

Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement Volume 2: Appendices

Appendix 8.1: Transport Assessment [part 13 of 20] Forecast VISSIM Modelling Report

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Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:



The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

<https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/>

TRANSPORT & INFRASTRUCTURE PLANNING

Tritax Symmetry Ltd
Hinckley National Rail Freight Interchange
M69 J1 & J2 VISSIM
Forecast Modelling Report



TRANSPORT & INFRASTRUCTURE PLANNING

Tritax Symmetry Ltd

Hinckley National Rail Freight Interchange

M69 J1 & J2 VISSIM

Forecast Modelling Report

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1. INTRODUCTION

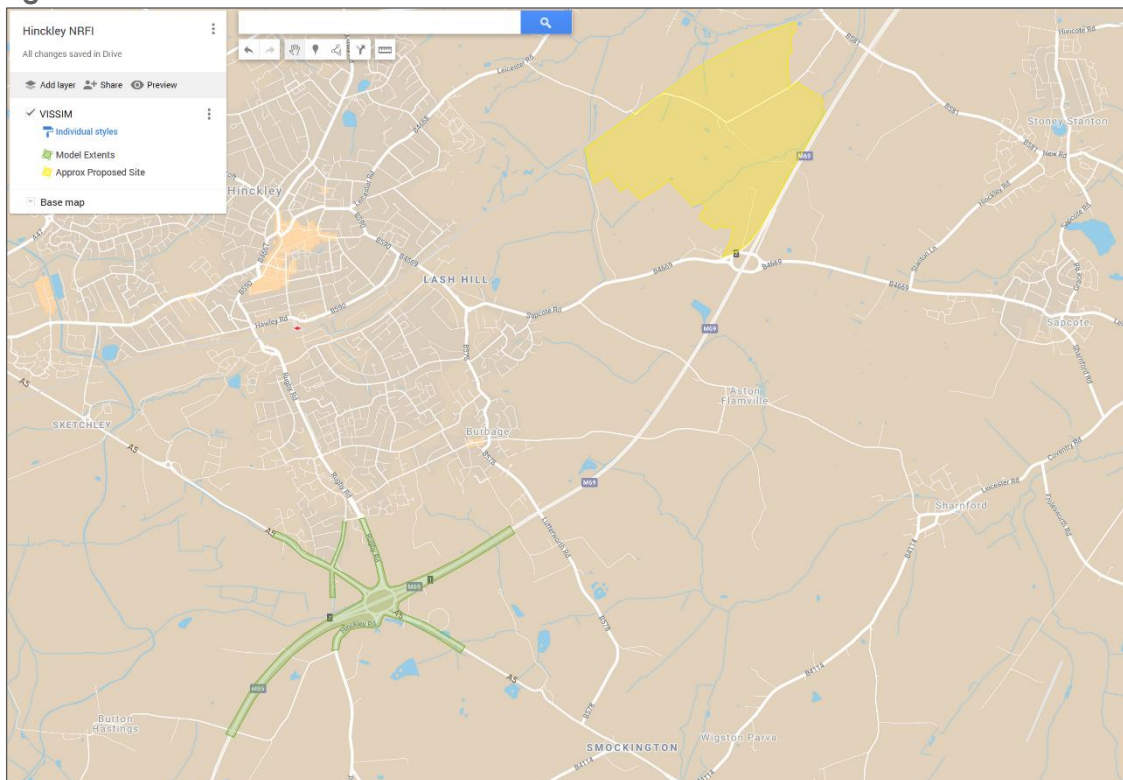
Instruction

- 1.1 BWB Consulting has been commissioned as part a wider project scope by Tritax Symmetry Ltd to develop a series of highway models capable assessing any highway impacts resultant of the proposed Hinckley National Rail Freight Interchange (HNRFI) development. It is understood that the site will be developed serving a maximum of 850,000sqm of B8 warehousing/distribution uses, with access served directly onto M69 Junction 2.
- 1.2 The model purpose is to provide a robust platform on which the proposed development can be tested, allowing any impacts on the junction and surrounding highway network to be assessed.

Site Location

- 1.3 **Figure 1** below displays the indicative location of the proposed development, as well as the relative position of the highway model extents.

Figure 1 - Site Location



Report Purpose

- 1.4 Due to the scale of the proposed development and the likely vehicular trips that it will generate, a comprehensive micro-simulation model of the M69 Junction 1 gyratory has been developed using PTV Group's VISSIM software.

- 1.5 The base models for both Junction 1 and Junction 2 have been prepared and validated to the required standards and are suitable to use as a baseline model to assess against future network and traffic changes.
- 1.6 Both models were submitted National Highways (NH) and Leicestershire County Council (LCC) as the Local Highway Authority (LHA), and subsequently were approved.
- 1.7 This Future Scenario report seeks to define in detail the process and procedures followed in the development of the modelled network and the methods applied in the traffic modelling itself.

2. REPORT STRUCTURE

2.1 The report is structured as follows:

- Section 3: Future Scenario Traffic Flow provision, including details of how the traffic data has been assigned for each of the future scenarios;
- Section 4: Future Scenario network; including network changes specifically at Junction 2 and commentary on any further mitigation measures required;
- Section 5: Future Model outputs including the comparison of baseline / reference case flow differences and modelled journey times; and
- Section 6: Summary and Recommendations including a summary of the model development process.

3. Future Year Flow Calculation

Model Specification

VISSIM Version – 20.00-14

Model Base Year – 2019

Model Time Periods:

- Weekday AM – 07:00-07:30 (warm-up), 07:30-09:30 (peak period/s), 09:30-10:00 (cool-down)
- Weekday PM – 16:00-16:30 (warm-up), 16:30-18:30 (peak period/s), 18:30-19:00 (cool-down)

Model Assignment

Junction 1 – Dynamic Assignment

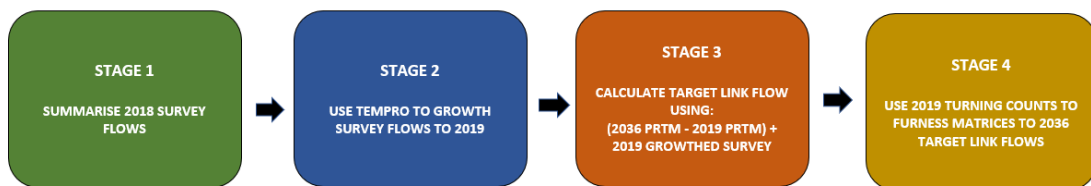
- 3.1 M69 Junction 1 base model was calibrated/validated using dynamic assignment, this has been retained in the forecast modelling scenarios.
- 3.2 To provide an accurate traffic profile, traffic OD matrices have been created per vehicle type, for each 15-minute interval, in line with the collected data. It should be noted that although the traffic has been separated into 15-minute intervals, the model has been validated hourly for each of the two busiest hours in each peak period.
- 3.3 As there is no route choice in the model, no route convergence should be required, however as a sensitivity test, the AM and PM 2026 Without Development Without Scheme Flows model was tested through the convergence process.
- 3.4 After discussions with PTV, BWB received onfirmation from their lead VISSIM developer that if there are no network changes, only flow differences, there is no requirement to reconverge for the future models as the routing has already been deemed appropriate. As such, and after checking the available paths within the model to confirm, there is no route choice between any OD pair within the Junction 1 model. Convergence has therefore not been undertaken for any of the additional scenarios.

Junction 2 – Static Assignment

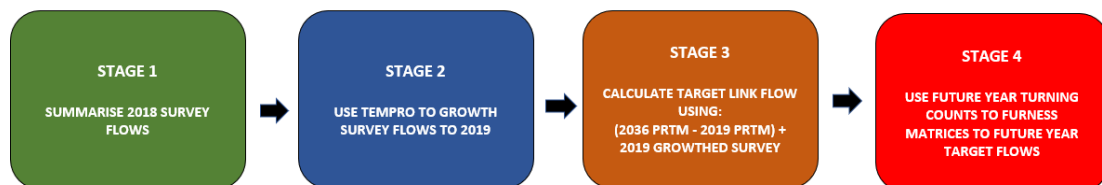
- 3.5 M69 Junction 2 base model was calibrated/validated using static assignment, this has been retained in the forecast modelling scenarios.
- 3.6 All routes between each Origin/Destination have a distinct route that has been manually assigned through the network using static routes. Therefore, there is no requirement for any model convergence as vehicles will not use any alternative routes.

Future Flow Assignment

- 3.7 Discussions were undertaken with NH and LCC and it was considered that SATURN base model did not validate very well with surveyed turning counts, therefore a furnishing methodology was formulated, details of which are provided below.
- 3.8 For Junction 1 the following forecast flow methodology has been applied:



- 3.9 Data has been provided from the PRTM 2.2 SATURN model and used in conjunction with the base PRTM and the base survey flows. The link flows taken from the PRTM 2.2 have been factored using the surveyed flows using an iterative process as per above.
- 3.10 For Junction 2, a different furnishing methodology has been undertaken as the proposed scheme will significantly alter the movement at the junction with rerouting of traffic through the junction. A revised furnishing methodology for the site access is presented below.



- 3.11 Once the data has been interpolated (for both junctions), the OD matrices are split into Lights and Heavies and converted into OD matrices. These OD matrices are then 'assigned' to the VISSIM base model using the following methodology.
- 3.12 The VISSIM base model contains a 15 minute flow profile from each Origin point for each vehicle type. This profile has been maintained for the future models as the model covers a 2 hour period. Each 15 minute interval has been assigned a proportion of the base hour total flow. This proportion is then assigned from the provided OD matrix.

3.13 An example is shown below.

Table 1: Vehicle Split

	07:00	07:15	07:30	07:45	08:00	08:15	08:30	08:45
Car	86%	70%	97%	67%	72%	72%	63%	78%
LGV	14%	30%	3%	33%	28%	28%	37%	22%

3.14 The time periods highlighted in yellow indicate the hour of interest comparable to the SATURN hourly flow. **Table 1** indicates the split between Cars and LGV's.

Table 2: Input profile

	07:00	07:15	07:30	07:45	08:00	08:15	08:30	08:45
150	232	125	105	156	165	178	150	
27%	42%	23%	19%	28%	30%	32%	27%	

3.15 **Table 2** shows the proportion of the hourly flow is of the hour of interest. The flows of 105 vehs at 07:45 is the equivalent of 19% of the total flow between 07:30 and 08:30.

3.16 If the forecast flow for the hour is 356, this flow is assigned through Table 1 for each time period for each vehicle type and then assigned through Table 2.

3.17 This process is undertaken for each vehicle type within the VISSIM model, each time period for each Origin/Destination pair.

4. Future Scenario networks

4.1 This section summarises the network changes to accommodate the development.

Junction 1

4.2 Initial modelling of the future year scenarios indicated that the existing MOVA configuration on site may require recalibrating to operate more efficiently. Therefore both WoDWS and WD schemes have utilised a recalibrated version of the MOVA files. Subsequently, no network changes have been made with the exception of location of signal detectors.

Junction 2

4.3 The original junction remains in use in the WoDWoS scenario, as no development or scheme design is planned, whereas the junction design below is modelled within the WoDWS and WD scheme scenarios.

