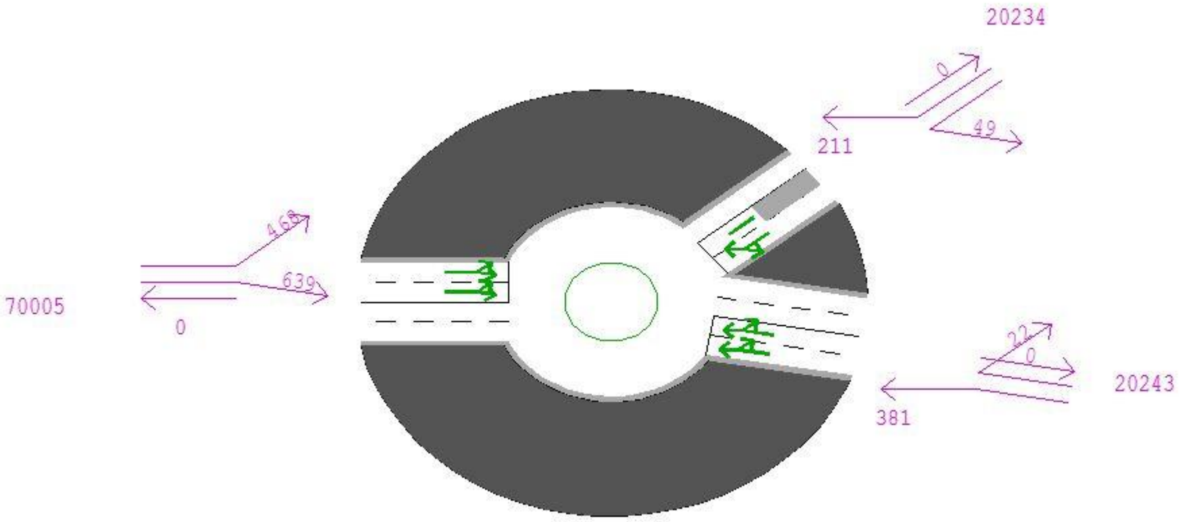


Figure C.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

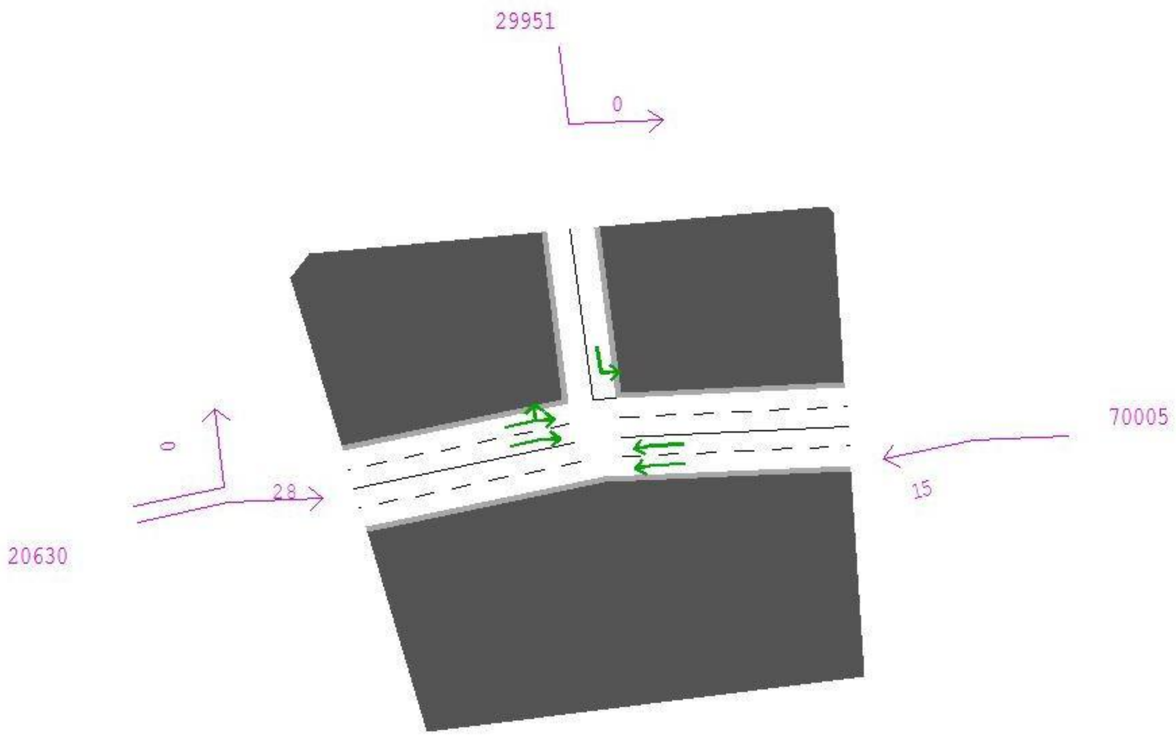


Figure C.11: A4303 / Shackleton Way Junction: Delay (seconds)

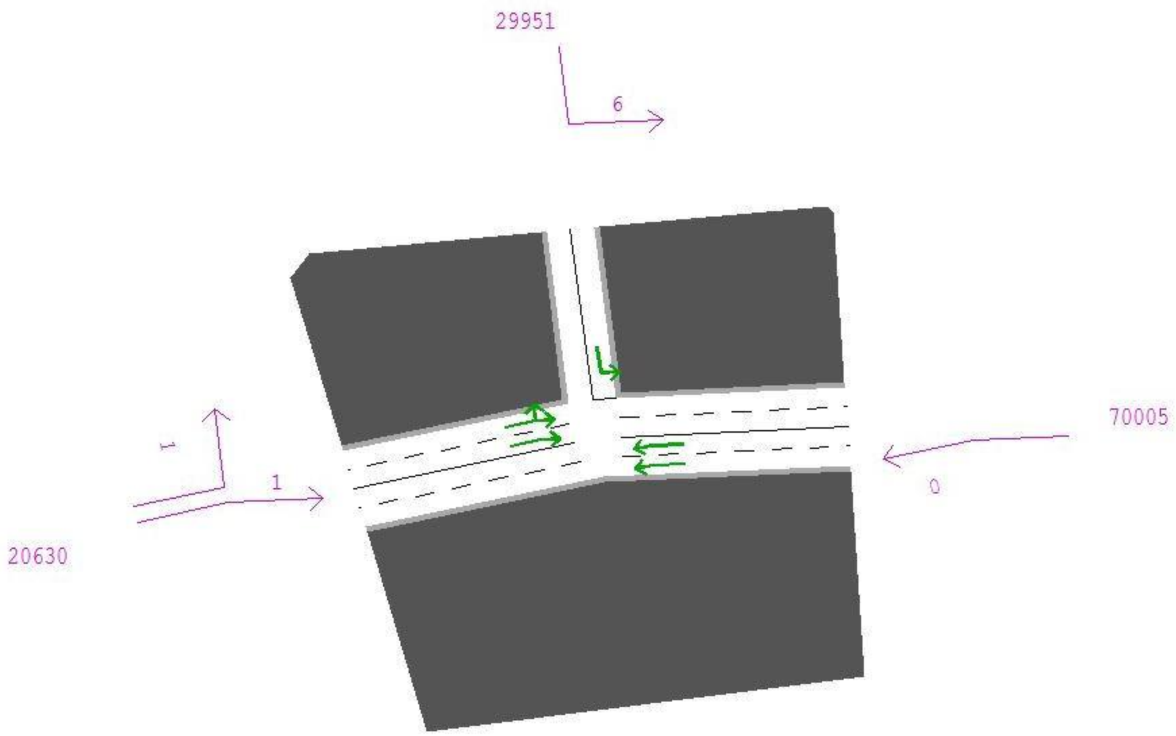


Figure C.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

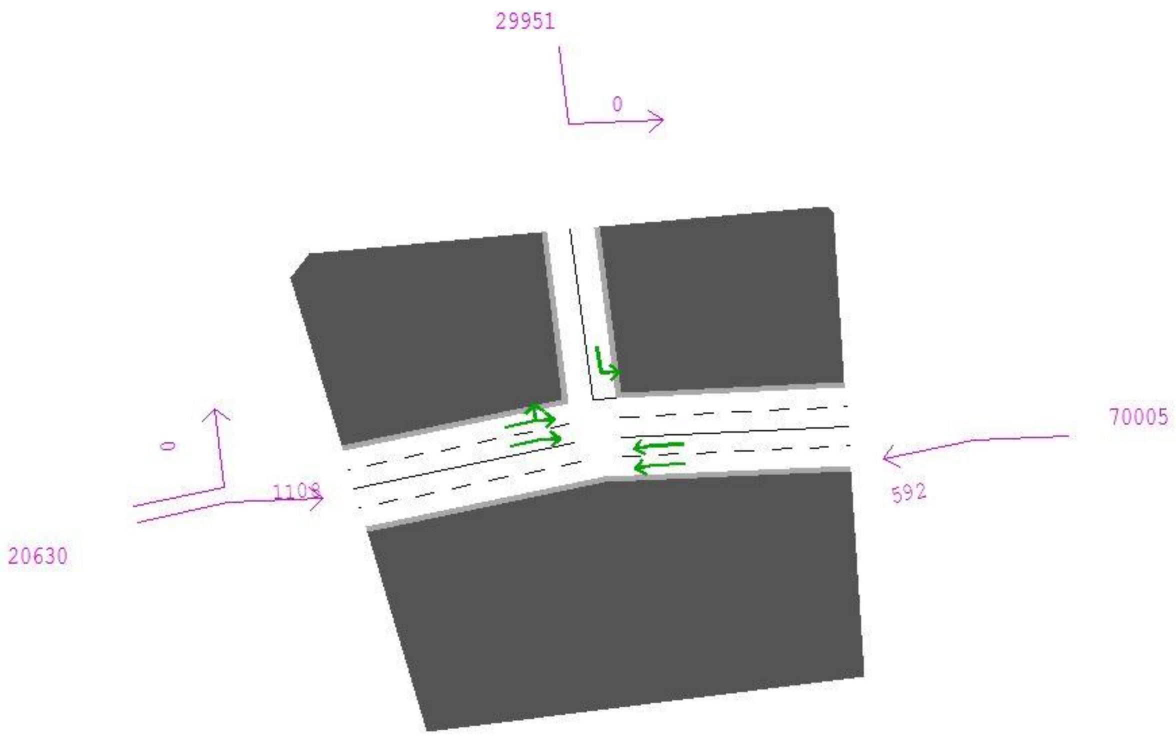


Figure C.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

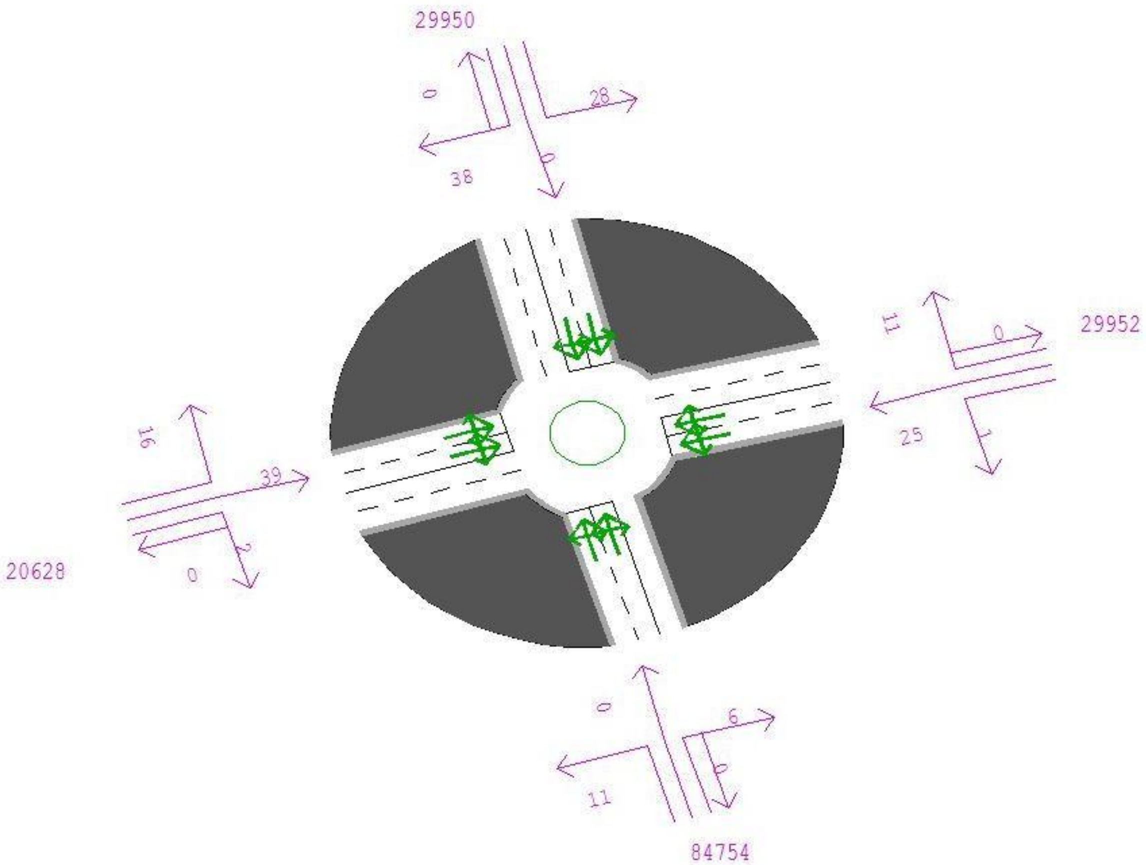


Figure C.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

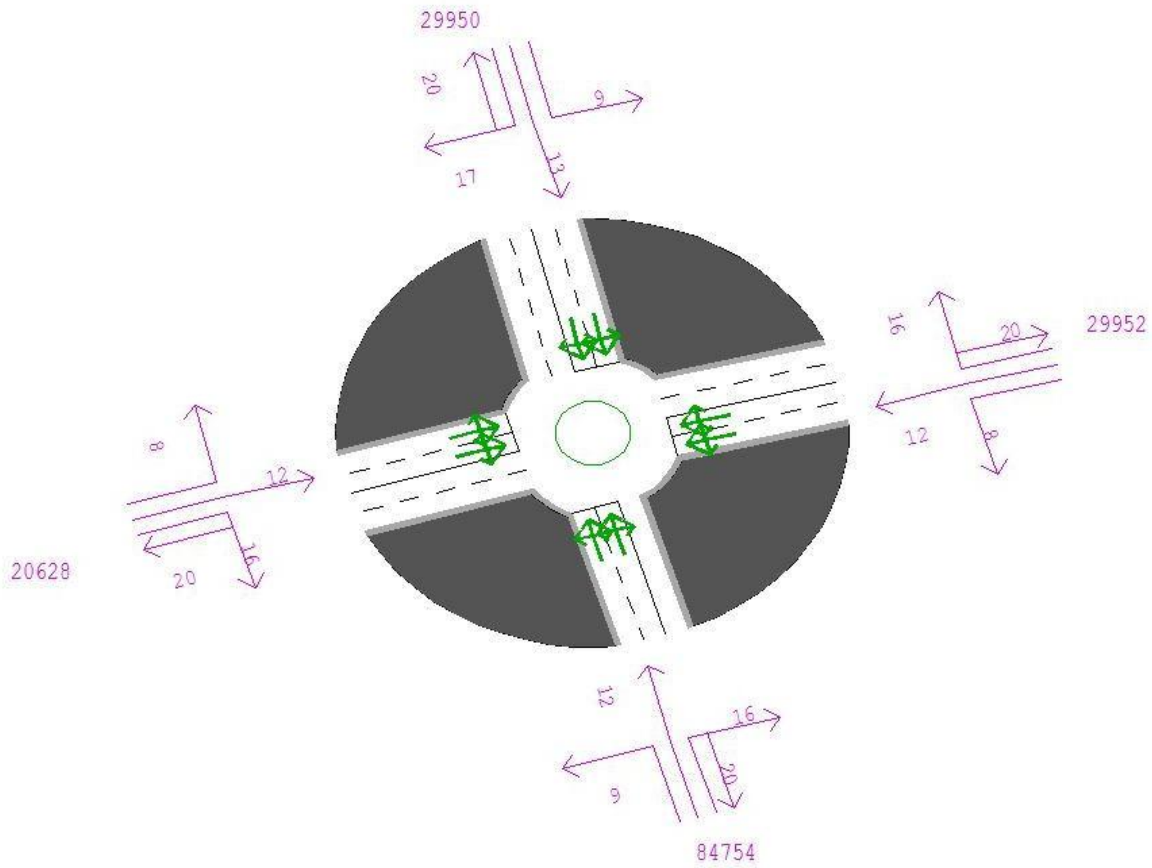


Figure C.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

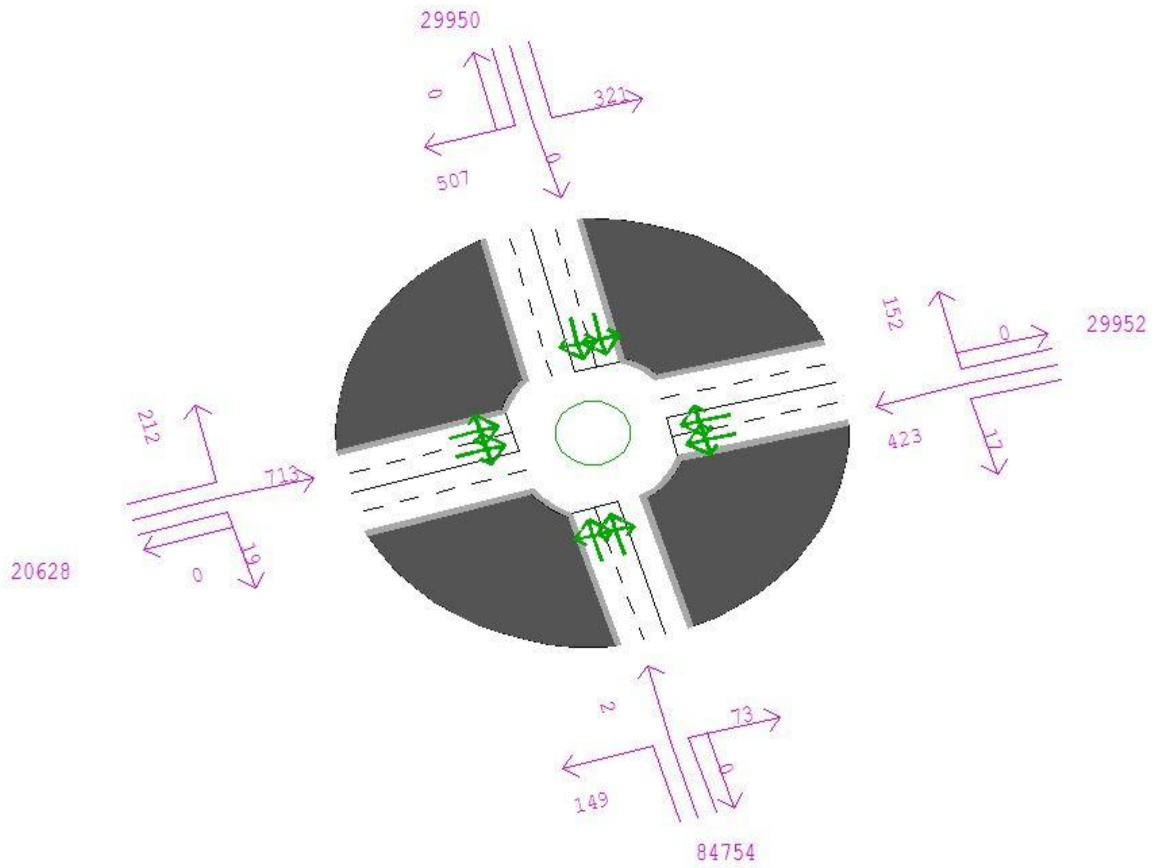


Figure C.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

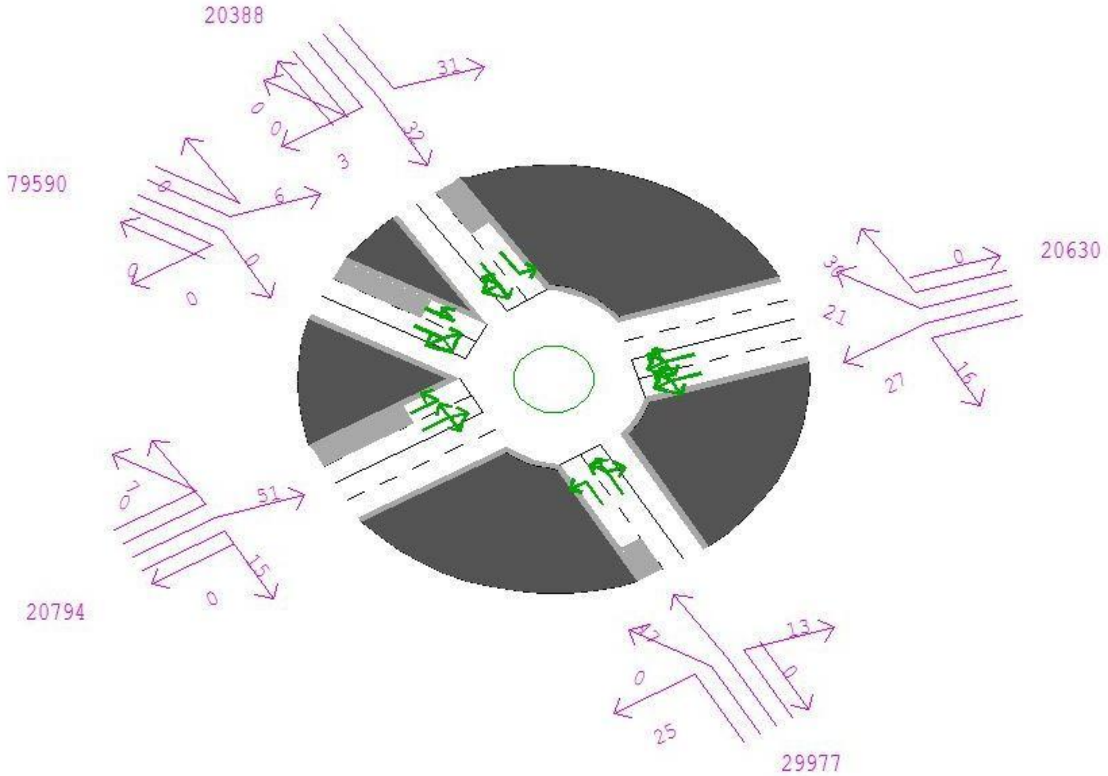


Figure C.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

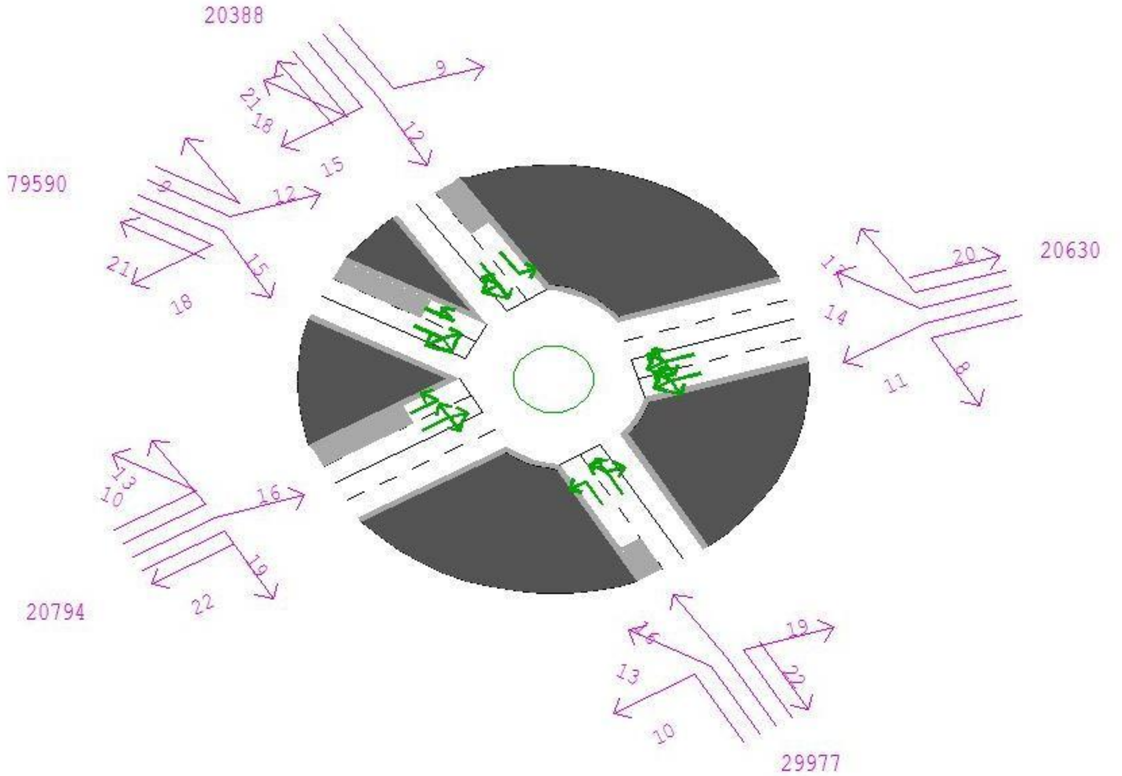


Figure C.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

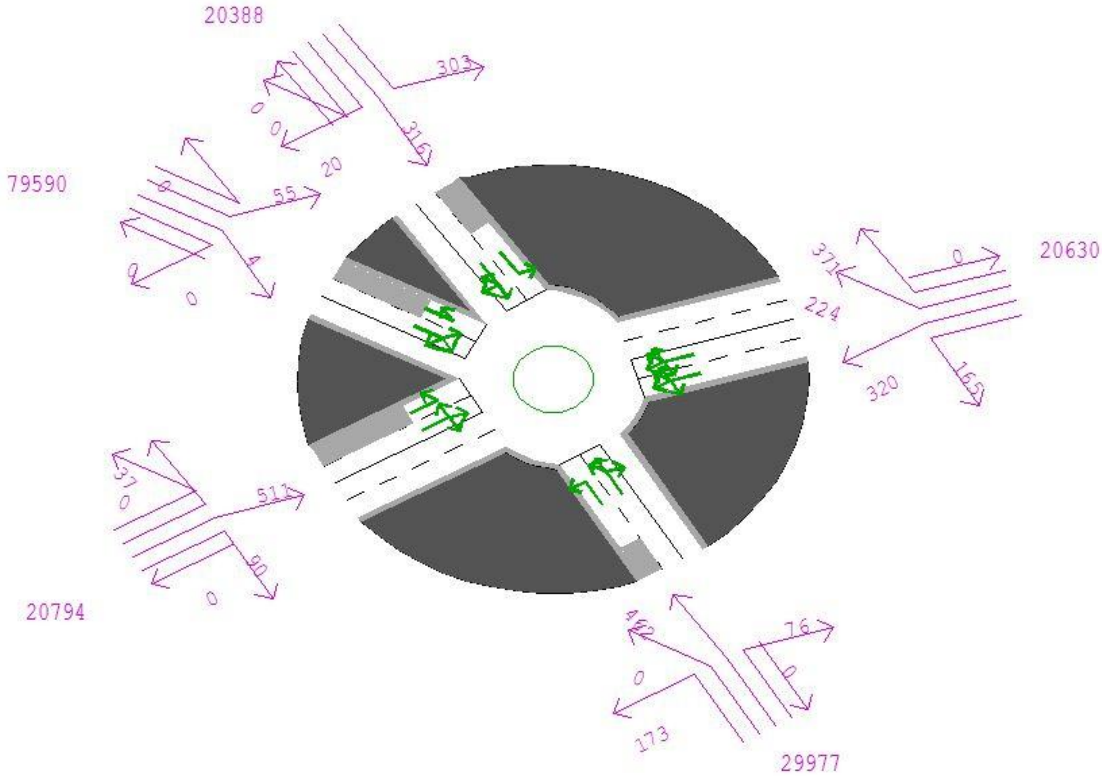


Figure C.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

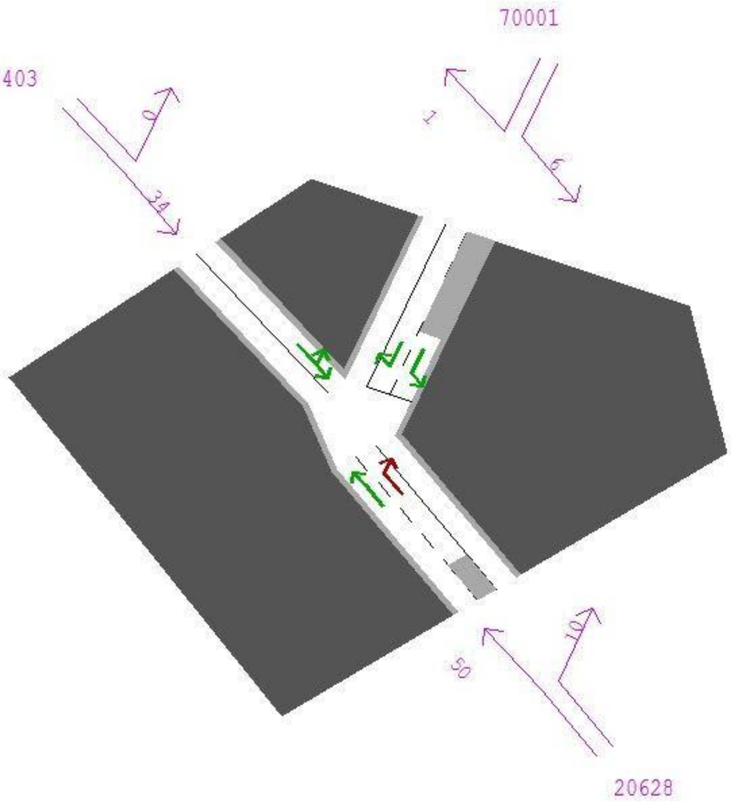


Figure C.20: A5 / Mere Lane Junction: Delay (seconds)

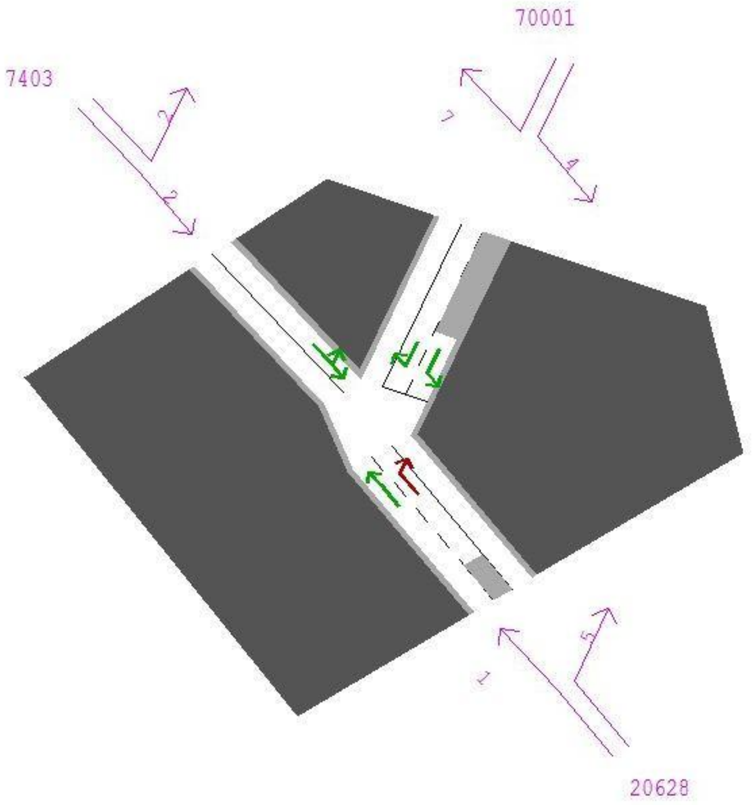


Figure C.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

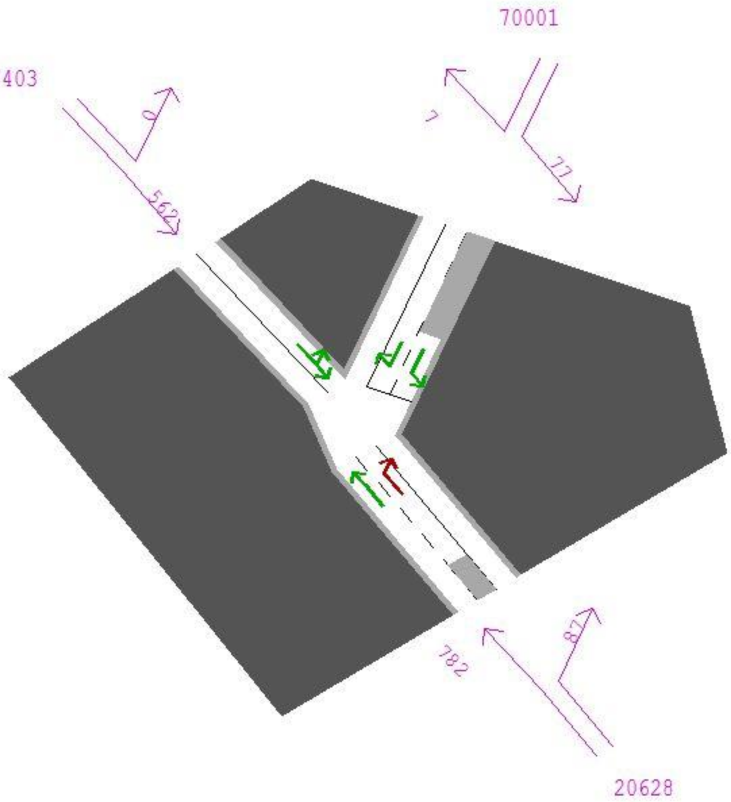


Figure C.22: M69 Junction 1: Volume-to-Capacity Ratio

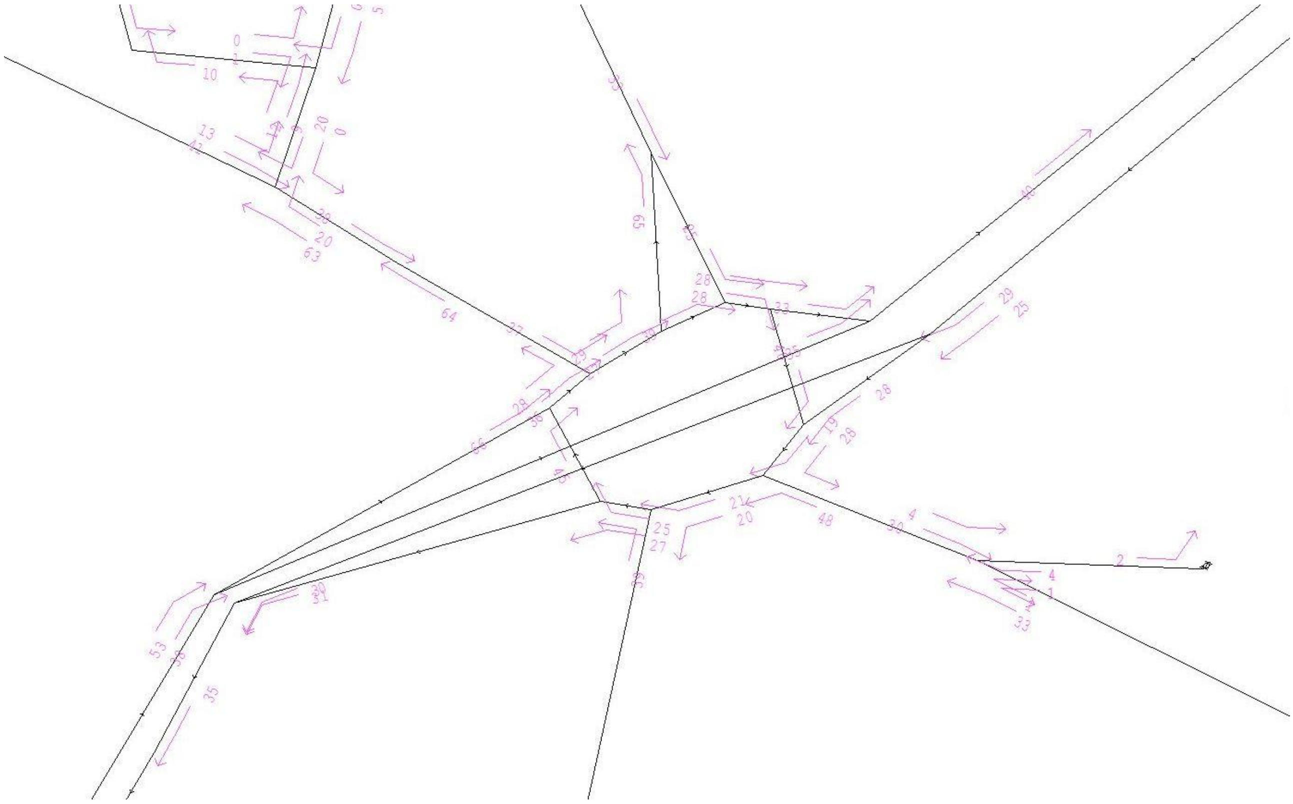


Figure C.23: M69 Junction 1: Delay (seconds)

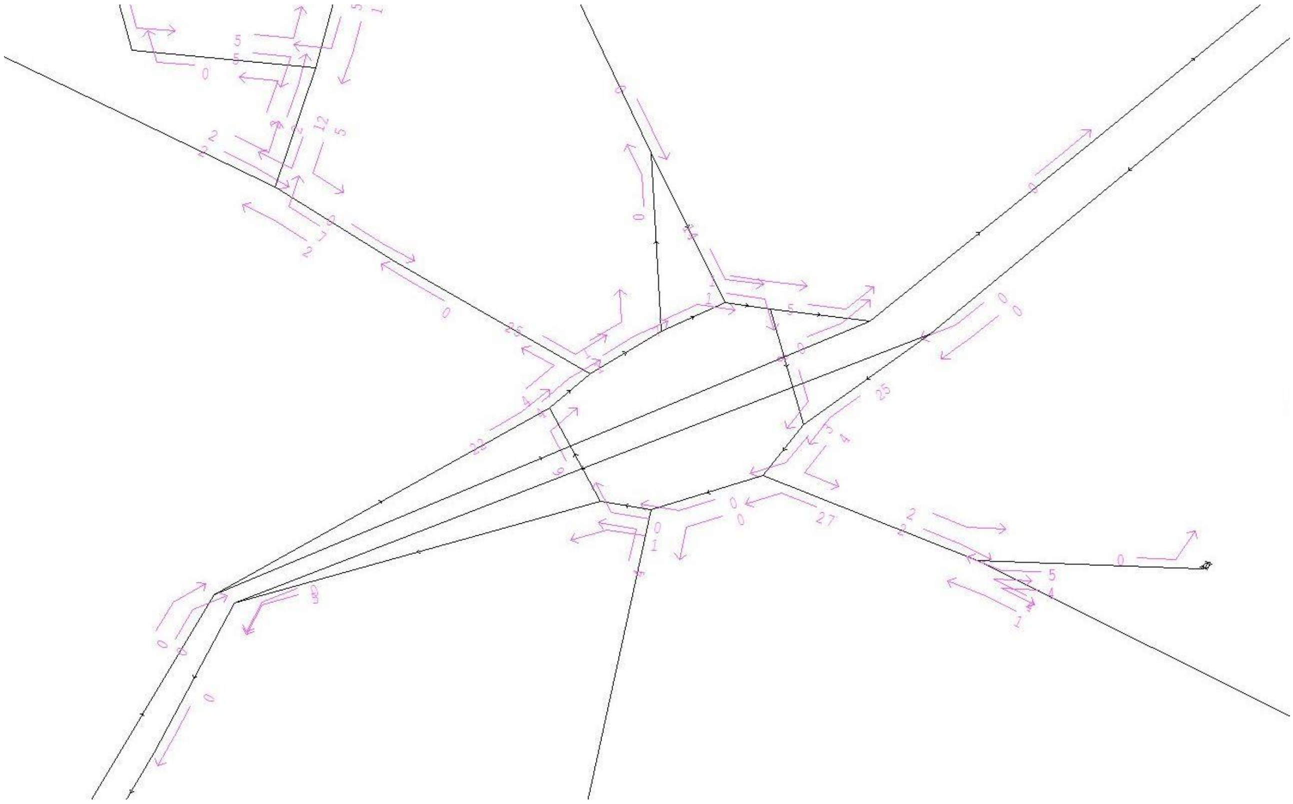


Figure C.24: M69 Junction 1: Arrive Flow (PCUs)

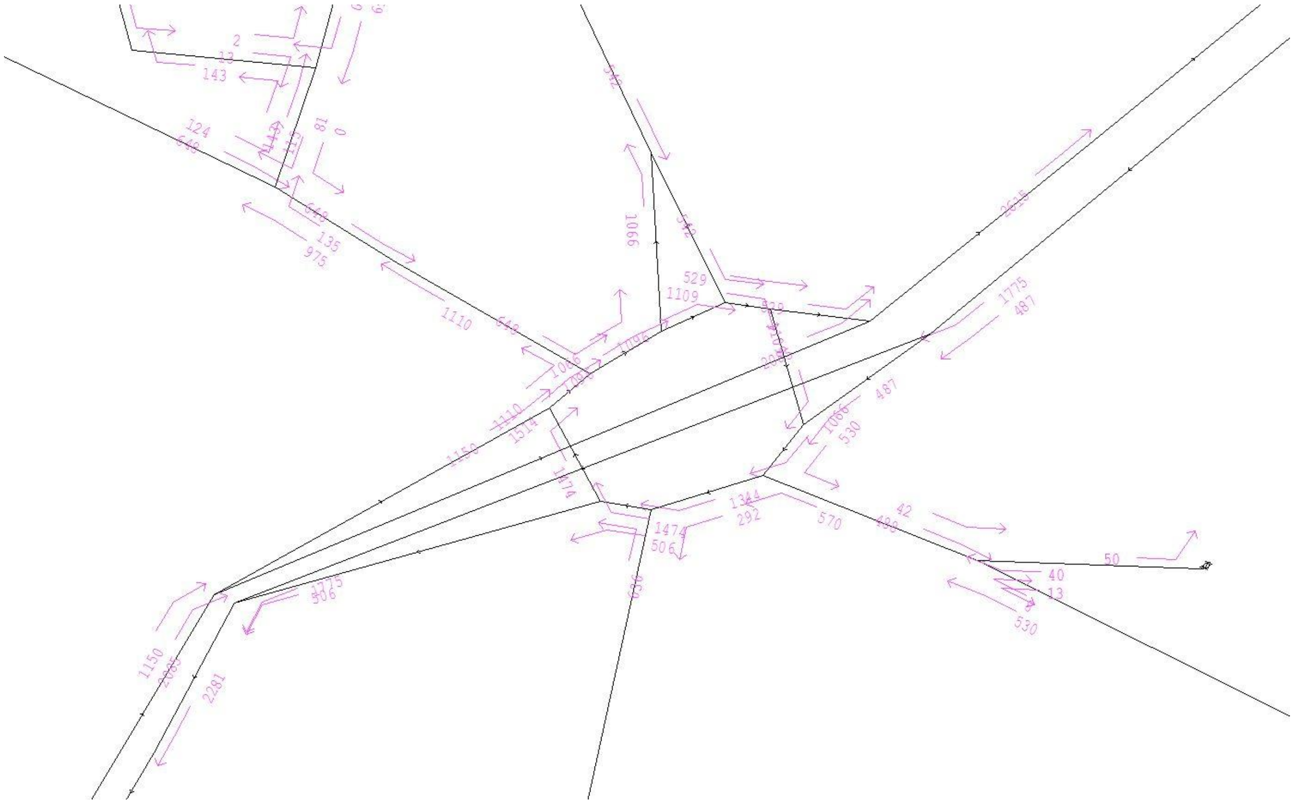


Figure C.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

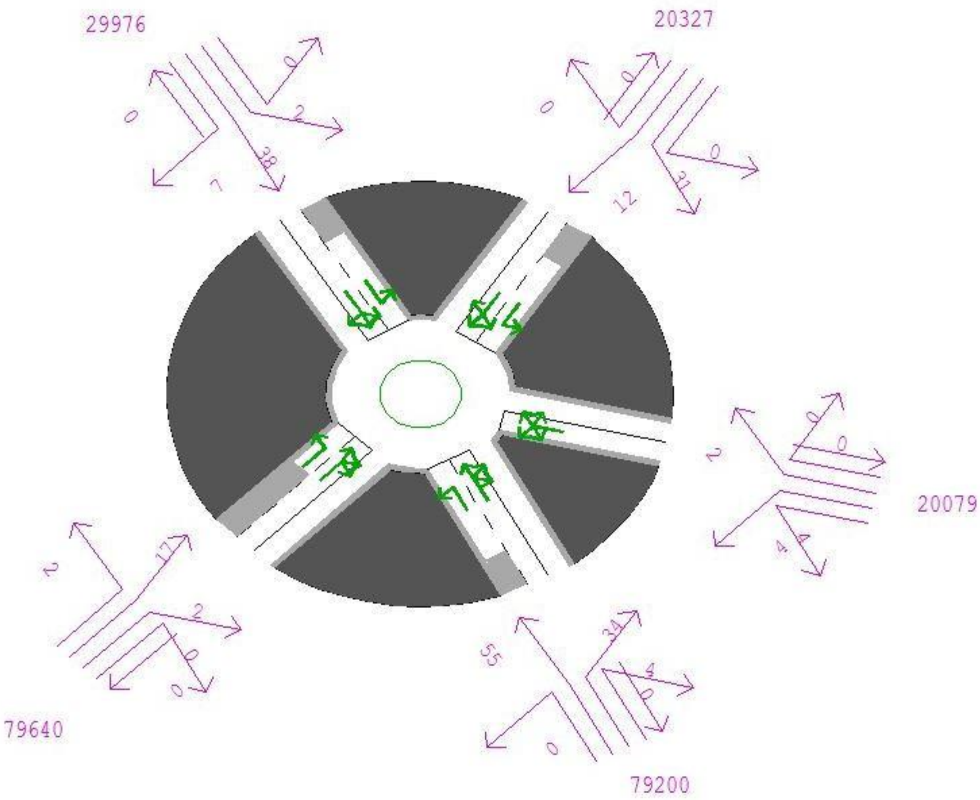


Figure C.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

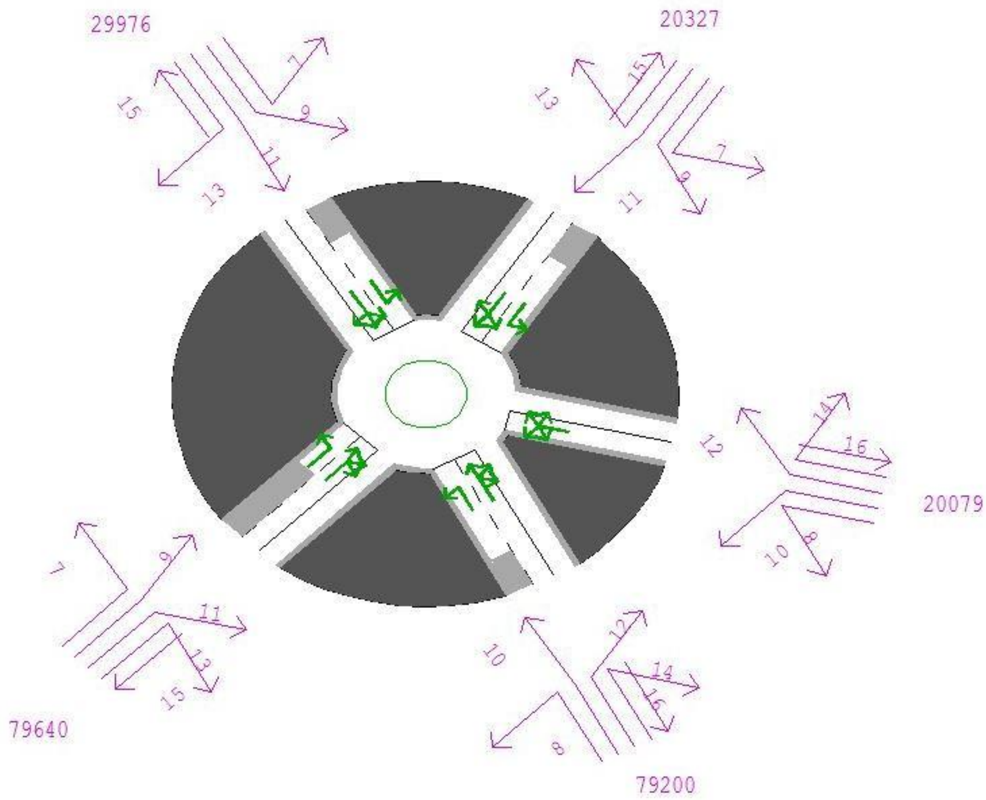


Figure C.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

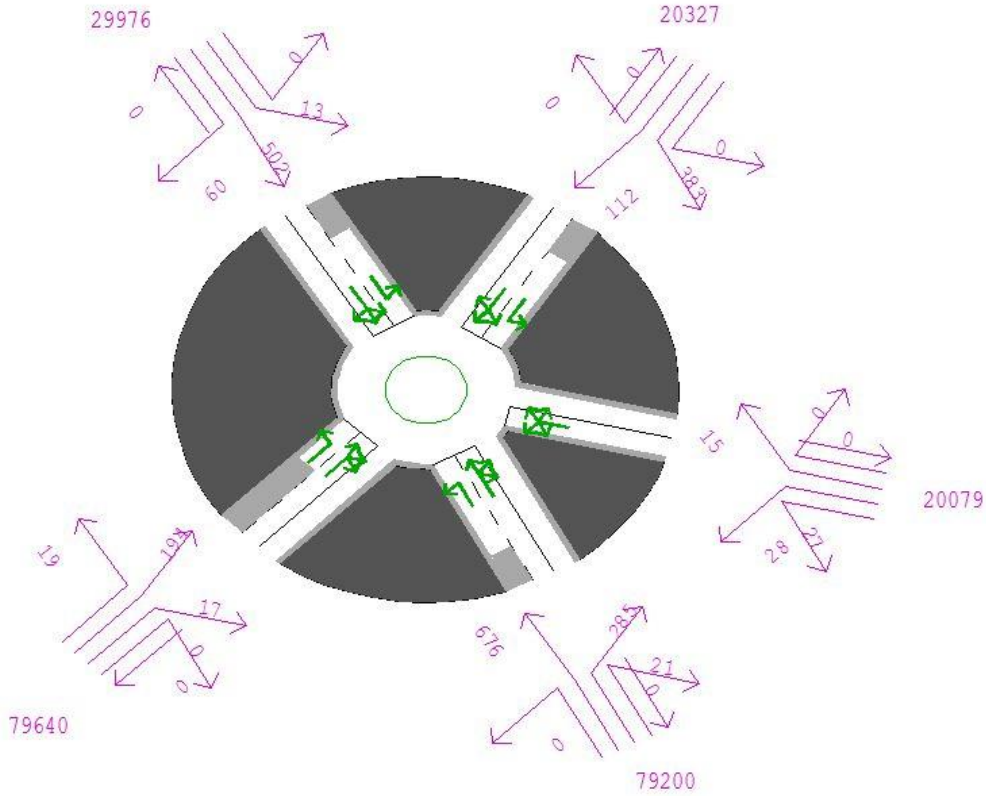


Figure C.28: M6 Junction 1: Volume-to-Capacity Ratio

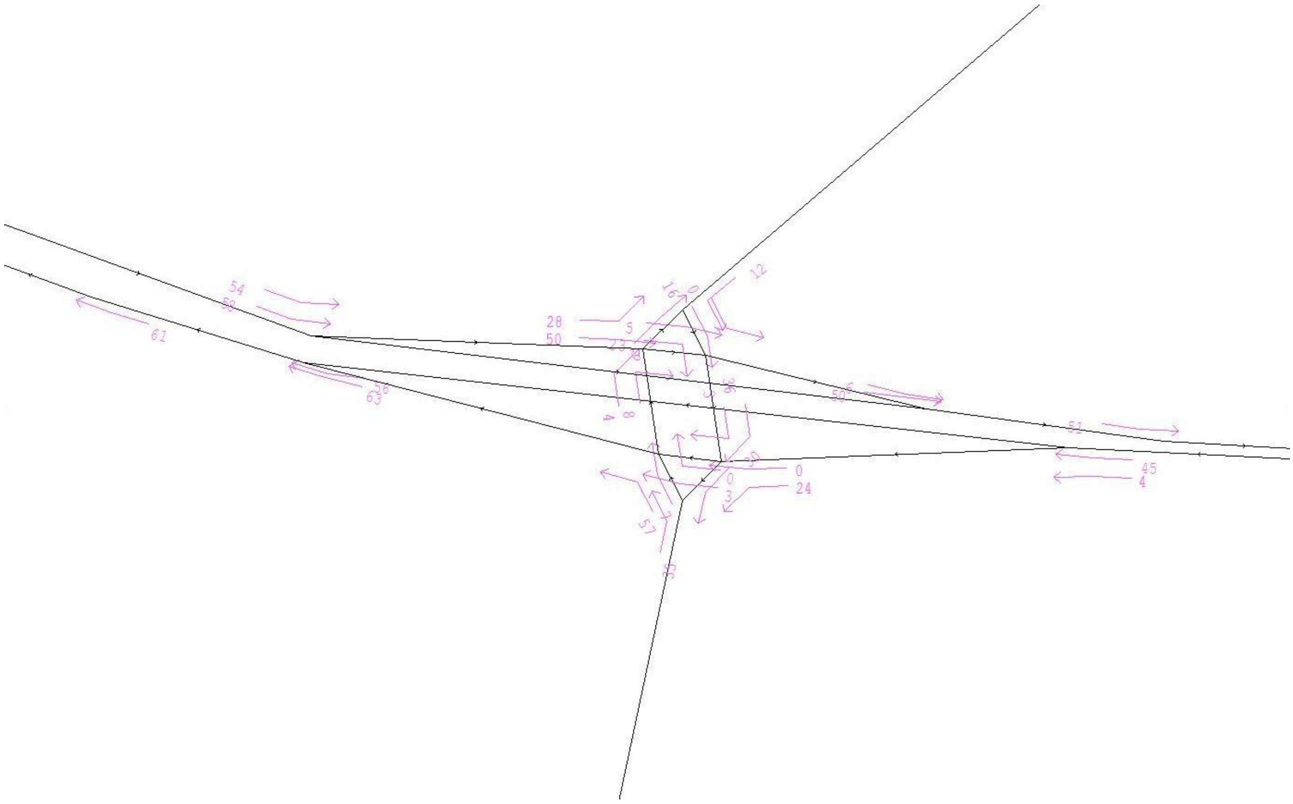


Figure C.29: M6 Junction 1: Delay (seconds)

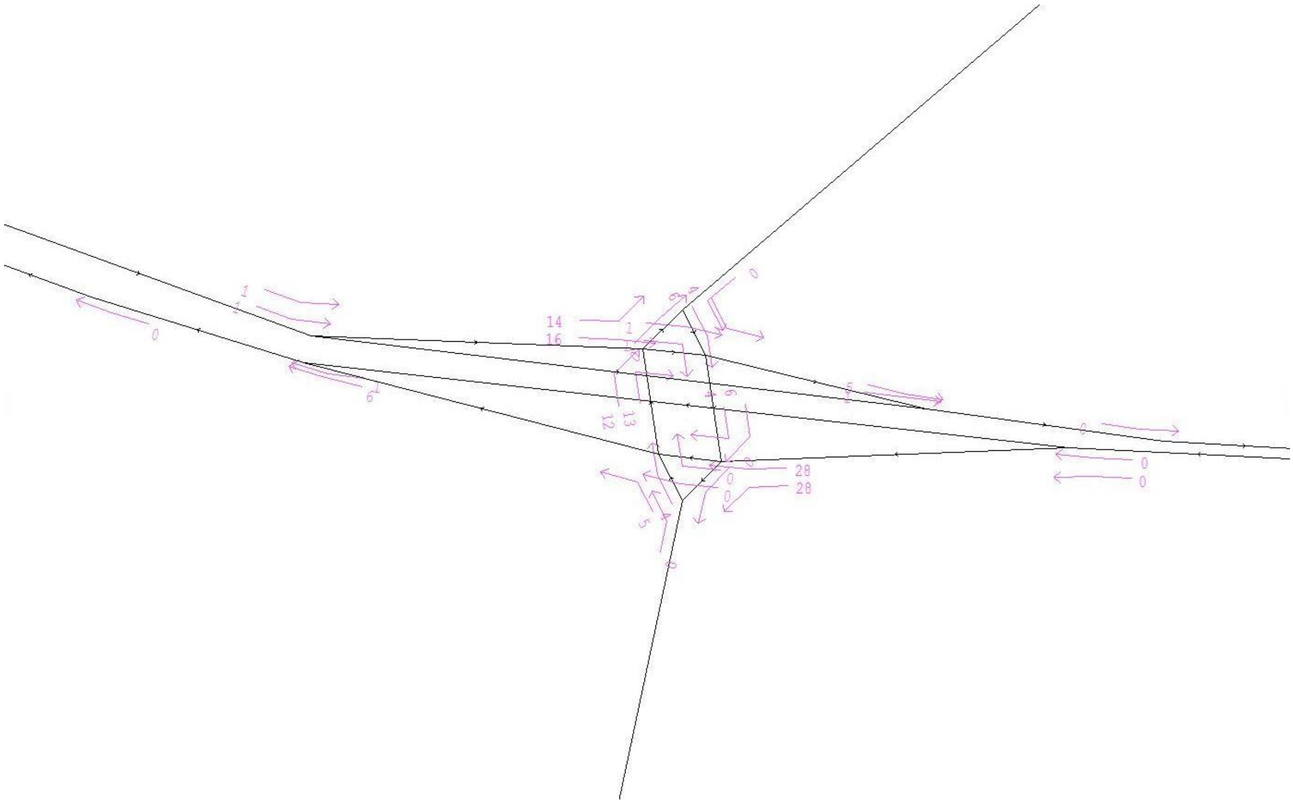


Figure C.30: M6 Junction 1: Arrive Flow (PCUs)

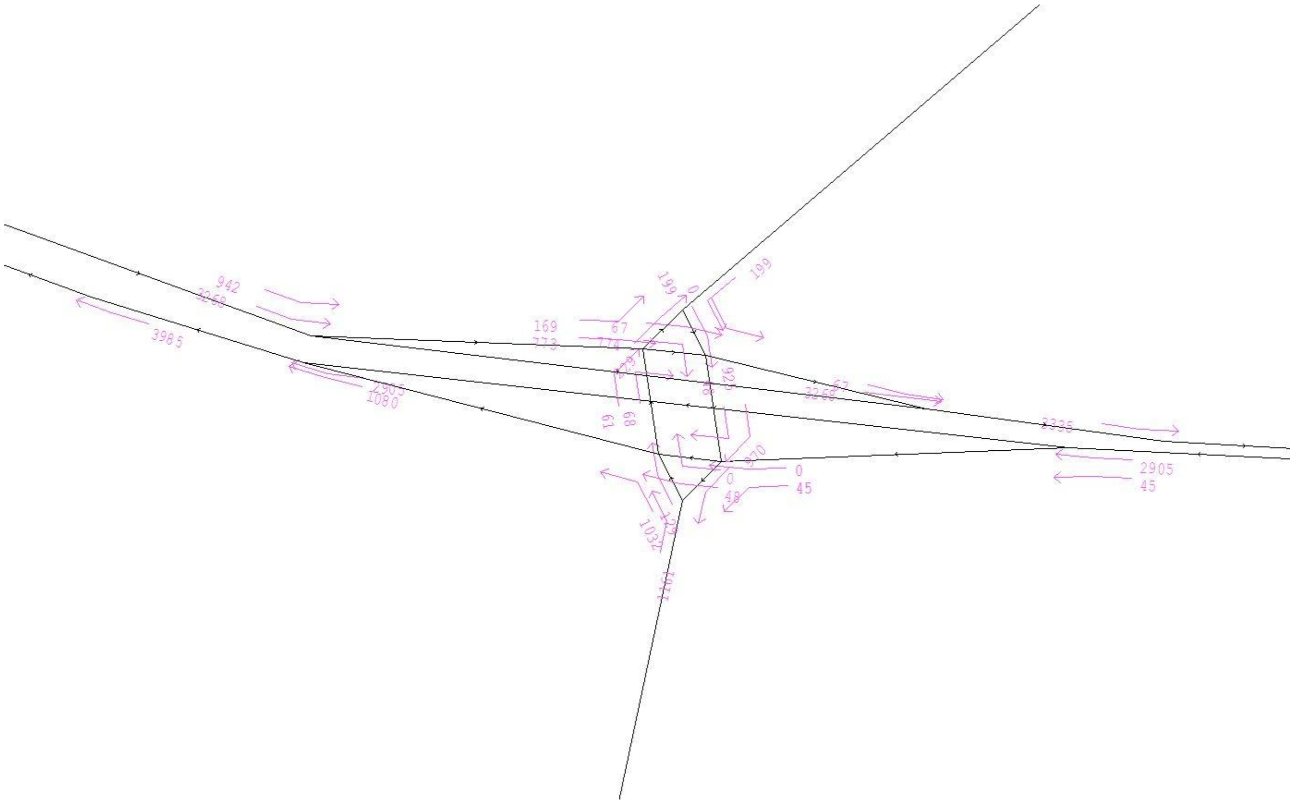


Figure C.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

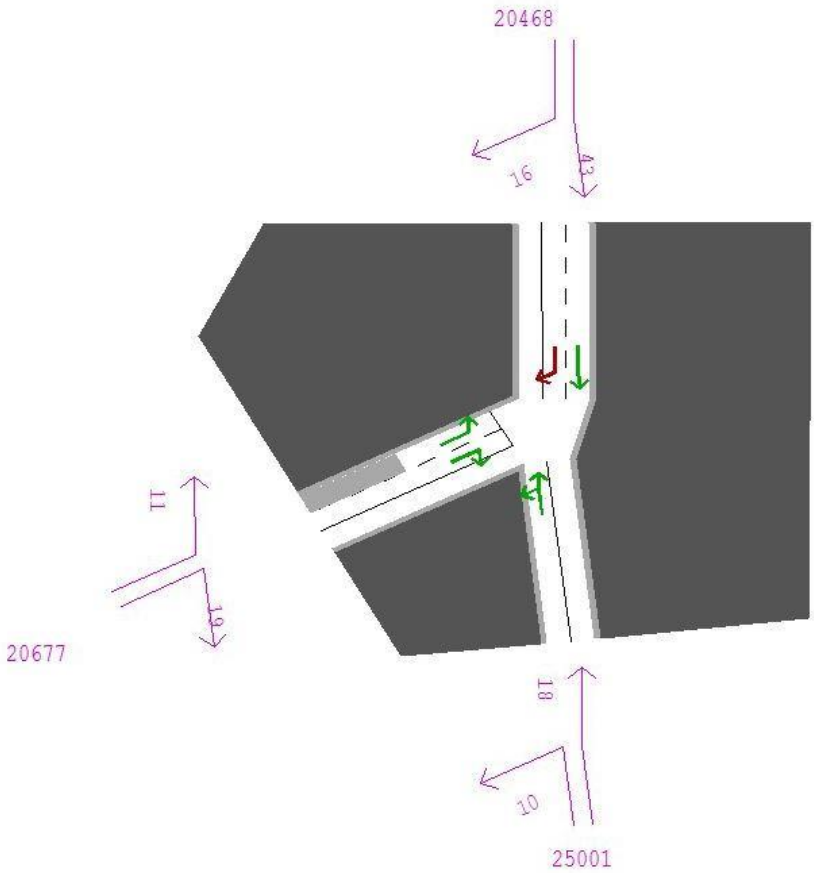


Figure C.32: A426 / Bill Crane Way Junction: Delay (seconds)

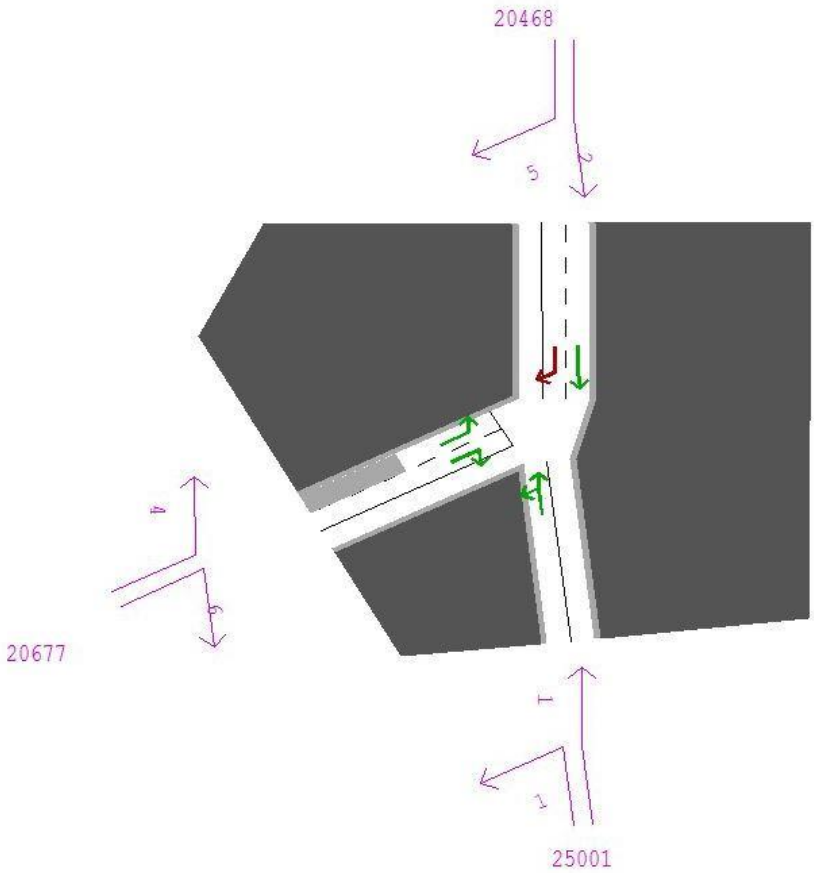
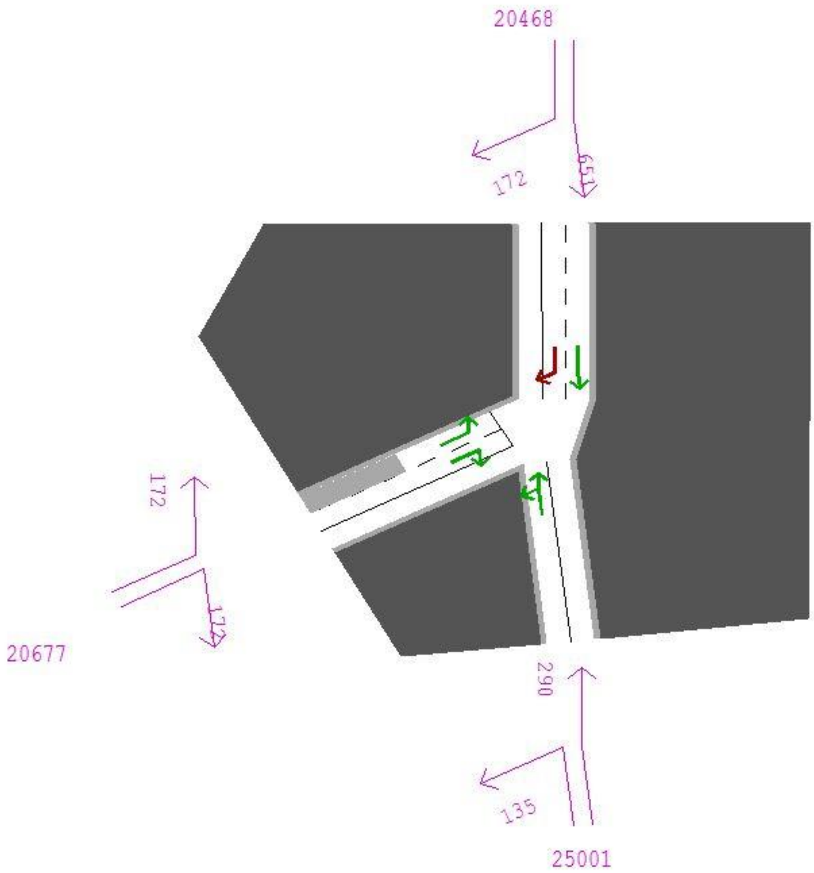


Figure C.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)



Appendix D 2026 'without development' AM Peak Junction Node Data

D.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure D.1: M1 Junction 20: Volume-to-Capacity Ratio

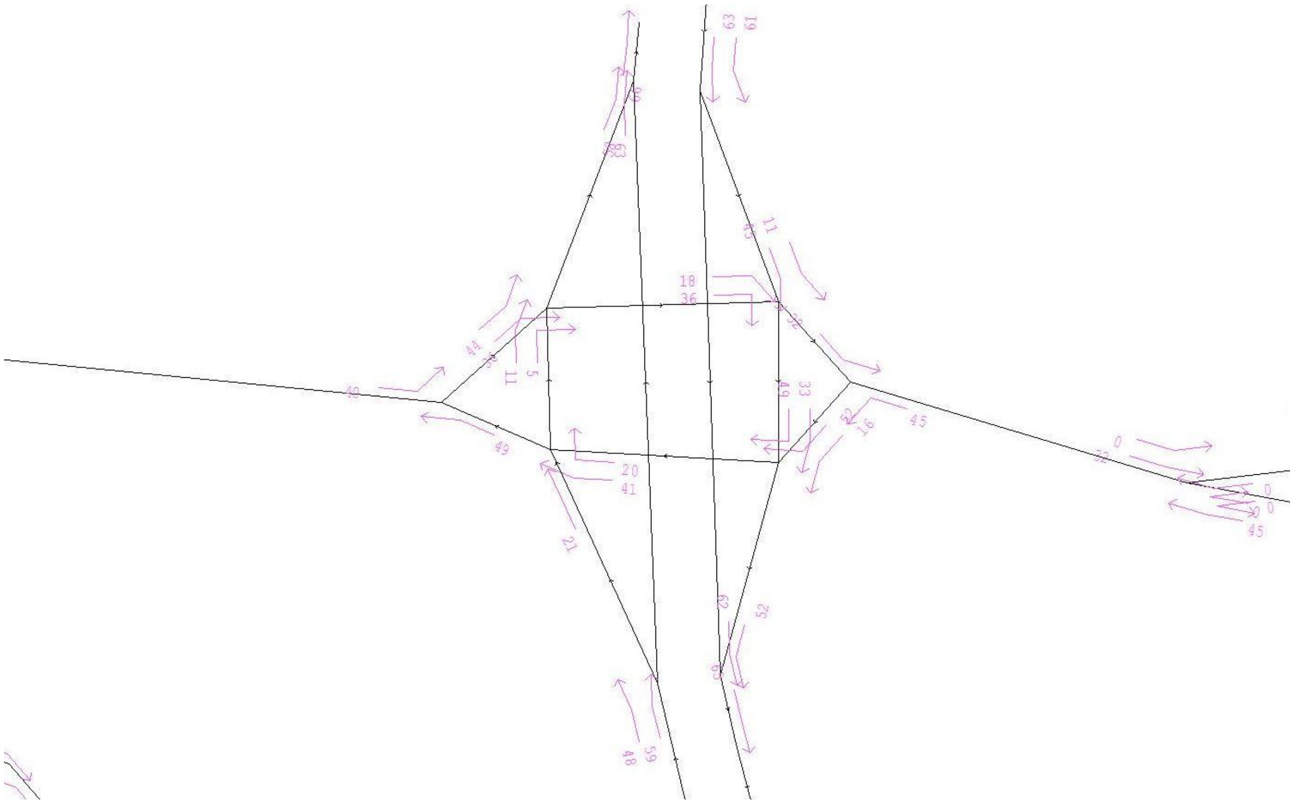


Figure D.2: M1 Junction 20: Delay (seconds)

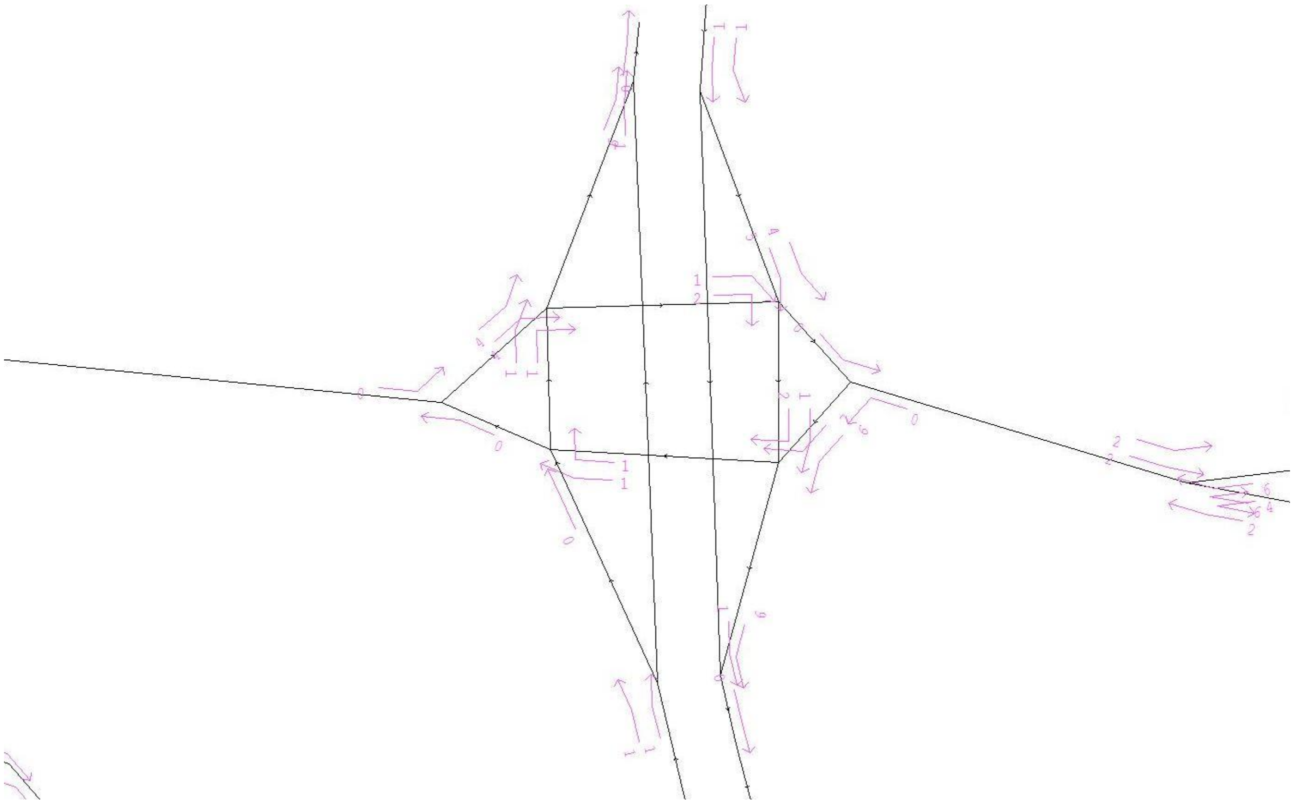


Figure D.3: M1 Junction 20: Arrive Flow (PCUs)

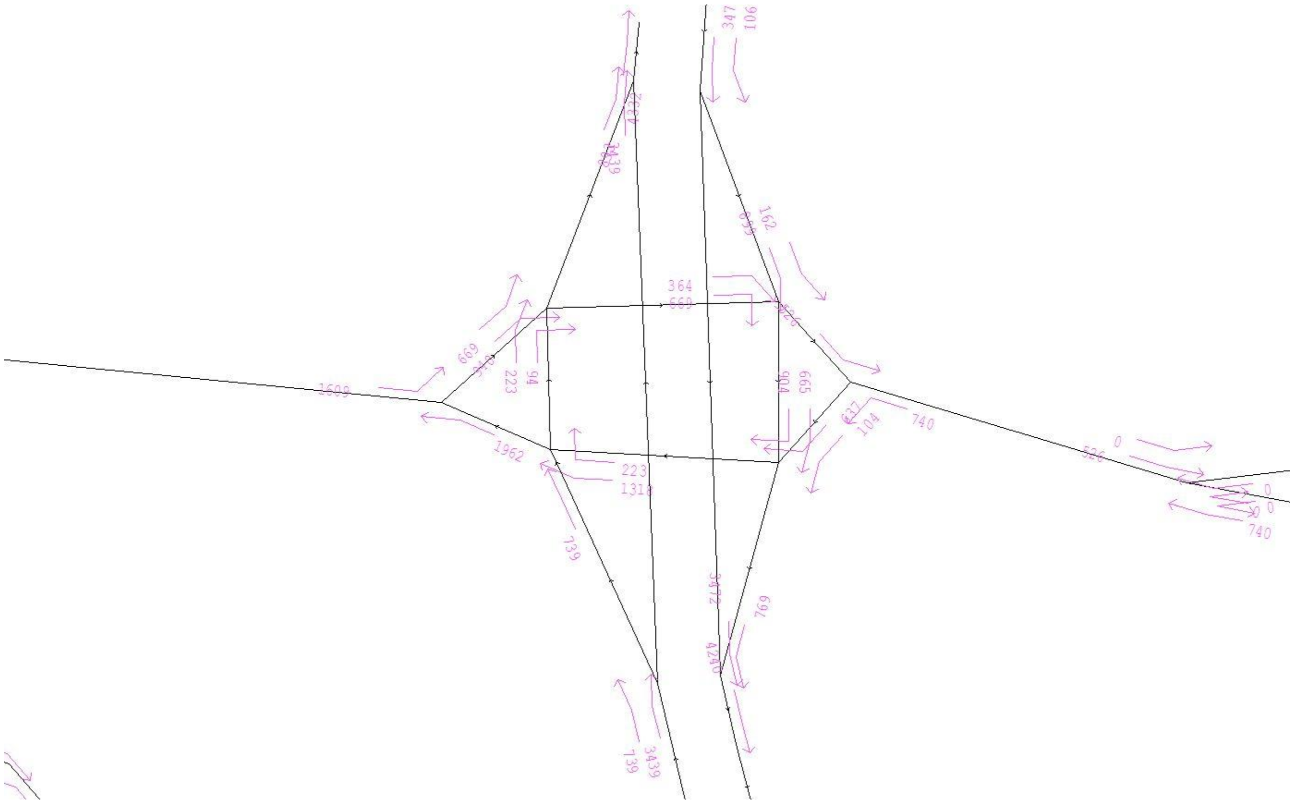


Figure D.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

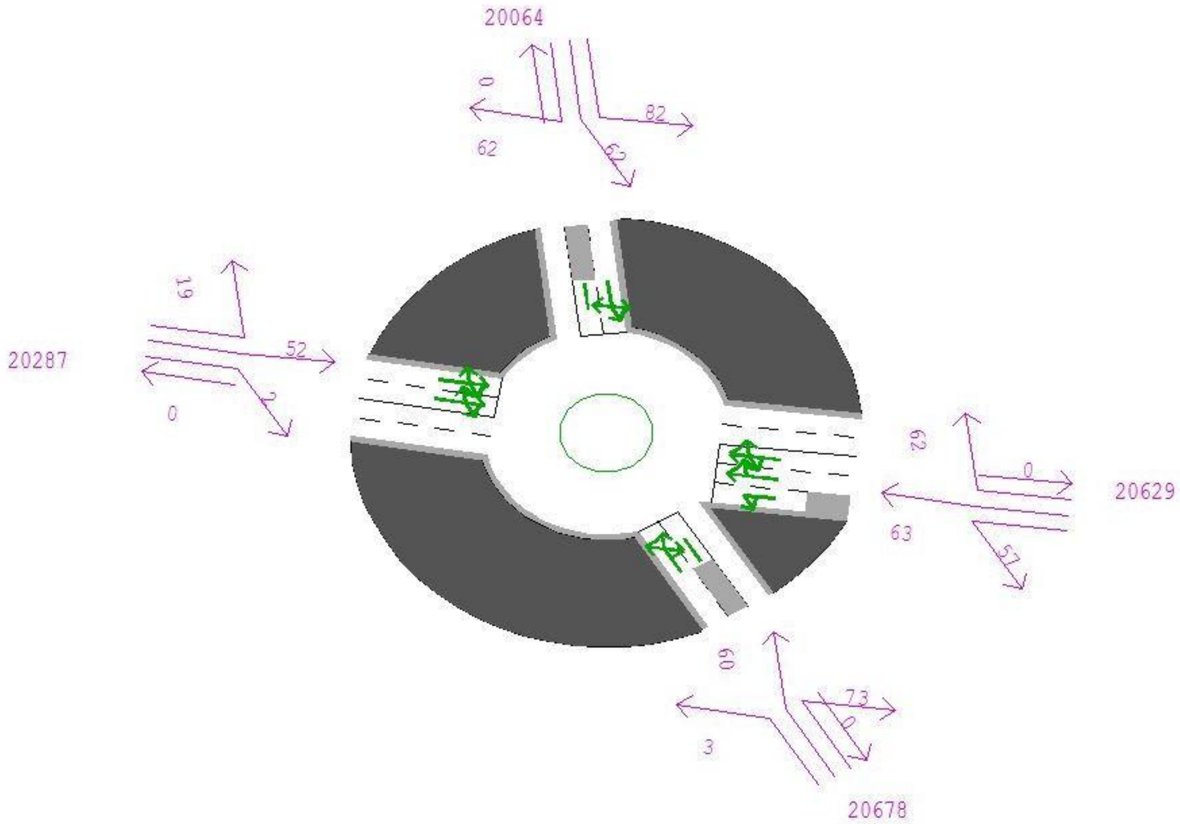


Figure D.5: A4303 / A426 Roundabout: Delay (seconds)

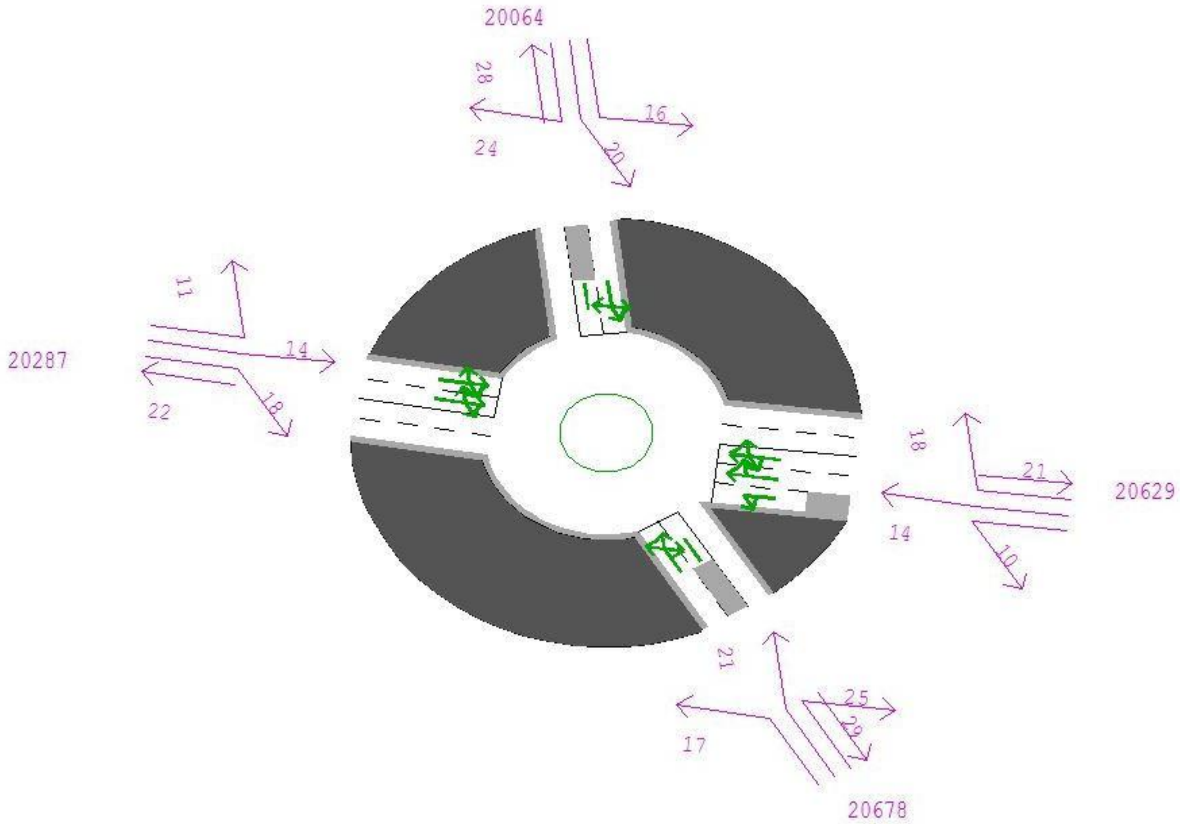


Figure D.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

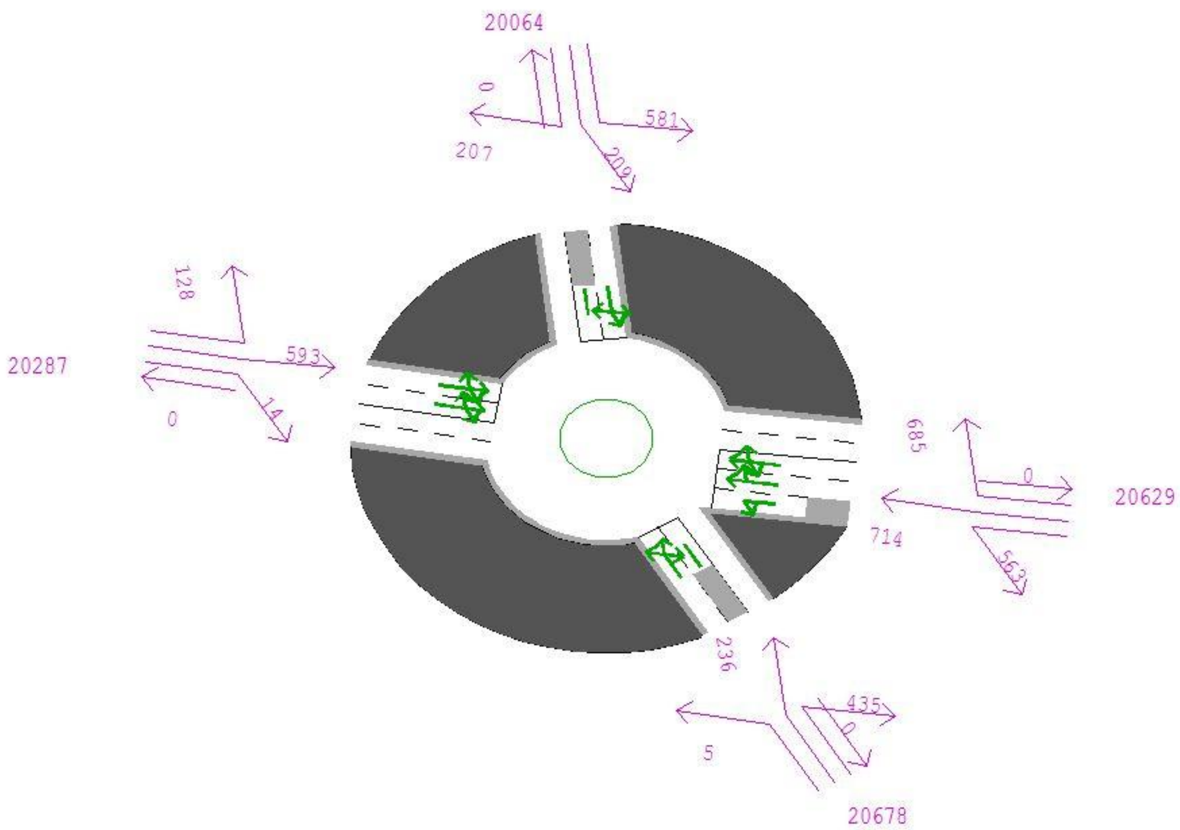


Figure D.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

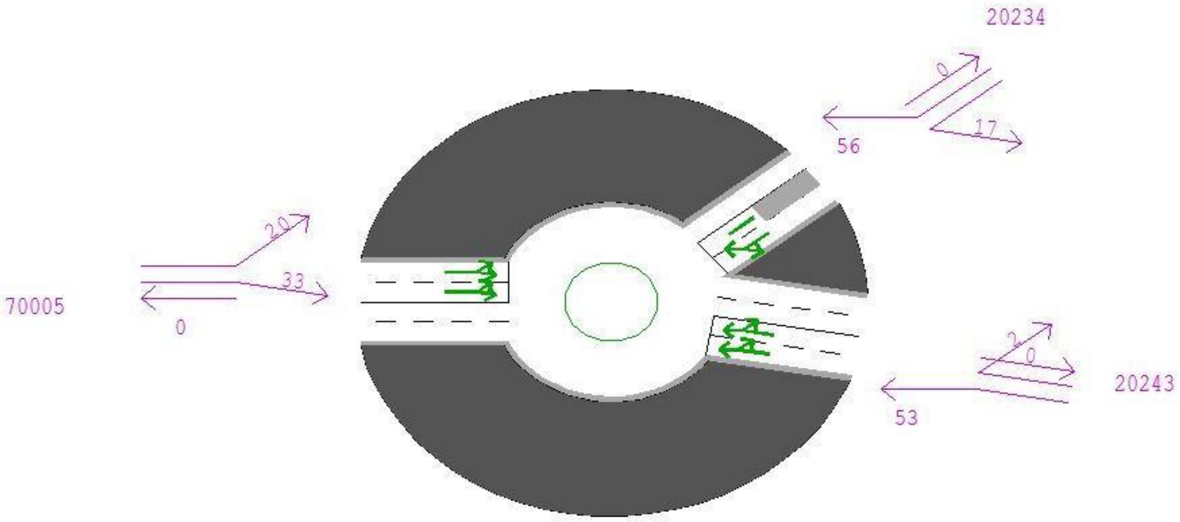


Figure D.8: A4303 / Coventry Road Roundabout: Delay (seconds)

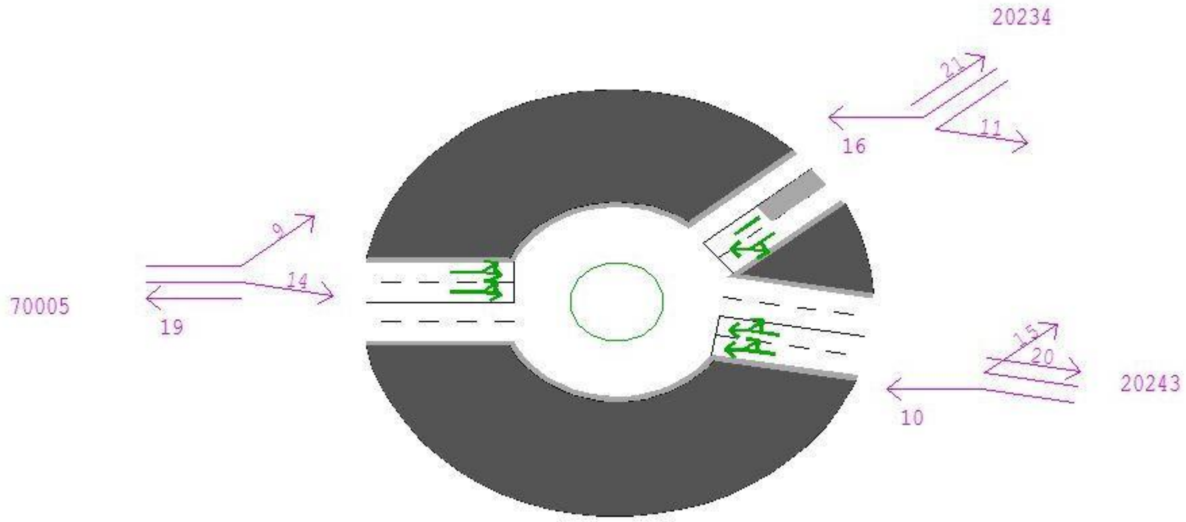


Figure D.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

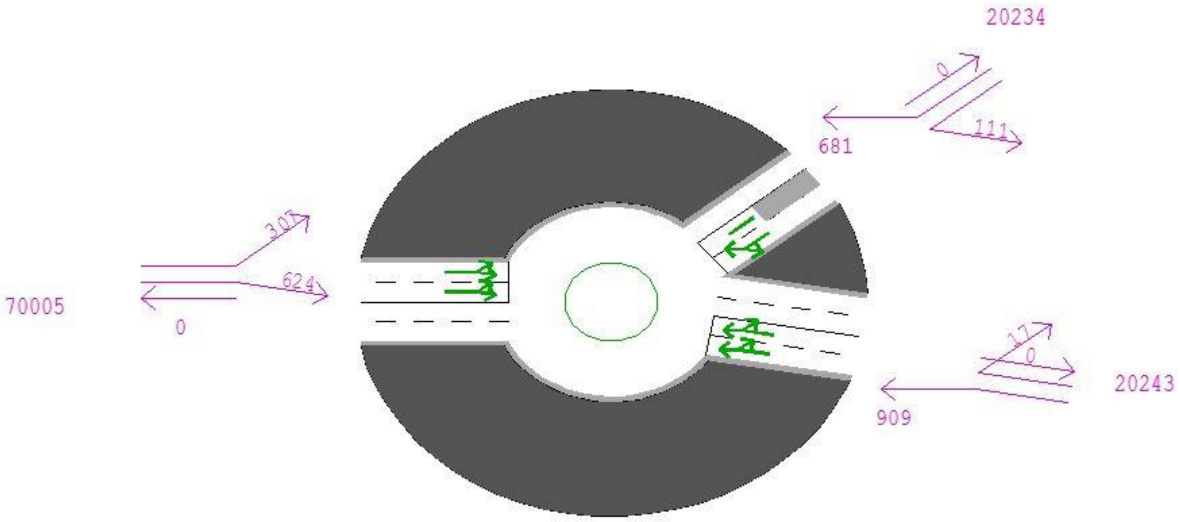


Figure D.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

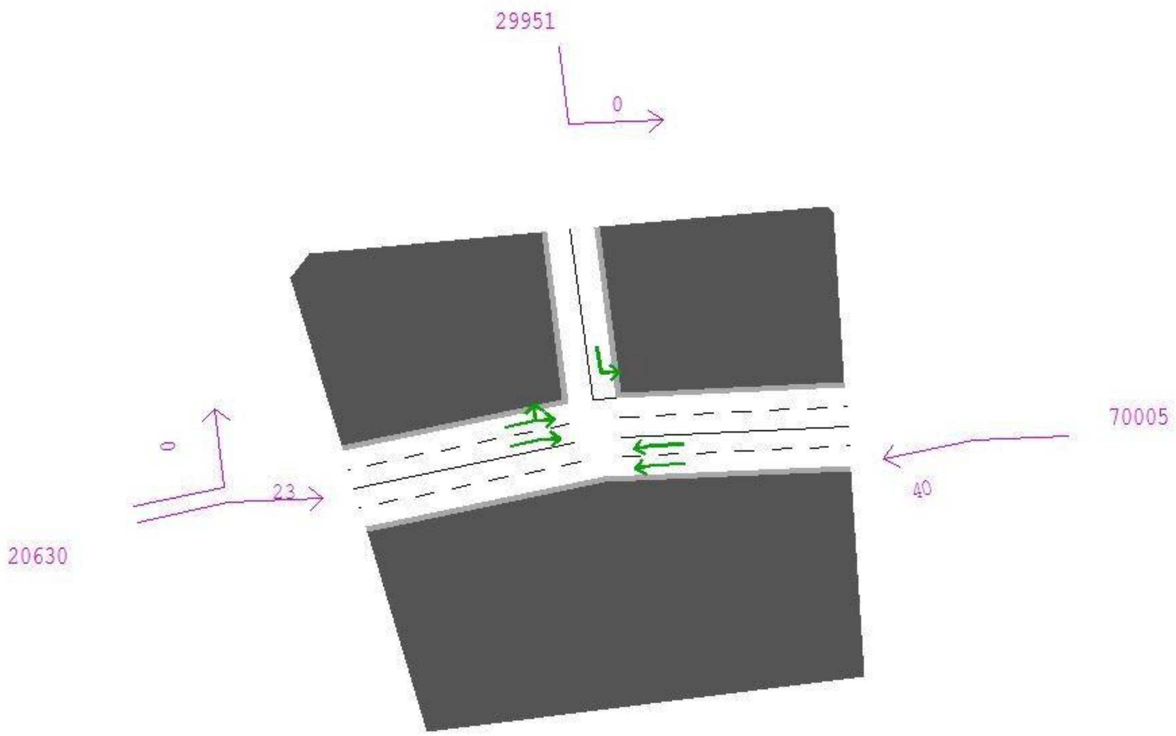


Figure D.11: A4303 / Shackleton Way Junction: Delay (seconds)

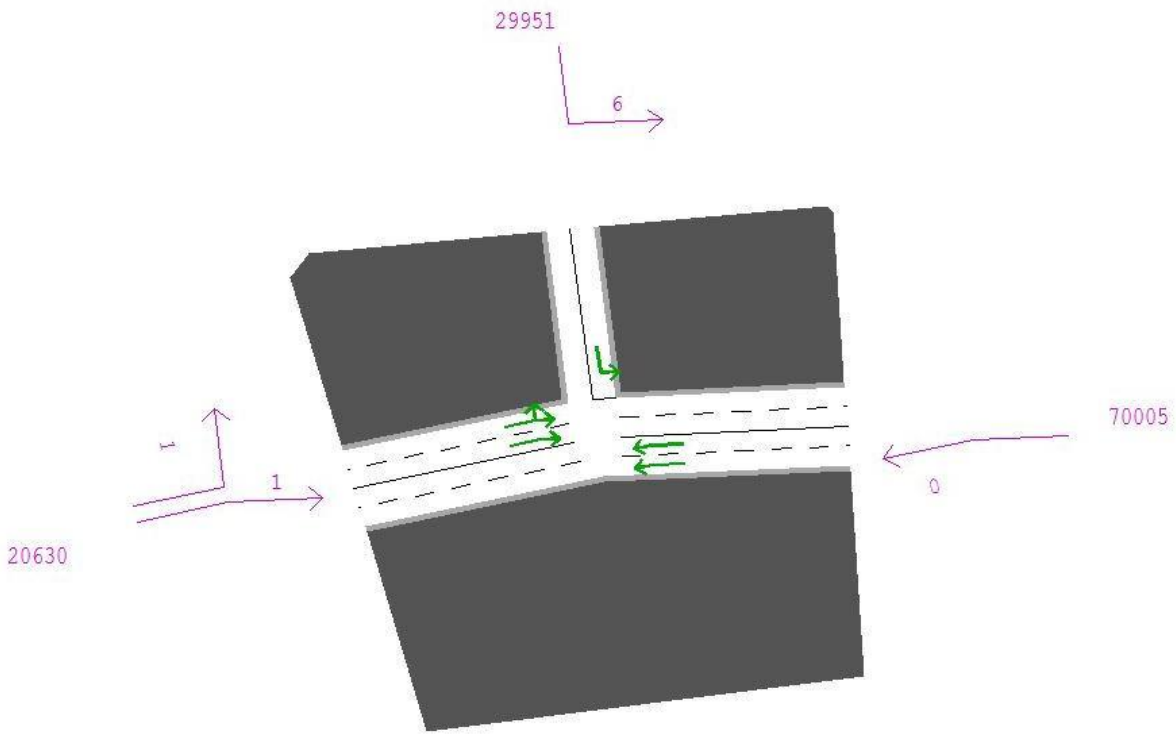


Figure D.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

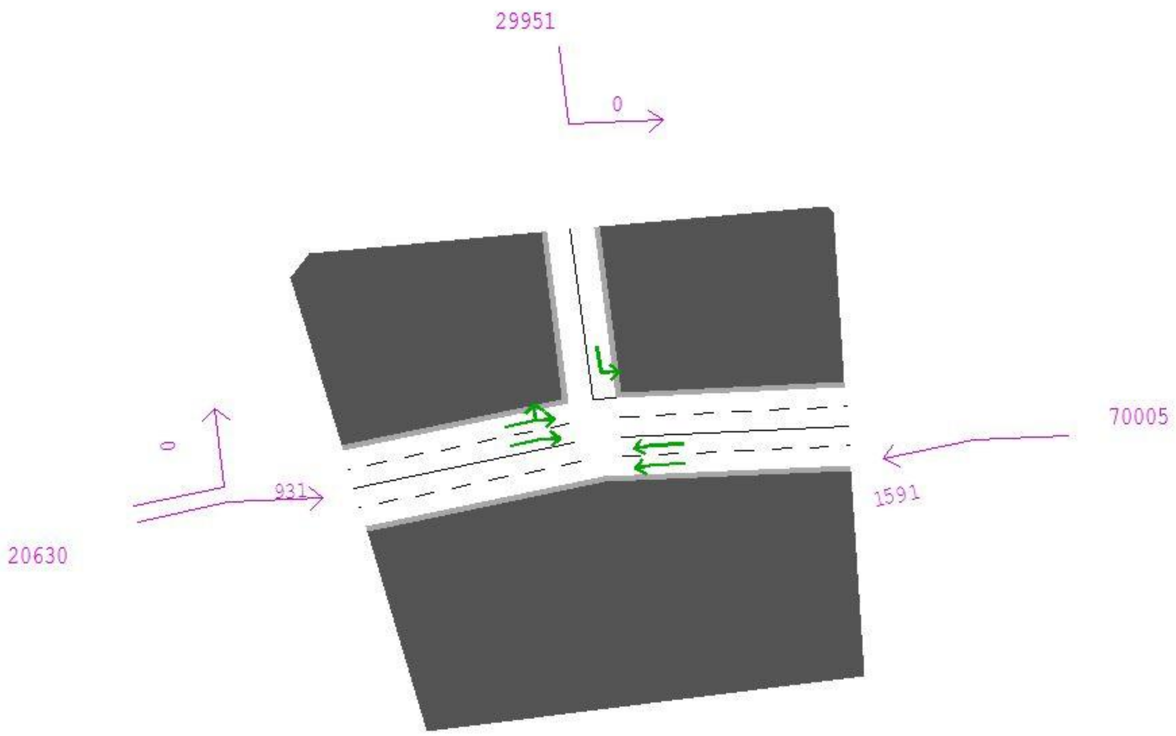


Figure D.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

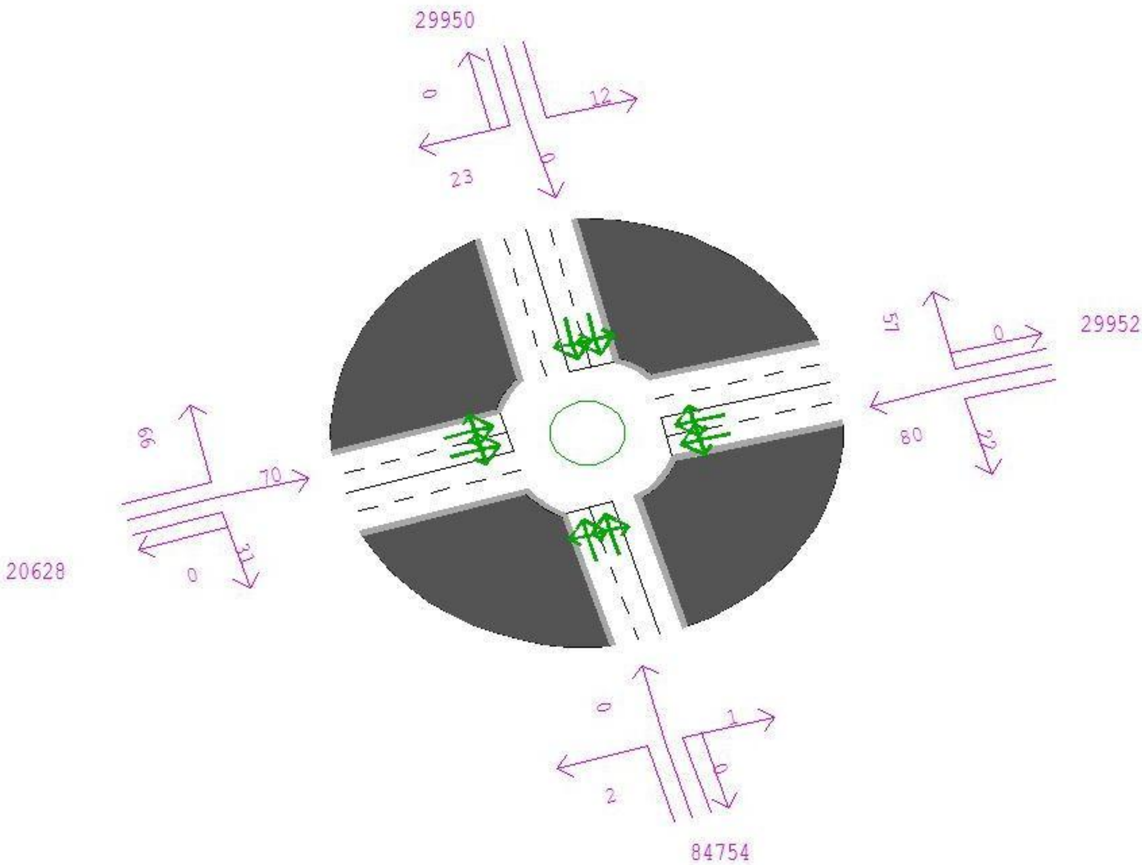


Figure D.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

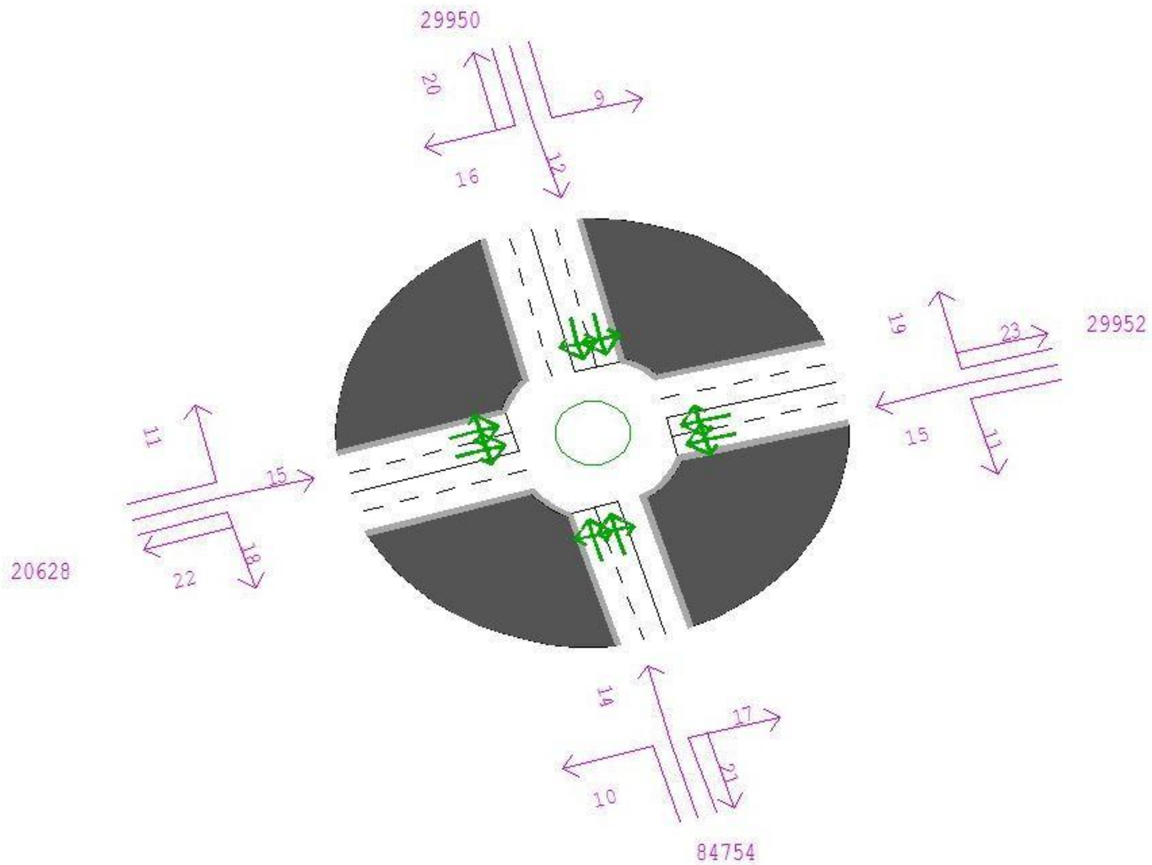


Figure D.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

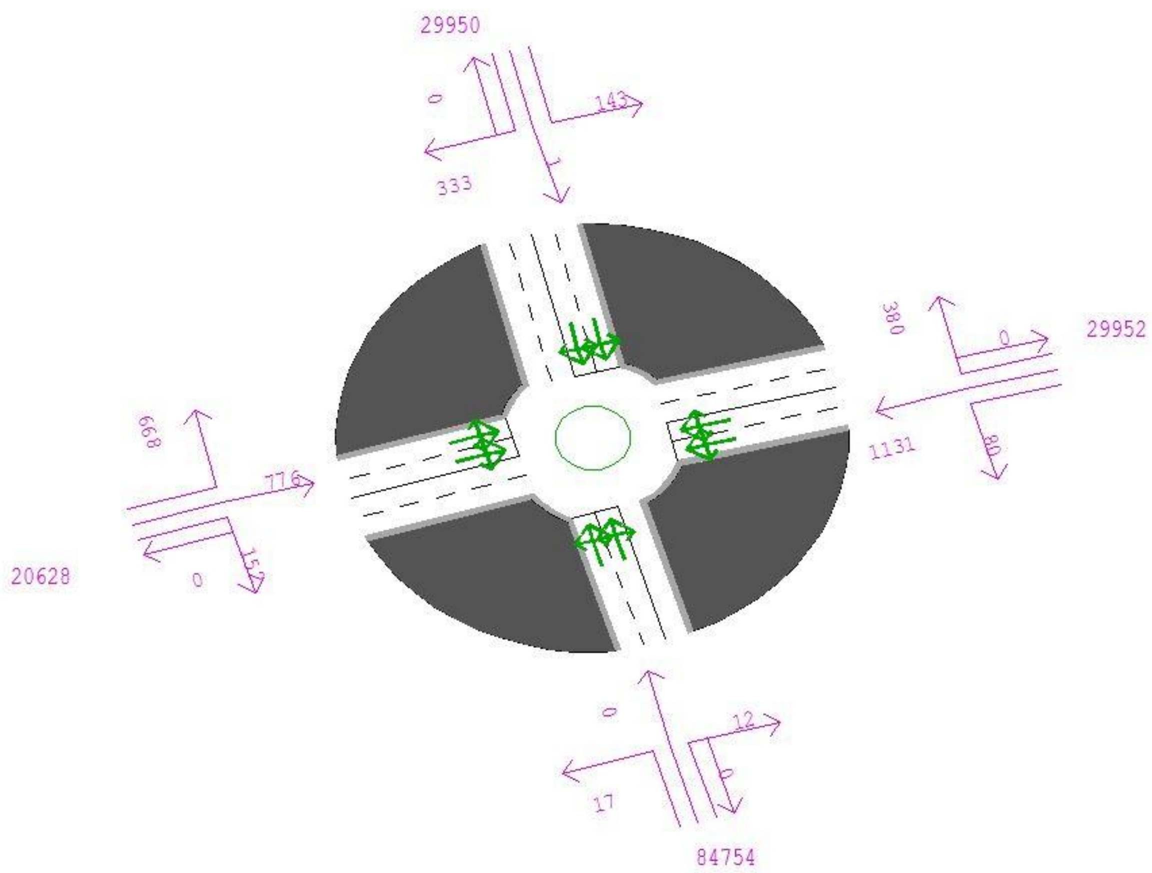


Figure D.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

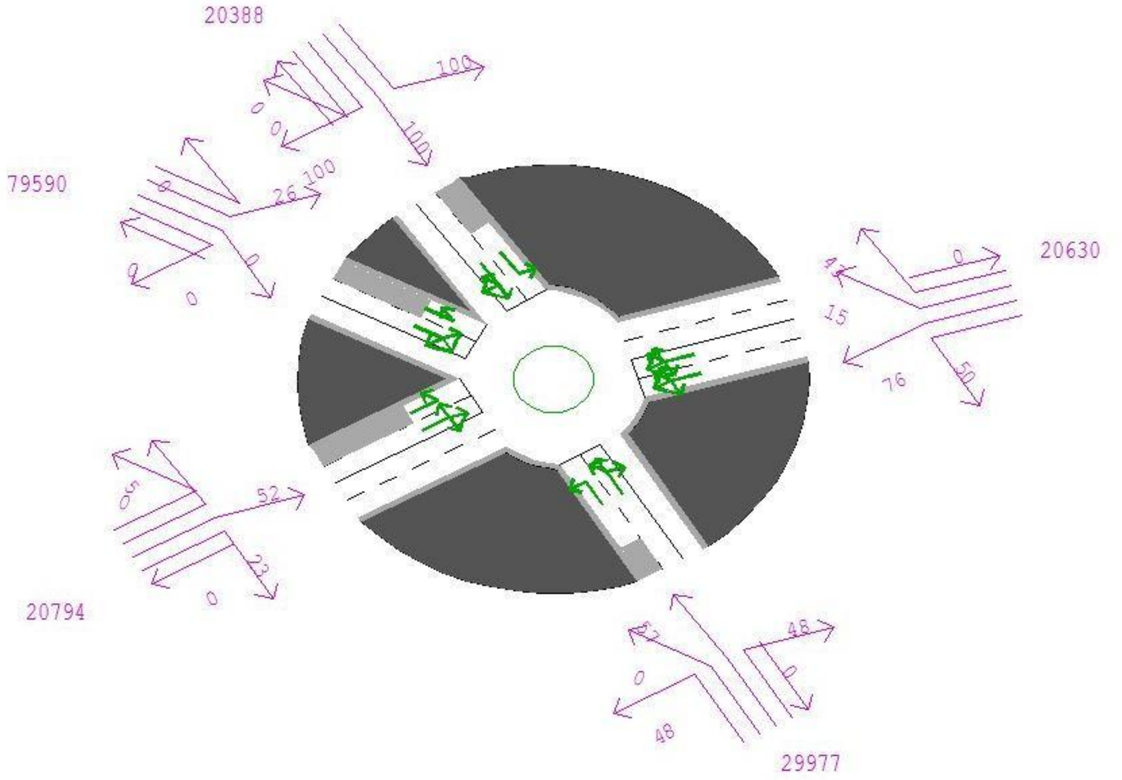


Figure D.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

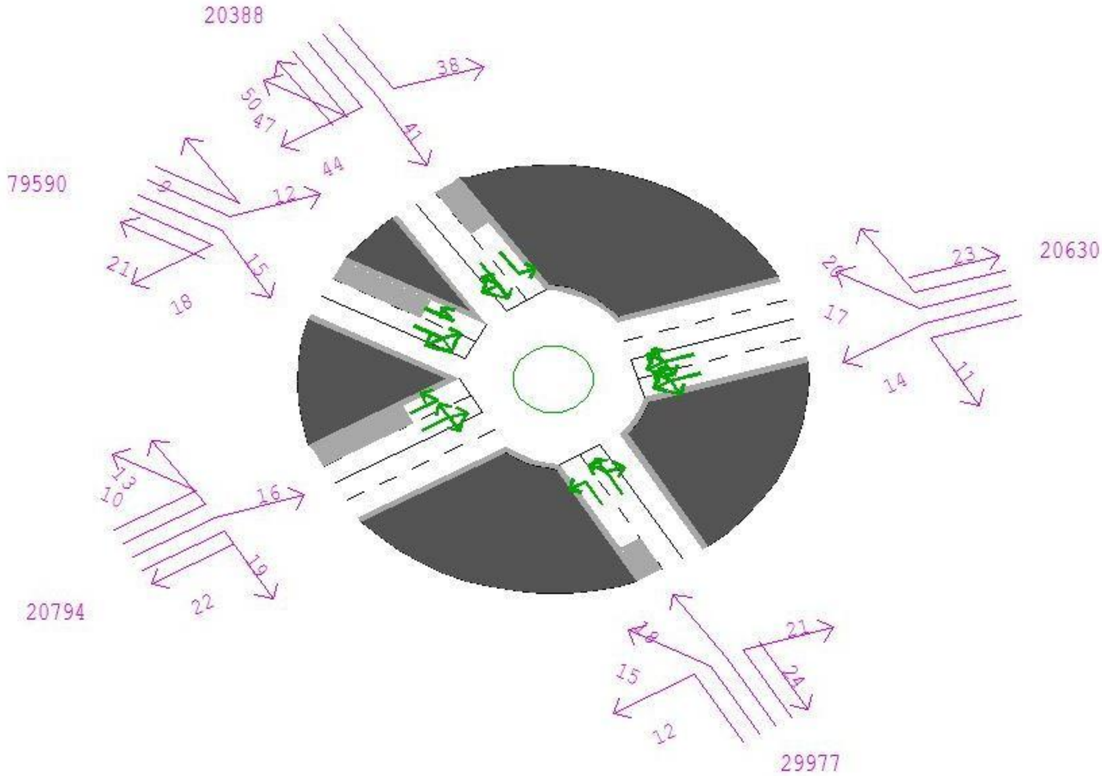


Figure D.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

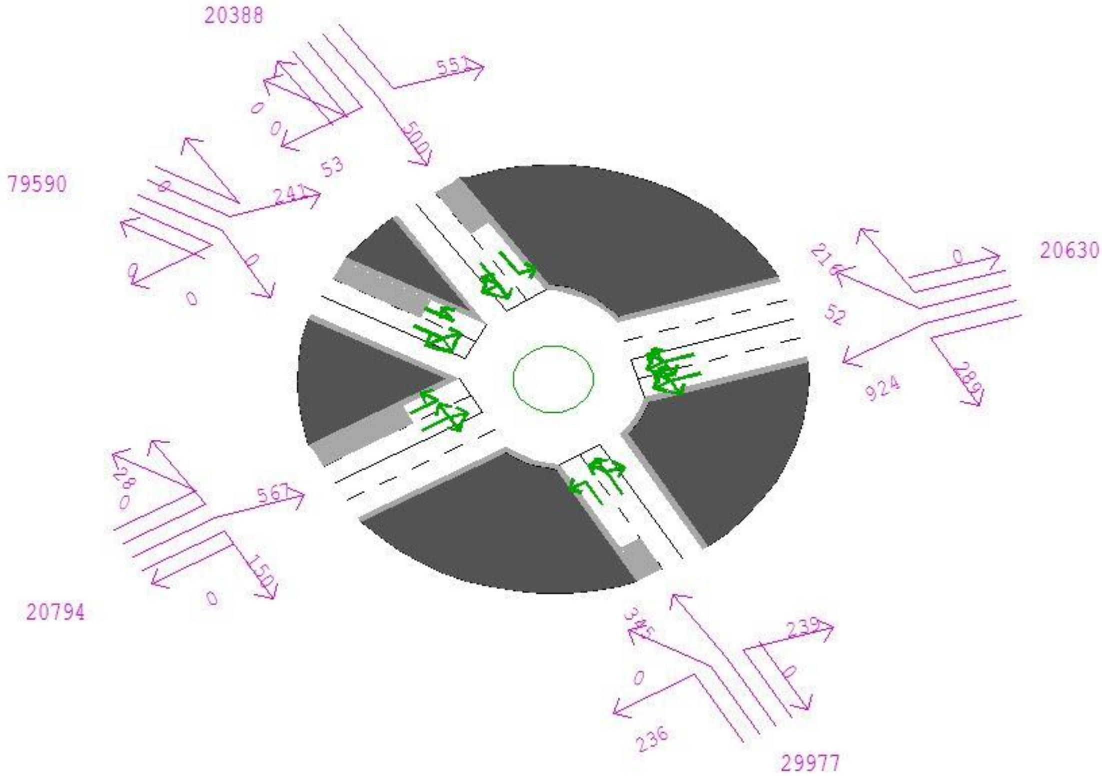


Figure D.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

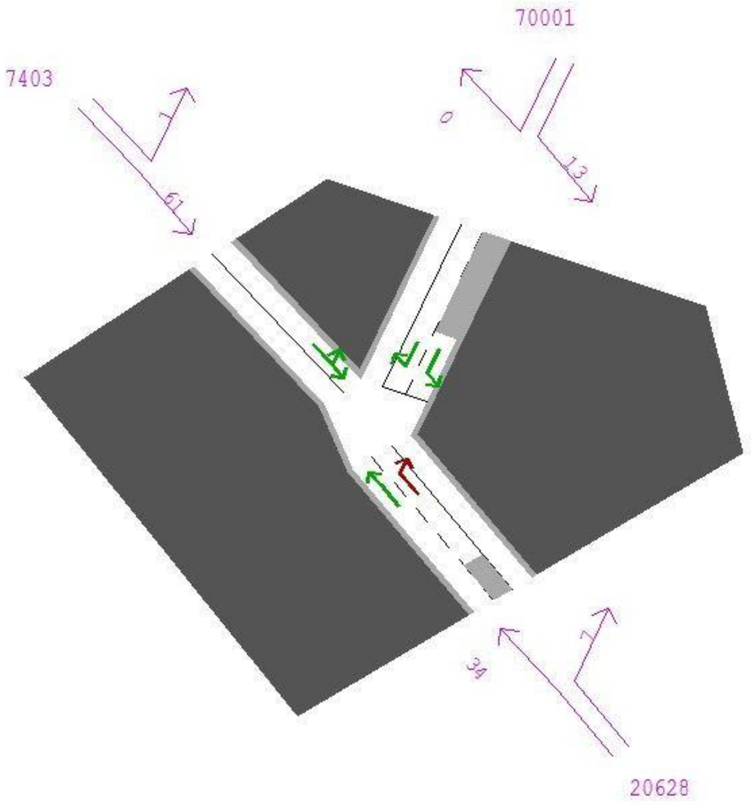


Figure D.20: A5 / Mere Lane Junction: Delay (seconds)

