

Proposed Motorway Rest Area
M4 Junction 16, Swindon, Wiltshire

November 2025

Forecasting Report

M4 Junction 16 VISSIM Modelling

REPORT

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Appendix A – M4 Westbound Off-Slip Mitigation Scheme and Road Safety Audit
Appendix B – BMW Dealership Application – Potential Site Access
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1 INTRODUCTION

- 1.1.1** Eddisons have been commissioned by Moto Hospitality Ltd to undertake VISSIM modelling of a new site at J16 of the M4, South of Swindon. There are a number of scenarios for the core development in 2027, and sensitivity testing in 2038.
- 1.1.2** A base model for the year of 2023 was developed by National Highways for this junction. Details relating to the development of the Base VISSIM model can be found in the Local Model Validation Report (LMVR).
- 1.1.3** The next stage of the model development requires the model to be forecast to future years. For the purpose of this testing, a core year of 2027 has been developed and a sensitivity test of 2038.
- 1.1.4** This document details the development testing methodology, the future year scenarios methodology, assumptions and the results of the testing.
- 1.1.5** The note also provides details on the development, including trip generation and distribution methodology along with site access arrangements and how this has been represented within the VISSIM models.

2 BASE MODEL

2.1.1 The core study area encompasses J16 of the M4, the Eastern and Western approaches of the M4, a short section of the A3102 to the North and Southwest of the motorway junction, and a section of the B4005 to the Southeast (where the Moto site access will enter the network).

2.1.2 National Highways developed the Base VISSIM model for this junction, a copy of the LMVR can be found in the accompanying Transport Assessment. The Base model calibrated and validated to a high and robust standard.

2.2 VISSIM Version and Parameters

2.2.1 The 2023 Model has been updated to VISSIM 2025 SP02. This was the newest available version of the software at the time of forecasting and it was deemed that the updated software still maintained strong correlation to the base. This has been agreed and accepted by National Highways.

2.2.2 The model utilises MOVA signalisation at J16, in the 2023 scenario a shorter green time is utilised, however after consultation with National Highways, a longer green time was utilised for all subsequent model testing.

2.2.3 The peak hours assumed for assessment are, AM 07:30-08:30 and PM 16:30-17:30

2.2.4 Scenario management has been used for all scenarios, as is best practice. All future year scenarios have been developed using the same methodology.

2.2.5 The scenarios of focus in this model are;

- AM 2023 Reference Case.
- PM 2023 Reference Case.
- AM 2027 Reference (Base) Case.
- PM 2027 Reference (Base) Case.

- AM 2027 Reference (Base) Case + Development.
- PM 2027 Reference (Base) Case + Development.

2.2.6 There are also scenarios that have been tested for sensitivity, these are;

- AM 2038 (Local Plan) Reference Case.
- PM 2038 (Local Plan) Reference Case.
- AM 2038 (Local Plan) Reference Case + Development.
- PM 2038 (Local Plan) Reference Case + Development.
- AM 2038 (Local Plan) Reference Case + Development + BMW application.
- PM 2038 (Local Plan) Reference Case + Development + BMW application.

2.2.7 The weight of the forecasting and development impact will be focussed on the 2027 cases.

2.3 Network Structure

2.3.1 The model extent is shown below in Figure 2.1 and the VISSIM models are shown in

2.3.2 Figure **2.2** for the Base, Figure 2.3, for the development access including with the mitigation on the off-slip and Figure 2.4 for the development access, mitigation on the off-slip, mitigation for the local plan and BMW application access included.



Figure 2.1 Model extent

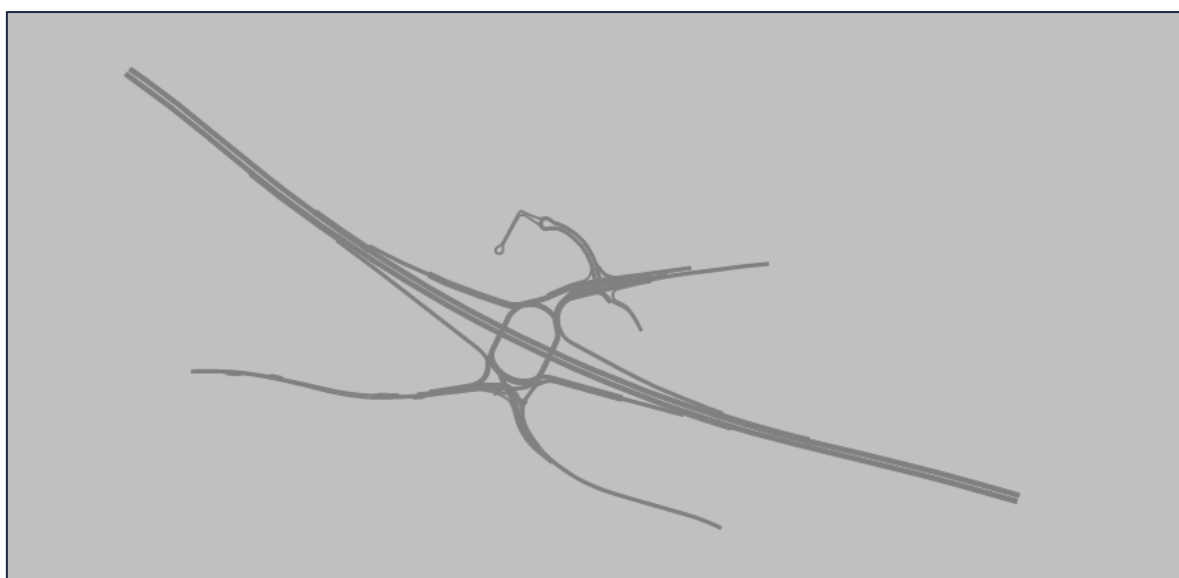


Figure 2.2 VISSIM Base network



Figure 2.3 VISSIM network with development access

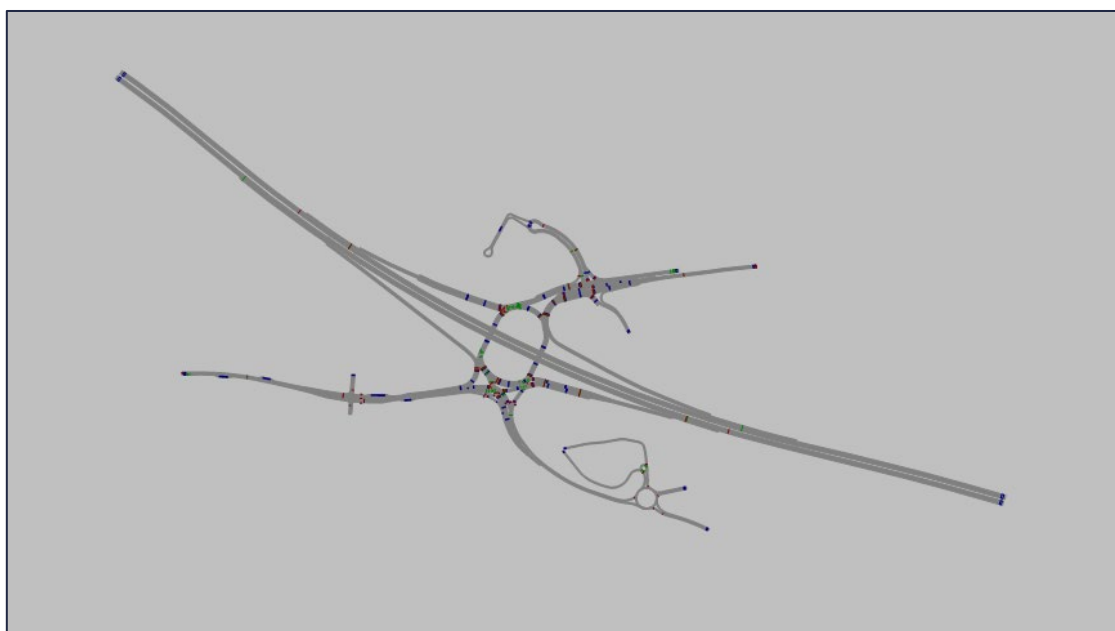


Figure 2.4 VISSIM network with development access and BMW access

2.4 Network Changes

2.4.1 Following post submission discussions with National Highways, a number of changes have been made to the VISSIM model, as detailed below:

2023 Reference Case

2.4.2 Reference case with an unchanged structure, no changes to inter-green timing.

2027 Reference Case

2.4.3 Reference case with altered inter-green timings, background growth and committed development trips have been added to the matrices. This also includes the addition of a yellow box at the end of the West bound off-slip at the Southeast corner of the gyratory. As seen in **Figure 2.5** below.

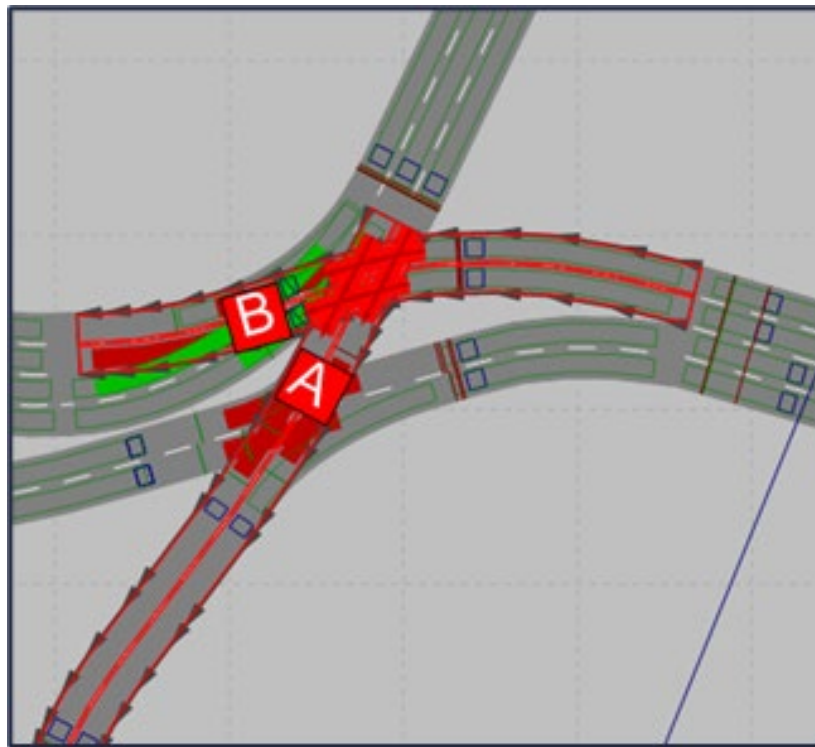


Figure 2.5 – To account for the addition of yellow box junction.

2027 Reference Case + Development

- 2.4.4 The 2027 Reference Case, plus the addition of the Moto development site access
Figure 2.6 and M4 West bound off-slip mitigation scheme Figure 2.7.

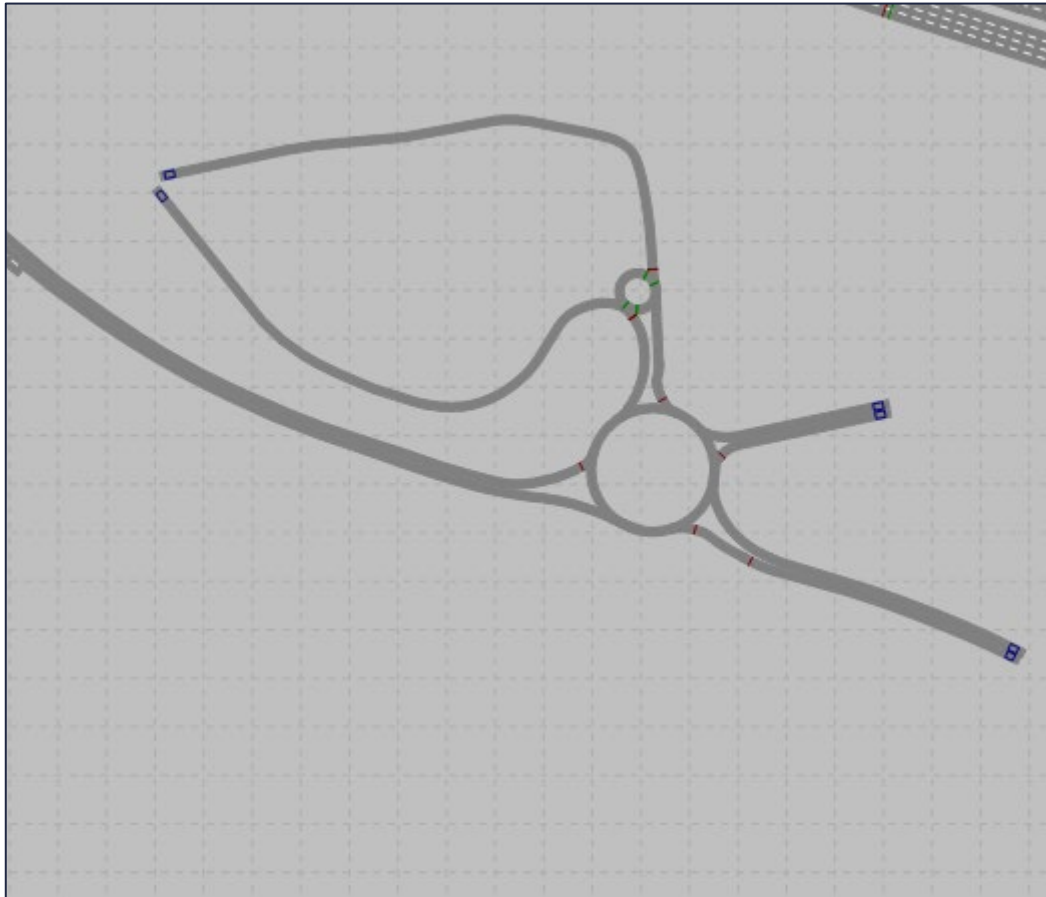


Figure 2.6 Development access roundbout

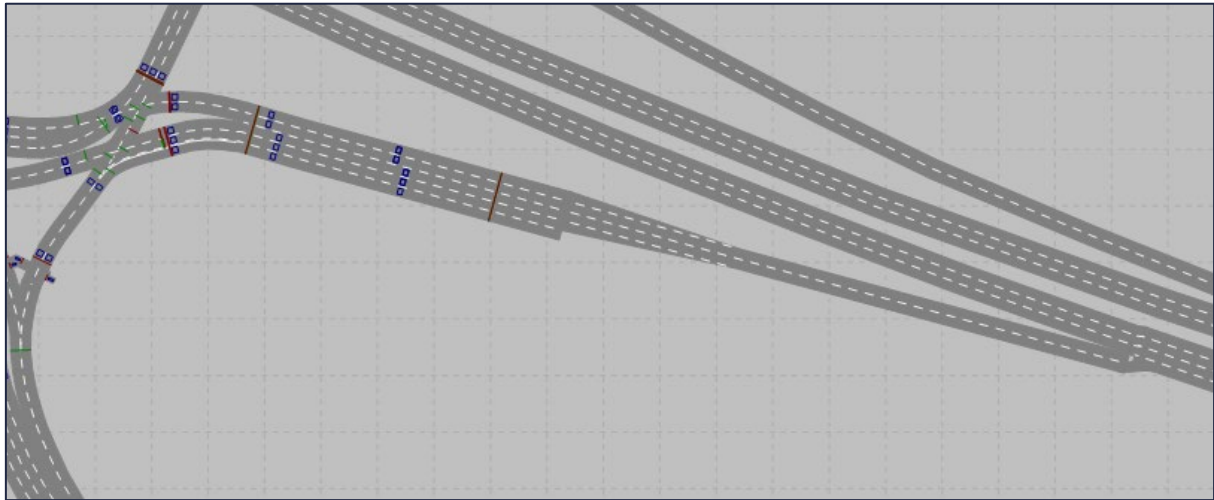


Figure 2.7 M4 Westbound off-slip mitigation

2.4.5 The development access features a new single lane roundabout on the B4005 with access to the development and farmland. Technical drawings for the access can be found in the accompanying Transport Assessment.

