East Midlands Gateway
Phase 2 (EMG2)

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PRTM 2023 Sensitivity Test Technical Note and Local Road Network Impact Assessment Note

APRIL 2026

The East Midlands Gateway Phase 2
and Highway Order 202X and The East Midlands Gateway
Rail Freight and Highway (Amendment) Order 202X

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The East Midlands Gateway Phase 2 and Highway Order 202X and The East Midlands Gateway Rail Freight and Highway (Amendment) Order 202X

PRTM 2023 SENSITIVITY TEST TECHNICAL NOTE AND LOCAL ROAD NETWORK IMPACT ASSESSMENT NOTE (DOCUMENT DCO 7.8/MCO 7.8)

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PRTM 2023 Sensitivity Test Modelling

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Notice

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APPENDICES

1. INTRODUCTION

Appointment

1.1 BWB Consulting Ltd (BWB) has been appointed by Segro Properties Ltd and Segro (EMG) Ltd (together the Applicant, or Segro) to provide highways and transportation advice in support of a second phase of its East Midlands Gateway Logistics Park (EMG1), which is a Strategic Rail Freight Interchange located to the north of East Midlands Airport.

Background Information

1.2 A Transport Assessment (TA), document reference EMG2-BWB-GEN-XX-RP-TR-0002 Revision P4 (DCO 6.6A), has been produced to support an application for a Development Consent Order (DCO). The transport modelling in the TA was undertaken using the 2019 East Midlands Freeport Model (EMFM 2019), which was the relevant model when discussions began on the Proforma in July 2022 before the modelling was commissioned in October 2024. This forms the core assessment for the TA.

1.3 A comprehensive mitigation scheme has been proposed using outputs from EMFM 2019 and further detailed VISSIM modelling, which includes significant works at M1 Junction 24, including a new free flow link between M1 northbound and A50 westbound, as well as other more minor works at M1 Junction 24, improvements to the A453/A6 Kegworth Bypass roundabout, and M1 Junction 23A (Finger Farm). The EMFM 2019 core modelling was agreed with National Highways (NH) by email on 5 January 2026 who confirmed "*Jacobs have completed their review of both the PRTM 2019 and VISSIM modelling and we are now content that the proposed scheme appropriately mitigates the impacts of EMG2 on the SRN*". This was subject to completion of the Stage 1 Road Safety Audits and Departures from Standard processes.

1.4 In December 2024, Leicestershire County Council (LCC) advised that an updated version of the EMFM 2019 model became available to use, known as the 2023 Pan Regional Transport Model (PRTM 2023). This was signed off by NH for use for this DCO on 20 May 2025.

1.5 It was agreed with the Transport Working Group (TWG), including NH and LCC's Highways Development Management (HDM) team, that a sensitivity test is carried out using PRTM 2023 to confirm whether the proposed mitigation scheme continues to provide the correct strategic solution to accommodate EMG2 using outputs from the new model. LCC's HDM agreement to this approach was set out in their email dated 11 September 2025, included in **Appendix 1**.

1.6 Conversations continued with the TWG to agree the scope for the PRTM 2023 sensitivity test modelling, which was reached on 14 January 2026 following which the modelling began. The delay between September and January related to a wider issue NH and LCC HDM had with PRTM 2023 which was not related to the EMG2 Project. PRTM 2023 was overstating the capacity of the local roads routing through Lockington and Hemington drawing too much traffic along that route than the A50 eastbound towards M1 junction 24. Post the resolution of this issue by NH, LCC HDM and LCC's Network Data and Intelligence (NDI) teams, the PRTM 2023 sensitivity test was completed, and

detailed modelling extracts initially provided by AECOM, who operate PRTM on behalf of LCC NDI, on 27 January 2026.

1.7 The core EMFM 2019 modelling considered a larger study area, including an additional 12 off-site junctions outside of the VISSIM model. It was agreed with the TWG that the PRTM 2023 sensitivity test can be limited to assessing the key part of the Strategic Road Network (SRN) within the VISSIM model, which extends between Finger Farm and M1 Junction 24, as this includes the network where the proposed mitigation scheme is located.

Purpose of Technical Note

1.8 The purpose of this report is to present the results of the PRTM 2023 sensitivity test modelling and confirm whether the proposed highway mitigation, as presented in the TA, remains suitable.

1.9 Since the TA was submitted with the DCO, meetings have continued to be held with the TWG twice per month. This includes a transport modelling specific meeting followed by a general TWG meeting. Copies of the minutes from all meetings between September 2025 and February 2026 inclusive are included at **Appendix 2**.

Technical Note Structure

1.10 Following this introduction, the remainder of this report is structured as follows:

- **Section 2**: summarises the methodology and results of the PRTM 2023 modelling, including comments received from NH.
- **Section 3**: summarises the VISSIM modelling using outputs from PRTM 2023 and how this compares against the EMFM 2019 core modelling results.
- **Section 4**: provides a comparison between the EMFM 2019 and PRTM 2023 VISSIM modelling results.
- **Section 5** reviews traffic flows from an Environmental Impact Assessment (EIA) perspective to understand whether the conclusions of the EIA could have changed with the PRTM 2023 modelling results.
- **Section 6:** responds to comments received from LCC with regard to potential impacts of the additional 100,000sqm of mezzanine floorspace, the use of which is restricted by Requirement 27 of the DCO.
- **Section 7**: sets out the summary and conclusions.

2. PRTM 2023 MODELLING

Base Model Validation

2.1 The PRTM 2023 model was approved by NH on 20 May 2025, following a detailed audit of the base model validation, undertaken as part of the wider East Midlands Growth Point (EMGP) project, exploring the impacts of other key development proposals, including EMG2, and wider mitigation requirements to accommodate all such future growth, over and above that proposed by EMG2. AECOM produced a Base Year Model Review report in July 2025 which considered the zone system and network structure in the vicinity of EMG2 and the performance of the base model against observed counts and journey time data. The results confirmed that PRTM 2023 performed well and met TAG acceptability guidelines, and it was agreed with the TWG that the model was, at the time, acceptable to test the forecast year sensitivity test scenarios to understand the impacts of EMG2.

2.2 As set out in paragraph 1.6, during initial forecast year model runs, it was noted that PRTM 2023 assigned higher levels of traffic through Hemington and Lockington in the eastbound direction towards M1 Junction 24 when compared to the core EMFM 2019 modelling. This was reviewed by AECOM alongside NH and LCC and it was agreed that this route was coded with too high capacity. It was therefore agreed with NH and LCC by email on 23 January 2026 that the capacity of the Hemington and Lockington eastbound route be reduced via three refinements to the model:

- adjustment of signal timings at the Hilton Hotel Lane arm of M1 Junction 24;
- adjustment of link speeds through Lockington, and;
- adjustment of merge/diverge capacities at the M1 J24a/J24 southbound.

2.3 AECOM subsequently updated the Base Year Model Review to account for the above changes and confirmed that PRTM 2023 continued to validate in line with TAG acceptability guidelines. AECOM produced an appendix to the Base Year Model Review report summarising these details which have been agreed with the TWG. NH and LCC subsequently confirmed that the re-assignment on the Hemington and Lockington route was more realistic – details of which are set out in the January 2026 TWG meeting minutes included in **Appendix 2**.

Forecast Year Modelling

2.4 It was agreed that the PRTM 2023 sensitivity test modelling assessed the Stage 1A and 2A scenarios only, which include traffic from the draft Local Plan allocations and Ratcliffe Power Station re-development, but not any associated mitigation. Full details of the modelling scenarios are presented in Section 8 of the TA, whilst a summary is provided below, ensuring a robust assessment in line with the core EMFM 2019 modelling.

- **Stage 1A modelling** = 2028/2038 forecast years with and without EMG2, including, consented and committed sites as well as draft Local Plan allocation sites, East Midlands Intermodal Park (EMIP) and full redevelopment of the Ratcliffe on Soar Power Station site, part of which is authorised by a Local Development Order (LDO).

- **Stage 2A modelling** = as per Stage 1A but with the inclusion of the proposed Highway Works as detailed in the TA.

2.5 The planning data assumptions for the PRTM 2023 modelling were listed in an Uncertainty Log (v2.0, 23 July 2025) and encapsulated in a Proforma dated 9 September 2025. A copy of the PRTM Proforma is included at **Appendix 3**. These details were agreed with the TWG ahead of the PRTM 2023 sensitivity test modelling being started to ensure the modelling was carried out on an agreed basis.

2.6 AECOM issued the PRTM 2023 sensitivity test forecasting report on 12 February 2026, a copy of which is included in **Appendix 4.** AECOM also issued a separate spreadsheet showing V/C ratios at key locations on the SRN, both of which were sent to the TWG, to allow a thorough comparison to be made between the 2028/38 without development and 2028/38 with development, with mitigation scenarios to understand the impacts of the EMG2 Project.

2.7 The PRTM 2023 forecasting report confirms that the proposed mitigation would have the same desired benefit of re-assigning traffic from the A453 northbound to the M1 northbound as per that set out in the core 2019 EMFM modelling set out in the TA, increasing capacity on the A453 corridor in the vicinity of the site, and the western part of the M1 Junction 24 circulatory. This is because of the new M1 northbound to A50 westbound free flow link which allows traffic to bypass M1 Junction 24. The proposed mitigation would allow for a significant increase in traffic to use the SRN, whilst having an overall betterment to capacity and improving highway safety.

2.8 There would continue to be delays on the M1 southbound / A50 eastbound route to M1 Junction 24, although the EMG2 development continues to have limited impacts at this location. It has been demonstrated how these impacts are linked to traffic associated with the Ratcliffe on Soar power station development on the A453 Remembrance Way, for which mitigation is yet to be determined and is being considered separately as part of the EMGP project.

National Highways Technical Note

2.9 JSJV on behalf of NH produced a Technical Note dated 17 February 2026 to audit the PRTM 2023 forecasting report and appraise the soundness of the conclusions. A copy of the Technical Note is included at **Appendix 5**, which provides statements by NH against key technical items of the PRTM 2023 modelling. NH's statements are categorised into the following three classifications.

Classification	Description
Observations	are points for consideration on an issue that would not significantly affect model operation or output.
Comments	main function is to highlight issues for attention in subsequent project stages.
Substantive Issues	are issues which require corrective action. The audit will suggest the detailed action required to address the issue, although there should be freedom for the development team to use alternative approaches in order to achieve the required level of analysis.

2.10 NH raised a total of 16 statements, of which 14 were 'observations' i.e. in agreement and not requiring any further work or changes to the modelling and two 'comments' i.e. requesting additional work. There were no substantive issues raised with the PRTM 2023 modelling. Extracts of NH's two comments are provided below.

> **Comment 1**:- The most recent testing indicates that the predicted flows in both 2028 and 2038 on the new single lane link road between the M1 northbound and the A50 westbound are at the upper limit of the theoretical capacity for a single lane.
>
> It is noted however that the downstream capacity issues at the A50 M1 J24A merge, which were apparent in the PRTM 19 assessment, do not materialise in the PRTM 23 assessment.
>
> Nonetheless, the Applicant's engineering team should continue to factor this into their evaluation and design, thereby ensuring the proposed infrastructure can adequately accommodate anticipated traffic demands while maintaining safety and efficiency, and give due consideration to future proofing.

> **Comment 2**:- JSJV notes the following 4 locations as being most critical for further information as part of the VISSIM modelling based upon the PRTM23 model run:
>
> - Around Finger Farm Roundabout
> - M1 Junction 23a Northbound Merge
> - Approach to J24 circulatory from the M1 SB
> - J24 northbound off-slip

2.11 NH position on the two outstanding comments is set out in the Technical Note included at Appendix 5.

3. VISSIM MODELLING

Introduction

3.1 As requested by NH in their Technical Note on 17 February 2026, the agreed VISSIM model has been retained to test the operation of the key junctions on the SRN using outputs from PRTM 2023 sensitivity test. These have been compared against the results of the EMFM 2019 core modelling to understand the differences and whether the proposed mitigation continues to mitigate the impacts of the EMG2 development.

Deriving Future Forecast Traffic Flows

3.2 Full details of the furnessing methodology are provided in Section 9 of the TA. Excel spreadsheets containing the furnessed traffic flows for all scenarios were issued to NH on 13 February 2026 and have been agreed.

VISSIM Modelling Results

3.3 The primary measurement of capacity in VISSIM is to conduct a journey time analysis between the without development and with development scenarios along with a comparison of predicted queues and a series of network performance indicators such as average delays, average speeds, number of vehicles entering the network and latent demand. Judgement is then required as to where significant impacts are occurring and subsequently where mitigation needs to be focussed.

Journey Time Routes

3.4 To determine the impact of the EMG2 development on the highway network, journey time routes utilised for the TA have been retained to provide a comparison between the "with" and "without development" scenarios.

3.5 **Figures 1** and **2** show the routes utilised for journey time results.

Figure 1: Journey Time Routes (1 - 10)

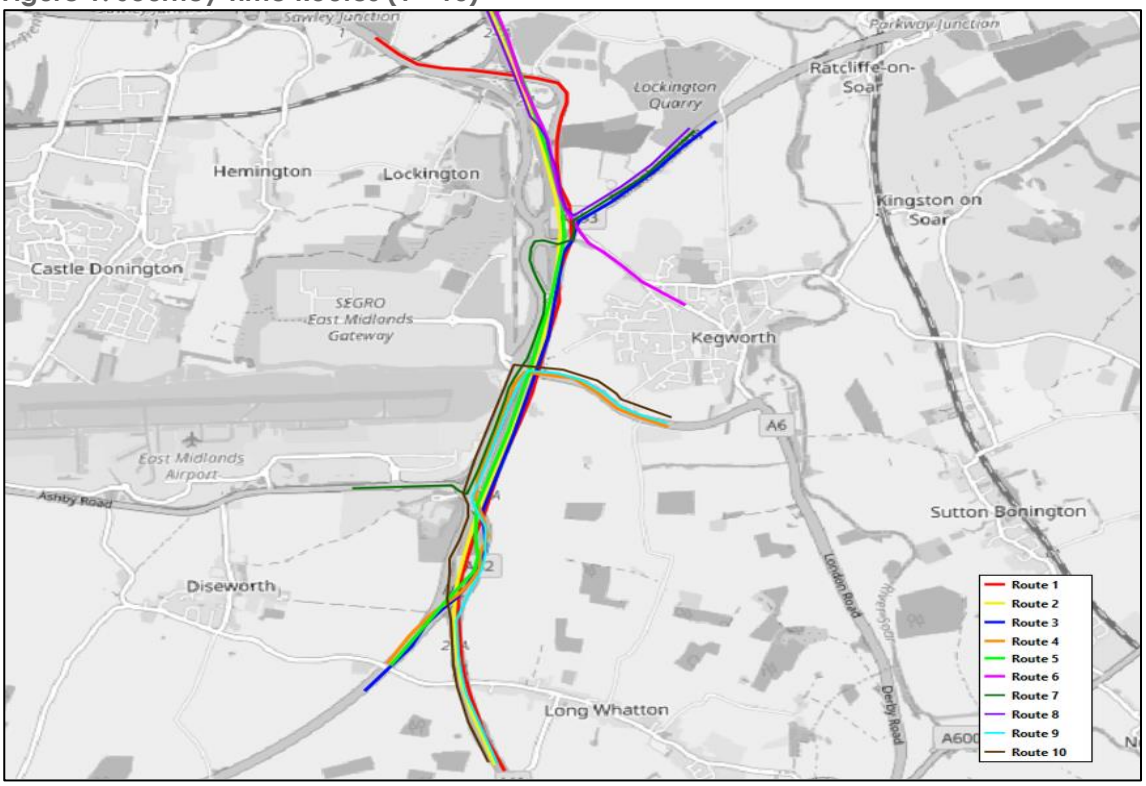
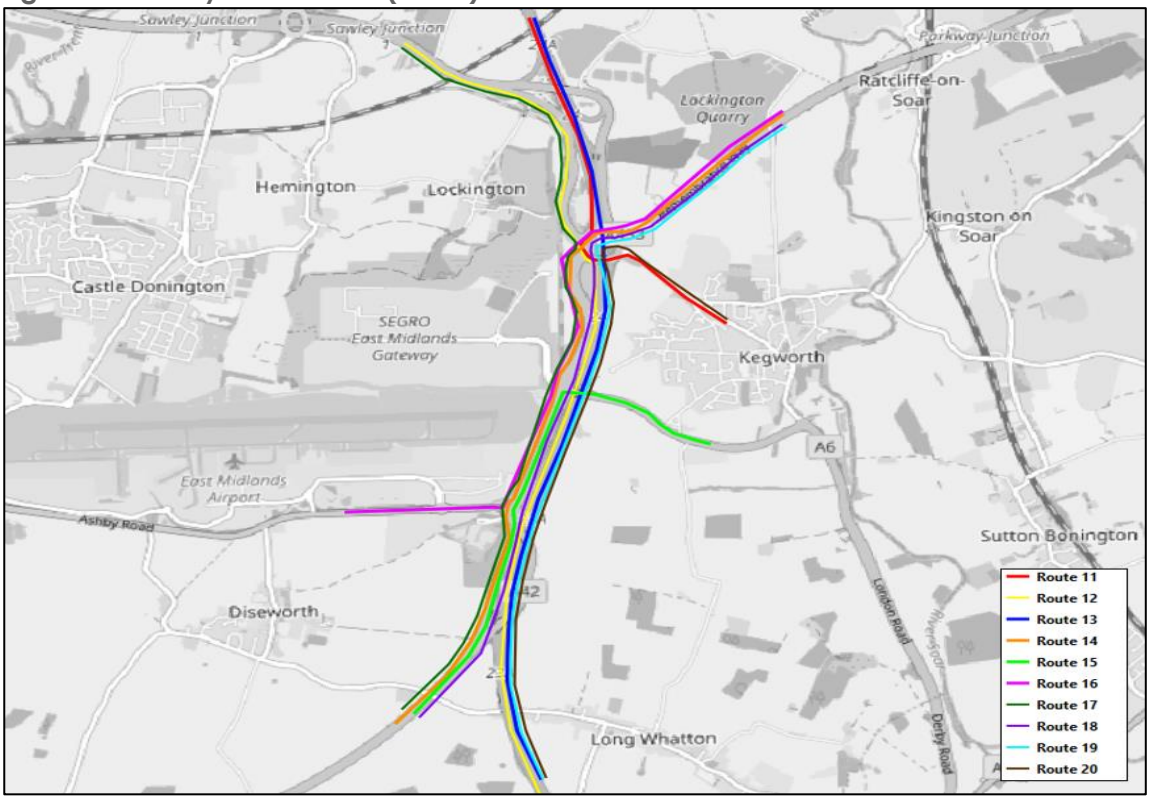


Figure 2: Journey Time Routes (10-20)



3.6 Details of the origin and destination of the routes identified above is provided below:

- Route 1 – A50 to M1 South
- Route 2 – M1 North to M1 South
- Route 3 – A453 Remembrance Way to A42
- Route 4 – Kegworth Bypass to A42
- Route 5 - M1 North to A42
- Route 6 – M1 North to Derby Road
- Route 7 – A453 Remembrance Way to A453 EMA
- Route 8 – M1 North to A453 Remembrance Way
- Route 9 – Kegworth Bypass to M1 South
- Route 10 - M1 South to Kegworth Bypass
- Route 11 – Derby Road to M1 North
- Route 12 – M1 South to A50
- Route 13 – M1 South to M1 North
- Route 14 – A42 to A453 Remembrance Way via A453
- Route 15 - A42 to Kegworth Bypass
- Route 16 – A453 EMA to A453 Remembrance Way
- Route 17 – A42 to A50 via A453
- Route 18 – A42 to A453 Remembrance Way via M1
- Route 19 – M1 South to A453 Remembrance Way via M1
- Route 20 - M1 South to Derby Road via M1

Convergence

3.7 In VISSIM, convergence is the process of repeatedly running a dynamic assignment model until the path costs, travel times, and volumes become stable and do not change significantly between runs. This is a crucial step to ensure the model's results are consistent and reliable for analysis. To achieve convergence, the model is run multiple times with a fixed random seed until the values stabilize.

3.8 For a model to be considered as converged, the following criteria must be met:

- 95% of all path traffic volumes change by less than 5% for at least four consecutive iterations; and
- 95% of travel times on all paths change by less than 20% for at least four consecutive iterations

3.9 This process has been undertaken for each scenario and the summaries are included within **Appendix 6**. Furthermore, traffic flows have been extracted from the converged models and presented in **Appendix 7**.

2023 PRTM VISSIM Results Stage 1A

Journey Time Comparison and Queue Results

3.10 **Table 1** and **2** show the journey time comparison between the "without development" and "with development" i.e. excluding mitigation scenarios for the forecast years 2028 and 2038 respectively (NB WoD = without development and WD = with development in all relevant tables).

Table 1: Stage 1A 2028 Journey Time Comparison (Seconds)

	AM				PM			
Route	2024 Base	2028 WoD	2028 WD	WD - WoD	2024 Base	2028 WoD	2028 WD	WD - WoD
Route 1	353	352	359	8	331	343	362	20
Route 2	339	347	353	6	317	320	334	13
Route 3	308	412	573	160	317	840	843	3
Route 4	306	337	371	34	293	289	318	29
Route 5	323	330	335	5	310	312	320	8
Route 6	272	286	307	22	292	259	265	6
Route 7	400	498	633	135	381	901	885	-15
Route 8	278	298	328	30	270	262	278	16
Route 9	316	349	388	39	297	295	345	50
Route 10	355	444	530	86	315	322	379	57
Route 11	349	372	374	2	341	351	381	30
Route 12	354	601	600	-1	348	375	416	41
Route 13	337	387	385	-2	349	361	384	23
Route 14	423	600	694	94	402	394	452	58
Route 15	333	417	501	84	282	282	337	55
Route 16	397	720	975	254	376	368	461	92
Route 17	354	497	585	88	337	337	404	67
Route 18	357	564	577	13	347	347	373	25
Route 19	375	585	600	15	380	388	415	28
Route 20	377	578	583	5	408	392	409	18

Table 2: Stage 1A 2038 Journey Time Comparison (Seconds)

	AM				PM			
Route	2024 Base	2038 WoD	2038 WD	WD - WoD	2024 Base	2038 WoD	2038 WD	WD - WoD
Route 1	353	405	470	65	331	355	384	29
Route 2	339	389	432	44	317	330	345	15
Route 3	308	609	753	144	317	916	925	9
Route 4	306	409	504	95	293	292	325	33
Route 5	323	363	408	45	310	317	327	9
Route 6	272	410	463	53	292	269	276	7
Route 7	400	684	804	120	381	976	969	-7
Route 8	278	420	483	62	270	272	292	20
Route 9	316	425	524	99	297	300	354	54
Route 10	355	459	505	46	315	329	382	53
Route 11	349	372	375	3	341	364	397	32
Route 12	354	718	709	-10	348	399	455	56
Route 13	337	518	515	-4	349	375	397	23
Route 14	423	730	757	27	402	403	468	65
Route 15	333	521	546	25	282	283	336	53
Route 16	397	711	963	251	376	376	469	93
Route 17	354	608	637	29	337	339	408	68
Route 18	357	1091	1039	-51	347	363	404	41
Route 19	375	817	816	-1	380	410	451	41
Route 20	377	813	805	-8	408	416	441	25

3.11 **Tables 1** and **2** show that there are significant increases in journey times between the 'without development' and 'with development' scenarios particularly at Finger Farm roundabout, A453/A6 Kegworth Bypass and M1 J24.

3.12 A review of the VISSIM simulation indicates that the M1 northbound off-slip becomes significantly congested under the forecast years without development scenarios. This issue is exacerbated in the forecast years with development scenarios, reducing the number of vehicles able to reach M1 J24 from both the M1 NB as well as via A453. This is a similar conclusion to EMFM 2019.

3.13 A summary of mean max and maximum queues is shown in **Tables 3** and **4** respectively for the 2028 without and with development scenarios.

Table 3: Stage 1A 2028 Mean Max Queue Comparison (Metres)

Mean Max Queues (m)			2028 AM				2028 PM			
	Junction	Approach	Base	WoD	WD	WD-WoD	Base	WoD	WD	WD-WoD
1	Finger Farm	A453 W	25	389	857	468	22	24	69	45
2	Finger Farm	A453 N	20	26	32	6	13	14	28	14
3	Finger Farm	M1/A42 S	40	123	253	130	19	25	26	1
11	M1 J24	M1/A50	169	258	371	113	91	143	139	-4
12	M1 J24	Remembrance Way	90	570	969	399	95	2384	2421	37
13	M1 J24	Deby Road	41	43	44	1	33	31	33	2
15	M1 J24	A453 S	39	81	88	7	68	79	128	49
16	M1 J24	Hilton Hotel Lane	23	59	71	12	15	19	19	0
17	M1 J24	M1 NB South of Slip	0	868	855	-13	0	0	0	0
20	M1 J24	M1 NB Off Slip	79	1108	1294	186	52	53	68	15
24	EMG1 Gyratory	Kegworth By-Pass	197	338	525	187	131	130	151	21
25	EMG1 Gyratory	A453 S	129	801	1100	299	101	94	126	32
26	EMG1 Gyratory	Wilders Way L-Turn	7	1	1	0	7	5	6	1
27	EMG1 Gyratory	Wilders Way Ahead	3	1	3	2	6	6	6	0
28	EMG1 Gyratory	A453 S Left turn	63	182	117	-65	37	36	35	-1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	124	292	494	202	79	91	106	15
30	EMG1 Gyratory	A453 N	113	64	73	9	36	31	36	5
31	M1 J24	M1 SB Offlip (M1)	0	13	120	107	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	10	127	117	0	0	0	0

Table 4: Stage 1A 2028 Maximum Queue Comparison (Metres)

Maximum Queues (m)			2028 AM				2028 PM			
	Junction	Approach	Base	WoD	WD	WD-WoD	Base	WoD	WD	WD-WoD
1	Finger Farm	A453 W	39	550	1104	554	30	32	153	121
2	Finger Farm	A453 N	48	34	42	8	20	17	38	21
3	Finger Farm	M1/A42 S	49	187	363	176	27	28	31	3
11	M1 J24	M1/A50	279	346	420	74	114	156	152	-4
12	M1 J24	Remembrance Way	126	722	1392	670	145	2779	2776	-3
13	M1 J24	Deby Road	55	50	53	3	39	36	41	5
15	M1 J24	A453 S	53	89	105	16	98	91	211	120
16	M1 J24	Hilton Hotel Lane	34	65	84	19	25	21	22	1
17	M1 J24	M1 NB South of Slip	0	1743	1635	-108	0	2	0	-2
20	M1 J24	M1 NB Off Slip	109	2181	2234	53	62	64	110	46
24	EMG1 Gyratory	Kegworth By-Pass	423	456	621	165	182	176	224	48
25	EMG1 Gyratory	A453 S	197	895	1224	329	118	110	167	57
26	EMG1 Gyratory	Wilders Way L-Turn	16	4	4	0	16	11	19	8
27	EMG1 Gyratory	Wilders Way Ahead	6	3	6	3	10	8	10	2
28	EMG1 Gyratory	A453 S Left turn	105	280	200	-80	47	46	45	-1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	431	588	157	146	126	163	37
30	EMG1 Gyratory	A453 N	202	80	82	2	52	42	43	1
31	M1 J24	M1 SB Offlip (M1)	0	36	232	196	0	3	1	-2
32	M1 J24	M1 SB Offlip (A50)	0	48	338	290	0	0	0	0

3.14 **Table 5** and **6** sets out the mean max and maximum queues respectively for the 2038 without and with development scenarios.

Table 5: Stage 1A 2038 Mean Max Queue Comparison (Metres)

Mean Max Queues (m)			2038 AM				2038 PM			
	Junction	Approach	Base	WoD	WD	WD-WoD	Base	WoD	WD	WD-WoD
1	Finger Farm	A453 W	25	340	956	616	22	20	47	27
2	Finger Farm	A453 N	20	33	35	2	13	15	27	12
3	Finger Farm	M1/A42 S	40	74	167	93	19	28	31	3
11	M1 J24	M1/A50	169	431	430	-1	91	193	200	7
12	M1 J24	Remembrance Way	90	1106	1553	447	95	2505	2557	52
13	M1 J24	Deby Road	41	48	51	3	33	44	46	2
15	M1 J24	A453 S	39	77	79	2	68	109	190	81
16	M1 J24	Hilton Hotel Lane	23	100	120	20	15	34	36	2
17	M1 J24	M1 NB South of Slip	0	2406	2321	-85	0	0	39	39
20	M1 J24	M1 NB Off Slip	79	608	607	-1	52	84	162	78
24	EMG1 Gyratory	Kegworth By-Pass	197	947	1587	640	131	161	198	37
25	EMG1 Gyratory	A453 S	129	967	1124	157	101	97	120	23
26	EMG1 Gyratory	Wilders Way L-Turn	7	1	2	1	7	5	8	3
27	EMG1 Gyratory	Wilders Way Ahead	3	2	2	0	6	5	7	2
28	EMG1 Gyratory	A453 S Left turn	63	202	149	-53	37	35	34	-1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	124	915	1582	667	79	120	143	23
30	EMG1 Gyratory	A453 N	113	64	69	5	36	31	41	10
31	M1 J24	M1 SB Offlip (M1)	0	851	1123	272	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	931	1349	418	0	0	0	0

Table 6: Stage 1A 2038 Maximum Queue Comparison (Metres)

Maximum Queues (m)			2038 AM				2038 PM			
	Junction	Approach	Base	WoD	WD	WD-WoD	Base	WoD	WD	WD-WoD
1	Finger Farm	A453 W	39	616	1135	519	30	24	69	45
2	Finger Farm	A453 N	48	39	48	9	20	21	34	13
3	Finger Farm	M1/A42 S	49	110	274	164	27	41	45	4
11	M1 J24	M1/A50	279	433	432	-1	114	226	232	6
12	M1 J24	Remembrance Way	126	1516	2354	838	145	2776	2779	3
13	M1 J24	Deby Road	55	60	58	-2	39	50	53	3
15	M1 J24	A453 S	53	92	90	-2	98	152	270	118
16	M1 J24	Hilton Hotel Lane	34	120	136	16	25	39	43	4
17	M1 J24	M1 NB South of Slip	0	3010	3010	0	0	0	140	140
20	M1 J24	M1 NB Off Slip	109	609	610	1	62	124	303	179
24	EMG1 Gyratory	Kegworth By-Pass	423	1138	1680	542	182	239	317	78
25	EMG1 Gyratory	A453 S	197	1104	1241	137	118	130	164	34
26	EMG1 Gyratory	Wilders Way L-Turn	16	3	7	4	16	10	11	1
27	EMG1 Gyratory	Wilders Way Ahead	6	4	6	2	10	8	9	1
28	EMG1 Gyratory	A453 S Left turn	105	262	192	-70	47	43	45	2
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	1138	1679	541	146	170	234	64
30	EMG1 Gyratory	A453 N	202	72	81	9	52	38	52	14
31	M1 J24	M1 SB Offlip (M1)	0	1140	1268	128	0	0	3	3
32	M1 J24	M1 SB Offlip (A50)	0	1143	1630	487	0	0	2	2

3.15 The results indicate that there would be large increases in queue lengths once the EMG2 development is in place without any mitigation included for in the morning peak hour and smaller increases in the evening peak hour. The increases would be situated at M1 J24 on the A453 Remembrance Way and M1/A50 approaches, Finger Farm Roundabout and at the A453/A6 Kegworth Bypass junction.

Network Performance

3.16 **Table 7** sets out the network performance comparison for all scenarios at the 2028 forecast year.

Table 7: Stage 1A 2028 Network Performance Comparison

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	2024 Base	52	48.6	18740	1401	1
	2028 WoD	118	40.5	20643	54841	36
	2028 WD	154	36.6	21217	211144	142
	WD - WoD	36	-3.9	574	156303	106
PM	2024 Base	42	51	18534	2354	1
	2028 WoD	114	41.6	20538	258841	303
	2028 WD	135	38.6	21437	297888	308
	WD - WoD	21	-3.1	899	39047	5

3.17 When comparing the results of the with development scenario against the without development scenario, the average delay increases in both peak hours, albeit more significantly in the morning peak hour with a delay increase of 36 seconds. The average speed decreases in both peak hours as a result of additional congestion.

3.18 **Table 8** sets out the network performance comparison for all scenarios at the 2038 forecast year.

Table 8: Stage 1A 2038 Network Performance Comparison

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	2024 Base	52	48.6	18740	1401	1
	2038 WoD	213	32.2	21597	312850	444
	2038 WD	259	28.8	21900	605760	539
	WD - WoD	45	-3.4	303	292910	95
PM	2024 Base	42	51	18534	2354	1
	2038 WoD	128	40.3	21810	627581	498
	2038 WD	152	37.2	22699	814752	590
	WD - WoD	24	-3.1	889	187170	92

3.19 Similarly to the 2028 assessment year results, **Table 8** shows that the average delay increases, the number of vehicles that enter the model increases, and Latent Demand increases in 2038.

3.20 In summary, the PRTM 2023 results show that the EMG2 development is having an impact on the network performance across the VISSIM network area. Therefore, the mitigation strategy derived in the TA based on the EMFM 2019 core assessment has been tested with the PRTM 2023 Stage 2A modelling results to determine if the mitigation continues to provide a significant benefit to the operation of the highway network.

2023 PRTM VISSIM Results Stage 2A

Journey Time Comparison

3.21 **Table 9** and **10** show the journey time comparison between the without development and with development + mitigation scenarios for the forecast years 2028 and 2038 respectively.

Table 9: Stage 2A 2028 Journey Time Comparison (Seconds)

	AM				PM			
Route	2024 Base	2028 WoD	2028 WD + Mit	(WD + Mit) - WoD	2024 Base	2028 WoD	2028 WD + Mit	(WD + Mit) - WoD
Route 1	353	352	352	1	331	343	342	-1
Route 2	339	347	346	-1	317	320	323	3
Route 3	308	412	379	-33	317	840	548	-292
Route 4	306	337	301	-37	293	289	280	-9
Route 5	323	330	328	-1	310	312	313	2
Route 6	272	286	311	26	292	259	274	15
Route 7	400	498	412	-86	381	901	571	-329
Route 8	278	298	325	26	270	262	276	14
Route 9	316	349	313	-36	297	295	288	-7
Route 10	355	444	322	-122	315	322	331	9
Route 11	349	372	355	-17	341	351	352	1
Route 12	354	601	323	-278	348	375	324	-51

	AM				PM			
Route 13	337	387	364	-23	349	361	377	16
Route 14	423	600	436	-164	402	394	386	-8
Route 15	333	417	294	-123	282	282	285	3
Route 16	397	720	417	-304	376	368	368	-1
Route 17	354	497	381	-116	337	337	343	7
Route 18	357	564	387	-177	347	347	349	2
Route 19	375	585	411	-174	380	388	402	14
Route 20	377	578	414	-164	408	392	422	30

Table 10: Stage 2A 2038 Journey Time Comparison (Seconds)

	AM				PM			
Route	**2024 Base**	**2038 WoD**	**2038 WD + Mit**	**(WD + Mit) - WoD**	**2024 Base**	**2038 WoD**	**2038 WD + Mit**	**(WD + Mit) - WoD**
Route 1	353	405	436	31	331	355	350	-5
Route 2	339	389	377	-12	317	330	334	4
Route 3	308	609	536	-73	317	916	621	-295
Route 4	306	409	314	-95	293	292	291	-1
Route 5	323	363	350	-13	310	317	319	2
Route 6	272	410	481	72	292	269	281	11
Route 7	400	684	573	-111	381	976	646	-330
Route 8	278	420	496	75	270	272	281	10
Route 9	316	425	331	-94	297	300	303	3
Route 10	355	459	325	-134	315	329	339	10
Route 11	349	372	377	6	341	364	361	-3
Route 12	354	718	386	-333	348	399	337	-62
Route 13	337	518	426	-93	349	375	393	19
Route 14	423	730	484	-246	402	403	395	-9
Route 15	333	521	292	-229	282	283	286	3
Route 16	397	711	472	-240	376	376	378	2
Route 17	354	608	382	-226	337	339	347	8
Route 18	357	1091	499	-592	347	363	359	-4
Route 19	375	817	522	-295	380	410	420	11
Route 20	377	813	532	-280	408	416	443	27

3.22 **Tables 9** and **10** show that there are significant reductions in journey times between scenario 2038 'without development' and 2038 'with development + mitigation', particularly at Finger Farm roundabout, A453/A6 Kegworth Bypass, and M1 Junction 24, in the morning peak hour, which is the busier of the two peak hours.

3.23 A review of the VISSIM simulation indicates that in the morning peak hour period more vehicles are able to access M1 J24 from the south as a result of moving traffic towards A50 onto the proposed link road. As a result, the M1 northbound off slip becomes significantly less congested with queues not impacting on the mainline traffic.

3.24 There are also reductions in journey times in the evening peak hour which overall show that the mitigation provides significant benefit to the SRN in the PRTM 2023 sensitivity test.

3.25 This is shown in **Tables 11** and **12,** which summarises the mean max and maximum queues for the 2028 without and with development + mitigation scenarios.

Table 11: Stage 2A 2028 Mean Max Queue Comparison (Metres)

Mean Max Queues (m)			2028 AM				2028 PM			
	Junction	Approach	Base	WoD	WD Mit	Miti - WoD	Base	WoD	WD Mit	Miti - WoD
1	Finger Farm	A453 W	25	389	27	-362	22	24	19	-5
2	Finger Farm	A453 N	20	26	36	10	13	14	23	9
3	Finger Farm	M1/A42 S	40	123	36	-87	19	25	17	-8
11	M1 J24	M1/A50	169	258	286	28	91	143	203	60
12	M1 J24	Remembrance Way	90	570	271	-299	95	2384	1320	-1064
13	M1 J24	Deby Road	41	43	52	9	33	31	37	6
15	M1 J24	A453 S	39	81	77	-4	68	79	102	23
16	M1 J24	Hilton Hotel Lane	23	59	85	26	15	19	17	-2
17	M1 J24	M1 NB South of Slip	0	868	0	-868	0	0	0	0
20	M1 J24	M1 NB Off Slip	79	1108	77	-1031	52	53	46	-7
24	EMG1 Gyratory	Kegworth By-Pass	197	338	192	-146	131	130	94	-36
25	EMG1 Gyratory	A453 S	129	801	118	-683	101	94	62	-32
26	EMG1 Gyratory	Wilders Way L-Turn	7	1	2	1	7	5	5	0
27	EMG1 Gyratory	Wilders Way Ahead	3	1	2	1	6	6	5	-1
28	EMG1 Gyratory	A453 S Left turn	63	182	74	-108	37	36	38	2
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	124	292	153	-139	79	91	73	-18
30	EMG1 Gyratory	A453 N	113	64	56	-8	36	31	34	3
31	M1 J24	M1 SB Offlip (M1)	0	13	1	-12	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	10	0	-10	0	0	0	0

Table 12: Stage 2A 2028 Maximum Queue Comparison (Metres)

Maximum Queues (m)			2028 AM				2028 PM			
	Junction	Approach	Base	WoD	WD Mit	Miti - WoD	Base	WoD	WD Mit	Miti - WoD
1	Finger Farm	A453 W	39	550	36	-514	30	32	23	-9
2	Finger Farm	A453 N	48	34	46	12	20	17	33	16
3	Finger Farm	M1/A42 S	49	187	41	-146	27	28	21	-7
11	M1 J24	M1/A50	279	346	348	2	114	156	234	78
12	M1 J24	Remembrance Way	126	722	336	-386	145	2779	2029	-750
13	M1 J24	Deby Road	55	50	59	9	39	36	43	7
15	M1 J24	A453 S	53	89	86	-3	98	91	109	18
16	M1 J24	Hilton Hotel Lane	34	65	104	39	25	21	21	0
17	M1 J24	M1 NB South of Slip	0	1743	3	-1740	0	2	1	-1
20	M1 J24	M1 NB Off Slip	109	2181	86	-2095	62	64	49	-15
24	EMG1 Gyratory	Kegworth By-Pass	423	456	315	-141	182	176	119	-57
25	EMG1 Gyratory	A453 S	197	895	163	-732	118	110	73	-37
26	EMG1 Gyratory	Wilders Way L-Turn	16	4	4	0	16	11	10	-1
27	EMG1 Gyratory	Wilders Way Ahead	6	3	7	4	10	8	9	1
28	EMG1 Gyratory	A453 S Left turn	105	280	121	-159	47	46	53	7
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	431	276	-155	146	126	92	-34
30	EMG1 Gyratory	A453 N	202	80	65	-15	52	42	40	-2
31	M1 J24	M1 SB Offlip (M1)	0	36	9	-27	0	3	0	-3
32	M1 J24	M1 SB Offlip (A50)	0	48	2	-46	0	0	0	0

3.26 **Table 13** and **14** sets out the mean max and maximum queues for the 2038 'without' and 'with development + mitigation' scenarios.

Table 13: Stage 2A 2038 Mean Max Queue Comparison (Metres)

Mean Max Queues (m)			2038 AM				2038 PM			
	Junction	Approach	Base	WoD	WD Mit	Miti - WoD	Base	WoD	WD Mit	Miti - WoD
1	Finger Farm	A453 W	25	340	38	-302	22	20	21	1
2	Finger Farm	A453 N	20	33	37	4	13	15	25	10
3	Finger Farm	M1/A42 S	40	74	38	-36	19	28	20	-8
11	M1 J24	M1/A50	169	431	432	1	91	193	223	30
12	M1 J24	Remembrance Way	90	1106	744	-362	95	2505	1599	-906
13	M1 J24	Deby Road	41	48	71	23	33	44	50	6
15	M1 J24	A453 S	39	77	94	17	68	109	116	7
16	M1 J24	Hilton Hotel Lane	23	100	211	111	15	34	33	-1
17	M1 J24	M1 NB South of Slip	0	2406	29	-2377	0	0	0	0
20	M1 J24	M1 NB Off Slip	79	608	94	-514	52	84	52	-32
24	EMG1 Gyratory	Kegworth By-Pass	197	947	344	-603	131	161	167	6
25	EMG1 Gyratory	A453 S	129	967	125	-842	101	97	67	-30
26	EMG1 Gyratory	Wilders Way L-Turn	7	1	2	1	7	5	8	3
27	EMG1 Gyratory	Wilders Way Ahead	3	2	2	0	6	5	7	2
28	EMG1 Gyratory	A453 S Left turn	63	202	61	-141	37	35	37	2
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	124	915	306	-609	79	120	138	18
30	EMG1 Gyratory	A453 N	113	64	56	-8	36	31	37	6
31	M1 J24	M1 SB Offlip (M1)	0	851	571	-280	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	931	1001	70	0	0	0	0

Table 14: Stage 2A 2038 Maximum Queue Comparison (Metres)

Maximum Queues (m)			2038 AM				2038 PM			
	Junction	Approach	Base	WoD	WD Mit	Miti - WoD	Base	WoD	WD Mit	Miti - WoD
1	Finger Farm	A453 W	39	616	65	-551	30	24	26	2
2	Finger Farm	A453 N	48	39	47	8	20	21	31	10
3	Finger Farm	M1/A42 S	49	110	48	-62	27	41	26	-15
11	M1 J24	M1/A50	279	433	435	2	114	226	247	21
12	M1 J24	Remembrance Way	126	1516	1015	-501	145	2776	2540	-236
13	M1 J24	Deby Road	55	60	95	35	39	50	56	6
15	M1 J24	A453 S	53	92	113	21	98	152	127	-25
16	M1 J24	Hilton Hotel Lane	34	120	272	152	25	39	37	-2
17	M1 J24	M1 NB South of Slip	0	3010	155	-2855	0	0	0	0
20	M1 J24	M1 NB Off Slip	109	609	104	-505	62	124	56	-68
24	EMG1 Gyratory	Kegworth By-Pass	423	1138	441	-697	182	239	217	-22
25	EMG1 Gyratory	A453 S	197	1104	169	-935	118	130	85	-45
26	EMG1 Gyratory	Wilders Way L-Turn	16	3	5	2	16	10	17	7
27	EMG1 Gyratory	Wilders Way Ahead	6	4	4	0	10	8	10	2
28	EMG1 Gyratory	A453 S Left turn	105	262	83	-179	47	43	50	7
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	1138	422	-716	146	170	194	24
30	EMG1 Gyratory	A453 N	202	72	64	-8	52	38	44	6
31	M1 J24	M1 SB Offlip (M1)	0	1140	957	-183	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	1143	1619	476	0	0	0	0

3.27 The tables above shows that the proposed mitigation provides a significant reduction in both the average and maximum queues for both 2028 and 2038. That is apart from the M1/A50 approach on the A50, which increases in the morning peak hour and is due to the proposed mitigation allowing more circulating traffic into M1 J24 which in turn allows more traffic to access the A453 Remembrance Way, resulting in more green time to the circulatory. As set out above this is more related to traffic from draft Local Plan allocations rather than the EMG2 development and further mitigation will be required to accommodate these other developments, as being considered in the EMGP project.

Network Performance

3.28 **Table 15** below sets out the network performance comparison for all scenarios during the 2028 forecast year.

Table 15: Stage 2A 2028 Network Performance Comparison

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	2024 Base	52	48.6	18740	1401	1
	WoD	118	40.5	20643	54841	36
	WD	154	36.6	21217	211144	142
	WD Mit	71	46.0	21812	2315	1
	WD Minus WoD	36	-3.9	574	156303	106
	Mit Minus WoD	-47	5.5	1169	-52526	-35
PM	2024 Base	42	51	18534	2354	1
	WoD	114	41.6	20538	258841	303
	WD	135	38.6	21437	297888	308
	WD Mit	80	45.5	21607	7653	3
	WD – WoD	21	-3.1	899	39047	5
	Mit – WoD	-34	3.9	1069	-251189	-300

3.29 When comparing the results of the 'with development' scenario including for mitigation against the 'without development' scenario, the average delay reduces significantly in the morning peak hour (47 seconds), and the average speed and vehicles arriving increases significantly (+5.5mph and 1169 vehicles respectively). The latent demand would decrease by 35 vehicles, meaning all vehicles can now enter the network.

3.30 In the evening peak hour, the average delay decreases by 34 seconds. The average speed increases by 3.9mph. The number of vehicles arriving in the network increases by 1069 vehicles, and the latent demand would decrease by 300 vehicles, which is a positive overall, in that the SRN is able to accommodate a higher number of vehicles with all traffic being able to enter the network i.e. no latent demand.

3.31 The benefit of the mitigation is also shown in the journey time tables which show a number of routes reducing in time once the mitigation scheme is introduced which re-enforces the above.

3.32 **Table 16** sets out the network performance comparison for all scenarios at the 2038 forecast year.

Table 16: Stage 2A 2038 Network Performance Comparison

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	2024 Base	52	48.6	18740	1401	1
	WoD	213	32.2	21597	312850	444
	WD	259	28.8	21900	605760	539
	WD Mit	135	38.6	23317	3503	1
	WD – WoD	45	-3.4	303	292910	95
	Mit – WoD	-78	6.4	1720	-309347	-443
PM	2024 Base	42	51	18534	2354	1
	WoD	128	40.3	21810	627581	498
	WD	152	37.2	22699	814752	590
	WD Mit	98	43.4	22930	296406	146
	WD – WoD	24	-3.1	889	187170	92
	Mit – WoD	-30	3.1	1120	-331176	-352

3.33 Similarly to the 2028 assessment, the 2038 results show that the average delay reduces considerably still in the morning peak hour (78 seconds), which results in higher average speeds, and an additional 1,720 vehicles arriving through the network area.

3.34 In the evening peak hour, there is a decrease in delay of 30 seconds, with average speeds increasing slightly by 3.1mph. Whilst this these are smaller changes, they are again showing that the junction performance overall would be much better compared to the morning peak hour, which is the key time period.

3.35 Also journey times for the 2038 'with mitigation' scenarios show a number of routes decreasing in time taken, which is a positive, and illustrates that the mitigation scheme provides a significant benefit to the SRN.

3.36 The network performance results demonstrate that under the Stage 2A scenario i.e. with the proposed mitigation, there is no latent demand in the morning peak hour, compared to over 400 vehicles not being able to enter the network in the 'without development' scenario. In the evening peak hour, some latent demand is noted on the M1 northbound approach in the 'with development, with mitigation' scenario. However, the VISSIM simulation does not indicate any significant queue blocking and latent demand remains lower compared to the 'without development' scenario. Full VISSIM outputs are also included within **Appendix 8**.

3.37 The VISSIM modelling confirms that more traffic is able to enter the network in both the morning and evening peak hours. There would be a reduction in average network delay and increases in overall network speeds. Therefore, the conclusions of the TA remain, in that the proposed mitigation provides a significant improvement to the operation of the SRN compared to the without development scenario.

Engineering Design Review

3.38 The above paragraphs respond to NH's second comment in **Appendix 4**. With regards to the response to their first, the geometric design elements of the highway works that are determined using relevant parts of CD 122 have been reviewed using the PRTM 2023 model data. In all cases the use of this model does not affect the proposed design of the highway works. Further detail is provided in **Appendix 9**.

4. PRTM 2023 VS EMFM 2019 VISSIM MODELLING COMPARISON

Introduction

4.1 This section provides a comparison of PRTM 2023 VISSIM modelling against the EMFM 2019 modelling in terms of flows and VISSIM outputs, to ensure the mitigation provides similar benefits to the SRN.

Flow Comparison

4.2 Overall, traffic flows across the highway network are generally lower in PRTM 2023 compared to the EMFM 2019 model. However, increases in flows are observed in the southbound direction from the M1, A50, and Remembrance Way. In addition, higher flows are noted from the M1 northbound/A42 towards M1 Junction 24, particularly during the morning peak period.

4.3 The comparison spreadsheet of the traffic flows is included with **Appendix 10**.

2028 Future Year Assessment

4.4 The main comparison of the different two EMFM/PRTM based VISSIM models is the journey times queues and network performance of each model. Full comparison of all outputs is included within **Appendix 11**, which are summarised in the remainder of this section.

Journey Times

4.5 **Table 17** below shows the journey time comparison for the 2028 future year assessment between the PRTM 2023 VISSIM model and EMFM 2019 VISSIM model.

Table 17: 2028 PRTM 2023 vs EMFM 2019 Journey Time Comparison (2023 Outputs minus 2019 Outputs)

	AM			PM		
Route	2028 WoD	2028 WD	2028 WD + Mit	2028 WoD	2028 WD	2028 WD + Mit
Route 1	-6	-49	-82	-6	-49	-82
Route 2	-9	-10	-19	1	4	-10
Route 3	100	256	68	-4	-4	-1
Route 4	33	36	6	402	408	226
Route 5	-8	-9	-21	1	-6	-6
Route 6	-7	-16	-155	-3	-4	-2
Route 7	102	255	63	0	-1	-27
Route 8	-4	-10	-150	403	408	225
Route 9	34	36	7	0	-2	-26
Route 10	112	148	1	1	-5	-6
Route 11	-7	-15	-1	-14	-7	-12
Route 12	-64	-86	25	-21	-24	-17
Route 13	-49	-74	3	-64	-49	-9
Route 14	111	148	4	-35	-29	-41
Route 15	108	133	2	-1	-4	-3
Route 16	252	453	6	-5	-1	-1
Route 17	120	150	8	-2	-9	-9
Route 18	-130	-192	-6	4	5	0
Route 19	-85	-102	-4	-102	-98	-16
Route 20	-92	-117	-26	-112	-107	-36

4.6 A comparison of the 2028 Without Development (WoD) morning peak hour scenario indicates increased journey times along Remembrance Way and routes via the A453 northbound towards M1 Junction 24. This is attributable to higher traffic flows in PRTM 2023 compared to EMFM 2019 along these corridors. The remaining routes demonstrate similar or improved journey times compared to EMFM 2019.

4.7 In the 2028 WoD evening peak hour scenario, most journey time routes have improved when compared to EMFM 2019, with the exception of those from Remembrance Way. The green time allocation for Remembrance Way is linked to the circulatory adjacent to M1 southbound timings. Consequently, higher circulatory flows result in increased green time for Remembrance Way. A review of circulatory traffic flows indicates that circulatory flows adjacent to M1 southbound are lower in PRTM 2023 compared to EMFM 2019. As a result, Remembrance Way receives reduced green time, resulting in longer queues compared to 2019.

4.8 Overall the 'With Mitigation' scenarios operate better in PRTM 2023 compared to EMFM 2019 with the exception of Remembrance Way which is as a result of increased flows and less green time given to the approach.

Queues

4.9 **Table 18** below shows the queue comparison for the 2028 future year assessment between the PRTM 2023 VISSIM model and EMFM 2019 VISSIM model.

Table 18: 2028 Queue Comparison (2023 Outputs minus 2019 Outputs)

Maximum Queues (m)			2028 AM			2028 PM		
	Junction	Approach	WoD	WD	WD Mit	WoD	WD	WD Mit
1	Finger Farm	A453 W	475	906	-26	-3	86	-8
2	Finger Farm	A453 N	-6	-5	1	-6	-1	-1
3	Finger Farm	M1/A42 S	103	163	-33	2	2	1
11	M1 J24	M1/A50	-54	-11	-87	11	2	-118
12	M1 J24	Remembrance Way	653	1316	278	1967	1991	1799
13	M1 J24	Deby Road	-34	-52	-23	-19	-14	-23
15	M1 J24	A453 S	-20	-30	2	-35	34	-19
16	M1 J24	Hilton Hotel Lane	-735	-953	-360	-31	-40	-11
17	M1 J24	M1 NB South of Slip	-666	-1375	2	-480	-274	1
20	M1 J24	M1 NB Off Slip	490	1144	14	-518	-477	-16
24	EMG1 Gyratory	Kegworth By-Pass	244	262	26	-66	-48	-42
25	EMG1 Gyratory	A453 S	509	616	53	20	15	3
26	EMG1 Gyratory	Wilders Way L-Turn	-6	-12	-5	-6	3	-8
27	EMG1 Gyratory	Wilders Way Ahead	-5	-6	-1	-3	-2	-3
28	EMG1 Gyratory	A453 S Left turn	143	13	22	-4	-11	2
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	260	267	-13	-36	-18	-33
30	EMG1 Gyratory	A453 N	8	-2	-9	-11	-17	-6
31	M1 J24	M1 SB Offlip (M1)	-2	3	-1151	3	1	0
32	M1 J24	M1 SB Offlip (A50)	-141	-715	-1720	0	0	-4

4.10 The table above shows that in the 2028 assessment year the PRTM 2023 outputs show an overall decrease in queues around the network, except the A453 Remembrance Way. This is again due to where is set out in the journey time section where the green time allocation for Remembrance Way is linked to the circulatory adjacent to M1 southbound timings. As the circulatory flows are lower in PRTM 2023, Remembrance Way receives reduced green time resulting in longer queues compared to EMFM 2019.

Network Performance

4.11 **Table 19** below shows the network performance comparison for the 2028 future year assessment between the PRTM 2023 VISSIM model and EMFM 2019 VISSIM model.

Table 19: 2028 Network Performance Comparison (2023 Outputs minus 2019 Outputs)

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	WoD	-3	0.5	-384	51979	32
	WD	1	0.2	-381	195301	94
	WD Mit	-22	3.0	-158	-611	-1
PM	WoD	34	-4.1	-715	198771	288
	WD	35	-3.8	-726	164030	264
	WD Mit	7	-0.9	-681	-115888	-46

4.12 A comparison of the network performance shows that PRTM 2023 achieves lower average network delays than EMFM 2019 during the morning peak. However, in the

evening peak, overall network delay is slightly higher due to the increased journey times observed on Remembrance Way, as outlined above.

2038 Future Year Assessment

Journey Times

4.13 **Table 20** below shows the journey time comparison for the 2028 future year assessment between the PRTM 2023 VISSIM model and EMFM 2019 VISSIM model.

Table 20: 2038 2023 PRTM v 2019 Based PRTM Journey Time Comparison (2023 Outputs minus 2019 Outputs)

	AM			PM		
Route	2038 WoD	2038 WD	2038 WD + Mit	2038 WoD	2038 WD	2028 WD + Mit
Route 1	-88	-123	-205	10	22	-37
Route 2	26	65	-35	4	4	7
Route 3	34	4	-8	2	-4	-135
Route 4	73	106	8	-14	-10	-11
Route 5	21	61	-47	-2	-2	0
Route 6	82	97	-94	3	2	-12
Route 7	21	0	-15	-1	-2	-140
Route 8	84	103	-88	3	4	-14
Route 9	77	108	15	-10	-5	-6
Route 10	-30	-108	3	-5	0	-1
Route 11	-31	-32	-20	-13	-13	-14
Route 12	17	-25	26	11	44	-2
Route 13	61	33	36	-15	-16	-14
Route 14	-51	-164	-100	-9	-4	-19
Route 15	51	-100	-2	-4	2	-3
Route 16	-292	72	-87	-17	-87	-54
Route 17	52	-93	-13	0	7	-8
Route 18	261	125	-68	-37	-25	-16
Route 19	20	-21	-42	-41	-30	-18
Route 20	11	-31	-73	-44	-35	-30

4.14 Journey time comparisons indicate a general increase in journey times in PRTM 2023 compared to EMFM 2019 in the 2038 Without Development (WoD) scenario. This is primarily due to increased flows on the M1/A42 northbound approach towards M1 Junction 24, as well as increased flows along the M1 southbound and Remembrance Way. However, the proposed mitigation provides a greater journey time improvement in PRTM 2023 compared to EMFM 2019.

4.15 During the evening peak period, journey times are generally lower in PRTM 2023 compared to EMFM 2019 across all modelled scenarios. This is consistent with the overall reduction in traffic flows during this period.

Queues

4.16 **Table 21** below shows the queue comparison for the 2028 future year assessment between the PRTM 2023 VISSIM model and EMFM 2019 VISSIM model.

Table 21: 2038 Queue Comparison (2023 Outputs minus 2019 Outputs)

Maximum Queues (m)			2038 AM			2038 PM		
	Junction	Approach	WoD	WD	WD Mit	WoD	WD	WD Mit
1	Finger Farm	A453 W	-395	147	10	-71	-317	-127
2	Finger Farm	A453 N	0	5	-16	-7	-7	-3
3	Finger Farm	M1/A42 S	-191	-1007	-12	9	13	-4
11	M1 J24	M1/A50	1	-1	0	66	47	-46
12	M1 J24	Remembrance Way	167	45	-50	-2	1	-143
13	M1 J24	Deby Road	-23	-46	-9	-5	-9	-27
15	M1 J24	A453 S	-719	-269	-271	44	88	-1
16	M1 J24	Hilton Hotel Lane	-1525	-1509	-841	-284	-340	-11
17	M1 J24	M1 NB South of Slip	433	2	39	-9	140	0
20	M1 J24	M1 NB Off Slip	-219	-240	-151	-145	76	-7
24	EMG1 Gyratory	Kegworth By-Pass	664	724	-21	-55	-97	-173
25	EMG1 Gyratory	A453 S	-133	-6	59	10	26	-36
26	EMG1 Gyratory	Wilders Way L-Turn	-37	-24	-8	-18	-17	-4
27	EMG1 Gyratory	Wilders Way Ahead	-8	-5	-5	-5	-4	-4
28	EMG1 Gyratory	A453 S Left turn	-166	-130	6	-3	1	-1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	700	723	20	-75	-83	-130
30	EMG1 Gyratory	A453 N	-29	-1	-16	-20	2	-9
31	M1 J24	M1 SB Offlip (M1)	942	829	-311	0	1	0
32	M1 J24	M1 SB Offlip (A50)	-565	-678	-689	0	2	0

4.17 The table above shows that in the 2038 assessment year PRTM 2023 outputs show an overall decrease in queues around the network in the mitigation scenario. However, comparisons indicate a general increase in queues in PRTM 2023 compared to EMFM 2019 in the 2038 Without Development (WoD) and WD scenarios.

4.18 This is due to increased flows on the M1/A42 northbound approach towards M1 Junction 24, as well as increased flows along the M1 southbound and Remembrance Way. However, the proposed mitigation provides a greater journey time improvement in PRTM 2023 compared to EMFM 2019.

Network Performance

4.19 **Table 22** below shows the network performance comparison for the 2028 future year assessment between the 2023 PRTM VISSIM model and 2019 PRTM VISSIM model.

Table 22: Network Performance Comparison (2023 Outputs minus 2019 Outputs)

Peak Hour	Scenario	Delay (s)	Speed (mph)	Veh Arr (Veh)	Latent Delay (s)	Latent Demand (Veh)
AM	WoD	3	-0.1	-377	204637	294
	WD	-1	0.1	-460	226907	165
	WD Mit	-42	4.0	578	-999911	-579
PM	WoD	2	0.1	-465	-121018	14
	WD	-2	0.4	-173	-752453	-316
	WD Mit	-22	2.8	-221	-684303	-354

4.20 The 'With Mitigation' network performance comparisons also indicates that PRTM 2023 shows lower average network delays compared to EMFM 2019, thereby confirming that the PRTM 2023 sensitivity test validates the positive conclusions reached in the TA based on EMFM 2019. Indeed, it shows that the EMFM 2019 assessment provides a worst-case of the two scenarios tested

5. ENVIRONMENTAL IMPACT ASSESSMENT FLOWS

5.1 It has been agreed with the TWG that the PRTM 2023 modelling forms a sensitivity test to the core EMFM 2019 modelling, focusing on the capacity of SRN across the VISSIM network area during the morning and evening peak hours.

5.2 A Transport Environmental Chapter (ES) was included in the EIA submitted with the DCO, which is based on the EMFM 2019 core modelling outputs. The ES Chapter assessed the changes in Average Annual Daily Traffic (AADT) flows between the without development and with development, with mitigation scenarios, and assessed whether this could lead to any unacceptable environmental effects. The conclusion was that, with the proposed highway mitigation and improvements to active travel infrastructure, there would be no unacceptable environmental effects from the EMG2 development.

5.3 PRTM 2023 (and EMFM 2019) are peak hour assignment models and therefore applies generic factors to the peak hour link flows to forecast AADT link flows. Therefore, where there are increases or decreases in peak hour link flows between PRTM 2023 and EMFM 2019, this would also be the same for AADT link flows.

5.4 **Table 23** and **24** compare the differences in base flows (2019 vs 2023) across key locations on the SRN and local road network respectively.

Table 23: Change in Base Flows on the SRN

Ref	Link Description	A Node	B Node	A-B	AM + PM		Diff
					2019 PRTM Base	2023 PRTM Base	
EB	A453 The Green - Airport Signals	50301	50485	50301-50485	924	814	-110
WB	A453 Airport Signals - The Green	50485	50301	50485-50301	757	674	-83
EB	A453 Airport Signals - Site Access Roundabout	74137	50386	74137-50386	1118	1396	278
WB	A453 Site Access Roudabout - Airport Signals	50386	74137	50386-74137	1012	1192	180
EB	A453 Site Access Roundabout - Finger Farm	88740	88733	88740-88733	1678	1762	84
WB	A453 Finger Farm - Site Access Roundabout	88733	88740	88733-88740	1705	1641	-64
NB	A453 Finger Farm - EMG1 Access	88729	76089	88729-76089	3579	2630	-949
SB	A453 EMG1 Access - Finger Farm	76089	88729	76089-88729	1298	1547	249
NB	A453 EMG1 Access - M1 J24	76091	76107	76091-76107	4074	3122	-952
SB	A453 M1 J24 - EMG1 Access	76107	76091	76107-76091	1015	1511	496
NB	A50 M1 J24 - M1 J24A	50478	7253	50478-7253	6019	5554	-465
WB	A50 M1 J24A - A50 J1	59983	50568	59983-50568	6825	6971	146
EB	A50 J1 - A50 M1 J24A	59981	50557	59981-50557	5975	6750	775

Table 24: Change in Base Flows on the Local Road Network

Link Description	AM + PM Base Flows		Difference
	2019 PRTM	2023 PRTM	
Kegworth via A453/A6 Kegworth Bypass	2746	1747	-999
Kegworth via M1 Junction 24	2332	2392	60
Disworth (Grimes Gate + The Green)	995	635	-360
Castle Donington via un-named Road	2274	1743	-531
Isley Walton (A453)	2496	1999	-497

5.5 The details in **Table 23** show that base traffic flows on the SRN both increase and decrease at various locations between EMFM 2019 and PRTM 2023. However, from an EIA perspective, these are non-sensitive routes designed predominantly to accommodate vehicular traffic and are therefore not sensitive to environmental effects, such as severance for example. It has also been confirmed using both outputs from EMFM 2019 and PRTM 2023 that the proposed mitigation would bring significant benefits to the SRN.

5.6 In terms of the local road network serving villages surrounding EMG2, **Table 24** confirms there is a significant reduction in base traffic flows between EMFM 2019 and PRTM 2023. The TA contains junction modelling of key junctions leading to these villages confirming that there would be no capacity issues or significant impacts from the EMG2 development. Therefore, given base flows have significantly reduced, this position remains unchanged in PRTM 2023.

5.7 As a result, the findings from the PRTM 2023 sensitivity test do not affect any of the conclusions of the detailed Transport Environmental Chapter produced to inform the DCO, based on the core EMFM 2019 assessment.

6. IMPACTS OF ADDITIONAL MEZZANINE FLOORSPACE

6.1 The PRTM 2023 sensitivity test retained the same development traffic generation forecasts as the core EMFM 2019 modelling in the TA. The traffic generation was calculated based on a total development of 430,000sqm GFA, comprising 330,000sqm of ground floorspace and 100,000sqm of B8 mezzanine floorspace.

6.2 The total quantum of development being applied for in the DCO is 530,000sqm, inclusive of 200,000sqm of B8 mezzanine floorspace, hence 100,000sqm more than above. Requirement 27 of the DCO has been agreed with NH to limit the use of the 200,000sqm mezzanine floorspace for storage purposes only to ensure that the distribution capacity and vehicle trip generation is not exceeded above that presented in the TA.

6.3 Notwithstanding this, LCC HDM requested an assessment of the residual impacts on the local highway network post confirmation of the proposed mitigation scheme and strategic transport modelling. LCC HDM confirmed that this should consider the potential additional impacts of the 100,000sqm mezzanine floorspace, should the agreed trip rates be applied to it, for completeness.

6.4 Technical Note (reference EMG2-BWB-GEN-XX-RP-TR-0022 Revision P1) included at **Appendix 12** provides the full assessment and demonstrates how there would be a negligible increase in traffic along the local road network that would not affect any of the previous modelling and hence conclusions of the TA.

7. HIGHWAY WORKS LIGHTING ASSESSMENT

7.1 The proposed highway mitigation includes a scheme of lighting that would either be retained or improved as necessary to suit the revised road layout. This was originally derived using output from PRTM 2019. BWB produced a Technical Note (reference EMG2-BWB-GEN-XX-RP-CH-0024 Revision P01) to review if any of the lighting assessment would change when assessed using the PRTM 2023 data.

7.2 A copy of the Technical Note is included at **Appendix 13** and confirms that there would be no changes to the previously provided lighting assessment found at Document DCO 6.11E.

8. SUMMARY & CONCLUSIONS

8.1 BWB Consulting Ltd (BWB) has been appointed by Segro Properties Ltd and Segro (EMG) Ltd (together the Applicant or Segro) (the Applicant) to provide highways and transportation advice in support of a second phase of its East Midlands Gateway Logistics Park (EMG1), which is a Strategic Rail Freight Interchange located to the north of East Midlands Airport

8.2 This Technical Note has presented details of the PRTM 2023 sensitivity test modelling. The key conclusions are as follows:

- The PRTM 2023 base model validates to an acceptable level in line with TAG Guidelines. The forecast year modelling has been carried out in line with a

methodology agreed with the Transport Working Group (TWG), including National Highways (NH) and Leicestershire County Council (LCC) Highway Development Management (HDM).

- AECOM issued a PRTM 2023 forecasting report presenting the results of the modelling. NH has undertaken an audit of the forecasting report and concluded that the modelling and results are acceptable subject to additional VISSIM modelling and consideration of the traffic flows within the engineering design work.

- BWB has undertaken the detailed VISSIM modelling using the previously agreed model and in line with previously agreed methodologies. The results continue to show that the proposed mitigation would bring significant benefits to the Strategic Road Network (SRN in the vicinity of M1 Junction 24, allowing larger amount of traffic to use the SRN, whilst improving capacity and safety). The results show an overall improvement compared to the core EMFM 2019 modelling in the Transport Assessment.

- The geometric design of the proposed highway mitigation would remain unchanged against the requirements of DMRB standards when compared to the core EMFM 2019 modelling.

- An assessment has been undertaken of the Annual Average Daily Traffic (AADT) flows to understand whether there could be any changes to the work in the Environmental Impact Assessment. The data shows that, for the majority, traffic flows in PRTM 2023 are lower than EMFM 2019. Therefore, it can be concluded that the core EIA using outputs from EMFM 2019 is robust and no updates are required.

- Whilst Regulation 27 of the DCO will control the use of the proposed mezzanine floorspace, to ensure it has no effects on traffic generation, at the request of LCC HDM, a manual assessment of the additional 100,000sqm mezzanine has been undertaken. Traffic levels have been calculated using the agreed trip rates and distributed in accordance with the pattern in PRTM 2023. This shows that, if Requirement 27 is set aside and the mezzanine floorspace treated the same as the remainder of the floorspace in terms of traffic generation, impacts on the local road network would be minimal.

8.3 To conclude, the PRTM 2023 sensitivity test modelling confirms that the proposed mitigation will provide significant benefits to the SRN. This will allow for greater levels of capacity and more traffic to use the SRN, whilst reducing queues and delays at key nodes, that will have both a benefit on journeys times and safety. As a result, together with the details in the TA for the core scenario, this demonstrates how the impacts of EMG2 can be mitigated so that the development can be accommodated, whilst ensuring overall improvements to the operation of the surrounding highway network.

APPENDICES

APPENDIX 1: Leicestershire County Council Email 11 September 2025

Matt Corner

From: [redacted]
Sent: 11 September 2025 09:20
To: [redacted]

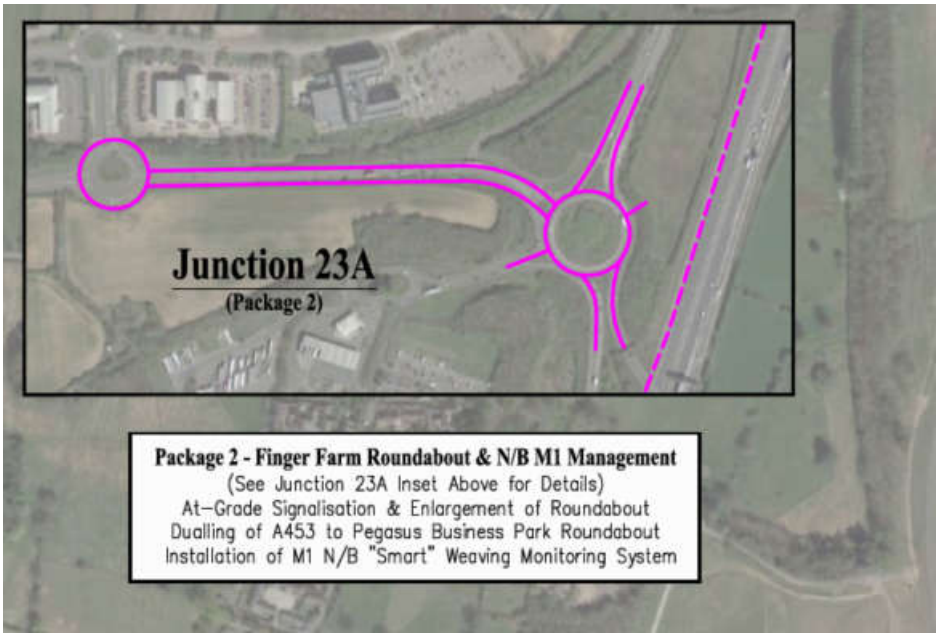
[redacted] EMG2 - modelling meeting follow up (2023 PRTM)

This email originated from outside of our organisation. Please exercise caution with content, links and attachments.

Morning Paul,

Many thanks for this it is very good news and appreciated. In the (hopefully) interests of clarity and brevity we would make the following bullet point observations. We agree to the modelling approach post agreement and action of these principles:

- The number of trips tested be updated to reflect the 530k land use pursued. Your intention is to use this as a sensitivity test to confirm acceptability of a strategic intervention, the disparity of circa 200trips across a peak hour on a network that is already heavily congested will be miniscule. However, adopting the approach requested by stakeholders will remove a key project risk to your client whereby you have not currently assessed the full quantum of development sought in transport terms. I would urge you / Segro to consider this risk carefully. Your presented outcomes wont change whether it is assessed or not however it removes an obstacle at examination.
- We understand the access infrastructure tested in the reference scenarios will be that as now proposed including wider flares and Toucan.
- The 'Pink package' allows for dualling and further works at Finger Farm. This is to be tested as part of the Growth Point work. Please confirm the mechanism for delivery and land safeguarding (if required) to deliver this scheme. Dualling was previously to be tested for EMG2 therefore wanted to ask prior to commissioning of this modelling work to ensure a mechanism is accounted for:



Kind regards,

[redacted]

[redacted]
Team Manager - Highway Development Management
Environment and Transport
Leicestershire County Council

Tel: 0116 305 4562
Email: [redacted]

[redacted]

Morning [redacted]

We refer to the recent discussions with regards to 2023 PRTM.

Without prejudice to my Clients position that the scheme has been properly assessed, and mitigation identified, using the appropriate model, together with us being in the throes of finalising our work based on the 2019 version of PRTM, further to the modelling meeting, and your follow up email below, which we thank you for, we accept the proposal to use the 2023 version of PRTM, but only on the basis that it will form a sensitivity test to the work undertaken using the 2019 version, limiting the additional work and expense involved.

This is to allow any sensitivity test modelling to be completed and reported on by the end of 2025 and ahead of the DCO Examination expected in January 2026. Hence the attached proforma strikes the right balance, in our opinion, to move this matter forward, building on the very useful discussion on Thursday (note the contents of Section 2 in particular).

With regards to the other ancillary PRTM related matters:

i) Project Specific Study Area Model Validation Report – this should be taken as agreed seeing as this was recently agreed for the East Midlands Growth Point (EMGP) work

ii) Local Planning Data Assumptions and Network Scheme Uncertainty Log – ditto; we'd simply include for the data set out to 2038 versus 2041 considered for EMGP.

We look forward to discussing the above and attached at tomorrow's TWG (agenda to follow, under separate cover) to discuss this in detail, with a view to promptly agreeing its contents, and obtaining a quote from AECOM to proceed, Thanks

Kind regards

Paul Wilson BA(Hons) MCIHT MSoRSA CMILT MInstILM
Director | Head of Transport & Accessibility Planning | BWB Consulting Limited

5th Floor, Waterfront House, Station Street, Nottingham, NG2 3DQ
M: [redacted] | **W:** bwbconsulting.com

[redacted]

Thank you for the very useful discussion this morning. To factor into your deliberations with Ian and the client team perhaps a pragmatic compromise with regard to the PRTM23 (EMFM2) work might be to use this work to

consider impacts at a strategic scale as the best available tool and information piece however the requirement on you only being to utilise the flow outputs in the J24 VISSIM model.

The other point to bear in mind with this approach is the PRTM23 work may resolve the A50 link issue that is currently under review.

This way the concerns you will probably have over abortive work and redoing a lot of the associated workstreams that currently rely upon PRTM2019 flows can be mostly mitigated and workload reduced.

I make this suggestion without prejudice and with the acknowledgement it would be for wider stakeholder consideration and agreement however hope it sets a reasonable compromise given the timescales and workload pressures working to.

Kind regards,

[redacted]

[redacted]
Team Manager - Highway Development Management
Environment and Transport
Leicestershire County Council

Tel: [redacted]

[redacted]

Where: Microsoft Teams Meeting; Brunel (Waterfront House, Nottingham, NG2 3DQ)

Microsoft Teams Need help?