Figure 2 - Junction 2 New Lining Arrangements

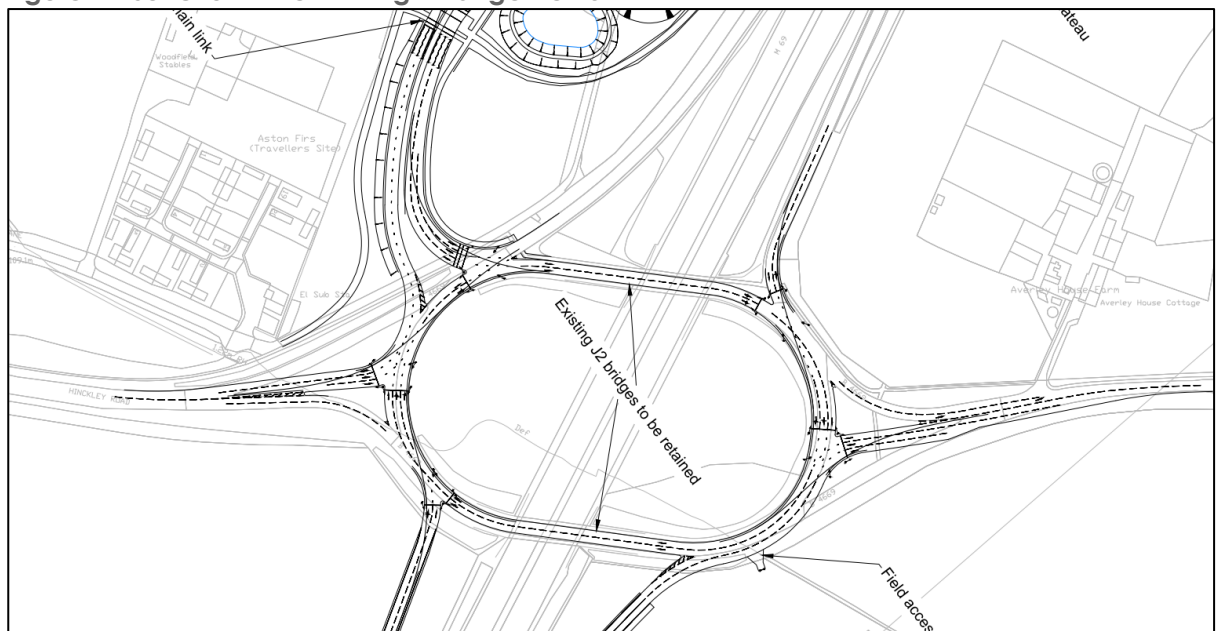


Figure 3 - Southern On/Off Slips



- 4.4 A new zone has been created at the site access with routes within the model now able to enter and exit from each of the other existing zones. The on / off slips are introduced on the southern section of the roundabout to allow access from the new development from and to the motorway. All existing zones are now able to use these two new slips.

TRAFFIC SIGNAL OPERATION

Junction 1

- 4.5 Traffic signals have been modelled using the PC MOVA emulation module. A revised MOVA config files had been created to attempt to provide a more efficient method of control at that junction. A copy of the revised MOVA configuration is provided in **Appendix A**.
- 4.6 No stoplines have been altered as the junction geometry remains identical to those found in the base situation.

- 4.7 Initial assessments of the future scenario modelled outputs indicated that the two offslips from the M69 would suffer from congestion and ultimately queue back onto the mainline, without further amendments to the traffic signal control.
- 4.8 Therefore, MOVA dataset files were amended to ensure that any queuing was contained within the limits of the offslip as far as possible. The minimum green times for these approaches have been increased to ensure no excessive queuing was observed however this increase did come at a price for the other approaches.

Junction 2

- 4.9 The junction has been provided with new signal stoplines as part of the scheme design and a LinSig model has been developed.
- 4.10 In the base model assessment, there are no signals at this junction. Signals will be required at the junction as there will be more interaction and traffic conflict caused by the new site access and the southern on/off slips.
- 4.11 As part of the development, it is proposed that the junction is signalised using MOVA to ensure the junction is able to cater for additional demand. A copy of the proposed MOVA configuration is provided in **Appendix A**.

5. Future Scenario Models

5.1 There are several scenarios that are to be modelled for each of the two junctions. These are as follows:

- 2026 WoDWoS – Without Development without Scheme
- 2026 WoDWS – Without Development with Scheme
- 2026 WDWS – With Development with Scheme
- 2036 WoDWoS – Without Development without Scheme
- 2036 WoDWS – With Development without Scheme
- 2036 WDWS – With Development with Scheme

5.2 Both the WoDWoS Scenarios are the Reference Case models and show the overall baseline future traffic forecasts. All future scenarios are compared to these two Scenarios.

5.3 This section summarises the comparison between Future Scenarios and the Base / Reference Case outputs.

6. M69 Junction 1

J1: Network Performance Comparison

6.1 Overall network performance statistics are used to assess the operational assessment of one modelled scenario to another. Key statistics used to provide a comparison between modelled scenarios are as follows:

- Average Delay - measure of the Total Delay / (Number of vehicles in the network + number of vehicles that have arrived).
- Average network speed - measure of the Total distance / Total Travel time,
- Vehicles Arrived- measure of the number of vehicles that have entered the network and reached their destination
- Latent Demand is a measure of the number of vehicles that are unable to enter the network.

6.2 The following tables compare the above network performance statistics for each peak period per scenario.

Scenario	Time period	Hour 1				Hour 2				End of Model - Latent	
		Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive		Latent Demand
AM_2026_WoDWoS	07:30 - 08:30	157	38	2185	1862	08:30 - 09:30	136	38	1918	2264	2049
AM_2026_WoDWS	07:30 - 08:30	54	57	1727	1	08:30 - 09:30	35	63	1372	0	411
AM_2026_WDWS	07:30 - 08:30	125	42	2296	1145	08:30 - 09:30	125	40	2002	1271	1013

6.3 During the AM peak period, it can be seen that in the WDWS scenario, the average delay and the latent demand reduces when compared to the WoDWoS scenario. In

addition, the speed increases and the number of vehicles arriving increases. This shows that that the junction is operating more efficiently in the WDWS scenario, and more traffic is moving through the network.

Scenario	Time period	Hour 1				Hour 2				End of Model - Latent	
		Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive		Latent Demand
AM_2036_WoDWoS	07:30 - 08:30	234	30	2309	1889	08:30 - 09:30	200	30	2077	2140	1874
AM_2036_WoDWS	07:30 - 08:30	155	38	2319	1817	08:30 - 09:30	159	35	1932	2430	3051
AM_2036_WDWS	07:30 - 08:30	181	35	2388	1662	08:30 - 09:30	132	36	1790	1917	1271

6.4 **Table 4** illustrates a similar pattern to 2026 modelled scenarios. A higher average speed indicates, less time traffic is held in a queue and a more stable junction.

6.5 It should be noted that the Latent Demand indicates that some traffic is unable to enter the network – this is a busy junction and within the WoDWoS scenario, a higher number of vehicles than the WDWS scenario are unable to travel through the network.

Scenario	Time period	Hour 1				Hour 2				End of Model - Latent	
		Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive		Latent Demand
PM_2026_WoDWoS	16:30 - 17:30	192	32	2405	695	17:30 - 18:30	281	26	2266	524	0
PM_2026_WoDWS	16:30 - 17:30	72	51	2463	0	17:30 - 18:30	49	58	2147	1	0
PM_2026_WDWS	16:30 - 17:30	147	38	2453	365	17:30 - 18:30	138	40	2245	205	12

6.6 The PM peak scenarios show a slightly better situation when it comes to Latent Demand. Less traffic is unable to enter the network the average delays decrease when looking between the WDWS scenario and the WoDWoS scenario. In addition, the speed increases. The junction is operating more efficiently in the WDWS scenario also.

Scenario	Time period	Hour 1				Hour 2				End of Model - Latent	
		Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive		Latent Demand
PM_2036_WoDWoS	16:30 - 17:30	453	25	2288	1647	17:30 - 18:30	505	25	2075	2776	1005
PM_2036_WoDWS	16:30 - 17:30	170	35	2627	729	17:30 - 18:30	169	36	2343	675	1182
PM_2036_WDWS	16:30 - 17:30	167	35	2612	803	17:30 - 18:30	178	35	2359	771	511

6.7 In the PM 2036 scenarios, more vehicles cannot make their way through the network, but as with the trend from the earlier time period, the delay is reduced and the speed increases when compared between the WDWS and WoDWoS scenario.

6.8 As part of the network performance assessment, the number of vehicles using the junction have been analysed. This data is available in **Appendix B**.

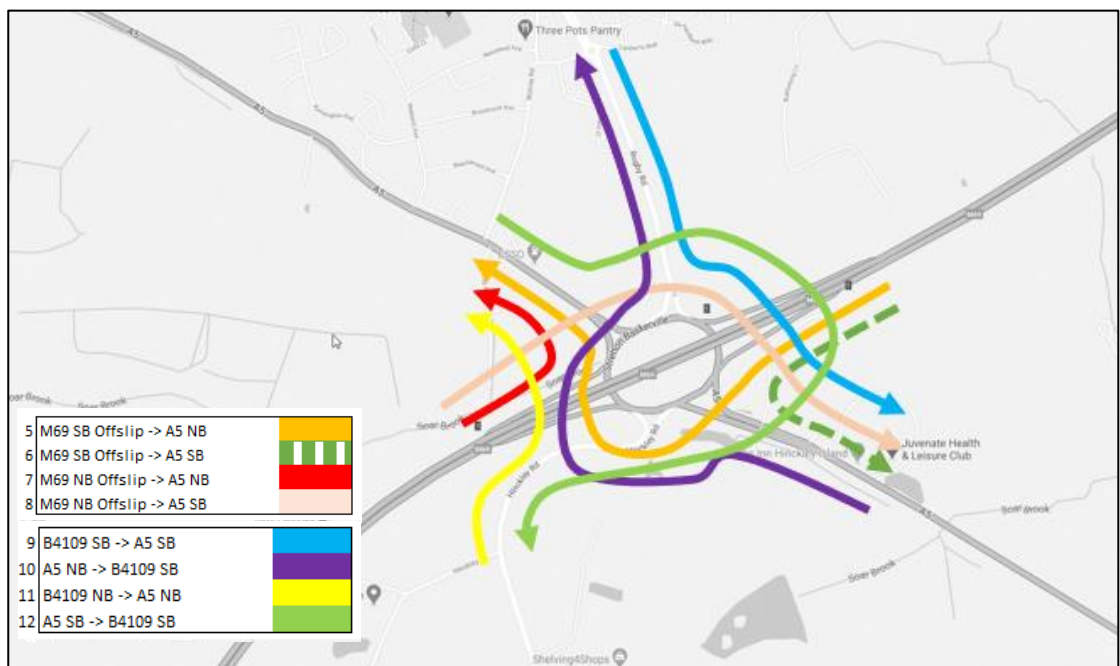
J1: Vehicle Journey Time Comparison

6.9 A total of 12 journey time routes have been assessed in each of the future scenarios.

6.10 Figure 4 shows the location of four primary through routes.



6.11 **Figure 5** shows the location of eight secondary turning routes.



Route No	Travel Time Measurement Route	Distance (metres)
1	Watling Street (North of Wolvey Rd) SB - A5 Watling Rd SB (S)	2246
2	A5 Watling Rd NB (S) - A5 Watling St NB	2299
3	M69 NB - Powerlines - M69 NB XXX	3568
4	M69 SB XXX - M69 SB Powerlines	3558
5	M69 SB Offslip - A5 Watling Rd NB (Jct Wolvey Rd)	1095
6	M69 SB Offslip - A5 Watling Rd SB (S)	1089
7	M69 NB Offslip - A5 Watling Rd NB (Jct Wolvey Rd)	770
8	M69 NB Offslip - A5 Watling Rd SB (S)	1376
9	Rugby Road SB (Jct Canberra Way RAB) - A5 Watling Rd SB (S)	1470
10	A5 Watling Rd NB (S) - Rugby Road NB (Jct Canberra Way RAB)	1755
11	B4109 Hinkley Road NB (Jct Hinkley Road) - A5 Watling Rd NB (Jct Wolvey Rd)	1083
12	A5 Watling Rd SB (Jct Wolvey Rd) - B4109 Hinkley Road SB (Jct Hinkley Road)	1310

6.12 The travel time measurements for all morning peak hour scenarios are provided in the following **Tables 8 to 11** below for each hour, each modelled scenario, and peak period.