2.4.6 The M4 West bound off-slip mitigation scheme adds an additional lane to the M4 West bound off-slip of 120m length from the stop line at the signals, this also rearranges the entrance to the slip road so that the main line feeds into the far left lane, rather than into the right lane, allowing for vehicles to distribute more evenly across the lanes. Technical drawings of the mitigation scheme can be found in **Appendix A**. The proposed scheme has been subject to a Stage 1 Road Safety Audit and agreed with National Highways and Wiltshire County Council.

2038 (Local Plan) Reference Case

2.4.7 This is a sensitivity reference case with the local plan matrices developed by Wiltshire. There is a mitigation scheme included that has been developed by Wiltshire,

2.4.8 Figure **2.8**. This extends the 3 lanes back to accommodate the uplift in volume from the local plan. This also includes the proposed yellow box junction arrangement from **Figure 2.5**.

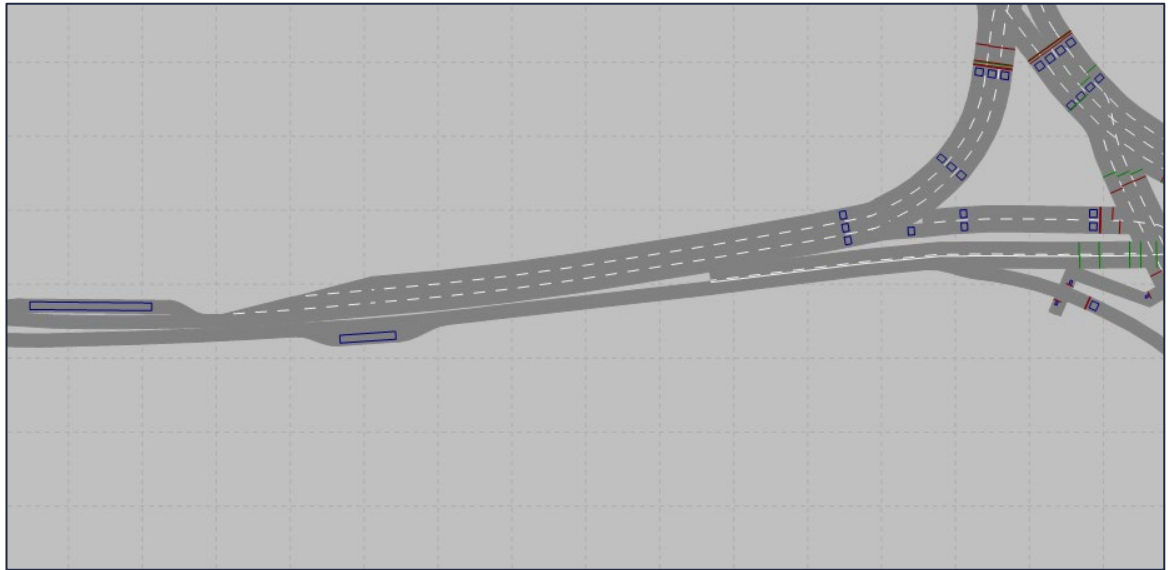


Figure 2.8 Local Plan mitigation scheme

2038 (Local Plan) Reference Case + Development

2.4.9 This is a sensitivity forecast assessment. The local plan matrices and the development matrices are included in this scenario. This includes the addition of the yellow box (**Figure 2.5**), the development access (**Figure 2.6**), the West bound off-slip mitigation (**Figure 2.7**) and the local plan mitigation (**Figure 2.8**).

2038 (Local Plan) Reference Case + Development + BMW

2.4.10 This is a sensitivity forecast assessment. The local plan matrices, plus the development matrices and the matrices for the BMW dealership application on the A3102 Swindon Road are included in this scenarios.

2.4.11 This includes the addition of the yellow box (

2.4.12 **Figure 2.5**), the development access (**Figure 2.6**), the West bound off-slip mitigation (**Figure 2.7**) and the local plan mitigation (**Figure 2.8**).

2.4.13 There is also a new junction proposed for access to the potential BMW dealership in this scenario. It includes a signalised junctions with additional lanes that run through to the local plan mitigation and there is a dedicated right hand turn in for the BMW access and Crematorium access. The current proposed technical plans for this junction can be found in **Appendix B**.

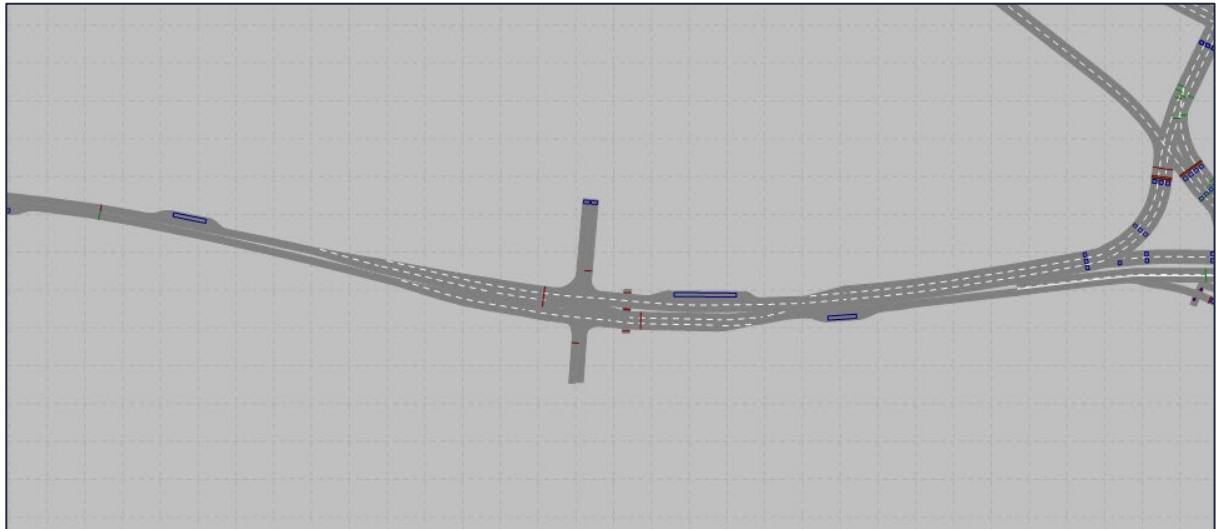


Figure 2.9 BMW Application – Proposed Site Access

2.5 Summary of Model Adjustments Agreed with National Highways

2.5.1 As part of the development process for the forecast years a number of changes were adopted for the model. These are detailed below in Table 2.1.

Table Comment	Modification	Scenarios
Required signal intergreen times to be increased.	Intergreen at the southeast signals increased to 6 seconds for each phase change.	All forecast scenarios. (Excludes 2023 ref cases).
Yellow box utilisation for the southeast corner.	Included yellow box coding	All forecast scenarios. (Excludes 2023 ref cases).
Revised lane allocation on A3102 approach to M4 J16.	Allowed all 3 lanes to connect through on connector 10042.	2038 scenarios.
MSA lane allocation.	Ensured MSA used lane 1 on overbridge and off-slip. Utilising both longer lane change distribution and banning of vehicles.	All + dev scenarios.
Off-slip Priority rule extending beyond stop line.	Ensured priority rule was not beyond stop line.	All scenarios.
Goods vehicles getting stuck and having an unreasonable lane distribution at exit from J16 on the southeast corner.	Changed heavy vehicle banning in lanes in favour of a refined distance distribution for goods vehicles.	All scenarios.
Lane change for off-slip coding.	Changed the connector 10067 to the off-slip	All + dev scenarios.

	nearside lane so that traffic is in the middle of the arrangement in the mitigation scheme.	
Various changes to priority rules around the junction.	Amendments suggest accepted and implemented to improve the general junction performance.	All scenarios.

Table 2.1Summary of discussed modifications

3 VISSIM MODEL FORECASTING

3.1 TEMPro growth factors

3.1.1 There are two future years forecast in the VISSIM model, 2027 and 2038. 2027 is the core scenario testing and 2038 is a sensitivity test to inform wider decision making.

3.1.2 TEMpro 8.1 has been utilised to obtain growth factors to modify background traffic volumes between the 2023 Base years and 2027 forecast. The growth factors are for Wiltshire 007, as this is the geographical location for J16 of the M4. These are derived from a combined value for Origin and Destination.

Date range	AM	PM
2023-2027	1.0204	1.0206
2023-2033	1.0982	1.0997

Table 3.1. TEMPro Growth Factors

3.1.3 The growth for the local plan reference has been calculated through the SATURN Model and attributed to Car, LGV and HGV. The application of traffic growth has been agreed with National Highways.

3.1.4 This growth has been applied to all light vehicle types across the entire simulation period. The reference matrices were input to the model with the grown volumes included, as well as committed development.

3.2 Committed Development

3.2.1 In the 2027 reference, the Witchelstowe development was added to the reference matrices as well as volume for developments at Royal Wooton Bassett. Details of these can be found in the transport assessment. These developments as well as the growth are considered robust in terms of traffic volumes and provide a high stress to the model.

3.2.2 In the 2038 reference Wiltshire provided their local plan matrices that encompassed all the committed development and reduced some of the growth to account for these developments. The 2038 Sensitivity analysis is considered a worst case scenario to understand sensitivities on the network. The 2038 scenario includes SBC delivering the full extent of the Wichelstowe development and a bus gate on Redposts Drive which results in a redistribution of Wichelstowe traffic + general traffic growth and no consideration of potential Regulation 18 non-car accessibility interventions. As such, it is considered that the Sensitivity analysis is unlikely to be fully realised on the network and the bus gate delivery is also within SBC's power not to pursue due to the impacts it would have on Junction 16.

3.2.3 For further information about the committed development, please reference the Transport Assessment.

3.3 Development Demands

3.3.1 Development demands were also developed for this project.

3.3.2 Trip generation for the development was derived from referencing two other sites on the M4. Membury and Leigh Delamere.

3.3.3 Both of these sites are 'online' MSA and as such exhibit much higher turn-in rates than the proposed MRA. Further details of this can be found in the accompanying TA.

		AM	PM
		2027	2027
Lights	Inbound	191	251
	Outbound	191	251
Heavies	Inbound	60	79
	Outbound	60	79

Table 3.2 Development inbound and outbound volumes

3.3.4 Table 3.2 above details the total demand for the modelled periods, these are broken down into 15 minute segments in the matrices and have been included in the "with dev" matrices in the model.

4 VISSIM MODEL RESULTS

- 4.1.1 Complete VISSIM results are provided in **Appendix C**.
- 4.1.2 The below section contains a summary of the forecast impacts.
- 4.1.3 During modelling it was found that there were extended queues on the M4 Westbound off slip, due to this it was decided that mitigation was required in order to alleviate this additional volume coming off of the M4.
- 4.1.4 Figure 4.1 below shows the proposed layout of the junction. In the with dev scenarios there is now an additional lane at the stop line for traffic turning left towards the B4005. The lane extends back 140m. Traffic bound for the services has been allocated to this lane and banned from the others. On the ground this will be done through signage for the services and lane markings.
- 4.1.5 Both lanes turning left then utilise the existing two lanes and merge down as before.

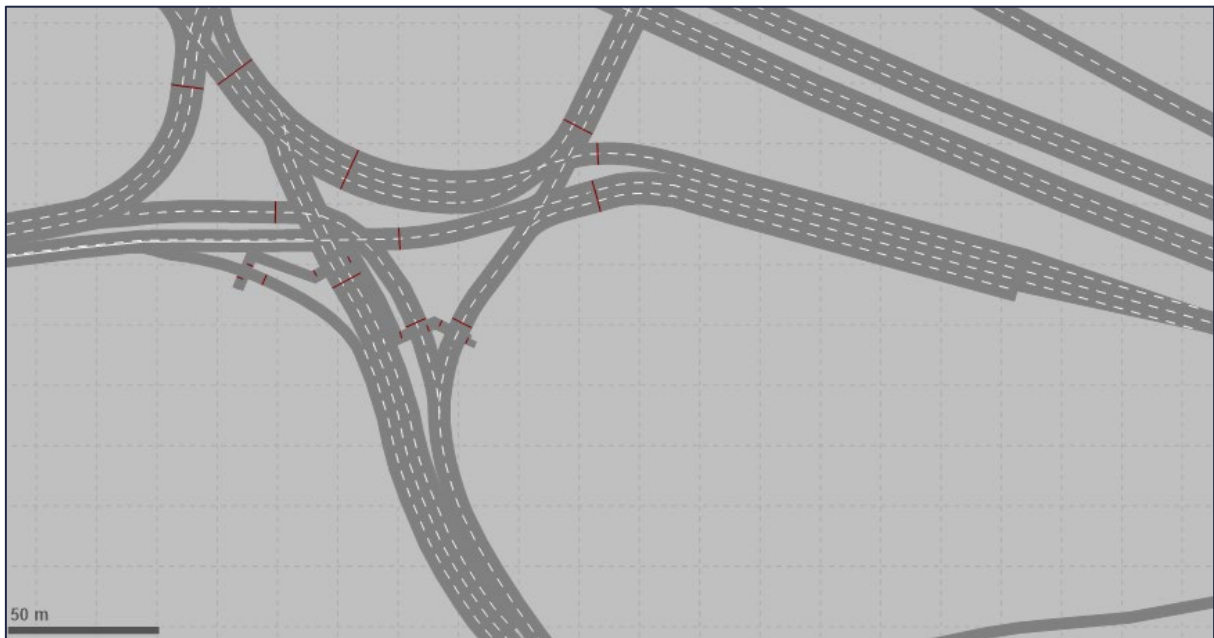


Figure 4.1 New configuration.

4.2 Core Scenario 2027 ref + dev

- 4.2.1** Results show that the inclusion of the Core scenario demands have a negligible impact on the network in both the AM and PM peak periods. Average delay per vehicle increases by 5.3s in the AM and decreases by 8.9s in the PM. As there is an additional roundabout being included for the development access, this is not an unreasonable change to expect in the AM and for the PM the change in balance of vehicles arriving at the gyratory helps reduce the delay of traffic leaving Swindon.
- 4.2.2** With regard to journey times, in the AM the route A3102 EB increases by 28 seconds, the route A3102 WB increases by 1 second, the route M4 EB to B4005 increases by 6 seconds, the route B4005 to M4 WB increases by 8 seconds, the route Lydiard Fields to M4 EB increases by 2 seconds and M4 WB to Lydiard fields increases by 1 second. Most of these increases are negligible. The increase to the A3102 WB route is attributed to the additional traffic from the development, as extra trips are calling the signals on the B4005.
- 4.2.3** In the PM there are significant improvements to journey times. The route A3102 EB decreases by 7 seconds, the route A3102 WB decreases by 95 seconds, the route M4 EB to B4005 decreases by 22 seconds, the route B4005 to M4 WB decreases by 31 seconds, the route Lydiard Fields to M4 EB decreases by 127 seconds and M4 WB to Lydiard fields decreases by 23 seconds. The decreases can be attributed to the reduction in pressure on the eastern side of the gyratory. The mitigation on the off-slip allows for more traffic volume to clear the off-slip and gives more signal time to the traffic leaving Swindon. This has the largest effect on clearing volume leaving Swindon but has wider benefit as there is less capacity constraint. The access roundabout for the development causes some queuing on the B4005. This delays a portion of the volume reaching M4 J16 and places queuing volume before the access roundabout, effectively allowing more traffic to move from the other arms of the gyratory.

4.2.4 With regards to queue lengths, AM maximum queue lengths on the Westbound off-slip decrease by 10m, there is an increase of 10m on the Eastbound off-slip. There is additional queueing on the A3102 Eastbound, with up to 208m of extra queue length. The PM maximum queue lengths on the Westbound off-slip decrease by 34m and there is a decrease of 2m on the Eastbound off-slip. There are decreases in queue lengths of up to 564m on the B4005 leaving Swindon.

4.2.5 It is important to note that the development mitigation ensures that the queues do not exceed the length of the off-slip.

4.3 Sensitivity Scenario 1 2038 ref + dev

4.3.1 Results show that the inclusion of sensitivity scenario 1 demands have a negligible impact on the network in both the AM and PM peak periods. Average delay per vehicle increases by 7.2s in the AM and decreases by 9.8s in the PM. As there is an additional roundabout being included for the development access, this is not an unreasonable change to expect in the AM and for the PM the change in balance of vehicles arriving at the gyratory helps reduce the delay of traffic leaving Swindon.