Join the meeting now

Meeting ID: [redacted]

Passcode: [redacted]

For organizers: Meeting options

APPENDIX 2: Meeting Minutes

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING;

Agenda item		Action
1	**Review of November's meeting minutes** a. PW shared November's actions on-screen and provided the following updates: i. AW not in attendance to update on PRoW and TRO work. HH confirmed this action is with AW. ii. IR said the A453 dualling is being considered but the mechanism still needs to be agreed. iii. Mezzanine matters are covered as an agenda item. iv. PRTM 2019 core modelling is covered as an agenda item. v. Comments on flow demands from NH have been addressed. vi. Departures from standard, RSA1, COBALT and Statements of Common Ground are covered as an agenda items. b. PW asked if there were any comments on the November meeting minutes. No comments were received hence these are agreed.	**AW** **IR**

2	**Client update** a. IR said that we are in the relevant representations period which ends on 9th January 2026. Following that we expect the Examination to start in late March 2026 lasting for approximately 6 months. The Planning Inspectorate then has 3 months to come up with a recommendation following which the Secretary of State has a further 3 months to make a decision. Hence a decision is likely to be made in March 2027. b. SHi asked if people are aware how to register as an interested party. FA confirmed NH have received an email about it. AA also confirmed she has received an email.	
3	**Highway design matters** a. SHi said from a NH departures point of view, all but one are about ready to be submitted. BWB are waiting on feedback from JB and GN to feed into the submission. b. JB said he has reviewed it and made some small tweaks, but the email assumes the modelling has been signed off, which remains outstanding. Therefore, the interpretation is that PRTM 2019 modelling will be signed off, which should be the case soon. c. GN agreed and said that revised PRTM 2019 flows were issued Monday morning, so work is still underway to review the information. d. SHi asked who the departures should be submitted to? JB asked whether BWB normally send departures to Spatial Planners or SES. SHi said they need to be sent to the Project Manager and asked whether this is therefore Adrian Chadha? JB confirmed that Adrian will be getting involved and taking the lead from a NH perspective and therefore to send the departure submission to him.	**BWB**
4	**Stage 1 Road Safety Audit** a. SHi said that BWB's RSA team have carried out the site visit and have been in contact with NH and LCountyC with updates. b. HH said that AW responded to BWB and was happy to not attend the site visit. c. SHi said that from a DCO perspective, if there are any audit issues that are geometric related then they can be resolved now, but if issues are raised with signage or signaling then this can be covered as part of the detailed design. d. SHi asked if formal approval has been received on the WCHAR Assessment? JB and FA said that this has been completed and agreed.	

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING; THURSDAY 11 SEPTEMBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of August's meeting minutes** a. PW shared August's actions on-screen and provided the following updates: i. PRTM 2019 vs 2023 comparison was shared by AECOM and discussed at the modelling meeting ii. DCO wording in relation to the use of mezzanines remains on-going. JB confirmed he spoke to IR and has suggested alternative wording. AW said he will liaise with HH on this matter and provide an update from LCountyC. iii. The TA appendices and plans were updated to remove reference to a secondary access before the DCO submission. iv. Construction related matters have been discussed with LCountyC and additional information was included in the CTMP about additional assessment work. TBo said he has reviewed the construction traffic note and NCountyC have no issues. PW asked if this can be confirmed in writing. v. PW referred to an email from AA regarding the Ashton Green development and uncertainty log. AD asked if the signalised junctions on Ashton Green Road should be included in the	**AW** **NCountyC** **BWB**

	uncertainty log. PW said there are three access junctions on Ashton Green Road being signalised and can share the drawings with AECOM. vi. STS and FTP documents have been updated and re-shared following the discussions held at last months meeting. vii. HGV route plan sign off sheet remains outstanding with NH. JB said this can be formally signed. viii. COBALT assessment note has been updated and shared. FA confirmed this is now agreed. ix. Stage 1A and 1B forecasting report sign off sheets remain outstanding. MC said that GN verbally confirmed at last months meeting that these are acceptable. b. PW asked if there were any comments on the August meeting minutes. No comments were received hence these are agreed.	
2	**Client update** a. IR provided the following updates: i. The DCO/MCO applications have been submitted. The date of acceptance is 25th September 2025 and after that there will be a period of review before Examination expected in January 2026. ii. During the modelling meeting last week, discussions were held about PRTM 2023. IR asked if everyone could stick to a programme so that the work can be completed by mid December 2025 and ahead of Examination.	
3	**PRTM 2019 modelling** a. PW said that BWB are bottoming out all modelling work using PRTM 2019 as the core model. b. PW reminded everyone that detailed responses have been received from NH on the Stage 2A and 2B modelling work. BWB are reviewing the comments before undertaking further modelling to address the outstanding queries. c. PW asked TBo if NCountyC have any comments? TBo said NCountyC are happy to defer to NH on this matter but can respond to specific details where needed. d. PW asked AW when LCountyC can provide comments. It is understood that HH has an email ready to be sent. AW said he will pick this up with HH. e. PW said updated demand flows and the furnessing note were sent on 3 September 2025 addressing comments from NH. A quote has been received from AECOM covering the final modelling work, which will generate final demand flows to inform the modelling and highway mitigation.	**LCountyC**

	f. SHi asked whether JB is happy with the PRTM 2019 modelling update. The demand flows from this modelling will be used to inform the geometric design of the highway mitigation and any departures. This modeling will resolve the issue with delays at the downstream A50 merge. JB said this is in line with what has been discussed and agreed previously but will talk offline and get NH SES lined up to review the departures. g. PW reminded everyone that this additional modelling stems from comments received from NH. A test has already been run that models two lanes on the link road and unconstrained capacity at the A50 merge. This showed that demand along the link road would not significantly increase. We now want to tweak this and model one lane on the link road with unconstrained capacity at the A50 merge to obtain accurate demand flows to inform the highway design work and departure process. h. PW suggested that the same approach will be undertaken for the EMGP work for consistency but he will call GN beforehand to ensure he is happy with this approach. JB suggested we should be consistent in the approaches. i. PW confirmed the Broad Rushes/Station Road Junctions 11 model will be sent to the TWG which includes the amendment to address LCountyC comments. j. PW asked if NCountyC have any comments on the modelling and the two junctions on the A453 Remembrance Way? TBo had no comments on the modelling of these two junctions. k. PW asked if there were any other questions on the PRTM 2019 work? No comments received.	**BWB** **BWB**
4	**Highway design** a. SHi thanked AW for LCountyC's comments on the highway design work on the local highway network and suggested that should the upcoming modelling work and RSA's not raise any material issues, then it appears we are heading in the right direction. b. AW said that is correct and that LCountyC still need to respond on the PRoW and Traffic Regulation Order work but does not anticipate many comments. c. SHi said that the departures process will be undertaken using the PRTM 2019 outputs and the demand flows from the upcoming modelling. The RSA process can be undertaken in parallel with the departure process as it is likely NH SES will find it helpful to have the RSA information as part of their review. JB confirmed this is logical. d. SHi said BWB will share DCO documents with the TWG. MC confirmed the TA and Transport ES Chapter are available on the EMG2 SharePoint page.	**LCountyC**

	e. SHi said that there are no changes on the design proposals on the SRN but there are a few updates on some of the technical documents responding to feedback from NH. An overall review of safety of the options for bridging over or beneath the A453 have been requested in the structures report. f. SHi said BWB will formally revisit the options report once the departures have been processed. g. FA asked if a copy of the TA can be sent ahead of 25 September 2025. MC said it is available on the EMG2 SharePoint page. FA said it will be helpful to have a list of what information has been updated since the non-stat consultation. MC said this can be provided.	**BWB**
5	**WCHAR** a. SHi asked if the WCHAR Assessment report is now agreed with NH? b. FA said these should now be acceptable and asked if a sign off sheet can be sent. MC said this will be circulated. c. SHi said that the WCHAR Review report was shared a while ago and understood that NH were unable to approve this until the WCHAR Assessment report had been agreed. Therefore, two sign off sheets can now be sent covering both documents.	**BWB**
6	**VISSIM modelling** a. PW thanked AW for the comments on behalf of LCountyC and that these will be considered.	**BWB**
7	**Sustainable transport** a. PW said that revised STS and FTP documents were shared with the TWG. These were updated to address the comments raised at last months TWG meeting. b. MC said the covering email provides a table explaining what information has been updated, which may be helpful for the TWG.	
8	**COBALT Assessment** a. MC said the revised COBALT assessment has been shared taking into account NH comments. A sign off sheet for the methodology note has been sent but another sheet can be sent covering the assessment note. b. PW asked if NCountyC and LCountyC are happy to defer to NH on this element. TBo and AW confirmed they are happy to leave this with NH.	**BWB**

9	**Sign off sheets** a. MC said he will circulate a table highlighting which documents have been formally signed and agreed and those that remain outstanding, attaching associated sign off sheets.	**BWB**
10	**PRTM 2023** a. PW referred to an email from HH and asked AW if these are LCountyC's comments on the PRTM 2023 proforma and modelling approach. AW said he is yet to read the email. b. PW said that the LMVR and uncertainty log details/planning data assumptions should already be agreed given this work was recently completed for EMGP. c. AD agreed and said that there would be slightly different flows in the base model if this was re-visited but these would be small changes and not alter the conclusions of the LMVR. d. PW asked if everyone is happy to move forward on this basis. TBo and JB confirmed NCountyC are happy. AW said he will liaise with HH and refer back. e. PW said that detailed discussions were held recently about the uncertainty log and planning data assumptions for EMGP. This work is testing a forecast year of 2041 so we can use this information and disregard any data between 2039-2041. TBo, ACH and FA said this is logical. f. PW said he will send the uncertainty log and LMVR information and set out the next steps. g. PW shared the PRTM proforma on-screen and confirmed that this deals with the comments received at the modelling meeting last week. This sensitivity test will consider both 2028/38 forecast years in both AM/PM peaks for the 'A' scenarios only. The with development scenario will include the flare and Toucan crossing to address comments made by LCountyC. The signal timings will mirror those adopted in the previous work where applicable/logical. AD said this is sensible but AECOM will check that the different model does not throw up any issues. h. PW said the A50 merge will be modelled as a single lane with unconstrained capacity as a like for like test with PRTM 2019. i. PW said that this work needs to be completed by the end of 2025 ahead of Examination. j. PW shared an email from HH which he viewed as LCountyC's comments on the proforma. They are of the view that the trip generation should be increased to reflect 530,000sqm floorspace. BWB disagreed with this approach given the evidence included in the TA regarding surveyed trip rates, the Travel Plan targets and the wording for the use of the mezzanines,	**AW** **BWB**

	which will be conditioned as part of the DCO. By retaining the same trip generation we will ensure a like for like sensitivity test. k. IR agreed we should go like for like on trip generation. The wording for the use of mezzanine is close to being agreed. It may be useful for LCountyC to review the evidence provided which may address their concerns in this regard. l. PW said that a drawing has been produced showing a potential scheme of dualling on the A453 at the site frontage. IR said that land has also been safeguarded to deliver the dualling. m. JB asked if the scheme of dualling is included in the Isley Woodhouse TA? IR said the Isley Woodhouse TA commits to establishing mitigation through the EMGP work. n. JB asked who will deliver the work? IR said that this will be determined as part of the EMGP work. PW said that 'dualling of the A453 is referenced in the Isley Woodhouse TA but without the detail showing a scheme. PW said he will respond to HH to give comfort that dualling the A453 is possible and has been considered should it be required. o. PW asked if there are any comments on the PRTM 2023 proforma? PB suggested that sensitivity tests are normally compared against the main assessment, so will this be the case or are BWB viewing this as a separate report that does not refer back to previous work. p. PW said that BWB will be taking the outputs and running them through VISSIM which will give a comparison vs the original modelling work. q. AD said AECOM are not able to produce difference plots between PRTM 2019 and PRTM 2023. Therefore, the best way would be to compare conclusions in the forecasting reports. AECOM can compare the conclusions and set these out in their report or write them at face value for others to interpret. r. VD and MC suggested that AECOM write the conclusions at face value for BWB and the TWG to review and consider. This can be supplemented with VISSIM modelling. s. PW said at the modelling meeting it was agreed that PRTM 2023 would be used rather than EMFM2. There would however be no major difference in the two models. This mirrors the approach being adopted for the EMGP work.	**BWB**
11	**Next steps** a. PW said he will respond to HH email and attached the LMVR and uncertainty log information. This should allow AECOM to provide a quote and start the modelling based on what is an agreed proforma. b. PW asked if there was AOB. No comments were received.	**BWB**

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING; THURSDAY 9 OCTOBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of September's meeting minutes** a. PW shared September's actions on-screen and provided the following updates: i. Mezzanine legal wording remains outstanding and to be discussed in this meeting. ii. BWB are waiting for confirmation from NCountyC on the CTMP and Construction Traffic Calculations Technical Note. iii. Drawings were issued to AECOM regarding Ashton Green Road in Leicester. iv. We are close to finalising the PRTM 2019 work and said that whilst LCountyC suggested further comments could be forthcoming, we have in effect now run out of time to consider anything further, noting previous comments largely related to PRTM 2023 v. Conversations were held with GN about the methodology for sensitivity test modelling. GN confirmed he is happy with the approach adopted.	**NCountyC**

	vi. The updated Broad Rushes/Station Road Junctions 11 model was sent. vii. Comments from LCountyC on PRoW and TRO work remain outstanding. AW thought LCountyC have responded but will check. viii. Final TA and ES Chapter were sent. Minor changes are forthcoming to address comments from PINS and reports can be re-shared. ix. Sign off sheets will be covered in the meeting. x. VISSIM model comments received from LCountyC are being considered and will be included in the next pack of information. xi. LCountyC have confirmed the base model validation work for PRTM 2023 does not need revisiting. xii. BWB issued the EMGP LMVR on 12/09/25. xiii. A453 dualling scheme was issued by IR. HH asked for clarification whether the dualling is included in the DCO. If not, there could be an issue about how the land is secured should it be needed for EMGP. IR said this will be agreed as part of the EMGP agreement, so it will available if required. HH suggested there is a risk of the land is not publicly available and remains privately owned. PW said this can be taken away and considered. b. PW asked if there were any comments on the September meeting minutes. No comments were received hence these are agreed.	**LCountyC** **BWB** **IR/BWB**
2	**Client update** a. IR provided the following updates: i. The DCO was withdrawn and will be re-submitted shortly. The technical team have been updating and checks are ongoing to ensure the changes are consistent throughout all reports, which will be detailed in a log. ii. PINS comments were not fundamental and more points of clarification. b. JB asked if PINS will request the full 28 days to review and validated the DCO. IR said they will most likely require another 28 days. c. Tied to an action raised at the last modelling meeting, PW said that whilst the EMGP work is separate, there are links to EMG2 and so if the work is complete and available it could form part of the EMG2 DCO but if not then EMG2 mitigation is entirely separate and does not rely on the EMGP work.	
3	**PRTM 2019 modelling** a. PW confirmed BWB has received the PRTM forecasting report from AECOM covering the A50 unconstrained merge sensitivity test. b. PW said that addressing NH comments and the additional reporting requested by LCountyC are the two remaining actions for the PRTM 2019 work.	

	c. PW said that the latest modelling is showing the mitigation working slightly better compared to what is presented in the TA. VD BWB will finalise the reporting before sharing information, hopefully next week. This should respond to all the comments received from NH and LCountyC and builds on separate discussions held with Lee Templeman at Jacobs.	**BWB**
	d. GN asked for timescales for the strategic modelling reporting for the unconstrained modelling scenario? PW confirmed this has been received and is to be discussed at the meeting.	
	e. PW shared AECOMs PRTM Forecasting Report on-screen and gave the following summary: i. Section 4 covers the sensitivity test with unconstrained A50 merge ii. Para 4.3.3 summarises the flow differences and there is an increase of 300-400 PCUs on the A50 westbound merge point. This results in reductions on the M1 towards M1 J25. iii. Section 4.5 covers V/C ratios, and the conclusions are that there are no significant changes to the core modelling.	
	f. PW said the PRTM Forecasting Report conclusions are as expected and that BWB will share a copy of the forecasting report. This will be considered in the upcoming modelling work.	**BWB**
	g. JB asked about the 400 PCU increase on the link road and what the total flows are from the model. PW said NH original concerns were that 2028 had 1,800 PCUs which reduced to 1,400 PCUs in 2038. The sensitivity test shows the additional 400 PCUs takes the flow back to 1,800 PCUs in 2038.	
	h. PW asked if AD had anything else to add. AD confirmed no further comments and PW summary is correct. The A50 merge is a pinch point and increasing capacity to a worst-case assigns more traffic along this route and other locations see a reduction in stress.	
	i. PW asked if any further information is required from AECOM before being shared with TWG i.e. spreadsheets. AD said spreadsheets have already been sent so BWB should have everything.	
	j. GN asked for a timeframe for sharing the updated PRTM Forecasting Report and spreadsheets from AECOM. PW said this will be shared today.	**BWB**
	k. PW said that all comments on furnessing have been taken on board, particularly NH methodology for Stage 2 furnessing, as well as AW comments. This should now be acceptable to all.	
	l. GN asked what demand flows have been used for VISSIM Stage 2 test. VD confirmed BWB have used the original demand set, the sensitivity work is a separate test for the TA. GN asked if BWB would like to share the spreadsheets showing the furnessed flows for the sensitivity test before they are modelled and reported on. VD confirmed he would share the spreadsheets.	**BWB**

	m. HH asked when the PRTM 2023 work will be available as it links with the PRTM 2019 sensitivity work particularly from a revised link flow at the A50 merge so it will be useful to check demand flows between the two models. n. PW said the programme will be shared shortly which covers the PRTM 2023 work. o. GN asked for timescales receiving updated VISSIM models, spreadsheets and forecasting report, including journey times graphs, convergence sheets etc. VD said all models and reporting should be available early next week.	 **BWB** **BWB**
4	**Highway Design** a. PW confirmed SHi is awaiting the outcome of the sensitivity test before completing the design work. This provides a worst-case in terms of geometric design work because flows along the A50 link road are greatest.	
5	**Programme** a. PW shared an updated programme on screen and said this will be shared with the TWG. i. DCO modelling completion is planned for 14/10/25 ii. Sensitivity test modelling is due to be completed by 17/10/25 with time for the TWG to review. iii. General reporting items are listed with dates. iv. PRTM 2023 work aligns with AECOMs timescales and BWB follow on work. v. All the work is planned to be completed before the end of 2025. b. PW said in terms of timescales, this will be based on when information is received from AECOM. This is currently planned for the end of October/early November. c. AD confirmed the above timescales, which will also include the forecasting reports, cordoned data and shapefiles. d. AD said that line 23 needs amending as the date is now. PW said the date can be updated before the programme is shared. e. HH asked if the programme can be supplemented with DCO submission date, 28-day validation date and Examination timetable to help with understanding tasks on the critical path and prioritise reviewing information. f. PW said there are items in the programme relating to RSA1 work. This should be able to commence once the PRTM 2019 work has been concluded and is due to take place over November 2025. g. HH said LCountyC preference is for this to take place post PRTM 2023 modelling.	 **BWB** **BWB**

	h. PW said this would extend timescales and the PRTM 2023 work is a sensitivity test. If there are any changes from the PRTM 2023 work then we can revisit the RSA1 if needed. i. HH said an interim RSA1 can be undertaken to agree concept designs. However, full RSA1 is normally needed post PRTM 2023. The mitigation is largely on the SRN so if NH are happy for the RSA1 to be undertaken before PRTM 2023 then this can be undertaken. j. PW said he would feed this back to SHi who is in discussion with JB at NH and suggested that full RSA1 can be carried out on the SRN post PRTM 2019, with full RSA1 on the LHA post PRTM 2023. k. JB said he has a meeting with SHi in 10 days time to run through plans and departures. NH is happy for RSA1 to be carried out post PRTM 2019 modelling.	
6	**PRTM 2023 modelling** a. PW said that the timescales for 2023 were covered above, so there was nothing further to add at this stage.	
7	**Sign off sheets** a. MC asked if the TWG can consider the sign off sheets circulated with the September 2025 meeting minutes. This includes a list of seven reports that have received written or verbal agreement, the WCHAR Assessment and Review reports are most critical as they relate to the highway design work. b. PW asked about legal wording for mezzanines. JB said he is talking to IR but there was no update for today. c. PW has issued text from the TA to LCountyC so they can see how the mezzanine element has been dealt with, building on the details issued to the TWG on 5/3/25, which have also been resent. BWB will await a response.	**NH/ LCountyC/ NCountyC** **LCountyC**
8	**AOB** a. PW asked if there was AOB. b. GN thanked AECOM for the additional spreadsheet information, and BWB for facilitating, which is above and beyond what is normally provided.	

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING; THURSDAY 13 NOVEMBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of October's meeting minutes** a. PW shared October's actions on-screen and provided the following updates: i. MC confirmed NCountyC has formally signed off the Construction Traffic Calculations Note and agreed to defer to NH and LCountyC on the CTMP. ii. Comments remain outstanding from LCountyC on the PRoW and TRO work. iii. Final copies of the TA and ES Chapter were shared with the TWG. iv. IR confirmed that discussions are being held about the land needed for the A453 dualling; whilst this is not currently under Segro's ownership the mechanism is being discussed. v. The PRTM forecasting report for A50 merge unconstrained sensitivity test was shared. vi. VISSIM models and forecasting reports for the PRTM 2019 core modelling were shared. The PRTM 2019 sensitivity test work will follow and is to be discussed at the meeting.	**LCountyC** **IR**

	vii. HH has provided comments on the mezzanine legal wording which BWB will review and act on accordingly. b. PW asked if there were any comments on the October meeting minutes. No comments were received hence these are agreed.	**BWB**
2	**Client update** a. IR provided the following updates: i. The DCO/MCO applications were accepted by PINS on 12/11/25, so the next steps are sending out notices of acceptance and understanding the process for relevant representations. ii. The Examination start date is expected to be March 2026.	
3	**PRTM 2019 modelling** a. PW confirmed the VISSIM model and forecasting report for the core scenarios were shared and asked if there is any update from NH? b. GN said that progress has been made in terms of reviewing the information, NH will be sending an email asking for clarification on a queue related query. Other than that, NH will continue reviewing the material before briefing JB and KS. c. GN confirmed asked whether BWB are happy for NH to contact directly as and when any questions arise. PW confirmed BWB are happy with this. d. PW said that the A50 unconstrained merge sensitivity test is being worked on and the forecasting report is being reviewed internally before it can be shared. GN said that NH would like to see it when available and will add it to the resourcing list. e. GN confirmed NH will provide comments on the flow demand sets for the sensitivity test modelling, although they appear acceptable. f. PW asked whether BWB should expect any comments LCountyC or NCountyC. If so, these will be needed as soon as possible because of timescales given the DCO application has now been validated. PW said considering the passage of time BWB do not intend to ask about this any further and assume therefore all is in order from a LCountyC/NCountyC perspective as a result.	**NH** **BWB** **NH**
4	**PRTM 2023 modelling** a. AD shared a presentation on screen and provided the following update on the PRTM 2023 modelling: i. The mitigation scheme is having similar positive benefits to what is shown in PRTM 2019, with the new M1 to A50 link road freeing up capacity on the A453 south to north.	

	ii. There is a slight difference with the operation of the A453 at the site frontage. The main constraint is the Finger Farm approaches during both the without and with development scenarios. The 'with development, with mitigation' scenario shows traffic reassigning from Finger Farm and the A453 to the M1 because of the new link road. This improves delays at Finger Farm and the A453 towards J24 and allows traffic to be drawn back to the A453 link which is causing delays due to capacity of the A453 itself. iii. This is the same in PRTM 2019; the difference is how the capacity of the A453 link is coded lower in PRTM 2023 (1,360 PCUs in PRTM 2023 vs 1,730 PCUs in PRTM 2019). This is not an issue in the base scenario as traffic flows are below the saturation flow point, and this has only been identified during the 'with mitigation' scenario because flows have increased. iv. AECOM have reviewed the A453 link and considered what the appropriate capacity is. It is a well surfaced, wide, straight road and therefore it was considered that the 1,360 PCU saturation flow is to low, and the recommendation was to revert back to the 1,730 PCU saturation flow, in line with PRTM 2019. b. PW said this issue arose as an anomaly following the with mitigation scenario being run. It has been discussed and BWB agreed with increasing the saturation flow given the conditions along the A453. We are aiming for a realistic assessment and so if we consider the road has a higher saturation flow then our recommendation is to increase it. c. AW said that the higher saturation flow sounds sensible and will speak to colleagues to confirm. PB agreed that the higher saturation flow is the correct solution from a LCountyC NDI perspective and was relieved with the recommendation. AW said that if LCountyC NDI are of this opinion, then LCountyC HDM can accept this approach. d. TBe asked if there would be any benefits of reducing the 50mph speed limit from a capacity perspective? AD said that there are set speed flow curves for 50mph roads in PRTM given some roads are narrower and feature more bends compared to others. The A453 link is wide so we would suggest it has a higher saturation flow closer to 1,730 PCUs. e. ACH asked if this would change the base assignment? PB confirmed that this has been checked by LCountyC NDI and has a 3 PCU effect, which is negligible. f. GN said there are no reasons to use the lower saturation flow so agreed to increasing it in line with PRTM 2019. g. PW thanked everyone for their swift responses and asked AECOM to therefore proceed with increasing the saturation flow and to share the modelling once complete so BWB can complete the subsequent VISSIM modelling and reporting work.	

5	**Mezzanine legal wording** a. PW said that comments were received from HH prior to the meeting, which will be reviewed and responded to. b. PW suggested that NCountyC will be deferring to others on this element but for DS to confirm if this is not the case.	**BWB**
6	**Highway design matters** a. MC provided an update in SHi absence: i. NH departures are being updated to reflect the agreed traffic data and design flows. SHi is preparing a note to NH setting out what BWB are saying in the departure applications in relation to traffic data and VISSIM modelling. ii. The aim is to submit the departure applications by the end of November, which is likely to hit SES extension period over Christmas meaning a review is likely to be completed in January 2026. iii. BWB would like to re-issue the Stage 1 Road Safety Audit briefs on the same basis as the traffic modelling and asked if NH/LCountyC are happy with this approach? b. JB confirmed that NH are happy for the Stage 1 RSA's to be undertaken following an agreement on the briefs, on the basis that modelling is not finalised and hence this is slightly at risk. c. AW also confirmed that this approach should be acceptable to LCountyC subject to the same caveat.	**BWB** **BWB**
7	**COBALT assessment** a. MC referred to an email to FA on 29/10/25 clarifying NH queries on the COBALT assessment. In summary, the Technical Note was updated ahead of the DCO submission but the revision number was not changed, hence why there may be some confusion. b. FA said that this should clarify things but this is with colleagues to review next week.	**NH**
8	**Sign off sheets** a. MC referred to an email sent on 17/10/25 which summarised the current position with regard to sign off sheets, what has been formally approved and what remains outstanding. b. MC confirmed that BWB have produced draft Statements of Common Ground (SoCG), which ultimately will supersede the sign off sheets but suggested that the email of 17/10/25 is re-sent, so that the TWG can confirm what documents are agreed to inform the first draft of the SoCG.	**BWB**

	c. IR said that whilst SoCG are being reviewed internally, this is from a formatting perspective, as PINS have a specific format. Therefore, BWB can issue the drafts as they are for the purposes of agreeing what details are agreed and what remains under discussion.	
9	**Programme review** a. PW said that a programme was issued to the TWG. We are slightly behind with the PRTM 2023 mainly because of the conversations held about the A453 link capacity which has delayed things slightly. Positively, this has been agreed at the meeting to allow modelling work to continue. b. PW said the aim is for the PRTM 2019 work to be finalised and agreed before the end of the year and for PRTM 2023 work to be issued before the end of the year, to be reviewed and finalised early in the New Year. This would be ahead of the Examination start time.	
10	**Next steps / AOB** a. PW summarised the next steps: i. TWG to review and comment on the PRTM 2019 core modelling work. ii. BWB to finalise and issue the PRTM 2019 sensitivity test assessment Technical Note iii. AECOM to continue PRTM 2023 modelling work for BWB to progress with. iv. BWB to re-issue Stage 1 RSA briefs for approval. v. BWB to issue SoCG for initial comments. vi. BWB to continue to liaise with LCountyC with regards to the mezzanines. b. PW asked if there was AOB. No comments were received so PW ended the meeting.	**TWG** **BWB** **AECOM/ BWB** **BWB** **BWB** **BWB/ LCountyC**

5	**PRTM 2019 core modelling** a. PW said that further information was sent to NH on Monday which provides everything that has been requested. b. GN advised BWB to start updating the VISSIM forecasting report and LMVR and in the meantime NH will continue reviewing the information that was sent this week. c. PW asked if HH or DS have any comments on the PRTM 2019 core work? HH and DS both confirmed they had no comments on the 2019 modelling.	**BWB**
6	**PRTM 2023 modelling sensitivity test** a. PW confirmed the PRTM 2023 modelling forecasting report was sent yesterday. b. AD shared a presentation on screen and provided the following overview: i. Flow change plots (2028 AM) ➢ Largest increases are expected on the A453 EB. ➢ The A453 north of Finger Farm has a reduction in delay due to traffic switching to the M1 with the mitigation in place. ➢ The 'with development' scenario shows a 200 PCU increase on Hilton Hotel Lane, which is similar with the mitigation included for. ➢ The with development scenario shows an 80 PCU increase on The Green which reduces to 30 PCUs with the mitigation. ➢ There are 1,850 PCUs using new M1 NB to A50 WB link road. ii. Flow change plots (2028 PM) ➢ The 'with development' scenario shows a reduction in traffic on A453 EB but 'with mitigation' there is an increase due to capacity relief at Finger Farm. ➢ The 'with development' scenario shows 200 PCUs using The Green, which reduces to 100 PCUs with mitigation included for. ➢ The 'with development' scenario shows some traffic using Grimes Gate near Diseworth, which is removed with the mitigation included for. ➢ The A453 north of Finger Farm also shows a reduction in traffic with the mitigation included for, as traffic is transferred to the M1 NB. iii. Flow change plots (2038 AM) ➢ The results are similar to 2028, however the flow changes on Hilton Hotel Lane are less. ➢ Lots more traffic is predicted to use A453 EB with the mitigation because Finger Farm is relieved. This traffic would otherwise route using alternative roads to the west.	

	iv. Flow change plots (2038 PM) ➢ Largely the same as in 2028 PM but with 180 PCUs routing via Hilton Hotel Lane. v. The Area of Influence reduces in size when the mitigation is included as more traffic is routing via the SRN. vi. There are expected to be an increase in delays on the M1 SB off-slip to J24 in both the with development and with mitigation scenarios. vii. Delays on the A453 EB and the left turn lane at M1 J24 are resolved with the mitigation. viii. Delays are reduced at Finger Farm and on the A453 to the north. However slight increase in delays on the A453 link to west of Finger Farm as this accommodates more traffic. ix. The A50 WB slip shows an increase in delays which is due to unconstraining this part of the model. c. AD summarised to say that the PRTM 2023 modelling is showing similar outputs to the PRTM 2019 modelling and no new issues are being identified. d. AD said a few numbers in PRTM 2023 Forecasting Report need updating so will share a revised report. e. GN asked for BWB thoughts on demand using the new link road? PW asked AD for clarification that this modelling includes the unconstrained A50 merge for the avoidance of doubt? AD confirmed the A50 WB merge has been modelled unconstrained. f. PW said that a comparison of PRTM 2019 unconstrained and PRTM 2023 unconstrained flows will be made, although it looks like they are similar, hence there should be no change to the current position. g. JB said NH view is that PRTM 2019 is the core scenario and that is what NH are focusing on. For the DCO it is key for us to justify that PRTM 2019 is robust and that PRTM 2023 shows no major differences, which the summary provided by AD helpfully confirms. We need to show that the changes are negligible, and if they are, it is as simple as that. h. JB said that Hilton Hotel Lane is a concern that needs looking at mind as this stood out as a change, but other than that, the difference between the two models seems negligible. i. PW agreed with JB and said that positively there are no fundamental differences in the two model outputs. BWB will be running the VISSIM modelling using the PRTM 2023 outputs to provide further assessment. j. PW said that there appears to be lower impacts through Diseworth in PRTM 2023 which hopefully is positive from an LCountyC perspective. k. HH thanked Aled for a very informative and competent review and confirmed that it is simple from LCountyC's perspective that their interests are with the VISSIM modelling for M1 J24 and if this is acceptable to NH then the impacts on the local road network can be considered. Nothing jumped	**AECOM**

	out from AD's summary, which is great, albeit included for some interesting information around Hemington and Lockington, which we need to understand the extent of and whether there are any issues that need to be dealt with. l. HH continued to set out that in terms of the A453 increases, whilst there is an acceptance that the section of the A453 between Finger Farm and the site access will not be dualled as a result of EMG2, the same question remains about safeguarding land for future dualling. The A50 and M1 off-slip increases near J24 need considering in VISSIM to ensure they continue to not be an issue. m. IR said that from a compulsive acquisition point of view there are complications, but Segro are actively looking at the mechanism to safeguard the land to dual the A453. n. HH thanked IR and said that running PRTM 2023 is a big hurdle that has been overcome for the DCO and continues to show that the mitigation scheme is fit for purpose. Therefore, the A453 land safeguarding is probably one of the last thing that LCountyC could object to the scheme on because of its importance for the NWLDC Local Plan and delivering wider schemes. Therefore, that is an important point which is being considered. This will allow LCountyC to remove the last concern they have from a transport perspective. o. PW asked if AECOM could update the forecasting report and share that with the presentation for BWB to circulate. In the meantime, BWB will continue the furnessing and VISSIM modelling with results to be shared in the New Year.	**AECOM**
7	**Mezzanine legal wording** a. PW referred to HH's email and that this aligns with the PRTM 2023 modelling. BWB are mindful of HH's email and will consider this as they progress. b. HH said that we should look at flow outputs from PRTM 2023 and consider the residual impacts on those key routes in the email. Impacts to the south of the A453 should be fine with the focus being on Hemington and Lockington. This should be based on higher number rather than just the difference as a result of mezzanine. c. PW said this can be considered and BWB can tabulate the flow increases and present this to LCountyC.	**BWB**
8	**COBALT assessment** a. MC said that he notes the comments received from FA and confirmed he would respond with initial thoughts and dates for a meeting. It appears as though the differences in traffic flows are due to the PRTM Forecasting Report presenting peak hour flows, whilst the COBALT Assessment uses AADT flows.	**BWB**

9	**Statements of Common Ground** a. MC said that initial drafts have been produced and are being reviewed internally. b. MC asked whether the SoCG should focus on transport planning related details or cover everything from a highway perspective, including drainage matters. c. HH said he would prefer all details in one SoCG. JB also confirmed he would expect all details in one SoCG. d. MC said that highway drainage matters will therefore be included in the SoCG alongside transport planning and highway design matters.	**BWB**
10	**Next steps / AOB** a. PW summarised the next steps: i. BWB to finalise and issue the draft SoCG's ii. BWB to work through the PRTM 2023 sensitivity test information iii. Await and updates formally DCO wise. b. MC asked for thoughts on meetings for 2026 and whether we continue with the same two meetings on a monthly basis? PW suggested that meetings are kept in for the same times throughout 2026 and can be reviewed monthly once we get to Examination. c. HH suggested whether it would be worthwhile having a planning/legal related call set up. IR to have a think and advise. d. PW and IR thanked everyone for their input over 2025 and ended the meeting.	**BWB** **BWB** **IR**

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING; THURSDAY 15 JANUARY 2026 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of December's meeting minutes** a. PW shared December's actions on-screen and provided the following updates: i. HH confirmed at December's meeting that the TRO and PRoW matters fall with AW. MC said in talking to SHi, he understands the PRoW work has been agreed with LCountyC. AW confirmed he would review and follow up. ii. Discussions have been held about the A453 dualling and how land can be safeguarded to deliver a scheme in the future. A meeting was held with LCountyC on 14/01/26 and another meeting is scheduled for 22/01/26, so this item remains on-going. iii. SHi has submitted a Departures from Standard application for the Strategic Road Network on 05/01/26. iv. BWB are updating the VISSIM LMVR and Forecast Reports for the PRTM 2019 core modelling and will share these once finalised. v. AD shared the 2023 PRTM Forecasting Report which was sent to the TWG with the December 2025 minutes.	**LCountyC** **BWB**

	vi. Mezzanine related discussions will continue with LCountyC post agreeing the 2023 VISSIM modelling. vii. COBALT assessment remains on-going and forms an agenda item. viii. Statements of Common Ground were issued to the authorities and also forms an agenda item. ix. PRTM 2023 modelling work is continuing and positive discussions were held at last week's modelling meeting. This also forms a key agenda item. x. Planning/legal related discussions are being held separately between Segro and LCountyC. b. PW asked if there were any comments on the December 2025 meeting minutes. No comments were received hence these are agreed.	
2	**Client update** a. PW provided a general project update in IR absence. The timescales for submitting relevant representations ended last week and representations have been received from LCountyC. BWB are awaiting further representations from PINS before considering informing next steps accordingly. b. PW set out that it is understood that the DCO Examination is due to start at the beginning of March 2026.	
3	**PRTM 2023 modelling** a. PW said he understood a meeting was held between NH, LCountyC (HDM and NDI) and AECOM earlier this week and asked for an update on the outcome of that meeting. b. GN confirmed that discussions were held about the technical elements of the PRTM 2023 sensitivity test modelling. To move forward at pace, adjustments can be made on the speed and capacity of signal timings rather than more significant options. Therefore, it is likely that less severe adjustments can be adopted; however, consideration of M1 J24 is still required. This should however be sufficient in overcoming the issues that have been discussed recently about the capacity along the Hemington/Lockington route. c. PW asked if the above discussions have confirmed the methodology and therefore left with AECOM to progress? AD said that it was also agreed with NH and LCountyC that additional capacity would also be provided on the M1 SB slip at M1J24, to make this more in line with existing capacity levels. Following that, a scope will need to be agreed with BWB confirming the outputs that are required before AECOM starts the updated modelling work. d. GN asked whether it would be helpful for NH to write to the Applicant team setting out the specification for the updated modelling? PW confirmed that would be helpful and separate meetings can be held if required to finalise and agree the scope before AECOM make a start.	

	e. GN confirmed the email can be sent straight after the meeting (*which has since been sent post the meeting)*. f. PW asked if a separate meeting can be booked with AECOM next week to run through the specification and if AD could share his availability. In the meantime, VD can review the specification sent by NH and prepare for the meeting (*which has since been agreed for the AM of Monday 19/1/26)*. g. PW said that BWB will assume NH's specification is also acceptable to LCountyC given they were in attendance at the meeting earlier in the week but for everyone in the TWG to be copied into the email for transparency. h. GN said that once his email has been sent, a response will be required from BWB confirming whether it is agreed to confirm the approach for the updated modelling. However, NH will remain fully engaged to help move things forward given the start date for the Examination. The discussions held yesterday were really useful to collectively agree the adjustments to the modelling which should therefore be acceptable to all. i. PW thanked NH, LCountyC and AECOM for facilitating a meeting and referred back to the modelling meeting on 08/01/26 where discussions were held about modelling of the Toucan crossing on the A453. The methodology is set out in the January 2026 modelling meeting minutes, which confirm that a robust methodology has been adopted using assumptions on pedestrians and cycle flow demands. j. PW referred to the modelling undertaken by AD and which showed a queue of approximately 20 PCUs on the A453 during a red signal, which would not affect the operation of Finger Farm. GN confirmed NH are content with how this has been addressed. k. PW also referred to an email from VD on 14/01/26 which provided further clarification on the proposed furnessing methodology. GN said that the email has been received, the methodology is understood, and that NH will respond in writing. l. PW provided an update on the furnessing methodology for AW's benefit given LCountyC were not in attendance at the January 2026 modelling meeting. The methodology ensures that the furnessed traffic flows align better with capacity levels set on each link in PRTM. m. PB said that the saturation capacity of some links will change post yesterday's discussion, but aside from that, the methodology sounds sensible.	**BWB**

4	**Highway design matters** a. MC gave an update in SHi's absence: i. LCountyC and NH have confirmed the scheme design is acceptable subject to the Stage 1 RSA and departures being agreed, as well as closing out any outstanding modelling points. ii. A copy of the Stage 1 RSA report has been sent to NH are to confirm it is agreed, following which BWB will produce a response report. LCountyC have already signed it off and want the response report. iii. Departures from Standard on the Strategic Road Network have been submitted to NH and SES have approximately 5 weeks remaining to review them. iv. Departures from Standard on the local road network are being drafted and will be submitted following completion of the Stage 1 RSA process. They are relatively minor points and much more straight forward compared to the departures with NH. b. JB confirmed the Stage 1 RSA is with him who will provide a response shortly.	**NH** **BWB** **NH**
5	**COBALT assessment** a. MC said the COBALT assessment is being updated now that other priorities have been cleared and that BWB are reviewing the traffic numbers before updating the assessment. A copy of the revised COBALT Assessment will therefore be sent soon responding to the comments received from FA.	**BWB**
6	**Statements of Common Ground** a. MC recapped to say that first versions of the Statements of Common Ground were issued to the authorities at the end of 2025. These set out the areas of agreement and those that remain under discussion relating to highways and transport matters. The SoCG is a live document that will be continually updated, for example agreement has since been reached with NH on the PRTM 2019 core modelling assessment, which therefore needs updating. b. MC confirmed that a response has been received from NCountyC confirming they agree with the details, which is a positive position. c. JB said that NH is not in disagreement with the current position on the technical matters. However, NH view is that the SoCG should be more comprehensive covering details on other technical matters, which NH are not currently in agreement with and therefore needs recording. However, NH will respond with comments next week which should make this clear. d. MC said that discussions were held internally about whether one single SoCG is produced covering all technical matters, or if separate documents are produced for each individual technical matter.	**NH**

	e. JB said it is typical for one SoCG to be produced covering all technical matters, which would be NH preference. This is what the Examining Authority will likely expect too. PW said BWB will update the Client team on this. f. PW confirmed that BWB has received LCountyC's representation and overall BWB are happy with what has been issued. There are a number of comments that are being dealt with such as the mezzanine floorspace and associated traffic impacts which BWB will continue to work through. The only comment that BWB perhaps queries is in relation to construction traffic impacts but BWB will consider that and liaise with the internal team in order to formally respond.	**BWB**
7	**Next steps / AOB** a. PW summarised the key next steps: i. AECOM to continue the revised PRTM 2023 modelling and issuing BWB with outputs (post agreeing the methodology based on the meeting held on 14/1/26). ii. BWB to furness the traffic flows and run the numbers through the VISSIM model to understand the impacts versus the PRTM 2019 modelling. b. PW asked for AD to send his availability for a meeting next week to discuss the methodology for the revised PRTM 2023 sensitivity test modelling. AD confirmed he would send his availability after the meeting (*meeting since confirmed for the AM of Monday 19/1/26*). c. PW thanked everyone for their time and ended the meeting.	**AECOM** **BWB**

EAST MIDLANDS GATEWAY PHASE 2 – TRANSPORT WORKING GROUP MEETING; THURSDAY 12 FEBRUARY 2026 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of December's meeting minutes** a. PW shared January's actions on-screen and provided the following updates: i. AW confirmed there are no major concerns with the TRO and PROW work but will confirm this by email. ii. The EMFM 2019 LMVR and Forecasting Report will be updated but BWB are awaiting confirmation from the wider Project Team on timescales for re-submitting documents. iii. BWB responded to GN on the specification for the PRTM 2023 modelling, which remains the key agenda item. iv. BWB await a response from NH on the Departures from Standard submission. v. The Departures from Standard application for the local road network was issued to LCountyC on 10/02/26 for any comment. vi. BWB have issued the Stage 1 RSA and associated Design Team Response and scheduled a meeting with NH for 20/02/26 to run through any outstanding matters. vii. BWB issued an updated COBALT Assessment to NH on 10/02/26 and therefore await confirmation as to whether this is now acceptable.	**LCountyC** **NH (SES)** **LCountyC** **BWB/NH** **NH**

	viii. Comments were received from NH and LCountyC on the Statements of Common Ground, which BWB will respond to. ix. BWB have reviewed the Relevant Representations and will provide an update in this meeting as to how we intend to respond. b. PW asked if there were any comments on the January 2026 meeting minutes. No comments were received hence these are agreed.	**BWB**
2	**Client update** a. IR said that the Rule 6 letter was received this week confirming the preliminary meeting will take place on 10/03/26 and what is included on the agenda. PINS have also issued agendas for other meetings scheduled for 11/03/26 and 12/03/26. The letter also sets out a broad timetable for the Examination process. b. SHi asked if the TWG have received the Rule 6 letter? NH and LCountyC confirmed receipt.	
3	**Highway design matters** a. SHi said from a LCountyC perspective, an email was sent on Monday with the Stage 1 RSA Design Team Response and updated design pack which hopefully addresses the problems that were raised and suggested it would be great to confirm whether the Stage 1 RSA and design work is agreed before the Examination starts. AW confirmed he will review and respond and advise SHi whether a call is required. b. SHi said from a NH perspective, the Stage 1 RSA has been completed and issued to NH. A meeting has been scheduled for 20/02/26 to discuss the details. BWB are undertaking design amendments which will be shared at the meeting. c. SHi said in terms of NH departures, there are seven days remaining for SES to respond and so any comments can be discussed at the meeting on 20/02/26. JB asked for clarification that all actions remain with NH SES and not the TWG? SHi confirmed that is correct and there are no actions with the TWG. d. SHi asked if there were any further comments on highway design. No further comments received.	**LCountyC** **NH (SES)**
4	**PRTM 2023 sensitivity test modelling** a. PW referred to previous comments received from NH on the PRTM 2023 Forecasting Report which have been updated by AECOM. BWB will circulate a copy of the revised Forecasting Report after the meeting; a copy has since been *issued by PW 12/2/26.* b. AW said that LCountyC will review the Forecasting Report and provide comments in the next few days.	**LCountyC**

	c. GN thanked AECOM for populating the missing cells in the V/C spreadsheet and asked whether the updated values have been reflected in the PRTM 2023 Forecasting Report. AD confirmed that is correct. d. PW asked if the tables in the Forecasting Report have been expanded to include the additional information requested by NH, or if the spreadsheet on its own will suffice? AD confirmed the table in the Forecasting Report has not been expanded and only the errors on the rows have been corrected. GN confirmed this is sufficient and no further changes are needed to the Forecasting Report itself. e. VD discussed the traffic flow furnessing and that BWB has adopted the previously agreed methodology, without any capping, which continues to provide a robust assessment. The flows have been tested in VISSIM, initially for the 2038 scenario, and overall, the model operates better compared to the PRTM 2019 modeling. f. VD provided the following summary: i. The morning peak hour modelling shows large queues on the M1 northbound towards Junction 24 in the without development scenario and significant latent demand with traffic not being able to enter the network. With the mitigation in place, the issues are resolved and all the traffic is able to enter the network from all zones and queues on the M1 significantly reduce. Whilst there remains queueing on the M1 southbound to Junction 24, there is no latent demand and traffic is able to enter the network. ii. The evening peak hour is similar with queues on the M1 northbound towards Junction 24 which the mitigation resolves. The simulation shows queueing from M1 Junction 23A, which is no longer the case. The latent demand shows approximately 150 vehicles not being able to enter the network, so BWB are investigating this further. iii. Overall, the conclusions on the proposed mitigation scheme remain unchanged and the modelling results actually show a betterment compared to the PRTM 2019 modelling. iv. BWB will be running the model 10 times to get the full simulation results and then summarise the data into spreadsheets for issue to NH. In the background, BWB can focus on the 2028 modeling before issuing all files and models. The furnessed flows and 2038 modelling outputs should be sent 13/02/26 with 2028 modeling next week. g. GN thanked BWB and agreed that the results sound positive and checked that BWB received NH list clarifying what outputs are required? VD confirmed the model output requests have been received and will prioritse the data in the order requested. h. GN said that the spreadsheets can be sent before the models if they need to be tidied up. i. JB also said the results sound very positive and in terms of timescales for the Examination there is a traffic and transport session scheduled for 11/03/26	**BWB**

	and it would be good for this workstream to be closed out with reports uploaded to the PINS website beforehand and asked whether that is achievable. j. PW said outputs will start to be sent tomorrow. BWB will be producing a Technical Note covering the PRTM 2023 sensitivity test modelling which will be completed before the end of February. k. JB asked GN whether JSJV has time to review the details ahead of 11/03/26? GN said he will try but this requires the information to be sent as soon as possible but if the results are as discussed then there should be no problem meeting this deadline. l. PW said that from a LCountyC perspective, traffic flows on the local road network have reduced and the site access works within capacity, noting the modelling includes traffic from all the draft local plan allocations but not their associated mitigation., hence this should also be viewed positively. BWB will however follow up with the mezzanine traffic flow information. m. PW said the PRTM 2023 Technical Note will also include a review of EIA flows for the cordon network to understand the differences and whether morning and evening peak hour flows have reduced. BWB will not re-visit the entire EIA study area, as previously agreed, but will provide an assessment on the VISSIM cordon area.	**BWB** **BWB** **BWB**
5	**MCO application** a. PW referred to the February 2026 modelling meeting and conversations about what additional assessment work could be required for the MCO and asked if NH have an update? b. GN said NH have discussed this and given the VISSIM model is available, it makes sense to take the 2028/38 without development flows and model the additional traffic from the MCO application on top. c. PW confirmed that is fine but asked whether the modelling can be limited to 2028 opening year only? GN suggested that both assessment years are required but the analysis can be summarised within a brief Technical Note focusing on the A453/A6 Kegworth Bypass gyratory. The analysis should aim to demonstrate there is no significant safety barrier on the SRN to allow the MCO to come forward supported with a Travel Plan as discussed before. d. PW confirmed BWB will carry out that work post completion of the PRTM 2023 sensitivity test work. GN said that NH are unlikely to require VISSIM models for the MCO application work and desktop outputs should suffice.	**BWB**
6	**Stage 1 Road Safety Audits / COBALT** a. PW confirmed reports were issued on 10/02/26 and BWB welcome any final comments.	**NH/ LCountyC**

	b. PW referred to an email from MC setting out BWB's position on general highway safety matters and how BWB will respond to comments raised in the representations. c. JB said he has received the email and will respond but confirmed the approach looks thorough.	 **NH**
7	**Statements of Common Ground** a. PW confirmed that BWB will respond to NH and LCountyC's comments provided on the first drafts. BWB has a question on one comment raised by LCountyC in relation to construction traffic and so asked who is best to direct the question to at LCountyC? AW advised BWB to contact AW or HH. b. PW confirmed that NCountyC has agreed with the SoCG and asked when a format signature can be provided. DS said he will catch up with TBo and refer back where this is at.	 **BWB** **NCountyC**
8	**Relevant Representations** a. PW said that BWB are reviewing the comments received in the Relevant Representations and will be formally responding to those at the appropriate time.	 **BWB**
9	**Next steps / AOB** a. PW summarised the next steps: i. BWB to continue the PRTM 2023 sensitivity test work and issue information to the TWG once available. ii. BWB to provide LCountyC with the additional mezzanine information post completion of the above. iii. BWB to update the SoCG and respond to the Relevant Representations b. PW asked if there was AOB. No comments were received so the meeting was ended.	 **BWB** **BWB** **BWB**

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 4 SEPTEMBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

[redacted] (CC) – BWB Consulting Limited; Segro transport consultants

MINUTES:

Agenda item		Action
1	**Review of Augusts' modelling meeting minutes** a. PW went through August's meeting actions, as follows: i. NH confirmed the traffic flow query through Castle Donington has been resolved. GN agreed and said this has been confirmed in NH Technical Note. ii. Revised furnessed flows for the Stage 2 modelling have been shared. Comments were received from LCountyC prior, which have been considered in the latest pack of information. AW asked for clarity as to how BWB has addressed LCountyC furnessing related comments. iii. Comments have been received from NH on the PRTM Stage 2A and 2B forecasting reports. These are being considered and will be addressed alongside any further comments from LCountyC and NCountyC. iv. The M1 NB to A50 WB merge query remains ongoing. v. The Toucan crossing was not included in the Stage 1 (with development) scenario but the A453 flare widening was included. However, both elements were included in the Stage 2 modelling which encapsulates the development and mitigation. Therefore, a comparison between the Stage 1 (without development) and Stage	**BWB**

	2 scenarios can be made to assess the full impacts of EMG2. GN asked what LCountyC's view is? HH said that the Toucan crossing forms part of the access strategy and has a link capacity effect which should have been included in Stage 1 (with development) scenario. However, this can be addressed through the PRTM 2023 sensitivity test work should that be undertaken. GN agreed with this approach. vi. LCountyC have reviewed the standalone junction models and raised one query on the Station Road/Broad Rushes roundabout model has been addressed and detailed in the TA. BWB are happy to share the Junctions 11 model if that would be of use. GN said NH will review the standalone modelling but at the moment are focusing on VISSIM but have an understanding of the results from the TA. DS said he will catch up with TBo but would like to fix the baseline position first. b. PW asked if there were any comments on August's minutes. GN confirmed NH are happy; no further comments received.	**BWB/ NH/NCountyC**
2	**Traffic flow furnessing demand matrices** a. PW confirmed that the Stage 2 furnessing matrices now adopt the NH alternative approach. This information was shared by VD on 03/09/25 responding to NH email of 20/08/25. This also takes into account the comments made by AW. b. GN acknowledged the email and clarified that these matrices take account of NH suggested approach, and this is supplemented by a revised Technical Note. c. PW asked if AW if LCountyC will be reviewing the Stage 2 furnessing spreadsheets? AW confirmed LCountyC will review the Stage 2 furnessed flows. d. DS confirmed NCountyC are happy to defer to NH and LCountyC on this element.	**NH** **LCountyC**
3	**Stage 2A/2B modelling related matters** <u>Stage 2A/2B forecasting reports</u> a. PW said the forecasting reports have been issued. Comments have been received from NH which BWB are reviewing and taking on board. PW asked if comments are expected from LCountyC and NCountyC? b. HH said LCountyC are waiting on the decision about PRTM 2023 before sending comments. c. PW said it will be helpful to have LCountyC comments on the PRTM 2019 modelling regardless, seeing as this forms the basis of the DCO	

	submission. HH said that the comments may change depending on the decision with PRTM 2023, so it will be helpful to understand next steps.	
	d. DS said he will catch up with TBo to understand the approach NCountyC are taking.	**NCountyC**
	<u>NH Tech Note</u>	
	e. PW referred to an email sent on 01/09/25 explaining how BWB will deal with NH comments. Fundamentally the modelling and engineering work need to align, particularly with regard to the M1 NB to A50 WB merge point. The previous sensitivity test modelled the new free flow link with two lanes and unconstrained capacity at the merge, but to ensure the two workstreams align, a further test is being considered that includes a single lane with unconstrained at the merge point. This will generate accurate traffic flows to inform the engineering.	
	f. GN said this additional sensitivity test will be helpful and clarified that the comments raised by NH were not how PRTM is coded but rather the about the delay and whether this was having an influence on demand flows. However, if this additional test is undertaken then NH would want input to ensure it is carried out correctly. A forecasting report 'lite' would be required containing appropriate outputs. In addition, spreadsheet outputs similar to before would be helpful for reviewing.	
	g. GN asked which scenarios this sensitivity test would be carried out for? PW said any sensitivity testing needs limiting, with a focus on the AM peak hour as worst-case. 2028 is the Circular compliant forecast year but 2038 is worst-case traffic flow wise. We would only test the 'A' scenario given the authorities have less of an interest in the 'B' scenarios.	
	h. GN said that both 2028/38 forecast years are required as well as both AM/PM peak hours to present the full narrative. However, GN will email setting out the specification to provide some direction.	**NH**
	i. HH asked what the principle of the sensitivity test work is and whether it is to justify a departure from standard or inform the design work?	
	j. PW said it is to align the modelling and engineering workstreams, so that the traffic flows accurately reflect the design of the engineering but also to justify any departures, where needed.	
	<u>Castle Donington flow query</u>	
	k. PW referred to the previous email from NH setting out the flow increase through Castle Donington and asked for LCountyC thoughts.	
	l. HH said this links to PRTM 2023 as this could change with updated modelling.	

4	**PRTM 2023** a. PW said that BWB issued a spreadsheet on 26/08/25 contianing flow differences between PRTM 2019 and 2023. b. MC shared the spreadsheet on screen and provided the following summary: i. A453 (at EMG2 Main Site) – two-way flows in the AM peak are unchanged and there has been a small increase in the PM peak. ii. A42 – decrease in both peak hours (300 PCUs in AM peak and 200 PCUs in PM peak) iii. A453 (north of Finger Farm) – signification reduction in northbound direction, particularly in the AM peak of 600 PCUs, and a slight increase in the southbound direction (circa 150 PCUs). iv. Kegworth bypass – significant reduction in both peak hours (350 PCUs AM peak and 550 PCUs PM peak) v. A50 – reduction on the slip road but an increase on the mainline particularly in the AM peak. vi. A453 Remembrance Way – increase of 200 PCUs in AM peak and no change in PM peak. vii. M1 mainline – increase of 800 PCUs in northbound direction in AM peak and 480 PCUs in PM peak. No significant change in the southbound direction. c. MC summarised to say that in general, there is a significant reduction in traffic on the A453 northbound to the north of Finger Farm but an increase on the M1 mainline in the northbound direction. The model therefore shows a difference in the route traffic is taking, with more assigned to the M1 rather than A453 in PRTM 2023. However, of the 800 PCUs travelling northbound on the M1, approximately 500 PCUs continue north on the mainline and 300 PCUs turn off at M1 J24 on the northbound off-slip. Turning movements at J24 would be largely unchanged as in PRTM 2019 these movements would be turning movements from the A453 to A50/A453 which are now arriving from M1 northbound off-slip. This is the key difference that needs consideration. d. AD agreed with the above summary and said that changes are small overall. Both models are validated against the count data so one would expect high levels of consistency. There is a slight reduction in light vehicles and an increase in HGVs across the model which is expected. There is the local re-routing between the A453 and M1 northbound, with more traffic routing to Derby via the A52 at J25 compared to the A50 via J24. e. HH appreciated the comparison but had concerns only looking at flow differences in the baseline, as this does not take account of the forecast years or HGV route patterns. HH asked what 2023 model the comparison was made in and whether this was EMFM or PRTM. AD	

	confirmed it was EMFM 2023 that has been compared to EMFM 2019. f. HH confirmed that LCountyC has never said PRTM 2019 is an unsuitable model, rather that there is a more up to date model available. It may be more efficient simply running the sensitivity tests rather than carrying out these comparisons. Unless there is a more appropriate model available, which LCountyC is unaware of, then PRTM 2023 should be carried out to address the outstanding queries. g. PW thanked HH and said that BWB are working within a timeframe ahead of the Examination but were intrigued about the differences in the two base models to inform next steps. h. IR said that in October 2024 when the modelling started, PRTM 2019 was the latest version available and it was not clear when PRTM 2023 would be available, which was ultimately in May 2025 (when NH signed it off). All the work has been carried out using PRTM 2019 and we have agreed to consider PRTM 2023. However, any sensitivity test modelling needs to be limited to ensure we meet the Examination timescales and Segro are happy to be led by the TWG but it needs to happen quickly. i. PB said in response to HH comment above (4f), a new model is actually available which was funded by the East Midlands Freeport and is known as EMFM2. This is an enhancement to PRTM 2023, particularly for network extents around the Freeport area, including Derby and west Nottingham. It was recommended that any sensitivity testing is undertaken using EMFM2. j. IR asked if EMFM2 has been validated and approved by NH. PB confirmed that because it is an enhancement to PRTM 2023 it does not need to be checked and sign off by NH. k. PW said that this further validates the decision made to use PRTM 2019 as models are being constantly updated. If we had used PRTM 2023 then comments could have been raised about the requirement for using EMFM2. Therefore, PW asked if sensitivity testing is carried out, what model should this be undertaken in? l. PB said his recommendation would be to use EMFM2. m. PW asked NH and LCountyC what their views are on the model choices to carry out the sensitivity testing? n. HH said he was not aware of EMFM2 but if the model is an enhanced version of PRTM 2023 with a better simulation to account for recent Freeport modelling, then this would be the best model to use, assuming that the base model validation is all acceptable. o. PB said that the base model is TAG compliant and passes all the criteria. HH said there are no objections from LCountyC then.	

	p. GN also confirmed he was unaware of EMFM2 but would need to speak to NH once he understands the approach to be undertaken for the sensitivity test modelling. GN asked if BWB can set this out in writing?	
	q. PW said it is useful to understand the recent updates to PRTM and EMFM and that BWB will consider next steps ahead of the TWG meeting next week.	**BWB**
	r. AD said that the flow comparison of PRTM 2019 and 2023 remains relevant as EMFM2 is an enhanced version of PRTM 2023. However, the network structure in EMFM2 is the same as EMFM 2019, so a further comparison can be made if required and would be a relatively quick exercise.	
	s. HH said that IR thoughts on additional modelling and timescales were helpful and agreed that a programme is created that sets out what additional modelling is to be undertaken and whether this falls within the timescales for Examination. We can then agree the approach before modelling is undertaken.	
	t. IR endorsed HH and said that whilst sensitivity test modelling can be carried out, it needs to be limited to what can be achieved and completed in the timescales before Examination.	
	u. PB said this is a fair point and so rather than share proformas, could the TWG simply agree the assessment years and scenarios to be re-modelled. Uncertainty logs can then be circulated to agree the planning assumptions allowing the modelling to be started over the next couple of weeks.	
	v. PW said agreeing the uncertainty log should be a quick process given this was carried out for the East Midlands Growth Point project, which is testing a forecast year of 2041.	
	w. HH agreed and that the key is the scenarios and planning data assumptions within the uncertainty log. What PB set out is what LCountyC would like to see and completing the sensitivity test modelling before Examination would address a lot of outstanding issues.	
	x. PW said he will speak to IR and set out next steps to the TWG before next week's meeting.	**BWB**
	y. GN said the above approach sounds sensible and once BWB set out the proposed approach NH will comment immediately to avoid any delays. The exclusions of 'B' scenarios is sensible.	

5	**VISSIM related work** a. PW said that BWB are working closely with NH and would welcome feedback from LCountyC. The Stage 2 model was issued on 30/08/25 and BWB can deal with any final comments from LT should there be any. b. GN said that Stage 2A demand flows may change because of the additional modelling tests being undertaken in PRTM 2019 to deal with the M1 NB and A50 WB merge query. However, there are a few gaps in the VISSIM forecasting report about convergence and latent demand that NH will respond to. Once BWB has clarified those points then NH will provide a Technical Note with formal comments on Stage 2 VISSIM modelling. c. PW thanked GN and said that this will help finesse details ahead of any sensitivity test modelling being carried out.	**NH** **NH/BWB**
6	**Standalone junction modelling** a. PW said that the Station Road/Broad Rushes model has been updated to reflect AW comments. The model file can be shared with the TWG so everyone has an up to date pack.	**BWB**
7	**Construction traffic modelling** a. PW said that NH have confirmed they are happy with the construction traffic modelling and asked whether LCountyC or NCountyC have any comments? b. DS confirmed NCountyC are happy with this and have no comments. c. HH said LCountyC have no comments at this stage but that during the meeting at County Hall discussions were had about the approach for construction traffic modeling and whether these have been taken on board d. PW confirmed that wording has been included in the revised CTMP submitted with the DCO explaining that further construction traffic modelling, taking account of lane closures, has been committed to in the CTMP. e. HH asked whether the CTMP also considers access should there be different access points during the construction phase. PW confirmed these details were included in the CTMP.	
8	**Next steps** a. PW asked if it would be helpful for BWB to share links to the DCO submission documents. GN said this would be helpful. b. HH said that LCountyC will receive documents from the PINS website,	

	but if models can be shared that will be helpful. c. MC said BWB will share models and documents but reminded everyone that a lot of the information is available on the EMG2 SharePoint page.	**BWB**
9	**AOB** a. PW asked if there was AOB. No comments received.	

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 2 OCTOBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of September's modelling meeting minutes**	
	a. PW went through September's meeting actions, as follows:	
	i. VD emailed on 01/10/25 responding to AW's email on furnessing.	
	ii. MC shared the Junctions 11 model of the Station Road/Broad Rushes roundabout on 15/09/25. AW confirmed the updated model looks fine.	
	iii. BWB are awaiting comments from NH on the standalone junction models. ACH said he will speak to GN and refer back.	**NH**
	iv. BWB are awaiting feedback from NCountyC on the A453 Junctions 11 models. DS said he would liaise with TBo and refer back.	**NCountyC**
	v. BWB have taken on board LCountyC comments on the furnessing. PW asked if this has resolved everything or whether further comments should be expected. AW said he would review and refer back.	**LCountyC**
	vi. VD explained the methodology adopted for the Stage 2A furnessing, which follows the approach recommended by NH. This retains the Stage 1 furnessed flows and adds the difference from the 2028/38 forecast year Stage 2A flows to account for the re-routing from the mitigation.	

	vii. VD also gave an update on how the shoulder peak flows were derived.	
	viii. VD said that journey time graphs can't be provided (without having to rerun all the forecast modelling scenarios, having followed up post meeting via email) but the additional graphics requested by LCountyC will be presented in a revised note.	**BWB**
	ix. PB suggested that splitting the journey times along routes will show specific areas where deterioration is occurring. VD said that all origin to destination points are provided but can add this detail if needed, however it will require re-running models.	
	x. PW asked if these comments are likely to change the conclusions or add value of what we are presenting, noting the VISSIM model is primarily on the SRN and NH have not requested this information?	
	xi. PB said that he can't speak on behalf of NH but that this information would be useful.	
	xii. ACH said this extra information would be helpful and may help with the narrative within the reporting.	
	xiii. SD said it is not box ticking and would be useful additional information although LT may not consider the information fundamental. PW said that LT has not requested it to date and BWB are in regular conversations with him.	
	xiv. HH said the mitigation strategy was developed manually, which has then been tested in VISSIM. By having this additional analysis, the review of the mitigation and design can be better informed.	
	xv. PW said BWB will take this away and consider whether it can be provided.	**BWB**
	xvi. DS said he will speak to TBo on the Stage 2 PRTM forecasting reports.	**NCountyC**
	xvii. BWB have received feedback from NH with regard to the 2019 PRTM sensitivity test modelling.	
	xviii. BWB have instructed AECOM on the PRTM 2023 modelling.	
	xix. BWB have received comments from NH on the Stage 2 modelling.	
	xx. BWB issued a revised furnessing note on 03/09/25. However, the note that covers convergence and latent demand is being updated.	
	xxi. BWB issued the final TA and ES Chapter submitted with the DCO.	
	b. PW asked if there were any comments on September's minutes. No comments were received.	

2	**PRTM 2019 Stage 2 modelling work** <u>Revised Furnessing Note</u> a. PW said the revised note was issued on 03/09/25. Confirmation has been received from NH that the Stage 2 furnessing is now acceptable and aligns with the Stage 1 furnessing methodology. <u>NH comments received on VISSIM forecast report</u> b. PW said that NH comments on the VISSIM forecasting report were received on 05/09/25. c. VD said that BWB are working through the comments, particularly relating to convergence and the outputs will be tabulated explaining how the models have been converged. <u>LCountyC comments on VISSIM forecasting report</u> d. PW said that LCountyC comments will be taken on board as discussed above. <u>Sensitivity test with M1 / A50 unconstrained merge test</u> e. PW said that AECOM has provided the traffic flows and BWB are working through the sensitivity test modelling. f. PW asked AD how the reporting is coming on? AD said it has been drafted and reviewed and there are a few things to be updated before a copy is sent early w/c 06/10/25. g. PW asked if there are any further comments on the PRTM 2019 modelling? ACH asked about timescales for receiving information. PW said that spreadsheet information and models should be available by the end of next week. The 2019 sensitivity test of the unconstrained A50 WB merge will then hopefully follow the week after. h. PW said he is working with BWB's Project Management team to produce a detailed programme, with the aim of sharing this before the TWG meeting next week.	**AECOM** **BWB**
3	**Standalone junction modelling** a. PW said comments have been received from LCountyC, and an updated Station Road/Broad Rushes model has been shared. b. PW said from NCountyC's perspective, there are only two junctions on the A453 which are not expected to be significantly impacted by EMG2 but we require confirmation from NCountyC nonetheless.	**NCountyC**

4	**PRTM 2023 sensitivity test** a. PW said that AECOM has been instructed and asked AD for an update on progress. b. AD said that AECOM are preparing the data and network inputs, they are close to being ready and initial model runs will be carried out over the weekend for the without/with development scenarios. Following that the with mitigation scenarios can be run. The aim is to complete this work by the middle of October and reporting will then follow for the end of October. c. PB asked if a decision has been made to not use EMFM2 and remain with PRTM 2023 instead? d. PW said that discussions were held about the two models and because NH would need to carry out a review of EMFM2, delaying the programme, a decision has been made to use PRTM 2023. This has been discussed and agreed with the TWG. e. HH said that the network coding within EMFM2 is more within Nottingham and Derby. Therefore, LCountyC's view is that because there are little changes on Leicestershire's network and other projects are using PRTM 2023, that it is better to keep things consistent. PRTM 2023 has been agreed as a suitable model choice. f. PB agreed that for EMG2, PRTM 2023 is the most appropriate model for the reasons above. g. PW said that PRTM 2023 is also being used for the EMGP project. h. HH said that if there are other projects on-going in the Freeport area using a particular model, then we would want to ensure that they are consistent. However, there is a question as to whether a separate project for EMGP is needed or whether it can be included in the PRTM 2023 modelling for EMG2 to avoid repetition. i. PB said that EMFM2 was updated from the original PRTM model as an enhanced version to test developments in the Freeport area to understand strategic impacts and improvements at M1 J23A and M1 J24. There is very little difference between PRTM 2023 and EMFM2 within this network area, but vehicles routing from Nottinghamshire, Derbyshire and Derby will be different, and how drivers access M1 J24 and M1 J23A may be different. j. PW said that we purposely separated the project teams for EMG2 and EMGP as requested by the TWG. The modelling being undertaken across the two projects is different, as EMG2 is testing the 'green package' whereas EMGP is testing the full wider mitigation, not just that attached to EMG2.	

	k. HH suggested that unless NCountyC, DCountyC or EMCCA raised issues with the model choice then there should not be any problems. l. HH asked whether the modelling outputs of the EMGP work will form part of the EMG2 DCO because it is likely to be raised at Examination? It will be useful to have a narrative so that we are clear during Examination if this is raised. m. PW thanked HH and said he will liaise with the client team about this and advise accordingly but said that details will not be included in the TA that will be included in the re-submitted DCO. It will be a case of timing and if the work is complete ahead of the DCO then it could be presented accordingly. n. HH said that the answer may be no, the EMGP work is not included in the DCO but it would be helpful if we're clear on the strategy.	**BWB**
5	**Mezzanine uplift** a. PW asked if there were any updates on the legal wording for the use of the mezzanines. ACH said he has no update from a NH perspective. b. PW asked for LCountyC's and NCountyC's views and whether BWB can have a response to PW email from 5 March 2025 which considers the impacts of the 430,000sqm vs 530,000sqm floorspace change. c. HH said that we went through a process of agreeing trip generation based on 430,000sqm and modelling has been carried out on that basis. The Client's aspirations then changed to apply for 530,000sqm. LCountyC view is that we should have gone back and agreed revised trip generation. The email does not do this and instead seeks to justify why the current modelling remains sufficient to support a larger development of 530,000sqm. The legal wording that has been shared so far does not reference 'racking' and instead references 'ancillary use', so comments have not been provided because LCountyC are in disagreement on the approach. d. PW said that we've agreed to a lower single occupancy mode share target for car drivers aligned with EMG1, which is a strong commitment from the client. It was appreciated trip rates were agreed in 2022 but things have moved on over time and it was requested some time ago by the TWG that our work should be data led. We have substantial evidence to show that the trip rates adopted are highly robust and the data set out in the March email should explain how the trip rates are overly high compared to what we may adopt if we started this process now. e. HH asked if the email concludes that the revised trip rates are as per those adopted in the table?	

	f. PW said the TA sets out the adopted trip rates but also the trip rates surveyed at EMG1 and when you apply those to 530,000sqm there would be a third less trips compared to what has been assessed in the modelling. This is then complemented by the legal wording for the use of mezzanine floorspace. Therefore, if we had used to 2024 surveyed EMG1 trip rates there would be a third less trips to what we have assessed, which should give the TWG comfort that the 530,000sqm floorspace will not cause any issues. g. HH said that a note could have been submitted to agree new trip rates, rather than using the data to justify why the trip rates we have adopted are incorrect and robust. h. PW said that the details are included in the TA explaining why the trip rates we've adopted are robust and hence support a 530,000sqm development. The email from March could be re-shared so that these details can be re-considered. i. HH said that assuming 430,000sqm has been modelled in 2023 PRTM, revised trip rates should have been adopted, which would then mean that suitable trip rates have been tested for the full quantum of development. j. PW said BWB will take this away, however, he set out that we have always sought to be data led using information from EMG1. We have adopted highly robust assumptions to date and the evidence now available allows us to justify a higher quantum of development with additional mezzanine floorspace. This information was not available in 2022 when we were agreeing trip rates.	**BWB**
6	**Next steps / timescales** a. PW confirmed that an updated programme is being produced and will be shared at next weeks TWG meeting. b. PW thanked everyone for their time and ended the meeting.	**BWB**

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 6 NOVEMBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of October's modelling meeting minutes** a. PW went through October's meeting actions, as follows: i. NH have previously confirmed the standalone junction modelling remains less of a priority as the focus is on the VISSIM network but there should be no issues further afield. AW confirmed LCountyC are happy with the base models but need to respond to the assessment and conclusions in the TA. NCountyC still to refer back with regards to their two junctions also. ii. BWB have dealt with LCountyC questions on furnessing and await any further feedback. iii. Journey time graphs were presented in the latest VISSIM Forecasting Report. iv. NCountyC is still to respond to the Stage 2 Forecasting Report. v. The PRTM Forecasting Report for A50 unconstrained merge sensitivity test was shared with the TWG vi. A copy of the programme was shared on 8 October 2025. vii. The minutes from October 2025 TWG meeting summarise how the EMGP work feeds into the EMG2 DCO. In summary, they are separate projects but if EMGP information is available at Examination then it can form part of the discussions. viii. The mezzanine floorspace information was sent to HH on 3 October 2025 and forms an agenda item. b. PW asked if there were any comments on October's minutes. No comments were received hence they are agreed.	**NH/LCountyC/ NCountyC** **LCountyC** **NCountyC**

2	**PRTM 2019 core modelling** a. PW said the base model and forecasting report were issued on 17 October 2025. Comments have been received from GN confirming base model is acceptable and PW asked whether there are any updates on forecast modelling. b. GN said NH are reviewing the Stage 1A information after which the Stage 2A information will be reviewed. The aim is to respond early next week with commentary. c. SD queried the journey time graphs and asked for these to be amended to scatter graphs as the 'x' axis does not reflect distance proportionately. d. PW confirmed these will be provided but asked whether we wait for further comments from NH. GN suggested we deal with the graphs now because it could take some time and limits the review (*VD issued these on 06/11/25)*.	**NH**
3	**PRTM 2019 sensitivity test** a. PW provided a summary of work completed to date. The PRTM Forecasting Report was issued 9 October and NH comments were received on 15 October. Spreadsheets and models were issued to NH on 24 October. BWB still needs to issue the Technical Note that summarises the result of this test. b. GN said that NH is content with the spreadsheets and how the forecast year flows have been derived and will confirm this in writing. c. GN asked if a report is being produced. PW confirmed that a Technical Note has been drafted and is being reviewed internally before being sent to the TWG by end of next week. GN asked if the VISSIM model can be included in the transmittal link again when sending report. d. PW provided an overview of the details in the Technical Note and clarified that it responds to the nine substantive issues raised by NH. It therefore builds on the emails sent recently about the traffic flows being used for SHi engineering and departure from standard process. e. PW said the Technical Note will be sent to all but given it was a sensitivity test requested by NH that BWB aren't necessarily expecting any detailed comments from LCountyC or NCountyC.	**BWB**
4	**PRTM 2023 sensitivity test** a. PW reminded everyone that trip distribution information was issued on 16 October. AECOM/BWB continue to be progressing things and will aim to share information at the TWG meeting next week.	**BWB**

5	**Mezzanine uplift** a. PW confirmed the legal wording has been agreed with NH. b. PW said he emailed HH with further details and asked AW whether there is any update from a LCountyC perspective? AW said he would liaise with HH and respond.	**LCountyC**
6	**Next steps / timescales** a. PW said that BWB will await comments on the standalone modelling and in particular the assessment of the results and conclusions of the TA, appreciating this is less critical than the VISSIM modelling.	**NH/LCountyC/ NCountyC**
7	**Next steps / AOB** a. PW set out the following key next steps: i. Conclusion of PRTM 2019 modelling ii. Completion of PRTM 2023 modelling iii. Statements of Common Ground to wrap everything up. b. PW confirmed the DCO has been re-submitted but not yet formally accepted by PINS. The hope that the PRTM 2019 modelling can be agreed before the end of 2025, whilst the agreement to the PRTM 2023 modelling is likely to fall into the New Year. c. PW asked if there was AOB. No comments received.	