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS
1	748	209	506	645	189	485	697	199	495
2	206	188	204	200	177	200	203	182	202
3	120	119	120	120	119	120	120	119	120
4	124	123	125	124	123	125	124	123	125
5	133	119	136	127	107	127	130	113	131
6	98	96	105	97	88	100	97	92	103
7	206	99	136	167	88	137	186	94	136
8	207	105	159	192	91	161	199	98	160
9	313	202	287	288	131	280	300	167	284
10	223	147	189	214	135	187	218	141	188
11	271	97	242	136	85	110	203	91	176
12	371	159	280	322	138	276	347	148	278
	3019	1661	2490	2631	1470	2308	2825	1565	2399

Total Travel Times - per scenario

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s
1	-	-539	-242	-	-456	-160	-	-497	-201
2	-	-18	-3	-	-23	0	-	-21	-1
3	-	-1	0	-	0	1	-	-1	0
4	-	-2	1	-	-1	2	-	-1	1
5	-	-14	3	-	-21	0	-	-17	1
6	-	-2	7	-	-9	3	-	-6	5
7	-	-107	-70	-	-78	-30	-	-92	-50
8	-	-102	-47	-	-101	-31	-	-102	-39
9	-	-111	-26	-	-157	-8	-	-134	-17
10	-	-76	-34	-	-79	-26	-	-78	-30
11	-	-174	-28	-	-51	-26	-	-113	-27
12	-	-213	-91	-	-184	-47	-	-198	-69
	-	-1358	-529	-	-1161	-323	-	-1260	-426

Overall Travel Time
Differences (Future Scenario
vs WoDWos)

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS	AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS	AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS	
1	631	796	613	615	763	609	623	780	611
2	509	211	215	480	205	217	494	208	216
3	146	121	136	120	120	122	133	121	129
4	125	125	127	124	125	126	124	125	127
5	146	148	182	142	130	144	144	139	163
6	106	109	138	99	97	101	103	103	120
7	252	251	388	206	181	331	229	216	360
8	168	204	216	183	190	211	175	197	213
9	307	285	292	300	275	281	303	280	286
10	499	232	249	481	217	248	490	224	248
11	611	229	440	542	111	293	576	170	367
12	310	392	330	309	370	321	309	381	326
	3810	3103	3326	3601	2783	3003	3706	2943	3165

Total Travel Times - per
scenario

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s
1	-	165	-18	-	148	-7	-	157	-13
2	-	-297	-293	-	-275	-263	-	-286	-278
3	-	-25	-11	-	0	2	-	-12	-5
4	-	0	3	-	1	2	-	1	2
5	-	1	36	-	-12	3	-	-5	19
6	-	3	32	-	-2	2	-	1	17
7	-	-1	136	-	-25	125	-	-13	130
8	-	36	48	-	6	27	-	21	38
9	-	-22	-15	-	-25	-19	-	-23	-17
10	-	-268	-250	-	-264	-234	-	-266	-242
11	-	-382	-170	-	-431	-249	-	-406	-210
12	-	82	20	-	61	13	-	71	16
	0	-707	-484	0	-818	-598	0	-763	-541

Overall Travel Time
Differences (Future Scenario
vs WoDWoS

6.13 Overall, the travel times reported for the two AM peak periods for both 2026 and 2036, as shown in **Table 9** and **11** report a reduction in overall travel time at the junction when compared with the WoDWoS scheme.

6.14 The travel time measurements for all evening peak hour scenarios are provided in the following **Tables 12** to **15** below for each hour, each modelled scenario, and peak period.

Route No	Average Hourly Travel Times								
	1630-1730			1730-1830			1630-1830		
	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS
1	430	248	375	440	200	255	435	224	315
2	592	206	574	620	200	558	606	203	566
3	184	122	122	315	121	121	250	121	122
4	120	127	142	120	120	121	120	123	131
5	147	223	172	147	152	145	147	187	158
6	102	182	132	100	116	101	101	149	116
7	182	119	147	200	110	134	191	115	141
8	129	115	147	134	101	128	132	108	138
9	150	142	152	154	136	154	152	139	153
10	567	179	570	594	158	529	581	168	550
11	138	148	123	131	114	130	134	131	127
12	245	169	233	251	144	182	248	157	208
	2986	1978	2889	3207	1673	2557	3096	1825	2723

Total Travel Times - per scenario

Route No	Average Hourly Travel Times								
	1630-1730			1730-1830			1630-1830		
	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s
1	-	-182	-56	-	-240	-185	-	-211	-121
2	-	-386	-18	-	-419	-62	-	-403	-40
3	-	-63	-62	-	-194	-194	-	-129	-128
4	-	7	21	-	0	1	-	3	11
5	-	76	25	-	5	-2	-	40	12
6	-	80	30	-	16	1	-	48	16
7	-	-63	-35	-	-90	-66	-	-76	-50
8	-	-14	18	-	-34	-7	-	-24	6
9	-	-8	2	-	-18	-1	-	-13	1
10	-	-388	3	-	-436	-66	-	-412	-31
11	-	10	-14	-	-16	-1	-	-3	-7
12	-	-76	-12	-	-107	-69	-	-92	-41
	-	-1008	-97	-	-1534	-650	-	-1271	-373

Overall Travel Time Differences (Future Scenario vs WoDWos)

Route No	1630-1730			1730-1830			Average Hourly Travel Times 1630-1830		
	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS
	1	472	403	385	478	432	433	475	417
2	313	472	600	424	482	628	368	477	614
3	470	124	123	655	122	122	562	123	122
4	172	175	181	408	121	121	290	148	151
5	233	213	203	374	186	172	303	200	187
6	99	155	157	107	118	119	103	136	138
7	192	170	148	224	214	203	208	192	175
8	153	142	135	194	171	166	173	156	151
9	168	163	153	218	229	178	193	196	165
10	283	455	582	390	472	621	337	464	602
11	595	425	171	399	334	169	497	380	170
12	268	247	236	302	269	264	285	258	250
	3417	3144	3073	4174	3151	3197	3796	3148	3135

Total Travel Times - per scenario

Route No	1630-1730			1730-1830			Average Hourly Travel Times 1630-1830		
	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWo s	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWo s	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWo s
	1	-	-69	-87	-	-46	-45	-	-58
2	-	159	287	-	58	204	-	109	245
3	-	-346	-347	-	-532	-533	-	-439	-440
4	-	4	9	-	-287	-287	-	-142	-139
5	-	-19	-30	-	-188	-203	-	-104	-116
6	-	55	57	-	11	12	-	33	35
7	-	-22	-44	-	-11	-21	-	-16	-33
8	-	-11	-17	-	-23	-28	-	-17	-23
9	-	-5	-16	-	12	-39	-	3	-27
10	-	172	300	-	82	230	-	127	265
11	-	-169	-424	-	-65	-230	-	-117	-327
12	-	-21	-32	-	-33	-38	-	-27	-35
	0	-273	-344	0	-1023	-977	0	-648	-661

Overall Travel Time Differences (Future Scenario vs WoDWoS)

6.15 The overall travel times reported in the PM peak follow a similar trend as that of the AM peaks. **Tables 13** and **15** show that in both of the PM future scenario years, the overall travel times decrease when compared to the WoDWoS scheme as with the AM,

6.16 Although increases on some journey time routes are noted, these are expected as rerouting of traffic would increase/decrease demand on certain arms when compared to the reference case scenario. The junction is modelled using MOVA which dynamically assigns green time to ensure the junction operates as efficiently as possible. Furthermore, the MOVA files have been reconfigured to ensure the junction operates more efficiently

than before. Although some journey time routes may increase, overall, the junction operates better than the WoDWoS scenario indicating that the junction operates better in the WDWS scenario therefore no further mitigation will be necessary.

7. M69 Junction J2

J2: Network Performance Comparison

7.1 **Tables 16** and **17** provides a summary of network performance statistics for each AM peak period per scenario.

Scenario	Hour 1					Hour 2					End of Model - Latent
	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	
AM_2026_WoDWos	07:30 - 08:30	8	92	6643	0	08:30 - 09:30	6	94	5284	0	0
AM_2026_WoDWS	07:30 - 08:30	25	80	8223	0	08:30 - 09:30	20	83	6384	0	0
AM_2026_WDWS	07:30 - 08:30	38	73	9288	0	08:30 - 09:30	26	79	7337	0	0

Scenario	Hour 1					Hour 2					End of Model - Latent
	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	
AM_2036_WoDWos	07:30 - 08:30	8	92	6917	0	08:30 - 09:30	6	94	5530	0	0
AM_2036_WoDWS	07:30 - 08:30	28	79	8977	0	08:30 - 09:30	43	77	6829	63	0
AM_2036_WDWS	07:30 - 08:30	59	66	9892	22	08:30 - 09:30	33	75	7951	0	0

7.2 The above tables indicate that the overall speed of the network decreases when looking at the future scenarios. This is caused by the introduction of traffic signals, and the level of queuing on the approaches of the junction. The average delay is seen to increase, but the number of vehicles within the network increases significantly as per the proposed demand.

7.3 **Tables 18** and **19** provides a summary of network performance statistics for each PM peak period per scenario.

Scenario	Hour 1					Hour 2					End of Model - Latent Demand
	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	
PM_2026_WoDWos	16:30 - 17:30	6	94	5948	0	17:30 - 18:30	6	94	5717	0	0
PM_2026_WoDWS	16:30 - 17:30	77	63	7545	5	17:30 - 18:30	30	79	7226	0	0
PM_2026_WDWS	16:30 - 17:30	63	65	8416	0	17:30 - 18:30	27	79	7863	0	0

Scenario	Hour 1					Hour 2					End of Model - Latent Demand
	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	Time period	Delay Avg	Speed Avg	Vehicles Arrive	Latent Demand	
PM_2036_WoDWos	16:30 - 17:30	7	94	6329	0	17:30 - 18:30	6	94	6098	0	0
PM_2036_WoDWS	16:30 - 17:30	118	51	7894	133	17:30 - 18:30	109	54	7780	72	0
PM_2036_WDWS	16:30 - 17:30	131	48	8673	183	17:30 - 18:30	108	54	8556	37	0

7.4 The PM peak scenarios show a very similar situation to that AM peak. Speed decreases, and average delay increases however this is due the introduction of signals which generally will introduce some delay to the junction. It should be noted that the WDWS scenario is now able to accommodate more than 2,000 additional vehicles when

compared to WoDWoS scenario and thereby providing a significant increase in capacity at the junction.

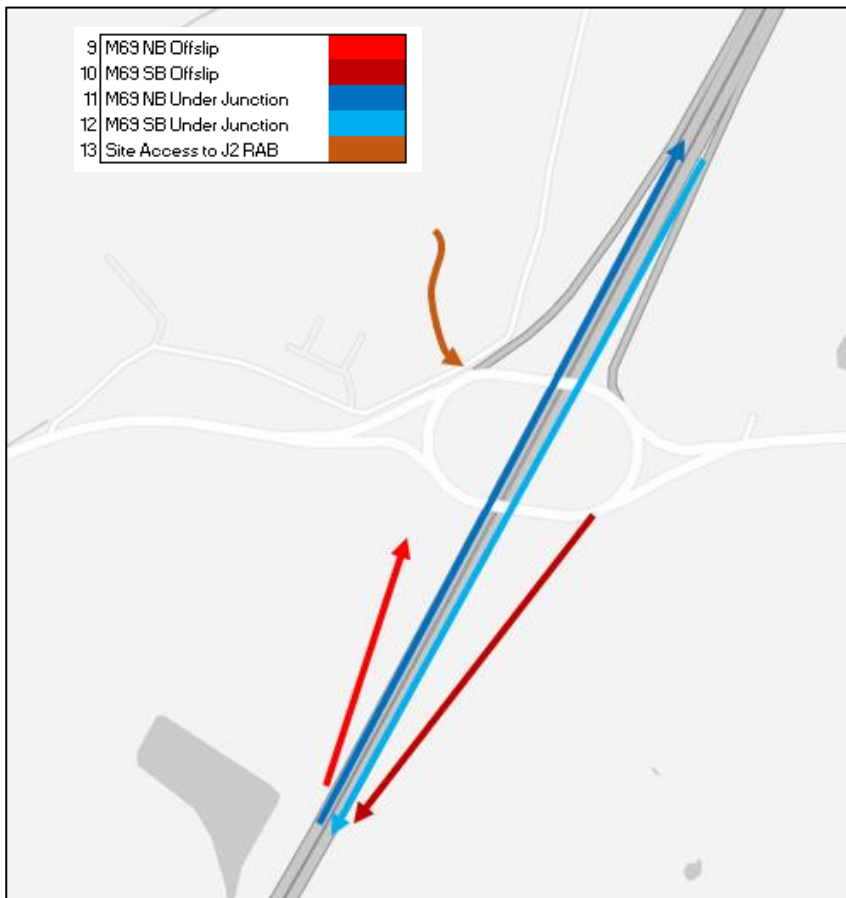
J2: VEHICLE JOURNEY TIME COMPARISON

7.5 A total of 13 journey time routes have been assessed in each of the future scenarios.

7.6 Figure 4 shows the location of four primary through routes.



7.7 Figure 7 shows the location of four secondary turning routes, and finally Figure 8 shows the location of the final New Slips turning routes and the route from the site access.



