Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Applicant's response to deadline 3 submissions [Appendix A - Post Covid Update following Deadline 3 submission (18.6.1 Transport General Update)]

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PROJECT NAME	**Hinckley Rail Freight Interchange**		
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CHECKED	Shirley Dumigan	**REVISION**	P01
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1. OVERVIEW

Background

1.1 The Examining Authority (ExA) issued a Rule 17 Letter in response to Procedural Deadline A on 22 September 2023. The letter sets out the Procedural Decision made by the ExA on a number of matters requiring response from the Applicant.

1.2 As part of the Rule 17 decision, a request was made to review the transport modelling considering recent documents published by the Department for Transport (DfT) and the Institute of Environmental Management and Assessment (IEMA). These were 1) the revised version of *TAG Unit M4- Forecasting and Uncertainty-* specific to changes in traffic since the Covid 19 pandemic, 2) *The Road Traffic Estimates in Great Britain 2022* and 3) the IEMA update on *Environmental Assessment of Traffic and Movement*.

1.3 An initial response from the Applicant was submitted as part of Deadline 1 (REP1-002) which set out the response around the two of the three documents mentioned in the Rule 17 letter, namely the IEMA review and the Road Traffic Estimates in Great Britain 2022. The response outlined that options set out within the TAG Unit guidance Appendix B had been reviewed with the Leicestershire County Council Network Data Intelligence team (LCC NDI) as custodians of the PRTM model. The clear recommendation to fit within the Examination timetables was to pursue Option 3 of the TAG Guidance notes: *Apply the adjustment globally to model results as a post-model adjustment.*

1.4 The Option 3 approach was put to the Highway Authorities by the ExA during the Issue Specific Hearing 2 (ISH 2) on 31 October 2023 and was verbally agreed. Further discussions between the Applicant and the Highway Authorities were held ahead of the Deadline 3 submission on 13 November 2023. During the meeting it was confirmed that the Authorities accepted the approach to the PRTM update. However, they were interested to see updated 2023 surveys for the mitigation junctions on the highway network to align with comments on Furnessing provided through Written Representations. This is recorded within the Deadline 3 submission document Transport General Update Note (REP3-046).

1.5 LCC NDI and their consultants have subsequently updated the original model with a Covid-19 sensitivity based on the agreement outlined above. The reporting reviewed the differences between the original model run as per the submission and the Covid-19 sensitivity test.

Summary of Findings

1.6 Appended to this note are the technical outputs from the Covid-19 Sensitivity Test. The outputs provide further detail on methodology and outputs with a short commentary on general comparisons between the model runs. Below is a summary and comment on the outputs.

1.7 Adjustment factors to account for Covid 19 impacts on highway forecasts have been calculated from observed data recorded in March 2019 and March 2023. Data collation on various count sites across Leicestershire indicates a reduction in peak hour traffic of 6.5% (AM Peak 0800-0900) and 9% (PM Peak 1700-1800).

1.8 Forecast flow change broadly shows reductions across the network in both peak hours, as would be expected from a global application of the percentage reductions outlined above. Changes on the M69 are smaller than other parts of the network, though they remain reduced compared with the original runs. This is likely to be due to existing congestion.

1.9 Outputs from the forecast delay change indicate similar patterns, with lower level of delay recorded in the Covid-19 sensitivity model run, this includes approaches to M1 Junction 21.

1.10 Node Volume-Capacity outputs review individual turning movement capacities. These, again, indicate reduced impacts generally. Those junctions where capacity is exceeded have been reviewed as part of the original Transport Assessment and further updates which have taken place since. Additional 2023 surveys, requested by the Highway Authorities, were focused on the junctions where mitigation is proposed, and the impacts are most readily experienced because of the development traffic or redistributed background traffic.

1.11 The Covid Sensitivity run has provided a useful review of the impacts of the pandemic on highway traffic assessments. The application of the observed reductions in flows provides a general view of the likely impacts when compared with the original model runs.

1.12 The original model outputs continue to provide a robust case for assessing the impact of the development and its infrastructure. However, as agreed with the Highway Authorities, further surveys, additional modelling and testing of sensitive junctions has been undertaken. This is to address comments made through written representations and as reported at Deadline 4 under Applicant Document Ref *18.13.2 Transport 2023 Update*.

Technical Note

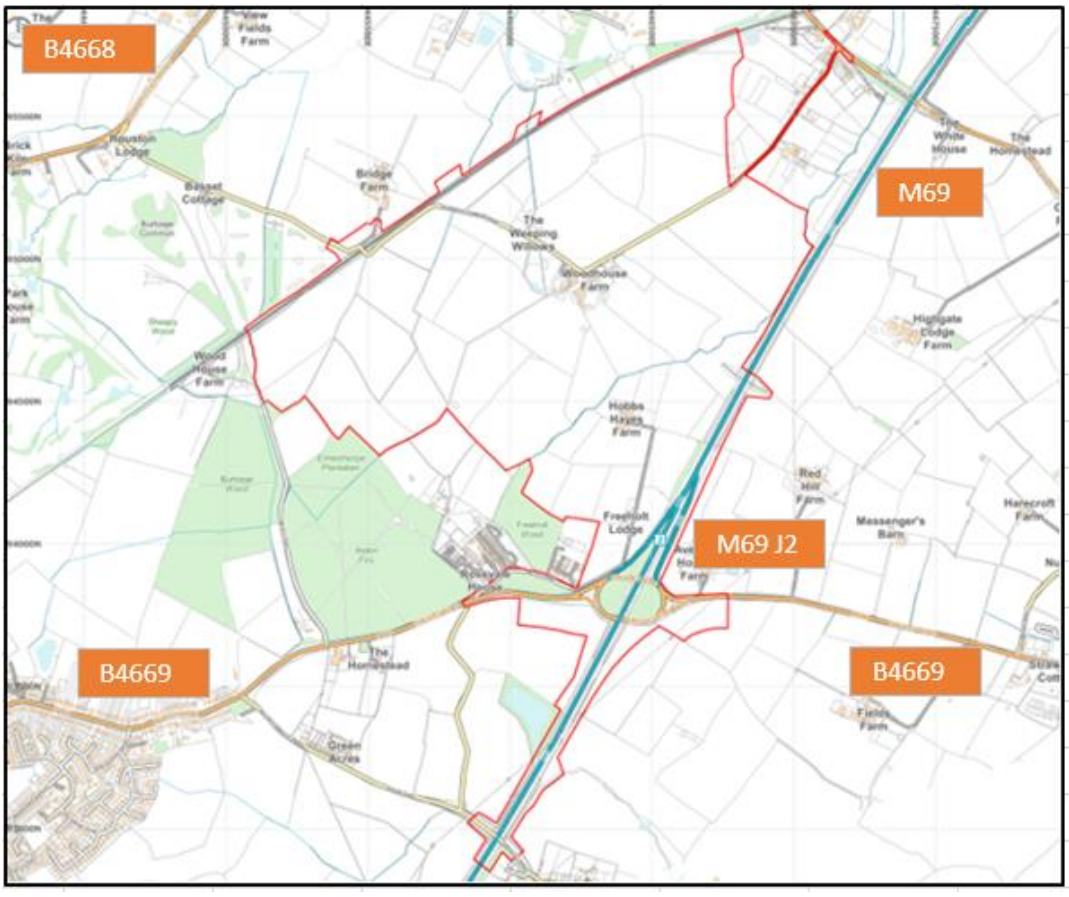
Hinckley National Rail Freight Interchange – 2036 COVID-19 Sensitivity Tests

Project name Hinckley National Rail Freight Interchange		**Subject** 2036 COVID-19 Sensitivity Tests	
Project number 60700799	**Client** Leicestershire County Council		**Version** v1.0
Date 11th December 2023	**Prepared by** Kit Tang / Clare Norris	**Checked by** Aled Davies	**Approved by** Mark Dazeley

1. Introduction

1.1.1 Hinckley National Rail Freight Interchange (NRFI) is a proposed B8 (warehousing) employment development located to the north-west of M69 Junction 2, to the east of Hinckley, Leicestershire. This proposed development has capacity for 850,000m^2 of employment land and is expected to generate around 8,000 jobs. Figure 1-1 provides an indication of the location of the proposed Hinckley NRFI.

Figure 1-1: Location of the Proposed Development



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1.1.2 To assess the potential highway impact of the proposed Hinckley NRFI development, AECOM was commissioned by Leicestershire County Council (LCC) to undertake an assessment using the Pan-Regional Transport Model (PRTM) (with a 2014 base year) in 2021 / 2022. Forecasts for 2019, 2026 and 2036 were produced for the scenarios as shown in Table 1.1, and the forecast assumptions and results are documented in the *PRTM Hinckley National Rail Freight Interchange Application: Forecast Modelling Report*[1].

Table 1.1: Existing HNRFI Forecast Model Scenarios

Scenario	Forecast Years	Proposed HNRFI Development	Proposed HNRFI Infrastructure	Proposed HNRFI Infrastructure (fully dualled link road)
Without Development	2019	×	×	×
Without Development	2026 & 2036	×	×	×
Without Development With Infrastructure	2026 & 2036	×	✓	×
With Development	2026 & 2036	✓	✓	×
With Development (Sensitivity Test)	2036	✓	✓	✓

1.1.3 In May 2023, the Department for Transport (DfT) released an updated TAG Unit M4 which provides guidance on how adjustments can be made to transport models to proportionately account for the impacts of COVID-19 on post-pandemic travel patterns. The guidance stipulates that models with a base year of 2023 (or later) do not need to apply any further adjustment to account for COVID-19. As the version of the PRTM used for the assessment of proposed Hinckley NRFI development has a base year of 2014, the updated TAG Unit M4 recommends adjustments are applied to account for COVID-19 impacts.

1.1.4 Two options to apply an adjustment to the existing forecasts to account for COVID-19 impacts have been considered (as shown in Table 1.2[2], and documented in the *Technical Note – proposed approaches to apply a COVID-19 adjustment to transport model forecasts (v1.0)*, and the client has informed AECOM that they would like to proceed with Option 1.

[1] PRTMv2.2 Hinckley National Rail Freight Interchange Application: Forecast Modelling v3.0 (dated 2022-05-18)
[2] Table 4.1, Technical Note – proposed approaches to apply a COVID-19 adjustment to transport model forecasts (v1.0) ("TN_approaches to apply a COVID-19 adjustment_v1.0.pdf") (dated 19 Oct 2023)

1.1.5 This technical note details the process and the data used to calculate the COVID-19 adjustment factors and the COVID-19 adjusted 2036 demand matrices. The forecast modelling results from the 2036 COVID-19 sensitivity tests are also provided in this technical note.

1.1.6 Following the introduction, this technical note contains the following sections:

- Section 2 describes the observed count data used to calculate the 2019 to 2023 adjustment factors;
- Section 3 presents the 2019 to 2023 adjustment factors applied to the forecast highway demand matrices to produce the 2036 COVID-19 adjusted matrices;
- Section 4 shows the forecast results for the 2036 COVID-19 sensitivity tests including forecast flow and delay change comparisons with the previous forecasts; and
- Section 5 provides a summary of the assessment of the 2036 COVID-19 sensitivity tests.