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 4 DECEMBER 2025 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of November's modelling meeting minutes** a. MC went through November's meeting actions, as follows: i. Standalone junction modelling is to be discussed further in this meeting. ii. Comments from LCountyC on the traffic flow furnessing remains outstanding which has been an action for some time. Therefore, it is assumed that no comments are forthcoming and this action will be closed. iii. Comments from NCountyC on the stage 2 modelling PRTM forecasting report remains outstanding. It was agreed with DS that no comments are required and this action can be closed. iv. BWB has been in dialogue with NH on the PRTM 2019 core modelling work which is covered as an agenda item. v. BWB issued scatter graphs to NH and will weave these into a final version of the Technical Note at the appropriate time. GN confirmed these were helpful for NH to carry out their analysis. vi. PRTM 2019 sensitivity test related items are covered as an agenda item. vii. PRTM 2023 sensitivity test related items are covered as an agenda item. viii. Feedback has been received from LCountyC on the legal wording for the use of the mezzanine floorspace. This is covered as an agenda item, albeit noting LCountyC were not present at the meeting.	

	b. MC asked if there were any comments on November's minutes. No comments were received hence they are agreed.	
2	**PRTM 2019 core modelling** a. MC provided a recap and advised that the revised VISSIM forecasting report was issued at the end of October and further information has since been provided to NH as requested. b. PW said that there is one outstanding piece of information relating to maximum queue lengths and impacts on the M1 mainline. GN confirmed NH are interested in maximum queues even if they are short term, to understand impacts on the dynamic network. c. VD said BWB are compiling the spreadsheets to show the comparison between the modelling, it appears that the changes to journey times are within 1-5%. The queues will show a slight variation because of the arrival patterns. The forecasting report does not record the maximum queue and instead records the maximum queue at set intervals. VD asked whether average queues would be more appropriate? d. GN said that maximum queues are more helpful for NH because of the sensitivity of the slip roads. VD said that BWB will compare both but to be mindful that the maximum queues may only reflect a very infrequent amount of time. e. GN said that lots of feedback has been reported on the PRTM 2019 core modelling work so no further comments will be made. f. GN asked if the 2038 Stage 2A scenario still shows a large queue on the M1 northbound off-slip that extends to the mainline? VD confirmed that this still occurs in the without mitigation scenarios, which is then resolved when the mitigation is included. g. GN asked about M1 SB/A50 entry to M1 J24 and whether maximum queues extend back to the diverge point of M1 mainline? h. VD said this occurs in Stage 'A' scenarios when traffic from the draft Local Plan allocation sites is included for. However in the 'B' scenarios queues are significantly less within the northeast quadrant of M1 J24. The conclusions of the previous VISSIM forecasting report therefore remain unchanged. i. GN summarised his understanding of the latest VISSIM modelling: i. Queues on the M1 northbound off-slip are resolved in Stage 2 during both the 'A' and 'B' scenarios. ii. The M1 SB / A50 entry has the potential for a maximum queue that extends to the diverge point in the 'A' scenario but not in the 'B' scenario. iii. Similarly, the A453 Remembrance Way is experiencing queueing in the 'A' scenario but not the 'B' scenario.	**BWB**

	j. VD confirmed GN summary is correct and is as per the original conclusions of the VISSIM forecasting report. k. GN asked for timescales in BWB issuing the latest modelling work. VD said that he is carrying out final checks but should hope to be in a position to issue the model before the end of today. GN thanked VD and asked for BWB's interpretation and view on the results when sending. Timescales for NH to complete the reviews are becoming critical so if this can be sent today that would be appreciated. l. PW suggested that should the modelling results that are sent to NH are as per these conclusions then this should draw a positive line under the PRTM 2019 core scenario. m. GN agreed and said the benefits of the scheme are clear albeit NH also like to report on what schemes cannot achieve/deliver. In this instance, there are a number of different workstreams so understanding the residual impacts helps with the wider strategy. However, EMG2 has focused on delivering mitigation to improve highway safety on the areas it is impacting, which is key. n. PW agreed and said that it was obviously never the intention for EMG2 to resolve all capacity issues but has focused on improving highway safety where it is having direct impacts and is relying on others schemes to input into the wider strategy.	**BWB**
3	**PRTM 2019 sensitivity test** a. MC provided a recap and said that PW issued the Tech Note on 18/11, initial comments have been received from NH and whether there were any further updated? b. GN said that this is a supplementary sensitivity test focusing on stress testing. At this stage there are no major updates on the substantive issues originally reported on by NH. NH are unlikely to produce a detailed Technical Note in response as the focus is on the core modelling. However, at this stage there is nothing that has been reviewed from the sensitivity test modelling that would preclude NH's position with the core modelling. c. MC agreed that the core modelling has to be the focus as it is the key scenario that underpins the mitigation strategy. The sensitivity tests are ancillary information that stress test certain elements of the network for wider understanding. d. PW also agreed and said that all issues that were raised previously have been responded to and dealt with so there will be nothing that remains outstanding. The sensitivity test also helped derive the traffic flows for the highway design work and departure from standard process	

	e. GN asked if the sensitivity test flows are being used for the highway design work? f. PW recapped to say that there was nervousness using the core flows in the design work post receipt of NH's response to the PRTM modelling work because they could be underplaying traffic on the new link road. The sensitivity test and unconstraining the merge provided higher flows and it was agreed that an average of the two would be appropriate for the design work. g. GN agreed and that an average of the constrained/unconstrained modelling outputs is the correct flows to use for the purposes of the highway design work. There has been one model platform used and the VISSIM demand inputs (rather than outputs) have been used alongside NH preferred furnessing methodology. Therefore, this is all acceptable and in line with previous discussions/agreements. h. GN said that should there be a successful design process with approval of departures then this would address the previous substantive issues raised by NH. The key is having a safe operational network within the engineering design. There is unlikely to be any further comments or workstreams beyond what has already been discussed. i. MC asked for an update on the departure from standard wording, in response to Simo Hilditch's email dated 13 November 2025. GN said that he spoke to JB and that this is higher on the priority list so will respond back as soon as they are able to.	**NH**
4	**PRTM 2023 sensitivity test** a. MC said that PRTM 2023 work remains on-going and the aim is for AECOM to share information for BWB to review ahead of next weeks TWG meeting. MC asked if there is an update from AECOM at this stage? b. AD said the modelling is being reviewed and should be sent by early next week. The flow/cordoned data will also be sent and following that we can share findings next Thursday. c. MC thanked AD and said that BWB would like to have an initial review of the information ahead of the TWG meeting and suggested that BWB/AECOM have a call beforehand to discuss the findings if required. d. GN said that NH will not have time to review any PRTM 2023 outputs before the end of the year and the focus will be on the PRTM 2019 core modelling. e. MC agreed with NH focus and that, NH can review and comment on this in early 2026 once they have concluded their review of PRTM	**AECOM**

	2019 core modelling. Whilst the PRTM outputs will have been issued by then, BWB's subsequent analysis will follow into the New year now anyway. f. GN agreed and said that BWB are aware of the information that NH like to see and where the sensitive parts of the network are. So, as long as this is reported, then it should be straight forward for NH to carry out a review in the new year. g. GN said that BWB will need to carry out the same furnessing methodology to derive the forecast year flows. h. VD confirmed BWB will follow the agreed methodology and will be happy to share forecast flows once available.	
5	**Mezzanine uplift** a. MC confirmed that an agreement has been reached with NH and that feedback has been received from LCountyC, who advise that there are a couple of things for BWB to be mindful of in terms of potential traffic increases through villages and across the site frontage. The information that was shared with LCountyC is based on the core trip rates and in reality, we expect traffic flows to be much lower with the implementation of the sustainable transport strategy, which we will remind LCountyC of. However, we will continue to work with them post the 2023 PRTM sensitivity test modelling, as requested.	
6	**Standalone junction modelling** a. MC provided a recap on previous meetings and that agreements have been reached with NH and LCountyC on the base models. Comments remain outstanding on the forecast year modelling, however we understand NH position particularly with regard to impacts at M1 J25 and J23, which are significantly smaller compared to around M1 J24, as detailed in the TA. The focus remains on the VISSIM modelling which covers the most sensitive part of the network with the greatest impacts. b. GN agreed and suggested that this action is now removed from the agenda. If NH have any comments, then they will be in touch. c. PW said this is logical and if no comments are received on certain details for extended periods of time, then we can assume there are no issues. We will include this within the meeting minutes and remove any outstanding actions that have been open for long time. For example, we know LCountyC are comfortable with the validation levels of the standalone junction models and the forecast year flows have been agreed, hence the conclusions in the TA follow an agreed approach. d. GN agreed and said the inputs have all been agreed so the conclusions of the TA set out the detail. The main concern for NH is	

	ensuring that highway safety is maintained on the SRN and the focus of the mitigation is on the M1 where the greatest impacts are occurring. e. GN asked if the standalone modelling is being updated with PRTM 2023 outputs? f. PW said that the purpose of the PRTM 2023 sensitivity test is to check the proposed mitigation scheme using the latest version of the model and it has been agreed that the standalone junction models are not updated. HH had confirmed he is happy with this and for the focus of the sensitivity test to be on the SRN. g. GN agreed with the focus of the sensitivity test being on the SRN. h. MC asked if DS is happy with BWB removing the standalone junction modelling action given impacts on Remembrance Way are limited because the two junctions are both grade separated and the majority of traffic travels on the mainline? DS confirmed he is happy for this action to be removed.	
7	**Next steps / AOB** a. MC set out the following key next steps: i. Concluding the PRTM 2019 modelling with NH focus on the core modelling scenarios. VD to send through the final modelling items to inform NH review. ii. PRTM 2023 sensitivity test outputs to be shared at next weeks TWG meeting, with AECOM providing a usual summary, with BWB analysis to follow. iii. BWB are producing Statements of Common Ground with each of the authorities setting out technical areas of agreement and what remains under discussion. We will share those once available which should clarify the position on key items. b. GN asked for FA and JB are included in the email when issuing the SoCG. PW confirmed all members of the TWG will be copied in across each of the authorities when they are sent individually.	**NH / BWB** **AECOM** **BWB**

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 8 JANUARY 2026 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of December's modelling meeting minutes** a. PW went through December's meeting actions, as follows: i. Queue information relating to the VISSIM modelling was sent to NH. ii. Approval has been received from NH on the PRTM 2019 core modelling. iii. Confirmation has been received from NH on the wording for departure from standards submission. iv. PRTM 2023 modelling outputs were shared and comments have been received from NH which will be discussed further in the meeting. v. Statements of Common Ground were issued and BWB await comments from the authorities. b. PW asked if there were any comments on December's minutes. No comments were received hence they are agreed.	
2	**PRTM 2019 core modelling** a. PW thanked NH for their confirmation that the PRTM 2019 core modelling is now agreed. This is a significant step that allows BWB to update VISSIM reports to close this work out. b. PW asked if a formal note will be provided by NH? GN said there is a report that summarises JSJV/NH's position, but this may be addressed	**NH**

	to NH rather than BWB. However, the report will be shared with the TWG for everyone's reference at the appropriate time. c. PW confirmed BWB are aware of what needs updating in the VISSIM reports (LMVR and forecasting report), building on the information shared with NH separately, so will make a start ahead of receiving any formal response from NH. d. GN said that NH has based their position on the latest spreadsheets, which should be referenced in the VISSIM reports. e. PW asked if any further comments can be expected from LCountyC? HH said that LCountyC has nothing further to add on PRTM 2019 modelling and that their interest now lies with the PRTM 2023 modelling.	**BWB**
3	**PRTM 2023 sensitivity test** <u>Introduction</u> a. PW recapped to say the PRTM 2023 Forecasting Report was issued on 12 December 2025, with comments received from GN on 17 December 2025. A meeting was held with AECOM yesterday to discuss the three key comments: i. Hemington and Lockington traffic increases ii. V/C changes around M1 Junction 24 iii. Pedestrian crossing on A453 and impacts on SRN <u>Hemington and Lockington traffic increases</u> b. AD confirmed the PRTM outputs for EMG2 and EMGP modelling show slight differences even though the models are the same. This is because of different assumptions in traffic forecasts, however, EMGP outputs will be discussed further at the separate TWG meeting next week. c. AD suggested that to address GN comments regarding EMG2, that the best way will be to undertake some initial additional sensitivity test model runs and advised that the scope for this modelling be discussed and agreed. d. PW referred to a meeting with AD on 07/01/25 and the understanding that the roads through Hemington and Lockington to M1 J24 are coded with more capacity in PRTM 2023 that is perhaps over estimating traffic flows. e. AD confirmed that approximately 600 PCUs are using the route and the main limiting factor is the signalised junction at M1J24, which is provided with 20 seconds green time out of a 60 seconds cycle time. This determines the amount of traffic that can physically use the route but additional tests can be undertaken that reduce the green time if	

	required. However, from a journey time perspective, the model shows this is an attractive alternative route compared to using the A50 and M1 SB route which is expected to experience congestion. AD advised that traffic using the Hemington and Lockington route is originating locally from Castle Donington, with the majority travelling towards Nottingham and Uniper. f. PW said it is positive that traffic using this route is originating locally, rather than being traffic re-assigning from the SRN. However, if there is a need for any additional sensitivity testing that throttles the signal times at M1J24 then it can be undertaken and BWB are open to the views of the TWG. g. GN said that there is a general agreement across the authorities that there is an over assignment of capacity along this link. Therefore, the PRTM modelling should be re-run with lower capacity. This is based on a number of meetings and knowledge sharing within this group and stakeholders. h. HH agreed with GN and that additional modelling is needed that reduces the capacity on this link, which would be consistent with other projects. i. PW said it appears this has been requested on a number of projects and asked AD if he is clear on what is needed to undertaken updated modelling? j. AD said clarification is needed on the approach for reducing capacity and whether it involves reducing green times at the signals or if something more detailed is needed. As PRTM is a strategic model, reducing the amount of green time at M1J24 signals should be sufficient. k. PW asked if AD recommendations are acceptable to NH, LCountyC and NCountyC? GN said that this issue has been on-going for some time and asked for BWB/AECOM to confirm what the concerns are and a recommended approach for addressing them and the methodology for any updated modelling for NH to consider. In the meantime, NH are considering this issue behind the scenes. l. ACH said the purpose of any revised modelling will be to understand how the model responds to congestion and how it affects the M1 J24/J24A areas. The second part is that there could be some re-routing away from A50 J1 particularly along Tamworth Road, which needs reviewing in further detail. It may be beneficial to carry out two or three different methodologies for reducing capacity through Hemington and Lockington to understand the best option, such as reduced green time, reduced speed flow curves and coding in specific passing places to understand the differences. m. GN agreed and said that NH would be happy to have a conversation with LCountyC HDM and NDI to inform next steps and decision	**NH/LCountyC**

	making, seeing as time is of the essence to resolve this and compete the 2023 PRTM sensitivity test modeling.	
	n. PW asked AD to therefore have a think about options for the additional model runs and to set out thoughts for wider consideration.	**AECOM**
	<u>Toucan crossing</u>	
	o. AD said that the Toucan crossing has been coded in line with information provided previously by BWB. This results in a 240 seconds cycle time with an 8 seconds red time, which reduces the saturation flow on the A453 from circa 1,700 PCUs to 1,650 PCUs. Therefore, the pedestrian crossing is having a small impact on capacity of the link.	
	p. ACH said the above is useful and asked if details can be provided confirming how many vehicles are queueing from the crossing. AD said this can be provided.	**AECOM**
	q. HH asked if the pedestrian calculations are based on the wider housing growth or demand from EMG2? PW said that BWB can forward the calculations that fed into the assumptions, which are based on pedestrian/cycle demands to/from EMG2. This was considered reasonable as demand from Isley Woodhouse will be on the northern side of the A453 before reaching the crossing. *NB in summary the methodology used to model the signal controlled crossing was; the number of pedestrians/cyclist trips forecast to be generated by the scheme equates to approximately 30 movements per hour; however, it is not anticipated that all of these movements will use the crossing as some may come from Diseworth for example. Therefore, on average during the peak hours a cycle time of 240 seconds with a ped/cyclist crossing phase of 8 seconds was proposed and included for in the PRTM modelling*	
	r. HH asked how this compares against what has been coded in VISSIM? VD said the timings are consistent, so the crossing has been coded as a fixed time every 4 minutes with 8 seconds of red time. HH therefore said that the queueing can be validated within the VISSIM model, which PW confirmed is the case.	
	<u>Summary</u>	
	s. PW summarised to say the key information requested from the PRTM 2023 modeling is the Hemington and Lockington route and how we address the concerns over capacity levels.	
	t. HH said the outputs from the PRTM 2023 modelling could be required for other disciplines and this will be explained in the written reps. PW confirmed he had this in mind and that the outputs will be provided by AECOM. For example, the noise and air quality consultants are aware of this sensitivity test albeit the hope is that the difference in flows between 2023 and 2019 PRTM will be minimal from a	

	environmental perspective and hence no updated assessment work will be required (especially when considering that 2023 forms a sensitivity test versus the core 2019 assessment included for in the DCO). u. HH advised that consideration is given to how the PRTM 2023 modelling is presented. GN suggested the term 'supplementary information' should be used.	
4	**Mezzanine uplift** a. HH said that the following steps should be undertaken with progressing the PRTM 2023 work: i. Complete updated PRTM 2023 modelling. ii. Carry out revised VISSIM modelling using outputs from the above and updated analysis provided to date from 2019. iii. LCountyC to then review the residual effects on the local road network. iv. LCountyC to consider any uplifts in traffic from additional mezzanine floorspace to understand whether this changes the conclusions of the main assessment, with a focus on Diseworth in particular. b. PW thanked HH and agreed with the above steps, adding that regardless of the current debate about the modelling of the Hemington and Lockington route, this will not prejudice anything south of the site, and the 2023 PRTM modelling work shows even less of an impact versus that set out in PRTM 2019 (which does not raise concern)	**AECOM/BWB** **BWB** **LCountyC** **BWB/ LCountyC**
5	**Next steps** a. PW said the focus is the PRTM 2023 modelling and in particular the Hemington and Lockington link capacity. b. VD said in terms of furnessing, the methodology adopted for the PRTM 2019 modelling resulted in higher traffic levels being predicted that exceeded the saturation flow of the link. This therefore needs taking into account when we furness the traffic flows using PRTM 2023 outputs. c. GN agreed this is a sensible approach to understand link capacity constraints and whether they need to be applied to the furnessing exercise to inform the VISSIM modelling hence asked to be kept informed on this. d. GN said JSJV are happy to support and address any other knock on effects that are identified with the PRTM 2023 modelling to resolve them in a timely manner, where needed. e. PW thanked GN although the initial model runs show that impacts are	

	perhaps focused on Hemington and Lockington as traffic increases to the south within Diseworth in particular are limited and less than PRTM 2019.	
6	**AOB** a. PW asked if there was AOB. No comments were received.	

EAST MIDLANDS GATEWAY PHASE 2 – MONTHLY MODELLING MEETING;
THURSDAY 5 FEBRUARY 2026 AT 1000 HOURS (ON TEAMS)

[redacted]

MINUTES:

Agenda item		Action
1	**Review of January's modelling meeting minutes**	
	a. PW went through January's meeting actions, as follows:	
	i. NH agreement has been received on the PRTM 2019 core modelling although this has been superseded by the Statement of Common Ground. GN agreed and said that formal approvals will still be issued by NH in the form of a JSJV Technical Note, but this will not prejudice BWB's plan to update their associated information so there is no need to wait for it	**NH**
	ii. BWB has updated the PRTM 2019 LMVR and Forecasting Report but are liaising with Gowlings as to when revised documents should be sent.	**BWB**
	iii. Discussions were held about the Lockington/Hemington capacity issue and the modelling has been completed by AECOM which forms an agenda item.	
	iv. Queueing information on the A453 from the proposed Toucan crossing was provided at the January TWG meeting and woven into the minutes.	
	v. AECOM has completed the PRTM 2023 modelling and PW issued the Forecasting Report on 05/02/26.	
	vi. BWB are now up and running with the VISSIM modelling using the PRTM 2023 outputs.	
	vii. Post completion of the VISSIM modelling, LCountyC can consider the residual impacts as they see fit (BWB will update the mezzanine	**BWB/LCC**

	review information to assist) b. PW asked if there were any comments on January's minutes. No comments were received hence they are agreed.	
2	**PRTM 2023 sensitivity test** <u>Forecast Year Modelling</u> a. PW said that flow difference plots were shared with the TWG on 23/01/26 and the Forecasting Report was circulated to the TWG before the meeting. The man change is that traffic flows through Lockington and Hemington have reduced, with slightly higher flows and impacts on the M1 southbound off-slip to Junction 24. However, the overall conclusions are consistent with those in the PRTM 2019 Forecasting Report. b. GN thanked the team for completing the work quickly and that the Forecasting Report has been received which NH will review and respond to. <u>Furnessing Methodology and VISSIM Modelling</u> c. PW referred back to previous discussions and the approach for the furnessing methodology, confirming that BWB are working through the furnessing and modelling. The results suggest that traffic flows may have reduced overall in PRTM 2023 so the network could operate slightly better compared to the PRTM 2019 core modelling. Once the VISSIM modelling has been concluded, it will be discussed with NH before model outputs are shared. d. GN asked if BWB could send the furnessing spreadsheet so that NH can review the traffic flows once ready. Once BWB is comfortable with the modelling NH are happy to join a call to discuss. e. GN asked that information is shared in the following order: i. Furnessing inputs ii. VISSIM models iii. V4 spreadsheet showing journey times and other outputs iv. Reporting <u>NCountyC Email</u> f. PW referred to an email from TBo on 15/01/26 which was shared on screen. NCountyC raised comments about impacts at the A453/Barton Lane roundabout. The email has been shared with AECOM and their response is that the junction is not within the Area of Influence in the revised PRTM run and therefore there is no significant impact from EMG2 development. g. AD agreed and said that the A453/Barton Lane junction now falls	**NH/LCountyC /NCountyC** **BWB** **BWB** **BWB**

	outside the AoI. h. DS asked that BWB respond to that email to explain this which should allow NCountyC to formally remove any queries *(email subsequently sent 5/2/26)*. <u>Mezzanine Uplift</u> i. PW said that once the VISSIM modelling using the PRTM 2023 outputs has been completed, BWB can produce an email which considers the impact of the additional mezzanine floorspace on the local road network to respond to previous comments from LCountyC. The contents will also formally be woven into the PRTM 2023 sensitivity test Technical Note. <u>EIA Flow Inputs</u> j. PW said that once the VISSIM modelling has been complete, BWB will compare traffic flows from an EIA perspective. From an initial analysis, it appears that traffic flows have reduced in PRTM 2023 compared to PRTM 2019, except for the M1 mainline. This should demonstrate how there is no need for any further EIA assessment above what was undertaken using the PRTM 2019 outputs, especially when PRTM 2023 forms a sensitivity test, and it appears that 2019 provides a worst-case assessment of the two. k. AD agreed that 2019 is the worst-case, albeit the 2023 evidence should help provide confidence in informing the mitigation scheme at M1 Junction 24 in particular.	**BWB** **BWB** **BWB**
3	**MCO Application and VISSIM Modelling (NH Reps)** a. PW referred to NH representation and the request for VISSIM modelling of the MCO application. BWB confirmed that this VISSIM work can be carried out, which will involve taking the PRTM 2028 outputs and manually assigning Plot 16 EMG1 traffic on top to understand the impacts. b. PW also said that comments have been received on road safety, which will be taken into account in this work. BWB will also respond to NH generally on highway safety matters and clarify how this has been taken into account during the project. c. GN asked that the methodology for the MCO VISSIM modelling is agreed with NH beforehand. GN said he will therefore check with JB on what is required. d. PW suggested that an alternative approach could be that BWB simply provide NH with the Plot 16 traffic assignment to understand whether the impacts warrant a revised VISSIM model.	

	GN said he will speak to JB and confirm what is required but it may be that the scope for addressing NH comments on the MCO application can be reduced.	**NH**
4	**Next steps** a. PW summarised the next steps: i. Conclude PRTM 2023 sensitivity test VISSIM modeling. BWB will share information with NH. This will ultimately be encapsulated in a Technical Note, including the mezzanine and EIA related matters that have been discussed. ii. The MCO test, which requires initial feedback from NH on the approach for this. iii. SoCG which will be discussed more at the TWG meeting next week. The SoCG from LCountyC has been received. b. PW confirmed that comments have been received from HH of LCountyC on the SoCG. HH has suggested for all references to PRTM 2019 to be stripped out, however BWB's view is this will need to remain in the SoCG in some form as it forms the core scenario which the PRTM 2023 sensitivity test can be compared against. c. AW asked for BWB to reply to LCountyC so that they can consider the details further.	**BWB** **NH** **BWB**
6	**AOB** a. PW asked if there was AOB. No comments were received.	

APPENDIX 3: PRTM Proforma

Pan Regional Transport Model (PRTM)

Development Testing Proforma

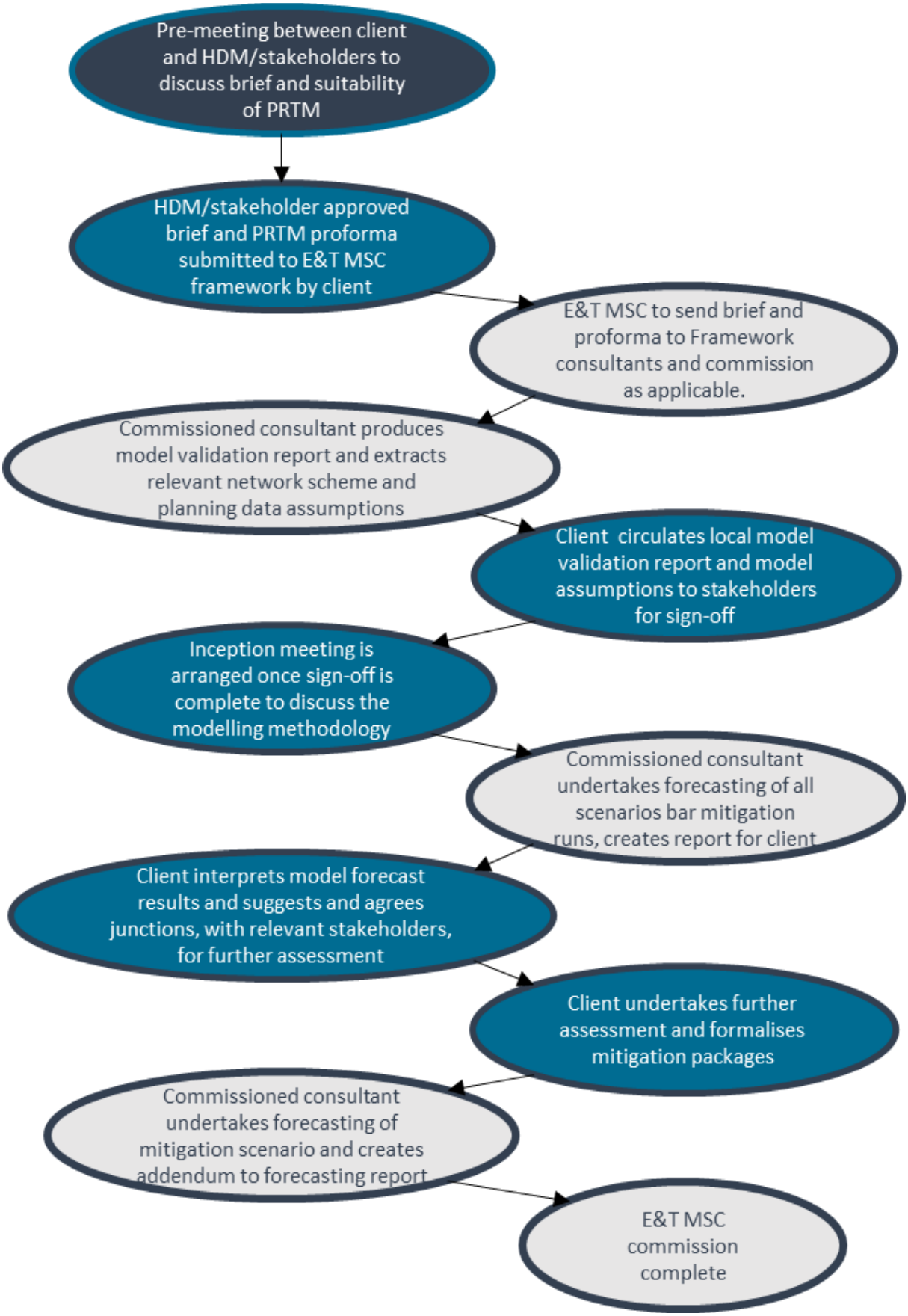
Foreword:

Before completing this form, for development management purposes, it is recommended that you contact Leicestershire County Council (LCC) and seek advice from the Highway Development Management (HDM) team on the proposed use of PRTM. The HDM team can be contacted at hdc@leics.gov.uk.

Although not a requirement it is strongly recommended that potential stakeholders, e.g. LCC HDM, National Highways, sign-off on your brief and trip generation before submitting this proforma to Environment and Transport Modelling Services Contract (E&T MSC). This should ensure that any subsequent work proposal through E&T MSC is as accurate as possible in terms of scope, timescales, and cost.

Please note that E&T MSC and wider Network Data and Intelligence (NDI) Team work independently from all other teams within LCC, including HDM. Please ensure any correspondence intended for the HDM team is sent to the case officer for your (pre)application; or, if unknown, to HDM's generic inbox: hdc@leics.gov.uk.

On the following page is an indicative flowchart summarising the general transport modelling process for using the PRTM to inform client Transport Assessments; this is a typical approach and has been simplified to a generic process – each individual application may differ from the below and as above advice should be sought from the HDM team.


Pre-meeting between client and HDM/stakeholders to discuss brief and suitability of PRTM
HDM/stakeholder approved brief and PRTM proforma submitted to E&T MSC framework by client
E&T MSC to send brief and proforma to Framework consultants and commission as applicable.
Commissioned consultant produces model validation report and extracts relevant network scheme and planning data assumptions
Client circulates local model validation report and model assumptions to stakeholders for sign-off
Inception meeting is arranged once sign-off is complete to discuss the modelling methodology
Commissioned consultant undertakes forecasting of all scenarios bar mitigation runs, creates report for client
Client interprets model forecast results and suggests and agrees junctions, with relevant stakeholders, for further assessment
Client undertakes further assessment and formalises mitigation packages
Commissioned consultant undertakes forecasting of mitigation scenario and creates addendum to forecasting report
E&T MSC commission complete

Section 1: Client Details

Name:	[redacted]
Company:	BWB Consulting Ltd
Telephone:	[redacted]
E-mail:	[redacted]
Date:	09/09/2025

Section 2: Development Details

Title:	East Midlands Gateway Phase 2
District / Location:	Land to the southeast of EMA, and southwest of M1J23a in North West Leicestershire DC's jurisdiction

Background:	The scheme has been modelled using the 2019 version of the EMFM, as was originally agreed with EMG2 Transport Working Group. LCountyC, as local highway authority, has requested that the modelling work be updated using the more recent version of PRTM. The Client is prepared to undertake some sensitivity modelling using the 2023 version of PRTM, provided it is completed before the end of 2025. As result, it is proposed that the following approach is adopted: i) The trip generation agreed for inclusion within the 2019 modelling work is retained, albeit on the basis that it is accepted that this aligns with the total GFA of 530,000sqm submitted for the DCO/MCO in total, including for 200,000sqm GFA of mezzanine floor space, considering the evidence provided based on the 2024 traffic survey undertaken at EMG1, which confirmed that the agreed trip rates are significantly higher and therefore provide a worst-case assessment. This will provide a like for like comparison versus the modelling work undertaken in the 2019 version of the EMFM. ii) There is no intention to model the 'B' scenario (excluding draft local plan allocation sites) once more from a transport perspective for the purpose of this exercise, with the full focus on the 'A' scenario, including for draft local plan allocation sites in the baseline as the core scenario for the TA. iii) Construction traffic is not modelled any further, seeing as it is highly unlikely that the conclusions reached in the 2019 PRTM modelling work will be prejudiced, as traffic flows have reduced overall in comparison to 2023 PRTM outputs, certainly on the local road network. iv) Stage 1 modelling, including for the development proposals, will include for the (single point) access strategy, including extended flare proposed as part of the 2019 PRTM modelling and Toucan crossing. v) The mitigation considered to date will include the iterations adopted to date to strike a better balance with the signal timings where applicable. vi) Consideration will be required as to how the A50 westbound M1 southbound merge is modelled post the comments received from National Highways in relation to the 2019 PRTM modelling (ie unconstrained capacity – TBC by National Highways). vii) The full focus of any updated transport work is a sensitivity test to test whether the mitigation proposals included for within the VISSIM model study area, focusing on the junctions in the vicinity of M1 Junction 24, would remain fit for purpose if assessed using the 2023 version of PRTM. Any wider impacts, beyond said core study area, will be

	considered from a high level only, with no intention of formally re-running junction capacity assessments for non VISSIM model junctions. Whilst the pre-modelling outputs in Section 4 will be required, these should be agreed considering the work recently undertaken for the East Midlands Growth Point scheme.

Access Arrangements:

Please provide a brief description of the access arrangements in the box below; if there are preliminary scheme drawings available, please provide these alongside submission of this proforma via email attachment.

As per that assessed in the 2019 version of PRTM; via a fourth arm of the existing A453/Hunter Road roundabout to serve 100% of the EMG2 development plus the bus interchange, with the 30,000sqm GFA B8 development at EMG1 (Plot 16) to be accessed via the existing EMG1 site access on Wilder Way. The Toucan crossing on the A453 should also be included as part of the access proposals for the avoidance of doubt.

Employment Development Land Use:

Land Use	Class	Unit	Quantum	Jobs
Shops	A1	m^2	*Figure*	*Figure*
Business	B1a	m^2	*Figure*	*Figure*
General Industrial	B2	m^2	*60,000*	*Figure*
Storage or Distribution	B8	m^2	*470,000*	*Figure*
Research & Development	B1b	m^2	*Figure*	*Figure*
Leisure	D2	m^2	*Figure*	*Figure*
Hotels	C1	Beds	*Figure*	*Figure*
Education	D1	Students	*Figure*	*Figure*

Section 3: Modelling Required

There are two main forms of assessment that the E&T MSC offers, a highway-only model run and a full-PRTM model run. It will be confirmed in the proposal which type of assessment is recommended for your development.

Please provide the trip generation for your development in the relevant tables below, it is advised to have these values agreed with HDM prior to submission.

Trip Generation:

Employment – EMG2 (60,000sqm GFA B2 and 440,000sqm GFA B8, including 200,000sqm mezzanine floor space):

Vehicle Type	AM			IP			PM		
	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
Light Vehicles	637	78	715	-	-	-	164	694	858
HGV's	75	86	161	-	-	-	87	55	142
Total	711	165	876	-	-	-	250	748	998

Employment – EMG1 (30,000sqm GFA B8, including mezzanine floor space):

Vehicle Type	AM			IP			PM		
	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
Light Vehicles	36	4	40	-	-	-	12	42	54
HGV's	6	7	13	-	-	-	8	5	13
Total	42	11	53	-	-	-	20	47	67

Assessment Years:

The PRTM can model any year between 2023 and 2061. For HDM applications is it recommended to include a "present day" or "year of observed counts" forecast, an opening year forecast, and a full build-out forecast. Interim assessments may be required between "opening year" and "full build out" if the quantum of proposed development is sufficiently large.

Please provide modelling years required with proposed phasing in each forecast year selected above, in the box below. An example has been included in green, please delete and populate with your data.

2023: 0% development (do minimum, base year)
2028: 100% occupancy
2038: 100% occupancy

Assessment Options:

Please select which scenarios you will want testing, as well as defining which model year each scenario corresponds to as this can potentially be multiple forecast years for one scenario; this will depend on your discussions with HDM and their requirements.

Scenario	Choice	Model Year(s)
Core	Assumed	2023/2028/2038
Core + no development + access strategy	☐	
Core + development + no mitigation	Assumed	2028/2038
Core + development + mitigation	☒	2028/2038
Other, please specify:		

Time Period Selection:

Please select the time periods you would like your development assessed in:

AM (0800-0900)	☒
IP (average hour for 0900-1600)	☐
PM (1700-1800)	☒

Indicative list of Junctions for Further Assessment:

If known, please provide an indicative list of expected junctions that may be required for further assessment in the box below. This, in turn, will facilitate the delivery of strategic model outputs to inform any further detailed junction assessments. Failing that, a rough estimation of the number of junctions that **may** require further assessment will aid consultants in producing robust quotations within their proposals.

Building on point viii) of Section 2, the following junctions will require detailed assessment:

i) A453/Hunter Road Roundabout (Leicestershire)
ii) Finger Farm Roundabout (National Highways)
iii) A453/EMGP1 Signal Gyratory (National Highways)
iv) M1 Junction 24 (National Highways)

Section 4: Pre-Modelling Outputs

This section details the options available to the client pre-modelling; typically, in aid of model assurance for project stakeholders to ensure no abortive work is undertaken. Please de-select which pre-modelling outputs you do not require, as these are usually standard documents provided to HDM.

Project Specific Study Area Model Validation Report	☒
Local Planning Data Assumptions	☒
Network Scheme Uncertainty Log	☒

Section 5: Post-Modelling Outputs

Highway Model Outputs:

The following highway model output options are available post-transport-model assignment. We have assumed the basic level of analysis required to complete a forecasting report to HDM's satisfaction, but please confirm this with them prior to commission.

Area of Influence (AoI) (criteria defined as 5% and 30 PCU change)	Assumed
Highway Flow Changes within AoI	Assumed
Highway Delay Changes within AoI	☒
Maximum Volume/Capacity Ratio Plots	Assumed
Select Link Analysis of Development Traffic (link based)	Assumed
Provision of flow data for junction design/assessment	☒
AADT/AAWT	☐

The following model outputs will be required in shape file format for the purposes of our subsequent analysis (which may overlap with above).
 	
- AM/PM Peak flows classified into Lights/Heavies/Total
- AM/PM Development only flows classified into Lights/Heavies/Total
- Maximum Junction VoC
- Link Delay
- Link Queue
- Mean speeds of links
- Road Class
 	
Further to the above extraction of cordon matrices (actual flows) for the VISSIM modelling extent is required which includes the following junctions:
- M1 J24;
- M1 J24a southbound merge onto the M1 and M1 junction 24;
- A453/EMG Phase 1/Kegworth Bypass signal controlled gyratory;
- M1 J23a Finger Farm roundabout (including M1/A42 on and off slip roads);
- A453/Hunter Road/minor EMG Phase 2 access roundabout;
 	
The outputs from the cordon matrices should include:
- Cordon matrices (in vehicle) for
  ○ Cars / LGVs / HGVs
  ○ AM Peak hour / PM Peak hour (including shoulder peaks if available)
- The cordon matrices to be provided in spreadsheet format.	

Environmental Model Outputs:

Environmental model outputs are available post-transport-model assignment. Please note that environmental outputs will require a separate commission via the E&T MSC Manager, please contact ETCF@leics.gov.uk if you require emission or dispersion modelling to support your application.

Section 6: Supporting Documents

Supporting Documents:

Please provide any supporting documents that have been selected below to the E&T MSC Manager upon delivery of your proforma.

Location Plan Access Scheme Drawings (and any associated signal timings) Development Masterplan	☐ ☐ ☐
Other, please specify:	Above all as per the 2019 PRTM run

Client's Expected Timescales:

Please provide an approximation for your client's timescales for this modelling commission in the box below; please take into consideration HDM's and National Highways' standard response times and sign-off procedures to avoid unrealistic timescales being provided and slippage to your project.

Now that the DCO has been submitted for proposals based on the 2019 version of PRTM, the plan is for the above, including subsequent analysis, to be concluded in the lead up to the Examination, expected to commence in January 2026.

Section 7: Contact Details

Email the completed form, along with supporting documents to ETCF@leics.gov.uk

For queries regarding the modelling process please contact:

Laura Good – ETCF & ET-MSC Manager

Email: ETCF@leics.gov.uk

APPENDIX 4: PRTM 2023 Sensitivity Test Forecasting Report

AECOM

PRTM 2023

East Midlands Gateway Phase 2: Forecasting Report

Delivering a better world

Quality Information

Prepared by	Checked by	Approved by
[redacted]	[redacted]	[redacted]

Revision History

Revision	Revision date	Details	Authorised	Name	Position
v1.0	2025-12-05	For Issue	Yes	Mark Dazeley	Regional Director
v1.1	2025-12-11	Revised Table 3.1 and 4.1	Yes	Mark Dazeley	Regional Director
v2.0	2026-02-04	Revised following Lockington and M1J24 J24a network coding changes	Yes	Mark Dazeley	Regional Director
v2.1	2026-02-12	Revised Table 3.2, Table 4.2 and Appendix A		Mark Dazeley	Regional Director

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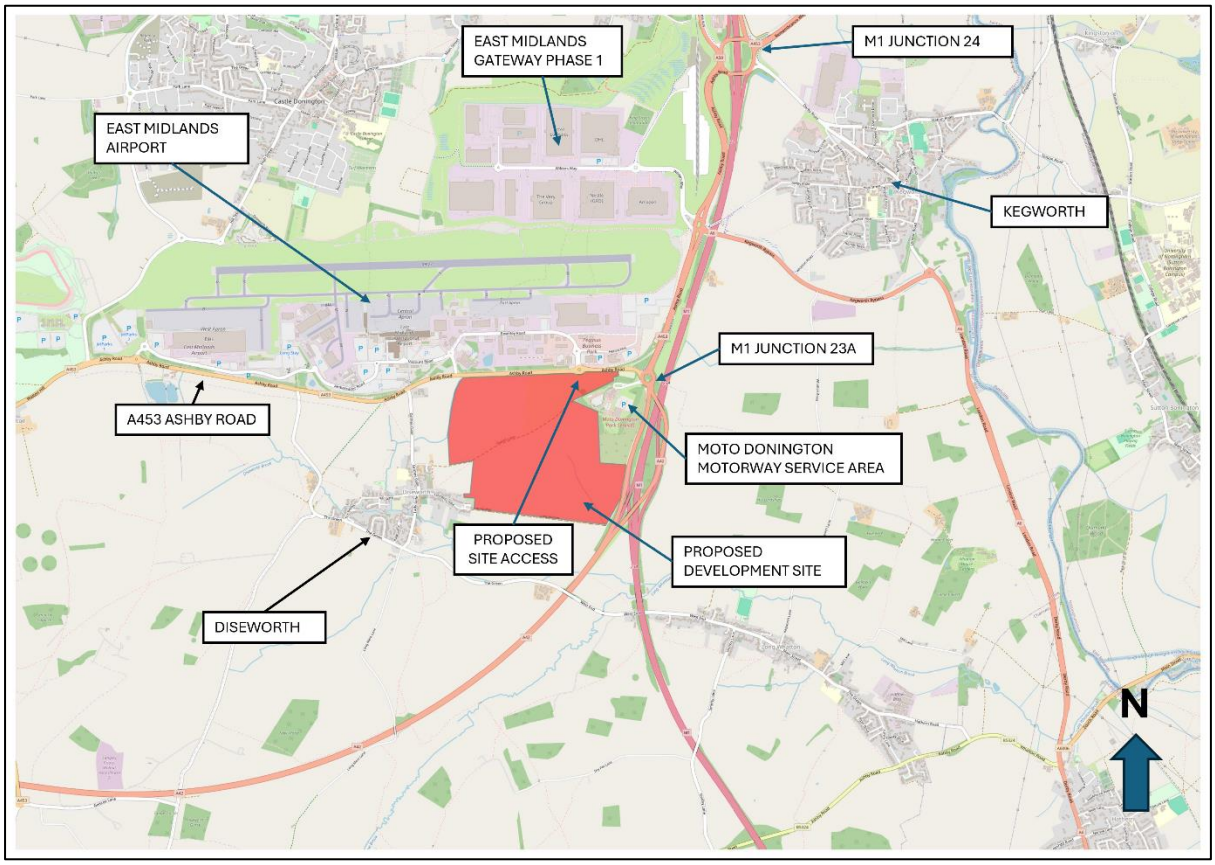
Section 1 – Overview

1.1 Introduction

1.1.1 The East Midlands Gateway Phase 2 (EMGP2) development is a proposed employment development of mixed B2 (general industrial) and B8 (storage or distribution) use, with capacity for 530,000sqm floorspace submitted for the DCO / MCO in total, including for 200,000sqm mezzanine floorspace. In addition to this, 30,000sqm of B8 floorspace is proposed on East Midlands Gateway Phase 1 (EMGP1) (Plot 16).

1.1.2 Figure 1.1 shows an indication of the location of the proposed EMGP2 development, denoted by the area shaded in red. The proposed development has a total area of circa 250 acres located to the south of the A453 and East Midlands Airport itself, to the east of Diseworth village. M1 Junction 23a lies to the east of the site with the Moto Donington Motorway Service Area directly abutting to the north-east.

Figure 1.1: Location of Proposed Development[1]

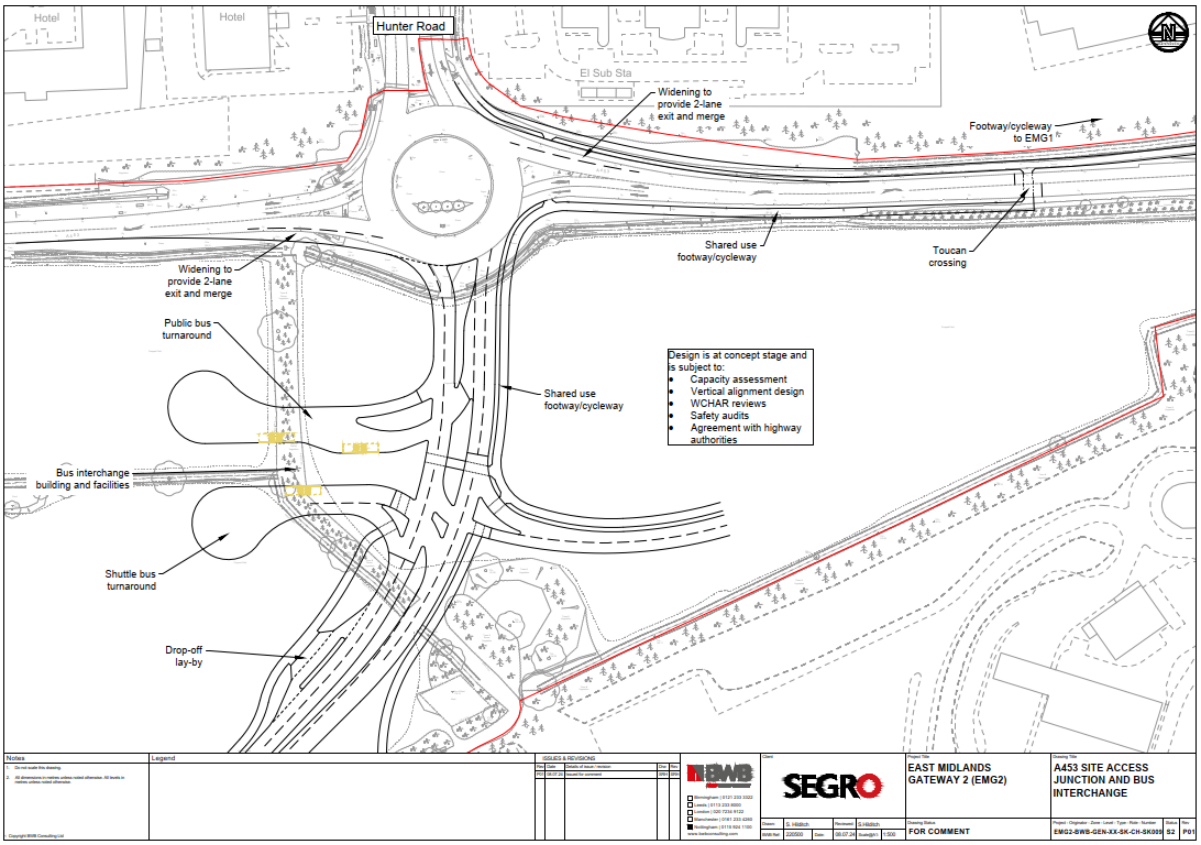


© OpenStreetMap Contributors

1.1.3 The proposed EMGP2 development will access the highway network via a single point of access consisting of a fourth arm off the existing A453 / Hunter Road roundabout, as indicatively shown in Figure 1.2. This design includes widening the exiting arms of the roundabout to two lanes before merging into a single lane, as well as the installation of a toucan crossing on the A453 between the proposed access roundabout and Finger Farm Roundabout. For the proposed EMGP1 (Plot 16) development, access will be via Wilder's Way.

[1] Location of Proposed Development adapted from Technical Note 1 – Transport Scoping Note, East Midlands Gateway Phase 2 (EMG-BWB-GEN-XX-RP-TR-0001_TN1 Transport Scoping Note-S1-P3.pdf). Provided as part of the information pack with the PRTM Development Form for East Midlands Gateway Phase 2.

Figure 1.2: Site Access Junction[2]



1.1.4 AECOM has been commissioned to undertake strategic modelling to assess the potential impacts of the proposed development, using the latest Pan-Regional Transport Model 2023 (PRTM23) for the AM Peak (08:00-09:00) and PM Peak (17:00-18:00) hours.

1.1.5 Subsequent to the submission of the Forecasting Report[3] in December 2025, concerns were raised regarding the level of traffic forecast to use the eastbound route through Lockington to the west of M1 Junction 24. It was agreed to incorporate three specific refinements into all model scenarios to limit the capacity and relative attractiveness of this route, and ensure that the impact of forecast traffic increases on M1 Junction 24 is fully understood:

- adjustment of signal timings at the Hilton Hotel Lane arm of M1 Junction 24;
- adjustment of link speeds through Lockington, and;
- adjustment of merge/diverge capacities at the M1 J24a/J24 southbound.

1.1.6 These adjustments were also tested in the 2023 base year model to assess the impact on calibration and validation. The resulting flow impacts were found to be minimal. It was confirmed that key strategic road network link flows continue to meet TAG criteria; therefore, these modifications do not constitute a material change to the base year model performance.

1.1.7 This report serves as an update to the previous version, documenting the forecast modelling with the inclusion of the agreed adjustments and the subsequent results for the strategic modelling assessment of the proposed development.

[2] EMG2-BWB-GEN-XX-SK-CH-SK009 S2 P01
[3] PRTM23 - EMGP2 - Forecasting Report v1.1

1.2 Report Structure

1.2.1 Following the introduction, this report contains the following sections:

- Section 2 – Forecasting Approach and Assumptions: this section details the forecasting assumptions applied alongside the mitigation measure assumptions.
- Section 3 – With Development Scenario Results: this section details the forecasting results with the proposed development and assigned using PRTM23.
- Section 4 – With Mitigation Scenario Results: this section details the forecasting results with the mitigation measures and assigned using PRTM23.
- Section 5 – Summary of the : this section provides a summary of the assessment of the proposed development.
- Appendix A – Planning Data Assumptions: this section summarises the residential and employment forecasting assumptions.
- Appendix B – Network Assumptions: this section details the network assumptions for the future year models.

Section 2 – Forecasting Approach and Assumptions

2.1 Introduction

2.1.1 This section sets out the forecasting assumptions applied for this application of the PRTM23, and the methodology adopted to create the required model forecasts.

2.1.2 The following forecast model scenarios have been produced for this report:

- 2028 Core Scenario;
- 2038 Core Scenario;
- 2028 With Development Scenario;
- 2038 With Development Scenario;
- 2028 With Mitigation Scenario; and
- 2038 With Mitigation Scenario.

2.1.3 The Core Scenario forecasts have made use of the highway, public transport, and variable demand model components of the PRTM23. The forecasts therefore include the response of travel demand to forecast changes in the costs of travel (including congestion, fuel prices and public transport fares) and change in assumed highway and public transport infrastructure over time. Section 2.2 provides the assumptions applied to the Core Scenario.

2.1.4 To produce the With Development forecasts, the highway demand for the proposed development has been added to the Without Development highway demand matrices and assigned in the highway model. Section 2.3 provides the demand assumptions for the proposed development.

2.1.5 To produce the With Mitigation forecasts, the highway mitigation measures for the proposed development have been added to the With Development network and assigned in the PRTM23 to create the required model forecasts. Section 2.4 provides the mitigation measure assumptions applied in the With Mitigation scenario.

2.1.6 PRTM23 uses the November 2024 TAG data book which was the latest available TAG data book at the time of the model calibration.

2.2 Background Planning Data and Highway Infrastructure Assumptions

2.2.1 Appendix A and Appendix B provide a summary of the planning data and highway infrastructure assumptions included in the forecast scenarios. Given the number of developments in the Uncertainty Log, the reporting of the planning data is limited to residential sites with more than 500 dwellings and employment sites with more than 750 jobs. All available data that should be used in the modelling, irrespective of size, have been used in the model forecasts.

2.2.2 The trip forecasting process contained within the PRTM uses forecasts of population, households, and jobs to generate estimates of future travel demand. Planning forecasts (containing measures of housing and development) were unconstrained (NTEM minimum[1]) for this application.

2.3 Proposed Development Trip Generation Assumptions

2.3.1 Development trip generation data for the proposed development were provided by the client which have been reproduced in Table 2.1.

2.3.2 We assume that the proposed development will be fully build out (i.e. 100% occupancy) in the 2028 and 2038 With Development scenarios.

[1] In the event that the planning data lead to below NTEM growth, the model reverts to NTEM as minimum.

Table 2.1: Development Trip Generation in Vehicles (2028 and 2038)[1]

	Light Vehicle Trips			Heavy Goods Vehicle Trips			All		
	Departing (Out)	Arriving (In)	Total	Departing (Out)	Arriving (In)	Total	Departing (Out)	Arriving (In)	Total
East Midlands Gateway Phase 2 Development									
AM Peak hour (08:00 to 09:00)	78	637	**715**	86	75	**161**	165	711	**876**
PM Peak hour (17:00 to 18:00)	694	164	**858**	55	87	**142**	748	250	**998**
East Midlands Gateway Phase 1 (Plot 16) Development									
AM Peak hour (08:00 to 09:00)	4	36	**40**	7	6	**13**	11	42	**53**
PM Peak hour (17:00 to 18:00)	42	12	**54**	5	8	**13**	47	20	**67**

2.4 Mitigation Measures

2.4.1 The following list of mitigation measures was provided by the client as shown in Figure 2.1[2] and Figure 2.2[3] and included in the mitigation assessment:

1. New M1 northbound to A50 westbound link road:
   - A single lane link road between the M1 northbound and the A50, bypassing M1 Junction 24.
   - One lane will diverge from the existing four-lane carriageway on the M1 northbound.
   - The existing dedicated left-turn land from the A453 northbound to the A50 will be removed.
2. A50 eastbound approaching Junction 24:
   - An additional lane, increasing from one lane to two lanes, before merging with the M1 southbound off-slip to form three lanes approaching Junction 24.
3. M1 Junction 24 circulatory works:
   - Layout changes to the western side of the M1 Junction 24 circulatory, as illustrated in Figure 2.1.
4. EMGP1 access improvements (as shown Figure 2.2):
   - An additional circulatory lane on the eastern section of the Wilders Way / A453 / A6 Kegworth Bypass roundabout.

[1] 250909 EMG2 PRTM 2023 Development Form v1.0.docx
[2] MG2-BWB-HGN-XX-DR-H-0103_Document DCO 2.8C_EMG2 Highway Plans GA Sheet 3 of 4-P07.pdf
[3] 250319 EMG2-BWB-HGN-XX-M2-H-0100_Site Wide Highways General Arrangement.DWG

Figure 2.1: Mitigation Measures at M1 Junction 24

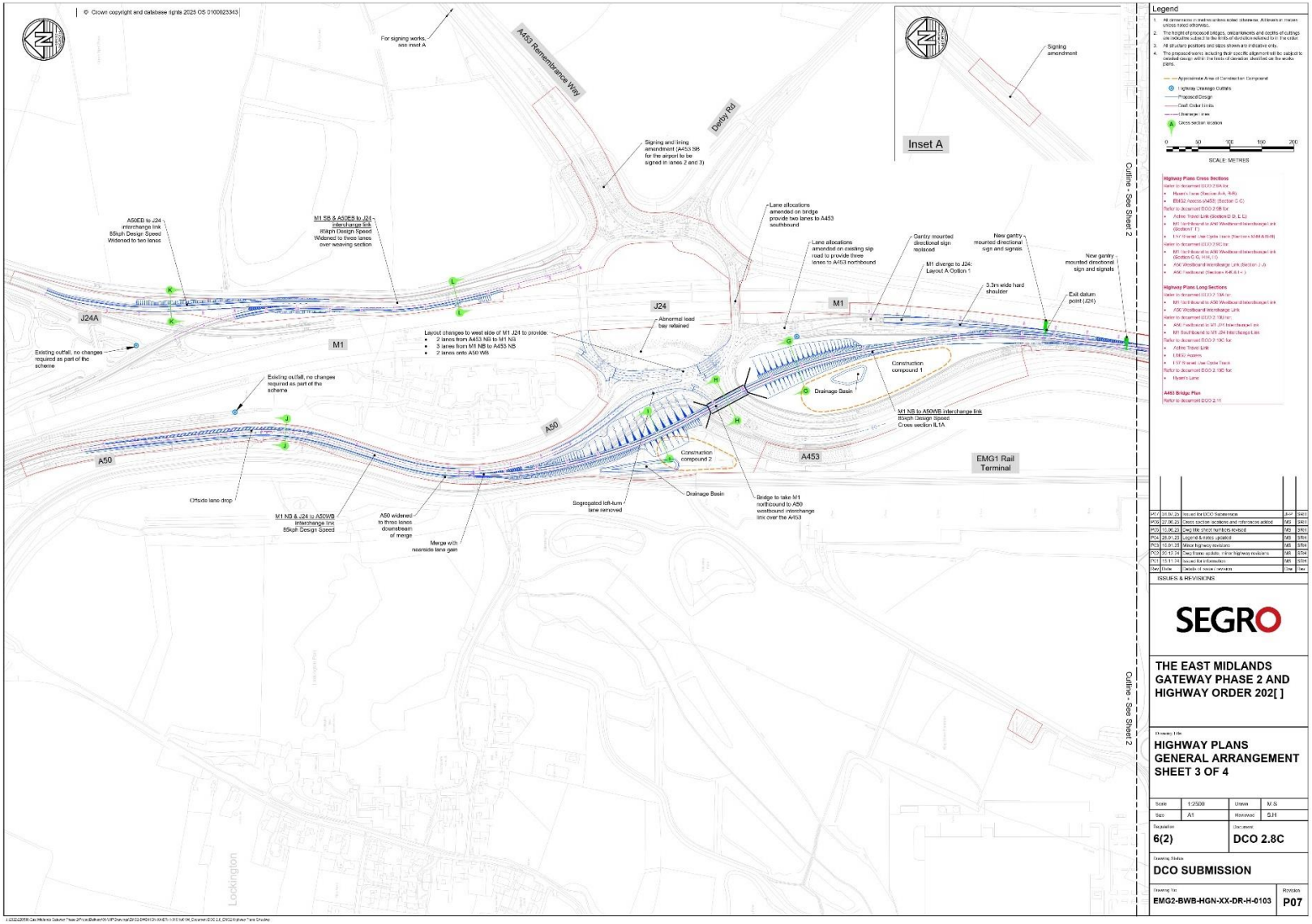
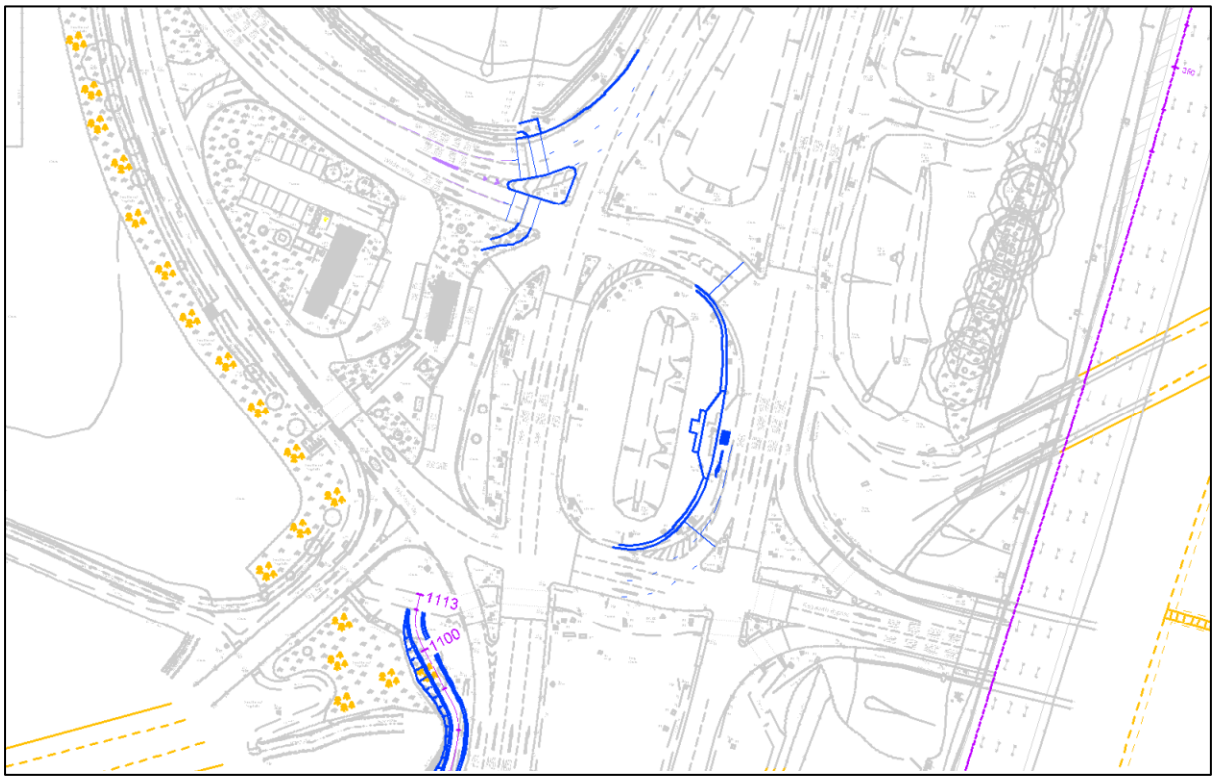


Figure 2.2: EMGP1 Access Improvements



Section 3 – With Development Scenario Results

3.1 Introduction

3.1.1 This section details the With Development scenario results for the proposed EMGP2 development assessment for the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours. The analysis includes:

- routeing of the forecast development traffic in the With Development scenarios (Section 3.2);
- forecast flow changes between the Core and With Development scenarios (Section 3.3);
- an assessment of the Area of Influence (AoI) (Section 3.4);
- forecast delay changes between the Core and With Development scenarios (Section 3.5); and
- forecast maximum node volume-capacity ratios for the Core and With Development scenarios (Section 3.6).

3.2 Forecast Development Traffic

3.2.1 It was agreed that the development trip distribution should be based on PRTM's in-built 'gravity model' which distributes trips according to the size and proximity of surrounding land-uses. The full PRTM was therefore run with the proposed development planning data assumptions included and then the trip distributions for each development zone were extracted. These were used along with the proposed trip generation to add the proposed development demand to the Without Development matrices which were reassigned to the With Development networks.

3.2.2 Figure 3.1 to Figure 3.8 show the forecast development trip distribution separately for HGVs and light vehicles on the highway network for the 2028 and 2038 With Development scenarios, expressed as passenger car units (PCUs). For information, the PCU factor for HGV is 2.0 and the PCU factor for the other assignment vehicle types (i.e. cars and LGVs) is 1.0.

3.2.3 The forecast HGV development traffic shows a broadly similar directional distribution to and from the proposed development during both the AM and PM Peak hours in the forecast years 2028 and 2038. HGVs are forecast to use the M1 and A50 for travel to / from Derby and the north, while using the M1 and A42 for connections to Leicester, Birmingham, and the south. In the 2038 PM Peak scenario, a portion of HGV trips (~20 PCUs) heading towards Birmingham via the A42 is forecast to route via A453 Walton Hill Road and A42 Junction 14, rather than via the Finger Farm Roundabout. This alternative routeing is likely driven by delays associated with the Finger Farm Roundabout and the resulting travel time advantage of travelling via A42 Junction 14 instead.

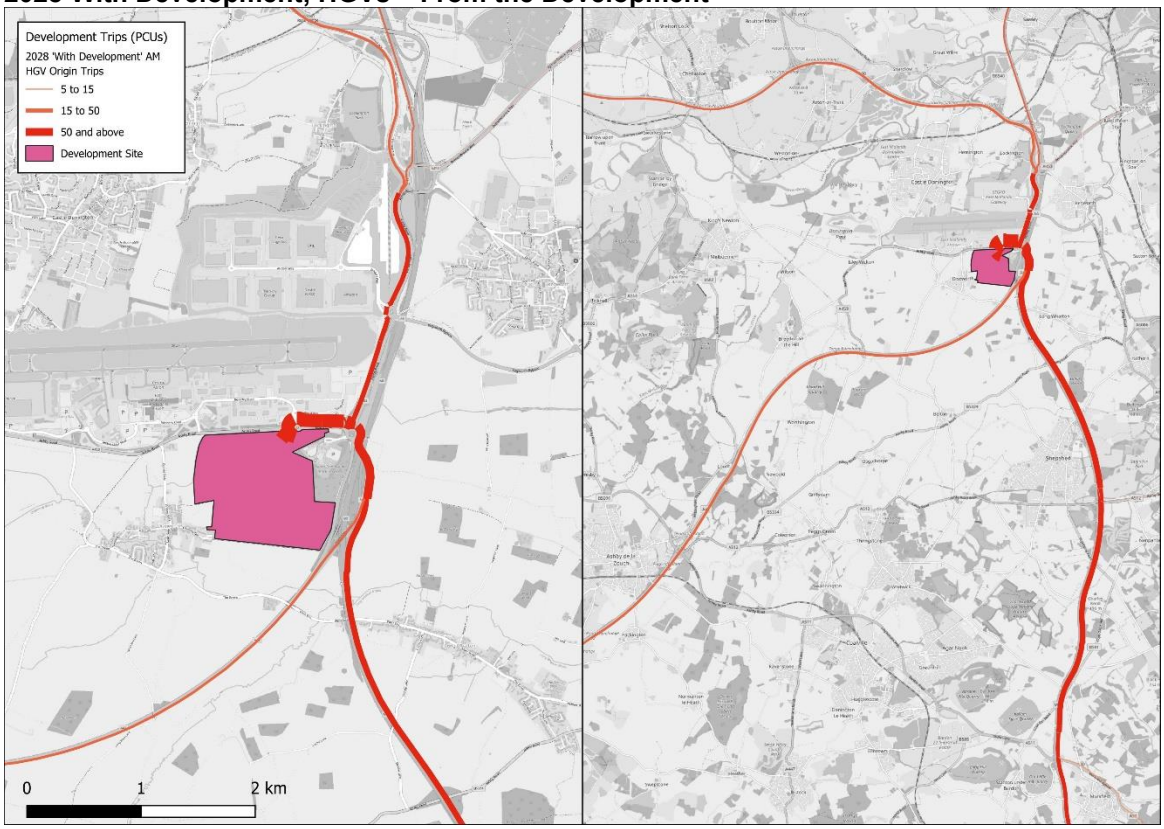
3.2.4 It should be noted that the local networks through Diseworth, Castle Donington and Kegworth have weight restrictions applied. These restrictions are represented in the PRTM23, and the HGV development trips are therefore forecast to mainly route to and from the proposed development site via the Strategic Road Network (SRN).

3.2.5 For light vehicle traffic, the model forecasts a broadly similar directional distribution of trips to and from the proposed development during both the AM and PM Peak hours in both forecast years. For outbound AM Peak and inbound PM Peak traffic, light vehicles are forecast to use the M1 and A50 for travel to / from Derby and the north, and use the M1 and A42 for connections to Leicester, Birmingham, and the south.

3.2.6 For inbound AM Peak and outbound PM Peak traffic, light vehicles similarly use the SRN to access Derby, Leicester, Birmingham, and destinations to the north and south. However, some traffic is forecast to use alternative local roads to connect to the SRN. Most light vehicles trips (~150 PCUs) to the development are forecast to route via the M1 northbound from the Leicester direction, followed by the M1 southbound (~100 PCUs) and the A453 Remembrance Way (~70 PCUs). Some trips originating from the north-west and travelling eastbound on the A50 are approaching along Melbourne Road via A50 Junction 3. In the 2038 PM Peak, trips approaching from the A42 northbound are forecast to route via A42 Junction 14 and Green Lane. The directional pattern of these development trips is generally reversed during the PM Peak, representing trips travelling from the EMGP2.