J2: AM Peak 2026

7.8 The travel time measurements for all morning peak hour scenarios are provided in **Tables 20 to 23**.

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS	AM_2026 _WoDWo s	AM_2026 _WoDWS	AM_2026 _WDWS
1	124	152	170	120	148	154	122	150	162
2	121	126	130	120	123	126	120	124	128
3	103	102	104	103	101	102	103	102	103
4	98	99	100	97	98	99	98	99	99
5	66	115	133	66	109	113	66	112	123
6	86	114	124	85	112	113	86	113	118
7	56	90	109	51	84	91	54	87	100
8	45	65	80	45	57	66	45	61	73
9	0	45	47	0	45	46	0	45	46
10	0	21	22	0	21	22	0	21	22
11	0	34	34	0	33	34	0	34	34
12	0	34	34	0	34	34	0	34	34
13	0	34	52	0	31	36	0	33	44
	700	1032	1139	686	998	1035	693	1015	1087

Total Travel Times - per scenario

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s	AM_2026 _WoDWo s	AM_2026 _WoDWS vs AM_2026 _WoDWo s	AM_2026 _WDWS vs AM_2026 _WoDWo s
1	-	27	46	-	28	35	-	28	40
2	-	4	9	-	4	7	-	4	8
3	-	-1	1	-	-1	0	-	-1	0
4	-	1	2	-	1	2	-	1	2
5	-	48	66	-	43	47	-	46	57
6	-	29	38	-	27	27	-	28	33
7	-	34	53	-	33	40	-	34	47
8	-	19	35	-	13	21	-	16	28
9	-	45	47	-	45	46	-	45	46
10	-	21	22	-	21	22	-	21	22
11	-	34	34	-	33	34	-	34	34
12	-	34	34	-	34	34	-	34	34
13	-	34	52	-	31	36	-	33	44
	-	163	251	0	147	178	0	155	215

Overall Travel Time Differences (Future Scenario vs WoDWos)

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS	AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS	AM_2036 _WoDWo s	AM_2036 _WoDWS	AM_2036 _WDWS
1	124	155	212	120	152	172	122	153	192
2	122	126	132	120	124	126	121	125	129
3	103	103	105	103	102	103	103	102	104
4	98	100	101	97	98	99	98	99	100
5	67	121	147	66	111	137	66	116	142
6	86	119	133	85	114	131	85	116	132
7	55	93	146	52	87	108	53	90	127
8	45	67	86	45	59	70	45	63	78
9	0	46	48	0	45	46	0	46	47
10	0	21	22	0	21	22	0	21	22
11	0	34	34	0	34	34	0	34	34
12	0	34	35	0	34	34	0	34	34
13	0	38	88	0	31	63	0	34	75
	700	1058	1290	687	1013	1145	694	1035	1217

Total Travel Times - per scenario

Route No	Average Hourly Travel Times								
	0730-0830			0830-0930			0730-0930		
	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s	AM_2036 _WoDWo s	AM_2036 _WoDWS vs AM_2036 _WoDWo s	AM_2036 _WDWS vs AM_2036 _WoDWo s
1	-	32	89	-	31	52	-	32	70
2	-	5	10	-	4	6	-	5	8
3	-	0	2	-	-1	0	-	-1	1
4	-	2	3	-	1	2	-	1	3
5	-	54	81	-	46	71	-	50	76
6	-	33	47	-	28	46	-	31	46
7	-	38	91	-	36	56	-	37	74
8	-	21	41	-	15	26	-	18	33
9	-	46	48	-	45	46	-	46	47
10	-	21	22	-	21	22	-	21	22
11	-	34	34	-	34	34	-	34	34
12	-	34	35	-	34	34	-	34	34
13	-	38	88	-	31	63	-	34	75
	0	185	363	0	160	259	0	172	311

Overall Travel Time Differences (Future Scenario vs WoDWos)

7.9 The above tables indicate that there is an increase in journey time on all routes of the junction however this is as a result of introducing signal controls to a priority-controlled junction. Furthermore, the network performance analysis indicated that the junction is

able to cater for more than 2,000 additional vehicles indicating that the infrastructure provided is sufficient to accommodate future year demand.

J2: PM Peak 2026

7.10 A summary of the evening peak hour journey time is presented in **Tables 24** to **27**.

Route No	Average Hourly Travel Times								
	1630-1730			1730-1830			1630-1830		
	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS	PM_2026 _WoDWo s	PM_2026 _WoDWS	PM_2026 _WDWS
1	119	173	172	119	170	166	119	172	169
2	119	124	123	118	123	122	118	123	122
3	102	232	165	102	142	108	102	187	136
4	97	97	98	97	97	98	97	97	98
5	67	108	131	66	103	118	67	106	124
6	89	110	127	88	108	117	88	109	122
7	48	104	107	48	101	98	48	103	103
8	42	63	69	42	61	63	42	62	66
9	0	175	107	0	85	51	0	130	79
10	0	21	22	0	21	22	0	21	22
11	0	36	35	0	35	34	0	35	35
12	0	34	34	0	34	34	0	34	34
13	0	38	93	0	35	47	0	37	70
	683	1314	1281	679	1117	1078	681	1216	1180

Total Travel Times - per scenario

Route No	Average Hourly Travel Times								
	1630-1730			1730-1830			1630-1830		
	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s	PM_2026 _WoDWo s	PM_2026 _WoDWS vs PM_2026 _WoDWo s	PM_2026 _WDWS vs PM_2026 _WoDWo s
1	-	53	53	-	52	47	-	53	50
2	-	5	4	-	5	5	-	5	4
3	-	130	62	-	41	6	-	85	34
4	-	0	1	-	0	1	-	0	1
5	-	40	63	-	37	51	-	39	57
6	-	22	38	-	20	29	-	21	34
7	-	56	60	-	54	51	-	55	55
8	-	21	26	-	19	21	-	20	24
9	-	175	107	-	85	51	-	130	79
10	-	21	22	-	21	22	-	21	22
11	-	36	35	-	35	34	-	35	35
12	-	34	34	-	34	34	-	34	34
13	-	38	93	-	35	47	-	37	70
	-	328	307	0	228	211	0	278	259

Overall Travel Time Differences (Future Scenario vs WoDWos)

Route No	1630-1730			1730-1830			Average Hourly Travel Times 1630-1830		
	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS	PM_2036 _WDWS
	1	120	167	172	119	165	167	119	166
2	119	123	122	118	123	121	118	123	122
3	103	304	301	102	304	273	102	304	287
4	97	98	98	98	98	99	98	98	99
5	67	110	130	67	106	124	67	108	127
6	89	112	127	88	109	124	89	111	125
7	48	97	108	47	96	102	48	97	105
8	42	63	71	42	63	68	42	63	69
9	0	245	241	0	244	213	0	245	227
10	0	21	22	0	21	22	0	21	22
11	0	36	36	0	36	36	0	36	36
12	0	34	34	0	34	34	0	34	34
13	0	38	98	0	38	89	0	38	94
	685	1450	1561	681	1436	1471	683	1443	1516

Total Travel Times - per scenario

Route No	1630-1730			1730-1830			Average Hourly Travel Times 1630-1830		
	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWS	PM_2036 _WoDWo s	PM_2036 _WoDWS vs PM_2036 _WoDWo s	PM_2036 _WDWS vs PM_2036 _WoDWS
	1	-	47	52	-	46	48	-	47
2	-	5	3	-	5	3	-	5	3
3	-	201	198	-	202	171	-	202	185
4	-	0	1	-	0	1	-	0	1
5	-	42	62	-	40	58	-	41	60
6	-	23	38	-	21	35	-	22	36
7	-	50	60	-	48	54	-	49	57
8	-	21	29	-	21	26	-	21	27
9	-	245	241	-	244	213	-	245	227
10	-	21	22	-	21	22	-	21	22
11	-	36	36	-	36	36	-	36	36
12	-	34	34	-	34	34	-	34	34
13	-	38	98	-	38	89	-	38	94
	0	390	444	0	383	396	0	386	420

Overall Travel Time Differences (Future Scenario vs WoDWos)

7.11 The evening peak hour journey times illustrate a similar pattern to the morning peak hour period. However, although there are increases in journey times on all routes of the junction, this is as a result of introducing signal control. Furthermore, as with the morning

peak hour period, the 'WDWS' scenario is able to accommodate more than 2,000 additional vehicles when compared to the 'WoDWoS' scenario.

8. SUMMARY AND CONCLUSIONS

SUMMARY

- 8.1 This Future Scenario Report documents the development of the future scenario models and demonstrates the comparisons between the base, reference case and future scenario assessments to both Junction 1 and Junction 2.
- 8.2 The operation of the traffic signals is subject to the advanced algorithms and calculations of the MOVA kernel taking into account the actual traffic volumes occurring on a second by second basis. MOVA in its most simplistic form provides green time to each traffic approach based upon traffic demanded on all arms. Each arm demands a particular green time and the MOVA controller distributes the time between each arm as required. When there are approaches that are similar in demand, the MOVA kernel will attempt to split the green time across all demanding approaches whilst maintaining throughput within the gyratory.

M69 Junction 1

- 8.3 Initial assessment of M69 Junction 1 was undertaken which indicated that there may be some inefficiencies with the current MOVA configuration. Therefore, as part of the scheme, it is proposed that the MOVA at the junction is recalibrated to ensure the junction operates more efficiently. All 'WDWS' and 'WoDWS' scenarios have utilised the recalibrated MOVA configuration. The existing MOVA configuration has been retained for the assessment of the reference case scenarios.
- 8.4 A review of the journey times indicated that although there may be increases on some routes of the junction, which is as a result of MOVA redistributing green times to ensure optimum operation of the junction, the 'WDWS' operates generally better than the 'WoDWS' scenarios.
- 8.5 The above is further supported by a comparison between network performance indicators which illustrate that the 'WDWS' scenarios in generally have reduced average delay, increased vehicle speed and reduced latent demand when compared to the 'WoDWS' scenarios in both peak hour periods. This illustrates that the 'WDWS' scenario generally operates better than the 'WoDWS' scenarios therefore, it is considered no further mitigation should be required at the junction.

M69 Junction 2

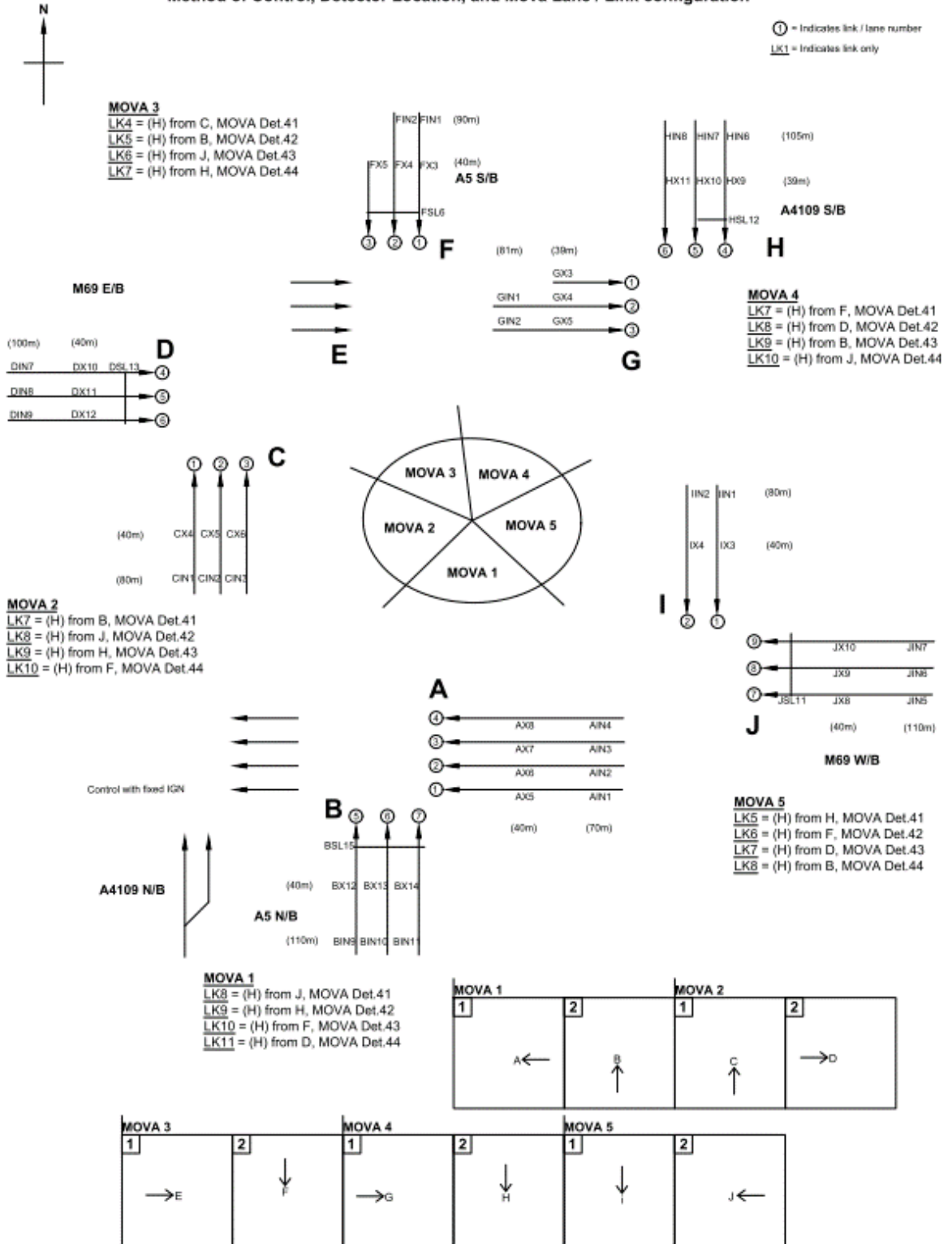
- 8.6 The design of the new junction has unlocked capacity for traffic leaving or joining the M69. The new offslip from the south, has been designed with the throughput of traffic in mind, as is the new site access to the north west.
- 8.7 A review of the journey times between 'WoD' and 'WDWS' scenarios indicates that there is an increase in journey times across all routes however this is as anticipated. The junction currently is a three-arm priority-controlled roundabout which is proposed to form a 5 arm signalised roundabout. Signalisation of entry arms generally add delay to journey times however a review of the network performance indicates that the junction is able to

accommodate more than 2,000 additional vehicles whilst operating satisfactorily. Therefore, it is considered no further refinements to the design is required.