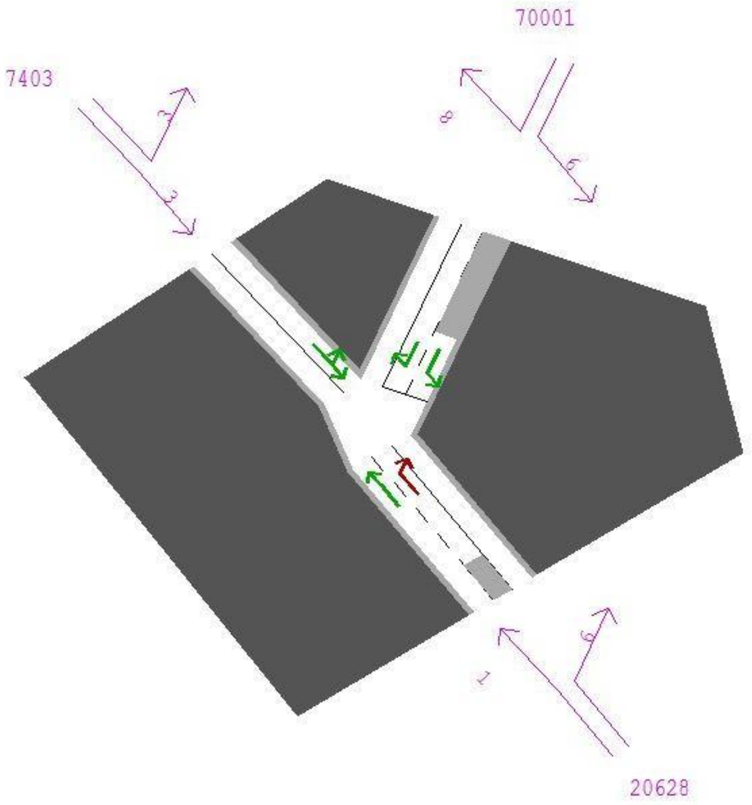


Figure D.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

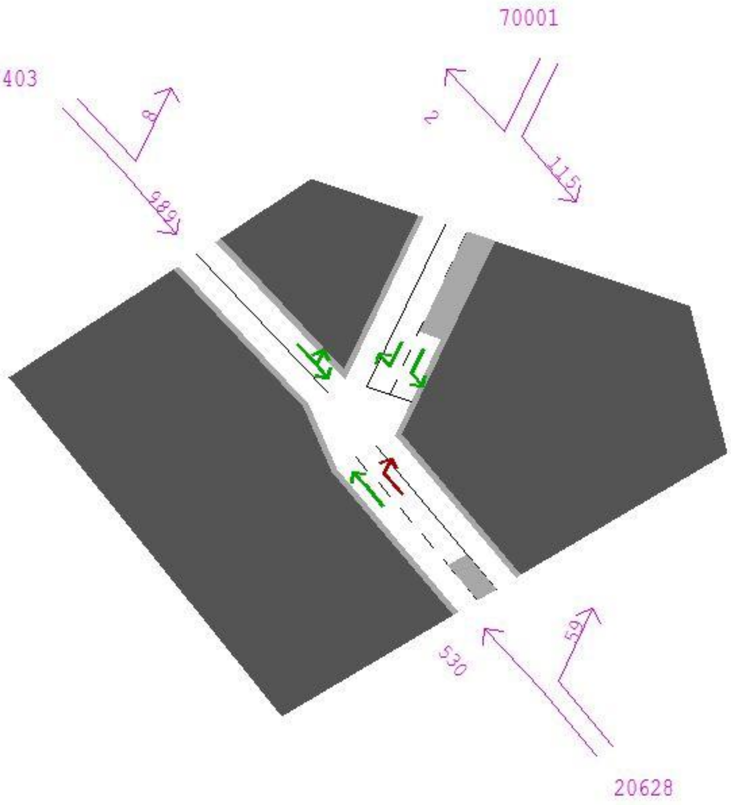


Figure D.22: M69 Junction 1: Volume-to-Capacity Ratio

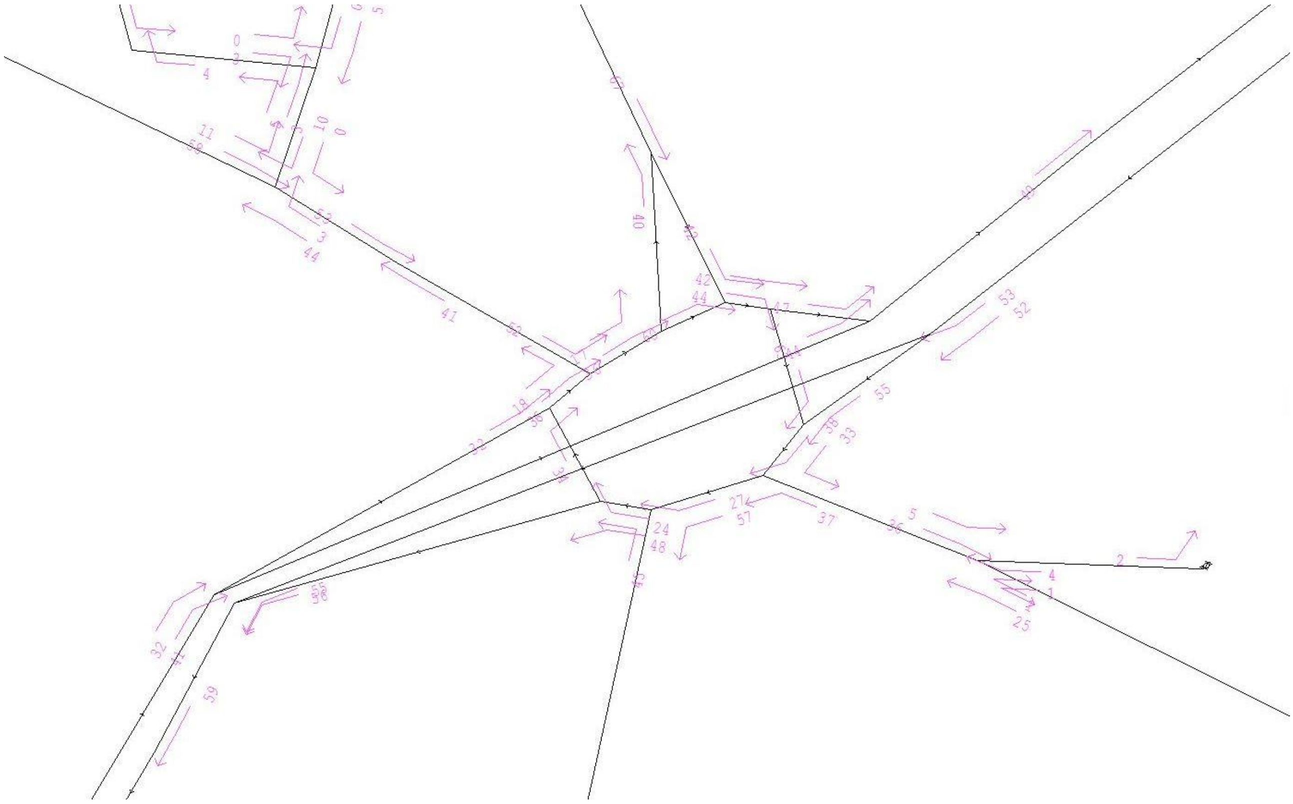


Figure D.23: M69 Junction 1: Delay (seconds)

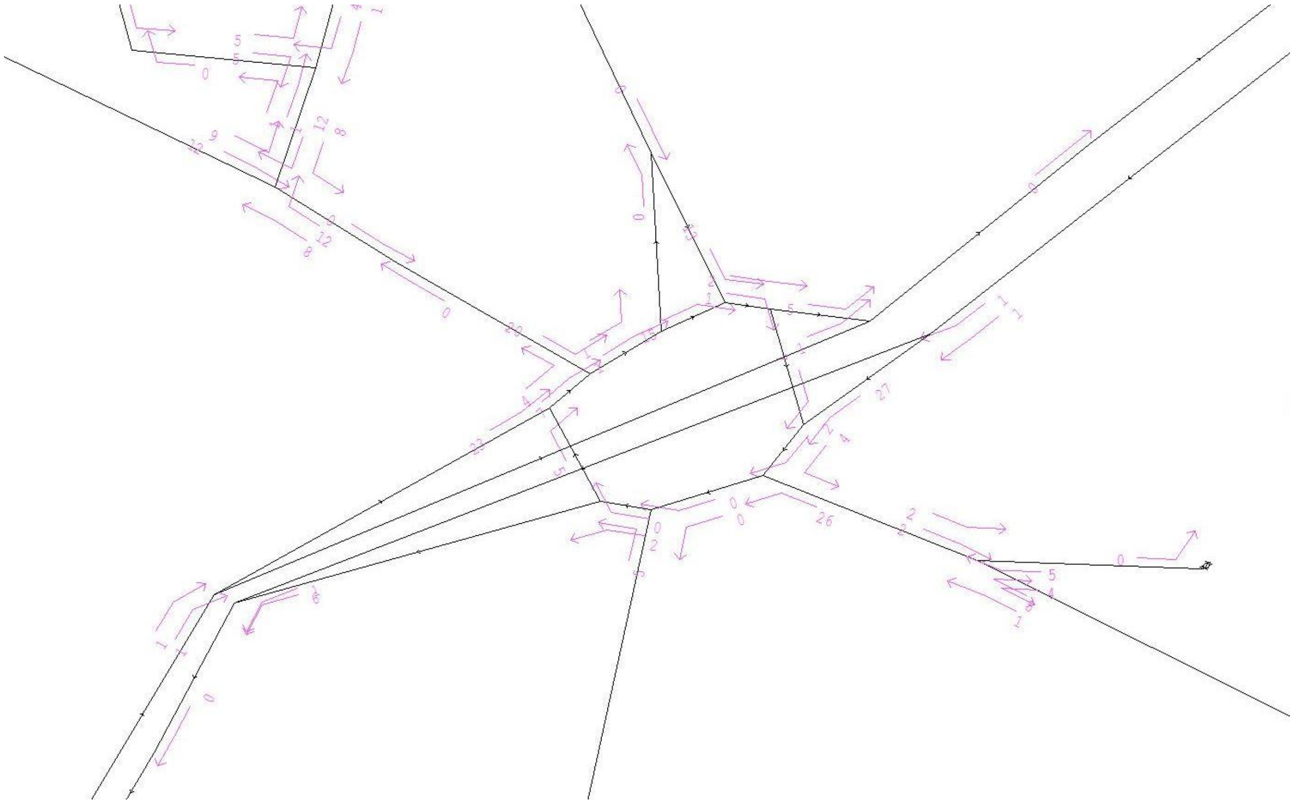


Figure D.24: M69 Junction 1: Arrive Flow (PCUs)

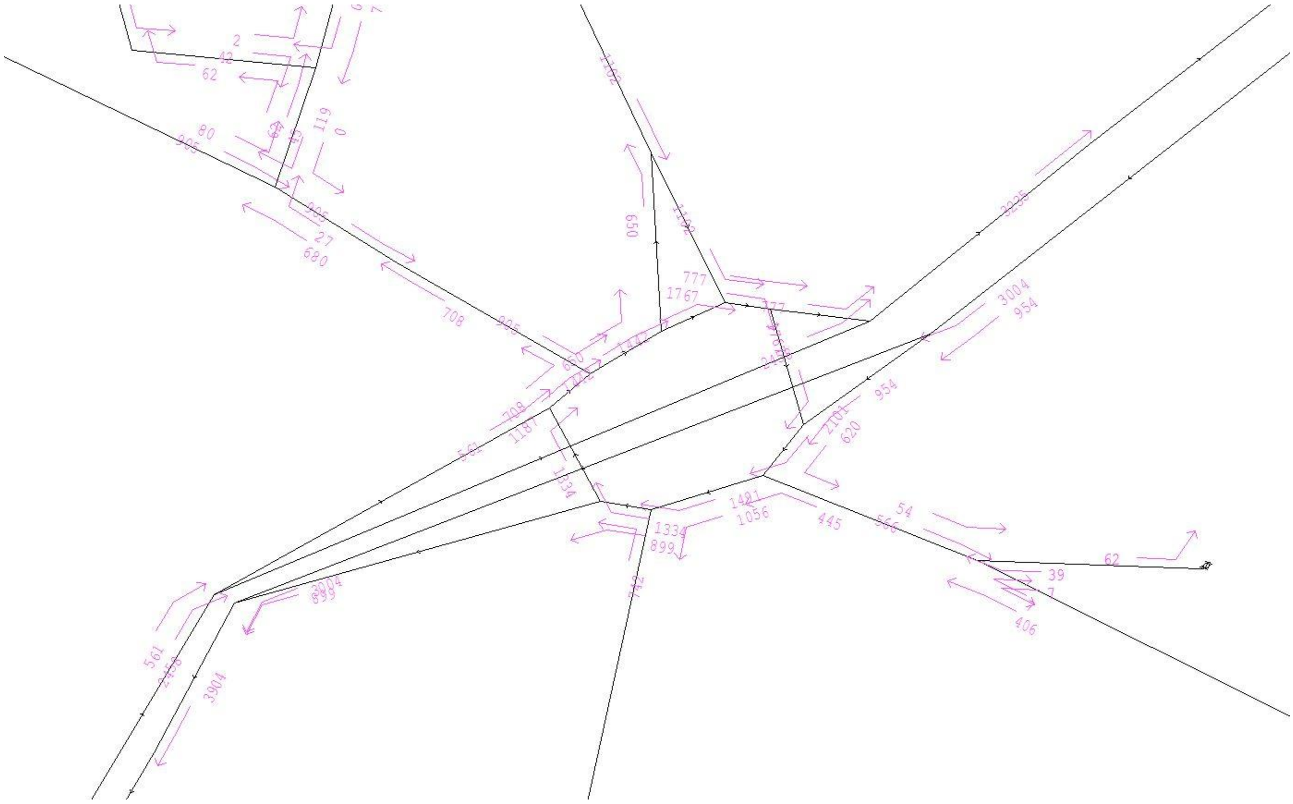


Figure D.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

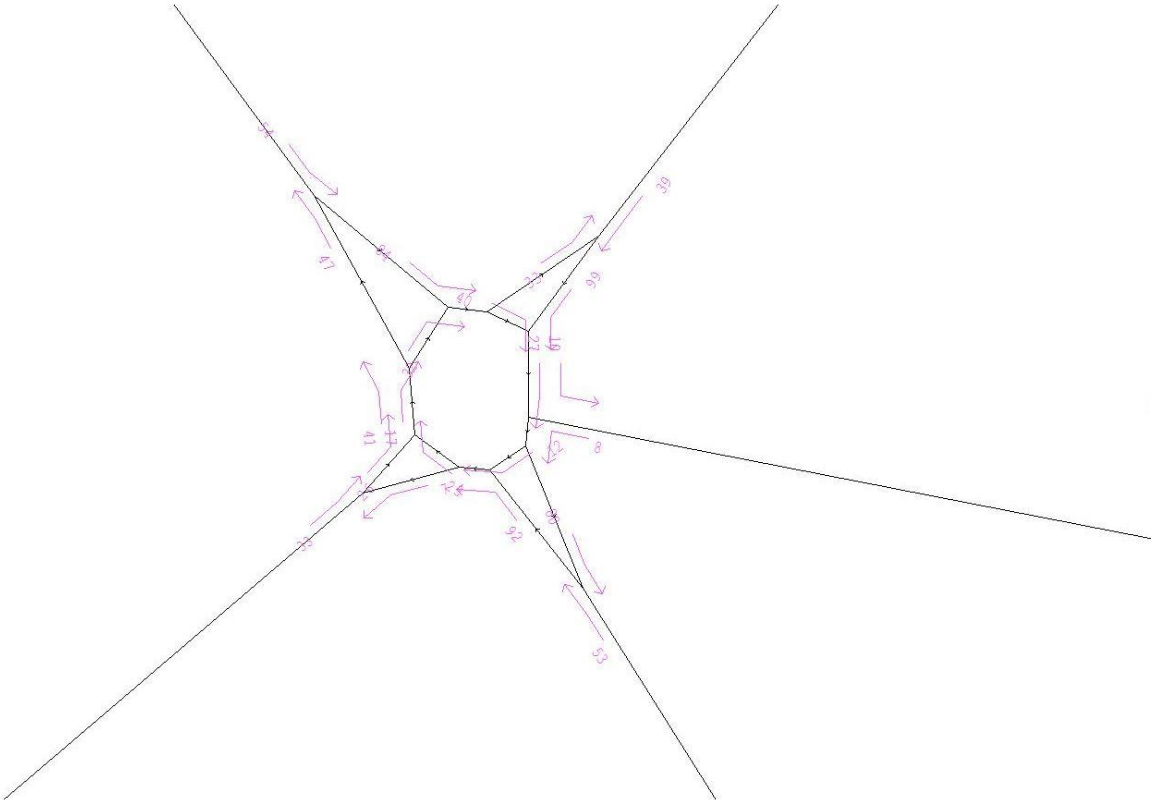


Figure D.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

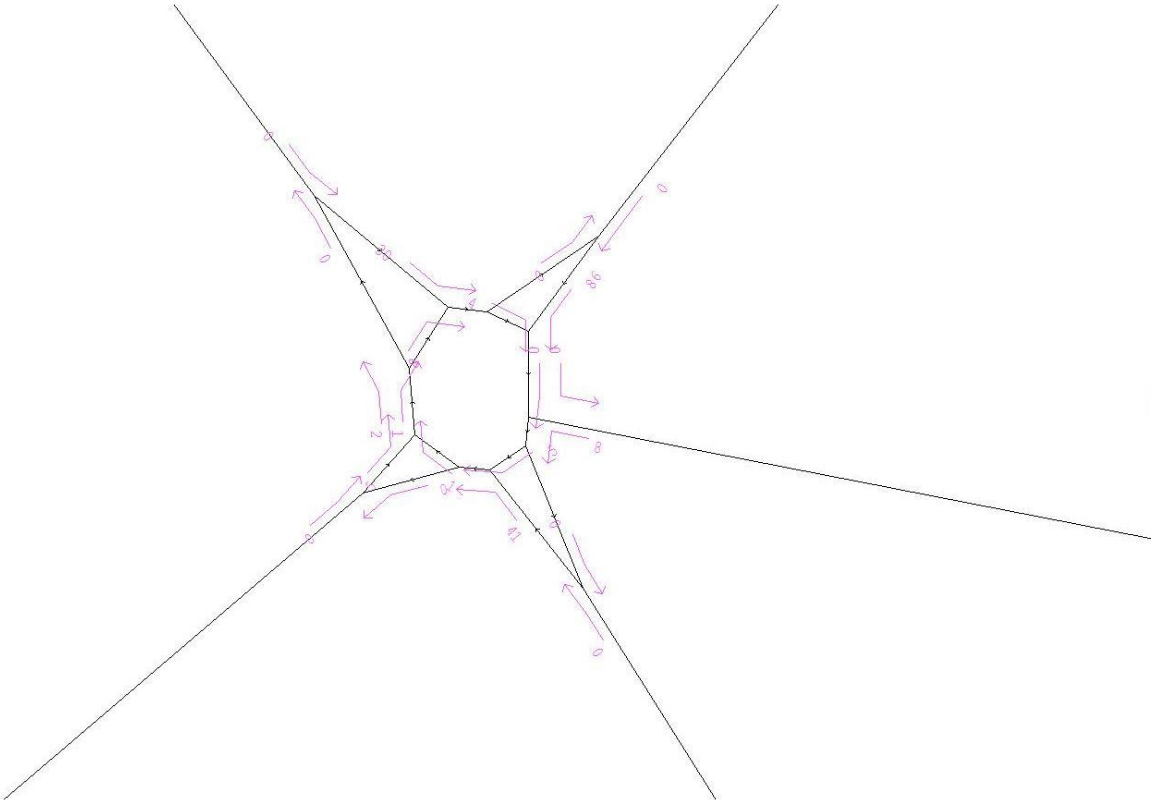


Figure D.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

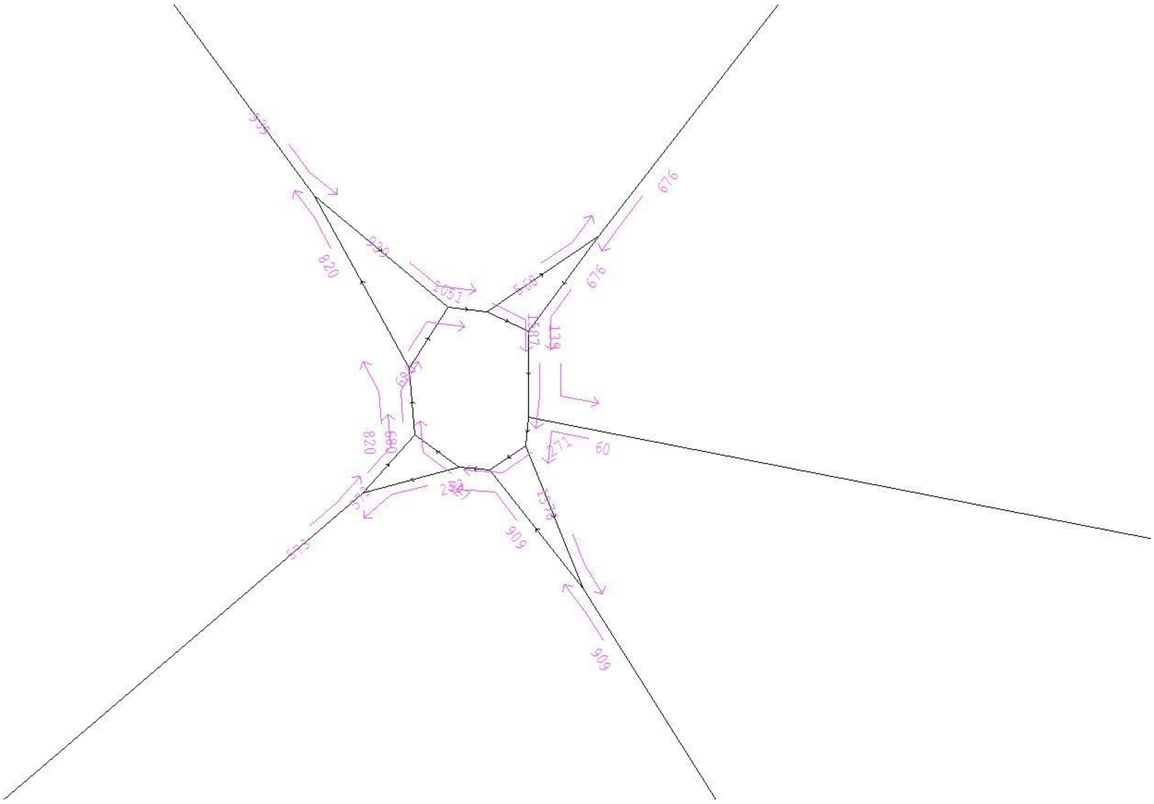


Figure D.28: M6 Junction 1: Volume-to-Capacity Ratio

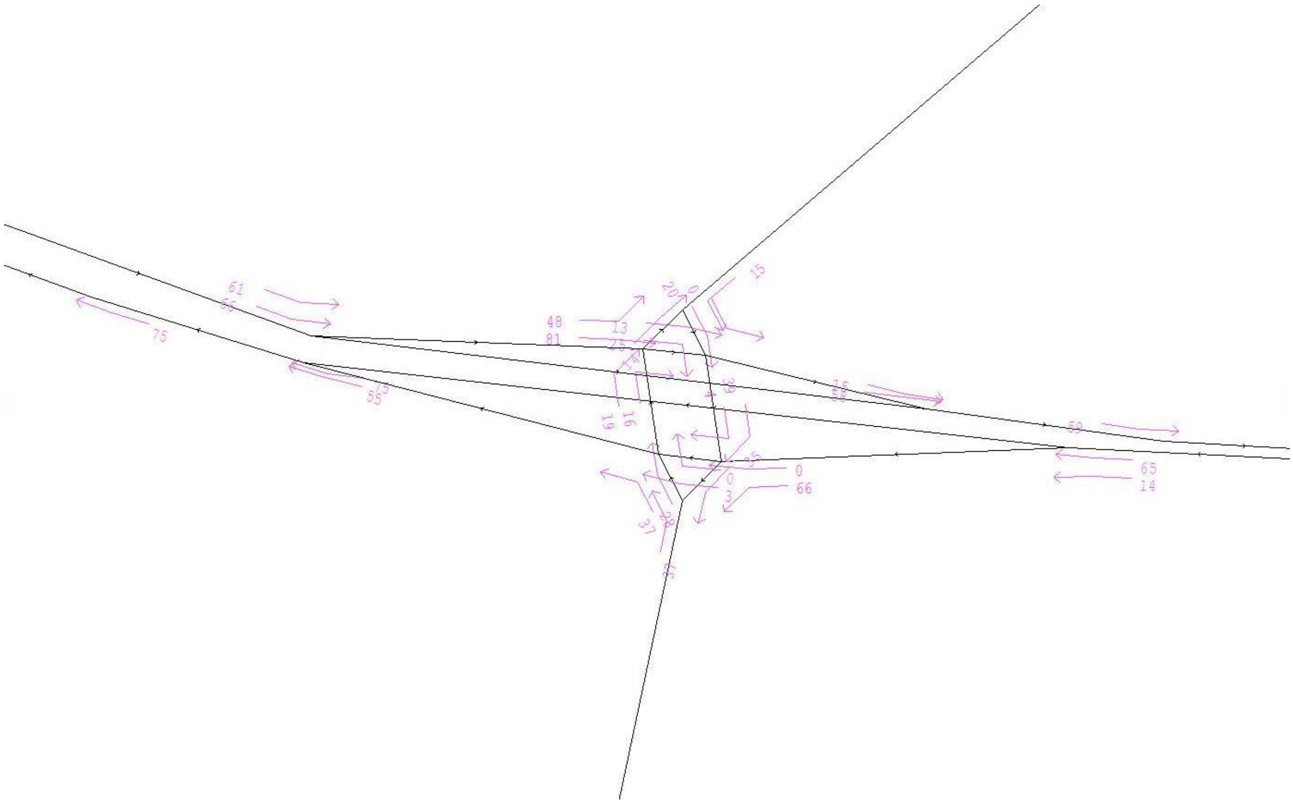


Figure D.29: M6 Junction 1: Delay (seconds)

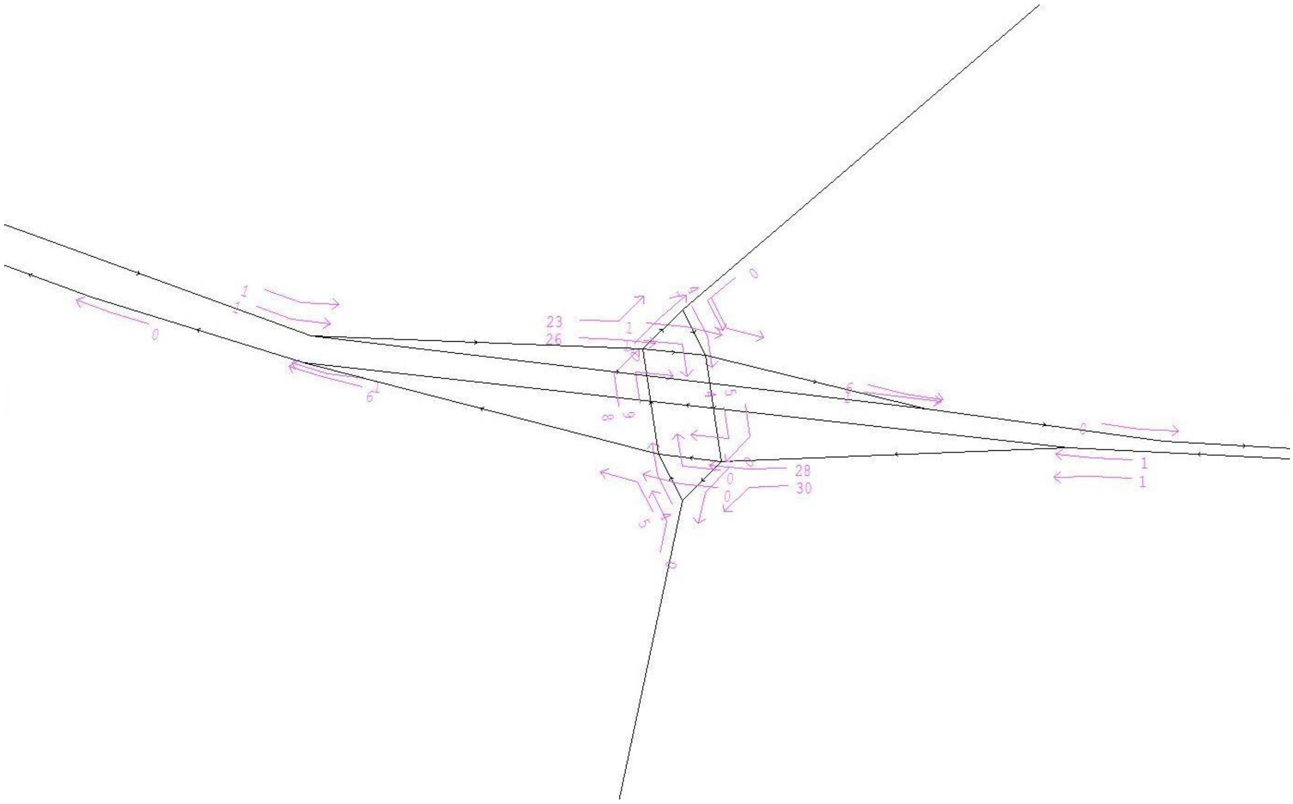


Figure D.30: M6 Junction 1: Arrive Flow (PCUs)

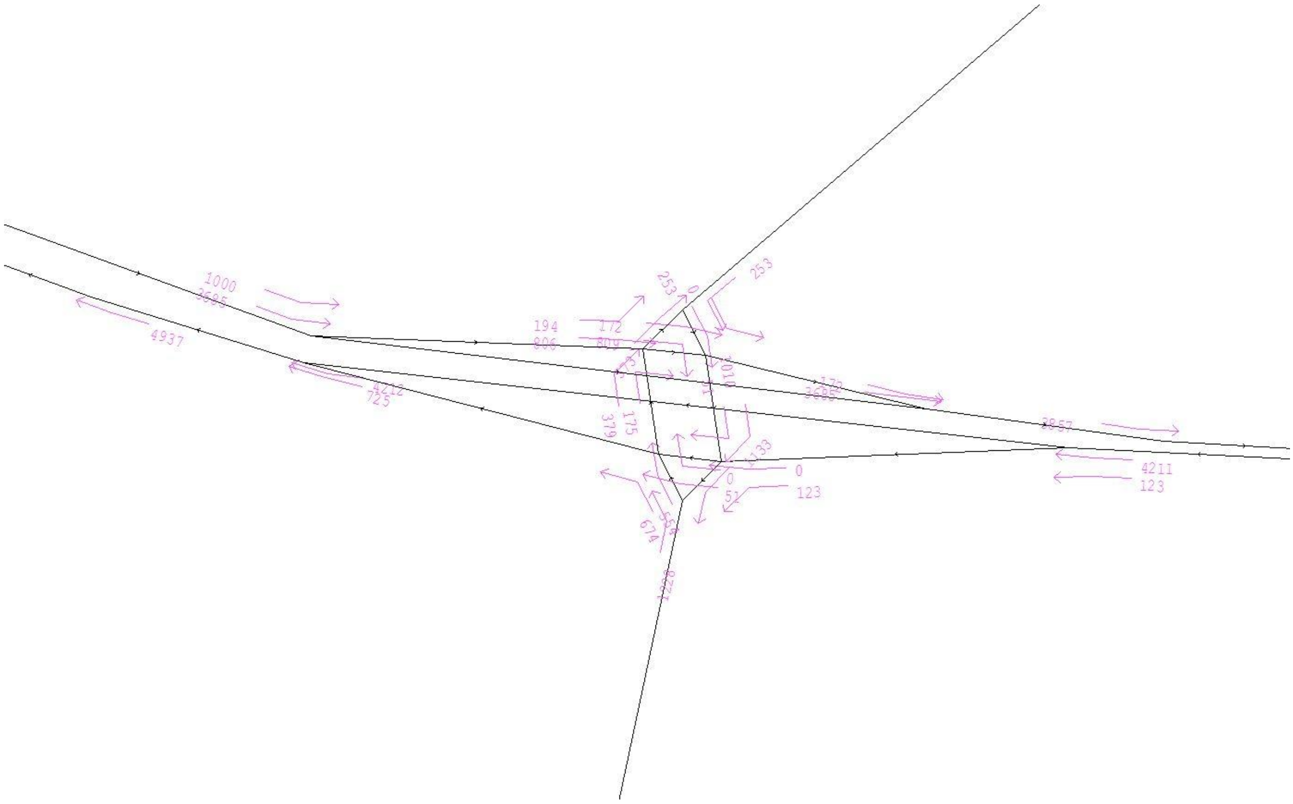


Figure D.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

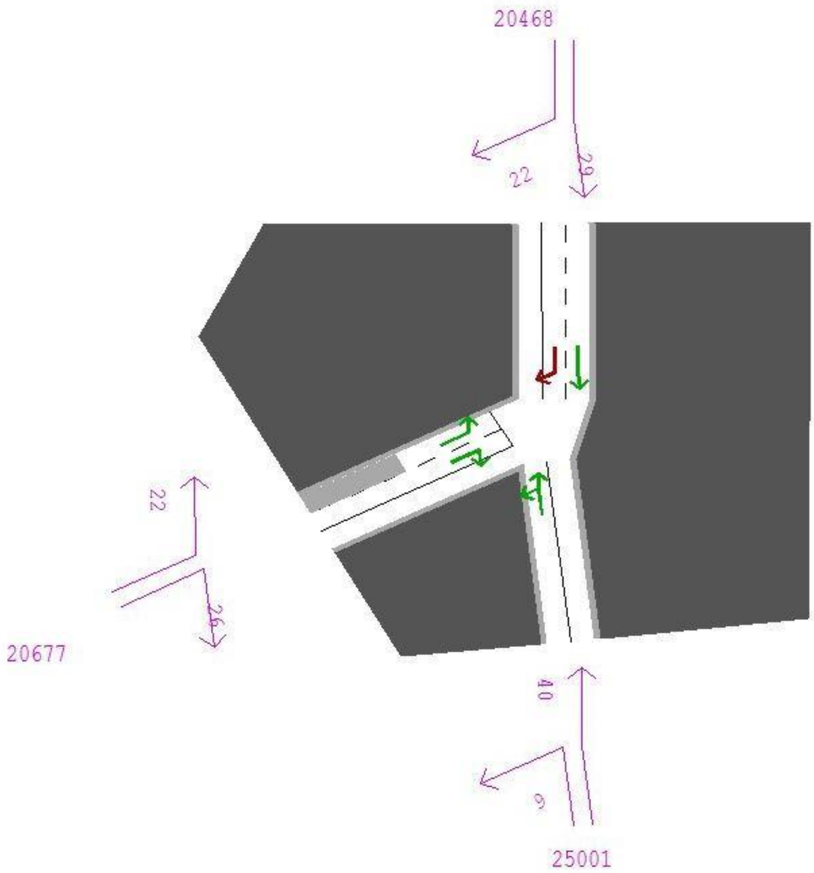


Figure D.32: A426 / Bill Crane Way Junction: Delay (seconds)

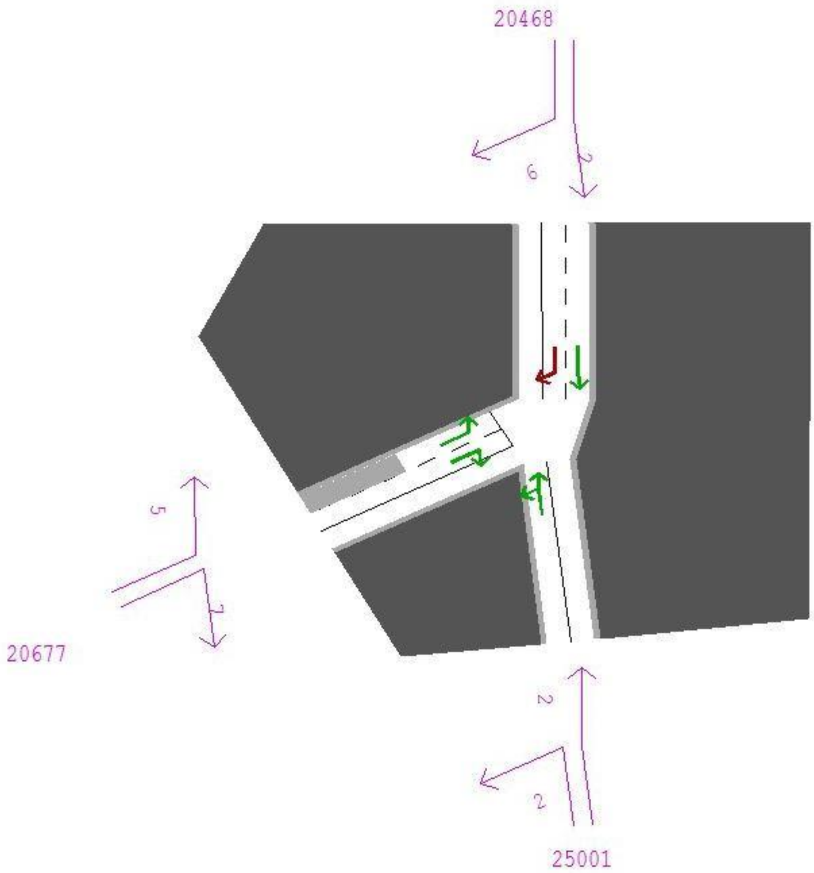
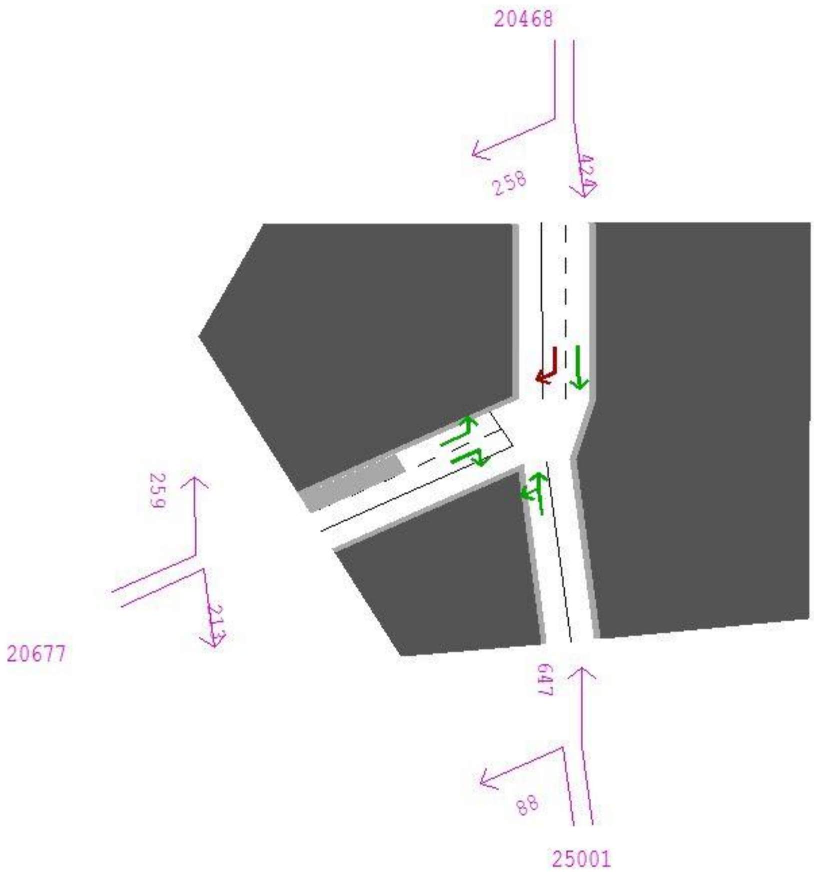


Figure D.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)



MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note – Appendices E and F

Final Report

Appendix E 2026 'without development' PM Peak Junction Node Data

E.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure E.1: M1 Junction 20: Volume-to-Capacity Ratio

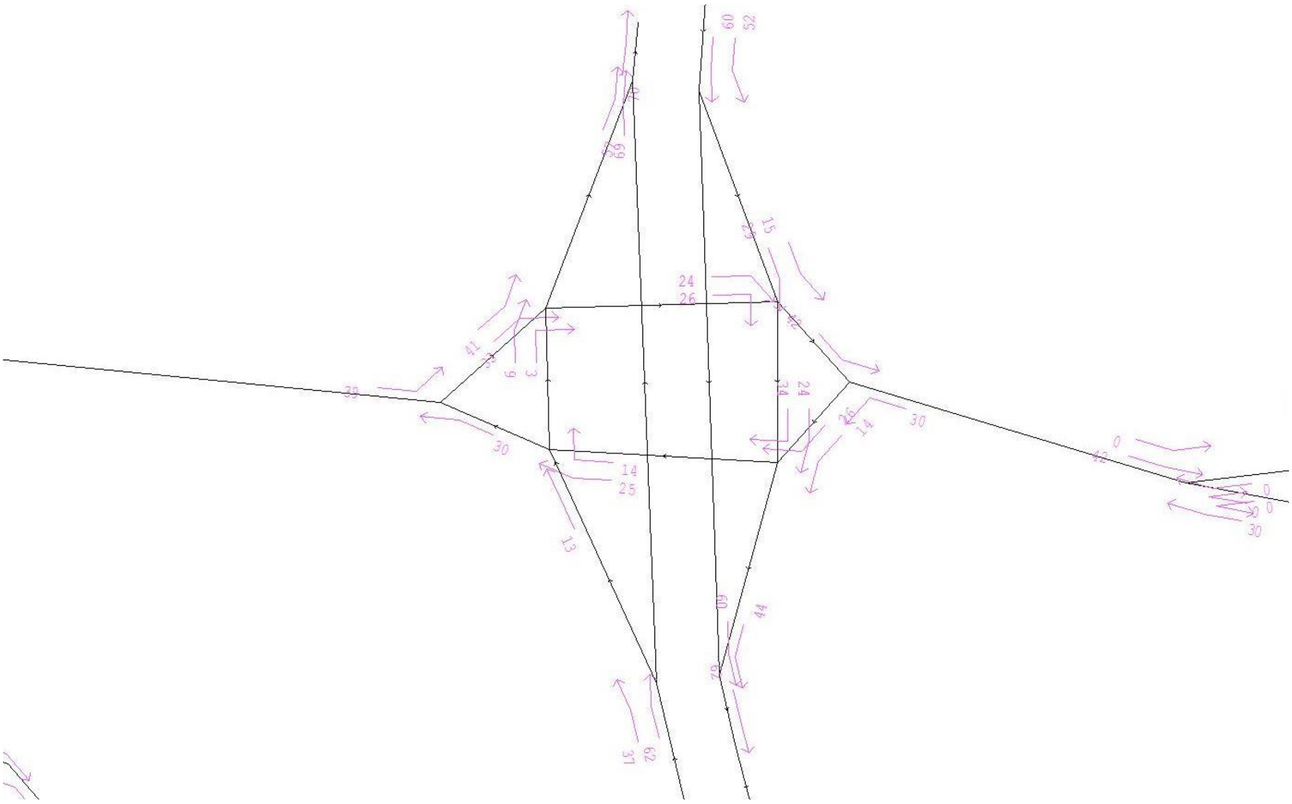


Figure E.2: M1 Junction 20: Delay (seconds)

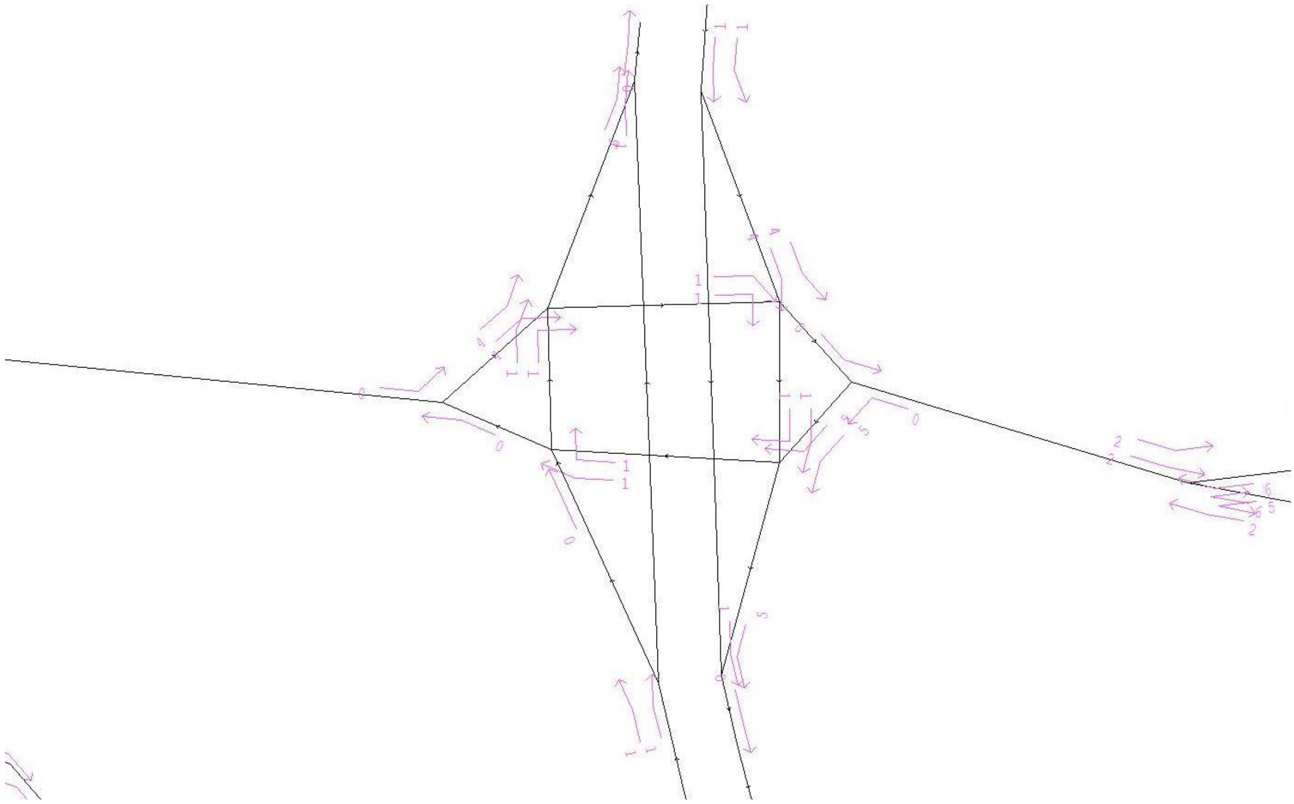


Figure E.3: M1 Junction 20: Arrive Flow (PCUs)

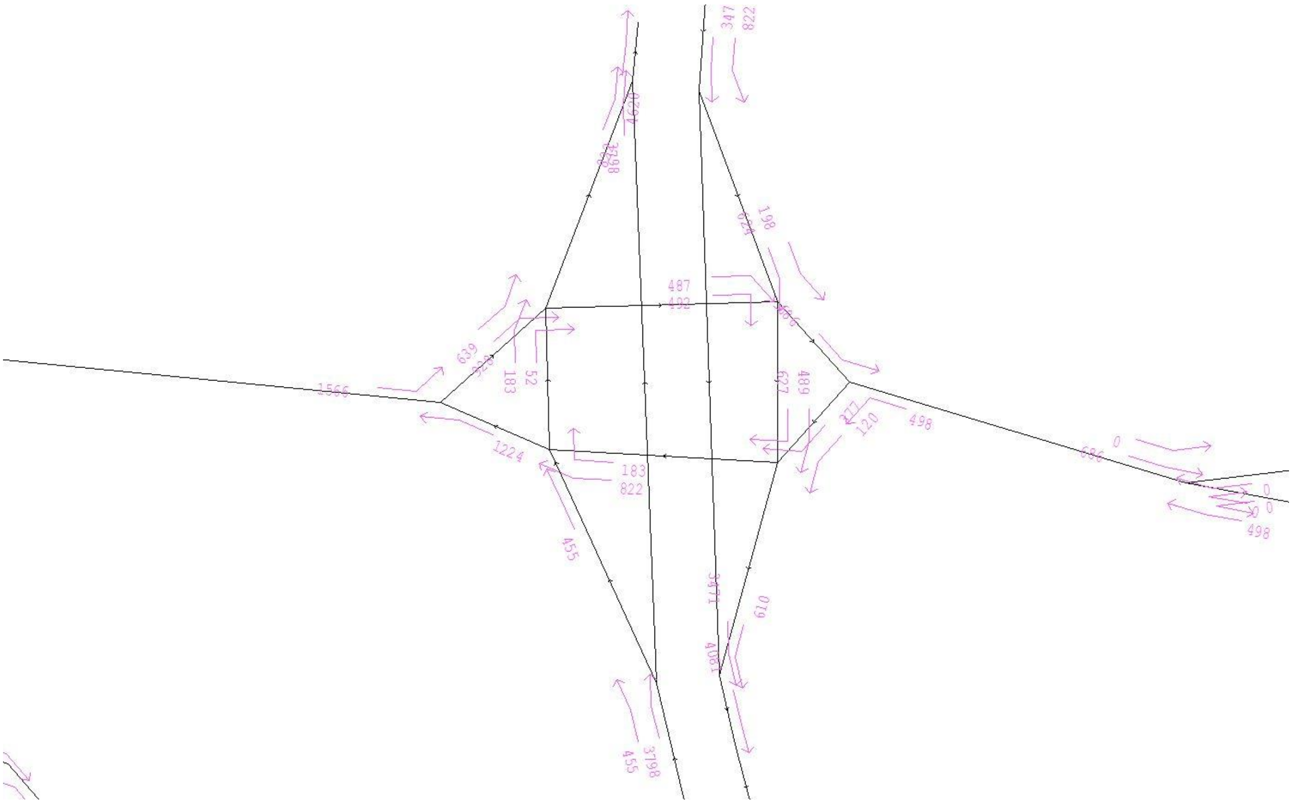


Figure E.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

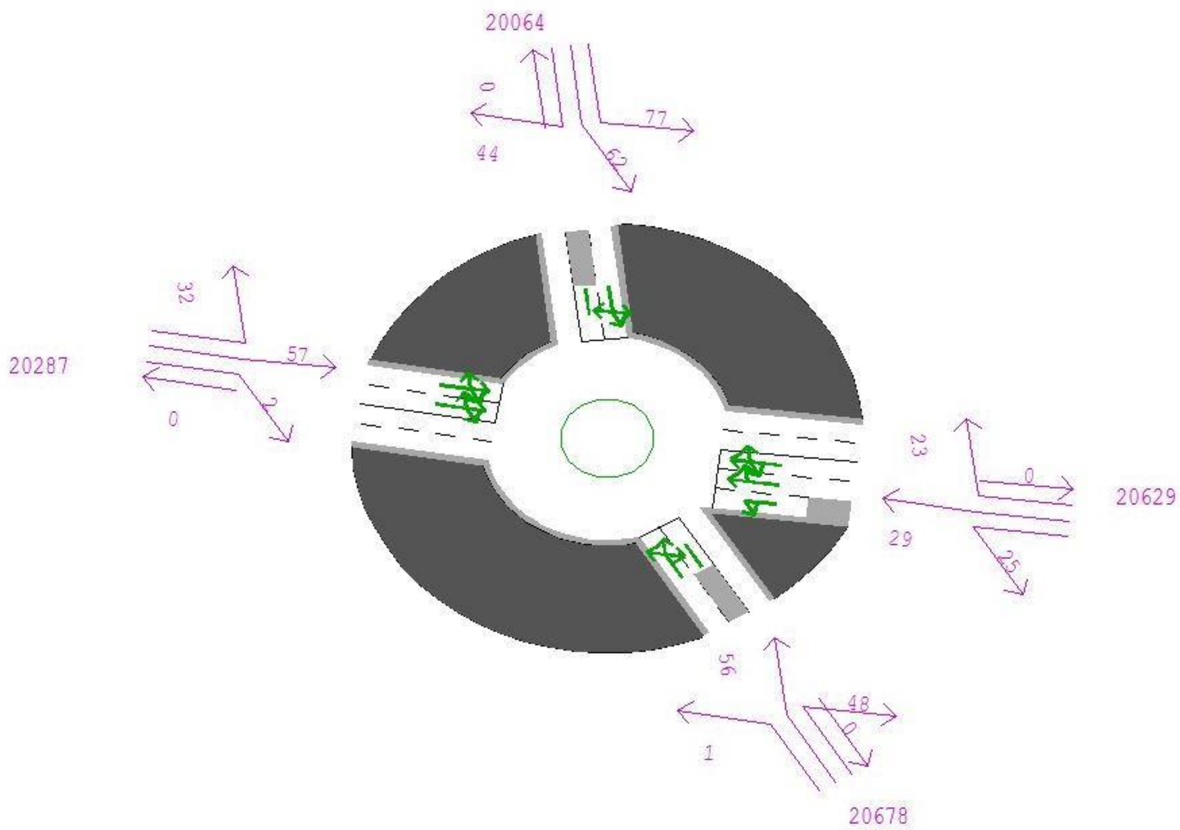


Figure E.5: A4303 / A426 Roundabout: Delay (seconds)

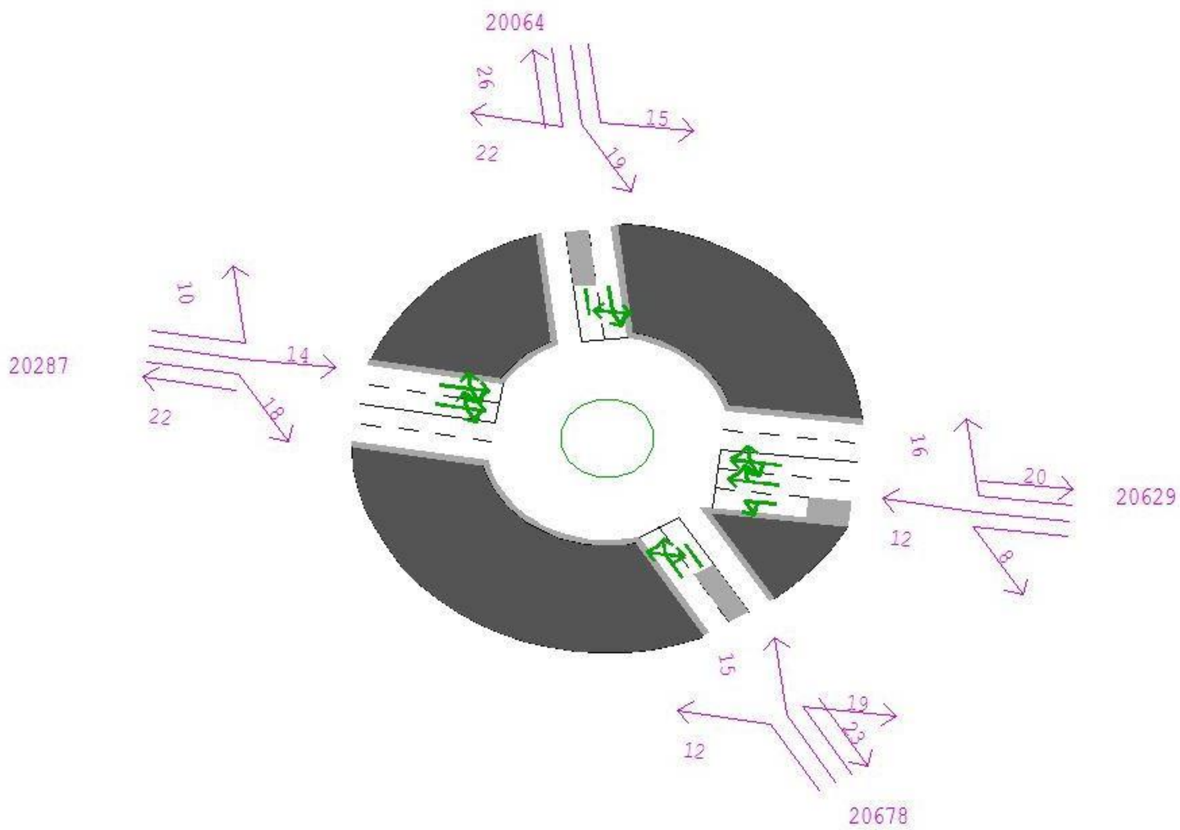


Figure E.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

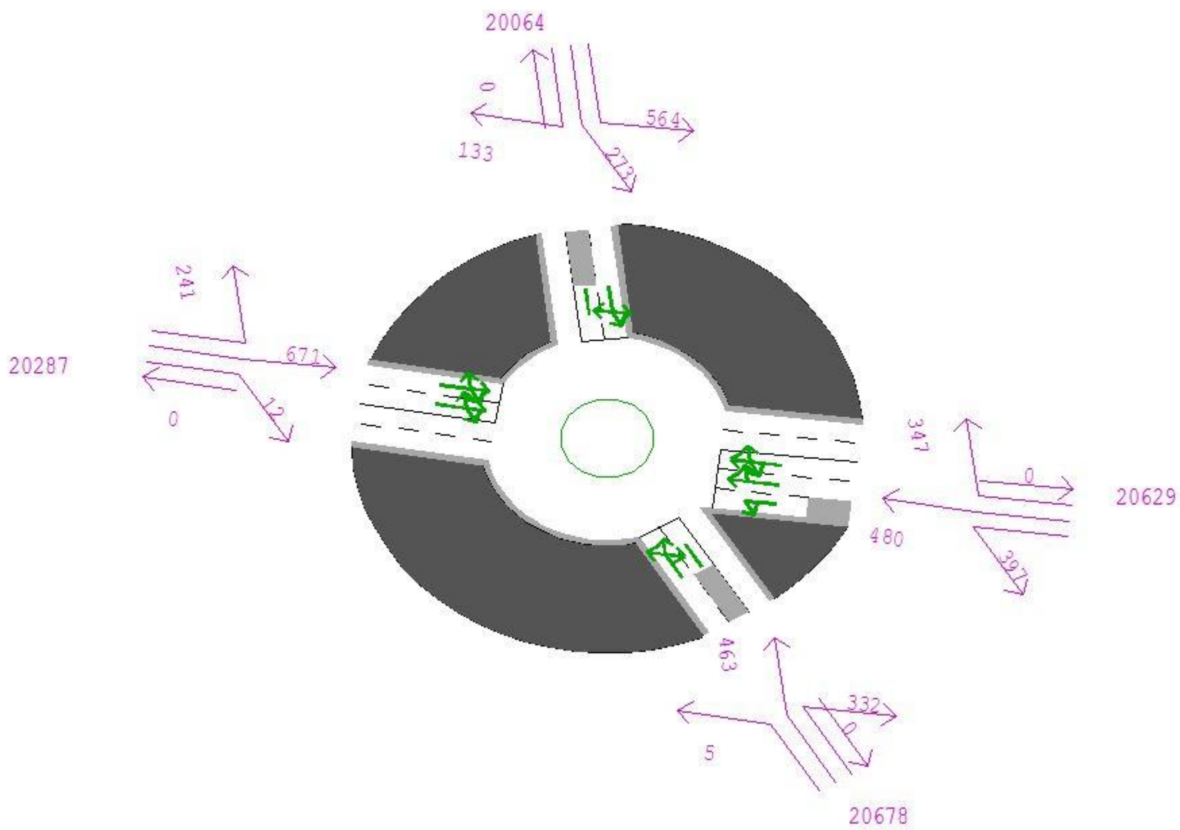


Figure E.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

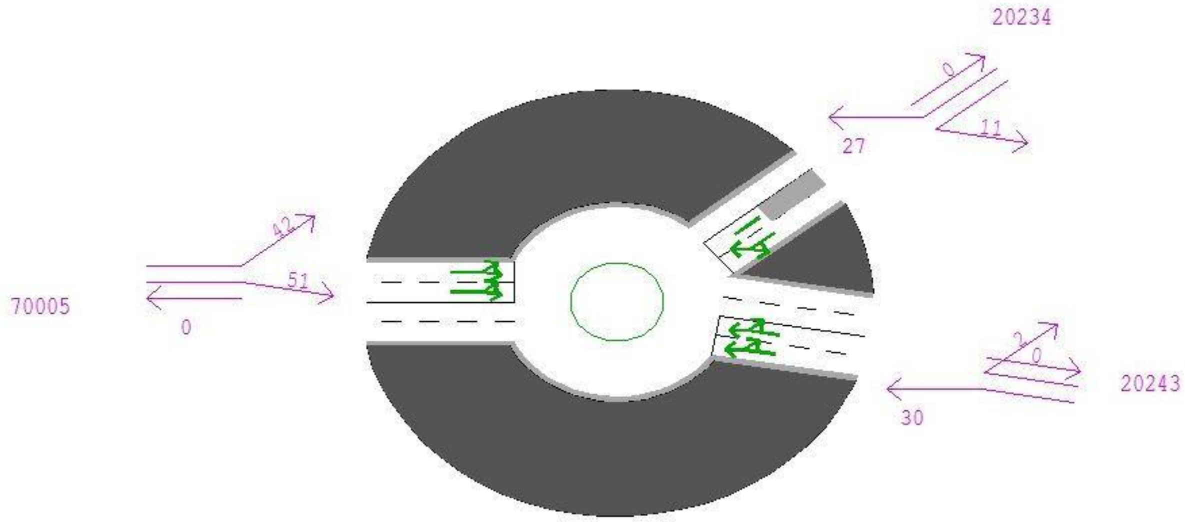


Figure E.8: A4303 / Coventry Road Roundabout: Delay (seconds)

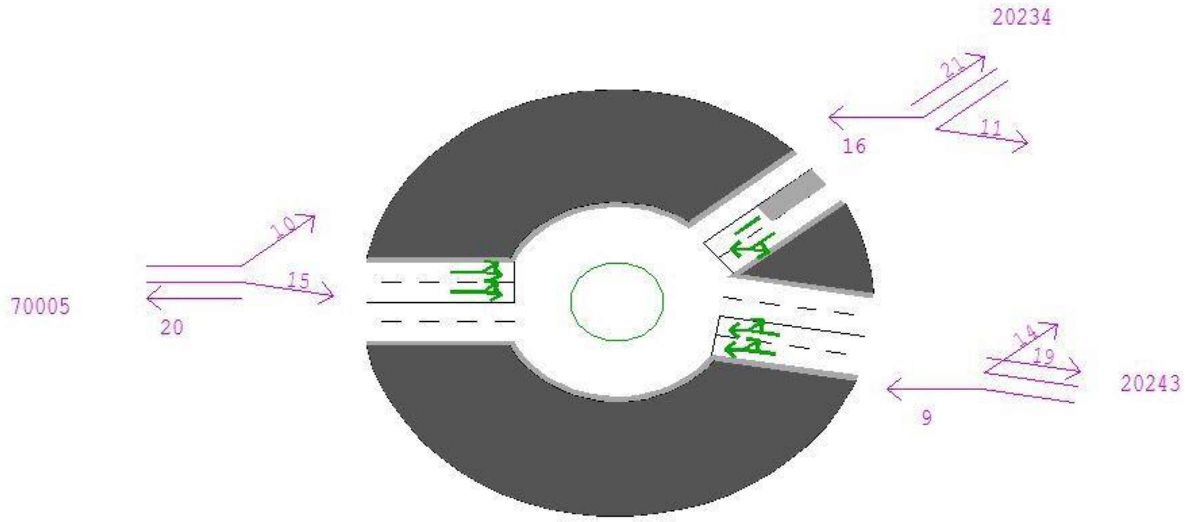


Figure E.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

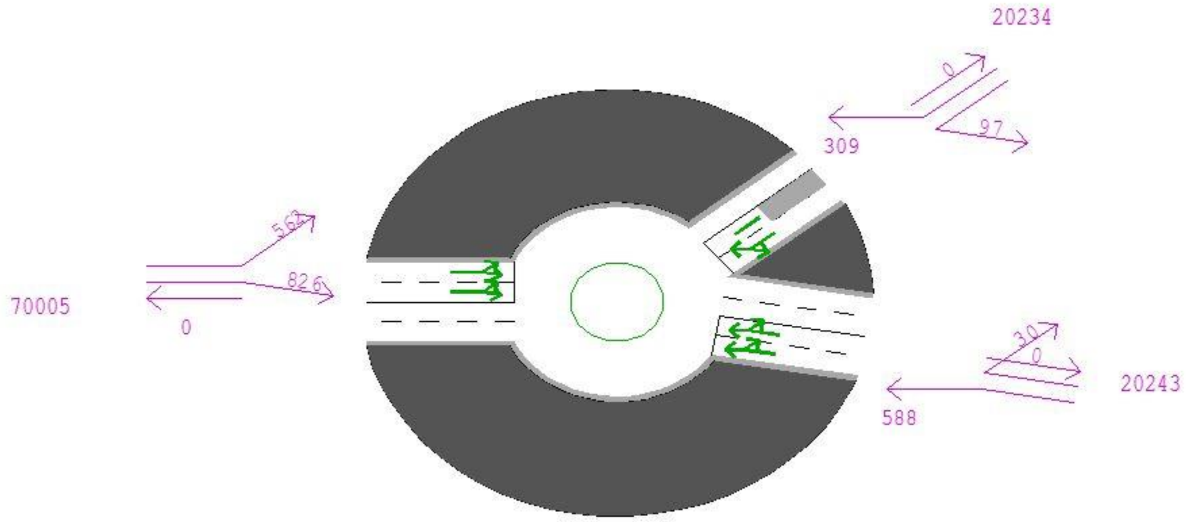


Figure E.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

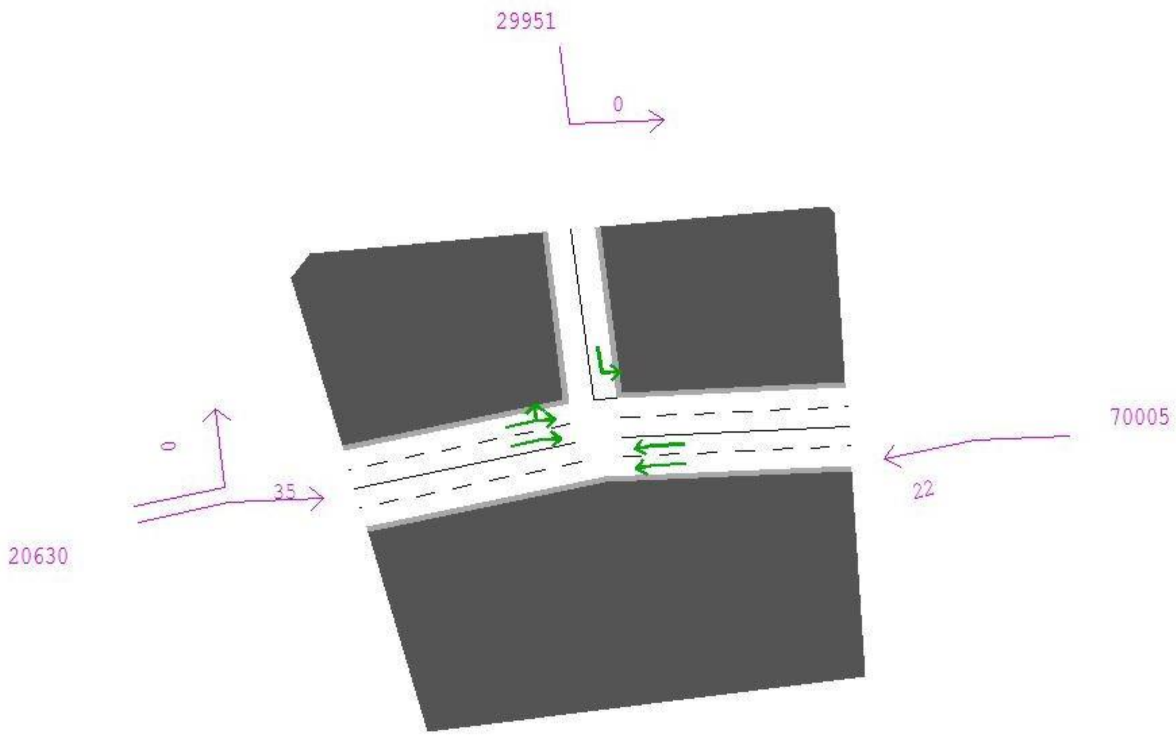


Figure E.11: A4303 / Shackleton Way Junction: Delay (seconds)

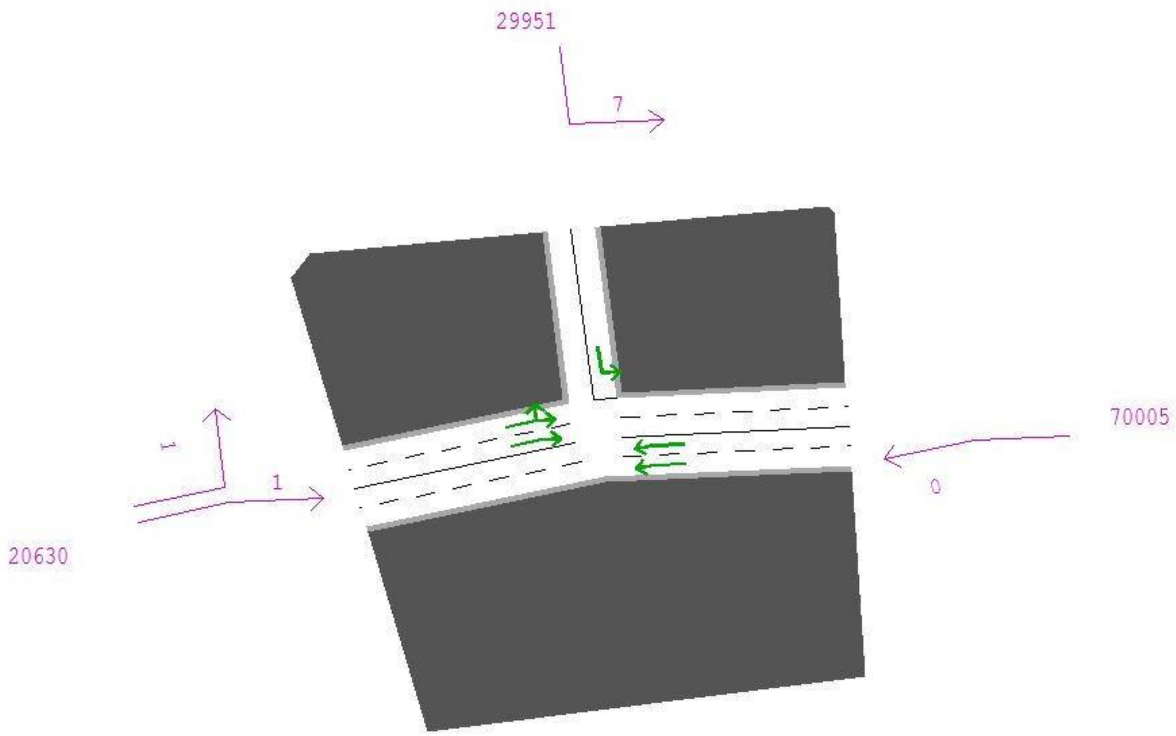


Figure E.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

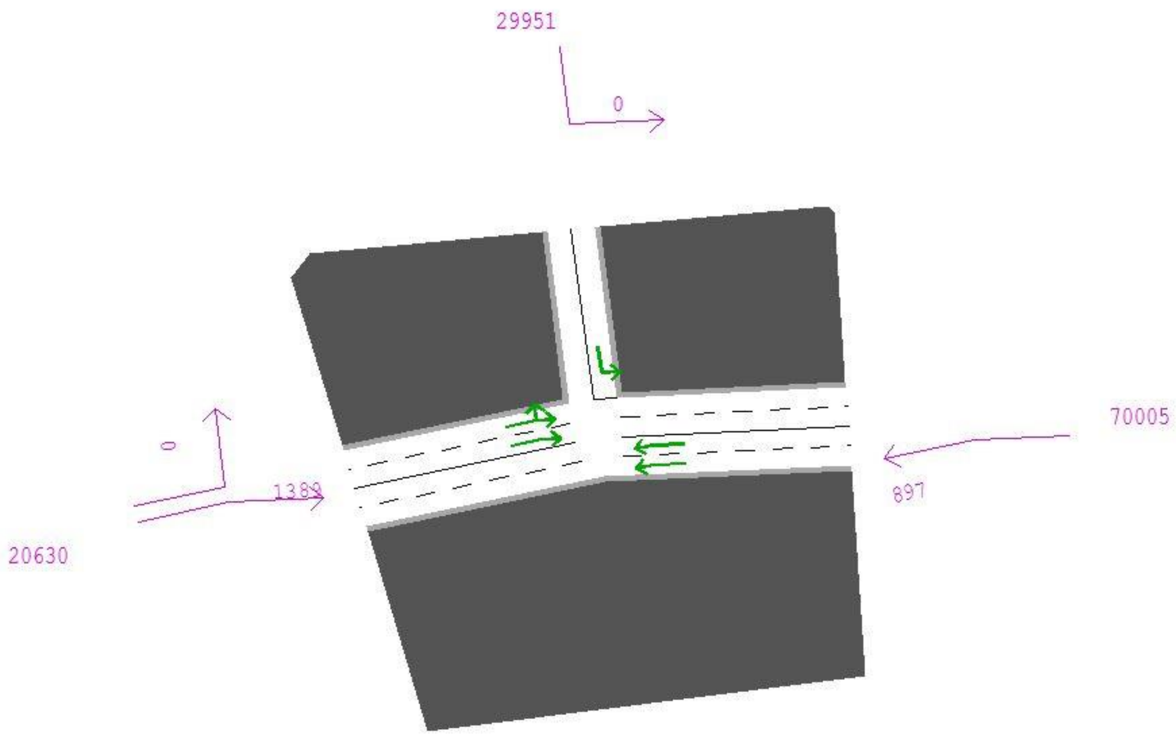


Figure E.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

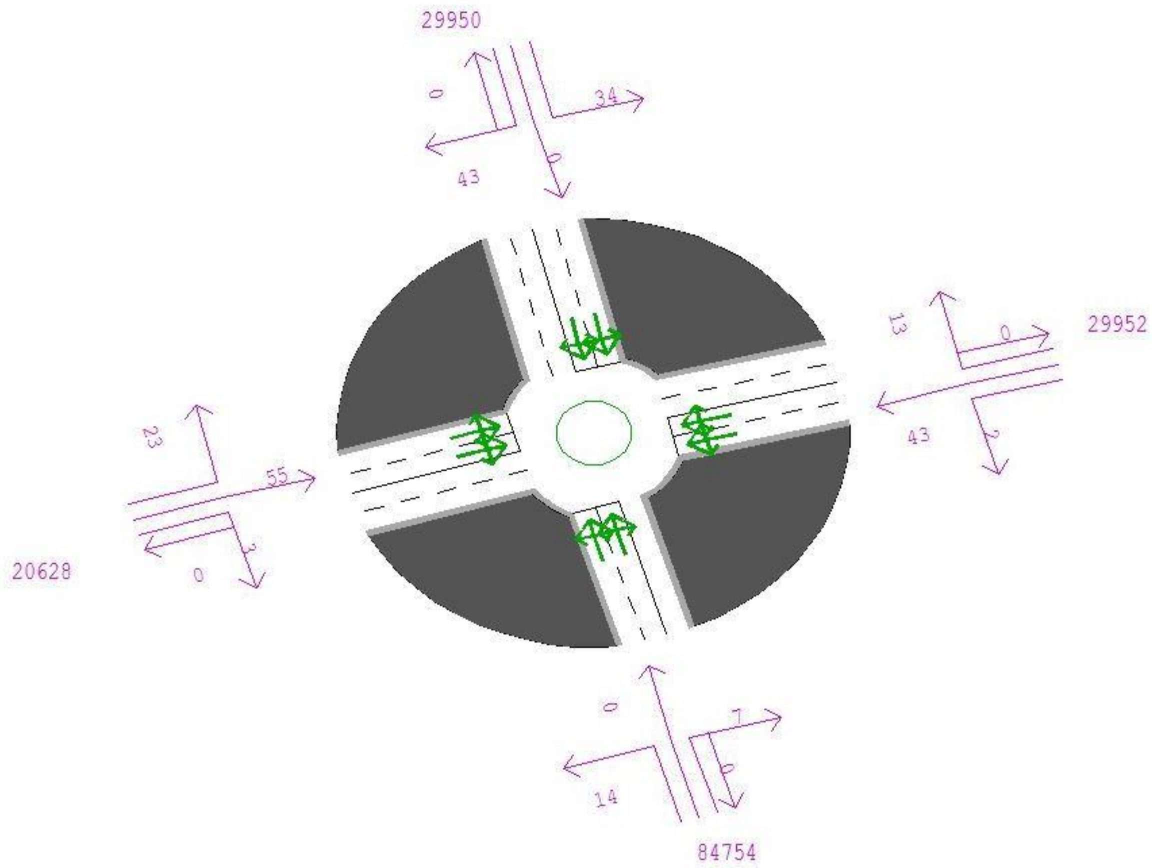


Figure E.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

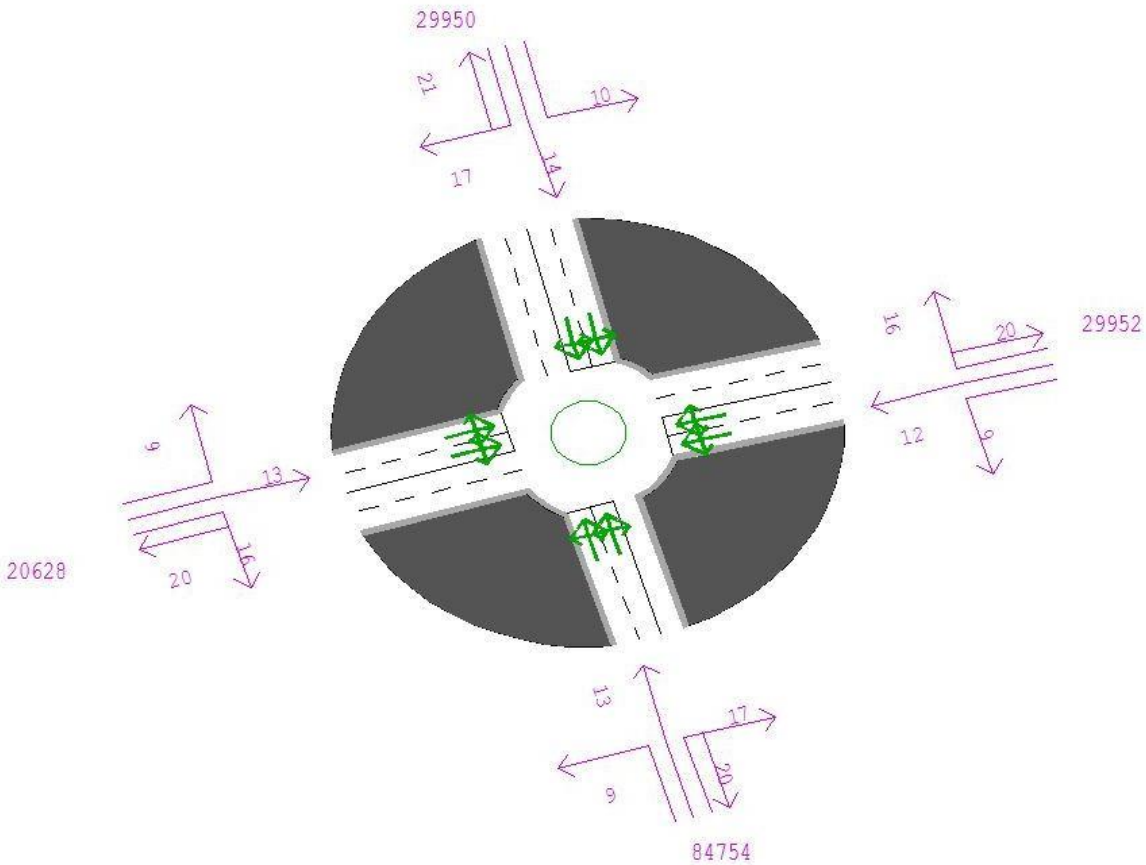


Figure E.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

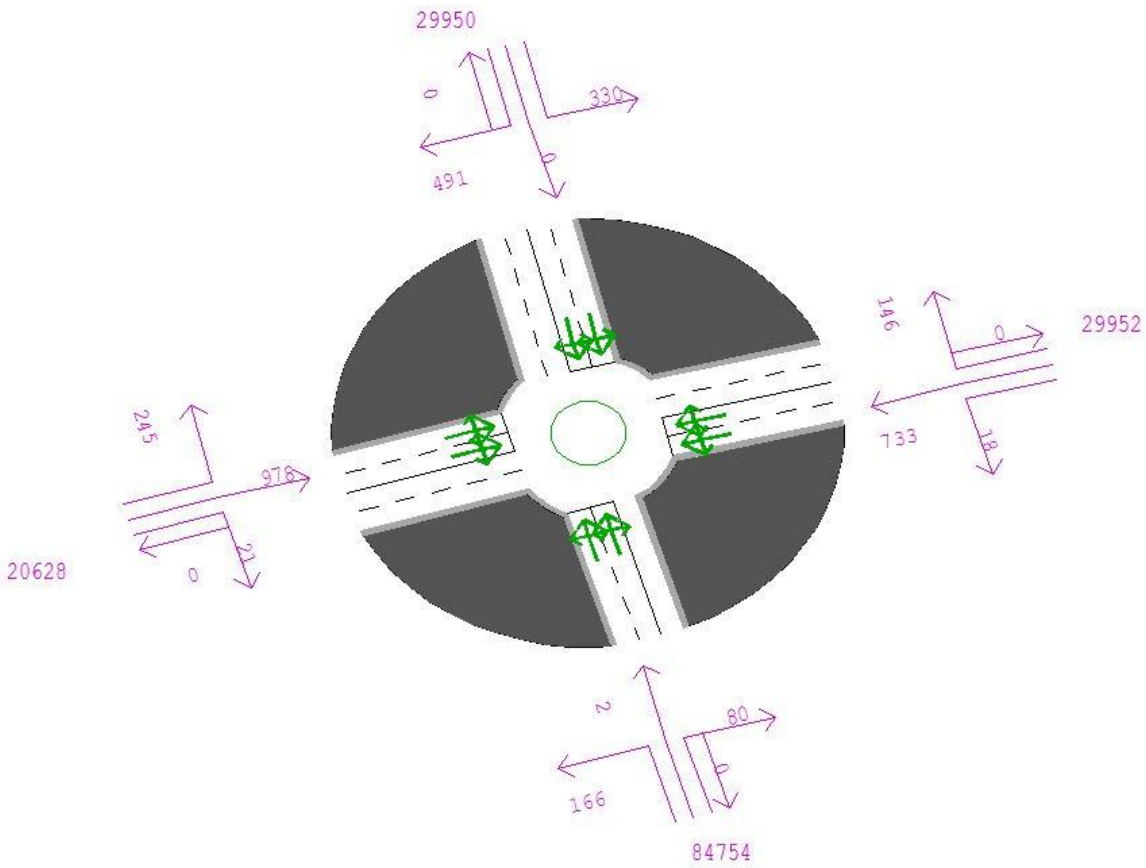


Figure E.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

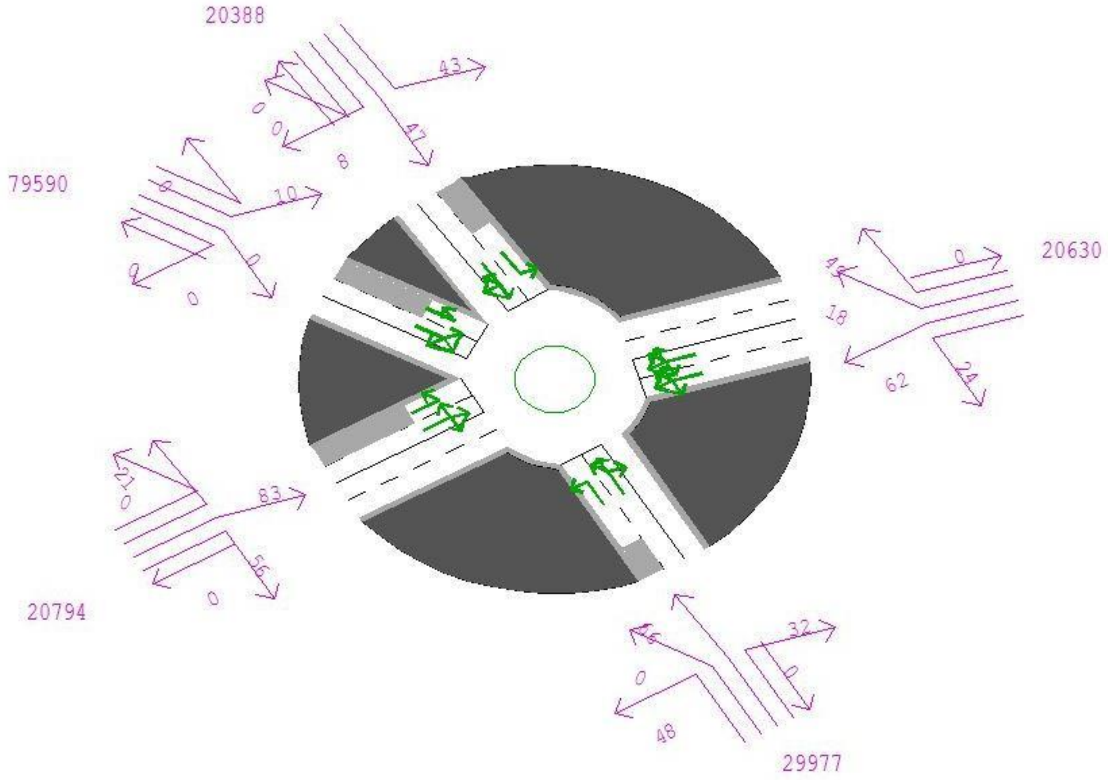


Figure E.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

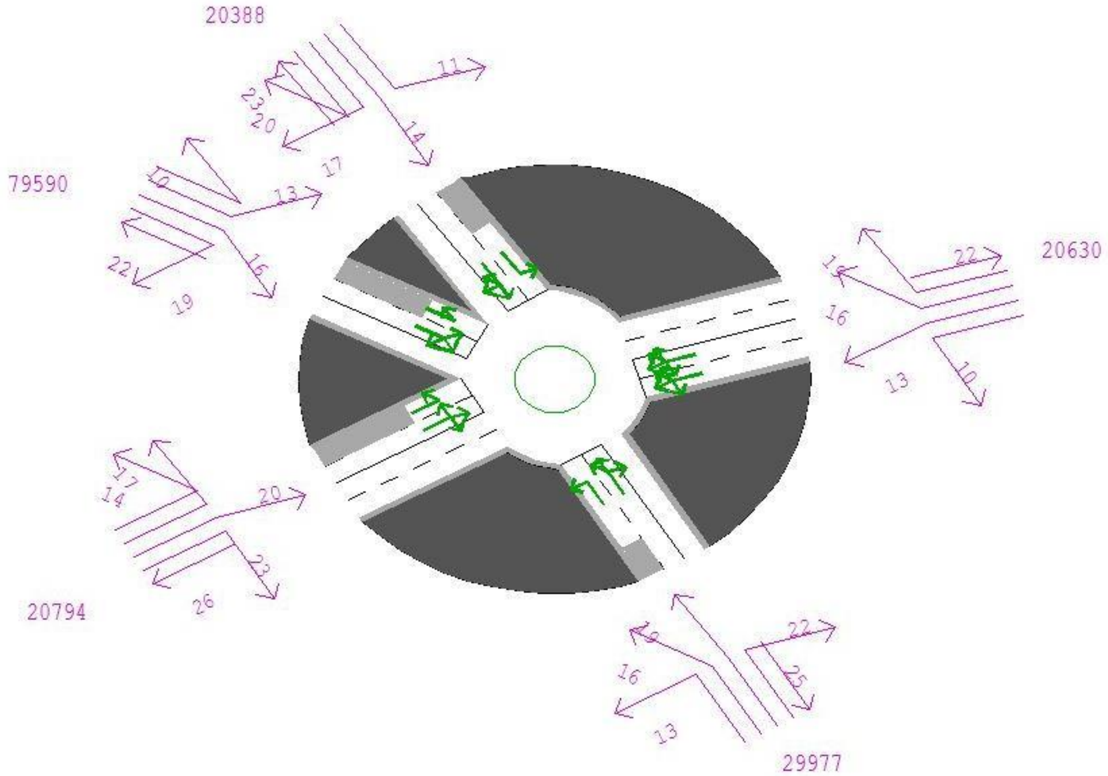


Figure E.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

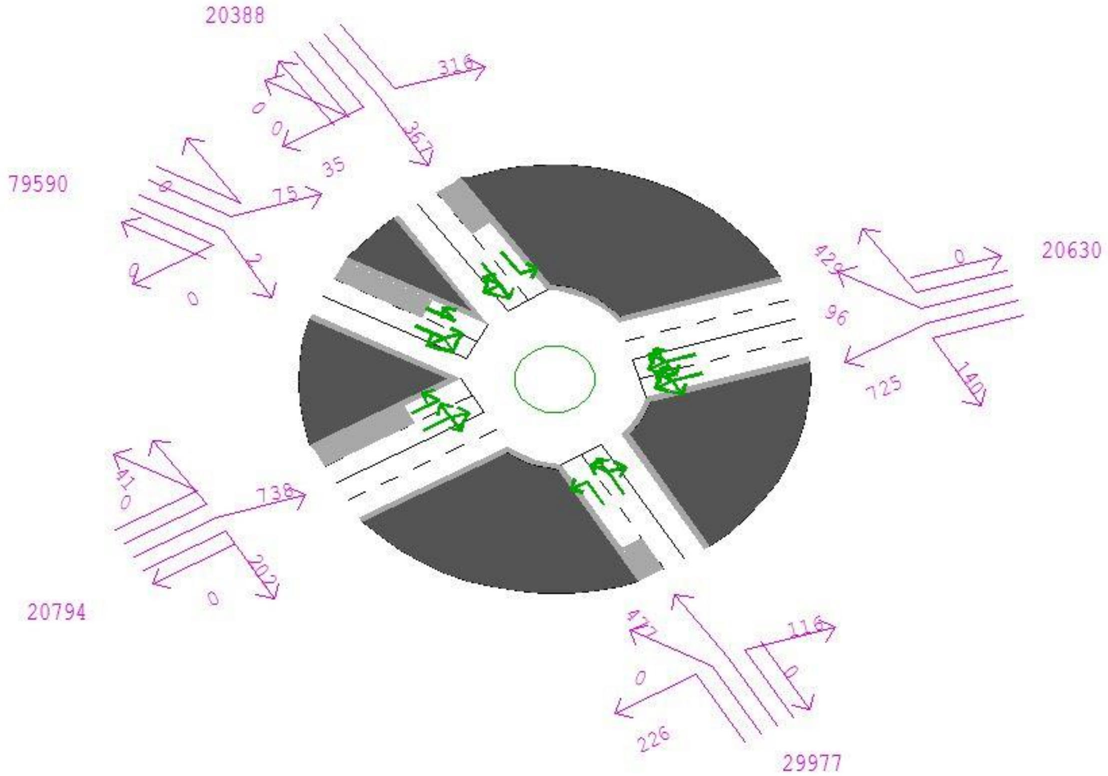


Figure E.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

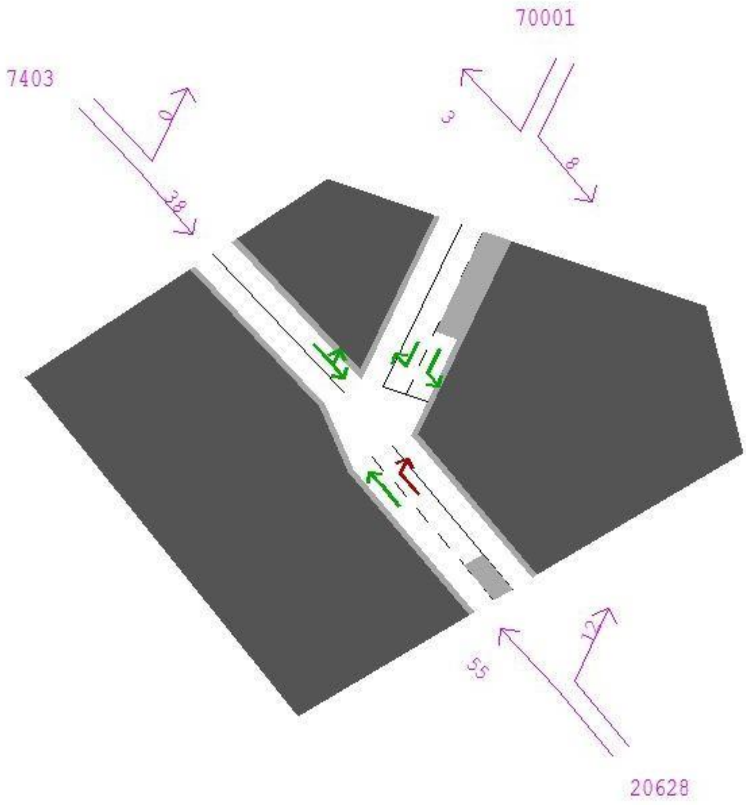


Figure E.20: A5 / Mere Lane Junction: Delay (seconds)

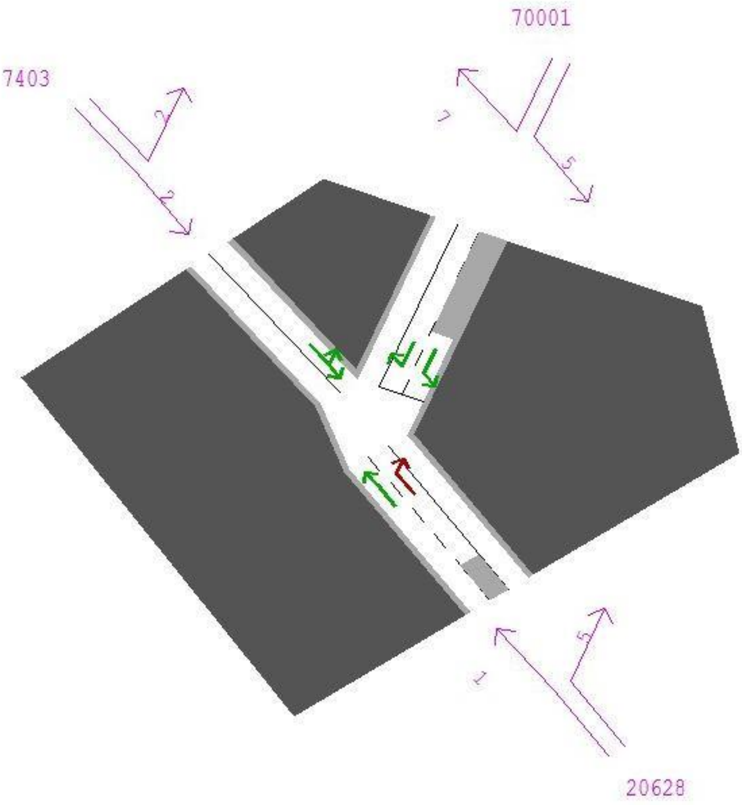


Figure E.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

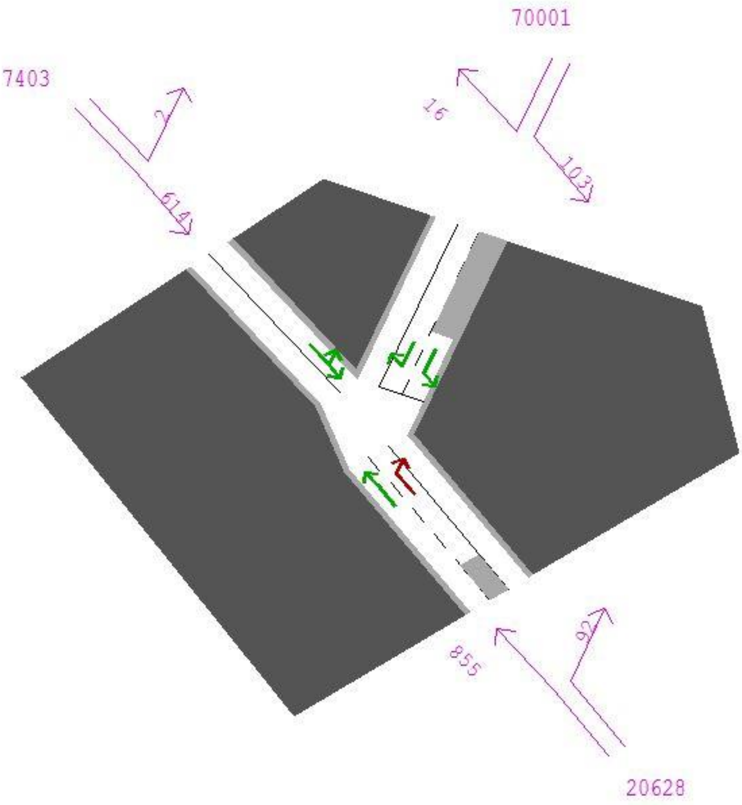


Figure E.22: M69 Junction 1: Volume-to-Capacity Ratio

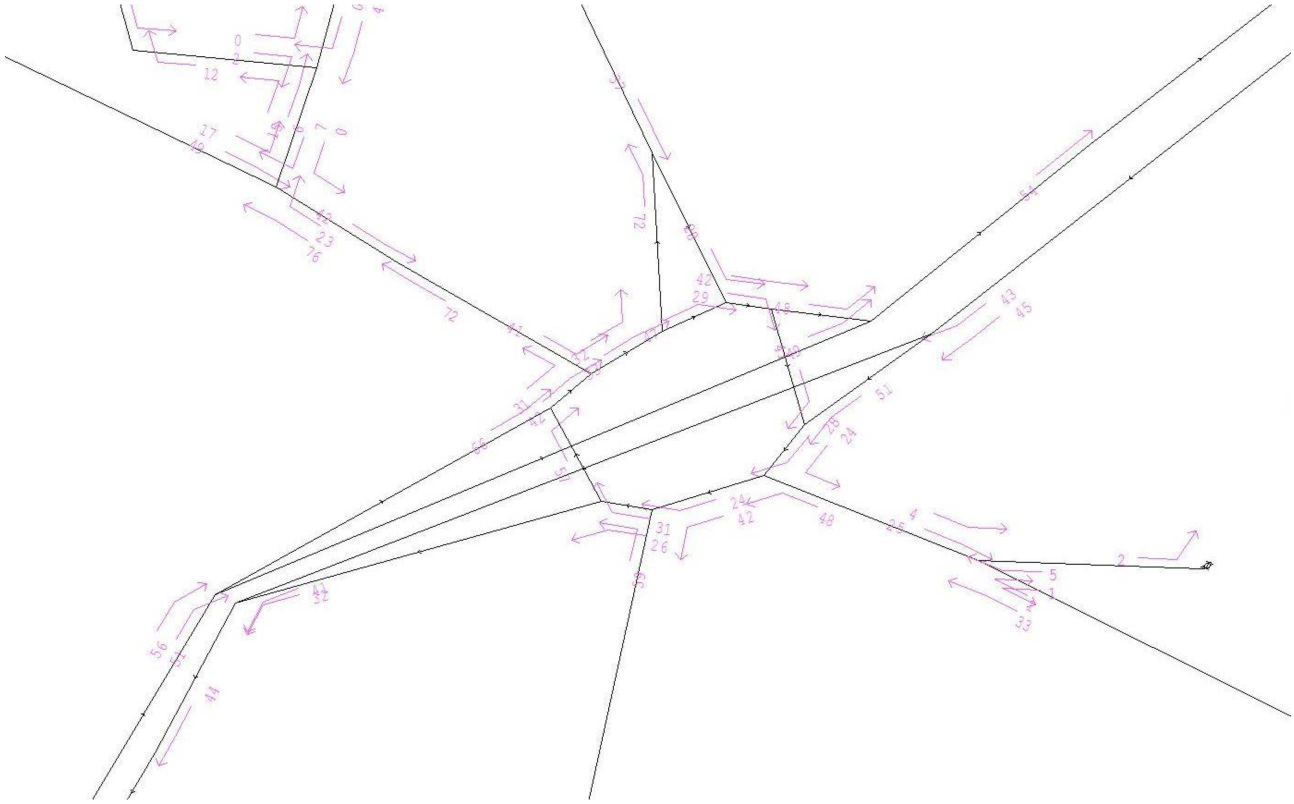


Figure E.23: M69 Junction 1: Delay (seconds)