Figure 3.1: HGV Trip Distribution to/from the Development, 2028 AM Peak

2028 With Development, HGVs – From the Development



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2028 With Development, HGVs – To the Development

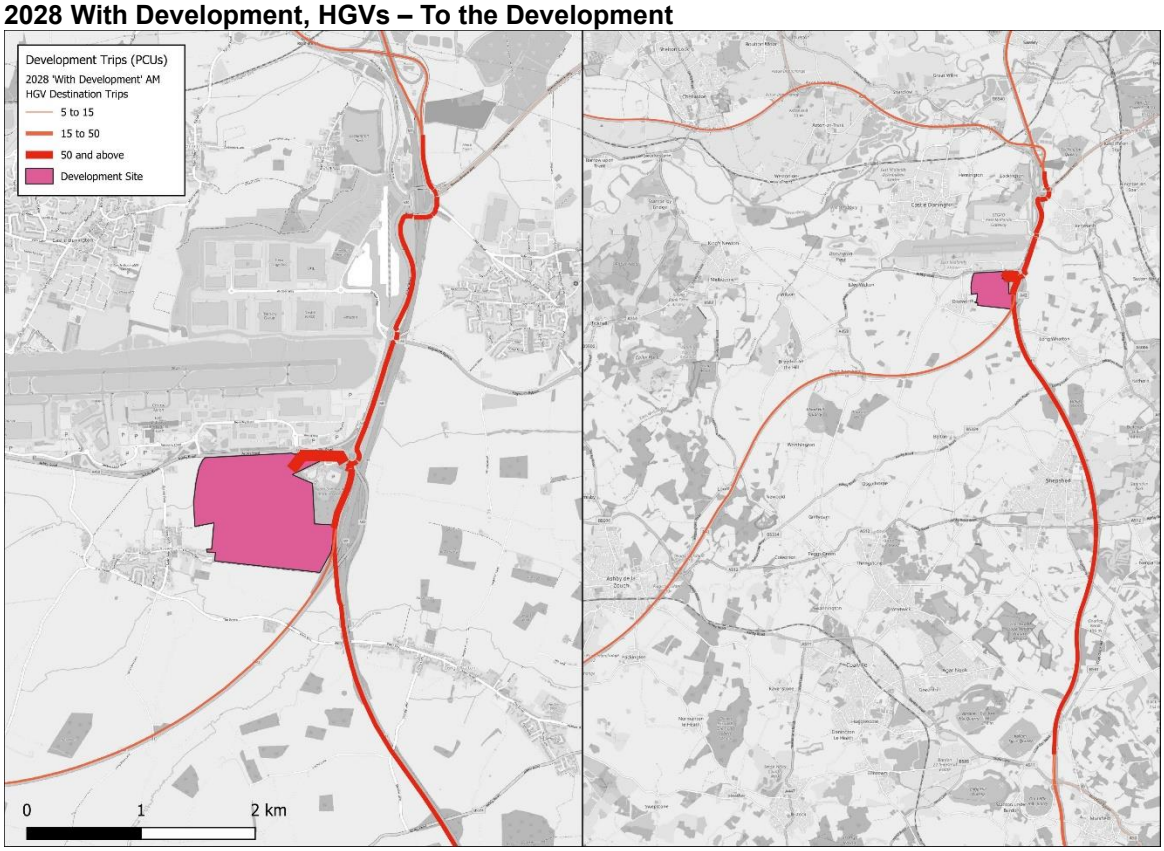

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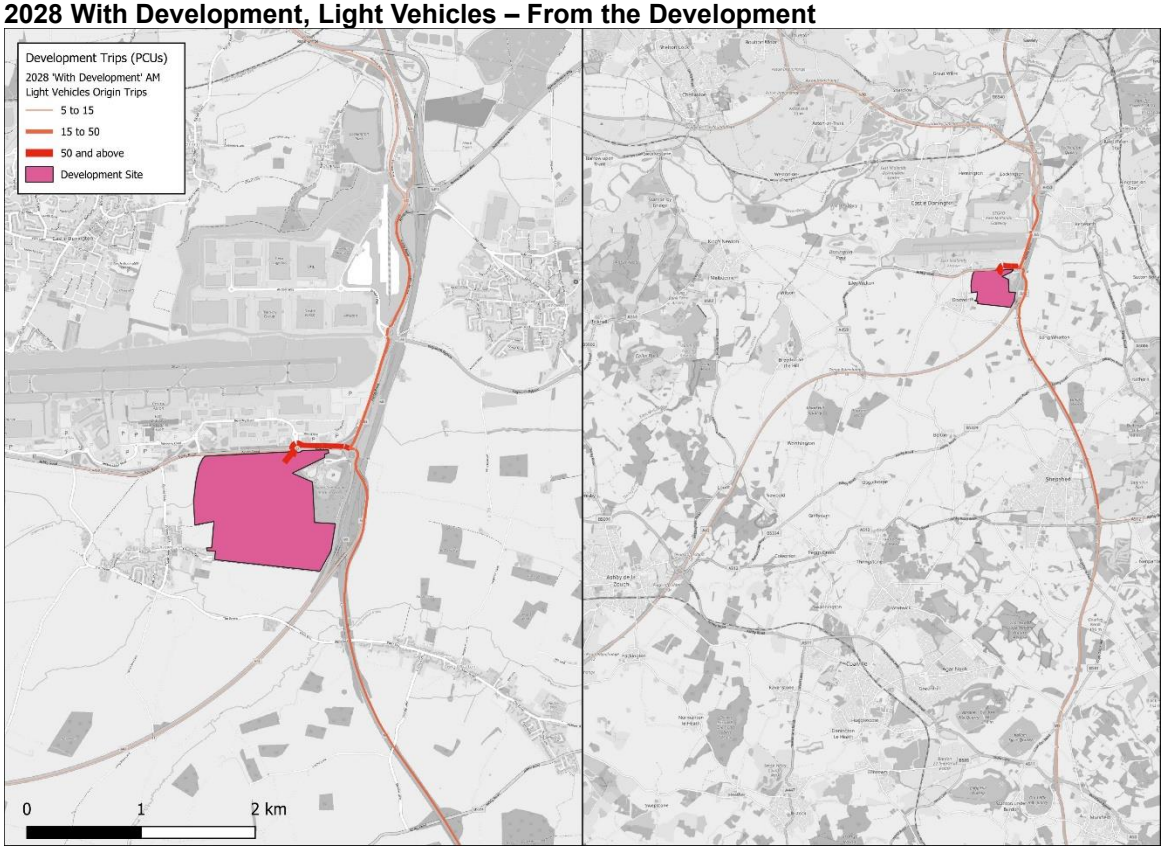
Figure 3.2: Light Vehicle Trip Distribution to/from the Development, 2028 AM Peak

2028 With Development, Light Vehicles – From the Development



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2028 With Development, Light Vehicles – To the Development

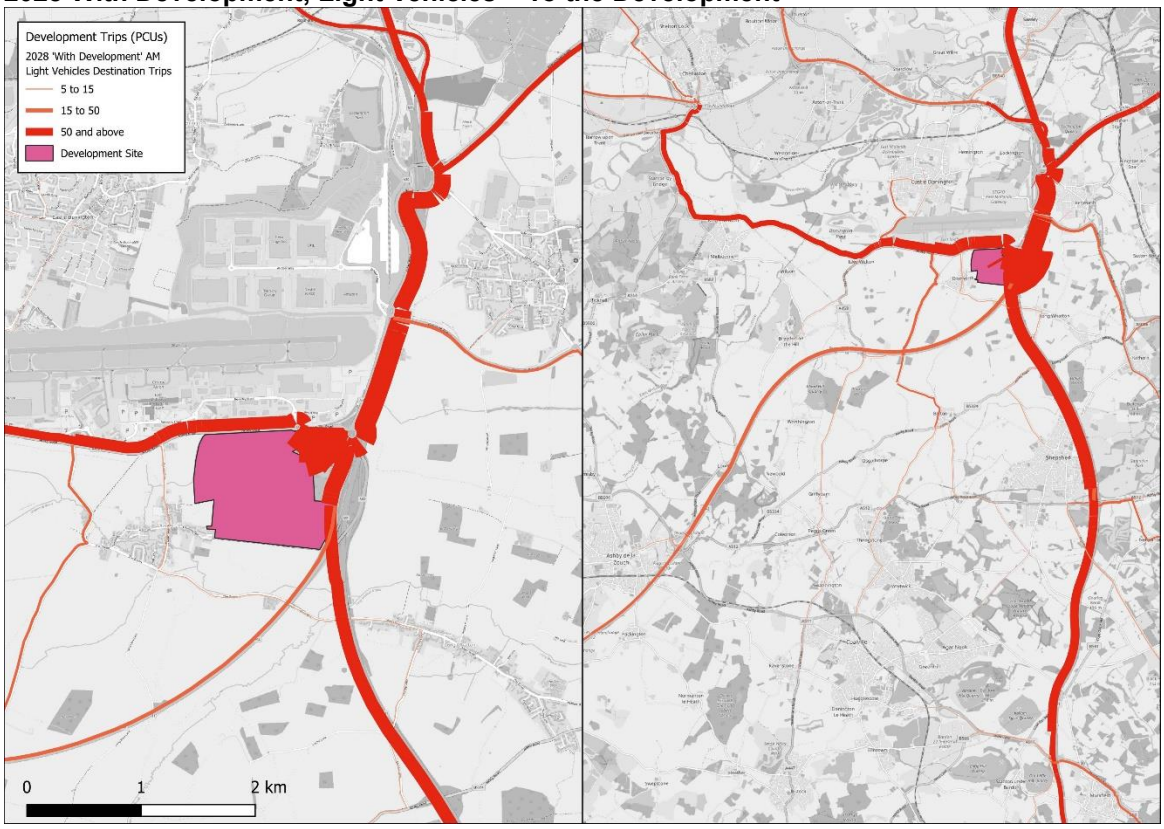

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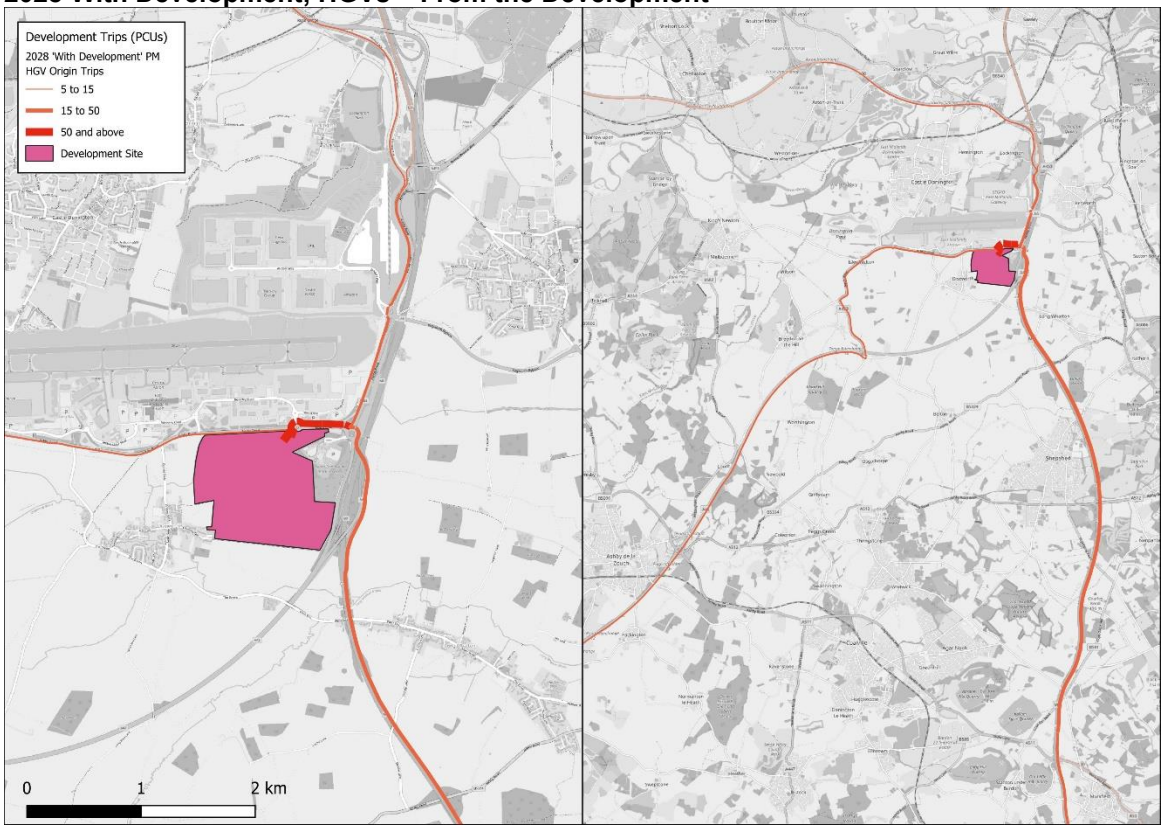
Figure 3.3: HGV Trip Distribution to/from the Development, 2028 PM Peak

2028 With Development, HGVs – From the Development



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2028 With Development, HGVs – To the Development

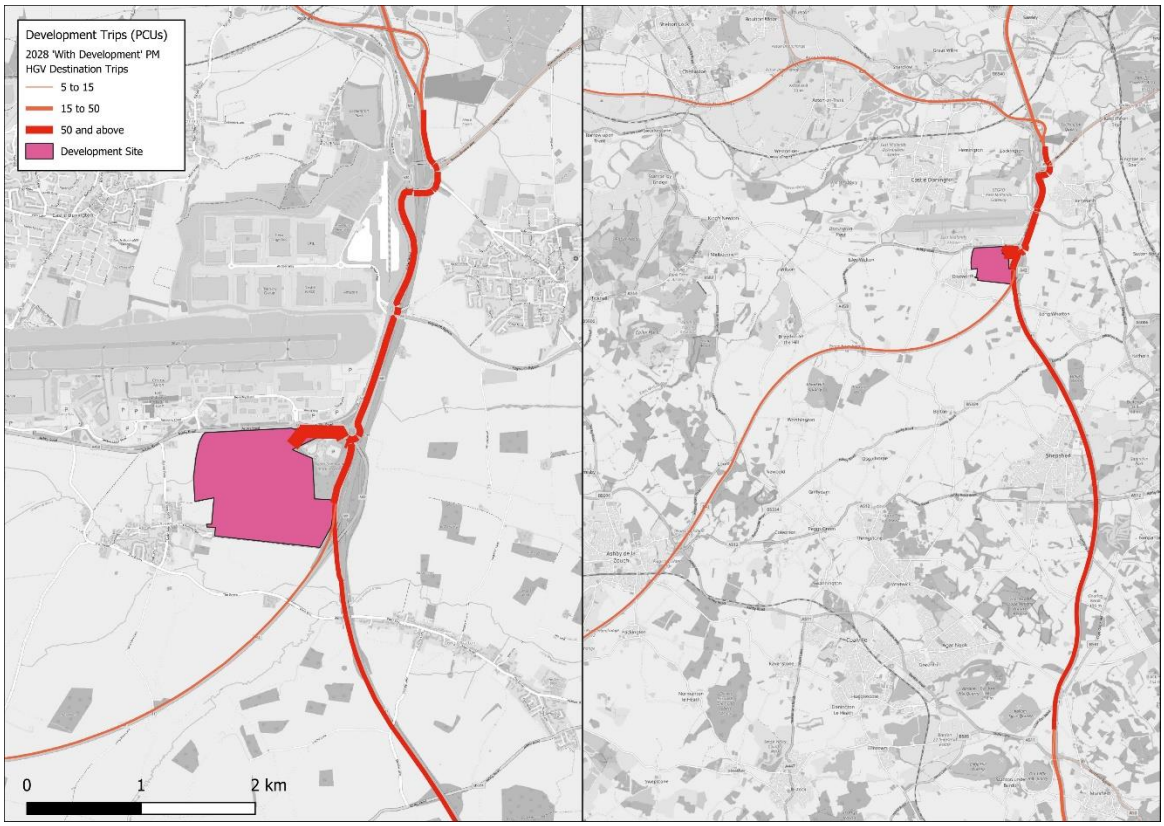

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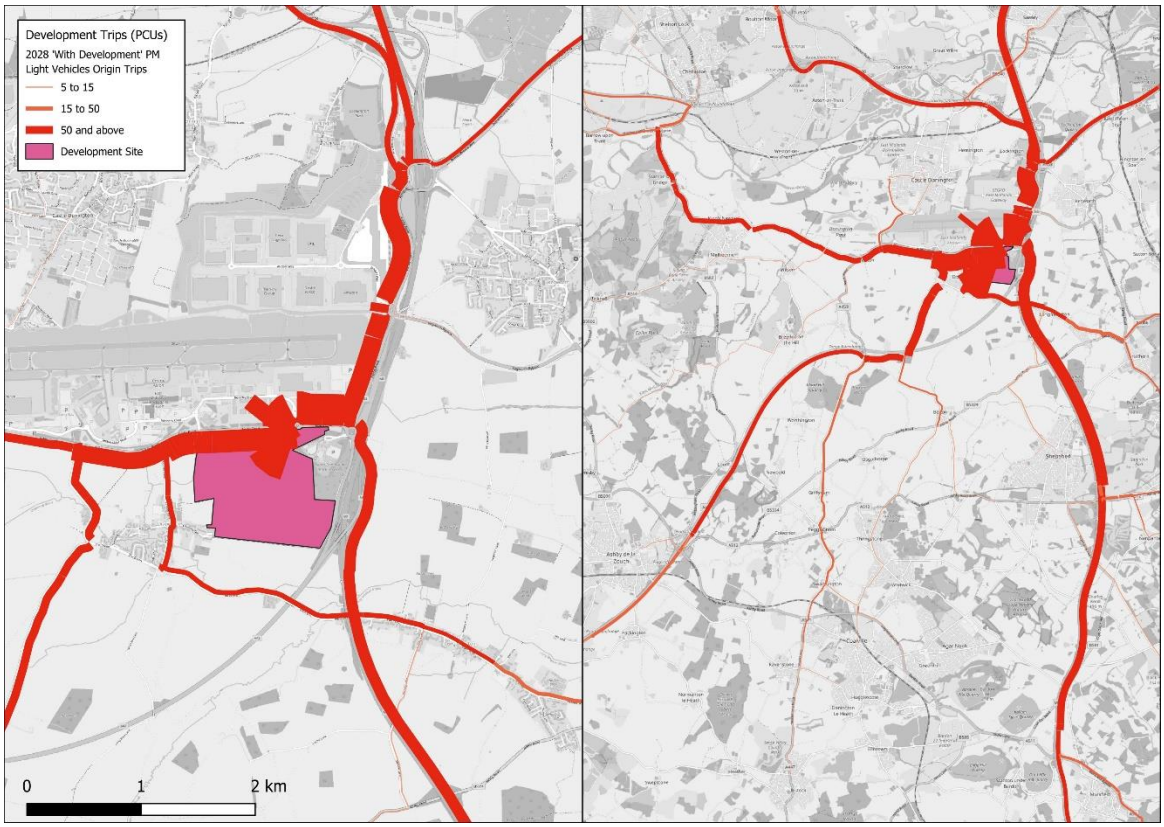
Figure 3.4: Light Vehicle Trip Distribution to/from the Development, 2028 PM Peak

2028 With Development, Light Vehicles – From the Development



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2028 With Development, Light Vehicles – To the Development

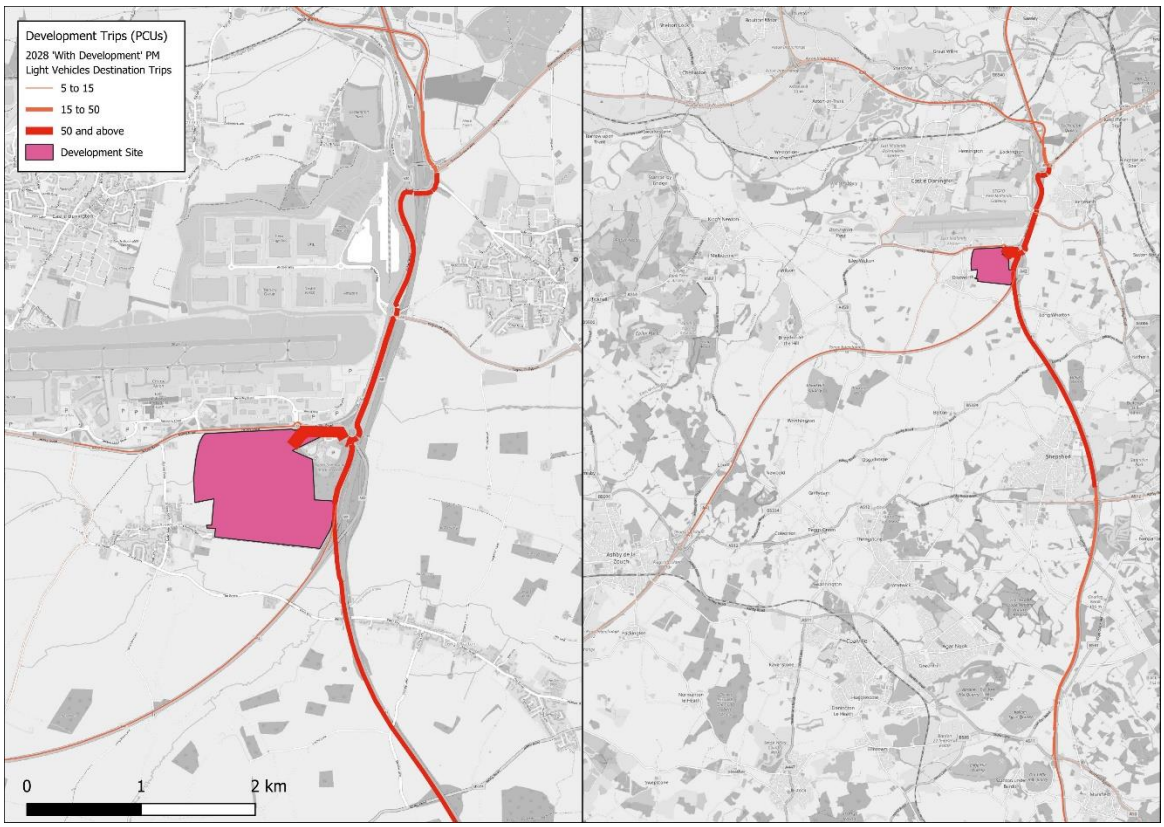

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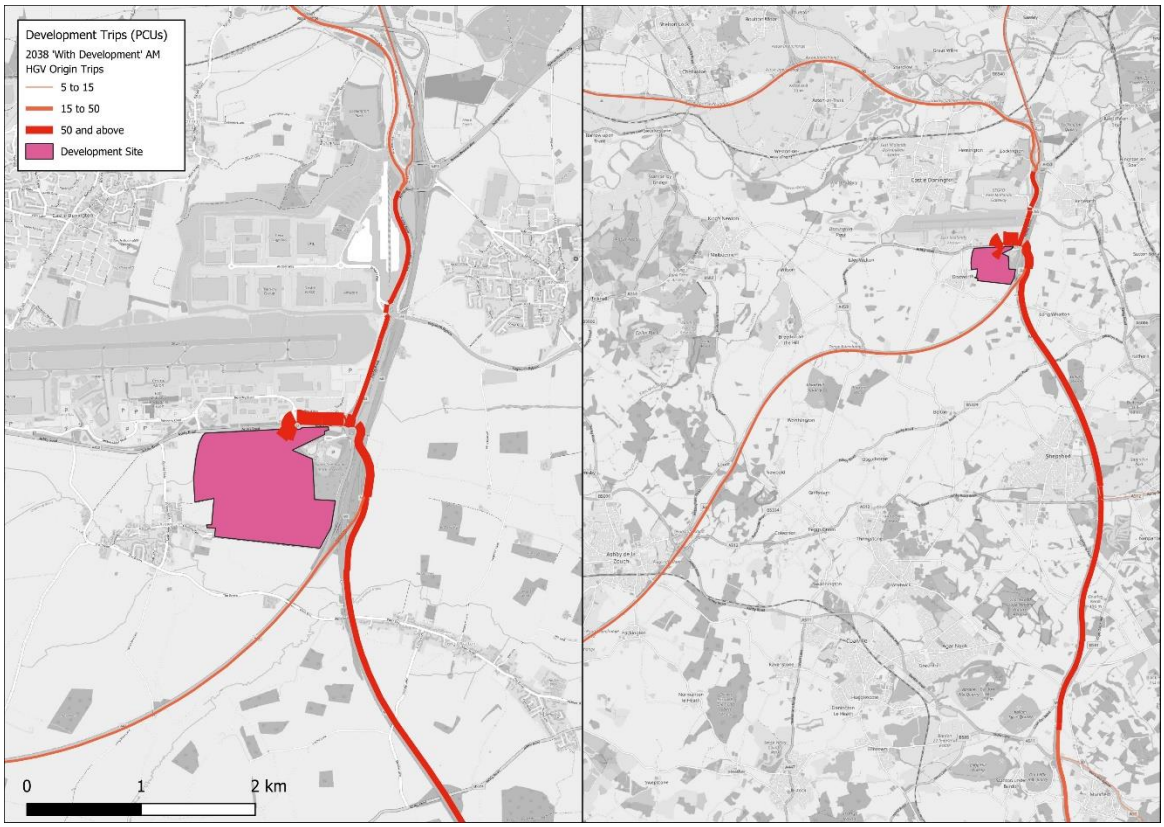
Figure 3.5: HGV Trip Distribution to/from the Development, 2038 AM Peak

2038 With Development, HGVs – From the Development



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2038 With Development, HGVs – To the Development

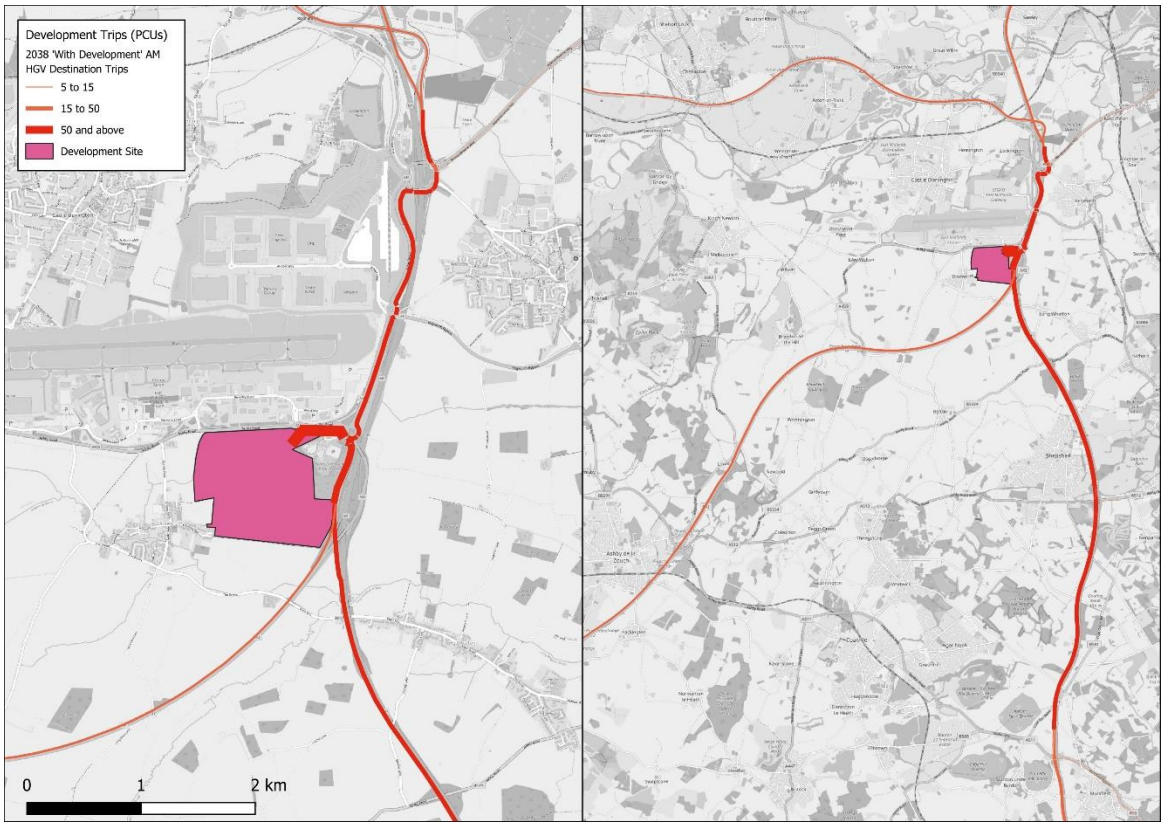

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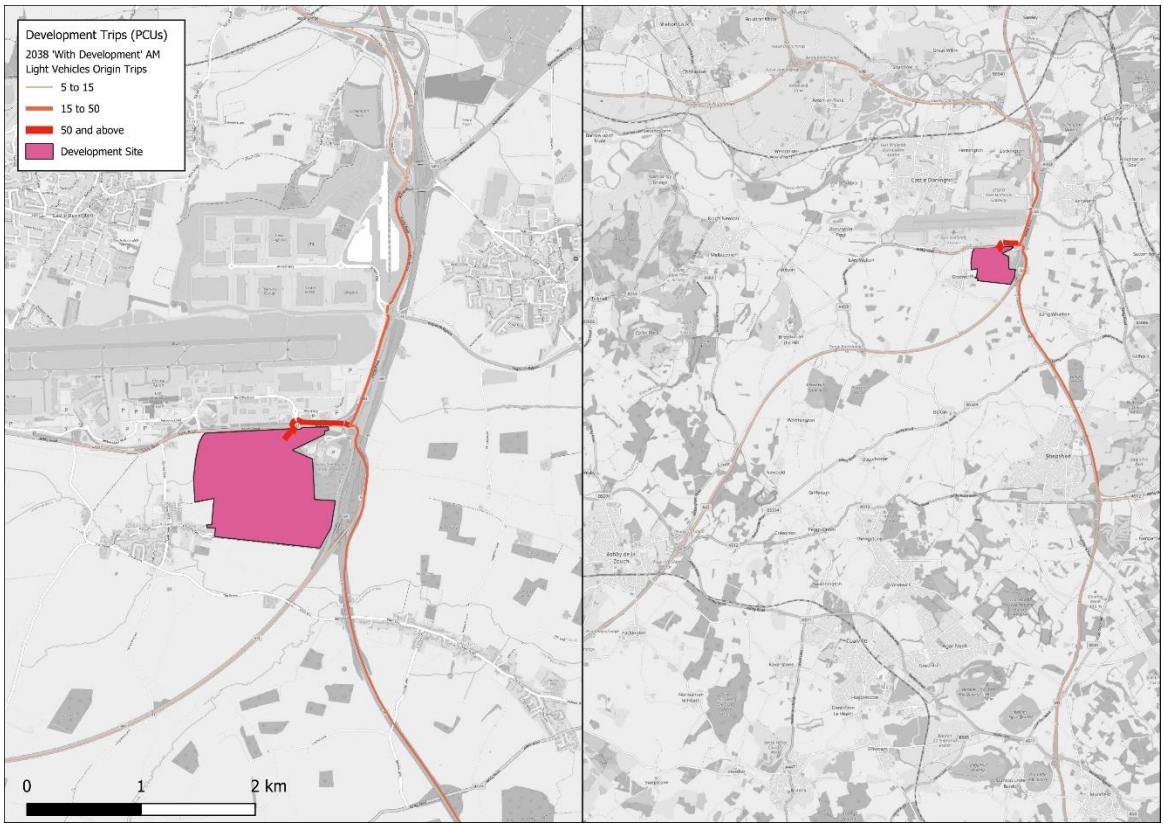
Figure 3.6: Light Vehicle Trip Distribution to/from the Development, 2038 AM Peak

2038 With Development, Light Vehicles – From the Development



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2038 With Development, Light Vehicles – To the Development

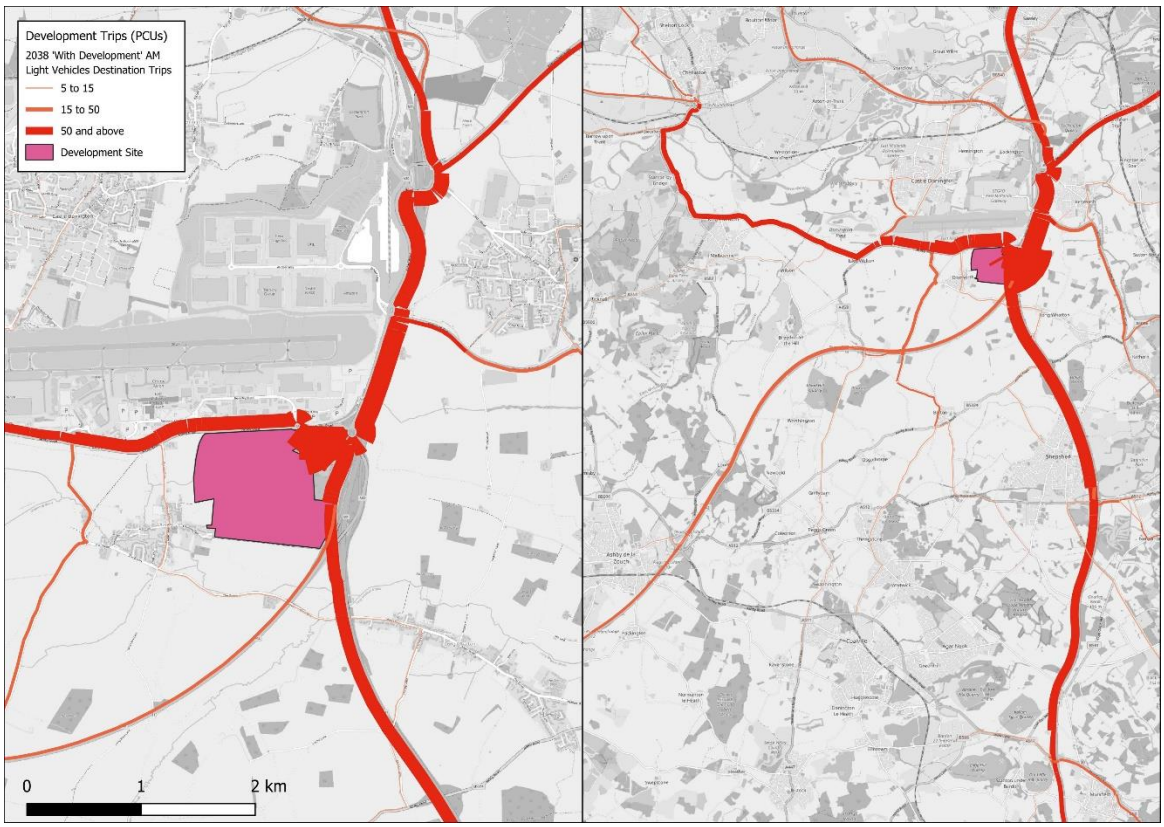

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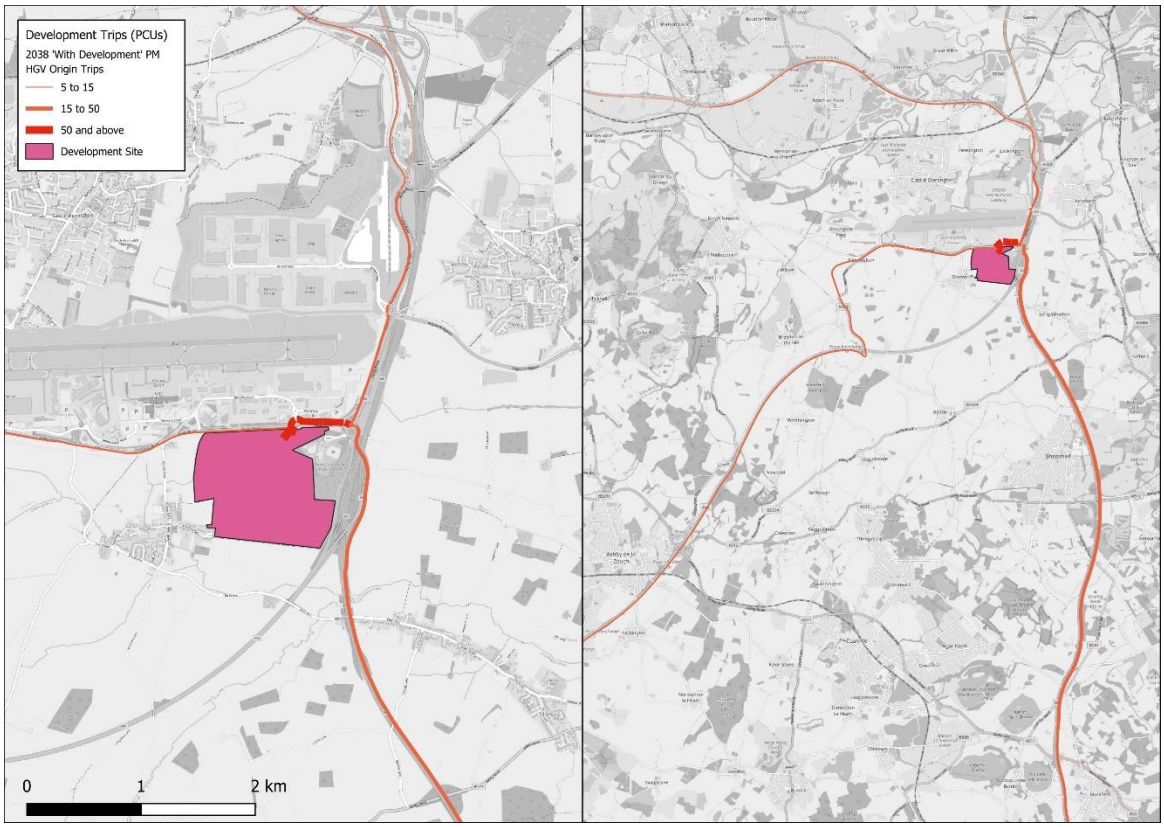
Figure 3.7: HGV Trip Distribution to/from the Development, 2038 PM Peak

2038 With Development, HGVs – From the Development



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2038 With Development, HGVs – To the Development

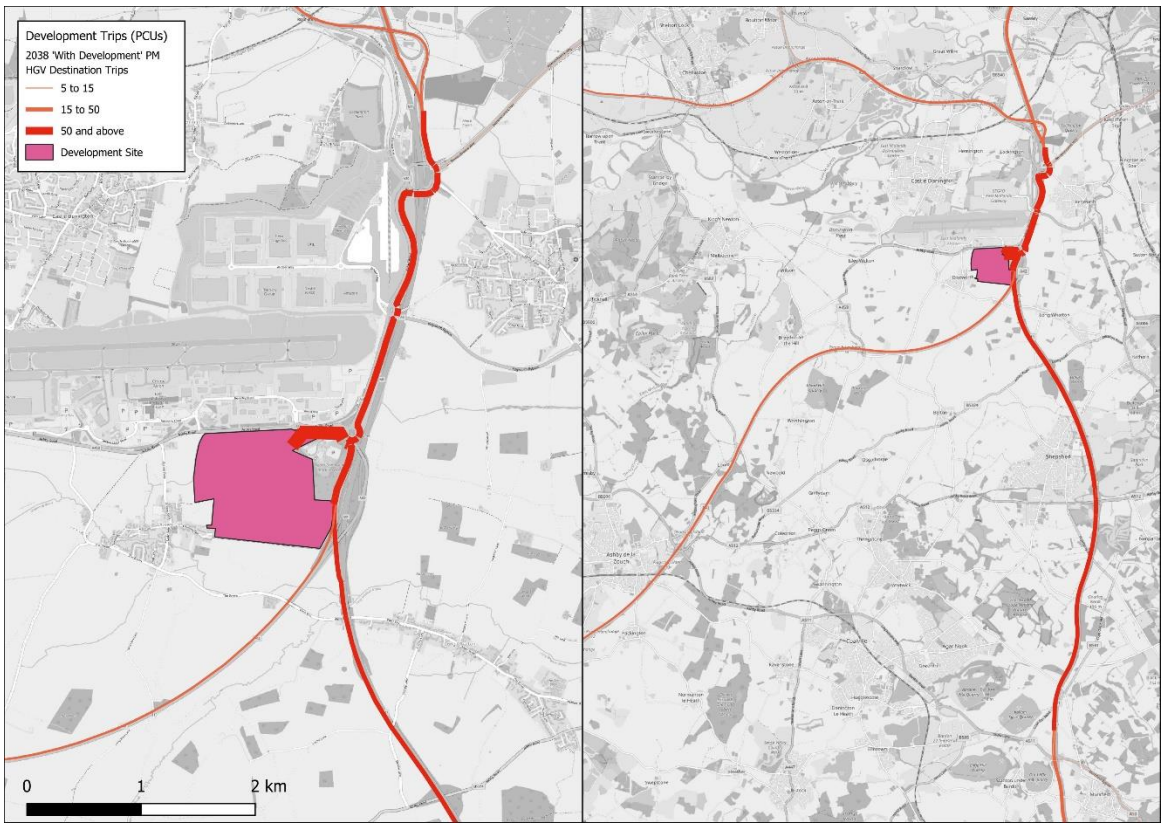

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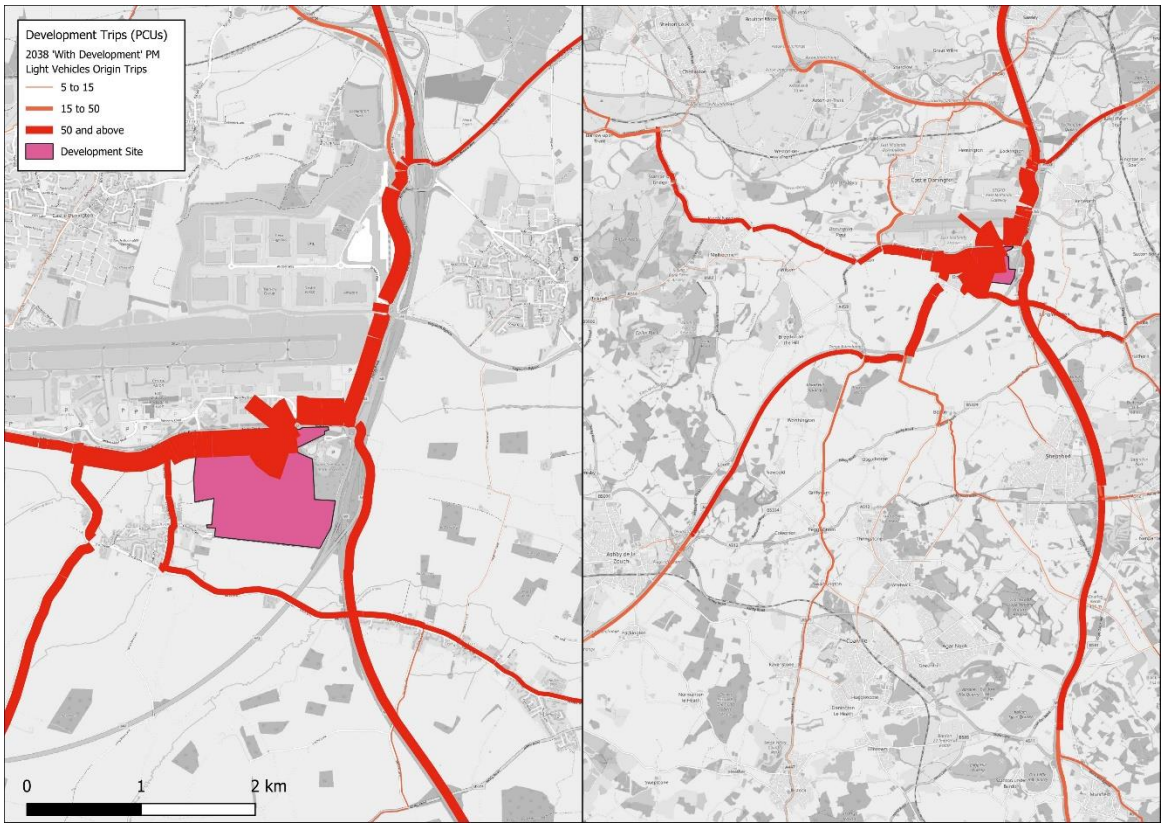
Figure 3.8: Light Vehicle Trip Distribution to/from the Development, 2038 PM Peak

2038 With Development, Light Vehicles – From the Development



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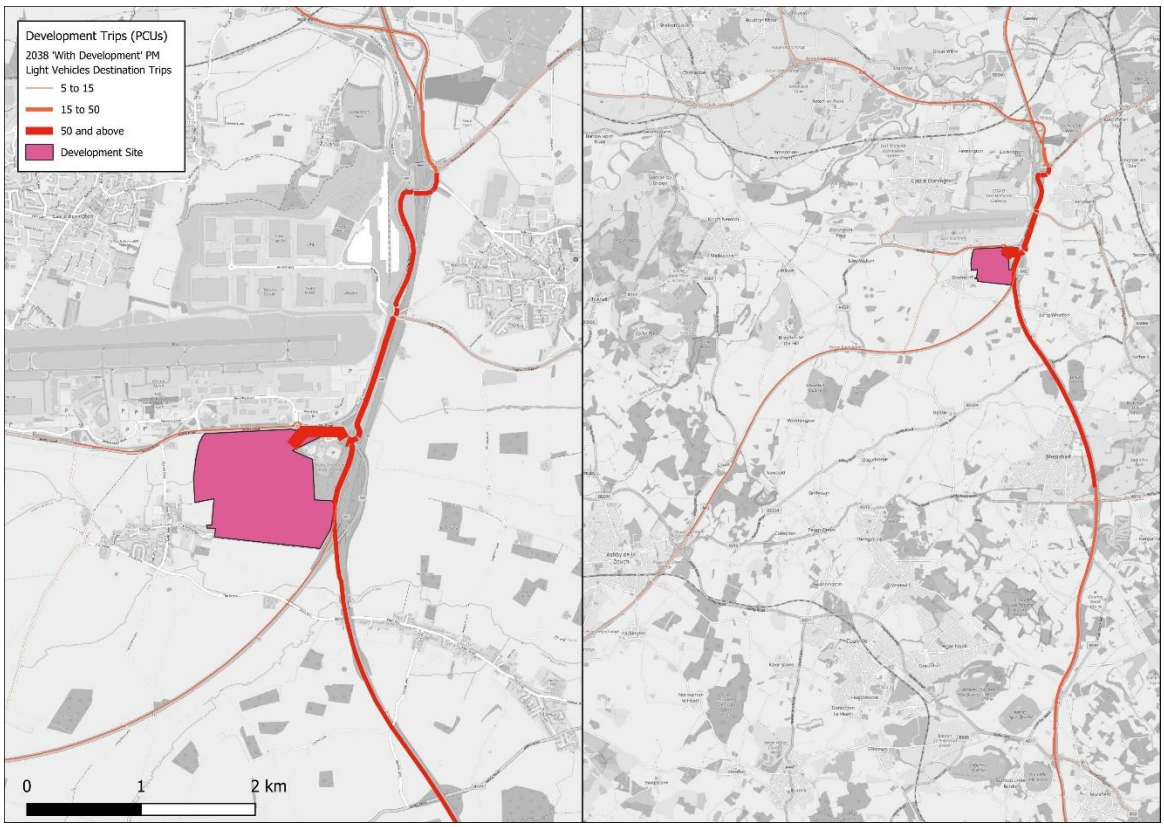
2038 With Development, Light Vehicles – To the Development



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3.3 Forecast Flow Change

3.3.1 Figure 3.9 and Figure 3.10 show the forecast flow changes in actual flows for 2028 and 2038 between the With Development and Core scenarios for the AM Peak and PM Peak hours. Red bandwidth represents a proportional increase in traffic flow in the With Development scenario and green bandwidth represents a decrease. These show that the traffic flow changes have a broadly similar pattern during both the AM and PM Peak hours in both forecast years.

3.3.2 Table 3.1 summarises the forecast flow changes on selected key roads.

Table 3.1: Forecast Flow Change (PCUs) on Key Roads – With Development minus Core

Road Section	Direction	With Development – Core Scenario			
		AM Peak		PM Peak	
		2028	2038	2028	2038
A453 to the west of Finger Farm Roundabout	Eastbound	220	350	-60	-10
	Westbound	450	390	240	190
A453 west of the development	Eastbound	190	300	-420	-330
	Westbound	-100	-160	240	150
A453 between Finger Farm Roundabout and M1 Junction 24	Northbound	-180	-130	100	60
	Southbound	280	290	120	60
M1 between M1 Junction 23a and M1 Junction 24	Northbound	270	250	30	20
	Southbound	20	20	70	30
West of A50 Junction 1	Eastbound	0	0	20	-10
	Westbound	-110	-30	60	50
Hilton Hotel Lane	Northbound	10	40	10	10
	Southbound	10	10	20	40
Green Lane, Diseworth	Northbound	80	160	-10	10
	Southbound	0	-20	210	200

3.3.3 The following key links exhibit significant flow changes during the AM and PM Peak hours in both forecast years:

- **A453 (between the site access and Finger Farm Roundabout)**: In the AM Peak, flows increase by approximately 220–350 PCUs eastbound and 390–450 PCUs westbound. In contrast, the PM Peak sees minimal changes westbound, but an increase of 190–240 PCUs eastbound.
- **A453 (west of the development)**: During the AM Peak, traffic flows show a clear directional split, with an eastbound increase of 190–300 PCUs and a westbound decrease of 100–160 PCUs. This pattern reverses in the PM Peak, which shows a reduction of 330–420 PCUs eastbound and an increase of 150–240 PCUs westbound.
- **A453 (between Finger Farm Roundabout and M1 Junction 24)**: The AM Peak shows a northbound decrease of 130–180 PCUs and a southbound increase of approximately 280–290 PCUs. PM Peak changes are relatively minor (60–120 PCUs).
- **M1 (between M1 Junction 23a and Junction 24)**: The M1 itself experiences an increase of 250–270 PCUs in the 2028 and 2038 AM Peaks, while changes southbound are negligible. In the PM Peak, both directions show only slight increases in 2028 and 2038.
- **West of A50 Junction 1**: During the AM Peak, there is no change in traffic eastbound, while westbound flows decrease by 30–110 PCUs. In the PM Peak, there are slight increases of up to 60 PCUs in the westbound direction.

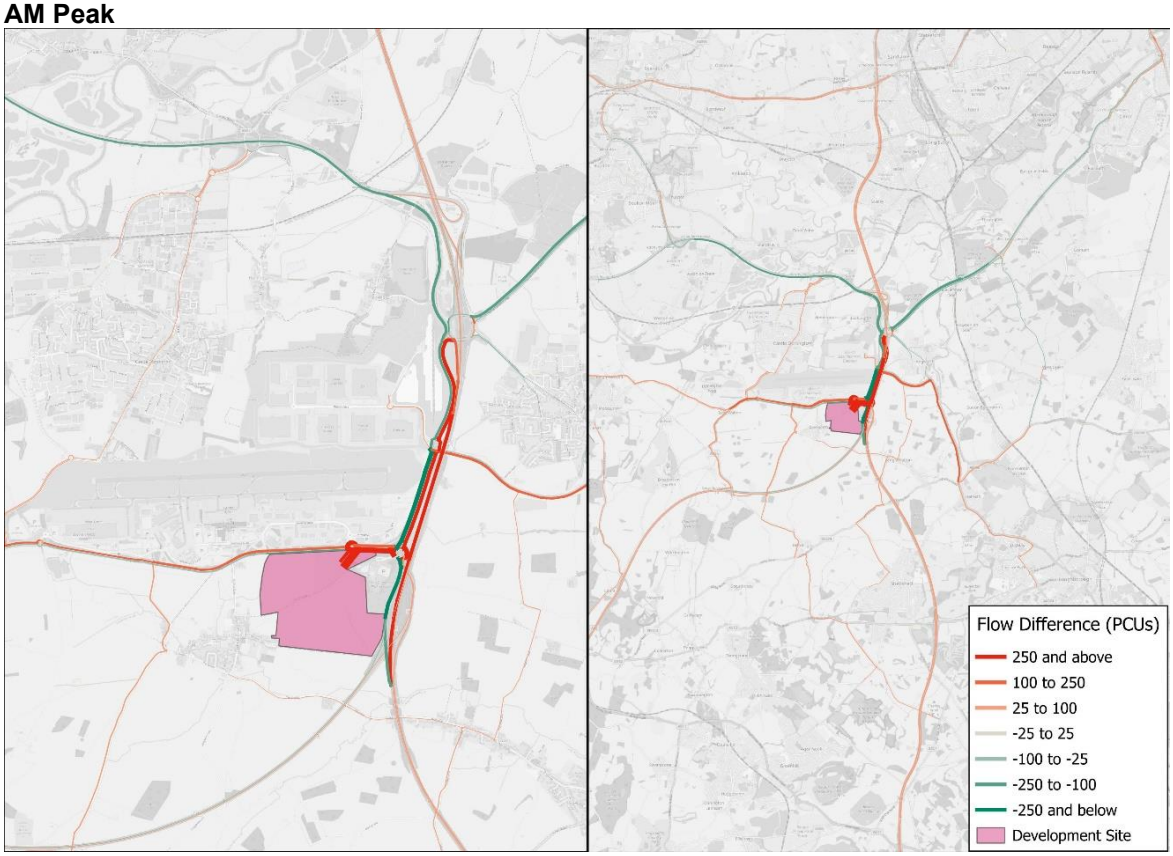
3.3.4 Furthermore, the local road networks of Castle Donington, Isley Walton and Diseworth are forecast to experience increased traffic flows:

- **Hilton Hotel Lane**: The increases in traffic are negligible across all scenarios.

- **Trent Lane, Melbourne Road, Grimes Gate, and Green Lane**: These routes show increased flow which in some cases is caused by traffic seeking to avoid delays at the Finger Farm Roundabout and M1 Junction 24.

Figure 3.9: Forecast Flow Change for 2028 With Development minus Core

AM Peak



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PM Peak

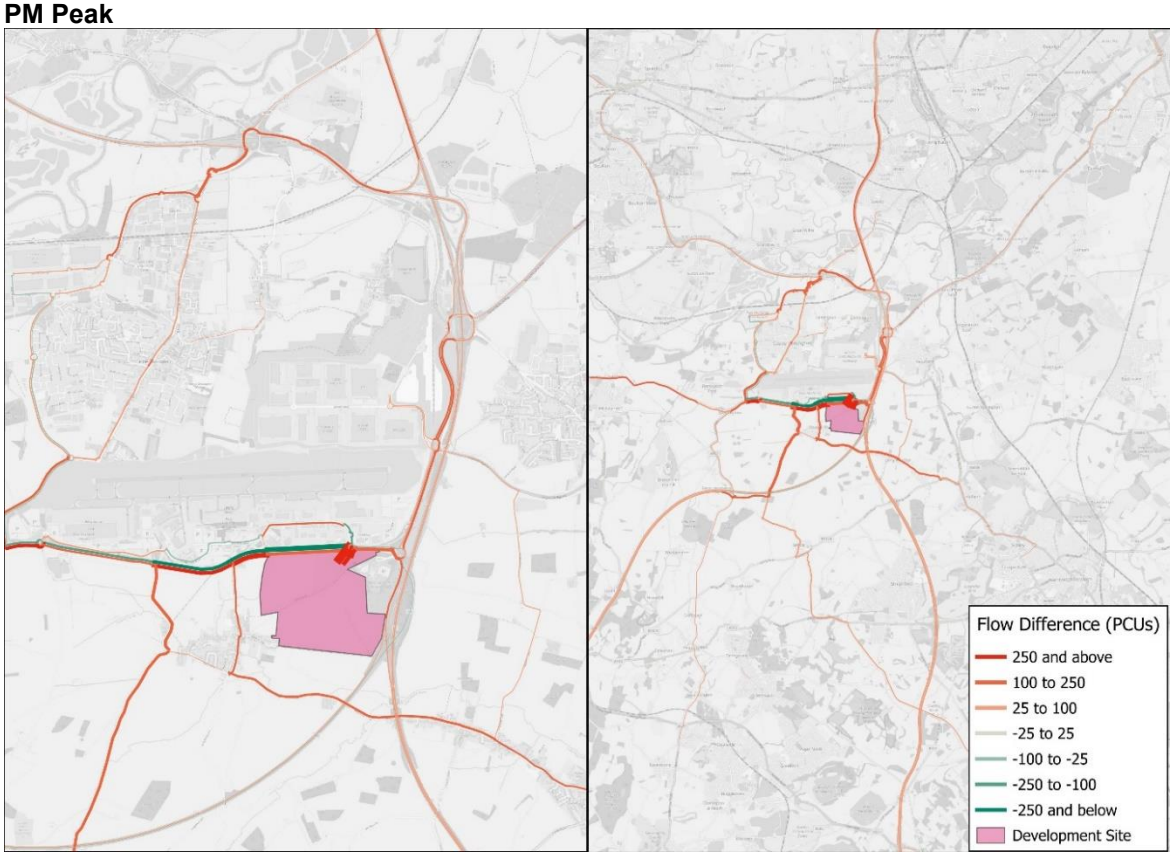

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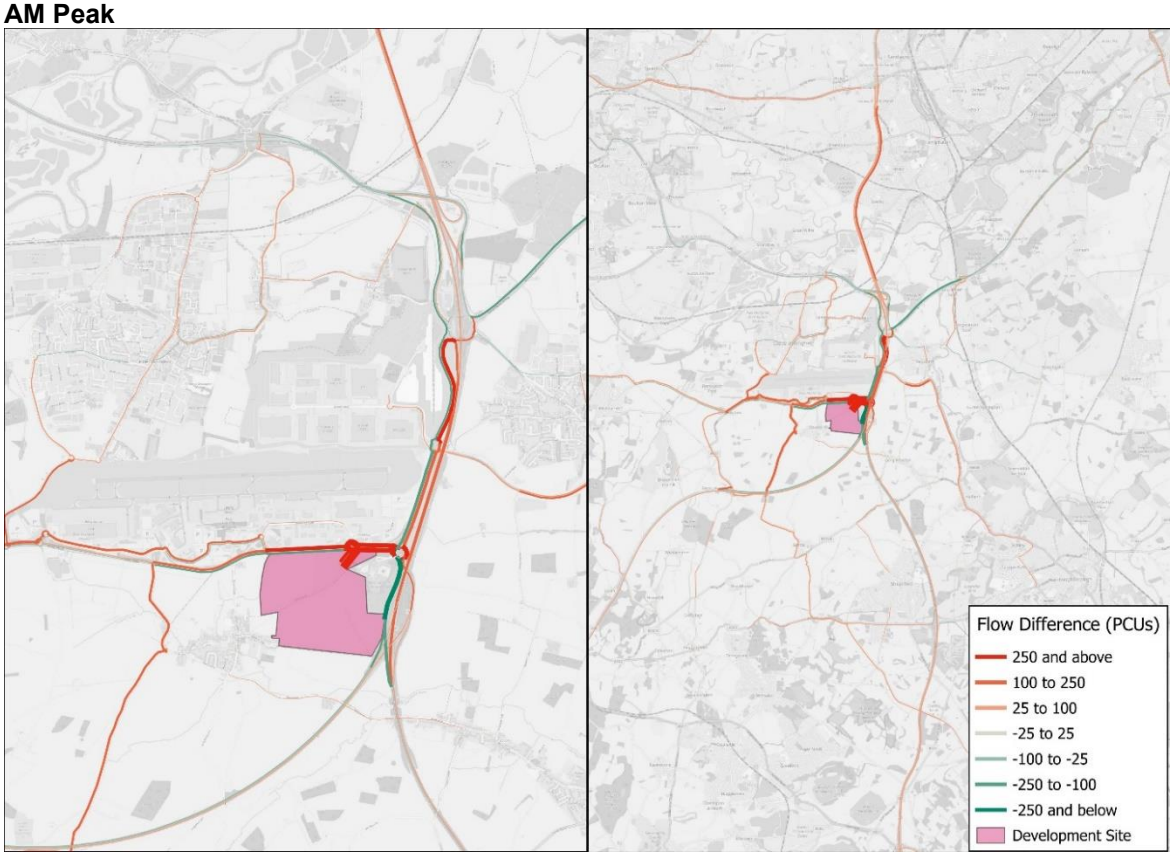
Figure 3.10: Forecast Flow Change for 2038 With Development minus Core

AM Peak



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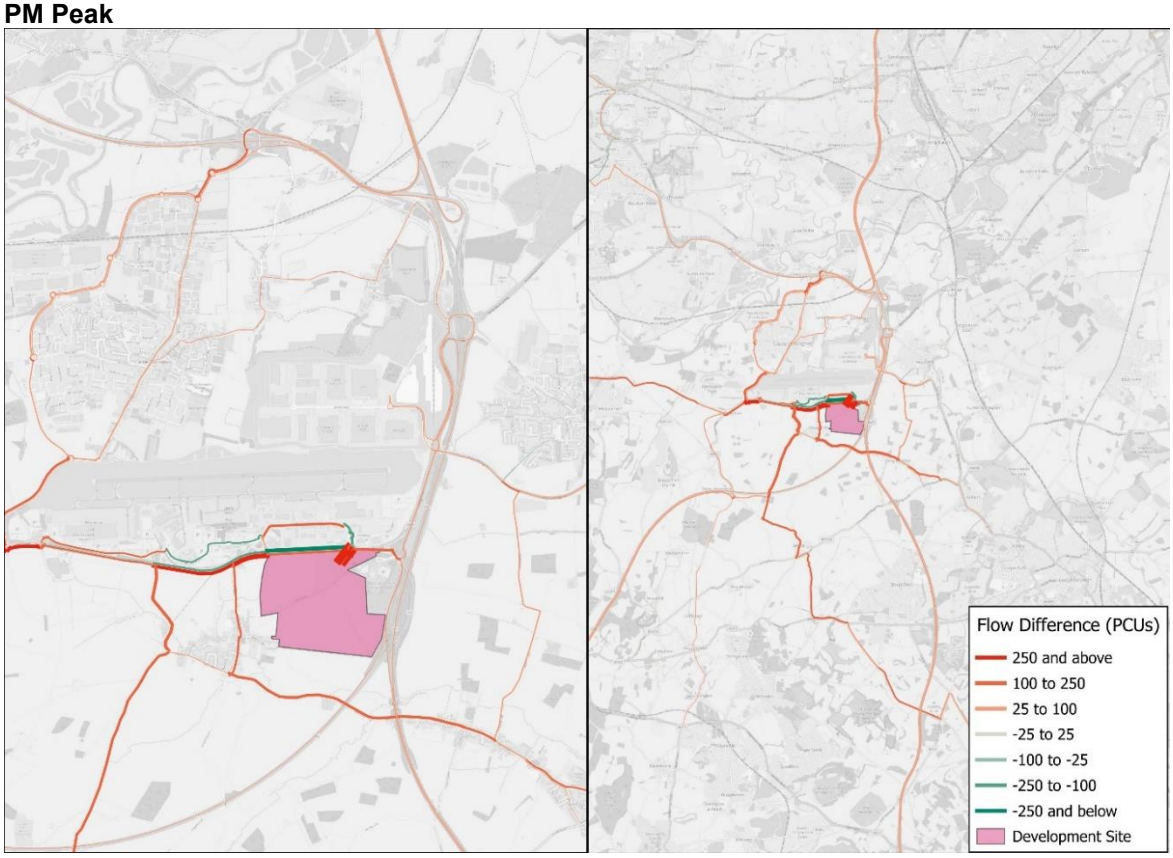
PM Peak



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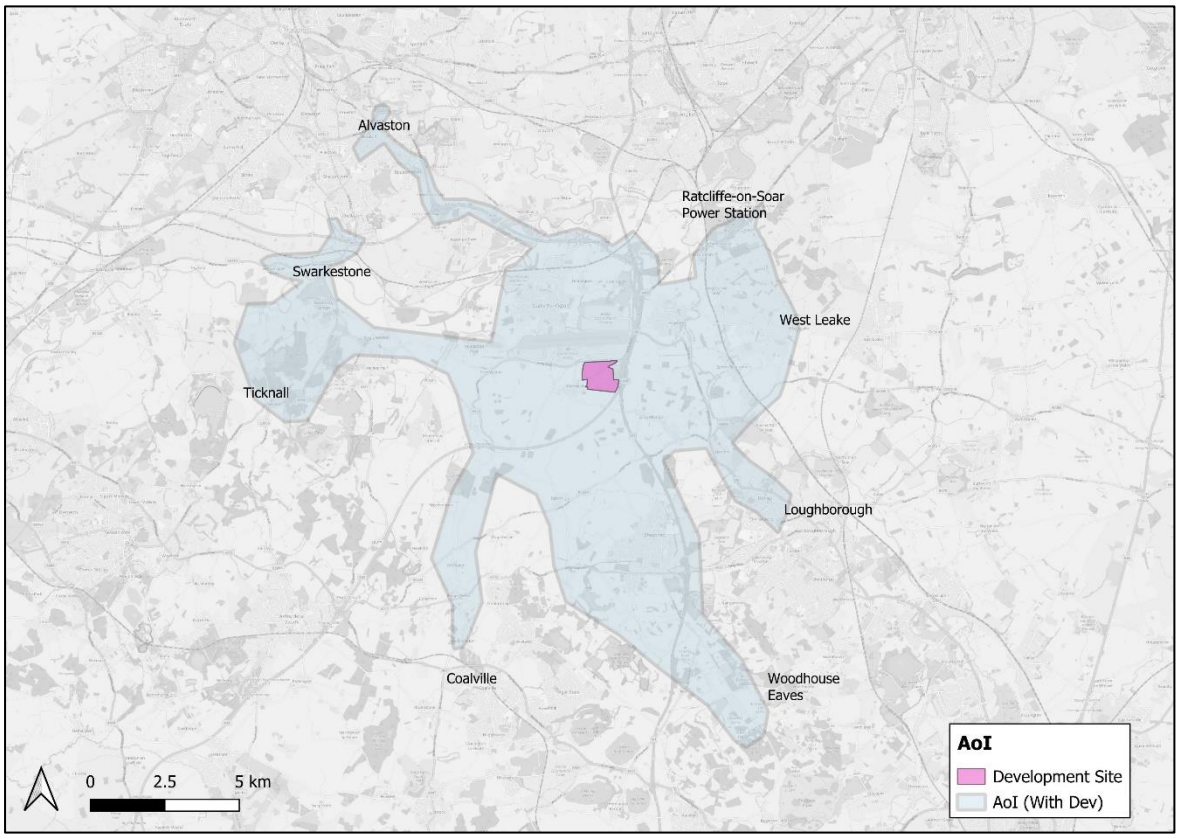
3.4 Area of Influence

3.4.1 Using the forecast flow changes between the With Development and Core scenarios, an indication of the AoI has been defined and is shown in Figure 3.11.

3.4.2 For the proposed development, the AoI has been defined by considering the links which are forecast to change flow by more than ±5% and ±30 PCUs between the 2028 and 2038 With Development and Core scenarios in either the AM Peak or the PM Peak hours. The links which are forecast to meet these criteria are included in the AoI, which contains the following areas / links:

- the A453 including Finger Farm Roundabout;
- the M1 between Junction 23 and Junction 24a;
- the A42 between the M1 and Junction 14;
- the A50 between the M1 and Junction 2; and
- local roads in and around Castle Donington, Kegworth, Diseworth, Loughborough, Woodhouse Eaves, Coalville, Ticknall, Alvaston, Ratcliffe-on-Soar Power Station (disused) and West Leake.

Figure 3.11: Area of Influence



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3.5 Forecast Delay Change

3.5.1 Due to forecast flow changes in the With Development Scenario, there are also changes to the forecast delays on the highway network. These changes in delay can be generated from two sources: link delay based on the speed-flow curve applied to the link; and the junction delay due to capacity constraints for individual turning movements. The analysis in this section combines the link and junction delays (taking a flow-weighted average of junction delays) to assess the changes in forecast delay with the proposed development traffic.

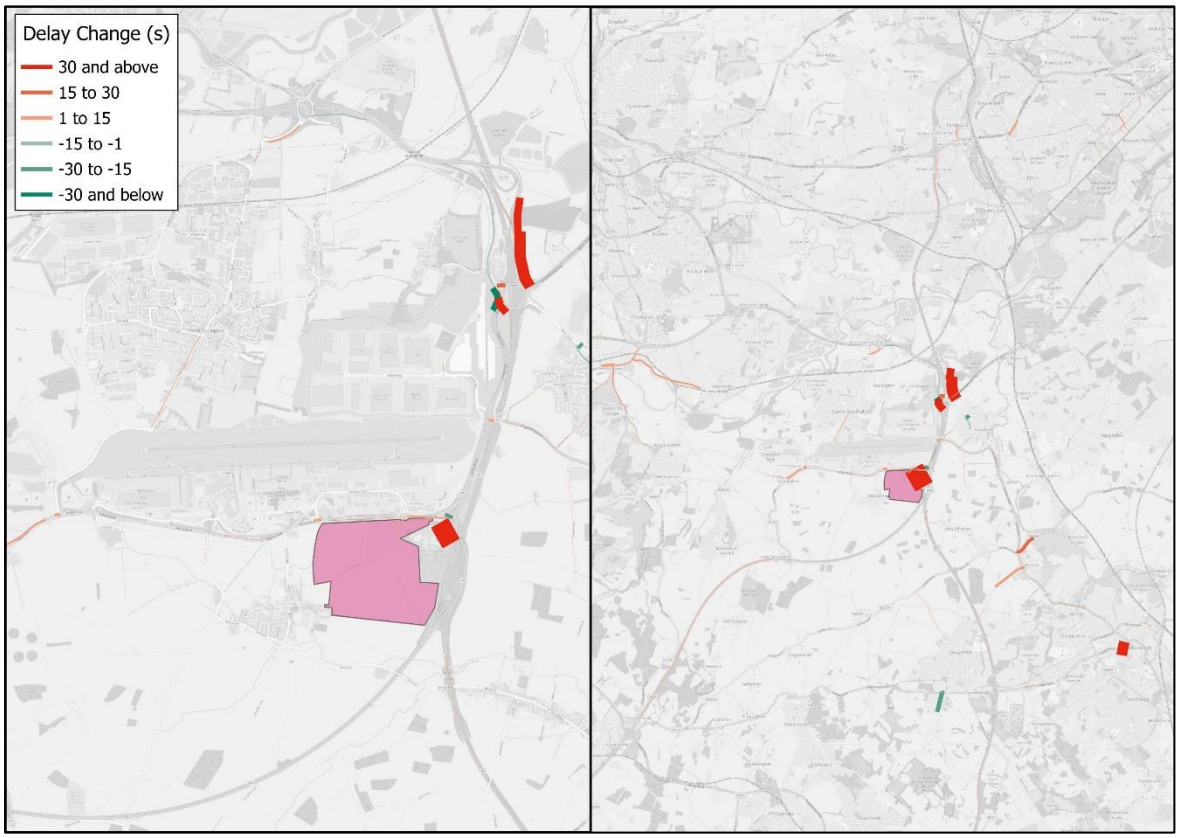
3.5.2 Figure 3.12 and Figure 3.13 show the forecast delay changes (in seconds) for 2028 and 2038, comparing the With Development and Core scenarios during the AM and PM Peaks. At Finger Farm Roundabout, delays on the southern arm are forecast to increase by 100–130 seconds during the AM Peak in both forecast years. During the PM Peak, the western arm is expected to experience delay increases of 250–260 seconds, driven by increased traffic flow from the development.

3.5.3 Increased delays are also forecast at M1 Junction 24 during the AM Peak in both 2028 and 2038, with the M1 southbound off-slip to the junction expected to experience an additional 40–60 seconds of delay. Traffic exiting M1 Junction 24 to the A50 is forecast to have an increase in delay of 25 seconds where it merges with the A453 northbound to A50 dedicated left-turn lane. The dedicated left-turn lane is forecast to experience a reduction in delay of around 30 seconds during the AM Peak in both 2028 and 2038. In addition, the M1 northbound off-slip is forecast to experience an increase in delay of around 35 seconds during the 2038 AM Peak.

3.5.4 In addition, an increase in delay of 35 seconds is forecast on the Kegworth Bypass westbound approach to the A453 / Kegworth Bypass junction during the 2038 AM Peak.

Figure 3.12: Forecast Delay Change for 2028 With Development minus Core

AM Peak



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PM Peak

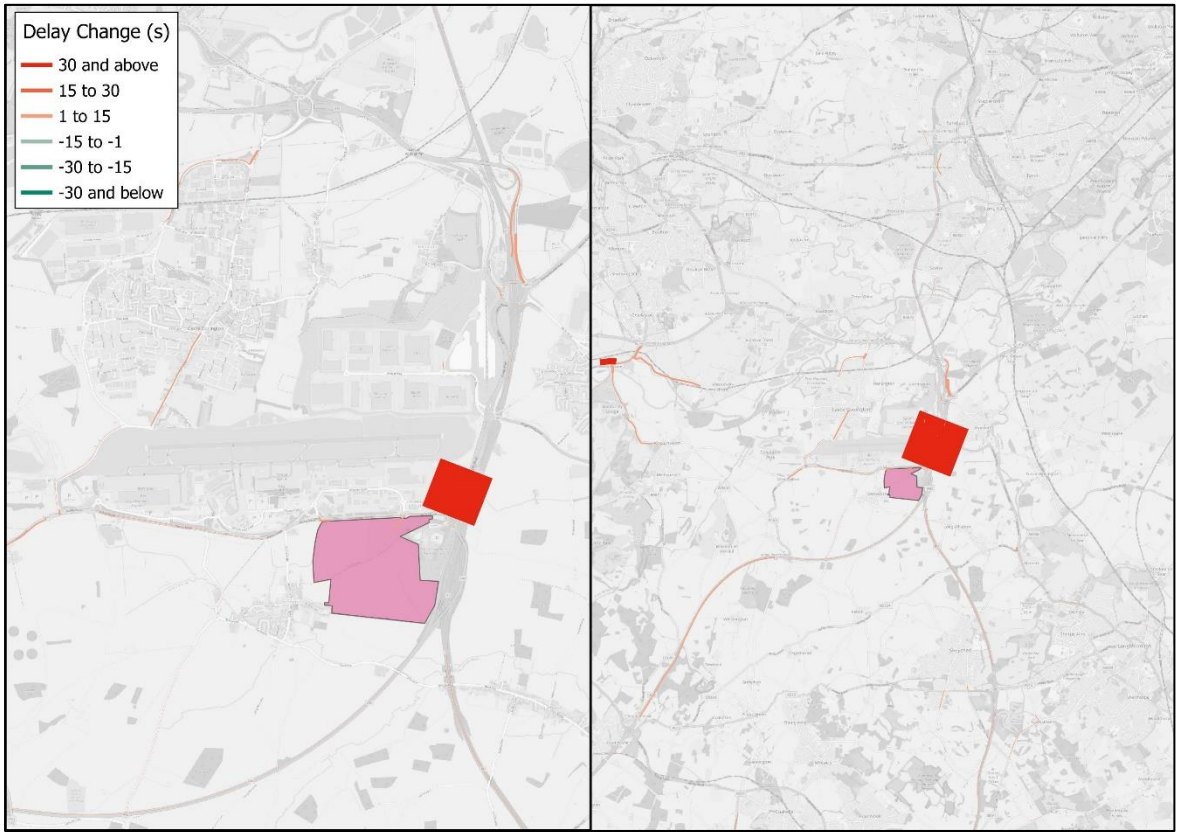

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Figure 3.13: Forecast Delay Change for 2038 With Development minus Core

AM Peak

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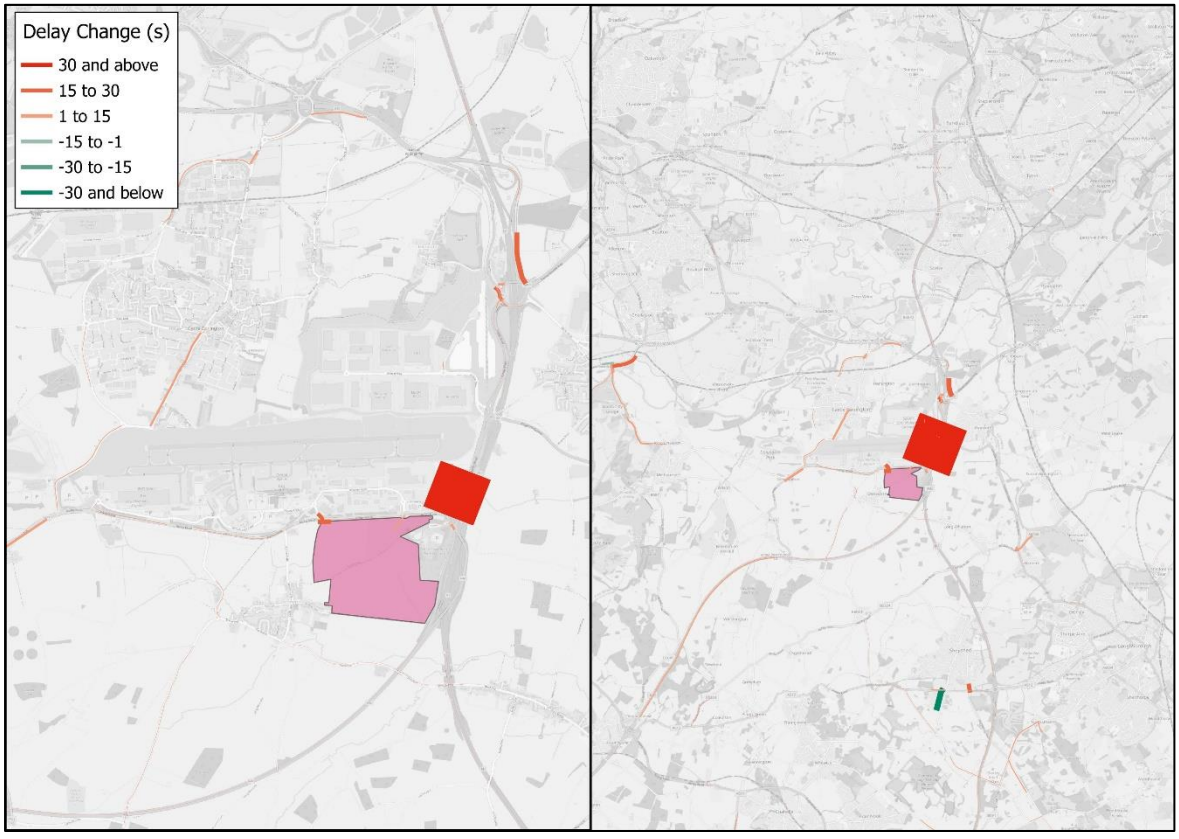
PM Peak



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3.6 Forecast Node Volume-Capacity Ratios

3.6.1 As a part of the forecast modelling, node / junction capacities are estimated for individual turning movements based on a number of factors including priority of the turn (for example, give-way or merge), the level of green-time at signalised junctions, and the amount of opposing traffic at the junction. Using these calculated capacities and the forecast traffic volumes, node volume-capacity ratios are estimated to identify locations where the forecast flows are approaching or exceeding the forecast capacity.

3.6.2 To summarise the forecast volume-capacity ratios for the individual turning movements at a node, there are two approaches. These are to calculate the flow-weighted average volume-capacity of the node, or to calculate the maximum volume-capacity ratio for all turns within a node. The average volume-capacity ratio provides an overview of how the individual node is performing but may not highlight locations where a limited number of movements at a node are approaching or exceeding capacity. To highlight these locations, the maximum volume-capacity ratio at each node has been used. Node volume-capacity ratios exceeding 85% indicate that the highway network is under stress, and there is likely to be a reduction in speed and increase in delay.

3.6.3 Figure 3.14 and Figure 3.15 show the forecast maximum junction volume-capacity ratio for 2028 and 2038, in the With Development and Core scenarios within the AoI. For ease of comparison, the symbology has been designed to show the data for both scenarios in the same plot.

3.6.4 The reader should note that the figures show a subset of all nodes to reduce the number of data points within the plots. Nodes which do not fall within the AoI are not shown. Nodes with maximum volume-capacity ratio below 85% in all forecast scenarios are not shown.

3.6.5 The forecast maximum node volume-capacity ratio plots show that the EMGP2 access junction along the A453, M1 Junction 23, M1 Junction 23a, M1 Junction 24, Finger Farm Roundabout and the Kegworth Bypass / A453 roundabout are most affected by the proposed development trips.

3.6.6 Table 3.2 shows the locations where the node volume-capacity ratio in the With Development scenario is higher than 85% and is in a higher volume-capacity ratio compared with the Core scenario during the AM and PM Peak hours in 2028 and 2038.

Table 3.2: Forecast Selected Node Volume-Capacity Ratio in With Development Scenario

Node Location	AM Peak		PM Peak	
	2028	2038	2028	2038
A453 toucan crossing	0.91	0.87	0.64	0.66
A453 / East Midlands Airport junction - westbound approach	0.92	1.01	0.90	0.96
A453 / Finger Farm Roundabout - eastbound approach	0.88	0.84	0.62	0.64
A453 / Finger Farm Roundabout - northbound approach	1.03	1.04	0.82	0.98
A453 / Site Access roundabout - westbound approach	0.87	0.83	0.60	0.63
A50 Junction 1 westbound off-slip	0.89	0.96	0.85	0.95
M1 northbound diverge to new link road	0.77	0.85	0.77	0.85
A50 / J24a southbound diverge	0.82	0.94	0.97	1.00
A512 / Nottingham Road - westbound approach	0.86	0.97	0.89	0.95
A512 Ashby Road/ Iveshead Road - northbound approach	1.01	1.01	1.00	1.00
Ashby Road / Hallamford Road - westbound approach	0.66	0.88	0.31	0.39
Barrow Lane / A514 - eastbound and westbound approach	0.96	0.95	1.01	1.02
Kegworth Bypass / A453 Roundabout - westbound approach	0.90	1.00	0.56	0.77
M1 Junction 23 - southbound on-slip	0.77	0.85	0.72	0.81
M1 Junction 23a - A42 northbound diverge to M1 northbound	0.85	0.90	0.84	0.86
M1 Junction 23a - northbound merge between A453 and M1	0.72	0.86	0.67	0.75
M1 Junction 23a - southbound merge between A453 and M1	0.77	0.86	0.76	0.85
M1 Junction 24 - Hilton Hotel Lane eastbound approach	0.92	1.04	0.66	0.76
M1 Junction 24 - northbound off-slip	0.81	1.00	0.91	0.96
M1 Junction 24 - western section of circulatory (at the exit to A50 northbound)	1.00	1.00	0.46	0.98

Node Location	AM Peak		PM Peak	
	2028	2038	2028	2038
M1 Junction 24 - western section of circulatory (at the exit to A453 southbound)	1.00	1.00	0.59	0.65
M1 Junction 24 - A453 northbound approach diverge	0.86	0.94	0.95	1.00
M1 Junction 24 - A453 northbound approach	1.02	1.02	0.79	0.95
M1 Junction 24a southbound on-slip merge onto M1	0.82	0.94	0.97	1.00
M1 Junction 24a - southbound merge between M1 southbound and A50 eastbound	1.02	1.07	0.92	0.89
Station Road, Castle Donington - northbound approach	0.65	0.79	0.87	0.93
Whatton Road / Derby Road - eastbound approach	0.99	1.00	0.69	0.85
A6 Derby Road / Zouch Road - northbound approach	1.00	1.04	0.93	1.01
Ashby Road Central / Leicester Road - southbound approach	1.01	1.03	1.00	1.00
Station Road / Donington Lane - westbound approach	0.98	0.99	0.81	0.87

Figure 3.14: Forecast Node Volume-Capacity Ratio for 2028 Core and 2028 With Development

AM Peak

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PM Peak

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Figure 3.15: Forecast Node Volume-Capacity Ratio for 2038 Core and 2038 With Development

AM Peak

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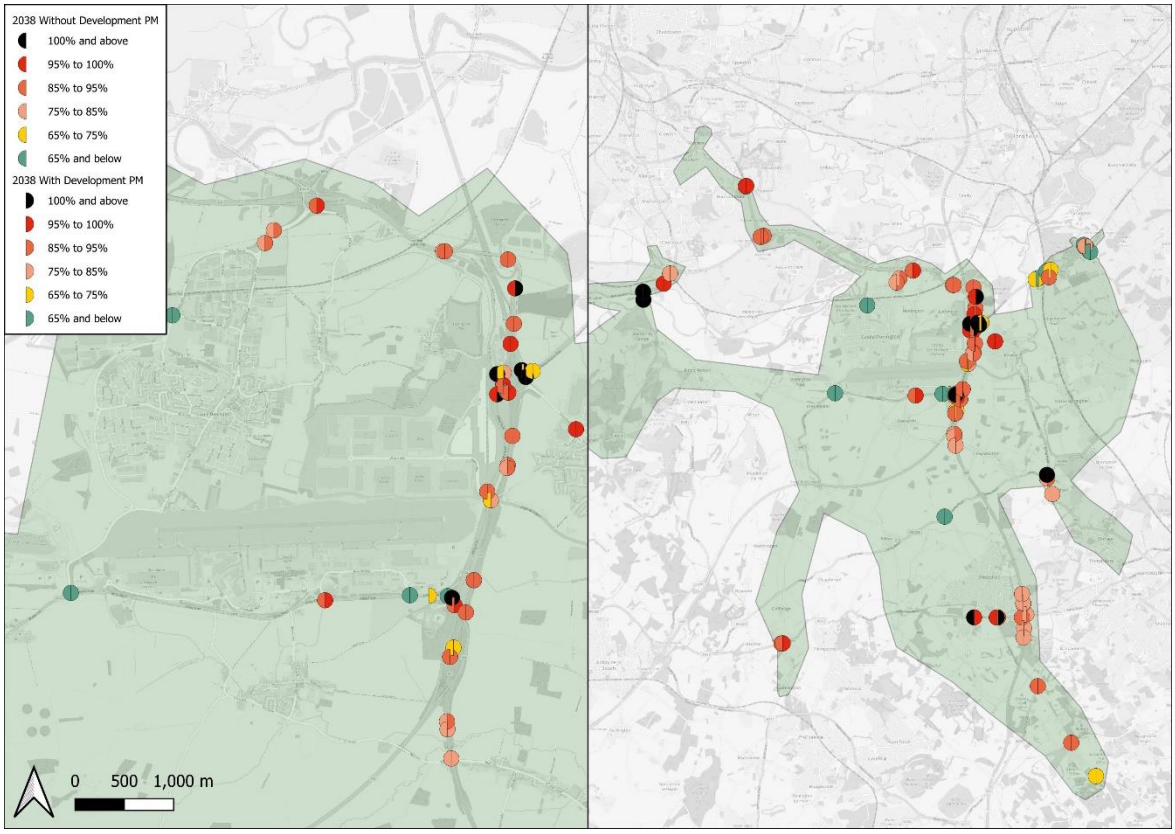
PM Peak



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Section 4 – With Mitigation Scenario Results

4.1 Introduction

4.1.1 This section details the With Mitigation scenario results for the proposed EMGP2 development assessment for the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours. The analysis includes:

- routeing of the forecast development traffic in the With Mitigation scenarios (Section 4.2);
- forecast flow changes between the Core and With Mitigation scenarios (Section 4.3);
- an assessment of the Area of Influence (Section 4.4);
- forecast delay changes between the Core and With Mitigation scenarios (Section 4.5); and
- forecast maximum node volume-capacity ratios for the Core and With Mitigation scenarios (Section 4.6).