APPENDIX A: MOVA CONFIGURATION

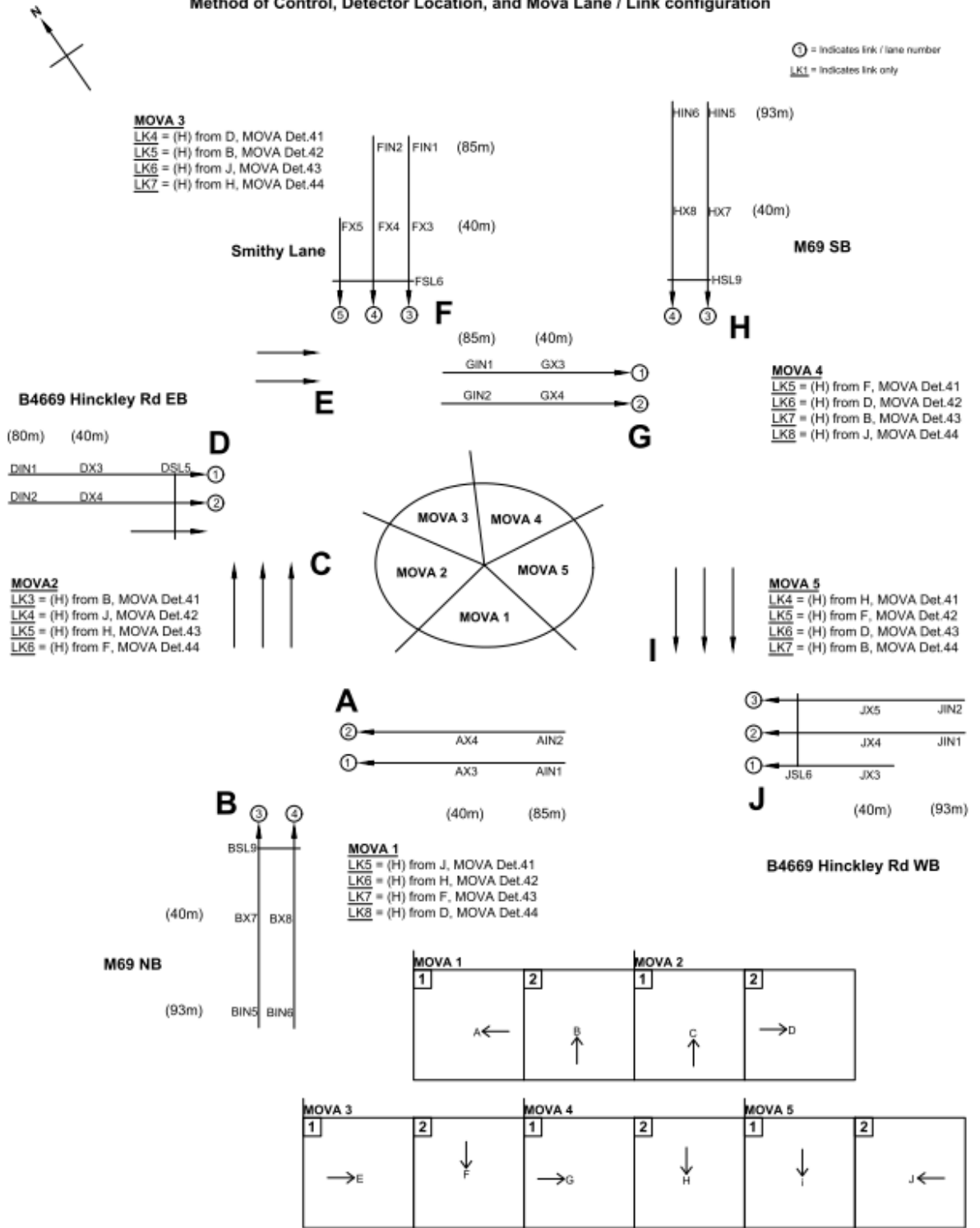
MOVA CONFIGURATION

M69J1 ROUNDABOUT / VISSIM
Method of Control, Detector Location, and Mova Lane / Link configuration



M69J2 ROUNDABOUT / VISSIM

Method of Control, Detector Location, and Mova Lane / Link configuration



APPENDIX B

J1: Vehicle Flow Comparison

J1: AM Peak 2026

AM Peak (07:30-09:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2026 WoDW	2026 WoDW	2026 WDDS
M69 Junction 1	Zone A - B4109 Rugby Road	Zone B - M69 Eastbound	252	253	187	290	337
		Zone C - A5 Southbound	387	392	289	395	371
		Zone D - B4109 Hinckley Road	493	500	455	473	555
		Zone E - M69 Westbound	1084	1114	1251	806	942
		Zone F - A5 Northbound	84	85	278	478	448
	Zone B - M69 Westbound	Zone C - A5 Southbound	113	113	111	133	265
		Zone D - B4109 Hinckley Road	390	395	479	491	730
		Zone E - M69 Westbound	4005	4041	3723	2512	3628
		Zone F - A5 Northbound	499	515	668	503	715
	Zone C - A5 Northbound	Zone A - B4109 Rugby Road	75	73	91	110	148
		Zone D - B4109 Hinckley Road	23	23	63	39	58
		Zone E - M69 Westbound	448	450	538	234	375
		Zone F - A5 Northbound	848	873	460	294	448
		Zone A - B4109 Rugby Road	184	184	239	165	226
	Zone D - B4109 Hinckley Road	Zone B - M69 Eastbound	73	73	97	69	160
		Zone E - M69 Westbound	24	24	31	14	21
		Zone F - A5 Northbound	179	181	471	203	300
		Zone A - B4109 Rugby Road	215	214	268	197	307
		Zone B - M69 Eastbound	283	289	455	336	647
	Zone E - M69 Eastbound	Zone C - A5 Southbound	11	11	11	9	16
		Zone F - A5 Northbound	549	545	147	71	89
		Zone A - B4109 Rugby Road	331	331	656	308	449
		Zone B - M69 Eastbound	2927	2935	2532	1708	2468
		Zone C - A5 Southbound	244	246	371	179	277
	Zone F - A5 Southbound	Zone D - B4109 Hinckley Road	25	26	44	18	26
		Zone A - B4109 Rugby Road	16	16	9	20	22
		Zone B - M69 Eastbound	481	485	368	463	680
		Zone C - A5 Southbound	830	844	557	688	783
		Zone D - B4109 Hinckley Road	170	174	186	161	216
	A5/Wolvey Road	Wolvey Road Southbound	Zone E - M69 Westbound	646	658	590	376
A5 Watling Street Eastbound			156	152	170	124	172
Wolvey Road Southbound			1	1	1	1	1
A5 Watling Street Westbound		A5 Watling Street Westbound	85	86	77	59	84
		Wolvey Road Southbound	3	4	5	5	6
		A5 Watling Street Westbound	2134	2178	1997	1526	1975
Wolvey Road Northbound		Wolvey Road Northbound	34	27	29	23	25
		A5 Watling Street Westbound	1	1	1	1	1
		Wolvey Road Northbound	4	0	0	0	0
A5 Watling Street Eastbound		A5 Watling Street Eastbound	2	4	5	3	4
		Wolvey Road Northbound	78	77	41	53	68
		A5 Watling Street Eastbound	1973	1997	1533	1581	1994
		Wolvey Road Southbound	1	1	0	1	1

J1: AM Peak 2036

AM Peak (07:30-09:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2036 WoDW	2036 WoDW	2036 WDDS
M69 Junction 1	Zone A - B4109 Rugby Road	Zone B - M69 Eastbound	252	253	177	263	251
		Zone C - A5 Southbound	387	392	274	392	324
		Zone D - B4109 Hinckley Road	493	500	422	513	525
		Zone E - M69 Westbound	1084	1114	1260	950	890
		Zone F - A5 Northbound	84	85	285	460	373
	Zone B - M69 Westbound	Zone C - A5 Southbound	113	113	140	225	270
		Zone D - B4109 Hinckley Road	390	395	541	779	805
		Zone E - M69 Westbound	4005	4041	3946	3912	3655
		Zone F - A5 Northbound	499	515	680	709	670
	Zone C - A5 Northbound	Zone A - B4109 Rugby Road	75	73	88	148	134
		Zone D - B4109 Hinckley Road	23	23	73	63	67
		Zone E - M69 Westbound	448	450	702	411	404
		Zone F - A5 Northbound	848	873	480	457	448
		Zone A - B4109 Rugby Road	184	184	249	234	209
	Zone D - B4109 Hinckley Road	Zone B - M69 Eastbound	73	73	100	108	144
		Zone E - M69 Westbound	24	24	30	21	28
		Zone F - A5 Northbound	179	181	447	352	341
		Zone A - B4109 Rugby Road	215	214	236	317	321
		Zone B - M69 Eastbound	283	289	508	621	711
		Zone C - A5 Southbound	11	11	9	14	15
	Zone E - M69 Eastbound	Zone F - A5 Northbound	549	545	179	116	104
		Zone A - B4109 Rugby Road	331	331	798	519	494
		Zone B - M69 Eastbound	2927	2935	2687	2658	2487
		Zone C - A5 Southbound	244	246	549	383	358
		Zone D - B4109 Hinckley Road	25	26	58	32	33
	Zone F - A5 Southbound	Zone A - B4109 Rugby Road	16	16	7	7	9
		Zone B - M69 Eastbound	481	485	350	386	475
		Zone C - A5 Southbound	830	844	585	574	604
		Zone D - B4109 Hinckley Road	170	174	192	169	215
		Zone E - M69 Westbound	646	658	651	376	415
A5/Wolvey Road	Wolvey Road Southbound	A5 Watling Street Eastbound	156	152	161	144	147
		Wolvey Road Southbound	1	1	1	1	1
		A5 Watling Street Westbound	85	86	63	53	57
	A5 Watling Street Westbound	Wolvey Road Southbound	3	4	5	6	6
		A5 Watling Street Westbound	2134	2178	2037	2059	1912
		Wolvey Road Northbound	34	27	29	29	25
	Wolvey Road Northbound	A5 Watling Street Westbound	1	1	1	1	1
		Wolvey Road Northbound	4	0	0	0	0
		A5 Watling Street Eastbound	2	4	6	4	3
	A5 Watling Street Eastbound	Wolvey Road Northbound	78	77	40	32	42
		A5 Watling Street Eastbound	1973	1997	1617	1371	1566
		Wolvey Road Southbound	1	1	0	0	0