Table 1.2: Options for Proportionately Accounting for COVID-19 Impacts

	Description	Benefits	Limitations / Disadvantages	Indicative timescale
Option 1 – apply an adjustment globally to existing forecast results as a post-model adjustment	Apply adjustment factors to existing forecast highway demand matrices to produce the COVID-19 adjusted 2036 demand matrices, and re-run highway assignments. The adjustment factors will be calculated based on observed count data in Leicestershire (March 2019 and March 2023 data). Analysis between the re-runs of the 2036 'Without Development' and 'With Development' will be repeated and compared with the existing forecast results.	- This method is transparent and quick to apply - Makes use of local count data to calculate the adjustment factors	- Assumes travel patterns / underlying demand matrices are not affected by COVID-19 - No validation undertaken against post COVID-19 data	3-5 weeks
Option 2 – undertake forecast modelling based on the interim 2023 base year model	Undertake 2036 forecast modelling based on the interim 2023 base year model. Analysis between the re-runs of the 2036 'Without Development' and 'With Development' will be repeated and compared with the existing forecast results.	- The interim 2023 base year model has been validated against observed 2023 count data (where available), capturing post-COVID-19 traffic conditions - No adjustments will be required to the forecast results (based on the interim 2023 base year model)	- It should be noted that not all observed 2023 data were available at the time of development of the interim 2023 base year model and existing available data from previous years have been used in these cases (i.e. observed journey time data were from 2019 and mobile network data were from 2019 (with adjustments applied)) - Longer timescale required to re-run the forecast scenarios	10-16 weeks

2. Observed Count Data (March 2019 and March 2023)

2.1.1 For the 2019 to 2023 adjustment factors required to factor the existing highway demand matrices for Option 1, AECOM has considered three data sources as discussed in the *Technical Note – proposed approaches to apply a COVID-19 adjustment to transport model forecasts (v1.0)*[3]. These are:

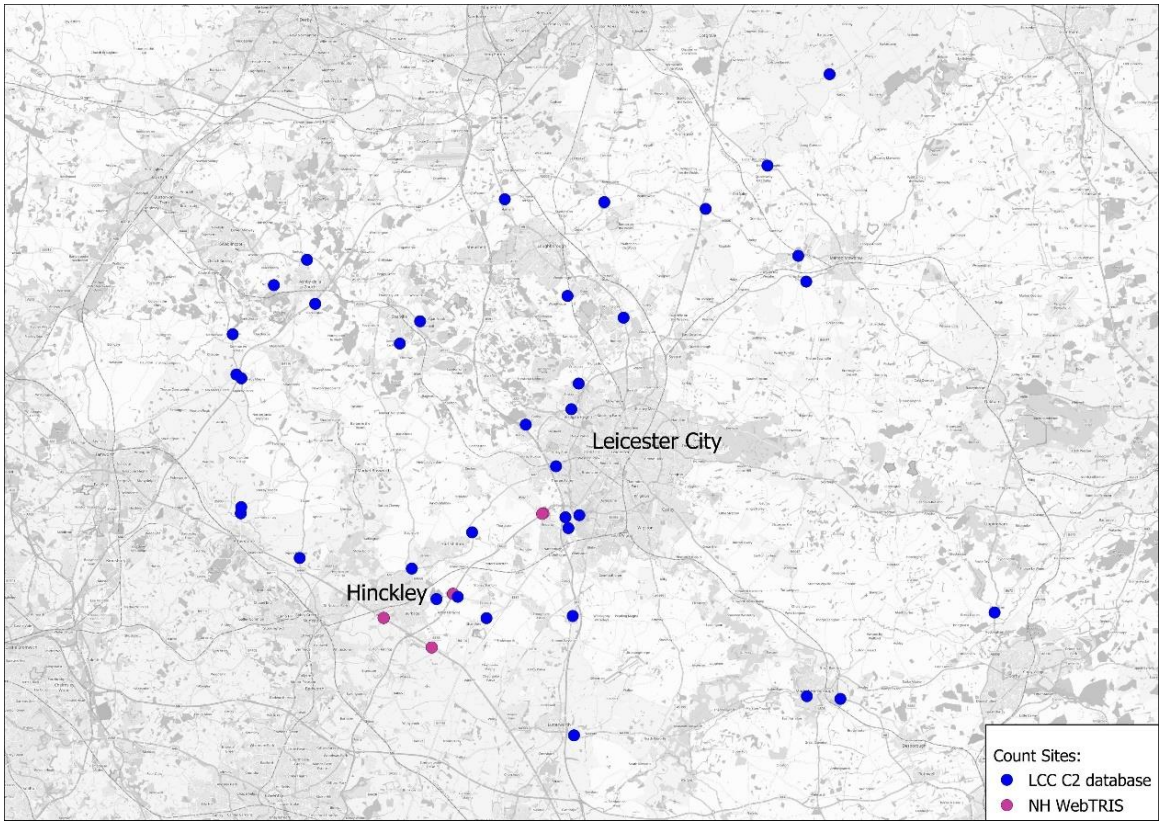
- existing local count data within Leicestershire;
- National Travel Survey (NTS) data between 2019 and 2022 (the latest available data); and
- the adjustment factors provided in the updated TAG Unit M4.

2.1.2 Given that the NTS and the factors provided in the TAG Unit M4 are based on older data from 2021 and 2022, which are expected to be partially affected by COVID-19 lockdown behaviour, it is considered preferable that the adjustment factors for this project are calculated using the March 2019 and March 2023 local count data within Leicestershire.

2.1.3 Figure 2-1 shows the count data sites, which include Automatic Traffic Counts (ATCs) from Leicestershire County Council's C2 database, and National Highways' WebTRIS database (for the M69 and A5).

[3] *TN_approaches to apply a COVID-19 adjustment_v1.0.pdf* (dated 19 Oct 2023)

Figure 2-1: Leicestershire Count Data (March 2019 and March 2023)



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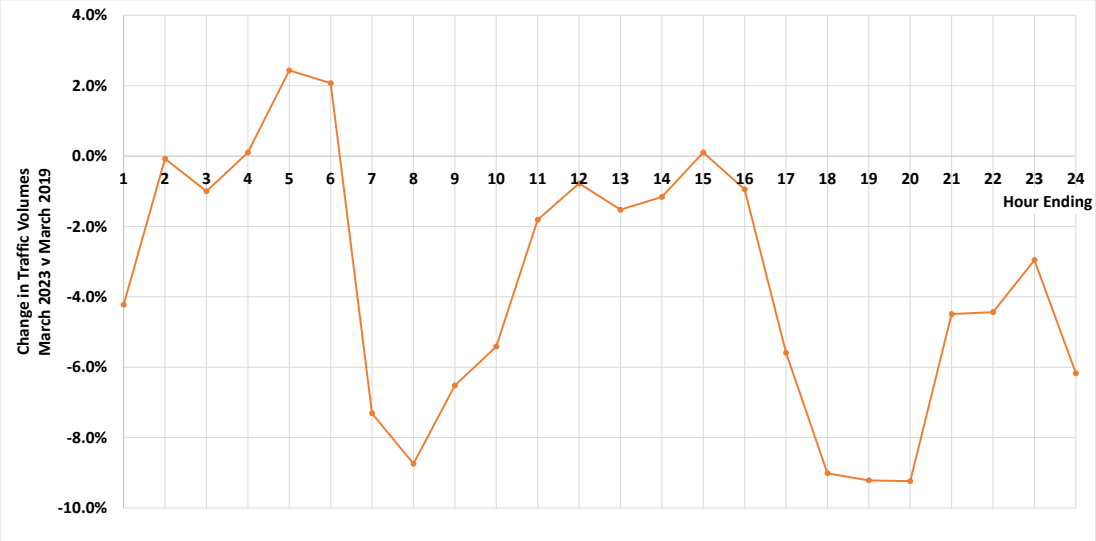
3. 2019 to 2023 Adjustment Factors

3.1.1 AECOM has undertaken analysis using existing available ATC data for March 2019 and March 2023 in Leicestershire (Figure 2-1) to understand the traffic volume changes between pre- and post-COVID-19, which shows that there is a reduction of **6.5%** and **9.0%** in traffic volume between 2019 and 2023 for the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours respectively.

3.1.2 Figure 3-1 shows the change in traffic volumes between March 2019 and March 2023 by hour.

Figure 3-1: Change in Traffic Volumes between March 2019 and March 2023



3.1.3 The adjustment factors have been applied to the existing forecast highway demand matrices to estimate the COVID-19 adjusted 2036 forecast highway demand matrices for the sensitivity tests using the following steps:

- Step 1: Take the existing 2019 forecast highway demand matrices and apply the adjustment factors globally (i.e. -6.5% for the AM Peak hour and -9.0% for the PM Peak hour) to produce the 2023 post COVID-19 demand matrices.
- Step 2: Calculate the percentage growth between 2023 and 2036 by interpolating between the existing 2019 and 2036 forecast highway demand matrices. We assume that the growth between 2019 and 2036 is linear.
- Step 3: Apply the percentage growth between 2023 and 2036 (at an origin-destination level) to the 2023 post COVID-19 demand matrices from Step 1 to produce the COVID-19 adjusted 2036 'Without Development' demand matrices. To create the COVID-19 adjusted 2036 'With Development' demand matrices, the difference matrices between the existing 2036 'With Development' and 2036 'Without Development' demand matrices are then added to the COVID-19 adjusted 2036 'Without Development' demand matrices.
- Step 4: Assign the COVID-19 adjusted 2036 demand matrices to produce the COVID-19 adjusted highway assignment sensitivity tests.

3.1.4 Table 3.1 shows the matrix totals following the COVID-19 adjustments. For information, Table 3.2 shows the matrix totals from the existing 2036 forecast model scenarios (i.e. without COVID-19 adjustments) and Table 3.3 shows the development trip generation / attraction data for the proposed Hinckley NRFI development.

3.1.5 The matrix totals are also presented in graph format in Figure 3-2 and Figure 3-3, which show the percentage change in matrix totals (vs 2014) before and after COVID-19 adjustments for the AM Peak and PM Peak hours respectively.

Table 3.1: Matrix Totals (with COVID-19 adjustments)

	2014	2019	2023 (COVID-19 adjusted)	2036 'Without Dev' (COVID-19 adjusted)	2036 'With Dev' (COVID-19 adjusted)
AM Peak hour (08:00 to 09:00)					
Matrix Total (PCUs)	**710,517**	**794,261**	**742,486**	**846,472**	**848,334**
vs 2014	--	11.8%	4.5%	19.1%	19.4%
vs 2019	--	--	-6.5%	6.6%	6.8%
vs 2023	--	--	--	14.0%	14.3%
				'With Dev' minus 'Without Dev'	*1,862*
PM Peak hour (17:00 to 18:00)					
Matrix Total (PCUs)	**686,308**	**772,072**	**702,490**	**806,010**	**808,870**
vs 2014	--	12.5%	2.4%	17.4%	17.9%
vs 2019	--	--	-9.0%	4.4%	4.8%
vs 2023	--	--	--	14.7%	15.1%
				'With Dev' minus 'Without Dev'	*2,860*

Table 3.2: Matrix Totals (without COVID-19 adjustments)

	2014	2019	2036 'Without Dev'	2036 'Without Dev With Infrastructure'*	2036 'With Dev'
AM Peak hour (08:00 to 09:00)					
Matrix Total (PCUs)	**710,517**	**794,261**	**945,296**	**945,288**	**947,158**
vs 2014	--	11.8%	33.0%	33.0%	33.3%
vs 2019	--	--	19.0%	19.0%	19.3%
			'Without Dev With Inf' minus 'Without Dev'	*-8*	*--*
				'With Dev' minus 'Without Dev With Inf'	*1,870*
				'With Dev' minus 'Without Dev'	*1,862*
PM Peak hour (17:00 to 18:00)					
Matrix Total (PCUs)	**686,308**	**772,072**	**925,910**	**926,509**	**928,770**
vs 2014	--	12.5%	34.9%	35.0%	35.3%
vs 2019	--	--	19.9%	20.0%	20.3%
			'Without Dev With Inf' minus 'Without Dev'	*599*	*--*
				'With Dev' minus 'Without Dev With Inf'	*2,261*
				'With Dev' minus 'Without Dev'	*2,860*