4.2 Forecast Development Traffic

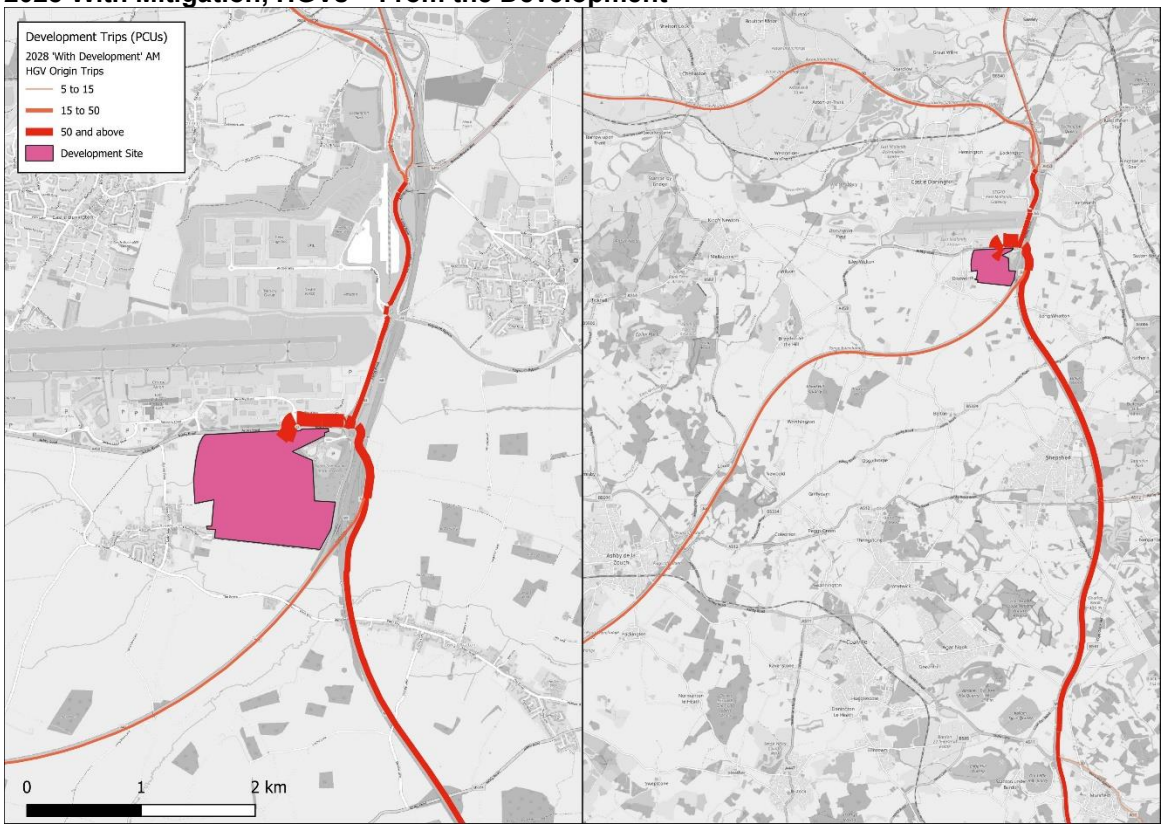
4.2.1 Figure 4.1 to Figure 4.8 show the forecast development trip distribution separately for HGVs and light vehicles on the highway network for the 2028 and 2038 With Mitigation scenarios.

4.2.2 The forecast development trip distributions are broadly consistent with those presented in Section 3.2 across most scenarios, except in 2028 and 2038 PM Peak for the following:

- HGV trips: Development HGV traffic bound for Birmingham (via the A42) is forecast to route via Finger Farm Roundabout. This differs from HGV traffic in the With Development scenario, which uses the A453 Walton Hill Road.
- Light vehicle trips: Development light vehicle traffic shows a reduction in flows on Grimes Gate (towards Long Whatton) (with a corresponding increase in trips routeing via the Kegworth Bypass) and Melbourne Road (towards A50 Junction 3).

Figure 4.1: HGV Trip Distribution to/from the Development, 2028 AM Peak

2028 With Mitigation, HGVs – From the Development



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2028 With Mitigation, HGVs – To the Development

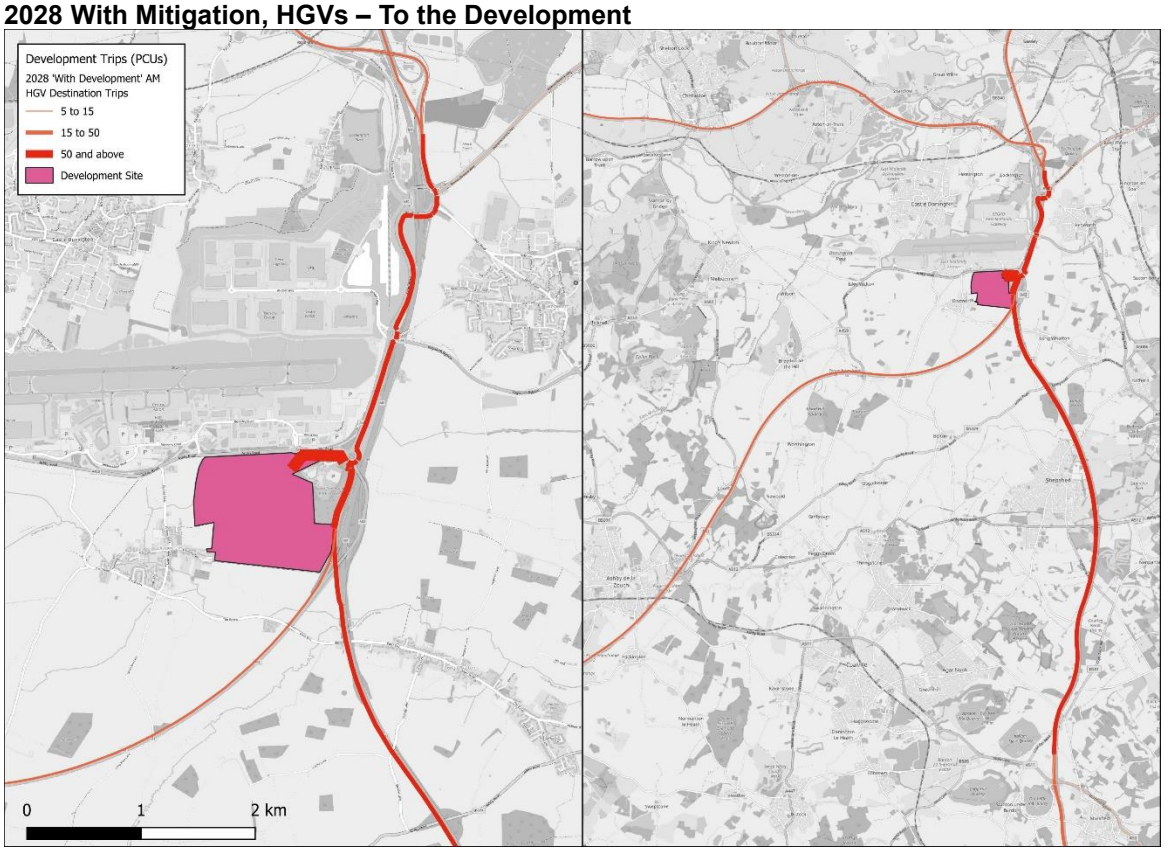

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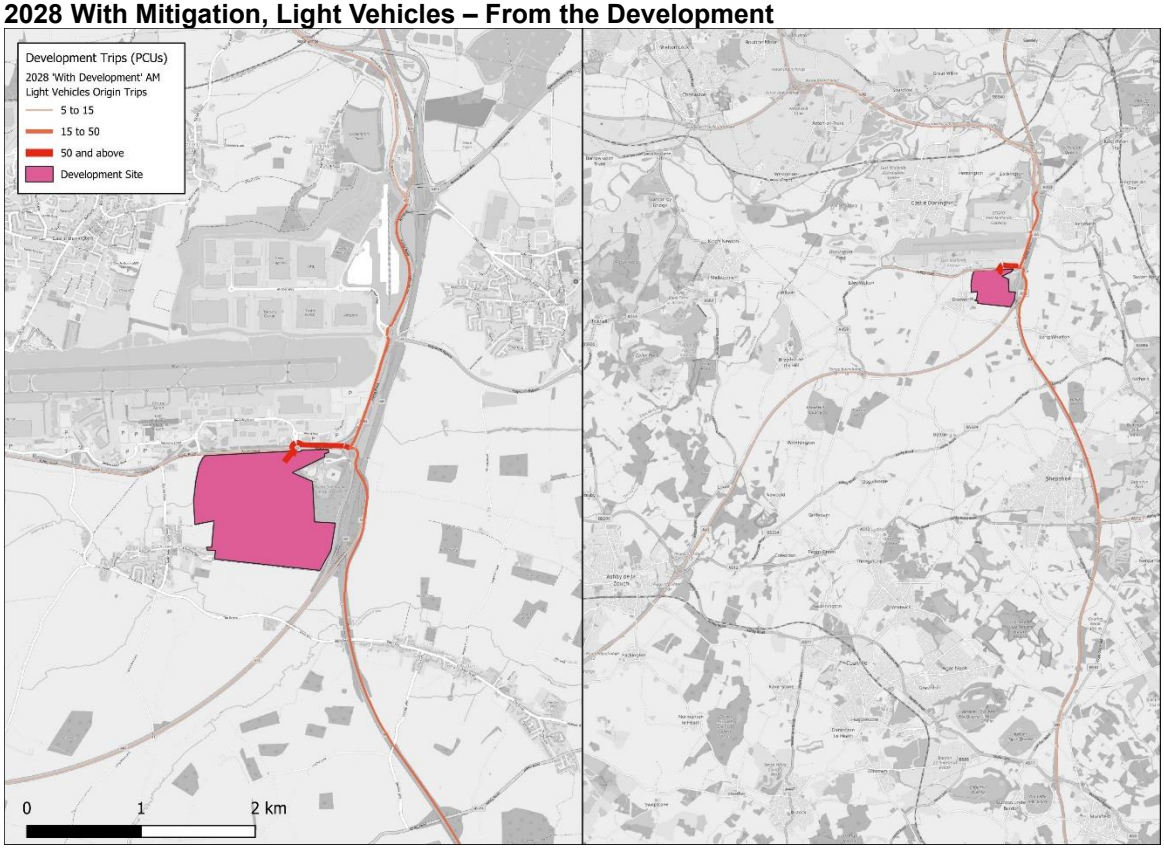
Figure 4.2: Light Vehicles Trip Distribution to/from the Development, 2028 AM Peak

2028 With Mitigation, Light Vehicles – From the Development



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2028 With Mitigation, Light Vehicles – To the Development

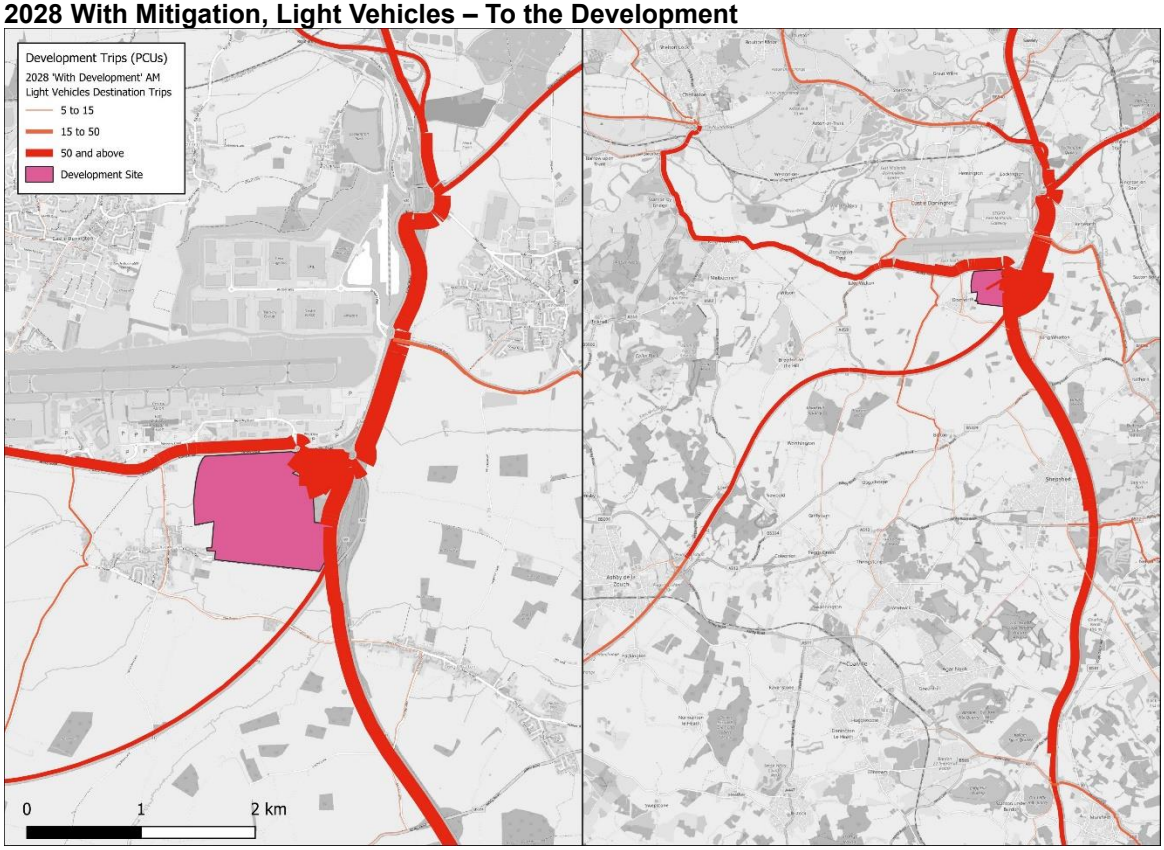

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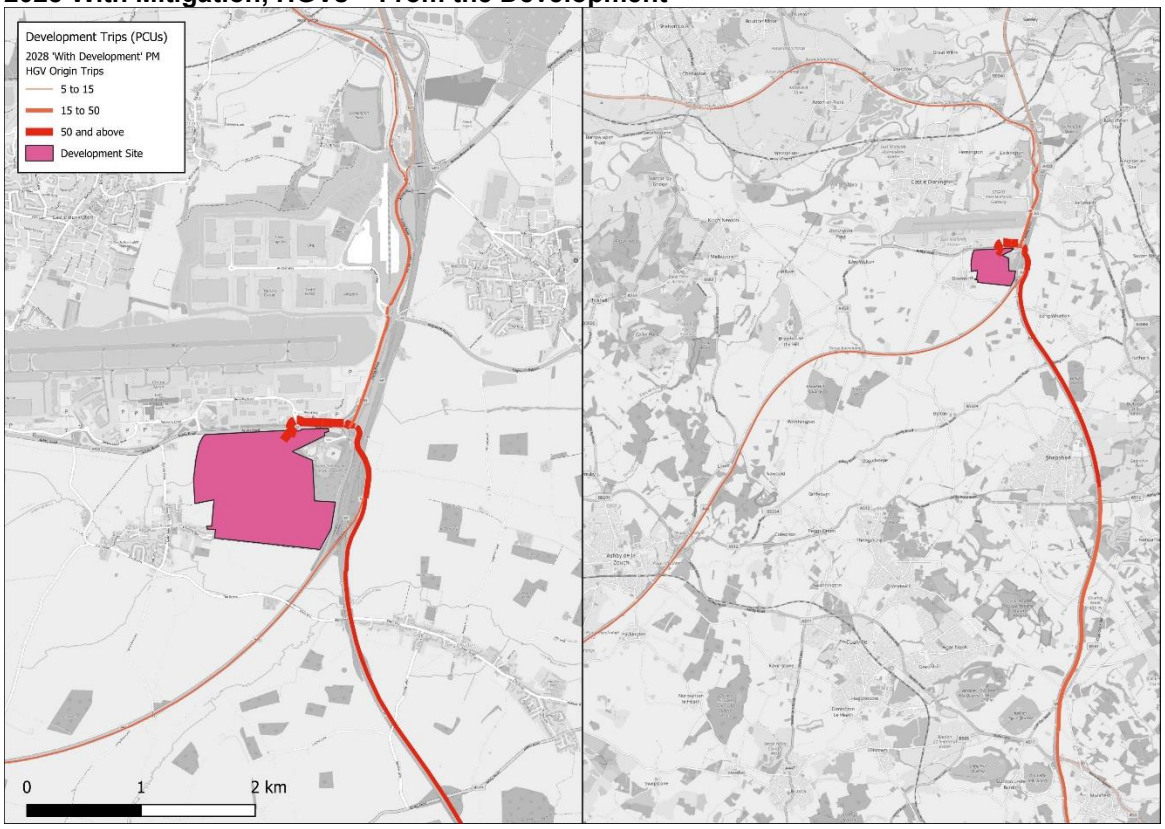
Figure 4.3: HGV Trip Distribution to/from the Development, 2028 PM Peak

2028 With Mitigation, HGVs – From the Development



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2028 With Mitigation, HGVs – To the Development

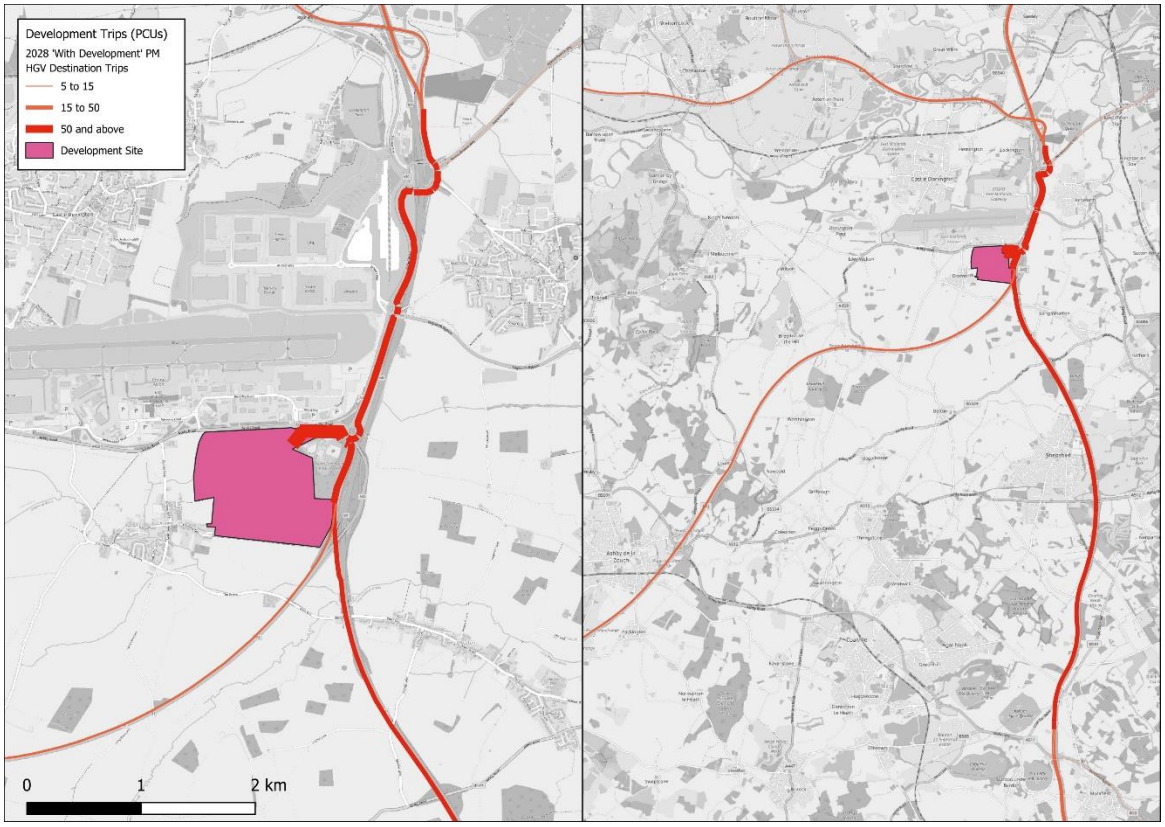

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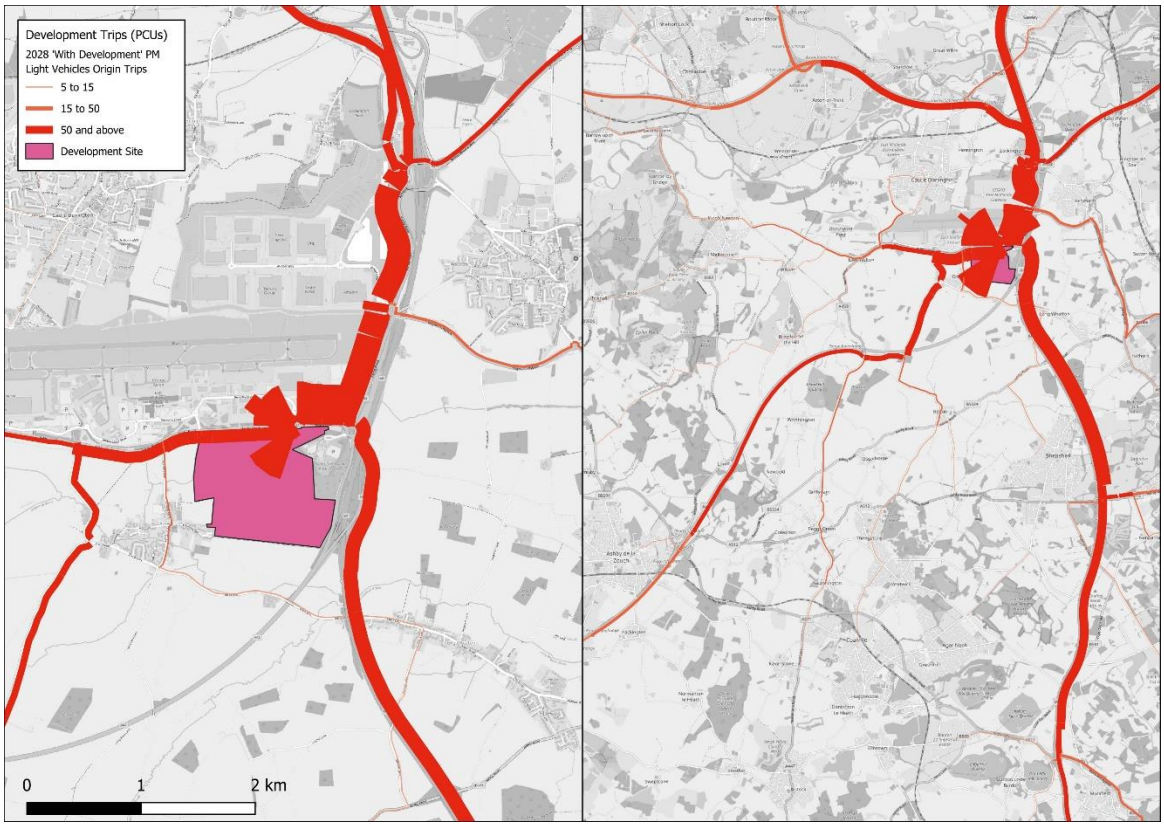
Figure 4.4: Light Vehicles Trip Distribution to/from the Development, 2028 PM Peak

2028 With Mitigation, Light Vehicles – From the Development



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2028 With Mitigation, Light Vehicles – To the Development

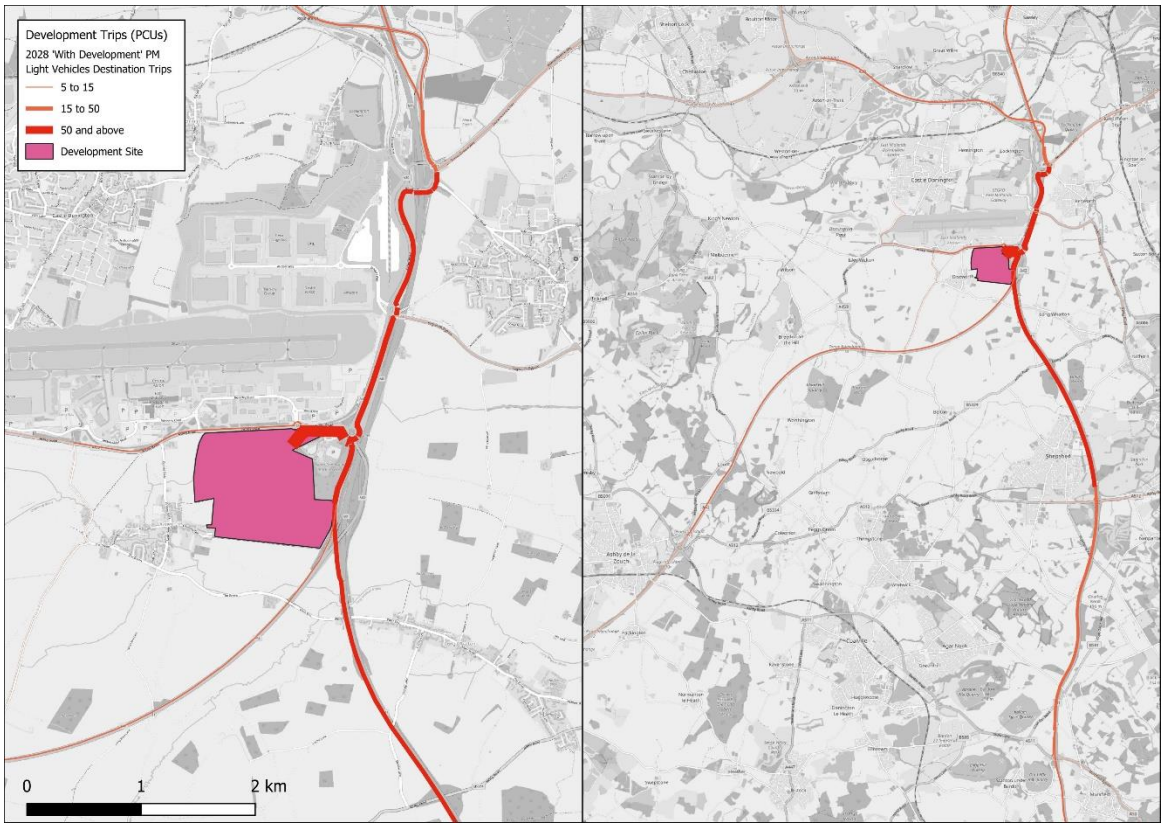

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Figure 4.5: HGV Trip Distribution to/from the Development, 2038 AM Peak

2038 With Mitigation, HGVs – From the Development

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2038 With Mitigation, HGVs – To the Development

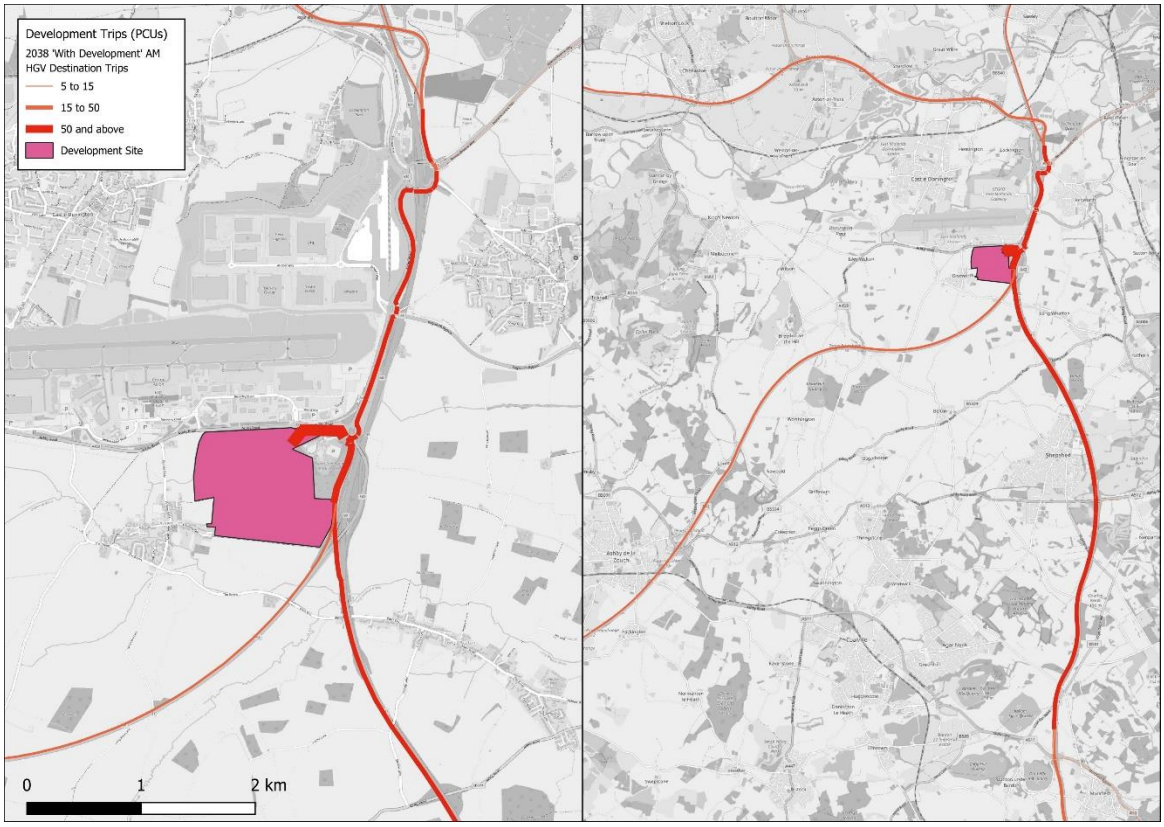

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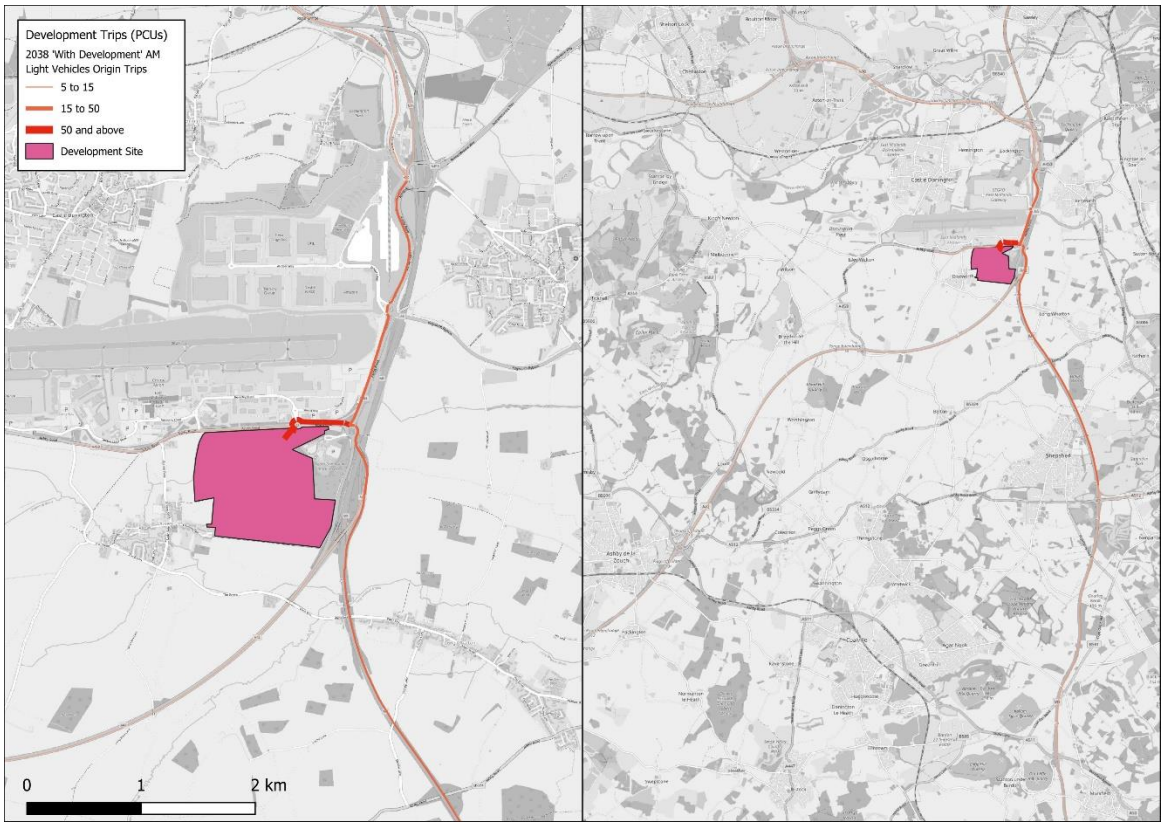
Figure 4.6: Light Vehicles Trip Distribution to/from the Development, 2038 AM Peak

2038 With Mitigation, Light Vehicles – From the Development



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2038 With Mitigation, Light Vehicles – To the Development

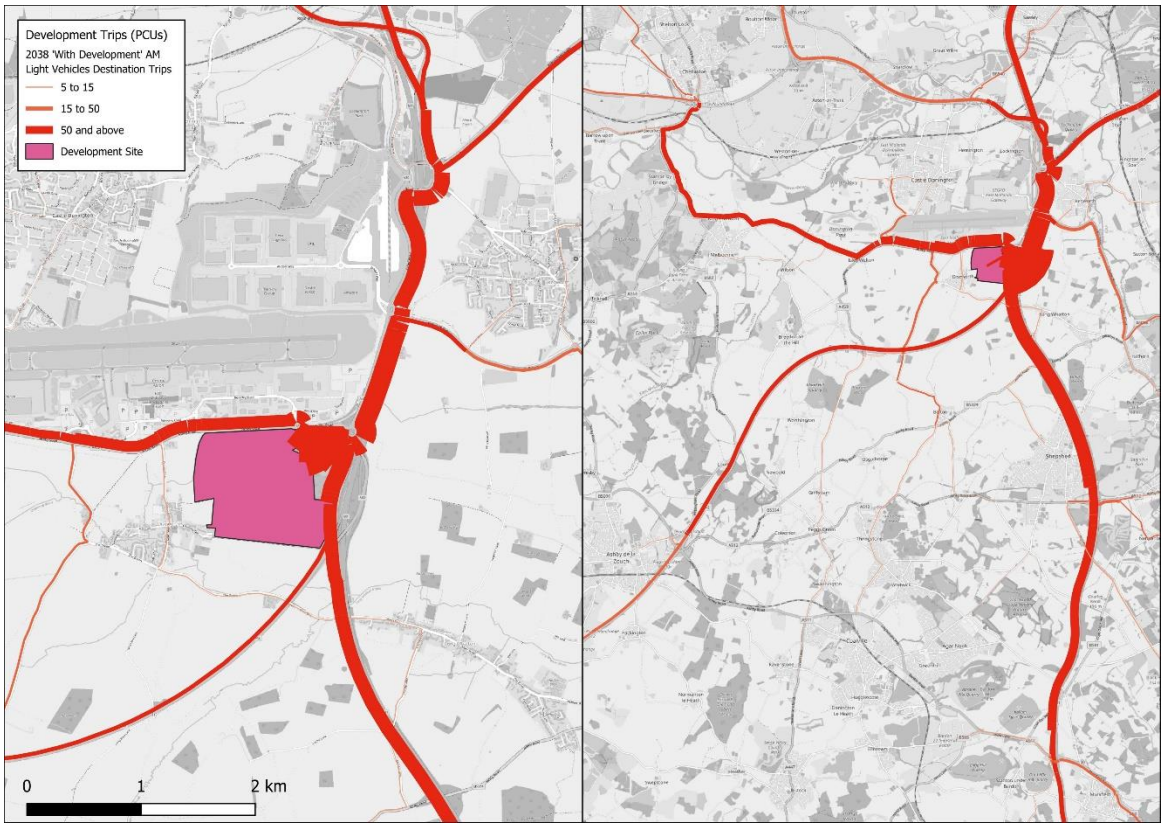

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Figure 4.7: HGV Trip Distribution to/from the Development, 2038 PM Peak

2038 With Mitigation, HGVs – From the Development

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2038 With Mitigation, HGVs – To the Development

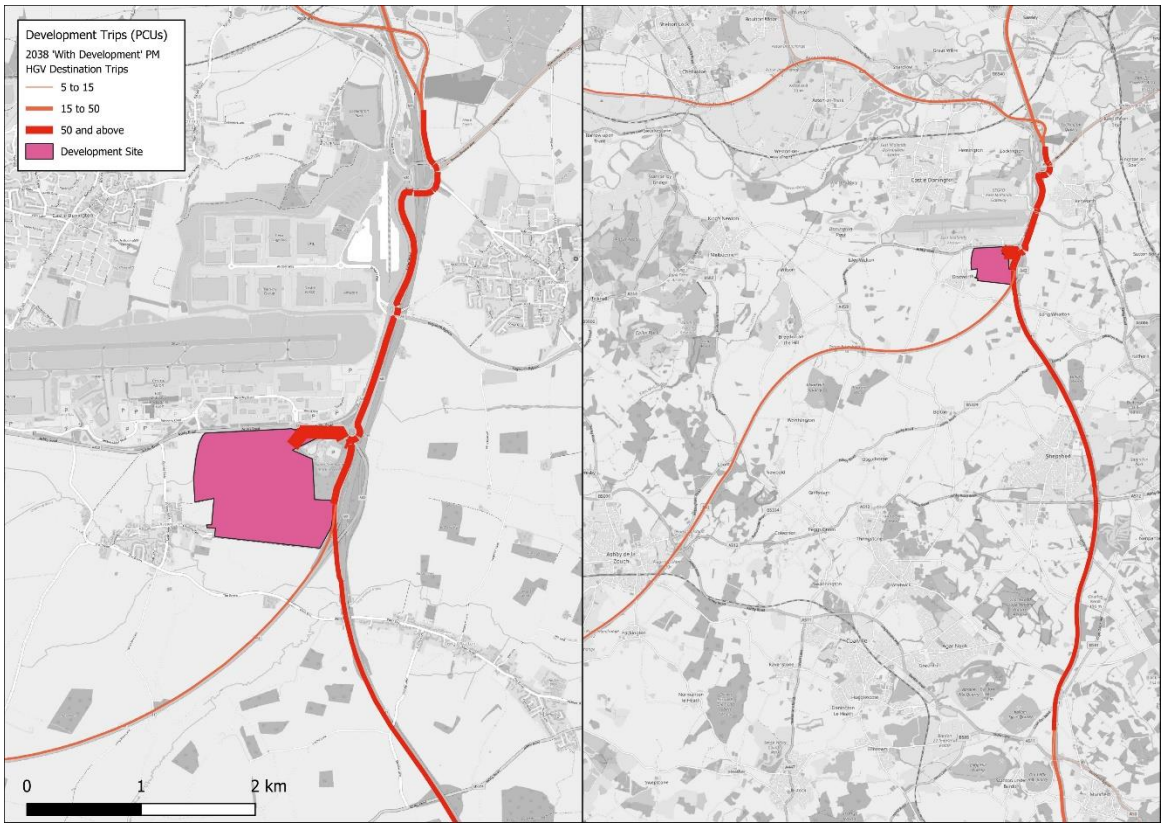

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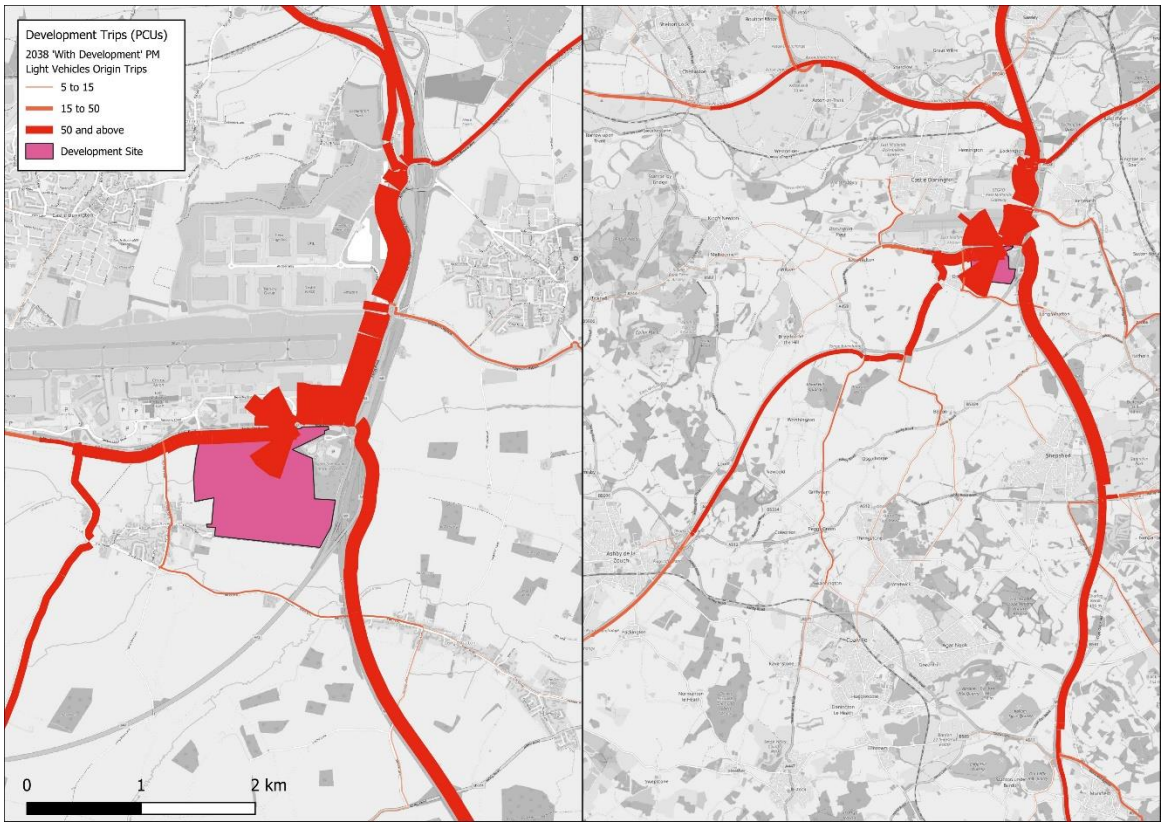
Figure 4.8: Light Vehicles Trip Distribution to/from the Development, 2038 PM Peak

2038 With Mitigation, Light Vehicles – From the Development



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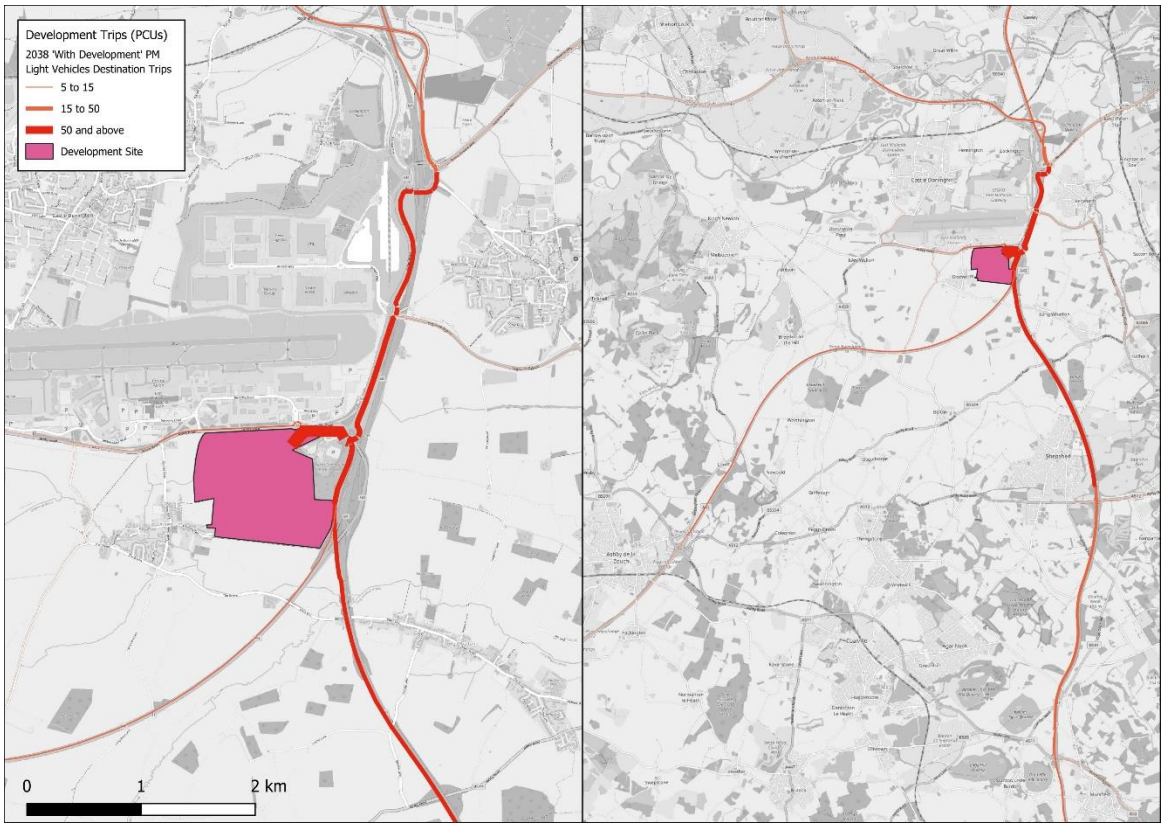
2038 With Mitigation, Light Vehicles – To the Development



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4.3 Forecast Flow Change

4.3.1 Figure 4.9 and Figure 4.10 show the forecast flow changes in 2028 and 2038 between the With Mitigation and Core scenarios for the AM Peak and PM Peak hours. These show that the traffic flow changes have a broadly similar pattern during both the AM and PM Peak hours in both forecast years.

4.3.2 However, the plots show significant differences compared with those in Section 3.3, which depict forecast flow changes between the With Development and Core scenarios. The mitigation measures, particularly the new northbound link at M1 Junction 24, have resulted in a significant shift in traffic from the A453 northbound to the M1.

4.3.3 Overall, these figures indicate that most traffic increases are expected on the SRN, specifically along the A453, M1, A50, and A42 corridors. Table 4.1 summarises the forecast flow changes on selected key roads.

Table 4.1: Forecast Flow Change (PCUs) on Key Roads – With Mitigation minus Core

Road Section	Direction	With Mitigation – Core Scenarios			
		AM Peak		PM Peak	
		2028	2038	2028	2038
A453 to the west of Finger Farm Roundabout	Eastbound	230	360	530	800
	Westbound	540	560	280	250
A453 West of the development	Eastbound	160	240	-80	170
	Westbound	-70	-100	140	60
A453 between Finger Farm Roundabout and M1 Junction 24	Northbound	-1,020	-690	-710	-440
	Southbound	220	200	120	60
M1 between M1 Junction 23a and M1 Junction 24	Northbound	930	640	900	750
	Southbound	0	-30	10	-40
West of A50 Junction 1	Eastbound	40	150	20	30
	Westbound	100	190	110	130
Hilton Hotel Lane	Northbound	0	20	0	-10
	Southbound	10	0	0	10
Green Lane, Diseworth	Northbound	30	40	0	10
	Southbound	0	-30	110	70
New Link Road	Northbound	1,850	1,910	1,470	1,540

4.3.4 The following key links exhibit significant flow changes during the AM and PM Peak hours in both forecast years:

- **A453 (between the site access and Finger Farm Roundabout)**: In the AM Peak, flows increase by 230–360 PCUs eastbound and 540–560 PCUs westbound. During the PM Peak, increases are forecast to reach 530–800 PCUs eastbound and 250–280 PCUs westbound.
- **A453 (west of the development)**: AM Peak flows indicate an eastbound increase of 160–240 PCUs and a westbound reduction of 70–100 PCUs. The PM Peak shows a general increase of 60–170 PCUs, except for an 80 PCU decrease eastbound in the 2028 PM Peak.
- **West of A50 Junction 1**: In the AM Peak in both 2028 and 2038, eastbound flows increase modestly by around 40–150 PCUs, while westbound flows rise slightly more, by around 100–190 PCUs. In the PM Peak, a similar pattern is observed, with eastbound flows increasing by around 20–30 PCUs and westbound flows by around 100–130 PCUs.
- **New Northbound Link and A453 (between Finger Farm Roundabout and M1 Junction 24)**: The new northbound link is forecast to carry between 1,850–1,910 PCUs in the AM Peak and 1,470–1,540 PCUs in the PM Peak. Consequently, the A453 northbound (between Finger Farm Roundabout and M1 Junction 24) experiences a reduction in flow of 690–1,020 PCUs during the AM Peak and 440–710 PCUs during the PM Peak.

4.3.5 Furthermore, the local road networks of Castle Donington, Isley Walton, and Diseworth are forecast to experience relatively minor impacts compared with the flow changes detailed in Section 3.3. This reduction is attributed to lower forecast delays at the Finger Farm Roundabout, which encourages traffic to remain on the SRN rather than displacing onto local roads.

Figure 4.9: Forecast Flow Change for 2028 With Mitigation minus Core

AM Peak

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PM Peak

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Figure 4.10: Forecast Flow Change for 2038 With Mitigation minus Core

AM Peak

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PM Peak

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4.4 Area of Influence with Mitigation Measures

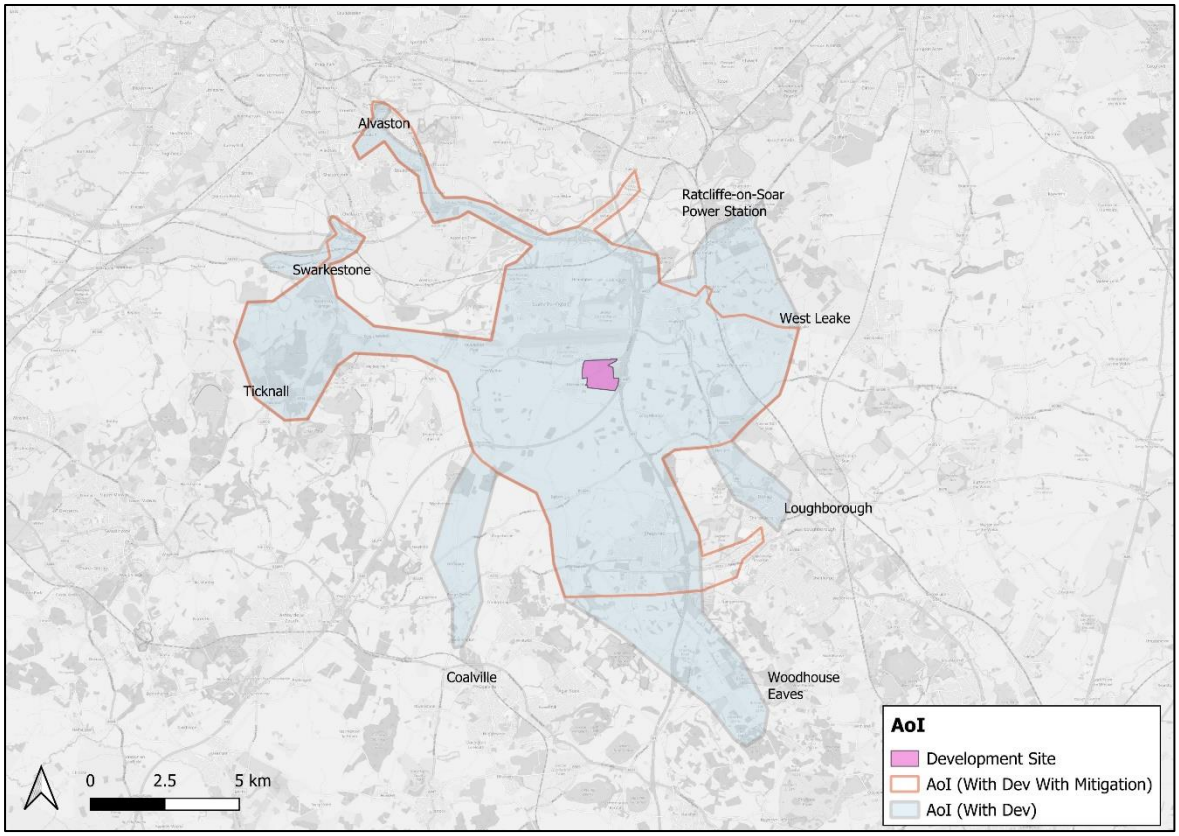
4.4.1 Using the forecast flow changes between the With Mitigation and Core scenarios, an indication of the AoI has been defined and is shown in Figure 4.11.

4.4.2 The AoI has been defined using the same criteria set out in Section 3.4. It comprises the following areas and links:

- the A453 including Finger Farm Roundabout;
- the M1 between Junction 23 and Junction 24a;
- the A42 between the M1 and Junction 14;
- the A50 between the M1 and Junction 2; and
- local roads in and around Castle Donington, Kegworth, Diseworth, Ticknall, Alvaston, and West Leake.

4.4.3 For comparison, Figure 4.11 also shows the AoI for the With Development scenario. As the mitigation measures reduce delays at Finger Farm Roundabout, trips no longer need to route via alternative local roads and instead remain on the SRN, leading to a smaller traffic impact area overall. The AoI for the With Mitigation scenario therefore covers a broadly similar but reduced extent compared with the With Development AoI, with Loughborough, Woodhouse Eaves, Coalville and Ratcliffe-on-Soar Power Station (disused) no longer included.

Figure 4.11: Area of Influence with Mitigation Measures



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4.5 Forecast Delay Change

4.5.1 Figure 4.12 and Figure 4.13 show the forecast delay changes (in seconds) in 2028 and 2038 between the With Mitigation and Core scenarios for the AM Peak and PM Peak hours.

4.5.2 At Finger Farm Roundabout, delays on the eastbound approach are forecast to decrease. Specifically, the 2038 AM Peak shows a reduction of 95 seconds, while the PM Peak across both forecast years shows a reduction ranging between 80 and 200 seconds.

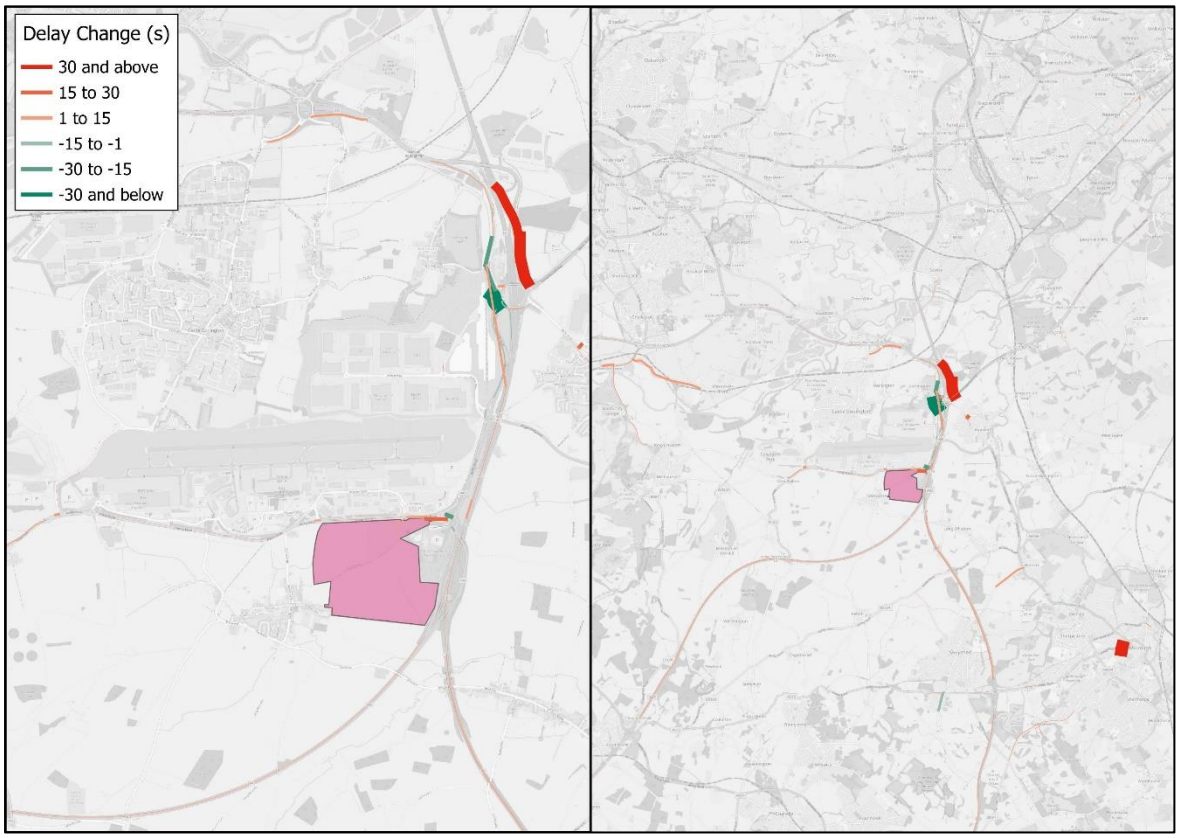
4.5.3 Increased delays of 110–130 seconds are forecast on the eastbound A453 during the PM Peak in both 2028 and 2038.

4.5.4 At M1 Junction 24, the M1 southbound off-slip to the junction is forecast to experience increased delays of approximately 40–60 seconds during the AM Peak in 2028 and 2038. There are also increased delays of 45-145 seconds at the merge between the M1 southbound off-slip and A50 southbound. However, the removal of the A453 northbound to A50 dedicated left-turn lane removes the existing merge with traffic exiting M1 Junction 24 to the A50, delivering significant delay reductions of approximately 70–95 seconds at this location.

4.5.5 In 2038, delays are forecast to increase by about 20–50 seconds on the A50 Junction 1 westbound off-slip during both the AM and PM Peaks. An increase in delay of around 45 seconds is also forecast at the A453 Leonardo Hotel junction eastbound in the 2038 AM Peak.

Figure 4.12: Forecast Delay Change for 2028 With Mitigation minus Core

AM Peak



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PM Peak

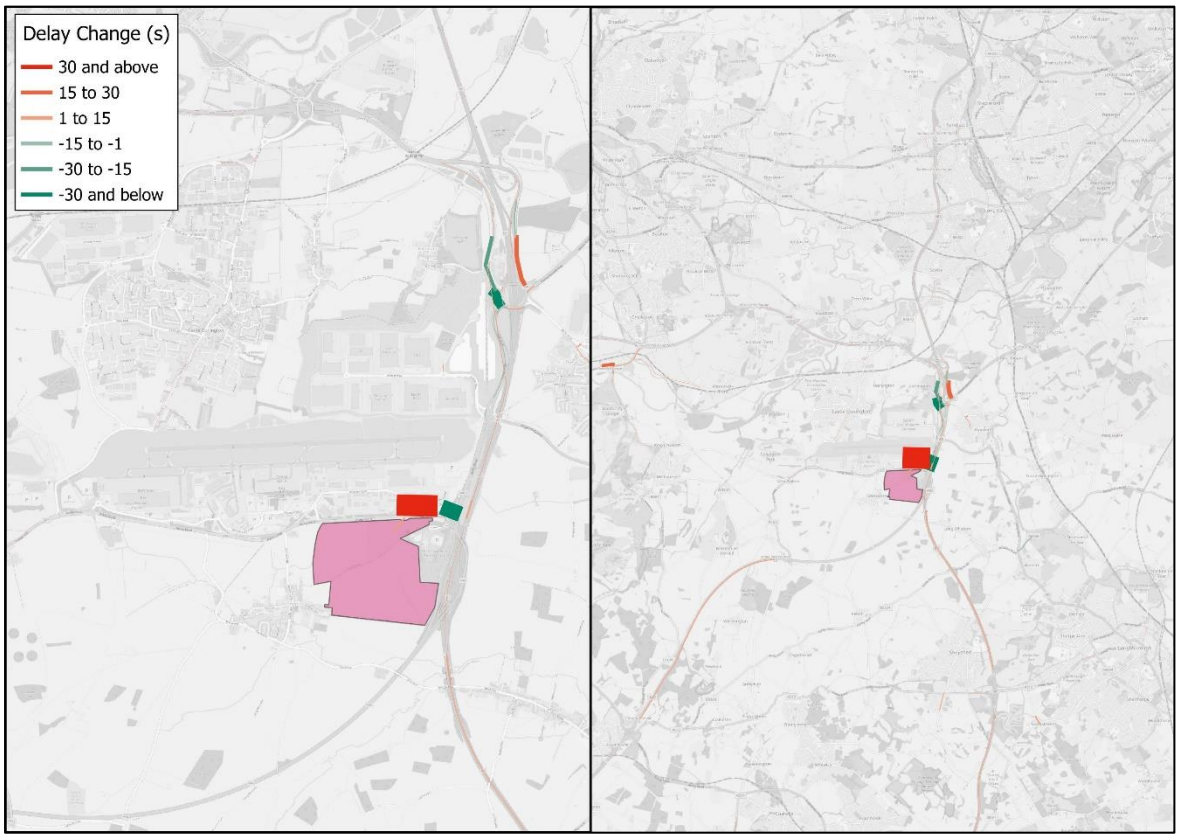

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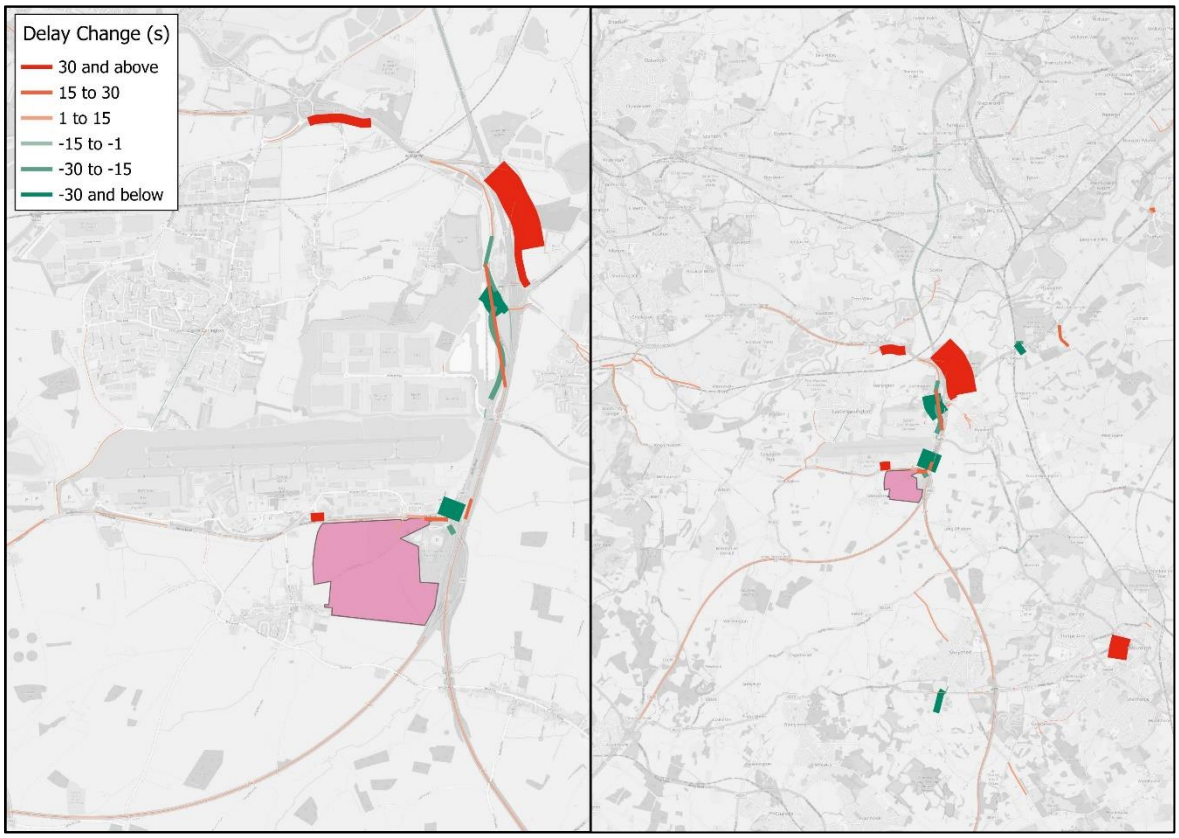
Figure 4.13: Forecast Delay Change for 2038 With Mitigation minus Core

AM Peak



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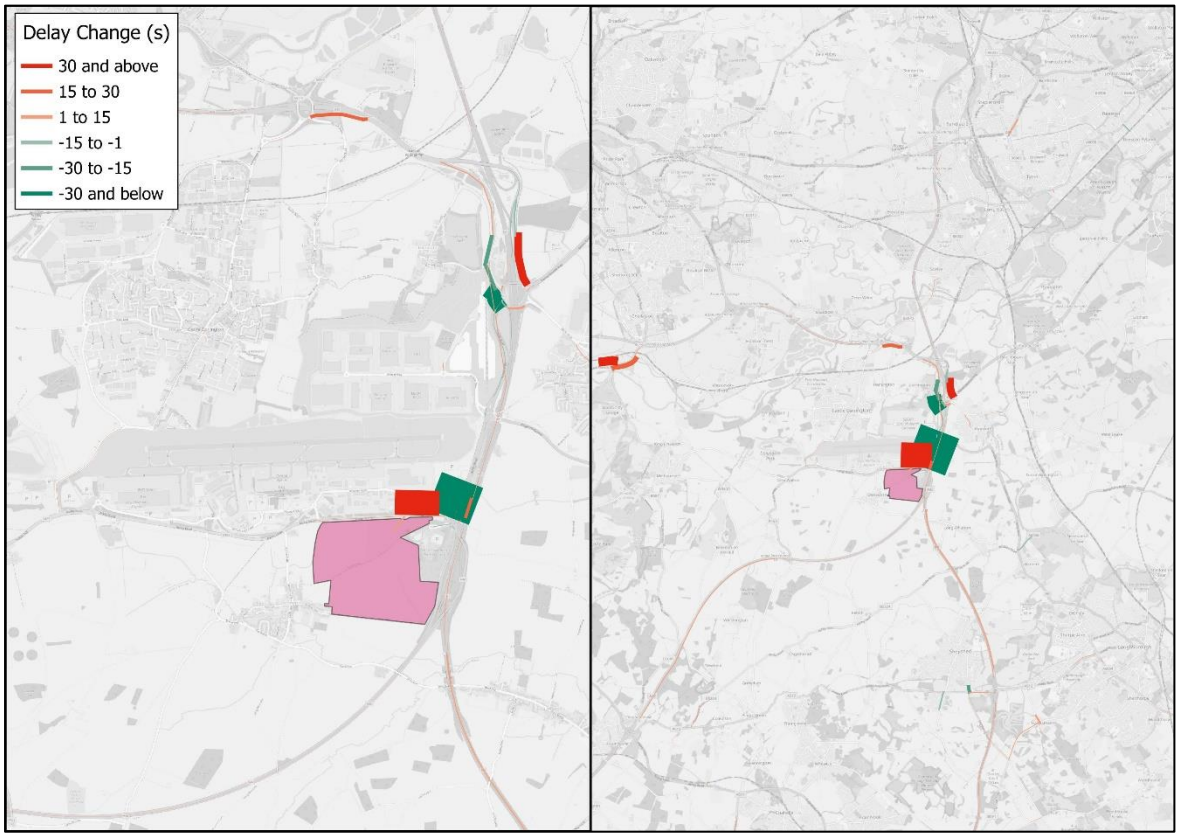
PM Peak



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4.6 Forecast Node Volume-Capacity Ratios

4.6.1 Figure 4.14 and Figure 4.15 show the forecast maximum junction volume-capacity ratio for 2028 and 2038, in the With Mitigation and Core scenarios within the AoI.

4.6.2 The forecast maximum node volume-capacity ratio plots show that the EMGP2 access junction along the A453, M1 Junction 23, M1 Junction 23a, M1 Junction 24, Finger Farm Roundabout and the Kegworth Bypass / A453 roundabout are most affected by the proposed development trips with mitigation measures.

4.6.3 Table 4.2 shows the locations where the node volume-capacity ratio in the With Mitigation scenario is higher than 85% and is in a higher volume-capacity ratio compared with the Core scenario during the AM and PM Peak hours in 2028 and 2038. Overall, the results represent an improvement in node volume-capacity ratios compared with those reported in Section 3.6, for the With Development scenario, demonstrating that the mitigation measures generally reduce pressure on junction capacity.

Table 4.2: Forecast Selected Node Volume-Capacity Ratio on With Mitigation Scenario

Node location	AM Peak		PM Peak	
	2028	2038	2028	2038
A453 toucan crossing	0.96	0.96	1.01	1.01
A453 / East Midlands Airport junction - westbound approach	0.89	1.00	0.87	0.87
A453 / Finger Farm Roundabout - eastbound approach	0.93	0.93	0.97	0.97
A453 / Site Access roundabout - westbound approach	0.92	0.92	0.62	0.66
A50 Junction 1 westbound off-slip	0.97	1.02	0.85	0.97
A50 westbound merge with M1 southbound	0.89	0.92	0.85	0.91
A512 Ashby Road / Iveshead Road - northbound approach	1.01	1.01	1.00	1.01
Ashby Road / Hallamford Road - westbound approach	0.63	0.88	0.32	0.39
M1 Junction 23 - northbound off-slip	0.70	0.86	0.71	0.89
M1 Junction 23 - southbound on-slip	0.78	0.87	0.73	0.82
M1 Junction 23a - A42 northbound diverge to M1 northbound	0.88	0.91	0.88	0.89
M1 Junction 23a - northbound diverge between A453 and M1	0.81	0.89	0.79	0.87
M1 Junction 23a - northbound merge between A453 and M1	0.83	0.92	0.82	0.87
M1 Junction 23a - southbound merge between A453 and M1	0.78	0.87	0.78	0.89
M1 Junction 24 - northbound off-slip	0.91	0.95	0.94	0.98
M1 Junction 24 - southbound approach	1.09	1.09	1.00	1.02
M1 Junction 24a A50 eastbound diverge	0.78	0.86	0.91	0.91
M1 northbound diverge to new link road	0.84	0.87	0.76	0.84
M1 southbound diverge between M1 and A42	0.79	0.86	0.78	0.83
Thulston Roundabout - northbound approach	0.86	0.89	0.74	0.80

Figure 4.14: Forecast Node Volume-Capacity Ratio for 2028 Core and 2028 With Mitigation

AM Peak

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PM Peak

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Figure 4.15: Forecast Node Volume-Capacity Ratio for 2038 Core and 2038 With Mitigation

AM Peak

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PM Peak

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Section 5 Summary of the Assessment

5.1 Introduction

5.1.1 The Pan-Regional Transport Model 2023 (PRTM23) has been used to undertake a strategic modelling assessment of the proposed development for both 2028 and 2038 in the AM Peak and PM Peak hours, for the Core, With Development and With Mitigation Scenarios. Based on the model forecasts, the key findings are summarised below.

5.2 With Development Scenario

5.2.1 The forecast development traffic has a similar trip distribution to and from the proposed development in both the AM Peak and PM Peak hours, and across both forecast years. The development traffic mainly routes via the SRN including the M1, A42, A50, and A453 Remembrance Way, with some local routeing taking place to the north and the south of the proposed development.

5.2.2 The forecast flow changes in 2028 and 2038 between the With Development and Core scenarios show that along the A453 near the site access and west of Finger Farm Roundabout, flows are expected to increase in both directions during the AM Peak, while the PM Peak shows smaller westbound increases. On the A453 between Finger Farm Roundabout and M1 Junction 24, northbound traffic is forecast to decrease while southbound traffic is forecast to increase during the AM Peak, with only minimal changes expected in the PM Peak. The M1 northbound shows a moderate increase in flow in the AM Peak in both 2028 and 2038, while changes southbound are negligible. In the PM Peak, both directions show only slight increases in 2028 and 2038. Local networks around Castle Donington, Isley Walton, and Diseworth are also predicted to carry higher traffic volumes. The traffic changes on Hilton Hotel Lane are negligible in both AM and PM Peaks, while local roads such as Trent Lane, Melbourne Road, Grimes Gate, and Green Lane are expected to have increases in flow.

5.2.3 An AoI for the proposed development has been defined by identifying links which are forecast to change by more than ±5% and ±30 PCUs between the With Development and Core scenarios for 2028 and 2038 in either the AM Peak or PM Peak hours. The forecast AoI includes:

- the A453 including Finger Farm Roundabout;
- the M1 between Junction 23 and Junction 24a;
- the A42 between the M1 and Junction 14;
- the A50 between the M1 and Junction 2; and
- local roads in and around Castle Donington, Kegworth, Diseworth, Loughborough, Woodhouse Eaves, Coalville, Ticknall, Alvaston, Ratcliffe-on-Soar Power Station (disused) and West Leake.

5.2.4 The forecast delay changes in 2028 and 2038 between the With Development and Core scenarios show the proposed development is forecast to increase delays at Finger Farm Roundabout, M1 Junction 24, and the A453 / Kegworth Bypass junction. The southern and western arms at Finger Farm Roundabout experience AM and PM Peak delay increases due to development traffic. The M1 southbound off-slip to the junction is expected to experience an increase in delay during the AM Peaks. Delays for traffic exiting M1 Junction 24 to the A50 are forecast to increase, whereas delay on the dedicated left-turn lane from the A453 northbound to the M1 is forecast to reduce in the 2028 and 2038 AM Peaks. The M1 northbound off-slip is forecast to experience longer delays in the 2038 AM Peak. The A453 / Kegworth Bypass junction sees modest 2038 AM Peak increases in delay.