4.3.2 In regard to journey times, in the AM the route A3102 EB increases by 47 seconds, the route A3102 WB increases by 3 second, the route M4 EB to B4005 increases by 14 seconds, the route B4005 to M4 WB increases by 8 seconds, the route Lydiard Fields to M4 EB increases by 9 seconds and M4 WB to Lydiard fields increases by 14 second. Most of these increases are negligible. The increase to the A3102 WB route is attributed to the additional traffic from the development, as extra trips are calling the signals on the B4005.

4.3.3 In the PM there are significant improvements to journey times with a couple of negligible increases. The route A3102 EB increase by 1 seconds, the route A3102 WB decreases by 108 seconds, the route M4 EB to B4005 decreases by 20 seconds, the route B4005 to M4 WB increases by 6 seconds, the route Lydiard Fields to M4 EB decreases by 124 seconds and M4 WB to Lydiard fields decreases by 53 seconds. The decreases can be attributed to the reduction in pressure on the eastern side of the gyratory. The mitigation on the off-slip allows for more traffic volume to clear the off-slip and gives more signal time to the traffic leaving Swindon. This has the largest effect on clearing volume leaving Swindon but has wider benefit as there is less capacity constraint.

4.3.4 With regards to queue lengths, AM maximum queue lengths on the Westbound off-slip decrease by up to 4m, there is an increase of 11m on the Eastbound off-slip. There is additional queueing on the A3102 Eastbound, with up to 229m of extra queue length. The PM maximum queue lengths on the Westbound off-slip decrease by 180m and there is a decrease of 2m on the Eastbound off-slip. There are decreases in queue lengths of up to 163m on the B4005 leaving Swindon.

4.3.5 It is important to note that the development mitigation ensures that the queues do not exceed the length of the off-slip.

4.3.6 The same offset of queuing before the access roundabout as seen in the 2027 scenario is seen again.

4.4 Sensitivity Scenario 2 2038 ref + dev + BMW

4.4.1 Results show that the inclusion of sensitivity scenario 2 demands have a slightly higher impact on the network in the AM peak period and negligible impact in the PM peak period. Average delay per vehicle increases by 15.1s in the AM and increases by 2.4s in the PM. As there is an additional roundabout and signalised junction being included for the development access', this is not an unreasonable change to expect in the AM and PM. The additional delay from the addition of the signalised junction negates some of the benefits witnessed in the previous scenarios.

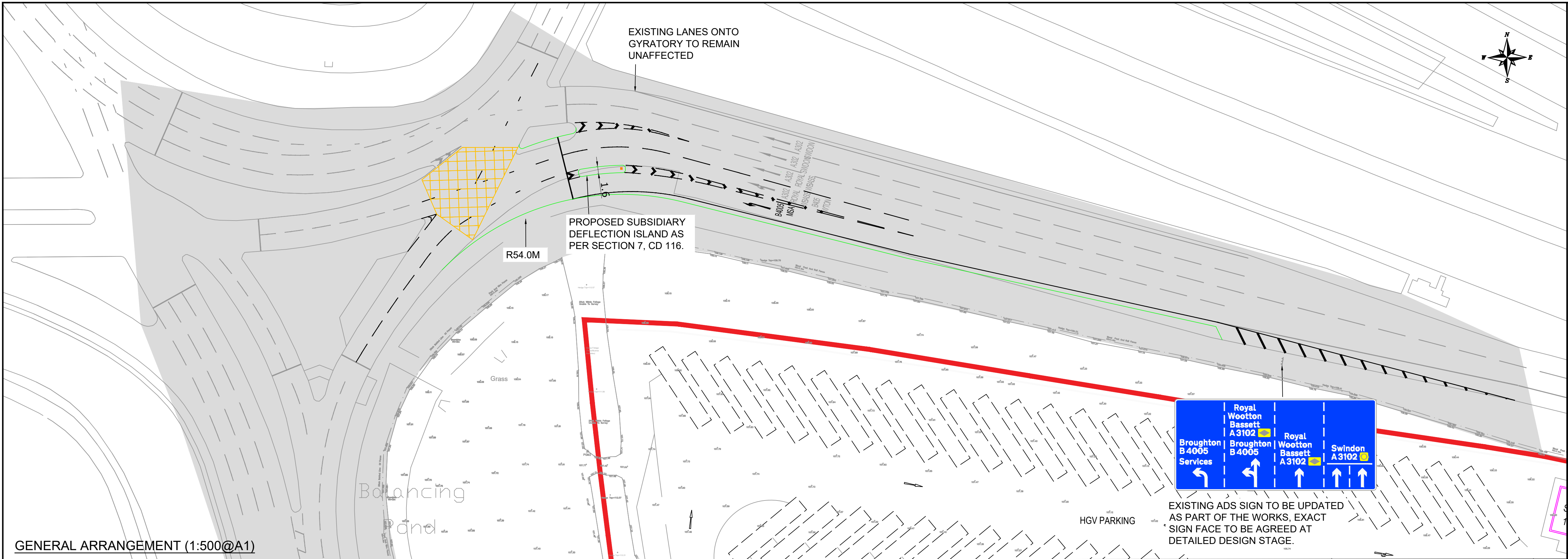
- 4.4.2** With regard to journey times, in the AM the route A3102 EB increases by 107 seconds, the route A3102 WB increases by 43 second, the route M4 EB to B4005 increases by 17 seconds, the route B4005 to M4 WB increases by 8 seconds, the route Lydiard Fields to M4 EB increases by 26 seconds and M4 WB to Lydiard fields increases by 2 seconds. The increases are largely attributed to the additional junctions rather than volume increases. The increase to the A3102 EB route is attributed to the additional traffic from the development, as extra trips are calling the signals on the B4005 and to the addition of signals on this route.
- 4.4.3** In the PM there are significant improvements to journey times, however there is also a significant increase seen to journey times on the A3102 EB route. The route A3102 EB increases by 73 seconds, the route A3102 WB decreases by 41 seconds, the route M4 EB to B4005 decreases by 11 seconds, the route B4005 to M4 WB increases by 7 seconds, the route Lydiard Fields to M4 EB decreases by 77 seconds and M4 WB to Lydiard fields decreases by 42 seconds. The decreases can be attributed to the reduction in pressure on the eastern side of the gyratory. The mitigation on the off-slip allows for more traffic volume to clear the off-slip and gives more signal time to the traffic leaving Swindon. This has the largest effect on clearing volume leaving Swindon but has wider benefit as there is less capacity constraint. The increase to the A3102 EB route is attributed to the additional traffic from the development, as extra trips are calling the signals on the B4005 and to the addition of signals on this route.
- 4.4.4** With regards to queue lengths, AM maximum queue lengths on the Westbound off-slip decrease by 12m, there is an increase of 25m on the Eastbound off-slip. There is additional queueing on the A3102 Eastbound, with up to 410m of extra queue length. The PM maximum queue lengths on the Westbound off-slip decrease by 132m and there is a decrease of 2m on the Eastbound off-slip. There are decreases in queue lengths of up to 29m on the B4005 leaving Swindon. There is an addition of 120m of queuing on the A3102 in EB in the PM.
- 4.4.5** It is important to note that the development mitigation ensures that the queues do not exceed the length of the off-slip.

5 SUMMARY

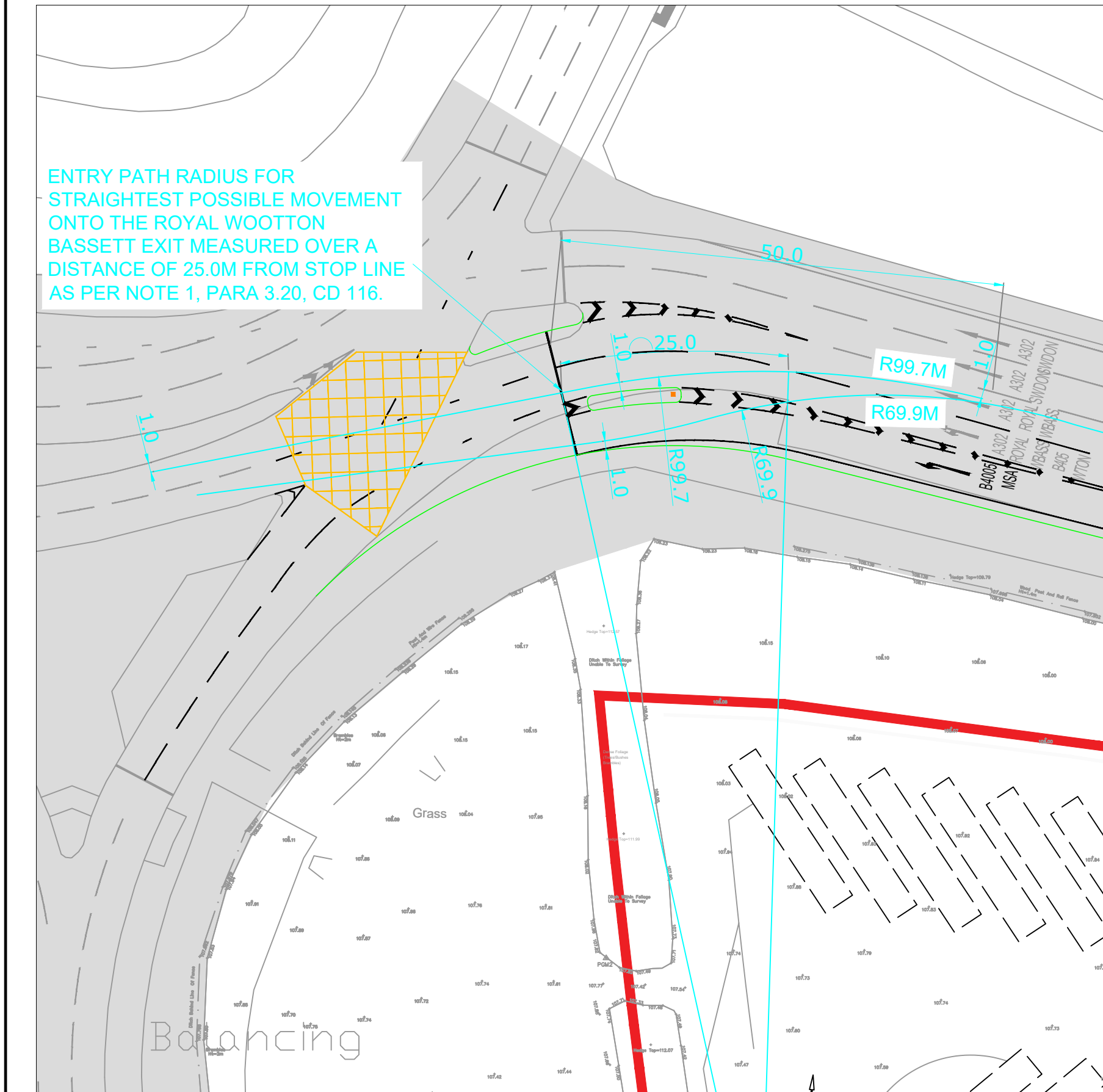
- 5.1.1** Eddisons have been commissioned by Moto Hospitality Ltd to provide microsimulation modelling services in support of a live planning application for a proposed motorway rest area to the Southwest of Swindon at J16 of the M4.
- 5.1.2** This note sets out the VISSIM model methodology for testing, and the results which set out the forecast impact of a development at J16 of the M4 and the surrounding road network.
- 5.1.3** Modelling results suggest that the network can accommodate the forecast traffic growth in the AM and PM, with minimal impact on network performance. In the PM peak there are time savings as a result of the increased capacity on the M4 J16 westbound off slip delay on traffic reaching the junction attributed to the new access roundabout on the B4005.
- 5.1.4** There is no negative impact to mainline flow of the M4 in any scenario that has development and mitigation.
- 5.1.5** It is deemed that the development will have no negative impacts on the strategic network provided the measures detailed are taken.
- 5.1.6** In 2027 no discernible negative impact is observed in the AM and PM. There is some increase to queue length on the A3102 Eastbound approaching Swindon. Overall, the network still performs within its capability.
- 5.1.7** In the sensitivity scenarios the network still performs within its capability with the additional volumes and access junctions. Further sensitivity testing was carried out by National Highways with some alternative lane change distance for the BMW garage junction. This found that under some circumstances queuing back can have some effects on Westbound traffic, however, this was a sensitivity test and does not hold weight with the MOTO or Wiltshire Local Plan applications.