***** *Full PRTM transport model run and includes the application of variable demand model*

Table 3.3: Development Trip Generation / Attraction for Hinckley NRFI[4]

	AM Peak hour (08:00 to 09:00)			PM Peak hour (17:00 to 18:00)		
	Arrivals	**Departures**	**Totals**	**Arrivals**	**Departures**	**Totals**
(in vehicles)						
Lights	899	117	1,016	351	922	1,273
HGVs	208	219	427	235	259	494
Total	**1,107**	**336**	**1,443**	**586**	**1,181**	**1,767**
(in PCUs)*						
Lights	899	117	1,016	351	922	1,273
HGVs	416	438	854	470	518	988
Total	**1,315**	**555**	**1,870**	**821**	**1,440**	**2,261**

**PCU factors for Lights and HGVs are 1.0 and 2.0 respectively.*

Figure 3-2: Percentage Change in Matrix Totals (vs 2014) (AM Peak hour)

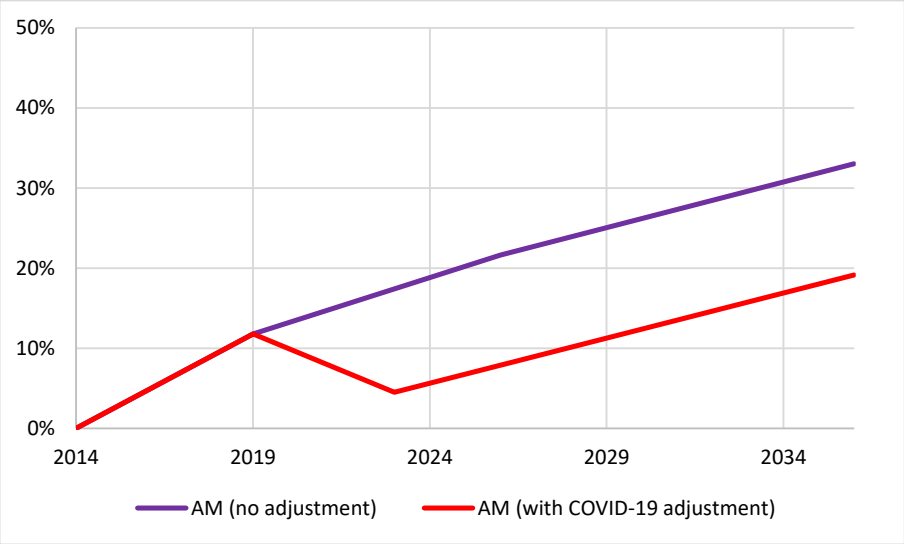
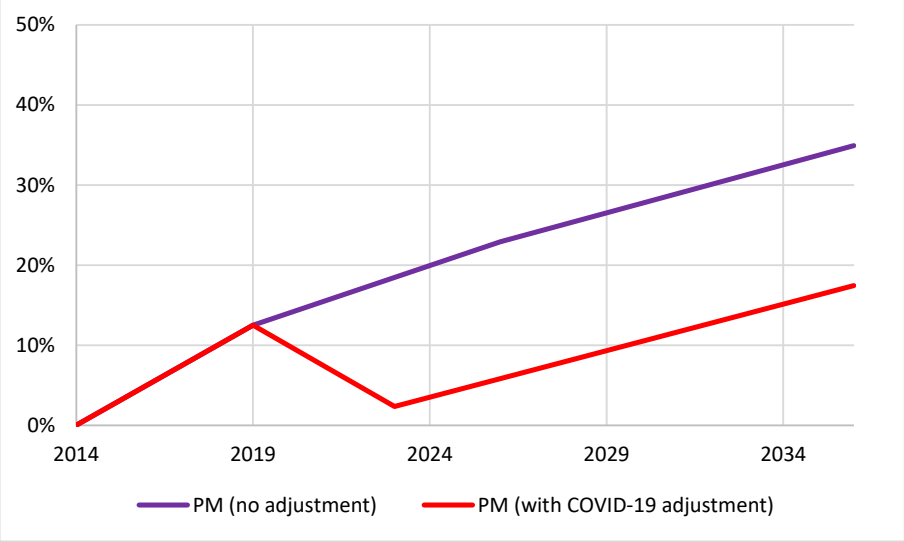


Figure 3-3: Percentage Change in Matrix Totals (vs 2014) (PM Peak hour)



[5] PRTMv2.2 Hinckley National Rail Freight Interchange Application: Forecast Modelling v3.0 (2022-05-18)

4. Forecast Model Results (COVID-19 Sensitivity Tests)

4.1 Introduction

4.1.1 The section of the technical note presents the forecast results for the 2036 COVID-19 sensitivity test scenarios requested as part of the brief.

4.1.2 Highway assignment model runs were undertaken using the 2036 COVID-19 adjusted 'Without Development' / 'With Development' highway demand matrices and the existing 2036 'Without Development' / 'With Development' highway networks. To provide an understanding of changes between the previous forecasts[5] undertaken for the Hinckley NRFI assessment (i.e. 2036 'Without Development' and 2036 'With Development' scenarios) and the COVID-19 sensitivity tests ((i.e. 2036 'Without Development (COVID-19 sensitivity test)' and 2036 'With Development (COVID-19 sensitivity test)' scenarios), the following analysis for the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours was undertaken.

- The forecast flow changes between the 2036 'Without Development' and 2036 'Without Development (COVID-19 sensitivity test)', and between the 2036 'With Development' and 2036 'With Development (COVID-19 sensitivity test)' (Section 4.2).
- The forecast delay changes between the 2036 'Without Development' and 2036 'Without Development (COVID-19 sensitivity test)', and between the 2036 'With Development' and 2036 'With Development (COVID-19 sensitivity test)' (Section 4.3).
- The forecast node volume-capacity ratios for the 2036 'Without Development', 2036 'With Development', 2036 'Without Development (COVID-19 sensitivity test)' and 2036 'With Development (COVID-19 sensitivity test)' scenarios (Section 4.4).

[5] PRTMv2.2 Hinckley National Rail Freight Interchange Application: Forecast Modelling v3.0 (2022-05-18)

4.2 Forecast Flow Change

4.2.1 Figure 4-1 shows the forecast flow changes in 2036 between the 'Without Development' and the 'Without Development (COVID-19 sensitivity test)' scenarios for the AM Peak and PM Peak hours; and Figure 4-3 shows the forecast flow changes in 2036 between the 'With Development' and the 'With Development (COVID-19 sensitivity test)' scenarios for the AM Peak and PM Peak hours. Red bandwidth represents an increase in traffic flow in the COVID-19 sensitivity tests and green bandwidth represents a decrease.

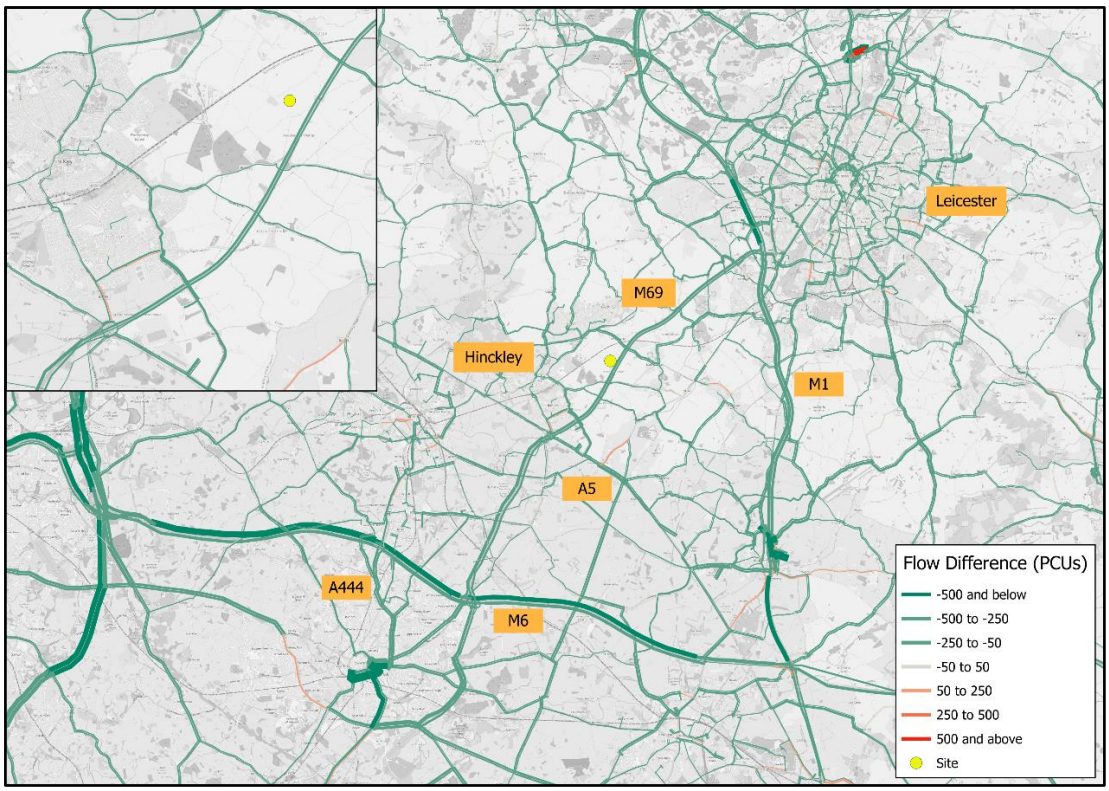
4.2.2 As expected, the forecast flows for the COVID-19 sensitivity tests are lower for most links due to reduced highway demand. For the M69, it is noted that the percentage reduction in forecast flows for the COVID-19 sensitivity tests is generally smaller than for surrounding links.

4.2.3 Figure 4-2 and Figure 4-4 show forecast flow changes for the M1 Junction 21 area. The forecast flow changes between the previous forecasts and the COVID-19 sensitivity tests are small for the M69 eastbound links. For the M69 approach to the M1 Junction 21, the forecast flows are slightly higher in the COVID-19 sensitivity tests for both the 2036 'Without Development (COVID-19 sensitivity test)' and 2036 'With Development (COVID-19 sensitivity test)' scenarios.

4.2.4 These results show that although flows for most links are forecast to be lower in the post-COVID-19 scenarios, the flows around the M1 Junction 21 area and the M69 approach to M1 Junction 21 are forecast to remain high.