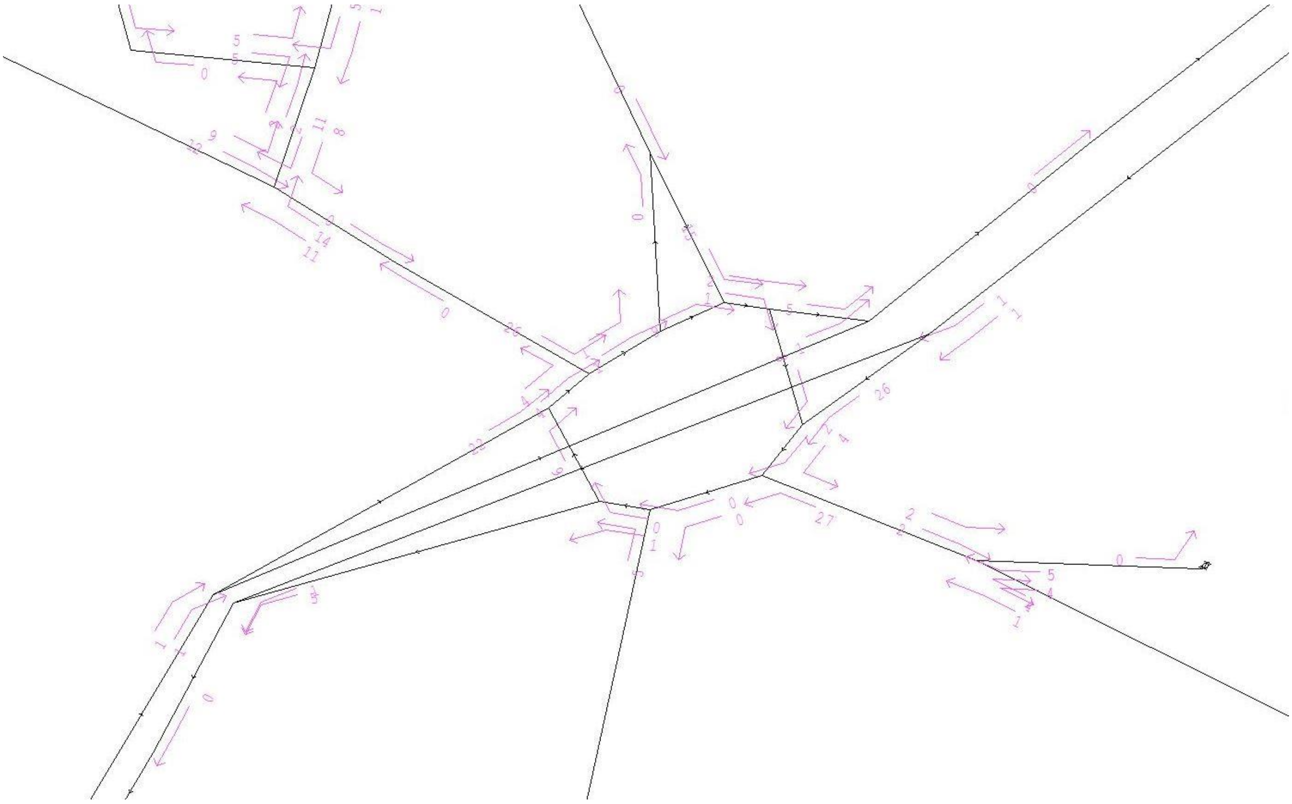


Figure E.24: M69 Junction 1: Arrive Flow (PCUs)

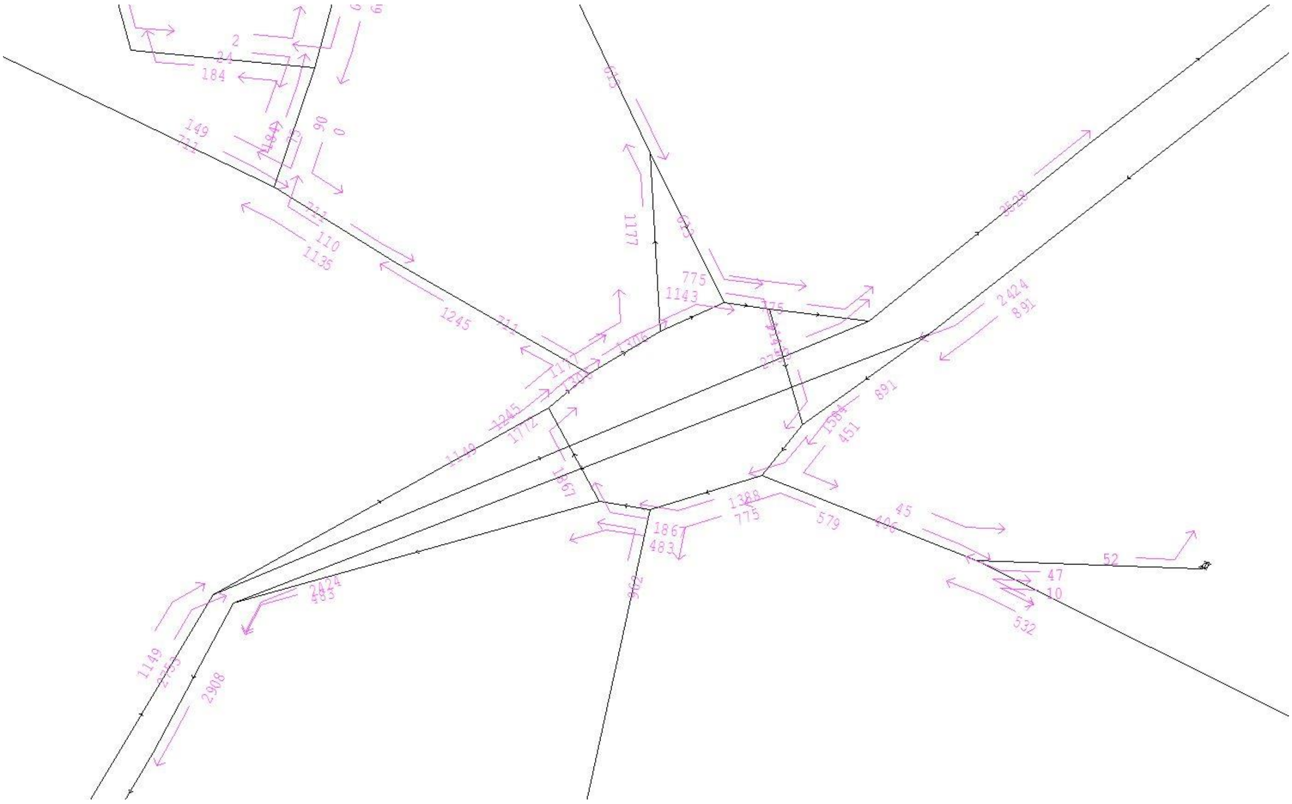


Figure E.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

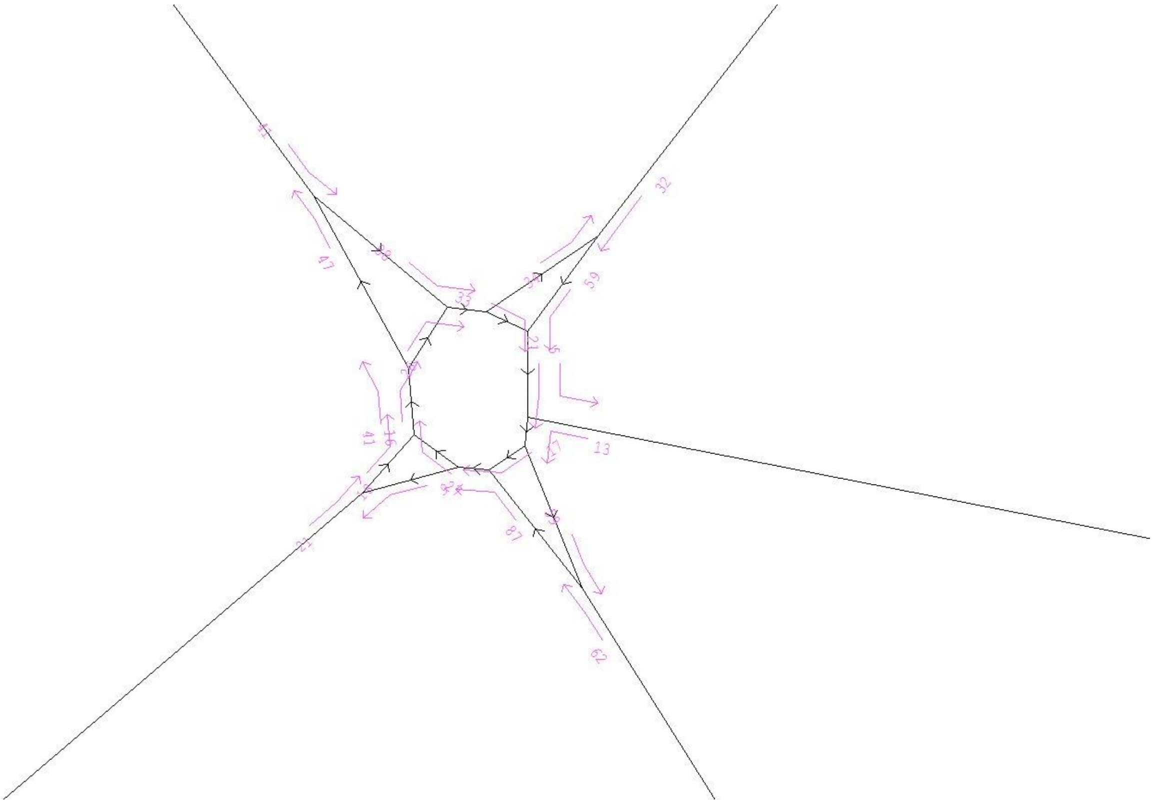


Figure E.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

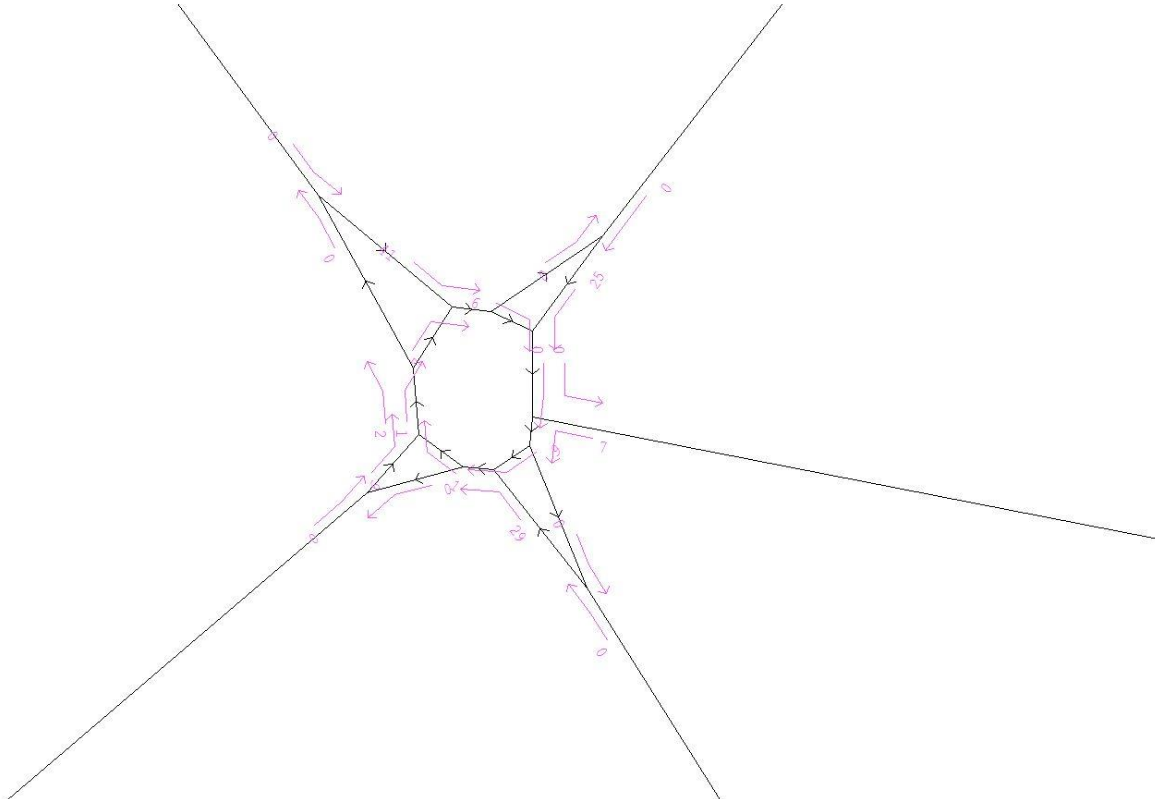


Figure E.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

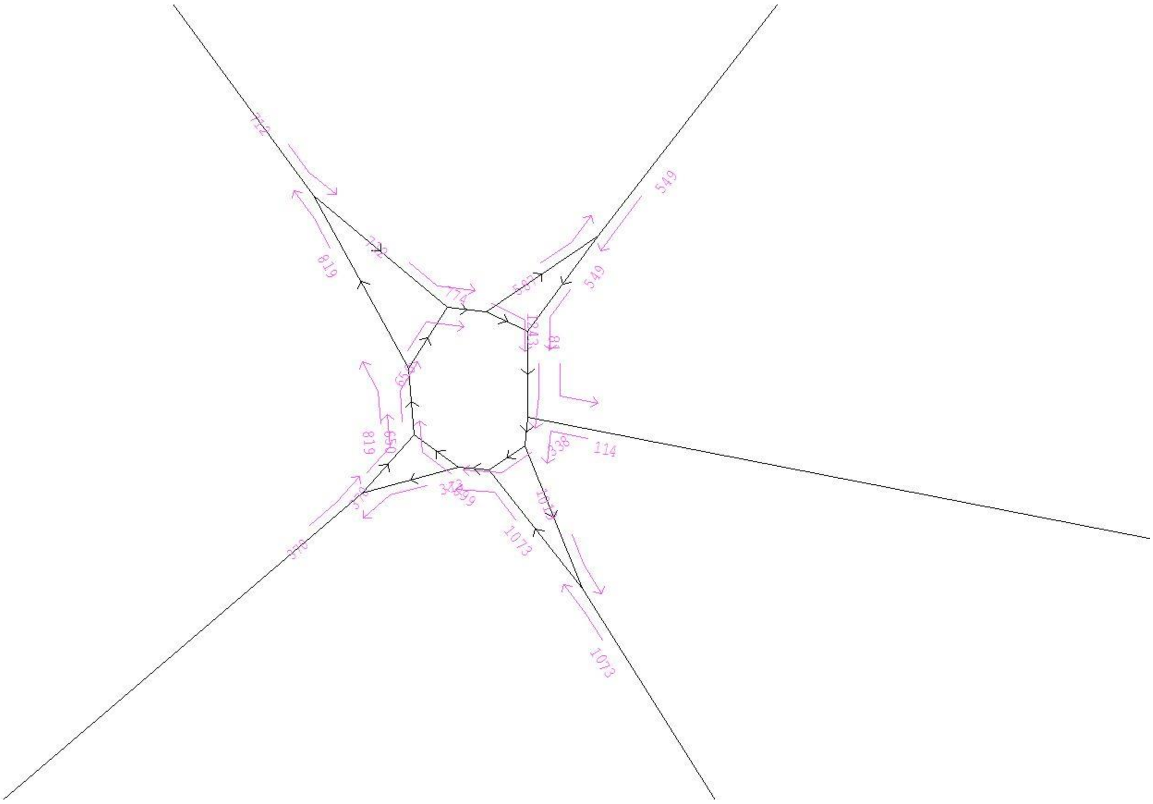


Figure E.28: M6 Junction 1: Volume-to-Capacity Ratio

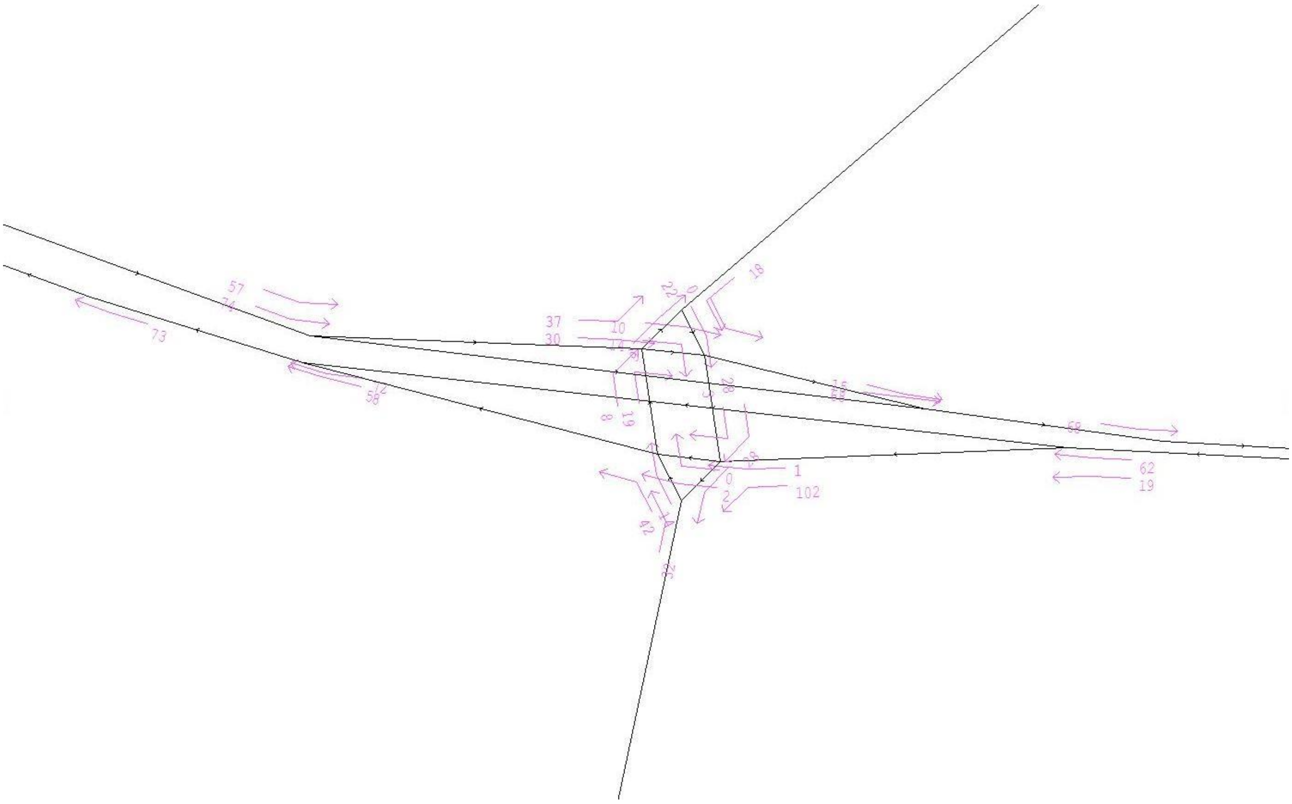


Figure E.29: M6 Junction 1: Delay (seconds)

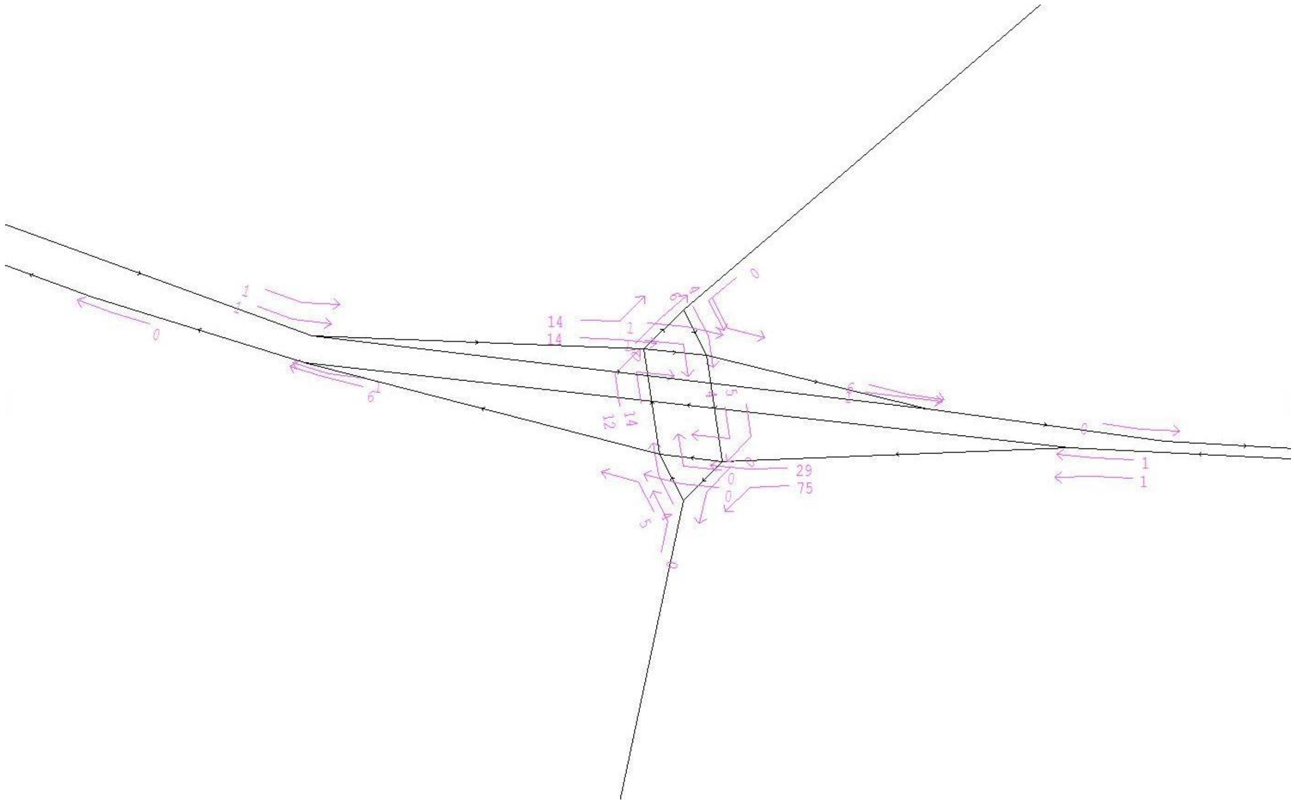


Figure E.30: M6 Junction 1: Arrive Flow (PCUs)

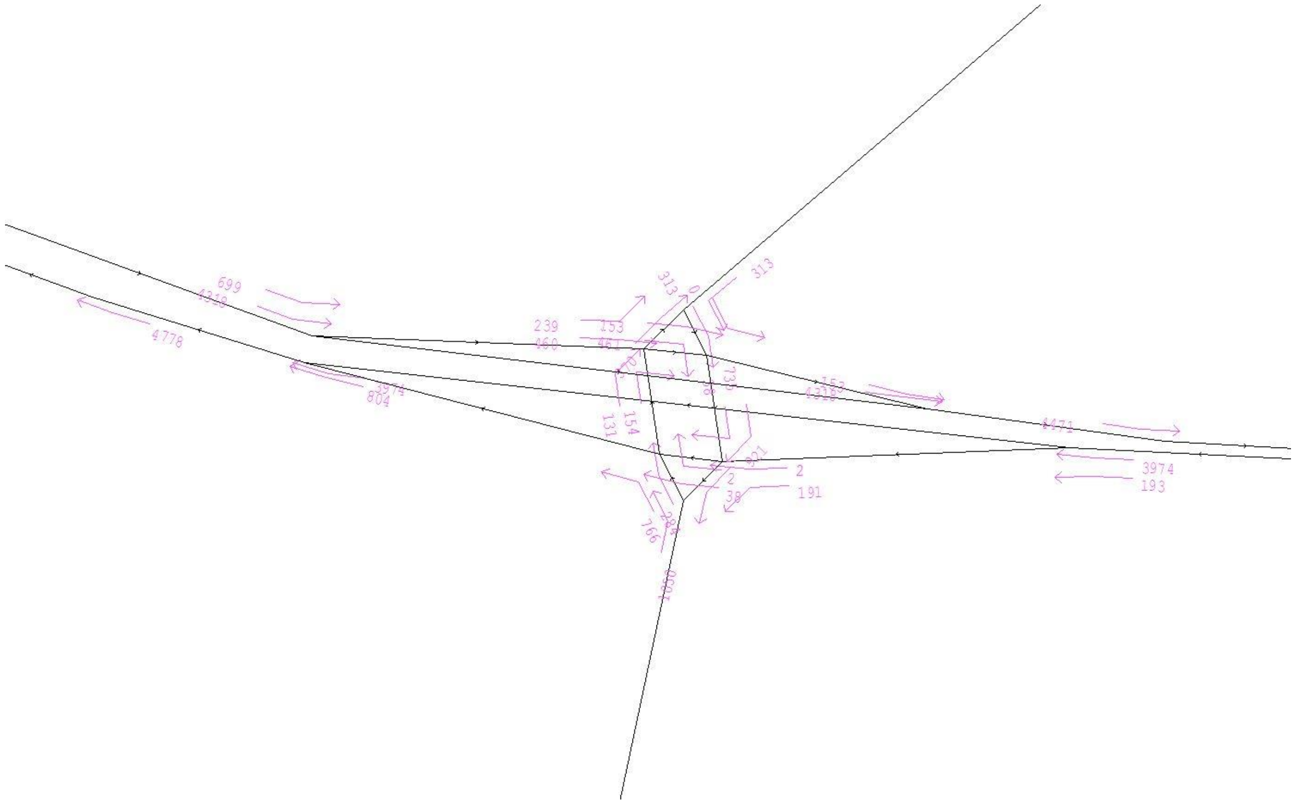


Figure E.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

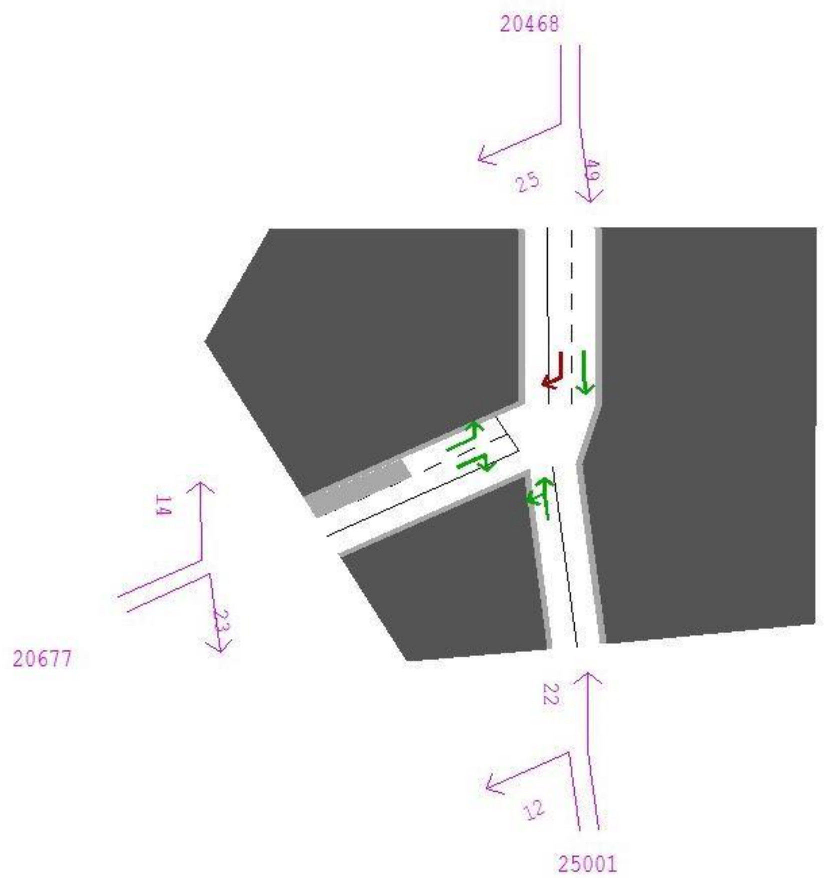


Figure E.32: A426 / Bill Crane Way Junction: Delay (seconds)

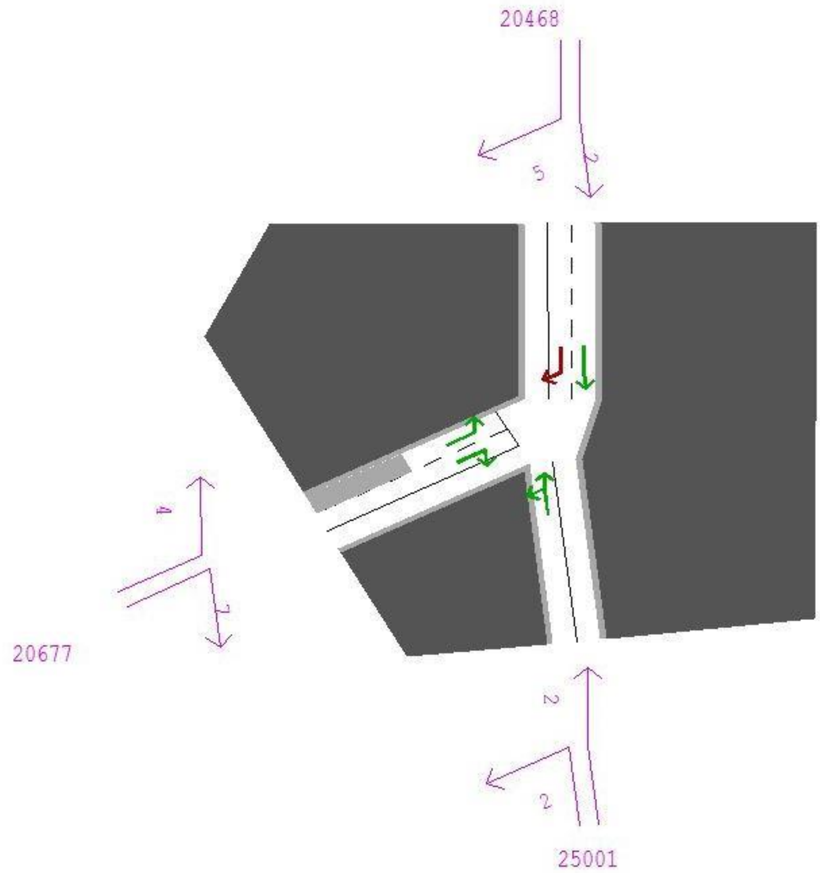
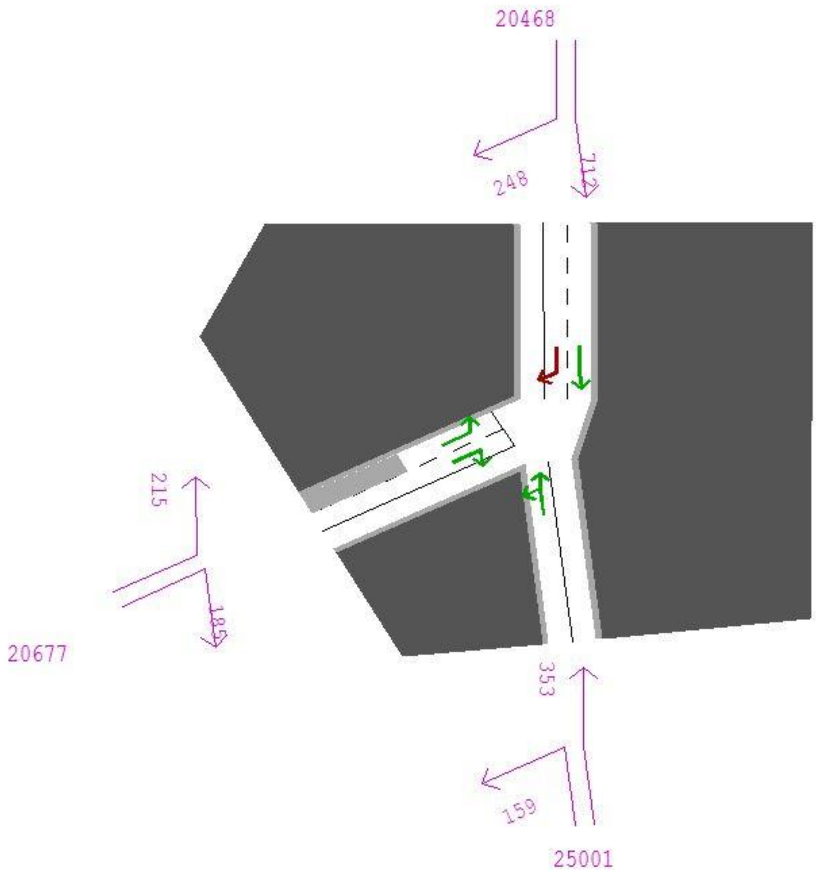


Figure E.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)



Appendix F 2026 ‘with development’, excluding the proposed mitigation measures, AM Peak Junction Node Data

F.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure F.1: M1 Junction 20: Volume-to-Capacity Ratio

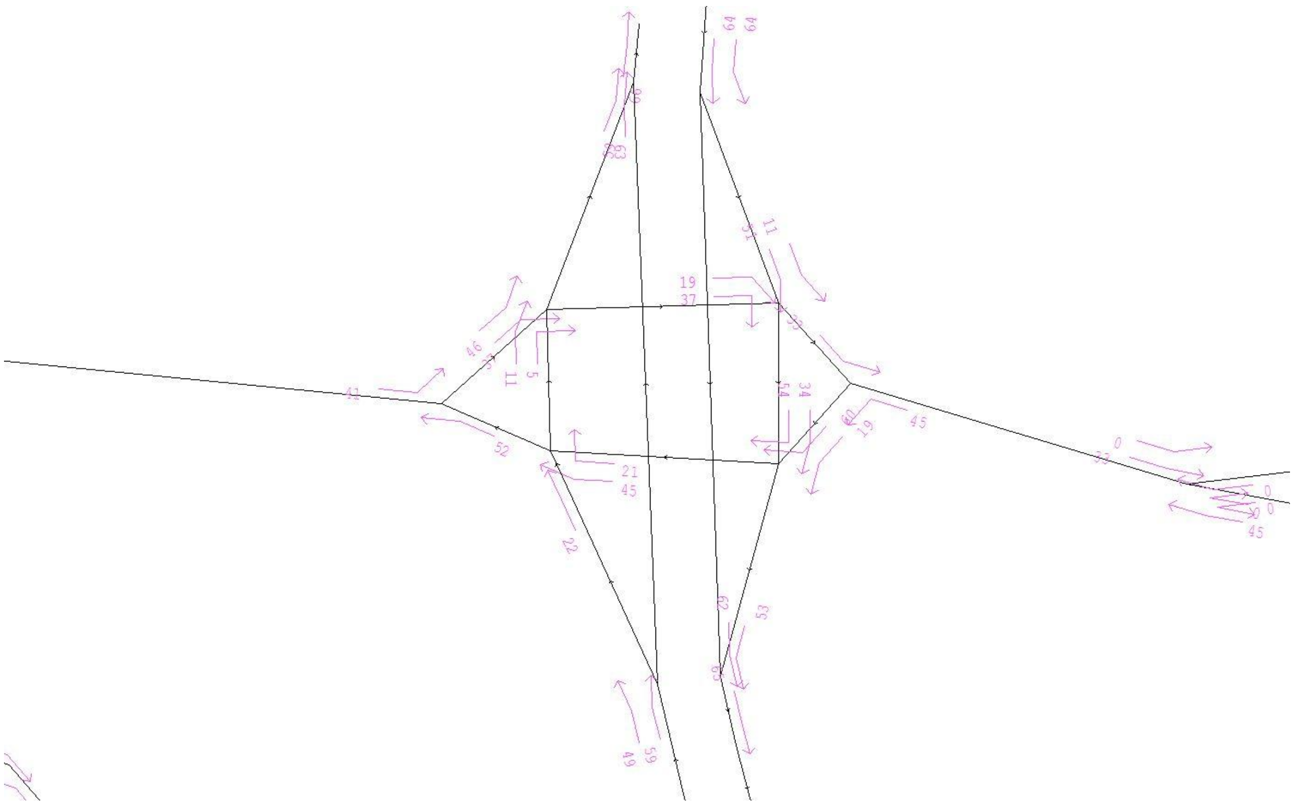


Figure F.2: M1 Junction 20: Delay (seconds)

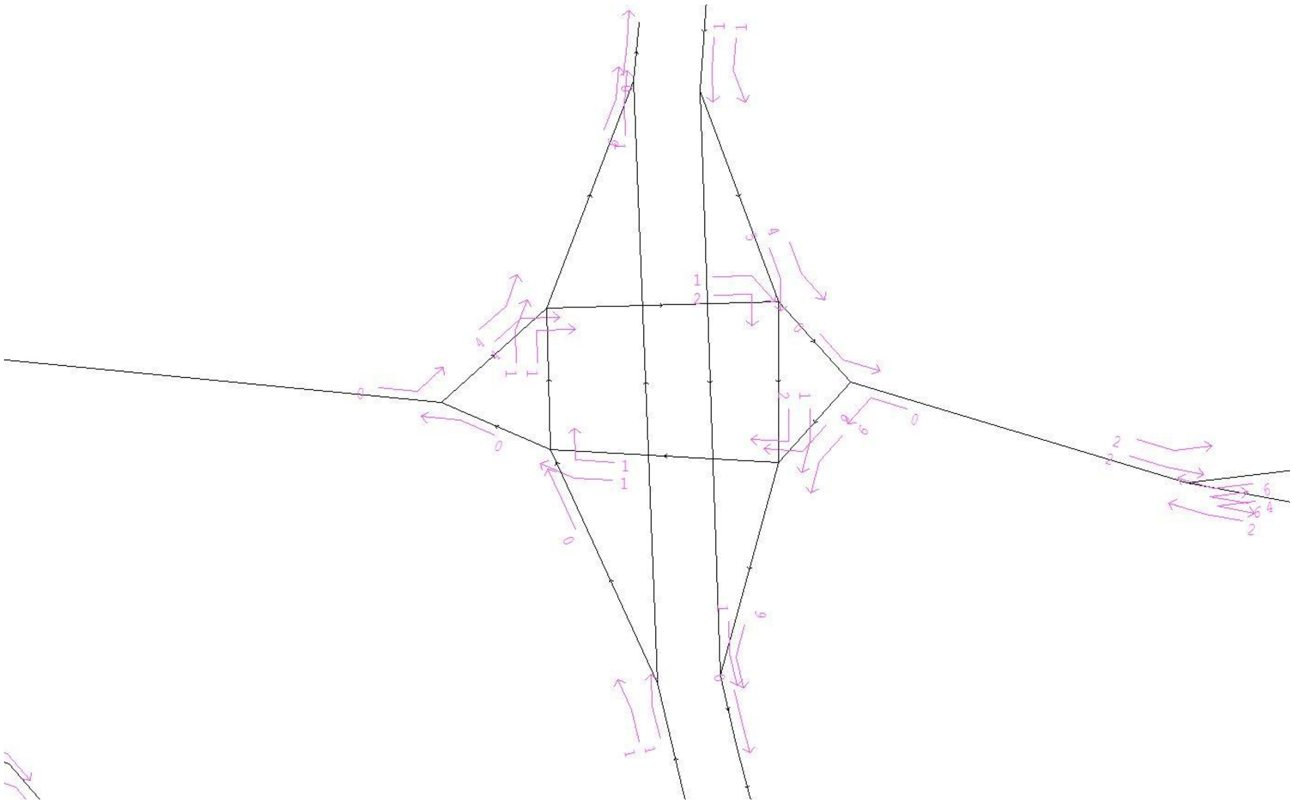


Figure F.3: M1 Junction 20: Arrive Flow (PCUs)

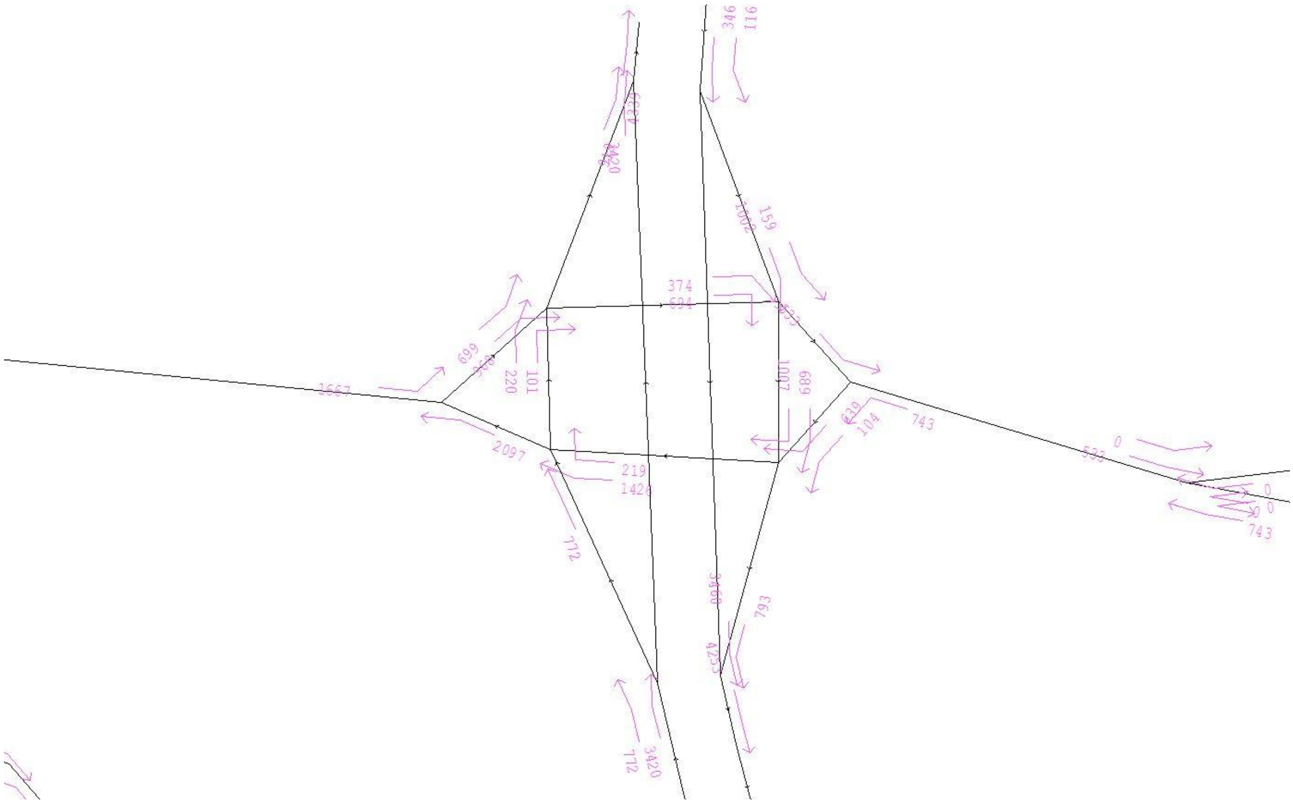


Figure F.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

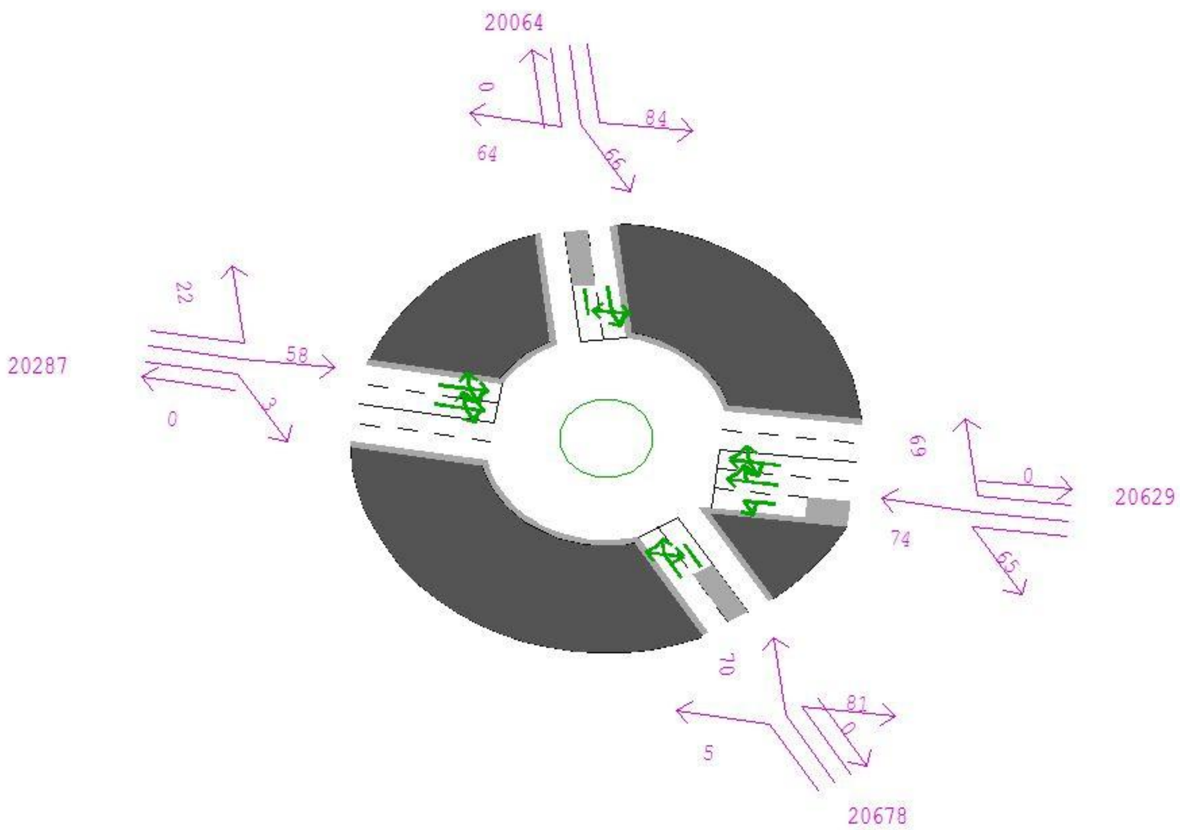


Figure F.5: A4303 / A426 Roundabout: Delay (seconds)

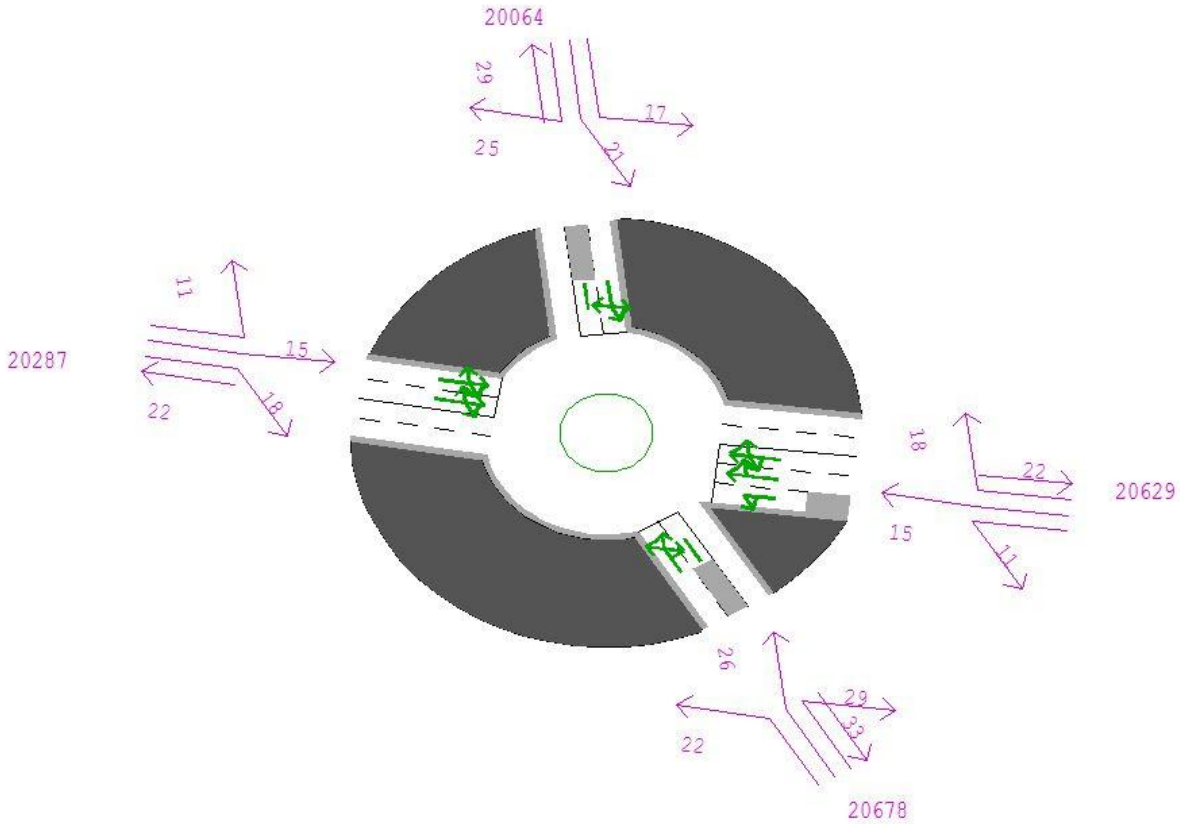


Figure F.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

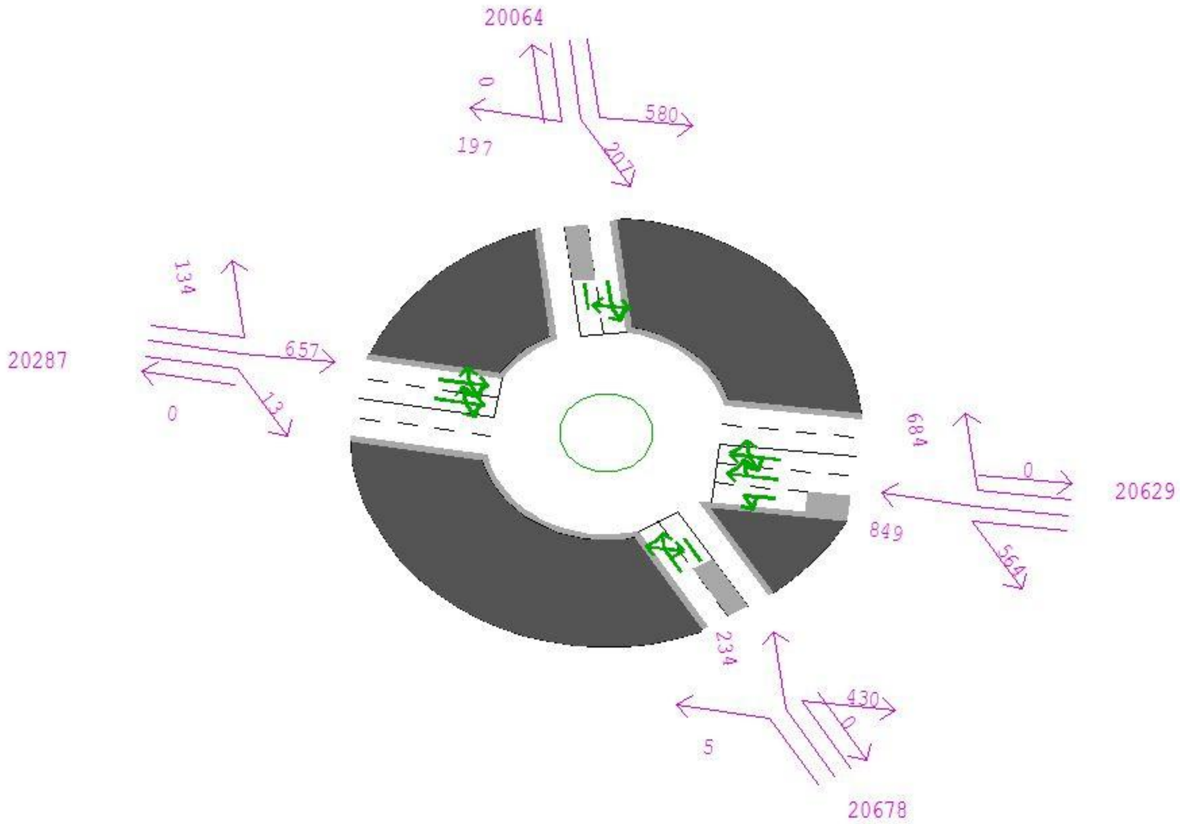


Figure F.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

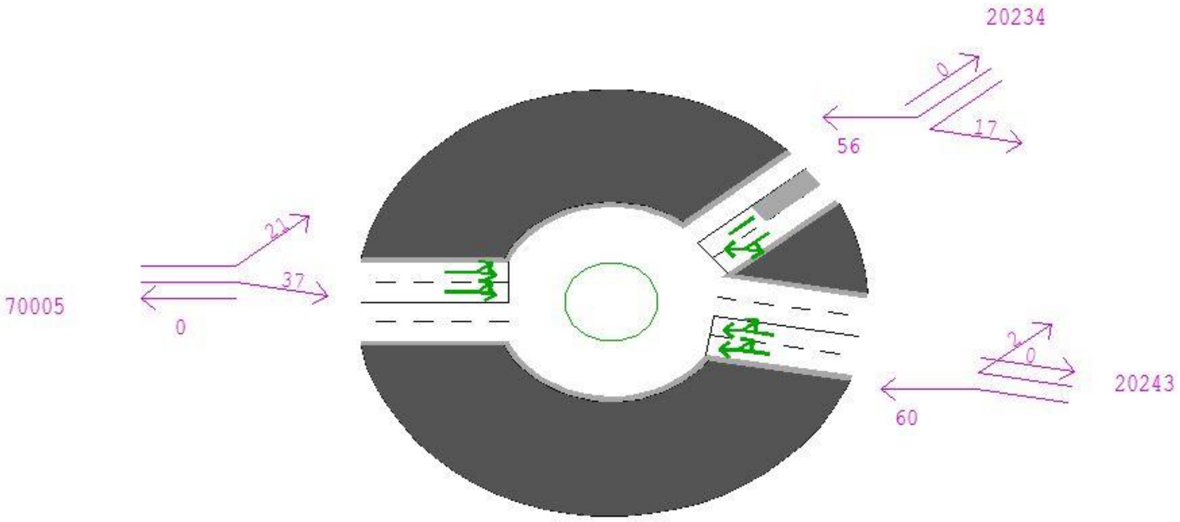


Figure F.8: A4303 / Coventry Road Roundabout: Delay (seconds)

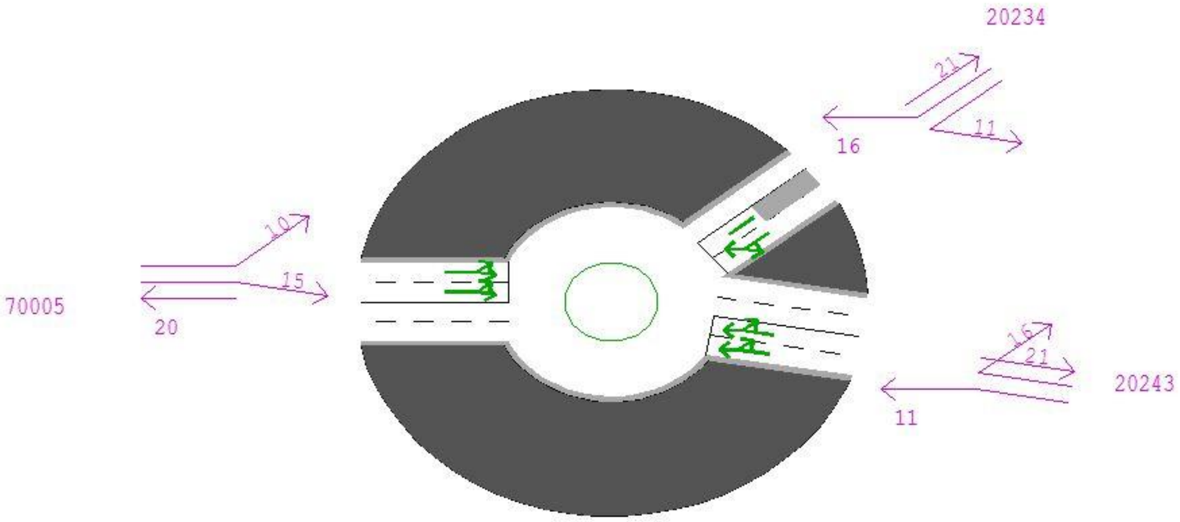


Figure F.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

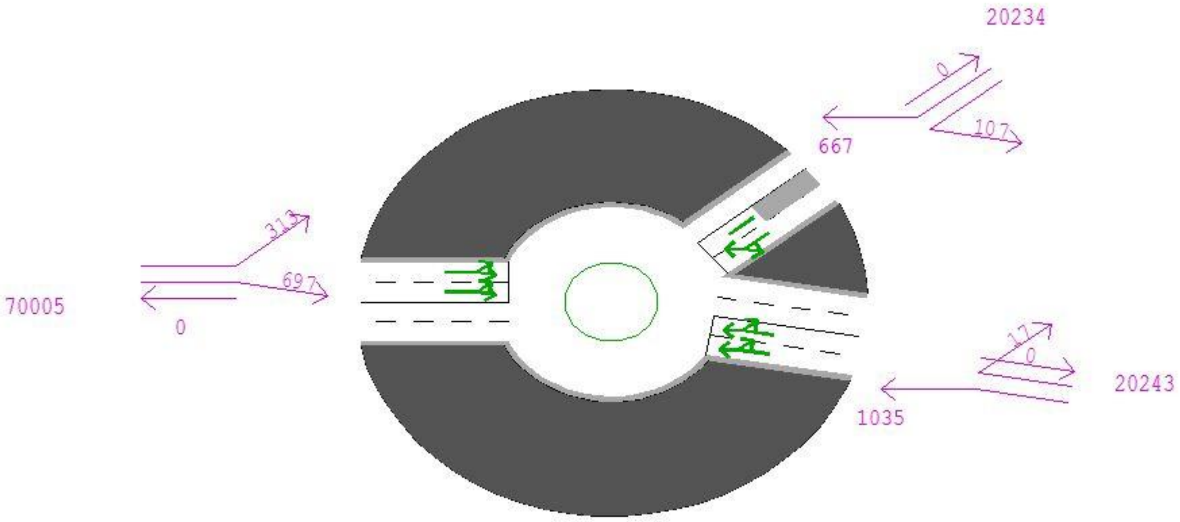


Figure F.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

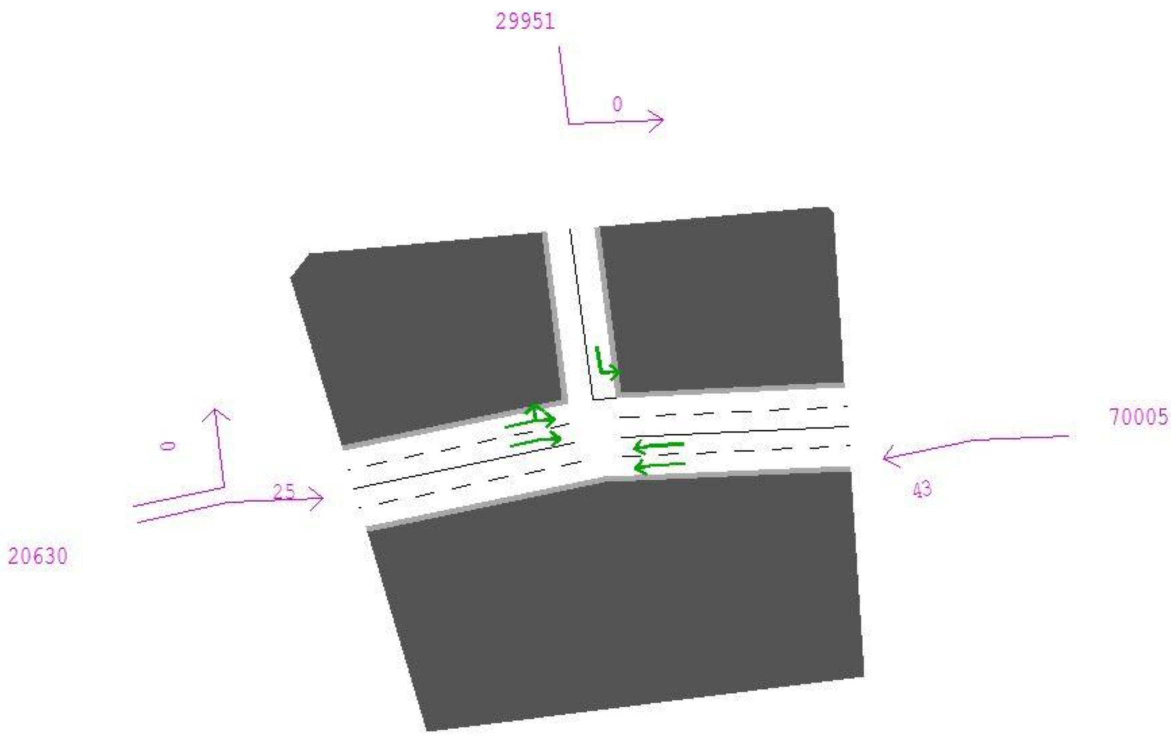


Figure F.11: A4303 / Shackleton Way Junction: Delay (seconds)

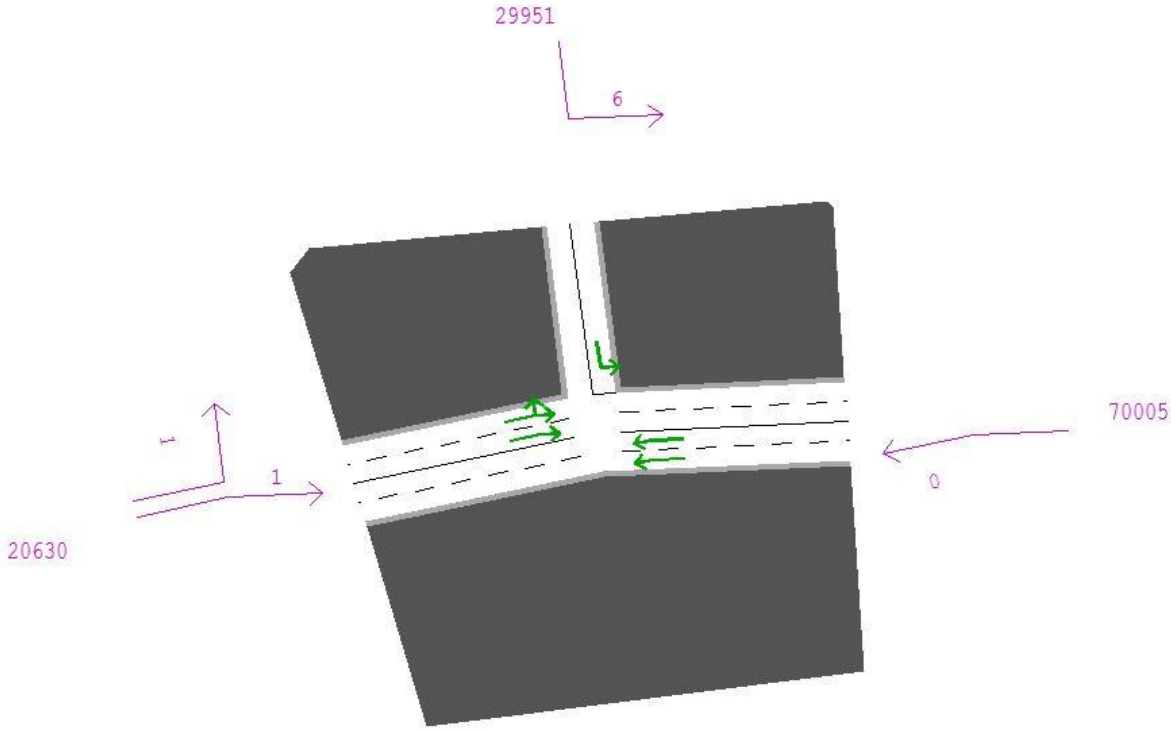


Figure F.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

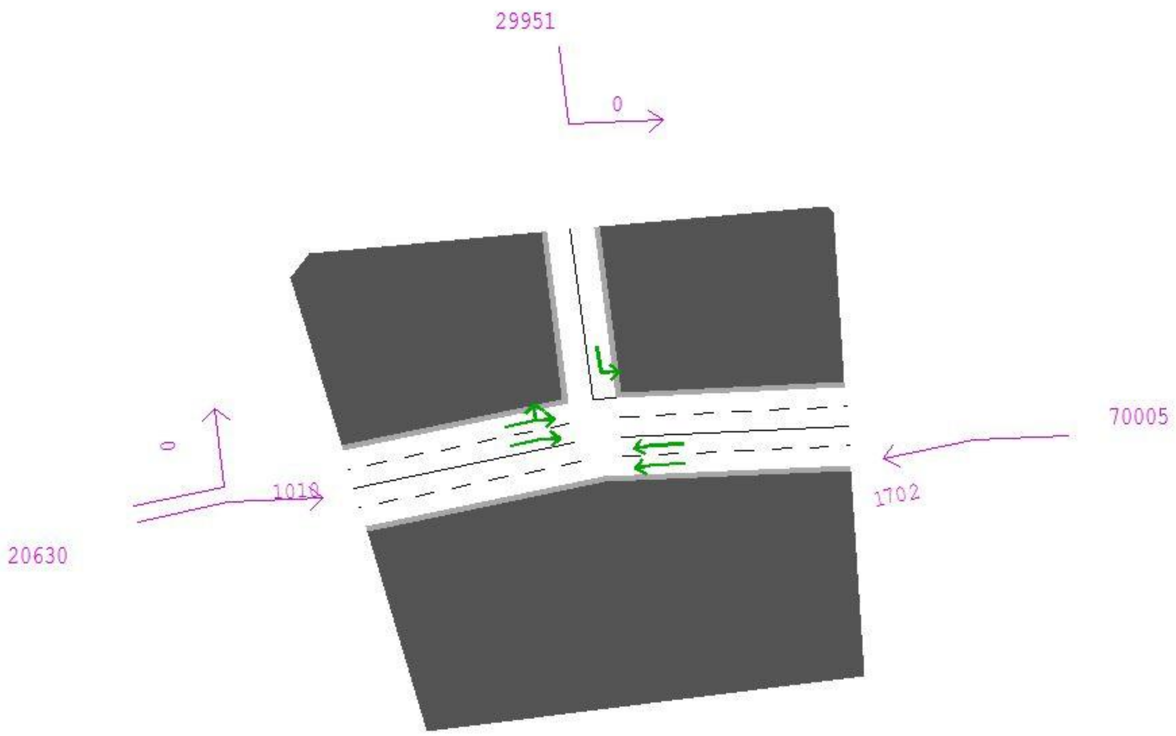


Figure F.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

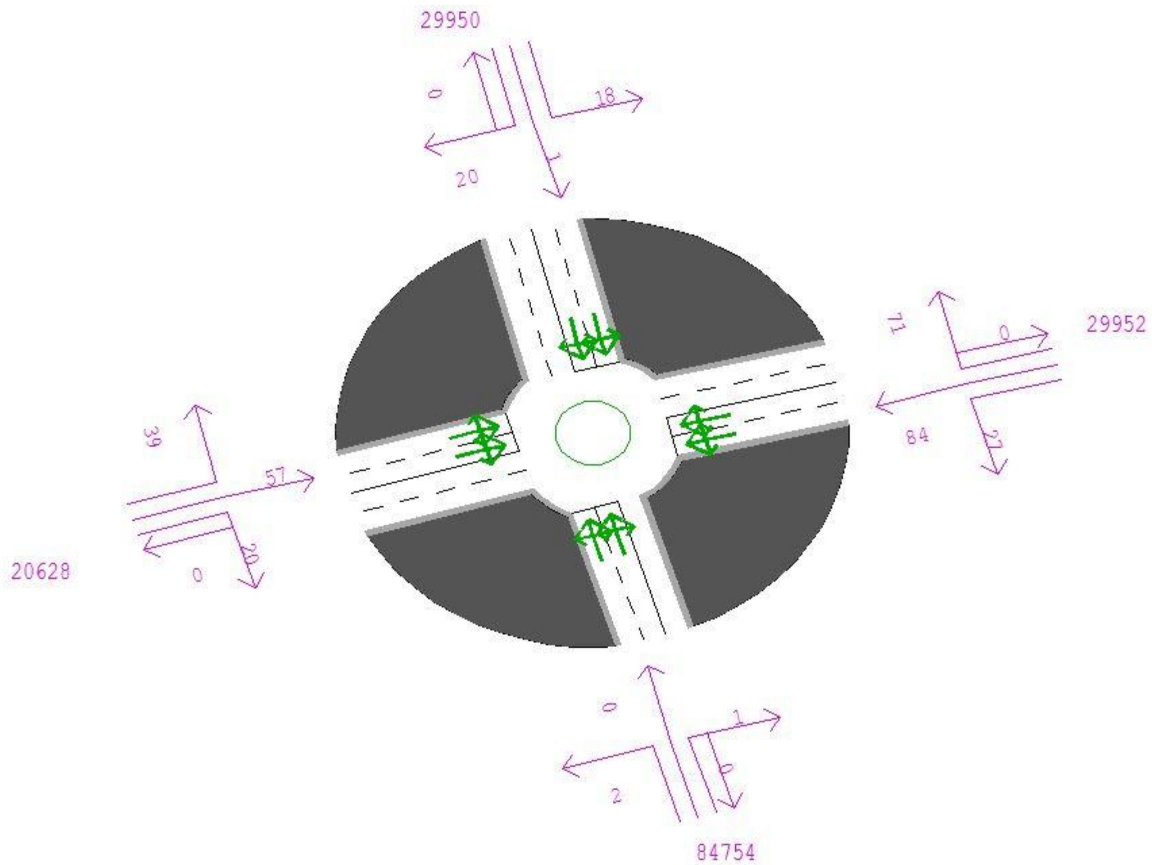


Figure F.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

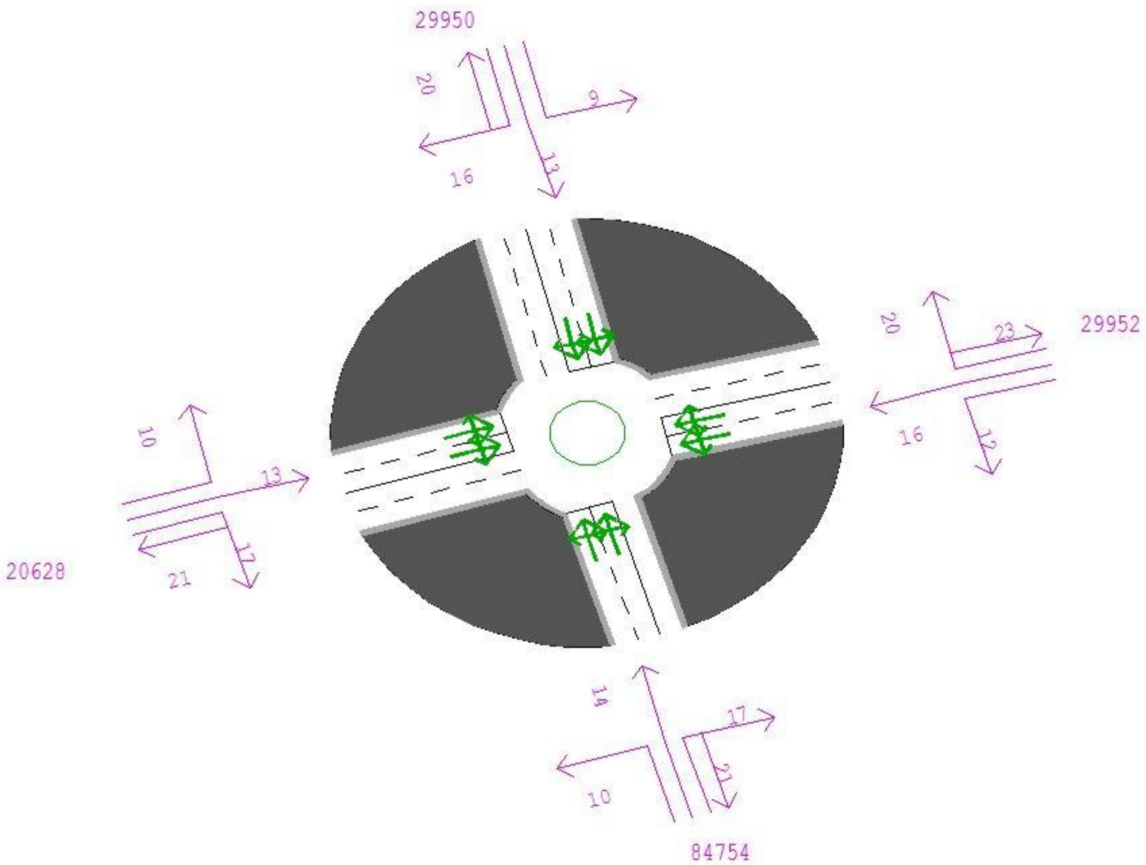


Figure F.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

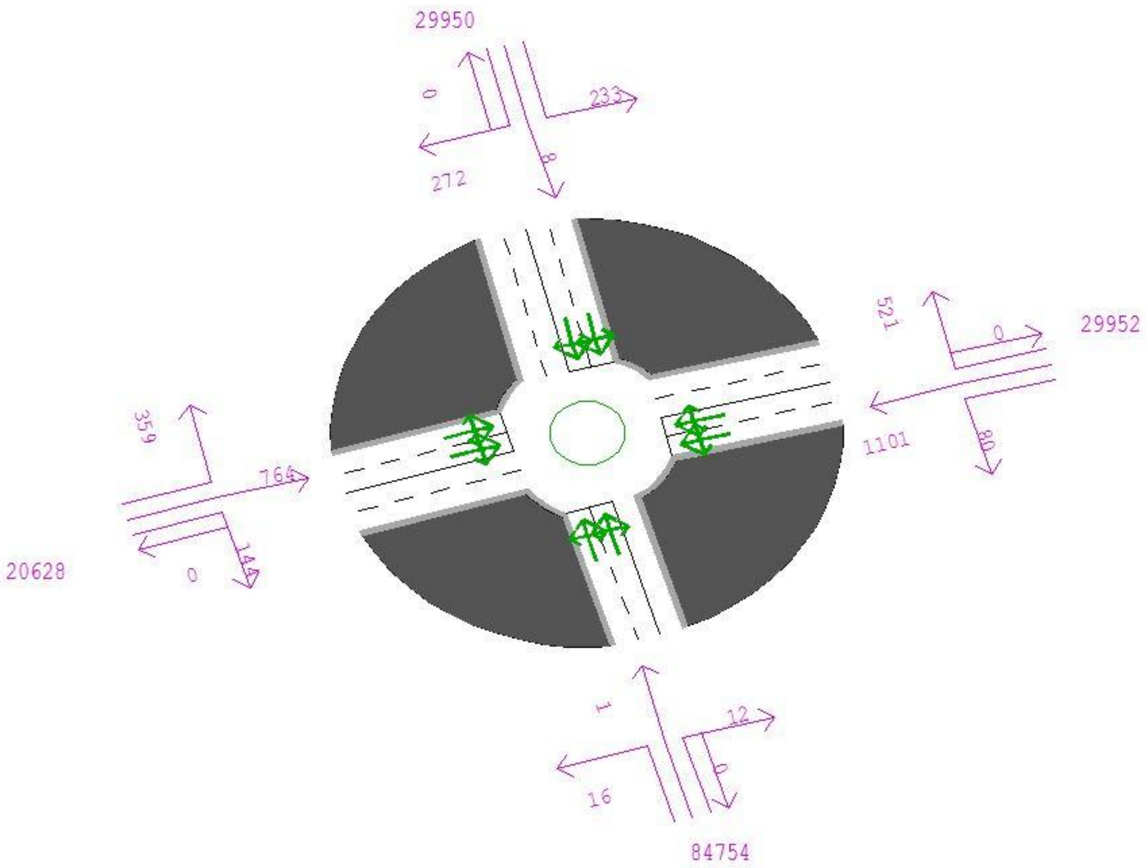


Figure F.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

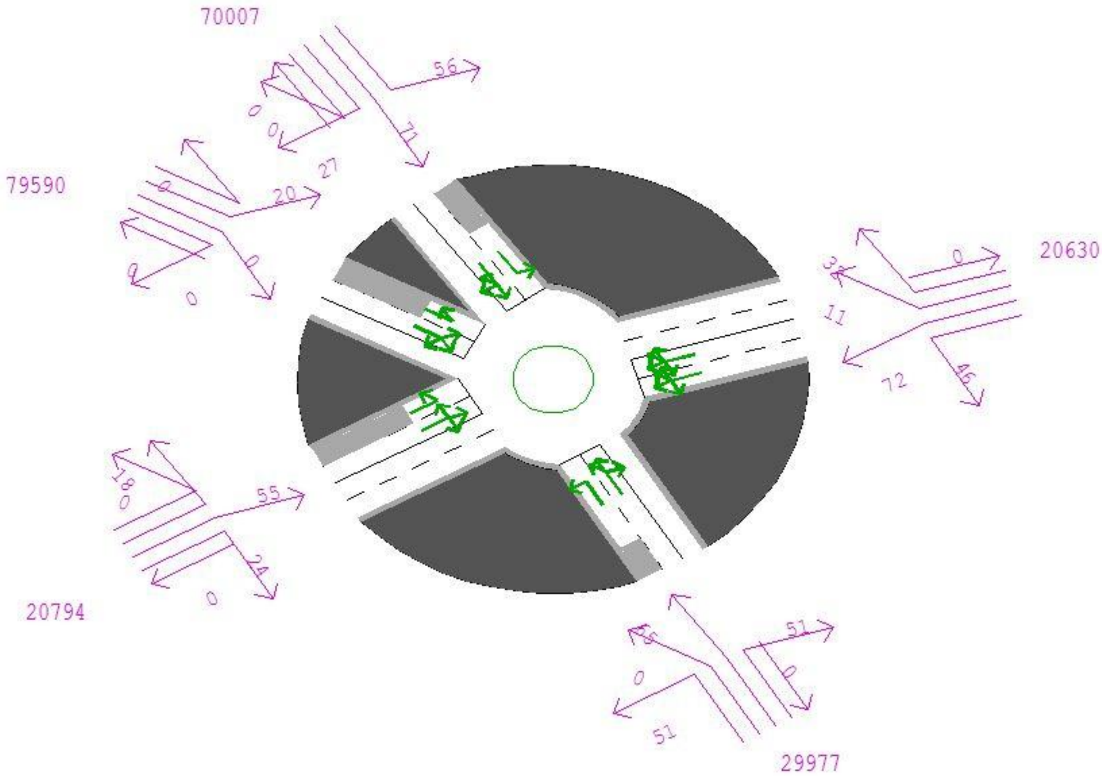


Figure F.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

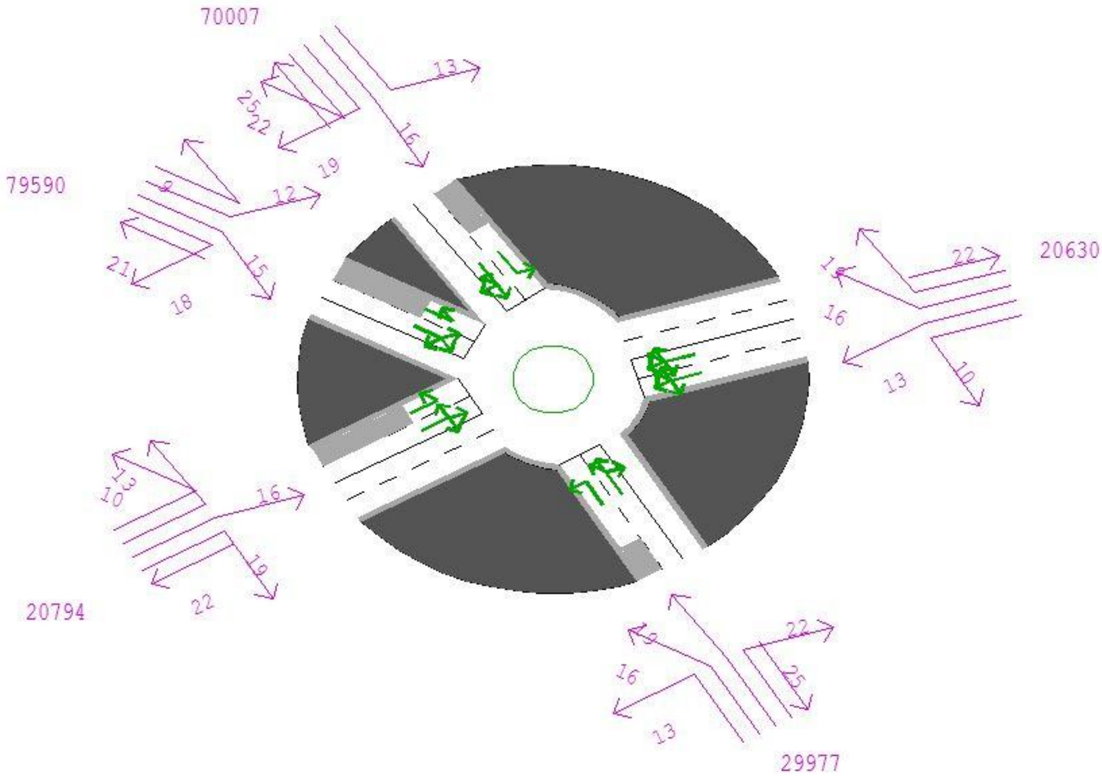


Figure F.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

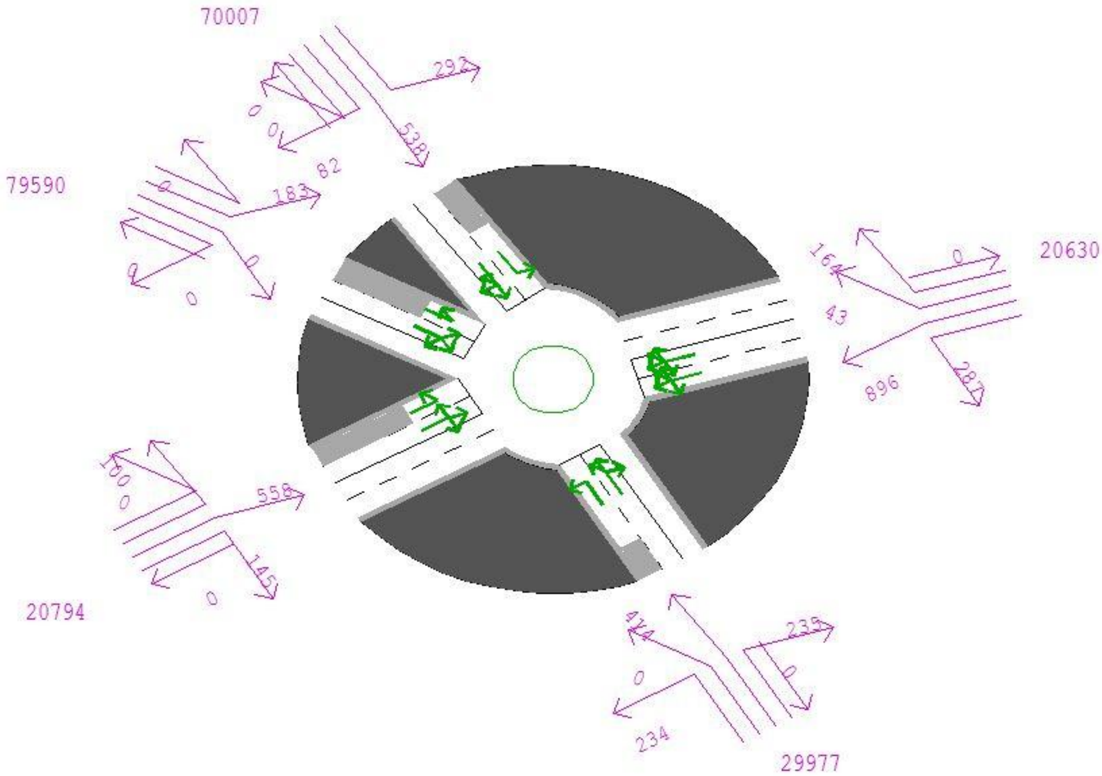


Figure F.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

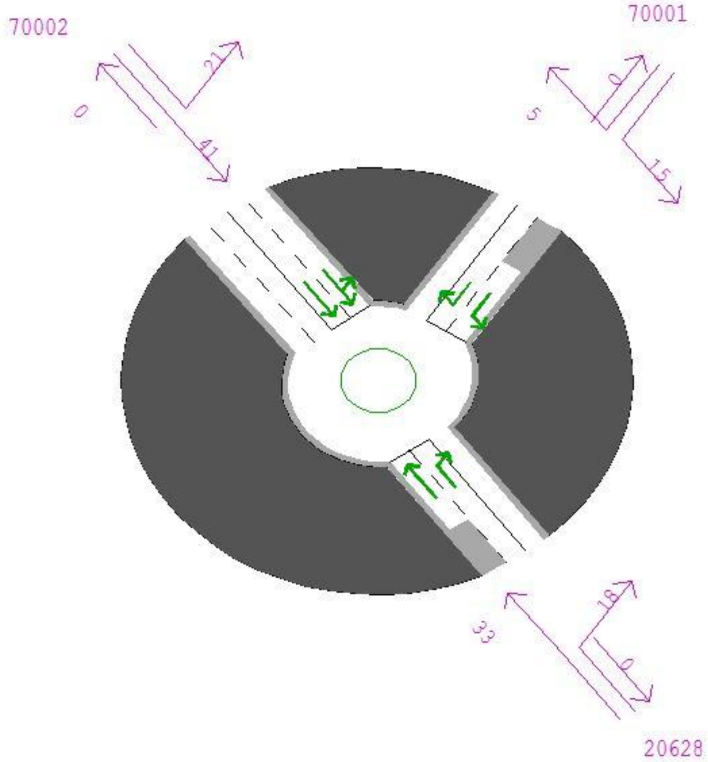


Figure F.20: A5 / Mere Lane Junction: Delay (seconds)

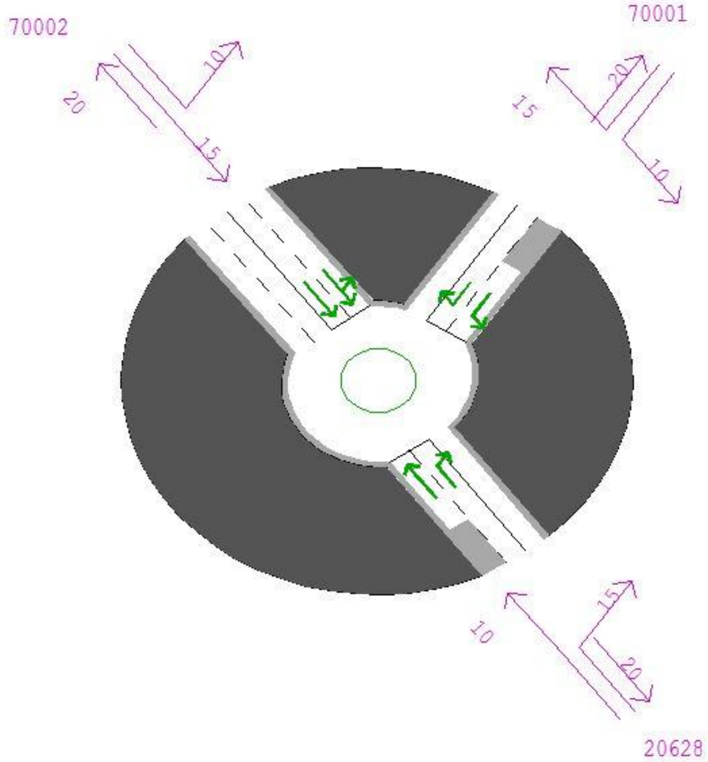


Figure F.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

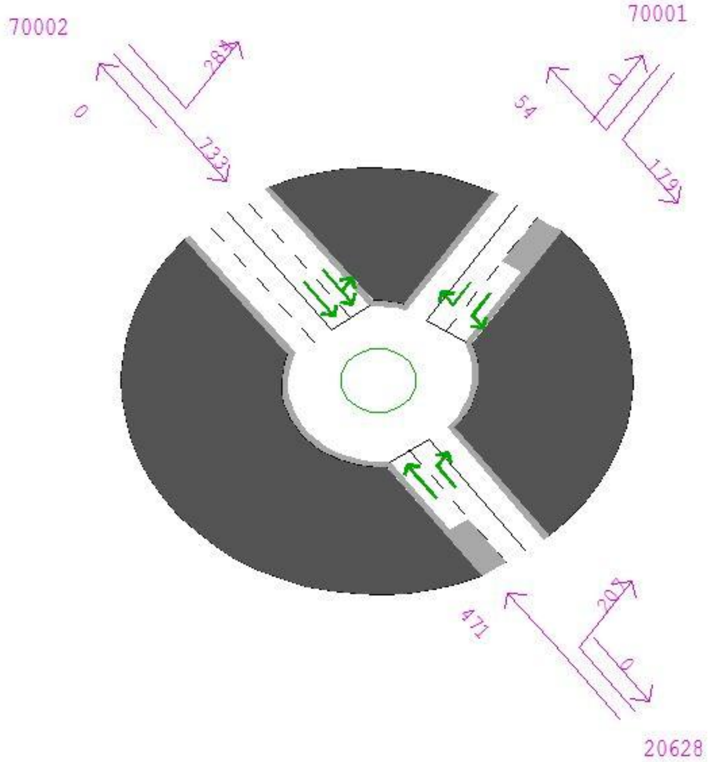


Figure F.22: M69 Junction 1: Volume-to-Capacity Ratio

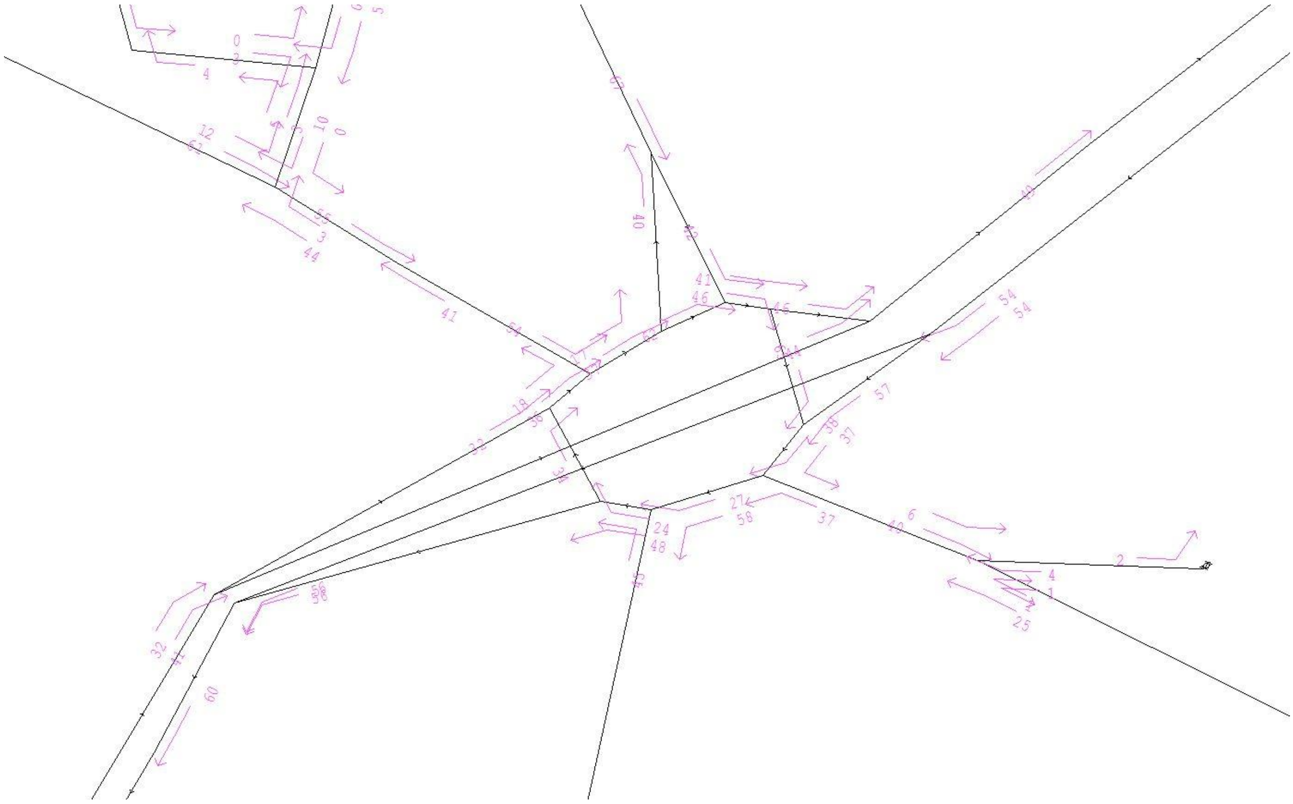


Figure F.23: M69 Junction 1: Delay (seconds)

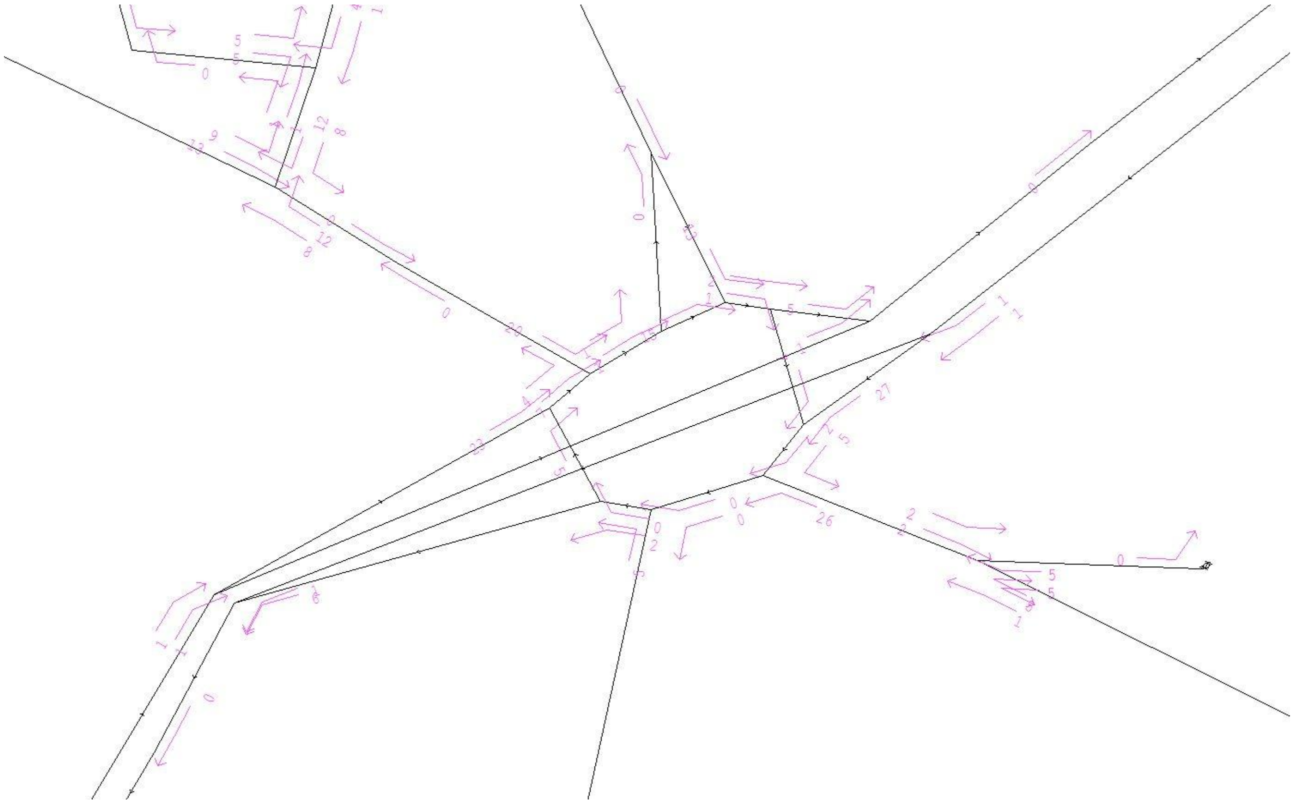


Figure F.24: M69 Junction 1: Arrive Flow (PCUs)

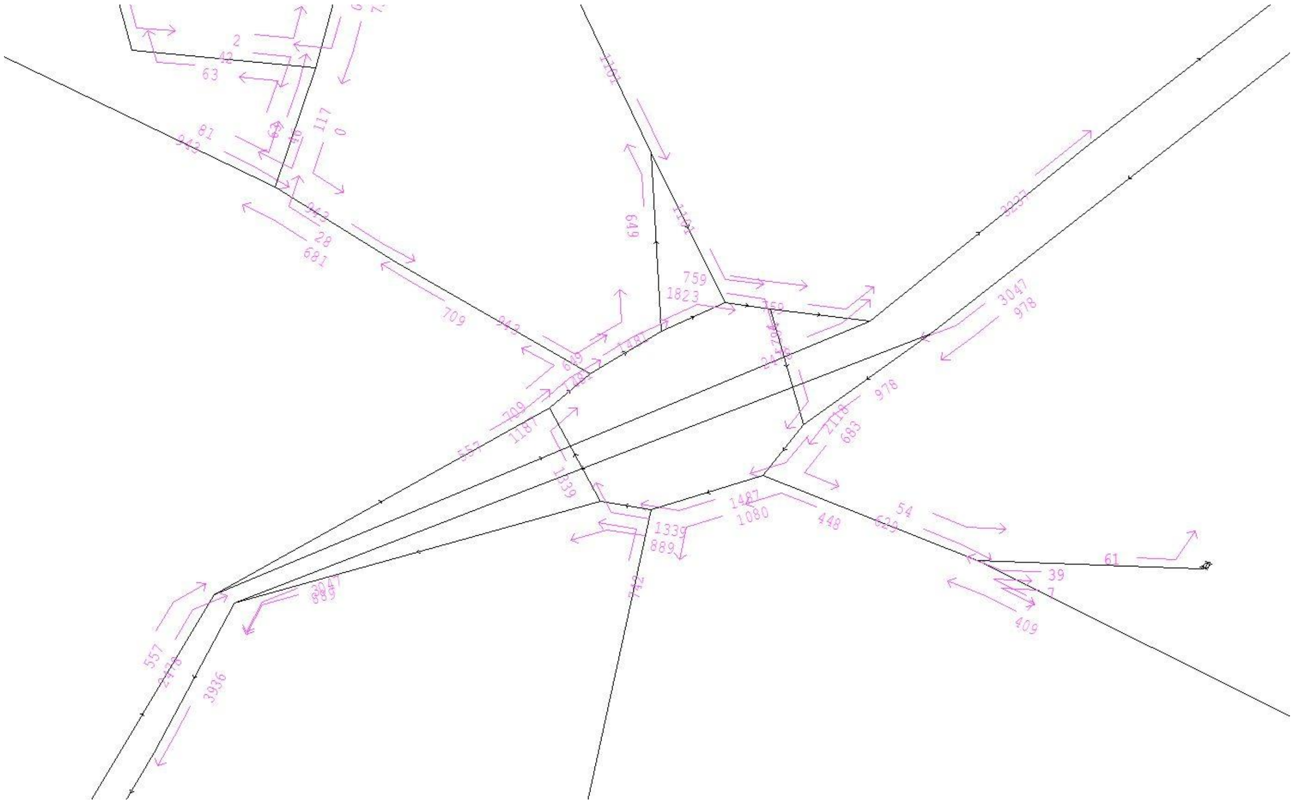


Figure F.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

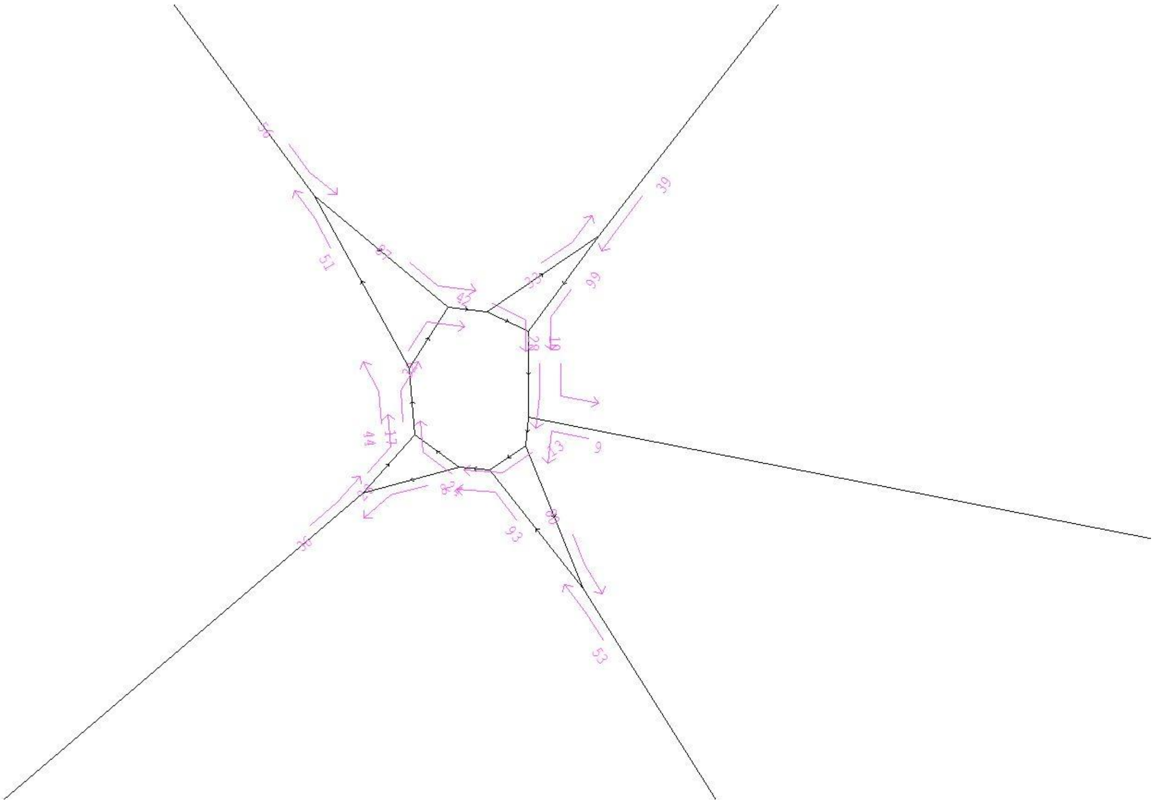


Figure F.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

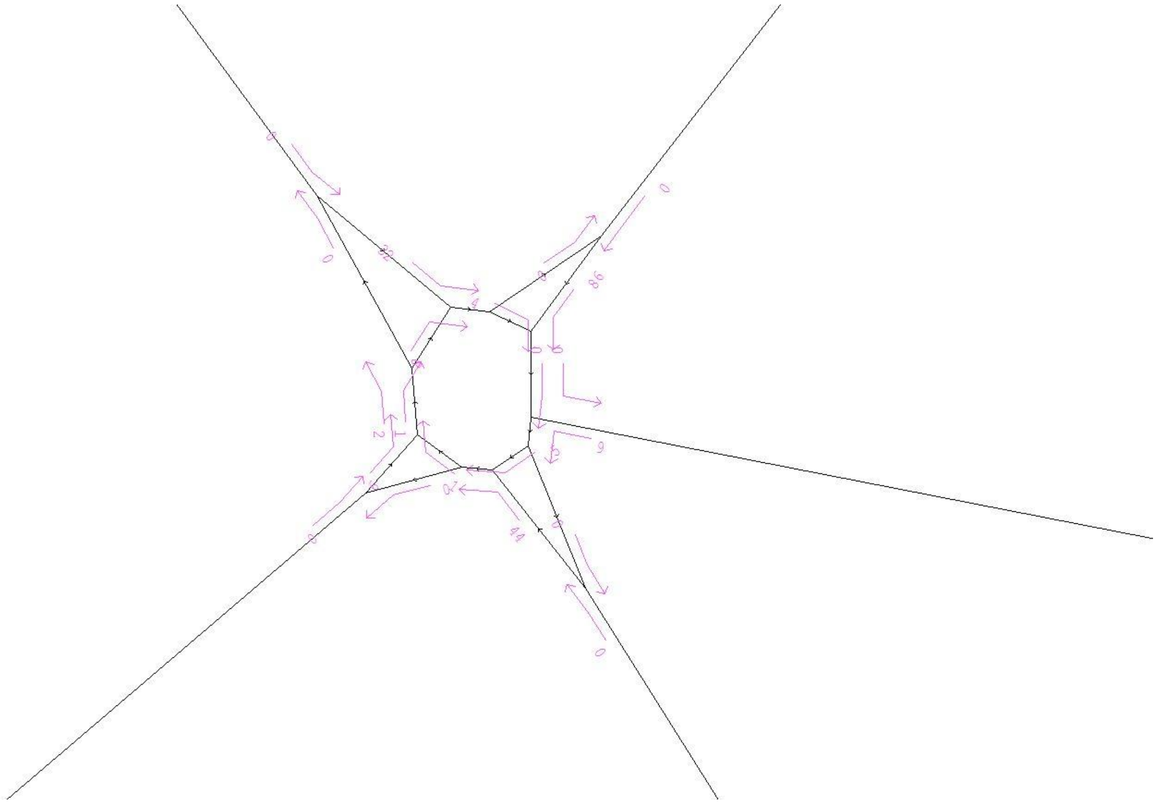


Figure F.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

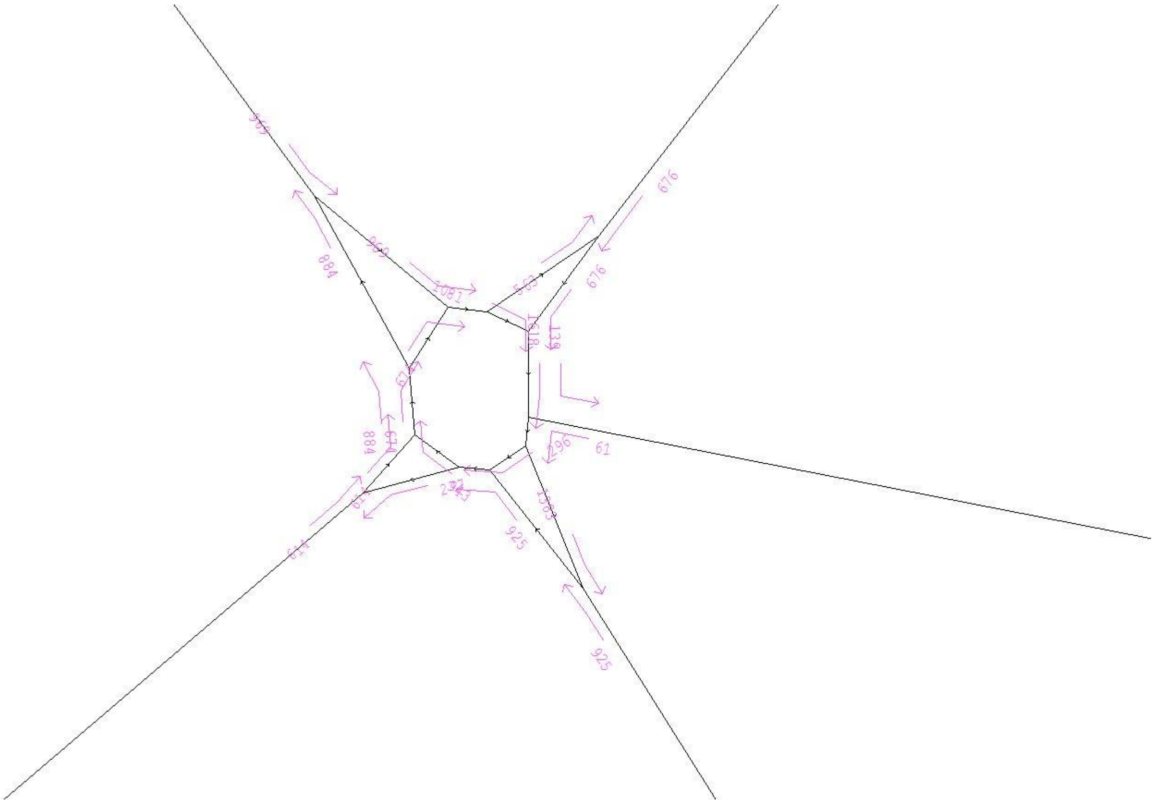


Figure F.28: M6 Junction 1: Volume-to-Capacity Ratio

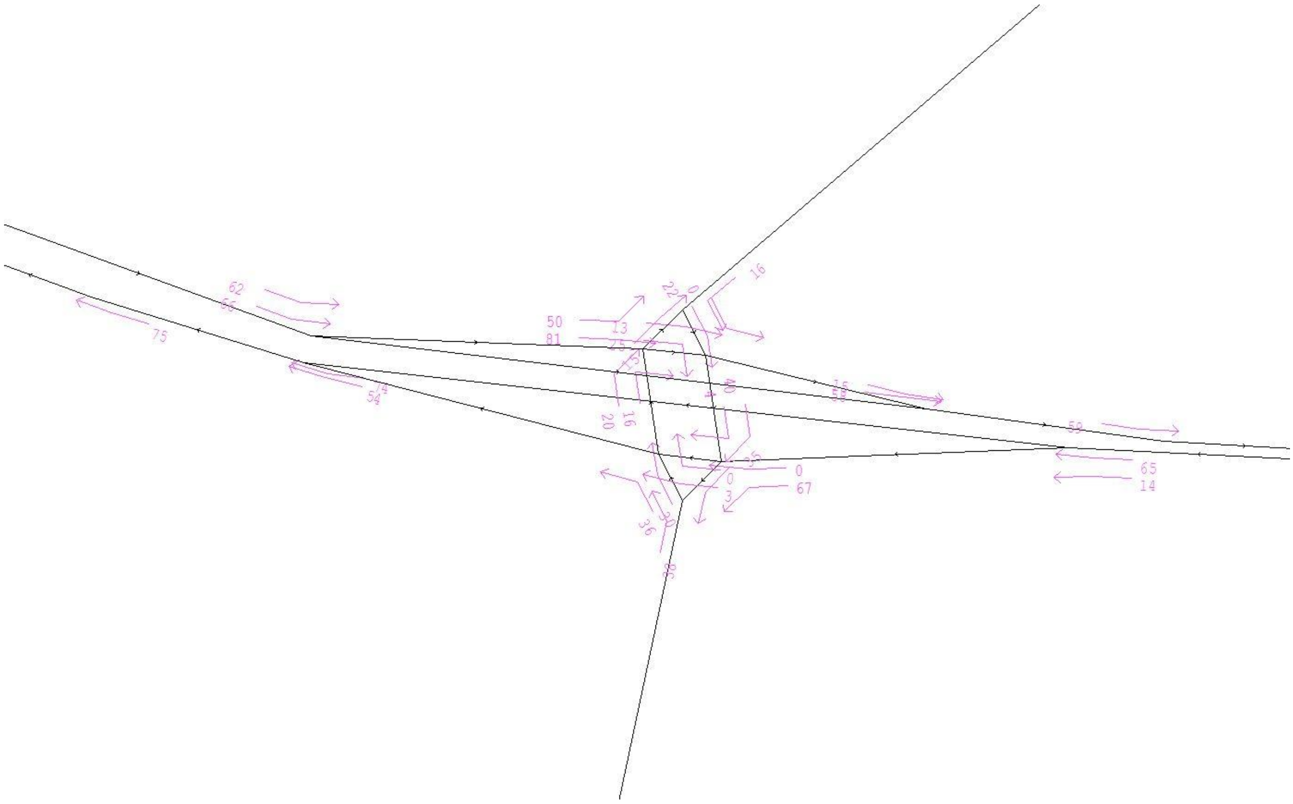


Figure F.29: M6 Junction 1: Delay (seconds)