APPENDICES

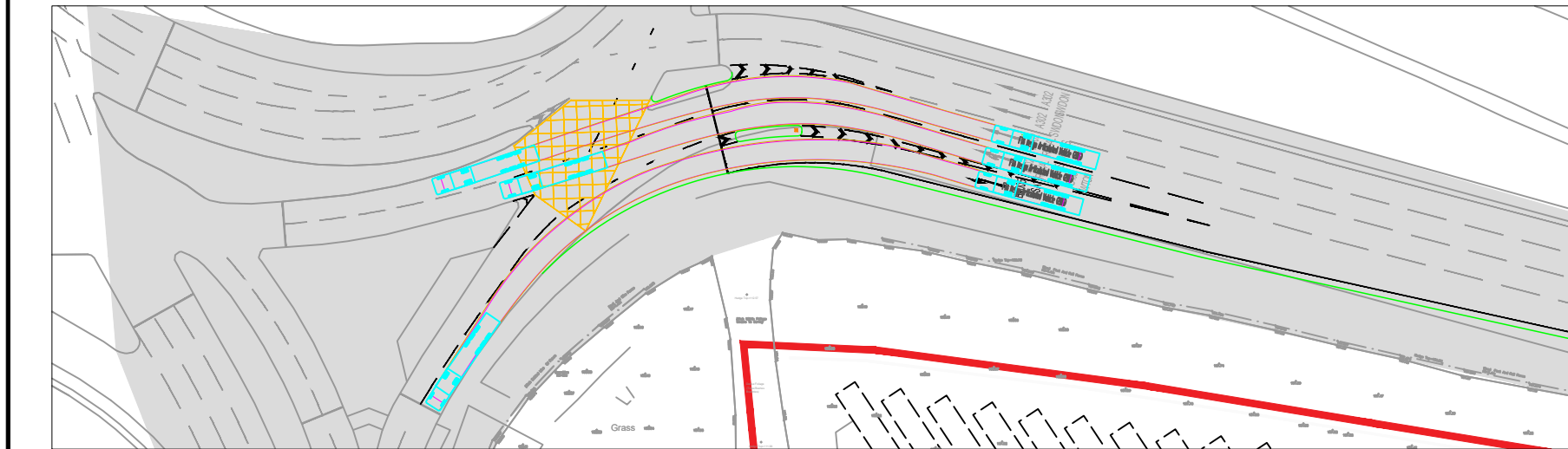
APPENDIX A



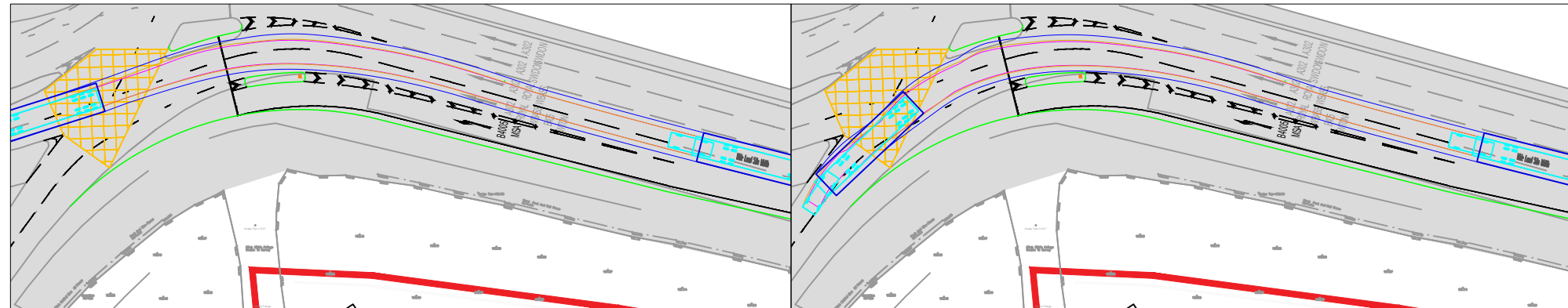
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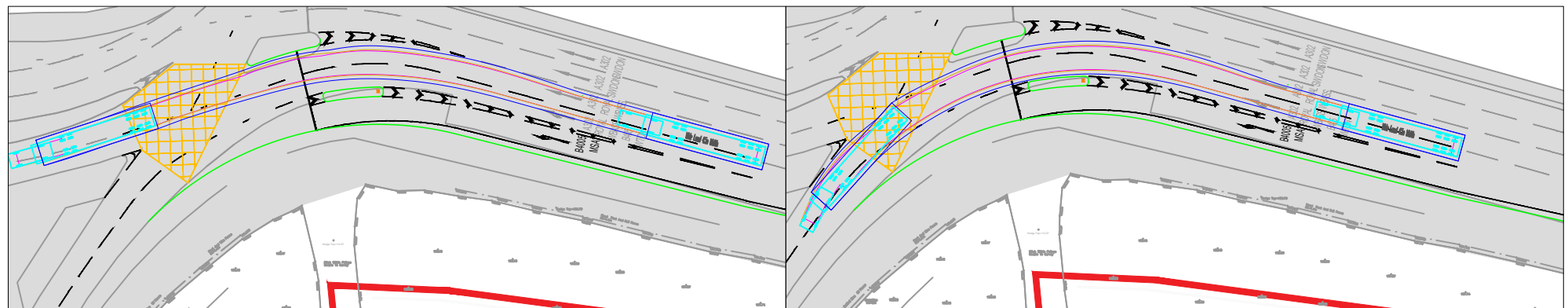
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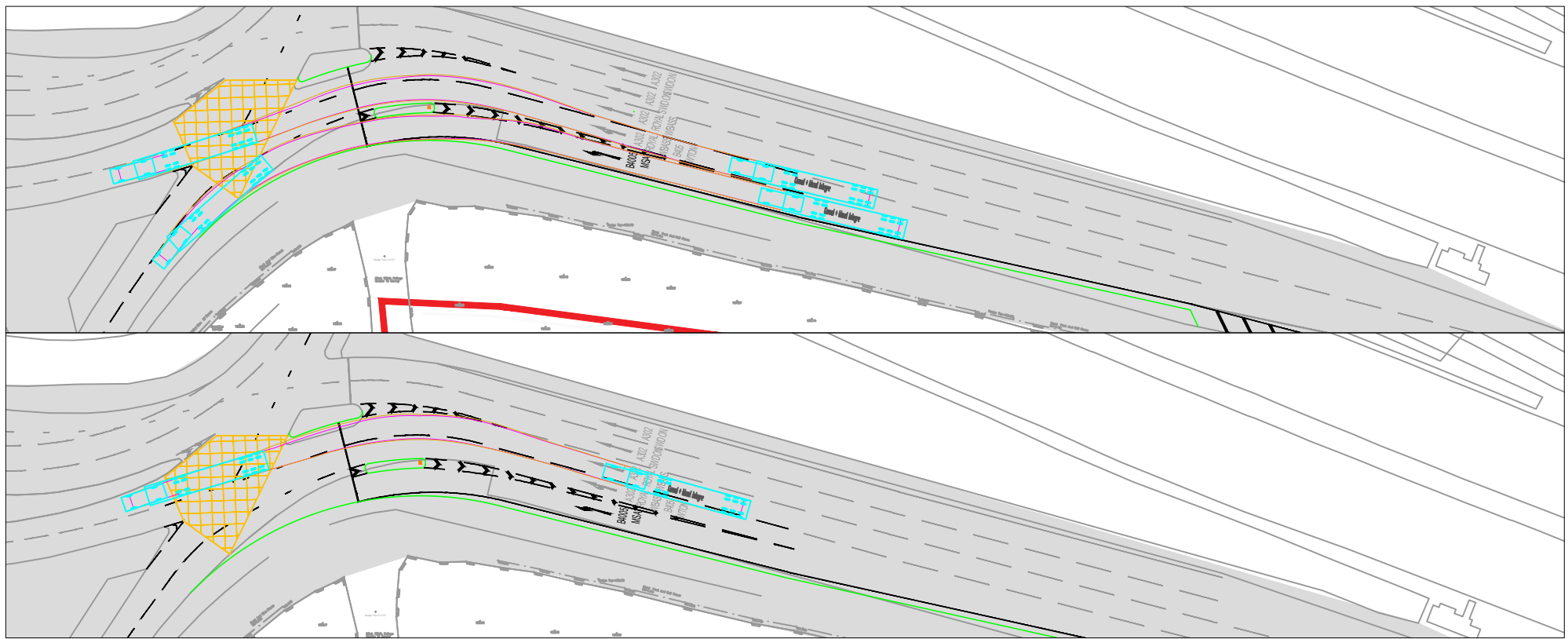
SWEPT PATH ANALYSIS: FTA



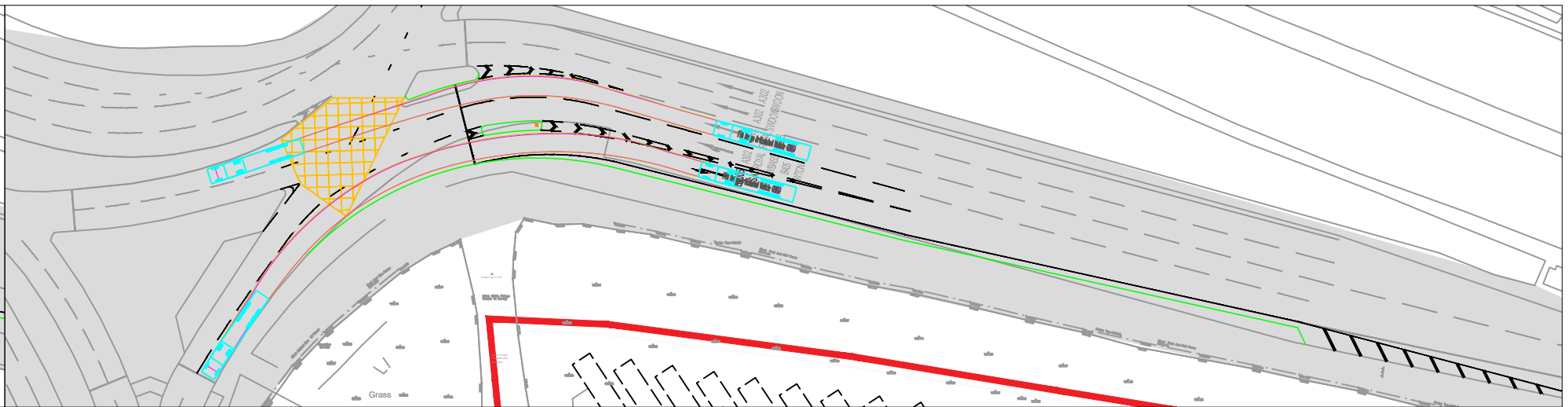
SWEPT PATH ANALYSIS: ABNORMAL LOAD VEHICLE (5.0M WIDTH)



SWEPT PATH ANALYSIS: ABNORMAL LOAD VEHICLE (4.5M WIDTH)



SWEPT PATH ANALYSIS: ABNORMAL LOAD VEHICLE



SWEPT PATH ANALYSIS: FTA

NOTES

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES.

INDICATIVE SITE BOUNDARY
DENOTES NEW KERBS
EXISTING ADOPTED HIGHWAY

LOCAL AUTHORITY: WILTSHIRE COUNCIL
TOTAL AREA OF SITE: 7.27Ha

DMRB DESIGN CHECKLIST			
DESIGN FEATURE	DESIGN REQUIREMENTS	LEFT TURN	NOTES
LANE WIDTHS	MINIMUM WIDTH OF 3.0M AND NO GREATER THAN 4.5M	4.0m LANE WIDTHS	COMPLIES
ENTRY RADIUS (r)	10 - 100M (20M IDEAL)	54m	COMPLIES
STORAGE LENGTH	SEE CAPACITY OF THE JUNCTION. LENGTH OF STORAGE LENGTH SHOULD BE AGREED WITH THE LOCAL AUTHORITY AND THIRD PARTY LAND BOUNDARIES. (SCOPE TO INCREASE IF REQUIRED)	80m	COMPLIES

LEFT TURN SLIP ROAD GEOMETRY

H G E C B A	ABNORMAL LOAD TRACKING ADDED ABNORMAL LOAD TRACKING ADDED AMENDED AS PER NH COMMENTS AMENDED AS PER NH COMMENTS AMENDED AS PER NH COMMENTS MINOR AMENDMENT DMRB CHECKLIST ADDED	LB LB LB LB LB LB LB	MTC MTC MTC MTC MTC MTC MTC	JUL 25 JUL 25 JUL 25 JUL 25 JUL 25 MAY 25 MAY 25
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REV	DETAILS	DRAWN	CHECKED	DATE
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CLIENT:

MOTO SWINDON

PROJECT:

MOTO SWINDON

DRAWING TITLE:

PROPOSED M4 WESTBOUND
OFF-SLIP IMPROVEMENT SCHEME

SCALES:
1:1000 @ A1 (UNLESS STATED)

DRAWN:	LB	CHECKED:	MTC	DATE:	MAR 25
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Eddisons
340 Deansgate
Manchester
M3 4LY
Email: info@eddisons.co.uk
Tel: 0161 837 7380
Web:
www.eddisons.com/services/transport-planning

DRAWING NUMBER:	3728-F13	REVISION:	H
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Eddisons



Eddisons

PROPOSED HIGHWAYS WORKS, M4 JUNCTION 16, WESTBOUND OFF-SLIP, SWINDON

**STAGE 1 - ROAD SAFETY AUDIT
SEPTEMBER 2025**

Transport Planning /Traffic Surveys/ Road Safety Audits

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REPORT CONTROL

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Prepared By:	Go-Surveys Ltd
On behalf of:	National Highways

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Appendices

Appendix A – List of drawings and documents supplied for audit.

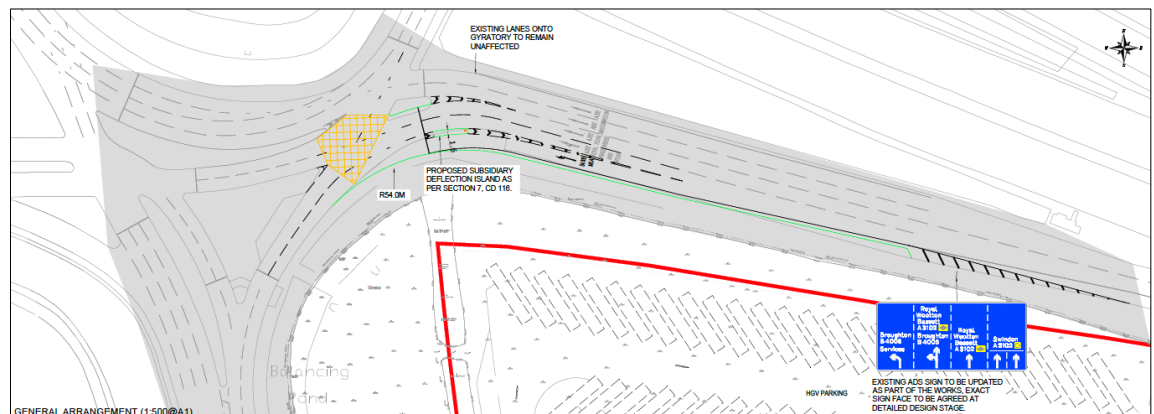
Appendix B – Location plan of identified problems.

1 INTRODUCTION

- 1.1 This report presents the findings from a Stage 1 Road Safety Audit (RSA) undertaken on the proposed Highways Works at the M4 Junction 16 westbound off-slip/Spittleborough Roundabout. The proposed works would form part of the off-site highways works associated with a proposed outline planning application for a new offline Motorway Service Area (MSA) that will be accessed via the B4005, Swindon, Wiltshire.
- 1.2 The audit was carried out by the following:
- | | |
|--|---------------------------------|
| Tristan Brooks
BSc (Hons), MBA, CMILT, MCIHT, MSoRSA,
HE RSA Cert. of Competency | - Road Safety Audit Team Leader |
| J Preston
MCIHT, MSoRSA | - Road Safety Audit Team Member |
- 1.3 The RSA was commissioned by Huw Morris/ Gaynor Gallacher of National Highways (the overseeing organisation for the Strategic Road Network). The overseeing organisation for the Local Road Network is Wiltshire Council. The RSA brief/Team have been approved by Huw Morris/ Gaynor Gallacher of National Highways and Robert Rossiter of Wiltshire Council.
- 1.4 The RSA brief was accepted by the audit team. The RSA brief was prepared by Eddisons who have designed the scheme.
- 1.5 The site visit was undertaken by the audit team (together) on Friday 1st August 2025 between 18:05 – 19:00 and comprised a walk (where available) and drive-throughs of the area covered by the scheme. During the site visit both the weather and carriageway surface were dry. Traffic in the vicinity of the scheme was considered to be moderate/heavy with queuing observed on the M4 Junction 16 westbound off-slip. No pedestrians or cyclists were observed during the site visit.
- 1.6 The M4 Junction 16 westbound off-slip is subject to the national speed limit for motorways reducing to a 40mph speed limit on the entry to the roundabout and there is street lighting throughout the geographical area of the proposed scheme.
- 1.7 A review of the Personal Injury Collisions (PIC) data between January 2019 and December 2023 (based on information provided in the Crashmap database, which supersedes the information in the RSA brief) has indicated that during this period there has been 3 PICs recorded in the vicinity of the proposed highways works, of which all resulted in injuries that were slight in severity. All 3 of the collisions occurred on the circulatory carriageway.

- 1.8 The drawings and documents supplied for audit are listed in **Appendix A**. An annotated drawing showing the locations of the problems identified is provided in **Appendix B**.
- 1.9 The scope of the RSA is limited to the proposed highways works in **Figure 1** that in summary will include amendments to the existing arrangements to include an additional left turn lane with subsidiary deflection island on the M4 Junction 16 westbound off-slip and associated signage.

Figure 1: Extent of the highways works subject to RSA.



- 1.10 The audit brief indicates that there are no departures from standard within the design of the scheme, nor have any previous RSAs been undertaken on the proposed scheme.
- 1.11 The terms of reference of the audit are as that described in DMRB GG/119 Standard on Road Safety Audits - Rev 2. The audit team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.12 The recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG/119. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2 ROAD SAFETY AUDIT FINDINGS FROM RSA 1

PROBLEM 1

LOCATION: M4 Junction 16 westbound off-slip.

SUMMARY: Omission of sufficient signage provision may increase the risk of side swipe type collisions.

- 2.1 The scheme drawings indicate that revisions will only be made to the westernmost nearside lane destination sign. Omission of changes to the other relevant lane destination signage on the slip road or on the Advanced Directional Sign (ADS) on the M4 mainline in advance of the slip road may result in drivers being provided with insufficient advance warning as to which lane they need to be in to access the services, which could result in injudicious late lane changes that could increase the risk of side swipe type collisions.

RECOMMENDATION

- 2.2 It is recommended that revisions to all the pertinent ADS and lane destination signage be undertaken and this information be provided for review at the Stage 2 RSA.

PROBLEM 2

LOCATION: M4 Junction 16 westbound off-slip.

SUMMARY: Implications on Vehicle Restraint System (VRS) may result in an increased risk of higher severity outcomes should collisions occur.

- 2.3 The proposed highways works are likely to require alterations to the existing (VRS) on the southern side of the slip road, which may have implications on the level of containment which could affect the severity of outcomes of any collisions involving errant vehicles.

RECOMMENDATION

- 2.4 It is recommended that an assessment of the changes to the VRS be undertaken and if considered relevant to highway safety, mitigation measures be implemented.

PROBLEM 3

LOCATION: M4 Junction 16 westbound off-slip.

SUMMARY: Potentially excessive vehicle queues could increase the risk of rear-end shunt type collisions.

- 2.5 The audit brief indicates that the proposed development will increase the volume of vehicles using the slip road and turning left at the Spitalborough Roundabout onto the B4005. However, no junction capacity assessments have been provided for review and therefore it is unclear if there is sufficient capacity to accommodate the forecast additional volume of

development traffic without potentially resulting in excessive queuing, which could impact vehicles travelling on the M4 westbound mainline which could increase the risk of rear end shunt type collisions.