Figure 4-1: Forecast Flow Change for the 2036 'Without Development (COVID-19 sensitivity test)' minus 'Without Development' (in PCUs)

AM Peak hour



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PM Peak hour

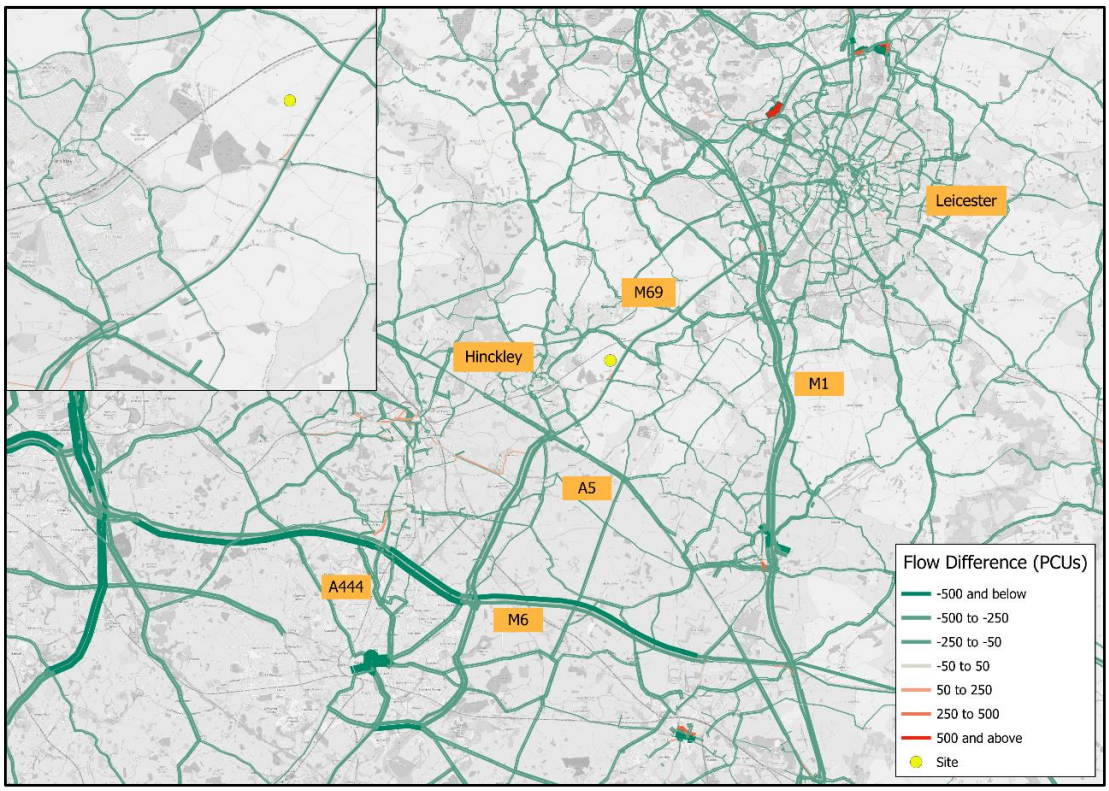

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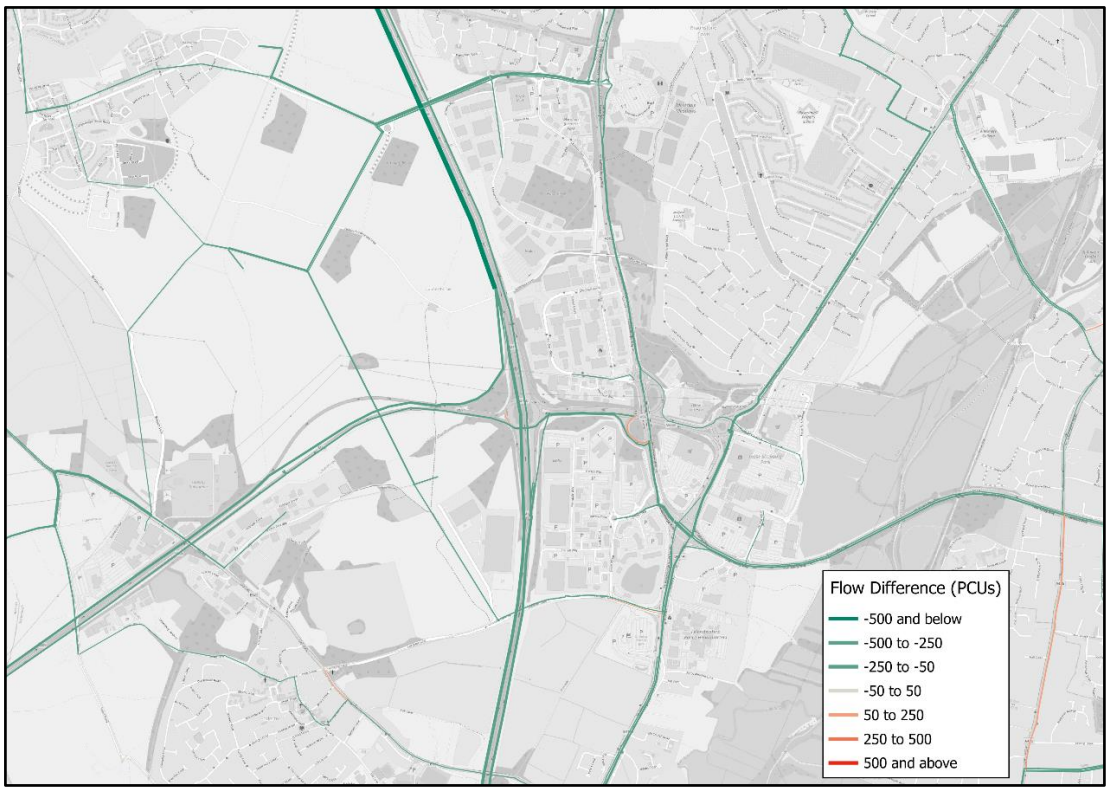
Figure 4-2: Forecast Flow Change for the 2036 'Without Development (COVID-19 sensitivity test)' minus 'Without Development', M1 J21 (in PCUs)

AM Peak hour



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PM Peak hour

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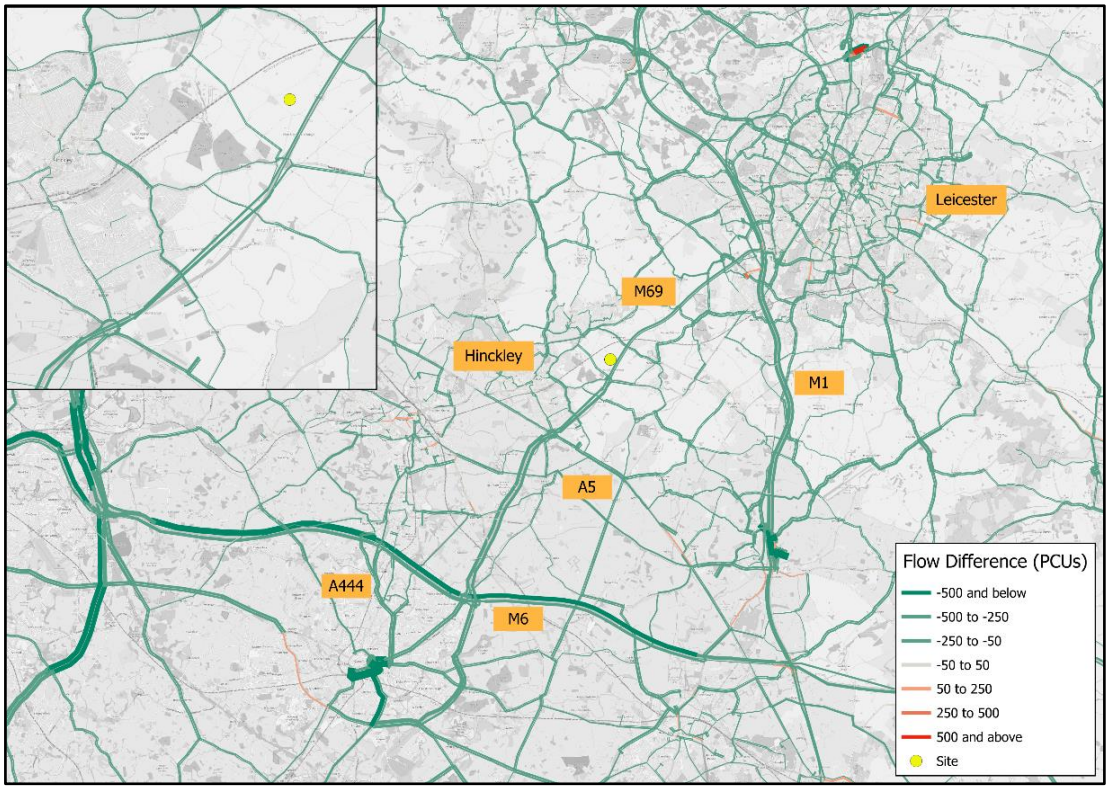
Figure 4-3: Forecast Flow Change for the 2036 'With Development (COVID-19 sensitivity test)' minus 'With Development' (in PCUs)