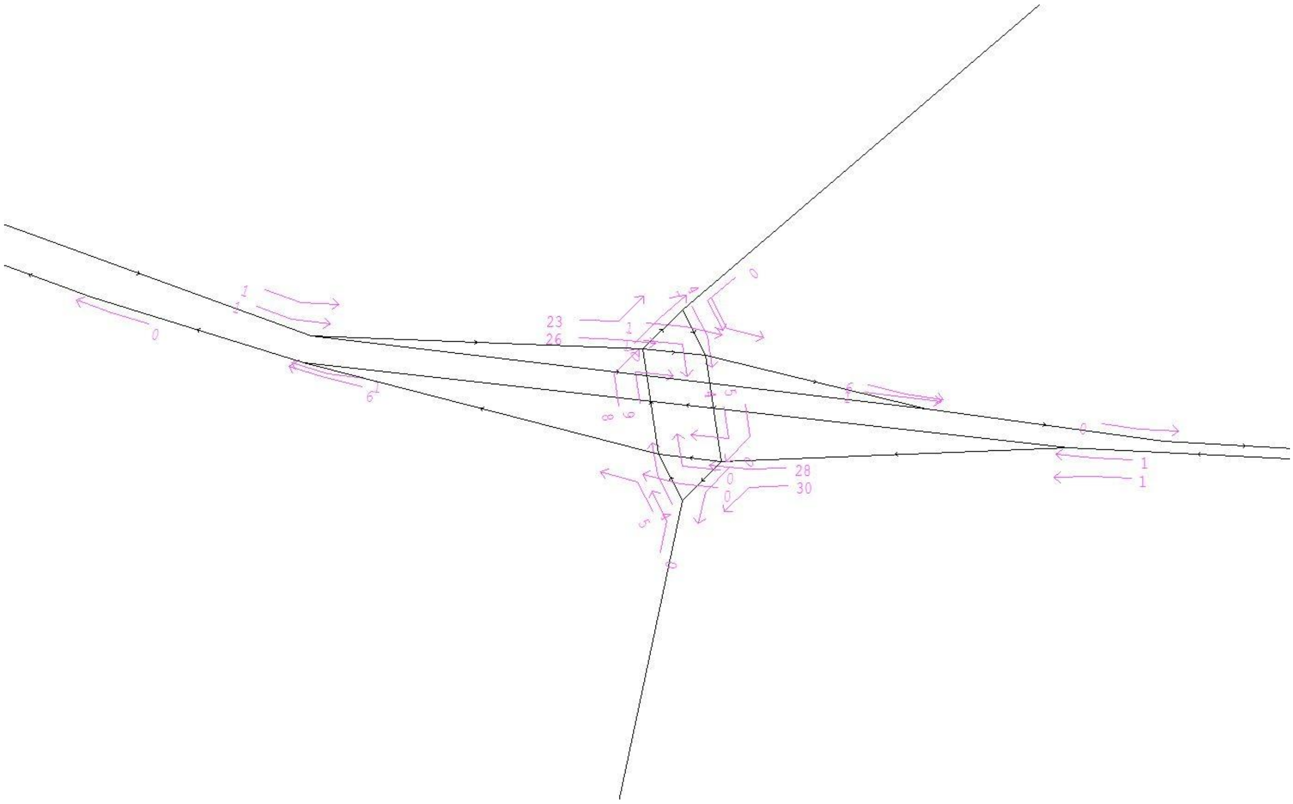


Figure F.30: M6 Junction 1: Arrive Flow (PCUs)

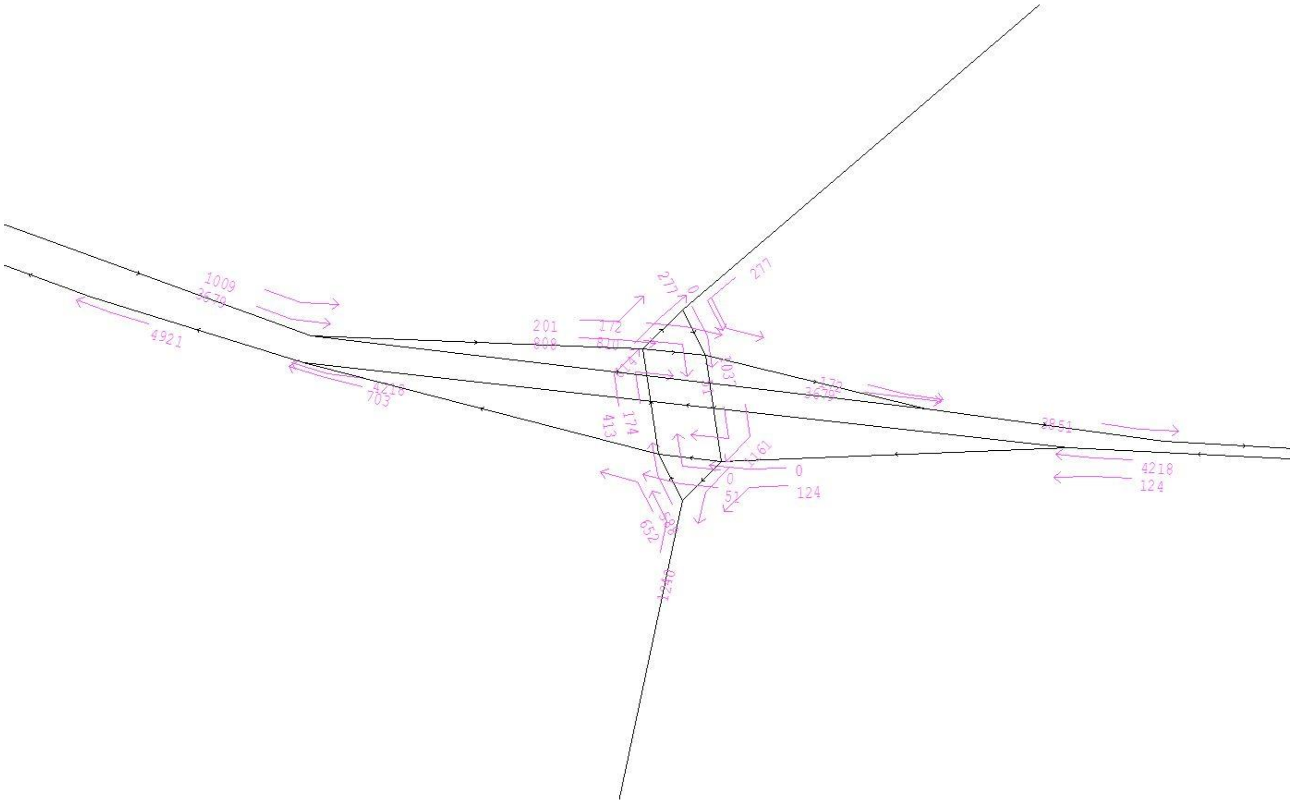


Figure F.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

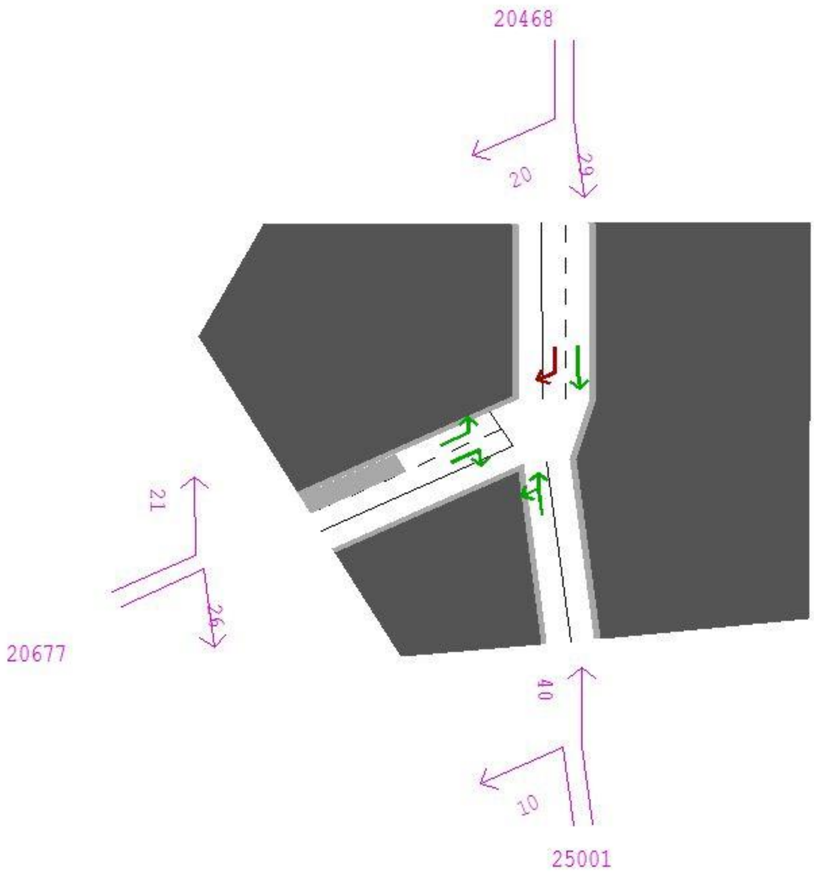


Figure F.32: A426 / Bill Crane Way Junction: Delay (seconds)

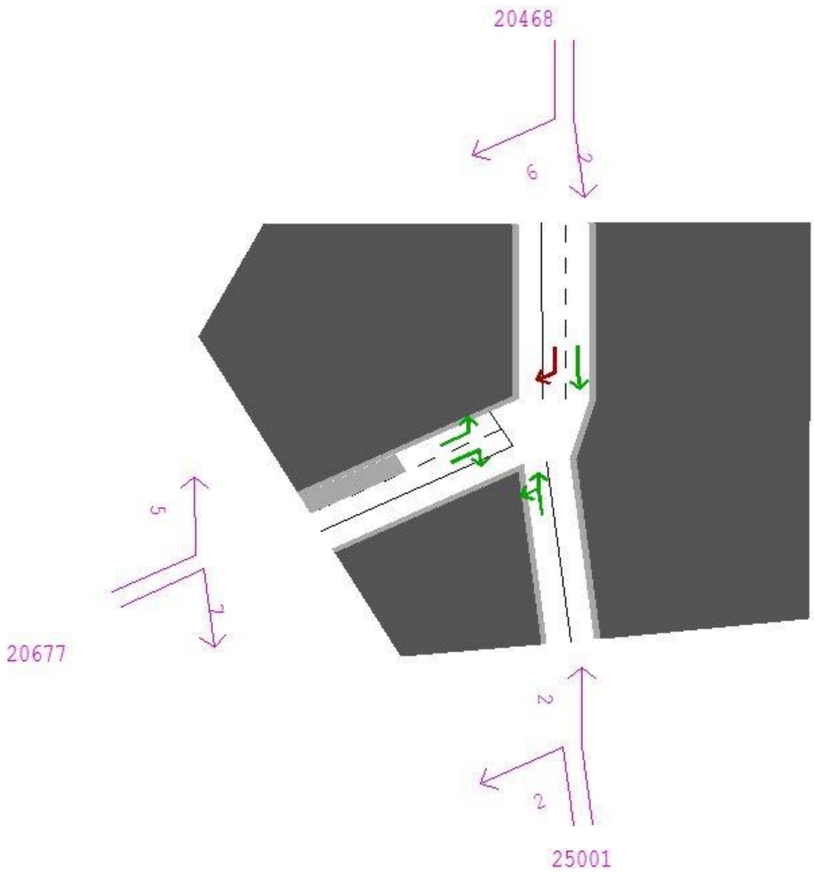


Figure F.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

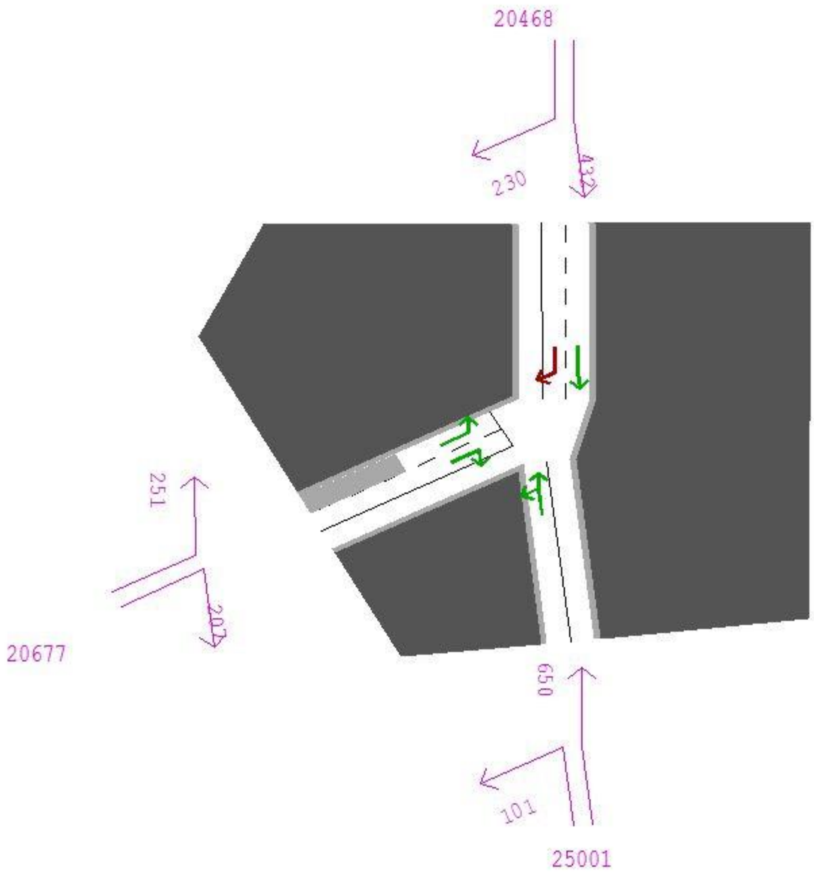


Figure F.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

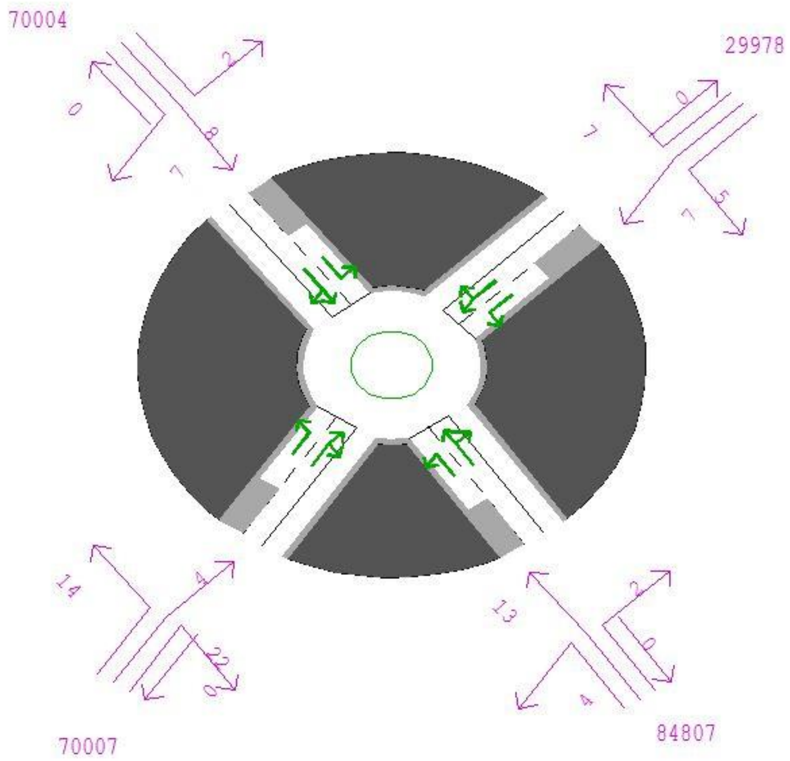


Figure F.35: Mere Lane / Magna Park Access: Delay (seconds)

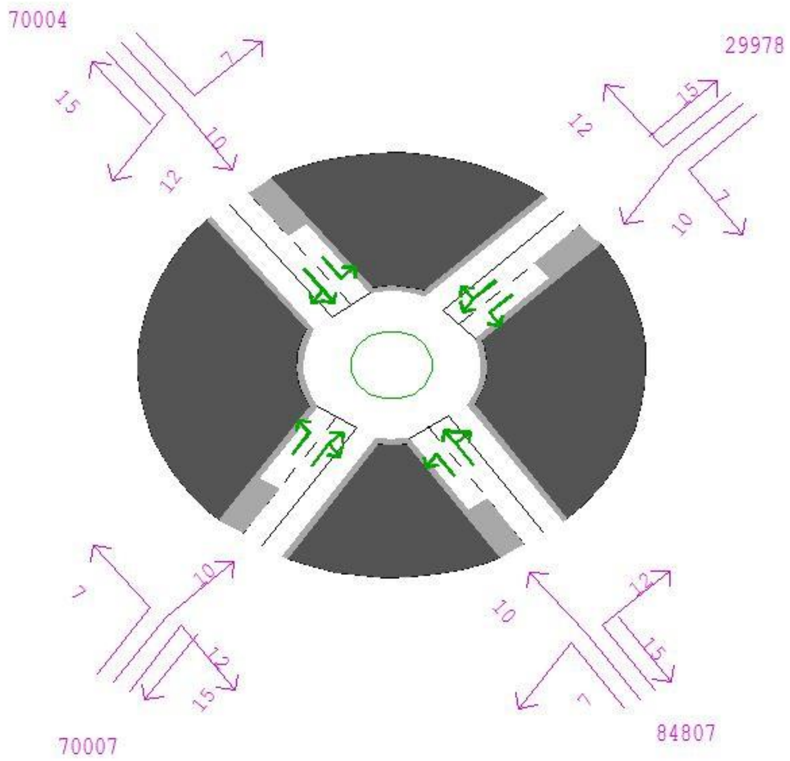


Figure F.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

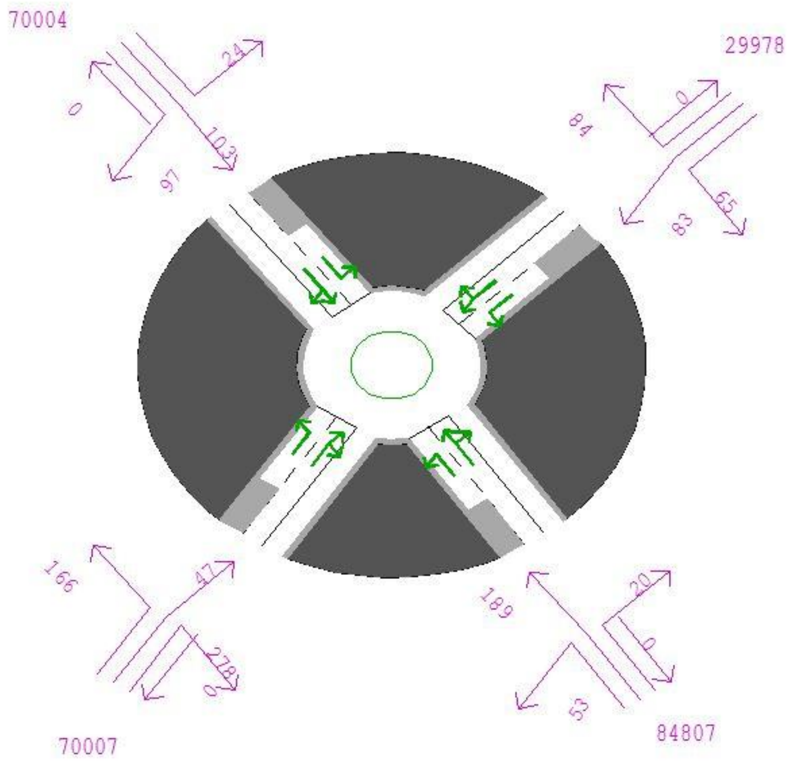


Figure F.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

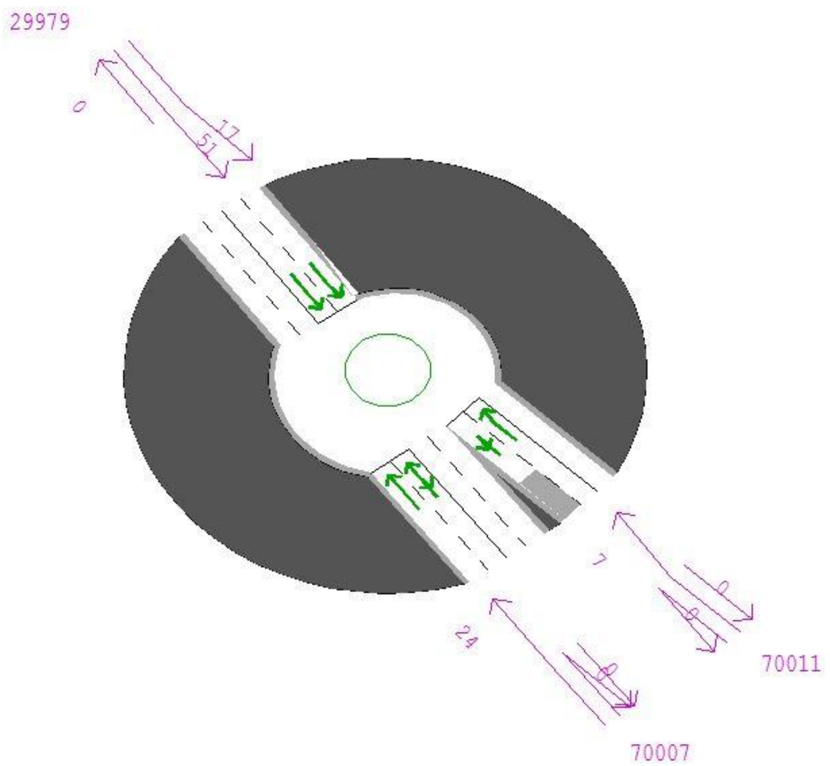


Figure F.38: A5 / Magna Park Access: Delay (seconds)

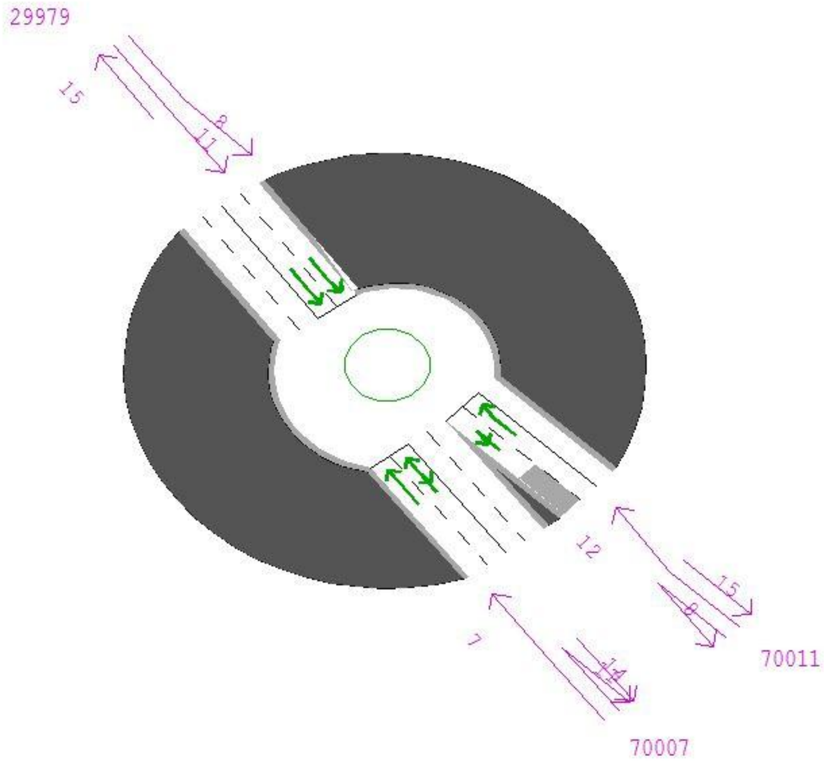
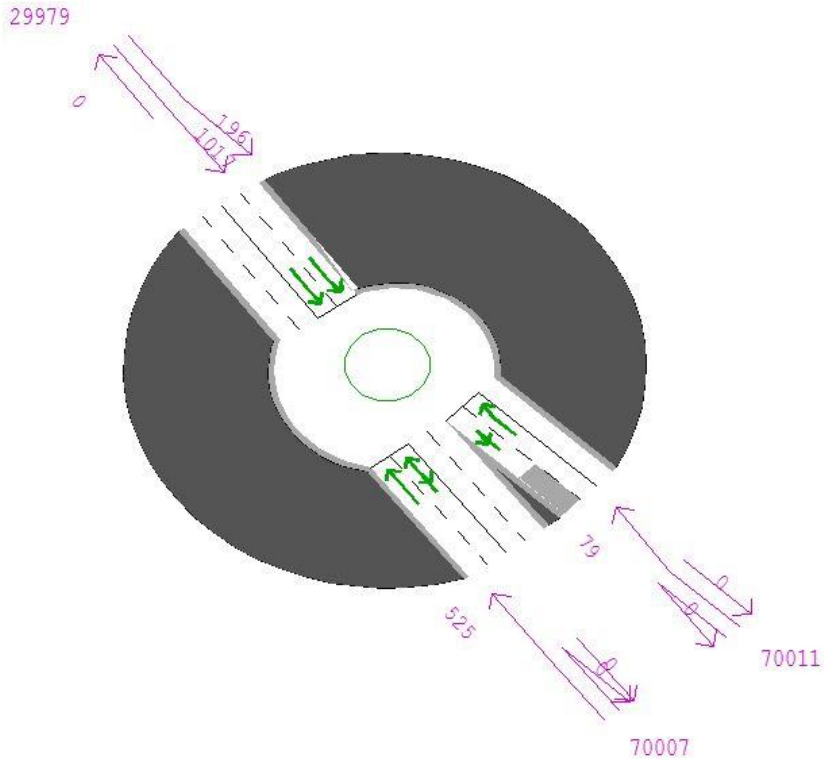


Figure F.39: A5 / Magna Park Access: Arrive Flow (PCUs)



IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note – Appendices G and H

Final Report

Appendix G 2026 'with development', excluding the proposed mitigation measures, PM Peak Junction Node Data

G.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure G.1: M1 Junction 20: Volume-to-Capacity Ratio

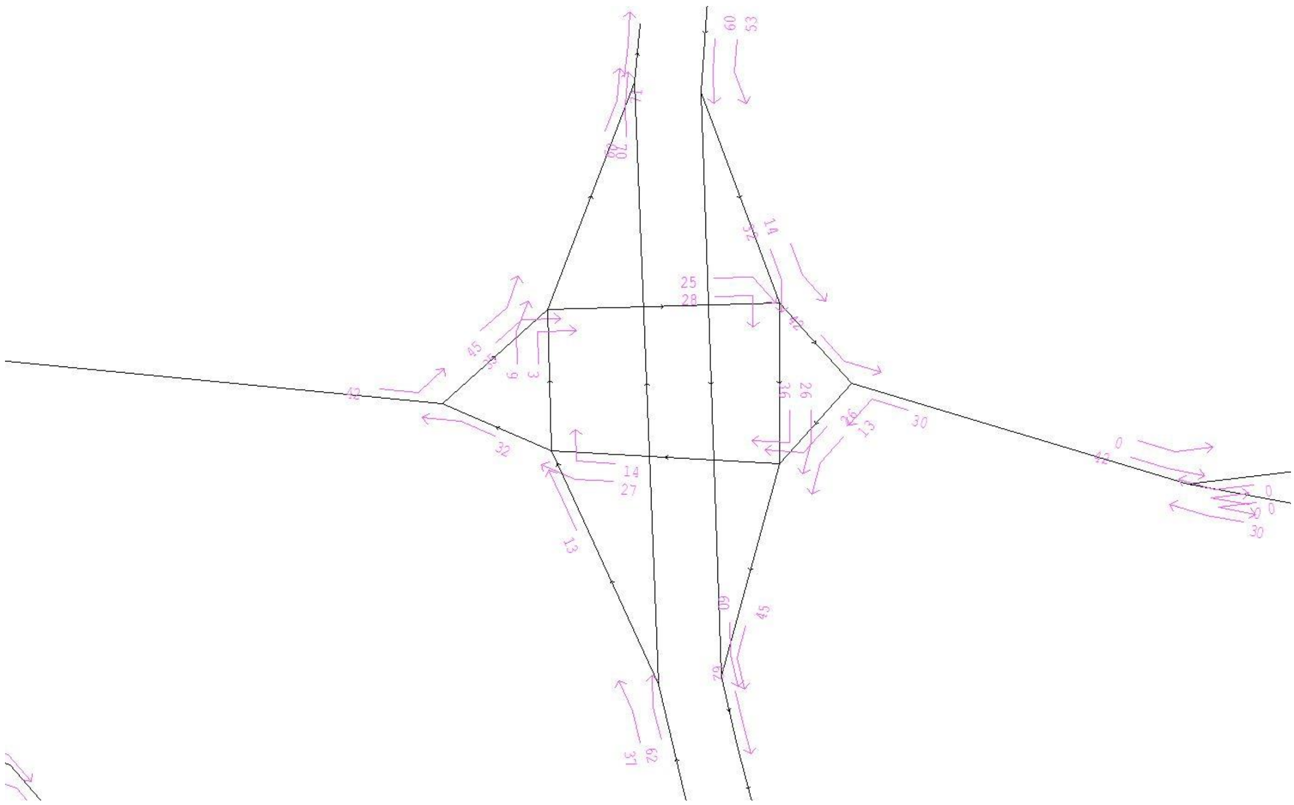


Figure G.2: M1 Junction 20: Delay (seconds)

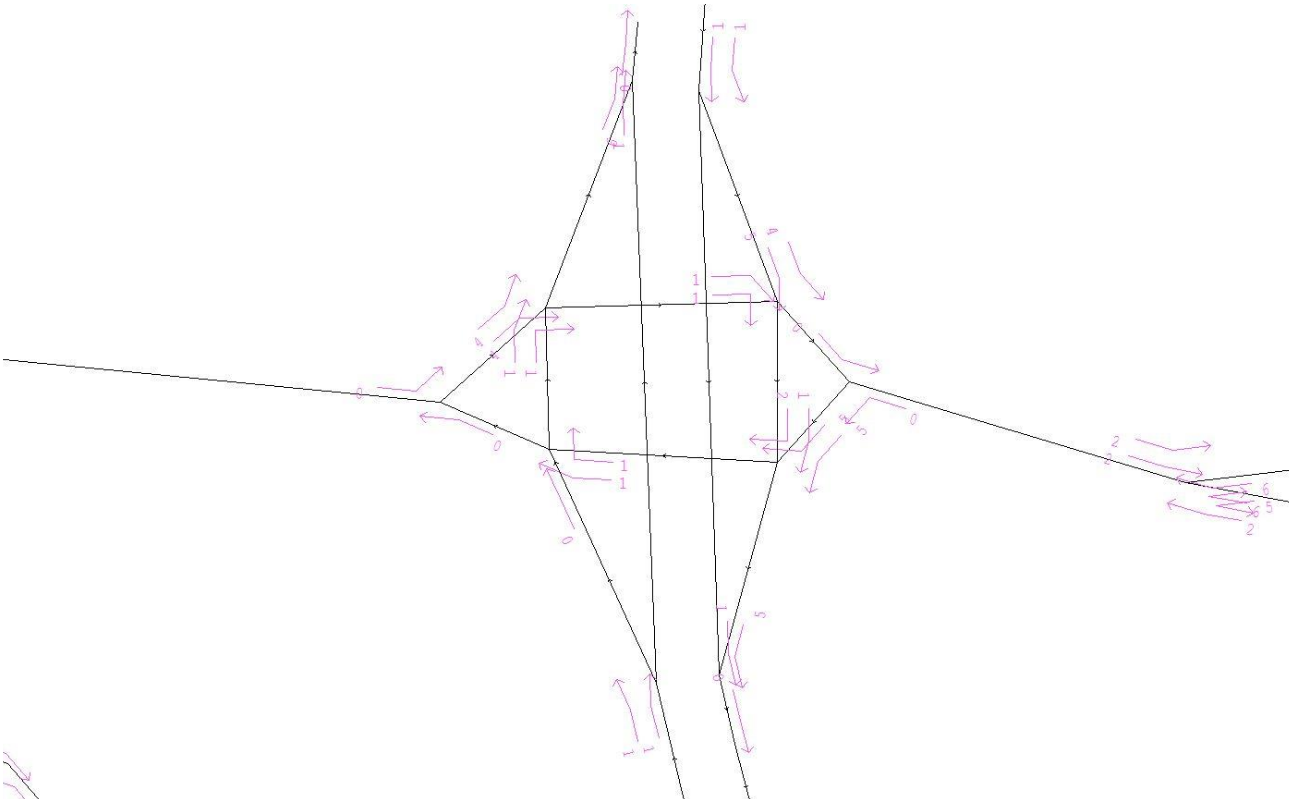


Figure G.3: M1 Junction 20: Arrive Flow (PCUs)

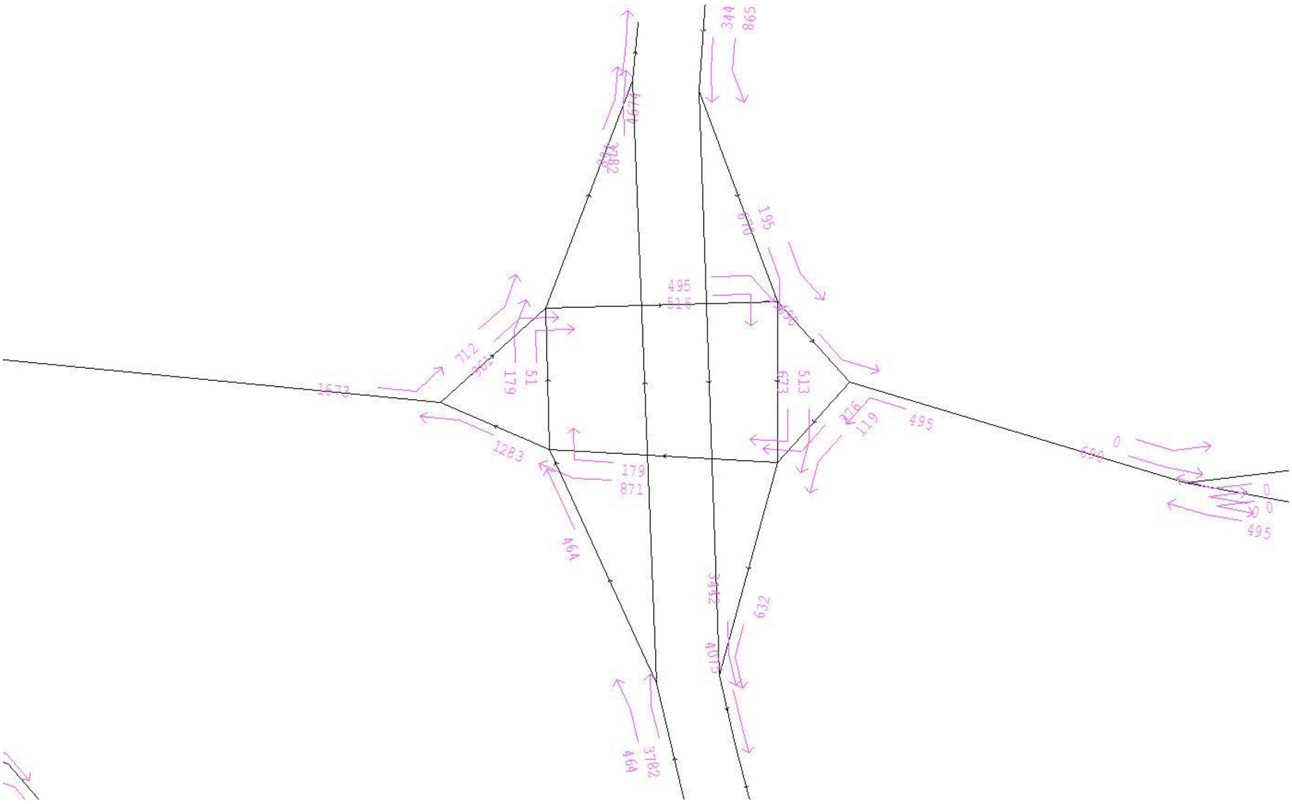


Figure G.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

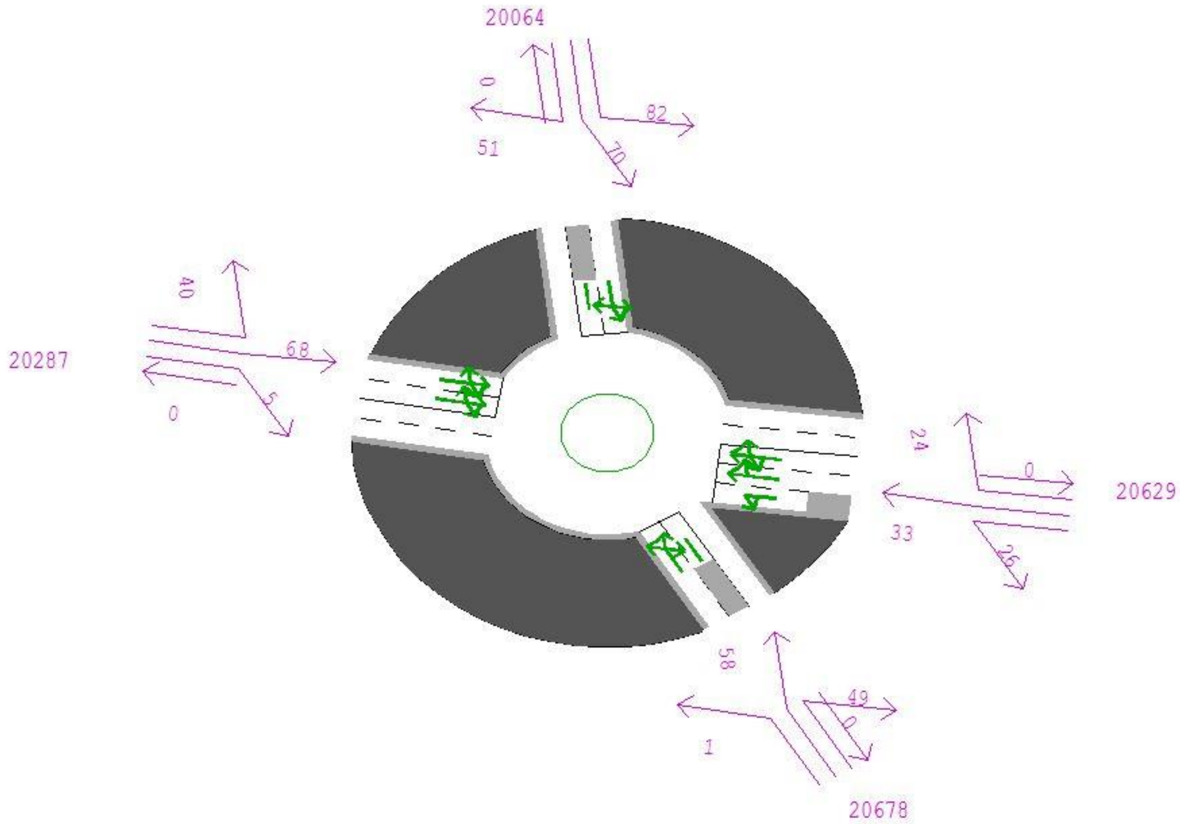


Figure G.5: A4303 / A426 Roundabout: Delay (seconds)

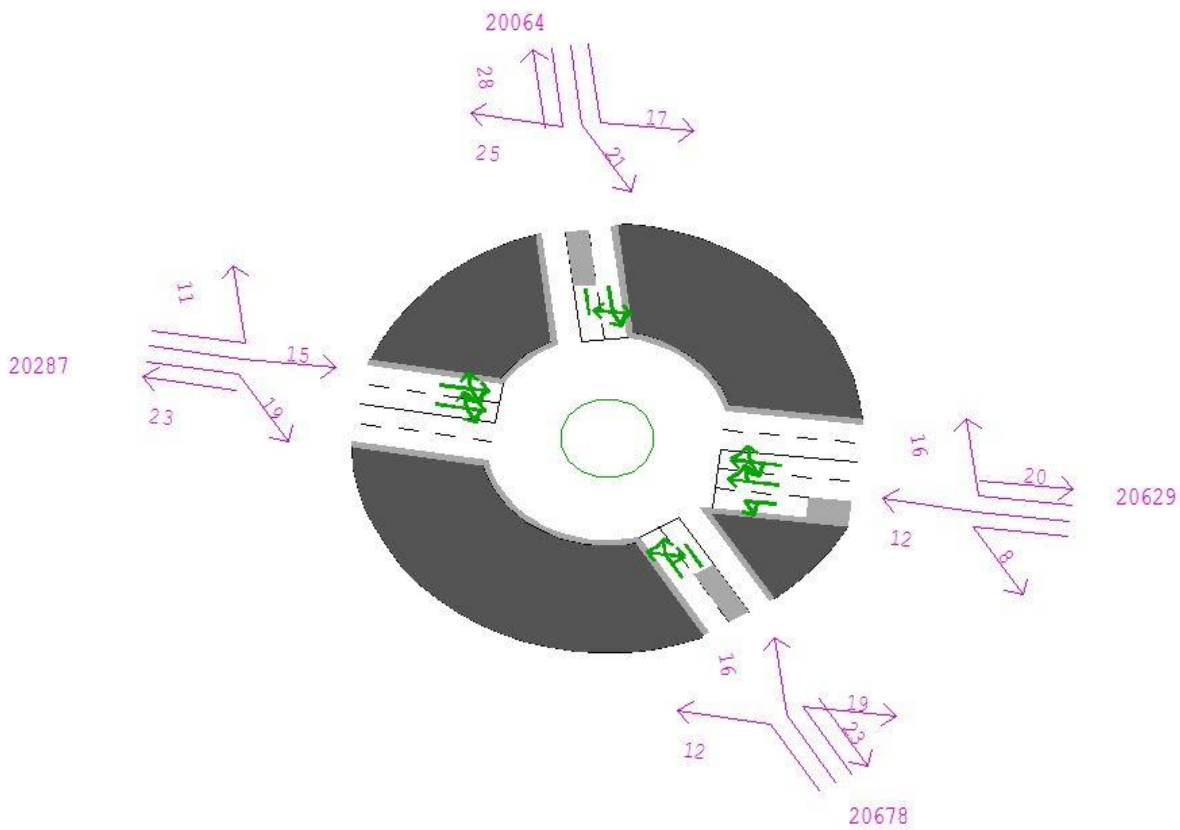


Figure G.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

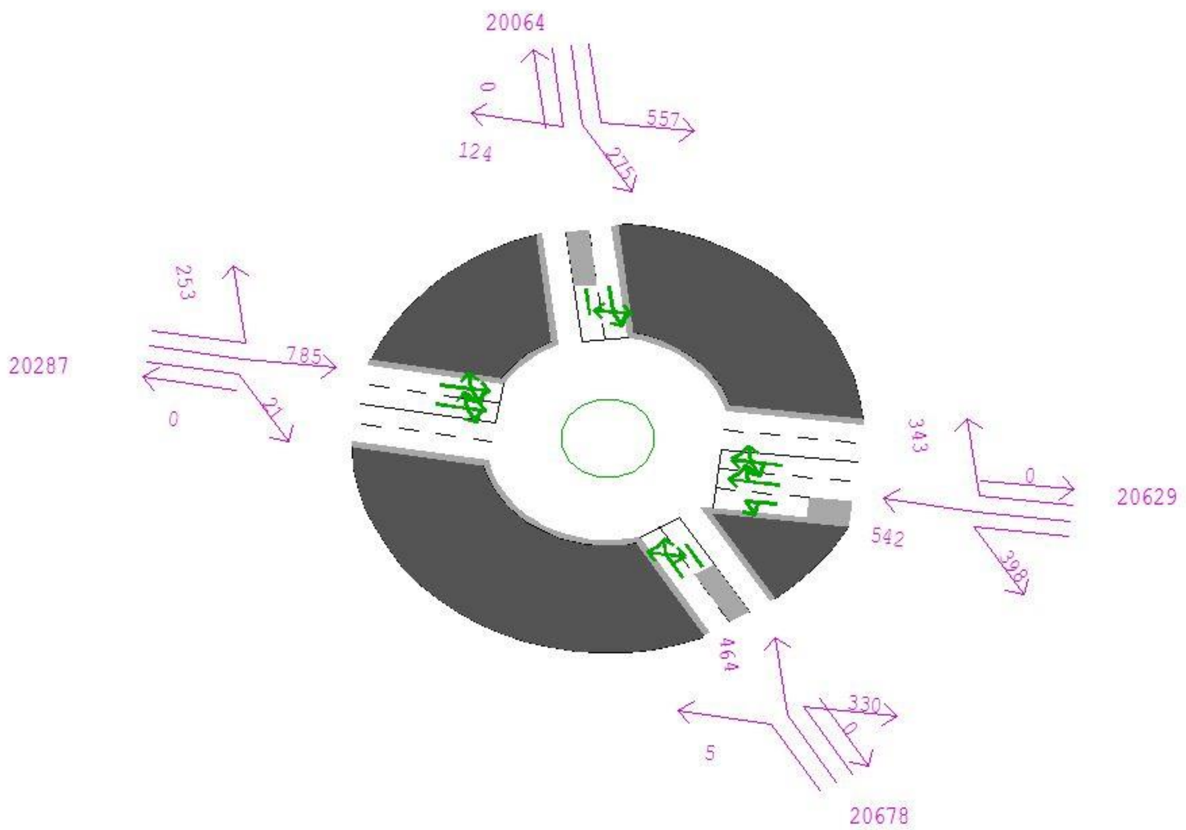


Figure G.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

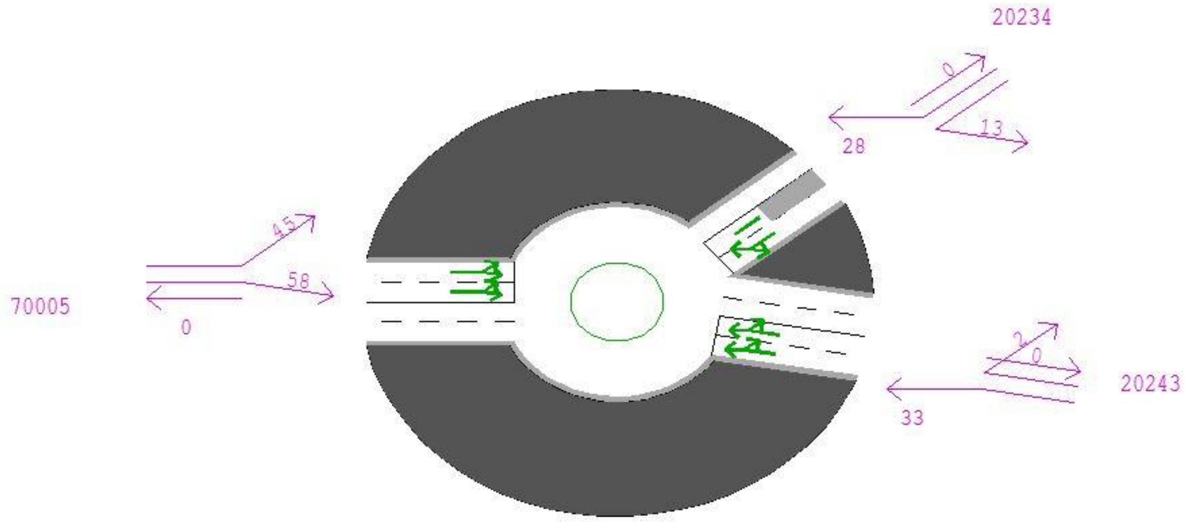


Figure G.8: A4303 / Coventry Road Roundabout: Delay (seconds)

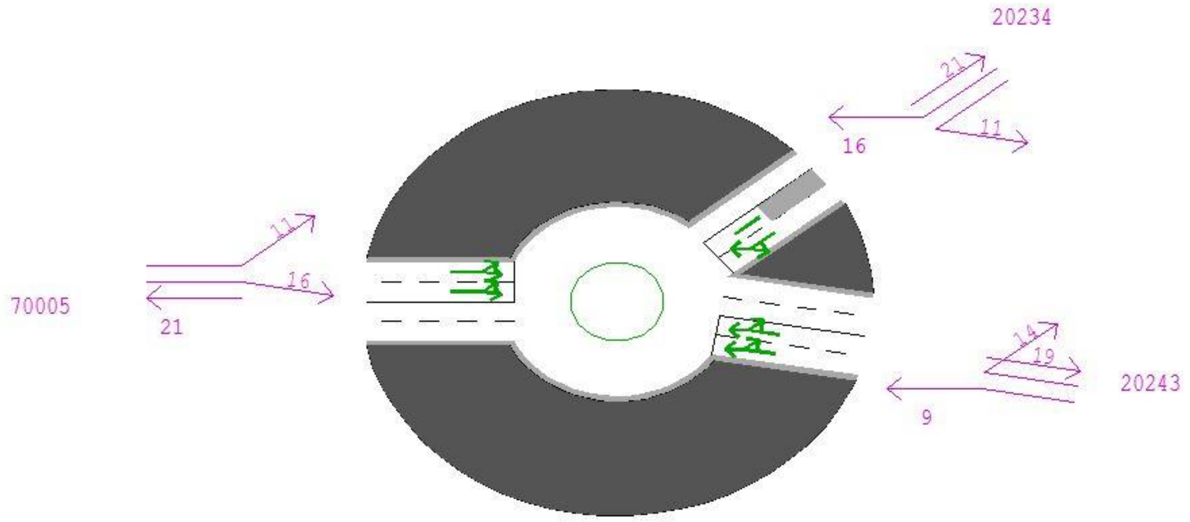


Figure G.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

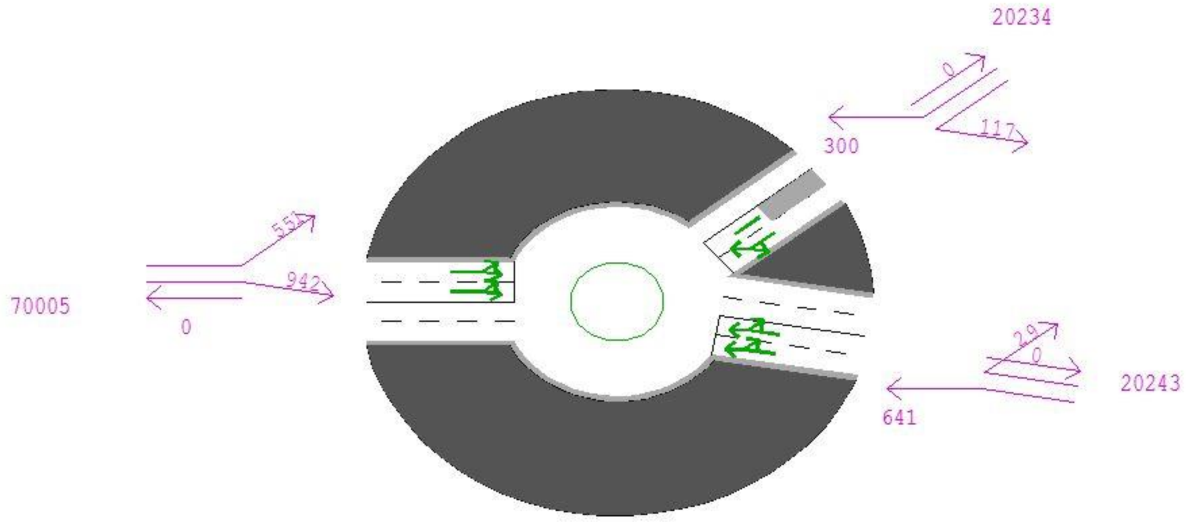


Figure G.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

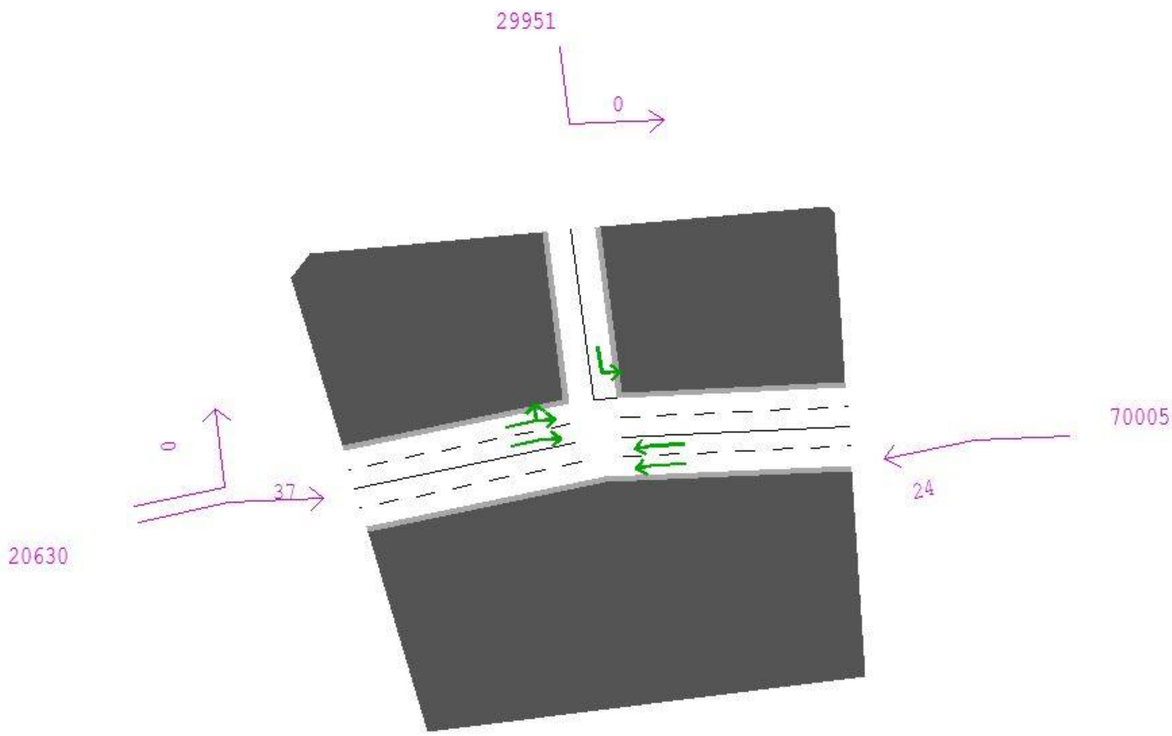


Figure G.11: A4303 / Shackleton Way Junction: Delay (seconds)

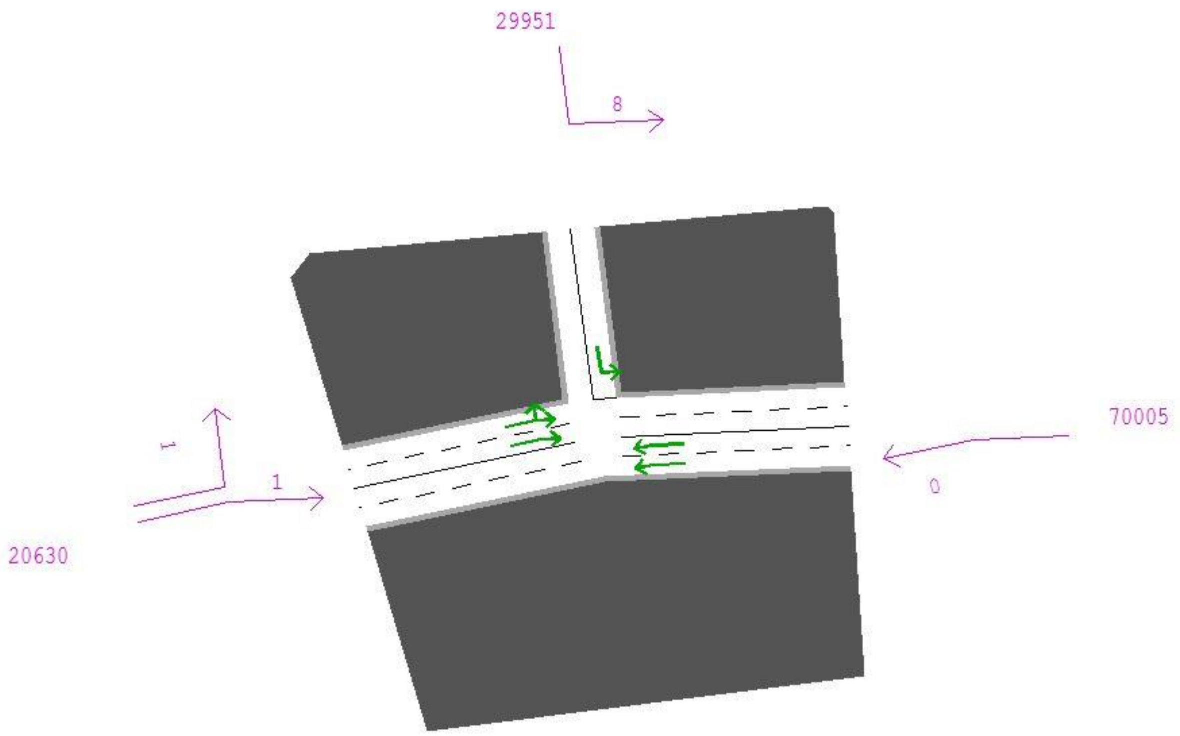


Figure G.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

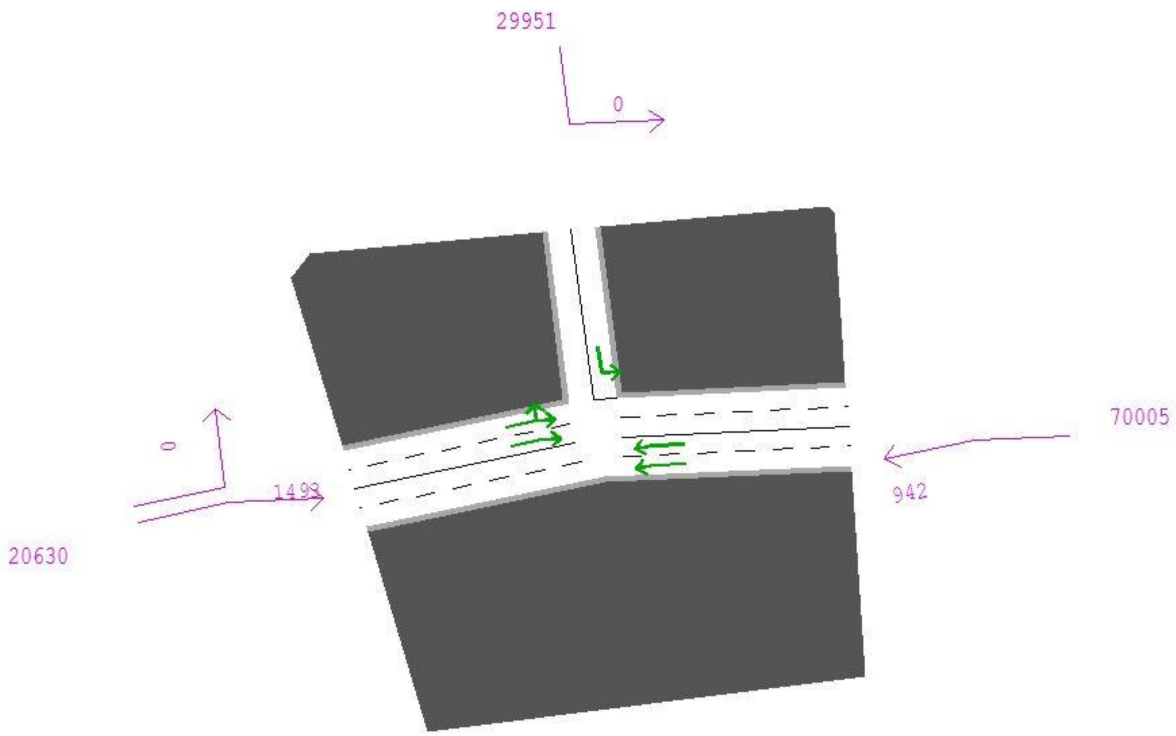


Figure G.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

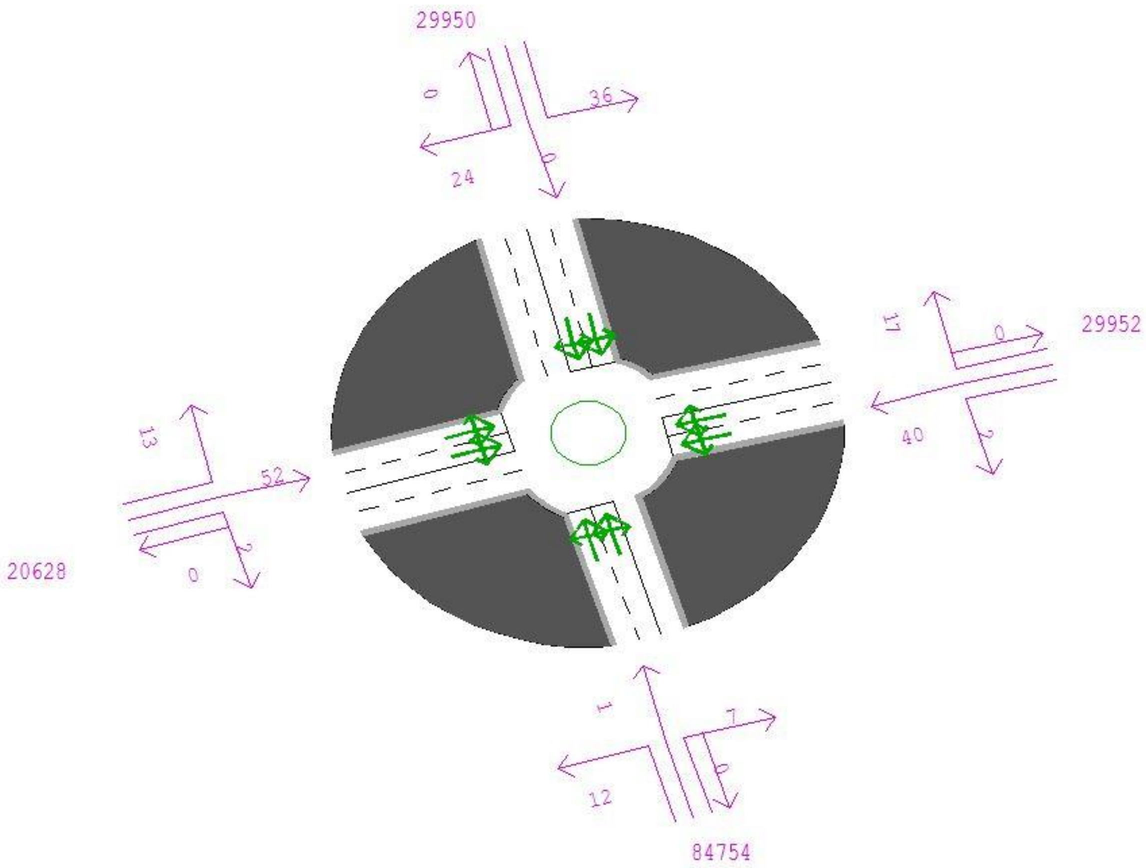


Figure G.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

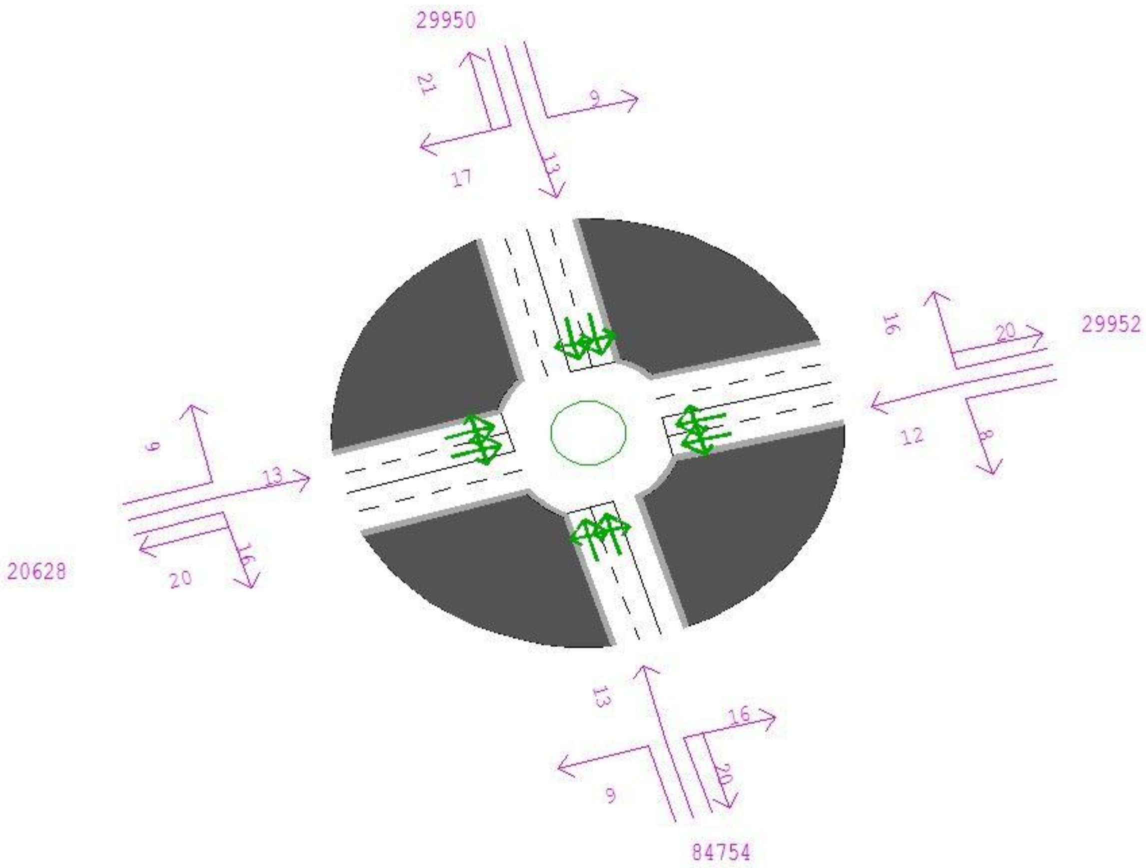


Figure G.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

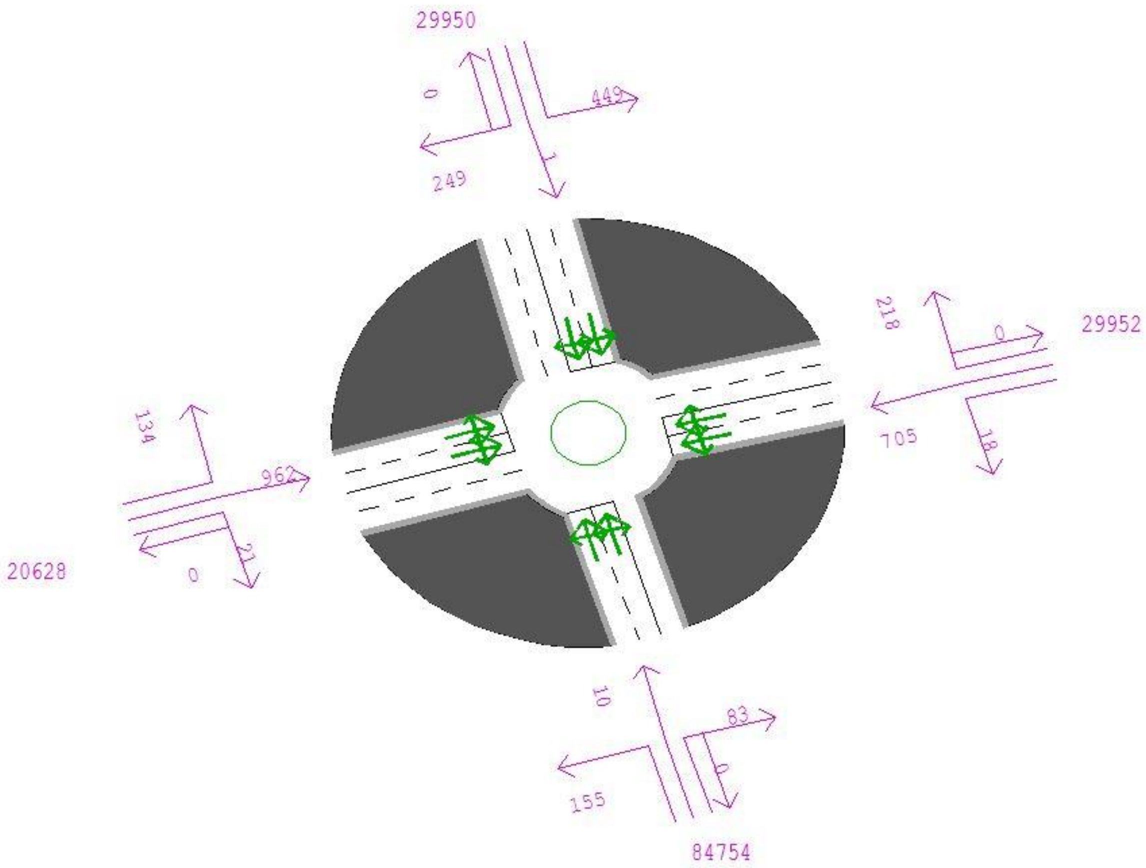


Figure G.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

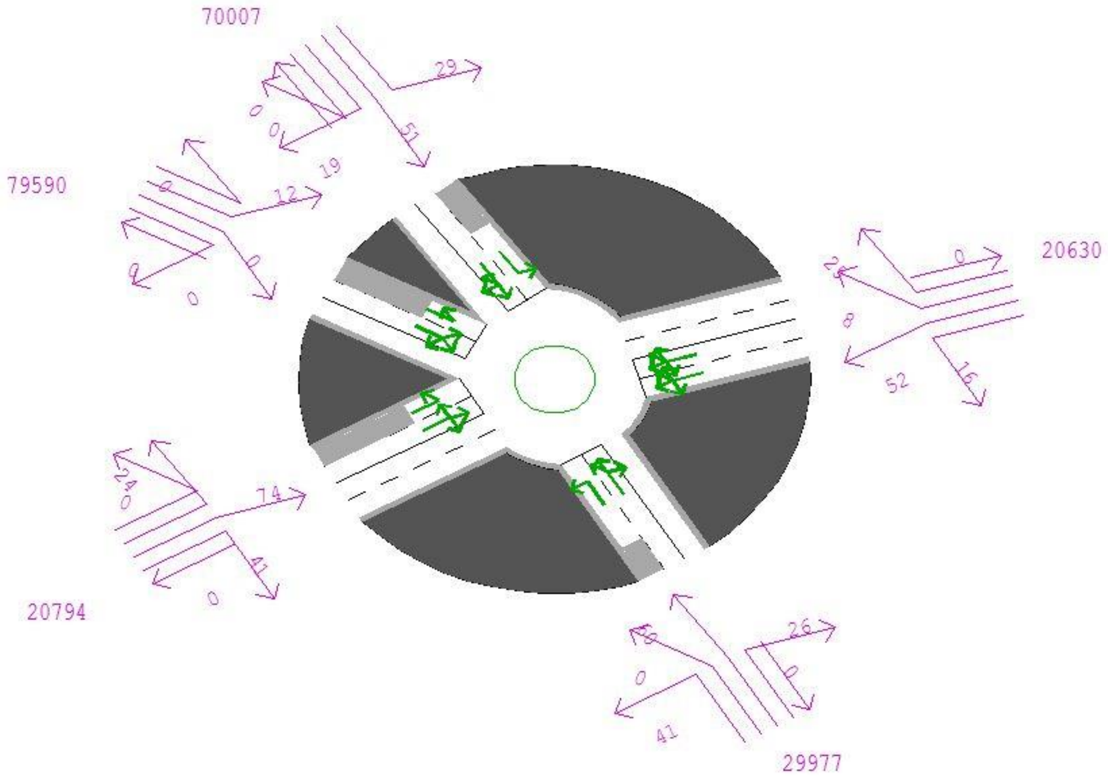


Figure G.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

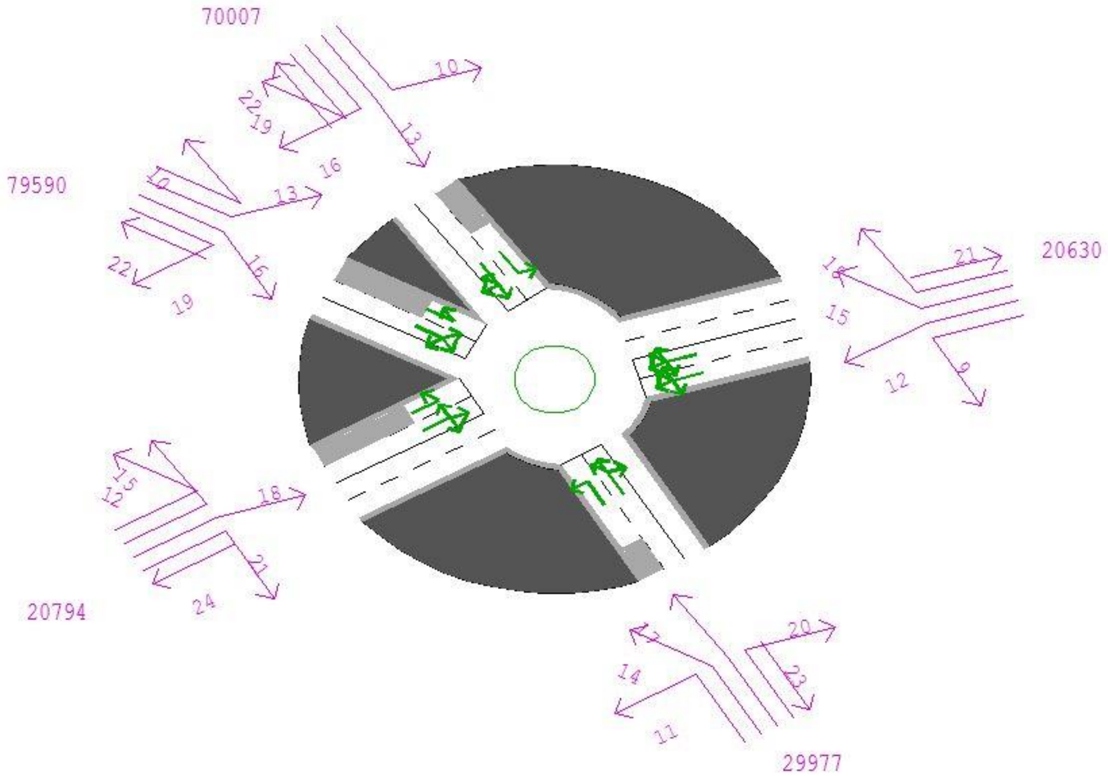


Figure G.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

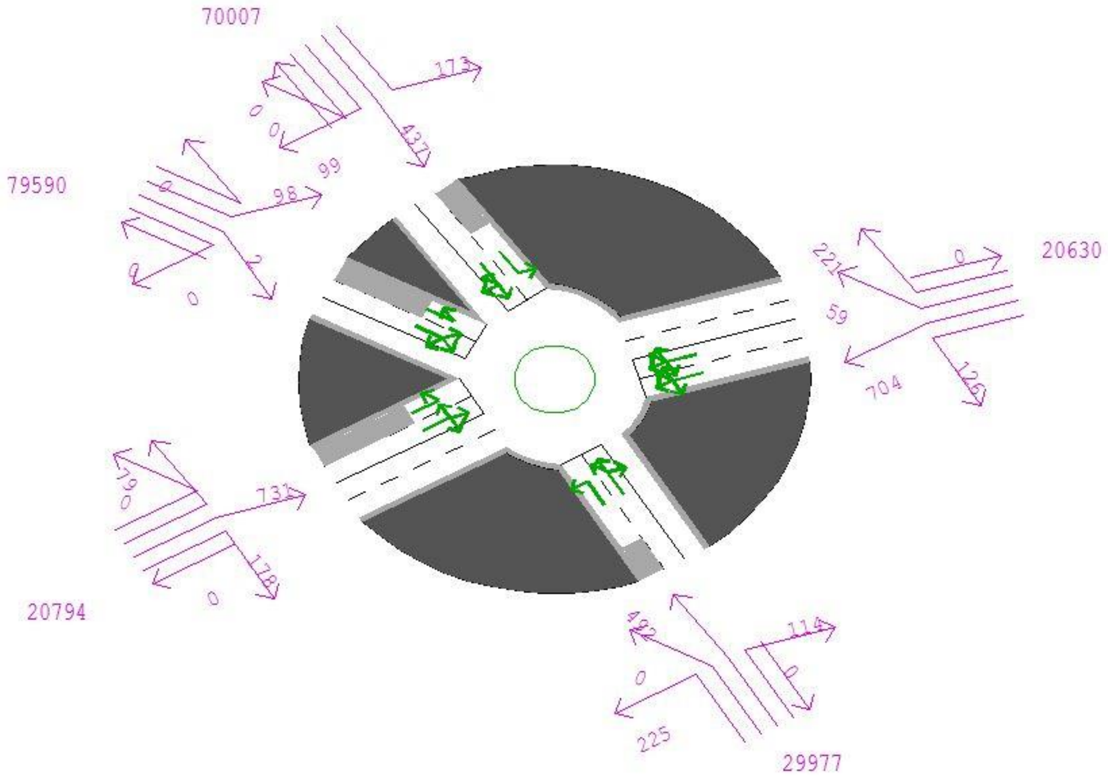


Figure G.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

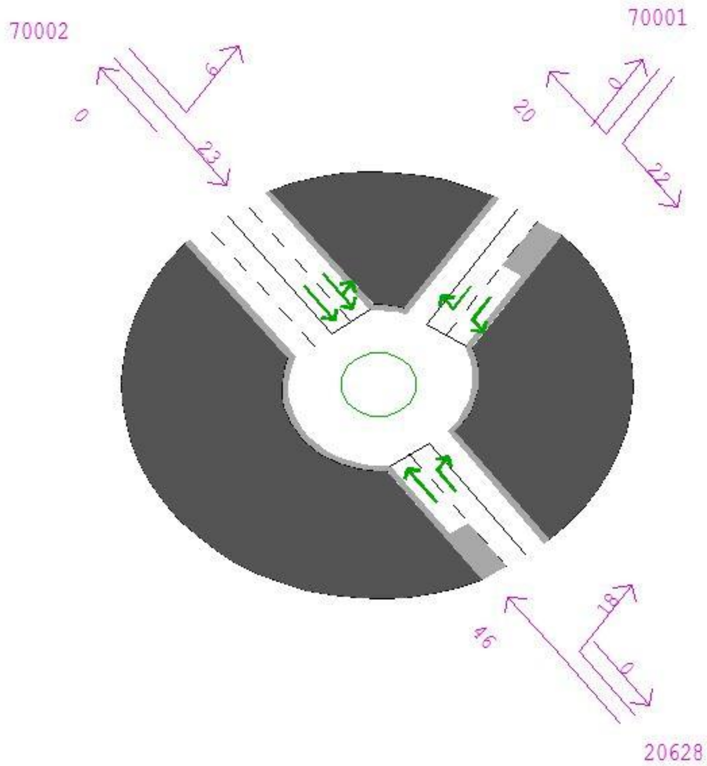


Figure G.20: A5 / Mere Lane Junction: Delay (seconds)

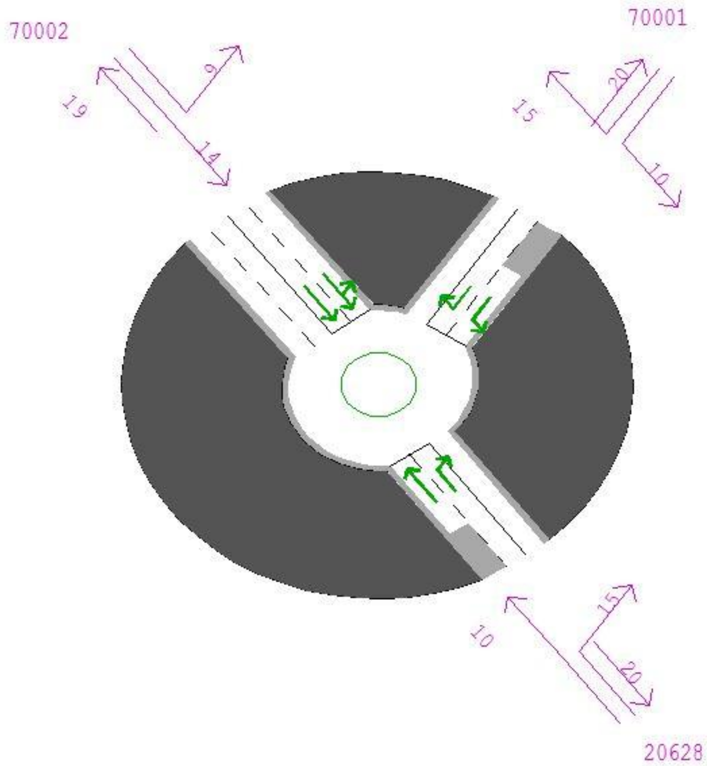


Figure G.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

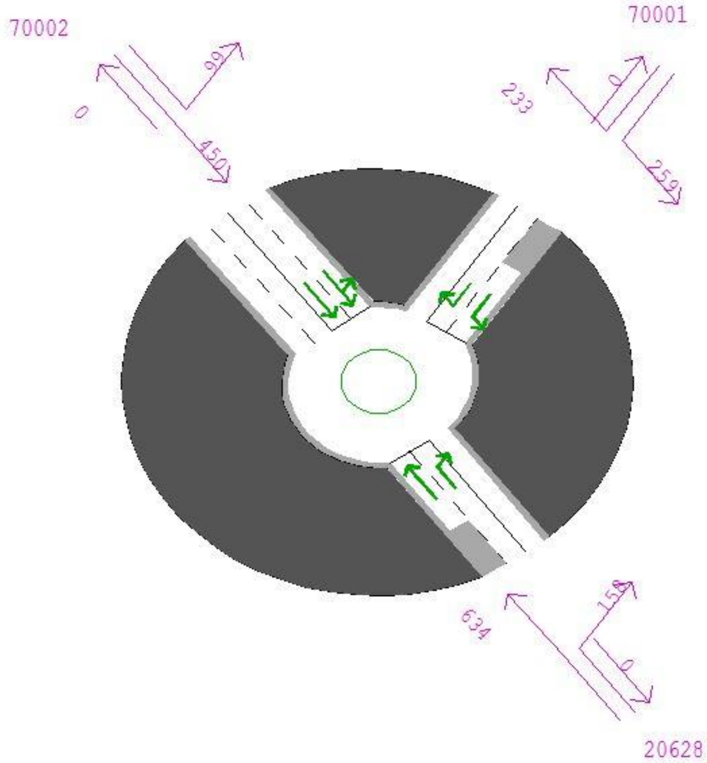


Figure G.22: M69 Junction 1: Volume-to-Capacity Ratio

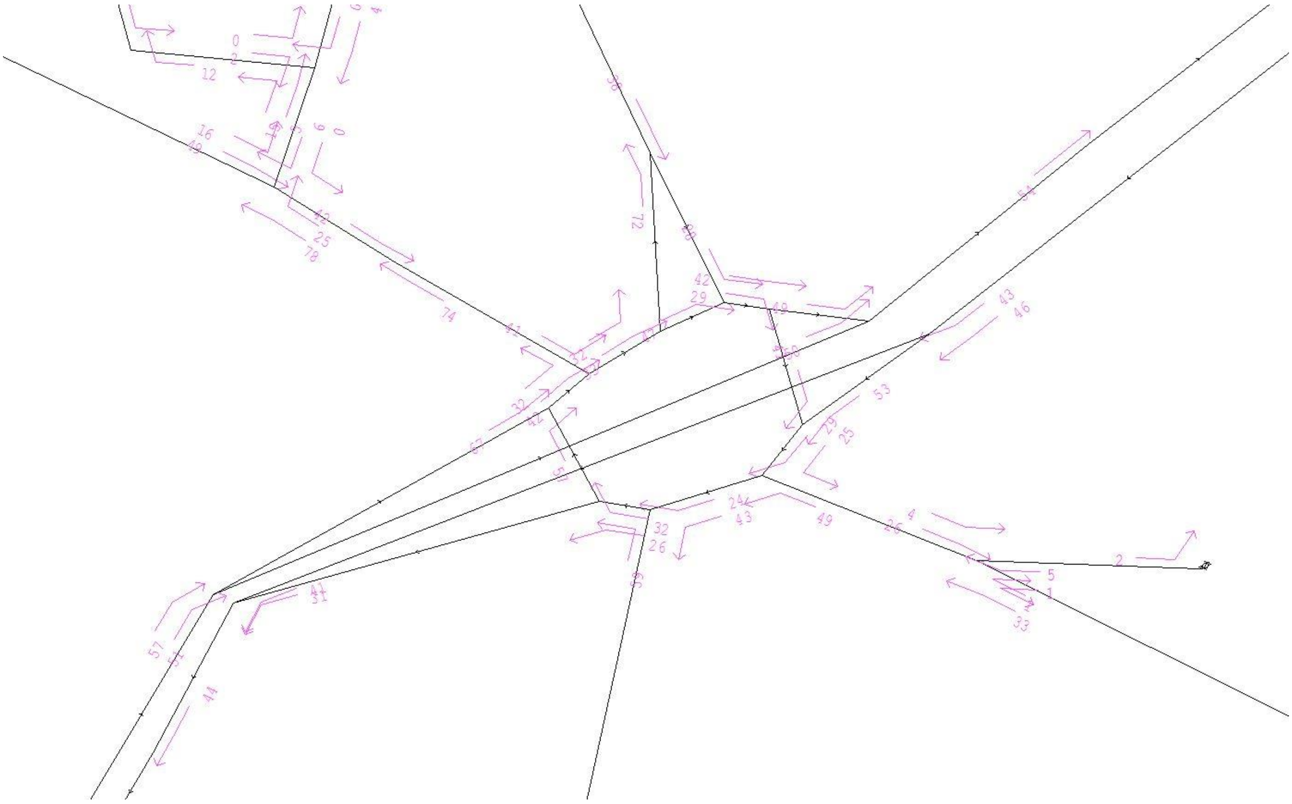


Figure G.23: M69 Junction 1: Delay (seconds)

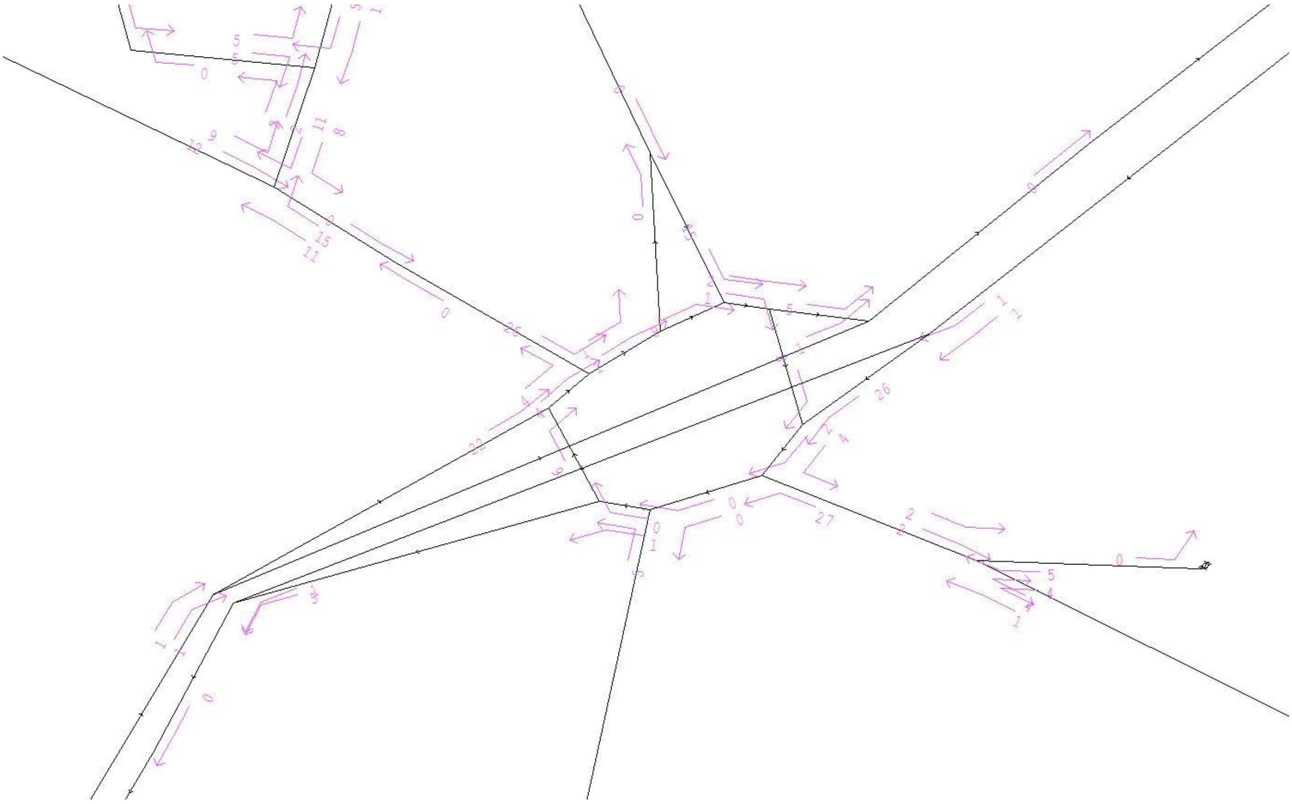


Figure G.24: M69 Junction 1: Arrive Flow (PCUs)

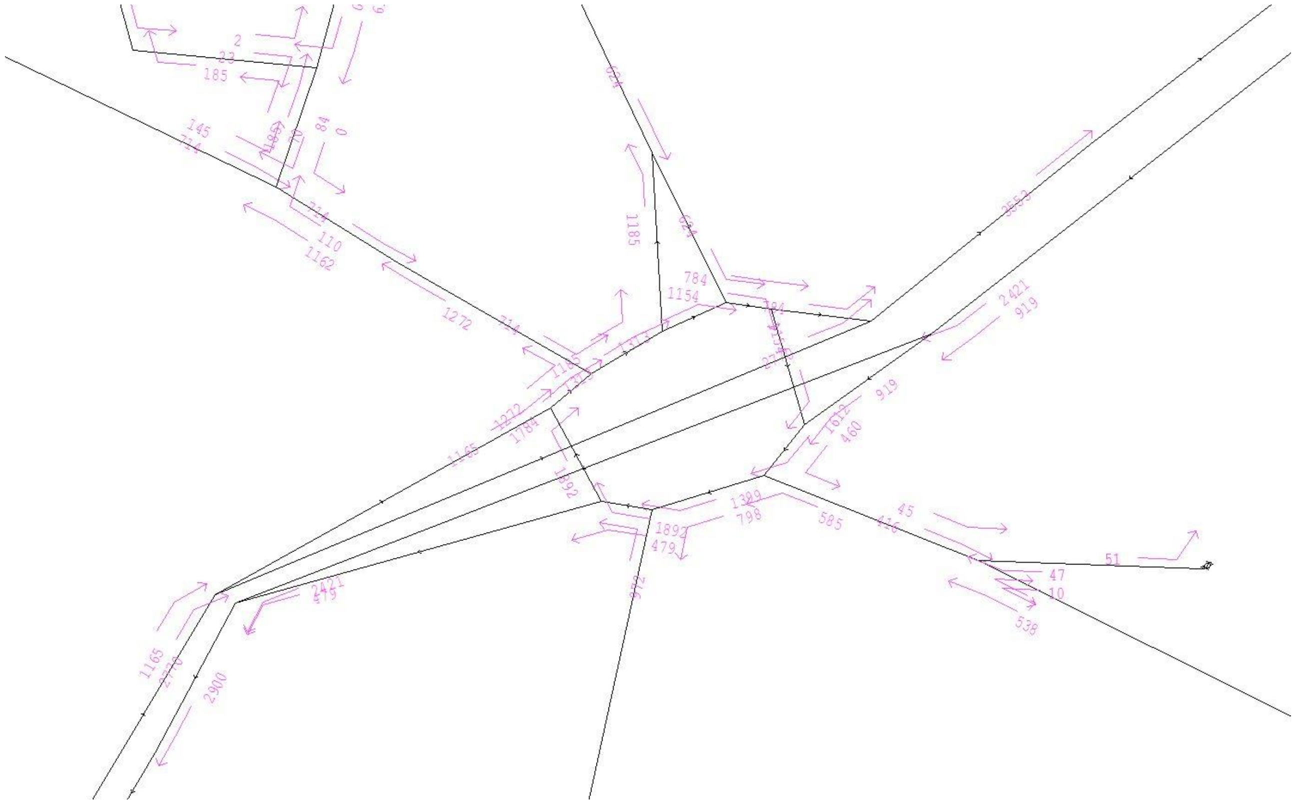


Figure G.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

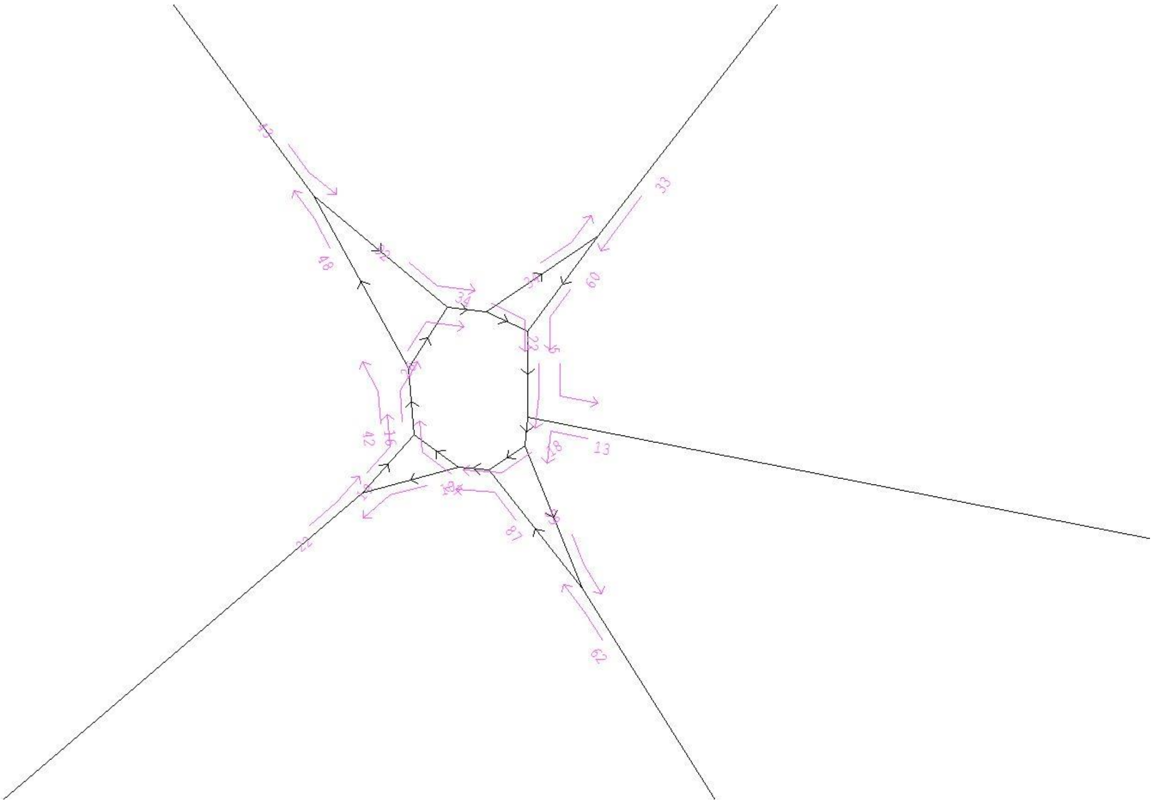


Figure G.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

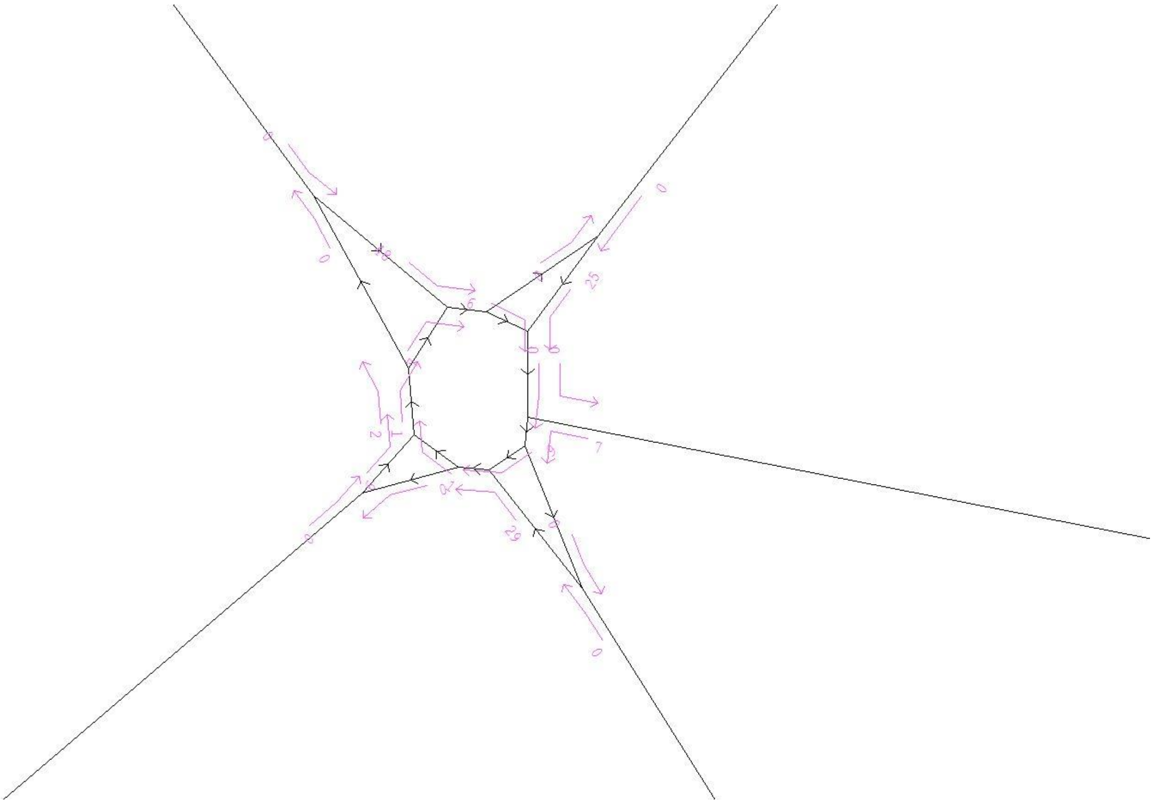


Figure G.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

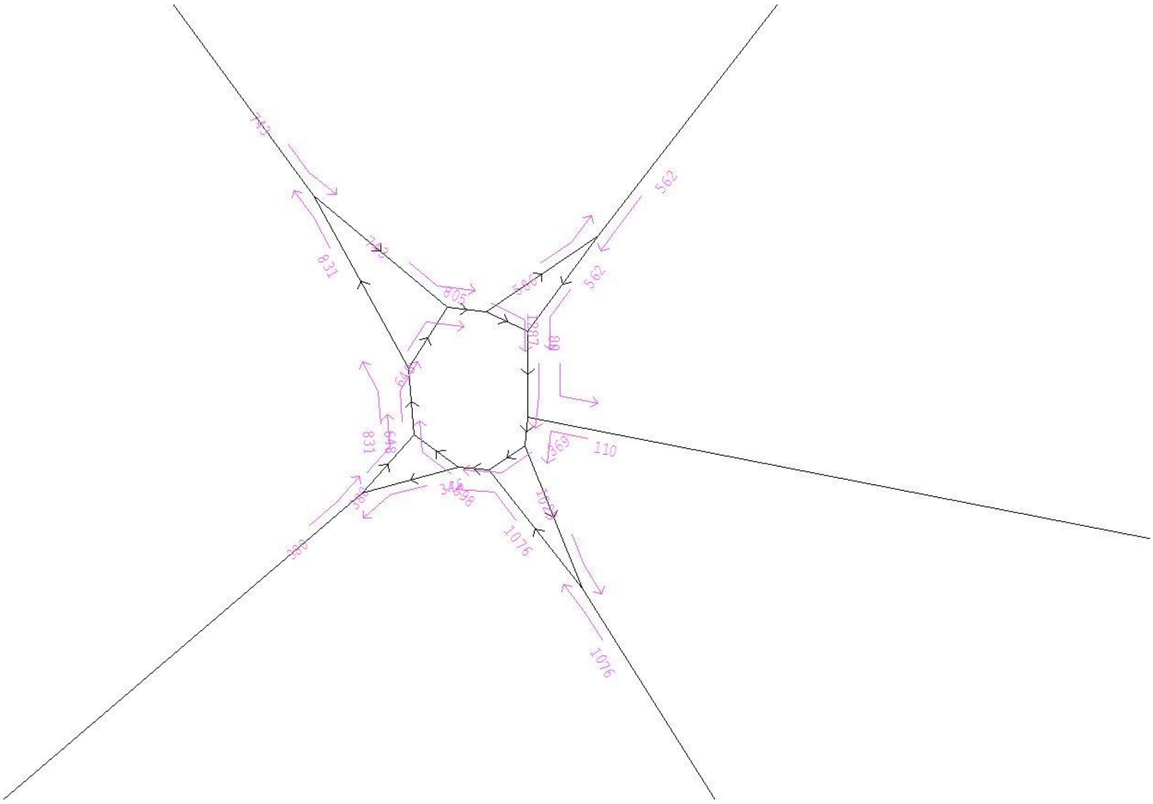


Figure G.28: M6 Junction 1: Volume-to-Capacity Ratio

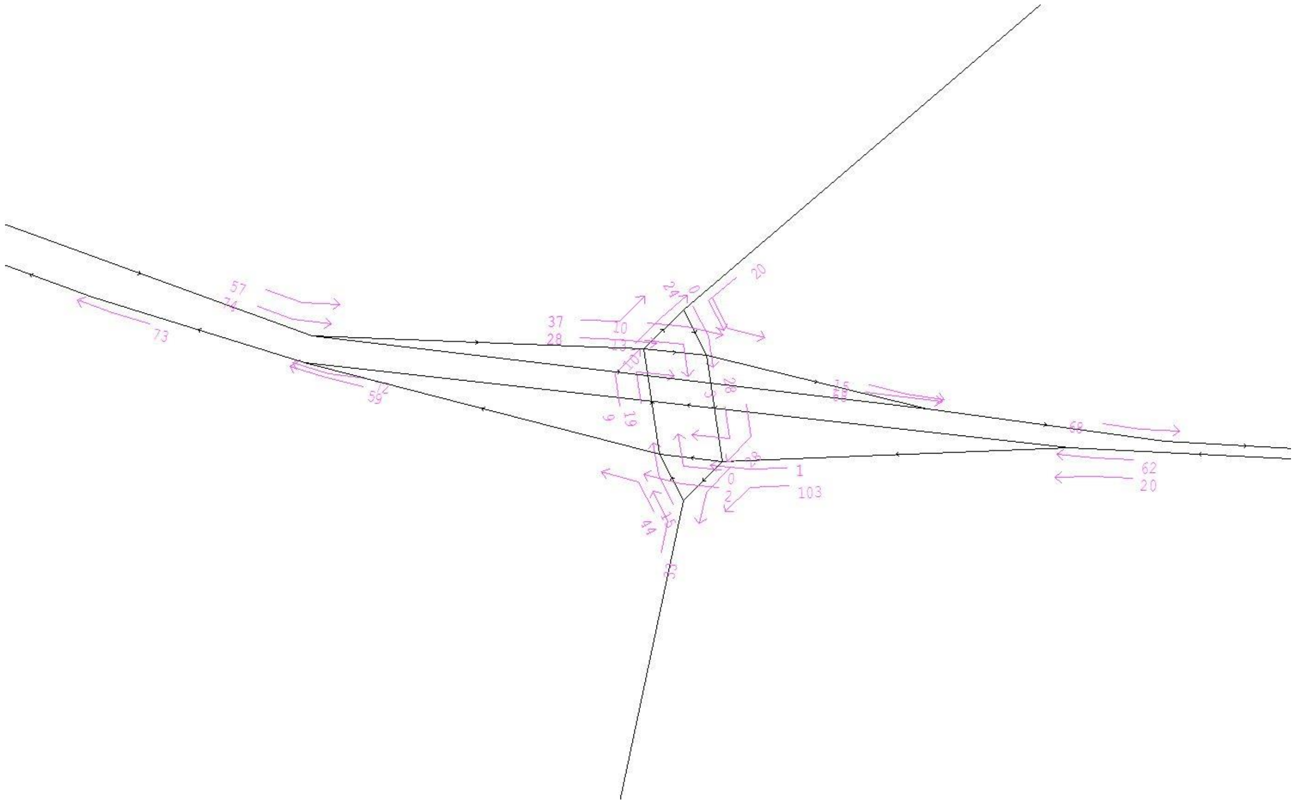


Figure G.29: M6 Junction 1: Delay (seconds)

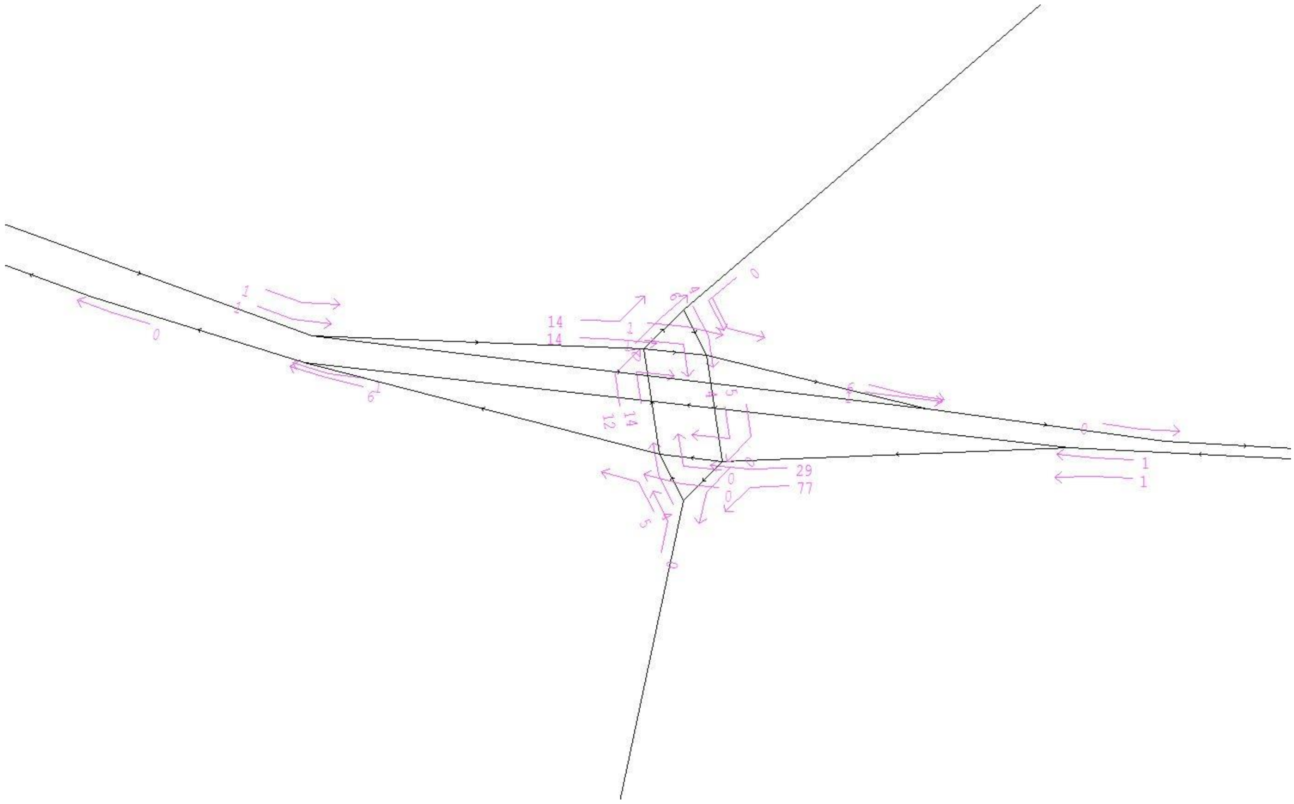


Figure G.30: M6 Junction 1: Arrive Flow (PCUs)