5.2.5 The forecast maximum node volume-capacity ratios show that the proposed development is forecast to increase pressure at junctions along the A453 including the Finger Farm roundabout. For M1 Junction 24, the node volume-capacity ratios are high for both the With Development and Core scenarios with multiple nodes at this junction exceeding 85% which indicates high levels of delay and congestion at this location.

5.3 With Mitigation Scenario

5.3.1 Based on the model forecasts between the With Mitigation and Core scenarios, the following is a summary of the key findings for the assessment of the proposed development.

5.3.2 The client has provided mitigation measures that have been included in the PRTM23 at the following locations:

- a new M1 northbound to A50 westbound link road;

- A50 eastbound approaching Junction 24;
- M1 Junction 24 circulatory works; and
- EMGP1 access improvements.

5.3.3 The forecast development trip distributions in the With Mitigation scenario are broadly consistent with those in the With Development scenario, except for key differences in the 2028 and 2038 PM Peaks. HGV trips from the proposed development will route exclusively via Finger Farm Roundabout towards Birmingham and the A42, rather than using the A453 Walton Hill Road as in the With Development scenario. Light vehicle traffic shows a reduction in flow on Grimes Gate (towards Long Whatton) and Melbourne Road (towards A50 Junction 3).

5.3.4 The forecast flow changes in 2028 and 2038 between the With Mitigation and Core scenarios show that, along the A453 near the site access and west of Finger Farm Roundabout, flows are expected to increase in both directions during the AM and PM Peaks. The new northbound link carries substantial traffic volumes during both the AM and PM Peaks. The M1 northbound between Junctions 23a and 24 is forecast to experience increased flows in both peaks. The traffic changes on Hilton Hotel Lane are negligible in both AM and PM Peaks.

5.3.5 The AoI for the With Mitigation scenario covers a similar but smaller area compared with the AoI for the With Development scenario. The excluded areas are Loughborough, Woodhouse Eaves, Coalville, and Ratcliffe-on-Soar Power Station (disused).

5.3.6 The forecast delay changes in 2028 and 2038 between the With Mitigation and Core scenarios show the proposed development is forecast to introduce changes in delay on the A453, at Finger Farm Roundabout, and at M1 Junction 24. At Finger Farm Roundabout, the delays on the eastbound approach reduce substantially on all scenarios, except in the 2028 AM Peak. Eastbound delays on the A453 increase during the PM Peak in 2028 and 2038. The M1 Junction 24 southbound off-slip to the junction sees higher AM Peak delays in both years. There are also increased delays at the merge between the M1 southbound off-slip and A50 southbound. However, the removal of the A453 to A50 dedicated left-turn lane in the mitigation measures eliminates the delays at that merging point.

5.3.7 The forecast maximum node volume-capacity ratios show that the proposed development is forecast to increase pressure at junctions along the A453 including the Finger Farm Roundabout. The results represent an improvement in node volume-capacity ratios compared with the With Development scenario, demonstrating that the mitigation measures generally reduce pressure on junction capacity.

5.3.8 Forecast turning flows have been extracted for the following four junctions in the vicinity of the proposed development. The data have been provided separately in MS Excel spreadsheet format[8] which contains the forecast turning flows for the AM Peak and PM Peak hours for light and heavy vehicles for all scenarios.

- A453 / site access roundabout;
- Finger Farm Roundabout;
- A453 / Kegworth Road dumbbell roundabouts; and
- A453 / West Leake Lane / Barton Lane dumbbell roundabouts.

5.4 Modelling Limitations

5.4.1 The forecasts undertaken reflect the forecast impact of the proposed development at East Midlands Gateway Phase 2 with the proposed mitigation measures included. It should be noted that the results provided in this report are at a high level. Due to the strategic nature of the PRTM23, not all roads are modelled, and the results should be interpreted with that in mind.

5.4.2 Although the PRTM23 modelling provides the strategic impact and forms part of the proposed East Midlands Gateway Phase 2 assessment evidence packs, the overall assessment should be complemented by local operational assessment and analysis.

[8] EMGP2 – PRTM23 Junction Turning Flows v2.0 - For Issue.xlsx

Appendix A Planning Data Assumptions

Table A.1: Residential Development Assumptions (sites with more than 500 dwellings)

District	Location	Quantum	Timescale	Include
Broxtowe	Chetwynd Barracks	1,500	2026-2040	Y
Broxtowe	Land at Toton	1,200	2029-2040	Y
Broxtowe	Eastwood Road Kimberley	960	2028-2041	Y
Derby	Acorn Way	600	2024-2030	Y
Derby	Rykneld Road	900	2026-2036	Y
Derby	Derby Royal Infirmary	920	2026-2031	Y
Derby	Manor / Kingsway Hospitals	937	2026-2031	Y
Derby	Castleward	840	2026-2031	Y
Derby	Boulton Moor / Snelsmoor Grange	800	2026-2036	Y
Derby	City Centre, Railway Station Masterplan	1,000	2026-2031	Y
Derby	City Centre, Derby Riverside	800	2026-2031	Y
Erewash	Erewash	566	Pre 2024-2028	Y
Erewash	Erewash	1,098	Pre 2024-2028	Y
Erewash	South West of Kirk Hallam	1,300	2024-2035	Y
Erewash	South Stanton	1,000	2027-2036	Y
Gedling	Teal Close	807	Pre 2024-2040	Y
Gedling	Gedling Colliery	941	Pre 2024-2040	Y
Gedling	Top Wighay	1,000	Pre 2024-2040	Y
Gedling	Extension to Top Wighay	900	2024-2040	Y
Gedling	Non-allocated sites Arnold	864	Pre 2024-2040	Y
Gedling	Non-allocated sites Bestwood	541	Pre 2024-2040	Y
Gedling	Non-allocated sites Calverton	586	Pre 2024-2040	Y
Gedling	Non-allocated sites Carlton	1,221	Pre 2024-2040	Y
Gedling	Non-allocated sites Ravenshead	586	Pre 2024-2040	Y
North West Leicestershire	Money Hill - Phase 1 A511 access only	505	2024-2028	Y
North West Leicestershire	Money Hill - Phase 2 Bloor and Taylor Wimpey only	975	2029-2040	Y
North West Leicestershire	Land off Grange Road (South East Coalville)	3,500	Pre 2024-2033	Y
North West Leicestershire	Land North and South of Park Lane, Castle Donington (CD10)	1076	2027-2036	Y
North West Leicestershire	Isley Woodhouse (IW1)	4,250	2032-2051	Y
Nottingham	Stanton Tip - Hempshill Vale	500	2024-2040	Y
Nottingham	Waterside (6 sites)	1,289	Pre 2024-2040	Y
Nottingham	City Centre	30,306	Pre 2024-2040	Y
Nottingham	East and West of Melton Road, Edwalton	1,844	2024-2040	Y
Rushcliffe	Land north of Bingham (planning application) (SHLAA/BIN/015)	1,029	Pre 2024-2028	Y
Rushcliffe	Land at Melton Road (SHLAA/WBR/047)	1,347	Pre 2024-2028	Y
Rushcliffe	East of Gamston North of Tollerton (SHLAA/TOL/008)	3,000	2028-2046	Y

District	Location	Quantum	Timescale	Include
Rushcliffe	Land at RAF Newton (phase 2) (SHLAA/NEW/002)	528	Pre 2024-2028	Y
Rushcliffe	Clifton South	3,000	Pre 2024-2037	Y
South Derbyshire	Broomy Farm, Woodville (H4)	589	Pre 2024-2028	Y
South Derbyshire	Drakelow Power Station, Drakelow (H6)	2,239	Pre 2024-2031	Y
South Derbyshire	Wragley Way (H15) Phase 2	1,850	2028-2047	Y
South Derbyshire	Primula Way (H16)	500	2028-2036	Y
South Derbyshire	Land west of Mickleover (H19 – Phase 3b)	783	2026-2033	Y
South Derbyshire	Boulton Moor, Elvaston (H13 – Phase 1)	1,163	Pre 2024-2030	Y
South Derbyshire	Boulton Moor, Elvaston (H13 – Phase 2)	550	2027-2035	Y
Leicester	Ashton Green	1,893	2027-2035	Y
Leicester	Land to East of Leicester Road Adjacent Ashton Green	670	2029-2035	Y

Table A.2: Employment Development Assumptions (sites with more than 750 jobs)

District	Location	Quantum	Timescale	Include
Broxtowe	Broxtowe	2,660	Pre 2024-2026	Y
Broxtowe	Broxtowe	1,091	Pre 2024-2026	Y
Broxtowe	Broxtowe	1,420	Pre 2024-2026	Y
Broxtowe	Broxtowe	1,063	Pre 2024-2026	Y
Derby	Derby	2,983	Pre 2024-2028	Y
Derby	Derby	2,873	Pre 2024-2028	Y
Derby	Derby	3,129	Pre 2024-2028	Y
Derby	Derby	2,936	Pre 2024-2028	Y
Derby	Derby	2,555	Pre 2024-2028	Y
Derby	Derby	2,835	Pre 2024-2028	Y
Derby	Derby	2,478	Pre 2024-2028	Y
Derby	Derby	1,693	Pre 2024-2028	Y
Derby	Derby	2,501	Pre 2024-2028	Y
Derby	Derby	3,834	Pre 2024-2028	Y
Derby	Derby	1,884	Pre 2024-2028	Y
Derby	Chaddesden Sidings (South)	2,190	2026-2030	Y
Derby	Raynesway / Derby Commercial Park	1,810	2026-2030	Y
Derby	Chellaston Business Park / Infinity Park	3,765	2026-2030	Y
Derby	Infinity Park Extension	1,710	2026-2030	Y
Derby	SmartParc (old Celanese Site)	5,653	2026-2030	Y
Derby	City Centre, Becketwell	1,528	2026-2030	Y
Gedling	Top Wighay Farm	1,577	Pre 2024-2040	Y
Leicester	Western Park Golf Course	2,870	2030-2033	Y
Leicester	Leicester Rail Station	1,700	2026-2027	Y
Leicester	Land around Phoenix Square	1,700	2028-2029	Y
Leicester	Ashton Green	4,851	2027-2036	Y

District	Location	Quantum	Timescale	Include
North West Leicestershire	Mercia Park	7,556	Pre 2024-2027	Y
North West Leicestershire	Strategic Rail Freight Interchange on land north of East Midlands Airport / west of Junction 24 of the M1	4,351	Pre 2024-2025	Y
North West Leicestershire	Sawley Crossroads	759	2034	Y
North West Leicestershire	Freeport status expansion	900	2026-2028	Y
North West Leicestershire	Isley Woodhouse	874	2037–2046	Y
North West Leicestershire	Land North of Remembrance Way (A453), Kegworth (EMP73 (part))	960	2032–2034	Y
North West Leicestershire	Money Hill - Phase 2	1,241	2030–2034	Y
North West Leicestershire	Former Lounge disposal point	912	2026	Y
North West Leicestershire	Land South of A50 Junction 1 Castle Donington Leicestershire	1,443	2027–2029	Y
North West Leicestershire	Park Lane, Castle Donington	1,236	2025–2029	Y
North West Leicestershire	Land West of Hilltop Farm, Castle Donington (EMP89)	794	2032–2034	Y
Nottingham	Phase 1 Unity Square, Sheriffs Way	1,856	Pre 2024-2040	Y
Nottingham	NG2 West	1,190	Pre 2024-2040	Y
Nottingham	Royal Quarter - Burton Street, Guildhall, Police Station and Fire Station	1,275	Pre 2024-2040	Y
Nottingham	Waterside -4 sites	1,785	Pre 2024-2040	Y
Nottingham	City centre	27,442	Pre 2024-2040	Y
Nottingham	Boots, Thane Road	760	Pre 2024-2040	Y
Nottingham	Victoria Centre	1,998	Pre 2024-2040	Y
Rushcliffe	Canal Quarter – Island Site	4,041	Pre 2024-2043	Y
Rushcliffe	Uniper Sites	5,374	2024–2029	Y
South Derbyshire	Land South Of, The Mease, Hilton, Derby, Derbyshire.	904	2025	Y
South Derbyshire	Plots 5 and P2 - 01, Dove Valley Park, Park Avenue, Foston, Derby, DE65 5BG	1,908	2024	Y
South Derbyshire	EMIP Masterplan	9,217	2026-2030	Y

Appendix B Network Assumptions

Table B.1: Highway Network Assumptions

Location	Scheme Name	Forecast Year	Include
Barwell	Access arrangements for Earl Shilton SUE and highway improvements for SUE	2027	Y
Barwell	Barwell SUE and Improvements	2027	Y
Coalville	Bardon Hill Link Southern Section	2025	Y
Blaby	Link across M69 to join North and South of the Lubbesthorpe development	2031	Y
Earl Shilton & Barwell	Highway improvements for SUE	2028	Y
Loughborough	Garendon Park Link	2031	Y
A47/B582	Desford Crossroads	2026	Y
Harborough	Harborough Strategic Development Area	2024	Y
Charnwood	Broadnook SUE	2024	Y
Charnwood	North of East Leicester Development Network - Thorpebury (previously Thurmaston) SUE	2026	Y
Leicester City	Waterside Development	2027	Y
Hinckley	Land East of Stoke Road, Phase 1 access	2025	Y
Hinckley	Land East of Stoke Road, Phases 2 & 3 access arrangements	2027	Y
Hinckley	Land East of Stoke Road, wider site connectivity	2032	Y
A5	MIRA South-Phase 1	2025	Y
A5	MIRA South-Phase 2	2031	Y
Hinckley and Bosworth	Burroughs Road	2028	Y
Blaby	Lubbesthorpe SUE mitigation: A47 / A563	2026	Y
Blaby	Lubbesthorpe SUE mitigation: Meridian South	2026	Y
Blaby	Lubbesthorpe SUE mitigation: Mill Hill / Warren Park Way	2026	Y
Melton Mowbray	NEMMDR Northern Section	2026	Y
Melton Mowbray	NEMMDR Eastern Section	2026	Y
Melton Mowbray	NEMMDR Southern Section	2028	Y
Coalville	Bardon Hill Link Northern Section	2028	Y
North West Leicestershire	A511 Schemes	2028	Y
A5	Padge Hall Development Access	2026	Y
Harborough	Magna Park Extension access - A5, Lutterworth	2027	Y
Harborough	Mill-on-the-Soar Staggered Signalised Junctions	2026	Y
Blaby	Hastings Fields Access	2026	Y
Blaby	Enderby Hub Site Access	2027	Y
Wigston	Wigston Direction for Growth Site Access, Phase 2	2027	Y
Loughborough	LUSEP access connection for the Science Park via the A512 roundabout	2031	Y
North West Leicestershire	Money Hill Site Access A511	2024	Y
South Derbyshire	Wragley Way SUE Access to A50	2031	Y
South Derbyshire	EMIP A50 (Freeport)	2030	Y
Hinckley & Bosworth	A47 / Dans Lane	2025	Y
North West Leicestershire	Land South of A50 J1, Development Access	2024	Y
North West Leicestershire	A50 J1	2025	Y
Nottinghamshire	A52 Wheatcroft junction	2028	Y

Location	Scheme Name	Forecast Year	Include
Nottinghamshire	A52 Nottingham Knight junction	2028	Y
Nuneaton and Bedworth	A4254b Eastboro Way P1	2024	Y
Nuneaton ad Bedworth	Transforming Nuneaton	2026	Y
Nuneaton and Bedworth	Croft Road/Greenmoor Road Priority	2031	Y
Nuneaton and Bedworth	A47 Old Hinckley Road	2024	Y
Nuneaton and Bedworth	Coventry Road / Gipsy Lane	2026	Y
Nuneaton & Bedworth	A4254 / B4114 / Eastboro Way	2026	Y
Nuneaton & Bedworth	Nuneaton Northern Sites Link Road	2026	Y
North Warwickshire	Market street / Bridge Street	2026	Y
Rugby	Avon Mill Roundabout	2026	Y
Rugby	A5 / A428 Halfway House Roundabout	2026	Y
Rugby	M1 Junction 18	2031	Y
Coventry	M6 J2 Signalisation	2024	Y
Nuneaton & Bedworth	Callendar Farm Phase 2	2031	Y
Nuneaton & Bedworth	Bermuda Triangle Project	2026	Y
Leicester City	Dover Street (Granby Street Junction)	2025	Y
Coventry	Grade separation of Binley Woods and Walgrove roundabouts	2026	Y
Newark	A1-A46 link South of Newark	2031	Y
Lutterworth	Lutterworth East Development (Development Access (A4304, Gilmorton Road and A426))	2027	Y
Lutterworth	M1 Junction 20	2027	Y
Lutterworth	Lutterworth Development Mitigation	2031	Y
Lutterworth	Lutterworth East Development (Link Road between A4304 and A426)	2031	Y
Harborough	Lutterworth East Development (Gilmorton Road bridge bus restriction)	2027	Y
Leicester City	Ashton Green	2025	Y

About AECOM

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APPENDIX 5: JSJV Technical Note (PRTM 2023)

Tech Note

Spatial Planning Framework Commission

Prepared by Jacobs-SYSTRA Joint Venture (JSJV) for the National Highways National Spatial Planning Contract 2022 in relation to the South East Region

Job number:	B2418400		
Job title:	EMG2 DCO		
To:	Paul Wilson, [redacted]	**cc:**	[redacted]
Topic:	EMGP2 Forecasting Modelling Review 2023		

	Prepared:	**Checked**	**Approved**
Name:	[redacted]	[redacted]	[redacted]
Date:	13/02/2026	16/02/2026	17/02/2026

Introduction

AECOM have been independently commissioned by SEGRO to undertake strategic transport modelling to assess the proposed development at the SEGRO Logistics Park East Midlands Gateway 2. This is linked to the Development Consent Order. Strategic transport modelling is required to provide an evidence base for assessing the impacts and identifying the mitigation needed to support the proposed development.

The Strategic Road Network (SRN) is a critical national asset and as such National Highways work to ensure that it operates safely and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity. In the case of this development proposal, National Highways' primary interest is in the M1 motorway and the A453, A50 and A42 Trunk Roads.

JSJV has been commissioned by National Highways to audit the supporting traffic modelling documents prepared by AECOM and appraise the impact of development on the SRN.

Review Categorisations

Issues are categorised according to the categories in Table 1 below: -

Table 1: Review Categorisations

Classification	Description
Observations	are points for consideration on an issue that would not significantly affect model operation or output.
Comments	main function is to highlight issues for attention in subsequent project stages.
Substantive Issues	are issues which require corrective action. The audit will suggest the detailed action required to address the issue, although there should be freedom for the development team to use alternative approaches in order to achieve the required level of analysis.

Previous Relevant Reviews – Pan Regional Transport Model 19 (PRTM 2019)

The following previous reports and items were provided by the Applicant: -

- EMFM 2019, East Midlands Gateway Phase 2, Forecasting Report, AECOM, 04/02/2025 (The report)
- EMFM 2019, East Midlands Gateway Phase 2a, Forecasting Report v4.0, AECOM, 02/07/25 (The report)
- EMGP2 – Response to NH comments on 23 July 2025 v3 (Excel)
- 1a EMG2 CD Flows (Plot)
- 2028 AM 2a Difference Plot – NH Increased capacity test.BMP
- RE: JSJV follow up to questions posed [16 July 2025] (Email)
- EMFM 2019, East Midlands Gateway Phase 2a, Forecasting Report v5.0, AECOM, 07/010/25 (The report)
- EMGP2 – Response to NH comments on 17th Sept 2025 – For Issue v1 (Excel)

JSJV undertook a series of reviews of the received information to appraise the soundness of the conclusions provided within the reports, and identified areas and next steps for further assessment by the Applicant. The findings of the review work are provided in the following Technical Notes:-

- B2418400 EMGP2 Forecasting Report TECH NOTE, JSJV, February 2025.
- B2418400 EMGP2 Forecasting Report Addendum (With Mitigation) TECH NOTE, JSJV, August 2025.
- B2418400 EMGP2 Forecasting Report Addendum (With Mitigation) TECH NOTE, JSJV, October 2025.

These items related to the strategic traffic modelling assessment using the Pan Regional Traffic Model (PRTM) 2019.

Previous Relevant Reviews – Pan Regional Transport Model 23 (PRTM 2023)

The Applicant has now undertaken a strategic traffic modelling assessment using PRTM 23. A base model review covering the relevant network area was supplied and considered acceptable by National Highways.

The following item was previously provided by the Applicant: -

- EMFM 2023, East Midlands Gateway Phase 2, Forecasting Report v1.1, AECOM, 04/02/2025 (The report) [received 12/12/25]

JSJV undertook an initial review of the report identifying three substantive issues which required consideration and potential correction prior to a full review being undertaken as the outputs presented in the report could change. These identified issues were provided to the Applicant in an email on 17/12/25. The detail of the issues are set out below:-

1. Investigation needed for routing between Hemington/Lockington and M1 J24
    - Potential Over-Assignment: There were indications of excessive traffic allocation on this particular route.
    - Strategic Model Constraints: The link constraints within the strategic model require careful examination and possible adjustment.
    - Model Revision: Based on the findings, it may be necessary to revisit the model, make appropriate adjustments, and conduct a subsequent re-run of the simulations.
2. Clarification required for V/C changes around M1 J24
    - A close-up image of this junction is required for clarity.
3. Recommendation to check A453 Pedestrian crossing delays and impact on the SRN
    - Verify against expected usage for the location.

In terms of points 2 and 3, the Applicant has confirmed that both issues would be addressed by a clarification in the updated forecast report. This was considered acceptable. In terms of point 1, JSJV requested the Applicant consider the following: -

1. North of Lockington Capacities: Adjusting the signal timing at M1 J24 as AECOM suggested.
2. North of Lockington Speeds: Implement proposed speed changes on the split link.
3. Increase capacities around M1 SB J24a/J24: Several turns in this area have capacity flows of 1730, which is likely too low given the nature of the network and forecast scenarios. Adjustments may be needed for:-
    - "A50/J24a SB directional" diverge
    - "A50/M1 J24 SB on-slip" merge
    - "M1 J24a SB off-slip" merge onto M1

Given the potential for the above adjustments to impact the base model calibration, JSJV requested the Applicant to confirm that the adjustments do not materially affect the base model. In response AECOM provided the following:-

- PRTM2023, EMGP2: Lockington and M1 J24 Coding Adjustment Model Reruns (22/01/26), AECOM [received 23/01/26] – PowerPoint presentation

The information confirms that the assignment on the Hemington/ Lockington routes is more realistic than that previously presented and JSJV were satisfied that the potential for understated impacts on the SRN, particularly M1 J24, has now been addressed. The particular route of most concern was the Tamworth Road to M1 J24 which appeared to use the A50 route.

It was also noteworthy that traffic reaching the A453 Remembrance Way was now lower in the AM peaks compared to the previous assessment. This demonstrated that there was some re-routing away from the area as a result of the congestion at M1 J24. PM peak flows on the A453 Remembrance Way were similar. It is also notable that:-

- Flows on the M1 SB J24a off-slip reduced in the forecast scenarios as the delays at the M1 J24 roundabout increased with the extra A50 traffic

- The flows trying to get to the Eastern side of M1 J24 were higher without Lockington/Hemington route being excessively desirable. This further highlighted the need for mitigation on the eastern side of M1 J24 to accommodate wider growth

Moreover, the PowerPoint presentation confirms that the proposed alterations do not have a material impact upon the base model. JSJV confirmed the above with the Applicant via email on 23/01/26.

Review

Following the adjustments described above, the Applicant has provided the following items for review: -

- EMFM 2023, East Midlands Gateway Phase 2, Forecasting Report v2.1, AECOM, 12/02/2025 (The report) [received 13/02/26]

- VC node data (Excel)

For ease of reference, the detail of the audit presented below follows the chapter sequencing of the report provided.

This latest Technical Note serves as a summary of the comprehensive information presented in the full-length report and submitted items. For a more thorough examination of the subject, readers are invited to consult the full length documents.

Section 2 – Forecasting Approach and Assumptions

Paragraph 2.1.2 of the report identifies the modelling assessment and the proposed modelling scenarios: -

- 2028 Core Scenario;

- 2038 Core Scenario;

- 2028 With Development Scenario;

- 2038 With Development Scenario;

- 2028 With Mitigation Scenario; and

- 2038 With Mitigation Scenario.

The modelling scenarios include both AM and PM peak hour variants.

Observation 1:- The scenarios/ assumptions used to test and appraise the impacts of development on the SRN use the agreed Proforma and modelling assumptions including the committed developments as set out in Appendix A of the report.

The proposed trip generation is set out in Table 2.1.

Observation 2:- The proposed trip generation reflects the agreed trip generation.

2.4 Mitigation Measures

The list of mitigation measures as described in the report (paragraph 2.4.1) included within this modelling assessment are: -

1. New M1 northbound to A50 westbound link road:
    - A single lane link road between the M1 northbound and the A50, bypassing M1 Junction 24.
    - One lane will diverge from the existing four-lane carriageway on the M1 northbound.
    - The existing dedicated left-turn lane from the A453 northbound to the A50 will be removed.
2. A50 eastbound approaching Junction 24:
    - An additional lane, increasing from one lane to two lanes, before merging with the M1 southbound off-slip to form three lanes approaching Junction 24.
3. M1 Junction 24 circulatory works:
    - Layout changes to the western side of the M1 Junction 24 circulatory, as illustrated in Figure 2.1.
4. EMGP1 access improvements (as shown [in] Figure 2.2):
    - An additional circulatory lane on the eastern section of the Wilders Way / A453 / A6 Kegworth Bypass roundabout.

Observation 3:- It should be noted that the findings of this Technical Note relate to the strategic modelling assessment as presented in the report. Separate engineering evaluation and more detailed modelling assessments of the proposed mitigation measures listed above are required.

Section 3 – Forecast Model Results

3.2 Forecast Development Traffic

The following PCU conversion factors have been used for the forecasting assessment: -

- Lights = 1 PCU; and,
- Heavies = 2 PCU.

Observation 4:- JSJV are content with the PCU assumptions.

Figures 3.1 - 3.8 show the distribution of development traffic by different modes for the AM and PM peak hours for both the 2028 and 2038 assessment with and without development.

Observation 5:- HGV traffic is forecast to utilise the SRN; which is anticipated. In terms of light vehicles, there is symmetry between the AM and PM peak arrivals and departures.

For light vehicles, the model predicts extensive use of the SRN. For both AM and PM peak hours, light vehicles are forecast to use the M1, A50, and A42 for connections to major cities and regions. JSJV is content with the proposed distribution.

3.3 Forecast Flow Change

Section 3.3 presents a quantified summary of the forecast flow changes. The summary is extracted and provided below (paragraph 3.3.3): -

- **A453 (between the site access and Finger Farm Roundabout)**: In the AM Peak, flows increase by approximately 220–350 PCUs eastbound and 390–450 PCUs westbound. In contrast, the PM Peak sees minimal changes westbound, but an increase of 190–240 PCUs eastbound.

- **A453 (west of the development)**: During the AM Peak, traffic flows show a clear directional split, with an eastbound increase of 190–300 PCUs and a westbound decrease of 100–160 PCUs. This pattern reverses in the PM Peak, which shows a reduction of 330–420 PCUs eastbound and an increase of 150–240 PCUs westbound.

- **A453 (between Finger Farm Roundabout and M1 Junction 24)**: The AM Peak shows a northbound decrease of 130–180 PCUs and a southbound increase of approximately 280–290 PCUs. PM Peak changes are relatively minor (60–120 PCUs).

- **M1 (between M1 Junction 23a and Junction 24)**: The M1 itself experiences an increase of 250–270 PCUs in the 2028 and 2038 AM Peaks, while changes southbound are negligible. In the PM Peak, both directions show only slight increases in 2028 and 2038.

- **West of A50 Junction 1**: During the AM Peak, there is no change in traffic eastbound, while westbound flows decrease by 30–110 PCUs. In the PM Peak, there are slight increases of up to 60 PCUs in the westbound direction.

Observation 6:- As anticipated from the development traffic distribution, there are notable increases in traffic flows on key SRN routes including the M1, A453 and A50.

The Applicant is cognisant of the capacity constraints at these locations and has considered the requirement for suitable mitigation to mitigate the residual cumulative impacts of development. This is reported below.

There are localised increases on the local road network routes including Trent Lane, Melbourne Road, Grimes Gate, and Green Lane.

The report notes that these routes show increased flow which in some cases is caused by traffic seeking to avoid delays at congested SRN locations including Finger Farm Roundabout and M1 Junction 24.

3.4 AoI

Figure 3.11 of the report shows the area of influence.

Observation 7:- JSJV are content with the proposed AoI which includes the A453 including Finger Farm Roundabout, the M1 between Junction 23 and Junction 24a, the A42 between the M1 and Junction 14, the A50 between the M1 and Junction 2.

3.5 Forecast Delay Change

There are forecast increases in delay as a result of development traffic on the SRN. Most critically this includes: -

- M1 Junctions 23A, 24, 24A;
- A453 and Finger Farm Roundabout;

A summary is provided below:-

Finger Farm Roundabout:

- AM Peak (both 2028 and 2038):
    - Southern arm: 100-130 seconds increase in delay
- PM Peak (both 2028 and 2038):
    - Western arm: 250-260 seconds increase in delay

M1 Junction 24:

- AM Peak (both 2028 and 2038):
    - M1 southbound off-slip: 40-60 seconds increase in delay
    - Traffic exiting to A50: 25 seconds increase in delay where merging with A453 northbound
    - A453 northbound to A50 dedicated left-turn lane: 30 seconds decrease in delay
- AM Peak (2038 only):
    - M1 northbound off-slip: 35 seconds increase in delay

A453 / Kegworth Bypass junction:

- AM Peak (2038 only):
    - Kegworth Bypass westbound approach: 35 seconds increase in delay

Observation 8:- The degree of the delay change, particularly at M1 J24 and Finger Farm roundabout, demonstrates the need for a mitigation package to mitigate the residual cumulative impacts of development at these locations.

3.6 Forecast Node Volume-Capacity Ratios

Section 3.6 presents the forecast node Volume / Capacity ratios. Figures 3.14 – 3.15 show the performance of nodes comparing the *with* and *without* development scenarios for both 2028 and 2038.

There are major constraints at a large number of nodes across the modelled area. Many of these are on or close to the SRN. The following SRN locations are shown to have a significant increase in V/C as a result of development:-

- M1 Junctions 24 and 24A
- A453 and Finger Farm Roundabout

Observation 9:- Table 3.2 shows the locations where the node volume-capacity ratio in the with Development scenario is higher than 85% and is in a higher volume-capacity ratio compared with the Core scenario during the AM and PM Peak hours in 2028 and 2038.

Evidence demonstrates the necessity for a mitigation package to mitigate the residual cumulative impacts of development at these locations.

Observation 10:- The PRTM 19 assessment identified several mainline constraints on the M1 motorway at multiple locations. However, the more recent PRTM 23 assessment indicates these specific mainline constraints are no longer present. Despite this improvement, it is important to note that merge and diverge points along this stretch of the M1 continue to be critical areas of concern in the latest assessment.

Section 4 – With Mitigation Scenario Results

Figure 4.1 to Figure 4.8 show the forecast development trip distribution for HGVs and light vehicles on the network for the 2028 and 2038 with mitigation scenarios.

Observation 11:- The distribution of both light vehicles and HGVs in the *with mitigation* scenarios are broadly consistent in the *with* and *without* development scenario.

Traffic continues to extensively use the SRN.

There are some minor differences in routing noted in paragraph 4.2.2 of the report. JSJV is content with the proposed traffic distribution.

Section 4.3 – Forecast Flow Change

Section 4.3 presents a quantified summary of the forecast flow changes in the with mitigation scenario. The summary is extracted and provided below (paragraph 4.3.4): -

- **A453 (between the site access and Finger Farm Roundabout)**: In the AM Peak, flows increase by 230–360 PCUs eastbound and 540–560 PCUs westbound. During the PM Peak, increases are forecast to reach 530–800 PCUs eastbound and 250–280 PCUs westbound.
- **A453 (west of the development)**: AM Peak flows indicate an eastbound increase of 160–240 PCUs and a westbound reduction of 70–100 PCUs. The PM Peak shows a general increase of 60–170 PCUs, except for an 80 PCU decrease eastbound in the 2028 PM Peak.
- **West of A50 Junction 1**: In the AM Peak in both 2028 and 2038, eastbound flows increase modestly by around 40–150 PCUs, while westbound flows rise slightly more, by around 100–190 PCUs. In the PM Peak, a similar pattern is observed, with eastbound flows increasing by around 20–30 PCUs and westbound flows by around 100–130 PCUs.

- **New Northbound Link and A453 (between Finger Farm Roundabout and M1 Junction 24)**: The new northbound link is forecast to carry between 1,850–1,910 PCUs in the AM Peak and 1,470–1,540 PCUs in the PM Peak. Consequently, the A453 northbound (between Finger Farm Roundabout and M1 Junction 24) experiences a reduction in flow of 690–1,020 PCUs during the AM Peak and 440–710 PCUs during the PM Peak.

In light of the proposed mitigation, particularly the new single lane link road between the M1 northbound and the A50 westbound, traffic bypasses the western circulatory section of M1 J24. The new M1 northbound link road is projected to experience the most significant increase in traffic flow across all modelled forecast scenarios.

This increase is primarily attributed to a redistribution of traffic from the A453, Finger Farm Roundabout and M1 Junction 24. There are significant increases in flow on the M1 northbound south of Junction 24.

The forecast flow on the new link road is 1,850 PCUs in the 2028 AM peak hour and is 1,470 in the PM peak. In 2038, in the AM peak the demand for the new link is 1,910 and in the PM is 1,850.

Comment 1:- The most recent testing indicates that the predicted flows in both 2028 and 2038 on the new single lane link road between the M1 northbound and the A50 westbound are at the upper limit of the theoretical capacity for a single lane.

It is noted however that the downstream capacity issues at the A50 M1 J24A merge, which were apparent in the PRTM 19 assessment, do not materialise in the PRTM 23 assessment.

Nonetheless, the Applicant's engineering team should continue to factor this into their evaluation and design, thereby ensuring the proposed infrastructure can adequately accommodate anticipated traffic demands while maintaining safety and efficiency, and give due consideration to future proofing.

4.4 Area of Influence with Mitigation Measures

Figure 4.11 shows the revised AoI

Observation 12:- JSJV does not disagree with the AoI which covers significant parts of the SRN.

4.5 Forecast Delay Change

Figures 4.12 – 4.16 show the forecast delay changes following the introduction of development traffic and mitigation measures. A summary is provided below:-

Finger Farm Roundabout:

- Eastbound approach:
    - 2038 AM Peak: 95 second decrease in delay
    - PM Peak (both 2028 and 2038): 80-200 seconds decrease in delay

A453:

- Eastbound:
    - PM Peak (both 2028 and 2038): 110-130 seconds increase in delay

M1 Junction 24:

- M1 southbound off-slip:
    - AM Peak (both 2028 and 2038): 40-60 seconds increase in delay
- Merge between M1 southbound off-slip and A50 southbound:
    - 45-145 seconds increase in delay
- Removal of A453 northbound to A50 dedicated left-turn lane:
    - 70-95 seconds decrease in delay at the merge with traffic exiting to A50

A50 Junction 1:

- Westbound off-slip (2038 only):
    - AM and PM Peaks: 20-50 seconds increase in delay
    - These delays are also not present as part of the without mitigation scenario which demonstrates the impact of the released traffic with the mitigation in place. Since there are no mainline delays, this is not showing any mainline queueing in the strategic traffic model and no further assessment is required. However, this should be considered as part of wider growth aspirations.

A453 Leonardo Hotel junction:

- Eastbound (2038 AM Peak only):
    - 45 seconds increase in delay

Observation 13:- This summary shows a mix of increased and decreased delays at various locations, with significant improvements at the Finger Farm Roundabout and the removal of the A453 to A50 dedicated left-turn lane as a result of the mitigation proposals where lanes have been reconfigured.

However, there are notable delays on the eastern side of M1 J24 particularly the A50/ M1 southbound approach to J24. The testing includes a forecast which includes the growth associated with the other Freeport sites particularly the Ratcliffe-on-Soar Power station. This has been included to robustly assess the mitigation on the western side of M1 J24.

To date, no agreed mitigation has been identified to mitigate against otherwise severe or unacceptable impacts on highway safety from this development at the M1 J24 but the need has been firmly established with condition 6 of the LDO.

The modelling continues to demonstrate the need for a wider holistic solution to accommodate committed and emerging growth proposals.

4.6 Forecast Node Volume-Capacity Ratios

Section 4.6 presents the forecast nodes Volume / Capacity ratios. Figures 4.14 – 4.15 show the performance of nodes comparing the without development and with mitigation scenarios for both 2028 and 2038.

Paragraph 4.6.2 of the report states:-

The forecast maximum node volume-capacity ratio plots show that the EMGP2 access junction along the A453, M1 Junction 23, M1 Junction 23a, M1 Junction 24, Finger Farm Roundabout and the Kegworth Bypass / A453 roundabout are most affected by the proposed development trips with mitigation measures.

Table 4.2 shows the locations where the node volume-capacity ratio in the With Mitigation scenario is higher than 85% and is in a higher volume-capacity ratio compared with the Core scenario during the AM and PM Peak hours in 2028 and 2038 (paragraph 4.6.3).

Overall, the results represent an improvement in node volume-capacity ratios compared with those reported in Section 3.6, for the With Development scenario, demonstrating that the mitigation measures generally reduce pressure on junction capacity.

JSJV requested AECOM to rationalise the node locations and provide complete data for the without development, with development, and with development and mitigation scenarios. This was provided in an excel spreadsheet. This is tabulated below with locations above 90% highlighted in red:-

Table 2: VC analysis

V/C for node locations as detailed within report	Without Development				With Development				With Development + Mitigation			
Node Location	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	2028	2038	2028	2038	2028	2038	2028	2038	2028	2038	2028	2038
A453 toucan crossing	-	-	-	-	0.91	0.87	0.64	0.66	0.96	0.96	1.01	1.01
A453 / East Midlands Airport junction - westbound approach	0.72	0.8	0.88	0.87	0.92	1.01	0.9	0.96	0.89	1	0.87	0.87
A453 / Finger Farm Roundabout - eastbound approach	0.61	0.61	0.65	0.52	0.88	0.84	0.62	0.64	0.93	0.93	0.97	0.97
A453 / Finger Farm Roundabout - northbound approach	0.97	1.01	0.7	0.89	1.03	1.04	0.82	0.98	0.77	0.96	0.33	0.56
A453 / Site Access roundabout - westbound approach	0.6	0.6	0.46	0.52	0.87	0.83	0.6	0.63	0.92	0.92	0.62	0.66
A50 Junction 1 westbound off-slip	0.93	0.97	0.85	0.92	0.89	0.96	0.85	0.95	0.97	1.02	0.85	0.97
M1 northbound diverge to new link road	0.77	0.85	0.76	0.85	0.77	0.85	0.77	0.85	0.84	0.87	0.76	0.84
A50 / J24a southbound diverge	0.8	0.93	0.95	1	0.82	0.94	0.97	1	0.81	0.92	0.95	0.99
A512 / Nottingham Road - westbound approach	0.86	0.97	0.87	0.94	0.86	0.97	0.89	0.95	0.86	0.97	0.88	0.95
A512 Ashby Road/ Iveshead Road - northbound approach	1.01	1.01	1	1	1.01	1.01	1	1	1.01	1.01	1	1.01
Ashby Road / Hallamford Road - westbound approach	0.58	0.82	0.31	0.38	0.66	0.88	0.31	0.39	0.63	0.88	0.32	0.39
Barrow Lane / A514 - eastbound and westbound approach	0.92	0.95	1	1.01	0.96	0.95	1.01	1.02	0.96	0.95	1.01	1.03
Kegworth Bypass / A453 Roundabout - westbound approach	0.68	0.92	0.52	0.73	0.9	1	0.56	0.77	0.65	0.89	0.5	0.71
M1 Junction 23 - southbound on-slip	0.76	0.85	0.71	0.8	0.77	0.85	0.72	0.81	0.78	0.87	0.73	0.82
M1 Junction 23a - A42 northbound diverge to M1 northbound	0.84	0.89	0.84	0.86	0.85	0.9	0.84	0.86	0.88	0.91	0.88	0.89
M1 Junction 23a - northbound merge between A453 and M1	0.67	0.81	0.67	0.74	0.72	0.86	0.67	0.75	0.83	0.92	0.82	0.87
M1 Junction 23a - southbound merge between A453 and M1	0.76	0.85	0.75	0.85	0.77	0.86	0.76	0.85	0.78	0.87	0.78	0.89
M1 Junction 24a - southbound merge between M1 southboundand A50 eastbound	0.79	1.04	0.9	0.91	1.02	1.07	0.92	0.89	1.02	1.08	0.45	0.43
M1 Junction 24 - Hilton Hotel Lane eastbound approach	0.86	1	0.63	0.74	0.92	1.04	0.66	0.76	0.9	0.99	0.71	0.83
M1 Junction 24 - northbound off-slip	0.78	0.82	0.88	0.94	0.81	1	0.91	0.96	0.91	0.95	0.94	0.98
M1 Junction 24 - western section of circulatory (at the exit to A50northbound)	0.48	1	0.46	0.48	1	1	0.46	0.98	0.43	0.45	0.48	0.53
M1 Junction 24 - western section of circulatory (at the exit toA453 southbound)	0.65	0.99	0.58	0.65	1	1	0.59	0.65	0.53	0.56	0.51	0.53
M1 Junction 24 - A453 northbound approach diverge	0.99	1.02	0.95	0.99	0.86	0.94	0.95	1	0.32	0.47	0.41	0.53
M1 Junction 24 - A453 northbound approach	0.87	1.01	0.79	0.87	1.02	1.02	0.79	0.95	0.47	0.5	0.46	0.54
M1 Junction 24a southbound on-slip merge onto M1	0.8	0.93	0.95	1	0.82	0.94	0.97	1	0.8	0.92	0.95	0.99
Station Road, Castle Donington - northbound approach	0.61	0.77	0.75	0.85	0.65	0.79	0.87	0.93	0.61	0.76	0.78	0.79
Whatton Road / Derby Road - eastbound approach	0.98	0.99	0.68	0.8	0.99	1	0.69	0.85	0.99	0.98	0.7	0.83
A6 Derby Road / Zouch Road - northbound approach	0.93	1.03	0.89	1.01	1	1.04	0.93	1.01	0.93	1.03	0.9	1.01
Ashby Road Central / Leicester Road - southbound approach	1.01	1.02	1	1	1.01	1.03	1	1	1	1.02	1	0.99
Station Road / Donington Lane - westbound approach	0.95	0.98	0.7	0.8	0.98	0.99	0.81	0.87	0.98	0.99	0.73	0.83
Thulston Roundabout - northbound approach	0.82	0.83	0.7	0.79	0.81	0.82	0.74	0.8	0.86	0.89	0.74	0.8
M1 Junction 24a A50 eastbound diverge	0.77	0.81	0.9	0.92	0.77	0.79	0.92	0.92	0.78	0.86	0.91	0.91
M1 southbound diverge between M1 and A42	0.73	0.84	0.71	0.83	0.73	0.84	0.72	0.84	0.79	0.86	0.78	0.83
M1 Junction 24 - southbound approach	1.07	1.09	0.98	1.02	1.09	1.09	1	1.02	1.09	1.09	1	1.02
M1 Junction 23 - northbound off-slip	0.66	0.83	0.7	0.86	0.66	0.82	0.7	0.86	0.7	0.86	0.71	0.89
A50 westbound merge with M1 southbound	0.85	0.85	0.82	0.85	0.79	0.82	0.83	0.85	0.89	0.92	0.85	0.91
M1 Junction 23a - northbound diverge between A453 and M1	0.79	0.86	0.76	0.84	0.77	0.85	0.77	0.85	0.81	0.89	0.79	0.87

There are significant decreases for the with development + mitigation scenario compared to the without development scenario on the SRN at:

- A453 / Finger Farm Roundabout - northbound approach
    - AM 2028 from 97% to 77%
    - AM 2038 from 101% to 96%
    - PM 2028 from 70% to 33%
    - PM 2038 from 89% to 56%
- M1 Junction 23a - southbound merge between M1 southbound and A50 eastbound
    - PM 2028 from 90% to 45%
    - PM 2038 from 91% to 43%
    - There is however an increase in the AM 2028 and 2038 scenarios
- M1 Junction 24 - western section of circulatory (at the exit to A50 northbound)
    - AM 2038 from 100% to 45%
- M1 Junction 24 - western section of circulatory (at the exit to A453 southbound)
    - AM 2028 from 65% to 53%
    - AM 2038 from 99% to 56%
    - There are some slight increases in the PM but none of these are critical
- M1 Junction 24 - A453 northbound approach diverge
    - AM 2028 from 99% to 32%
    - AM 2038 from 102% to 47%
    - PM 2028 from 95% to 41%
    - PM 2038 from 99% to 53%
- M1 Junction 24 - A453 northbound approach
    - AM 2028 from 87% to 47%
    - AM 2038 from 101% to 50%
    - PM 2028 from 79% to 46%
    - PM 2038 from 87% to 54%

Significant increases in V/C on the SRN are observed at:

- A453 / Finger Farm Roundabout - eastbound approach
    - AM 2028 from 61% to 93%

    - AM 2038 from 61% to 93%
    - PM 2028 from 65% to 97%
    - PM 2038 from 52% to 97%
- A453 / Site Access roundabout - westbound approach
    - AM 2028 from 60% to 92%
    - AM 2038 from 60% to 92%
    - PM 2028 from 46% to 62%
    - PM 2038 from 52% to 66%
- M1 Junction 23a - northbound merge between A453 and M1
    - AM 2028 from 67% to 83%
    - AM 2038 from 81% to 92%
    - PM 2028 from 67% to 82%
    - PM 2038 from 74% to 87%
- M1 Junction 24a - southbound merge between M1 southbound and A50 eastbound
    - AM 2028 from 79% to 102%
    - AM 2038 from 104% to 108%
- M1 Junction 24 - northbound off-slip [see further analysis below]
    - AM 2028 from 78% to 91%
    - AM 2038 from 82% to 95%
    - PM 2028 from 88% to 94%
    - PM 2038 from 94% to 98%

The following areas are most pertinent for National Highways:-

- Finger Farm Roundabout
- M1 Junction 23a Northbound Merge
- Approach to J24 circulatory from the M1 SB
- J24 northbound off-slip

For the locations around Finger Farm Roundabout, there are a number of increases and decreases. This is to be expected given the changes to traffic movements through the area and the new development. This is partially mitigated by the decreases on the northbound approach arm. This location will need to be assessed within the VISSIM model to understand how these increases impact the operation of the junction within the microsimulation assessment.

The M1 Junction 23a northbound merge shows an increase as a result of diverted traffic towards the new slip road. Previous microsimulation modelling indicated that as congestion builds up traffic has the option to re-route towards the existing Finger Farm route. Whilst these are up to 92% VC in the model, there remains a degree of additional capacity and re-assignment of traffic on this route would not be unreasonable.

For the approach to the J24 circulatory, there are developments included within the forecast that do not yet include a defined mitigation. These are included to ensure that the mitigation elements are tested rigorously, and the proposed mitigation is not dependent on the mitigation from other sites.

The impact of this has been previously considered as part of the previous VISSIM modelling and the need for further mitigation on the eastern side of the M1 as part of these other sites' planning processes as mentioned above. Further VISSIM assessment will be undertaken using the PRTM 23 demand inputs.

The M1 J24 northbound off-slip indicates a curious change which coincides with a significant decrease in traffic as seen in Figures 4.9 and 4.10 of the report. The table above suggests the VC actually increases following the introduction of the mitigation including the new bypass. There are some significant decreases of VC on circulatory sections of M1 J24 which could suggest either some signal adjustments with the scheme in place or an individual turn overstating these impacts.

AECOM have confirmed that no signal time adjustments has been made. In reality, the traffic signals are adaptive and more green time would be given to the circulatory. It is notable that Figures 4.12 and 4.13 do not show any major delay increases in this area, so the increases are not associated with significant queueing implications in the traffic model.

Further examination of the M1 northbound off-slip and the southern section of the circulatory section has been undertaken. JSJV requested VC plots by link for each scenario. These are shown below:-

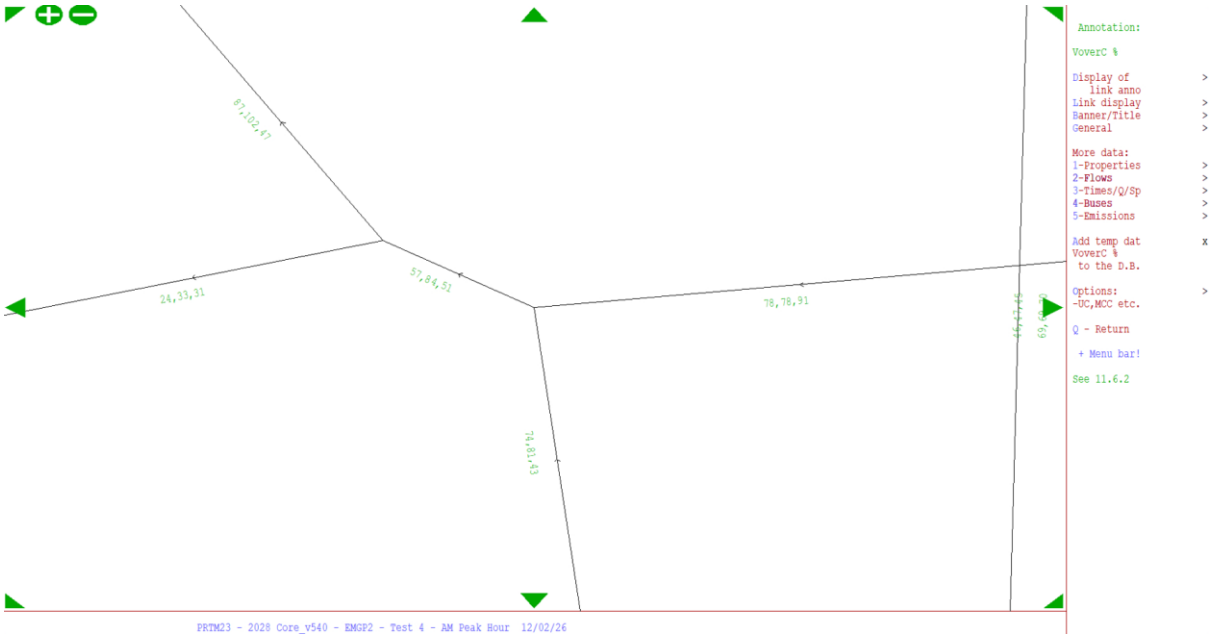


Figure 1: M1 J24 NB Off-slip area 2028 AM peak VC

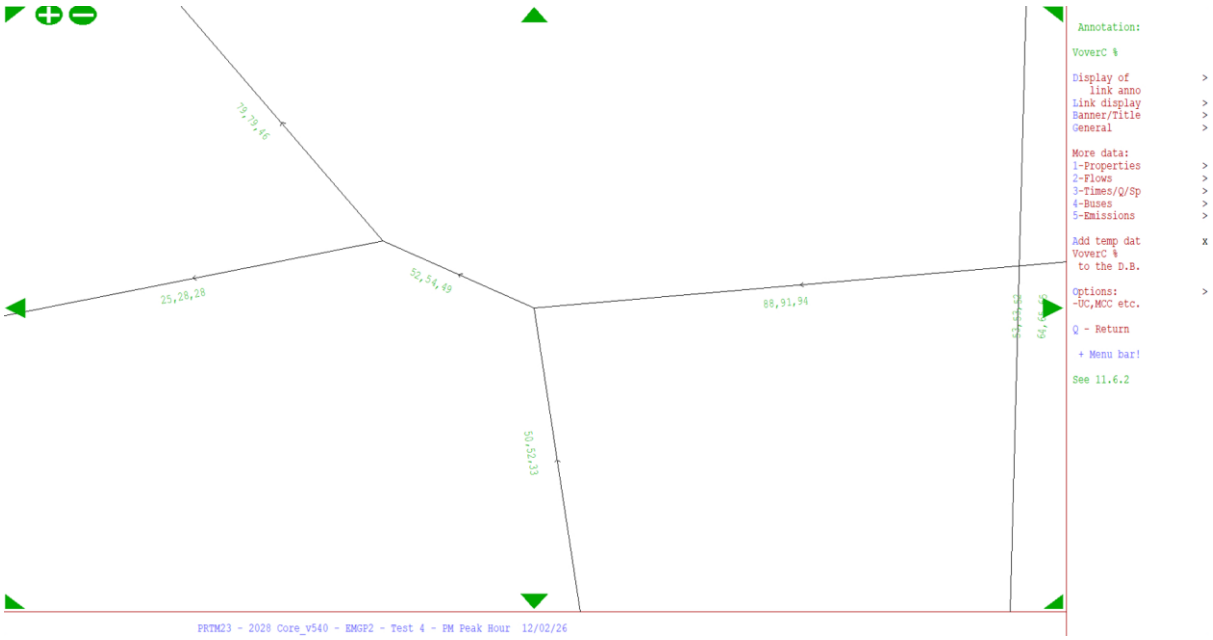


Figure 2: M1 J24 NB Off-slip area 2028 PM peak VC

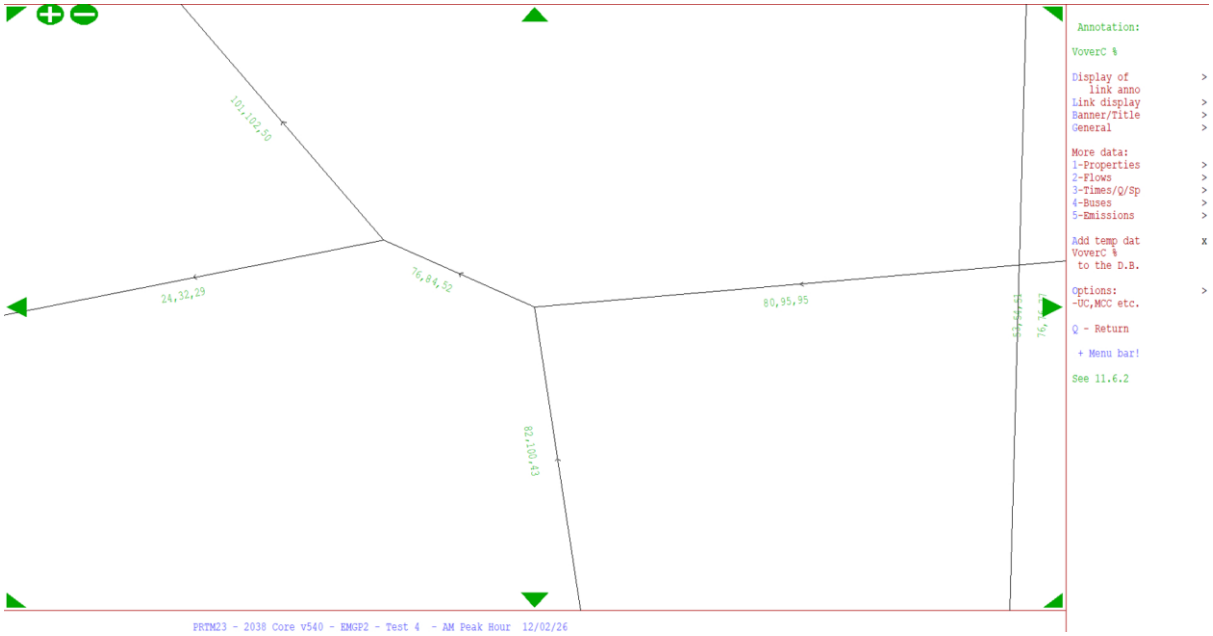


Figure 3: M1 J24 NB Off-slip area 2038 AM peak VC

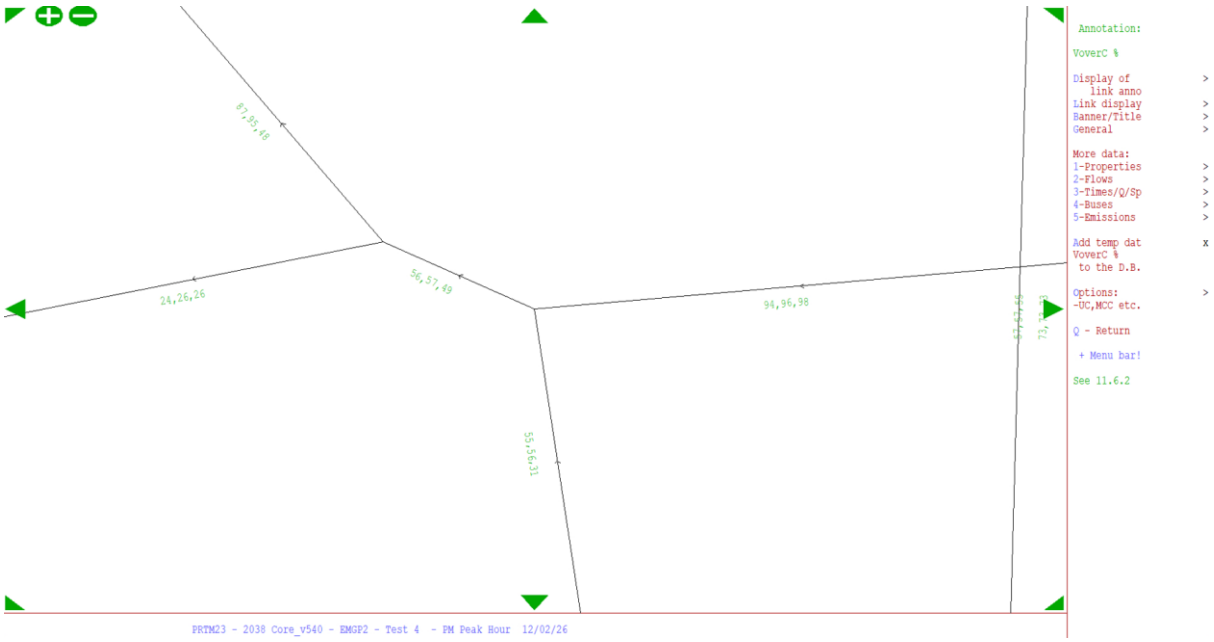


Figure 4: M1 J24 NB Off-slip area 2038 PM peak VC

The following table summarises the VCs shown in the plots provided above. VCs < 0.89 are shown in green, VCs >0.9 are shown in amber, and VCs of 1 and above are shown in red: -

Table 3: M1 J24 Link VCs

	Without Development				With Development				With Development + Mitigation			
	Am peak		Pm peak		Am peak		Pm peak		Am peak		Pm peak	
Node location	**2028**	**2038**	**2028**	**2038**	**2028**	**2038**	**2028**	**2038**	**2028**	**2038**	**2028**	**2038**
M1 northbound off-slip	0.74	0.82	0.5	0.55	0.81	1.00	0.52	0.56	0.43	0.43	0.33	0.31
M1 southern circulatory	0.78	0.8	0.88	0.94	0.78	0.95	0.91	0.96	0.91	0.95	0.94	0.98

Whilst the results provided in the excel and report suggest a worsening of VCs, there is actually a smaller increase on the circulatory section. As noted above, the adaptive nature of the traffic signals would account for a rebalance of available green time. This would therefore reduce the VCs as currently shown in the report on the circulatory section but would need to be assessed through the VISSIM assessment.

Where the new bypass is provided, there is betterment to the northbound off-slip. Moreover, where there are increases in traffic on the circulatory section, there is a corresponding increase in VC.

Comment 2:- JSJV notes the following 4 locations as being most critical for further information as part of the VISSIM modelling based upon the PRTM23 model run:

- Around Finger Farm Roundabout
- M1 Junction 23a Northbound Merge
- Approach to J24 circulatory from the M1 SB
- J24 northbound off-slip

Section 5 – Summary of the Assessment

Paragraphs 5.4.1 and 5.4.2 state:-

> *The forecasts undertaken reflect the forecast impact of the proposed development at East Midlands Gateway Phase 2 with the proposed mitigation measures included. It should be noted that the results provided in this report are at a high level. Due to the strategic nature of the PRTM23, not all roads are modelled, and the results should be interpreted with that in mind.*
>
> *Although the PRTM23 modelling provides the strategic impact and forms part of the proposed East Midlands Gateway Phase 2 assessment evidence packs, the overall assessment should be complemented by local operational assessment and analysis.*

Observation 14:- JSJV agrees that the outputs from the strategic modelling should be applied critically by the Applicant during the next stage of assessment. Microsimulation modelling is required. The inputs and assumptions of that assessment should be agreed with National Highways prior to assessment being undertaken on the SRN.

Summary and Next Steps

JSJV has been commissioned by National Highways to review the supporting traffic modelling documents prepared for the proposed East Midlands Gateway 2 development and appraise the impact of the development on the SRN.

It is requested that the Applicant considers the findings identified in this Technical Note and undertakes appropriate actions in consultation with National Highways, the Local Highway Authorities and JSJV during the next stage of assessment.

The strategic modelling identifies the need for a mitigation package to mitigate the residual cumulative impacts of development on the SRN. The proposed mitigation measures show benefits in terms of capacity.

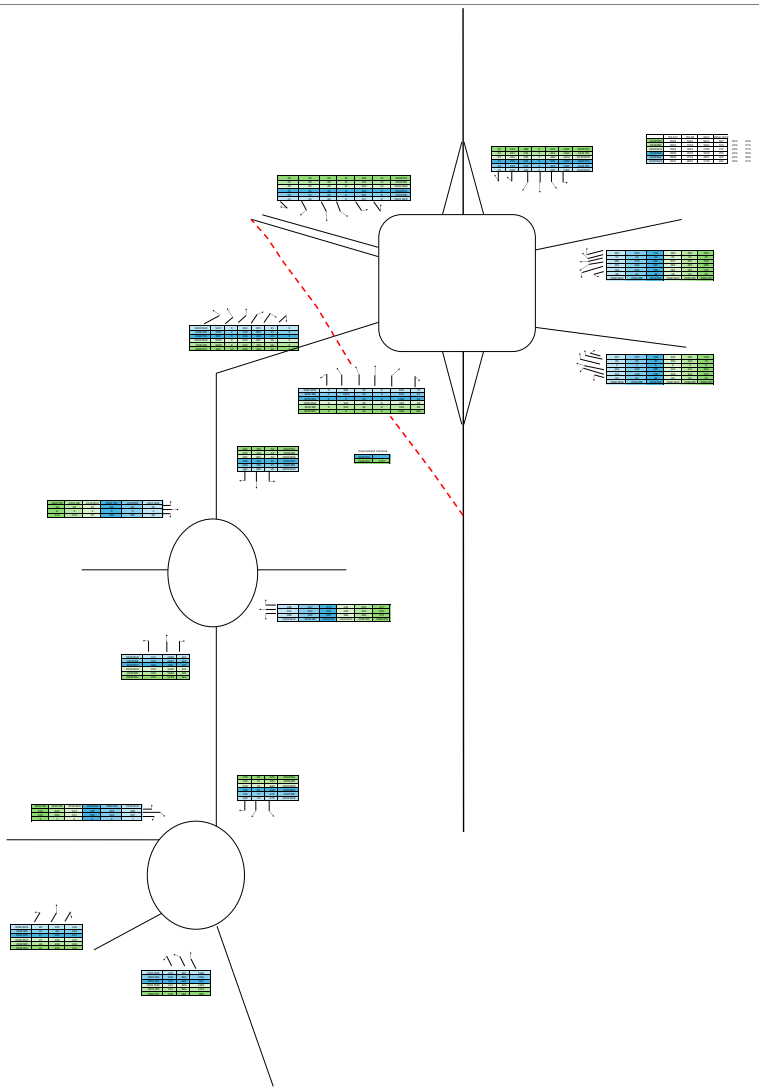
Further assessment is required using the microsimulation modelling package to further explore the more focused implications of development on the SRN and develop a suitable package of interventions to mitigate the residual cumulative impacts of development and any unacceptable impacts on highway safety. Critical to this is ongoing engineering and safety evaluation.

APPENDIX 6: VISSIM Convergence Summaries

Run	Volume						Travel Time					
	2028 WoD		2028 WoD + Dev		2028 WoD + Dev + Miti		2028 WoD		2028 WoD + Dev		2028 WoD + Dev + Miti	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	99%	99%	98%	97%	98%	96%	100%	100%	100%	100%	100%	97%
2	98%	95%	99%	98%	98%	98%	98%	95%	100%	100%	100%	96%
3	97%	95%	96%	98%	98%	97%	100%	98%	100%	100%	100%	96%
4	99%	100%	99%	99%	99%	95%	100%	100%	100%	100%	100%	100%

Run	Volume						Travel Time					
	2038 WoD		2038 WoD + Dev		2038 WoD + Dev + Miti		2038 WoD		2038 WoD + Dev		2038 WoD + Dev + Miti	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	96%	97%	95%	96%	95%	96%	98%	95%	99%	98%	97%	98%
2	97%	97%	96%	98%	99%	96%	100%	99%	99%	99%	100%	95%
3	99%	100%	96%	97%	99%	95%	100%	100%	100%	100%	100%	96%
4	98%	97%	98%	100%	97%	97%	100%	100%	100%	99%	100%	96%

APPENDIX 7: Converged VISSIM Flows



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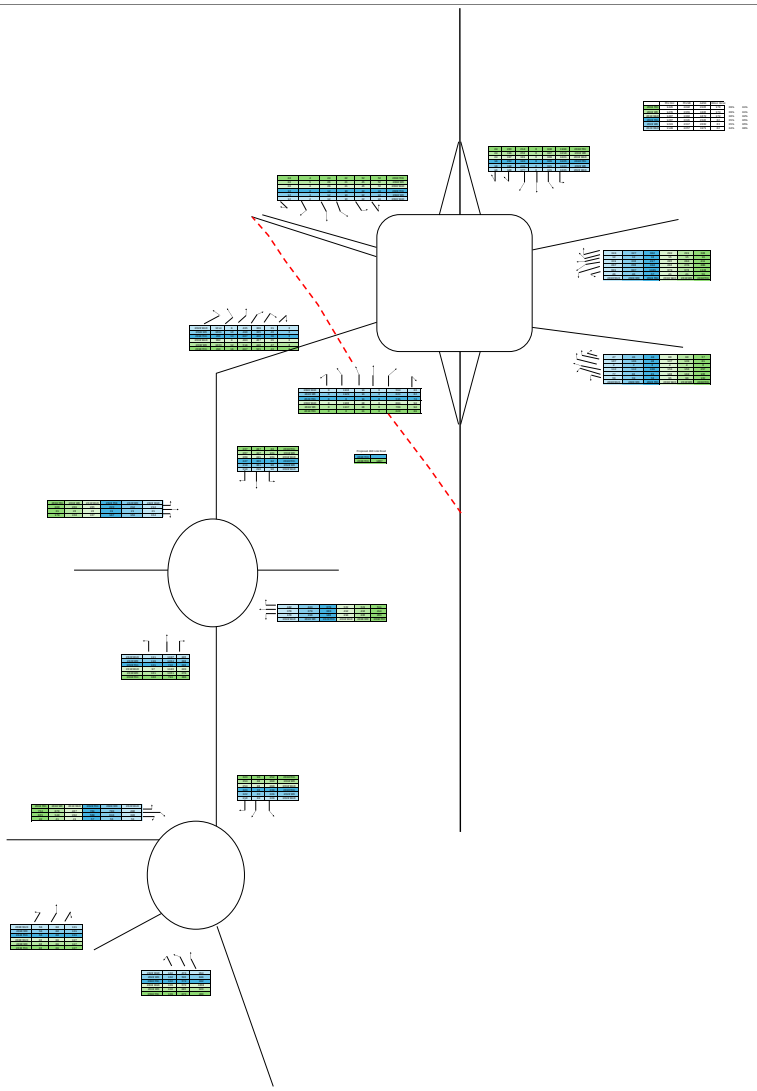
Project	East Midlands Gateway Phase 2		
Drawn	CC	**Approved**	VD
Checked	CC	**Date**	26.02.26

Drawing Title

Stage A Flow Comparison AM

Project Number

220500



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Project

East Midlands Gateway Phase 2

Drawing Title

Stage A Flow Comparison PM

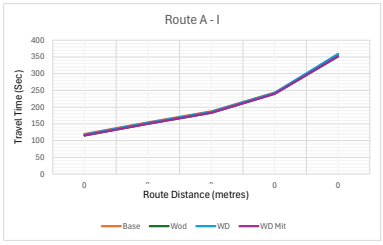
Drawn	CC	**Approved**	VD
Checked	CC	**Date**	26.02.26

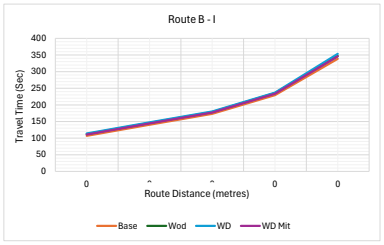
Project Number

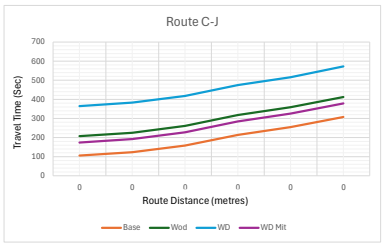
220500

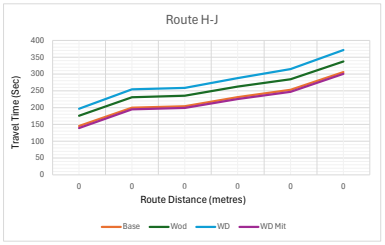
APPENDIX 8: 2023 PRTM VISSIM Outputs

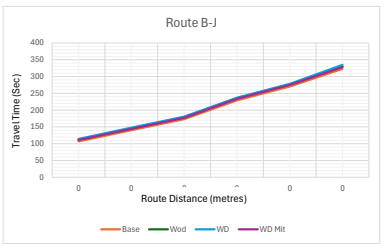
Stage 1/2A 2028 Morning Peak Hour Graphs

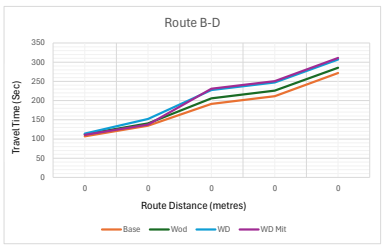


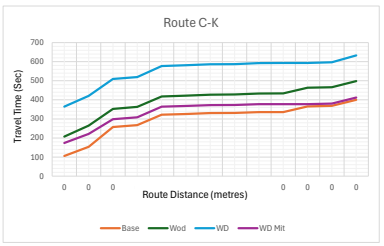


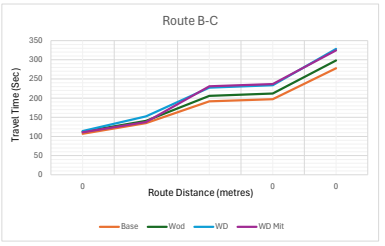


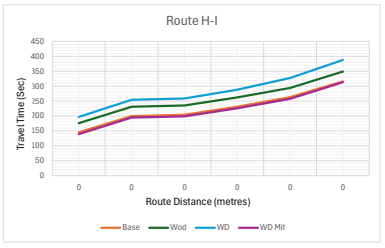


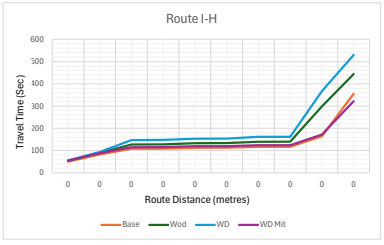


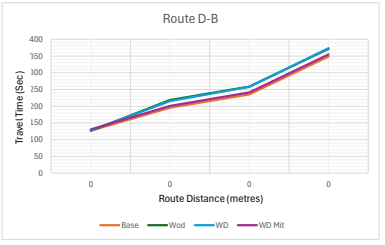


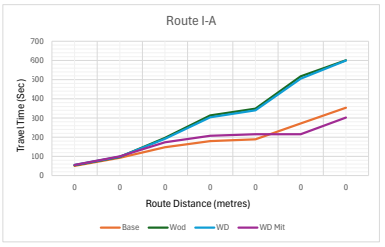


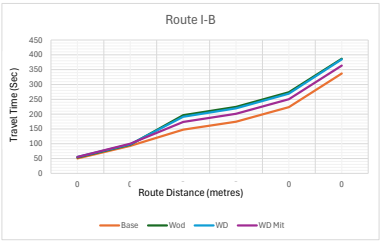


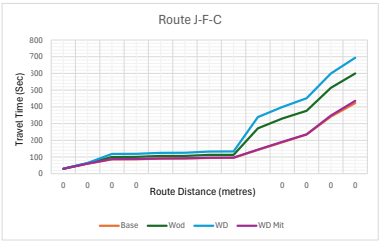


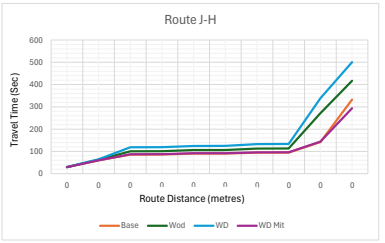


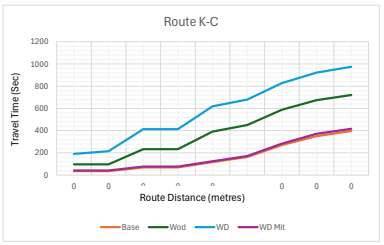


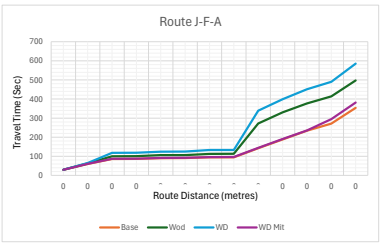


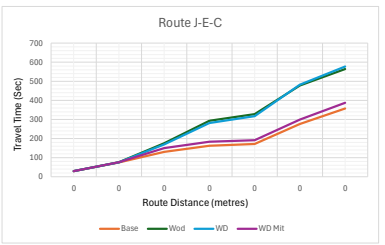


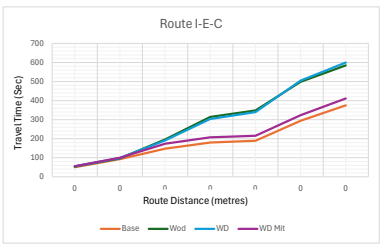


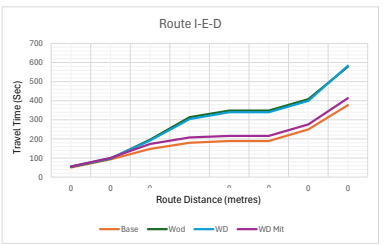




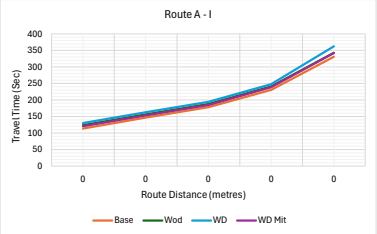


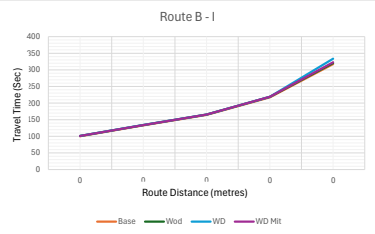


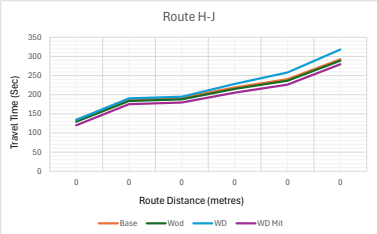


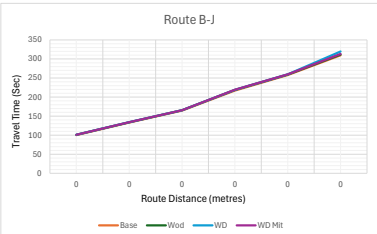


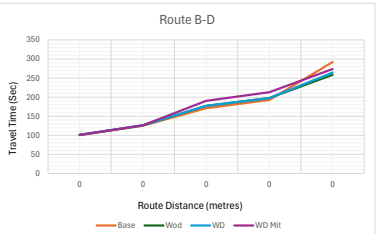
Stage 1/2A 2028 Evening Peak Hour Graphs