AM Peak hour



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PM Peak hour

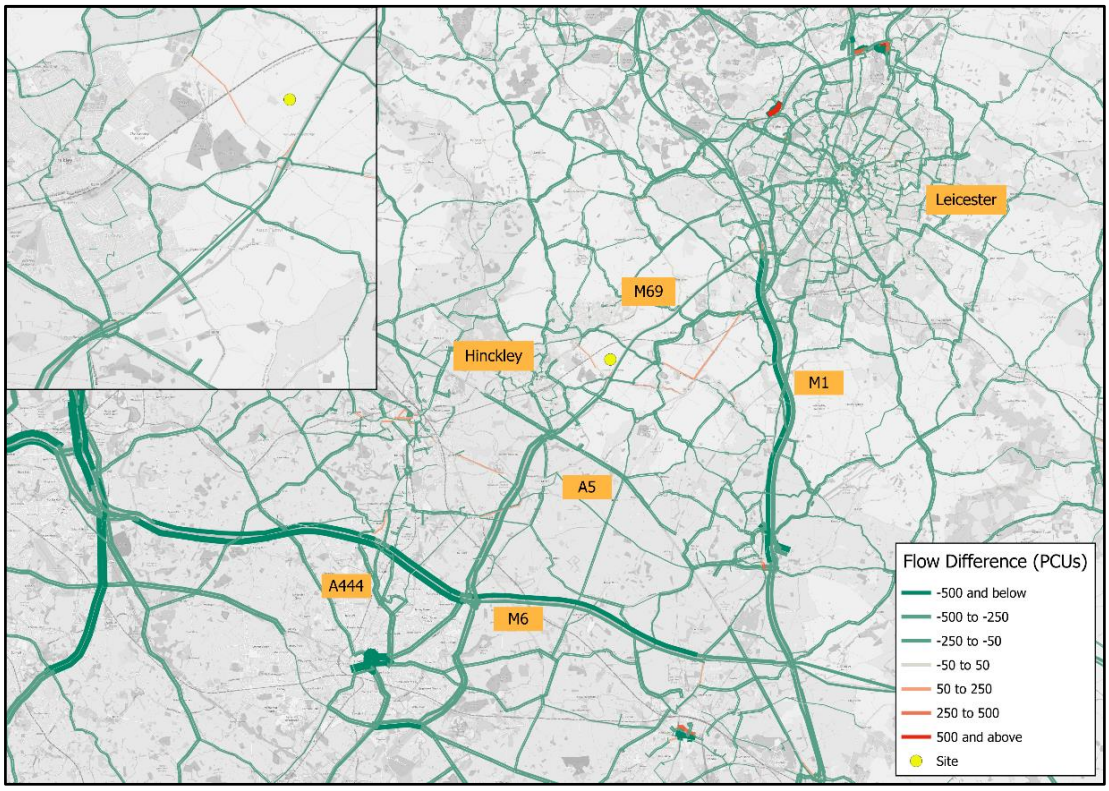

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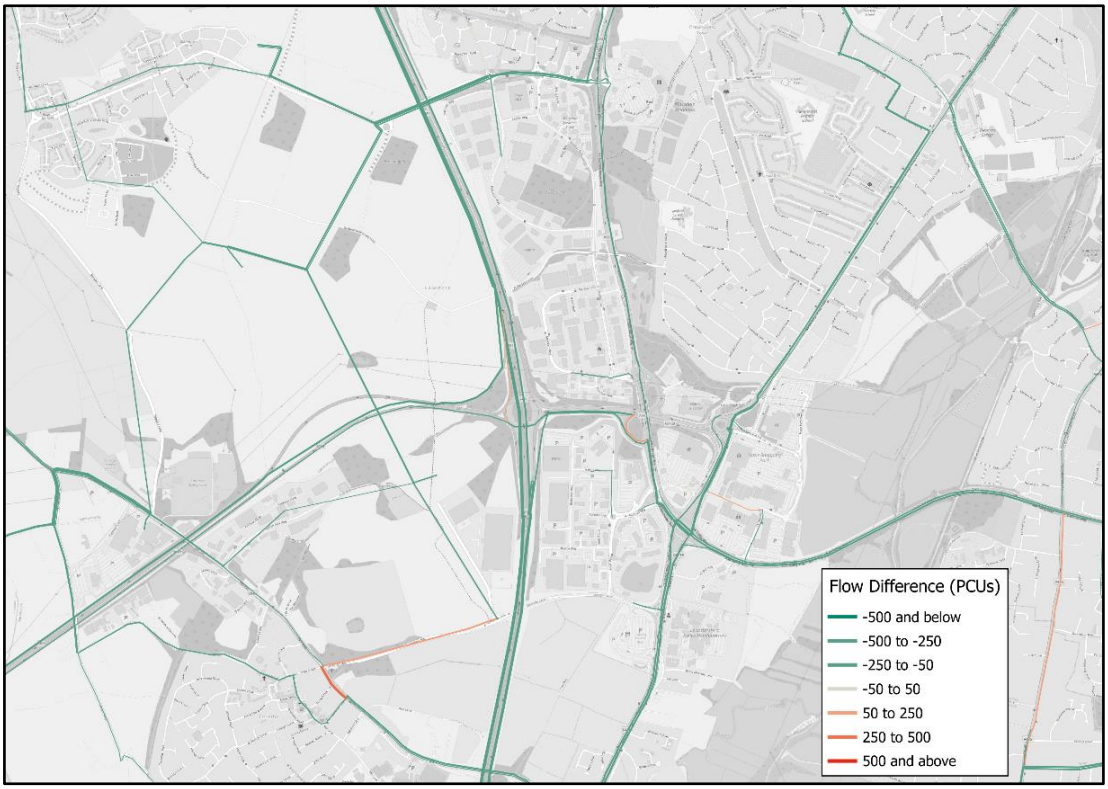
Figure 4-4: Forecast Flow Change for the 2036 'With Development (COVID-19 sensitivity test)' minus 'With Development', M1 J21 (in PCUs)

AM Peak hour



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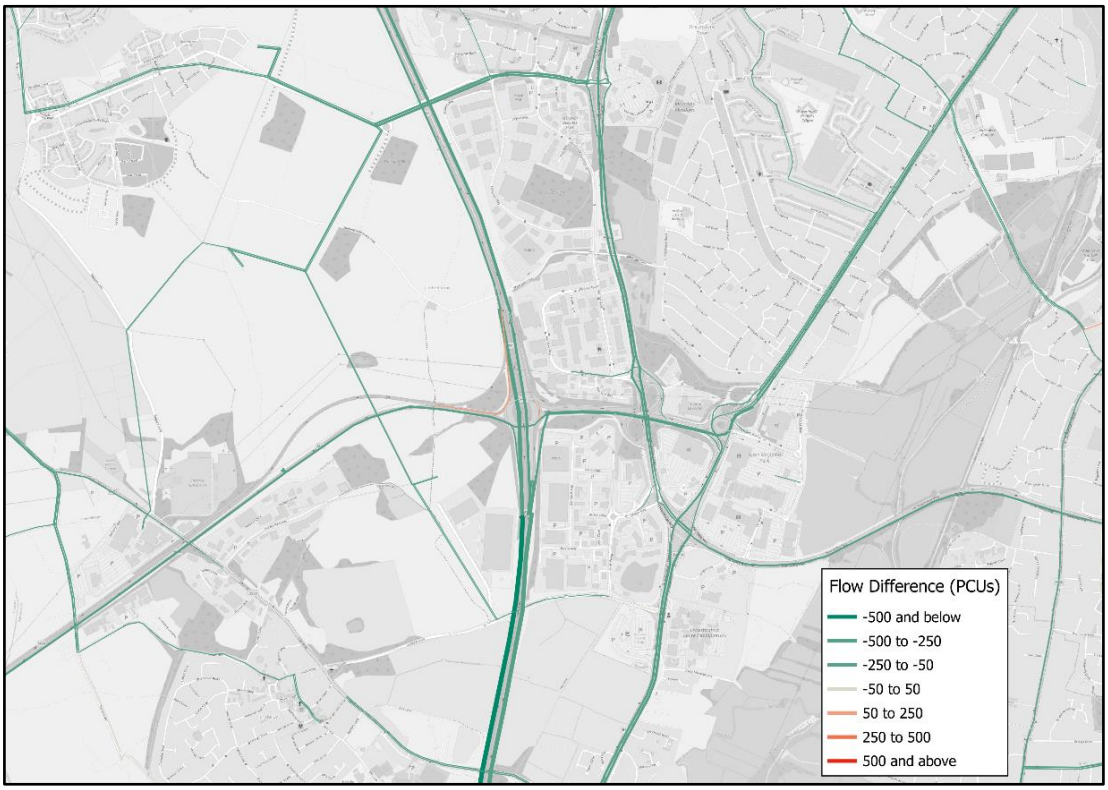
PM Peak hour



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4.3 Forecast Delay Change

4.3.1 As a result of forecast flow changes between the previous forecasts[6] and the COVID-19 sensitivity tests, there are changes to the forecast delay 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 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 and infrastructure.

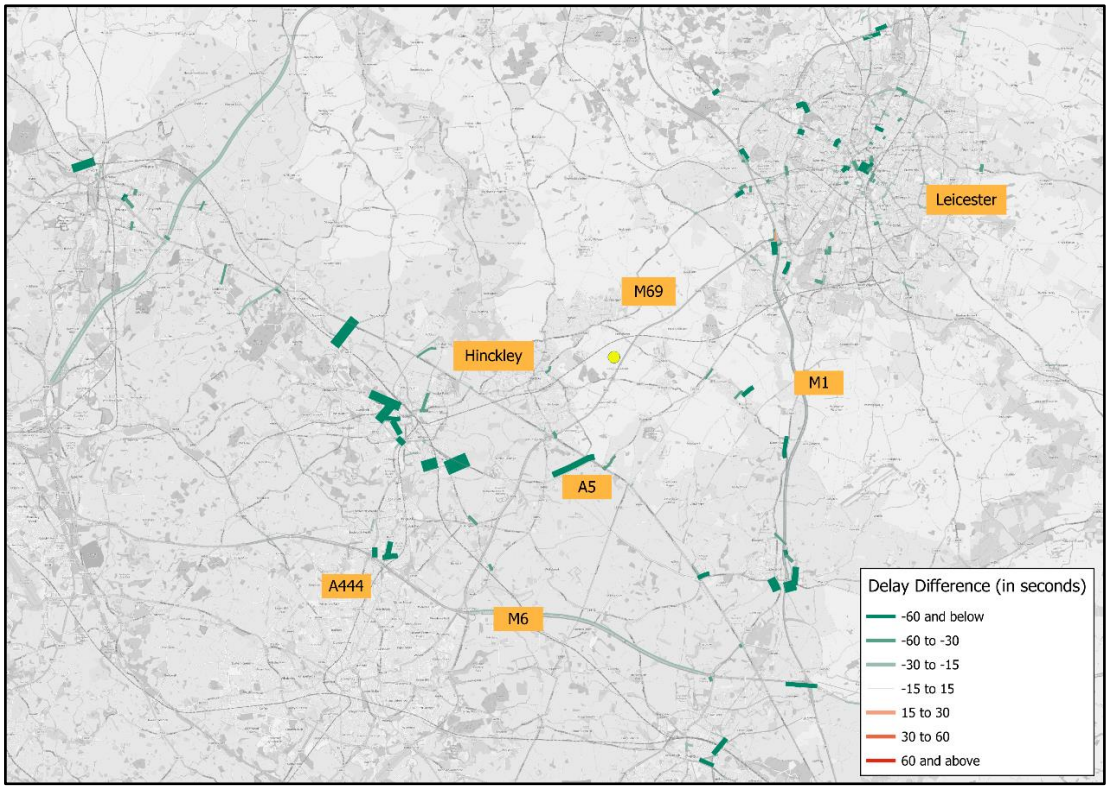
4.3.2 Figure 4-5 shows the forecast delay changes in 2036 between the 'Without Development' and the 'Without Development (COVID-19 sensitivity test)' for the AM Peak and PM Peak hours; and Figure 4-7 shows the forecast flow changes in 2036 between the 'With Development' and the 'With Development (COVID-19 sensitivity test)' for the AM Peak and PM Peak hours. The forecast delay change shows that delays are generally lower for the COVID-19 sensitivity test scenarios, due to lower flows.

4.3.3 Figure 4-6 and Figure 4-8 show the forecast delay changes for the M1 Junction 21 area which also show that delays are generally lower for most approaches to the M1 Junction 21 for the COVID-19 sensitivity scenarios, except for the M1 northbound on-slip which is forecast to have slightly higher delay.

[6] PRTMv2.2 Hinckley National Rail Freight Interchange Application: Forecast Modelling v3.0 (2022-05-18)

Figure 4-5: Forecast Delay Change for the 2036 'Without Development (COVID-19 sensitivity test)' minus 'Without Development' (in seconds)

AM Peak hour



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PM Peak hour

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Figure 4-6: Forecast Delay Change for the 2036 'Without Development (COVID-19 sensitivity test)' minus 'Without Development', M1 J21 (in seconds)