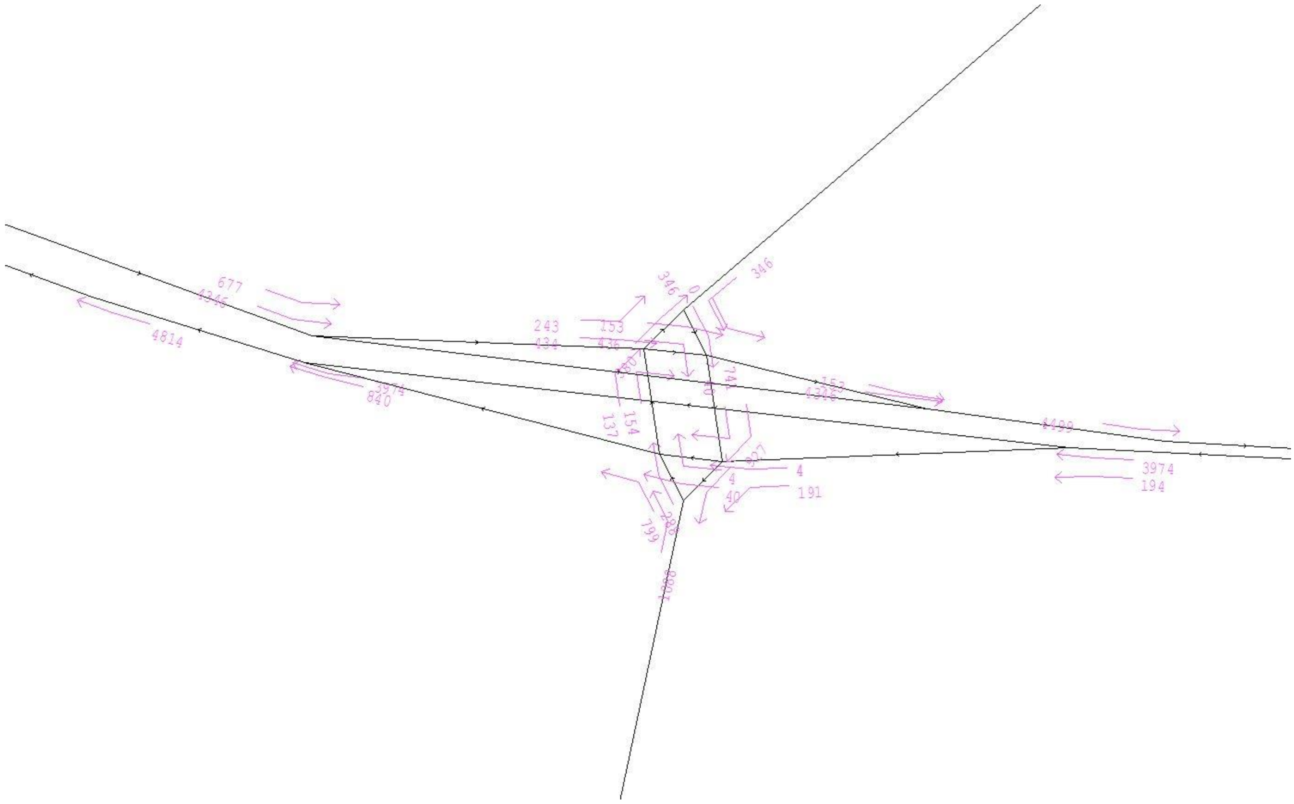


Figure G.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

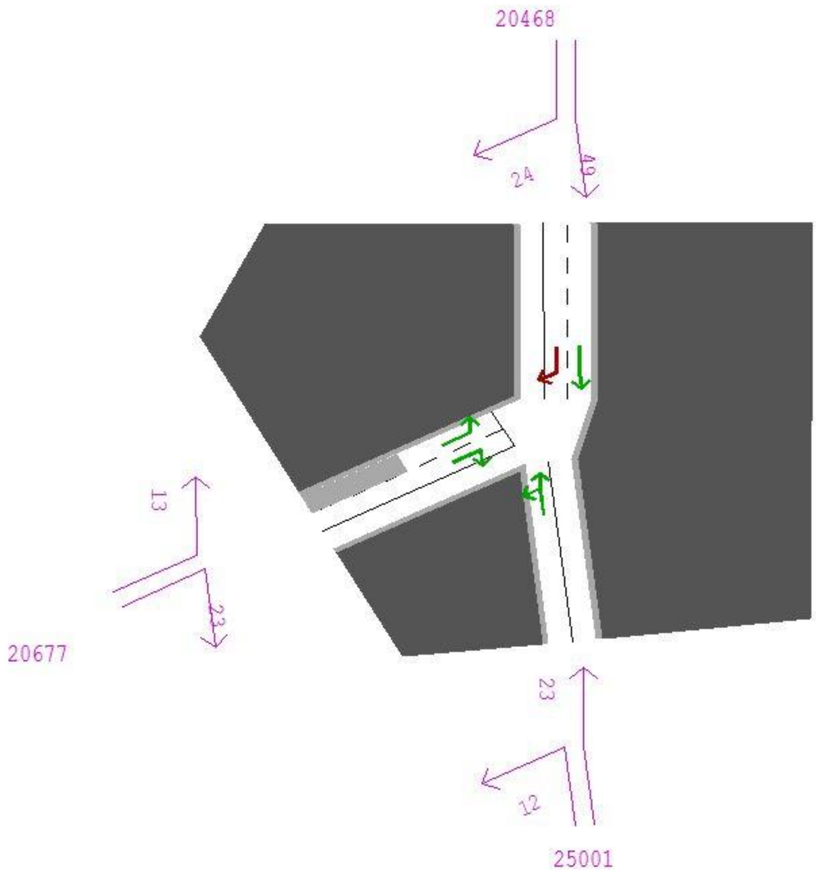


Figure G.32: A426 / Bill Crane Way Junction: Delay (seconds)

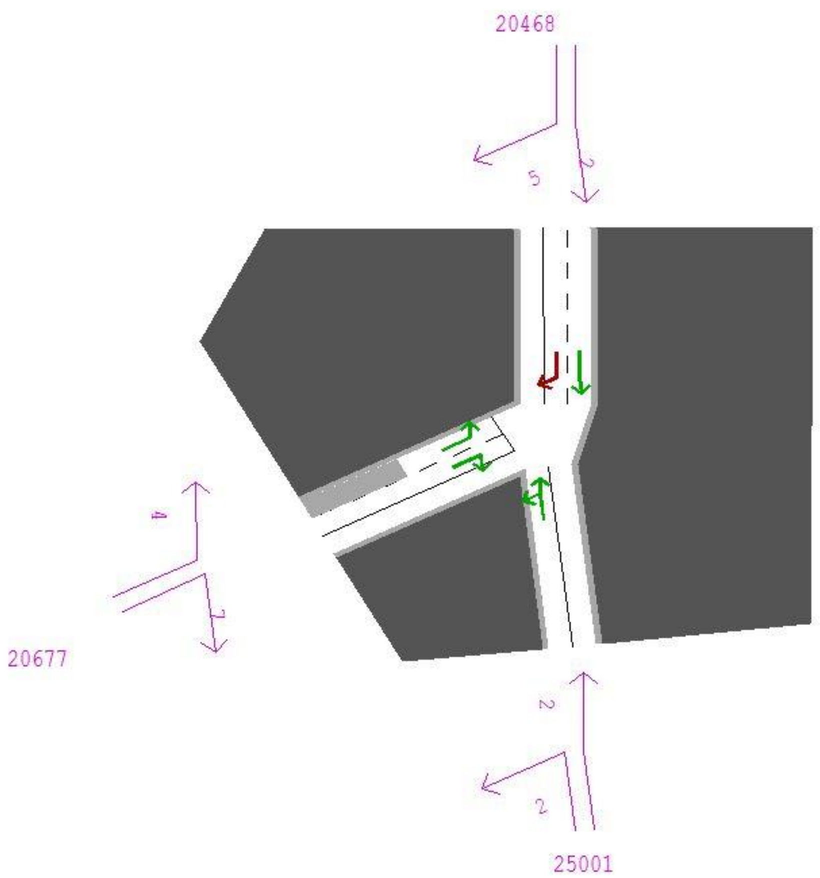


Figure G.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

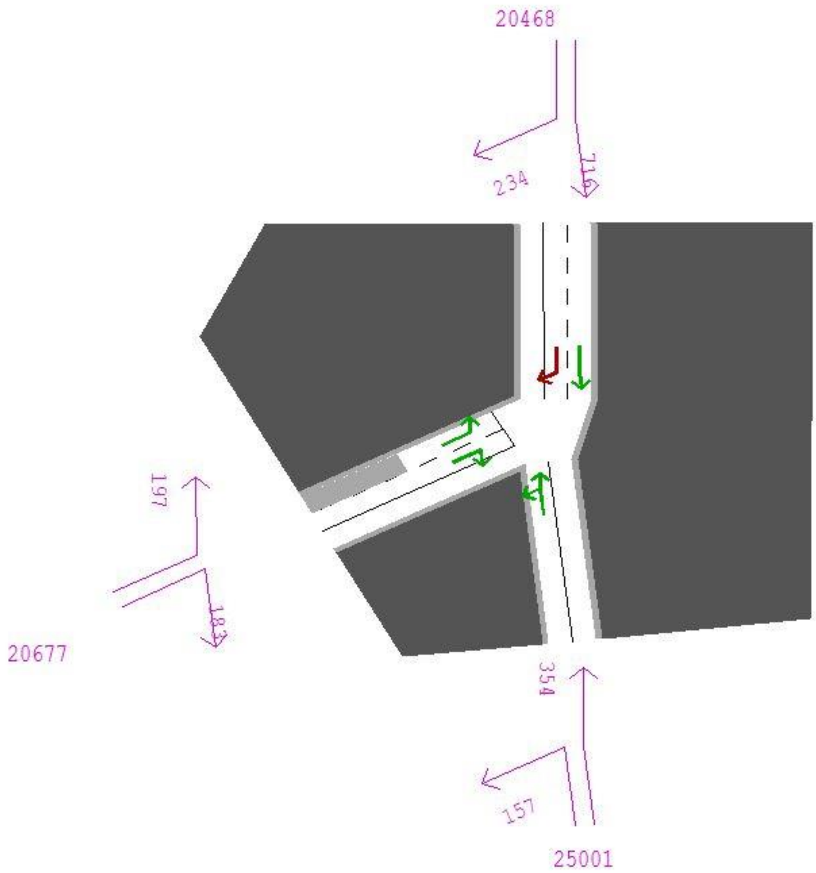


Figure G.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

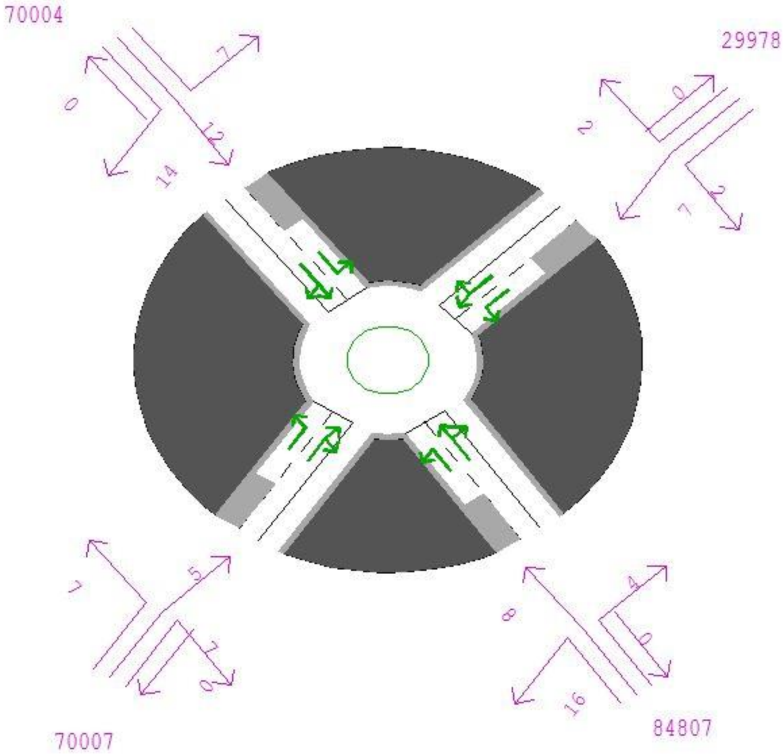


Figure G.35: Mere Lane / Magna Park Access: Delay (seconds)

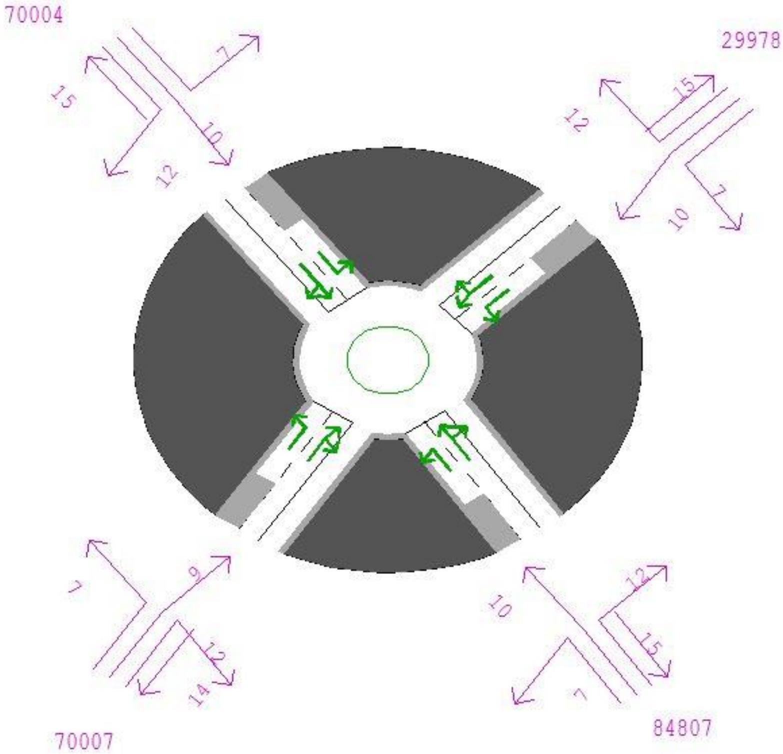


Figure G.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

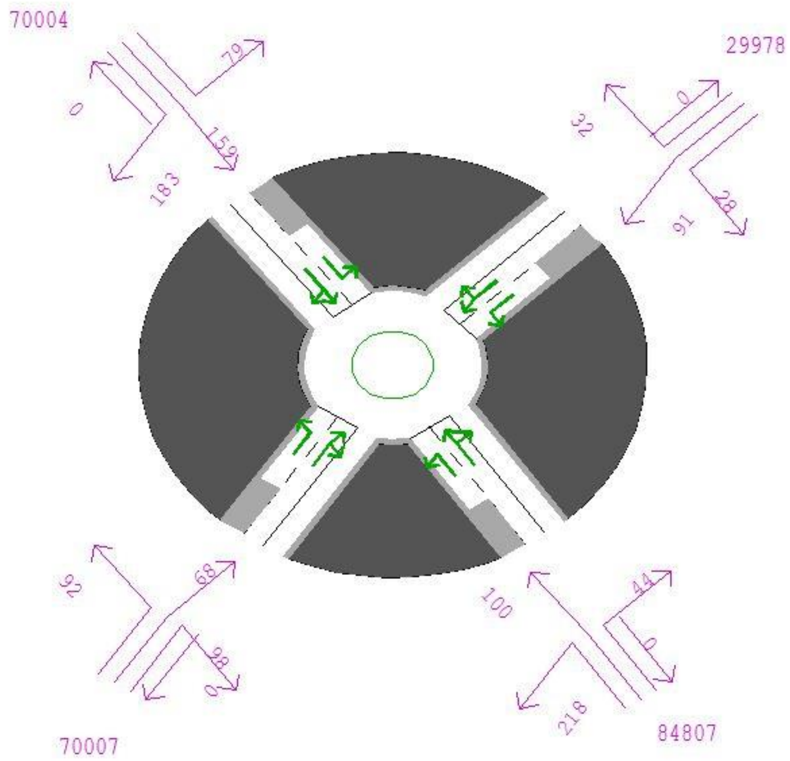


Figure G.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

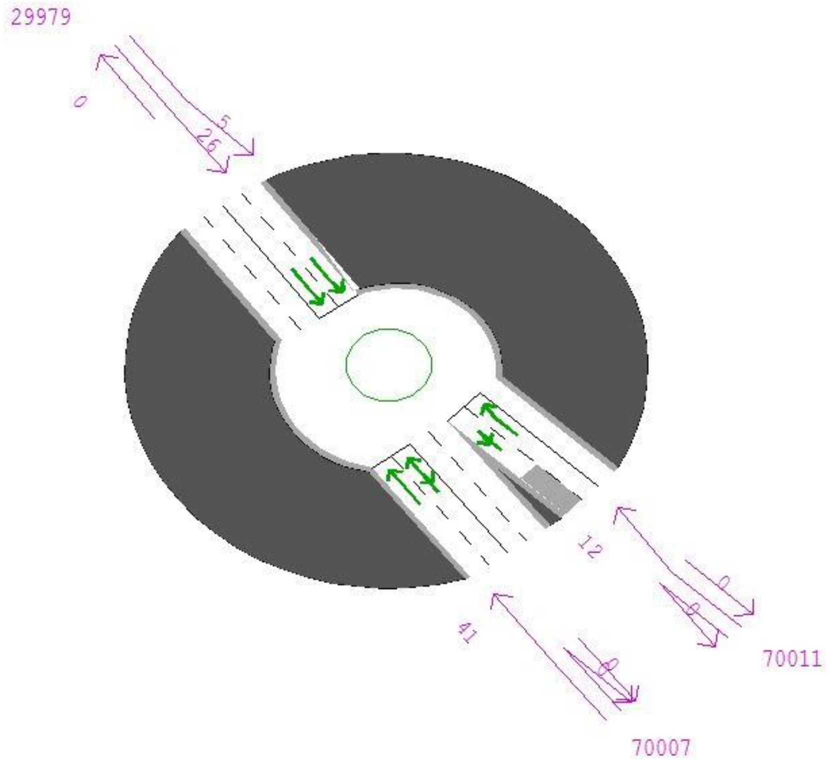


Figure G.38: A5 / Magna Park Access: Delay (seconds)

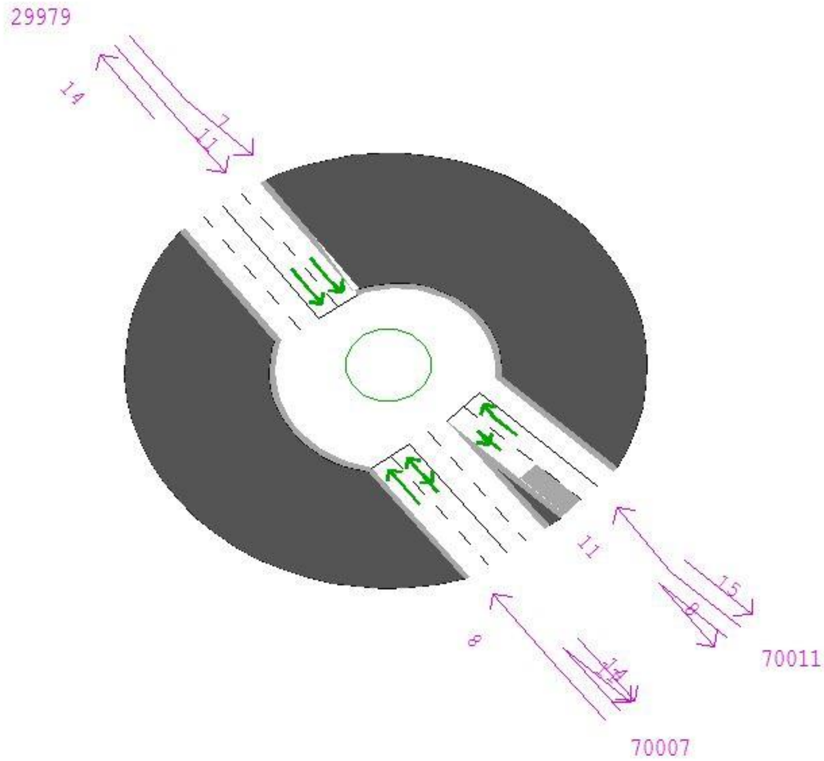
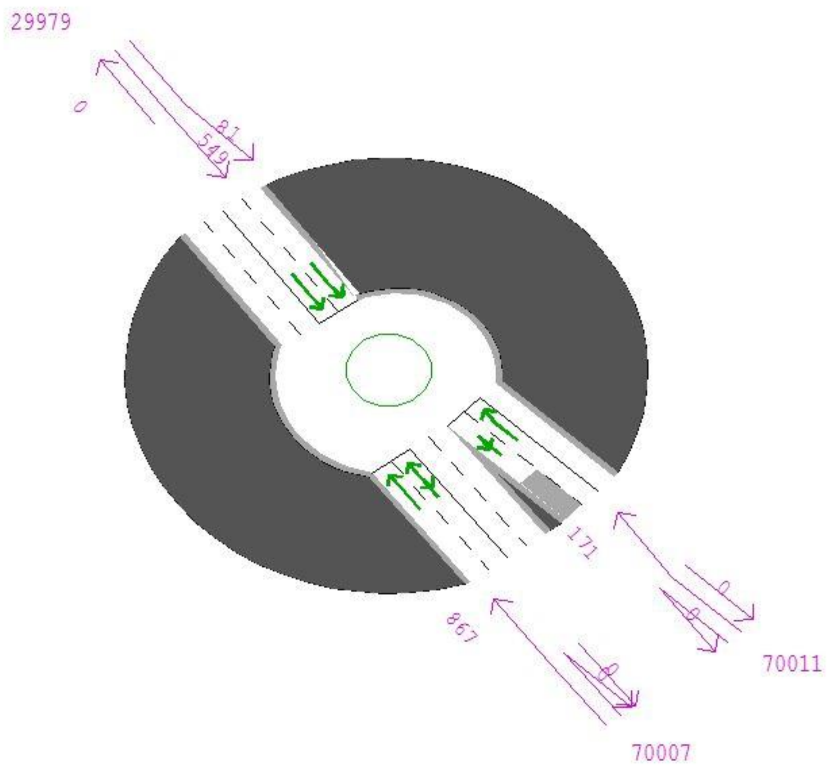


Figure G.39: A5 / Magna Park Access: Arrive Flow (PCUs)



Appendix H 2026 'with development', including the proposed mitigation measures, AM Peak Junction Node Data

H.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure H.1: M1 Junction 20: Volume-to-Capacity Ratio

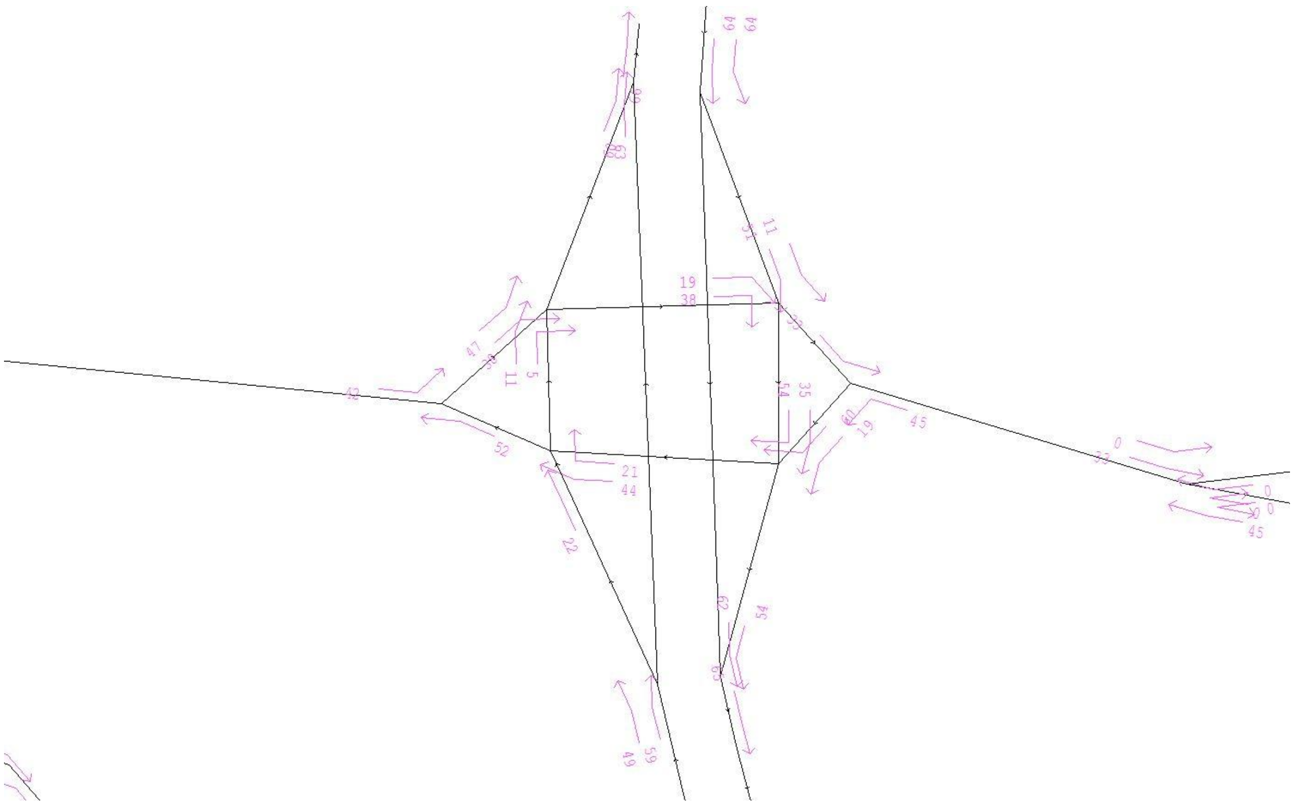


Figure H.2: M1 Junction 20: Delay (seconds)

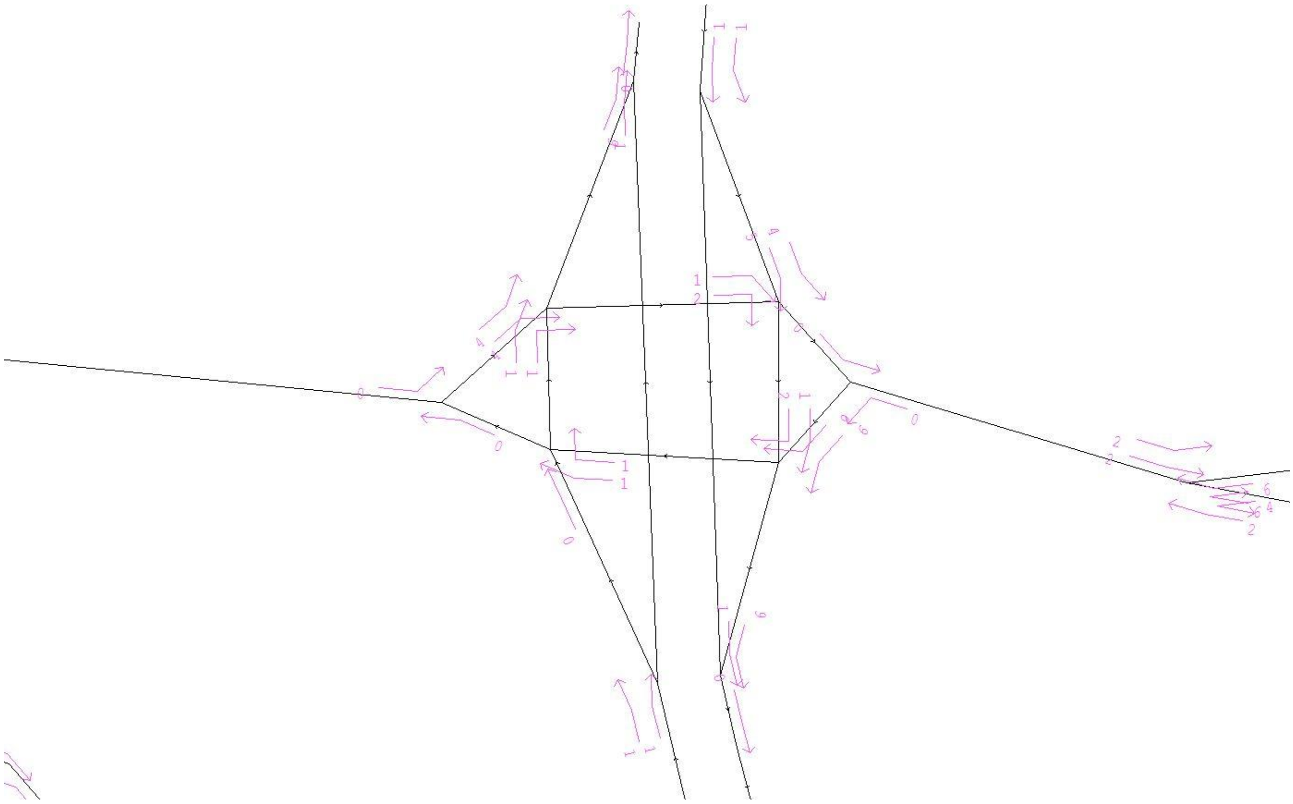


Figure H.3: M1 Junction 20: Arrive Flow (PCUs)

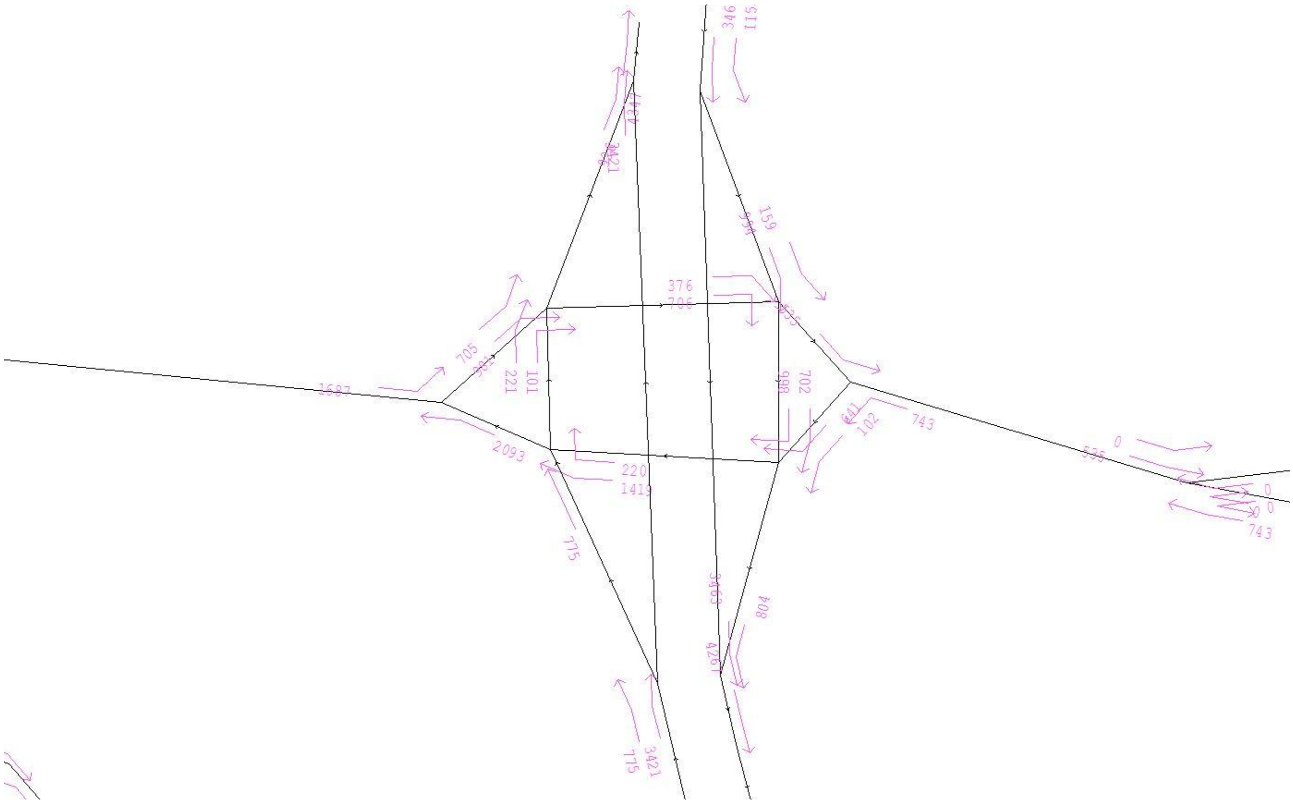


Figure H.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

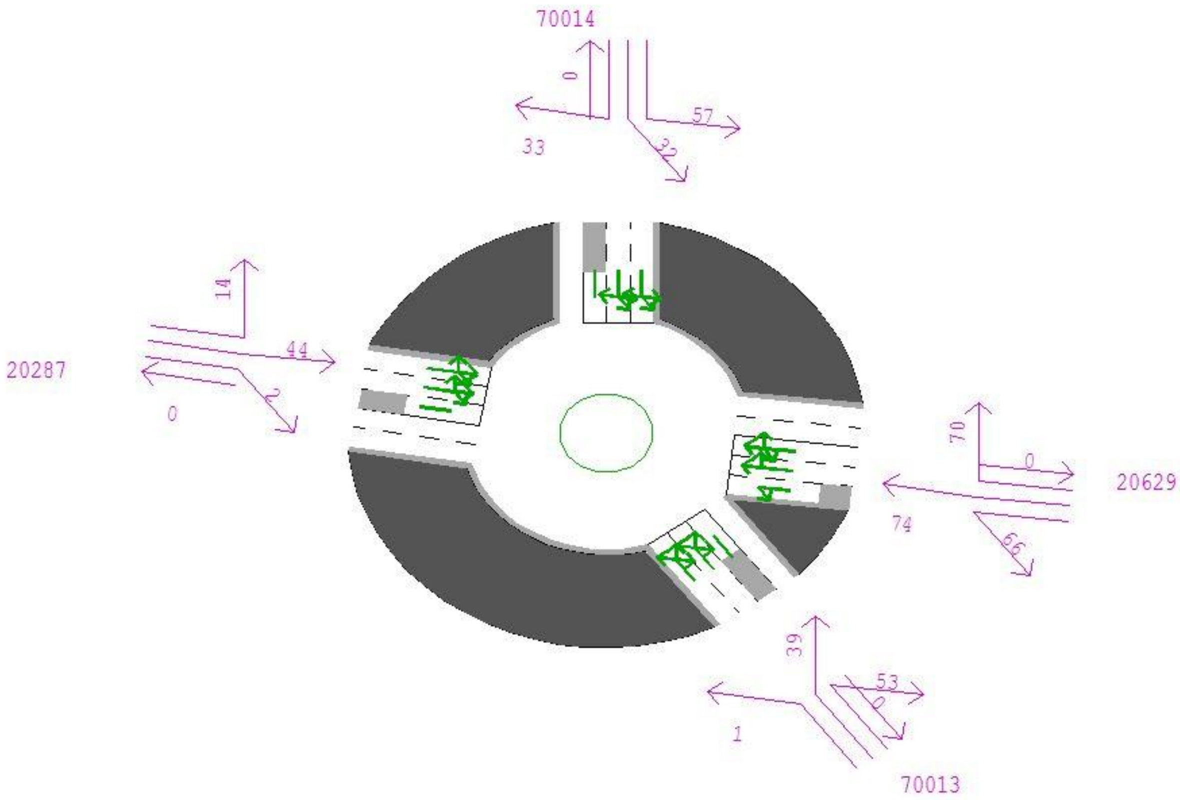


Figure H.5: A4303 / A426 Roundabout: Delay (seconds)

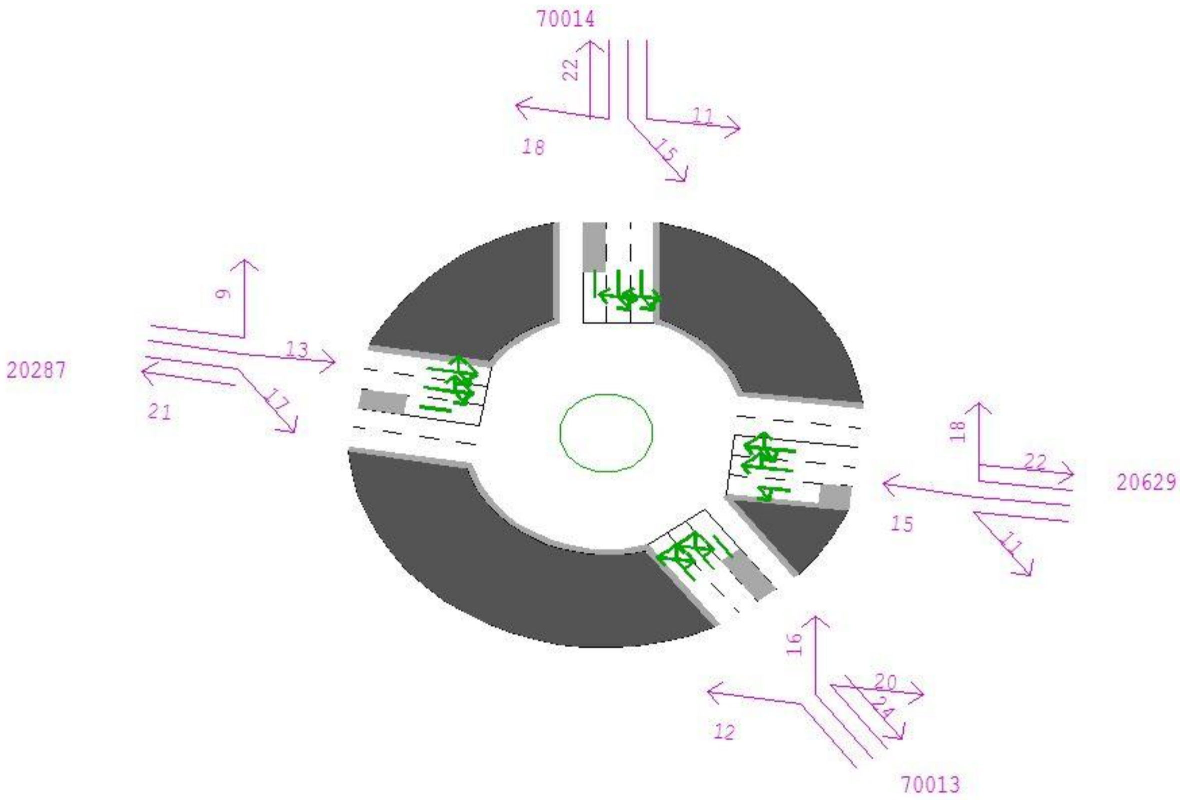


Figure H.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

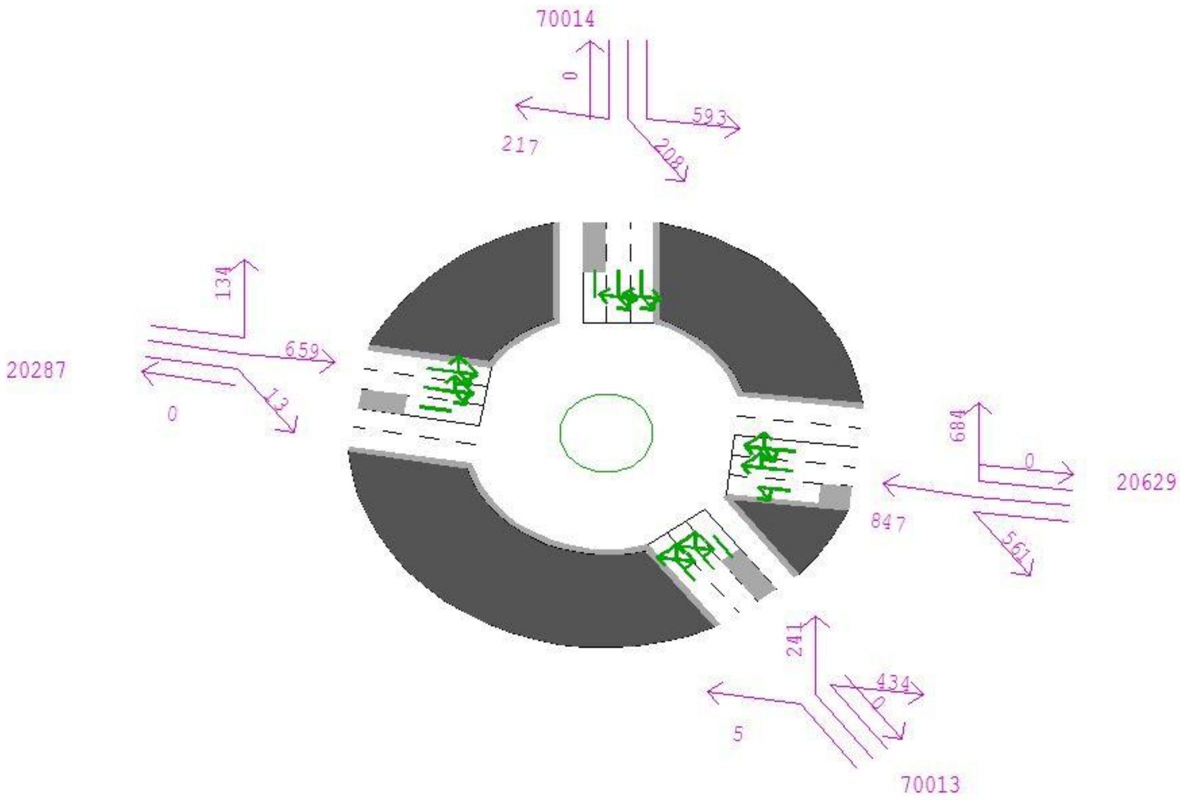


Figure H.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

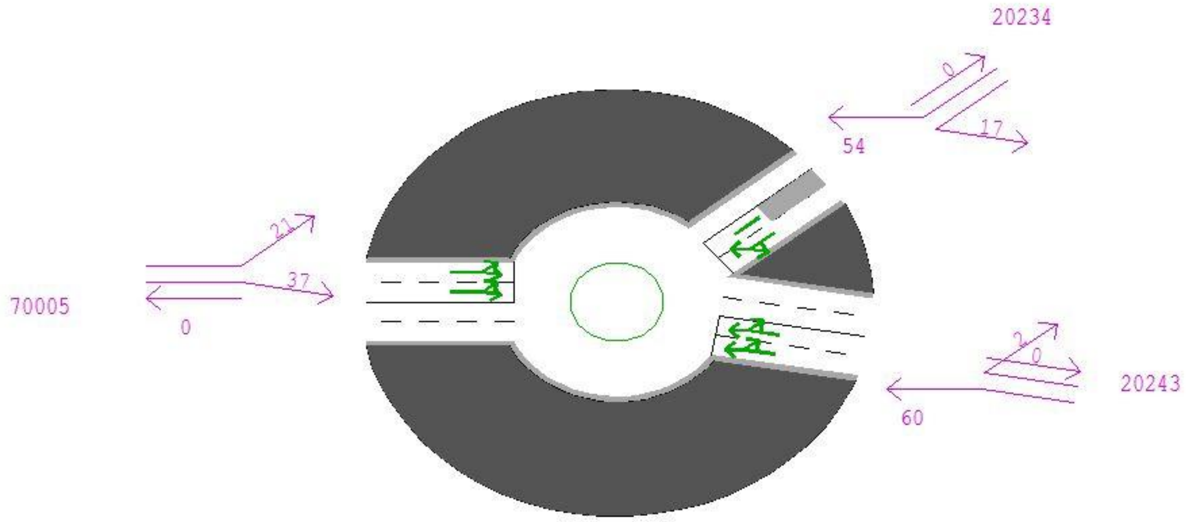


Figure H.8: A4303 / Coventry Road Roundabout: Delay (seconds)

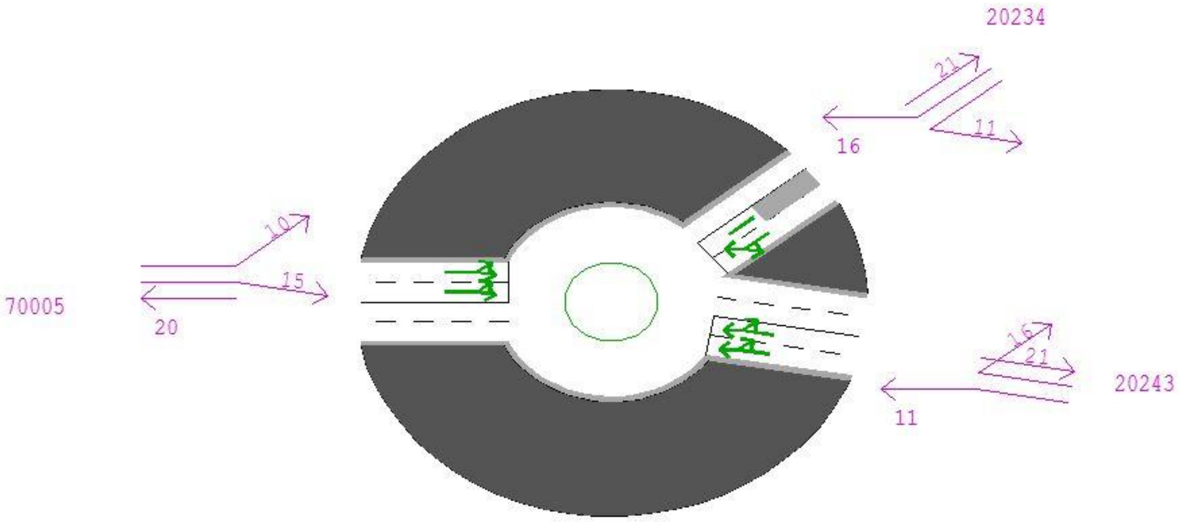


Figure H.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

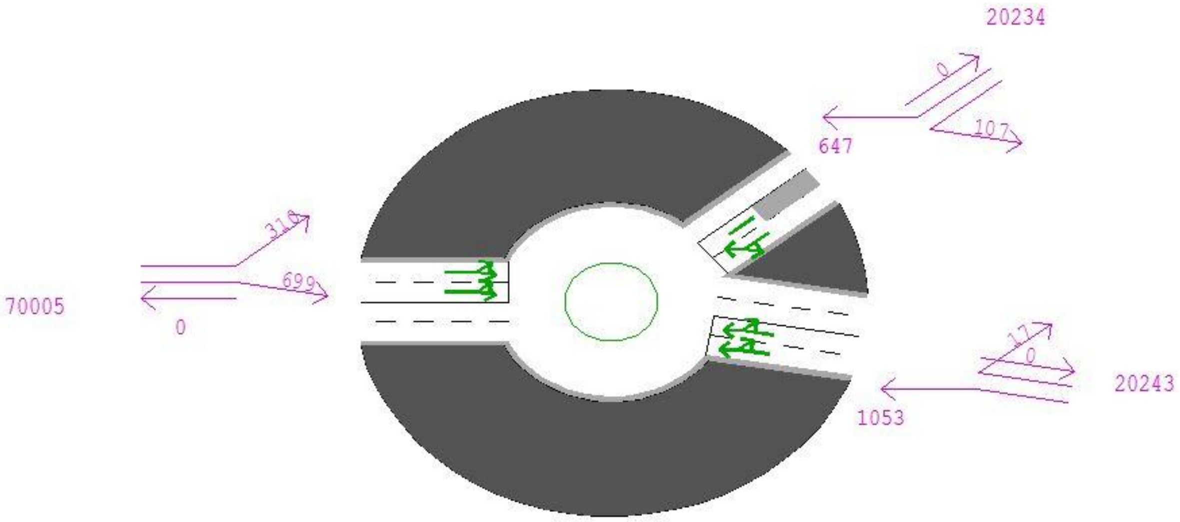


Figure H.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

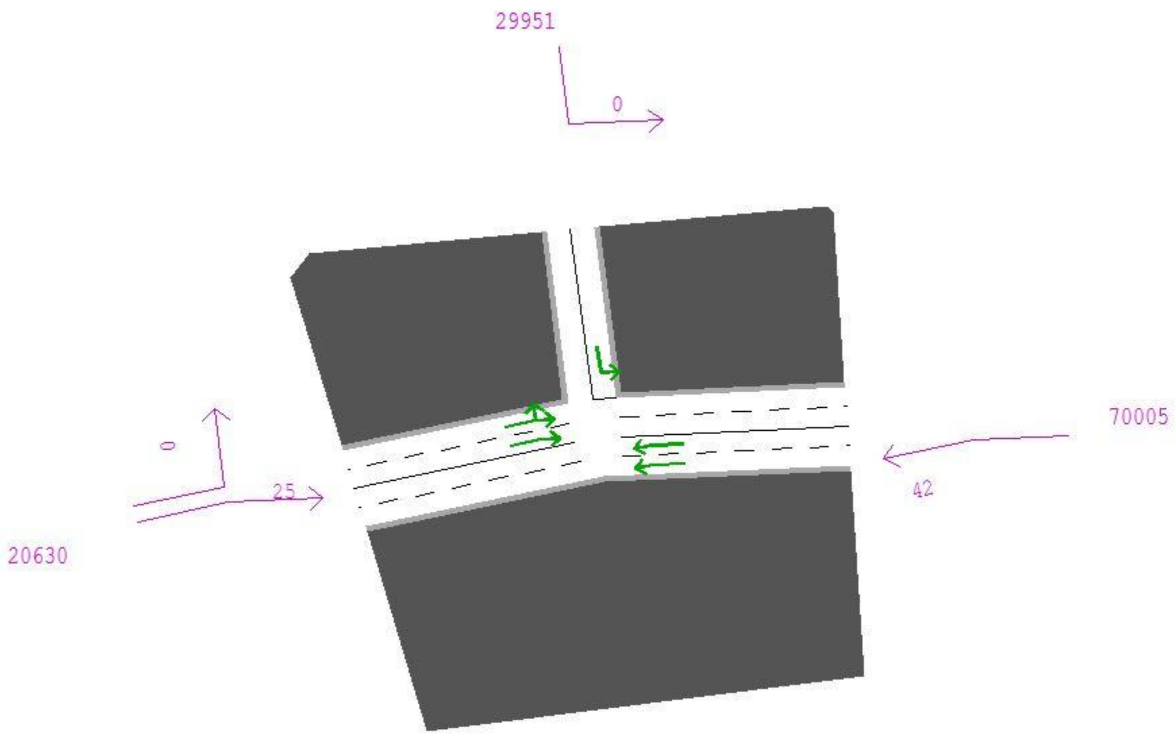


Figure H.11: A4303 / Shackleton Way Junction: Delay (seconds)

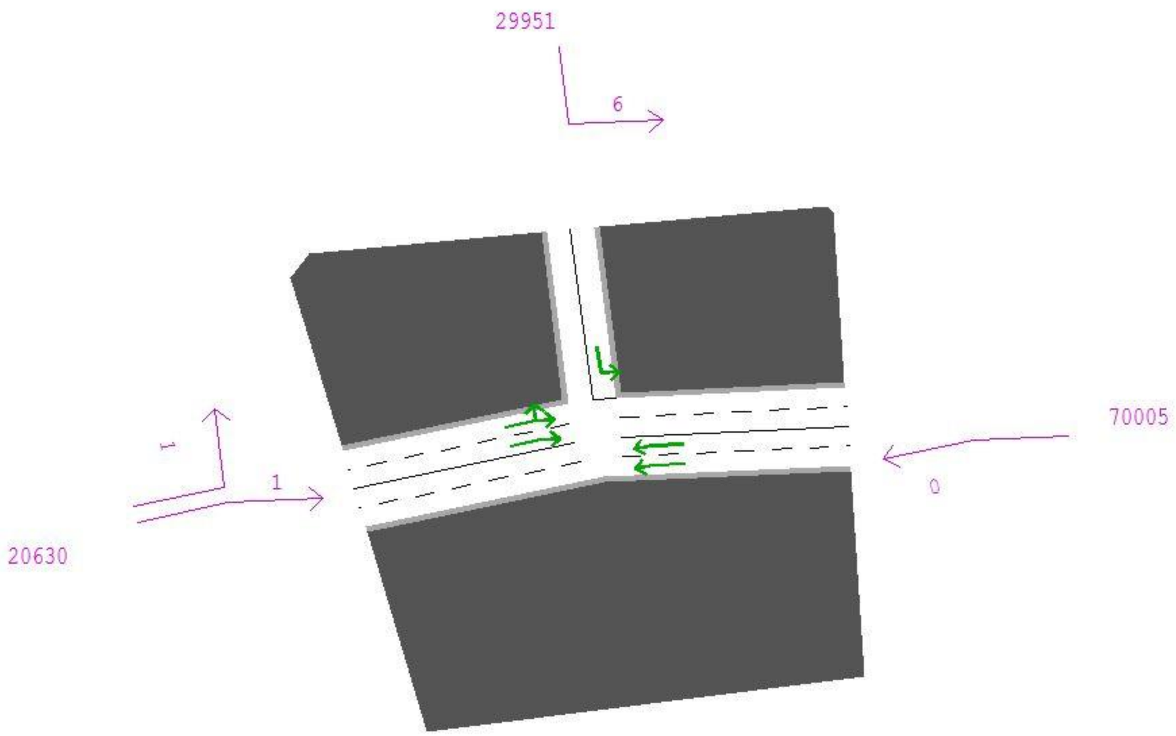


Figure H.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

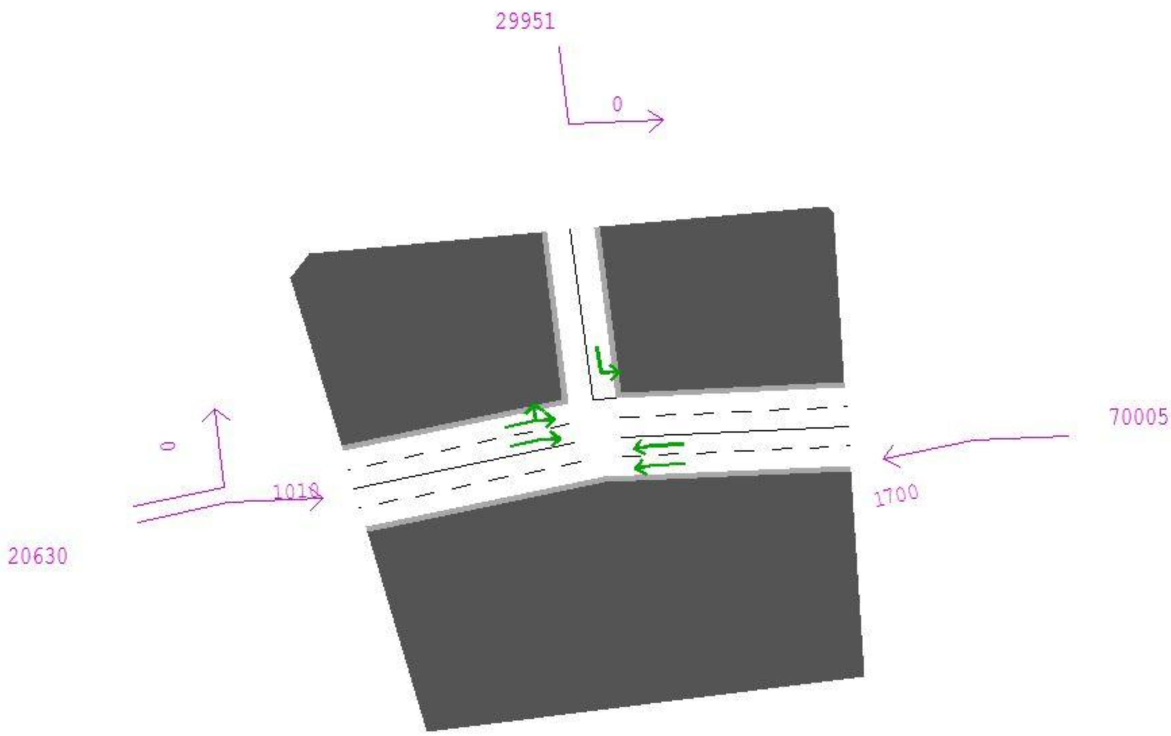


Figure H.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

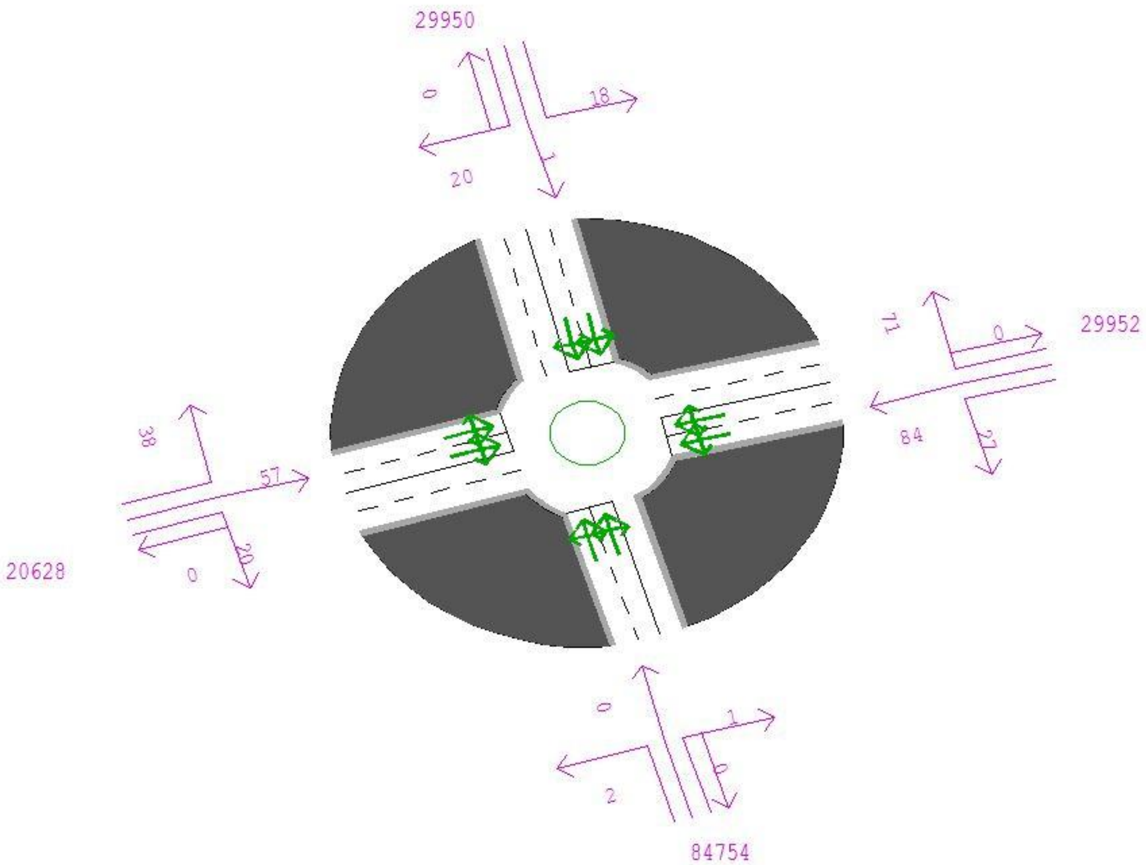


Figure H.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

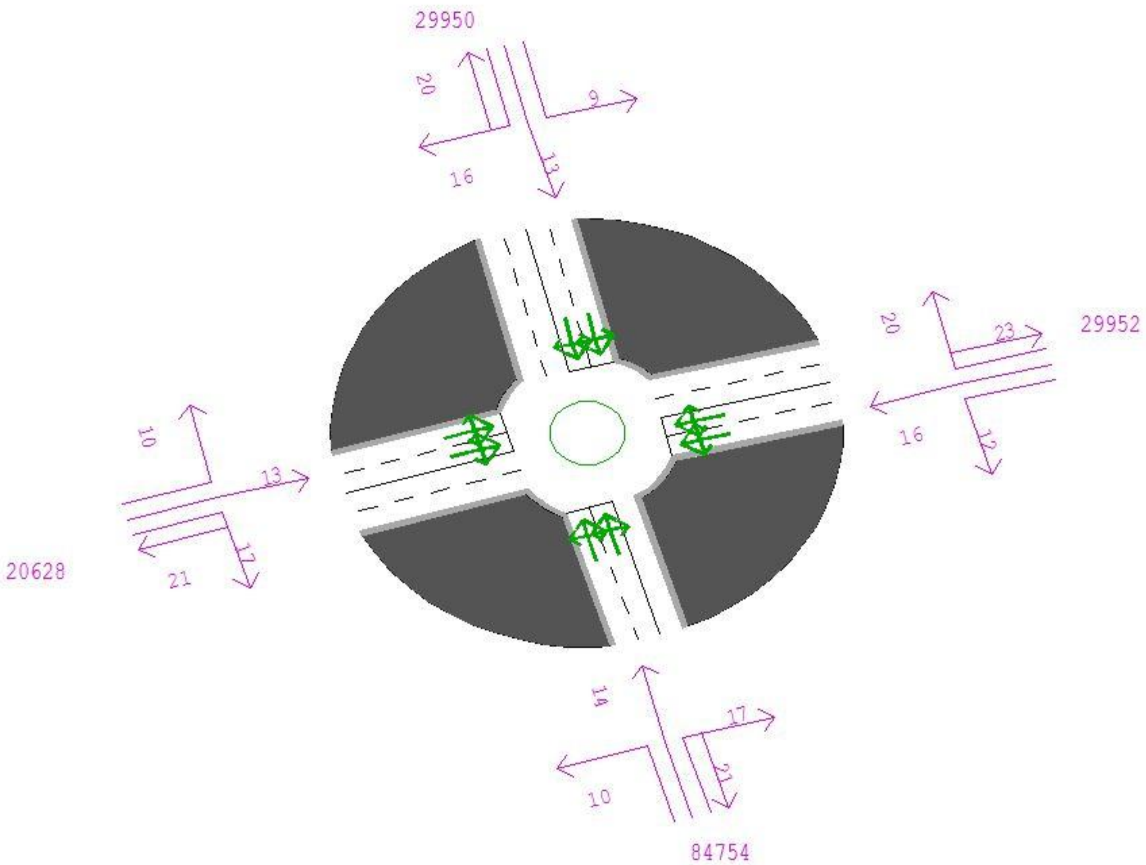


Figure H.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

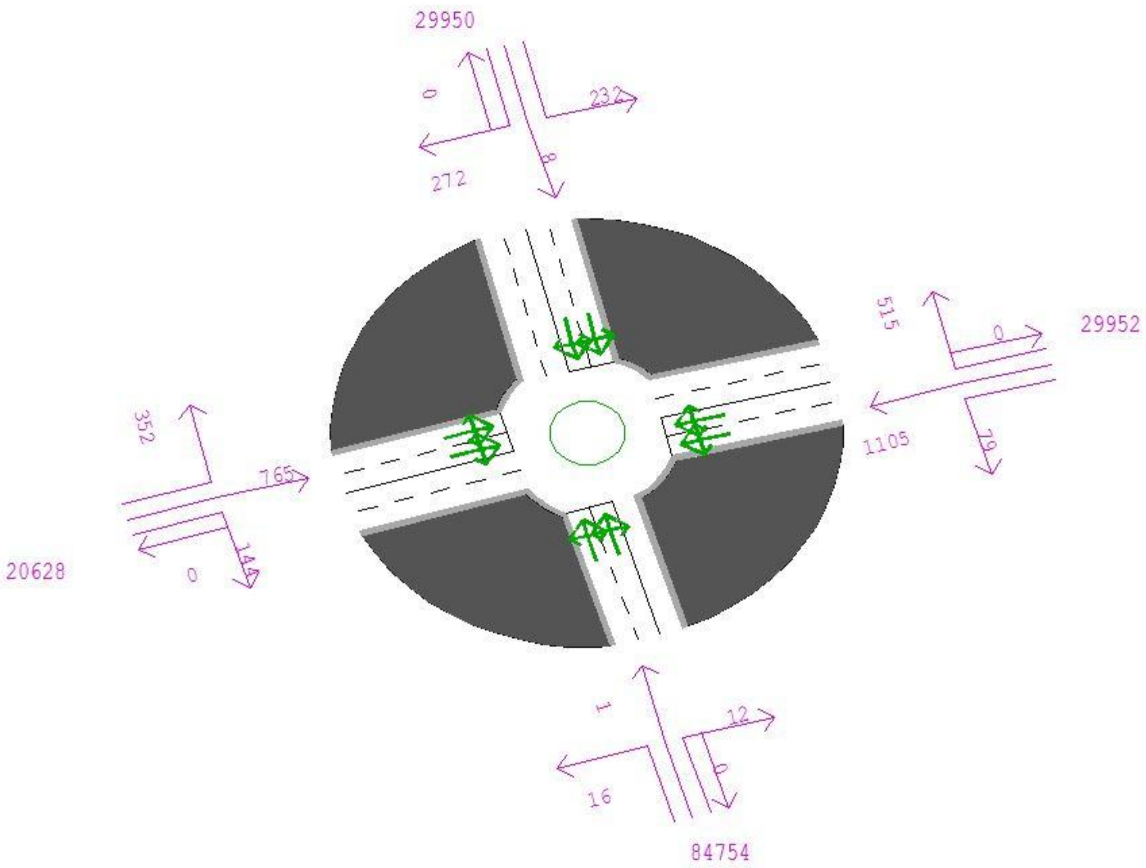


Figure H.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

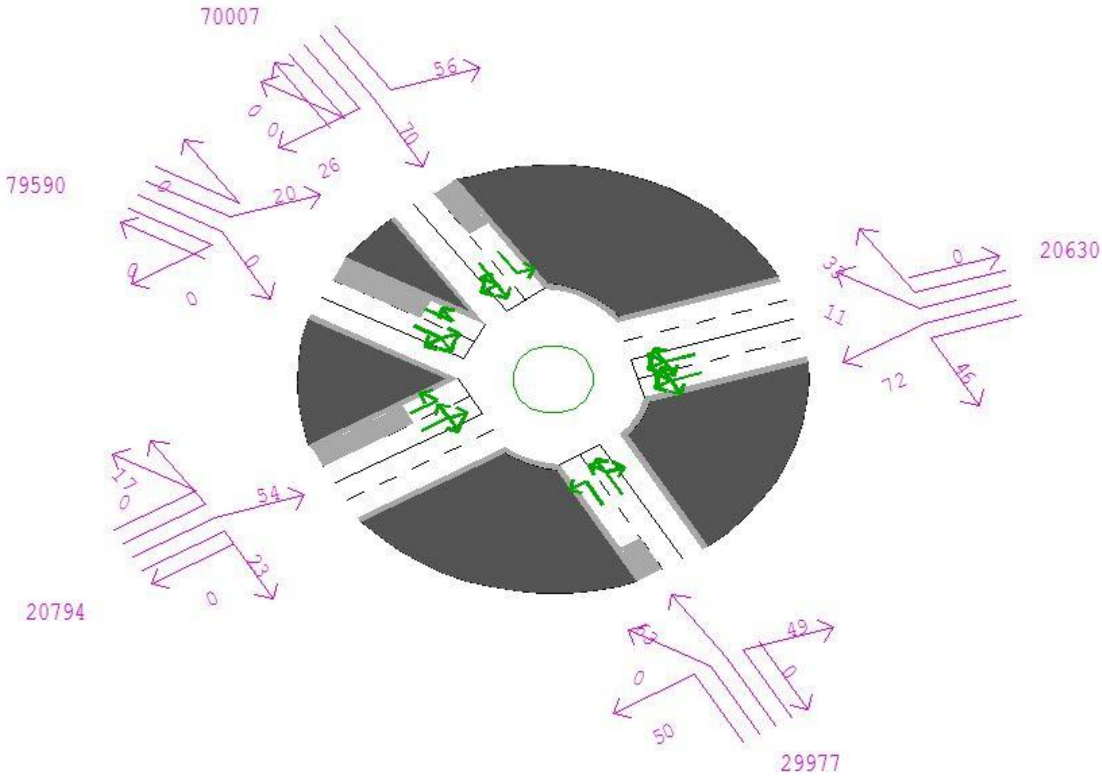


Figure H.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

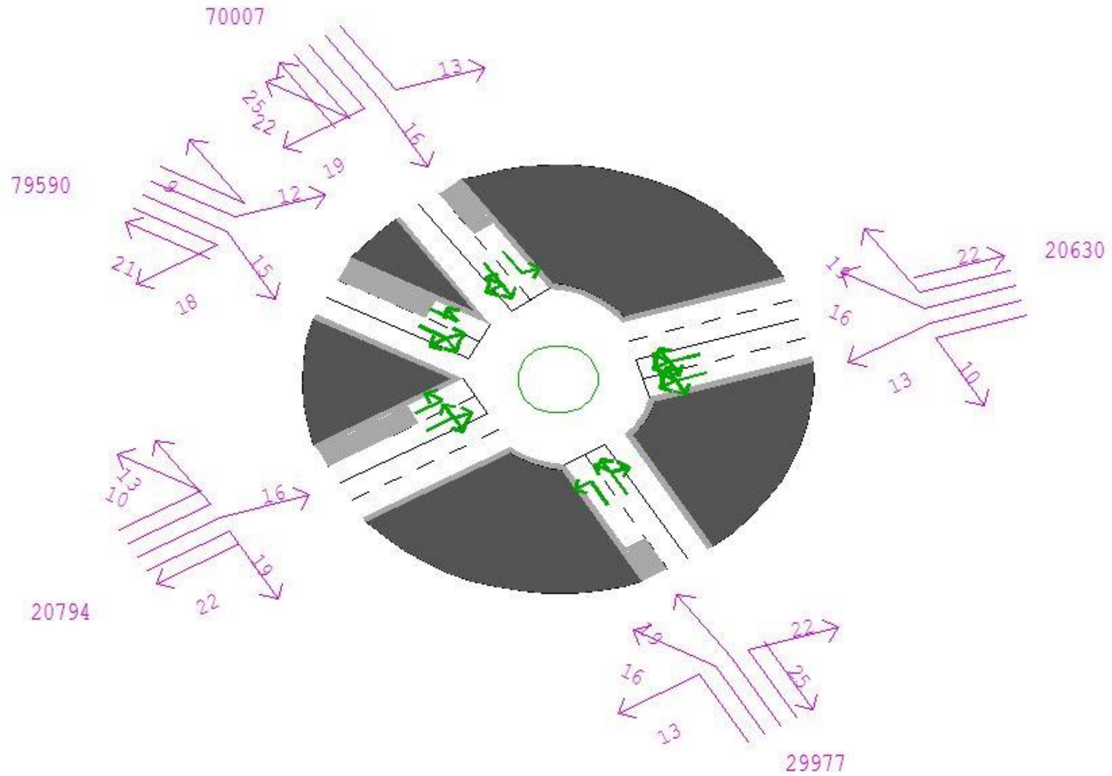


Figure H.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

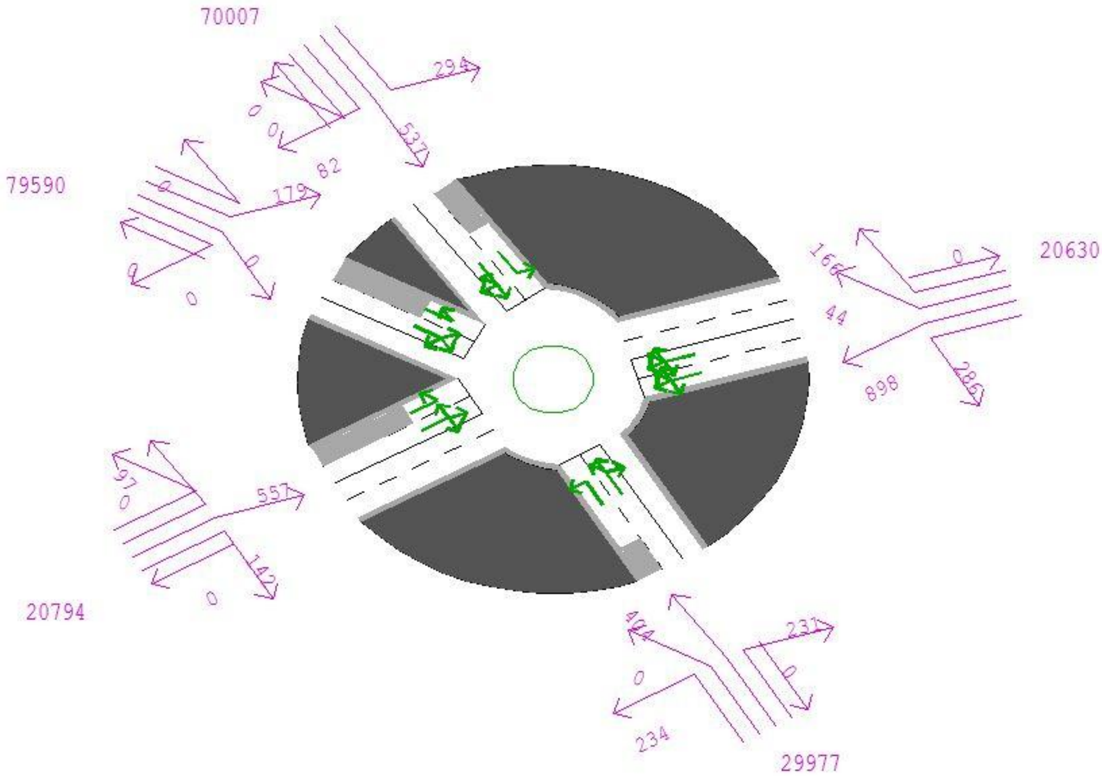


Figure H.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

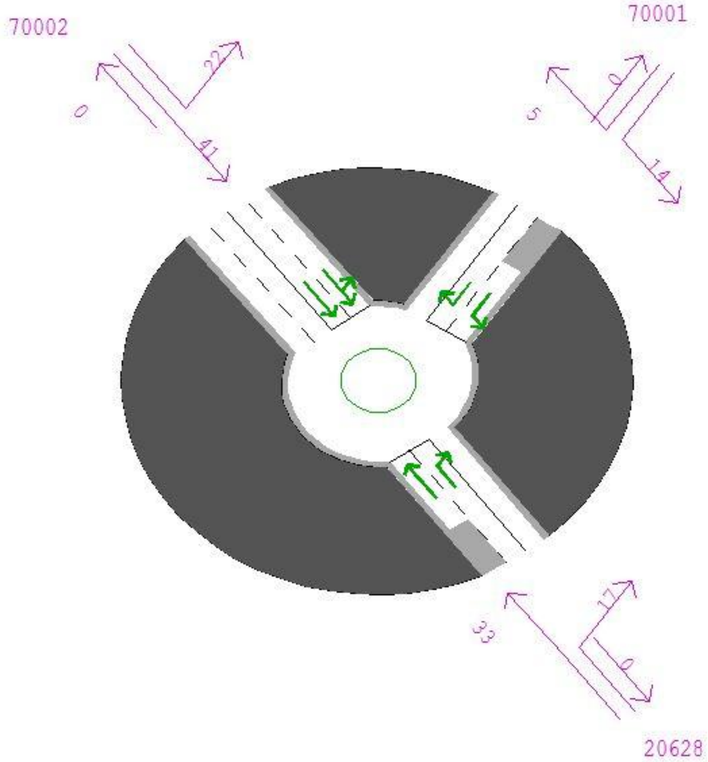


Figure H.20: A5 / Mere Lane Junction: Delay (seconds)

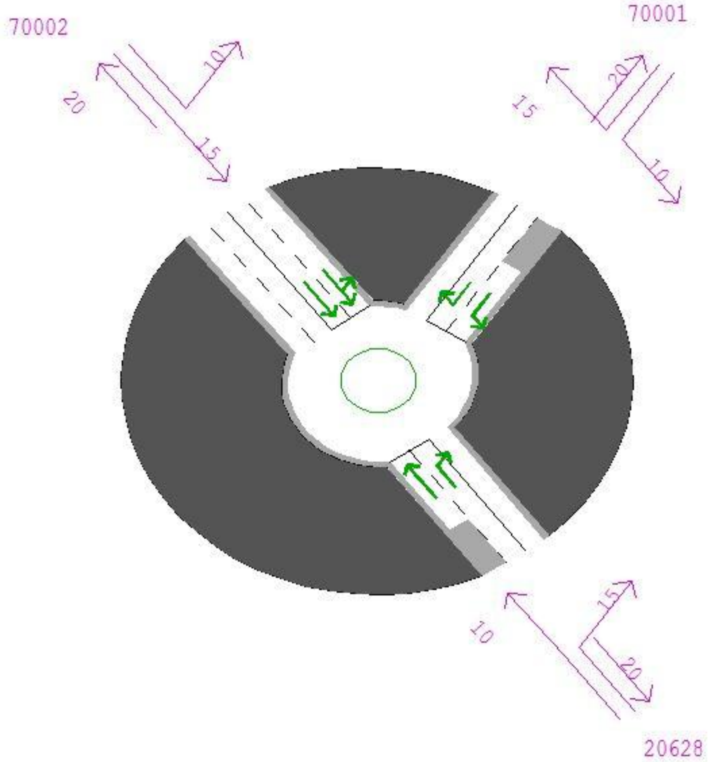


Figure H.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

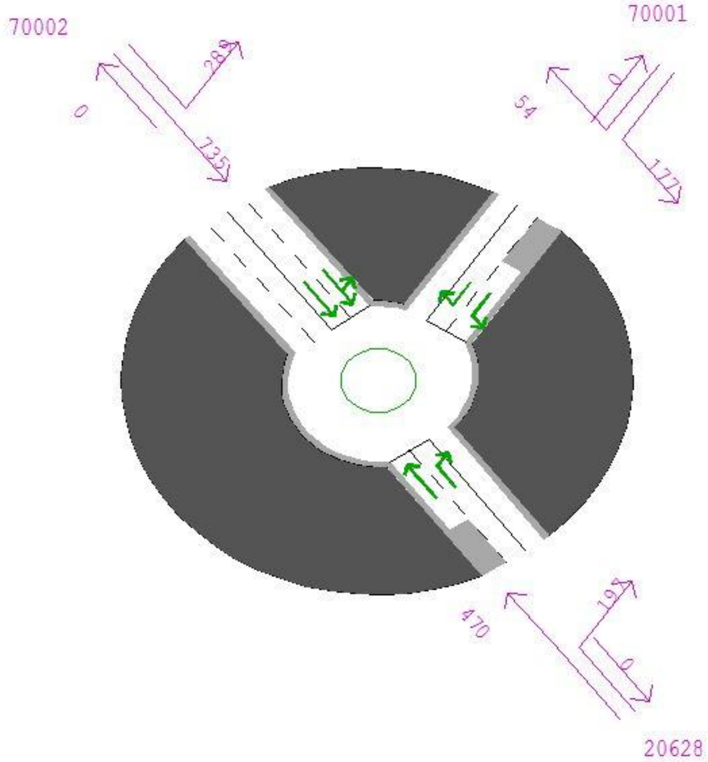


Figure H.22: M69 Junction 1: Volume-to-Capacity Ratio

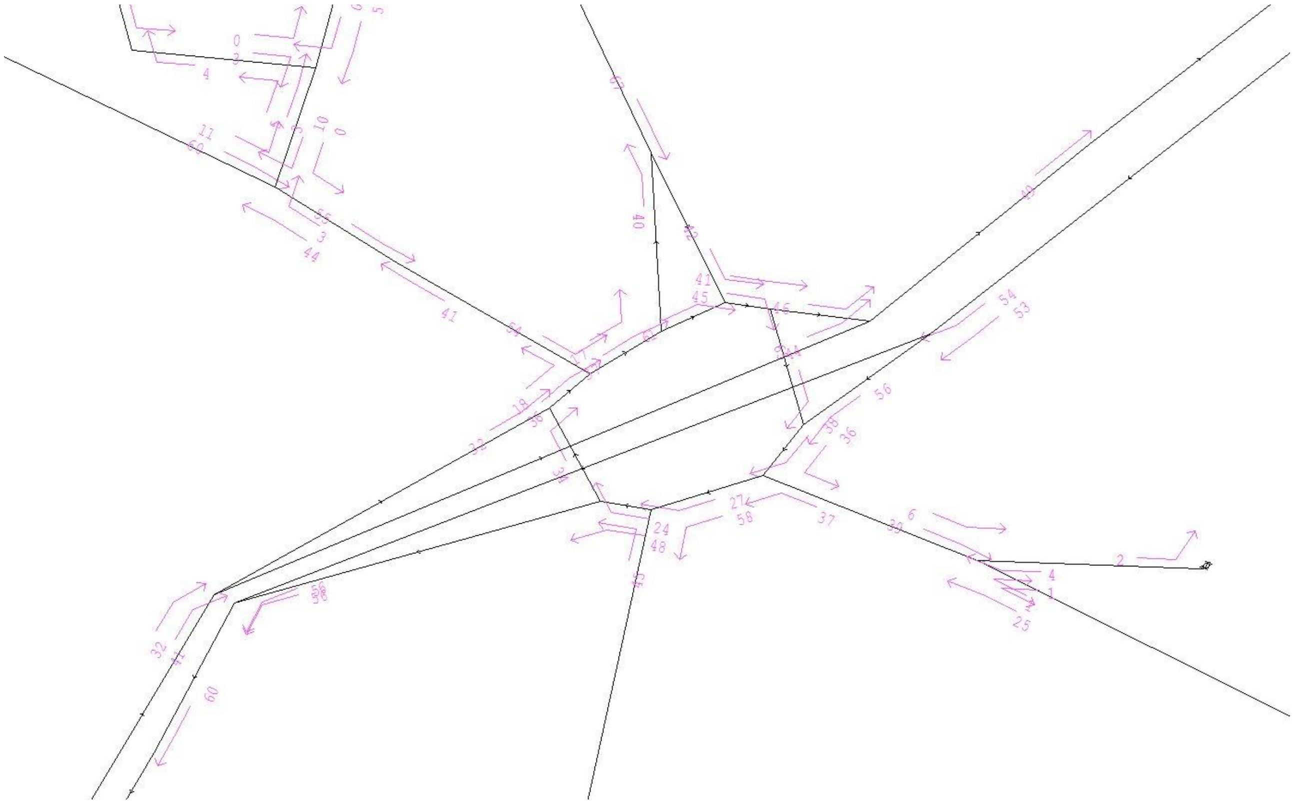


Figure H.23: M69 Junction 1: Delay (seconds)

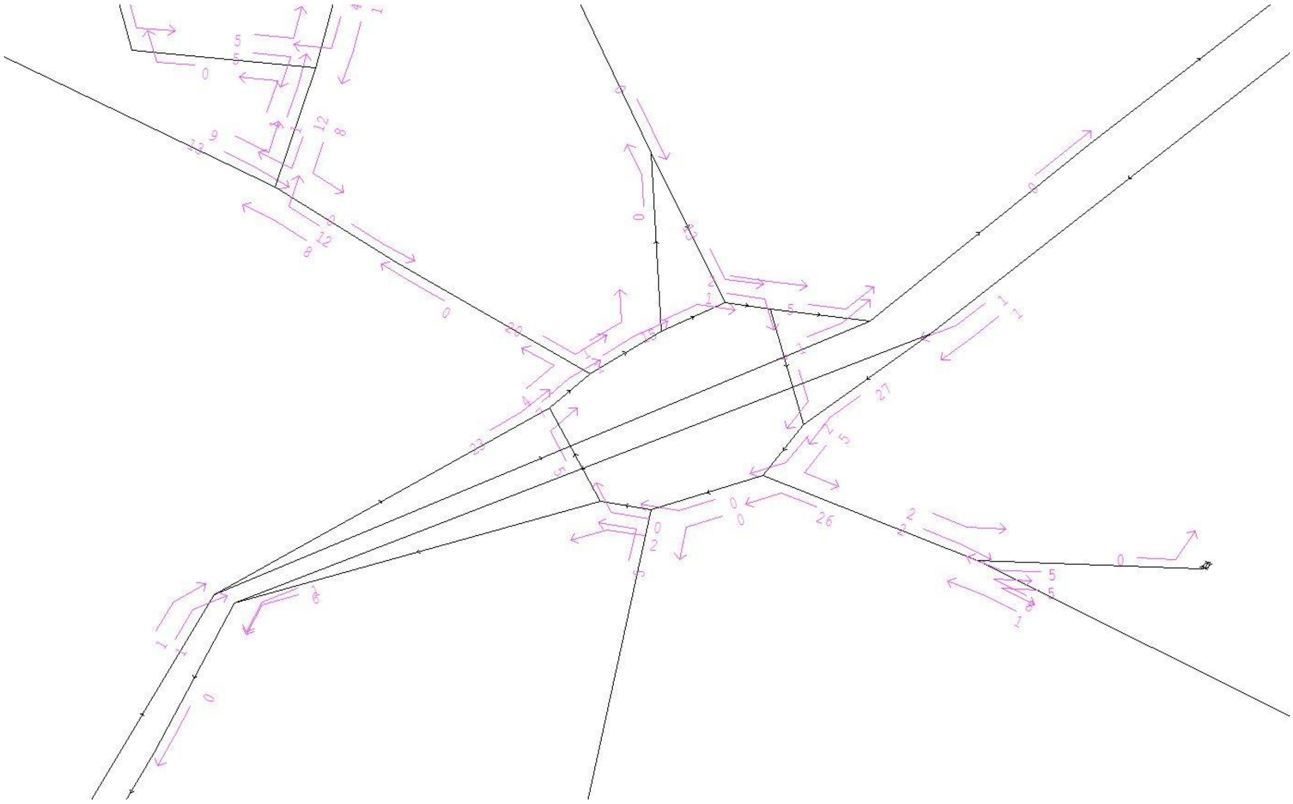


Figure H.24: M69 Junction 1: Arrive Flow (PCUs)

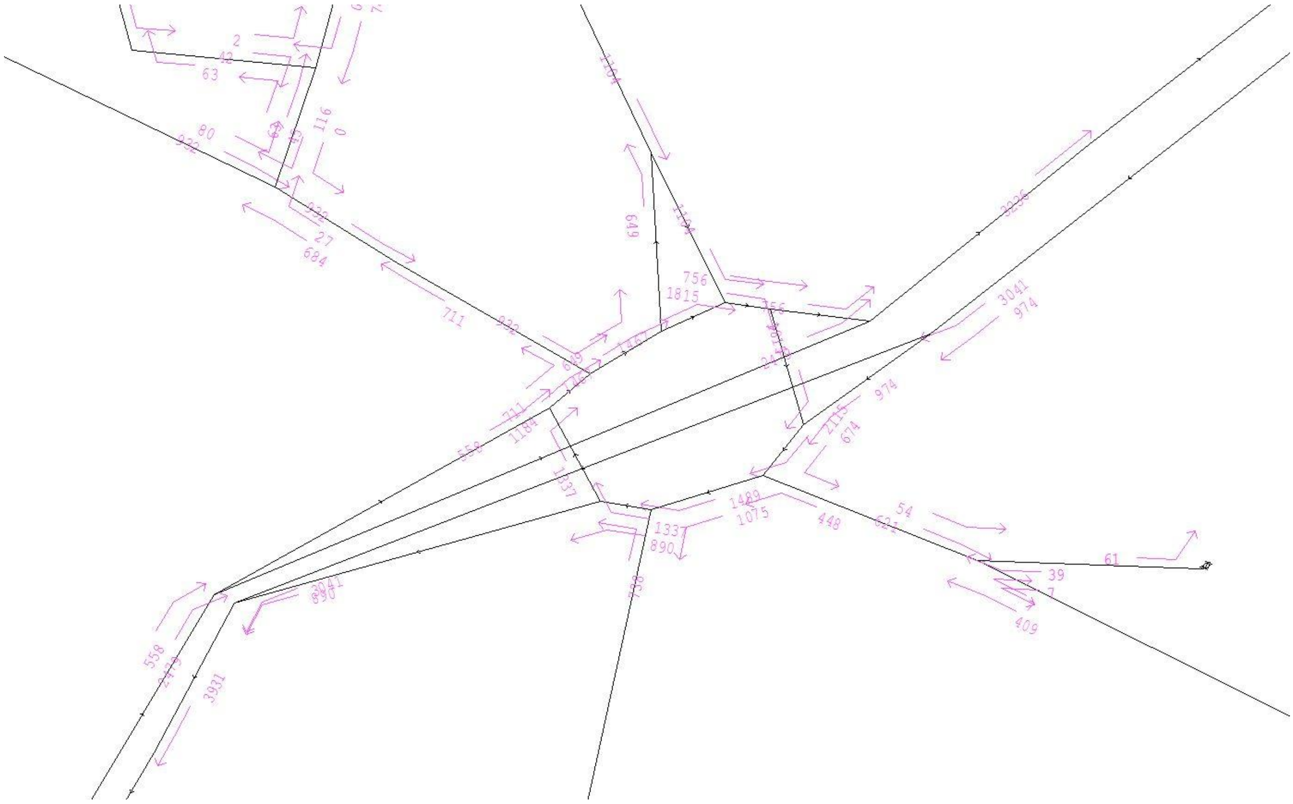


Figure H.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

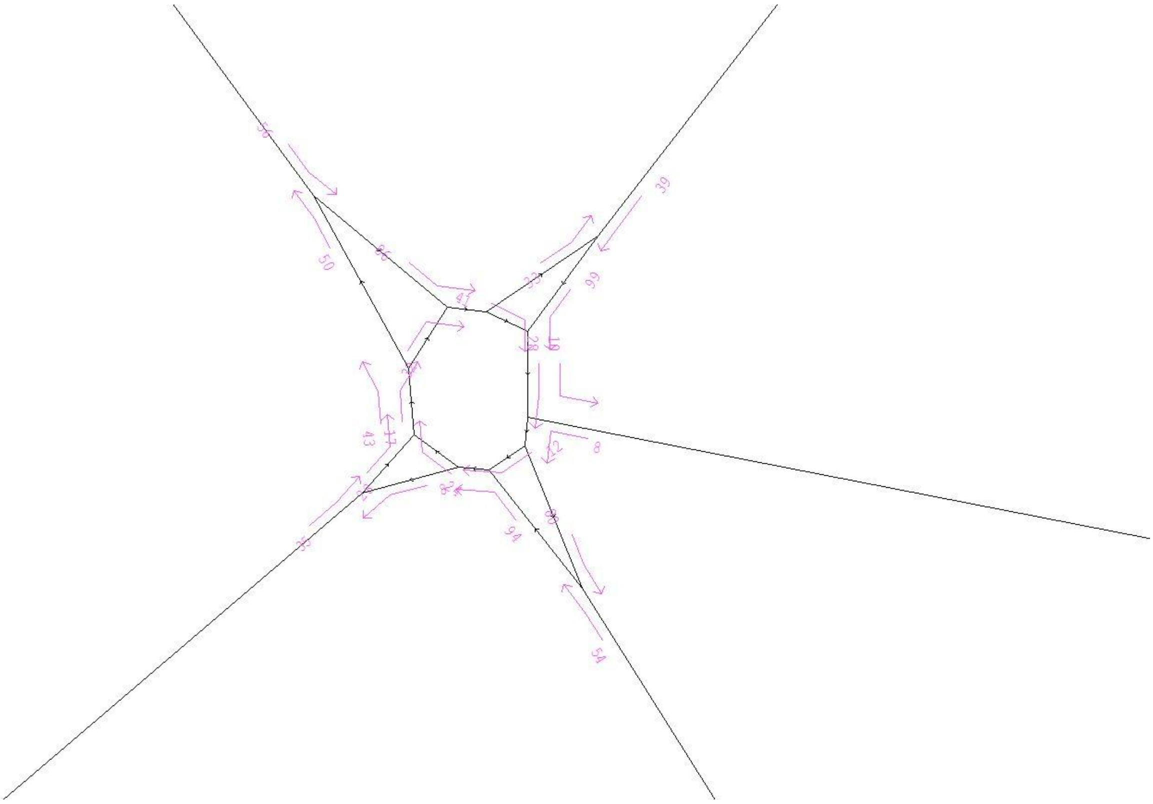


Figure H.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

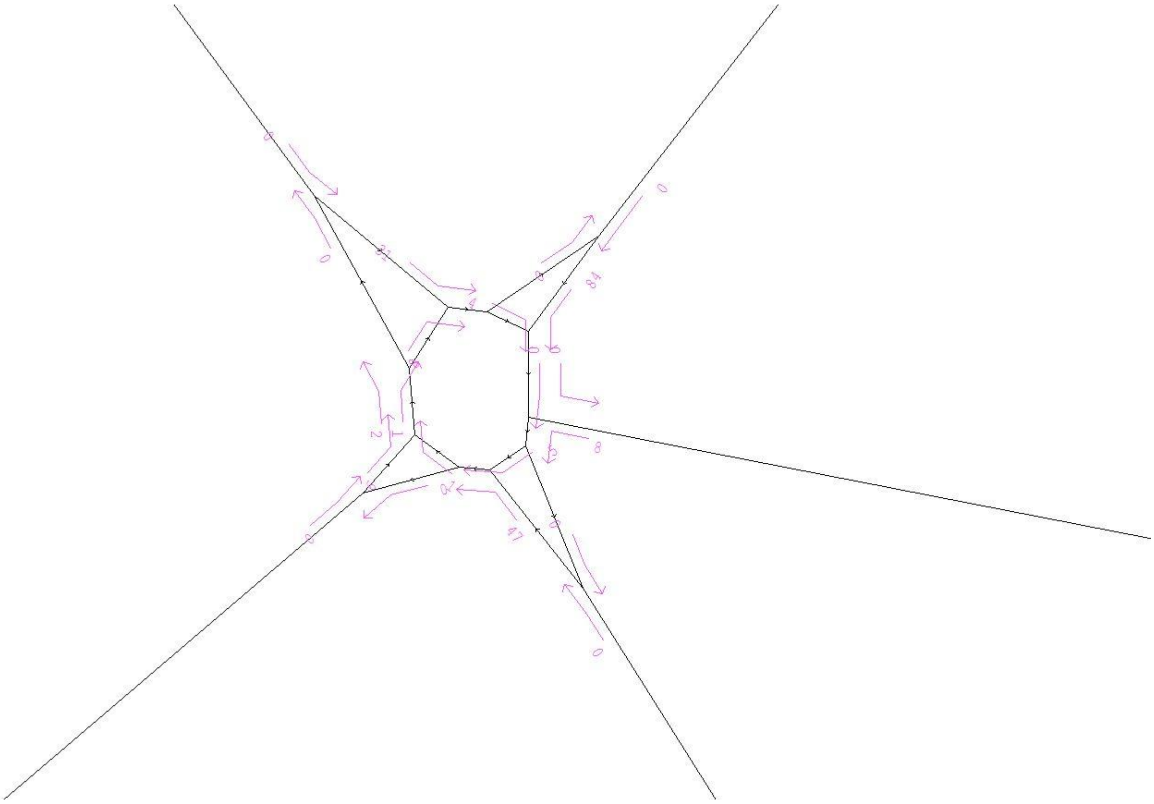


Figure H.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

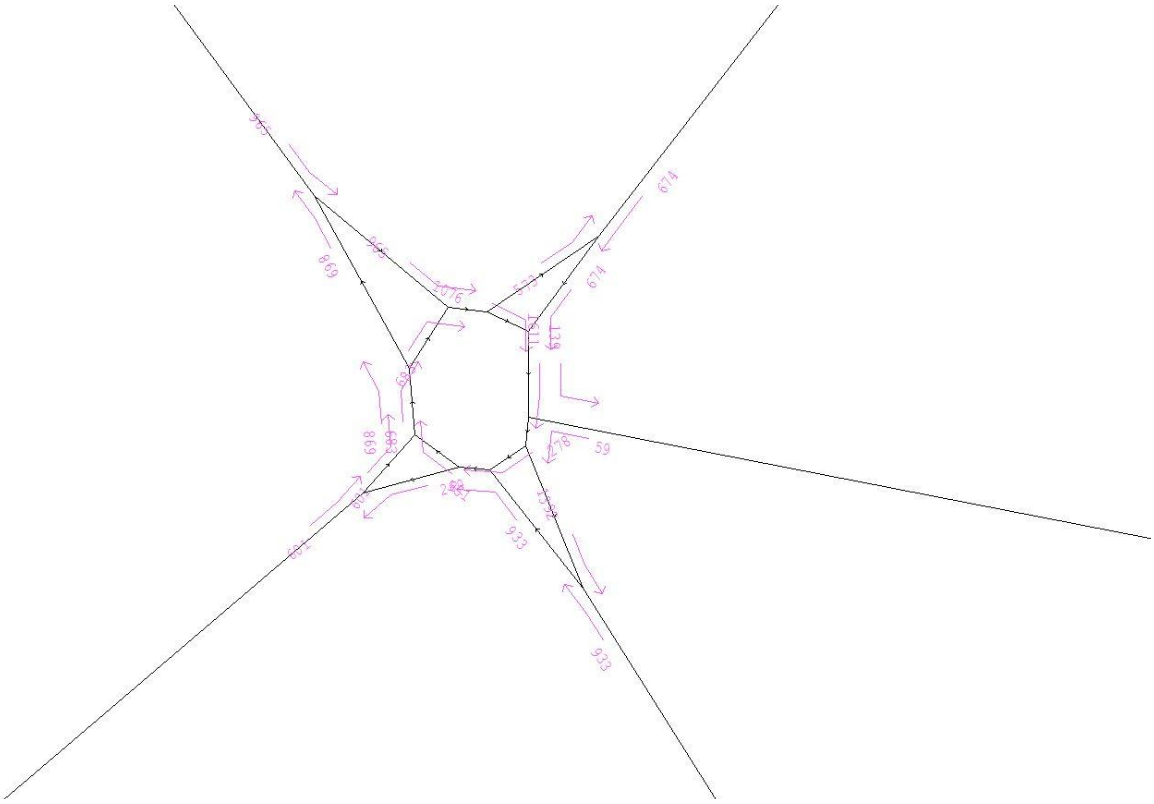


Figure H.28: M6 Junction 1: Volume-to-Capacity Ratio

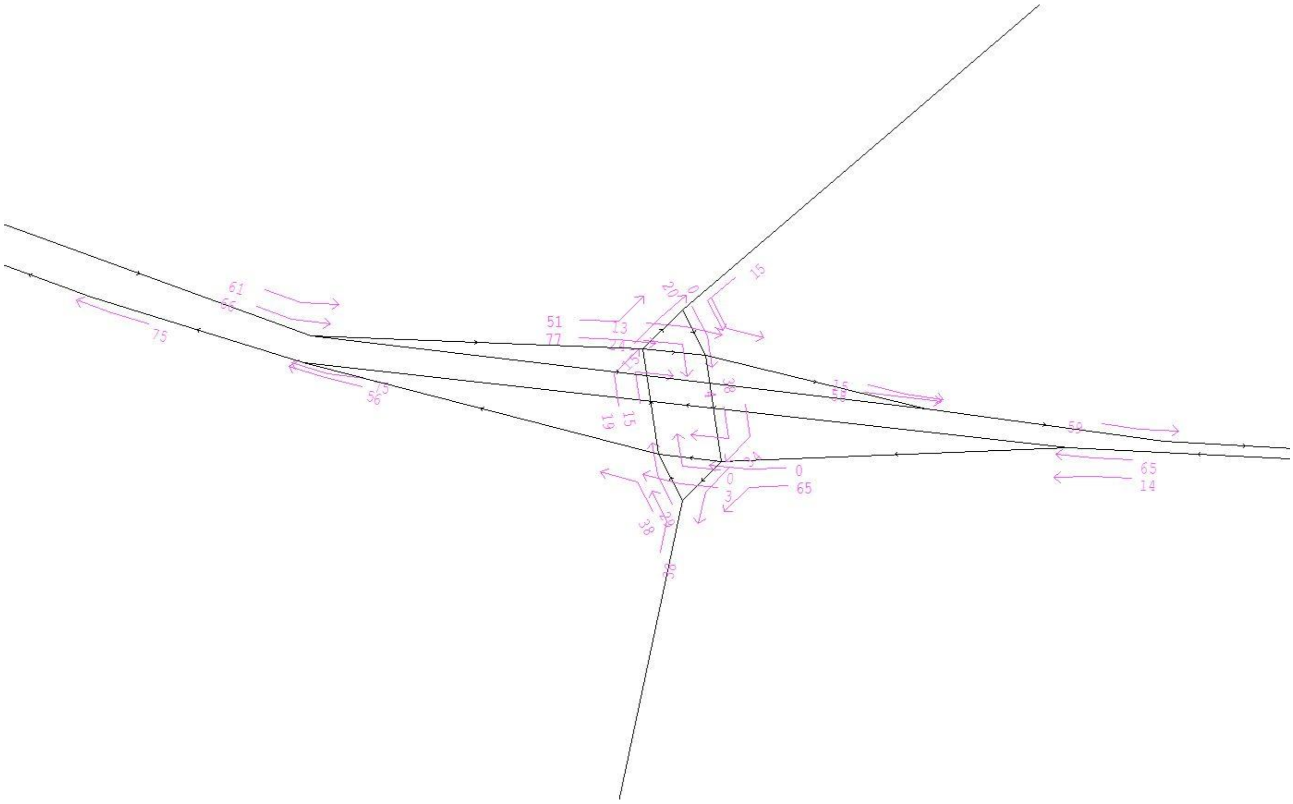


Figure H.29: M6 Junction 1: Delay (seconds)

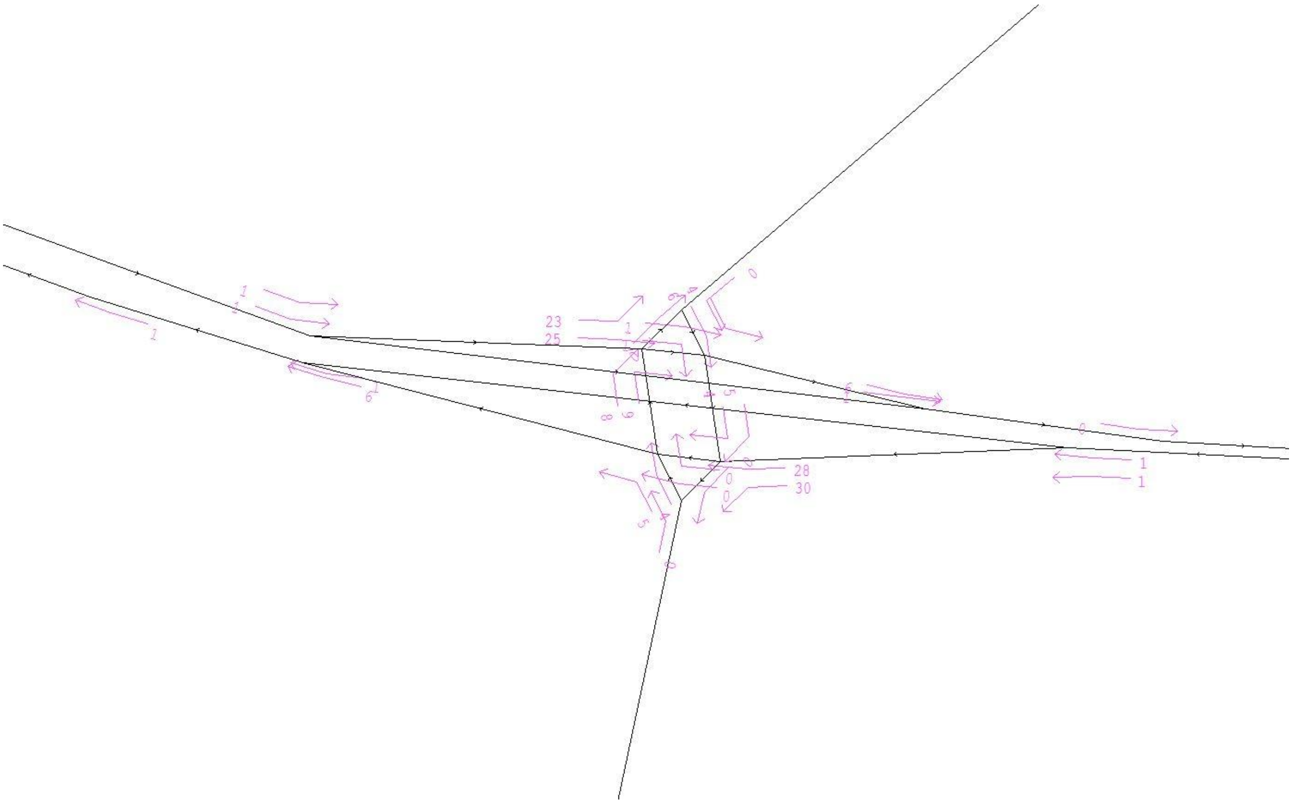


Figure H.30: M6 Junction 1: Arrive Flow (PCUs)

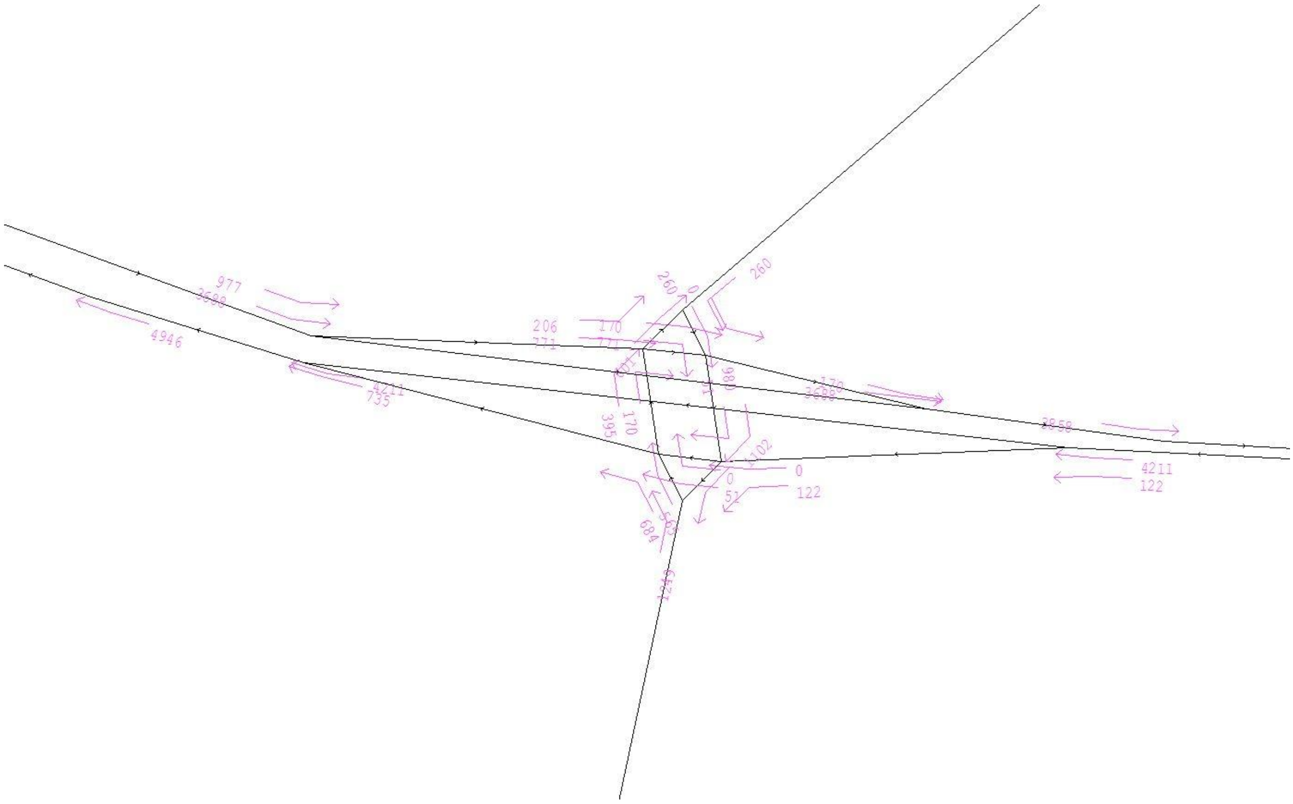


Figure H.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

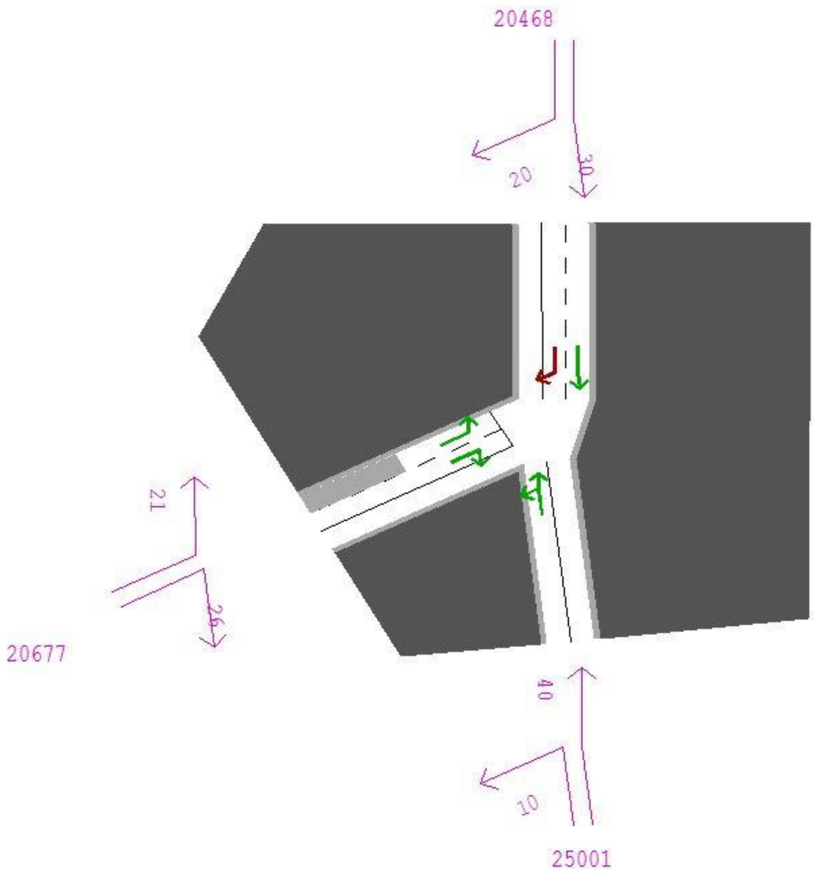


Figure H.32: A426 / Bill Crane Way Junction: Delay (seconds)