RECOMMENDATION

- 2.6 It is recommended that junction capacity assessments be undertaken and mitigation be undertaken if the forecast levels of queuing would impact on the running of the M4 westbound mainline.

PROBLEM 4

LOCATION: M4 Junction 16 eastbound off-slip/ circulatory carriageway.

SUMMARY: Potential for increased risk of vehicle collisions due to omission of signage.

- 2.7 The audit brief does not provide any details of what if any signage provision etc is proposed for drivers accessing the facility via the M4 Junction 16 eastbound off-slip. The potential omission of suitable signage etc could increase the risk of collisions on the M4 Junction 16 eastbound off-slip or on the circulatory carriageway of the roundabout due to for example driver confusion as to which lane they should be in if accessing the MSA and making injudicious manoeuvres which could result in side swipe type collisions.
- 2.8 The audit team note that this matter is outside the geographical scope of the scheme presented for audit, but is directly related to the proposals and may have road safety implications.

RECOMMENDATION

- 2.9 It is recommended that appropriate signage etc be provided for drivers accessing the MSA via the M4 Junction 16 eastbound off-slip.

PROBLEM 5

LOCATION: M4 Junction 16 eastbound off-slip.

SUMMARY: Potentially excessive vehicle queues could increase the risk of rear-end shunt type collisions.

- 2.10 The audit brief does not provide any information with regard to the potential increase in traffic movements resulting from the proposed development that will access the MSA facility via the M4 Junction 16 eastbound off-slip nor any junction capacity assessments resulting from increased vehicle movements. It is unclear therefore if there is sufficient capacity to accommodate any additional volume of development traffic without potentially resulting in excessive queuing, which could impact vehicles travelling on the M4 east bound mainline which could increase the risk of rear end shunt type collisions.

- 2.11 The audit team note that this matter is outside the geographical scope of the scheme presented for audit, but is directly related to the proposals and may have road safety implications.

RECOMMENDATION

- 2.12 It is recommended that junction capacity assessments be undertaken and mitigation be undertaken if the forecast levels of queuing would impact on the running of the M4 eastbound mainline/ roundabout circulatory carriageway.

3 AUDIT STATEMENT

3.1 We certify that this audit has been carried out in accordance with GG/119.

Signed:  Date: 08 September 2025	T Brooks – BSc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Competency Audit Team Leader go-surveys Ltd 72 Plasturton Avenue Cardiff CF11 9HJ
Signed:  Date: 08 September 2025	J Preston MCIHT, MSoRSA. Audit Team Member go-surveys Ltd 72 Plasturton Avenue Cardiff CF11 9HJ



APPENDIX A

List of Drawings and Documents Provided for Audit

3728.01 RSA1 Brief-S278 M4 J16 – Rev A

Stage 1 RSA Brief – 23rd July 2025 – Including Personal Injury Collision Data/Accident Data
Traffic Flow Data – M4 Westbound slip road only/ Road Safety Auditors CV's/ WCHAR Assessment
Exemption Note/Scheme layout

3728-F13 - Rev H

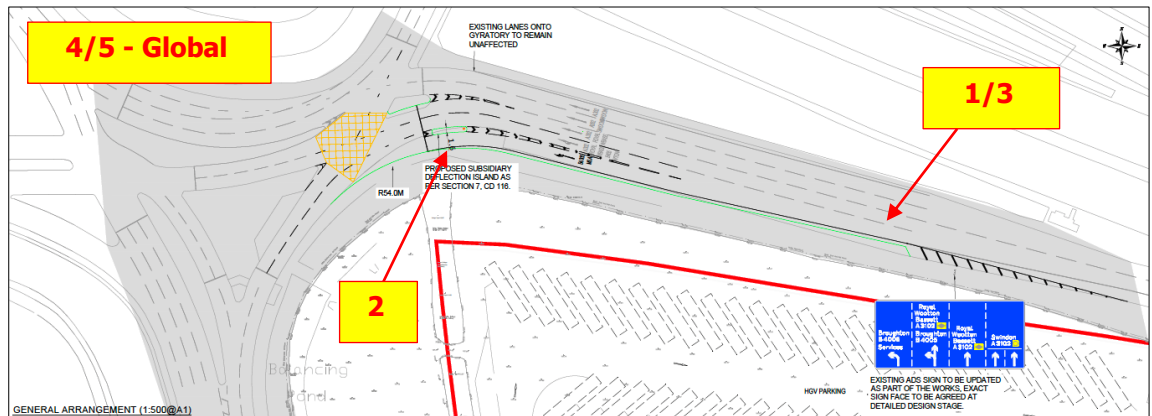
Proposed M4 Westbound Off slip Improvement Scheme

PIC Data (Crashmap)

Jan 2019-Dec 2023

APPENDIX B

Location of Identified Problems



Appendix F. Road safety audit response report template for stages 1, 2 and 3 only

F1 Project details

Provide:

Table F.1 Project details

Report title:	Road Safety Audit Response Stage 1
Date:	09/09/2025
Document reference and revision:	3728.02
Prepared by:	Eddisons
On behalf of:	National Highways/ Wiltshire Council

Table F.2 Authorisation sheet

Project:	MOTO Swindon
Report title:	Road Safety Audit Response Stage 1
Prepared by:	Eddisons
Name:	Leon Blythe
Position:	Senior Engineer
Signed:	
Organisation:	Eddisons
Date:	09/09/2025
Approved by:	
Name:	
Position:	
Signed:	
Organisation:	
Date:	

F2 Introduction**Summary of Scheme**

Eddisons have been instructed by Moto Hospitality Ltd to advise on the traffic and transport issues relating to an outline planning application for a new motorway rest area (MRA) on land adjacent to Junction 16 of the M4 in Swindon, Wiltshire.

The Proposed Development will be served from the M4 via an improved signalised arrangement with an additional left turn lane with subsidiary deflection island onto the B4005 at Spittleborough Roundabout. The proposed highway improvements are shown on plan **3728-F13 Revision H**

The geometric criteria required for the arrangements have been set out in the Design Manual for Roads and Bridges (DMRB). The DMRB forms part of the Manual of Contract Documents for Highway works.

The junction alignment parameters are provided in DMRB documents; CD 109 Highway Link Design; CD 116 Geometric Design of Roundabouts and CD 122 Geometric Design for Grade Separated Junctions.

RSA Report

The site visit was undertaken by the audit team (together) on Friday 1st August 2025 between 18:05 – 19:00 and comprised a walk (where available) and drive-throughs of the area covered by the scheme. During the site visit both the weather and carriageway surface were dry. Traffic in the vicinity of the scheme was considered to be moderate/heavy with queuing observed on the M4 Junction 16 westbound off-slip. RSA 1 report GS1577-2025 was produced, highlighting 5 problems with the scheme.

Details of Representatives from Design Organisation

Leon Blythe
Senior Engineer
Eddisons,
340 Deansgate, Manchester
M3 4LY
leon.blythe@eddisons.com

F3**Key personnel****Table F.3 Key personnel**

Overseeing Organisation:	National Highways: Gaynor Gallacher Assistant Spatial Planner National Highways: Ash House, Falcon Road, Sowton Ind. Estate, Exeter EX2 7LB Gaynor.Gallacher@nationalhighways.co.uk Wiltshire Council: Robert Rossiter Strategic Specialist Major Highways Projects Team Wiltshire Council County Hall, Bythesea Rd, Trowbridge BA14 8JN, United Kingdom Email: robert.rossiter@wiltshire.gov.uk Website: www.wiltshire.gov.uk
RSA team:	Tristan Brooks (as Audit Team Leader), Go Surveys Jon Preston (As Audit Team Member), six: Ten Highways & Traffic
Design organisation:	Leon Blythe Senior Engineer Eddisons, 340 Deansgate, Manchester M3 4LY leon.blythe@eddisons.com 0161 837 7380

F4 Road safety audit decision log

Table F.4 Road safety audit decision log

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
Problem 1: Omission of sufficient signage provision may increase the risk of side swipe type collisions. The scheme drawings indicate that revisions will only be made to the westernmost nearside lane destination sign. Omission of changes to the other relevant lane destination signage on the slip road or on the Advanced Directional Sign (ADS) on the M4 mainline in advance of the slip road may result in drivers being provided with insufficient advance warning as to which lane they need to be in to access the services, which could result in injudicious late lane changes that could increase the risk of side swipe type collisions.	It is recommended that revisions to all the pertinent ADS and lane destination signage be undertaken and this information be provided for review at the Stage 2 RSA.	RSA problem and recommendation accepted by the design organisation. As part of the detailed design stage existing ADS and lane changing signage will be reviewed as part of the signage proposals for the scheme. This will also include the proposals for new signage too.	Response accepted	To be addressed at detailed design
Problem 2: Implications on Vehicle Restraint System (VRS) may result in an increased risk of higher severity outcomes should collisions occur. The proposed highways works are likely to require alterations to the existing (VRS) on the southern side of the slip road, which may have implications on the level of containment which could affect the severity of outcomes of any collisions involving errant vehicles.	It is recommended that an assessment of the changes to the VRS be undertaken and if considered relevant to highway safety, mitigation measures be implemented.	RSA problem and recommendation accepted by the design organisation. As part of the detailed design stage a RRRAP is to be undertaken to confirm the VRS requirements following the modification to the existing alignment of the VRS barrier. VRS proposals to be provided for approval.	Response accepted	To be addressed at detailed design
Problem 3: Potentially excessive vehicle queues could increase the risk of rear-end shunt type collisions. The audit brief indicates that the proposed development will increase the volume of vehicles using the slip road and turning left at the Spittalborough Roundabout onto the B4005. However, no junction capacity assessments have been provided for review and therefore it is unclear if there is sufficient capacity to accommodate the forecast additional volume of development traffic without potentially resulting in excessive queuing, which could impact vehicles travelling on the M4 westbound mainline which could increase the risk of rear end shunt type collisions.	It is recommended that junction capacity assessments be undertaken and mitigation be undertaken if the forecast levels of queuing would impact on the running of the M4 westbound mainline.	RSA problem and recommendation accepted by the design organisation. Junction capacity assessments have been undertaken and are currently with National Highways for their review. Full junction capacity details can be provided upon agreement of the junction modelling with National Highways, prior to Stage 2.	Response accepted	Modelling results to be provided for Stage 2 audit
Problem 4: Potential for increased risk of vehicle collisions due to omission of signage. The audit brief does not provide any details of what if any signage provision etc is proposed for drivers accessing the facility via the M4 Junction 16 eastbound off-slip. The potential omission of suitable signage etc could increase the risk of collisions on the M4 Junction 16 eastbound off-slip or on the	It is recommended that appropriate signage etc be provided for drivers accessing the MSA via the M4 Junction 16 eastbound off-slip.	RSA problem and recommendation accepted by the design organisation. As part of the detailed design stage new signage for the motorway service area will be provided for approval. Signs will be in accordance with Guide to the signing of roadside facilities for motorists on the strategic	Response accepted	To be addressed at detailed design

circulatory carriageway of the roundabout due to for example driver confusion as to which lane they should be in if accessing the MSA and making injudicious manoeuvres which could result in side swipe type collisions. The audit team note that this matter is outside the geographical scope of the scheme presented for audit, but is directly related to the proposals and may have road safety implications.		road network in England'.		
Problem 5: Potentially excessive vehicle queues could increase the risk of rear-end shunt type collisions. The audit brief does not provide any information with regard to the potential increase in traffic movements resulting from the proposed development that will access the MSA facility via the M4 Junction 16 eastbound off-slip nor any junction capacity assessments resulting from increased vehicle movements. it is unclear therefore if there is sufficient capacity to accommodate any additional volume of development traffic without potentially resulting in excessive queuing, which could impact vehicles travelling on the M4 east bound mainline which could increase the risk of rear end shunt type collisions. The audit team note that this matter is outside the geographical scope of the scheme presented for audit, but is directly related to the proposals and may have road safety implications.	It is recommended that junction capacity assessments be undertaken and mitigation be undertaken if the forecast levels of queuing would impact on the running of the M4 eastbound mainline/roundabout circulatory carriageway.	RSA problem and recommendation accepted by the design organisation. Junction capacity assessments have been undertaken and are currently with National Highways for their review. Full junction capacity details can be provided upon agreement of the junction modelling with National Highways, prior to Stage 2.	Response accepted.	Modelling results to be provided for Stage 2 Audit

F5 Design organisation and Overseeing Organisation statements

Include the following statements to be signed by the design organisation and the Overseeing Organisation.

Table F.5 Design organisation statement

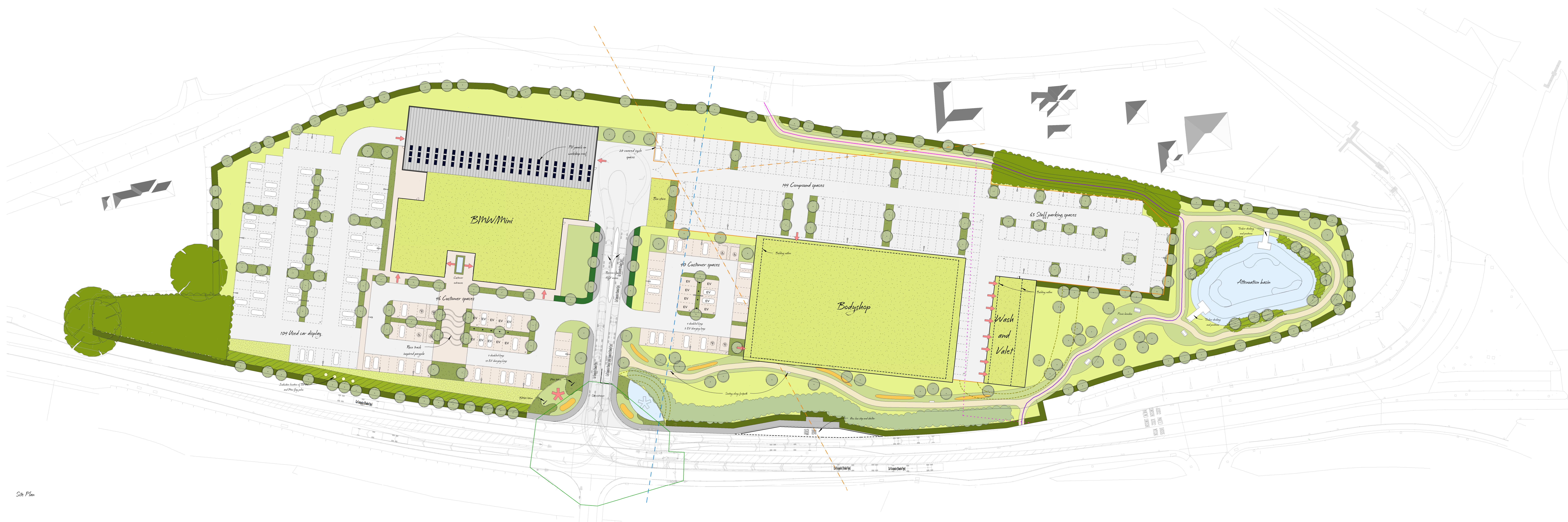
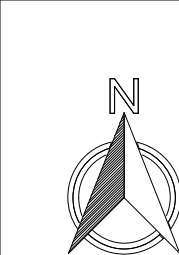
On behalf of the design organisation I certify that:	
1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.	
Name:	Leon Blythe
Signed	
Position:	Highway Engineer
Organisation:	Eddisons
Date:	09/09/25

Table F.6 Overseeing Organisation statement

On behalf of the Overseeing Organisation I certify that: 1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and 2) the agreed RSA actions will be progressed.	
Name:	Huw Morris
Signed:	
Position:	Principal Engineer
Organisation:	National Highways
Date:	24/09/2025

On behalf of the Overseeing Organisation I certify that: 1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and 2) the agreed RSA actions will be progressed.	
Name:	Rob Rossiter
Signed:	
Position:	Strategic Specialist (Transport)
Organisation:	Wiltshire Council
Date:	24/9/25

APPENDIX B



Site Plan

SITE PLAN KEY	
	Charcoal block paving
	Tarmac
	Amenity grass
	Neutral grassland
	Ornamental shrub planting
	Ornamental hedgehog
	Proposed tree
	2.4m high palisade fence
	Existing public right of way
	Existing public right of way to be decommissioned
	Proposed public right of way
	Existing water mains
	Junction intervisibility
	Overhead cables to be redirected underground
	Water feature
	Proposed woodland
	Existing woodland to be enhanced
	Native hedgerow
	Native scrub
	Green roof
	Bully planting
	Water
	Footpath
	Long grassland
	Proposed flag poles
	EV charging point
	Proposed lighting column
	Mounted sculpture
	Proposed contours for mounded earth

REVISIONS	
B	08.10.2024 Compound parking adjusted. Wash and valet moved closer to the Prep Centre. One lay stone removed.
C	21.10.2024 Updated landscape design.
D	10.01.25 Design amendments in accordance with design team.
E	17.01.25 Issued for planning.