AM Peak hour

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PM Peak hour

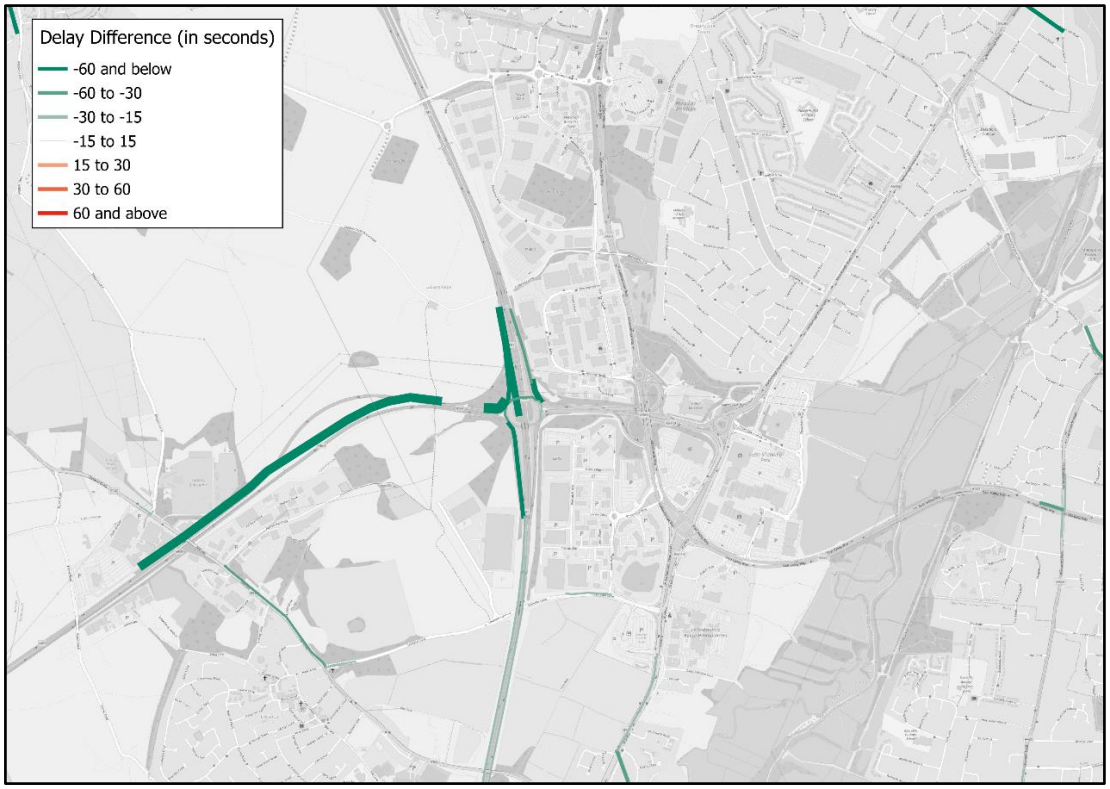

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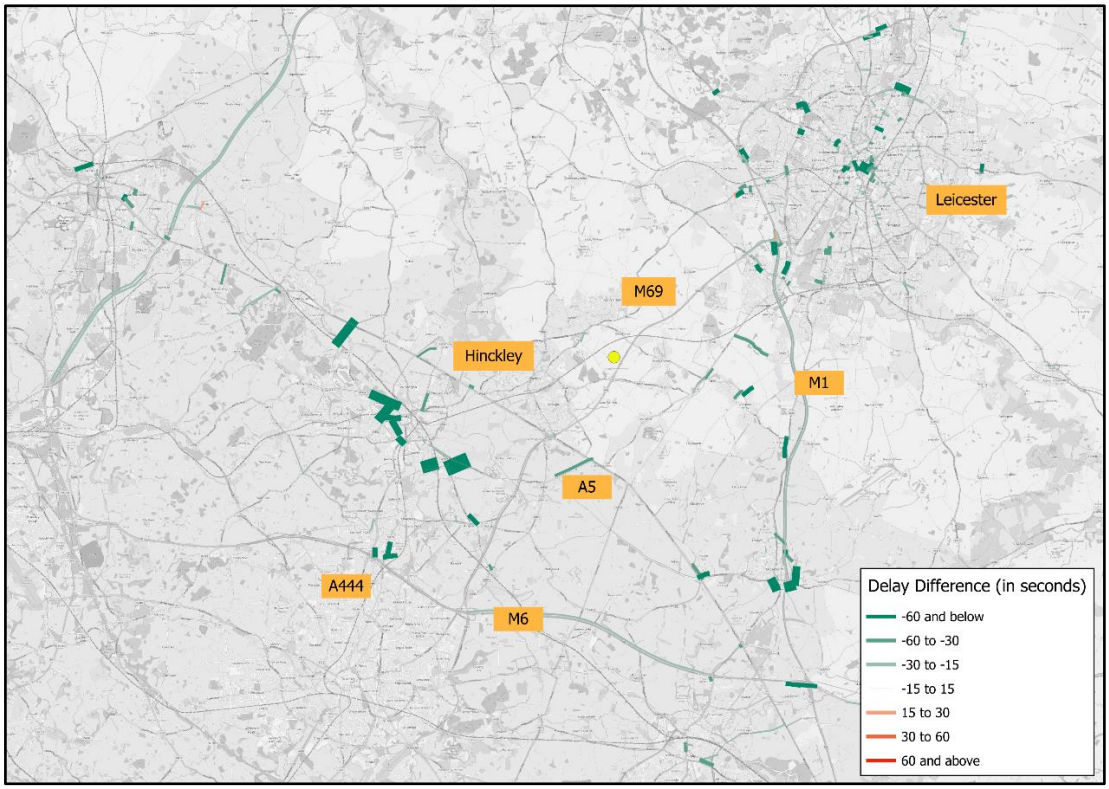
Figure 4-7: Forecast Delay Change for the 2036 'With Development (COVID-19 sensitivity test)' minus 'With Development' (in seconds)

AM Peak hour



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PM Peak hour

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Figure 4-8: Forecast Delay Change for the 2036 'With Development (COVID-19 sensitivity test)' minus 'With Development', M1 J21 (in seconds)

AM Peak hour

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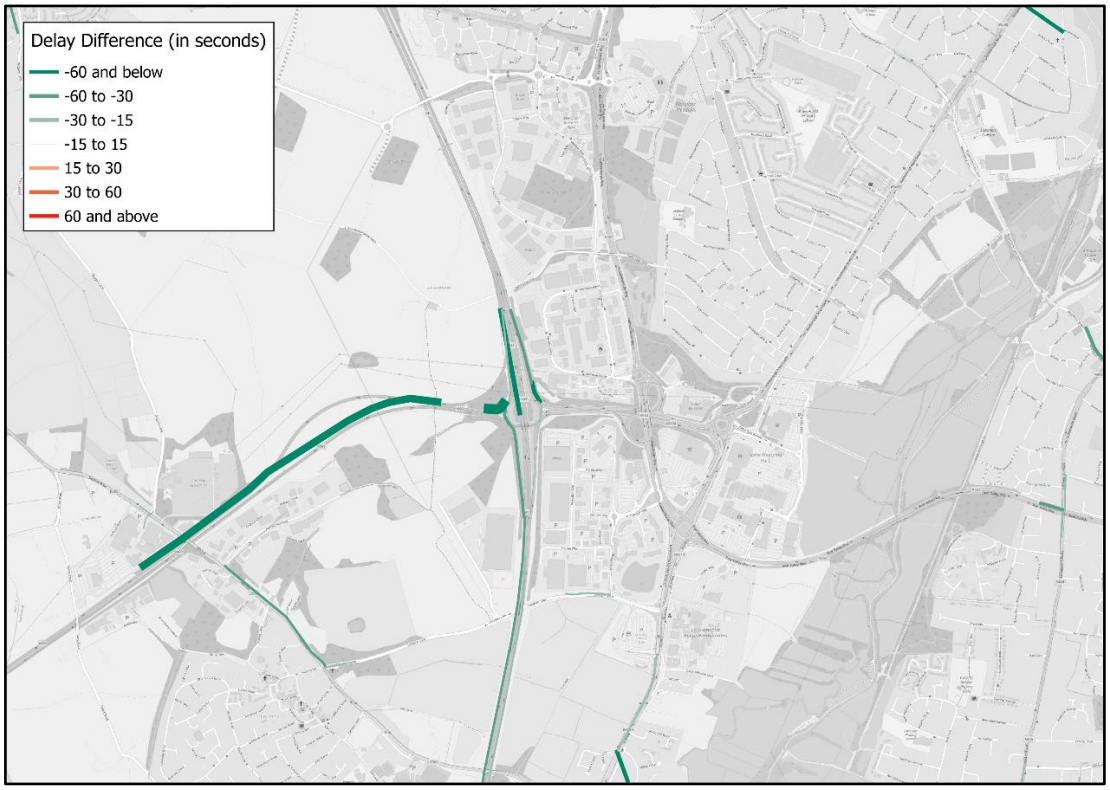
PM Peak hour



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4.4 Forecast Node Volume-Capacity Ratios

4.4.1 As part of the forecast modelling, junction (node) capacities are estimated for individual turning movements based on a number of factors including the 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 node. 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.

4.4.2 To summarise the forecast volume-capacity ratios for individual turning movements at a node, these 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. Volume-capacity ratios exceeding 85% indicate that the highway network is under stress and there is likely to be a reduction in speed and an increase in delay.

4.4.3 Figure 4-9 shows the forecast maximum node volume-capacity ratios for the 2036 'Without Development' and the 2036 'Without Development (COVID-19 sensitivity test)' scenarios, and Figure 4-11 shows the forecast maximum node volume-capacity ratios for the 2036 'With Development' and the 2036 'With Development (COVID-19 sensitivity test)' scenarios. For ease of comparison, the symbology has been designed to show the data for two scenarios on the same plot. To reduce the number of data points on the plots, nodes with maximum volume-capacity ratios below 85% in all forecast scenarios are not shown.

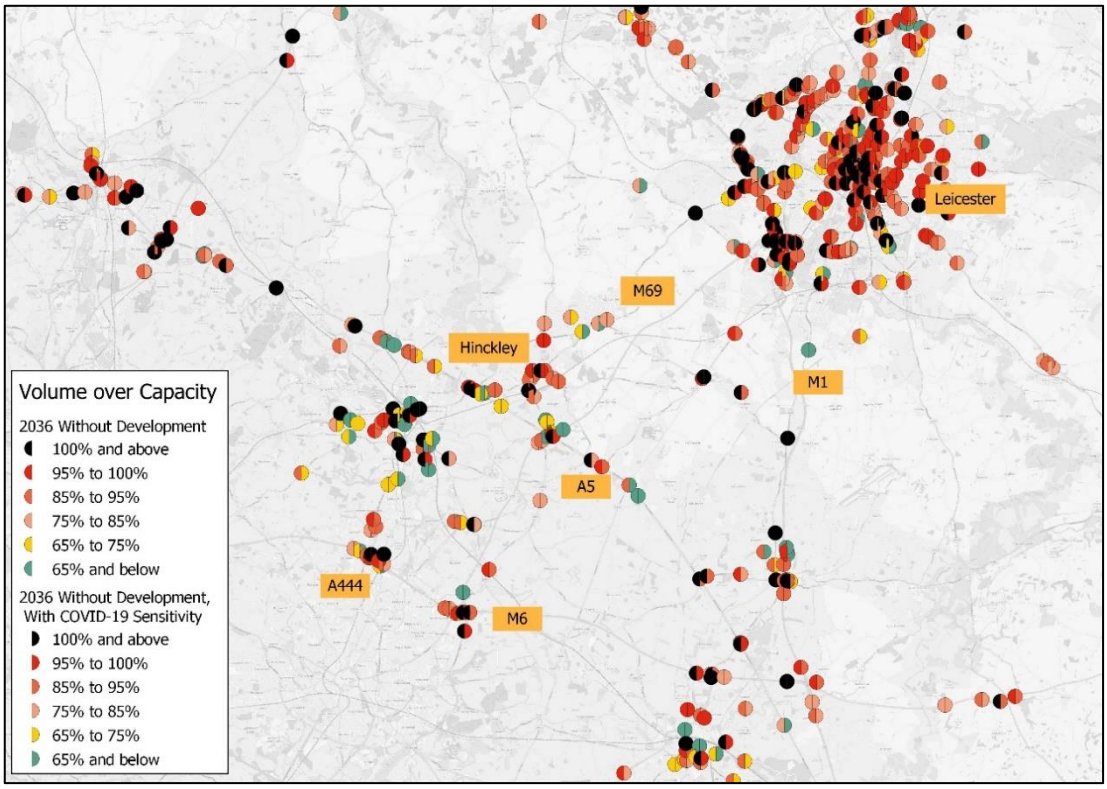
4.4.4 As expected, the maximum node volume-capacity ratios are lower for the COVID-19 sensitivity tests for a number of nodes across the network due to the lower demand. For the 2036 'Without Development (COVID-19 sensitivity test)', it is noted that the forecast maximum node volume-capacity ratios for several nodes within the urban area of Hinckley and the A47 remain high (i.e. above 85%) as well as at M69 Junction 1 and M1 Junction 21 (Figure 4-10 shows the forecast maximum node volume-capacity ratios for the M1 Junction 21 area for the 2036 'Without Development (COVID-19 sensitivity test)' scenario).

4.4.5 For the 2036 'With Development (COVID-19 sensitivity test)', the forecast maximum node volume-capacity ratios are also generally lower when compared with the previous forecasts, however several nodes within the urban area of Hinckley and the A47 remain high (i.e. above 85%) for both the AM Peak and PM Peak hours. The forecast maximum node volume-capacity ratios are also high (i.e. above 85%) at M69 Junction 2 and M1 Junction 21 (Figure 4-12 shows the forecast maximum node volume-capacity ratios for the M1 Junction 21 area for the 2036 'With Development (COVID-19 sensitivity test)' scenario).