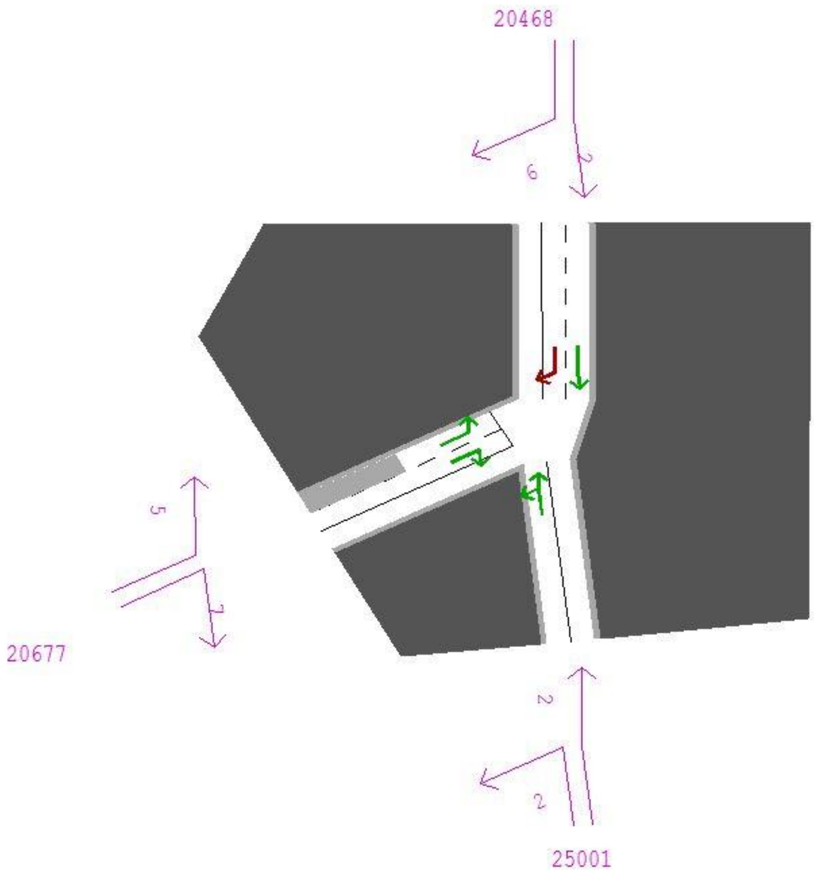


Figure H.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

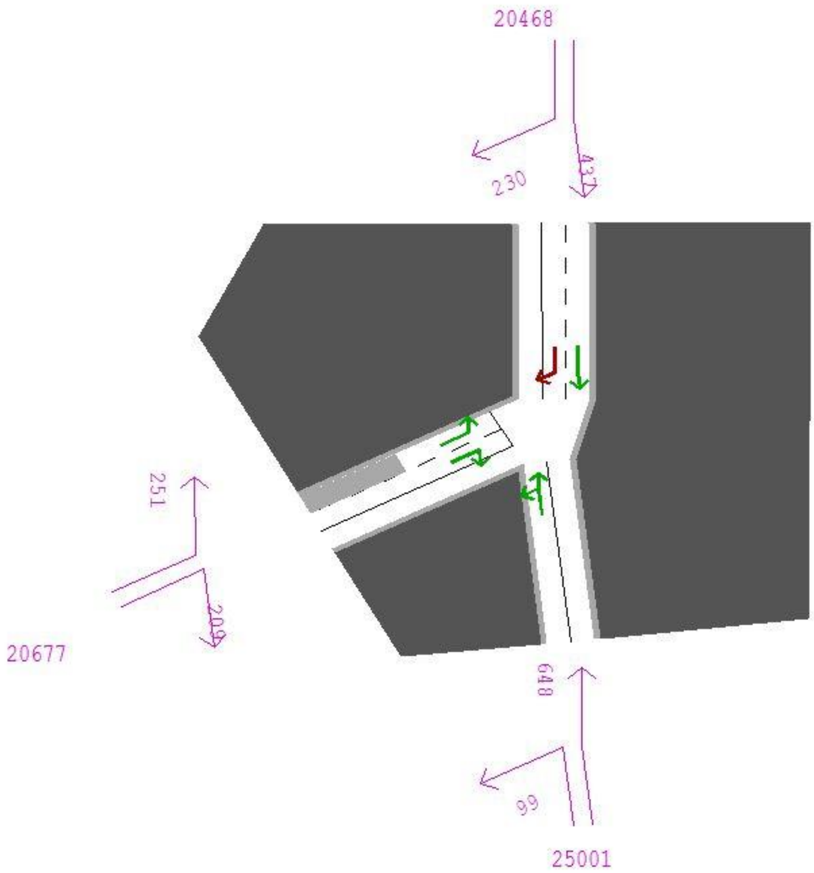


Figure H.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

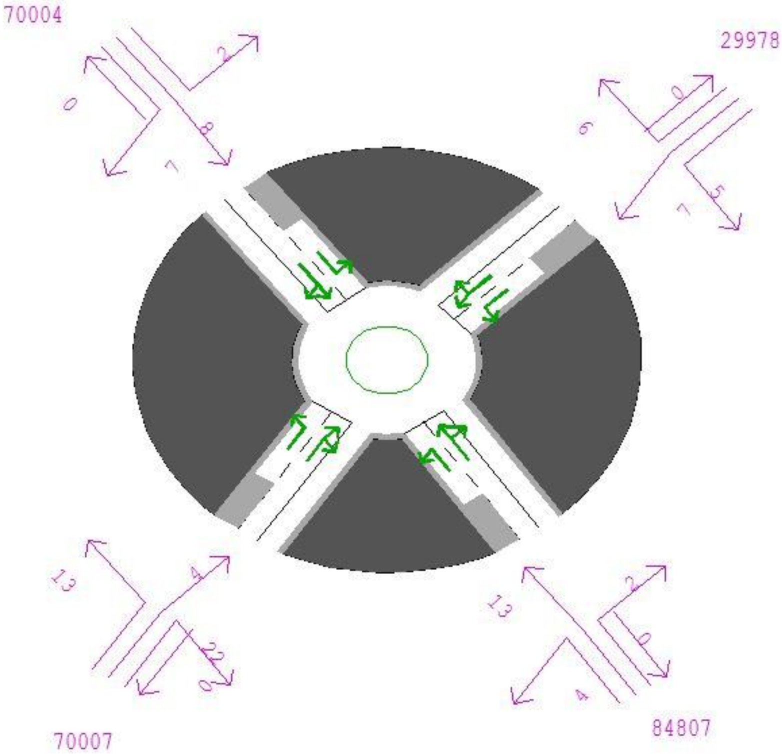


Figure H.35: Mere Lane / Magna Park Access: Delay (seconds)

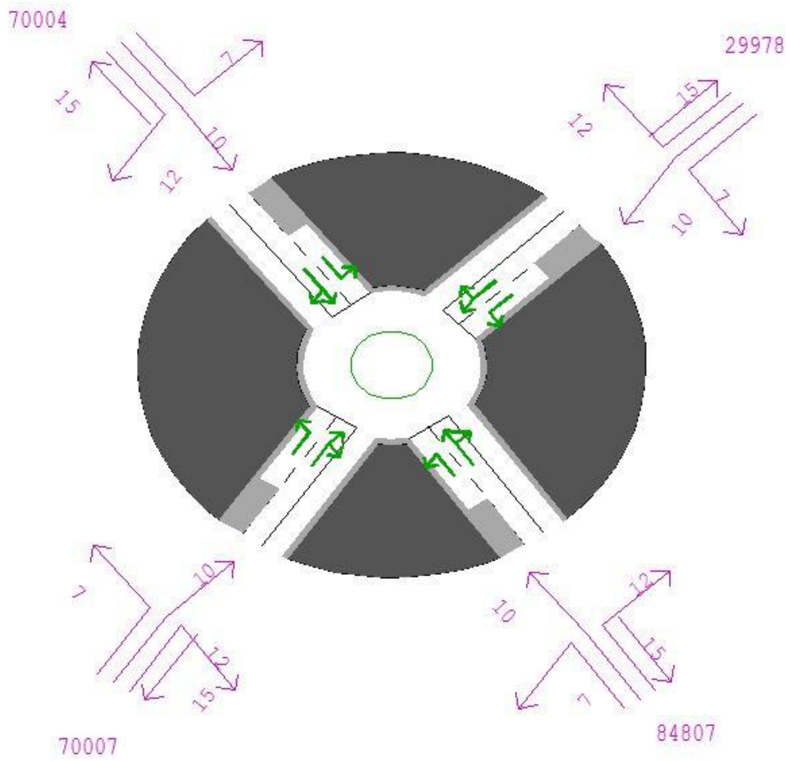


Figure H.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

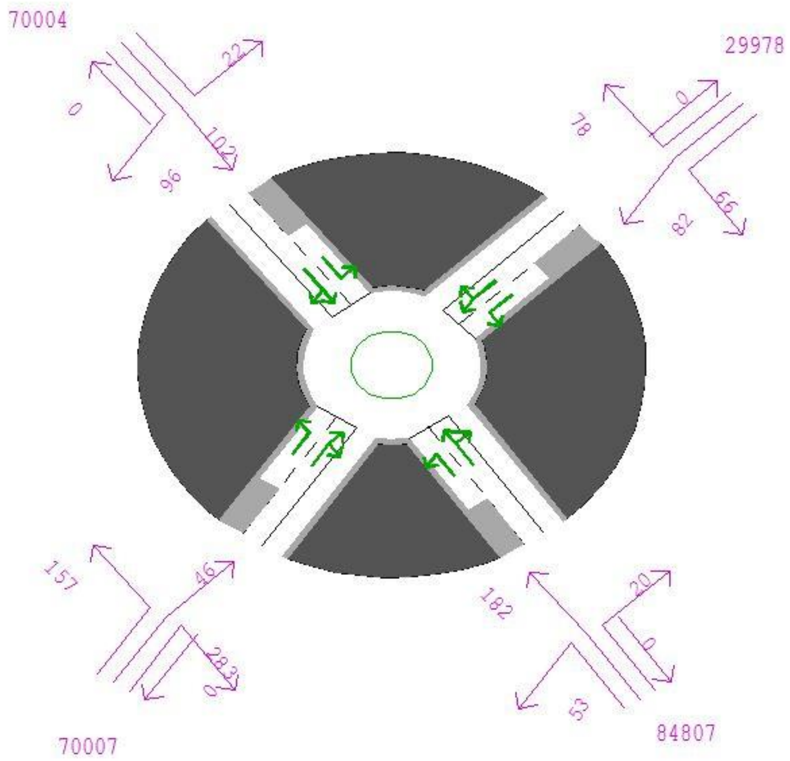


Figure H.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

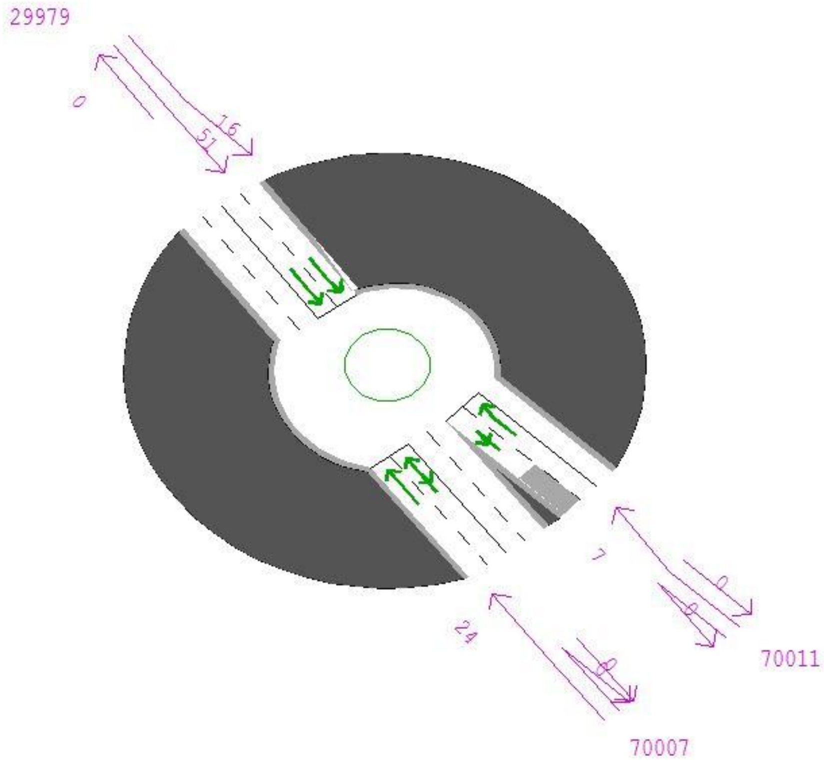


Figure H.38: A5 / Magna Park Access: Delay (seconds)

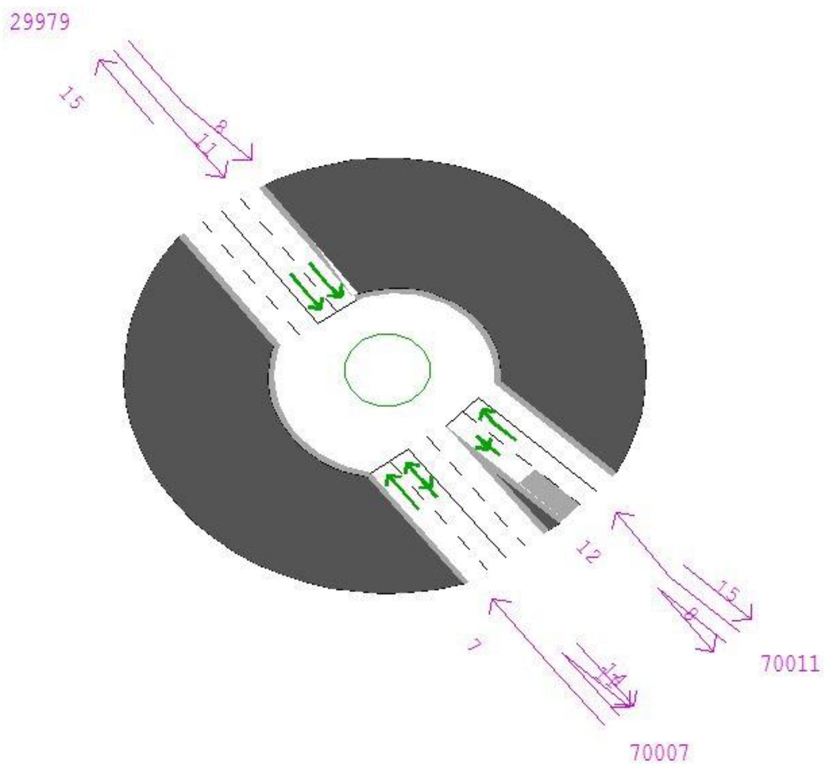
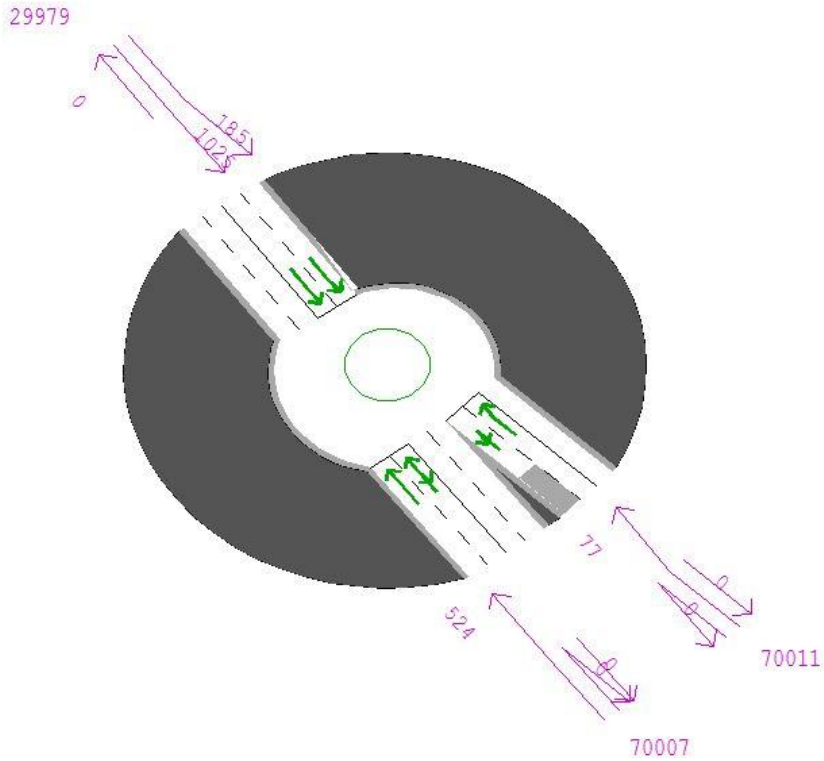


Figure H.39: A5 / Magna Park Access: Arrive Flow (PCUs)



MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note – Appendices I and J

Final Report

Appendix I 2026 'with development', including the proposed mitigation measures, PM Peak Junction Node Data

I.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure I.1: M1 Junction 20: Volume-to-Capacity Ratio

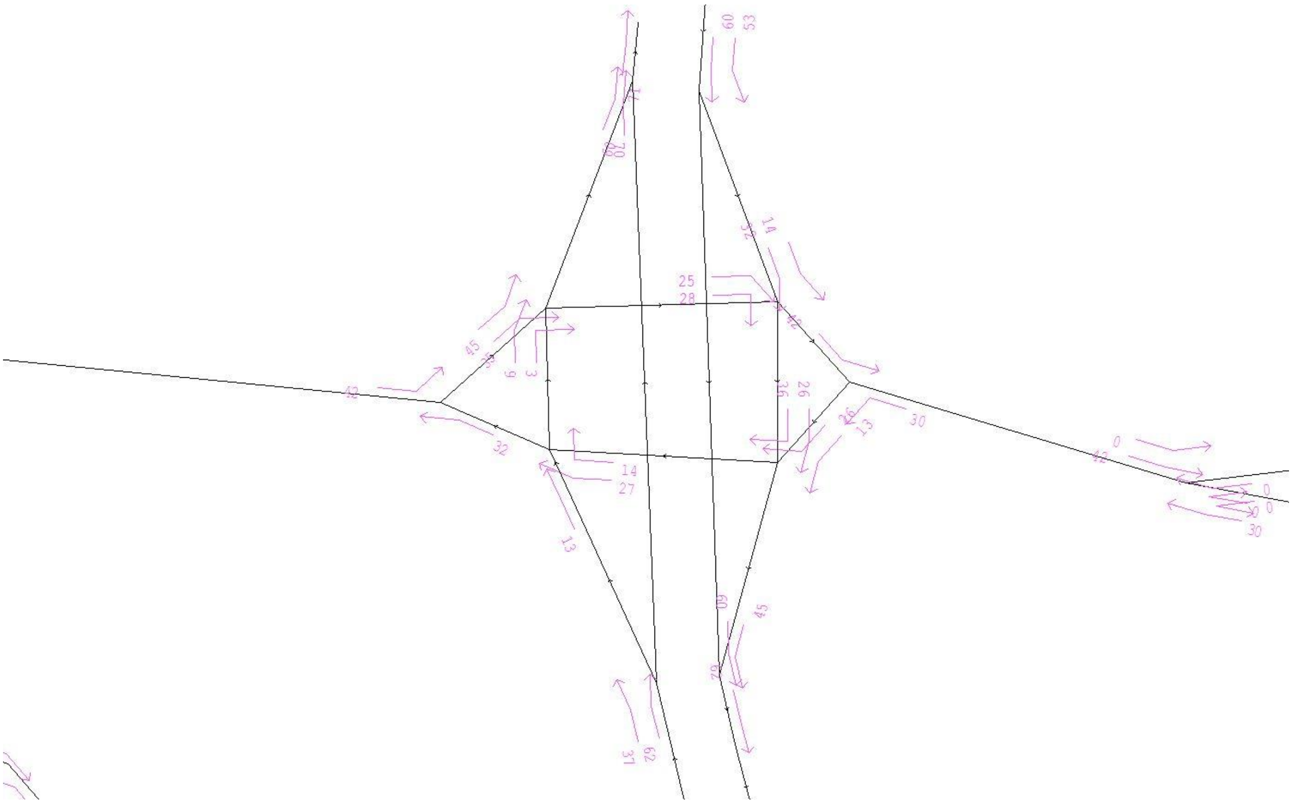


Figure I.2: M1 Junction 20: Delay (seconds)

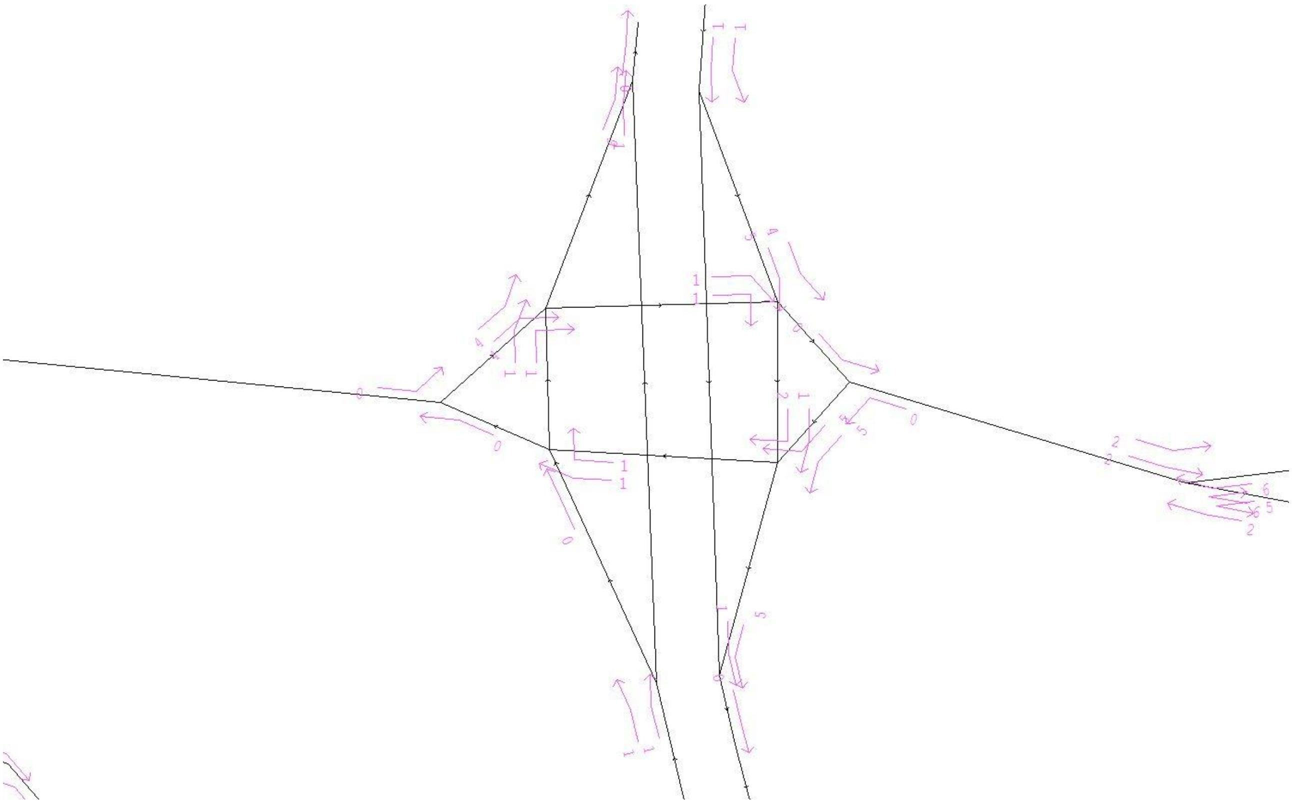


Figure I.3: M1 Junction 20: Arrive Flow (PCUs)

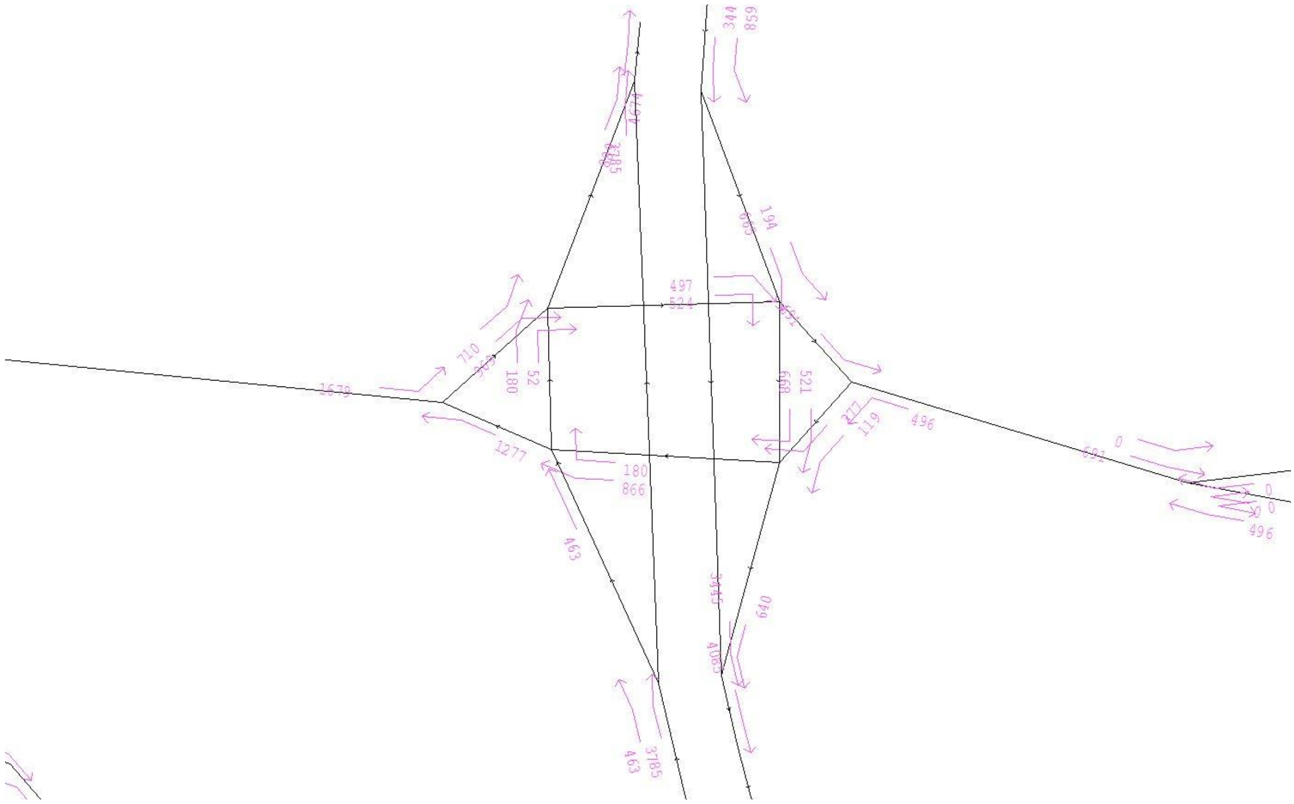


Figure I.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

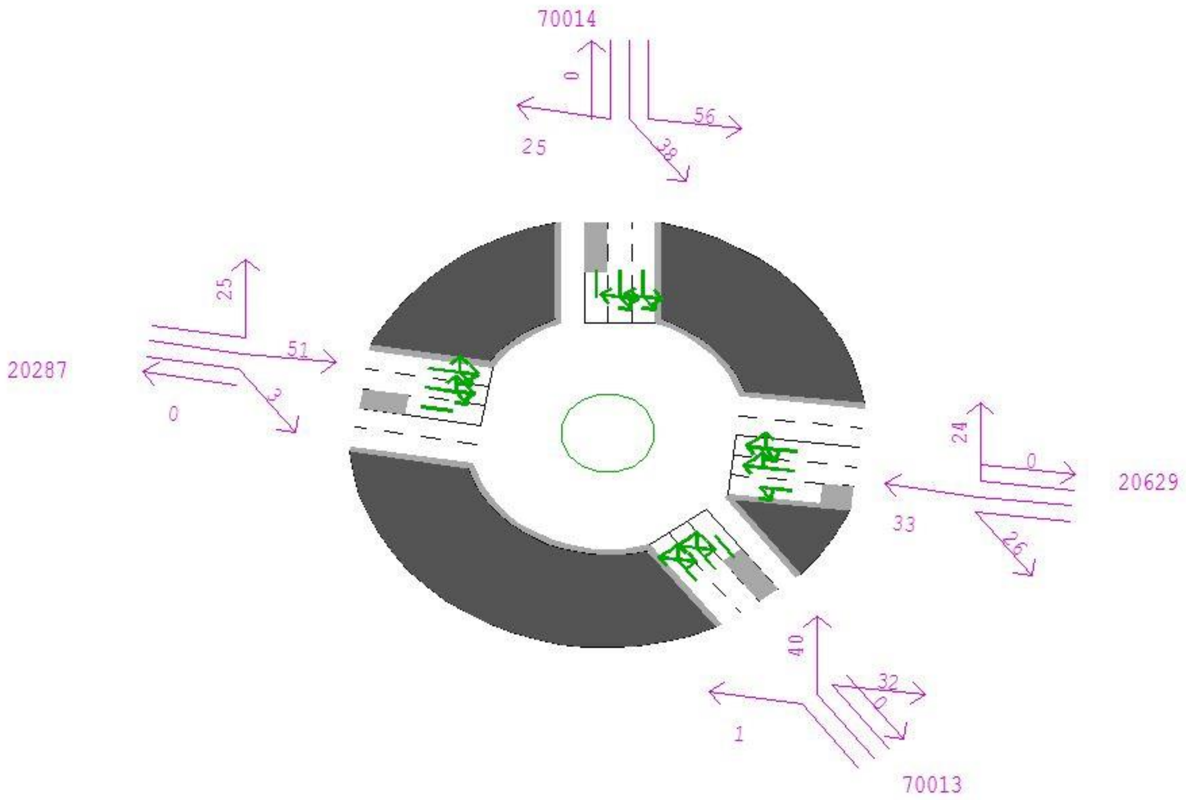


Figure I.5: A4303 / A426 Roundabout: Delay (seconds)

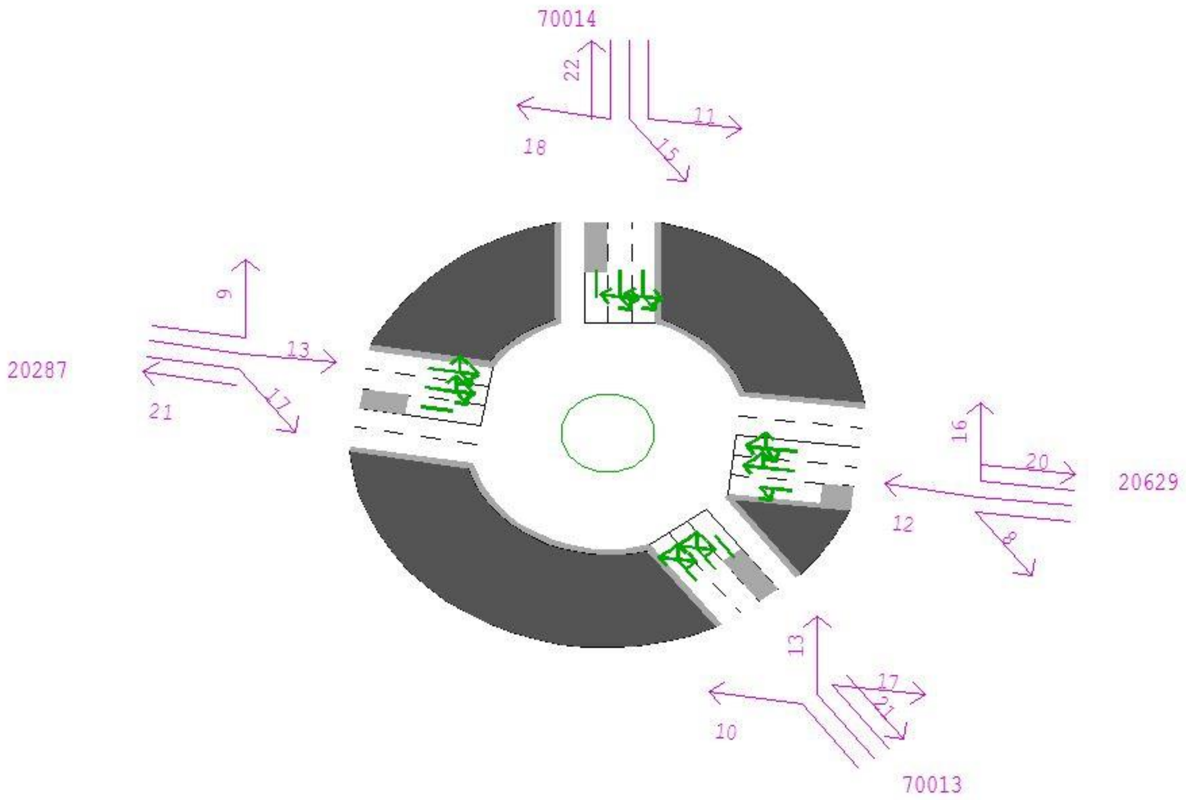


Figure I.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

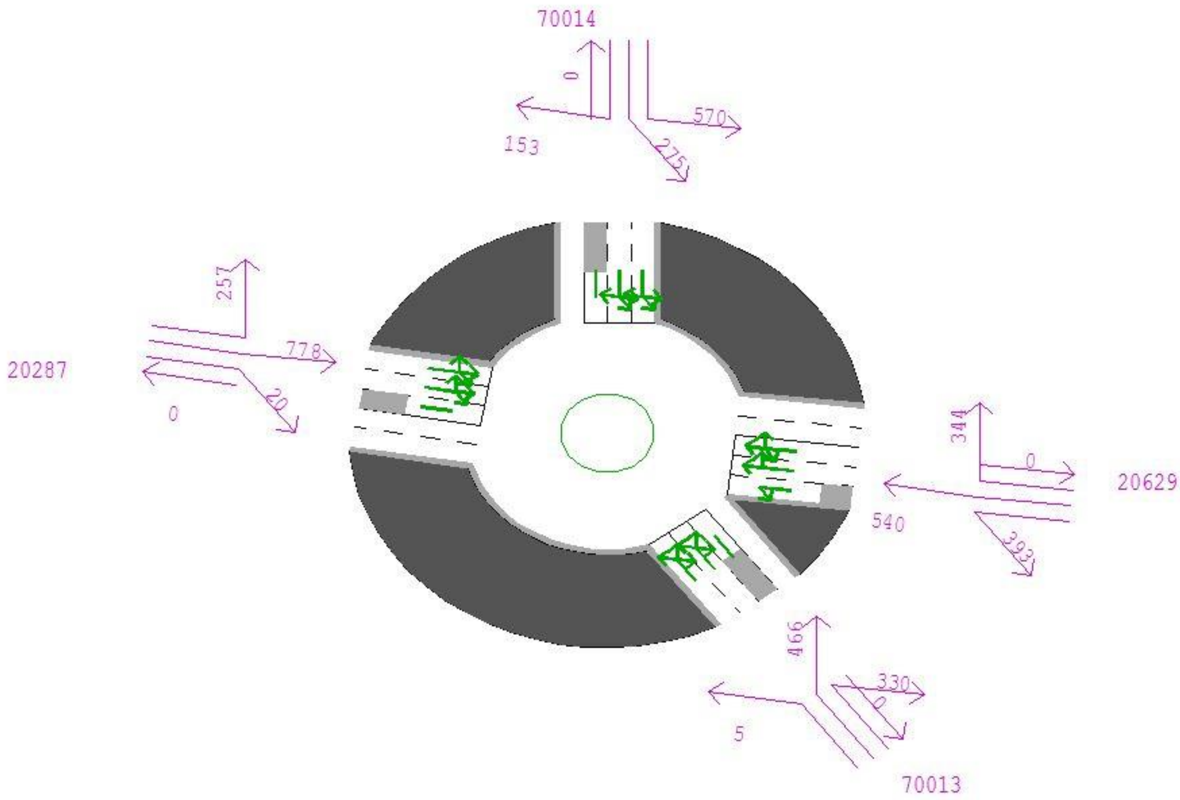


Figure I.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

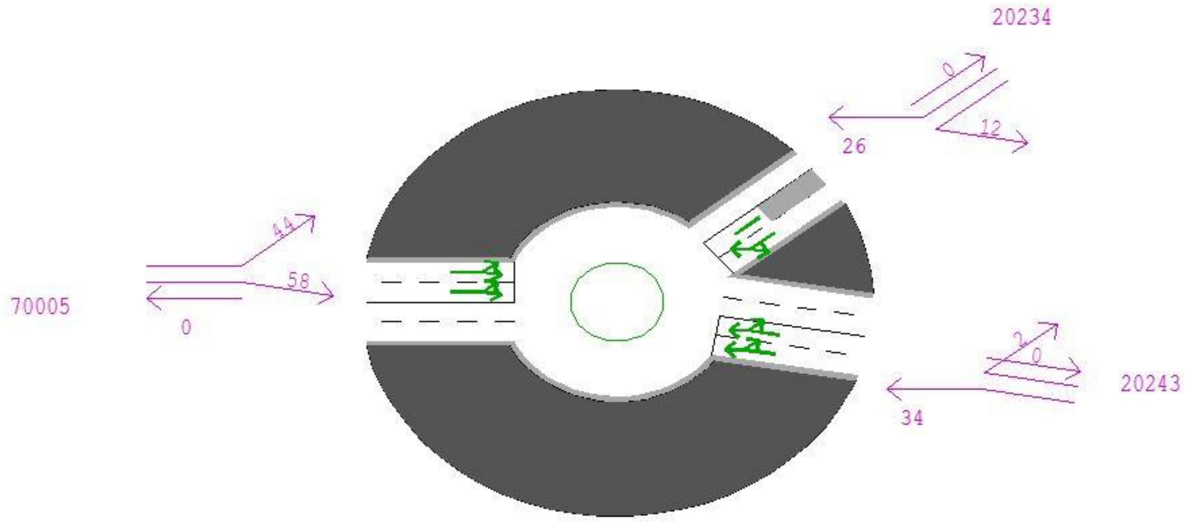


Figure I.8: A4303 / Coventry Road Roundabout: Delay (seconds)

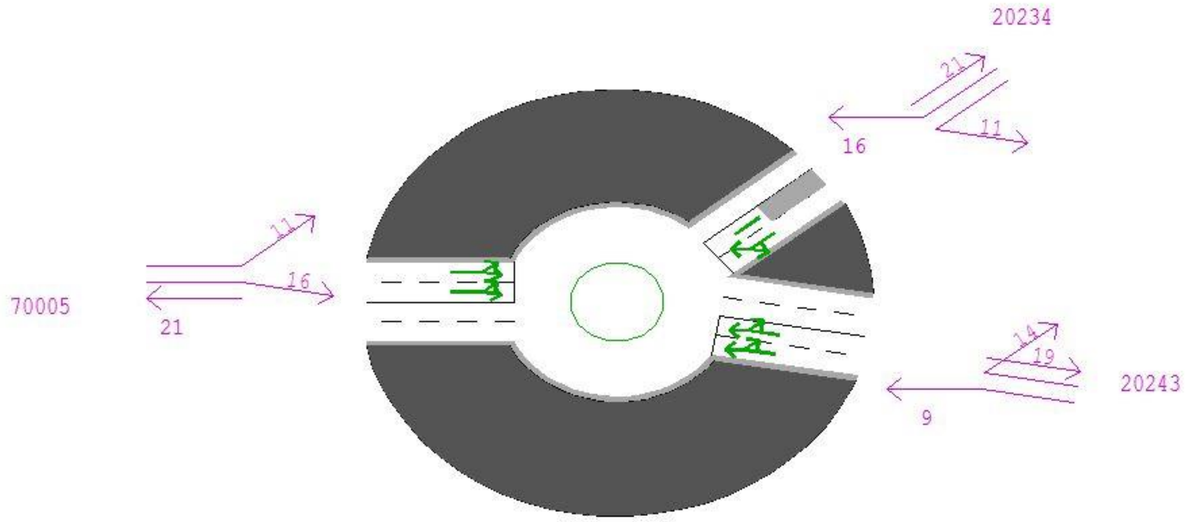


Figure I.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

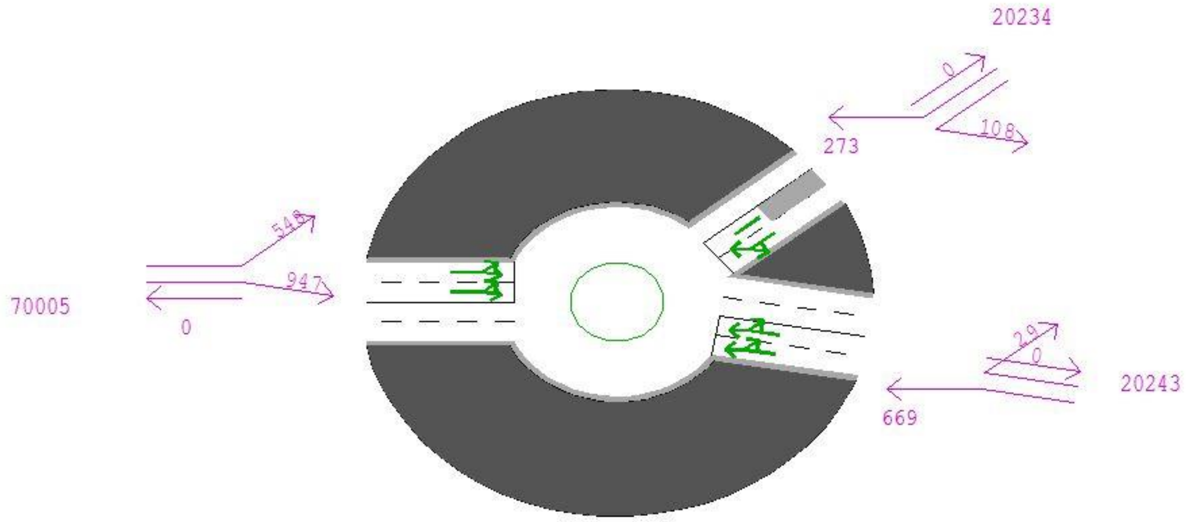


Figure I.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

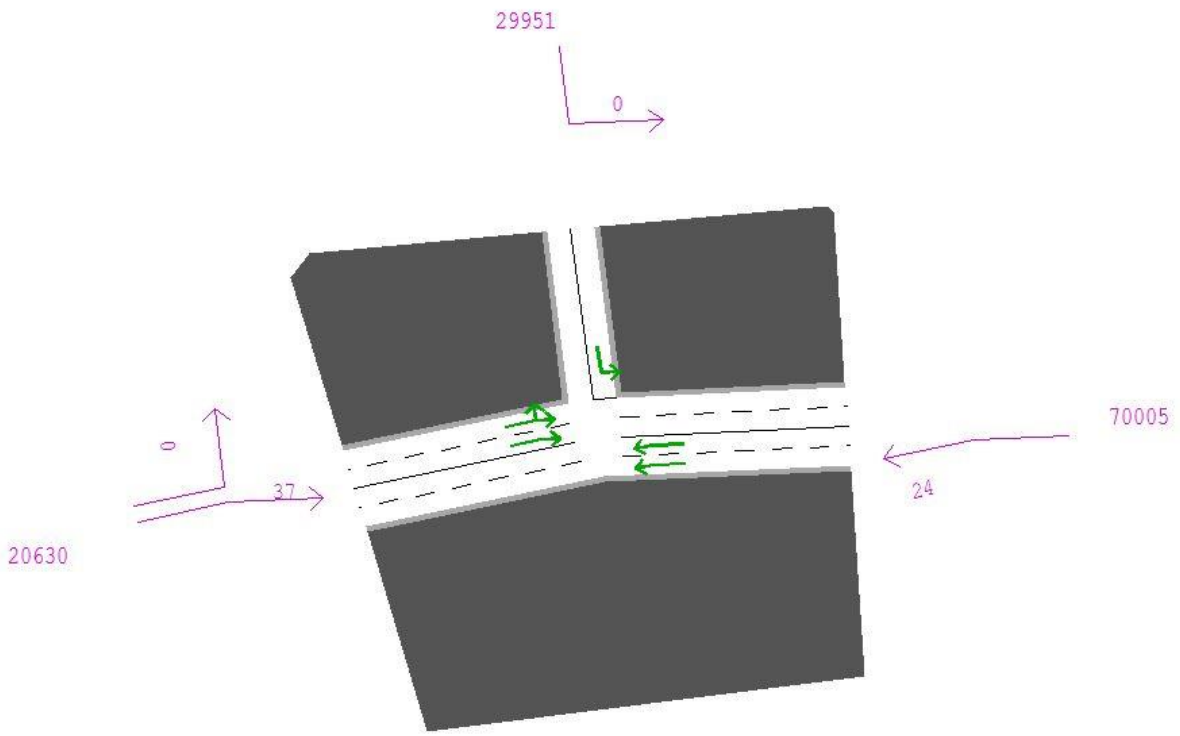


Figure I.11: A4303 / Shackleton Way Junction: Delay (seconds)

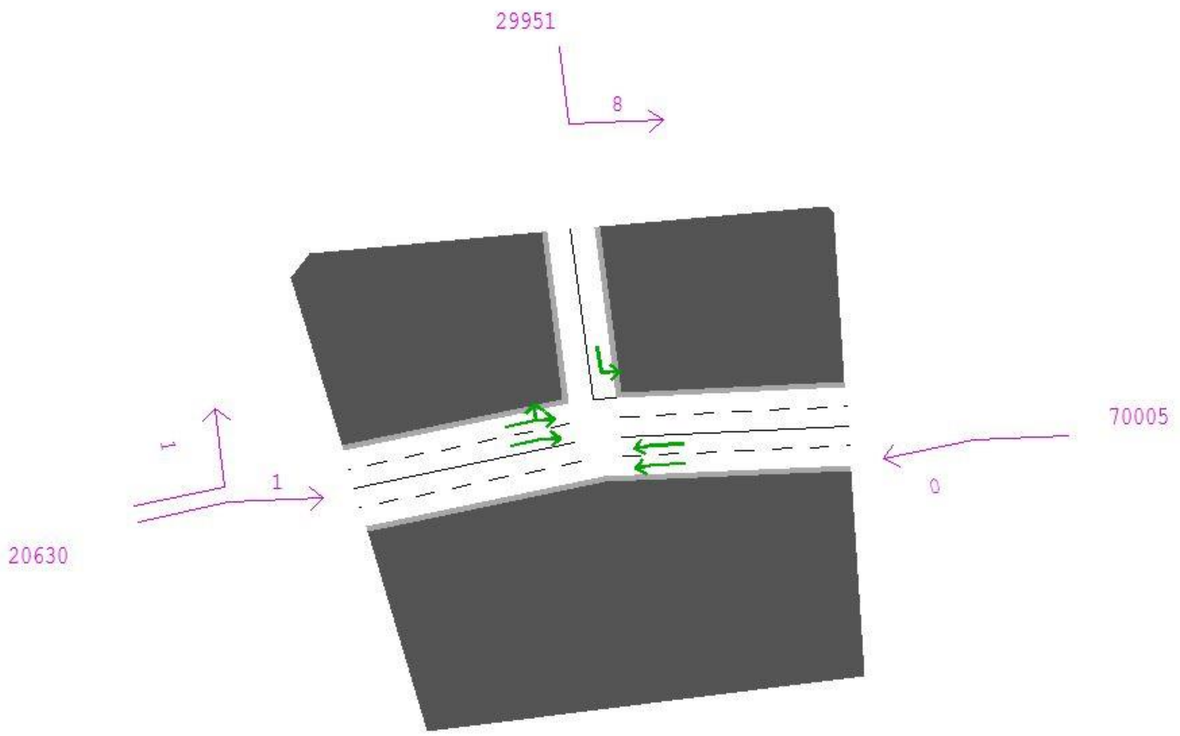


Figure I.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

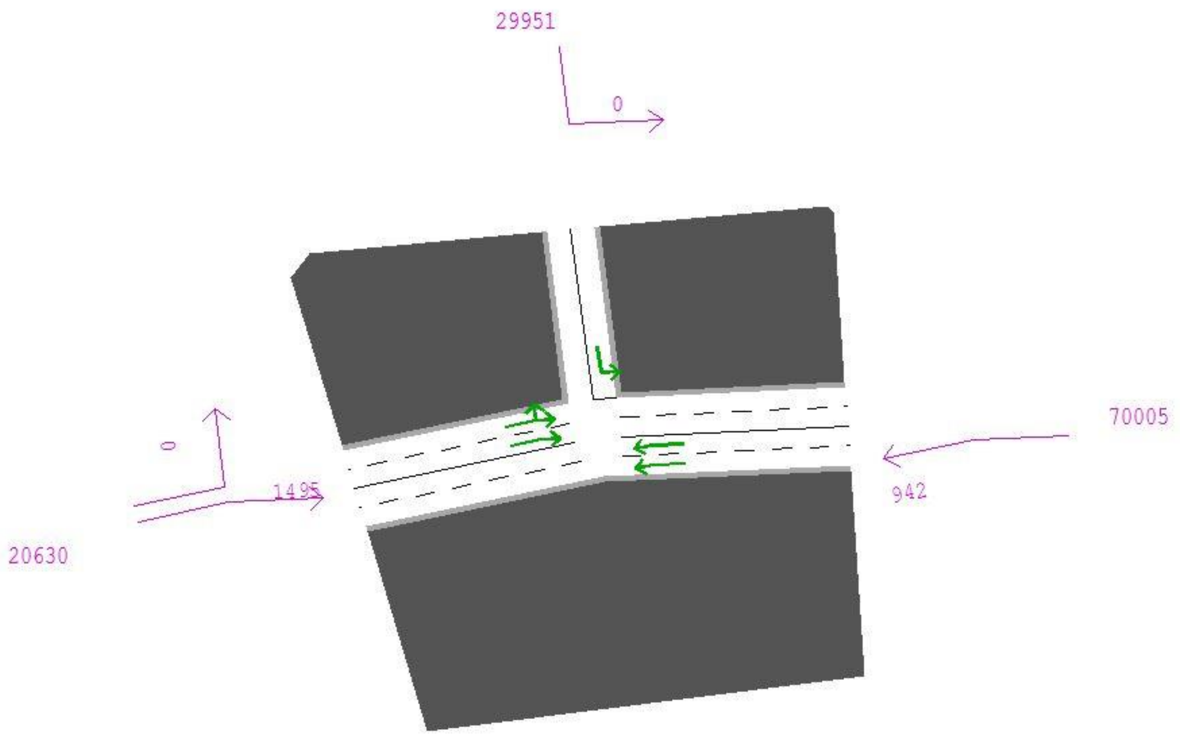


Figure I.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

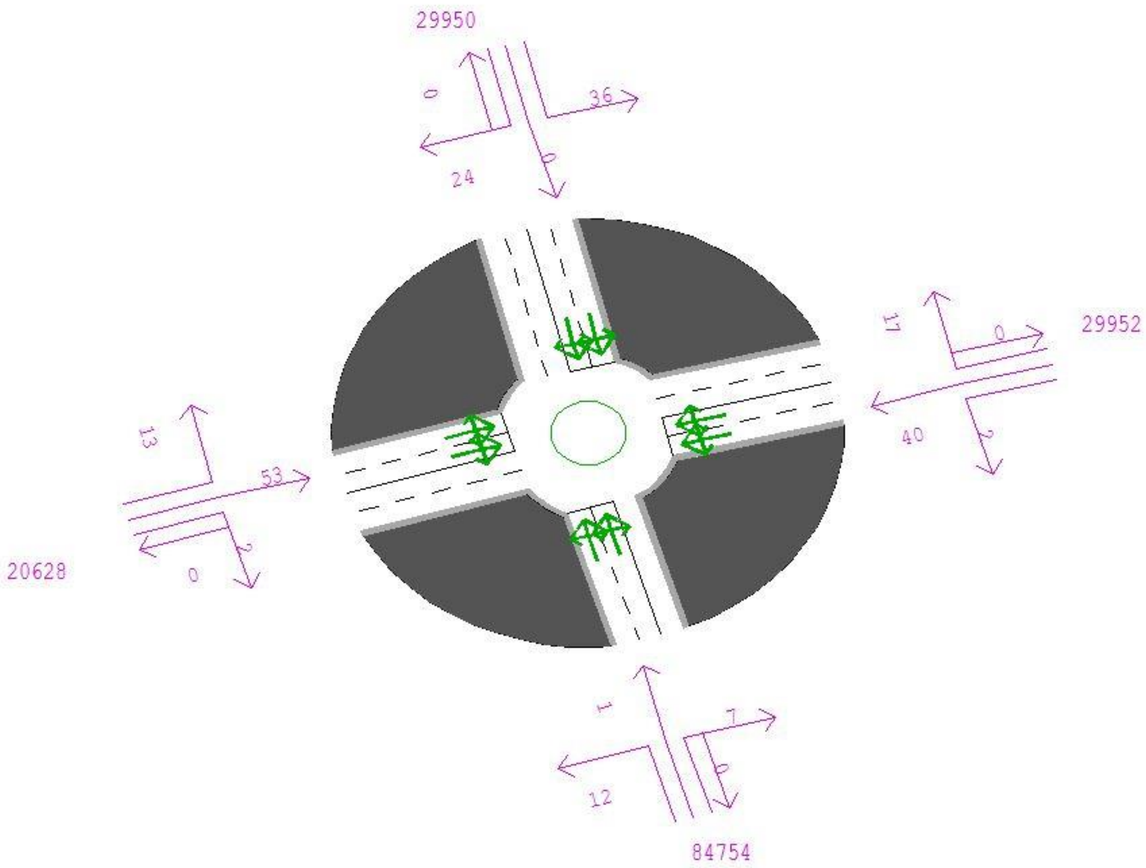


Figure I.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

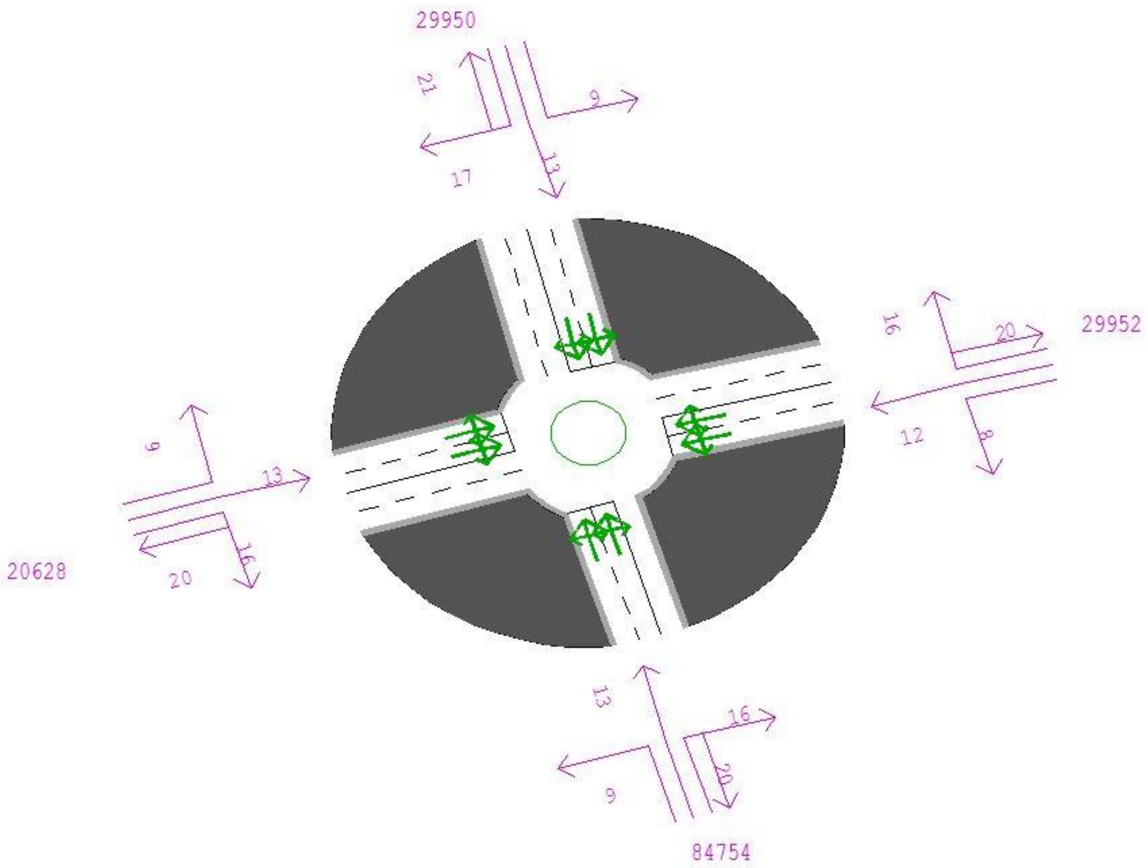


Figure I.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

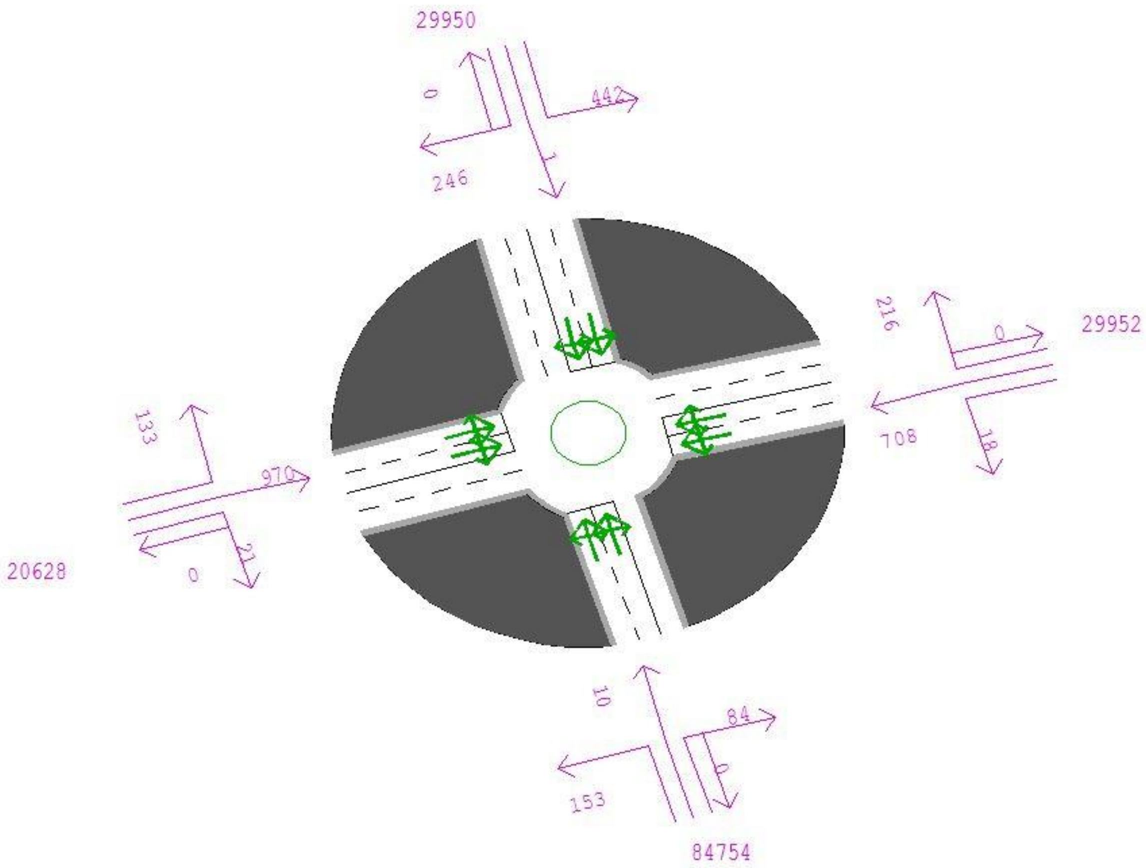


Figure I.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

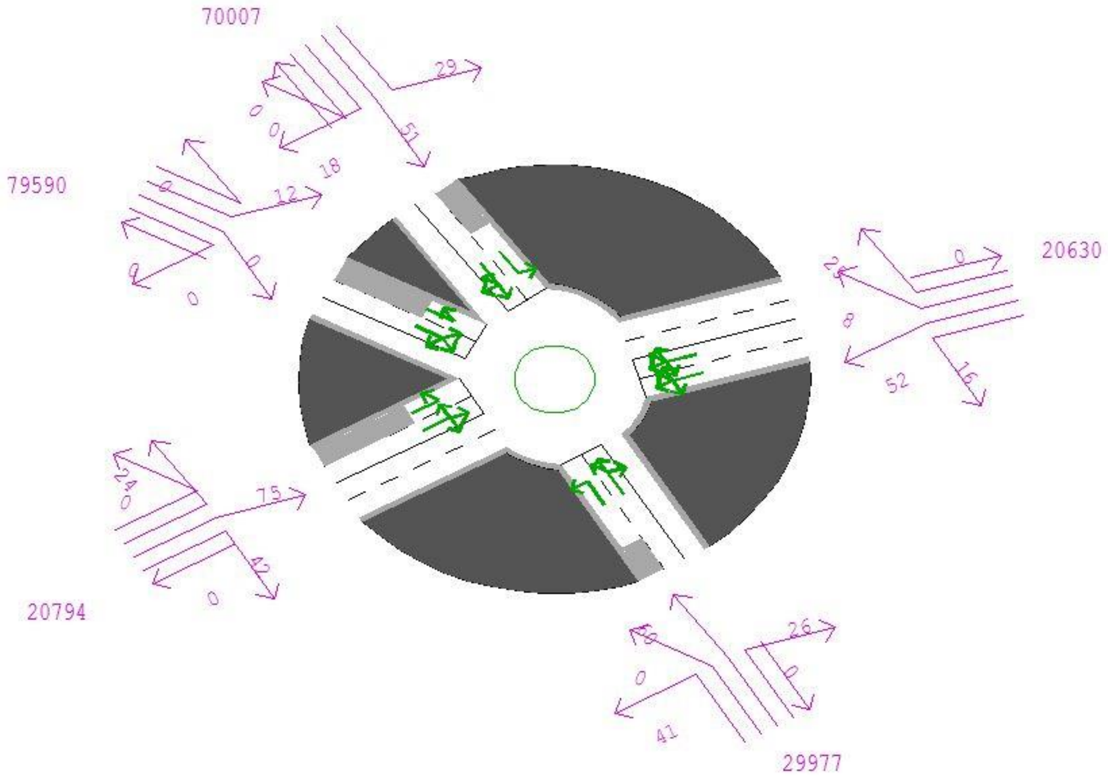


Figure I.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

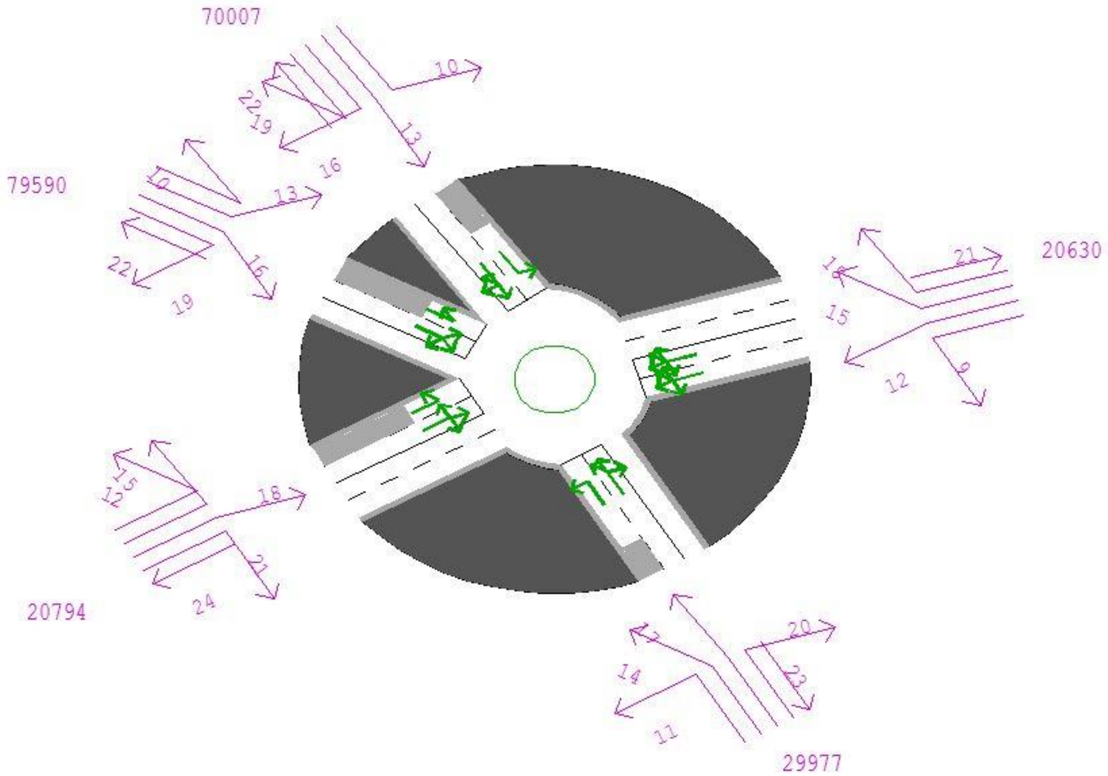


Figure I.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

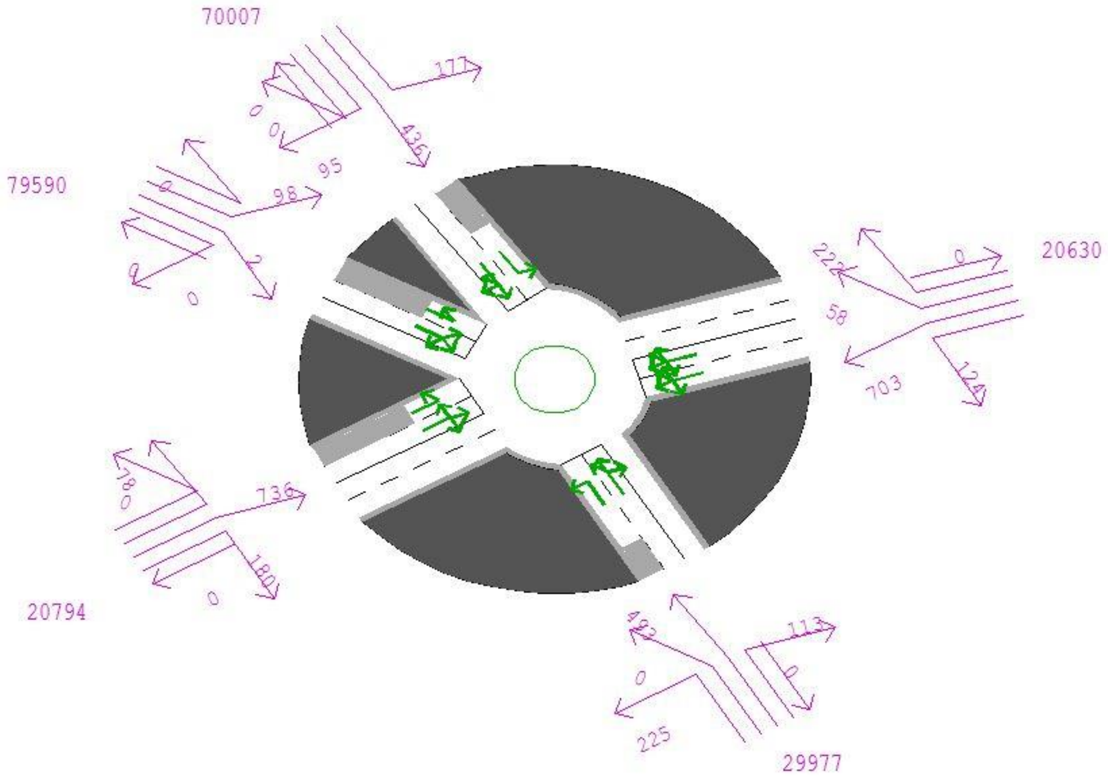


Figure I.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

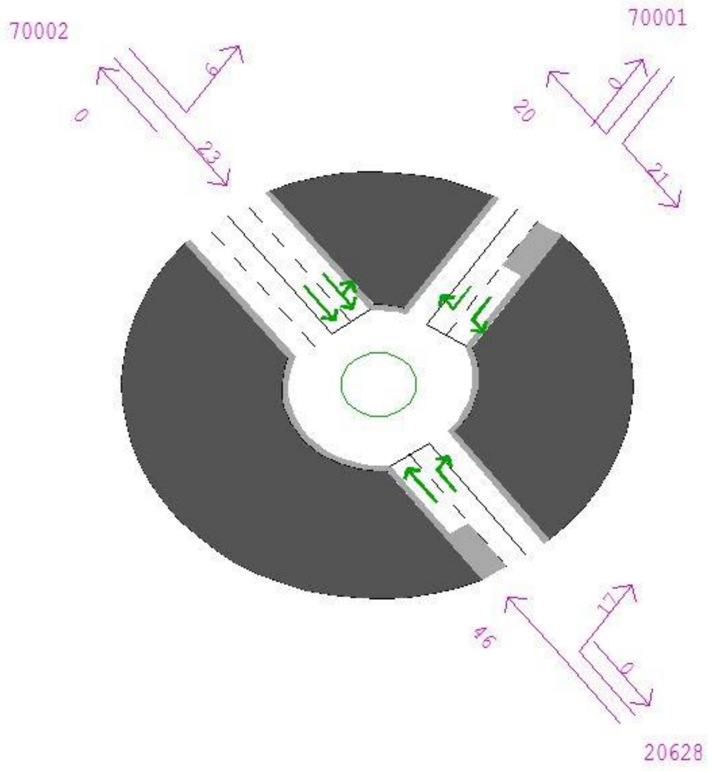


Figure I.20: A5 / Mere Lane Junction: Delay (seconds)

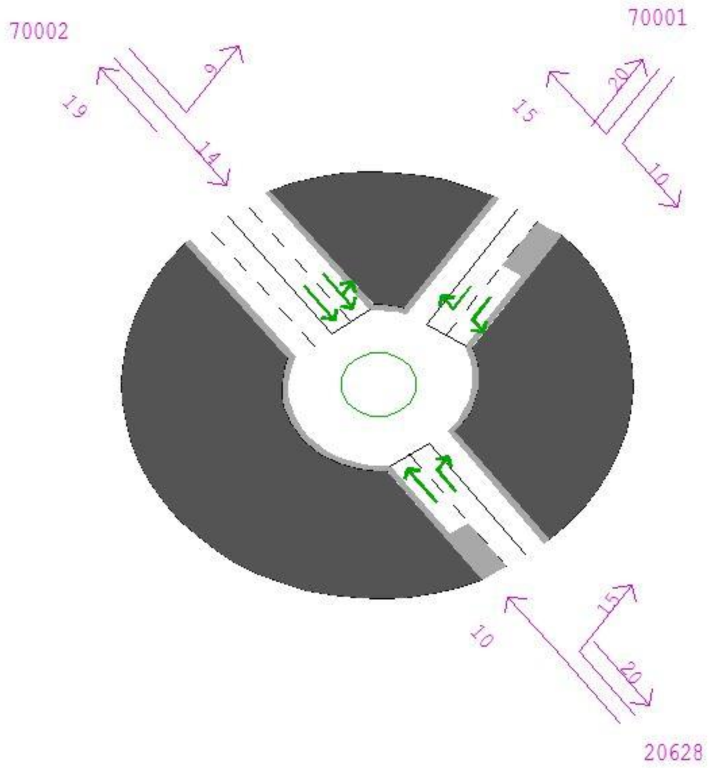


Figure I.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

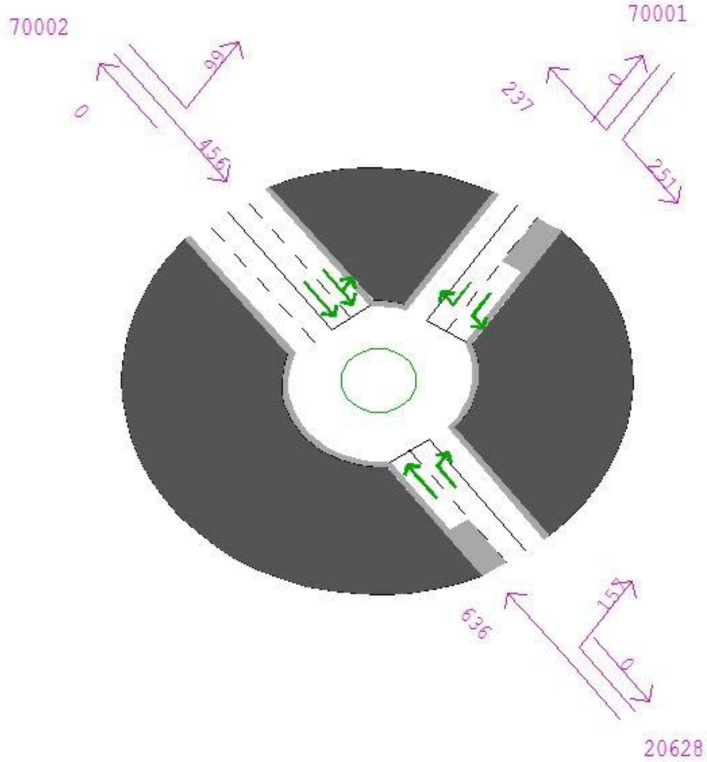


Figure I.22: M69 Junction 1: Volume-to-Capacity Ratio

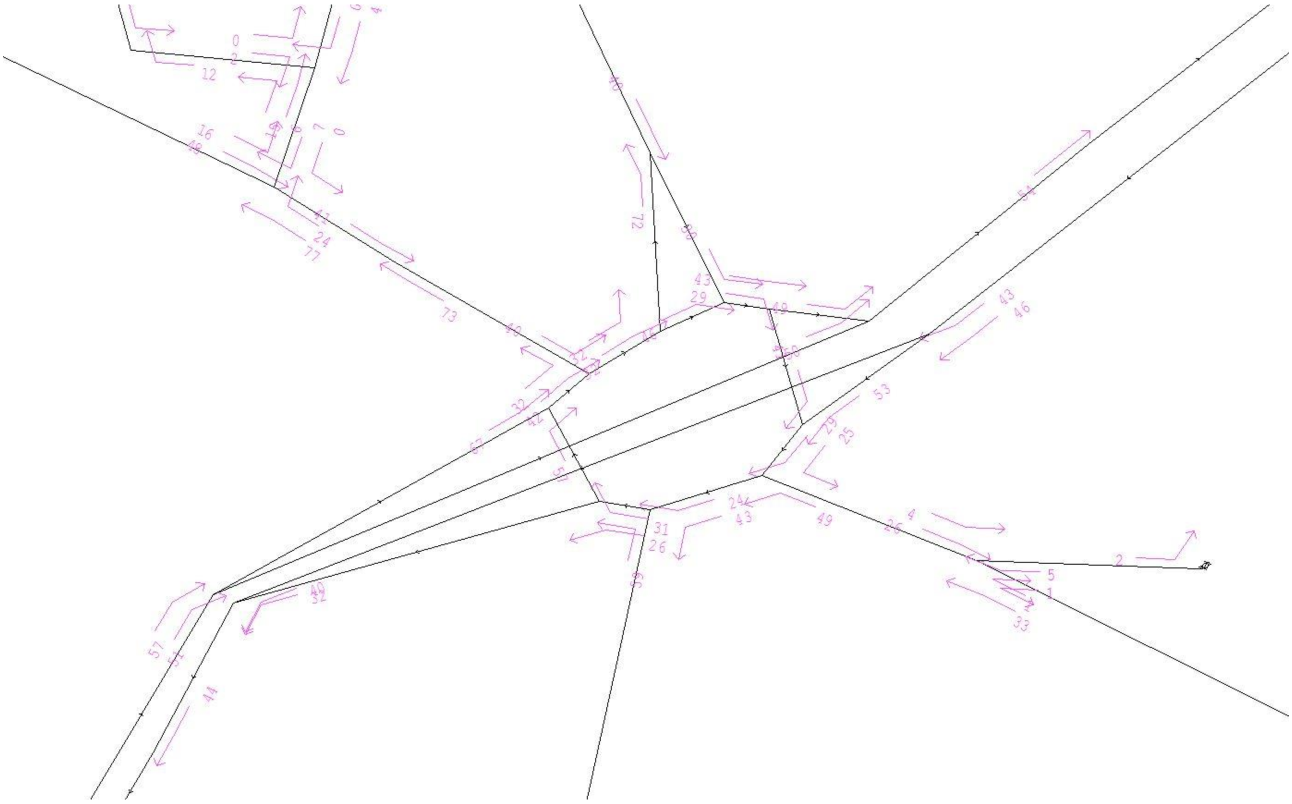


Figure I.23: M69 Junction 1: Delay (seconds)

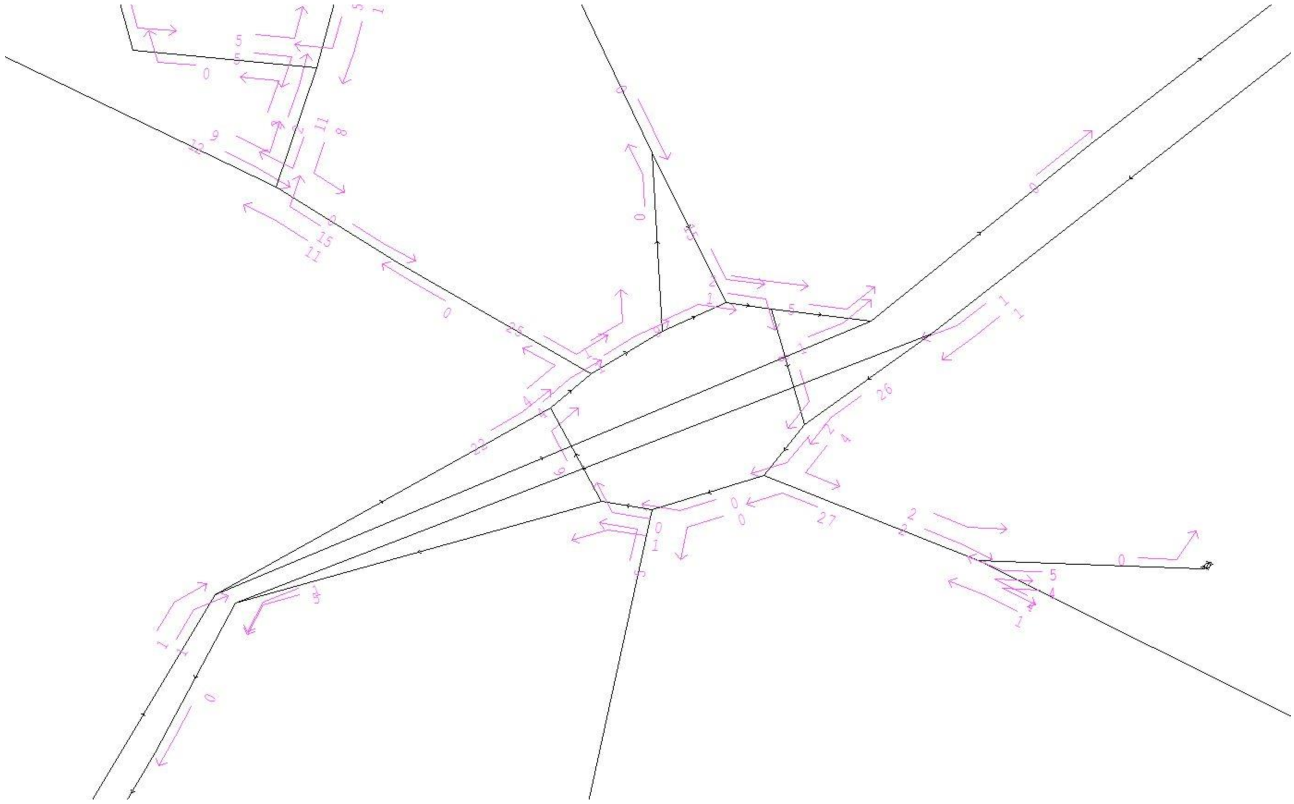


Figure I.24: M69 Junction 1: Arrive Flow (PCUs)

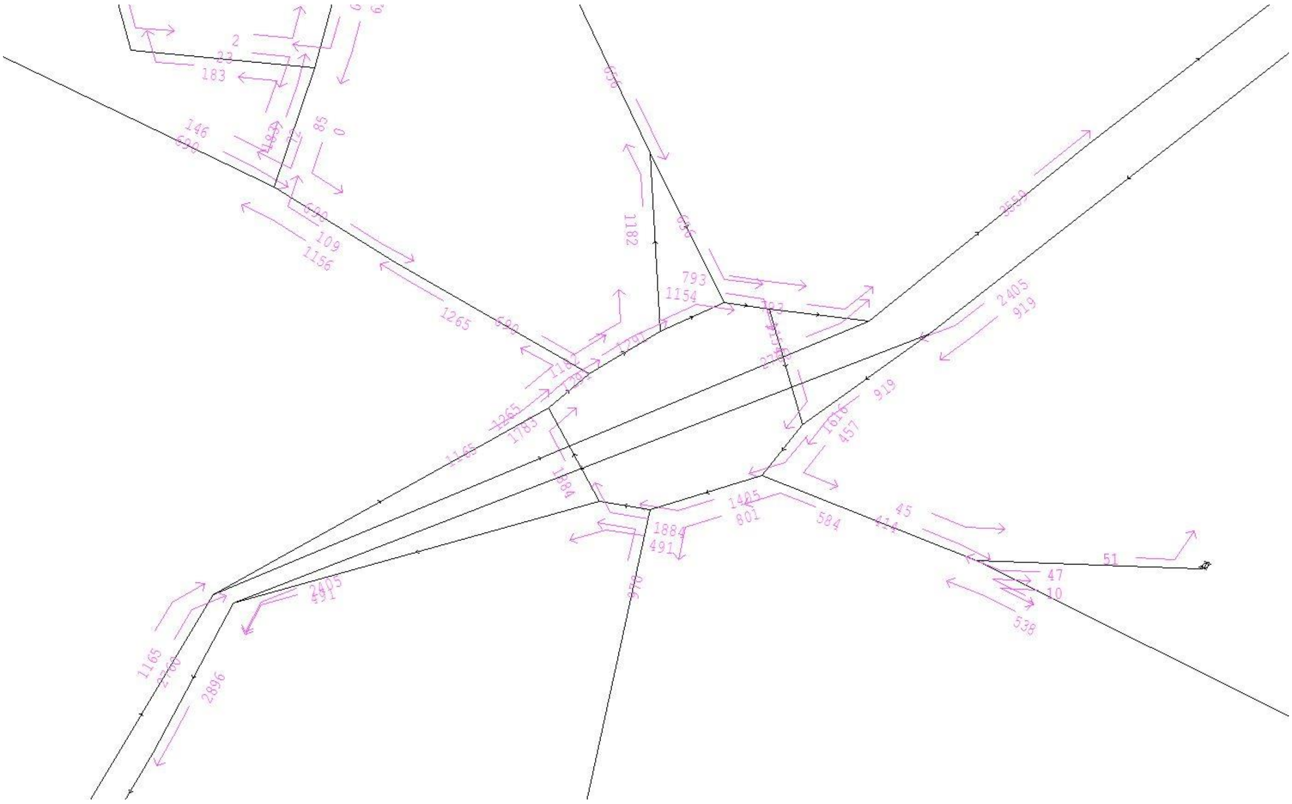


Figure I.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

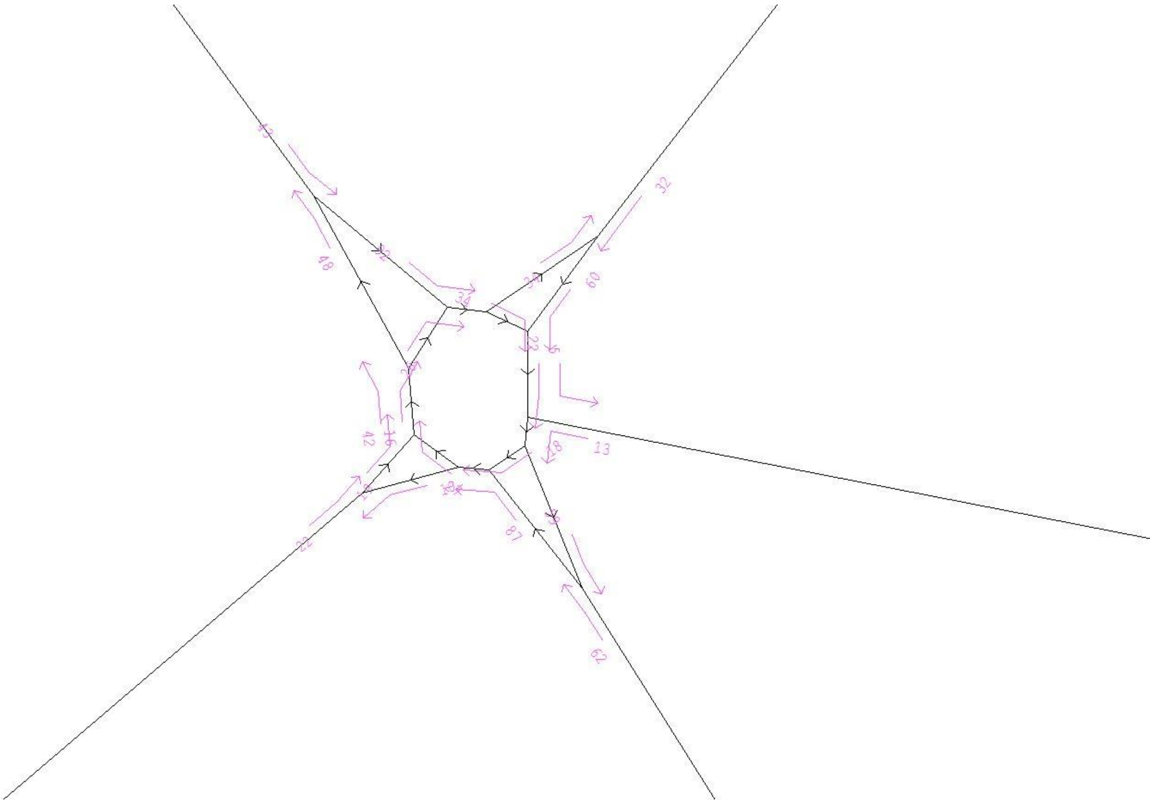


Figure I.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

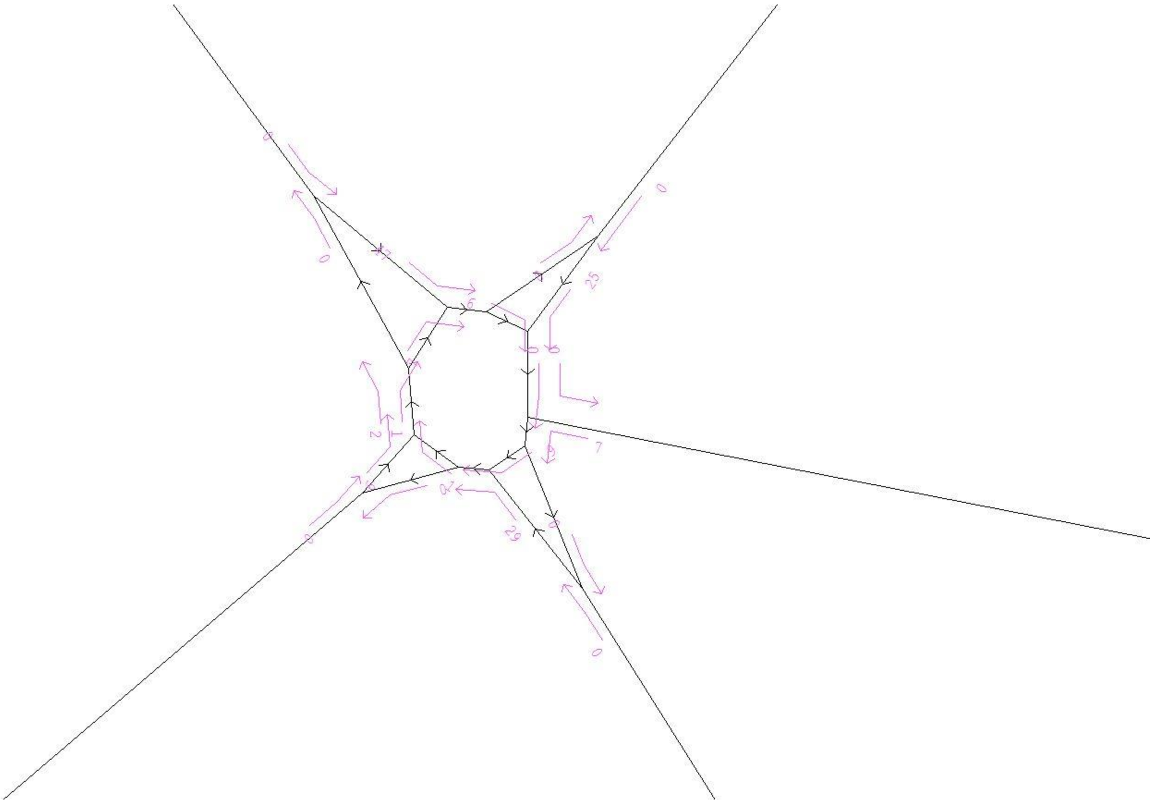


Figure I.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

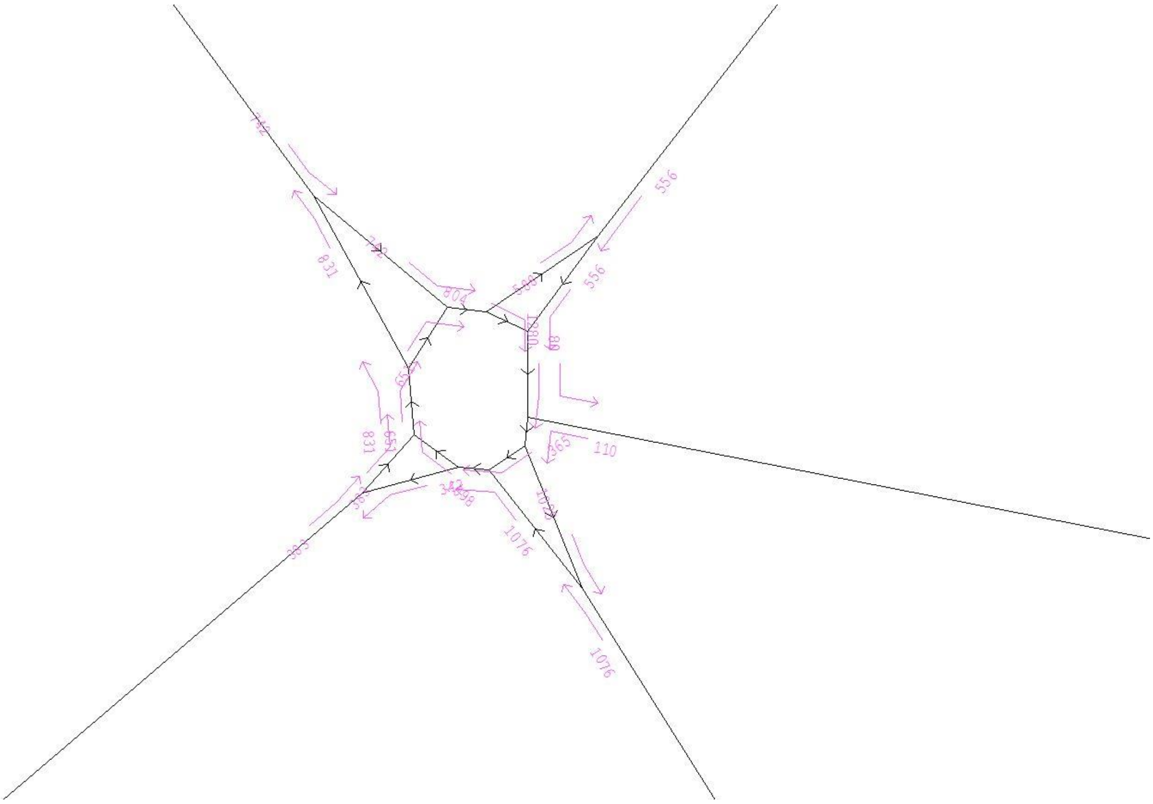


Figure I.28: M6 Junction 1: Volume-to-Capacity Ratio

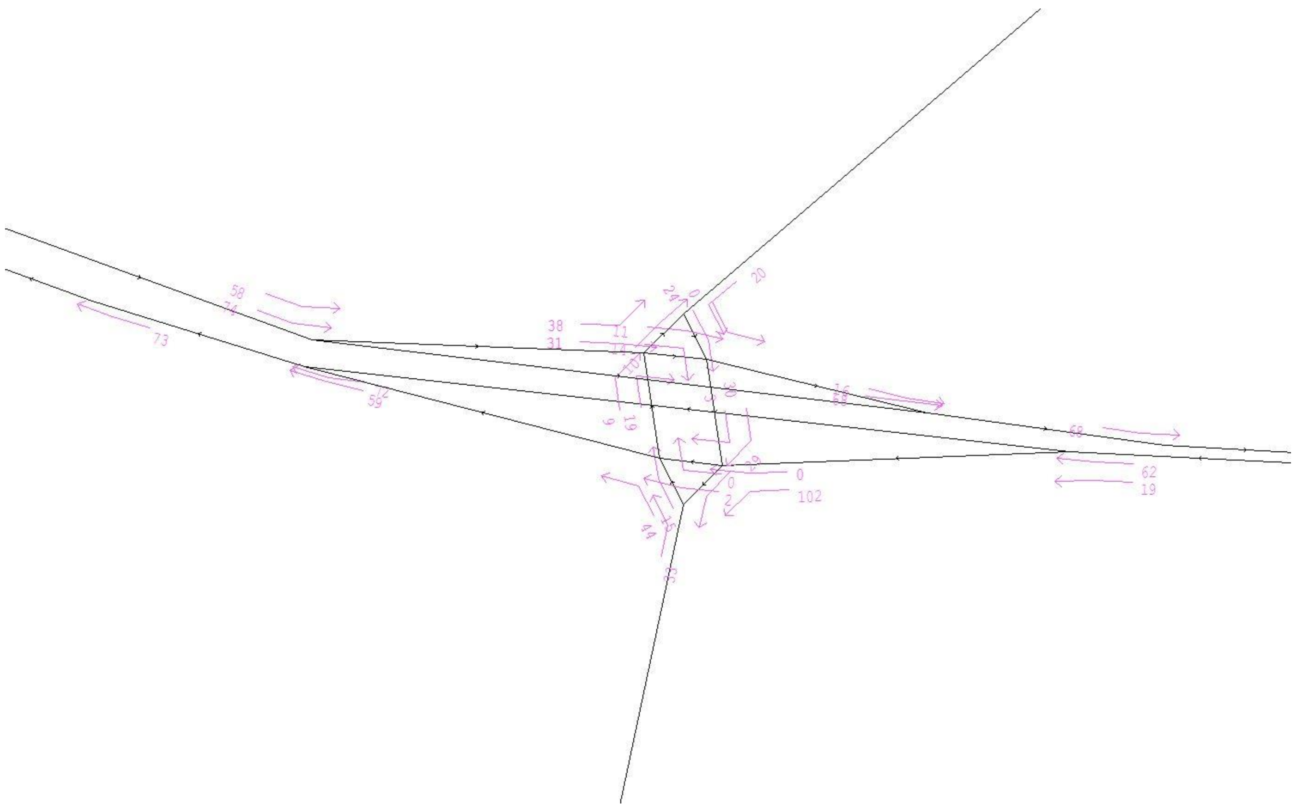


Figure I.29: M6 Junction 1: Delay (seconds)

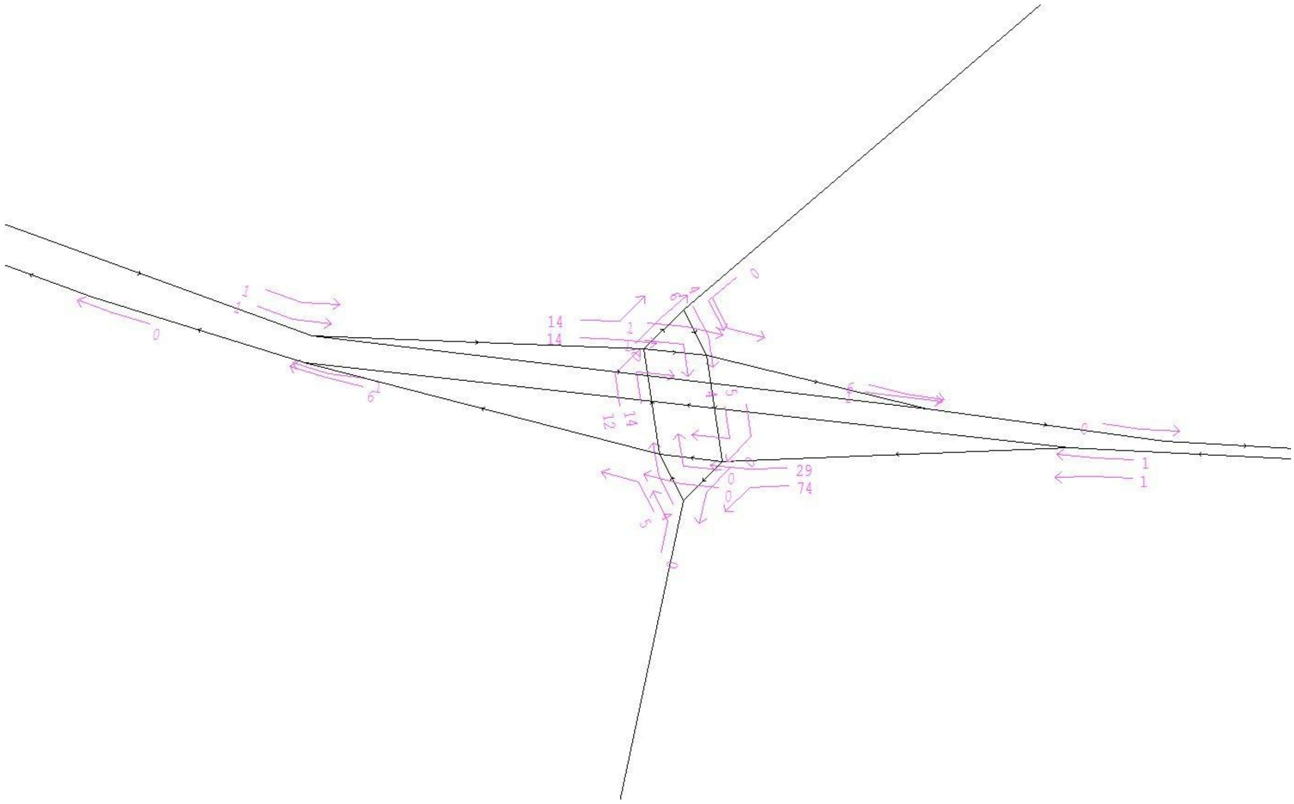


Figure I.30: M6 Junction 1: Arrive Flow (PCUs)

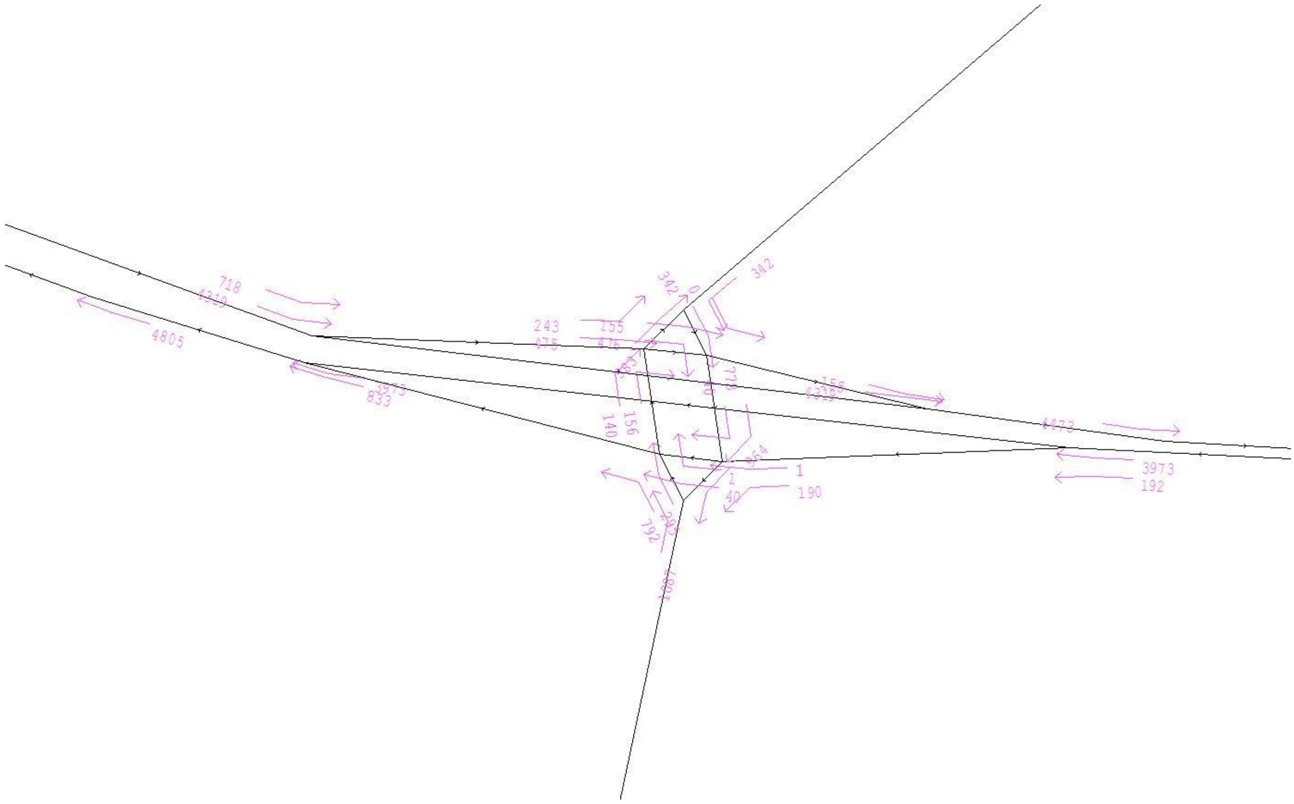


Figure I.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

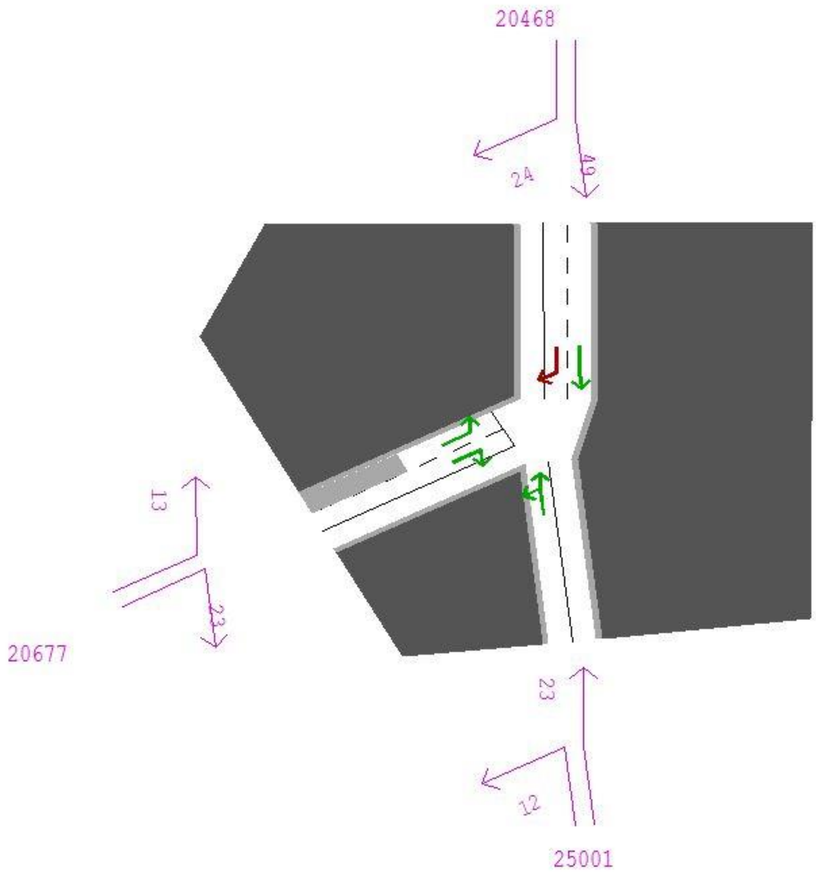


Figure I.32: A426 / Bill Crane Way Junction: Delay (seconds)

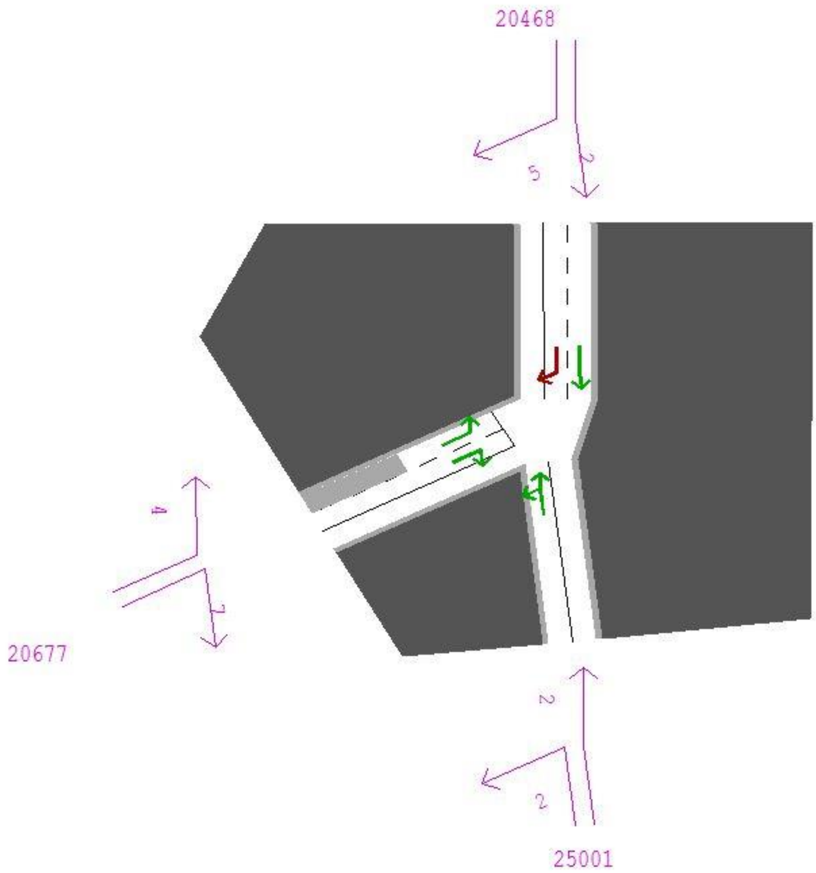


Figure I.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

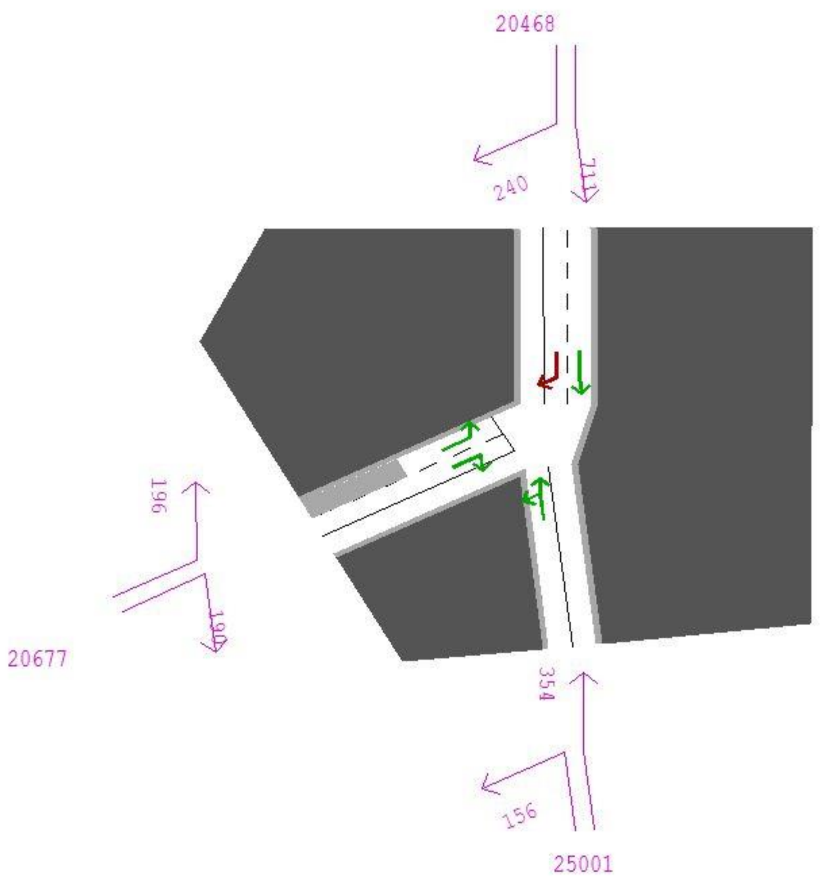


Figure I.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

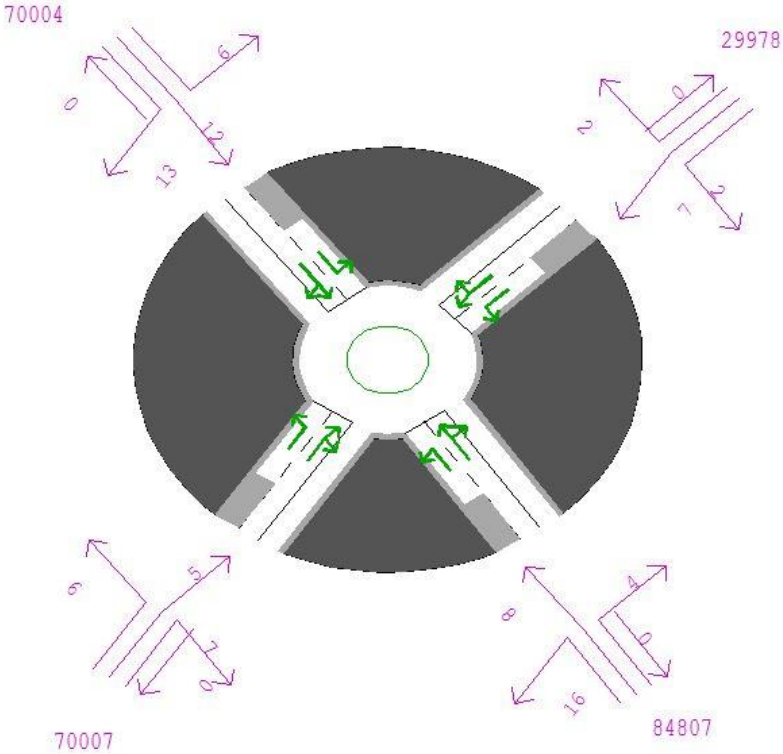


Figure I.35: Mere Lane / Magna Park Access: Delay (seconds)