J1: PM Peak 2026

PM Peak (16:30-18:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows			
	Approach	Exit/movement	Observed	Modelled	2026 WoDW	2026 WoDW	2026 WDDS	
M69 Junction 1	B4109 Rugby Road	M69 Eastbound	117	117	141	297	242	
		A5 Southbound	235	235	235	247	264	
		B4109 Hinckley Road	239	237	281	259	286	
		M69 Westbound	387	363	541	430	463	
		A5 Northbound	32	31	394	588	571	
	M69 Westbound	A5 Southbound	64	64	78	127	319	
		B4109 Hinckley Road	377	379	361	531	659	
		M69 Westbound	3152	3155	2924	2787	2763	
		A5 Northbound	456	455	840	847	715	
	A5 Northbound	B4109 Rugby Road	179	179	251	389	464	
		B4109 Hinckley Road	15	15	22	27	29	
		M69 Westbound	265	267	401	365	374	
		A5 Northbound	787	765	570	515	546	
		B4109 Rugby Road	405	402	487	556	537	
	B4109 Hinckley Road	M69 Eastbound	44	44	50	137	96	
		M69 Westbound	27	27	53	41	41	
		A5 Northbound	192	192	642	382	349	
		B4109 Rugby Road	373	376	471	462	472	
		M69 Eastbound	181	184	177	355	334	
		A5 Southbound	14	14	19	15	21	
		M69 Eastbound	A5 Northbound	747	742	155	114	89
			B4109 Rugby Road	1258	1263	1476	926	959
			M69 Eastbound	4516	4530	4505	4334	4406
			A5 Southbound	681	682	741	518	550
	B4109 Hinckley Road		34	34	52	32	32	
	A5 Southbound	B4109 Rugby Road	32	32	37	36	36	
		M69 Eastbound	456	457	431	852	804	
		A5 Southbound	906	906	962	962	955	
		B4109 Hinckley Road	86	76	68	72	58	
		M69 Westbound	473	469	574	450	424	
A5/Wolvey Road	Wolvey Road Southbound	A5 Watling Street Eastbound	52	50	57	61	63	
		Wolvey Road Southbound	1	1	1	1	1	
		A5 Watling Street Westbound	41	41	41	41	41	
	A5 Watling Street Westbound	Wolvey Road Southbound	1	0	0	0	0	
		A5 Watling Street Westbound	2030	2094	2475	2336	2184	
		Wolvey Road Northbound	93	91	119	108	82	
	Wolvey Road Northbound	A5 Watling Street Westbound	1	1	1	1	2	
		Wolvey Road Northbound	0	0	0	0	0	
		A5 Watling Street Eastbound	1	0	0	0	0	
	A5 Watling Street Eastbound	Wolvey Road Northbound	300	298	275	300	286	
		A5 Watling Street Eastbound	1867	1883	2023	2294	2190	
		A5 Watling Street Westbound	0	0	0	0	0	

J1: PM Peak 2036

PM Peak (16:30-18:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows			
	Approach	Exit/movement	Observed	Modelled	2036 WoDW	2036 WoDW	2036 WDDS	
M69 Junction 1	B4109 Rugby Road	M69 Eastbound	117	117	129	238	241	
		A5 Southbound	235	235	209	242	246	
		B4109 Hinckley Road	239	237	293	306	311	
		M69 Westbound	387	363	635	564	570	
		A5 Northbound	32	31	325	554	570	
	M69 Westbound	A5 Southbound	64	64	62	293	294	
		B4109 Hinckley Road	377	379	337	647	650	
		M69 Westbound	3152	3155	2956	3064	3064	
		A5 Northbound	456	455	738	828	831	
	A5 Northbound	B4109 Rugby Road	179	179	212	426	427	
		B4109 Hinckley Road	15	15	33	30	26	
		M69 Westbound	265	267	566	438	382	
		A5 Northbound	787	765	556	596	563	
		B4109 Rugby Road	405	402	550	503	433	
	B4109 Hinckley Road	M69 Eastbound	44	44	63	93	79	
		M69 Westbound	27	27	64	64	66	
		A5 Northbound	192	192	566	380	407	
		B4109 Rugby Road	373	376	447	536	570	
		M69 Eastbound	181	184	159	325	327	
		A5 Southbound	14	14	17	20	23	
		M69 Eastbound	A5 Northbound	747	742	145	108	101
			B4109 Rugby Road	1258	1263	1301	1070	1075
			M69 Eastbound	4516	4530	3997	4763	4762
			A5 Southbound	681	682	639	600	610
	B4109 Hinckley Road		34	34	53	41	40	
	A5 Southbound	B4109 Rugby Road	32	32	31	37	38	
		M69 Eastbound	456	457	333	694	712	
		A5 Southbound	906	906	746	895	920	
		B4109 Hinckley Road	86	76	59	69	74	
		M69 Westbound	473	469	571	525	545	
A5/Wolvey Road	Wolvey Road Southbound	A5 Watling Street Eastbound	52	50	50	60	62	
		Wolvey Road Southbound	1	1	1	1	1	
		A5 Watling Street Westbound	41	41	36	40	41	
	A5 Watling Street Westbound	Wolvey Road Southbound	1	0	1	0	0	
		A5 Watling Street Westbound	2030	2094	2207	2357	2360	
		Wolvey Road Northbound	93	91	104	107	112	
	Wolvey Road Northbound	A5 Watling Street Westbound	1	1	1	1	1	
		Wolvey Road Northbound	0	0	0	0	0	
		A5 Watling Street Eastbound	1	0	0	0	0	
	A5 Watling Street Eastbound	Wolvey Road Northbound	300	298	220	280	291	
		A5 Watling Street Eastbound	1867	1883	1681	2161	2234	
		A5 Watling Street Westbound	0	0	0	0	0	

AM
2026
Actual flows through the network
All Vehicles

	F	A	B	C	D	E	F	Tot
5b	WWDW	22	680	783	216	470	0	2171
4b	WoDWS	20	463	688	161	376	0	1709
3b	WoDWoS	9	368	557	186	590	0	1709
x	Base	16	485	844	174	658	0	2176

	Y	W	X	Y	Z	Tot	From F	Diff
5b	WWDW	1994	1	0	68	2063	2166	-5
4b	WoDWS	1581	1	0	53	1634	1705	-4
3b	WoDWoS	1533	0	0	41	1574	1704	-5
x	Base	1997	1	0	77	2076	2150	-27

	Z	W	X	Y	Z	Tot
5b	WWDW	172	1	84	0	257
4b	WoDWS	124	1	59	0	184
3b	WoDWoS	170	1	77	0	248
x	Base	152	1	86	0	239

	W	W	X	Y	Z	Tot	From F	Diff
5b	WWDW	0	6	1975	25	2006	1999	8
4b	WoDWS	0	5	1526	23	1553	1548	5
3b	WoDWoS	0	5	1997	29	2031	2024	7
x	Base	0	4	2178	27	2209	2200	9

	E	A	B	C	D	E	F	Tot
5b	WWDW	449	2468	277	26	0	89	3309
4b	WoDWS	308	1708	179	18	0	71	2284
3b	WoDWoS	656	2532	371	44	0	147	3750
x	Base	331	2935	246	26	0	545	4083

	A	A	B	C	D	E	F	Tot
5b	WWDW	0	337	371	555	942	448	2652
4b	WoDWS	0	290	395	473	806	478	2441
3b	WoDWoS	0	187	289	455	1251	278	2460
x	Base	0	253	392	500	1114	85	2343



	B	A	B	C	D	E	F	Tot
5b	WWDW	148	0	265	730	3628	715	5487
4b	WoDWS	110	0	133	491	2512	503	3749
3b	WoDWoS	91	0	111	479	3723	668	5072
x	Base	73	0	113	395	4041	515	5138

	C	A	B	C	D	E	F	Tot
5b	WWDW	226	160	0	58	375	448	1266
4b	WoDWS	165	69	0	39	234	294	802
3b	WoDWoS	239	97	0	63	538	460	1398
x	Base	184	73	0	23	450	873	1604

	D	A	B	C	D	E	F	Tot
5b	WWDW	307	647	16	0	21	300	1291
4b	WoDWS	197	336	9	0	14	203	758
3b	WoDWoS	268	455	11	0	31	471	1236
x	Base	214	289	11	0	24	181	720

PM

2026

Actual flows through the network

All Vehicles

	F	A	B	C	D	E	F	Tot
11b	WWDW	36	804	955	58	424	0	2278
10b	WoDWS	36	852	962	72	450	0	2372
9b	WoDWoS	37	431	962	68	574	0	2073
x	Base	32	457	906	76	469	0	1940

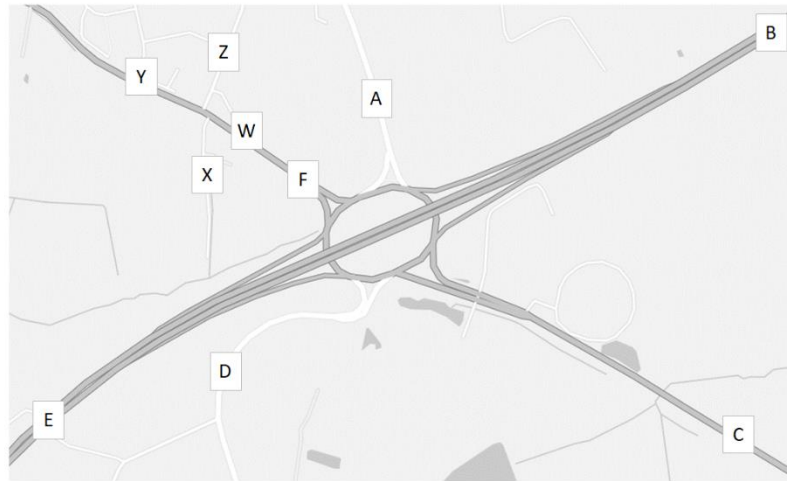
	Y	W	X	Y	Z	Tot	From F	Diff
11b	WWDW	2190	0	0	286	2476	2253	-25
10b	WoDWS	2294	0	0	300	2594	2354	-17
9b	WoDWoS	2023	0	0	275	2298	2080	7
x	Base	1883	0	0	298	2181	1933	-8

	Z	W	X	Y	Z	Tot
11b	WWDW	63	1	41	0	105
10b	WoDWS	61	1	41	0	103
9b	WoDWoS	57	1	41	0	99
x	Base	50	1	41	0	92

	W	W	X	Y	Z	Tot	From F	Diff
11b	WWDW	0	0	2184	82	2266	2270	-4
10b	WoDWS	0	0	2336	108	2444	2446	-2
9b	WoDWoS	0	0	2475	119	2594	2600	-6
x	Base	0	0	2094	91	2185	2185	0

	E	A	B	C	D	E	F	Tot
11b	WWDW	959	4406	550	32	0	89	6037
10b	WoDWS	926	4334	518	32	0	114	5924
9b	WoDWoS	1476	4505	741	52	0	155	6929
x	Base	1263	4530	682	94	0	742	7252

	A	A	B	C	D	E	F	Tot
11b	WWDW	0	242	264	286	463	571	1826
10b	WoDWS	0	297	247	259	430	588	1820
9b	WoDWoS	0	141	235	281	541	394	1592
x	Base	0	117	235	237	363	31	983



	B	A	B	C	D	E	F	Tot
11b	WWDW	464	0	319	659	2763	715	4920
10b	WoDWS	389	0	127	531	2787	847	4680
9b	WoDWoS	251	0	78	361	2924	840	4455
x	Base	179	0	64	379	3155	455	4231

	C	A	B	C	D	E	F	Tot
11b	WWDW	537	96	0	29	374	546	1582
10b	WoDWS	556	137	0	27	365	515	1601
9b	WoDWoS	487	50	0	22	401	570	1529
x	Base	402	44	0	15	267	765	1493

	D	A	B	C	D	E	F	Tot
11b	WWDW	472	334	21	0	41	349	1217
10b	WoDWS	462	355	15	0	41	382	1254
9b	WoDWoS	471	177	19	0	53	642	1362
x	Base	376	184	14	0	27	192	793

AM
2036
Actual flows through the network
All Vehicles

	F	A	B	C	D	E	F	Tot
8b	WWDW	9	475	604	215	415	0	1716
7b	WoDWS	7	386	574	169	376	0	1512
6b	WoDWoS	7	350	585	192	651	0	1785
x	Base	16	485	844	174	658	0	2176

	Y	W	X	Y	Z	Tot	From F	Diff
8b	WWDW	1566	0	0	42	1608	1713	-3
7b	WoDWS	1371	0	0	32	1402	1515	3
6b	WoDWoS	1617	0	0	40	1657	1777	-8
x	Base	1997	1	0	77	2076	2150	-27

	Z	W	X	Y	Z	Tot
8b	WWDW	147	1	57	0	205
7b	WoDWS	144	1	53	0	198
6b	WoDWoS	161	1	63	0	225
x	Base	152	1	86	0	239

	W	W	X	Y	Z	Tot	From F	Diff
8b	WWDW	0	6	1912	25	1943	1935	7
7b	WoDWS	0	6	2059	29	2094	2093	1
6b	WoDWoS	0	5	2037	29	2070	2071	0
x	Base	0	4	2178	27	2209	2200	9