4.4.6 For M69 Junction 1, the forecast maximum node volume-capacity ratios for the 2036 'With Development (COVID-19 sensitivity test)' scenario reduce when compared with the 2036 'Without Development (COVID-19 sensitivity test)' scenario as a proportion of M69 eastbound trips to Burbage and Hinckley is forecast to route via M69 Junction 2 (using the south-facing slips) rather than via M69 Junction 1, reducing the pressure on the eastbound approach to the M69 Junction 1 roundabout. However, it should be noted that the forecast maximum node-volume-capacity ratios are still high for the eastern section of M69 Junction 1.

Figure 4-9: Forecast Node Volume-Capacity Ratios for the 2036 'Without Development (COVID-19 sensitivity test)' and 'Without Development'

AM Peak hour



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PM Peak hour

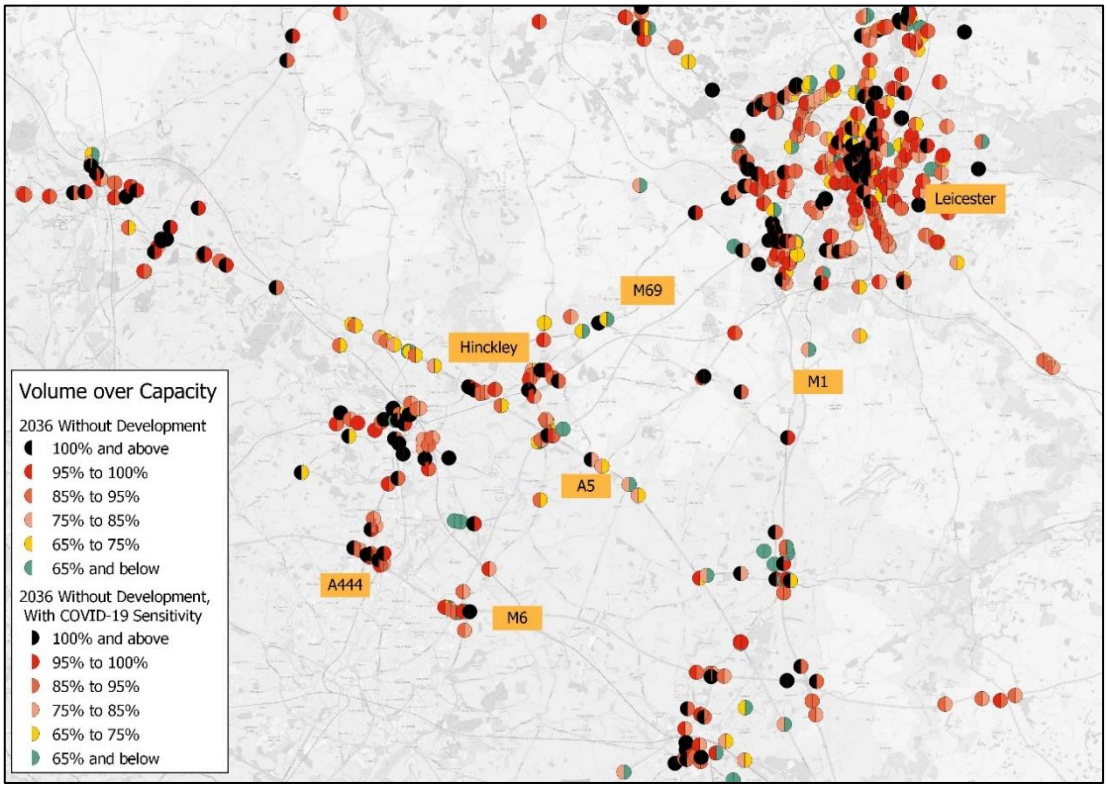

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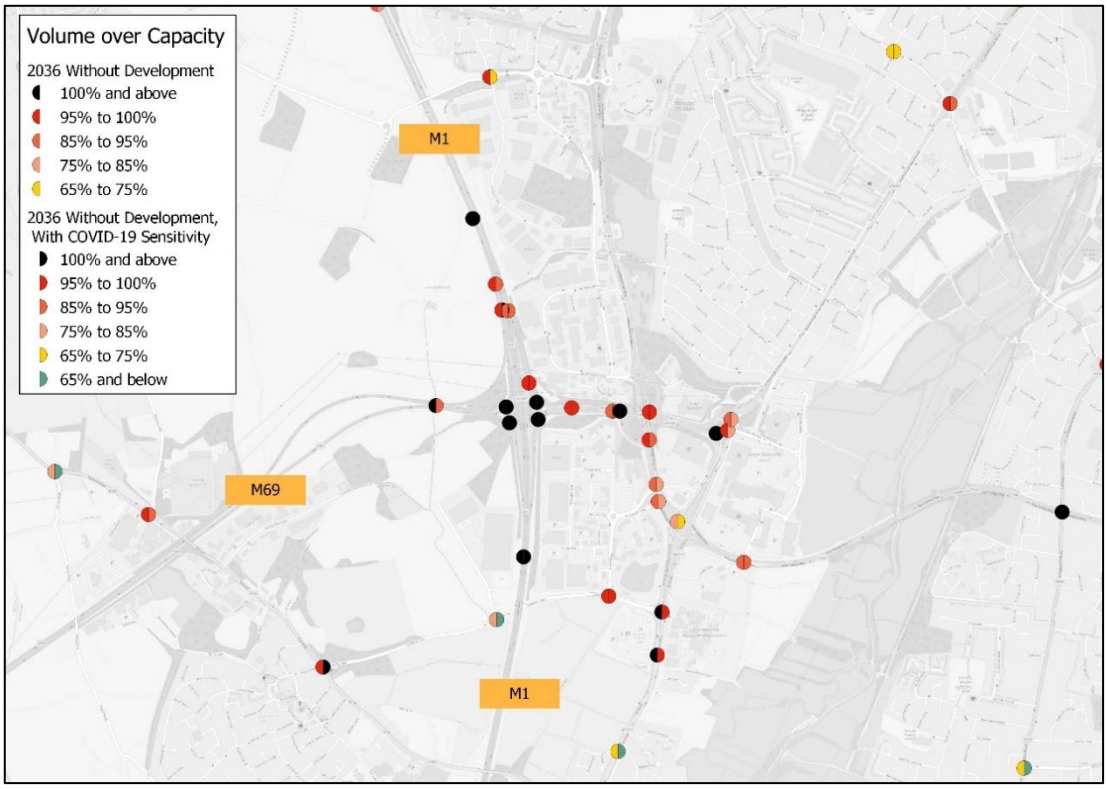
Figure 4-10: Forecast Node Volume-Capacity Ratios for the 2036 'Without Development (COVID-19 sensitivity test)' and 'Without Development', M1 J21

AM Peak hour



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PM Peak hour

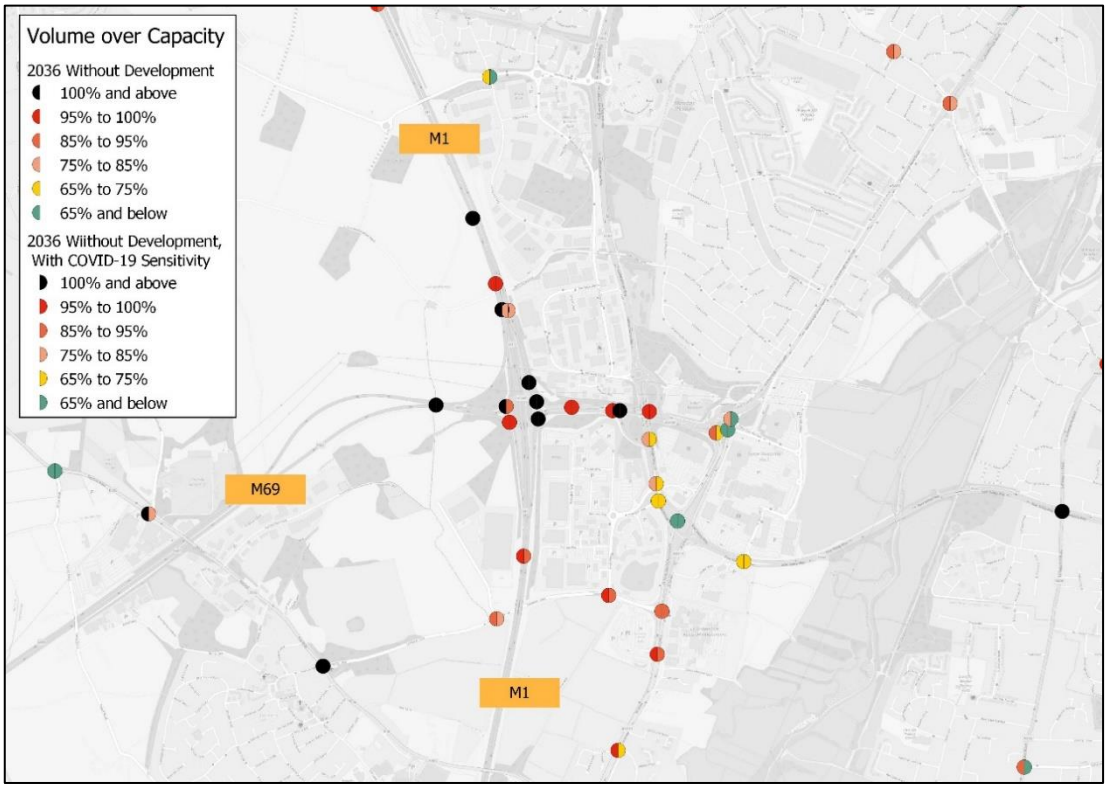

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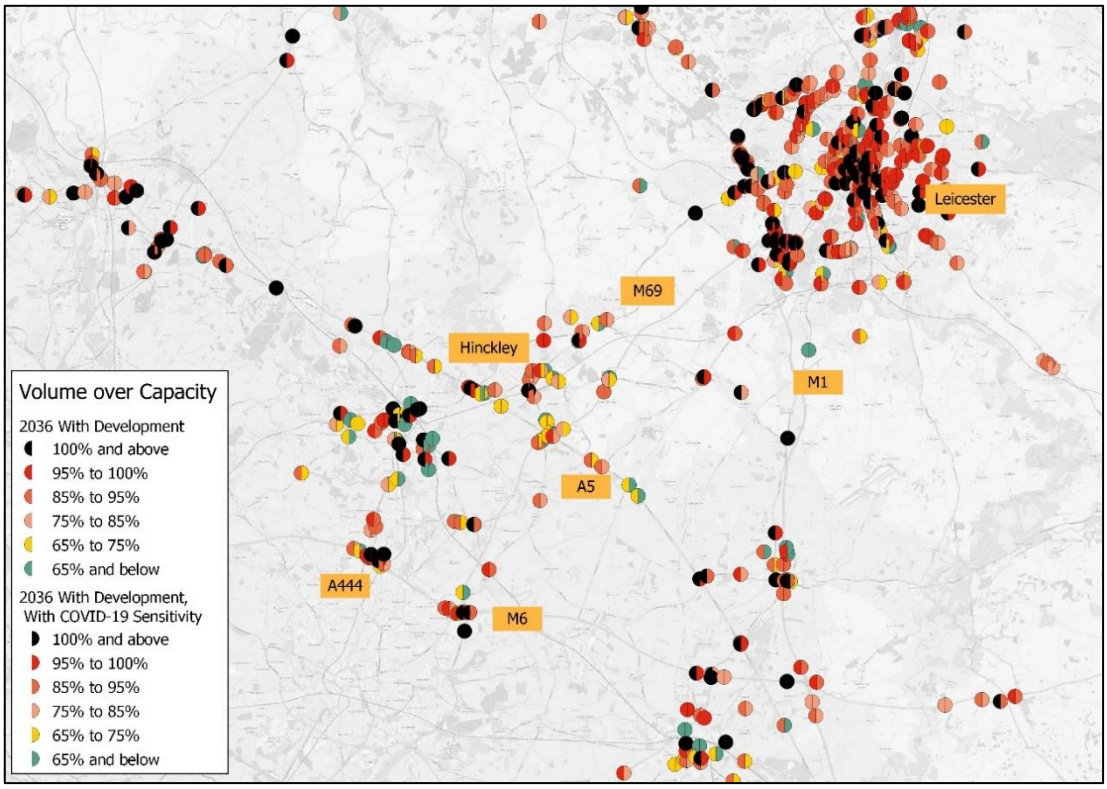
Figure 4-11: Forecast Node Volume-Capacity Ratios for the 2036 'With Development (COVID-19 sensitivity test)' and 'With Development'