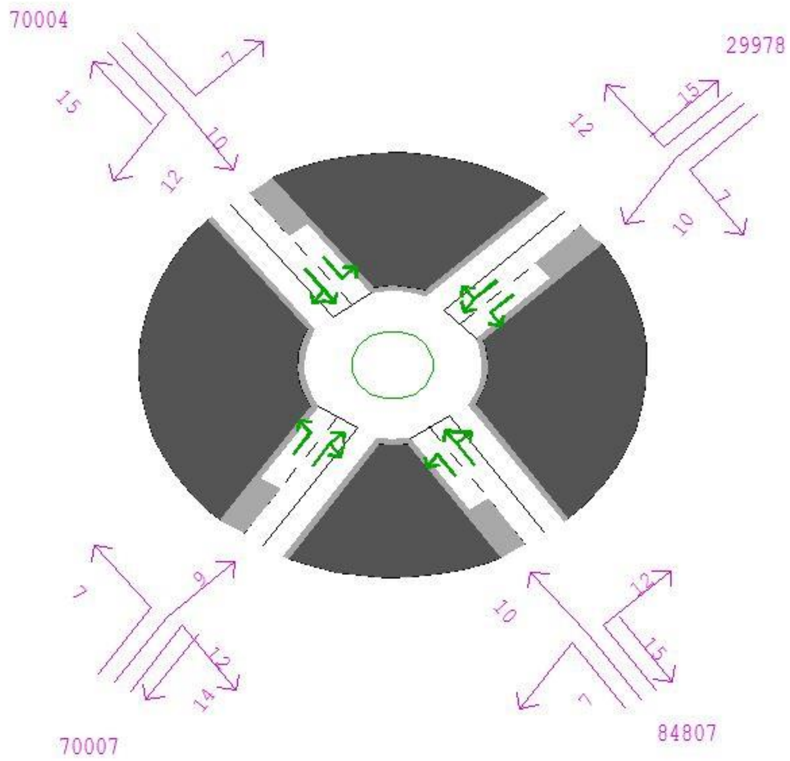


Figure I.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

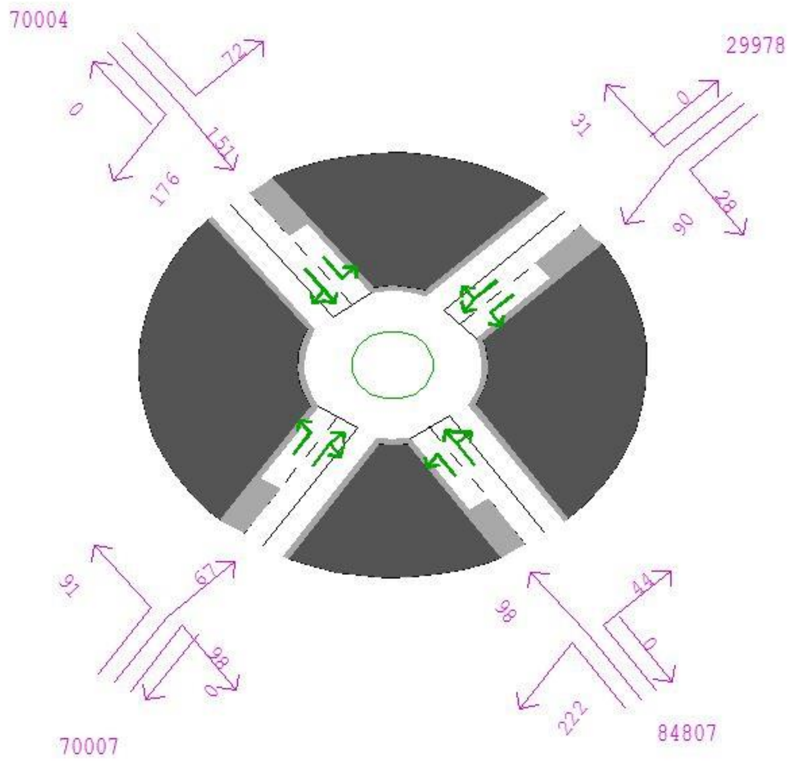


Figure I.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

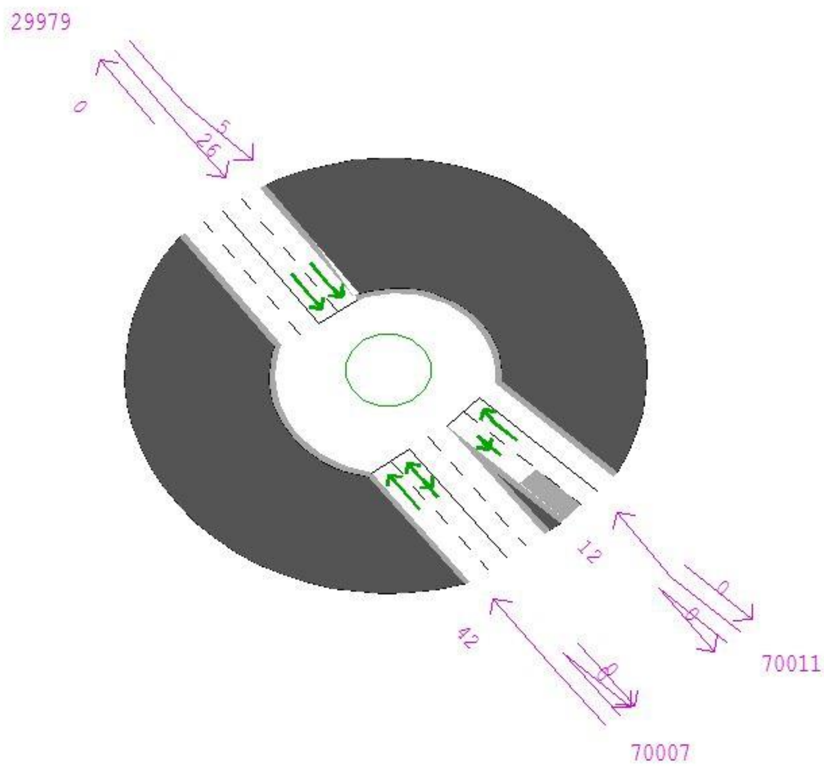


Figure I.38: A5 / Magna Park Access: Delay (seconds)

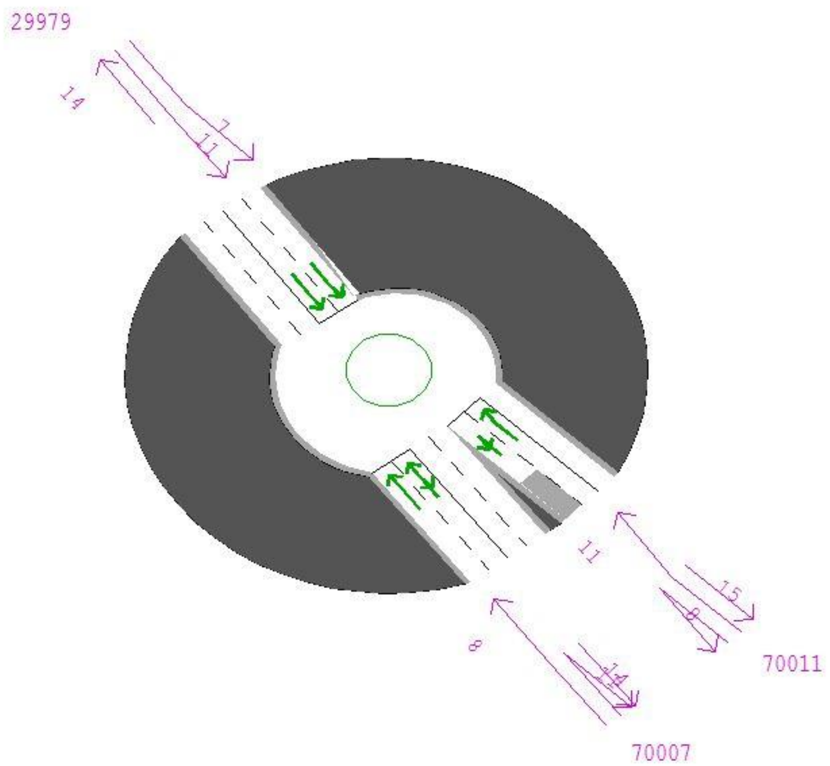
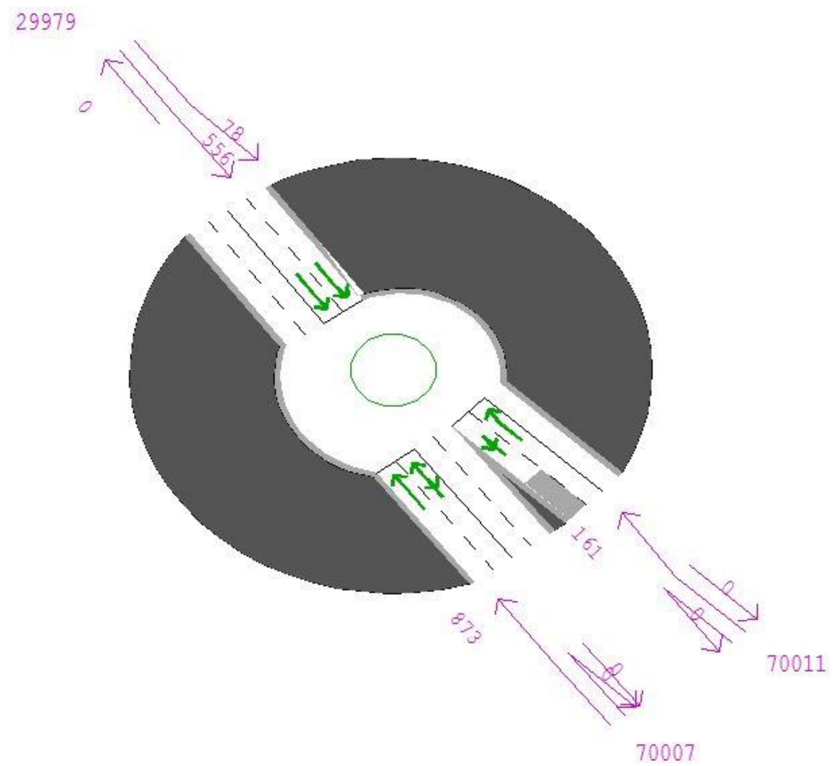


Figure I.39: A5 / Magna Park Access: Arrive Flow (PCUs)



Appendix J 2026 ‘with development’, including the proposed mitigation measures and Symmetry Park, AM Peak Junction Node Data

J.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure J.1: M1 Junction 20: Volume-to-Capacity Ratio

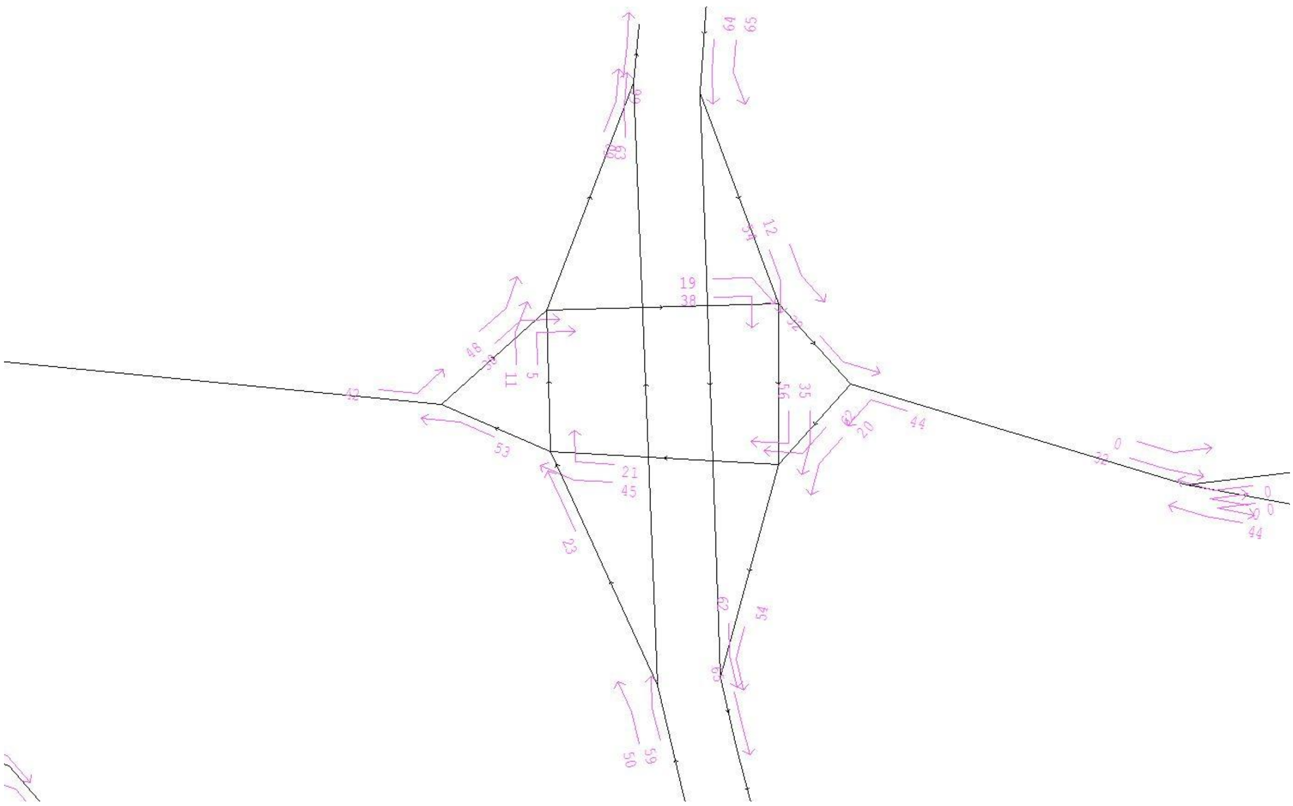


Figure J.2: M1 Junction 20: Delay (seconds)

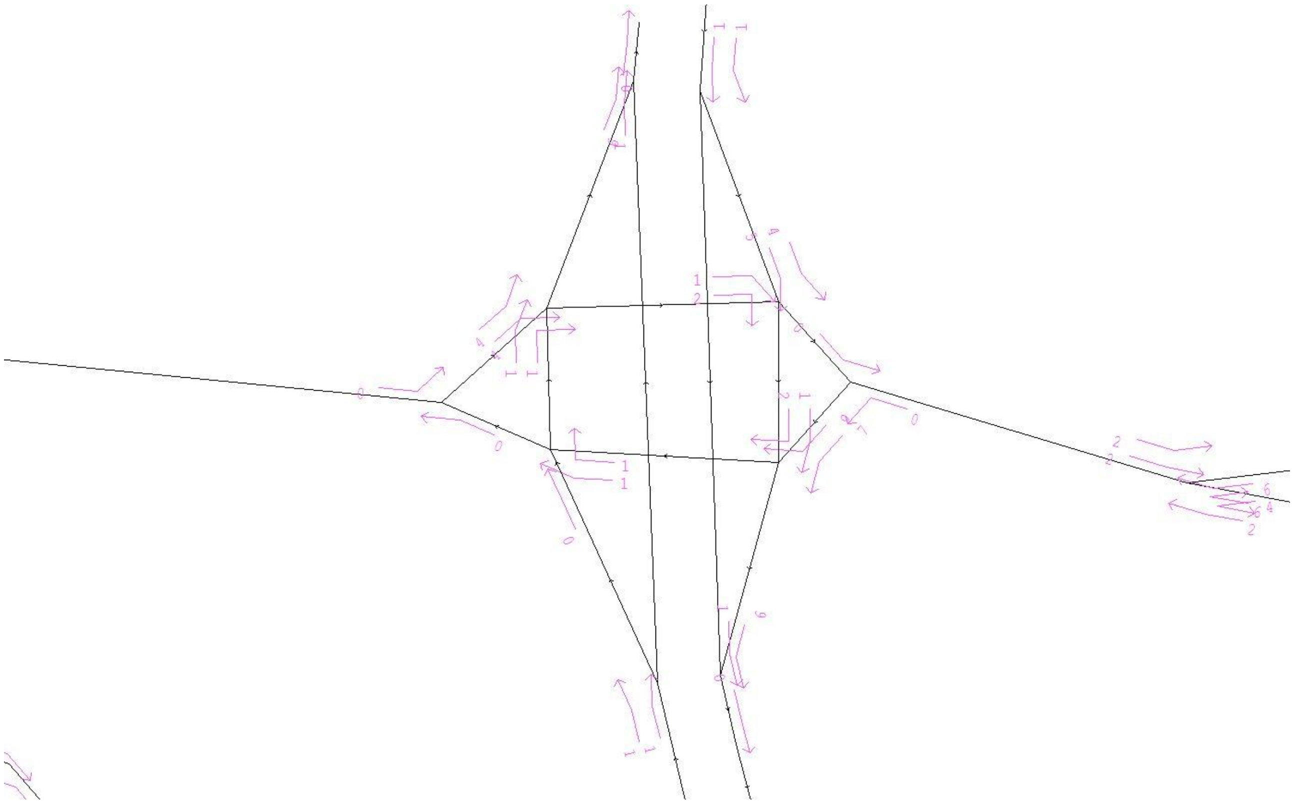


Figure J.3: M1 Junction 20: Arrive Flow (PCUs)

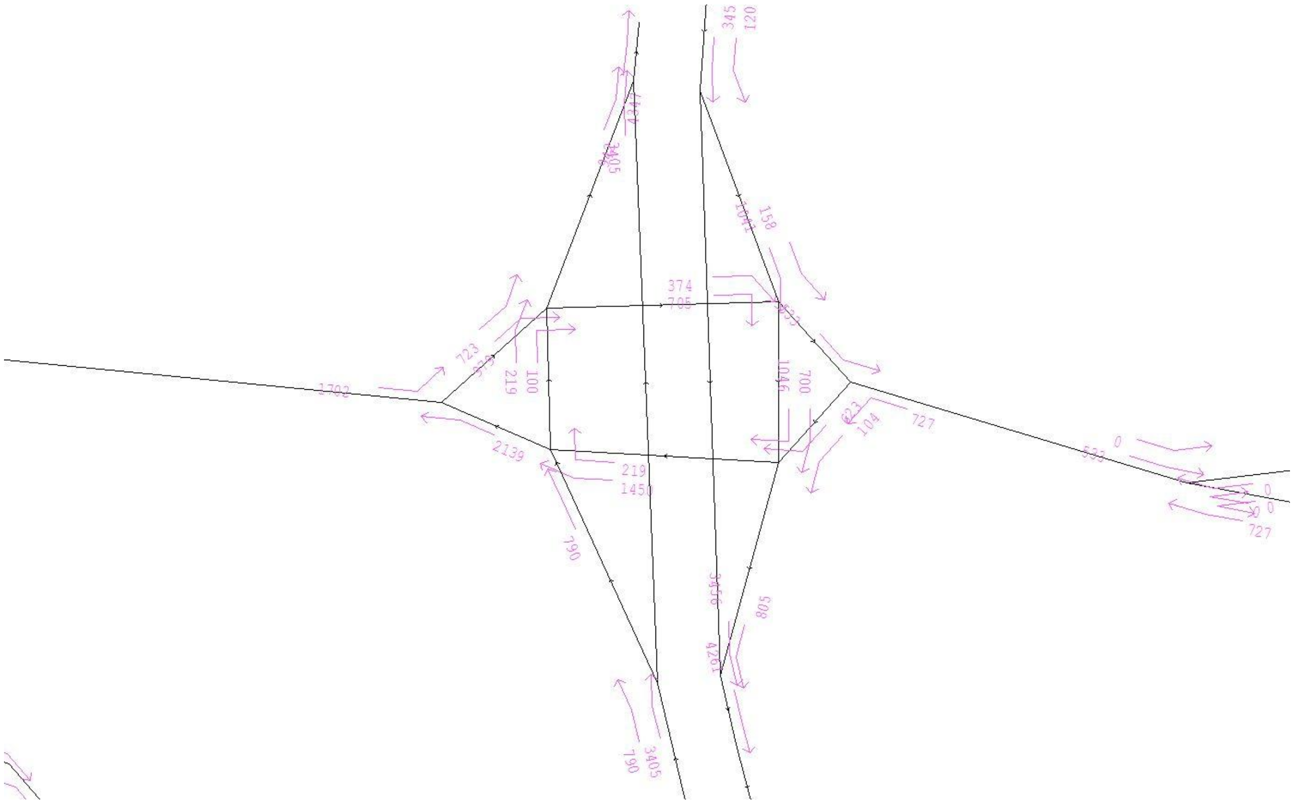


Figure J.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

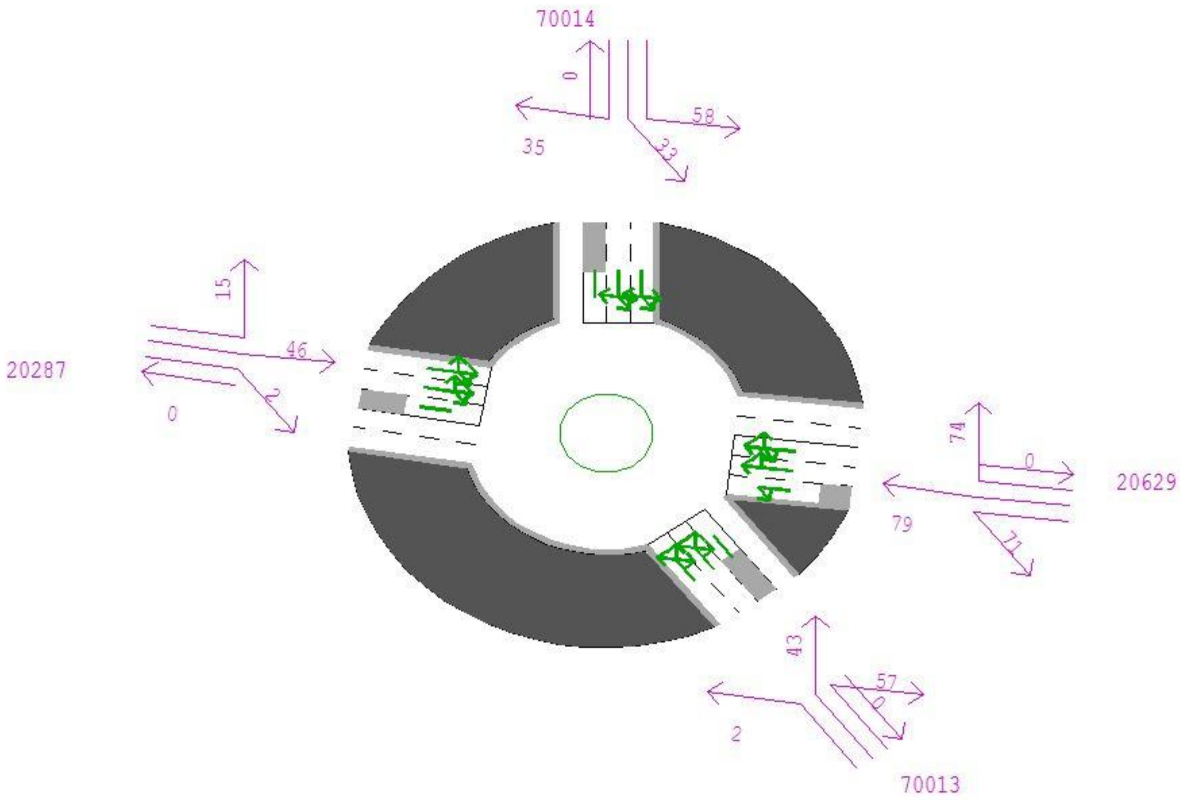


Figure J.5: A4303 / A426 Roundabout: Delay (seconds)

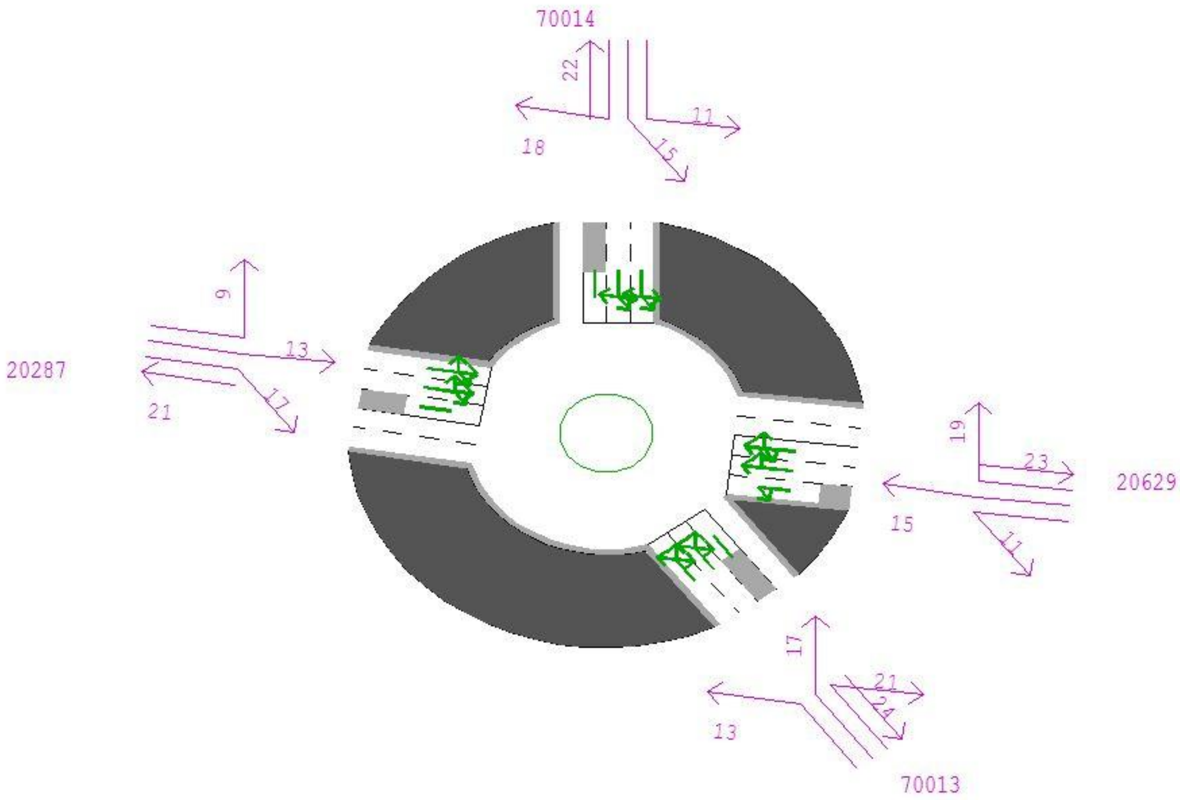


Figure J.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

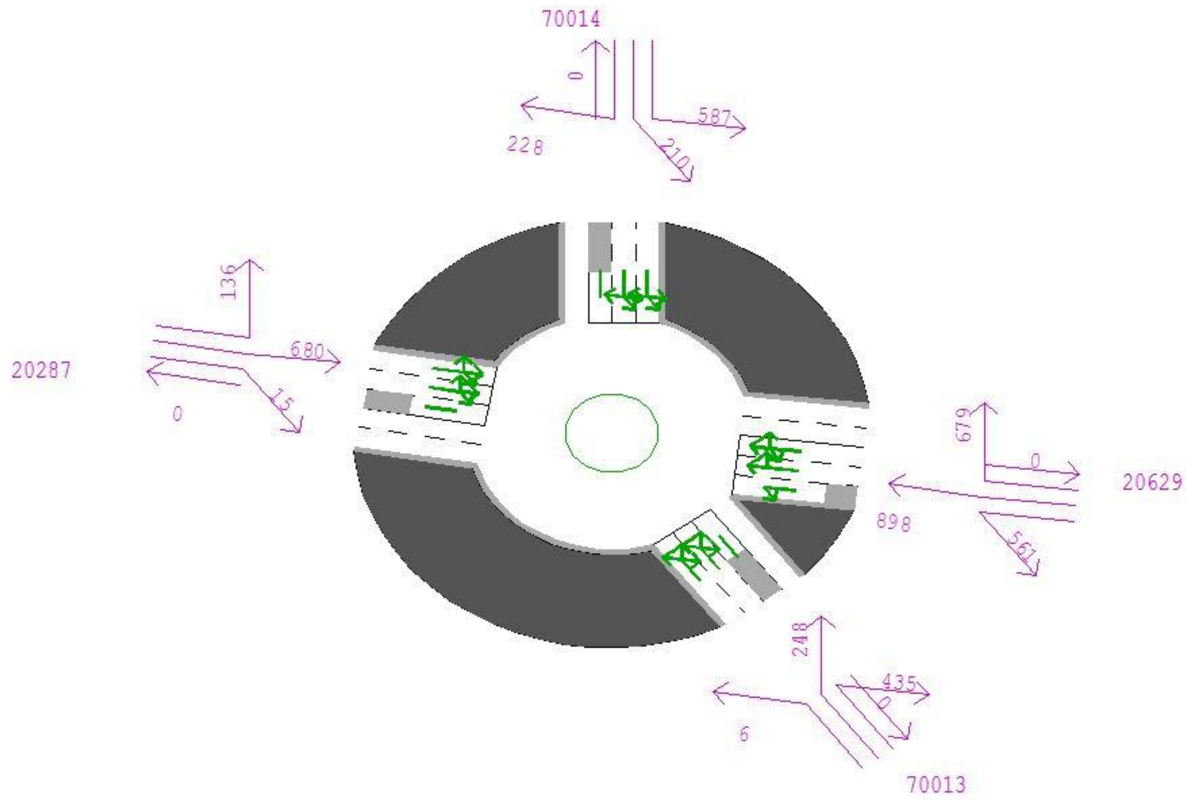


Figure J.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

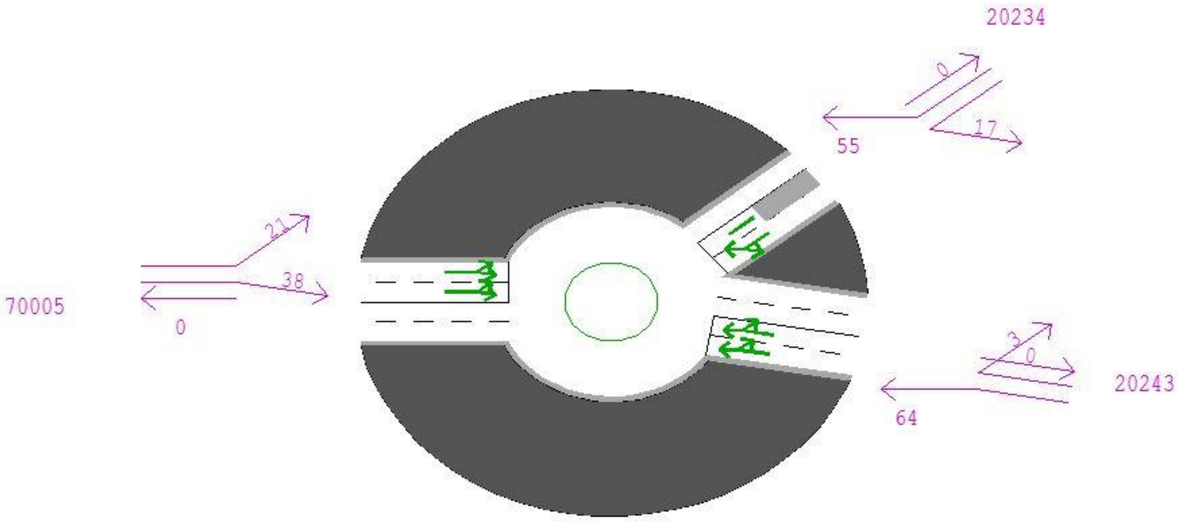


Figure J.8: A4303 / Coventry Road Roundabout: Delay (seconds)

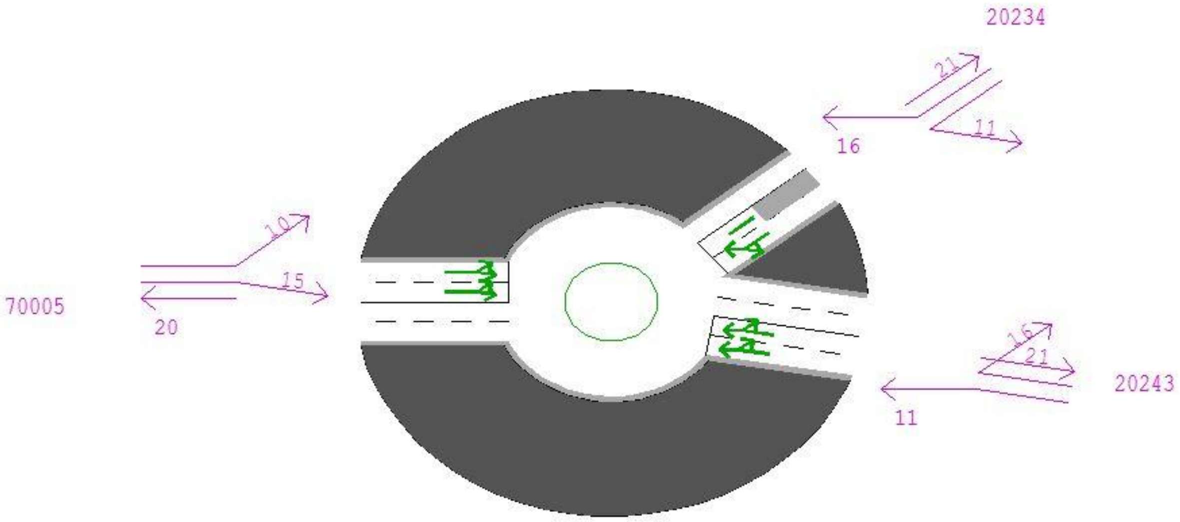


Figure J.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

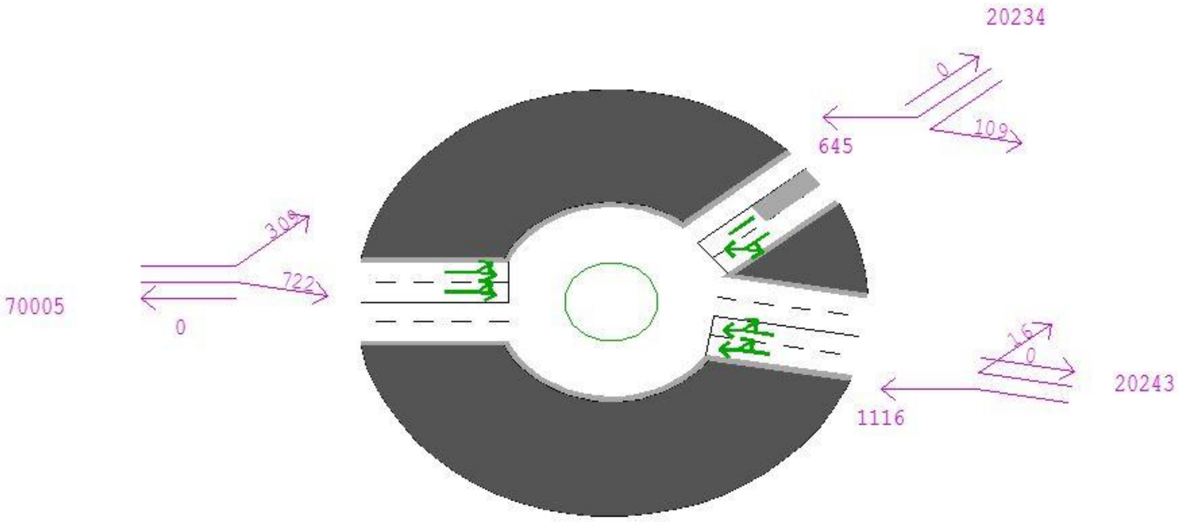


Figure J.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

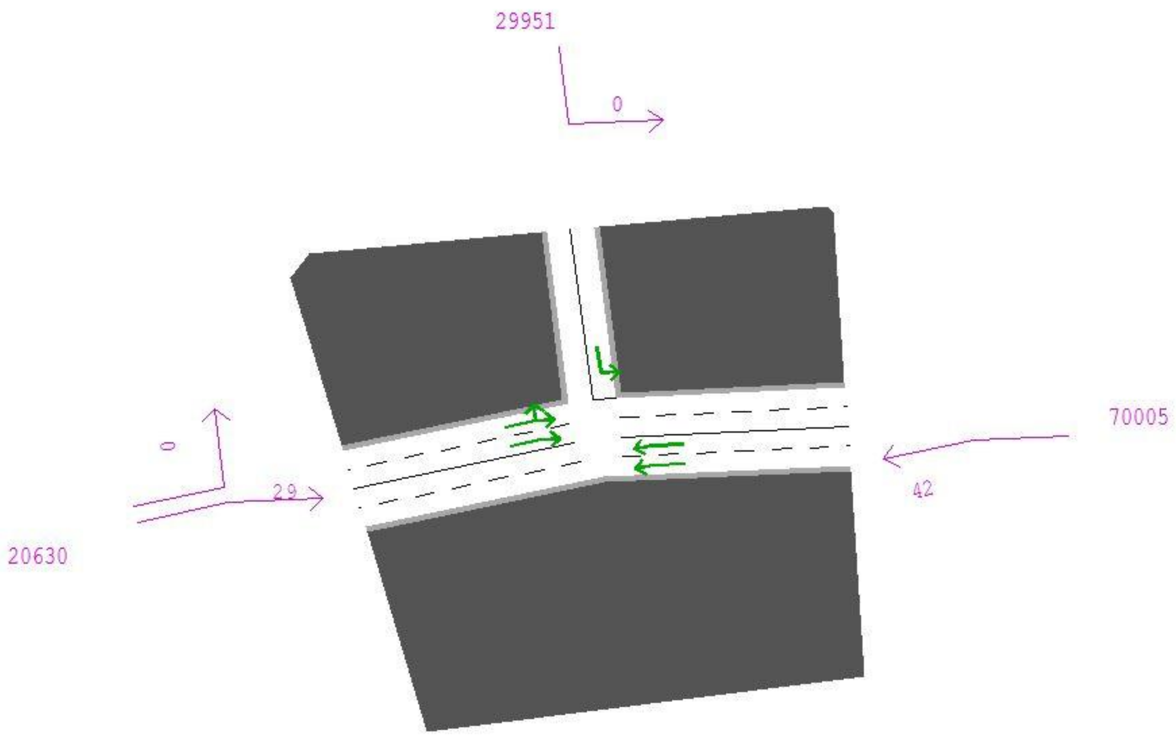


Figure J.11: A4303 / Shackleton Way Junction: Delay (seconds)

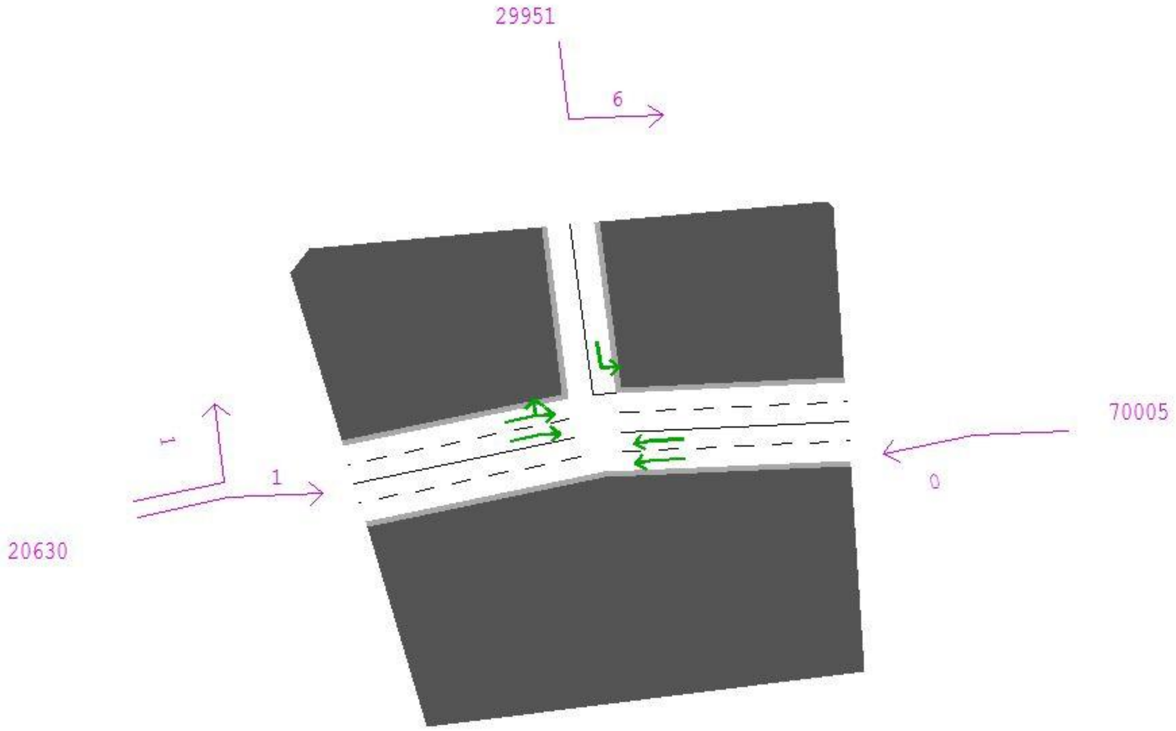


Figure J.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

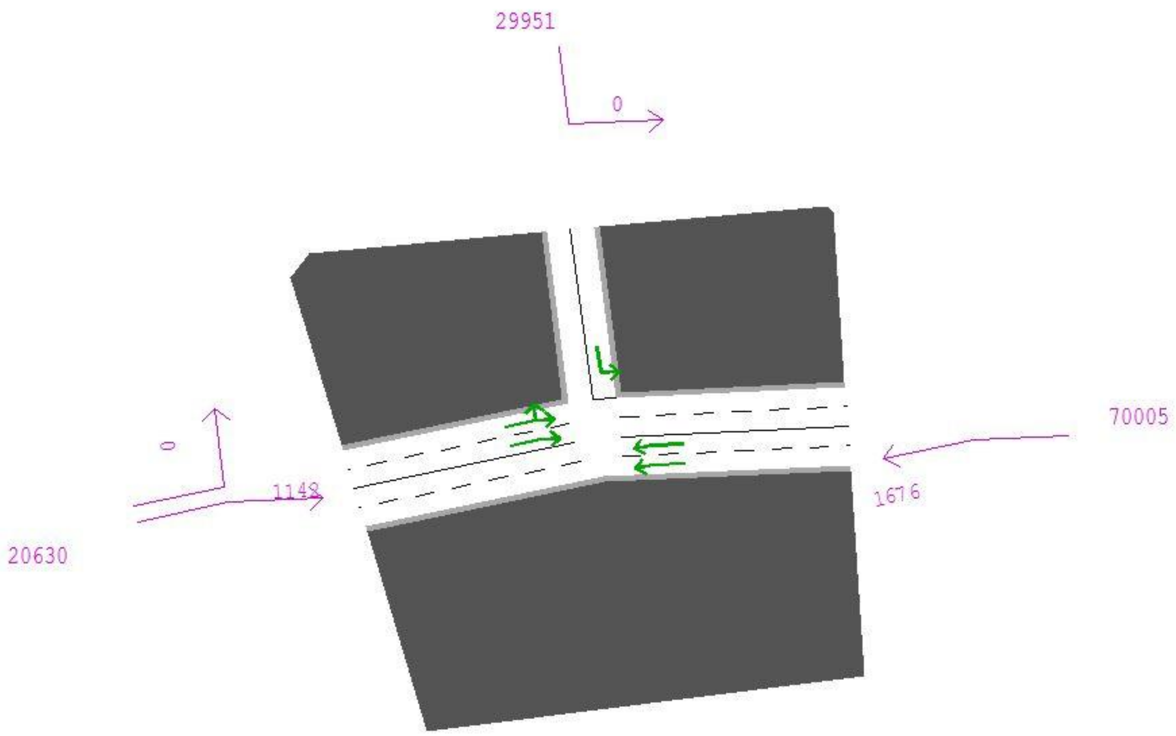


Figure J.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

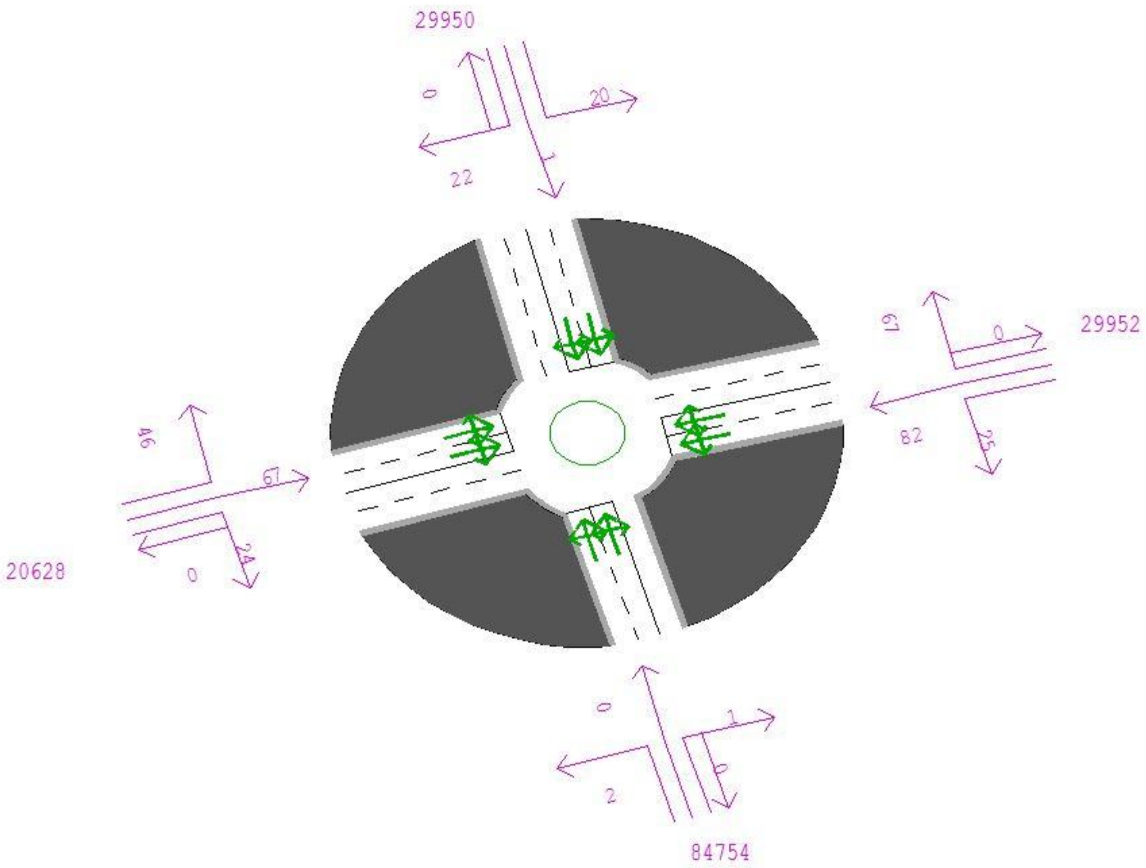


Figure J.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

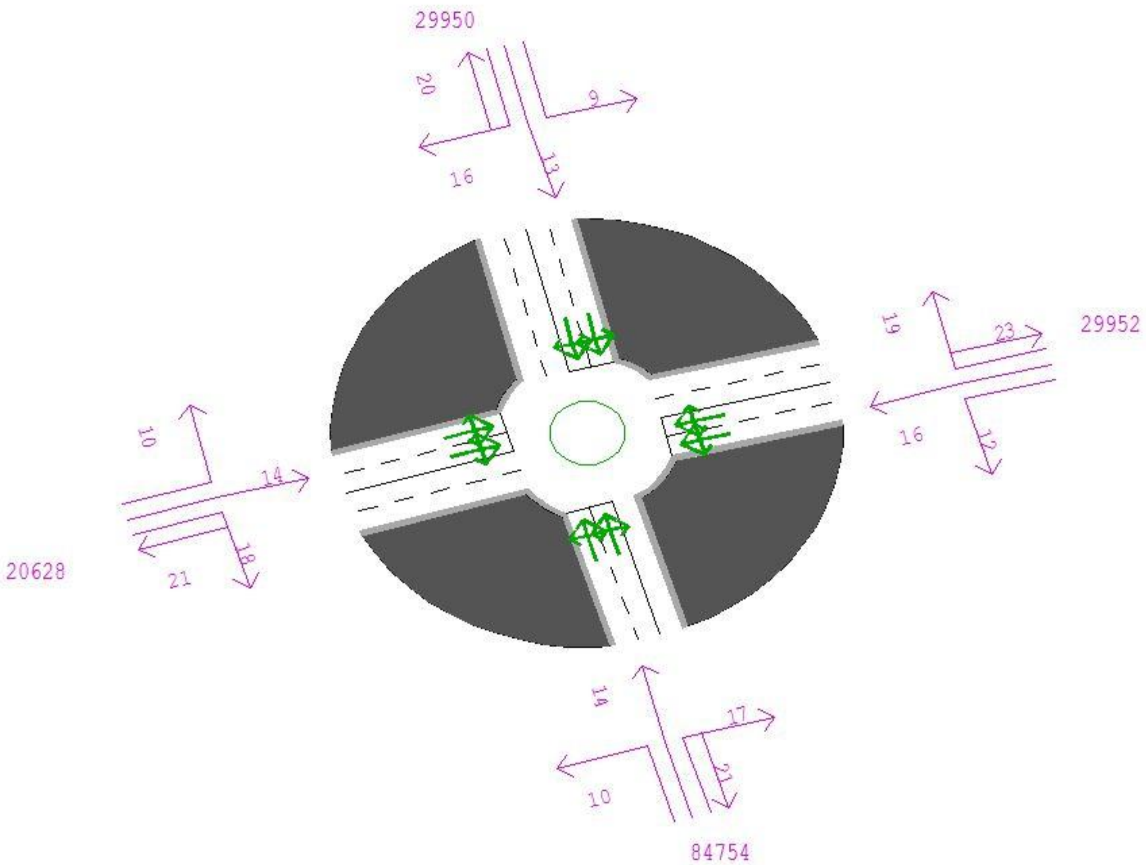


Figure J.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

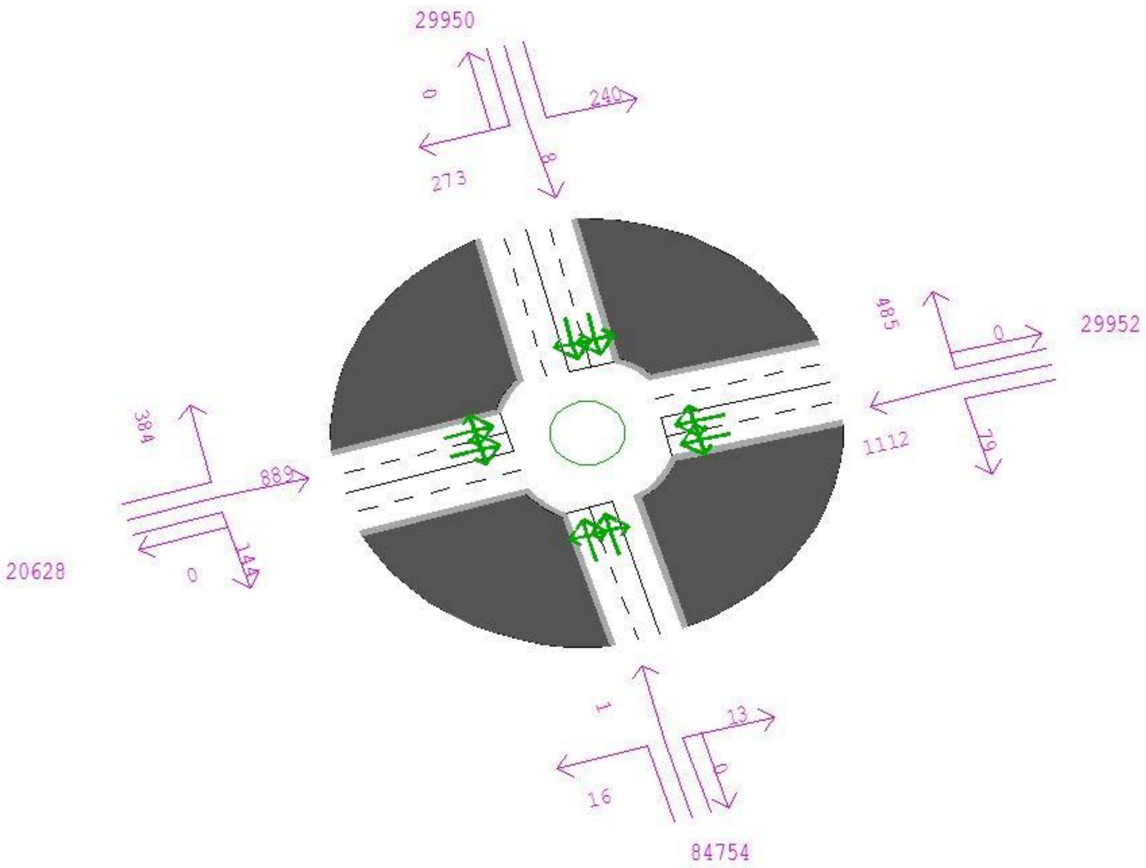


Figure J.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

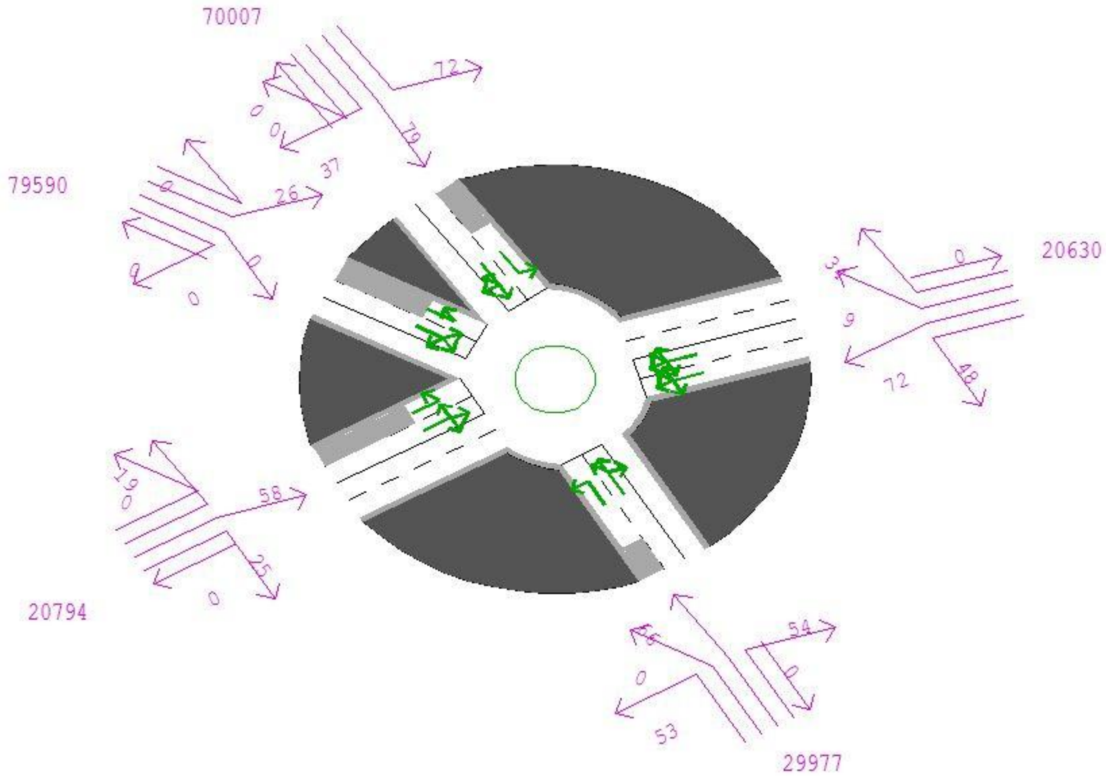


Figure J.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

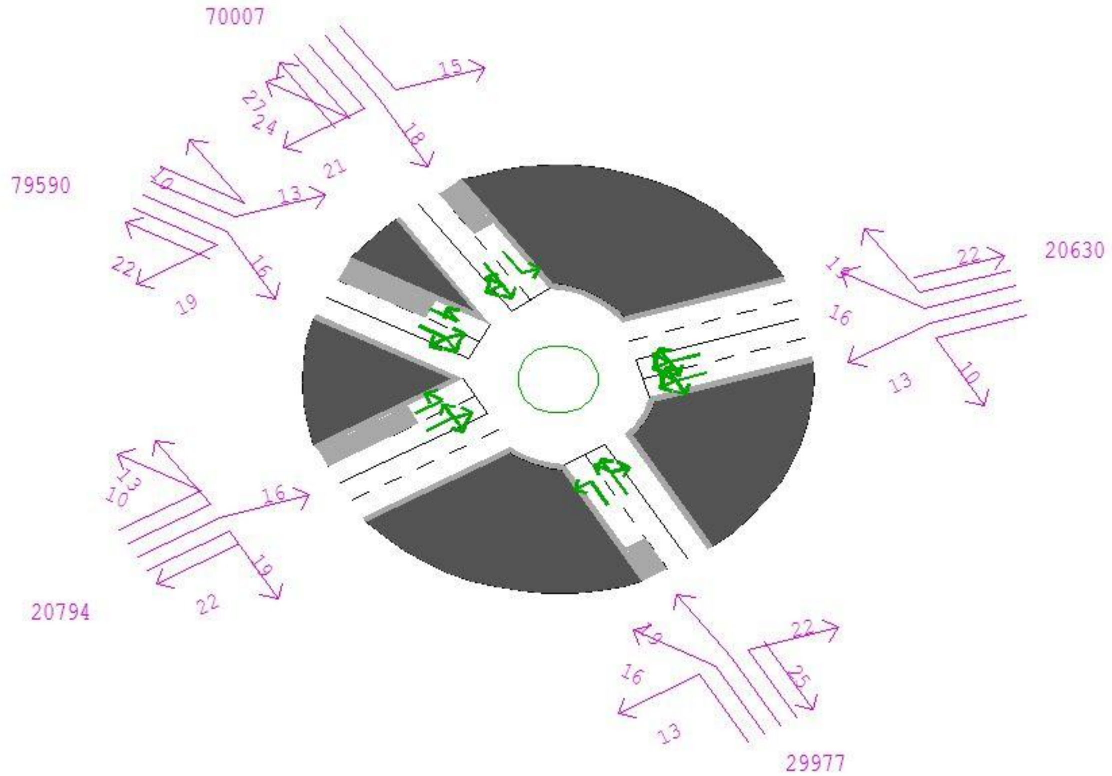


Figure J.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

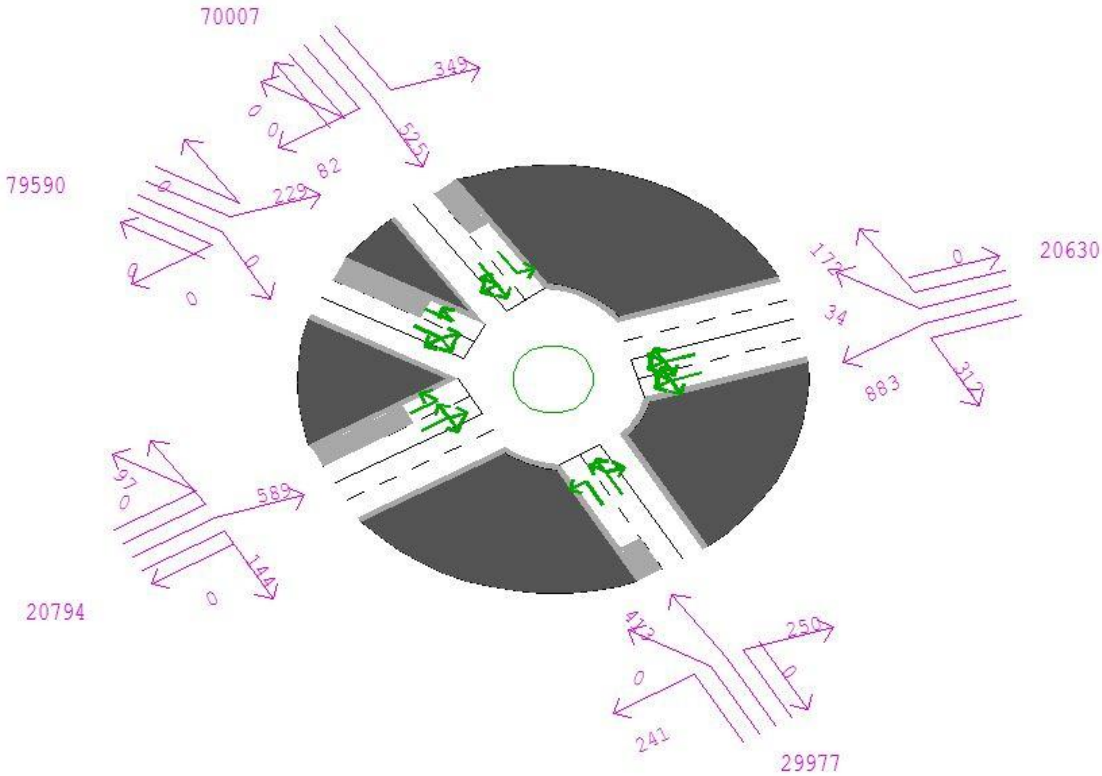


Figure J.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

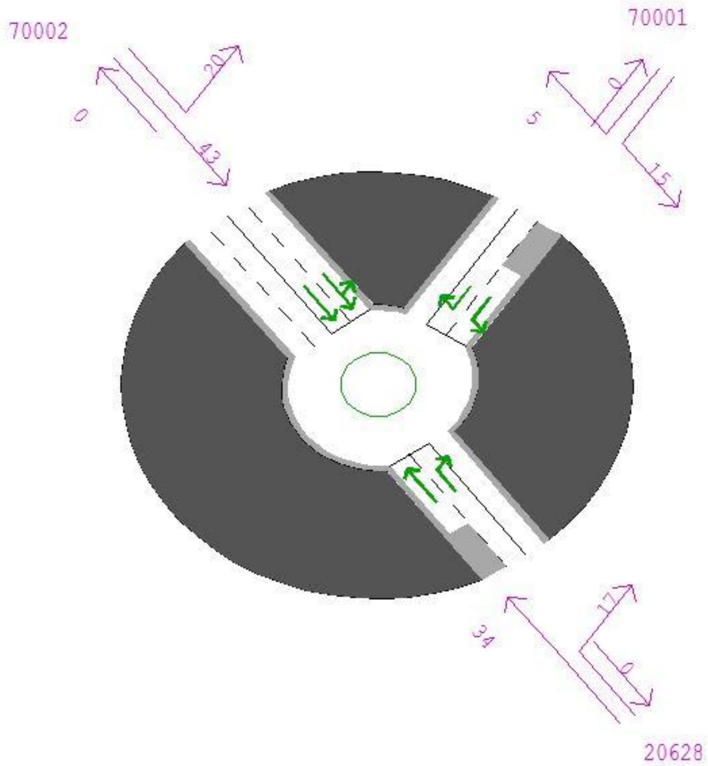


Figure J.20: A5 / Mere Lane Junction: Delay (seconds)

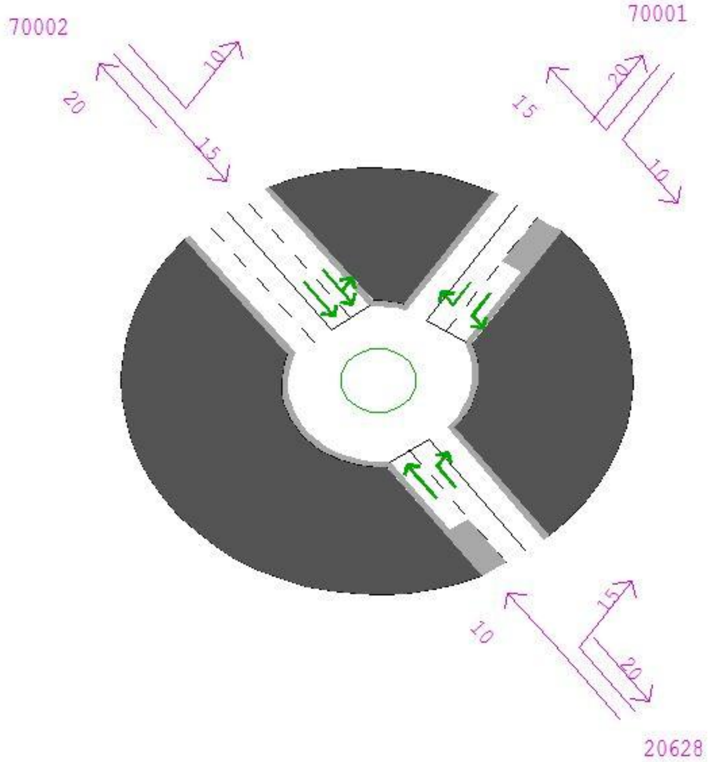


Figure J.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

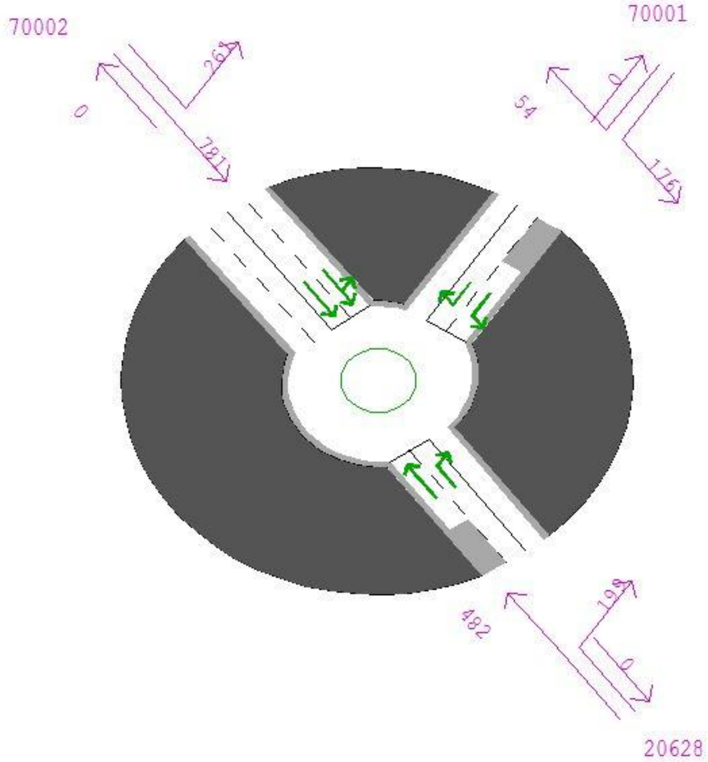


Figure J.22: M69 Junction 1: Volume-to-Capacity Ratio

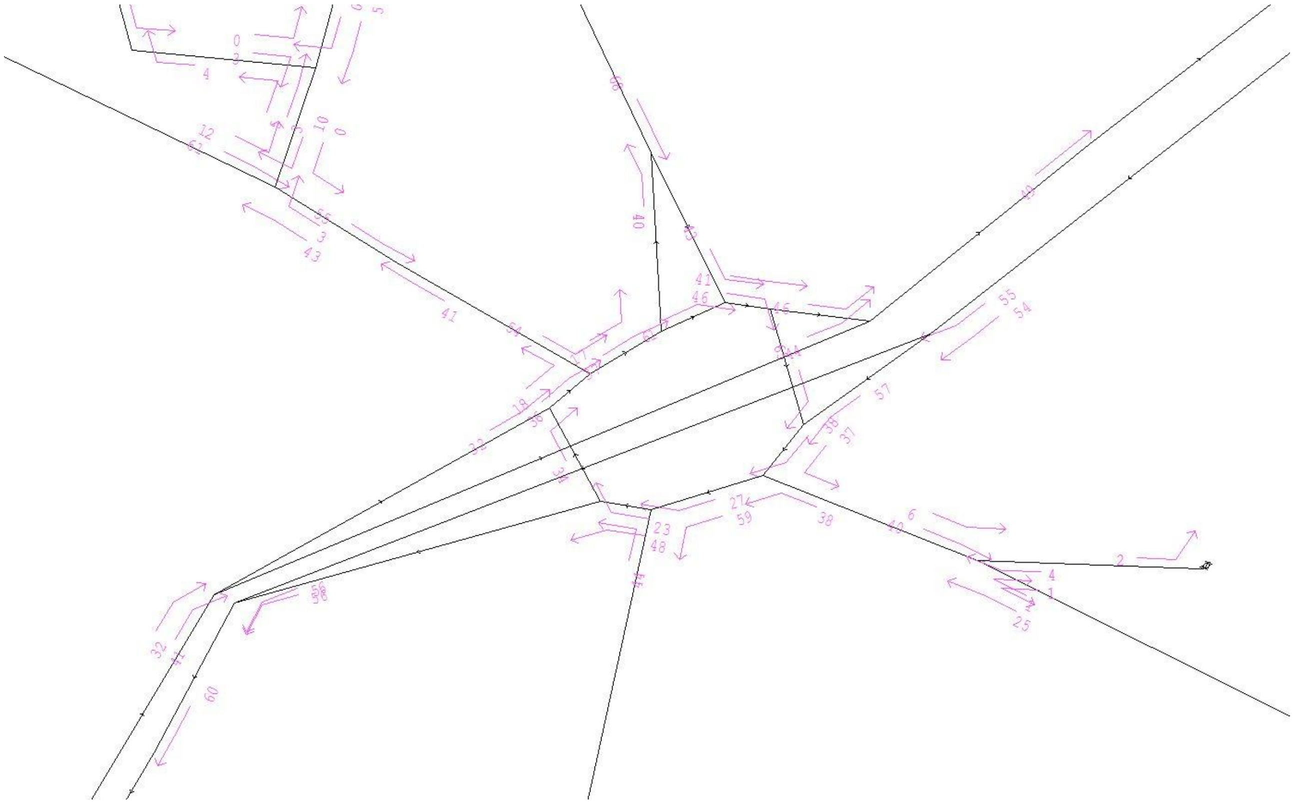


Figure J.23: M69 Junction 1: Delay (seconds)

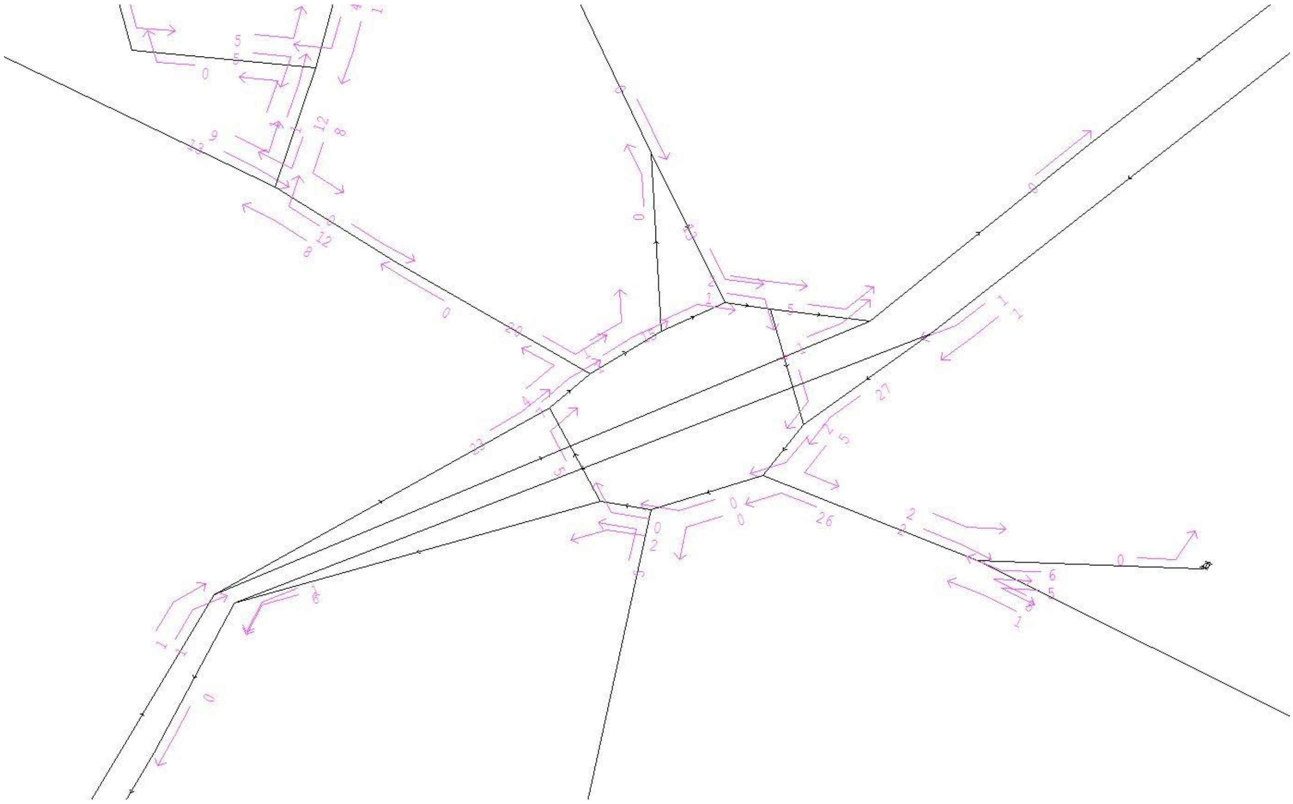


Figure J.24: M69 Junction 1: Arrive Flow (PCUs)

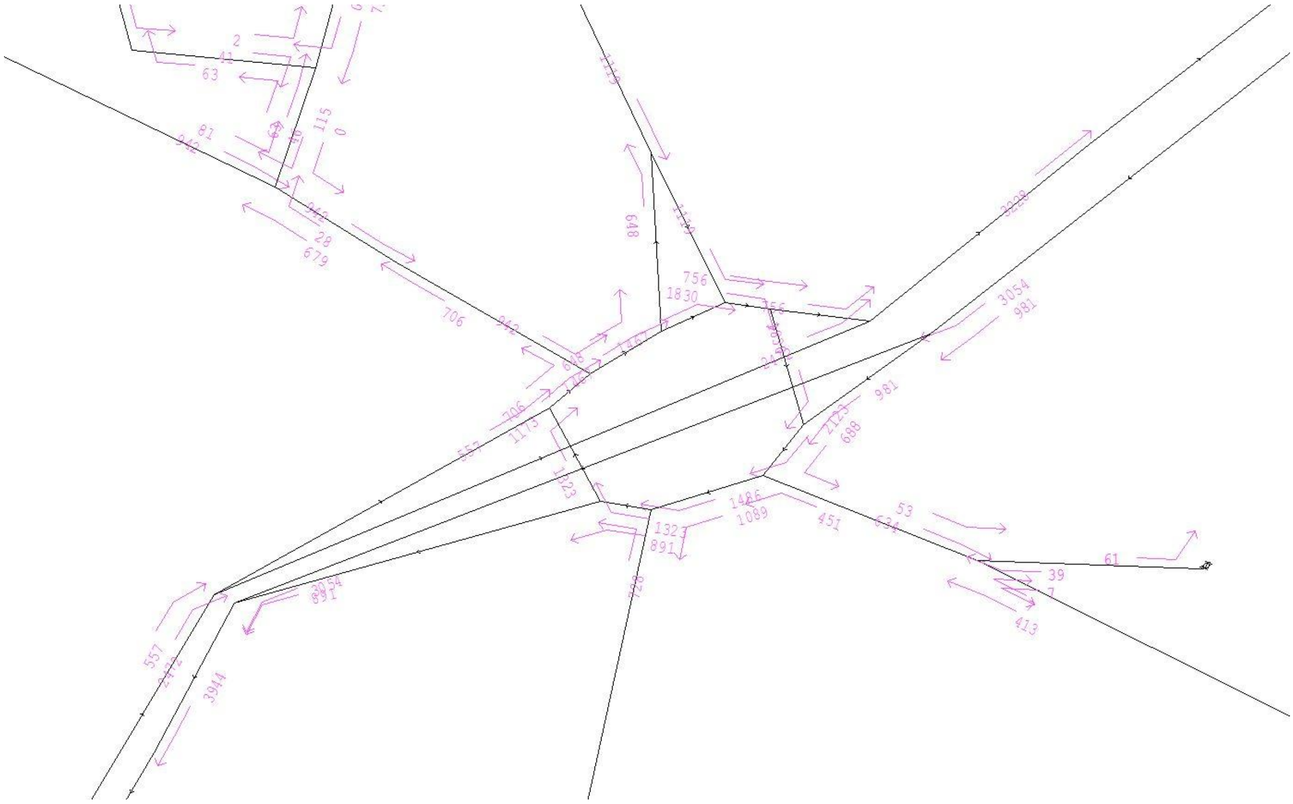


Figure J.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

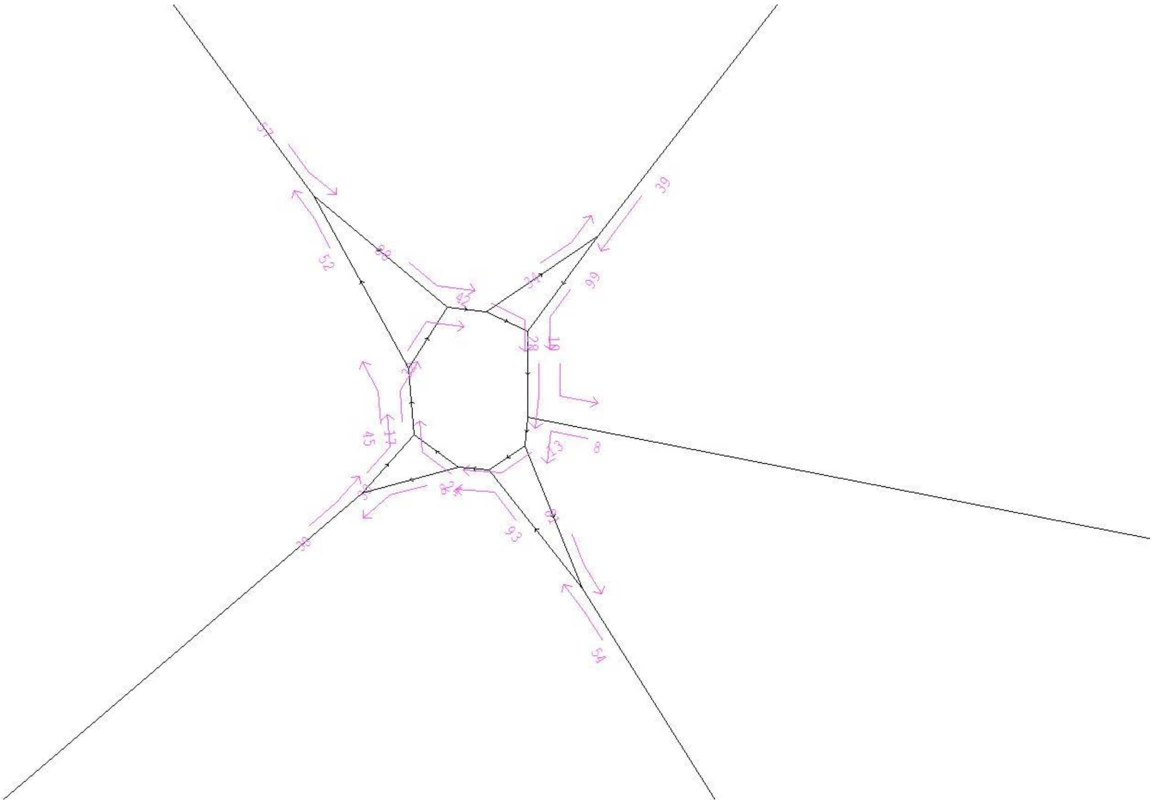


Figure J.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

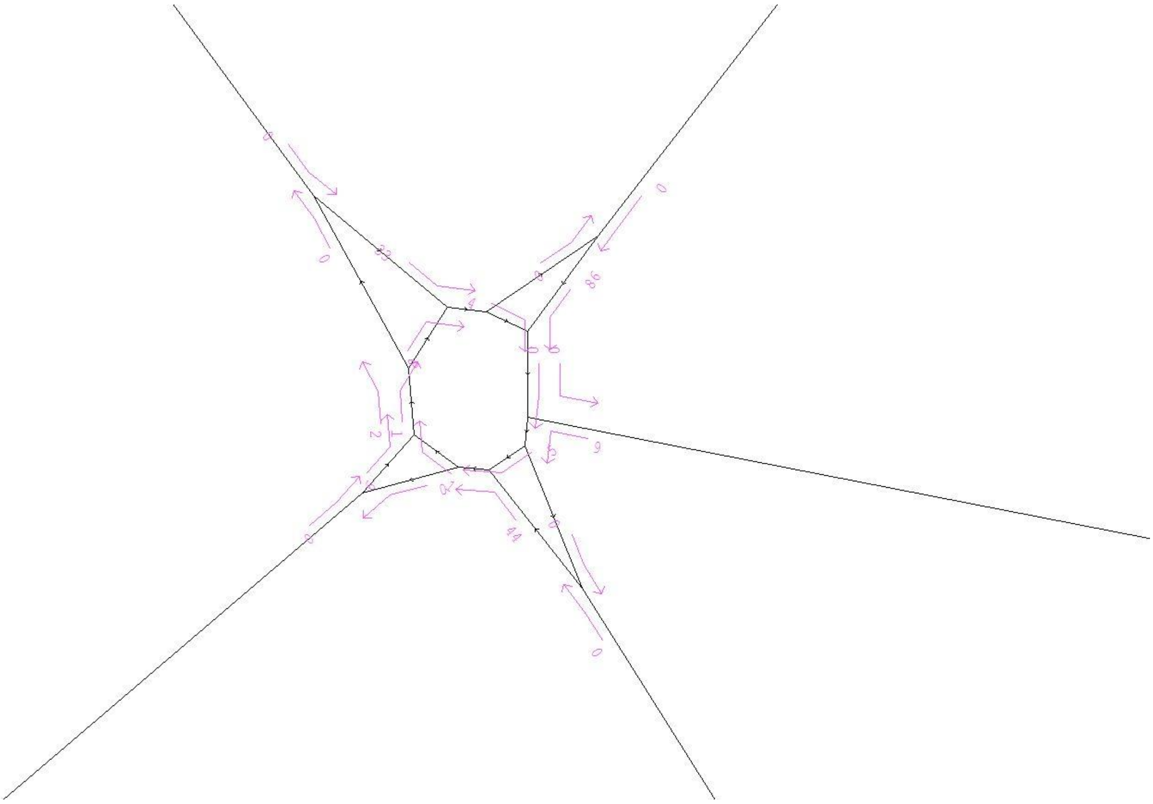


Figure J.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

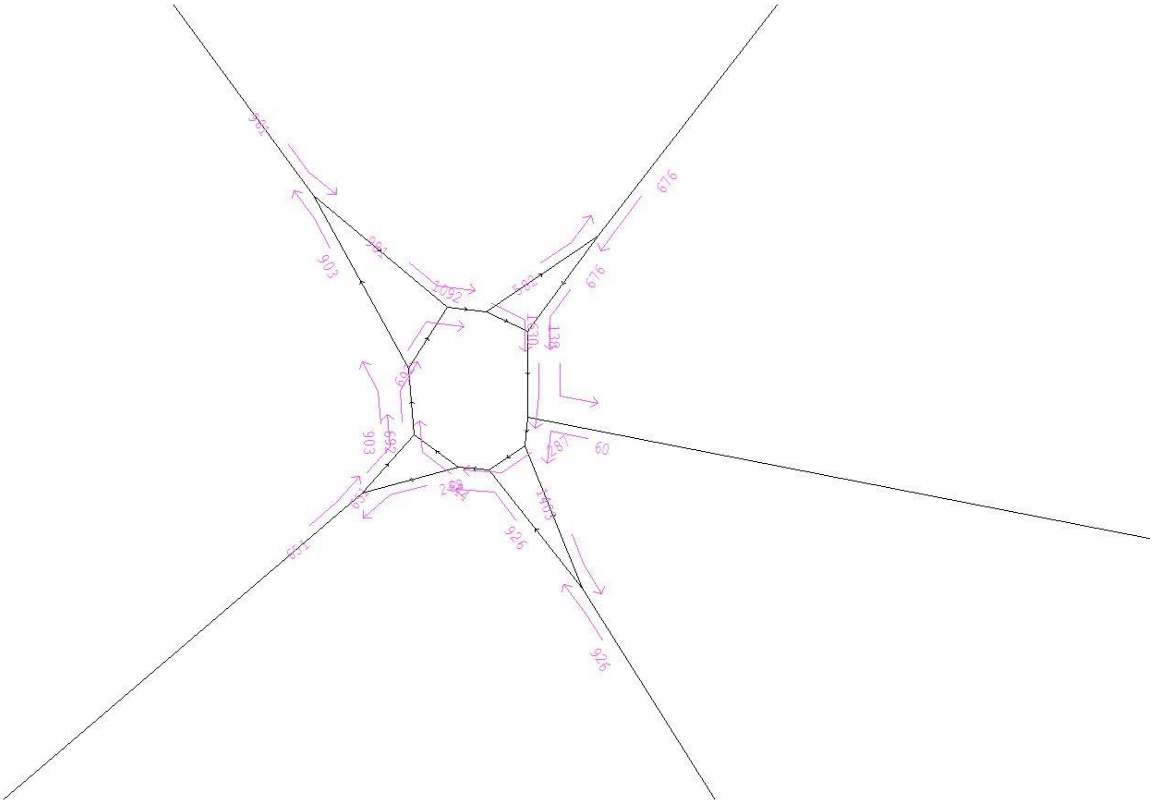


Figure J.28: M6 Junction 1: Volume-to-Capacity Ratio

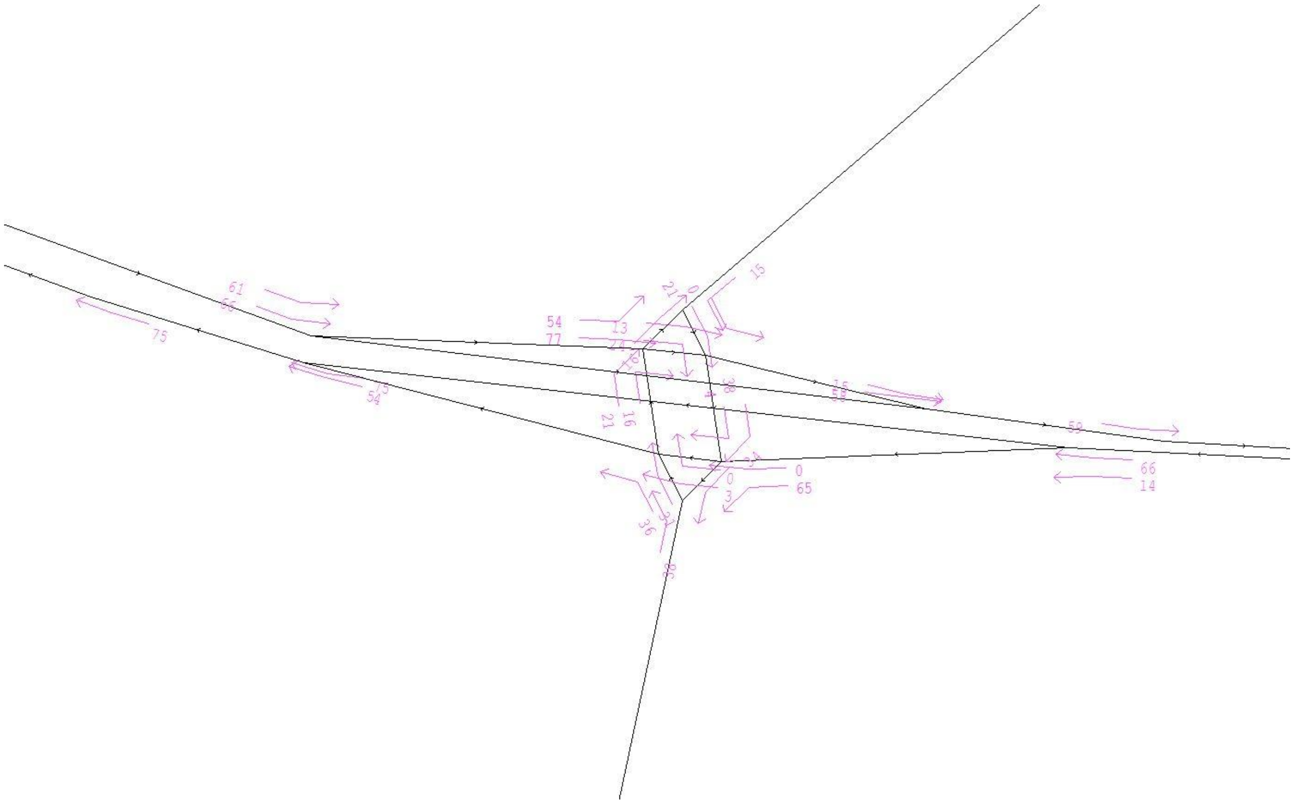


Figure J.29: M6 Junction 1: Delay (seconds)

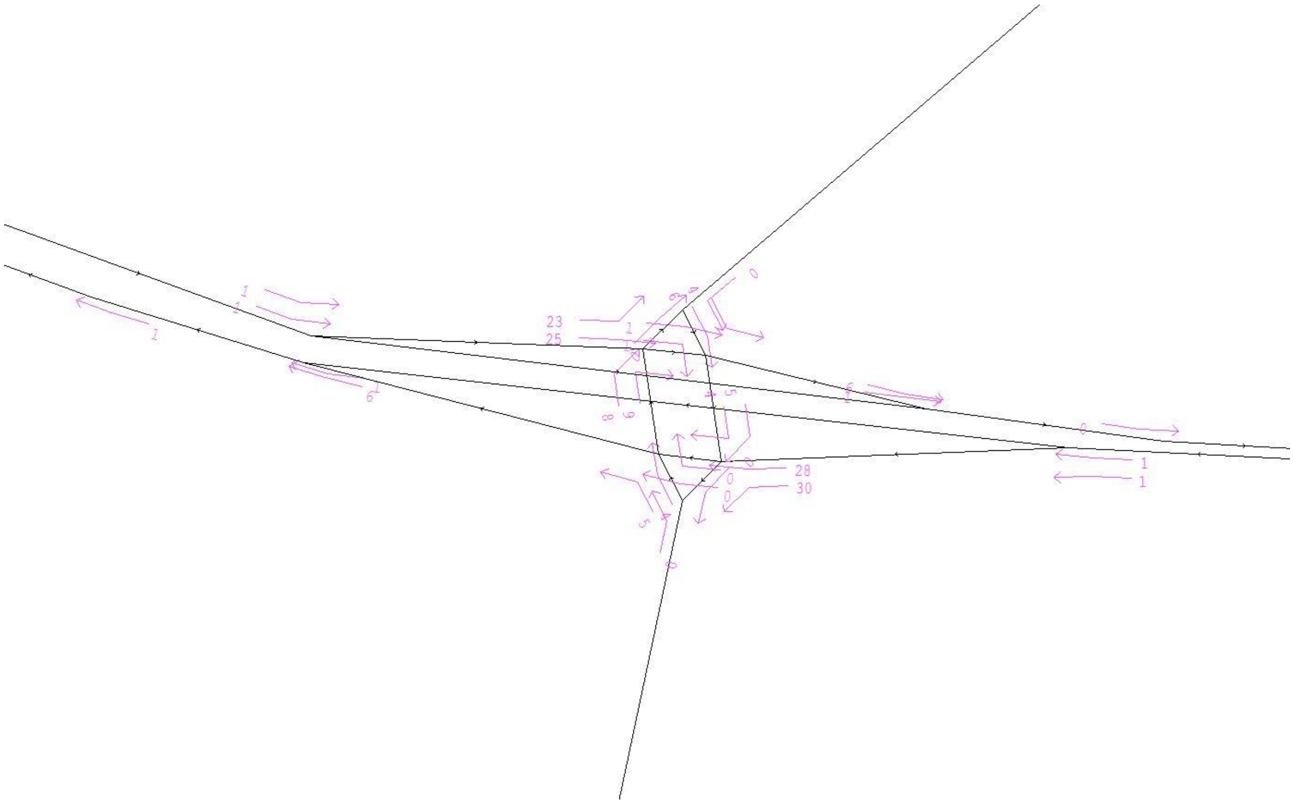


Figure J.30: M6 Junction 1: Arrive Flow (PCUs)

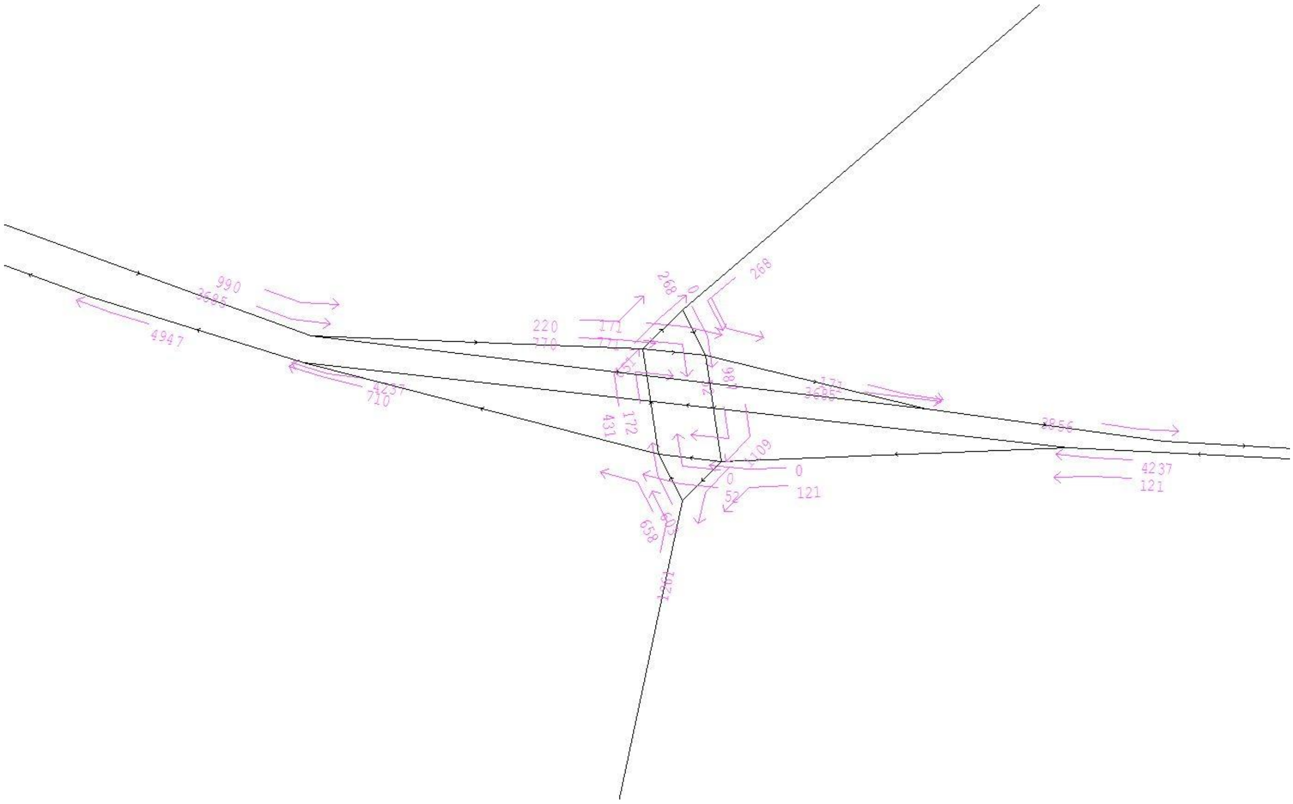


Figure J.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

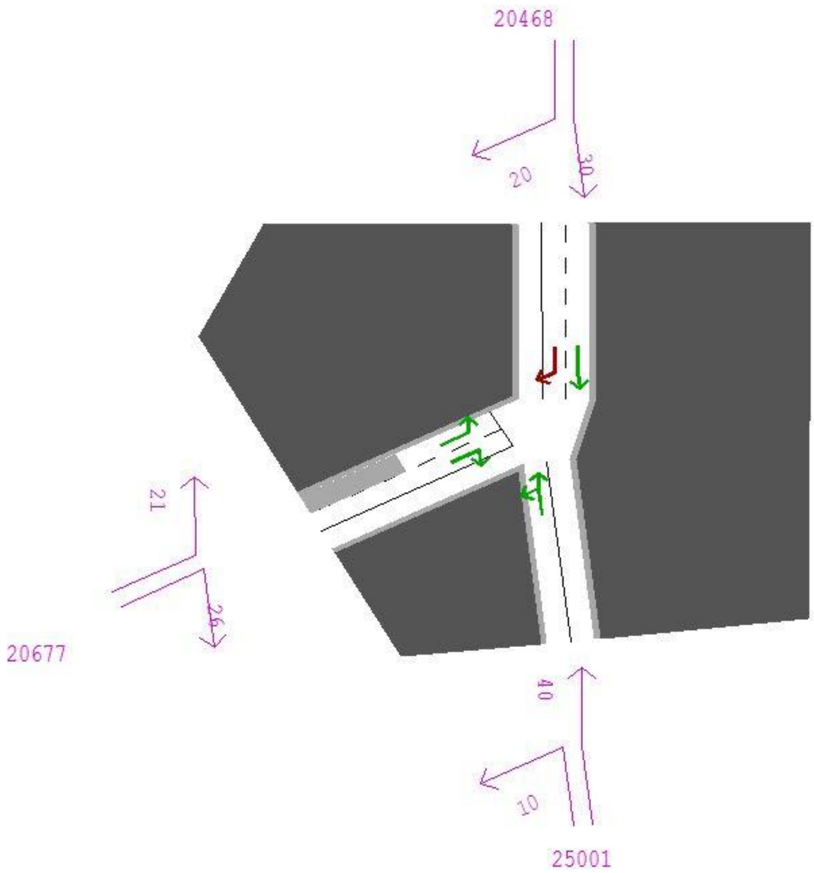


Figure J.32: A426 / Bill Crane Way Junction: Delay (seconds)

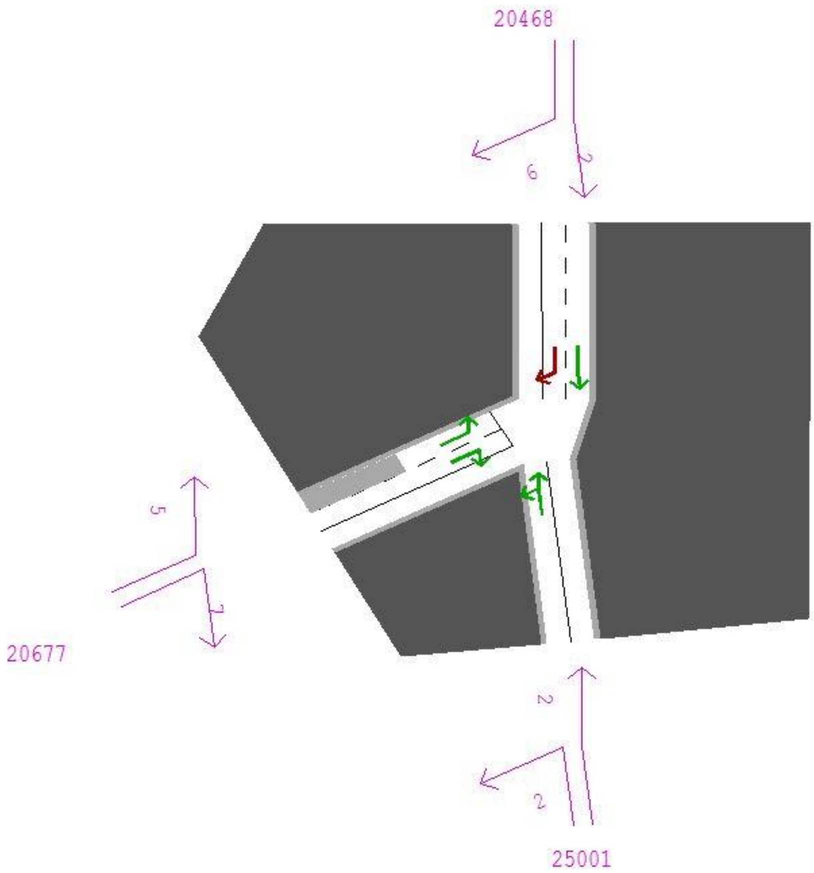


Figure J.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

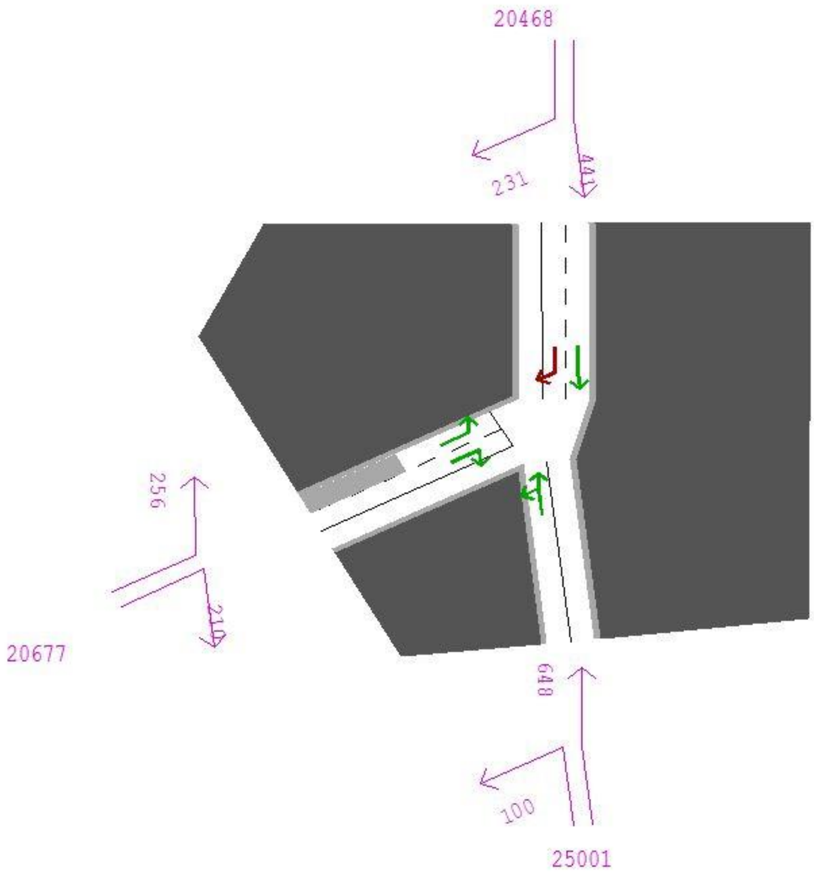


Figure J.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

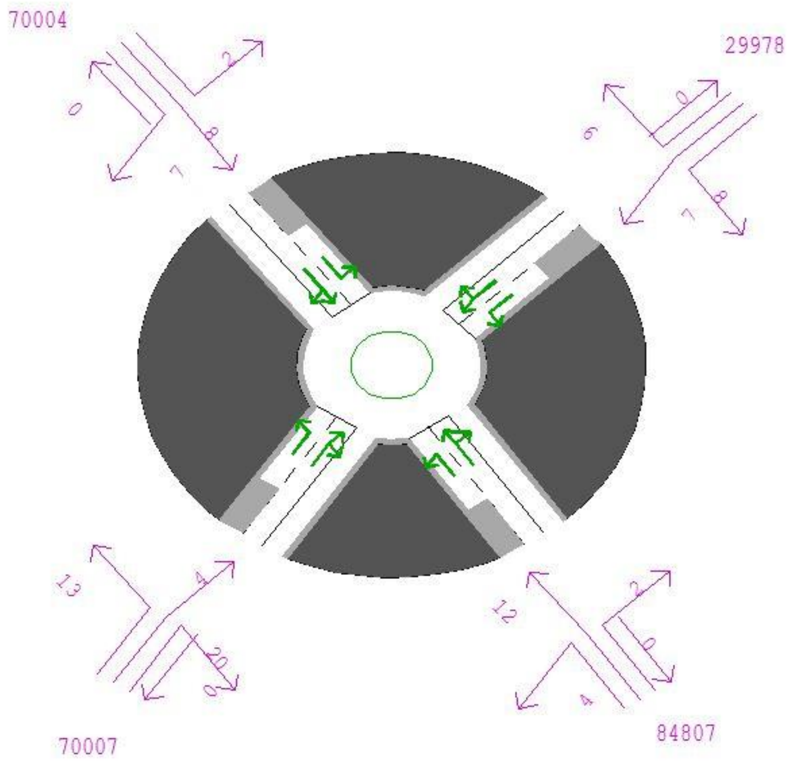


Figure J.35: Mere Lane / Magna Park Access: Delay (seconds)

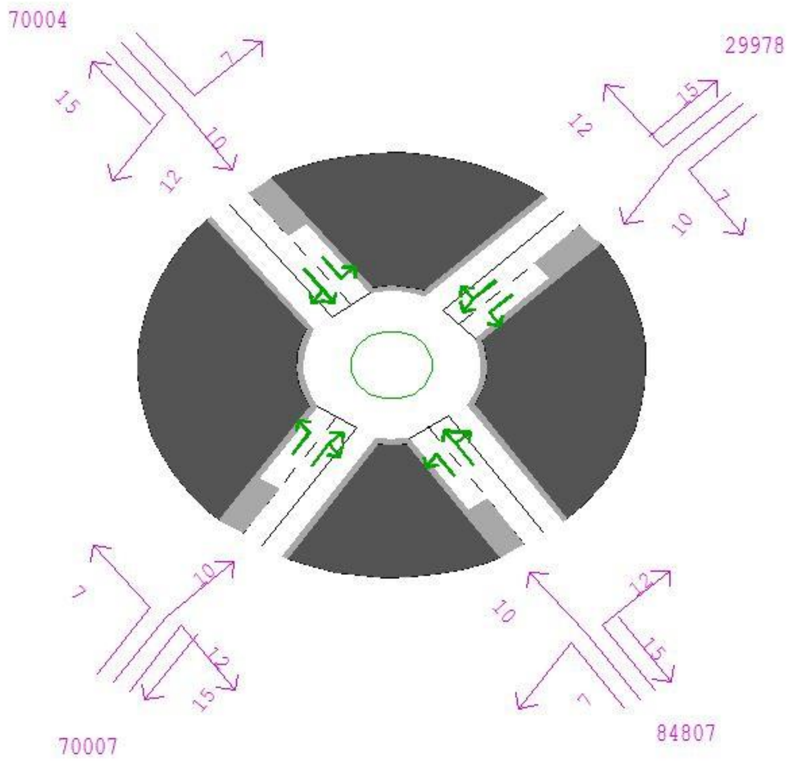


Figure J.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

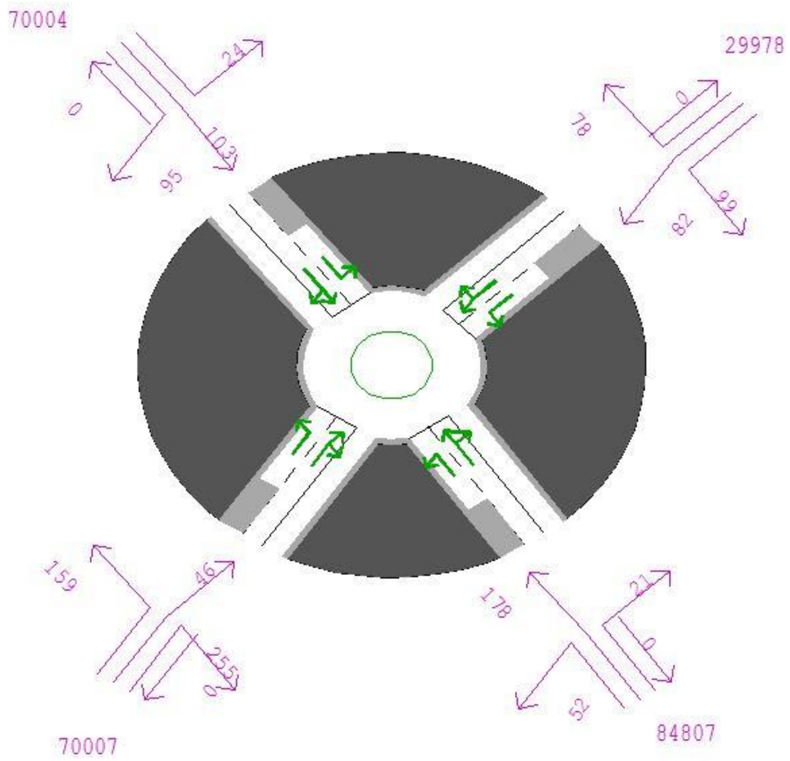


Figure J.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

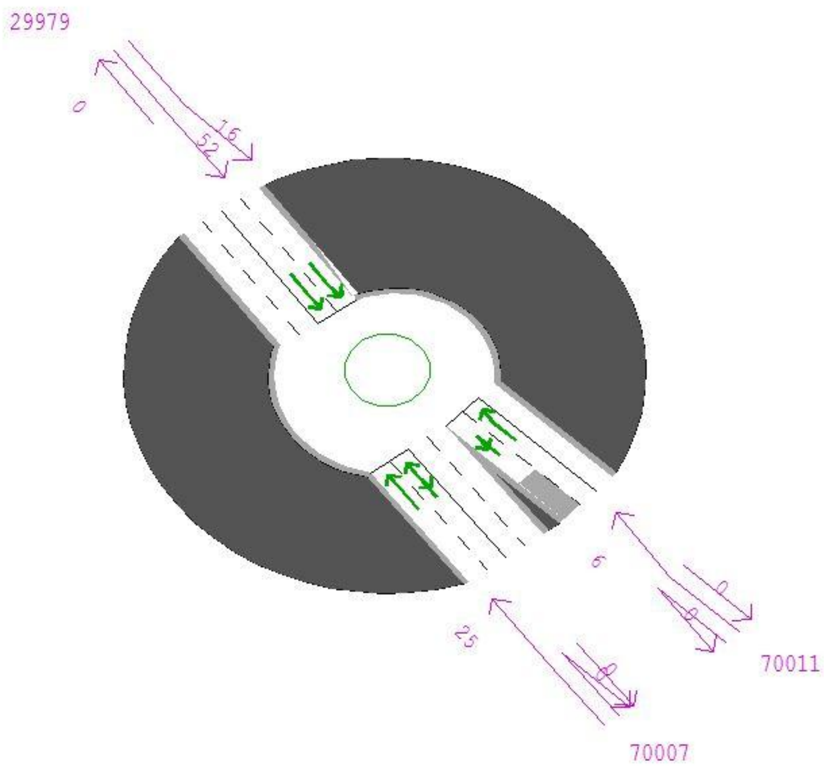


Figure J.38: A5 / Magna Park Access: Delay (seconds)

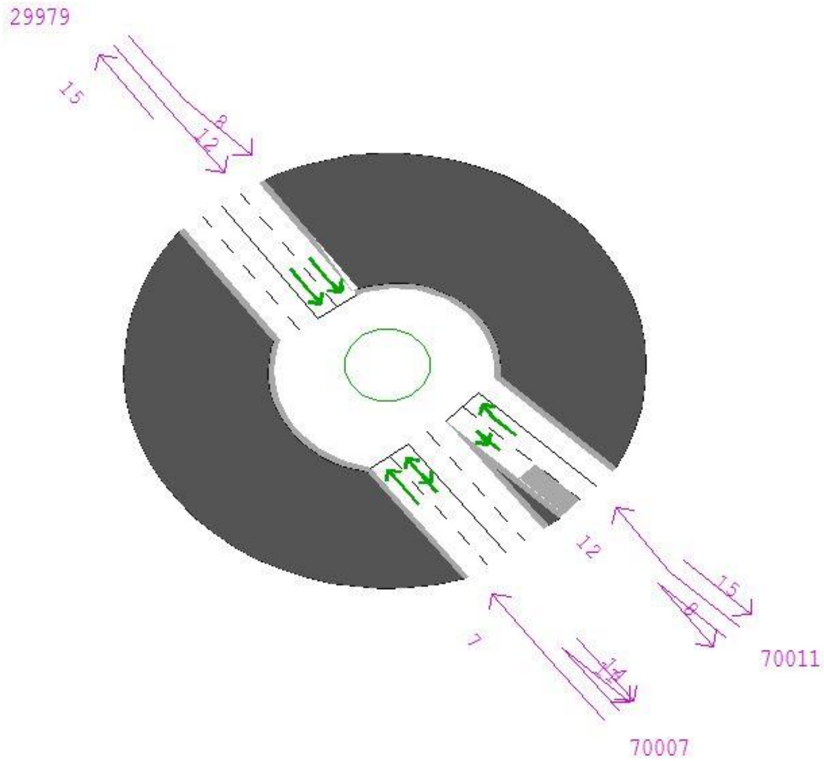
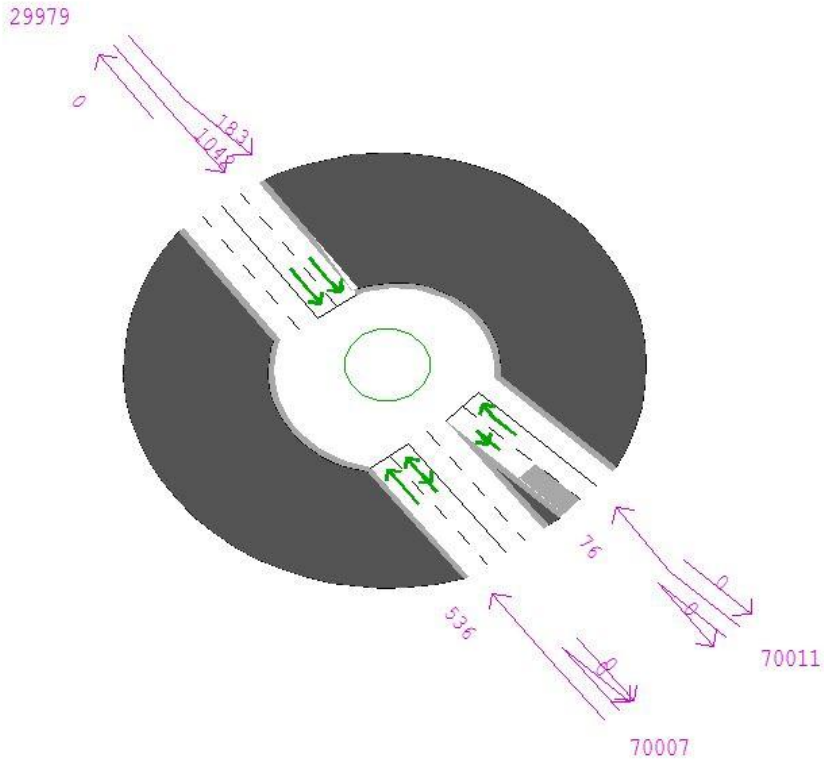


Figure J.39: A5 / Magna Park Access: Arrive Flow (PCUs)



MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

Second Supplementary Transport Assessment: Appendix B LLITM Technical Note – Appendix K

Final Report

Appendix K 2026 'with development', including the proposed mitigation measures and Symmetry Park, PM Peak Junction Node Data

K.1.1 It should be noted that the highway model has not been calibrated nor validated at a junction level. This means that the turning flows, and resultant delays and capacity restraints, may not be representative of the situation in 2008 in the base year model. This should be borne in mind when considering the results of this analysis.