	E	A	B	C	D	E	F	Tot
8b	WWDW	494	2487	358	33	0	104	3475
7b	WoDWS	519	2658	383	32	0	116	3708
6b	WoDWoS	798	2687	549	58	0	179	4270
x	Base	331	2935	246	26	0	545	4083

	A	A	B	C	D	E	F	Tot
8b	WWDW	0	251	324	525	890	373	2362
7b	WoDWS	0	263	392	513	950	460	2578
6b	WoDWoS	0	177	274	422	1260	285	2418
x	Base	0	253	392	500	1114	85	2343



	B	A	B	C	D	E	F	Tot
8b	WWDW	134	0	270	805	3655	670	5535
7b	WoDWS	148	0	225	779	3912	709	5772
6b	WoDWoS	88	0	140	541	3946	680	5395
x	Base	73	0	113	395	4041	515	5138

	C	A	B	C	D	E	F	Tot
8b	WWDW	209	144	0	67	404	448	1271
7b	WoDWS	234	108	0	63	411	457	1273
6b	WoDWoS	249	100	0	73	702	480	1604
x	Base	184	73	0	23	450	873	1604

	D	A	B	C	D	E	F	Tot
8b	WWDW	321	711	15	0	28	341	1416
7b	WoDWS	317	621	14	0	21	352	1325
6b	WoDWoS	236	508	9	0	30	447	1230
x	Base	214	289	11	0	24	181	720

PM
2036
Actual flows through the network
All Vehicles

	F	A	B	C	D	E	F	Tot
14b	WWDW	38	712	920	74	545	0	2289
13b	WoDWS	37	694	895	69	525	0	2220
12b	WoDWoS	31	333	746	59	571	0	1740
x	Base	32	457	906	76	469	0	1940

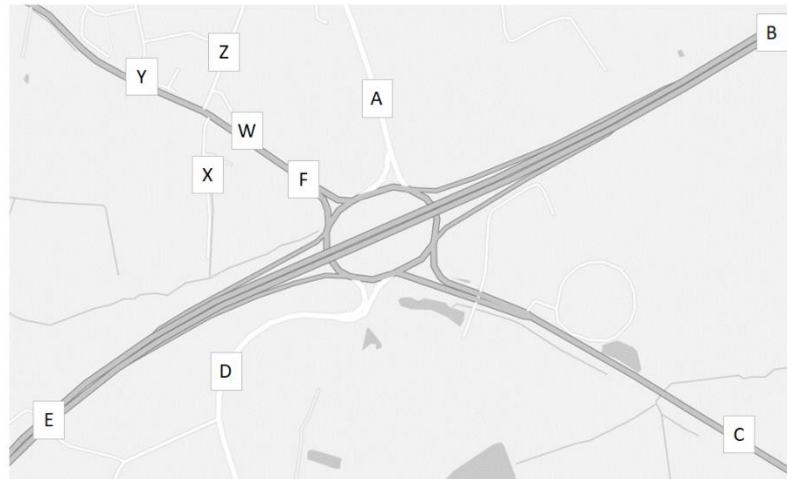
	Y	W	X	Y	Z	Tot	From F	Diff
14b	WWDW	2234	0	0	291	2525	2296	6
13b	WoDWS	2161	0	0	280	2441	2221	1
12b	WoDWoS	1681	0	0	220	1900	1731	-9
x	Base	1883	0	0	298	2181	1933	-8

	Z	W	X	Y	Z	Tot
14b	WWDW	62	1	41	0	104
13b	WoDWS	60	1	40	0	101
12b	WoDWoS	50	1	36	0	87
x	Base	50	1	41	0	92

	W	W	X	Y	Z	Tot	From F	Diff
14b	WWDW	0	0	2360	112	2472	2472	0
13b	WoDWS	0	0	2357	107	2465	2466	-1
12b	WoDWoS	0	1	2207	104	2312	2331	-19
x	Base	0	0	2094	91	2185	2185	0

	E	A	B	C	D	E	F	Tot
14b	WWDW	1075	4762	610	40	0	101	6588
13b	WoDWS	1070	4763	600	41	0	108	6582
12b	WoDWoS	1301	3997	639	53	0	145	6135
x	Base	1263	4530	682	94	0	742	7252

	A	A	B	C	D	E	F	Tot
14b	WWDW	0	241	246	311	570	570	1938
13b	WoDWS	0	238	242	306	564	554	1903
12b	WoDWoS	0	129	209	293	635	325	1590
x	Base	0	117	235	237	363	31	983



	B	A	B	C	D	E	F	Tot
14b	WWDW	427	0	294	650	3064	831	5265
13b	WoDWS	426	0	293	647	3064	828	5257
12b	WoDWoS	212	0	62	337	2956	738	4305
x	Base	179	0	64	379	3155	455	4231

	C	A	B	C	D	E	F	Tot
14b	WWDW	433	79	0	26	382	563	1484
13b	WoDWS	503	93	0	30	438	596	1659
12b	WoDWoS	550	63	0	33	566	556	1768
x	Base	402	44	0	15	267	765	1493

	D	A	B	C	D	E	F	Tot
14b	WWDW	570	327	23	0	66	407	1392
13b	WoDWS	536	325	20	0	64	380	1325
12b	WoDWoS	447	159	17	0	64	566	1253
x	Base	376	184	14	0	27	192	793

J2: Vehicle Flow Comparison

J2: AM Peak 2026

AM Peak (07:30-09:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2026 WoDW	2026 WoDW	2026 WDDS
M69 J2	M69 North	B4669 East	94	97	0	24	23
		B4669 West	379	419	0	339	316
	B4669 East	B4669 West	666	669	0	405	376
		M69 North	340	338	0	249	212
	B4669 West	M69 North	794	799	0	1042	1080
		B4669 East	368	368	0	218	229
M69	M69 Mainline	Northbound	4247	4252	0	3115	3139
		Southbound	5149	5138	4756	4574	4645
M69 J2 (New Movements)	M69 North	M69 South			0	0	0
		Site Access			0	160	592
	B4699 East	M69 South			0	1109	1172
		Site Access			0	294	495
	B4699 West	M69 South			0	13	14
		Site Access			0	79	137
	Site Access	M69 North			0	331	500
		B4669 East			0	164	184
		B4669 West			0	16	18
		M69 South			0	1236	1461
	M69 J2 NB Offslip	M69 North			0	0	0
		B4669 East			0	502	491
		B4669 West			0	4	3
		Site Access			0	690	1506

J2: AM Peak 2036

AM Peak (07:30-09:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2036 WoDW	2036 WoDW	2036 WDDS
M69 J2	M69 North	B4669 East	94	97	0	24	20
		B4669 West	379	419	0	318	288
	B4669 East	B4669 West	666	669	0	364	345
		M69 North	340	338	0	270	251
	B4669 West	M69 North	794	799	0	965	1019
		B4669 East	368	368	0	242	291
M69	M69 Mainline	Northbound	4247	4252	0	3356	3410
		Southbound	5149	5138	5036	4991	5036
M69 J2 (New Movements)	M69 North	M69 South			0	0	0
		Site Access			0	164	607
	B4699 East	M69 South			0	1195	1234
		Site Access			0	331	520
	B4699 West	M69 South			0	24	31
		Site Access			0	100	227
	Site Access	M69 North			0	343	438
		B4669 East			0	208	167
		B4669 West			0	15	17
	M69 J2 NB Offslip	M69 South			0	1435	1737
		M69 North			0	0	0
		B4669 East			0	568	557
		B4669 West			0	7	3
		Site Access			0	832	1602