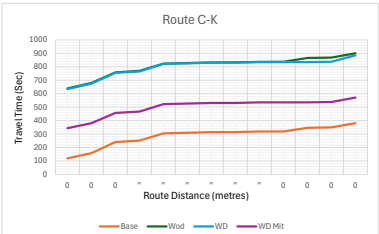


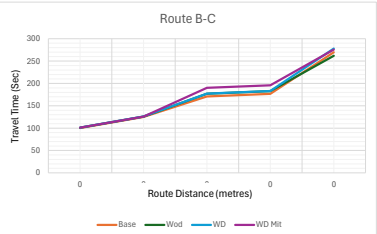


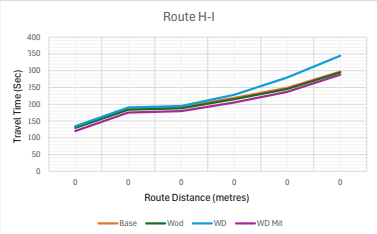


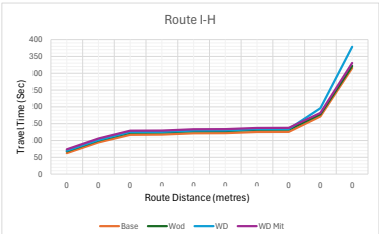


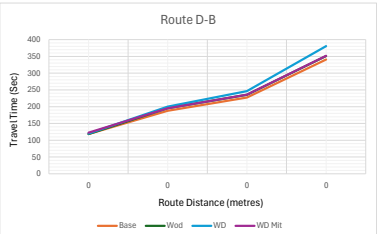


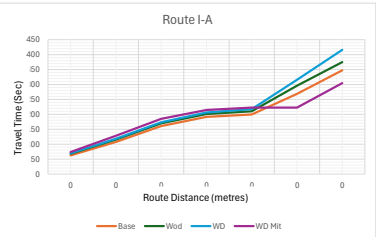


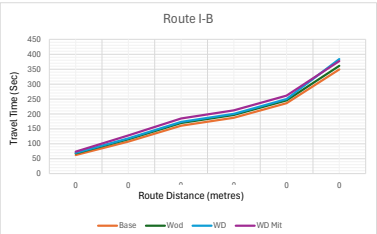


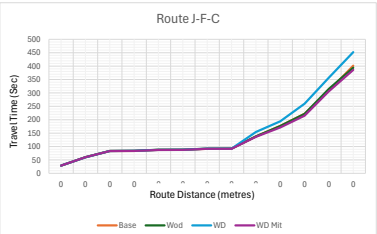


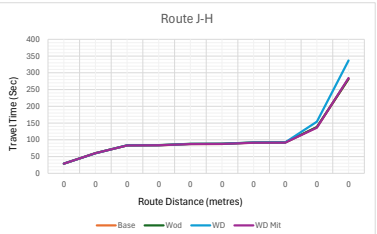


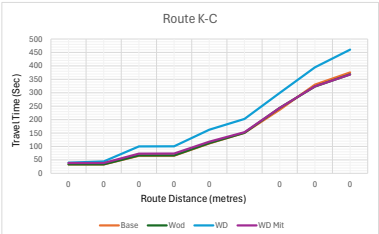


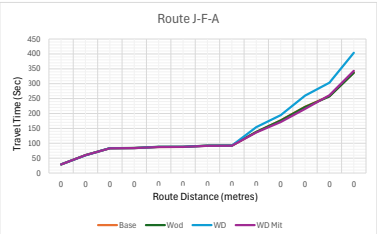


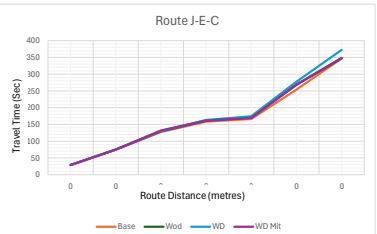










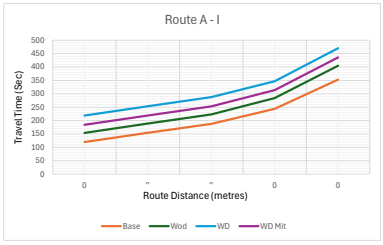


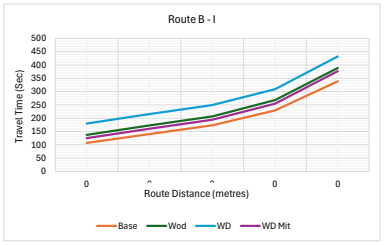
Sections Build Up

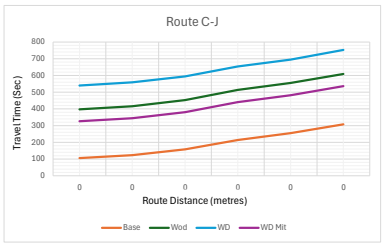
		AM						PM					
IDs	Route	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD
A-I	Route 1	353	352	359	352	8	1	331	343	362	342	20	-1
B-I	Route 2	339	347	353	346	6	-1	317	320	334	323	13	3
C-J	Route 3	308	412	573	379	160	-33	317	840	843	548	3	-292
H-J	Route 4	306	337	371	301	34	-37	293	289	318	280	29	-9
B-J	Route 5	323	330	335	328	5	-1	310	312	320	313	8	2
B-D	Route 6	272	286	307	311	22	26	292	259	265	274	6	15
C-K	Route 7	400	498	633	412	135	-86	381	901	885	571	-15	-329
B-C	Route 8	278	298	328	325	30	26	270	262	278	276	14	14
H-I	Route 9	316	349	388	313	39	-36	297	295	345	288	50	-7
I-H	Route 10	355	444	530	322	86	-122	315	322	379	331	57	9
D-B	Route 11	349	372	374	355	2	-17	341	351	381	352	30	1
I-A	Route 12	354	601	600	323	-1	-278	348	375	416	324	41	-51
I-B	Route 13	337	387	385	364	-2	-23	349	361	384	377	23	16
J-F-C	Route 14	423	600	694	436	94	-164	402	394	452	386	58	-8
J-H	Route 15	333	417	501	294	84	-123	282	282	337	285	55	3
K-C	Route 16	397	720	975	417	254	-304	376	368	461	368	92	-1
J-F-A	Route 17	354	497	585	381	88	-116	337	337	404	343	67	7
J-E-C	Route 18	357	564	577	387	13	-177	347	347	373	349	25	2
I-E-C	Route 19	375	585	600	411	15	-174	380	388	415	402	28	14
I-E-D	Route 20	377	578	583	414	5	-164	408	392	409	422	18	30

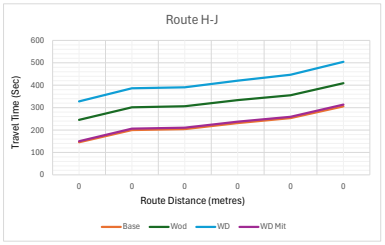
			AM				PM				Cumulative JT AM				Cumulative JT PM			
		Route ID	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit
A-I	D147	165: A50 to A50/M1 Fork	120	115	118	116	114	124	130	120	120	115	118	116	114	124	130	120
	D149	167: A50 to M1 SB Merge	35	35	35	35	33	32	33	33	154	150	153	150	147	156	163	153
	D151	169: M1 SB Mainline under J24	33	33	33	33	31	32	32	32	187	183	186	183	178	188	194	185
	D152	170: M1 SB Mainline between J24 Merge and A42 Diverge	56	57	57	57	53	53	53	54	244	240	243	240	231	241	248	238
	D153	171: M1 SB Mainline between A42 Diverge to End	109	111	116	112	100	102	115	104	353	352	359	352	331	343	362	342
B-I	D145	163: M1 SB to J24 Diverge	107	112	114	111	100	101	101	101	107	112	114	111	100	101	101	101
	D150	168: M1 SB Mainline between J24 Diverge and A50 Merge	33	34	33	33	33	33	33	33	140	146	148	144	133	134	134	134
	D151	169: M1 SB Mainline under J24	33	33	33	33	31	32	32	32	173	179	180	177	165	166	166	166
	D152	170: M1 SB Mainline between J24 Merge and A42 Diverge	56	57	57	57	53	53	53	54	229	236	237	234	217	219	219	219
	D153	171: M1 SB Mainline between A42 Diverge to End	109	111	116	112	100	102	115	104	339	347	353	346	317	320	334	323
C-J	D111	126: M1 J24 A453 Approach	106	207	365	174	119	639	635	343	106	207	365	174	119	639	635	343
	D125	143: M1 J24 A453 N to M1 S	18	18	18	18	17	18	17	18	123	225	383	192	136	657	652	361
	D117	132: M1 J24 M1 SB Merge	34	36	35	36	36	38	37	39	158	261	418	227	172	694	689	400
	D152	170: M1 SB Mainline between J24 Merge and A42 Diverge	56	57	57	57	53	53	53	54	214	318	475	284	224	747	743	454
	D160	178: M1 SB A42 Diverge	41	41	41	41	41	41	41	41	255	359	516	325	265	788	783	494
	D86	85: A42/M1 SB Merge to A42	53	53	57	53	52	52	60	53	308	412	573	379	317	840	843	548
H-J	D100	114: Keg By to A453 S	145	176	197	139	134	130	134	120	145	176	197	139	134	130	134	120
	D109	123: EMG1 RB to M1	54	55	58	56	54	54	56	55	200	231	254	195	188	184	191	175
	D88	88: FF Circ S1	4	4	4	4	4	4	4	4	204	235	259	199	192	188	195	180
	D83	82: FF to M1/A42 Fork	27	27	29	27	27	27	34	26	231	262	288	226	219	215	228	205
	D85	84: M1/A42 Fork to M1 SB/A42 Merge	22	22	27	21	21	21	30	21	253	284	315	247	241	237	258	226
	D86	85: A42/M1 SB Merge to A42	53	53	57	53	52	52	60	53	306	337	371	301	293	289	318	280
B-J	D145	163: M1 SB to J24 Diverge	107	112	114	111	100	101	101	101	107	112	114	111	100	101	101	101
	D150	168: M1 SB Mainline between J24 Diverge and A50 Merge	33	34	33	33	33	33	33	33	140	146	148	144	133	134	134	134
	D151	169: M1 SB Mainline under J24	33	33	33	33	31	32	32	32	173	179	180	177	165	166	166	166
	D152	170: M1 SB Mainline between J24 Merge and A42 Diverge	56	57	57	57	53	53	53	54	229	236	237	234	217	219	219	219
	D160	178: M1 SB A42 Diverge	41	41	41	41	41	41	41	41	270	277	278	275	258	259	260	260
	D86	85: A42/M1 SB Merge to A42	53	53	57	53	52	52	60	53	323	330	335	328	310	312	320	313
B-D	D145	163: M1 SB to J24 Diverge	107	112	114	111	100	101	101	101	107	112	114	111	100	101	101	101
	D146	164: M1 SB Diverge to M1/A50 Merge	28	29	38	27	25	25	25	25	135	141	152	137	125	126	126	126
	D110	125: M1 J24 M1/A50 Approach	57	65	75	93	46	51	51	64	192	206	228	231	171	177	177	190
	D119	137: M1 J24 A50/M1 Arm to Derby Road	20	20	20	20	22	21	20	23	211	226	247	251	193	198	198	213
	D116	131: M1 J24 Derby Road Exit	60	60	60	60	99	61	67	61	272	286	307	311	292	259	265	274
C-K	D111	126: M1 J24 A453 Approach	106	207	365	174	119	639	635	343	106	207	365	174	119	639	635	343
	D126	144: M1 J24 A453 N to A453 S	48	58	56	48	39	41	40	38	154	265	421	222	158	680	674	381
	D96	108: M1 J24 to EMG1 RB	104	88	89	77	82	79	81	76	258	353	510	299	240	759	755	457
	D98	112: A453 N to S	10	10	10	10	11	11	10	10	267	363	519	308	251	769	765	467
	D109	123: EMG1 RB to M1	54	55	58	56	54	54	56	55	322	418	577	364	305	824	821	522
	D88	88: FF Circ S1	4	4	4	4	4	4	4	4	326	422	581	368	309	828	826	527
	D89	89: FF Circ S2	5	5	5	5	5	5	5	4	331	427	586	373	314	833	830	531
	D90	90: FF Circ S3	1	1	1	1	1	1	1	1	331	428	587	373	315	833	831	532
	D91	91: FF Circ S4	4	5	6	4	4	4	4	4	335	433	593	377	319	837	835	535
	D92	92: FF Circ S5	0	0	1	0	0	0	0	0	336	434	593	378	319	837	835	536
	D71	69: FF to SA	30	30	0	0	28	28	0	0	365	463	593	378	347	866	835	536
	D74	72: SA Circ S3	3	3	4	3	3	3	3	3	368	466	597	380	349	868	838	538
	D70	67: A453 WB from SA	32	32	36	32	32	32	48	33	400	498	633	412	381	901	885	571
B-C	D145	163: M1 SB to J24 Diverge	107	112	114	111	100	101	101	101	107	112	114	111	100	101	101	101
	D146	164: M1 SB Diverge to M1/A50 Merge	28	29	38	27	25	25	25	25	135	141	152	137	125	126	126	126
	D110	125: M1 J24 M1/A50 Approach	57	65	75	93	46	51	51	64	192	206	228	231	171	177	177	190
	D120	138: M1 J24 A50/M1 Arm to A453 N	6	6	6	6	6	6	6	6	197	212	234	237	177	183	183	196
	D115	130: M1 J24 A453 N Exit	81	86	95	88	93	79	95	80	278	298	328	325	270	262	278	276
H-I	D100	114: Keg By to A453 S	145	176	197	139	134	130	134	120	145	176	197	139	134	130	134	120
	D109	123: EMG1 RB to M1	54	55	58	56	54	54	56	55	200	231	254	195	188	184	191	175
	D88	88: FF Circ S1	4	4	4	4	4	4	4	4	204	235	259	199	192	188	195	180
	D83	82: FF to M1/A42 Fork	27	27	29	27	27	27	34	26	231	262	288	226	219	215	228	205
	D84	83: M1/A42 Fork to M1 Merge	32	32	39	32	30	30	52	32	263	294	327	258	249	246	280	237
	D87	87: M1 SB FF Merge to M1 S End	53	55	60	56	48	49	65	51	316	349	388	313	297	295	345	288
I-H	D81	80: M1 to FF Diverge	50	54	55	56	62	68	69	74	50	54	55	56	62	68	69	74
	D82	81: M1 Diverge to A42/M1 Merge	32	36	38	33	32	32	32	32	82	90	94	88	94	100	101	106
	D80	79: A42/M1 Approach to FF	26	38	54	27	23	23	24	23	108	127	147	115	117	123	125	129
	D90	90: FF Circ S3	1	1	1	1	1	1	1	1	109	128	148	116	117	124	126	130
	D91	91: FF Circ S4	4	5	6	4	4	4	4	4	113	133	153	120	121	128	130	133
	D92	92: FF Circ S5	0	0	1	0	0	0	0	0	113	133	154	120	122	128	130	134
	D93	93: FF Circ S6	4	6	8	4	4	4	4	4	117	140	162	124	125	132	134	137
	D94	94: FF Circ S7	0	0	0	0	0	0	0	0	117	140	162	124	126	132	134	138
	D77	75: FF to EMG1 RB	47	159	205	48	46	46	62	44	165	298	368	172	171	178	196	182
	D107	121: EMG1 to Keg By	191	145	162	150	144	144	183	148	355	444	530	322	315	322	379	331
D-B	D112	127: M1 J24 Derby Road Approach	127	126	128	131	119	118	120	123	127	126	128	131	119	118	120	123
	D132	150: M1 J24 Derby Road to M1 NB	69	82	88	70	69	77	80	73	196	219	216	201	188	196	200	195
	D114	129: M1 J24 to M1 NB Merge	40	40	42	40	40	40	47	41	235	259	258	241	227	235	247	236
	D144	162: M1 NB Merge to M1 End	113	113	116	113	113	116	134	116	349	372	374	355	341	351	381	352
I-A	D81	80: M1 to FF Diverge	50	54	55	56	62	68	69	74	50	54	55	56	62	68	69	74
	D155	173: M1 NB to A42/M1 Merge	42	43	43	45	45	48	49	54	93	97	98	100	107	115	118	128
	D156	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	99	93	74	53	54	55	57	148	196	191	174	161	170	173	185
	D157	175: M1 J24 Diverge	32	118	112	34	31	31	33	30	180	314	304	207	192	201	206	215
	D113	128: M1 J24 M1 NB Approach	9	35	36	8	8	9	11	8	189	349	340	215	199	210	217	222
	D135	153: M1 J24 M1 S to A50	82	169	165	0	69	86	98	0	271	517	505	215	268	296	316	222
	D118	135: M1 J24 to A50 End	82	84	95	87	79	79	100	82	354	601	600	302	348	375	416	305
I-B	D81	80: M1 to FF Diverge	50	54	55	56	62	68	69	74	50	54	55	56	62	68	69	74
	D155	173: M1 NB to A42/M1 Merge	42	43	43	45	45	48	49	54	93	97	98	100	107	115	118	128
	D156	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	99	93	74	53	54	55	57	148	196	191	174	161	170	173	185
	D158	176: M1 Mainline After J24 Diverge	27	28	28	27	27	27	27	28	174	224	219	201	187	197	200	212
	D159	177: M1 Mainline between After J24 Diverge to J24 Merge	49	49	50	49	49	49	50	49	224	274	269	250	236	246	250	261
	D144	162: M1 NB Merge to M1 End	113	113	116	113	113	116	134	116	337	387	385	364	349	361	384	377
J-F-C	D78	77: A42 to FF Diverge	29	29	30	30	29	29	29	29	29	29	30	30	29	29	29	29
	D79	78: A42 Diverge to A42/M1 Merge to FF	31	33	35	31	32	31	31	31	60	63	65	60	60	60	60	60
	D80	79: A42/M1 Approach to FF	26	38	54	27	23	23	24	23	86	100	118	87	83	84	83	83
	D90	90: FF Circ S3	1	1	1	1	1	1	1	1	86	101	119	88	84	84	84	84
	D91	91: FF Circ S4	4	5	6	4	4	4	4	4	90	106	125	92	87	88	88	87
	D92	92: FF Circ S5	0	0	1	0	0	0	0	0	90	107	125	92	88	88	88	88
	D93	93: FF Circ S6	4	6	8	4	4	4	4	4	94	113	133	96	92	92	92	91
	D94	94: FF Circ S7	0	0	0	0	0	0	0	0	95	113	133	96	92	92	92	92
	D77	75: FF to EMG1 RB	47	159	205	48	46	46	62	44	142	272	339	144	137	138	154	136
	D104	118: A453 S to A453 N	46	58	60	47	40	38	40	35	188	330	399	190	177	176	194	171
	D109	123: EMG1 RB to M1	46	46	52	45	46	45	66	44	234	376	451	235	223	222	260	215
	D137	155: M1 J24 M1 S to A453 N	108	137	148	113	86	93	97	91	342	514	599	348	309	315	357	306
	D115	130: M1 J24 A453 N Exit	81	86	95	88	93	79	95	80	423	600	694	436	402	394	452	386
J-H	D78	77: A42 to FF Diverge	29	29	30	30	29	29	29	29	29	29	30	30	29	29	29	29
	D79	78: A42 Diverge to A42/M1 Merge to FF	31	33	35	31	32	31	31	31	60	63	65	60	60	60	60	60
	D80	79: A42/M1 Approach to FF	26	38	54	27	23	23	24	23	86	101	118	87	83	84	83	83
	D90	90: FF Circ S3	1	1	1	1	1	1	1	1	86	101	119	88	84	84	84	84
	D91	91: FF Circ S4	4	5	6	4	4	4	4	4	90	106	125	92	87	88	88	87
	D92	92: FF Circ S5	0	0	1	0	0	0	0	0	90	107	125	92	88	88	88	88
	D93	93: FF Circ S6	4	6	8	4	4	4	4	4	94	113	133	96	92	92	92	91
	D94	94: FF Circ S7	0	0	0	0	0	0	0	0	95	113	133	96	92	92	92	92
	D77	75: FF to EMG1 RB	47	159	205	48	46	46	62	44	142	272	339	144	137	138	154	136
	D107	121: EMG1 to Keg By	191	145	162	150	144	144	183	148	333	417	501	294	282	282	337	285
K-C	D68	65: A453 EB to Site Access RB	36	97	191	42	33	33	40	38	36	97	191	42	33	33	40	38
	D72	70: SA Circ S1	0	0	25	0	0	0	5	0	36	97	215	42	33	33	44	38
	D69	66: A453 Site Access to FF	33	136	198	35	32	33	56	35	69	233	413	76	66	67	100	73
	D94	94: FF Circ S7	0	0	0	0	0	0	0	0	69	233	414	77	66	67	101	74
	D77	75: FF to EMG1 RB	47	159	205	48	46	46	62	44	117	392	619	124	111	113	162	118
			46	58	60	47	40	38	40	35	162	451	679	171	151	151	202	153
	D104	118: A453 S to A453 N	108	137	148	113	86	93	97	91	270	588	827	284	237	244	300	244
	D137	155: M1 J24 M1 S to A453 N	81	86	95	88	93	79	95	80	351	674	922	372	330	323	395	324
	D115	130: M1 J24 A453 N Exit	46	46	52	45	46	45	66	44	397	720	975	417	376	368	461	368
J-F-A	D78	77: A42 to FF Diverge	29	29	30	30	29	29	29	29	29	29	30	30	29	29	29	29
	D79	78: A42 Diverge to A42/M1 Merge to FF	31	33	35	31	32	31	31	31	60	63	65	60	60	60	60	60
	D80	79: A42/M1 Approach to FF	26	38	54	27	23	23	24	23	86	100	118	87	83	84	83	83
	D90	90: FF Circ S3	1	1	1	1	1	1	1	1	86	101	119	88	84	84	84	84
	D91	91: FF Circ S4	4	5	6	4	4	4	4	4	90	106	125	92	87	88	88	87
	D92	92: FF Circ S5	0	0	1	0	0	0	0	0	90	107	125	92	88	88	88	88
	D93	93: FF Circ S6	4	6	8	4	4	4	4	4	94	113	133	96	92	92	92	91
	D94	94: FF Circ S7	0	0	0	0	0	0	0	0	95	113	133	96	92	92	92	92
	D77	75: FF to EMG1 RB	47	159	205	48	46	46	62	44	142	272	339	144	137	138	154	136
	D104	118: A453 S to A453 N	46	58	60	47	40	38	40	35	188	330	399	190	177	176	194	171
	D109	123: EMG1 RB to M1	46	46	52	45	46	45	66	44	234	376	451	235	223	222	260	215
	D139	157: M1 J24 A453 S to A50	37	37	39	59	36	35	43	46	271	414	490	295	258	257	303	261
	D118	135: M1 J24 to A50 End	82	84	95	87	79	79	100	82	354	497	585	381	337	337	404	343
J-E-C	D78	77: A42 to FF Diverge	29	29	30	30	29	29	29	29	29	29	30	30	29	29	29	29
	D154	172: A42 to A42/M1 NB Merge	46	47	46	47	46	46	46	46	75	76	76	76	75	75	75	75
	D156	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	99	93	74	53	54	55	57	130	176	169	150	128	129	130	132
	D157	175: M1 J24 Diverge	32	118	112	34	31	31	33	30	162	293	281	184	159	161	163	162
	D113	128: M1 J24 M1 NB Approach	9	35	36	8	8	9	11	8	172	328	317	192	166	170	175	170
	D137	155: M1 J24 M1 S to A453 N	105	150	165	108	88	98	103	99	277	478	482	300	254	268	278	269
	D115	130: M1 J24 A453 N Exit	81	86	95	88	93	79	95	80	357	564	577	387	347	347	373	349
I-E-C	D81	80: M1 to FF Diverge	50	54	55	56	62	68	69	74	50	54	55	56	62	68	69	74
	D155	173: M1 NB to A42/M1 Merge	42	43	43	45	45	48	49	54	93	97	98	100	107	115	118	128
	D156	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	99	93	74	53	54	55	57	148	196	191	174	161	170	173	185
	D157	175: M1 J24 Diverge	32	118	112	34	31	31	33	30	180	314	304	207	192	201	206	215
	D113	128: M1 J24 M1 NB Approach	9	35	36	8	8	9	11	8	189	349	340	215	199	210	217	222
	D137	155: M1 J24 M1 S to A453 N	105	150	165	108	88	98	103	99	294	498	505	323	287	309	320	322
	D115	130: M1 J24 A453 N Exit	81	86	95	88	93	79	95	80	375	585	600	411	380	388	415	402
I-E-D	D81	80: M1 to FF Diverge	50	54	55	56	62	68	69	74	50	54	55	56	62	68	69	74
	D155	173: M1 NB to A42/M1 Merge	42	43	43	45	45	48	49	54	93	97	98	100	107	115	118	128
	D156	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	99	93	74	53	54	55	57	148	196	191	174	161	170	173	185
			32	118	112	34	31	31	33	30	180	314	304	207	192	201	206	215
	D157	175: M1 J24 Diverge	9	35	36	8	8	9	11	8	189	349	340	215	199	210	217	222
	D113	128: M1 J24 M1 NB Approach	0	0	0	0	0	0	0	0	189	349	340	215	199	210	217	222
	D143	161: M1 J24 A453 S to M1 SB	60	60	60	60	99	61	67	61	250	408	400	276	298	271	284	283
	D116	131: M1 J24 Derby Road Exit	127	170	184	138	109	121	125	138	377	578	583	414	408	392	409	422

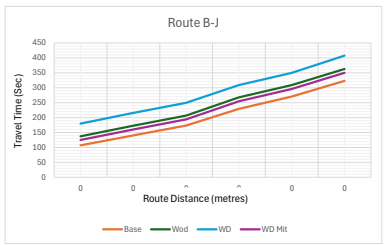
Stage 1/2A 2038 Morning Peak Hour Graphs

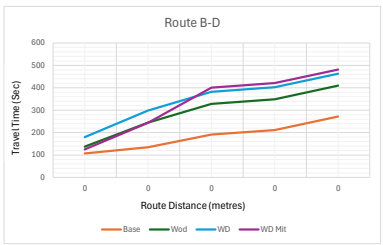


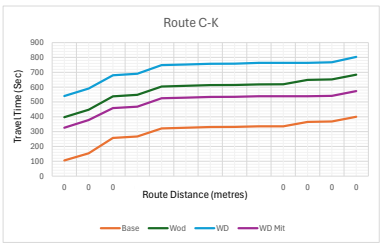


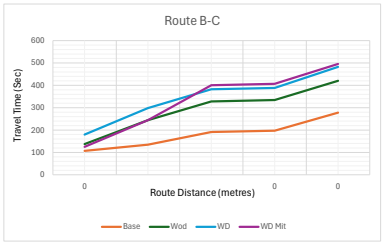


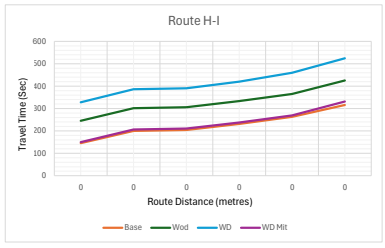


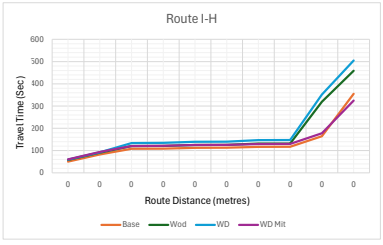


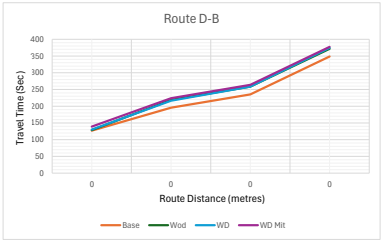


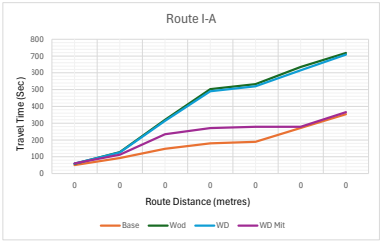


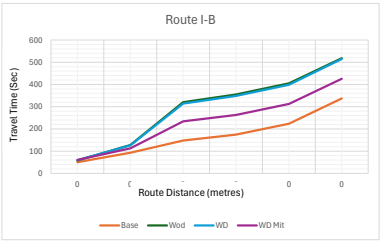


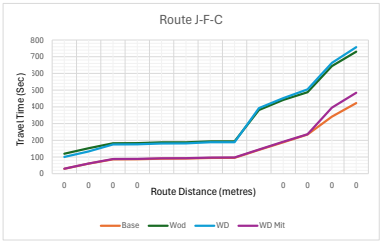


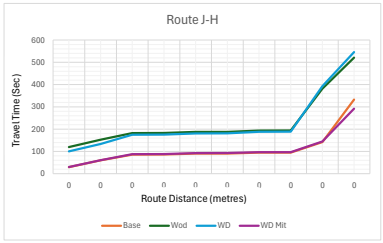


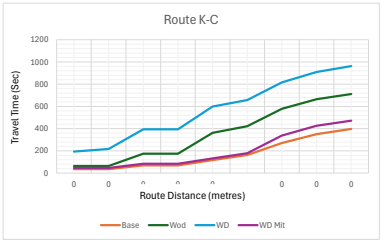


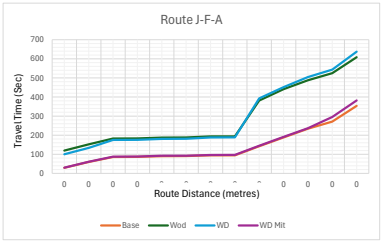


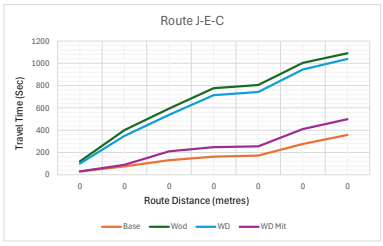


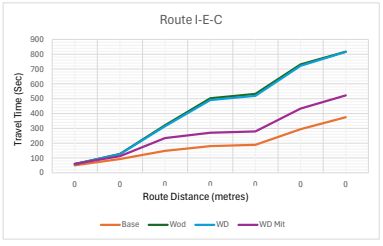


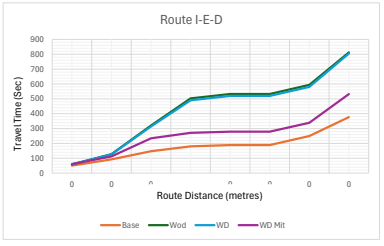




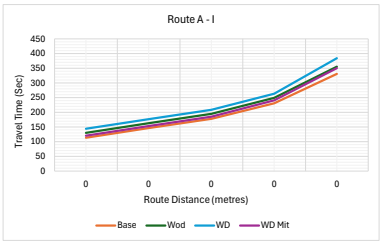


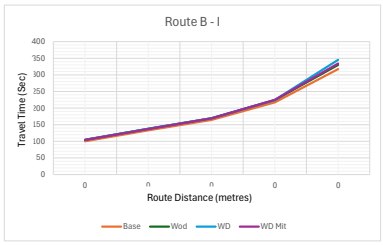


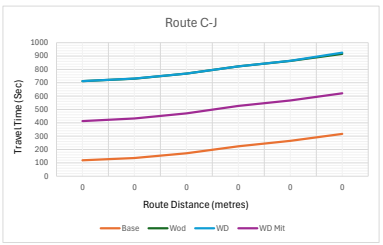


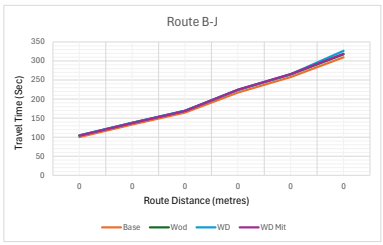


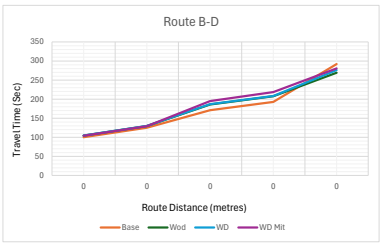
Stage 1/2A 2038 Evening Peak Hour Graphs

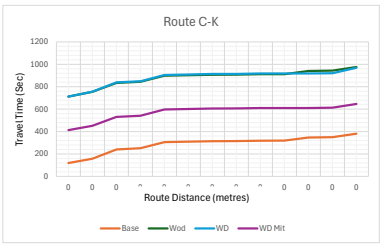


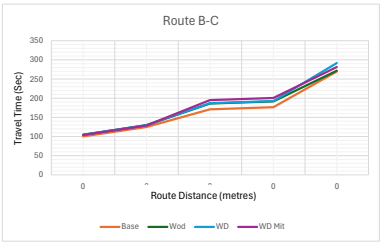


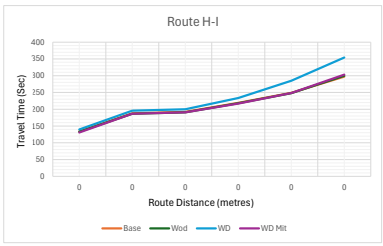


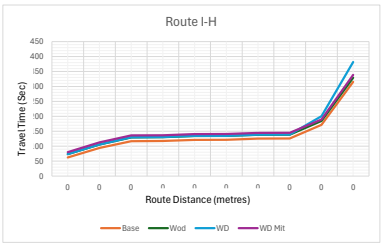


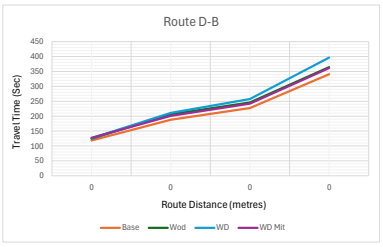


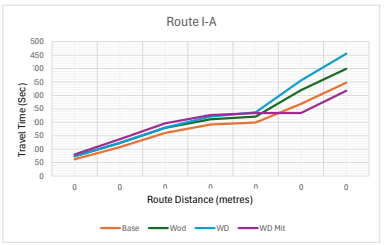


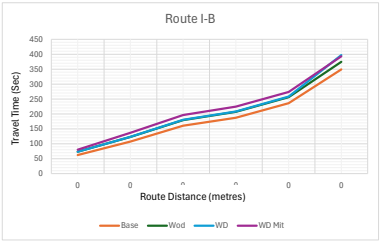


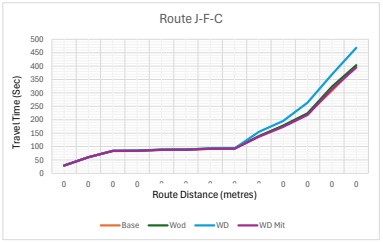


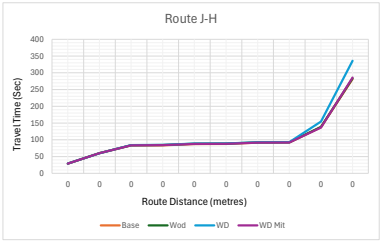


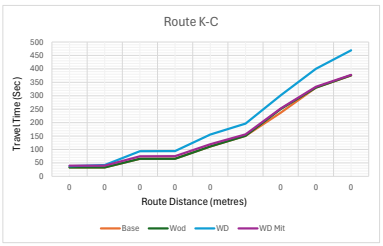


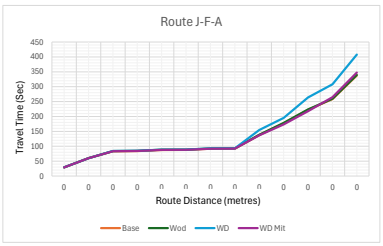


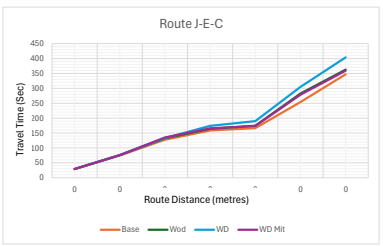


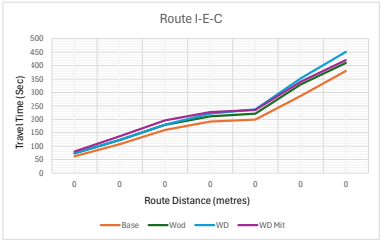


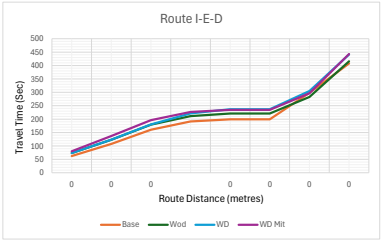












					AM				PM				Cumulative JT AM				Cumulative JT PM			
		Dist	Cum Dist	Route ID	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit	Base	Wod	WD	WD Mit
A-I	D147	0	0	165: A50 to A50/M1 Fork	120	154	219	184	114	130	144	120	120	154	219	184	114	130	144	120
	D149	0	0	167: A50 to M1 SB Merge	35	35	35	35	33	33	33	33	154	189	254	219	147	163	177	153
	D151	0	0	169: M1 SB Maintine under J24	33	34	34	34	31	32	32	32	187	223	287	253	178	195	209	185
	D152	0	0	170: M1 SB Maintine between J24 Merge and A42 Diverge	56	61	59	60	53	55	55	56	244	284	347	313	231	249	263	241
	D153	0	0	171: M1 SB Maintine between A42 Diverge to End	109	121	123	122	100	106	121	110	353	405	470	436	331	355	384	350
B-I	D145	0	0	163: M1 SB to J24 Diverge	107	137	180	125	100	104	105	104	107	137	180	125	100	104	105	104
	D150	0	0	168: M1 SB Maintine between J24 Diverge and A50 Merge	33	35	36	35	33	33	33	33	140	173	216	160	133	138	138	137
	D151	0	0	169: M1 SB Maintine under J24	33	34	34	34	31	32	32	32	173	207	249	194	165	169	170	169
	D152	0	0	170: M1 SB Maintine between J24 Merge and A42 Diverge	56	61	59	60	53	55	55	56	229	268	309	255	217	224	224	225
	D153	0	0	171: M1 SB Maintine between A42 Diverge to End	109	121	123	122	100	106	121	110	339	389	432	377	317	330	345	334
C-J	D111	0	0	126: M1 J24 A453 Approach	106	397	540	326	119	712	712	413	106	397	540	326	119	712	712	413
	D125	0	0	143: M1 J24 A453 N to M1 S	18	19	19	18	17	19	19	19	123	416	559	344	136	731	731	432
	D117	0	0	132: M1 J24 M1 SB Merge	34	37	36	36	36	38	37	39	158	453	595	380	172	768	768	471
	D152	0	0	170: M1 SB Maintine between J24 Merge and A42 Diverge	56	61	59	60	53	55	55	56	214	514	654	441	224	823	823	527
	D160	0	0	178: M1 SB A42 Diverge	41	41	41	41	41	41	41	41	255	555	695	482	265	864	864	567
	D86	0	0	85: A42/M1 SB Merge to A42	53	54	58	54	52	53	61	53	308	609	753	536	317	916	925	621
H-J	D100	0	0	114: Keg By to A453 S	145	245	328	150	134	133	140	131	145	245	328	150	134	133	140	131
	D109	0	0	123: EMG1 RB to M1	54	56	58	56	54	54	56	56	200	302	386	206	188	187	196	187
	D88	0	0	88: FF Circ S1	4	4	4	4	4	4	4	4	204	306	391	210	192	191	200	191
	D83	0	0	82: FF to M1/A42 Fork	27	27	30	27	27	27	33	26	231	333	420	238	219	218	233	217
	D85	0	0	84: M1/A42 Fork to M1 SB/A42 Merge	22	22	26	22	21	22	30	21	253	355	447	259	241	240	263	238
	D86	0	0	85: A42/M1 SB Merge to A42	53	54	58	54	52	53	61	53	306	409	504	314	293	292	325	291
B-J	D145	0	0	163: M1 SB to J24 Diverge	107	137	180	125	100	104	105	104	107	137	180	125	100	104	105	104
	D150	0	0	168: M1 SB Maintine between J24 Diverge and A50 Merge	33	35	36	35	33	33	33	33	140	173	216	160	133	138	138	137
	D151	0	0	169: M1 SB Maintine under J24	33	34	34	34	31	32	32	32	173	207	249	194	165	169	170	169
	D152	0	0	170: M1 SB Maintine between J24 Merge and A42 Diverge	56	61	59	60	53	55	55	56	229	268	309	255	217	224	224	225
	D160	0	0	178: M1 SB A42 Diverge	41	41	41	41	41	41	41	41	270	309	350	296	258	265	265	266
	D86	0	0	85: A42/M1 SB Merge to A42	53	54	58	54	52	53	61	53	323	363	408	350	310	317	327	319
B-D	D145	0	0	163: M1 SB to J24 Diverge	107	137	180	125	100	104	105	104	107	137	180	125	100	104	105	104
	D146	0	0	164: M1 SB Diverge to M1/A50 Merge	28	107	118	119	25	25	25	25	135	244	298	244	125	130	130	129
	D110	0	0	125: M1 J24 M1/A50 Approach	57	84	84	156	46	56	57	66	192	328	382	401	171	186	187	195
	D119	0	0	137: M1 J24 A50/M1 Arm to Derby Road	20	21	20	21	22	22	21	23	211	349	403	421	193	208	208	219
	D116	0	0	131: M1 J24 Derby Road Exit	60	61	60	60	99	62	68	62	272	410	463	481	292	269	276	281
C-K	D111	0	0	126: M1 J24 A453 Approach	106	397	540	326	119	712	712	413	106	397	540	326	119	712	712	413
	D126	0	0	144: M1 J24 A453 N to A453 S	48	50	51	52	39	43	44	39	154	448	590	378	158	755	756	452
	D96	0	0	108: M1 J24 to EMG1 RB	104	90	90	80	82	80	83	79	258	538	680	459	240	834	839	531
	D98	0	0	112: A453 N to S	10	10	10	10	11	10	10	10	267	548	690	469	251	845	849	541
	D109	0	0	123: EMG1 RB to M1	54	56	58	56	54	54	56	56	322	604	748	525	305	898	905	597
	D88	0	0	88: FF Circ S1	4	4	4	4	4	4	4	4	326	609	753	529	309	902	909	601
	D89	0	0	89: FF Circ S2	5	5	5	5	5	5	5	4	331	614	758	534	314	907	914	606
	D90	0	0	90: FF Circ S3	1	1	1	1	1	1	1	1	331	614	758	534	315	908	914	606
	D91	0	0	91: FF Circ S4	4	5	5	4	4	4	4	4	335	619	763	538	319	912	918	610
	D92	0	0	92: FF Circ S5	0	0	1	0	0	0	0	0	336	619	764	539	319	912	919	610
	D71	0	0	69: FF to SA	30	30	0	0	28	29	0	0	365	649	764	539	347	941	919	610
	D74	0	0	72: SA Circ S3	3	3	3	3	3	3	3	3	368	652	768	541	349	943	921	613
	D70	0	0	67: A453 WB from SA	32	32	36	32	32	33	48	33	400	684	804	573	381	976	969	646
B-C	D145	0	0	163: M1 SB to J24 Diverge	107	137	180	125	100	104	105	104	107	137	180	125	100	104	105	104
	D146	0	0	164: M1 SB Diverge to M1/A50 Merge	28	107	118	119	25	25	25	25	135	244	298	244	125	130	130	129
	D110	0	0	125: M1 J24 M1/A50 Approach	57	84	84	156	46	56	57	66	192	328	382	401	171	186	187	195
	D120	0	0	138: M1 J24 A50/M1 Arm to A453 N	6	6	6	6	6	6	6	6	197	334	388	407	177	192	193	201
	D115	0	0	130: M1 J24 A453 N Exit	81	86	94	89	93	80	99	81	278	420	483	496	270	272	292	281
H-I	D100	0	0	114: Keg By to A453 S	145	245	328	150	134	133	140	131	145	245	328	150	134	133	140	131
	D109	0	0	123: EMG1 RB to M1	54	56	58	56	54	54	56	56	200	302	386	206	188	187	196	187
	D88	0	0	88: FF Circ S1	4	4	4	4	4	4	4	4	204	306	391	210	192	191	200	191
	D83	0	0	82: FF to M1/A42 Fork	27	27	30	27	27	27	33	26	231	333	420	238	219	218	233	217
	D84	0	0	83: M1/A42 Fork to M1 Merge	32	32	39	32	30	30	52	32	263	365	460	270	249	248	285	248
	D87	0	0	87: M1 SB FF Merge to M1 S End	53	60	65	62	48	52	69	55	316	425	524	331	297	300	354	303
I-H	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D82	0	0	81: M1 Diverge to A42/M1 Merge	32	32	33	33	32	32	32	33	82	90	92	94	94	106	106	113
	D80	0	0	79: A42/M1 Approach to FF	26	30	42	27	23	24	24	23	108	120	134	121	117	130	130	136
	D90	0	0	90: FF Circ S3	1	1	1	1	1	1	1	1	109	121	135	121	117	130	131	137
	D91	0	0	91: FF Circ S4	4	5	5	4	4	4	4	4	113	125	140	125	121	134	134	140
	D92	0	0	92: FF Circ S5	0	0	1	0	0	0	0	0	113	126	140	126	122	134	135	141
	D93	0	0	93: FF Circ S6	4	6	7	4	4	4	4	4	117	131	147	129	125	138	139	144
	D94	0	0	94: FF Circ S7	0	0	0	0	0	0	0	0	117	132	148	130	126	139	139	145
	D77	0	0	75: FF to EMG1 RB	47	188	204	48	46	46	61	45	163	319	352	178	171	184	200	189
	D107	0	0	121: EMG1 to Keg By	191	139	153	147	144	145	181	149	355	459	505	325	315	329	382	339
D-B	D112	0	0	127: M1 J24 Derby Road Approach	127	128	130	139	119	125	126	127	127	128	130	139	119	125	126	127
	D132	0	0	150: M1 J24 Derby Road to M1 NB	69	90	86	85	69	82	85	74	196	219	216	224	188	206	211	201
	D114	0	0	129: M1 J24 to M1 NB Merge	40	40	42	40	40	40	46	41	235	259	258	264	227	246	257	242
	D144	0	0	162: M1 NB Merge to M1 End	113	113	116	113	113	118	139	119	349	372	375	377	341	364	397	361
I-A	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D155	0	0	173: M1 NB to A42/M1 Merge	42	69	66	52	45	49	50	57	93	127	126	113	107	123	123	137
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	148	320	314	234	161	179	180	196
	D157	0	0	175: M1 J24 Diverge	32	183	177	36	31	32	41	31	180	503	491	271	192	211	221	227
	D113	0	0	128: M1 J24 M1 NB Approach	9	30	29	8	8	10	16	8	189	533	520	279	199	221	237	235
	D135	0	0	153: M1 J24 M1 S to A50	82	102	95	0	69	98	118	0	271	635	615	279	268	319	356	235
	D118	0	0	135: M1 J24 to A50 End	82	84	94	87	79	80	100	83	354	718	709	366	348	399	455	317
I-B	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D155	0	0	173: M1 NB to A42/M1 Merge	42	69	66	52	45	49	50	57	93	127	126	113	107	123	123	137
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	148	320	314	234	161	179	180	196
	D158	0	0	176: M1 Mainline After J24 Diverge	27	35	34	29	27	28	28	28	174	355	348	263	187	207	208	225
	D159	0	0	177: M1 Mainline between After J24 Diverge to J24 Merge	49	50	50	49	49	49	50	49	224	405	399	312	236	256	258	274
	D144	0	0	162: M1 NB Merge to M1 End	113	113	116	113	113	118	139	119	337	518	515	426	349	375	397	393
J-F-C	D78	0	0	77: A42 to FF Diverge	29	120	100	30	29	29	29	29	29	120	100	30	29	29	29	29
	D79	0	0	78: A42 Diverge to A42/M1 Merge to FF	31	33	33	31	32	31	31	31	60	152	133	61	60	60	60	60
	D80	0	0	79: A42/M1 Approach to FF	26	30	42	27	23	24	24	23	86	182	175	88	83	84	84	83
	D90	0	0	90: FF Circ S3	1	1	1	1	1	1	1	1	86	183	176	88	84	84	85	84
	D91	0	0	91: FF Circ S4	4	5	5	4	4	4	4	4	90	187	181	92	87	88	89	88
	D92	0	0	92: FF Circ S5	0	0	1	0	0	0	0	0	90	188	181	93	88	89	89	88
	D93	0	0	93: FF Circ S6	4	6	7	4	4	4	4	4	94	193	188	97	92	93	93	92
	D94	0	0	94: FF Circ S7	0	0	0	0	0	0	0	0	95	194	189	97	92	93	93	92
	D77	0	0	75: FF to EMG1 RB	47	188	204	48	46	46	61	45	142	382	393	145	137	139	155	137
	D104	0	0	118: A453 S to A453 N	46	60	59	46	40	40	41	37	188	441	452	191	177	178	195	173
	D109	0	0	123: EMG1 RB to M1	46	47	53	45	48	46	69	44	234	488	505	236	223	224	264	218
	D137	0	0	155: M1 J24 M1 S to A453 N	108	156	158	159	86	99	105	96	342	644	663	395	309	323	369	314
	D115	0	0	130: M1 J24 A453 N Exit	81	86	94	89	93	80	99	81	423	730	757	484	402	403	468	395
J-H	D78	0	0	77: A42 to FF Diverge	29	120	100	30	29	29	29	29	29	120	100	30	29	29	29	29
	D79	0	0	78: A42 Diverge to A42/M1 Merge to FF	31	33	33	31	32	31	31	31	60	152	133	61	60	60	60	60
	D80	0	0	79: A42/M1 Approach to FF	26	30	42	27	23	24	24	23	86	182	175	88	83	84	84	83
	D90	0	0	90: FF Circ S3	1	1	1	1	1	1	1	1	86	183	176	88	84	84	85	84
	D91	0	0	91: FF Circ S4	4	5	5	4	4	4	4	4	90	187	181	92	87	88	89	88
	D92	0	0	92: FF Circ S5	0	0	1	0	0	0	0	0	90	188	181	93	88	89	89	88
	D93	0	0	93: FF Circ S6	4	6	7	4	4	4	4	4	94	193	188	97	92	93	93	92
	D94	0	0	94: FF Circ S7	0	0	0	0	0	0	0	0	95	194	189	97	92	93	93	92
	D77	0	0	75: FF to EMG1 RB	47	188	204	48	46	46	61	45	142	382	393	145	137	139	155	137
	D104	0	0	118: A453 S to A453 N	46	60	59	46	40	40	41	37	188	441	452	191	177	178	195	173
	D109	0	0	123: EMG1 RB to M1	46	47	53	45	46	46	69	44	234	488	505	236	223	224	264	218
	D139	0	0	157: M1 J24 A453 S to A50	37	37	39	59	36	36	44	47	271	525	544	295	258	260	308	265
	D118	0	0	135: M1 J24 to A50 End	82	84	94	87	79	80	100	83	354	608	637	382	337	339	408	347
K-C	D78	0	0	77: A42 to FF Diverge	29	120	100	30	29	29	29	29	29	120	100	30	29	29	29	29
	D154	0	0	172: A42 to A42/M1 NB Merge	46	281	249	59	46	47	47	47	75	401	349	89	75	76	76	76
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	130	594	537	211	128	132	133	135
	D157	0	0	175: M1 J24 Diverge	32	183	177	36	31	32	41	31	162	776	714	247	159	164	174	166
	D113	0	0	128: M1 J24 M1 NB Approach	9	30	29	8	8	10	16	8	172	806	743	255	166	174	190	174
	D137	0	0	155: M1 J24 M1 S to A453 N	105	198	202	154	88	109	115	105	277	1004	945	410	254	283	305	279
	D115	0	0	130: M1 J24 A453 N Exit	81	86	94	89	93	80	99	81	357	1091	1039	499	347	363	404	359
J-E-C	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D155	0	0	173: M1 NB to A42/M1 Merge	42	69	66	52	45	49	50	57	93	127	126	113	107	123	123	137
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	148	320	314	234	161	179	180	196
	D157	0	0	175: M1 J24 Diverge	32	183	177	36	31	32	41	31	180	503	491	271	192	211	221	227
	D113	0	0	128: M1 J24 M1 NB Approach	9	30	29	8	8	10	16	8	189	533	520	279	199	221	237	235
	D137	0	0	155: M1 J24 M1 S to A453 N	105	198	202	154	88	109	115	105	294	731	722	434	287	330	352	340
	D115	0	0	130: M1 J24 A453 N Exit	81	86	94	89	93	80	99	81	375	817	816	522	380	410	451	420
I-E-C	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D155	0	0	173: M1 NB to A42/M1 Merge	42	69	66	52	45	49	50	57	93	127	126	113	107	123	123	137
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	148	320	314	234	161	179	180	196
	D157	0	0	175: M1 J24 Diverge	32	183	177	36	31	32	41	31	180	503	491	271	192	211	221	227
	D113	0	0	128: M1 J24 M1 NB Approach	9	30	29	8	8	10	16	8	189	533	520	279	199	221	237	235
	D137	0	0	155: M1 J24 M1 S to A453 N	105	198	202	154	88	109	115	105	294	731	722	434	287	330	352	340
	D115	0	0	130: M1 J24 A453 N Exit	81	86	94	89	93	80	99	81	375	817	816	522	380	410	451	420
I-E-D	D81	0	0	80: M1 to FF Diverge	50	58	59	60	62	74	73	80	50	58	59	60	62	74	73	80
	D155	0	0	173: M1 NB to A42/M1 Merge	42	69	66	52	45	49	50	57	93	127	126	113	107	123	123	137
	D156	0	0	174: M1 NB Mainline between A42/M1 Merge and Before J24 Diverge	55	193	188	122	53	57	57	59	148	320	314	234	161	179	180	196
					32	183	177	36	31	32	41	31	180	503	491	271	192	211	221	227
	D157	0	0	175: M1 J24 Diverge	9	30	29	8	8	10	16	8	189	533	520	279	199	221	237	235
	D113	0	0	128: M1 J24 M1 NB Approach	0	0	0	0	0	0	0	0	189	533	520	279	199	221	237	235
	D143	0	0	161: M1 J24 A453 S to M1 SB	60	61	60	60	99	62	68	62	250	594	580	339	298	283	305	297
	D116	0	0	131: M1 J24 Derby Road Exit	127	219	225	193	109	133	136	146	377	813	805	532	408	416	441	443

Sections Build Up

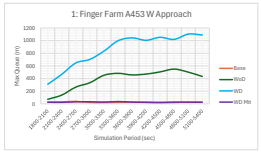
		AM				PM			
IDs	Route	Base	WoD	WD Mit	Mit - WoD	Base	WoD	WD Mit	Mit - WoD
A-I	Route 1	353	405	436	31	331	355	350	-5
B-I	Route 2	339	389	377	-12	317	330	334	4
C-J	Route 3	308	609	536	-73	317	916	621	-295
H-J	Route 4	306	409	314	-95	293	292	291	-1
B-J	Route 5	323	363	350	-13	310	317	319	2
B-D	Route 6	272	410	481	72	292	269	281	11
C-K	Route 7	400	684	573	-111	381	976	646	-330
B-C	Route 8	278	420	496	75	270	272	281	10
H-I	Route 9	314	425	331	-94	297	300	303	3
I-H	Route 10	355	459	325	-134	315	329	339	10
D-B	Route 11	349	372	377	6	341	364	361	-3
I-A	Route 12	354	718	386	-333	348	399	337	-62
I-B	Route 13	337	518	426	-93	349	375	393	19
J-F-C	Route 14	423	730	484	-246	402	403	395	-9
J-H	Route 15	333	521	292	-229	282	283	286	3
K-C	Route 16	397	711	472	-240	376	376	378	2
J-F-A	Route 17	354	608	382	-226	337	339	347	8
J-E-C	Route 18	357	1091	499	-592	347	363	359	-4
I-E-C	Route 19	375	817	522	-295	380	410	420	11
I-E-D	Route 20	377	813	532	-280	408	416	443	27

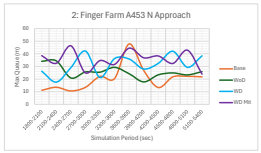
Maximum Queues (m)			2028 AM						2028 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD
1	Finger Farm	A453 W	39	550	1104	36	555	-514	30	32	153	23	121	-9
2	Finger Farm	A453 N	48	34	42	46	8	12	20	17	38	33	21	-16
3	Finger Farm	M1/A42 S	49	187	363	41	176	-146	27	28	31	21	3	-7
11	M1 J24	M1/A50	279	346	420	348	74	2	114	156	152	234	-4	78
12	M1 J24	Remembrance Way	126	722	1392	336	671	-386	145	2779	2776	2629	-2	-750
13	M1 J24	Doby Road	55	50	53	59	4	9	39	36	41	43	6	7
15	M1 J24	A453 S	53	89	105	86	16	-3	98	91	211	109	120	18
16	M1 J24	Hilton Hotel Lane	34	65	84	104	19	39	25	21	22	21	1	0
17	M1 J24	M1 NB South of Slip	0	1743	1635	3	-107	-1740	0	2	0	1	-2	-1
20	M1 J24	M1 NB Off Slip	109	2181	2234	86	53	-2095	62	64	110	49	46	-16
24	EM01 Gyratory	Kegworth By-Pass	423	456	621	315	165	-141	182	176	224	119	48	-56
25	EM01 Gyratory	A453 S	197	895	1224	163	329	-733	118	110	167	73	57	-37
26	EM01 Gyratory	Wilders Way L-Turn	16	4	4	4	0	0	16	11	19	10	8	-2
27	EM01 Gyratory	Wilders Way Ahead	6	3	6	7	3	4	10	8	10	9	2	1
28	EM01 Gyratory	A453 S Left turn	105	280	200	121	-80	-159	47	46	45	53	-1	7
29	EM01 Gyratory	Kegworth By-Pass Left Turn	255	431	588	276	158	-155	146	126	163	92	37	-34
30	EM01 Gyratory	A453 N	202	80	82	65	2	-16	52	42	43	40	1	-2
31	M1 J24	M1 SB Offlip (M1)	0	36	232	9	196	-27	0	3	1	0	-2	-3
32	M1 J24	M1 SB Offlip (A50)	0	48	338	2	291	-45	0	0	0	0	0	0

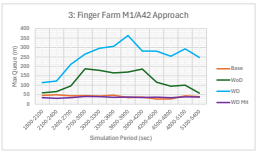
Mean Max Queues (m)			2028 AM						2028 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD
1	Finger Farm	A453 W	25	389	857	27	468	-361	22	24	69	13	46	-5
2	Finger Farm	A453 N	20	26	32	36	6	10	13	14	28	23	14	9
3	Finger Farm	M1/A42 S	40	123	253	36	129	-87	19	25	26	17	1	-7
11	M1 J24	M1/A50	169	258	371	286	113	28	91	143	139	203	-4	60
12	M1 J24	Remembrance Way	90	570	969	271	399	-299	95	2384	2421	1320	37	-1064
13	M1 J24	Doby Road	41	43	44	52	1	10	33	31	33	37	2	6
15	M1 J24	A453 S	59	81	88	77	7	-3	68	79	128	102	49	22
16	M1 J24	Hilton Hotel Lane	23	59	71	85	12	26	15	19	19	17	1	-2
17	M1 J24	M1 NB South of Slip	0	868	855	0	-13	-868	0	0	0	0	0	0
20	M1 J24	M1 NB Off Slip	79	1108	1294	77	186	-1031	52	53	68	46	15	-8
24	EM01 Gyratory	Kegworth By-Pass	197	338	525	192	187	-146	131	130	151	94	22	-36
25	EM01 Gyratory	A453 S	129	801	1100	116	299	-685	101	94	126	62	31	-32
26	EM01 Gyratory	Wilders Way L-Turn	7	1	1	2	0	1	7	5	6	5	1	0
27	EM01 Gyratory	Wilders Way Ahead	3	1	3	2	2	1	6	6	6	5	1	-1
28	EM01 Gyratory	A453 S Left turn	63	182	117	74	-65	-108	37	36	35	38	-1	2
29	EM01 Gyratory	Kegworth By-Pass Left Turn	124	282	494	153	202	-140	79	91	106	73	15	-18
30	EM01 Gyratory	A453 N	113	64	73	56	9	-8	36	31	36	34	5	2
31	M1 J24	M1 SB Offlip (M1)	0	13	120	1	107	-12	0	0	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	10	127	0	117	-10	0	0	0	0	0	0

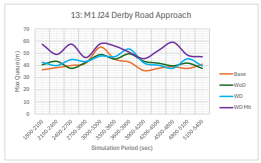
2700
2800
2900
3000

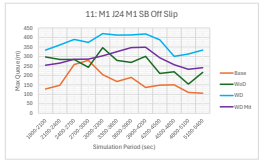
Stage 1/2A 2028 Morning Peak Hour Graphs

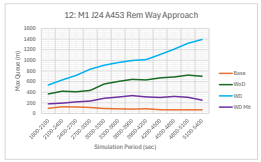


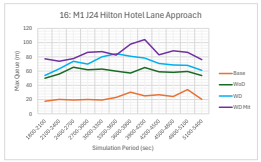


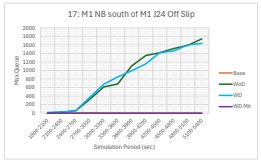


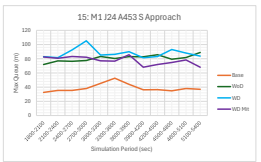


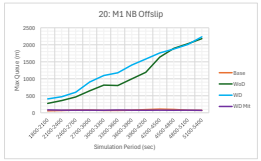


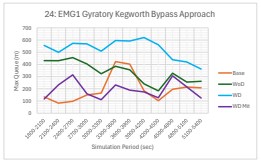


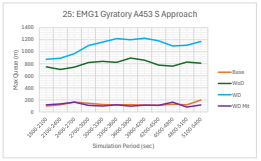


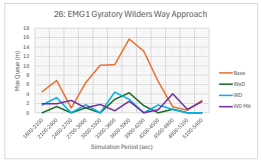


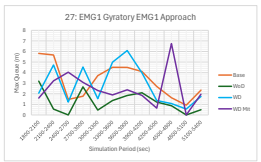


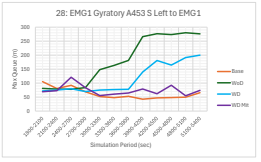


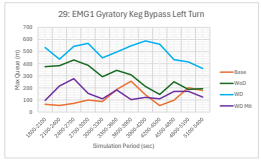


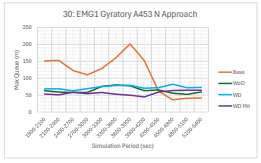


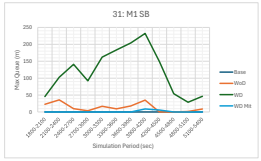


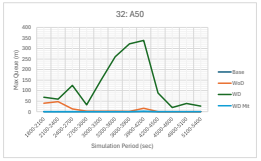






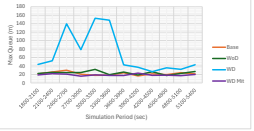




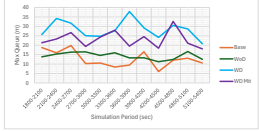


Stage 1/2A 2028 Evening Peak Hour Graphs

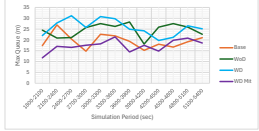
1: Finger Farm A453 W Approach



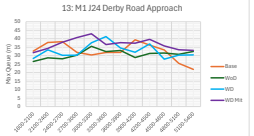
2: Finger Farm A453 N Approach



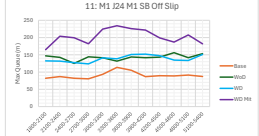
3: Finger Farm M1/A42 Approach



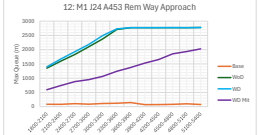
13: M1 J24 Derby Road Approach



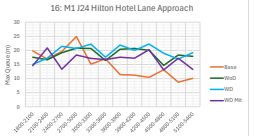
11: M1 J24 M1 SB Off Slip



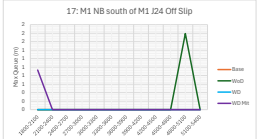
12: M1 J24 A453 Rem Way Approach



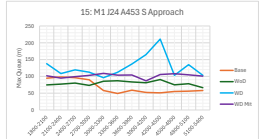
16: M1 J24 Hilton Hotel Lane Approach



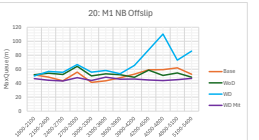
17: M1 NB south of M1 J24 Off Slip



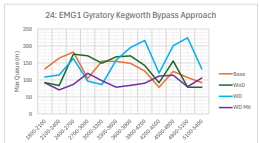
15: M1 J24 A453 S Approach



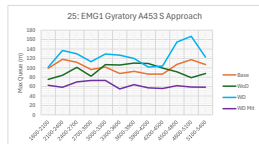
20: M1 NB Offslip



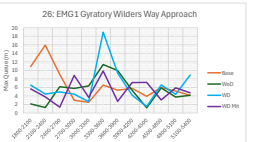
24: EMG1 Gyratory Kegworth Bypass Approach



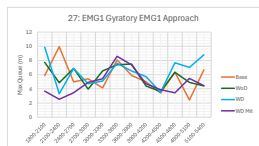
25: EMG1 Gyratory A453 S Approach



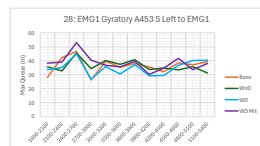
26: EMG1 Gyratory Wilders Way Approach



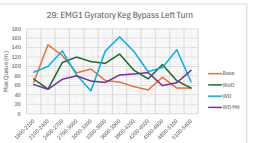
27: EMG1 Gyratory EMG1 Approach



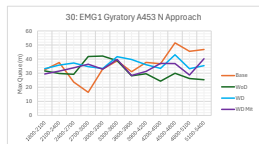
28: EMG1 Gyratory A453 S Left to EMG1



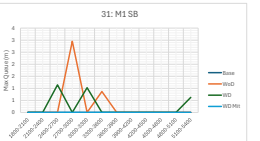
29: EMG1 Gyratory Keg Bypass Left Turn



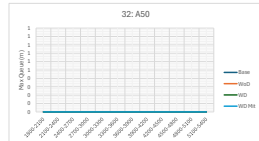
30: EMG1 Gyratory A453 N Approach



31: M1 SB



32: A50

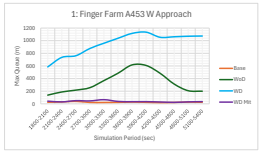


Maximum Queues (m)			2038 AM						2038 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD
1	Finger Farm	A453 W	39	616	1135	65	519	-551	30	24	69	26	45	2
2	Finger Farm	A453 N	48	39	48	47	9	8	20	21	34	31	13	11
3	Finger Farm	M1/A42 S	49	110	274	48	164	-61	27	41	45	26	4	-14
11	M1 J24	M1/A50	279	433	432	435	-1	2	114	226	232	247	5	21
12	M1 J24	Remembrance Way	126	1516	2354	1015	837	-501	145	2776	2779	2540	3	-236
13	M1 J24	Derby Road	55	60	58	95	-1	35	39	50	53	56	3	6
15	M1 J24	A453 S	53	92	90	113	-2	21	98	152	270	127	118	-26
16	M1 J24	Hilton Hotel Lane	34	120	136	272	16	152	25	39	43	37	5	-2
17	M1 J24	M1 NB South of Slip	0	3010	3010	155	0	-2855	0	0	140	0	-140	0
20	M1 J24	M1 NB Off Slip	109	609	610	104	1	-505	62	124	303	56	179	-68
24	EM01 Gyratory	Kegworth By-Pass	423	1138	1680	441	542	-697	182	239	317	217	78	-21
25	EM01 Gyratory	A453 S	197	1104	1241	169	136	-936	118	130	164	85	34	-44
26	EM01 Gyratory	Wilders Way L-Turn	16	3	7	5	4	2	16	10	11	17	1	7
27	EM01 Gyratory	Wilders Way Ahead	6	4	6	4	1	0	10	8	9	10	1	2
28	EM01 Gyratory	A453 S Left turn	105	262	192	83	-69	-178	47	43	45	50	2	7
29	EM01 Gyratory	Kegworth By-Pass Left Turn	255	1138	1679	422	542	-716	146	170	234	194	65	24
30	EM01 Gyratory	A453 N	202	72	81	64	9	-8	52	38	52	44	14	6
31	M1 J24	M1 SB Offlip (M1)	0	1140	1268	957	128	-183	0	0	3	0	3	0
32	M1 J24	M1 SB Offlip (A50)	0	1143	1630	1619	488	476	0	0	2	0	2	0

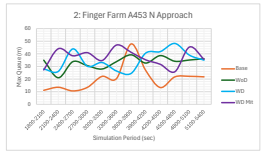
Mean Max Queues (m)			2038 AM						2038 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD	Base	WoD	WD	WD Mit	WD-WoD	Mit - WoD
1	Finger Farm	A453 W	25	340	956	38	616	-302	22	29	47	21	27	1
2	Finger Farm	A453 N	20	33	35	37	2	4	13	15	27	25	13	11
3	Finger Farm	M1/A42 S	40	74	167	38	93	-37	19	28	31	20	3	-8
11	M1 J24	M1/A50	169	431	430	432	-1	1	91	193	200	223	6	29
12	M1 J24	Remembrance Way	90	1106	1553	744	447	-362	95	2505	2557	1589	53	-920
13	M1 J24	Derby Road	41	48	51	71	3	23	33	44	46	50	2	6
15	M1 J24	A453 S	59	77	79	94	2	17	68	109	190	116	81	8
16	M1 J24	Hilton Hotel Lane	23	100	120	211	20	111	15	34	36	33	3	0
17	M1 J24	M1 NB South of Slip	0	2406	2321	29	-85	-2377	0	0	39	0	39	0
20	M1 J24	M1 NB Off Slip	79	608	607	94	0	-514	52	84	162	52	78	-32
24	EM01 Gyratory	Kegworth By-Pass	197	947	1587	344	640	-603	131	161	198	167	37	7
25	EM01 Gyratory	A453 S	129	967	1124	125	157	-842	101	97	120	67	23	-29
26	EM01 Gyratory	Wilders Way L-Turn	7	1	2	2	1	1	7	5	8	8	3	3
27	EM01 Gyratory	Wilders Way Ahead	3	2	2	2	0	0	6	5	7	7	2	1
28	EM01 Gyratory	A453 S Left turn	63	202	149	61	-53	-141	37	35	34	37	-1	2
29	EM01 Gyratory	Kegworth By-Pass Left Turn	124	915	1582	306	667	-609	79	120	143	138	23	17
30	EM01 Gyratory	A453 N	113	64	69	56	5	-8	36	31	41	37	10	6
31	M1 J24	M1 SB Offlip (M1)	0	851	1123	571	272	-280	0	0	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	931	1349	1001	418	70	0	0	0	0	0	0

Stage 1/2A 2038 Morning Peak Hour Graphs

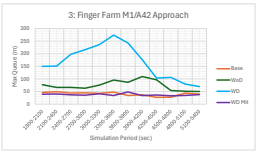
1: Finger Farm A453 W Approach



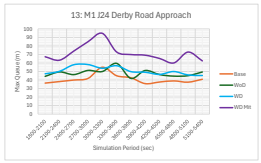
2: Finger Farm A453 N Approach



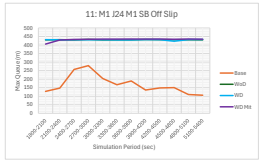
3: Finger Farm M1/A42 Approach



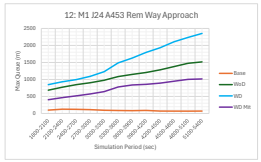
13: M1 J24 Derby Road Approach



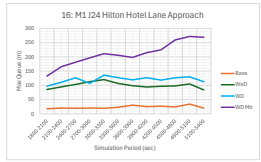
11: M1 J24 M1 SB Off Slip



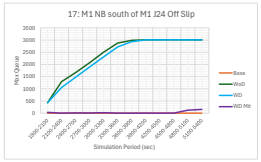
12: M1 J24 A453 Rem Way Approach



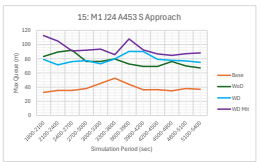
16: M1 J24 Hilton Hotel Lane Approach



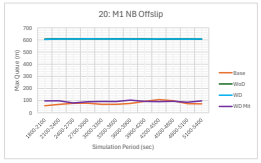
17: M1 NB south of M1 J24 Off Slip



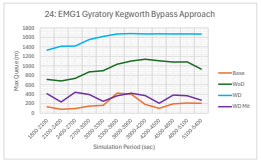
15: M1 J24 A453 S Approach



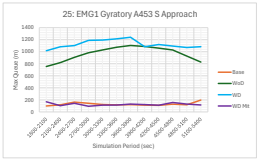
20: M1 NB Offslip



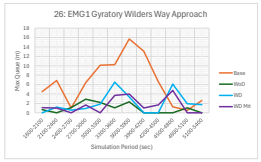
24: EMG1 Gyratory Kegworth Bypass Approach



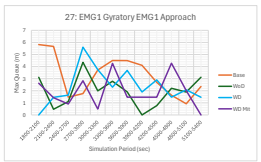
25: EMG1 Gyratory A453 S Approach



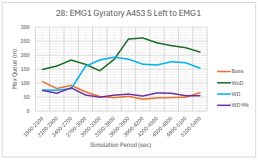
26: EMG1 Gyratory Wilders Way Approach



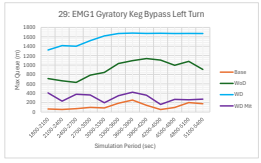
27: EMG1 Gyratory EMG1 Approach



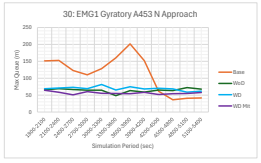
28: EMG1 Gyratory A453 S Left to EMG1



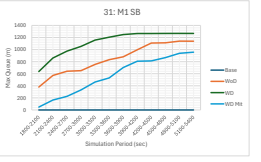
29: EMG1 Gyratory Keg Bypass Left Turn



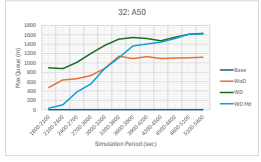
30: EMG1 Gyratory A453 N Approach



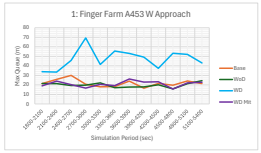
31: M1 SB

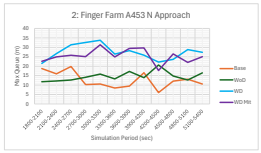


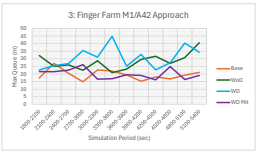
32: A50

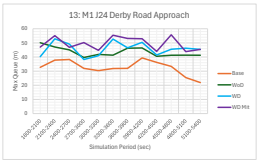


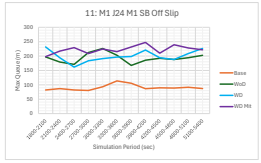
Stage 1/2A 2038 Evening Peak Hour Graphs

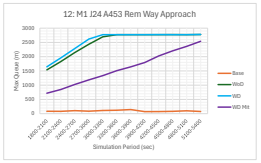


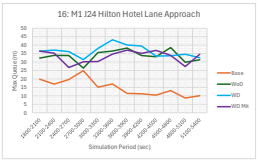


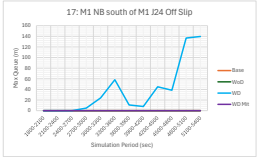


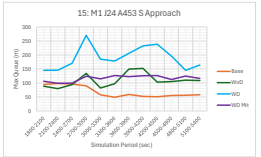


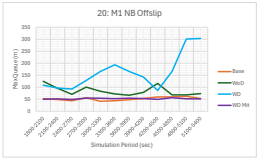


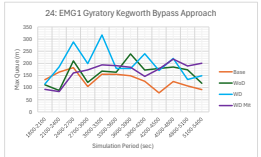


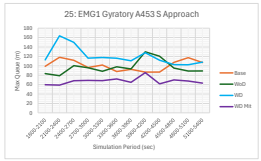


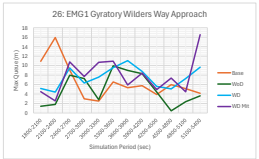


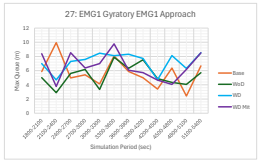


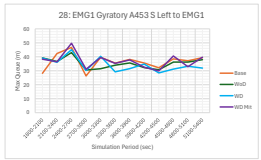


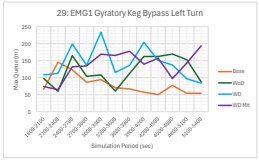


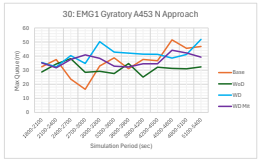


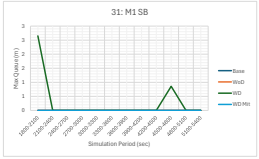


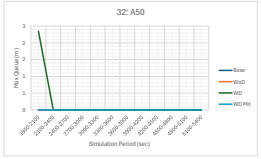












Forecast Year 2038 Stage A

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	213	32.2	21597	312850	444
	WD	259	28.8	21900	605760	539
	WD Mit	135	38.6	23317	3503	1
	WD - WD	**45**	**-3.4**	**303**	**292910**	**95**
	Mit - WoD	**-78**	**6.4**	**1720**	**-309347**	**-443**
PM	2024 Base	42	51	18534	2354	1
	WoD	128	40.3	21810	627581	498
	WD	152	37.2	22699	814752	590
	WD Mit	98	43.4	22930	296406	146
	WD - WD	**24**	**-3.1**	**889**	**187170**	**92**
	Mit - WoD	**-30**	**3.1**	**1120**	**-331176**	**-352**

												Latent Demand (Veh)							
2038	Scenario	Veh Arrived	Latent Demand	A50	M1 N	Remembrance Way	Hilton Hotel Lane	M1 S	A42 S	A453 W	Finger Farm Services	Kegworth Bypass	A50	M1 N	Remembrance Way	Hilton Hotel Lane	M1 S	A42 S	A453 W	Finger Farm Services	Kegworth Bypass
AM	WoD	21597	444						100%				0	0	0	0	0	444	0	0	0
	WD	21900	539						67%	23%		11%	0	0	0	0	0	361	124	0	59
	WD Mit	23317	1					100%					0	0	0	0	1	0	0	0	0
PM	WoD	21810	498			83%		17%					0	0	413	0	85	0	0	0	0
	WD	22699	590			73%		27%					0	0	431	0	159	0	0	0	0
	WD Mit	22930	146					100%					0	0	0	0	146	0	0	0	0

Forecast Year 2028 Stage A

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	118	40.5	20643	54841	36
	WD	154	36.6	21217	211144	142
	WD Mit	71	46.0	21812	2315	1
	WD - WD	**36**	**-3.9**	**574**	**156303**	**106**
	Mit - WoD	**-47**	**5.5**	**1169**	**-52526**	**-35**
PM	2024 Base	42	51	18534	2354	1
	WoD	114	41.6	20538	258841	303
	WD	135	38.6	21437	297888	308
	WD Mit	80	45.5	21607	7653	3
	WD - WD	**21**	**-3.1**	**899**	**39047**	**5**
	Mit - WoD	**-34**	**3.9**	**1069**	**-251189**	**-300**

												Latent Demand (Veh)							
2028	Scenario	Veh Arrived	Latent Demand	A50	M1 N	Remembrance Way	Hilton Hotel Lane	M1 S	A42 S	A453 W	Finger Farm Services	Kegworth Bypass	A50	M1 N	Remembrance Way	Hilton Hotel Lane	M1 S	A42 S	A453 W	Finger Farm Services	Kegworth Bypass
AM	WoD	20643	36		4%					96%			0	1	0	0	0	0	34	0	0
	WD	21217	142							87%	13%		0	0	0	0	0	0	123	18	0
	WD Mit	21812	1		100%								0	1	0	0	0	0	0	0	0
PM	WoD	20538	303			100%							0	0	303	0	0	0	0	0	0
	WD	21437	308			100%							0	0	308	0	0	0	0	0	0
	WD Mit	21607	3						100%				0	0	0	0	0	3	0	0	0

APPENDIX 9: Geometric Design Review (PRTM 2023) Report

GEOMETRIC DESIGN REVIEW (PRTM 2023)
EAST MIDLANDS GATEWAY 2

Project	**East Midlands Gateway 2 (EMG2)**		
Document Number	EMG2-BWB-GEN-XX-RP-CH-0021	**BWB Ref**	220500
Author	[redacted]	**Status**	S2
Checked	[redacted]	**Revision**	P01
Approved	Paul Wilson	**Date**	27.02.2026

1 INTRODUCTION

1.1 DMRB standard CD 122 "Geometric design of grade separated junctions" uses traffic flow data to inform geometric requirements for the following aspects:

- Merge and diverge layouts;
- Cross-sections for connector roads (i.e. slip roads and interchange links); and
- Number of lanes required in a weaving section.