CLIENT	
DICK LOVETT COMPANIES LTD	
PROJECT	
JUNCTION 16	
DRAWING TITLE	
SITE PLAN	

DRAWING NUMBER	
0062-102	
AUGUST 2024	AO
PLANNING	

REV	
E	
1:500	



APPENDIX C

Run number>>	AVG
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	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev +BMW
	07:30 - 08:30	07:30 - 08:30	07:30 - 08:30	07:30 - 08:30	07:30 - 08:30	07:30 - 08:30
Average Delay per Vehicle in the Network (s)	23.9	29.2	37.0	34.5	44.2	52.2
Average Speed per Vehicle (mph)	59.7	54.8	51.1	50.8	46.6	42.7
Vehicles Active in the Network	401.0	451.0	546.0	509.0	617.0	674.0
Vehicle Trips Completed	10147.0	11167.0	12377.0	11315.0	12459.0	12474.0
Latent Demand at End of Time Period	7.5	65.0	278.1	122.7	388.5	459.3
Total Delay (hrs)	12.0	14.2	20.0	17.9	25.5	31.0
Latent Delay (hrs)	0.4	4.8	22.6	9.3	30.8	35.9

	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +BMW
	16:30 - 17:30	16:30 - 17:30	16:30 - 17:30	16:30 - 17:30	16:30 - 17:30	16:30 - 17:30
Average Delay per Vehicle in the Network (s)	23.8	66.2	57.2	57.3	47.3	59.5
Average Speed per Vehicle (mph)	60.3	36.6	41.3	40.2	45.3	39.7
Vehicles Active in the Network	362.0	660.0	760.0	639.0	651.0	749.0
Vehicle Trips Completed	10840.0	11564.0	12894.0	11546.0	13003.0	13000.0
Latent Demand at End of Time Period	0.3	440.1	334.3	580.1	670.3	761.1
Total Delay (hrs)	9.0	32.4	37.4	30.6	27.9	37.1
Latent Delay (hrs)	0.0	35.4	26.6	45.9	53.7	59.8

	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev +BMW
	07:30 - 09:00	07:30 - 09:00	07:30 - 09:00	07:30 - 09:00	07:30 - 09:00	07:30 - 09:00
Average Delay per Vehicle in the Network (s)	23.8	30.2	38.0	36.8	48.8	56.6
Average Speed per Vehicle (mph)	59.7	53.9	50.2	49.3	44.1	40.5
Vehicles Active in the Network	401.0	590.0	436.0	419.0	577.0	632.0
Vehicle Trips Completed	14991.0	16562.0	18449.0	16802.0	18522.0	18577.0
Latent Demand at End of Time Period	0.4	24.3	301.4	102.2	462.5	551.3
Total Delay (hrs)	5.3	9.7	13.9	13.7	24.0	28.8
Latent Delay (hrs)	0.0	2.3	25.3	8.8	39.2	46.7

	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +BMW
	16:30 - 18:00	16:30 - 18:00	16:30 - 18:00	16:30 - 18:00	16:30 - 18:00	16:30 - 18:00
Average Delay per Vehicle in the Network (s)	23.9	67.5	64.3	59.5	51.6	64.3
Average Speed per Vehicle (mph)	60.4	36.1	64.3	39.1	43.3	37.7
Vehicles Active in the Network	296.0	590.0	31.6	556.0	600.0	711.0
Vehicle Trips Completed	15891.0	17117.0	12509.0	17207.0	19292.0	19313.0
Latent Demand at End of Time Period	0.2	525.9	1022.0	721.2	795.2	923.2
Total Delay (hrs)	5.9	27.4	345.2	24.3	26.2	35.2
Latent Delay (hrs)	0.0	44.2	40.6	59.3	65.2	75.9

AM	Run Number >>	AVG
	Vehicle Type >>	All

VEHS(All)

AM Peak 07:30-08:30									
Model Junction	Junction Description	From	To	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev +BMW
				All	All	All	All	All	All
Juntion 1	Spittleborough Rounabout	A3102 (N)	M4 (E)	536	545	552	546	538	511
		A3102 (N)	B4005 (S)	189	333	340	335	330	313
		A3102 (N)	A3102 (SW)	469	516	510	514	498	500
		A3102 (N)	M4 (W)	551	564	634	563	622	599
		A3102 (N)	A3102 (N)	0	0	0	0	0	0
		M4 (E)	B4005 (S)	29	210	210	310	312	310
		M4 (E)	A3102 (SW)	301	316	395	315	396	421
		M4 (E)	M4 (W)	0	0	0	0	0	0
		M4 (E)	A3102 (N)	482	393	428	392	425	428
		M4 (E)	M4 (E)	2	2	2	2	2	2
		B4005 (S)	A3102 (SW)	189	267	311	269	312	316
		B4005 (S)	M4 (W)	70	133	137	227	231	232
		B4005 (S)	A3102 (N)	180	345	348	347	349	348
		B4005 (S)	M4 (E)	40	101	101	220	218	220
		B4005 (S)	B4005 (S)	0	0	0	0	0	0
		A3102 (SW)	M4 (W)	102	113	151	110	144	152
		A3102 (SW)	A3102 (N)	635	615	570	591	540	541
		A3102 (SW)	M4 (E)	492	506	634	492	604	614
		A3102 (SW)	B4005 (S)	203	329	341	323	326	325
		A3102 (SW)	A3102 (SW)	0	0	0	0	0	0
		M4 (W)	A3102 (N)	829	734	691	729	692	692
		M4 (W)	M4 (E)	0	0	0	0	0	0
		M4 (W)	B4005 (S)	107	308	317	431	439	439
		M4 (W)	A3102 (SW)	94	96	92	96	89	127
		M4 (W)	M4 (W)	2	2	2	2	2	2
Junction 2	Lydiard Field	The Lydiard Beefeater (N)	A3102 (E)	108	109	108	109	109	109
		The Lydiard Beefeater (N)	A3102 (W)	114	116	111	118	108	108
		A3102 (E)	Frankland Rd (S)	16	16	16	16	16	15
		A3102 (E)	A3102 (W)	1598	1805	1903	1809	1859	1783
		A3102 (E)	The Lydiard Beefeater (N)	221	226	216	225	214	196
		Frankland Rd (S)	A3102 (W)	29	30	33	29	33	30
		A3102 (W)	The Lydiard Beefeater (N)	248	250	239	247	235	236
		A3102 (W)	A3102 (E)	1868	1828	1789	1803	1762	1767
Junction 3	B4005/Dev Access Roundabout	Dev Access (N)	Farm Access (NE)	-	-	-	0	0	0
		Dev Access (N)	B4005 (E)	-	-	-	0	0	0
		Dev Access (N)	B4005 (W)	-	-	-	221	218	221
		Farm Access (NE)	B4005 (E)	-	-	-	0	0	0
		Farm Access (NE)	B4005 (W)	-	-	-	0	0	0
		Farm Access (NE)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	B4005 (W)	-	-	-	845	895	900
		B4005 (E)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	Dev Access (N)	-	-	-	234	232	230
		B4005 (W)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	B4005 (E)	-	-	-	1158	1168	1150

AM Peak 07:30-09:00									
Model Junction	Junction Description	From	To	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev +BMW
				All	All	All	All	All	All
Juntion 1	Spittleborough Rounabout	A3102 (N)	M4 (E)	784	798	820	799	800	770
		A3102 (N)	B4005 (S)	288	514	533	519	517	496
		A3102 (N)	A3102 (SW)	705	778	778	777	743	746
		A3102 (N)	M4 (W)	758	776	891	775	868	841
		A3102 (N)	A3102 (N)	0	0	0	0	0	0
		M4 (E)	B4005 (S)	45	327	327	476	476	476
		M4 (E)	A3102 (SW)	437	457	575	458	575	612
		M4 (E)	M4 (W)	0	0	0	0	0	0
		M4 (E)	A3102 (N)	735	589	643	590	639	640
		M4 (E)	M4 (E)	2	2	2	2	2	2
		B4005 (S)	A3102 (SW)	284	403	464	406	468	473
		B4005 (S)	M4 (W)	100	195	200	334	337	336
		B4005 (S)	A3102 (N)	296	545	546	549	550	547
		B4005 (S)	M4 (E)	59	152	152	325	319	319
		B4005 (S)	B4005 (S)	0	0	0	0	0	0
		A3102 (SW)	M4 (W)	147	166	220	163	209	221
		A3102 (SW)	A3102 (N)	981	961	901	923	854	858
		A3102 (SW)	M4 (E)	704	729	911	706	871	886
		A3102 (SW)	B4005 (S)	309	522	531	505	508	510
		A3102 (SW)	A3102 (SW)	0	0	0	0	0	0
		M4 (W)	A3102 (N)	1167	1018	1002	1017	1003	1005
		M4 (W)	M4 (E)	0	0	0	0	0	0
		M4 (W)	B4005 (S)	163	468	488	657	673	673
		M4 (W)	A3102 (SW)	141	145	144	146	141	195
		M4 (W)	M4 (W)	3	3	3	3	3	3
Junction 2	Lydiard Field	The Lydiard Beefeater (N)	A3102 (E)	152	154	153	154	154	153
		The Lydiard Beefeater (N)	A3102 (W)	172	174	172	177	168	167
		A3102 (E)	Frankland Rd (S)	31	31	31	31	31	28
		A3102 (E)	A3102 (W)	2313	2632	2803	2639	2725	2639
		A3102 (E)	The Lydiard Beefeater (N)	332	338	328	337	319	298
		Frankland Rd (S)	A3102 (W)	44	45	50	44	49	48
		A3102 (W)	The Lydiard Beefeater (N)	382	389	369	383	363	365
		A3102 (W)	A3102 (E)	2793	2721	2715	2693	2676	2685
Junction 3	B4005/Dev Access Roundabout	Dev Access (N)	Farm Access (NE)	-	-	-	0	0	0
		Dev Access (N)	B4005 (E)	-	-	-	0	0	0
		Dev Access (N)	B4005 (W)	-	-	-	322	313	312
		Farm Access (NE)	B4005 (E)	-	-	-	0	0	0
		Farm Access (NE)	B4005 (W)	-	-	-	0	0	0
		Farm Access (NE)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	B4005 (W)	-	-	-	1293	1362	1367
		B4005 (E)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	Dev Access (N)	-	-	-	350	347	347
		B4005 (W)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	B4005 (E)	-	-	-	1802	1821	1803

PM

Run Number >>	AVG
Vehicle Type >>	All

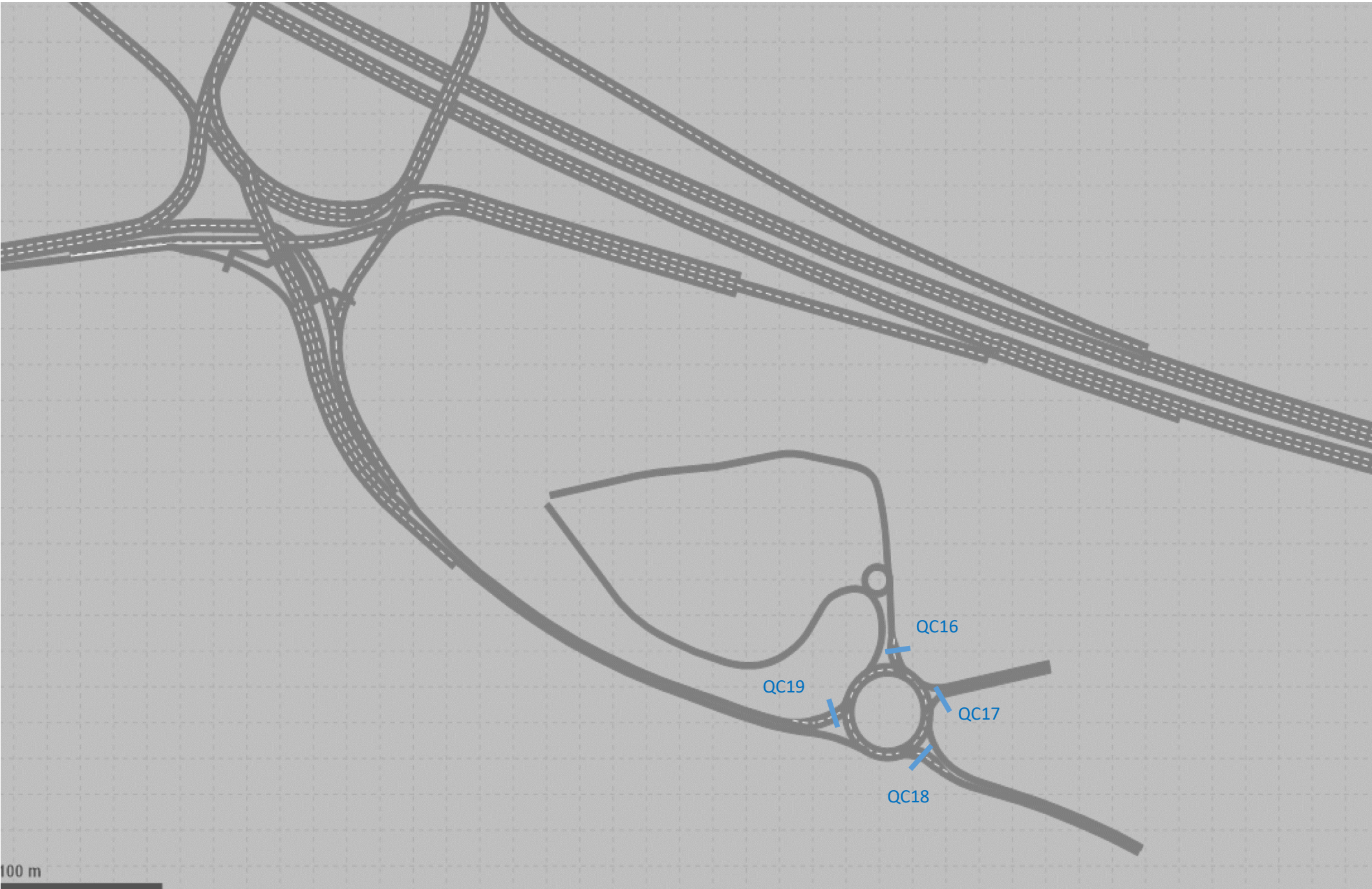
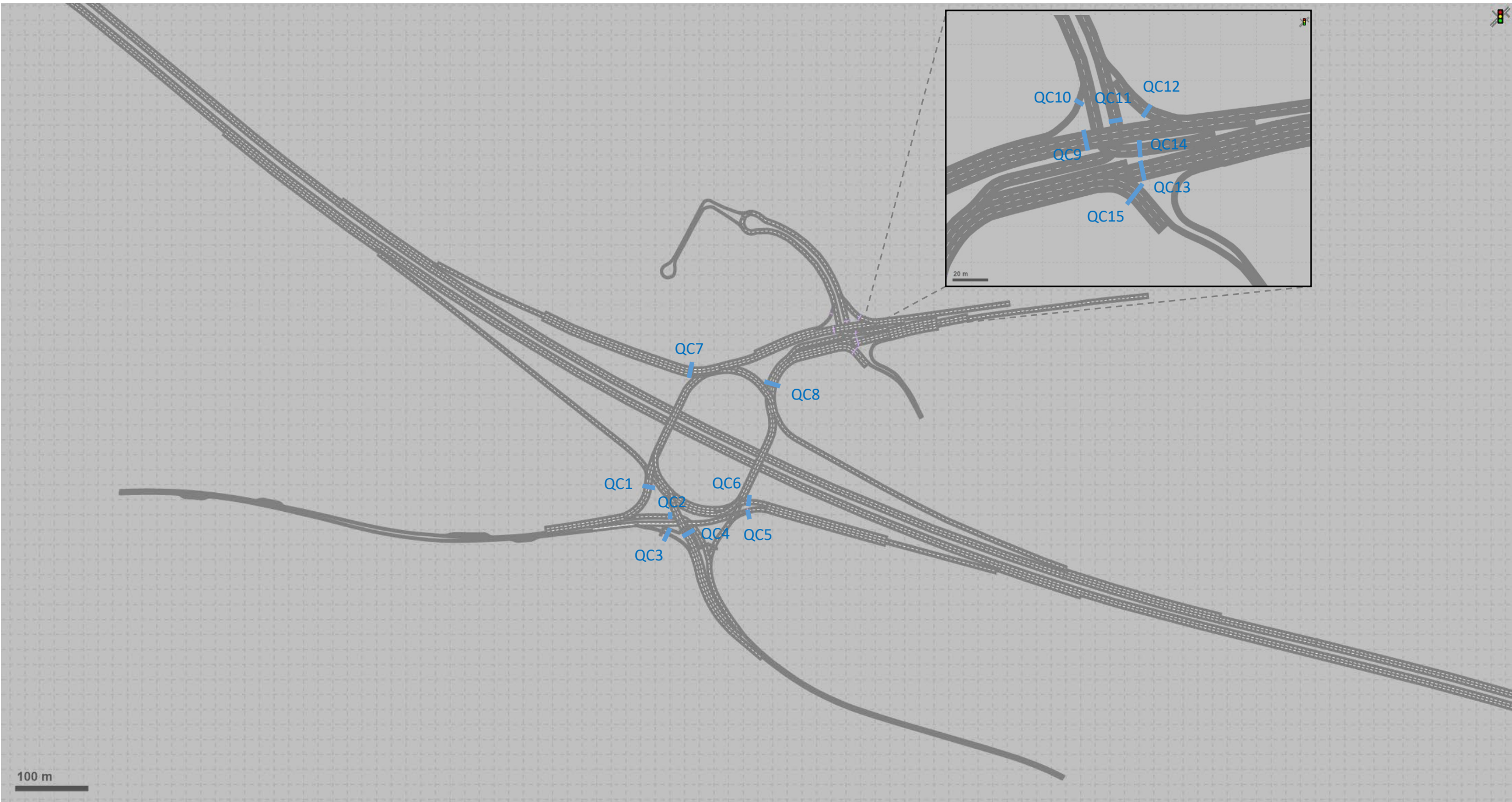
VEHS(All)