J2: PM Peak 2026

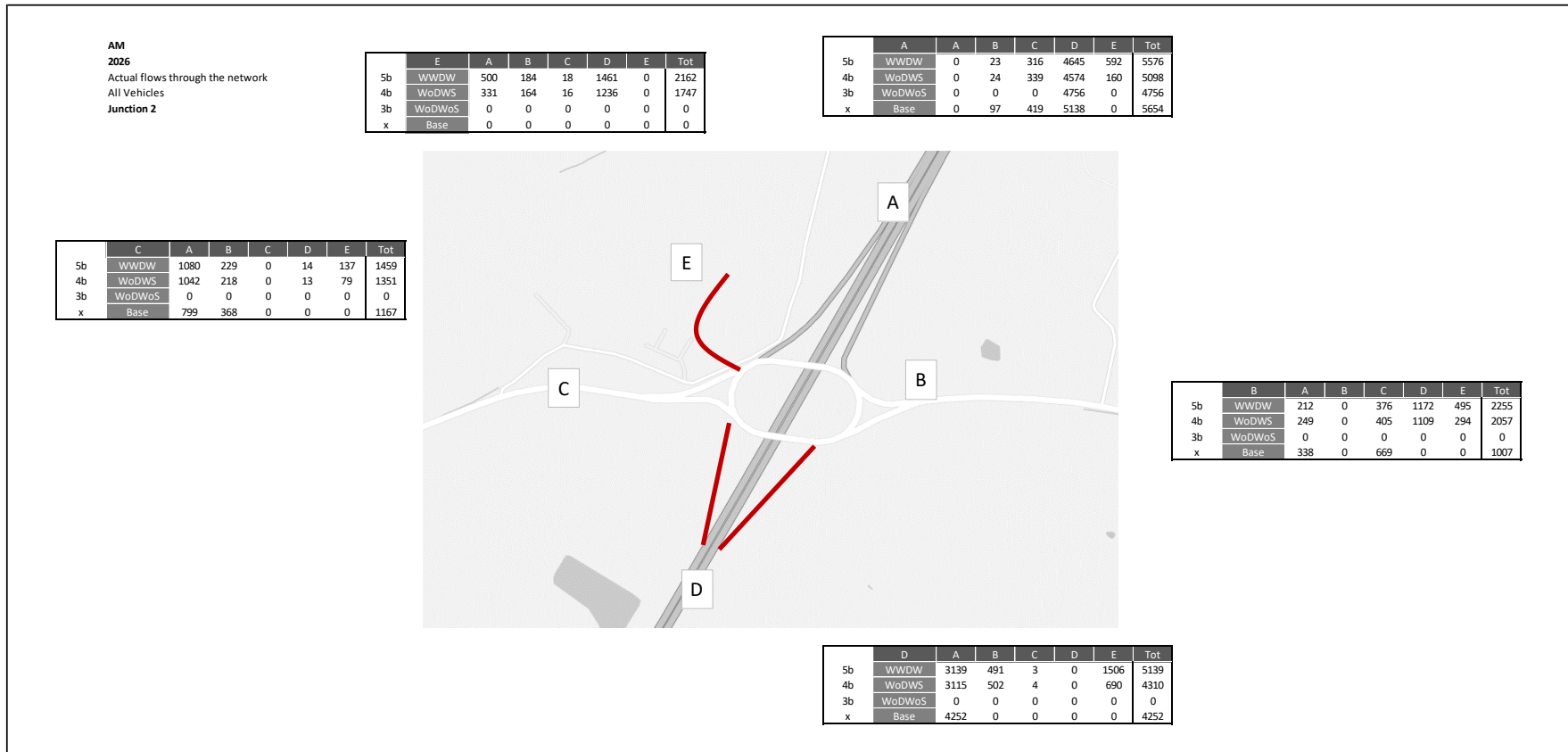
PM Peak (16:30-18:30) Summary - ALL

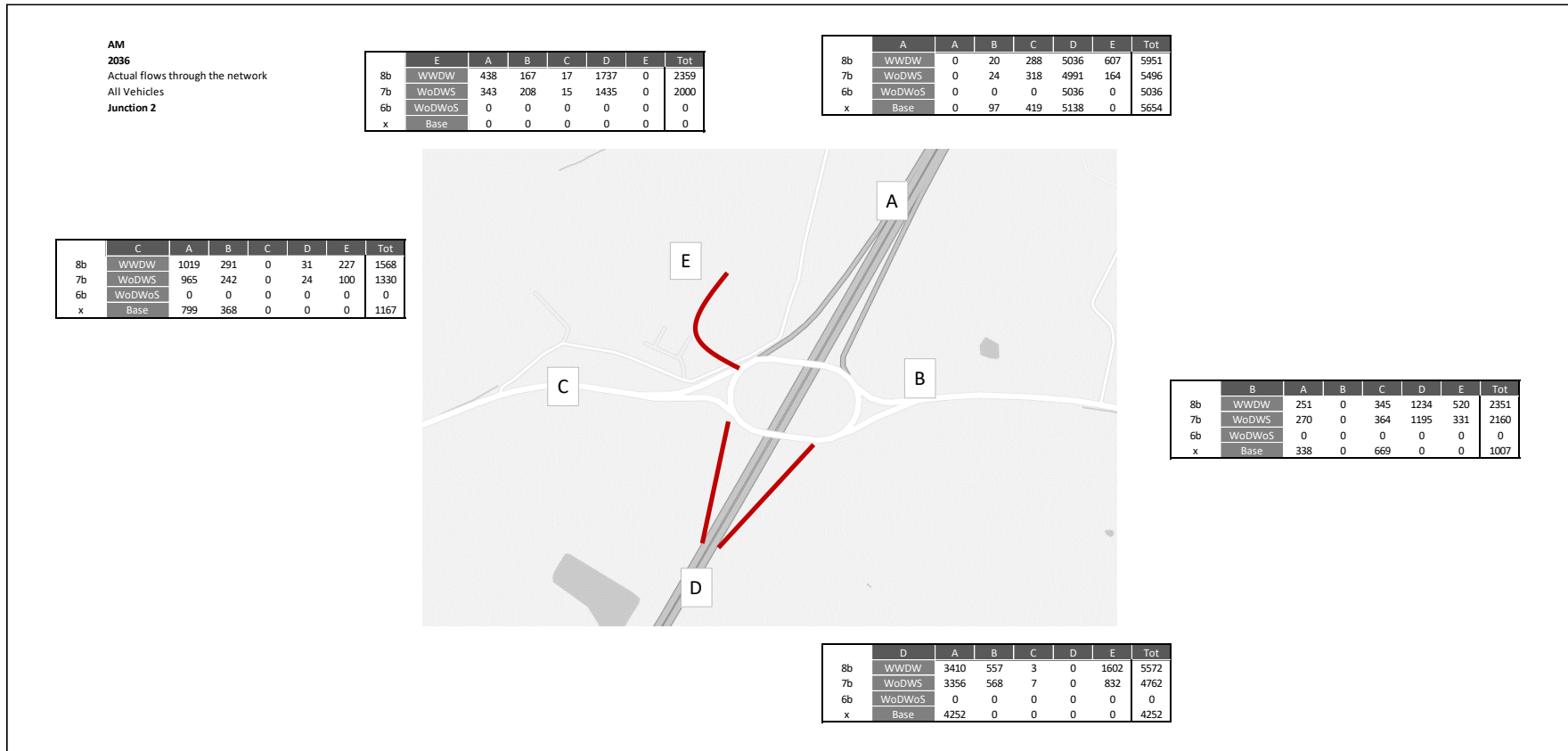
Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2026 WoDW	2026 WoDW	2026 WDDS
M69 J2	M69 North	M69 Eastbound	346	365	0	197	173
		A5 Southbound	656	706	0	310	313
	B4669 East	B4109 Hinckley Road	407	411	0	336	360
		M69 Westbound	44	43	0	67	37
	B4669 West	A5 Northbound	299	305	0	284	253
		A5 Southbound	680	679	0	428	362
M69	M69 Mainline	B4109 Hinckley Road	4468	4481	0	3973	3967
		M69 Westbound	4437	4378	4555	4335	4372
M69 J2 (New Movements)	M69 North	M69 South			0	0	0
		Site Access			0	245	345
	B4699 East	M69 South			0	519	522
		Site Access			0	282	186
	B4699 West	M69 South			0	0	0
		Site Access			0	115	197
	Site Access	M69 North			0	102	562
		B4669 East			0	179	410
		B4669 West			0	8	46
	M69 J2 NB Offslip	M69 South			0	611	1485
		M69 North			0	0	0
		B4669 East			0	2043	1962
		B4669 West			0	64	63
		Site Access			0	3401	3270

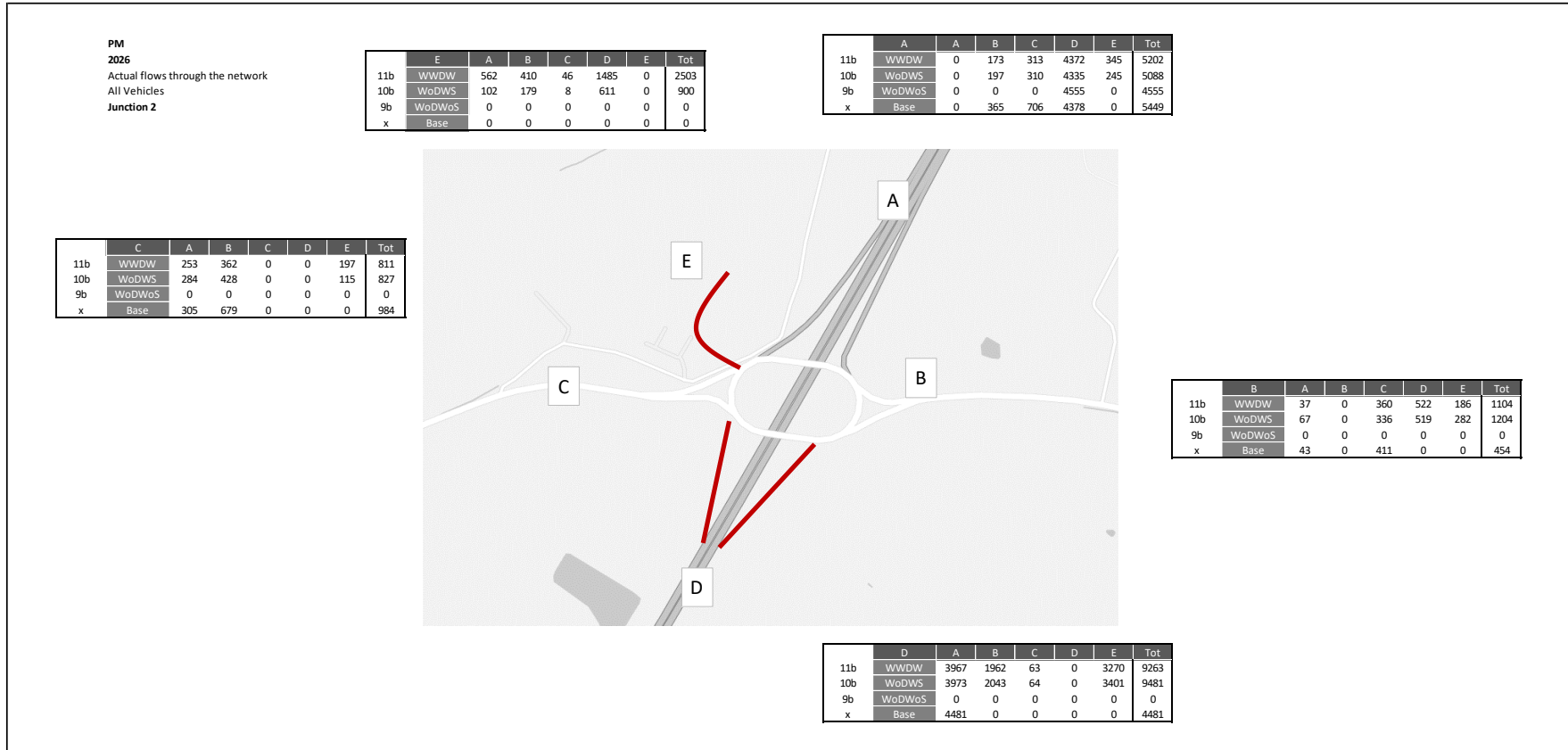
J2: PM Peak 3026

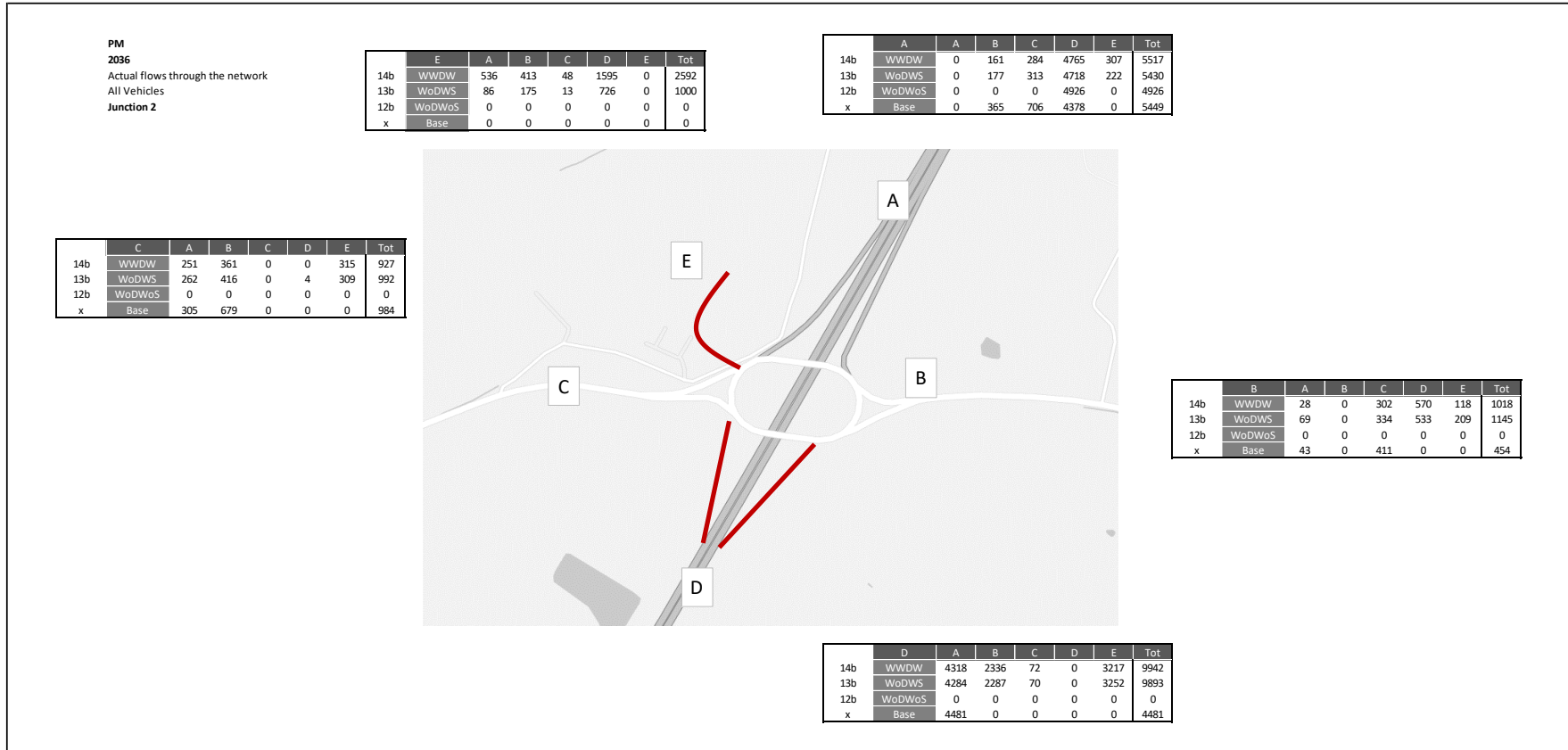
PM Peak (16:30-18:30) Summary - ALL

Junction	Junction/ Movement		Vehicle Flow		Scenario Flows		
	Approach	Exit/movement	Observed	Modelled	2036 WoDW	2036 WoDW	2036 WDDS
M69 J2	M69 North	M69 Eastbound	346	365	0	177	161
		A5 Southbound	656	706	0	313	284
	B4669 East	B4109 Hinckley Road	407	411	0	334	302
		M69 Westbound	44	43	0	69	28
	B4669 West	A5 Northbound	299	305	0	262	251
		A5 Southbound	680	679	0	416	361
M69	M69 Mainline	B4109 Hinckley Road	4468	4481	0	4284	4318
		M69 Westbound	4437	4378	4926	4718	4765
M69 J2 (New Movements)	M69 North	M69 South			0	0	0
		Site Access			0	222	307
	B4699 East	M69 South			0	533	570
		Site Access			0	209	118
	B4699 West	M69 South			0	4	0
		Site Access			0	309	315
	Site Access	M69 North			0	86	536
		B4669 East			0	175	413
		B4669 West			0	13	48
		M69 South			0	726	1595
	M69 J2 NB Offslip	M69 North			0	0	0
		B4669 East			0	2287	2336
		B4669 West			0	70	72
		Site Access			0	3252	3217











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