1.2 The above has been applied to the following aspects of the EMG2 highway works (heading south to north):

- M1 J23A northbound merge layout (from the A42);
- M1 J23A to J24/24A number of lanes (weaving section);
- M1 J24A northbound diverge layout (proposed interchange link to A50);
- M1 J24 northbound diverge layout (slip road to J24 roundabout);
- M1 northbound to A50 westbound interchange link cross-section;
- A50 westbound interchange link merge layout (interchange link from M1 northbound); and
- A50 westbound merge layout (with interchange link from M1 southbound).

1.3 The above aspects of geometric design for the EMG2 highway works were assessed using the traffic data from the PRTM2019 model including the subsequent furnessing methodology and VISSIM modelling agreed with National Highways.

1.4 As the PRTM2023 model has now been developed, the purpose of this note is to review whether this revised data set affects the geometric design proposals for these aspects of the highway works.

2 REVIEW OF DESIGN USING PRTM2023

Merges and diverges

2.1 The table below provides an assessment of the merge and diverge requirements based on CD 122 Figures 3.12a, 3.12b and 3.26b:

Merge / Diverge	Existing layout type	CD 122 requirement (PRTM 2019)	Proposed layout in EMG2 highway works	CD 122 requirement (PRTM 2023)	Would PRTM 2023 data change design proposal?
M1 J23A northbound merge	E (lane gain with ghost island)*	E	E (existing layout geometry to be amended to be compliant with CD 122)	E	No
M1 J24A northbound diverge	n/a	D (lane drop with ghost island)	A option 2 (auxiliary lane) (Subject to departure from standard)	D	No, the need for the same departure still applies
M1 J24 northbound diverge	B (double diverge)**	A	A option 1 (taper diverge)	A	No
A50 westbound interchange link merge (from M1 NB link)	n/a	E (lane gain with ghost island)	Bespoke layout with nearside lane gain followed by offside lane reduction (Departure from standard has been approved)	E	No, the need for the same departure still applies
A50 westbound merge (from M1 SB link	E (lane gain without ghost island)***	E	E (as existing, no works are proposed)	E	No

* The existing merge is non-standard as the geometry of the nose, taper and ghost island exceed the requirements of CD 122 table 3.21

** The existing diverge is non-standard with it having an auxiliary lane at the first exit

*** The existing merge is non-standard as it does not have a ghost island

2.2 As can be seen from the above, the use of the PRTM2023 data does not affect the requirements for the merge and diverge layouts.

M1 J23A to J24/24A weaving section

2.3 CD 122 equation 4.7 is used to determine the number of lanes required within the weaving section with the proceeding sections of CD 122 setting out how to deal with the fractional part. Using the PRTM2019 model it was determined that five lanes are required within the weaving section for the PM peak hour (which is the worst case) and, as this is not proposed to be implemented as part of the EMG2 highway works, a departure from standard has been approved to retain the existing four lanes.

2.4 Based on the PRTM2023 modelling the merging flow from the A42 at 23A is over 200 vehicles lower than in the PRTM2019 modelling. The merging flow from the A42 is the critical flow in the weaving calculation as, with this being less than the diverge flow to M1 J24 and 24A, it is the 'minor weaving flow' in CD 122 equation 4.7. It is this flow that is critical to determining the number of lanes as the minor weaving flow has an impact on the traffic flow of up to three times its numerical value.[1]

2.5 Whilst the use of CD 122 equation 4.7 with the PRTM2023 modelling shows that five lanes are still be required, due to the minor weaving flow being reduced, the fractional part of the equation is less than it was previously. Therefore, the assessment of the number of lanes and subsequent approval of the departure from standard using the PRTM2019 model is robust and should remain unchanged.

[1] Taken from superseded standard TD22/06 para 2.66 which, although superseded, has the same weaving equation as CD 122

M1 northbound to A50 westbound interchange link cross-section

2.6 The table below shows the predicted traffic flows for the interchange link. In the PRTM2019 modelling due to the unusual layout[2] of the downstream merge at the A50 westbound and interchange link from the M1 southbound, two different options were modelled. A comparison of the worst case flows from this assessment (which is the 2A unconstrained model) is presented below.

Peak hour	PRTM2019 2A unconstrained	PRTM2023 2A unconstrained	Difference
AM	1938	1782	-156
PM	1891	1813	-78

2.7 In all cases, using CD 122 table 5.17b, a two-lane interchange link to cross-section IL2A is required. However, the proposed cross-section is a single lane interchange link to IL1A. This has been approved as a departure from standard.

2.8 As can be seen from the above, the PRTM2023 modelling shows a reduction in the forecast traffic using the proposed interchange link. The assessment of the number of lanes on the link and subsequent approval of the departure from standard using the PRTM2019 model is therefore robust and should also remain unchanged.

3 CONCLUSION

3.1 The geometric design elements of the highway works that are determined using relevant parts of CD 122 have been reviewed using the PRTM2023 model data. In all cases the use of this model does not affect the proposed design of the highway works.

[2] It is unusual as the predominant flow is from the link from M1 J24 roundabout, being over three times higher than the flow from the interchange link from the M1 southbound, yet the link with the higher flow merges onto the link with the lower flow

APPENDIX 10: 2019 v 2023 PRTM VISSIM Flow Comparison

2019 PRTM Based 2038 Model

2038 WoD

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	752	393	17	27	598	346	90	72	22	55	0	0	0	2372
2	272	0	321	190	12	20	3155	1698	46	38	13	29	0	0	0	5794
3	228	253	0	74	30	19	463	228	124	95	27	70	0	0	0	1611
4	124	122	140	0	5	10	72	32	74	53	15	44	0	0	0	691
5	37	21	265	36	0	0	74	34	17	14	0	14	0	0	0	512
6	304	72	68	7	2	0	179	62	0	402	0	0	0	0	0	1096
7	759	2398	657	78	32	225	0	0	209	125	72	116	0	0	0	4671
8	718	1006	356	90	29	82	0	0	44	38	21	33	0	0	0	2417
9	274	84	89	10	4	0	112	30	0	0	8	32	0	0	0	643
10	49	8	7	0	0	6	45	13	0	0	0	0	0	0	0	128
11	45	11	9	0	0	0	73	15	16	0	0	9	0	0	0	178
12	38	10	10	0	0	0	13	3	14	0	0	0	0	0	0	88
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	2848	3985	2674	878	131	389	4784	2461	634	837	178	402	0	0	0	20201

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	120	34	0	0	49	29	6	26	3	2	0	0	0	269
2	62	0	15	7	0	0	369	256	0	3	0	0	0	0	0	712
3	63	37	0	3	0	0	93	46	5	21	3	1	0	0	0	272
4	28	0	2	0	0	0	7	4	0	0	0	0	0	0	0	41
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	3	3	4	0	0	0	5	2	0	8	0	0	0	0	0	25
7	73	396	157	4	0	0	0	0	21	68	30	9	0	0	0	758
8	66	262	147	2	0	0	0	0	3	15	6	1	0	0	0	502
9	5	6	8	0	0	0	32	8	0	0	1	0	0	0	0	60
10	10	13	19	0	0	0	59	17	0	0	0	0	0	0	0	118
11	9	10	15	0	0	0	29	5	2	0	0	1	0	0	0	71
12	0	2	2	0	0	0	10	2	0	0	0	0	0	0	0	16
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	319	729	489	50	0	0	653	369	37	141	43	14	0	0	0	2844

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	886	514	61	32	96	37	21	33	13	2	0	0	0	1695
2	197	0	118	67	0	2	2853	1774	0	4	1	0	0	0	0	5016
3	255	251	0	60	49	53	722	467	54	89	26	10	0	0	0	2036
4	147	143	82	0	15	19	82	43	32	50	9	4	0	0	0	626
5	44	89	105	51	0	0	39	29	0	9	0	0	0	0	0	366
6	170	234	81	18	14	0	146	50	32	395	7	5	0	0	0	1152
7	1475	3651	448	74	75	0	0	0	342	0	98	74	0	0	0	6237
8	0	1630	424	61	10	0	0	0	0	0	0	0	0	0	0	2125
9	146	63	21	3	0	161	279	106	0	48	49	44	0	0	0	920
10	54	82	24	5	0	21	71	26	14	0	4	3	0	0	0	304
11	3	8	2	1	0	39	96	30	39	6	0	6	0	0	0	230
12	13	23	8	1	0	132	95	39	33	18	13	0	0	0	0	375
13	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	2504	6174	2199	855	224	459	4483	2601	567	652	220	148	0	0	0	21086

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	34	15	0	1	15	16	4	18	4	3	0	0	0	110
2	2	0	23	13	0	1	328	211	0	10	2	0	0	0	0	590
3	28	16	0	0	0	0	78	47	2	19	3	0	0	0	0	193
4	14	0	2	0	0	0	3	0	0	0	0	0	0	0	0	19
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	4	0	0	0	0	3	1	0	17	0	0	0	0	0	25
7	112	284	50	0	0	1	0	0	8	45	19	5	0	0	0	524
8	0	145	138	0	0	4	0	0	0	0	0	0	0	0	0	287
9	0	4	0	0	0	0	3	2	0	9	2	0	0	0	0	20
10	0	28	7	0	1	1	26	11	10	0	24	5	0	0	0	113
11	0	5	0	0	0	0	8	3	1	9	0	0	0	0	0	26
12	0	4	0	0	0	0	4	3	1	8	1	0	0	0	0	21
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	156	490	254	28	1	8	468	294	26	135	55	13	0	0	0	1928

2023 PRTM Based 2038 Model

2038 WoD

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	839	281	12	11	522	289	72	68	20	53	0	0	0	2167
2	272	0	522	196	12	12	3245	1718	55	54	16	40	0	0	0	6142
3	277	325	0	65	28	9	504	236	124	112	30	83	0	0	0	1793
4	99	104	128	0	3	3	52	22	48	40	11	35	0	0	0	545
5	19	12	153	13	0	0	34	15	7	6	0	7	0	0	0	266
6	335	85	87	5	2	0	177	58	0	428	0	0	0	0	0	1177
7	891	2107	879	66	29	102	0	0	202	141	76	134	0	0	0	4627
8	668	1195	380	60	21	29	0	0	33	34	17	30	0	0	0	2467
9	324	107	120	9	3	0	117	31	0	0	9	37	0	0	0	757
10	56	10	8	0	0	3	45	14	0	0	0	0	0	0	0	136
11	48	14	11	0	0	0	70	14	14	0	0	9	0	0	0	180
12	59	17	18	0	0	0	18	3	18	0	0	0	0	0	0	133
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	3048	3976	3145	695	110	169	4784	2400	573	883	179	428	0	0	0	20390

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	76	31	0	6	68	30	8	17	3	2	0	0	0	241
2	62	0	5	3	0	0	432	162	0	1	0	0	0	0	0	665
3	33	22	0	2	0	2	73	30	4	9	2	1	0	0	0	178
4	17	0	1	0	0	0	6	2	0	0	0	0	0	0	0	26
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	6	5	7	0	0	0	13	3	0	12	0	0	0	0	0	46
7	80	378	129	4	0	6	0	0	29	50	32	9	0	0	0	717
8	50	183	81	2	0	0	0	0	3	9	5	1	0	0	0	334
9	5	6	7	0	0	0	41	9	0	0	1	0	0	0	0	69
10	4	5	6	0	0	1	30	7	0	0	0	0	0	0	0	53
11	8	9	10	0	0	0	36	5	3	0	0	1	0	0	0	72
12	0	2	2	0	0	0	9	2	0	0	0	0	0	0	0	15
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	265	610	324	42	0	15	708	250	47	98	43	14	0	0	0	2416

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	995	499	23	38	116	34	35	50	18	4	0	0	0	1812
2	197	0	210	101	0	4	3028	1803	0	9	1	0	0	0	0	5353
3	378	389	0	57	20	61	840	414	90	124	38	19	0	0	0	2430
4	132	140	55	0	4	12	59	23	33	45	8	5	0	0	0	516
5	24	53	45	19	0	0	17	10	0	4	0	0	0	0	0	172
6	176	258	63	11	4	0	120	31	37	395	7	6	0	0	0	1108
7	1723	3229	390	54	24	0	0	0	451	0	110	106	0	0	0	6087
8	0	1590	442	55	3	0	0	0	0	0	0	0	0	0	0	2090
9	63	28	7	1	0	51	92	27	0	20	21	22	0	0	0	332
10	62	103	22	4	0	19	66	18	20	0	4	5	0	0	0	323
11	4	9	2	1	0	37	90	22	51	7	0	9	0	0	0	232
12	15	30	7	1	0	132	97	30	48	23	17	0	0	0	0	400
13	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	2774	5829	2238	803	78	354	4529	2412	765	677	224	176	0	0	0	20859

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	12	36	0	1	12	11	4	5	3	2	0	0	0	86
2	2	0	10	32	0	2	373	132	0	3	2	0	0	0	0	556
3	7	10	0	0	0	0	61	32	2	5	2	0	0	0	0	119
4	22	0	4	0	0	0	12	0	0	0	0	0	0	0	0	38
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	7	0	0	0	0	5	1	0	17	0	0	0	0	0	30
7	68	301	39	0	0	1	0	0	17	28	31	8	0	0	0	493
8	0	112	123	0	0	4	0	0	0	0	0	0	0	0	0	239
9	0	4	0	0	0	0	3	2	0	4	2	0	0	0	0	15
10	0	13	2	0	1	1	14	6	8	0	13	2	0	0	0	60
11	0	5	0	0	0	0	10	4	1	4	0	0	0	0	0	24
12	0	4	0	0	0	1	5	3	1	4	2	0	0	0	0	20
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	99	456	190	68	1	10	495	191	33	70	55	12	0	0	0	1680

2023 Based PRTM Minus 2019 Based PRTM

2038 WoD

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	87	-112	-5	-16	-76	-57	-18	-4	-2	-2	0	0	0	-205
2	0	0	201	6	0	-8	90	20	9	16	3	11	0	0	0	348
3	49	72	0	-9	-2	-10	41	8	0	17	3	13	0	0	0	182
4	-25	-18	-12	0	-2	-7	-20	-10	-26	-13	-4	-9	0	0	0	-146
5	-18	-9	-112	-23	0	0	-40	-19	-10	-8	0	-7	0	0	0	-246
6	31	13	19	-2	0	0	-2	-4	0	26	0	0	0	0	0	81
7	132	-291	222	-12	-3	-123	0	0	-7	16	4	18	0	0	0	-44
8	-50	189	24	-30	-8	-53	0	0	-11	-4	-4	-3	0	0	0	50
9	50	23	31	-1	-1	0	5	1	0	0	1	5	0	0	0	114
10	7	2	1	0	0	-3	0	1	0	0	0	0	0	0	0	8
11	3	3	2	0	0	0	-3	-1	-2	0	0	0	0	0	0	2
12	21	7	8	0	0	0	5	0	4	0	0	0	0	0	0	45
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	200	-9	471	-183	-21	-220	0	-61	-61	46	1	26	0	0	0	189

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	-44	-3	0	6	19	1	2	-9	0	0	0	0	0	-28
2	0	0	-10	-4	0	0	63	-94	0	-2	0	0	0	0	0	-47
3	-30	-15	0	-1	0	2	-20	-16	-1	-12	-1	0	0	0	0	-94
4	-11	0	-1	0	0	0	-1	-2	0	0	0	0	0	0	0	-15
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	3	2	3	0	0	0	8	1	0	4	0	0	0	0	0	21
7	7	-18	-28	0	0	6	0	0	8	-18	2	0	0	0	0	-41
8	-16	-79	-66	0	0	0	0	0	0	-6	-1	0	0	0	0	-168
9	0	0	-1	0	0	0	9	1	0	0	0	0	0	0	0	9
10	-6	-8	-13	0	0	1	-29	-10	0	0	0	0	0	0	0	-65
11	-1	-1	-5	0	0	0	7	0	1	0	0	0	0	0	0	1
12	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	-1
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	-54	-119	-165	-8	0	15	55	-119	10	-43	0	0	0	0	0	-428

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	109	-15	-38	6	20	-3	14	17	5	2	0	0	0	117
2	0	0	92	34	0	2	175	29	0	5	0	0	0	0	0	337
3	123	138	0	-3	-29	8	118	-53	36	35	12	9	0	0	0	394
4	-15	-3	-27	0	-11	-7	-23	-20	1	-5	-1	1	0	0	0	-110
5	-20	-36	-60	-32	0	0	-22	-19	0	-5	0	0	0	0	0	-194
6	6	24	-18	-7	-10	0	-26	-19	5	0	0	1	0	0	0	-44
7	248	-422	-58	-20	-51	0	0	0	109	0	12	32	0	0	0	-150
8	0	-40	18	-6	-7	0	0	0	0	0	0	0	0	0	0	-35
9	-83	-35	-14	-2	0	-110	-187	-79	0	-28	-28	-22	0	0	0	-588
10	8	21	-2	-1	0	-2	-5	-8	6	0	0	2	0	0	0	19
11	1	1	0	0	0	-2	-6	-8	12	1	0	3	0	0	0	2
12	2	7	-1	0	0	0	2	-9	15	5	4	0	0	0	0	25
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	270	-345	39	-52	-146	-105	46	-189	198	25	4	28	0	0	0	-227

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	T
1	0	0	-22	21	0	0	-3	-5	0	-13	-1	-1	0	0	0	-24
2	0	0	-13	19	0	1	45	-79	0	-7	0	0	0	0	0	-34
3	-21	-6	0	0	0	0	-17	-15	0	-14	-1	0	0	0	0	-74
4	8	0	2	0	0	0	9	0	0	0	0	0	0	0	0	19
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	5
7	-44	17	-11	0	0	0	0	0	9	-17	12	3	0	0	0	-31
8	0	-33	-15	0	0	0	0	0	0	0	0	0	0	0	0	-48
9	0	0	0	0	0	0	0	0	0	-5	0	0	0	0	0	-5
10	0	-15	-5	0	0	0	-12	-5	-2	0	-11	-3	0	0	0	-53
11	0	0	0	0	0	0	2	1	0	-5	0	0	0	0	0	-2
12	0	0	0	0	0	1	1	0	0	-4	1	0	0	0	0	-1
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	-57	-34	-64	40	0	2	27	-103	7	-65	0	-1	0	0	0	-248

Zone No	Zone Name
1	A50
2	M1 North
3	A453 Remembrance Way
4	Derby Road
5	Hilton Lane
6	Keg Worth Bypass
7	M1 South
8	A42
9	A453
10	Wilders Way
11	Services
12	Hunter Road
13	M1 J24 Service Road
14	Hunter Road R'bout S Arm
15	Site Access

	Lights + Heavies
1	-233
2	301
3	88
4	-161
5	-246
6	102
7	-85
8	-118
9	123
10	-57
11	3
12	44
13	0
14	0
15	0
Total	-239

	Lights + Heavies
1	93
2	303
3	320
4	-91
5	-194
6	-39
7	-181
8	-83
9	-593
10	-34
11	0
12	24
13	0
14	0
15	0
Total	-475

APPENDIX 11: 2023 v 2019 VISSIM Modelling Outputs Comparison

2019 PRTM Based 2028 Model

		AM						PM					
IDs	Route	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD
A-I	Route 1	353	358	408	434	50	76	331	342	358	352	16	10
B-I	Route 2	339	356	363	365	7	9	317	324	338	324	14	0
C-J	Route 3	308	312	317	311	6	0	317	438	435	322	-3	-116
H-J	Route 4	306	304	335	295	31	-9	293	288	324	286	36	-2
B-J	Route 5	323	338	344	349	6	11	310	315	324	315	9	0
B-D	Route 6	272	293	323	466	30	173	292	259	266	301	6	42
C-K	Route 7	400	396	378	349	-18	-46	381	498	477	346	-21	-152
B-C	Route 8	278	302	338	475	36	173	270	262	280	302	18	40
H-I	Route 9	316	315	352	306	37	-9	297	294	350	294	57	0
I-H	Route 10	355	332	382	321	50	-11	315	336	386	343	51	8
D-B	Route 11	349	379	389	356	10	-23	341	372	405	369	33	-3
I-A	Route 12	354	665	686	298	22	-367	348	439	465	333	26	-106
I-B	Route 13	337	436	459	361	22	-75	349	396	413	418	16	22
J-F-C	Route 14	423	489	546	432	57	-57	402	395	456	389	61	-7
J-H	Route 15	333	309	368	292	59	-17	282	287	338	286	51	-1
K-C	Route 16	397	468	522	411	54	-57	376	370	470	377	99	7
J-F-A	Route 17	354	377	435	373	58	-3	337	333	399	343	67	11
J-E-C	Route 18	357	694	769	393	74	-301	347	449	471	365	22	-84
I-E-C	Route 19	375	670	702	415	32	-255	380	500	522	438	21	-62
I-E-D	Route 20	377	670	700	440	30	-230	408	502	514	458	11	-44

2023 PRTM Based 2028 Model

		AM						PM					
IDs	Route	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD
A-I	Route 1	353	352	359	352	8	1	331	343	362	342	20	-1
B-I	Route 2	339	347	353	346	6	-1	317	320	334	323	13	3
C-J	Route 3	308	412	573	379	160	-33	317	840	843	548	3	-292
H-J	Route 4	306	337	371	301	34	-37	293	289	318	280	29	-9
B-J	Route 5	323	330	335	328	5	-1	310	312	320	313	8	2
B-D	Route 6	272	286	307	311	22	26	292	259	265	274	6	15
C-K	Route 7	400	498	633	412	135	-86	381	901	885	571	-15	-329
B-C	Route 8	278	298	328	325	30	26	270	262	278	276	16	14
H-I	Route 9	316	349	388	313	39	-36	297	295	345	288	50	-7
I-H	Route 10	355	444	530	322	86	-122	315	322	379	331	57	9
D-B	Route 11	349	372	374	355	2	-17	341	351	381	352	30	1
I-A	Route 12	354	601	600	323	-1	-278	348	375	416	324	41	-51
I-B	Route 13	337	387	385	364	-2	-23	349	361	384	377	23	16
J-F-C	Route 14	423	600	694	436	94	-164	402	394	452	386	58	-8
J-H	Route 15	333	417	501	294	84	-123	282	282	337	285	55	3
K-C	Route 16	397	720	975	417	254	-304	376	368	461	368	92	-1
J-F-A	Route 17	354	497	585	381	88	-116	337	337	404	343	67	7
J-E-C	Route 18	357	564	577	387	13	-177	347	347	373	349	25	2
I-E-C	Route 19	375	585	600	411	15	-174	380	388	415	402	28	14
I-E-D	Route 20	377	578	583	414	5	-164	408	392	409	422	18	30

2023 Based PRTM Minus 2019 Based PRTM

		AM			PM		
IDs	Route	WoD	WD	WD Mit	WoD	WD	WD Mit
A-I	Route 1	-6	-49	-82	1	5	-10
B-I	Route 2	-9	-10	-19	-4	-4	-1
C-J	Route 3	101	255	67	402	408	226
H-J	Route 4	33	36	6	1	-6	-7
B-J	Route 5	-9	-9	-21	-4	-4	-2
B-D	Route 6	-7	-16	-155	-1	-1	-27
C-K	Route 7	103	255	63	403	408	225
B-C	Route 8	-4	-9	-150	0	-2	-26
H-I	Route 9	34	36	7	1	-6	-6
I-H	Route 10	112	148	1	-14	-8	-13
D-B	Route 11	-7	-15	-1	-21	-25	-17
I-A	Route 12	-64	-87	25	-64	-49	-9
I-B	Route 13	-50	-74	2	-35	-29	-41
J-F-C	Route 14	111	149	4	-1	-4	-3
J-H	Route 15	108	133	2	-5	-1	-2
K-C	Route 16	252	452	5	-2	-9	-9
J-F-A	Route 17	120	150	8	4	5	0
J-E-C	Route 18	-130	-191	-6	-101	-99	-16
I-E-C	Route 19	-85	-103	-3	-113	-106	-36
I-E-D	Route 20	-91	-117	-26	-111	-105	-36

2019 PRTM Based 2028 Model

Maximum Queues (m)			2028 AM						2028 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD
1	Finger Farm	A453 W	39	75	198	62	123	-13	30	35	67	31	32	-4
2	Finger Farm	A453 N	48	40	47	45	8	5	20	23	39	34	16	11
3	Finger Farm	M1/A42 S	49	84	200	74	116	-11	27	26	29	20	3	-6
11	M1 J24	M1/A50	279	400	431	435	31	35	114	145	150	352	5	207
12	M1 J24	Remembrance Way	126	69	76	58	7	-10	145	812	785	230	-26	-582
13	M1 J24	Deby Road	55	84	105	82	21	-1	39	55	55	66	0	11
15	M1 J24	A453 S	53	109	135	84	26	-25	98	126	177	128	51	2
16	M1 J24	Hilton Hotel Lane	34	800	1037	464	237	-336	25	52	62	32	9	-21
17	M1 J24	M1 NB South of Slip	0	2409	3010	1	601	-2408	0	482	274	0	-208	-482
20	M1 J24	M1 NB Off Slip	109	1691	1090	72	-602	-1620	62	582	587	65	5	-517
24	EMG1 Gyratory	Kegworth By-Pass	423	212	359	289	148	77	182	242	272	161	30	-81
25	EMG1 Gyratory	A453 S	197	386	608	110	222	-276	118	90	152	70	62	-20
26	EMG1 Gyratory	Wilders Way L-Turn	16	10	16	9	7	-1	16	17	16	18	-1	1
27	EMG1 Gyratory	Wilders Way Ahead	6	8	12	8	4	0	10	11	12	12	2	1
28	EMG1 Gyratory	A453 S Left turn	105	137	187	99	50	-38	47	50	58	51	5	1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	171	321	289	150	118	146	162	181	125	19	-37
30	EMG1 Gyratory	A453 N	202	72	84	74	12	1	52	53	60	46	7	-6
31	M1 J24	M1 SB Offlip (M1)	0	38	229	1160	191	1123	0	0	0	0	0	0
32	M1 J24	M1 SB Offlip (A50)	0	189	1053	1722	864	1533	0	0	0	4	0	4

2023 Based PRTM Minus 2019 Based PRTM

Maximum Queues (m)			2028 AM			2028 PM		
	Junction	Approach	WoD	WD	WD Mit	WoD	WD	WD Mit
1	Finger Farm	A453 W	475	906	-26	-3	86	-8
2	Finger Farm	A453 N	-5	-5	2	-6	-1	-2
3	Finger Farm	M1/A42 S	103	163	-33	2	2	1
11	M1 J24	M1/A50	-54	-10	-86	11	2	-118
12	M1 J24	Remembrance Way	653	1317	278	1967	1991	1799
13	M1 J24	Deby Road	-34	-52	-23	-19	-13	-23
15	M1 J24	A453 S	-20	-30	2	-36	34	-19
16	M1 J24	Hilton Hotel Lane	-734	-953	-359	-32	-39	-11
17	M1 J24	M1 NB South of Slip	-666	-1375	2	-480	-274	1
20	M1 J24	M1 NB Off Slip	489	1145	14	-518	-477	-17
24	EMG1 Gyratory	Kegworth By-Pass	244	261	26	-66	-48	-42
25	EMG1 Gyratory	A453 S	510	617	53	20	15	3
26	EMG1 Gyratory	Wilders Way L-Turn	-6	-12	-5	-6	3	-8
27	EMG1 Gyratory	Wilders Way Ahead	-5	-6	-1	-3	-2	-3
28	EMG1 Gyratory	A453 S Left turn	143	13	22	-5	-11	2
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	260	267	-12	-36	-19	-33
30	EMG1 Gyratory	A453 N	8	-2	-9	-10	-17	-6
31	M1 J24	M1 SB Offlip (M1)	-2	3	-1151	3	1	0
32	M1 J24	M1 SB Offlip (A50)	-141	-715	-1720	0	0	-4

2023 PRTM Based 2028 Model

Maximum Queues (m)			2028 AM						2028 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD
1	Finger Farm	A453 W	39	550	1104	36	555	-514	30	32	153	23	121	-9
2	Finger Farm	A453 N	48	34	42	46	8	12	20	17	38	33	21	16
3	Finger Farm	M1/A42 S	49	187	363	41	176	-146	27	28	31	21	3	-7
11	M1 J24	M1/A50	279	346	420	348	74	2	114	156	152	234	-4	78
12	M1 J24	Remembrance Way	126	722	1392	336	671	-386	145	2779	2776	2029	-2	-750
13	M1 J24	Deby Road	55	50	53	59	4	9	39	36	41	43	6	7
15	M1 J24	A453 S	53	89	105	86	16	-3	98	91	211	109	120	18
16	M1 J24	Hilton Hotel Lane	34	65	84	104	19	39	25	21	22	21	1	0
17	M1 J24	M1 NB South of Slip	0	1743	1635	3	-107	-1740	0	2	0	1	-2	-1
20	M1 J24	M1 NB Off Slip	109	2181	2234	86	53	-2095	62	64	110	49	46	-16
24	EMG1 Gyratory	Kegworth By-Pass	423	456	621	315	165	-141	182	176	224	119	48	-56
25	EMG1 Gyratory	A453 S	197	895	1224	163	329	-733	118	110	167	73	57	-37
26	EMG1 Gyratory	Wilders Way L-Turn	16	4	4	4	0	0	16	11	19	10	8	-2
27	EMG1 Gyratory	Wilders Way Ahead	6	3	6	7	3	4	10	8	10	9	2	1
28	EMG1 Gyratory	A453 S Left turn	105	280	200	121	-80	-159	47	46	45	53	-1	7
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	431	588	276	158	-155	146	126	163	92	37	-34
30	EMG1 Gyratory	A453 N	202	80	82	65	2	-16	52	42	43	40	1	-2
31	M1 J24	M1 SB Offlip (M1)	0	36	232	9	196	-27	0	3	1	0	-2	-3
32	M1 J24	M1 SB Offlip (A50)	0	48	338	2	291	-45	0	0	0	0	0	0

2019 PRTM Based 2028 Model

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	121	40.1	21027	2863	4
	WD	153	36.5	21598	15843	48
	WD Mit	93	43.1	21970	2926	2
	WD - WD	**32**	**-3.6**	**571**	**12981**	**44**
	Mit - WoD	**-28**	**3.0**	**943**	**63**	**-2**
PM	2024 Base	42	51	18534	2354	1
	WoD	81	45.8	21253	60070	15
	WD	100	42.4	22163	133859	44
	WD Mit	73	46.5	22288	123541	49
	WD - WD	**20**	**-3.4**	**910**	**73789**	**30**
	Mit - WoD	**-7**	**0.7**	**1035**	**63471**	**34**

2023 PRTM Based 2028 Model

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	118	40.5	20643	54841	36
	WD	154	36.6	21217	211144	142
	WD Mit	71	46.0	21812	2315	1
	WD - WD	**-118**	**-40.5**	**-20643**	**-54841**	**-36**
	Mit - WoD	**-47**	**5.5**	**1169**	**-52526**	**-35**
PM	2024 Base	42	51	18534	2354	1
	WoD	114	41.6	20538	258841	303
	WD	135	38.6	21437	297888	308
	WD Mit	80	45.5	21607	7653	3
	WD - WD	**21**	**-3.1**	**899**	**39047**	**5**
	Mit - WoD	**-34**	**3.9**	**1069**	**-251189**	**-300**

2023 Based PRTM Minus 2019 Based PRTM

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	0	0.0	0	0	0
	WoD	-3	0.5	-384	51979	32
	WD	1	0.2	-381	195301	94
	WD Mit	-22	3.0	-158	-611	-1
PM	2024 Base	0	0.0	0	0	0
	WoD	34	-4.1	-715	198771	288
	WD	35	-3.8	-726	164030	264
	WD Mit	7	-0.9	-681	-115888	-46

2019 PRTM Based 2038 Model

		AM						PM					
IDs	Route	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD
A-I	Route 1	353	493	593	641	100	148	331	345	362	387	17	43
B-I	Route 2	339	363	367	412	5	50	317	326	341	327	14	1
C-J	Route 3	308	575	749	544	174	-31	317	914	929	756	15	-158
H-J	Route 4	306	336	398	306	62	-30	293	306	335	302	29	-4
B-J	Route 5	323	342	347	397	5	55	310	319	329	319	10	0
B-D	Route 6	272	328	366	575	37	247	292	266	274	293	8	27
C-K	Route 7	400	663	804	588	141	-75	381	977	971	786	-6	-191
B-C	Route 8	278	336	380	584	44	248	270	269	288	295	19	26
H-I	Route 9	316	348	416	316	67	-32	297	310	359	309	49	-2
I-H	Route 10	355	489	613	322	124	-167	315	334	382	340	48	6
D-B	Route 11	349	403	407	397	3	-6	341	377	410	375	33	-2
I-A	Route 12	354	701	734	340	33	-361	348	388	411	319	23	-70
I-B	Route 13	337	457	482	390	25	-68	349	390	413	407	23	17
J-F-C	Route 14	423	781	921	584	140	-197	402	412	472	414	60	2
J-H	Route 15	333	470	646	294	176	-175	282	287	334	289	48	2
K-C	Route 16	397	1003	891	559	-112	-444	376	393	556	432	163	39
J-F-A	Route 17	354	556	730	395	175	-161	337	339	401	355	62	16
J-E-C	Route 18	357	830	914	567	84	-263	347	400	429	375	29	-26
I-E-C	Route 19	375	797	837	564	40	-233	380	451	481	438	30	-13
I-E-D	Route 20	377	802	836	605	34	-197	408	460	476	473	16	13

2023 PRTM Based 2038 Model

		AM						PM					
IDs	Route	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD	Base	WoD	WD	WD Mit	WD - WD	Mit - WoD
A-I	Route 1	353	405	470	436	65	31	331	355	384	350	29	-5
B-I	Route 2	339	389	432	377	44	-12	317	330	345	334	15	4
C-J	Route 3	308	609	753	536	144	-73	317	916	925	621	9	-295
H-J	Route 4	306	409	504	314	95	-95	293	292	325	291	33	-1
B-J	Route 5	323	363	408	350	45	-13	310	317	327	319	9	2
B-D	Route 6	272	410	463	481	53	72	292	269	276	281	7	11
C-K	Route 7	400	684	804	573	120	-111	381	976	969	646	-7	-330
B-C	Route 8	278	420	483	496	62	75	270	272	292	281	20	10
H-I	Route 9	316	425	524	331	99	-94	297	300	354	303	54	3
I-H	Route 10	355	459	505	325	46	-134	315	329	382	339	53	10
D-B	Route 11	349	372	375	377	3	6	341	364	397	361	32	-3
I-A	Route 12	354	718	709	366	-10	-352	348	399	455	317	56	-82
I-B	Route 13	337	518	515	426	-4	-93	349	375	397	393	23	19
J-F-C	Route 14	423	730	757	484	27	-246	402	403	468	395	65	-9
J-H	Route 15	333	521	546	292	25	-229	282	283	336	286	53	3
K-C	Route 16	397	711	963	472	251	-240	376	376	469	378	93	2
J-F-A	Route 17	354	608	637	382	29	-226	337	339	408	347	68	8
J-E-C	Route 18	357	1091	1039	499	-51	-592	347	363	404	359	41	-4
I-E-C	Route 19	375	817	816	522	-1	-295	380	410	451	420	41	11
I-E-D	Route 20	377	813	805	532	-8	-280	408	416	441	443	25	27

2023 Based PRTM Minus 2019 Based PRTM

		AM			PM		
IDs	Route	WoD	WD	WD Mit	WoD	WD	WD Mit
A-I	Route 1	-88	-123	-205	11	22	-37
B-I	Route 2	26	65	-36	4	4	7
C-J	Route 3	34	4	-8	2	-4	-135
H-J	Route 4	73	106	8	-14	-10	-11
B-J	Route 5	21	60	-47	-1	-2	0
B-D	Route 6	82	97	-94	3	2	-12
C-K	Route 7	21	-1	-15	-1	-2	-140
B-C	Route 8	84	102	-89	2	4	-14
H-I	Route 9	77	109	15	-11	-5	-5
I-H	Route 10	-30	-108	3	-5	-1	-2
D-B	Route 11	-32	-32	-20	-13	-13	-14
I-A	Route 12	17	-25	26	11	44	-1
I-B	Route 13	61	33	36	-15	-16	-14
J-F-C	Route 14	-50	-163	-100	-9	-4	-19
J-H	Route 15	51	-100	-3	-3	2	-3
K-C	Route 16	-292	71	-88	-17	-87	-55
J-F-A	Route 17	53	-93	-13	1	7	-7
J-E-C	Route 18	261	126	-68	-38	-26	-16
I-E-C	Route 19	20	-21	-41	-41	-30	-18
I-E-D	Route 20	11	-31	-72	-45	-35	-30

2019 PRTM Based 2038 Model

Maximum Queues (m)			2038 AM						2038 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD
1	Finger Farm	A453 W	39	1011	988	55	-23	-956	30	95	386	153	291	58
2	Finger Farm	A453 N	48	39	43	63	5	24	20	28	41	34	13	6
3	Finger Farm	M1/A42 S	49	301	1281	60	980	-241	27	32	32	30	1	-1
11	M1 J24	M1/A50	279	432	433	435	0	3	114	160	185	293	25	134
12	M1 J24	Remembrance Way	126	1349	2309	1065	960	-284	145	2778	2778	2683	-1	-95
13	M1 J24	Deby Road	55	83	104	104	21	22	39	55	62	83	8	28
15	M1 J24	A453 S	53	811	359	384	-452	-426	98	108	182	128	75	20
16	M1 J24	Hilton Hotel Lane	34	1645	1645	1113	0	-532	25	323	383	48	60	-275
17	M1 J24	M1 NB South of Slip	0	2577	3008	116	431	-2461	0	9	0	0	-9	-9
20	M1 J24	M1 NB Off Slip	109	828	850	255	22	-573	62	269	227	63	-42	-206
24	EMG1 Gyratory	Kegworth By-Pass	423	474	956	462	482	-12	182	294	414	390	120	96
25	EMG1 Gyratory	A453 S	197	1237	1247	110	10	-1127	118	120	138	121	19	1
26	EMG1 Gyratory	Wilders Way L-Turn	16	40	31	13	-9	-27	16	28	28	21	-1	-7
27	EMG1 Gyratory	Wilders Way Ahead	6	12	11	9	-1	-3	10	13	13	14	0	1
28	EMG1 Gyratory	A453 S Left turn	105	428	322	77	-106	-351	47	46	44	51	-1	5
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	438	956	402	518	-36	146	245	317	324	71	79
30	EMG1 Gyratory	A453 N	202	101	82	80	-19	-21	52	58	50	53	-8	-5
31	M1 J24	M1 SB Offlip (M1)	0	198	439	1268	240	1070	0	0	2	0	2	0
32	M1 J24	M1 SB Offlip (A50)	0	1708	2308	2308	600	600	0	0	0	0	0	0

2023 Based PRTM Minus 2019 Based PRTM

Maximum Queues (m)			2038 AM			2038 PM		
	Junction	Approach	WoD	WD	WD Mit	WoD	WD	WD Mit
1	Finger Farm	A453 W	-395	147	10	-71	-316	-127
2	Finger Farm	A453 N	1	5	-16	-7	-7	-2
3	Finger Farm	M1/A42 S	-191	-1007	-12	9	12	-4
11	M1 J24	M1/A50	0	-1	0	67	47	-46
12	M1 J24	Remembrance Way	167	45	-50	-2	2	-143
13	M1 J24	Deby Road	-23	-46	-10	-5	-10	-28
15	M1 J24	A453 S	-719	-269	-272	44	88	-1
16	M1 J24	Hilton Hotel Lane	-1525	-1509	-841	-284	-340	-11
17	M1 J24	M1 NB South of Slip	433	2	39	-9	140	0
20	M1 J24	M1 NB Off Slip	-219	-240	-151	-145	77	-6
24	EMG1 Gyratory	Kegworth By-Pass	664	724	-21	-55	-97	-173
25	EMG1 Gyratory	A453 S	-133	-6	59	10	26	-36
26	EMG1 Gyratory	Wilders Way L-Turn	-37	-24	-8	-19	-17	-5
27	EMG1 Gyratory	Wilders Way Ahead	-8	-5	-4	-5	-5	-4
28	EMG1 Gyratory	A453 S Left turn	-166	-130	6	-3	1	-1
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	700	724	20	-76	-82	-130
30	EMG1 Gyratory	A453 N	-29	-1	-16	-20	2	-9
31	M1 J24	M1 SB Offlip (M1)	942	830	-311	0	0	0
32	M1 J24	M1 SB Offlip (A50)	-565	-678	-689	0	2	0

2023 PRTM Based 2038 Model

Maximum Queues (m)			2038 AM						2038 PM					
	Junction	Approach	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD	Base	WoD	WD	WD Mit	WD-WoD	Miti - WoD
1	Finger Farm	A453 W	39	616	1135	65	519	-551	30	24	69	26	45	2
2	Finger Farm	A453 N	48	39	48	47	9	8	20	21	34	31	13	11
3	Finger Farm	M1/A42 S	49	110	274	48	164	-61	27	41	45	26	4	-14
11	M1 J24	M1/A50	279	433	432	435	-1	2	114	226	232	247	5	21
12	M1 J24	Remembrance Way	126	1516	2354	1015	837	-501	145	2776	2779	2540	3	-236
13	M1 J24	Deby Road	55	60	58	95	-1	35	39	50	53	56	3	6
15	M1 J24	A453 S	53	92	90	113	-2	21	98	152	270	127	118	-26
16	M1 J24	Hilton Hotel Lane	34	120	136	272	16	152	25	39	43	37	5	-2
17	M1 J24	M1 NB South of Slip	0	3010	3010	155	0	-2855	0	0	140	0	140	0
20	M1 J24	M1 NB Off Slip	109	609	610	104	1	-505	62	124	303	56	179	-68
24	EMG1 Gyratory	Kegworth By-Pass	423	1138	1680	441	542	-697	182	239	317	217	78	-21
25	EMG1 Gyratory	A453 S	197	1104	1241	169	136	-936	118	130	164	85	34	-44
26	EMG1 Gyratory	Wilders Way L-Turn	16	3	7	5	4	2	16	10	11	17	1	7
27	EMG1 Gyratory	Wilders Way Ahead	6	4	6	4	1	0	10	8	9	10	1	2
28	EMG1 Gyratory	A453 S Left turn	105	262	192	83	-69	-178	47	43	45	50	2	7
29	EMG1 Gyratory	Kegworth By-Pass Left Turn	255	1138	1679	422	542	-716	146	170	234	194	65	24
30	EMG1 Gyratory	A453 N	202	72	81	64	9	-8	52	38	52	44	14	6
31	M1 J24	M1 SB Offlip (M1)	0	1140	1268	957	128	-183	0	0	3	0	3	0
32	M1 J24	M1 SB Offlip (A50)	0	1143	1630	1619	488	476	0	0	2	0	2	0

2019 PRTM Based 2038 Model

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	211	32.3	21974	108213	150
	WD	259	28.8	22360	378853	373
	WD Mit	177	34.6	22739	1003413	580
	WD - WD	**48**	**-3.5**	**386**	**270640**	**223**
	Mit - WoD	**-34**	**2.4**	**765**	**895201**	**430**
PM	2024 Base	42	51	18534	2354	1
	WoD	126	40.2	22275	748599	484
	WD	154	36.8	22872	1567205	906
	WD Mit	120	40.6	23151	980709	500
	WD - WD	**28**	**-3.4**	**597**	**818606**	**422**
	Mit - WoD	**-7**	**0.4**	**876**	**232110**	**16**

2023 PRTM Based 2038 Model

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	52	48.6	18740	1401	1
	WoD	213	32.2	21597	312850	444
	WD	259	28.8	21900	605760	539
	WD Mit	135	38.6	23317	3503	1
	WD - WD	**45**	**-3.4**	**303**	**292910**	**95**
	Mit - WoD	**-78**	**6.4**	**1720**	**-309347**	**-443**
PM	2024 Base	42	51	18534	2354	1
	WoD	128	40.3	21810	627581	498
	WD	152	37.2	22699	814752	590
	WD Mit	98	43.4	22930	296406	146
	WD - WD	**24**	**-3.1**	**889**	**187170**	**92**
	Mit - WoD	**-30**	**3.1**	**1120**	**-331176**	**-352**

2023 Based PRTM Minus 2019 Based PRTM

Time Period	Scenarios	Delay (s)	Speed (mph)	Veh Arr	Latent Delay	Latent Demand
AM	2024 Base	0	0.0	0	0	0
	WoD	3	-0.1	-377	204637	294
	WD	-1	0.1	-460	226907	165
	WD Mit	-42	4.0	578	-999911	-579
PM	2024 Base	0	0.0	0	0	0
	WoD	2	0.1	-465	-121018	14
	WD	-2	0.4	-173	-752453	-316
	WD Mit	-22	2.8	-221	-684303	-354

APPENDIX 12: Technical Note EMG2-BWB-GEN-XX-RP-TR-0022 _Local Road Network Assessment

ASSESSMENT OF RESIDUAL IMPACTS ON LOCAL ROAD NETWORK

EAST MIDLANDS GATEWAY PHASE 2

PROJECT NAME	**East Midlands Gateway Phase 2 – Assessment of Residual Impacts on Local Road Network**		
DOCUMENT NUMBER	EMG2-BWB-GEN-XX-RP-TR-0023	**BWB REF**	220500
AUTHOR	[redacted]	**STATUS**	S2
CHECKED	[redacted]	**REVISION**	P1
APPROVED	[redacted]	**DATE**	13/03/26

1. INTRODUCTION

1.1 BWB Consulting Ltd (BWB) is commissioned by Segro to provide highways and transportation advice on a Phase 2 expansion of the East Midlands Gateway (EMG2) employment development. The site is being proposed for a large B2/B8 industrial development and forms part of the Government's East Midlands Freeport initiative.

1.2 The core scenario for the Transport Assessment supporting the Development Consent Order was assessed using the 2019 version of the Pan Regional Transport Model (PRTM). The transport impacts of the EMG2 development have however also been assessed using the 2023 version of PRTM following approval of the modelling methodology in January 2026 with National Highways (NH) and Leicestershire County Council (LCC).

1.3 As requested by LCC, the purpose of this Technical Note is to review the traffic flow outputs from PRTM 2023 to assess the residual impacts of the EMG2 development on the local road network to identify whether any additional mitigation is required to address any unacceptable impacts. The assessment also considers the potential impacts of an additional 100,000sqm gross floor area (GFA) of B8 mezzanine floorspace on the EMG2 Main Site.

2. ASSESSMENT OF HIGHWAY IMPACTS

Traffic Flows

2.1 Traffic flow outputs have been obtained from PRTM 2023 for the following scenarios:

- 2038 Without Development (WoD)
- 2038 With Development, with Mitigation (WD + Mitigation)

2.2 It should be noted that both scenarios include for committed developments and infrastructure schemes, as well as traffic from draft Local Plan allocations and Ratcliffe on Soar Power Station re-development, but without any mitigation, as agreed with NH and LCC in the PRTM Proforma dated 9 September 2025 and Uncertainty Log v2.0 dated 23 July 2025. The WD + Mitigation flows include for the full quantum of the EMG2 development and the proposed highway mitigation, as presented in Section 12 of the TA.

2.3 To understand the potential impacts of an additional 100,000sqm GFA of B8 mezzanine floorspace at EMG2, the development traffic assignment plots from PRTM 2023 have

been scaled proportionately to reflect the 100,000sqm GFA. The potential increases during the morning and evening peak hours are as follows, generated using the originally agreed EMG1 trip rates as set out within the TA, which are higher than the actual recorded EMG1 trip rates and hence continue to provide a robust assessment:

- Morning peak hour – 143 arrivals, 48 departures, 191 total
- Evening peak hour – 70 arrivals, 169 departures, 239 total

2.4 The traffic assignment from the 100,000sqm GFA mezzanine has been distributed to the highway network in accordance with the distribution pattern derived from PRTM 2023. The arrivals and departures for the morning and evening peak hours are shown at **Figures 1** and **2** respectively.

Figure 1: Traffic Assignment of 100,000sqm GFA Mezzanine Floorspace (morning peak hour)

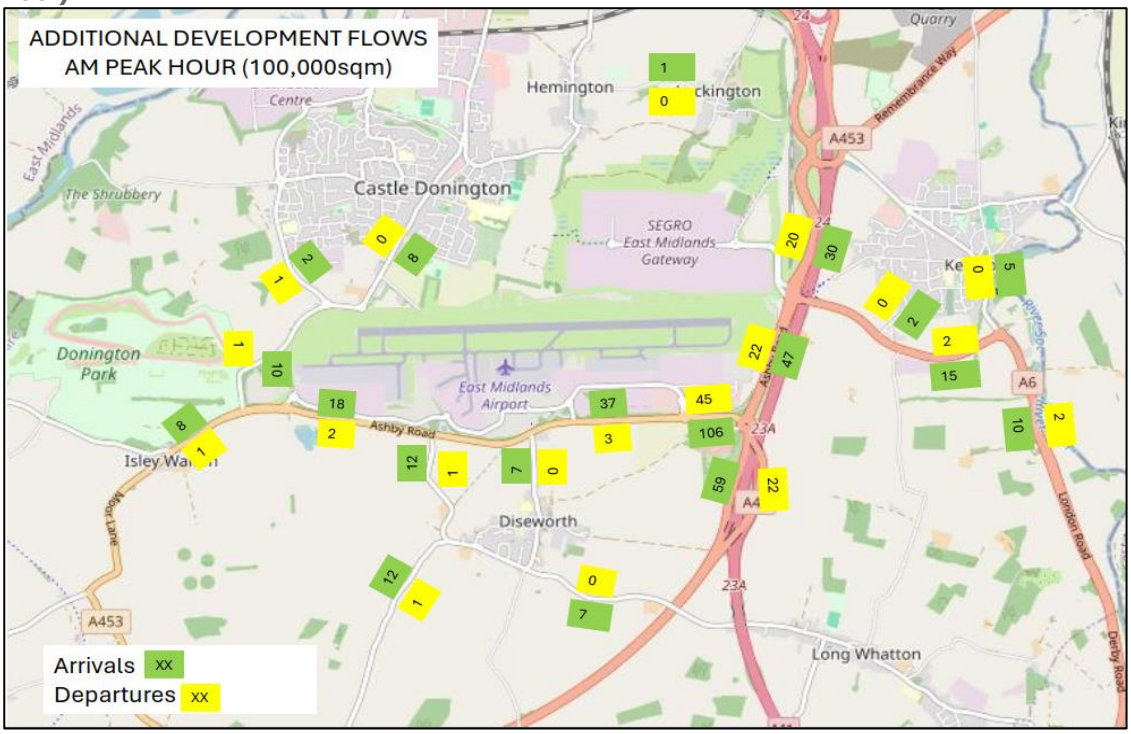
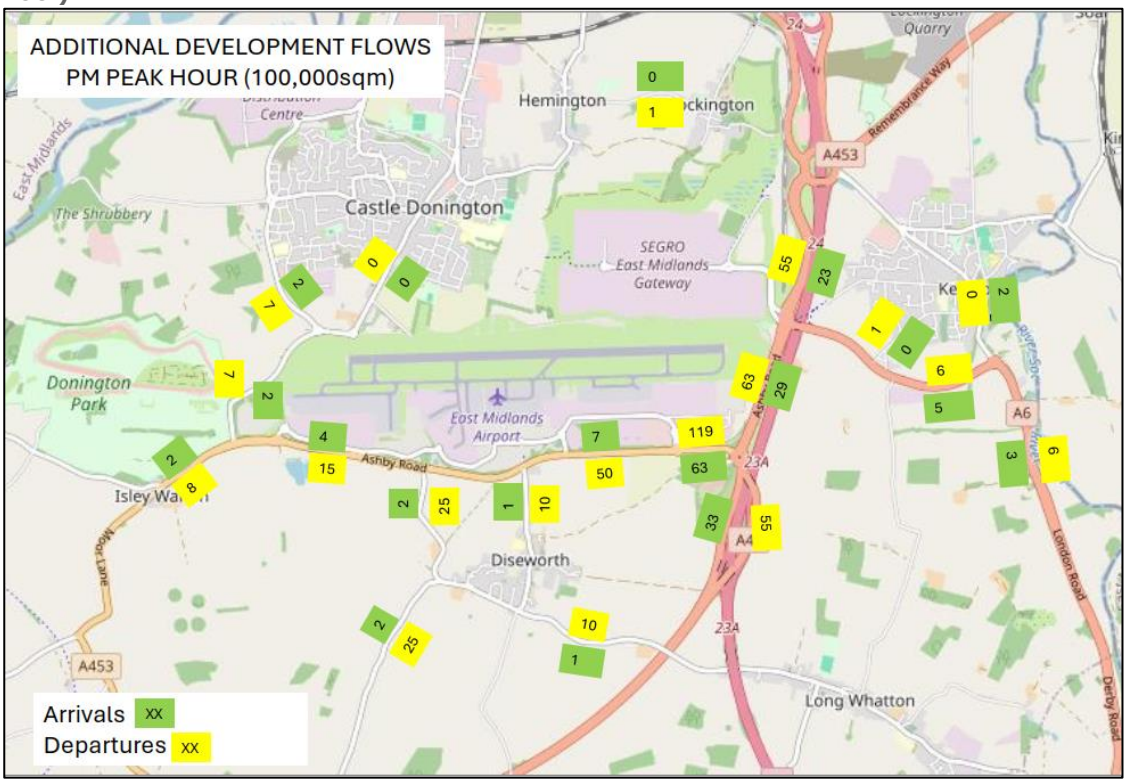


Figure 2: Traffic Assignment of 100,000sqm GFA Mezzanine Floorspace (evening peak hour)



Difference in Traffic Flows

2.5 The spreadsheet at **Appendix 1** contains full details of the forecast year traffic flows across 11 key links serving the villages of Kegworth, Diseworth, Isley Walton, Castle Donington and Hemington/Lockington and the difference between the following scenarios:

- Scenario 1: 2038 Without Development (WoD)
- Scenario 2: 2038 With Development + Mitigation (WD + Mitigation)
- Scenario 3: 2038 With Development + Mitigation + Mezzanine (WD + Mitigation + Mezzanine)

2.6 The 11 links that have been assessed have been agreed with LCC.

2.7 A summary of the difference in traffic flows is provided in **Table 1**, which provides an understanding of the impacts of the EMG2 Project on the local road network.

Table 1: Difference in Traffic Flows

ID	Link	2038 AM Peak Hour		2038 PM Peak Hour	
		Scenario 2 Minus Scenario 1	Scenario 3 Minus Scenario 1	Scenario 2 Minus Scenario 1	Scenario 3 Minus Scenario 1
1	A6 Kegworth Bypass	-26	-7	38	50
2	Ashby Road, Kegworth	4	4	6	6
3	Derby Road, Kegworth	163	163	-3	-3
4	Station Road, Kegworth	24	29	32	32
5	Grimes Gate, Diseworth	11	18	0	11
6	The Green, Diseworth	2	15	80	107
7	The Green, Diseworth towards Long Whatton	-7	0	-12	-1
8	A453, Isley Walton	45	54	27	37
9	Castle Donington Bypass	70	73	48	57
10	High Street, Castle Donington	44	52	-2	-2
11	Hemington Lane, Hemington & Lockington	-21	-20	-1	0

Assessment of Impacts

2.8 The data shows that the residual impacts on the local road network will, overall, be negligible, with small increases predicted through local villages surrounding EMG2.

2.9 There is expected to be an increase in excess of 100 vehicles in the morning peak hour on Derby Road, Kegworth (163 in ID 3). The Green, Diseworth (ID 6) is expected to experience an increase of 80 vehicles between Scenarios 1 and 2 and an increase of 107 vehicles between Scenarios 1 and 3 in the evening peak hour. The impacts on these two links are considered in further detail below.

Derby Road, Kegworth – ID 3

2.10 The section of Derby Road leads to M1 Junction 24 and is a main route in and out of Kegworth. In the WoD scenario, PRTM 2023 confirms that M1 J24 is operating at high levels of congestion, resulting in background traffic reassigning along other routes where delays are lower. In the WD + Mitigation scenario, PRTM 2023 shows that capacity of M1 Junction 24 increases due to the proposed highway works, providing improved journey times along Derby Road. The increase of 163 trips relates entirely to background re-assignment and there are no vehicles from the EMG2 development predicted to use Derby Road. It is therefore a localised effect of re-assignment that will have benefits on the surrounding local highway network.

The Green, Diseworth – ID 6

2.11 PRTM 2023 shows an increase of 80 vehicles during the evening peak hour along The Green at the western side of Diseworth between Scenario 1 and Scenario 2. The assignment of these trips has been interrogated further to understand where the additional traffic is travelling to/from.

2.12 PRTM 2023 assignment plots are provided in **Figures 3** and **4,** which show that the majority of this traffic is travelling to A42 at Junction 14 (Strategic Road Network) via Gelscoe Lane, which is a non-sensitive route outside of any village or built-up area. There would be an increase of 30 trips to the south of Gelscoe Lane towards Belton, and so even when accounting for a small increase from the additional mezzanine floorspace, there would be a negligible impact through Belton village.

Figure 3: Scenario 1 Flows (evening peak hour)

Figure 4: Scenario 2 Flows (evening peak hour)

2.13 Section 4 of the TA identified a historic issue with Personal Injury Collisions (PIC) occurring at the A453/The Green junction due to right turning movements from the A453 west into The Green. It was evident that the historic PIC cluster has improved in recent years due to overgrown vegetation obstructing signs being cut back in 2023 and new warning signs installed for eastbound travelling vehicles between 2017 and 2020. Therefore, as per the conclusions of the TA, historic PIC issues have been resolved at this junction and the additional impacts from the EMG2 development, inclusive of an additional 100,000sqm GFA of mezzanine floorspace, would not prejudice this and so not have any unacceptable impacts on highway safety.

Summary

2.14 The assessment confirms that, with the proposed highway mitigation proposed on the Strategic Road Network, residual impacts on the local highway network will be negligible. This ensures that the EMG2 development will not have any material impacts on the local road network and therefore no additional mitigation is required based on the outputs from the PRTM 2023 model.

3. SUMMARY

3.1 BWB has undertaken an assessment of the PRTM 2023 modelling outputs to understand whether the EMG2 development could have any unacceptable residual impacts on the local road network, when accounting for the comprehensive mitigation scheme on the Strategic Road Network.

3.2 The key conclusions from this Technical Note are as follows:

- The difference in traffic flows between the 2038 Without Development (WoD) and With Development, with Mitigation (WD + Mitigation) scenarios have been assessed and show that there would be a negligible difference across 11 key links on the local road network.
- When including additional traffic from a further 100,000sqm GFA of B8 mezzanine floorspace, there would continue to be a negligible impact on the local road network.
- There would be an increase of up to 163 trips on Derby Road in Kegworth during the morning peak hour, which is the highest increase on any part of the local road network. However, this is a route leading to M1 Junction 24 (Strategic Road Network) and the increase would be an effect of background traffic re-assigning locally due to capacity improvements at M1 Junction 24, rather than a direct impact from additional development trips.
- There would be an increase of up to 107 trips along The Green to the west of Diseworth during the evening peak hour. However, this is a non-sensitive route outside of any village or built-up area and the majority of traffic is travelling towards A42 Junction 14 (Strategic Road Network). The impacts further south towards Belton would be negligible. The historic safety issues at the A453/The Green junction have been resolved by cutting back overgrown vegetation and installing additional signage. Therefore, the additional traffic from the EMG2 development would not have any unacceptable impact on highway safety at this junction.

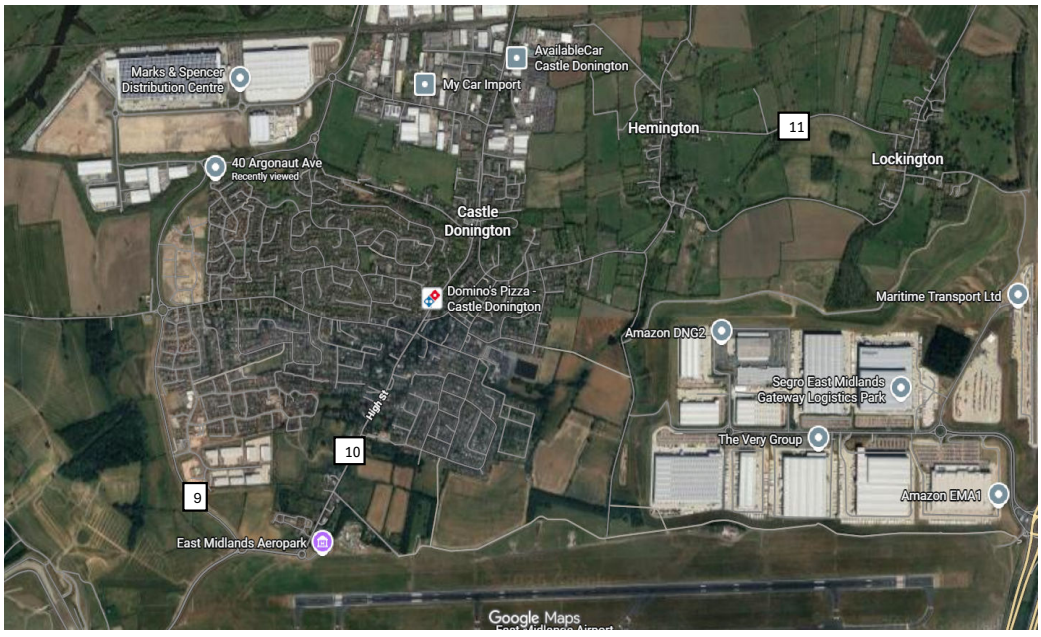
Overall, it is concluded that the EMG2 development would have a negligible residual impact on the local road network and no further mitigation is required.

APPENDIX 1. PRTM 2023 Traffic Flow Data

ID	Link	2038 AM						2038 PM					
		WoD	WD + Mitigation	Additional 100,000sqm Mezzanine	WD + Mitigation + Mezzanine	Difference ((WD + Mitigation) - WoD)	Difference ((WD + Mitigation + Mezzanine) - WoD)	WoD	WD + Mitigation	Additional 100,000sqm Mezzanine	WD + Mitigation + Mezzanine	Difference ((WD + Mitigation) - WoD)	Difference ((WD + Mitigation + Mezzanine) - WoD)
1	A6 Kegworth Bypass	1312	1286	19	1305	**-26**	**-7**	1211	1249	12	1261	**38**	**50**
2	Ashby Road, Kegworth	700	704	0	704	**4**	**4**	817	823	0	823	**6**	**6**
3	Derby Road, Kegworth	1287	1450	0	1450	**163**	**163**	1621	1618	0	1618	**-3**	**-3**
4	Station Road, Kegworth	1046	1070	5	1075	**24**	**29**	1236	1268	0	1268	**32**	**32**
5	Grimes Gate, Diseworth	117	128	7	135	**11**	**18**	157	157	11	168	**0**	**11**
6	The Green, Diseworth	422	424	13	437	**2**	**15**	503	583	27	610	**80**	**107**
7	The Green, Diseworth towards Long Whatton	225	218	7	225	**-7**	**0**	301	289	11	300	**-12**	**-1**
8	A453, Isley Walton	1646	1691	9	1700	**45**	**54**	1455	1482	10	1492	**27**	**37**
9	Castle Donington Bypass	1380	1450	3	1453	**70**	**73**	1127	1175	9	1184	**48**	**57**
10	High Street, Castle Donington	426	470	8	478	**44**	**52**	384	382	0	382	**-2**	**-2**
11	Hemington Lane, Hemington & Lockington	313	292	1	293	**-21**	**-20**	207	206	1	207	**-1**	**0**


ParkBee Hilton East Midlands Airport
Remembrance Way
M1
A50
A453
Derby Rd
24
Refresco Drinks UK
3
4
Side Ley
Station Rd
Kingston on Soar
River Soar
Kingston Ln
Goldsmith Rd
Marco's New York Italian Kegworth
Ashby Rd
High St
Kegworth
Station Rd
Melton Ln
2
1
Kegworth Byp
London Rd
University of Nottingham - Sutton Bonington...
Google Maps


East Midlands Airport
Terminal
DHL Express East Midlands Airport
Leonardo Hotel East Midlands Airport
Radisson Blu Hotel, East Midlands Airport
A453
M1
23A
East Midlands Airport Mid Stay 3
GRIDSERVE Charging Station
Walton Hill
8
6
5
Diseworth
The Grn
7
A42
W End
Google Maps


Marks & Spencer Distribution Centre
AvailableCar Castle Donington
My Car Import
Hemington
11
Lockington
40 Argonaut Ave
Recently viewed
Castle Donington
Domino's Pizza - Castle Donington
Maritime Transport Ltd
Amazon DNG2
Segro East Midlands Gateway Logistics Park
High St
10
The Very Group
9
Amazon EMA1
East Midlands Aeropark
Google Maps

APPENDIX 13: Highway Works Lighting Assessment

Project	**East Midlands Gateway 2**		
Document Number	EMG2-BWB-GEN-XX-RP-CH-0024	**BWB Ref**	220500
Author	[redacted]	**Status**	S2
Checked	[redacted]	**Revision**	P01
Approved	[redacted]	**Date**	27.03.2026

1 INTRODUCTION

1.1 The EMG2 highway works includes improvements at M1 J24 and works along the A453 corridor. Most of the area of works has road lighting and this will be retained and amended as necessary to suit the revised road layout. The proposed M1 northbound to A50 westbound will be lit throughout its length.

1.2 National Highways and Leicestershire County Council (LCC) have previously been consulted on the proposed lighting strategy which identifies:

- Extent of road to be lit;
- Lighting classes (M classes and C classes as defined by BS 5489); and
- Maximum height of columns (exact height will be subject to detailed design).

1.3 The strategy is found at Appendix E of the lighting chapter of the Environmental Statement (Document 6.11E).

1.4 Using BS 5489 lighting classes are determined using several factors, one of these being the predicted traffic flow in annual average daily traffic (AADT). This was originally assessed using the PRTM 2019 data.

1.5 The purpose of this technical note is to review if any of the lighting assessment would change when assessed using the PRTM 2023 data.

2 REVIEW OF LIGHTING OF TRAFFIC ROUTES (LINKS)

2.1 Lighting classes for traffic routes are determined using BS 5489 section A.3.1 and specifically table A.2. The lighting class for traffic routes is the M class, which is detailed in BS EN 13201-2.

2.2 The following table sets out for each link in the lighting strategy that has been assessed

- The current proposed lighting M class assessed using the 2019 PRTM data;
- The 2023 AADT for the link;
- The lighting M class assessed using 2023 PRTM data; and
- If the change in AADT affects the assessed class.

Link	Current proposed M class	2023 PRTM AADT	M class 2023 PRTM	Has M class changed?
M1 J23A-24 NB	M2	88,044	M2	No
M1 NB – A50 WB link	M2	18,959	M2 (See note 1)	No
M1 J24 NB diverge slip	M2	11,778	M2 (See note 2)	No
M1 J24 – A50 WB link (downstream of link from M1 NB)	M2	42,293	M2	No

Link	Current proposed M class	2023 PRTM AADT	M class 2023 PRTM	Has M class changed?
M1 SB / A50 EB – M1 J24 link	M2	29,124	M2	No
A453: J24 – A6 / EMG1 junction	M3	31,716	M3	No
A453: A6 / EMG1 junction – Finger Farm	M3	30,192	M3	No
A453: Finger Farm – EMG2 junction	M3	33,702	M3	No
A453 west of EMG2 junction	M3	20,220	M3	No

[1] Whilst this would normally be assessed as M3 based on the AADT, as the flow exceeds 65% of the lane maximum capacity the lighting level is adjusted to M2.

[2] Although this would normally be assessed as M3 based on the AADT as this is a short link from the M1 mainline M2 class is selected for consistency

2.3 As can be seen from the above the change in AADT when assessed using the 2023 PRTM does not affect the required M class on any of the links.

3 REVIEW OF CONFLICT AREAS

3.1 The conflict area C class for each junction is determined using the most onerous M class that connects to the junction.

3.2 As none of the M classes have changed then the previously assessed C class is unchanged.

4 CONCLUSION

4.1 No changes to the previously determined M class or C class for junction areas are required when assessed using the 2023 PRTM data.

4.2 On this basis the highway lighting assessment at Appendix E of the lighting chapter of the Environmental Statement (Document 6.11E) remains appropriate for the lighting assessment and, in due course, the detailed design of the road lighting for the EMG2 highway works.

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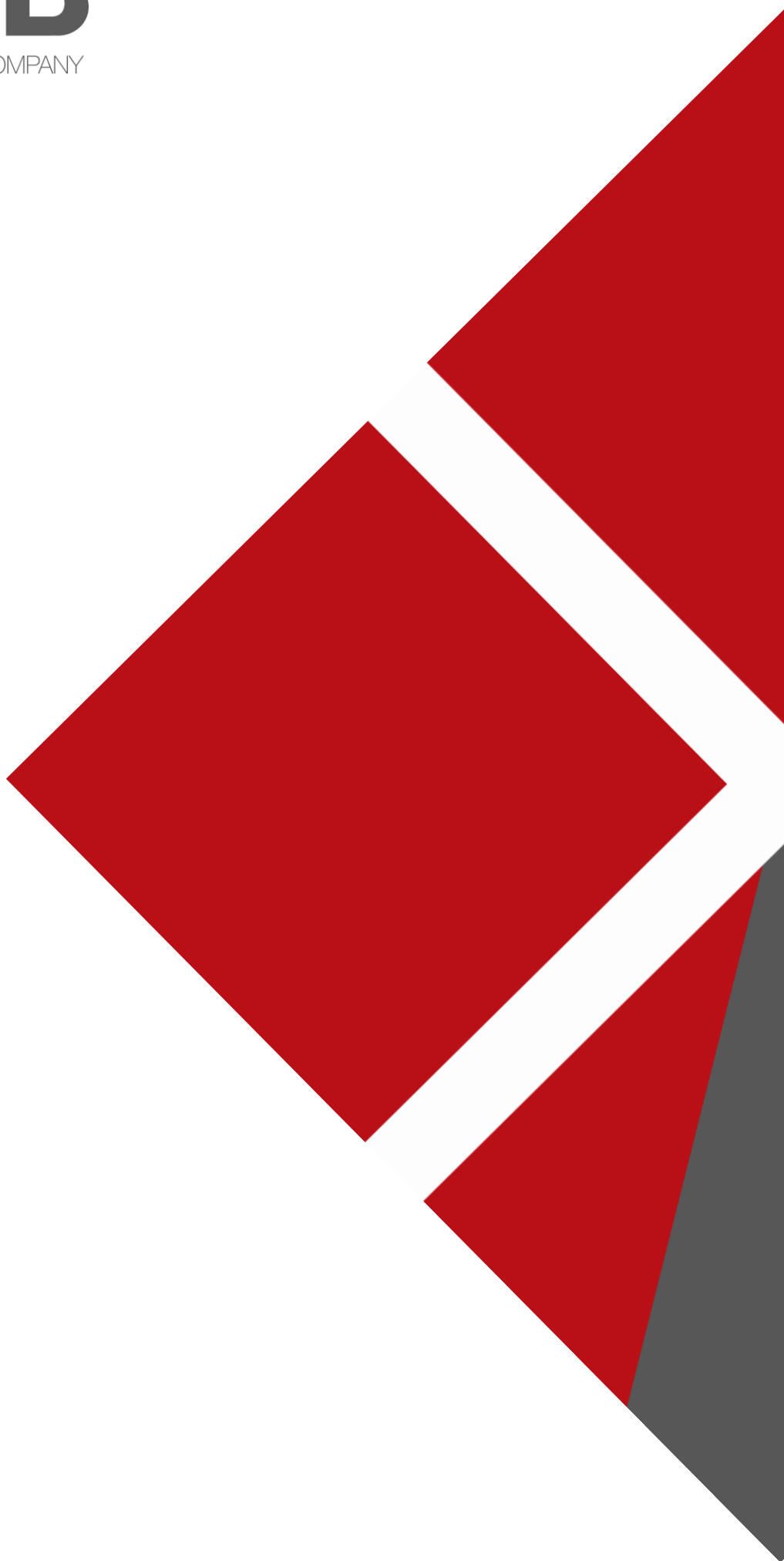

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