				PM Peak 16:30-17:30					
Model Junction	Junction Description	From	To	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +BMW
				All	All	All	All	All	All
Juntion 1	Spittleborough Rounabout	A3102 (N)	M4 (E)	580	330	465	368	510	485
		A3102 (N)	B4005 (S)	243	336	338	330	374	357
		A3102 (N)	A3102 (SW)	619	526	489	599	540	520
		A3102 (N)	M4 (W)	586	353	486	403	537	507
		A3102 (N)	A3102 (N)	0	0	0	0	0	0
		M4 (E)	B4005 (S)	50	120	111	261	260	256
		M4 (E)	A3102 (SW)	470	495	549	502	588	600
		M4 (E)	M4 (W)	0	0	0	0	0	0
		M4 (E)	A3102 (N)	488	500	513	505	519	521
		M4 (E)	M4 (E)	2	2	2	2	2	2
		B4005 (S)	A3102 (SW)	298	390	471	293	347	344
		B4005 (S)	M4 (W)	110	347	308	382	350	352
		B4005 (S)	A3102 (N)	227	475	420	326	320	321
		B4005 (S)	M4 (E)	19	278	223	333	284	284
		B4005 (S)	B4005 (S)	0	0	0	0	0	0
		A3102 (SW)	M4 (W)	100	101	134	102	137	166
		A3102 (SW)	A3102 (N)	594	621	583	627	584	597
		A3102 (SW)	M4 (E)	330	326	437	332	439	462
		A3102 (SW)	B4005 (S)	214	274	302	282	306	309
		A3102 (SW)	A3102 (SW)	0	0	0	0	0	0
		M4 (W)	A3102 (N)	594	607	679	603	680	678
		M4 (W)	M4 (E)	0	0	0	0	0	0
		M4 (W)	B4005 (S)	103	165	183	288	306	306
		M4 (W)	A3102 (SW)	66	86	102	89	103	115
		M4 (W)	M4 (W)	1	1	1	1	1	1
Junction 2	Lydiard Field	The Lydiard Beefeater (N)	A3102 (E)	181	172	175	181	179	179
		The Lydiard Beefeater (N)	A3102 (W)	148	139	138	145	143	143
		A3102 (E)	Frankland Rd (S)	8	6	8	7	8	8
		A3102 (E)	A3102 (W)	1769	1351	1571	1485	1699	1639
		A3102 (E)	The Lydiard Beefeater (N)	61	37	50	49	61	54
		Frankland Rd (S)	A3102 (W)	113	54	76	77	125	95
		A3102 (W)	The Lydiard Beefeater (N)	83	83	80	82	76	76
Junction 3	B4005/Dev Access Roundabout	A3102 (W)	A3102 (E)	1817	2116	2118	1977	2028	2041
		Dev Access (N)	Farm Access (NE)	-	-	-	0	0	0
		Dev Access (N)	B4005 (E)	-	-	-	0	0	0
		Dev Access (N)	B4005 (W)	-	-	-	268	266	266
		Farm Access (NE)	B4005 (E)	-	-	-	0	0	0
		Farm Access (NE)	B4005 (W)	-	-	-	0	0	0
		Farm Access (NE)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	B4005 (W)	-	-	-	1067	1038	1034
		B4005 (E)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	Dev Access (N)	-	-	-	267	268	267
		B4005 (W)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	B4005 (E)	-	-	-	891	974	960

				PM Peak 16:30-18:00					
Model Junction	Junction Description	From	To	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +BMW
				All	All	All	All	All	All
Juntion 1	Spittleborough Rounabout	A3102 (N)	M4 (E)	811	499	667	543	710	685
		A3102 (N)	B4005 (S)	361	510	529	524	580	557
		A3102 (N)	A3102 (SW)	939	807	740	916	816	787
		A3102 (N)	M4 (W)	820	529	693	582	755	721
		A3102 (N)	A3102 (N)	0	0	0	0	0	0
		M4 (E)	B4005 (S)	80	193	168	404	403	401
		M4 (E)	A3102 (SW)	698	736	809	742	884	905
		M4 (E)	M4 (W)	0	0	0	0	0	0
		M4 (E)	A3102 (N)	734	735	741	740	759	760
		M4 (E)	M4 (E)	2	2	2	2	2	2
		B4005 (S)	A3102 (SW)	399	535	668	436	518	516
		B4005 (S)	M4 (W)	160	510	459	591	538	541
		B4005 (S)	A3102 (N)	330	670	616	465	460	462
		B4005 (S)	M4 (E)	28	410	333	497	431	430
		B4005 (S)	B4005 (S)	0	0	0	0	0	0
		A3102 (SW)	M4 (W)	137	146	197	148	200	244
		A3102 (SW)	A3102 (N)	860	937	866	947	865	874
		A3102 (SW)	M4 (E)	480	498	688	506	692	721
		A3102 (SW)	B4005 (S)	288	403	457	410	463	466
		A3102 (SW)	A3102 (SW)	1	1	0	1	0	0
		M4 (W)	A3102 (N)	873	890	992	888	993	994
		M4 (W)	M4 (E)	0	0	0	0	0	0
		M4 (W)	B4005 (S)	160	258	286	446	477	476
		M4 (W)	A3102 (SW)	93	123	142	124	142	161
		M4 (W)	M4 (W)	1	1	1	1	1	1
Junction 2	Lydiard Field	The Lydiard Beefeater (N)	A3102 (E)	253	240	243	256	251	251
		The Lydiard Beefeater (N)	A3102 (W)	219	216	208	227	218	216
		A3102 (E)	Frankland Rd (S)	17	12	17	16	17	17
		A3102 (E)	A3102 (W)	2555	2046	2310	2213	2471	2404
		A3102 (E)	The Lydiard Beefeater (N)	114	61	90	86	112	98
		Frankland Rd (S)	A3102 (W)	149	81	121	126	174	135
		A3102 (W)	The Lydiard Beefeater (N)	119	121	116	118	110	110
Junction 3	B4005/Dev Access Roundabout	A3102 (W)	A3102 (E)	2675	3107	3100	2919	2968	2977
		Dev Access (N)	Farm Access (NE)	-	-	-	0	0	0
		Dev Access (N)	B4005 (E)	-	-	-	0	0	0
		Dev Access (N)	B4005 (W)	-	-	-	411	410	409
		Farm Access (NE)	B4005 (E)	-	-	-	0	0	0
		Farm Access (NE)	B4005 (W)	-	-	-	0	0	0
		Farm Access (NE)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	B4005 (W)	-	-	-	1578	1540	1539
		B4005 (E)	Dev Access (N)	-	-	-	0	0	0
		B4005 (E)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	Dev Access (N)	-	-	-	412	413	414
		B4005 (W)	Farm Access (NE)	-	-	-	0	0	0
		B4005 (W)	B4005 (E)	-	-	-	1374	1506	1485

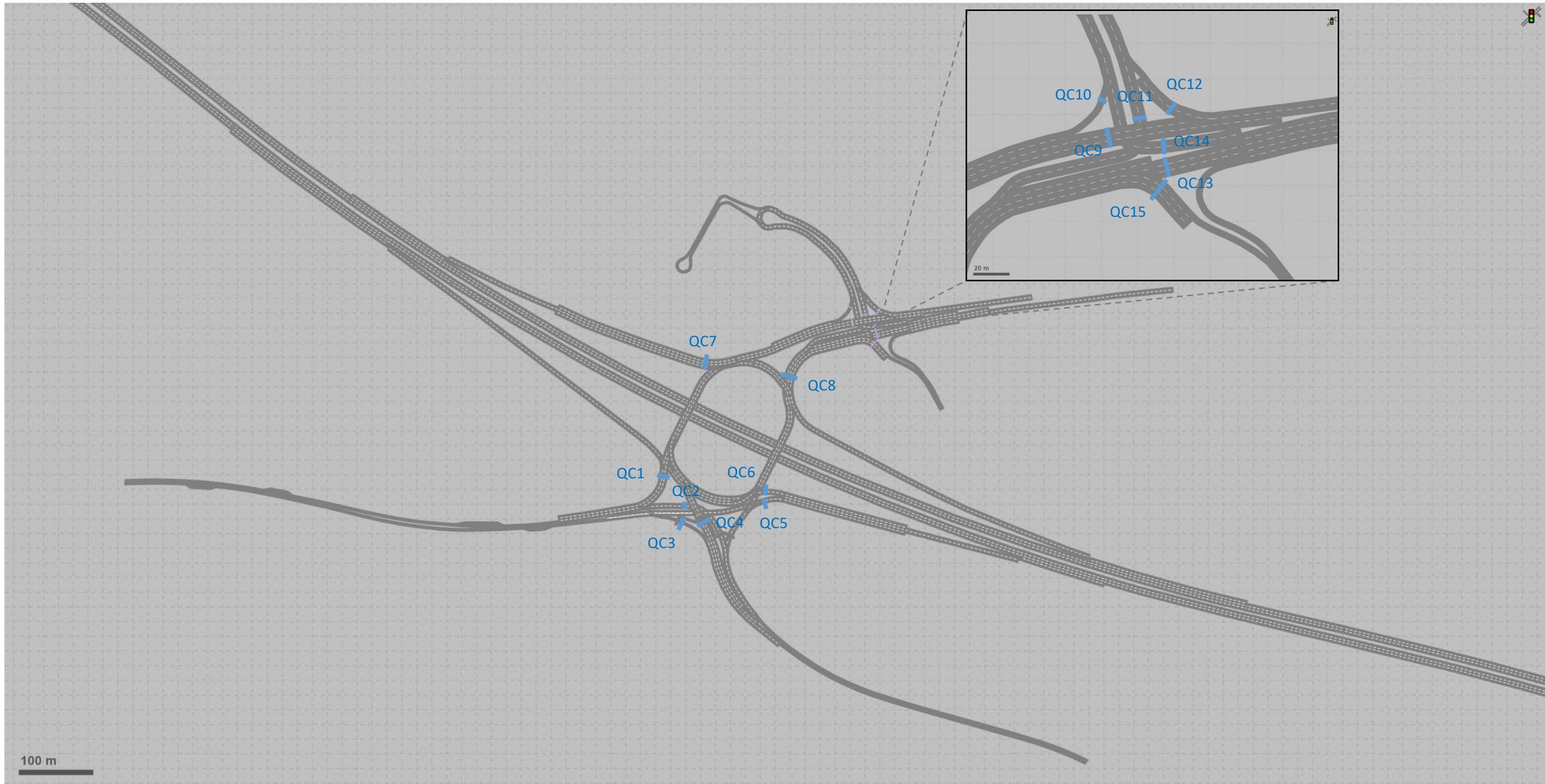
Run Number >>	AVG
Q Type >>	Max

	Spittleborough Roundabout								Lydiard Field								B4005/Dev Access Roundabout			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	A3102 west ahead	A3102 west right	B4005 left	B4005 ahead	M5 wb off left	M5 wb off ahead	M5 eb off	A3102 east	GWW eb ahead	GWW eb left	Lydiard Fields right	Lydiard Fields left	GWW wb ahead	GWW wb right	Frankland Road	Dev Access sb	Farm Access wb	B4005 wb	B4005 eb	
AM 2023 Ref	532	31	29	28	60	66	121	73	206	51	24	20	64	32	16	#N/A	#N/A	#N/A	#N/A	
AM 2027 Ref	652	201	39	44	61	62	103	89	180	39	24	19	64	33	13	#N/A	#N/A	#N/A	#N/A	
AM 2038 Ref	493	219	53	49	80	82	67	147	114	13	23	19	363	178	38	#N/A	#N/A	#N/A	#N/A	
AM 2027 Ref + Dev	715	408	47	63	51	54	113	107	168	62	22	23	73	30	15	67	0	125	1	
AM 2038 Ref + Dev	722	366	62	63	68	77	78	148	120	23	23	18	354	231	34	68	0	131	8	
AM 2038 Ref+Dev +BMW	732	629	58	61	68	69	91	150	126	15	20	19	407	301	45	67	0	134	0	



	Additional Queue information 7:30-9:00								Lydiard Field												B4005/Dev Access Roundabout			
	Spittlesborough Roundabout																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19					
	A3102 west ahead	A3102 west right	B4005 left	B4005 ahead	M5 wb off left	M5 wb off ahead	M5 eb off	A3102 east	GWW eb ahead	GWW eb left	Lydiard Fields right	Lydiard Fields left	GWW wb ahead	GWW wb right	Frankland Road	Dev Access sb	Farm Access wb	B4005 wb	B4005 eb					
AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref	AM 2023 Ref					
AM 2023 Ref	501	47	28	29	62	68	93	63	172	21	22	14	44	25	8	#N/A	#N/A	#N/A	#N/A					
AM 2027 Ref	699	294	43	46	59	57	76	86	138	17	24	14	53	27	7	#N/A	#N/A	#N/A	#N/A					
AM 2038 Ref	474	253	45	45	68	69	53	141	119	17	21	13	213	84	15	#N/A	#N/A	#N/A	#N/A					
AM 2027 Ref + Dev	735	419	46	60	49	51	81	110	146	21	20	14	56	25	7	68	0	121	0					
AM 2038 Ref + Dev	638	425	55	58	66	68	74	148	113	8	21	13	388	209	16	68	0	133	1					
AM 2038 Ref+Dev +BMW	643	612	53	60	56	58	89	148	115	16	24	13	409	236	36	69	0	120	28					