AM Peak hour



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PM Peak hour

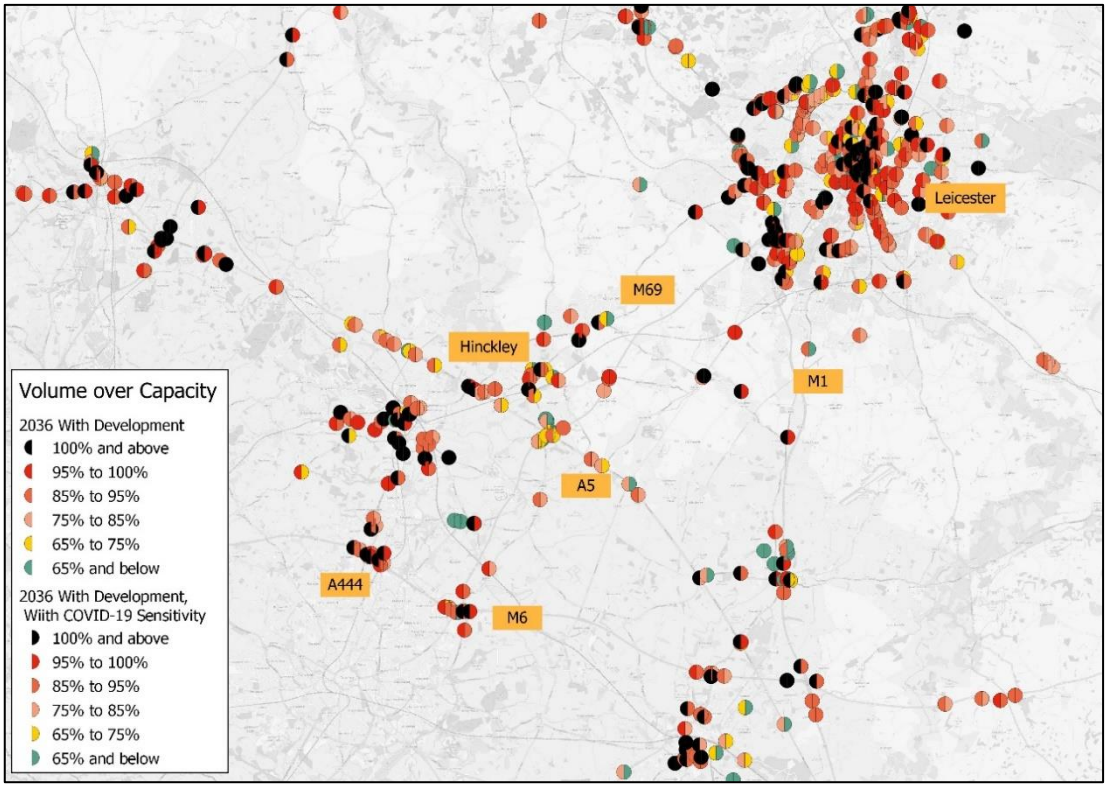

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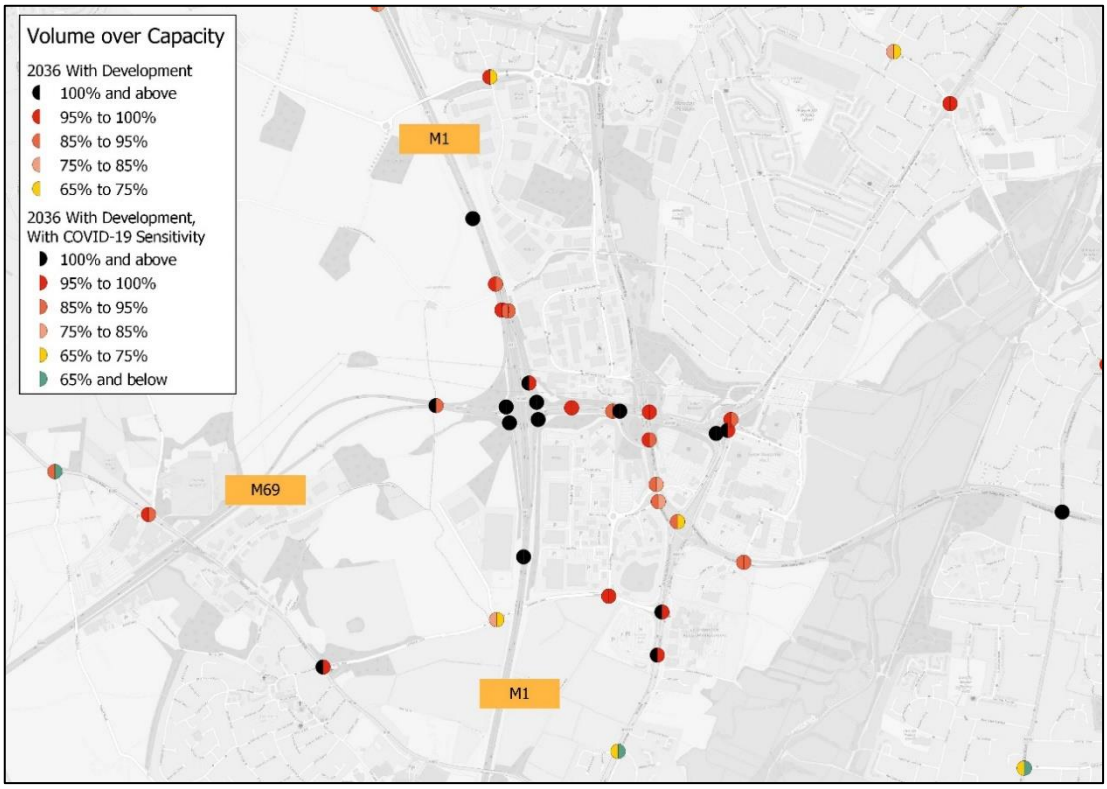
Figure 4-12: Forecast Node Volume-Capacity Ratios for the 2036 'With Development (COVID-19 sensitivity test)' and 'With Development', M1 J21

AM Peak hour



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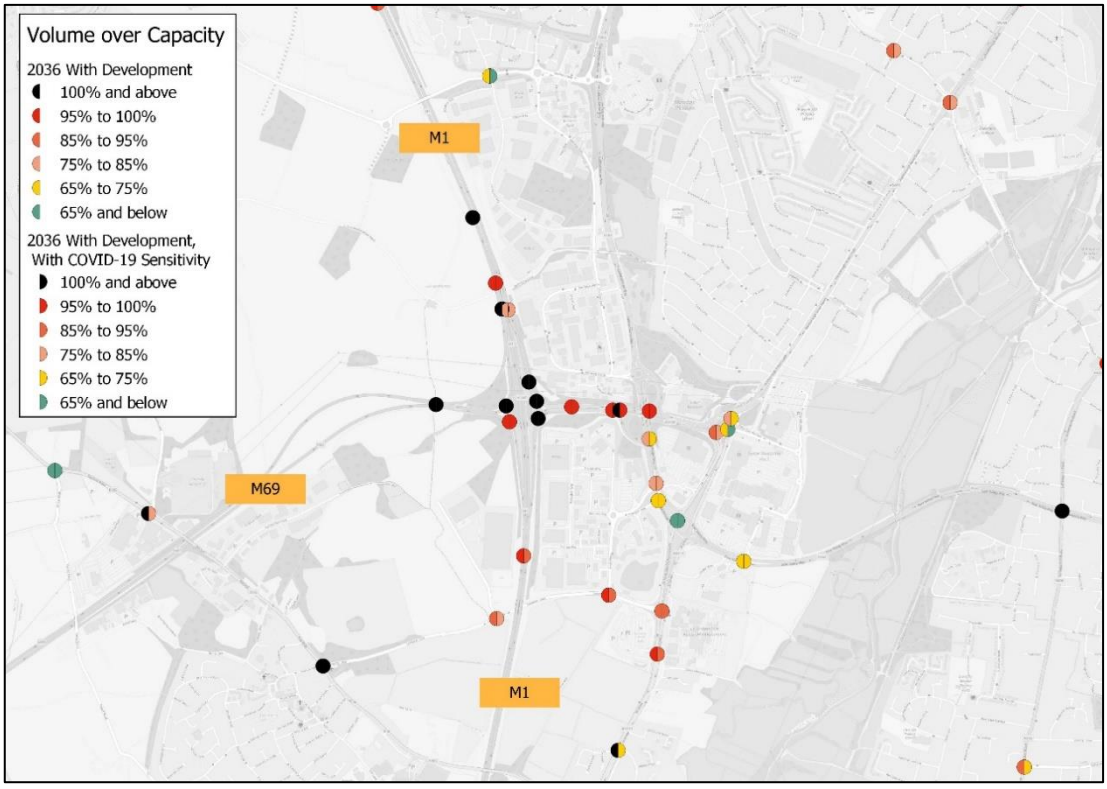
PM Peak hour



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5. Summary

5.1.1 To account for COVID-19 impacts in the highway forecasts undertaken for the assessment of the proposed Hinckley NRFI development, adjustment factors calculated from observed March 2019 and March 2023 data are required.

5.1.2 A data collation exercise was undertaken to review existing available count data within Leicestershire, and based on the count sites as shown in Figure 2-1, there is a reduction of **6.5%** and **9.0%** in traffic volume between 2019 and 2023 for the AM Peak (08:00 to 09:00) and PM Peak (17:00 to 18:00) hours respectively.

5.1.3 Adjustments to the existing 2036 highway forecast demand matrices have been undertaken based on the change in traffic volumes between 2019 and 2023, and the 2036 COVID-19 adjusted demand matrices have been assigned to the relevant 2036 highway networks to produce the 2036 'Without Development (COVID-19 sensitivity test)' and 2036 'With Development (COVID-19 sensitivity test)' highway assignment scenarios.

5.1.4 Forecast flow change, forecast delay change and forecast maximum node volume-capacity ratio comparisons between the previous 2036 forecasts[7] and the COVID-19 sensitivity tests were undertaken.

5.1.5 The forecast results show that the COVID-19 sensitivity tests generally have lower forecast flows and delays for the majority of links across the highway network. However, for the M1 Junction 21 area, the percentage change in forecast flows for the COVID-19 sensitivity tests is generally lower than surrounding links; and for the M69 eastbound approach to the M1 Junction 21, the forecast flows are slightly higher for the COVID-19 sensitivity tests for both the 2036 'Without Development (COVID-19 sensitivity test)' and 2036 'With Development (COVID-19 sensitivity test)' scenarios.

5.1.6 The maximum node volume-capacity ratios also show that M69 Junction 1 and M1 Junction 21 are forecast to remain operating at or over capacity with above 85% maximum node volume-capacity ratios for the 2036 'Without Development (COVID-19 sensitivity test)'. For the 2036 'With Development (COVID-19 sensitivity test)' scenario, in addition to M69 Junction 1 and M1 Junction 21, high maximum node volume-capacity ratios (i.e. above 85%) are also forecast for M69 Junction 2.

[7] PRTMv2.2 Hinckley National Rail Freight Interchange Application: Forecast Modelling v3.0 (2022-05-18)