Figure K.1: M1 Junction 20: Volume-to-Capacity Ratio

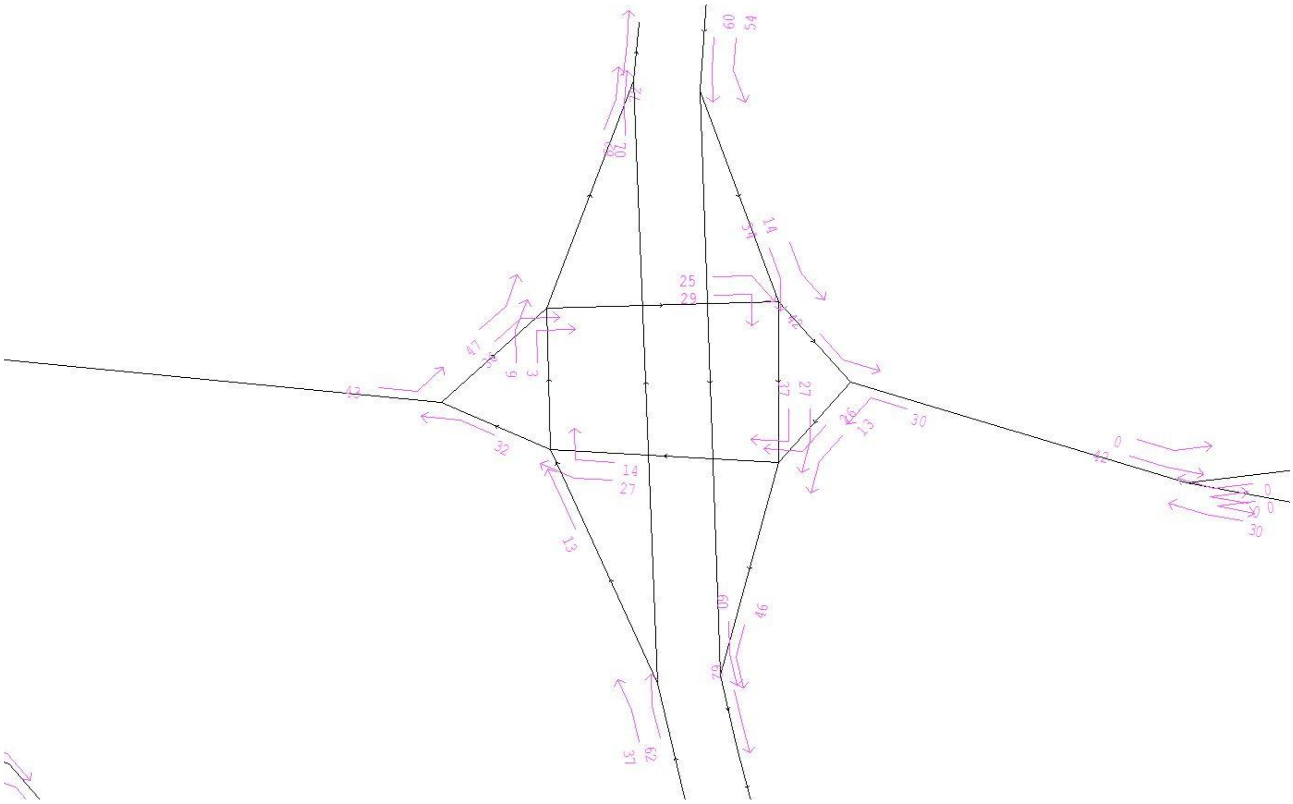


Figure K.2: M1 Junction 20: Delay (seconds)

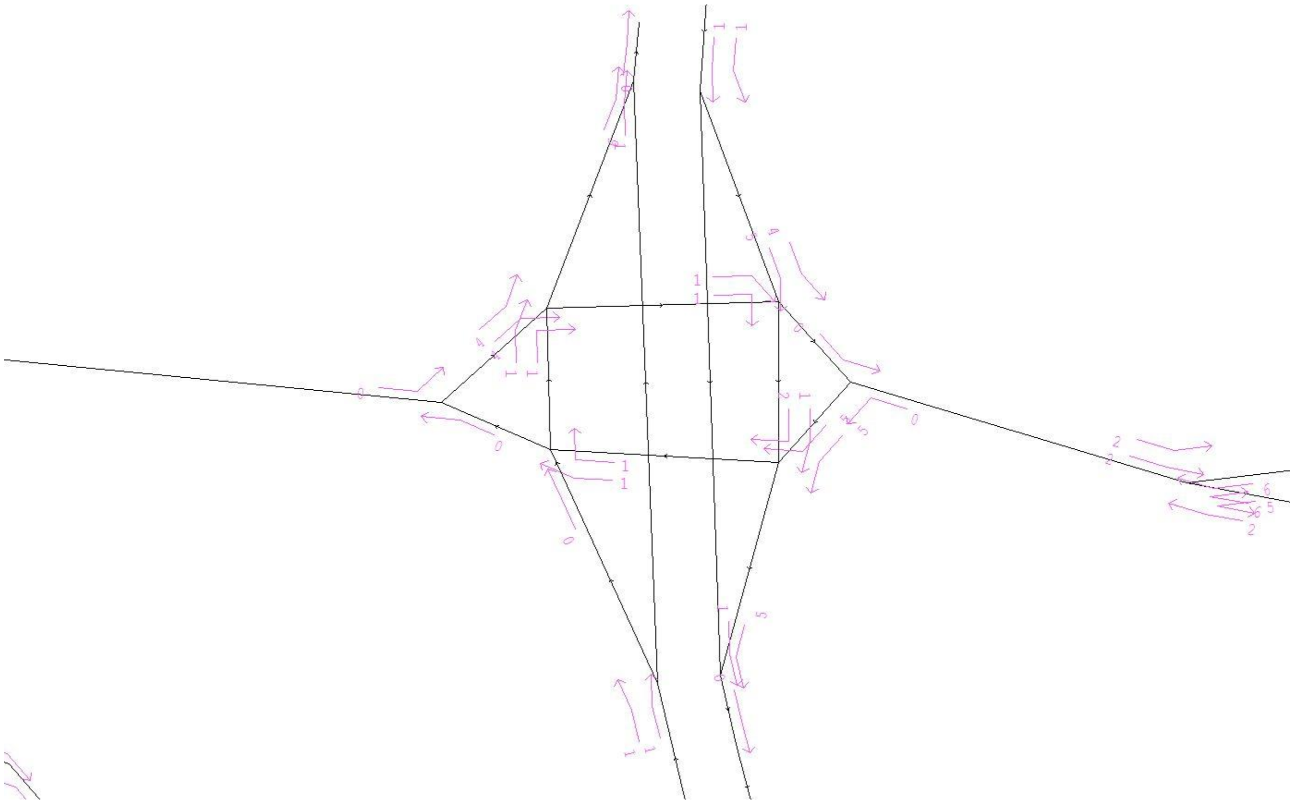


Figure K.3: M1 Junction 20: Arrive Flow (PCUs)

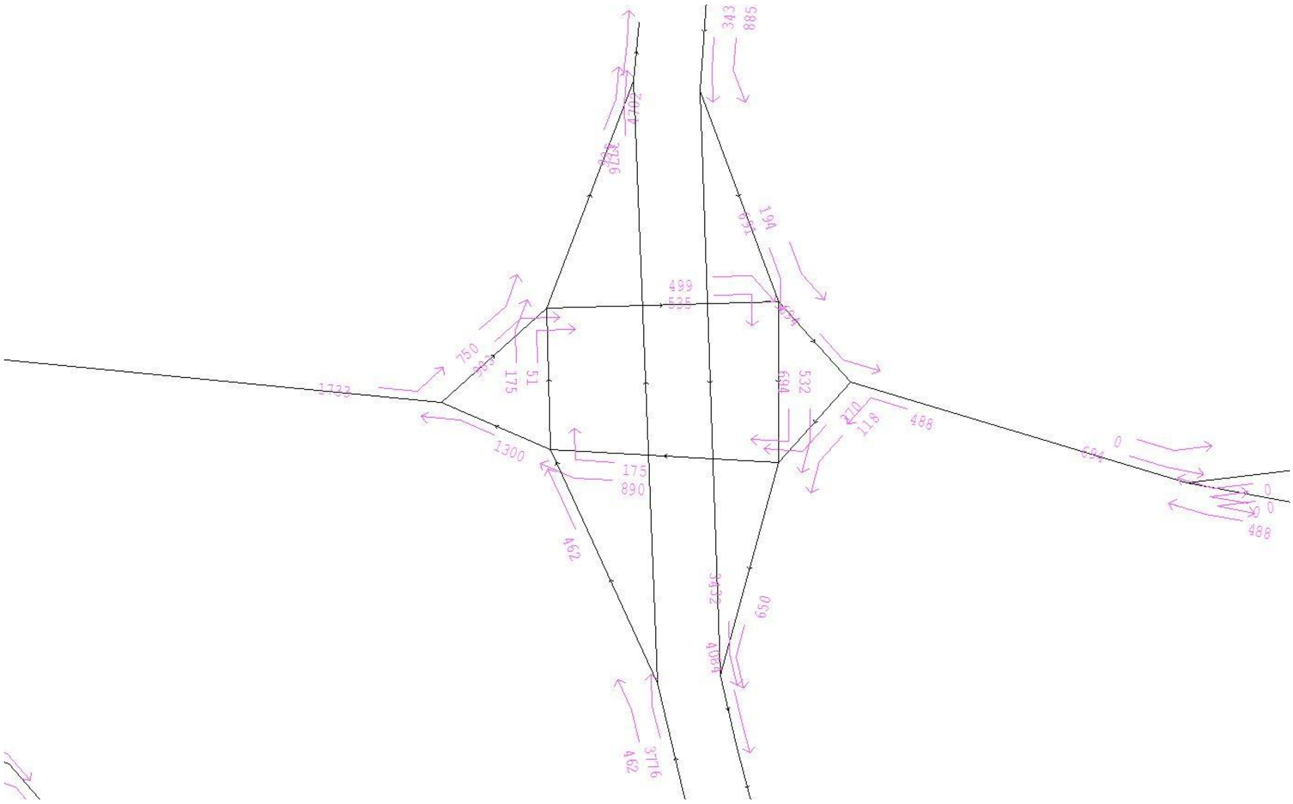


Figure K.4: A4303 / A426 Roundabout: Volume-to-Capacity Ratio

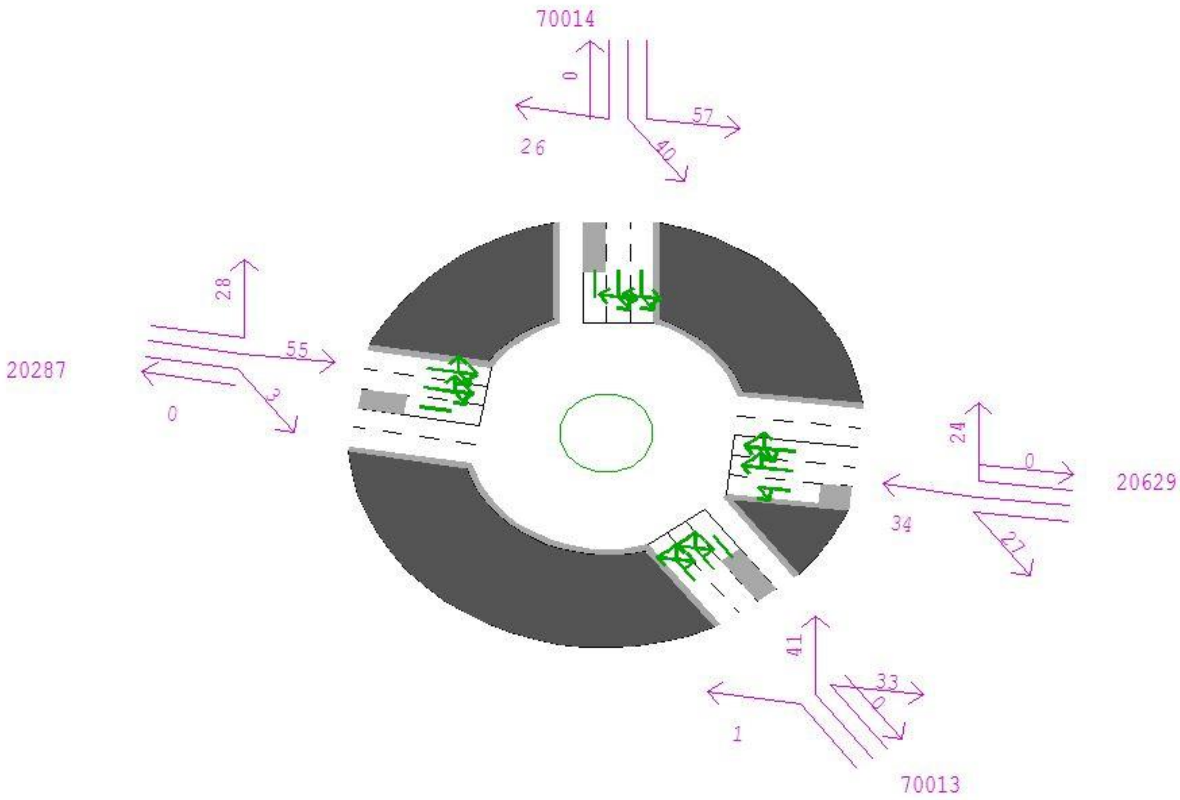


Figure K.5: A4303 / A426 Roundabout: Delay (seconds)

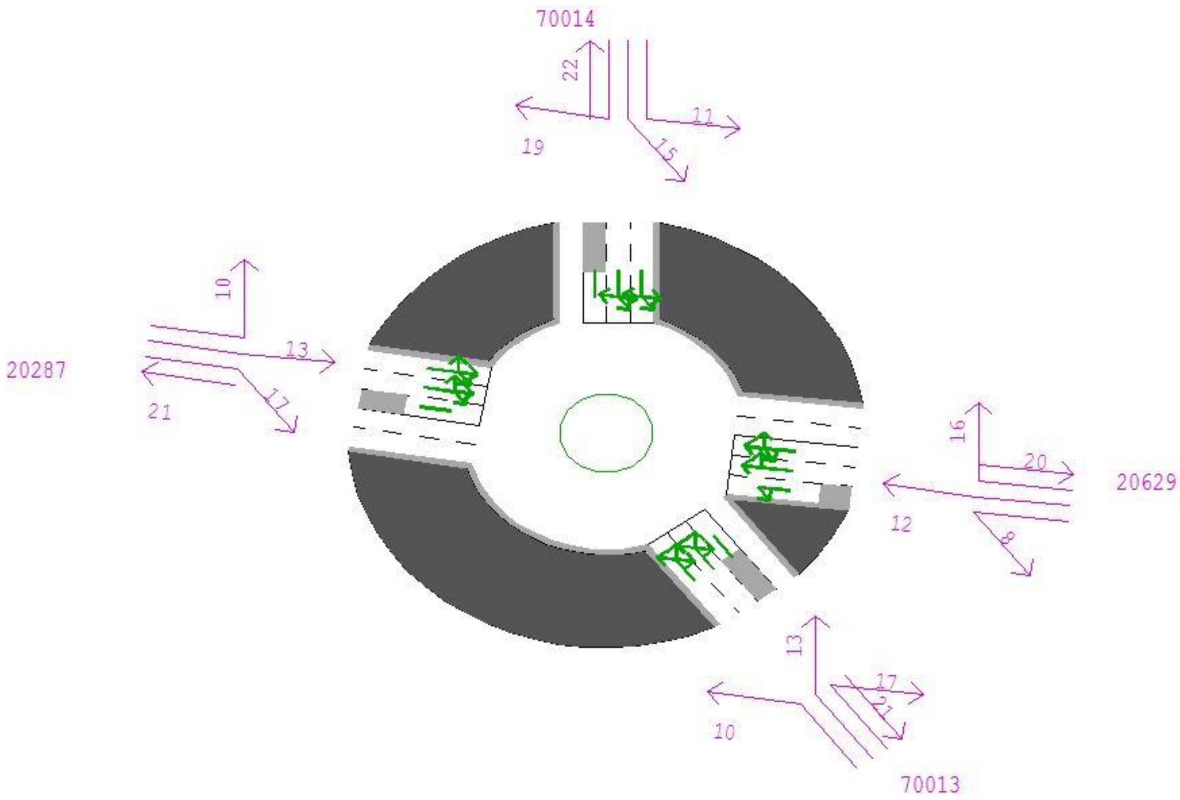


Figure K.6: A4303 / A426 Roundabout: Arrive Flow (PCUs)

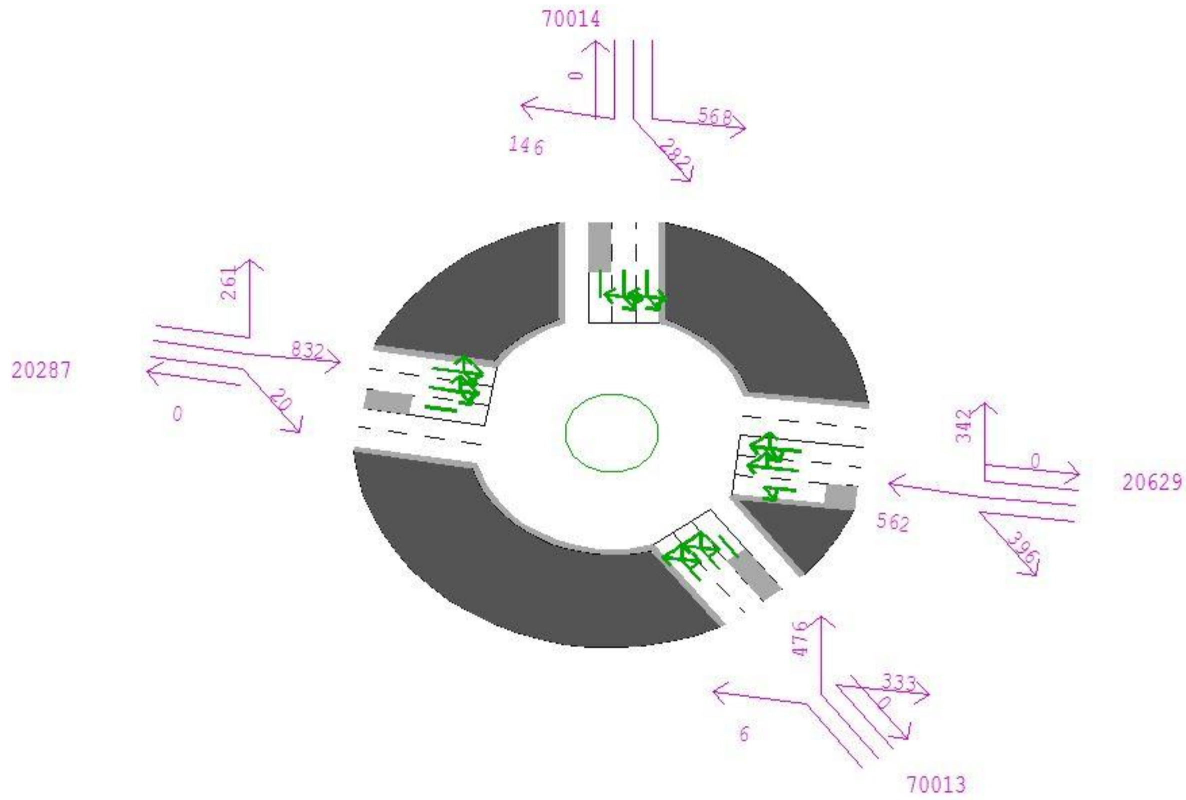


Figure K.7: A4303 / Coventry Road Roundabout: Volume-to-Capacity Ratio

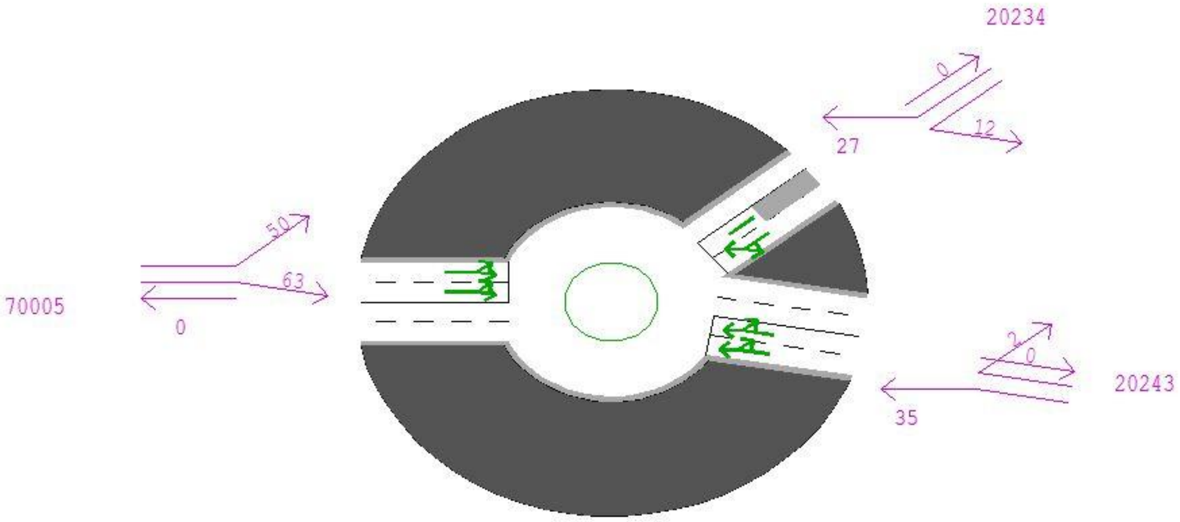


Figure K.8: A4303 / Coventry Road Roundabout: Delay (seconds)

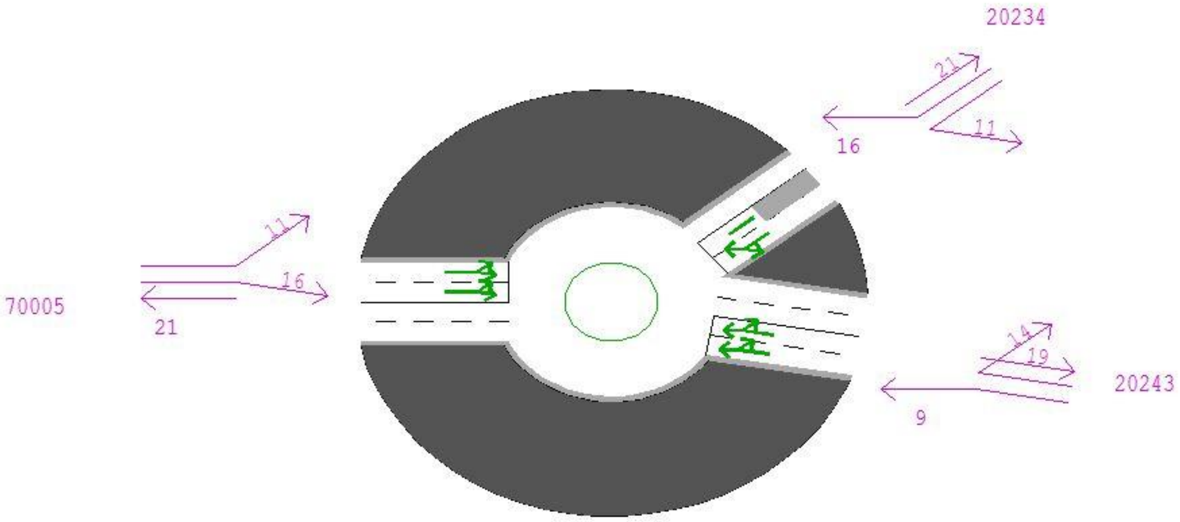


Figure K.9: A4303 / Coventry Road Roundabout: Arrive Flow (PCUs)

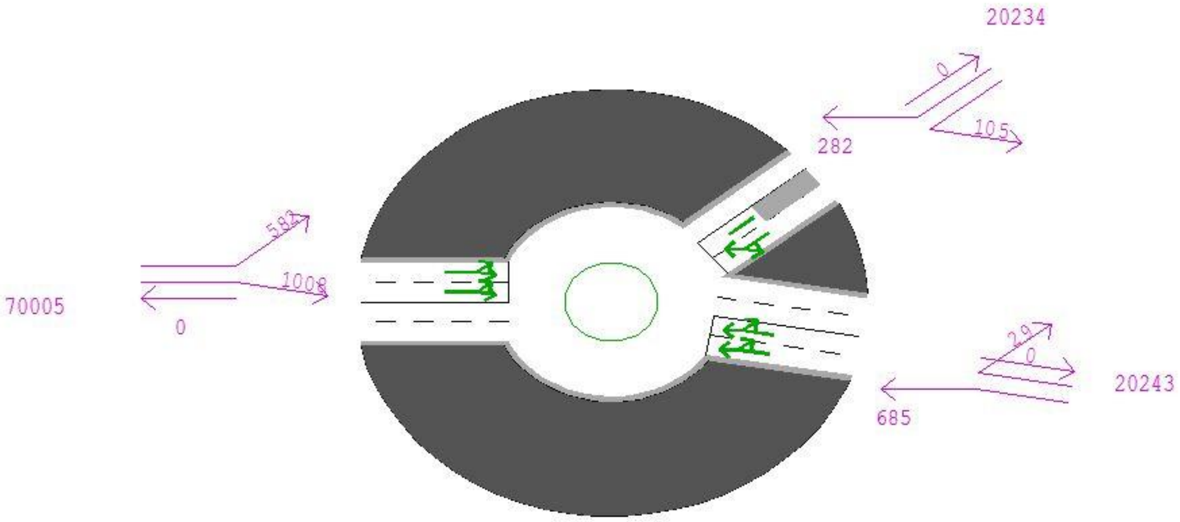


Figure K.10: A4303 / Shackleton Way Junction: Volume-to-Capacity Ratio

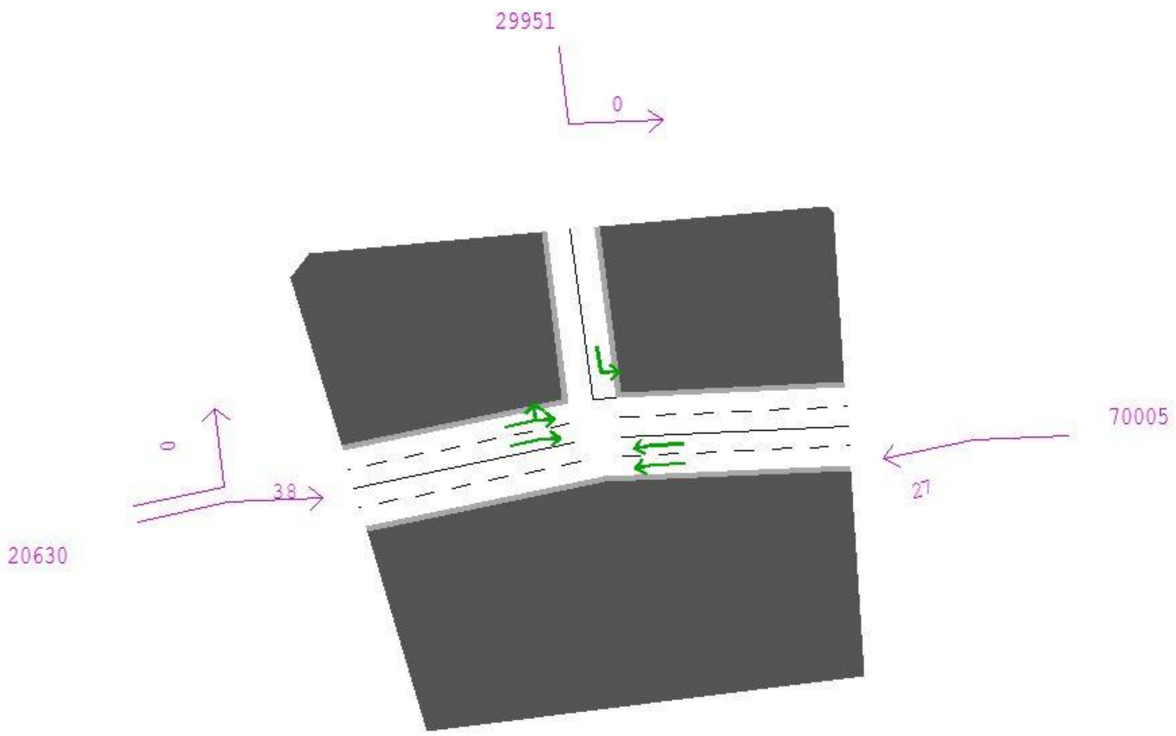


Figure K.11: A4303 / Shackleton Way Junction: Delay (seconds)

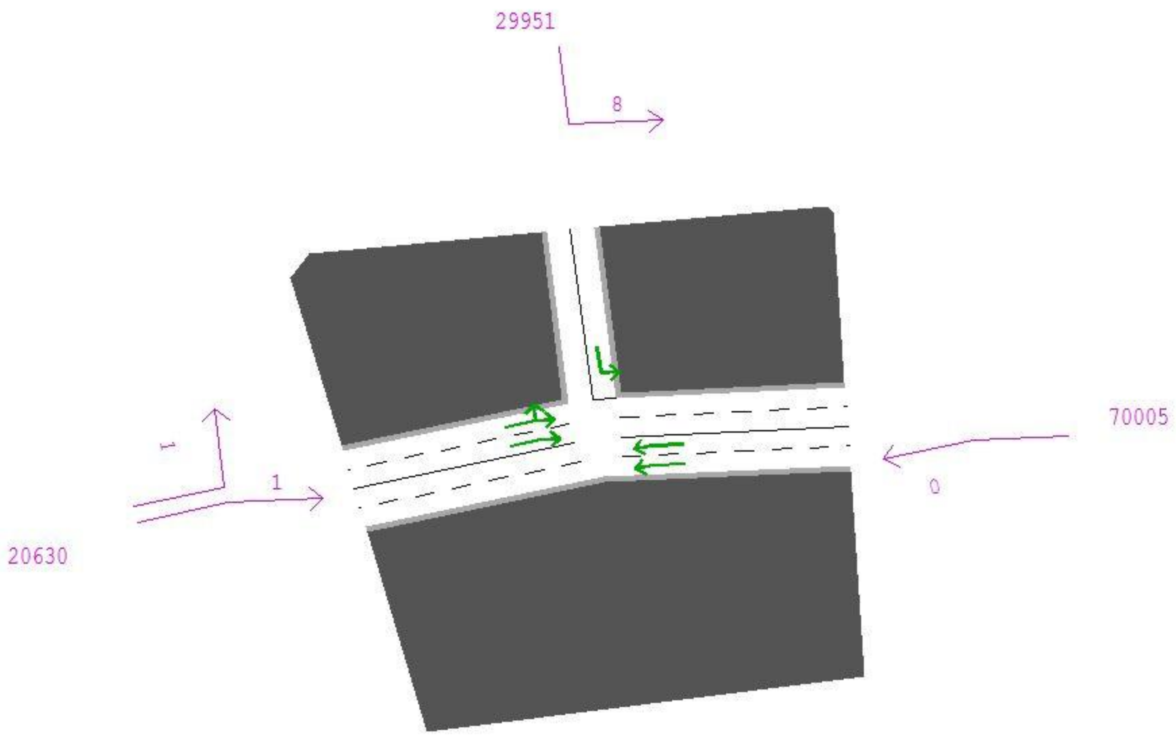


Figure K.12: A4303 / Shackleton Way Junction: Arrive Flow (PCUs)

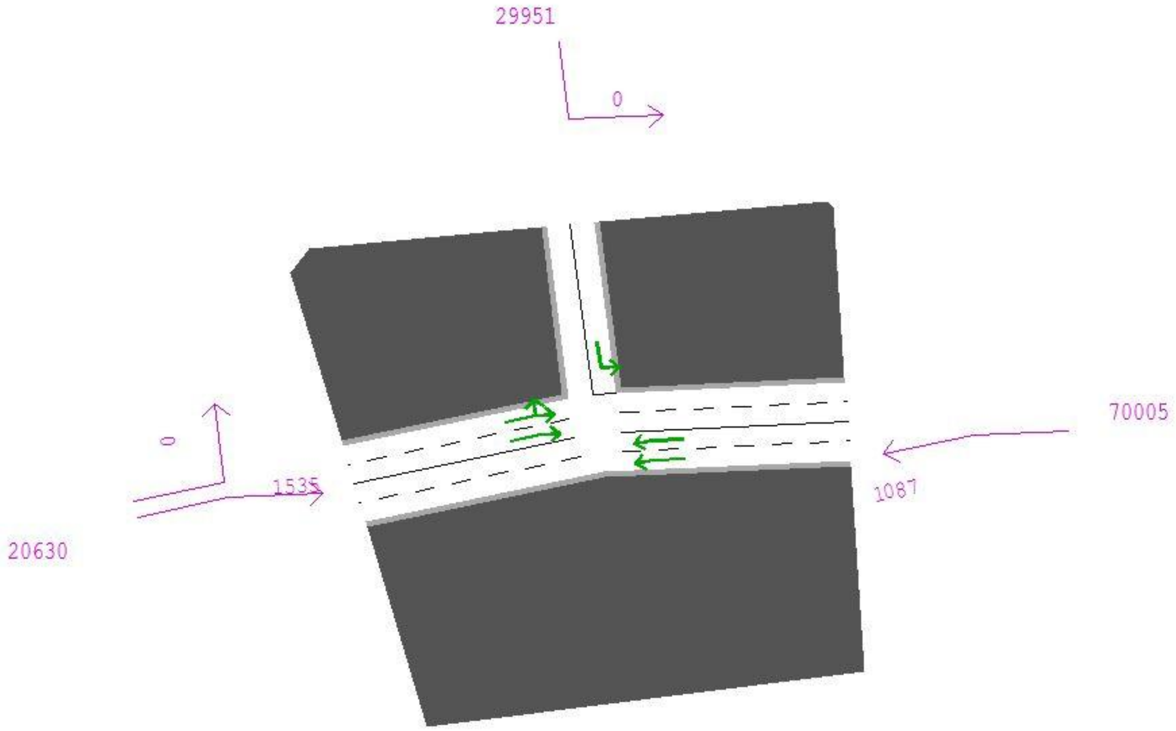


Figure K.13: A4303 / Hunter Boulevard Roundabout: Volume-to-Capacity Ratio

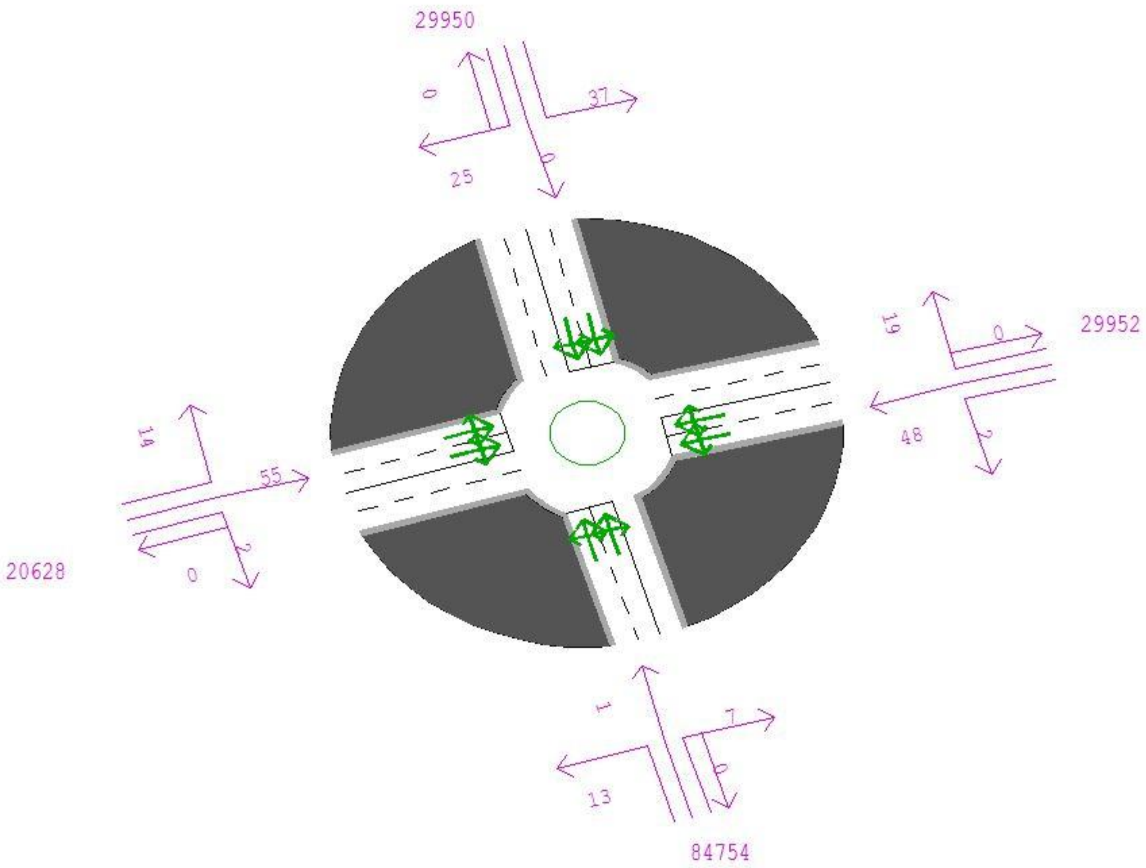


Figure K.14: A4303 / Hunter Boulevard Roundabout: Delay (seconds)

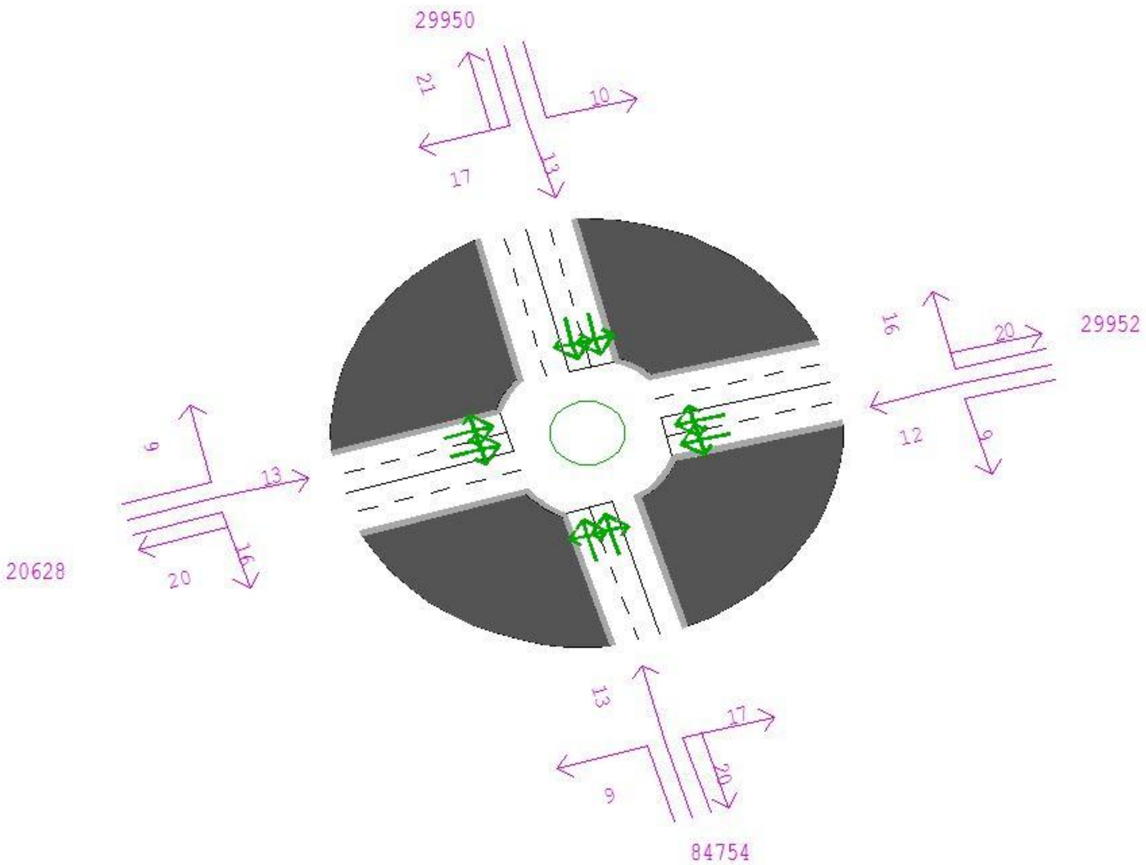


Figure K.15: A4303 / Hunter Boulevard Roundabout: Arrive Flow (PCUs)

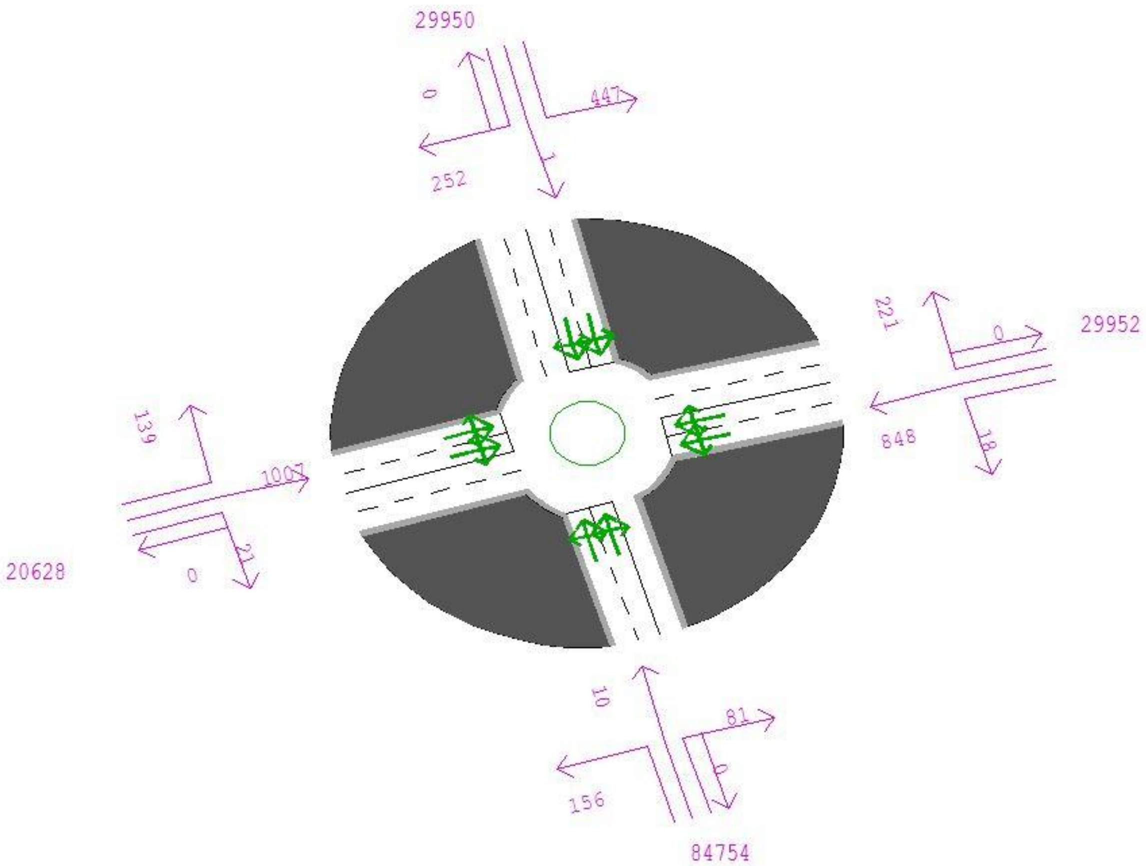


Figure K.16: A5 / A4303 (Cross in Hand) Roundabout: Volume-to-Capacity Ratio

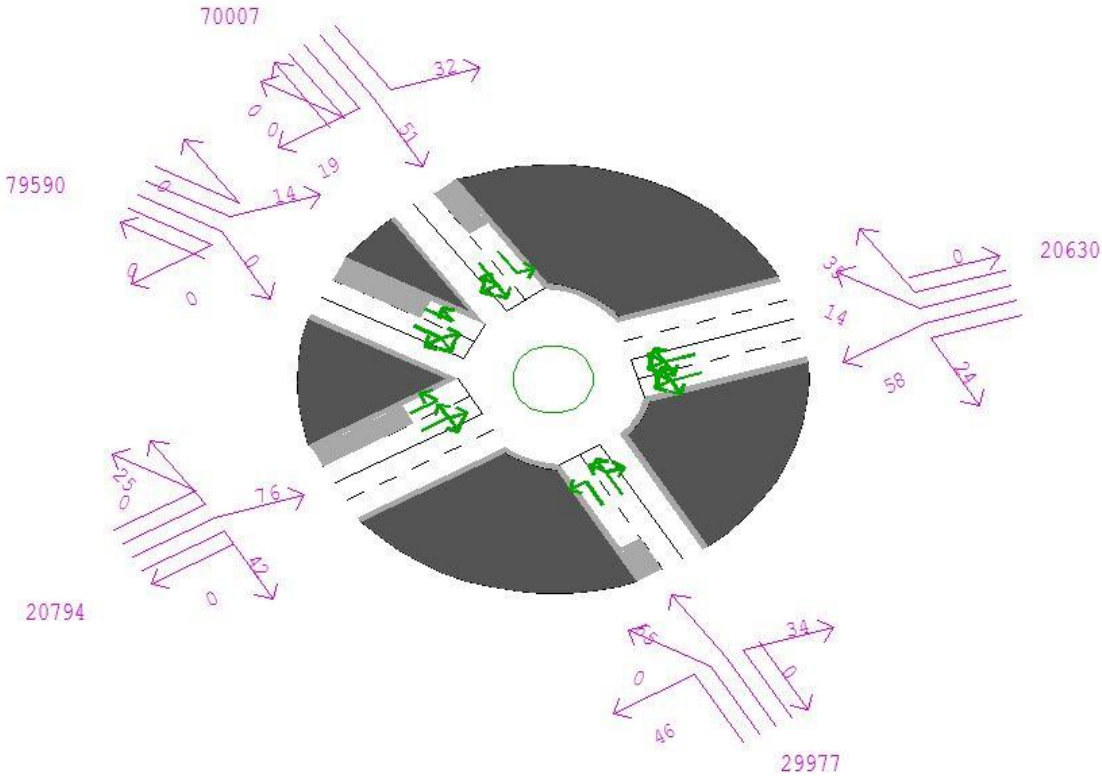


Figure K.17: A5 / A4303 (Cross in Hand) Roundabout: Delay (seconds)

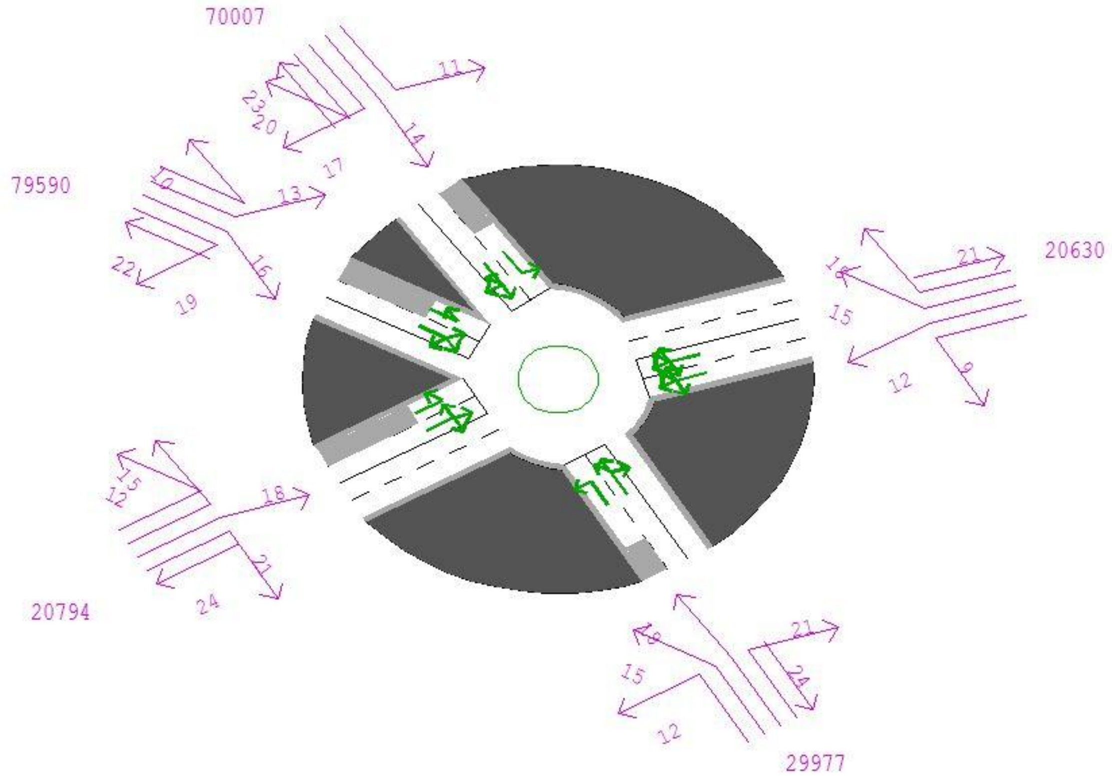


Figure K.18: A5 / A4303 (Cross in Hand) Roundabout: Arrive Flow (PCUs)

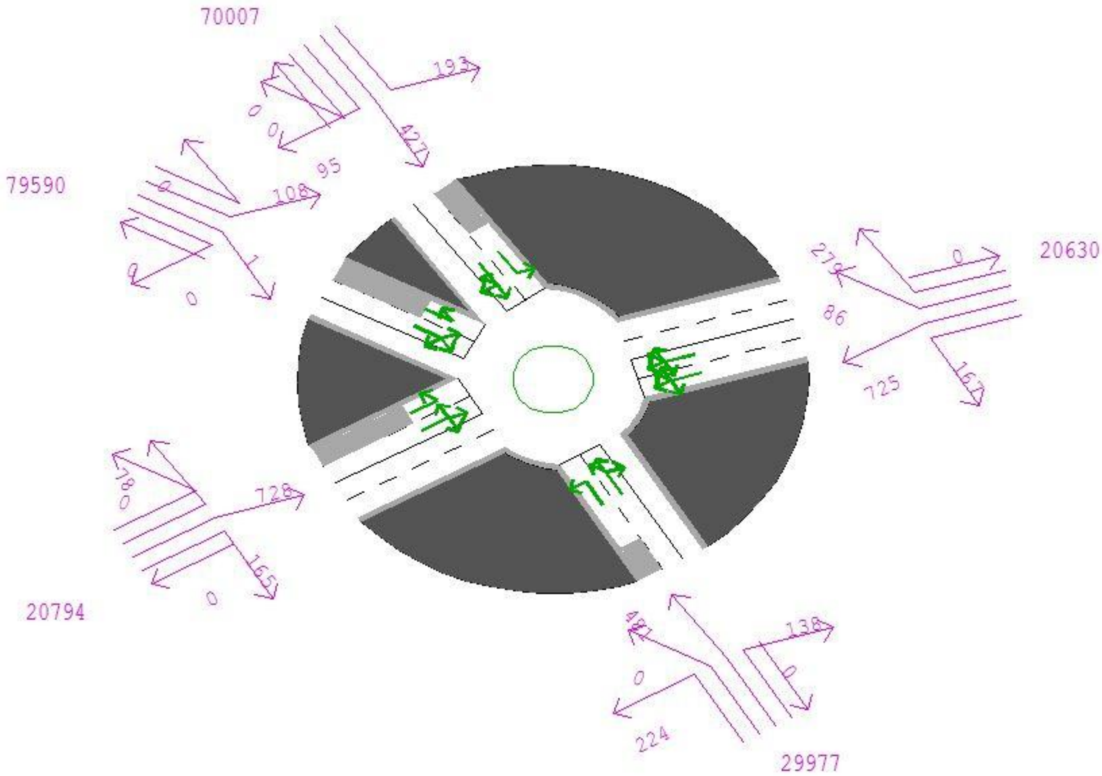


Figure K.19: A5 / Mere Lane Junction: Volume-to-Capacity Ratio

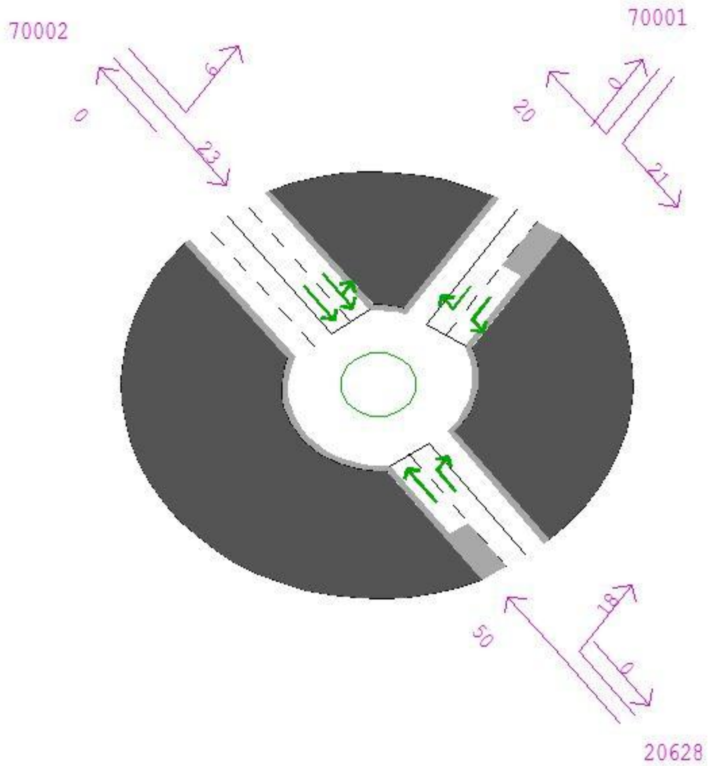


Figure K.20: A5 / Mere Lane Junction: Delay (seconds)

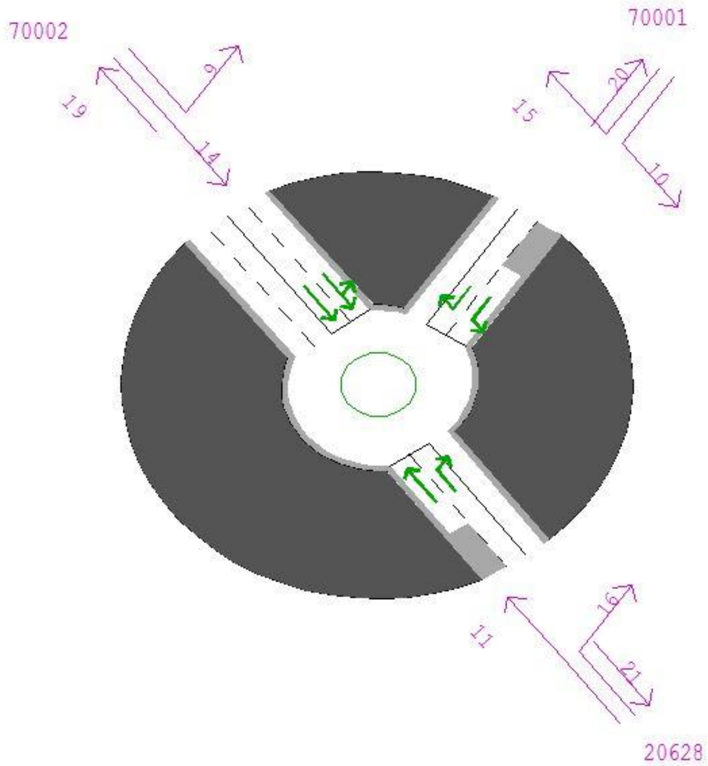


Figure K.21: A5 / Mere Lane Junction: Arrive Flow (PCUs)

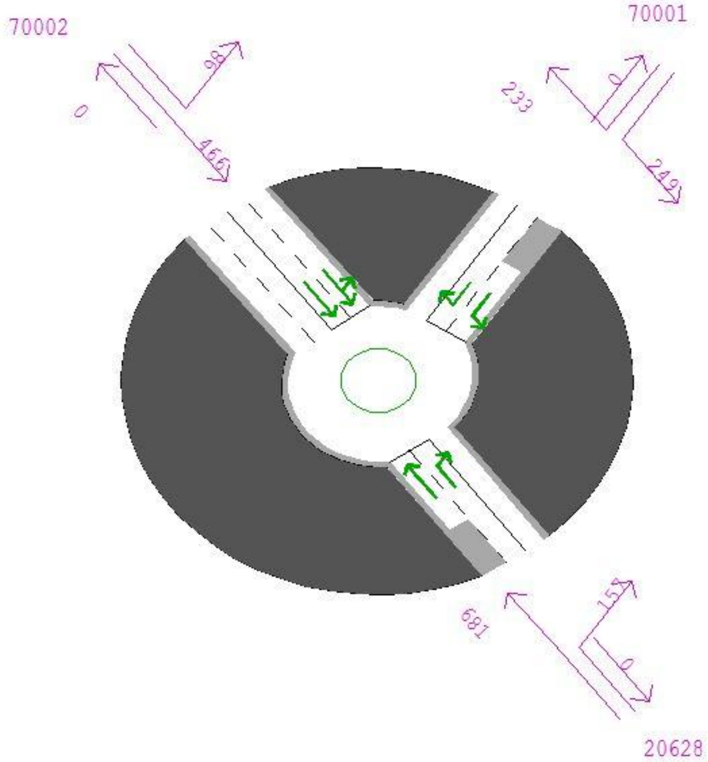


Figure K.22: M69 Junction 1: Volume-to-Capacity Ratio

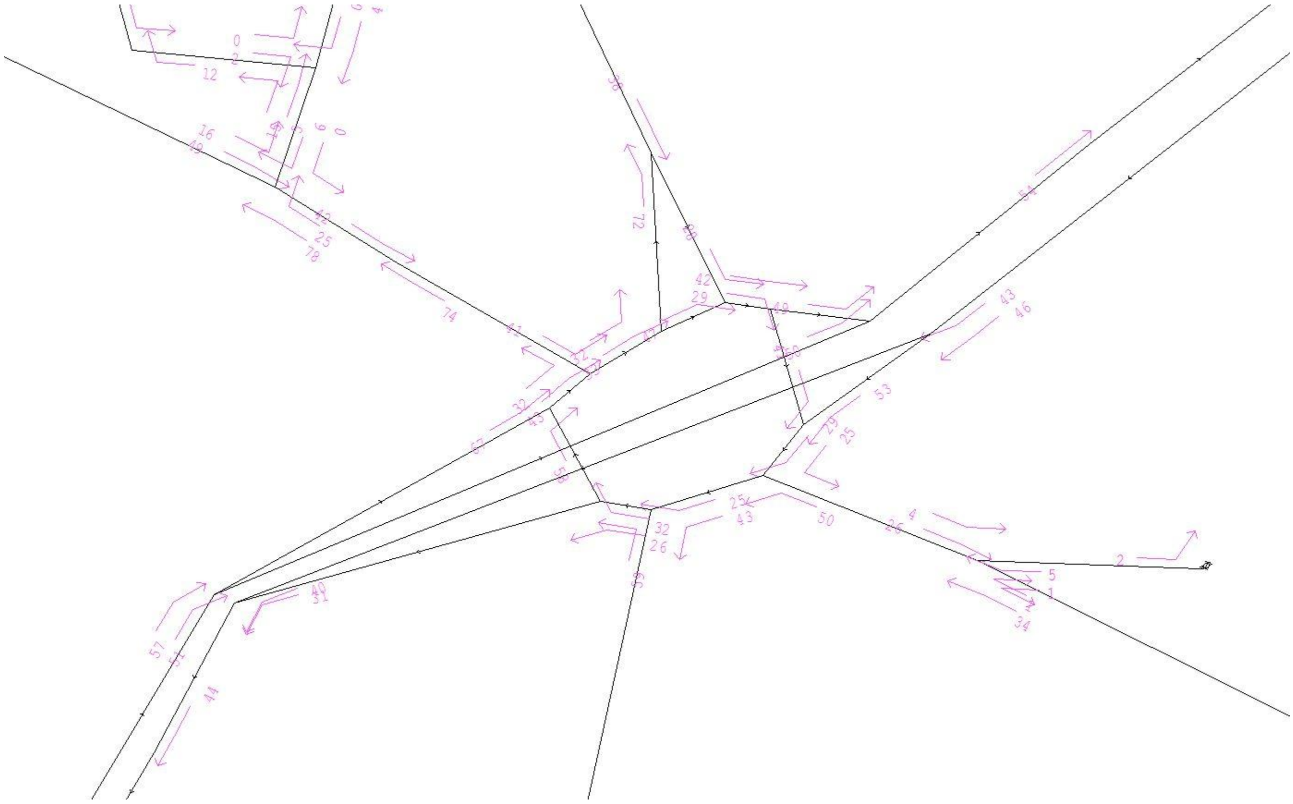


Figure K.23: M69 Junction 1: Delay (seconds)

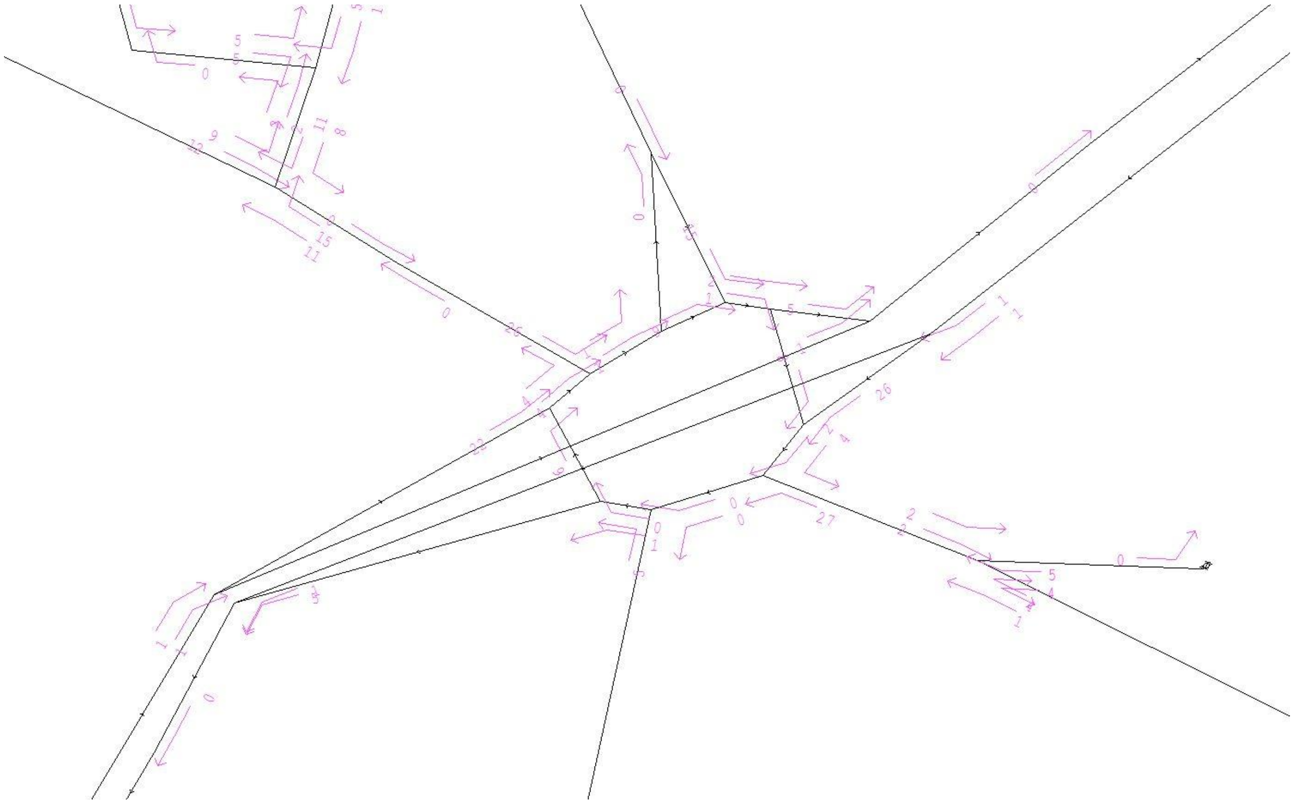


Figure K.24: M69 Junction 1: Arrive Flow (PCUs)

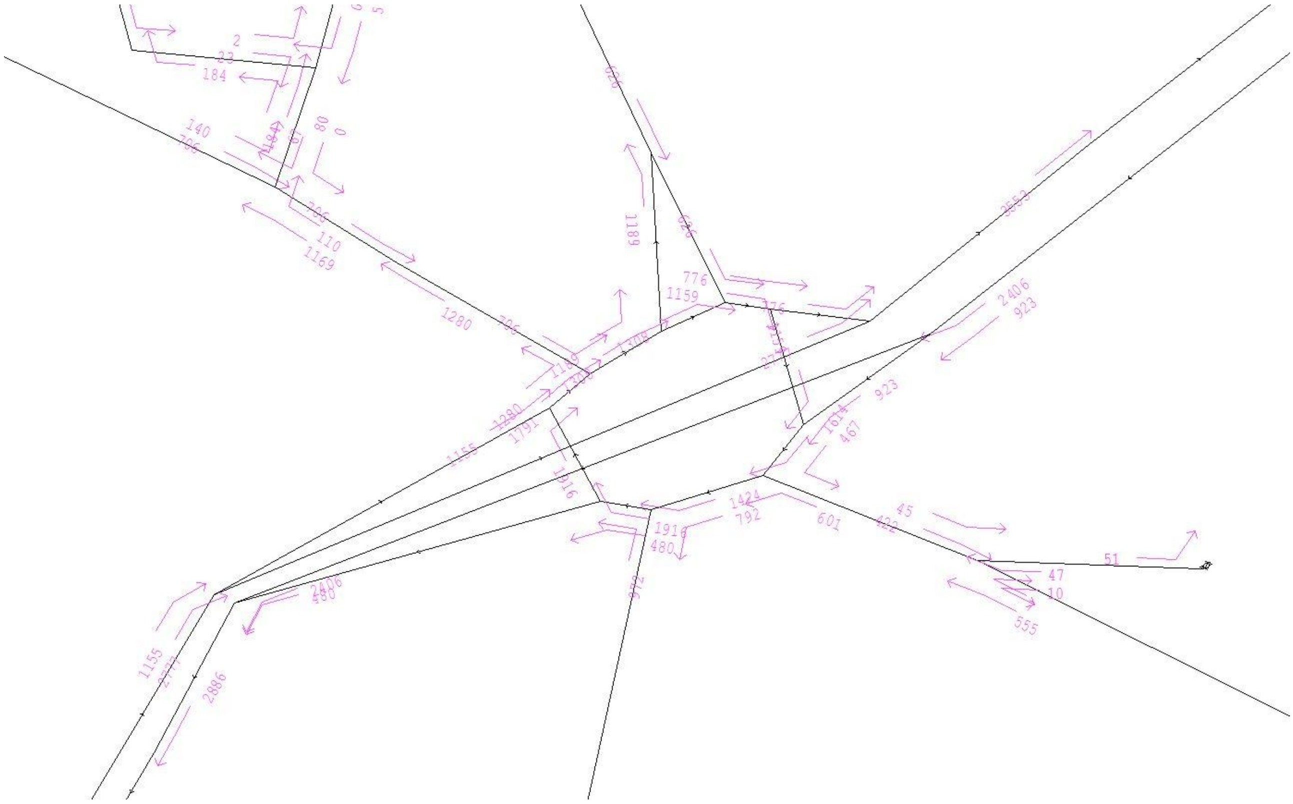


Figure K.25: A5 / A426 (Gibbet Hill) Roundabout: Volume-to-Capacity Ratio

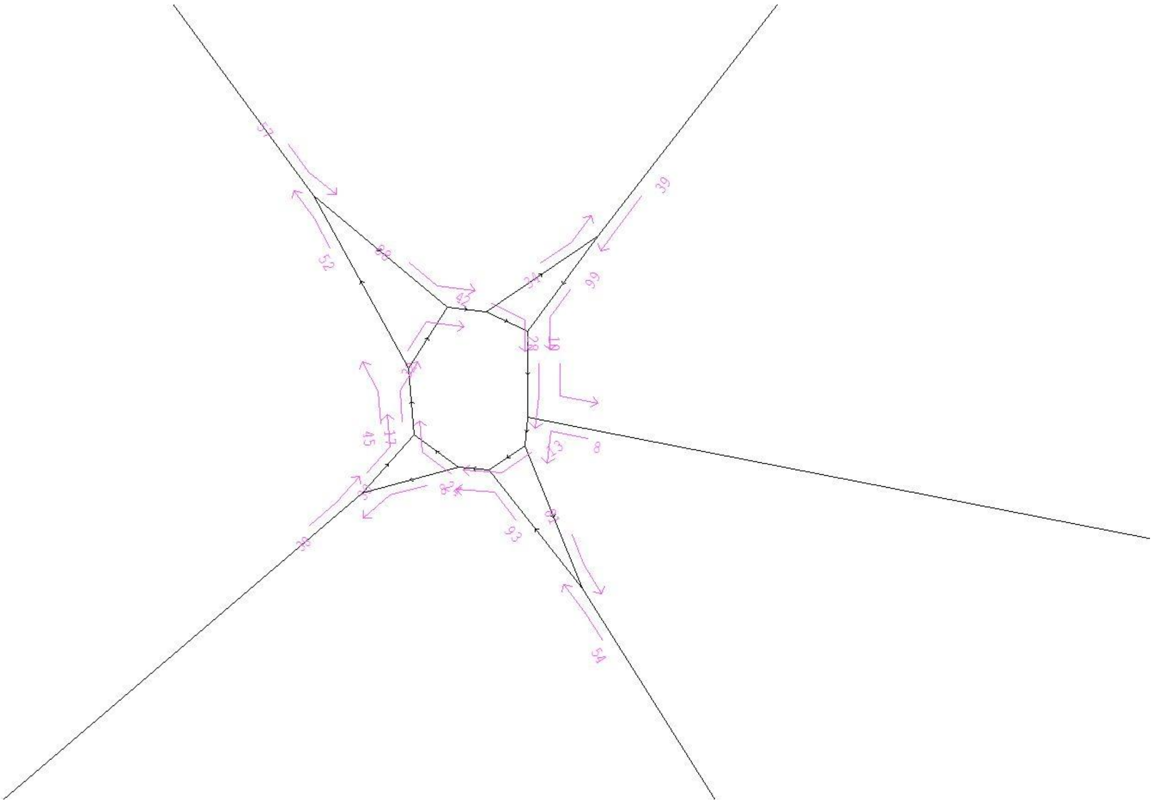


Figure K.26: A5 / A426 (Gibbet Hill) Roundabout: Delay (seconds)

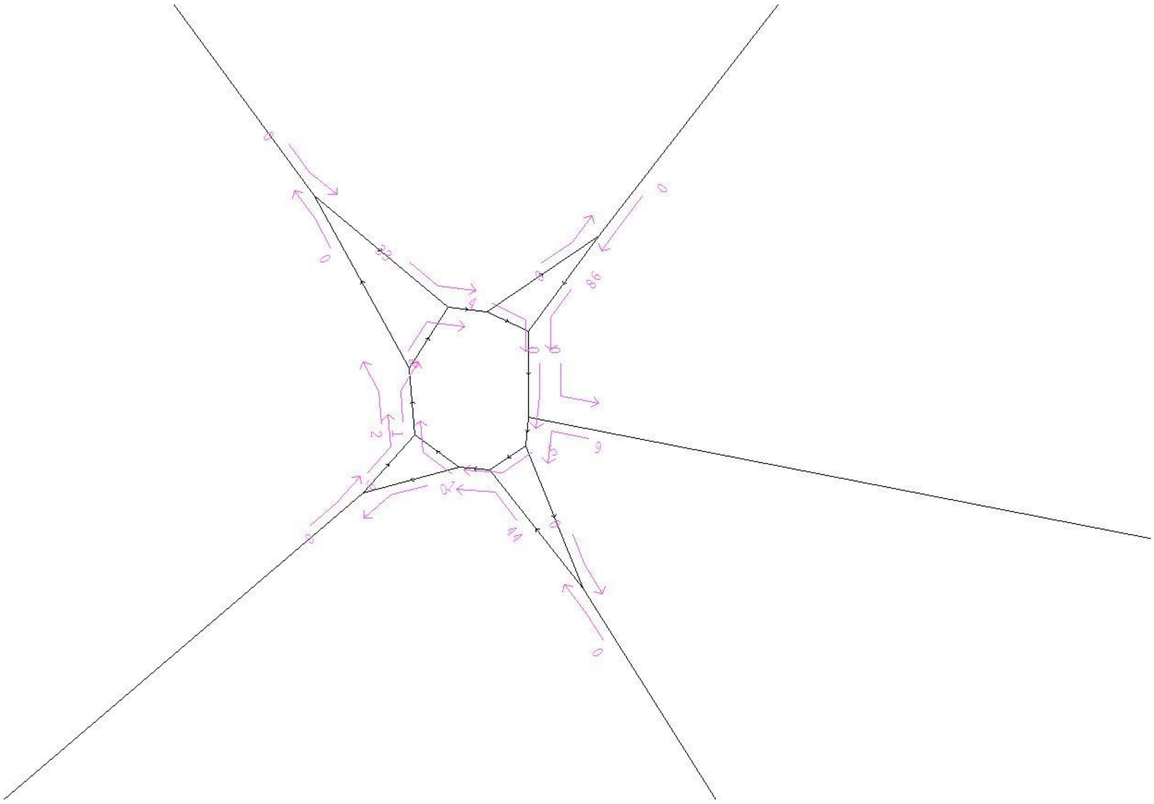


Figure K.27: A5 / A426 (Gibbet Hill) Roundabout: Arrive Flow (PCUs)

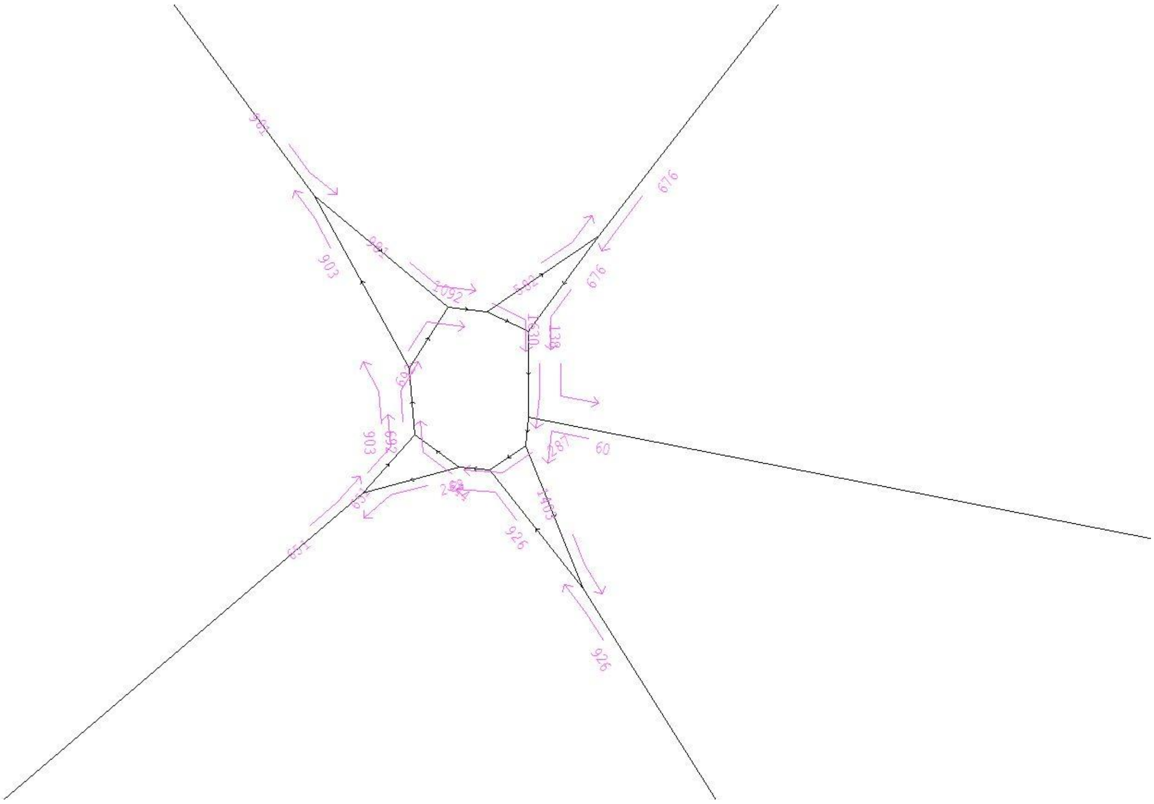


Figure K.28: M6 Junction 1: Volume-to-Capacity Ratio

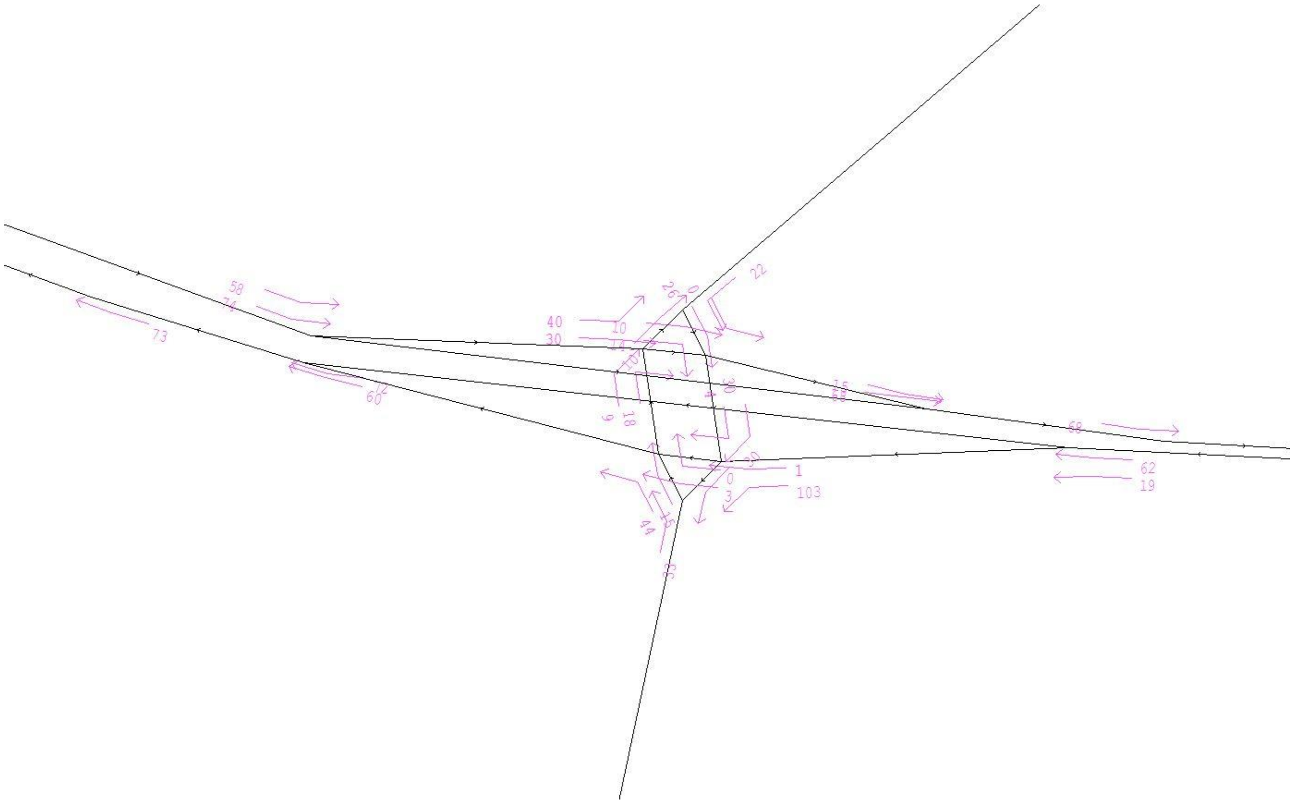


Figure K.29: M6 Junction 1: Delay (seconds)

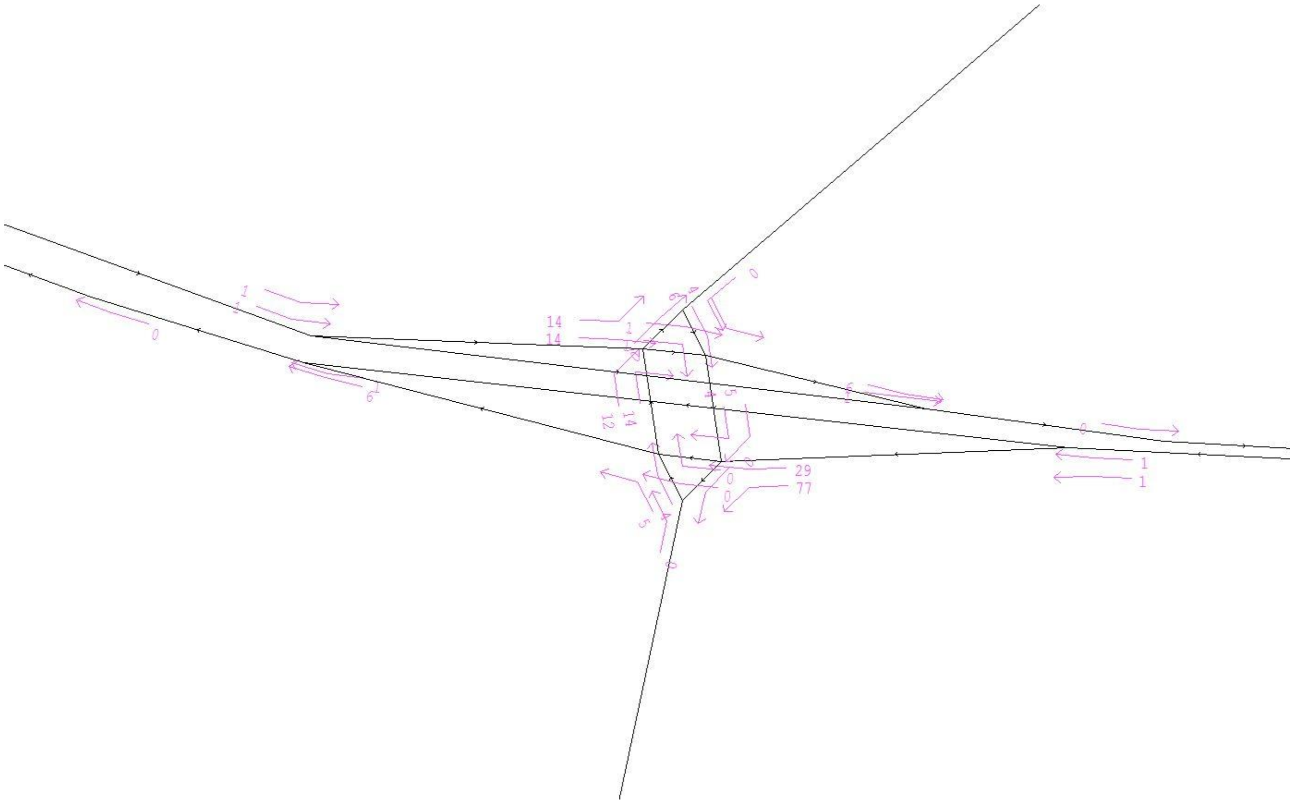


Figure K.30: M6 Junction 1: Arrive Flow (PCUs)

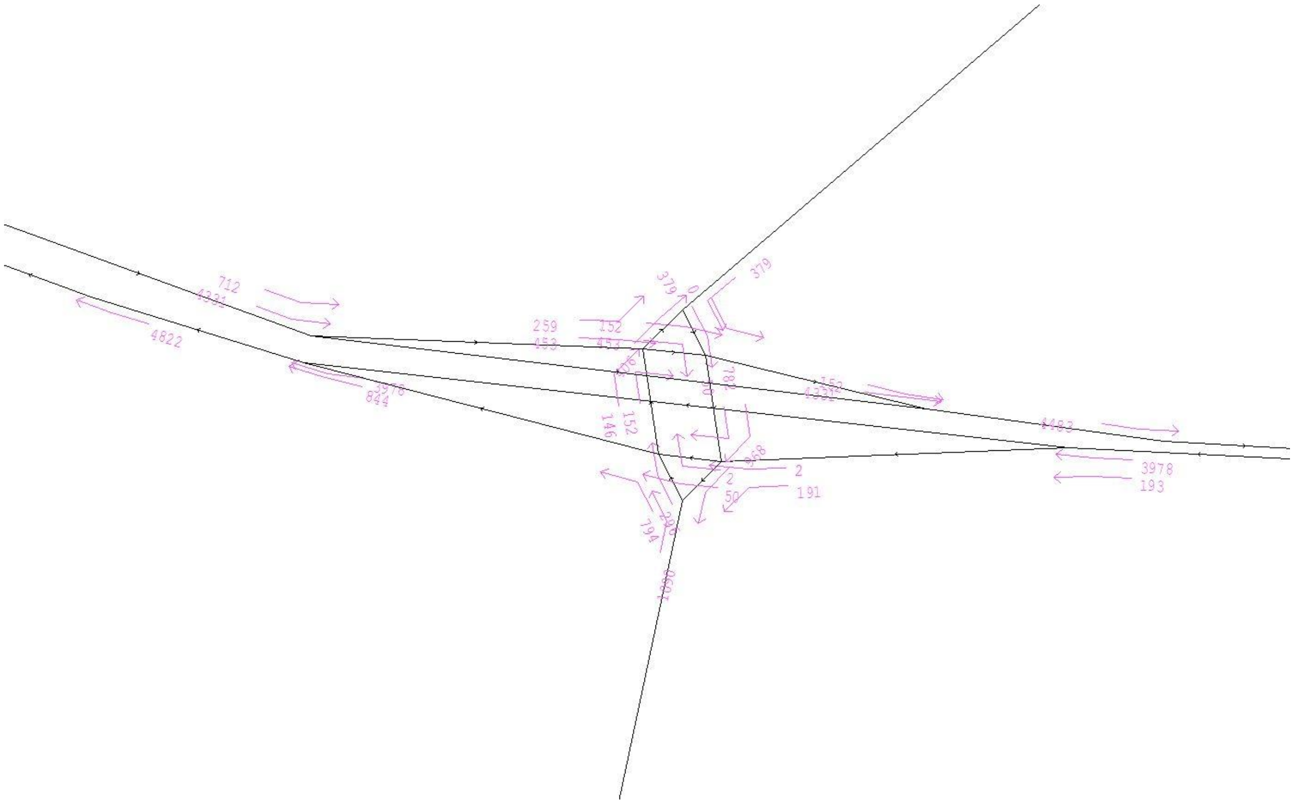


Figure K.31: A426 / Bill Crane Way Junction: Volume-to-Capacity Ratio

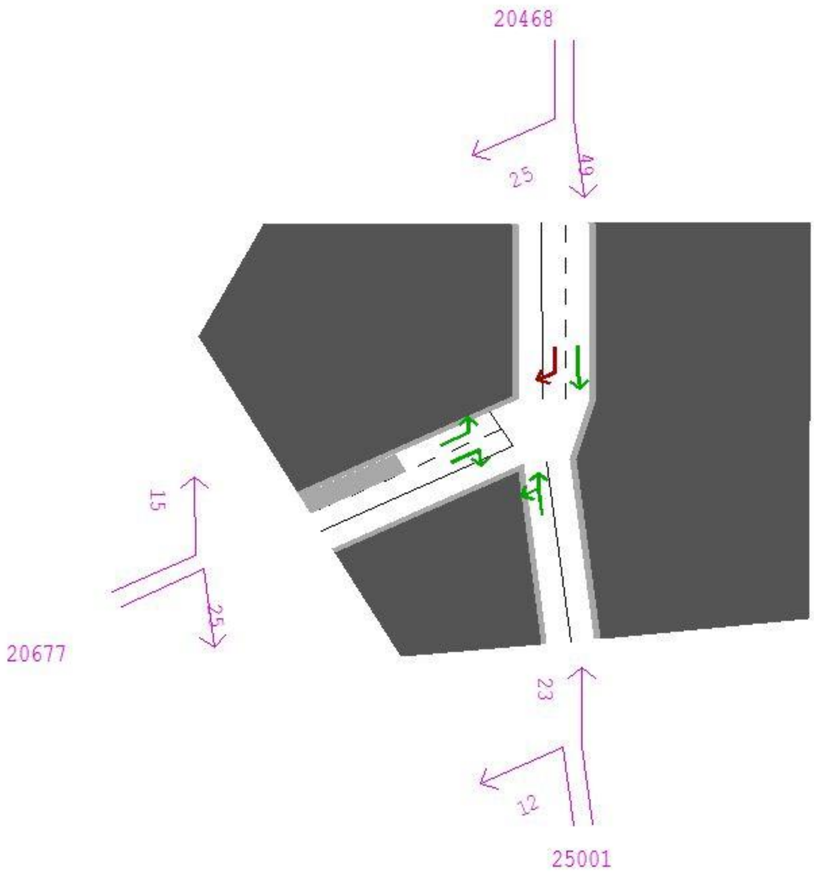


Figure K.32: A426 / Bill Crane Way Junction: Delay (seconds)

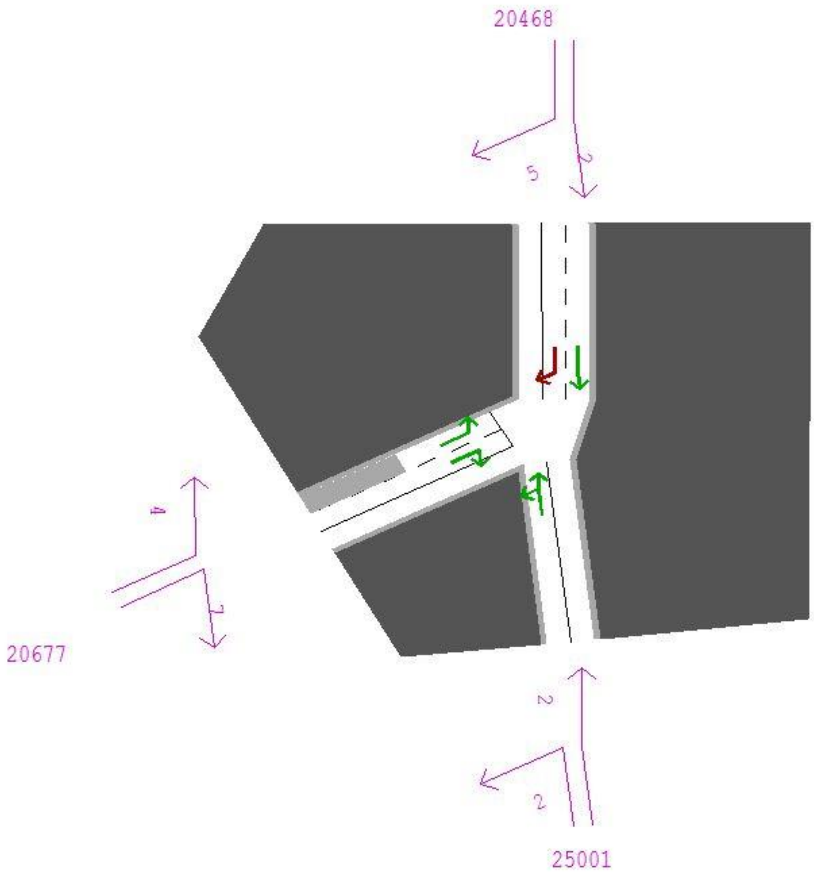


Figure K.33: A426 / Bill Crane Way Junction: Arrive Flow (PCUs)

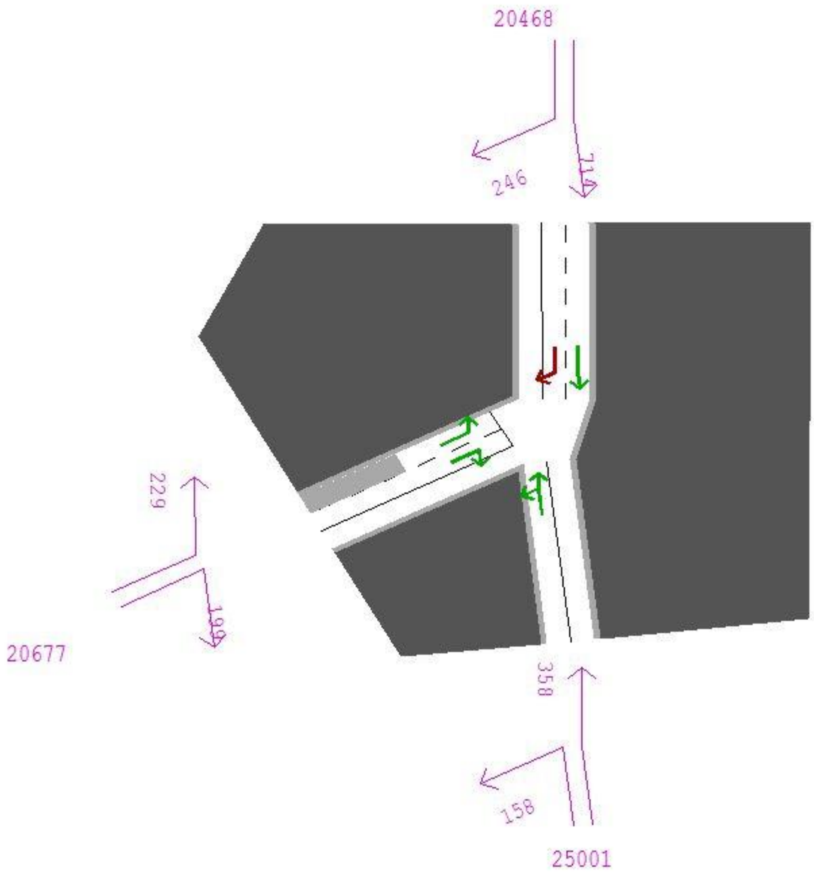


Figure K.34: Mere Lane / Magna Park Access: Volume-to-Capacity Ratio

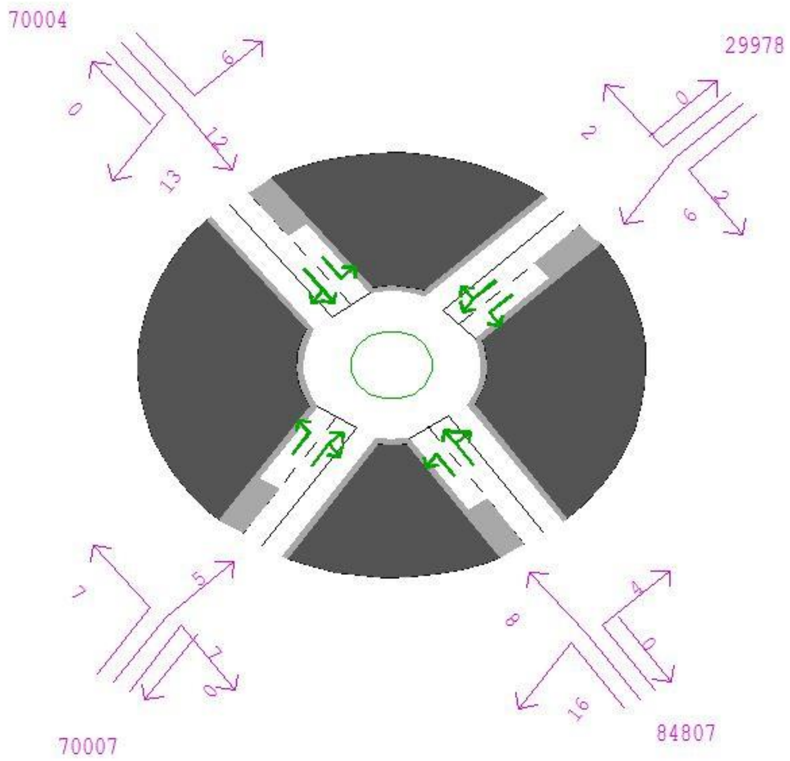


Figure K.35: Mere Lane / Magna Park Access: Delay (seconds)

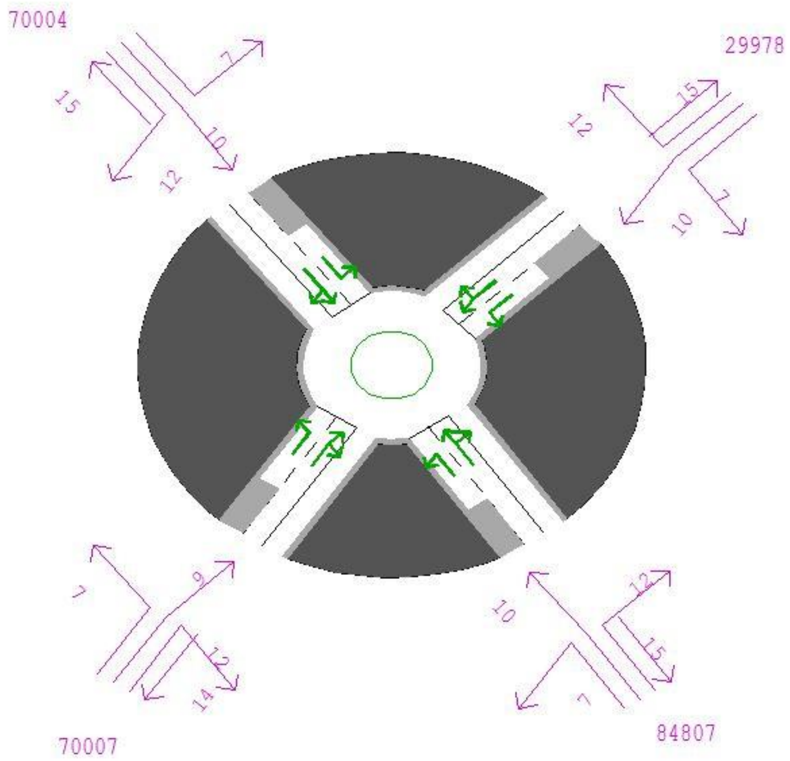


Figure K.36: Mere Lane / Magna Park Access: Arrive Flow (PCUs)

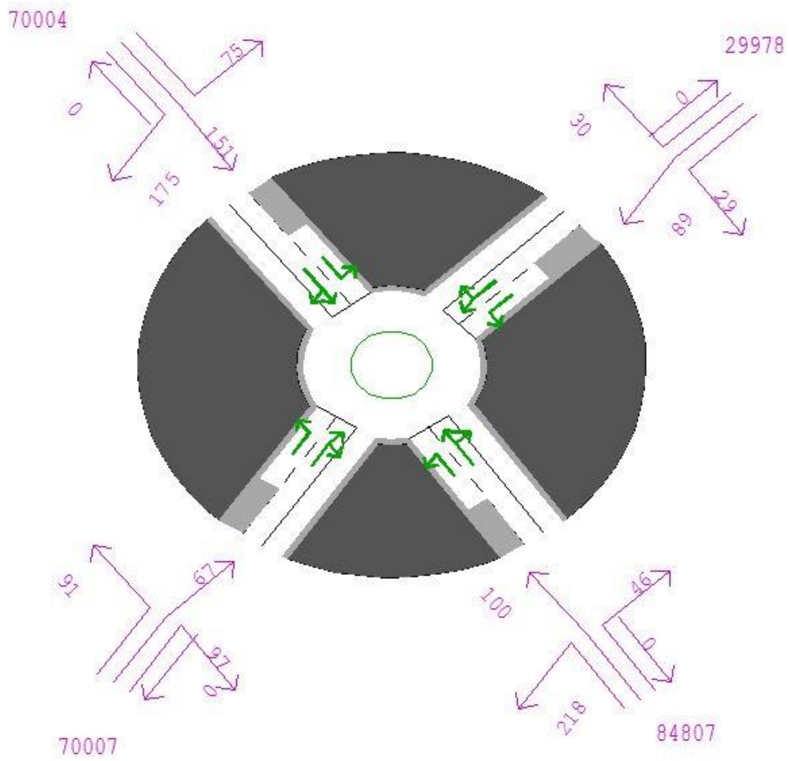


Figure K.37: A5 / Magna Park Access: Volume-to-Capacity Ratio

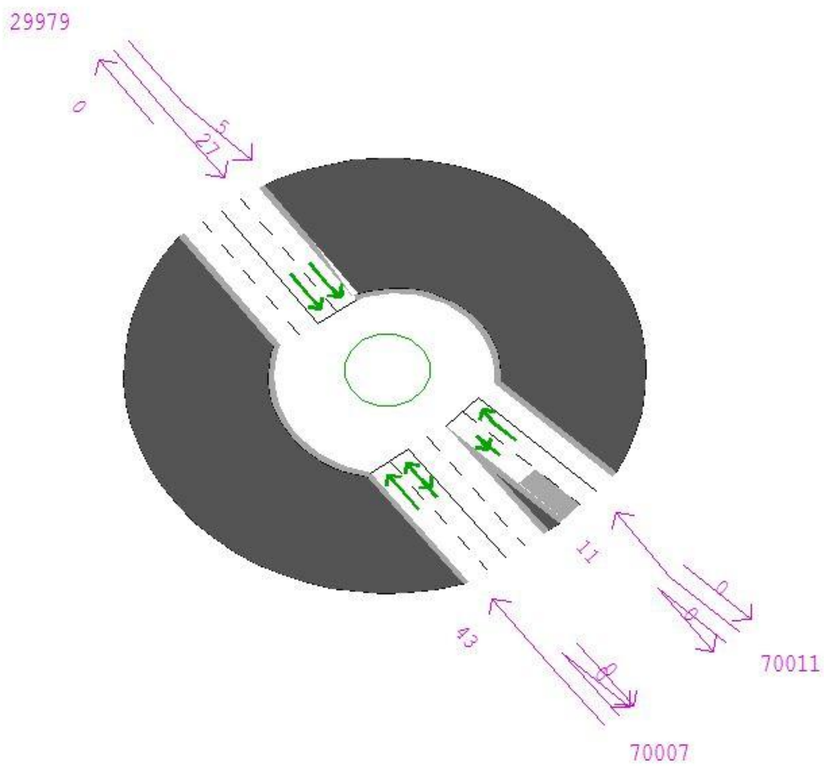


Figure K.38: A5 / Magna Park Access: Delay (seconds)

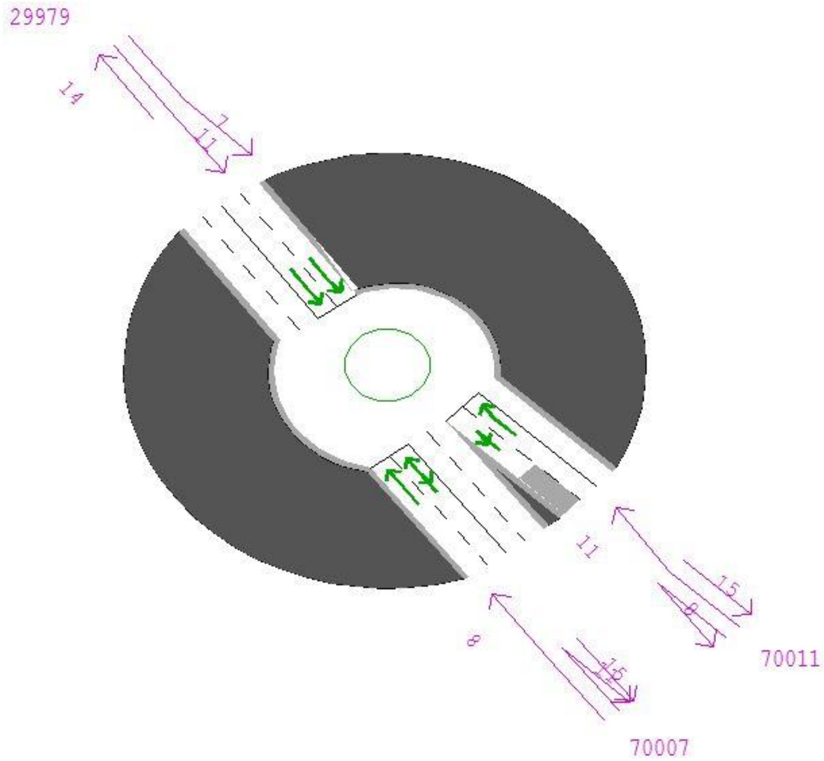


Figure K.39: A5 / Magna Park Access: Arrive Flow (PCUs)