		Spittlesborough Roundabout								Lydiard Field								B4005/Dev Access Roundabout			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
		A3102 west ahead	A3102 west right	B4005 left	B4005 ahead	M5 wb off left	M5 wb off ahead	M5 eb off	A3102 east	GWW eb ahead	GWW eb left	Lydiard Fields right	Lydiard Fields left	GWW wb ahead	GWW wb right	Frankland Road	Dev Access sb	Farm Access wb	B4005 wb	B4005 eb	
		PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	
PM 2023 Ref	Max	82	26	46	36	124	126	50	79	111	1	22	22	92	12	24	#N/A	#N/A	#N/A	#N/A	
PM 2027 Ref	Max	735	531	657	641	117	119	61	150	133	1	153	113	410	12	130	#N/A	#N/A	#N/A	#N/A	
PM 2038 Ref	Max	750	596	111	94	303	304	71	150	133	1	77	52	401	13	130	#N/A	#N/A	#N/A	#N/A	
PM 2027 Ref + Dev	Max	722	564	93	97	83	85	59	151	113	4	78	42	410	15	130	65	0	146	11	
PM 2038 Ref + Dev	Max	754	679	95	90	122	125	69	147	124	1	33	25	238	15	102	65	0	146	3	
PM 2038 Ref+Dev+BMW	Max	751	715	95	97	171	173	69	147	115	1	31	23	387	12	130	65	0	146	0	



		Additional Queue information 5:30-6:00 Spittlesborough Roundabout								Lydiard Field												B4005/Dev Access Roundabout			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19					
		A3102 west ahead	A3102 west right	B4005 left	B4005 ahead	M5 wb off left	M5 wb off ahead	M5 eb off	A3102 east	GWW eb ahead	GWW eb left	Lydiard Fields right	Lydiard Fields left	GWW wb ahead	GWW wb right	Frankland Road	Dev Access sb	Farm Access wb	B4005 wb	B4005 eb					
		PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref	PM 2023 Ref					
PM 2023 Ref	Max	59	20	35	29	143	144	36	82	97	1	20	17	69	14	13	#N/A	#N/A	#N/A	#N/A					
PM 2027 Ref	Max	714	598	79	70	112	114	49	150	125	1	184	134	411	13	129	#N/A	#N/A	#N/A	#N/A					
PM 2038 Ref	Max	748	681	102	87	478	479	55	150	129	1	112	81	411	52	130	#N/A	#N/A	#N/A	#N/A					
PM 2027 Ref + Dev	Max	663	571	93	97	71	48	148	113	1	73	52	408	15	129	61	0	145	2						
PM 2038 Ref + Dev	Max	749	683	91	89	129	131	56	150	114	1	56	29	338	33	89	65	0	146	0					
PM 2038 Ref+Dev+BMW	Max	752	752	96	91	179	182	60	149	104	2	53	26	404	15	130	60	0	146	1					

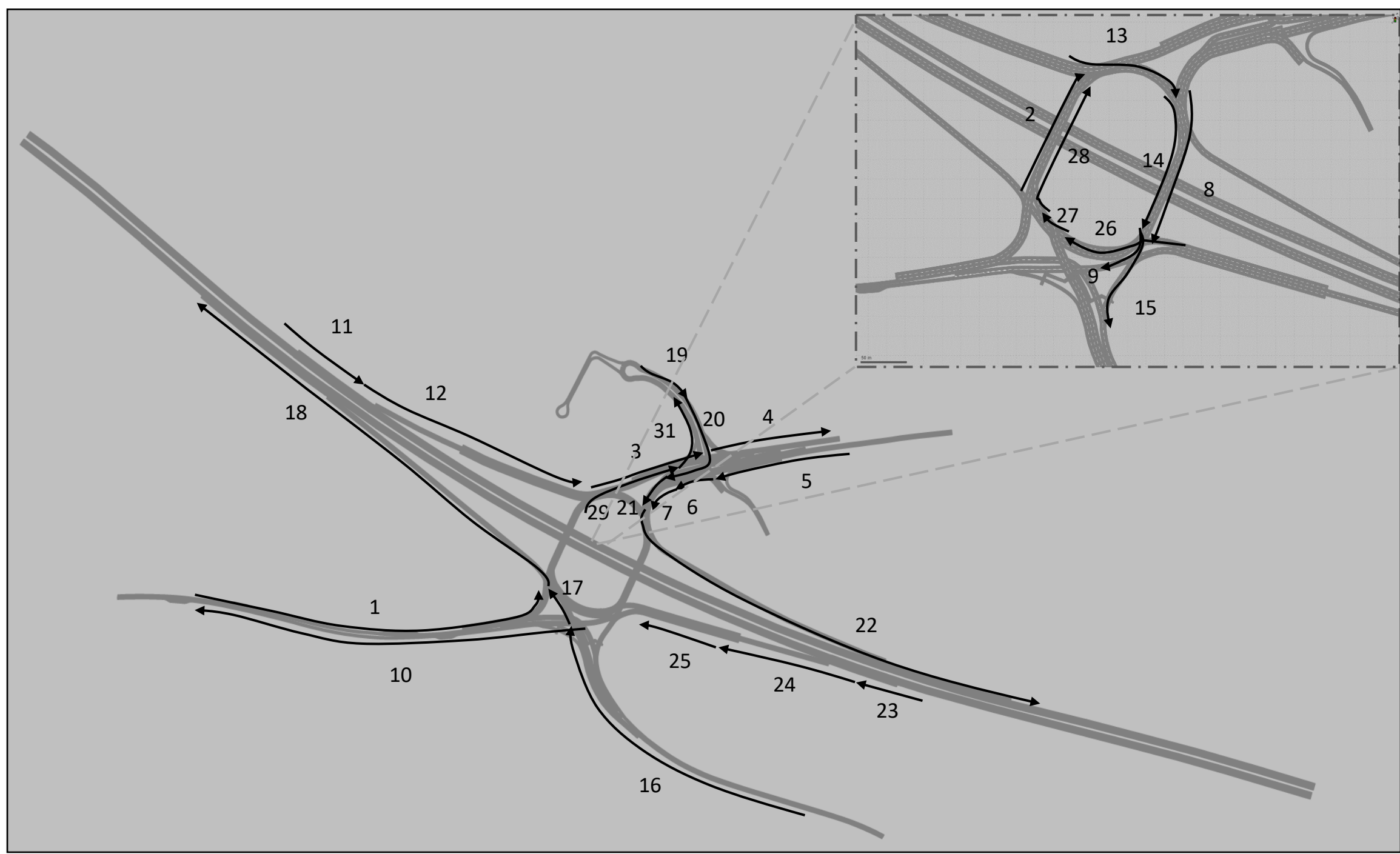
Run Numbers >> AVG

	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev +BMW
	0730-0830	0730-0830	0730-0830	0730-0830	0730-0830	0730-0830
1	100	118	113	145	158	216
2	16	14	14	15	16	18
3	27	27	26	27	26	25
4	18	18	18	18	18	18
5	19	19	48	19	50	72
6	8	9	23	9	24	30
7	10	13	25	15	29	33
8	21	29	44	28	42	44
9	27	33	35	32	32	33
10	52	54	55	54	55	62
11	6	6	6	6	6	6
12	41	44	44	45	50	54
13	26	26	36	36	34	35
14	20	26	48	29	56	53
15	16	22	23	24	25	25
16	61	65	67	73	75	75
17	8	8	9	8	8	8
18	33	33	34	33	34	34
19	9	9	9	9	9	9
20	63	68	136	68	142	156
21	8	10	17	11	19	22
22	28	28	29	29	30	30
23	4	4	4	4	4	4
24	10	10	10	12	12	12
25	10	10	15	8	12	10
26	36	31	33	33	46	35
27	11	10	10	10	10	10
28	23	23	23	24	25	25
29	18	18	18	18	18	17
31	11	11	11	11	11	11

JT1 E8	161	177	230	205	217	278
JT1 WB	138	156	170	156	233	274
JT2 E8	109	124	156	130	170	173
JT2 WB	102	106	109	114	118	117
JT3 E8	107	115	191	117	200	216
JT3 WB	123	118	123	119	137	125

	AM 2023 Ref	AM 2027 Ref	AM 2038 Ref	AM 2027 Ref + Dev	AM 2038 Ref + Dev	AM 2038 Ref+Dev+BMW
	0730-0900	0730-0900	0730-0900	0730-0900	0730-0900	0730-0900
1	103	129	125	152	164	228
2	15	14	14	15	16	18
3	27	27	26	26	26	25
4	18	18	18	18	18	18
5	18	19	46	19	64	84
6	8	9	23	9	29	33
7	10	13	25	15	32	35
8	21	29	45	30	44	45
9	27	32	35	32	32	33
10	52	53	55	54	55	61
11	6	6	6	6	6	6
12	41	42	44	45	51	55
13	26	28	38	27	35	36
14	20	26	49	32	58	55
15	16	22	23	24	26	25
16	61	65	67	73	75	75
17	8	8	9	8	8	8
18	33	33	34	33	34	34
19	9	9	9	9	9	9
20	62	68	142	69	177	202
21	8	9	17	11	21	23
22	28	28	29	29	30	30
23	4	4	4	4	4	4
24	10	10	10	11	12	12
25	11	10	14	8	11	10
26	36	32	34	34	45	35
27	11	10	10	11	11	10
28	23	22	23	27	26	27
29	18	18	18	18	18	18
31	11	11	11	11	11	11

JT1 E8	163	188	183	212	224	289
JT1 W8	138	155	229	159	256	292
JT2 E8	109	123	159	133	176	178
JT2 W8	102	106	109	114	117	117
JT3 E8	107	115	196	118	237	264
JT3 W8	123	117	123	119	136	125



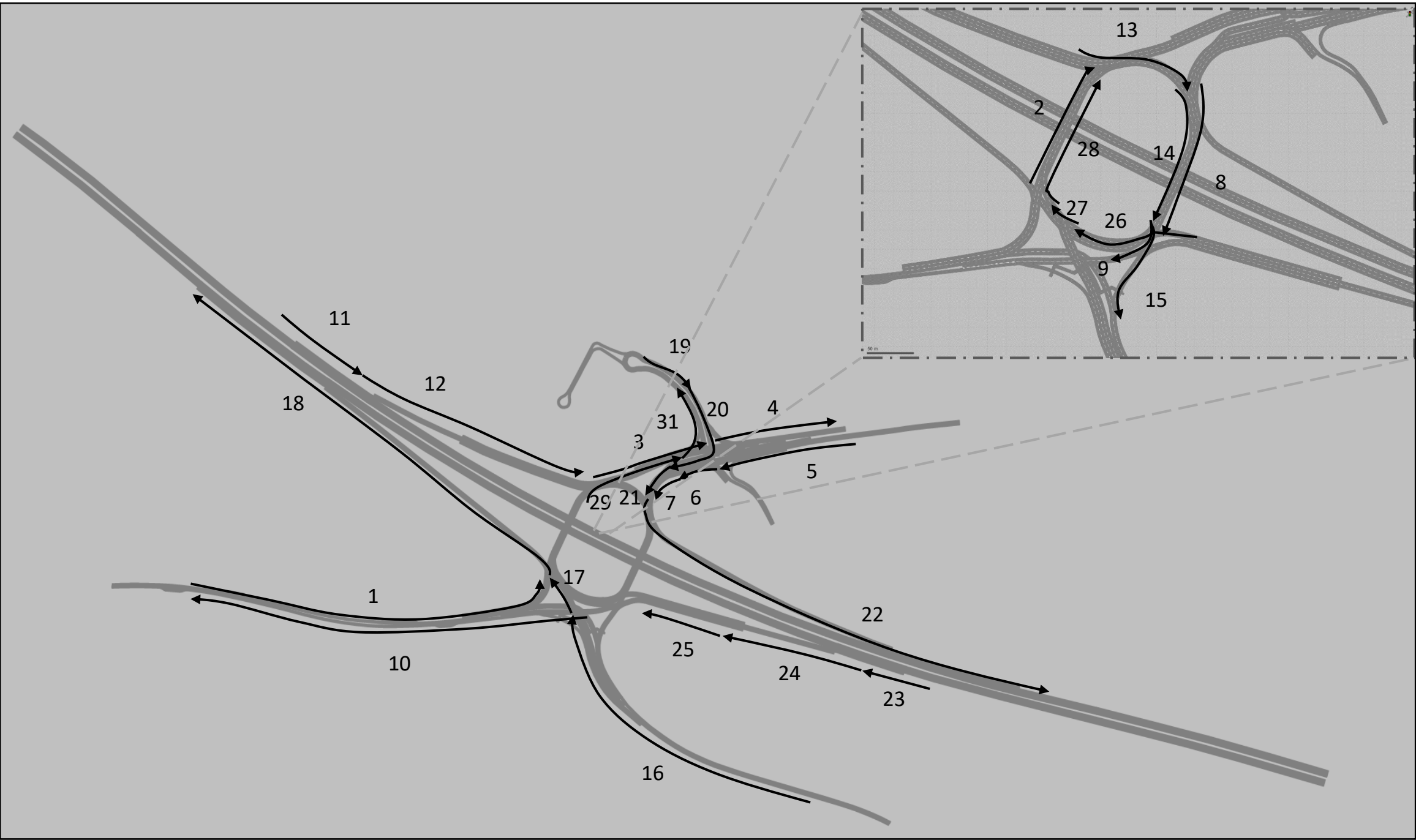
Run Numbers>> AVG

	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +8MW
	1630-1730	1630-1730	1630-1730	1630-1730	1630-1730	1630-1730
1	73	168	207	162	209	95
2	14	17	16	16	16	88
3	25	25	26	25	25	115
4	18	18	18	18	18	169
5	21	181	107	123	41	138
6	8	50	38	40	21	136
7	9	44	34	37	25	144
8	31	73	62	56	48	115
9	32	41	41	36	36	53
10	57	58	63	60	63	100
11	5	5	6	6	5	307
12	35	44	44	45	44	92
13	11	23	23	40	37	35
14	51	107	96	63	55	35
15	17	22	21	22	23	55
16	63	120	79	88	84	58
17	8	8	8	8	8	80
18	33	33	33	33	34	72
19	9	42	14	12	9	28
20	67	326	258	234	147	12
21	6	27	21	23	17	156
22	27	32	30	30	29	41
23	4	4	4	4	4	365
24	12	11	22	12	13	116
25	27	30	61	15	25	115
26	54	44	38	37	34	43
27	11	11	9	10	9	86
28	21	11	23	23	23	94
29	17	18	18	18	19	119
31	10	10	10	10	10	6

JT1 EB	129	228	267	221	268	467
JT1 WB	159	447	345	352	235	685
JT2 EB	120	201	189	175	166	524
JT2 WB	104	161	120	129	126	209
JT3 EB	110	426	323	299	202	236
JT 3 WB	157	151	187	129	136	946

	PM 2023 Ref	PM 2027 Ref	PM 2038 Ref	PM 2027 Ref + Dev	PM 2038 Ref + Dev	PM 2038 Ref+Dev +8MW
	1630-1800	1630-1800	1630-1800	1630-1800	1630-1800	1630-1800
1	71	175	211	162	214	95
2	14	16	16	16	16	88
3	25	26	26	26	26	112
4	18	18	18	18	18	165
5	21	180	124	136	65	134
6	8	50	40	41	27	133
7	9	43	36	36	29	141
8	31	72	63	56	49	114
9	31	41	41	36	36	52
10	57	58	62	59	62	100
11	5	5	6	5	5	306
12	34	43	43	43	45	91
13	11	23	23	40	37	35
14	51	104	95	61	57	36
15	17	22	22	22	24	57
16	63	106	78	87	84	57
17	8	8	8	8	8	80
18	33	32	33	33	33	70
19	9	62	28	16	12	26
20	68	391	316	268	204	12
21	6	26	22	23	19	153
22	27	32	30	30	29	38
23	4	4	6	4	4	356
24	14	13	64	12	13	115
25	31	33	97	14	28	115
26	56	45	38	37	34	42
27	11	11	9	10	9	82
28	20	23	23	23	23	92
29	17	19	19	18	18	116
31	10	10	10	10	10	6

JT1 EB	127	236	272	222	274	459
JT1 WB	158	443	365	365	268	674
JT2 EB	119	197	189	173	168	525
JT2 WB	104	146	119	128	125	207
JT3 EB	110	512	396	337	264	229
JT 3 WB	164	156	266	127	139	925



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