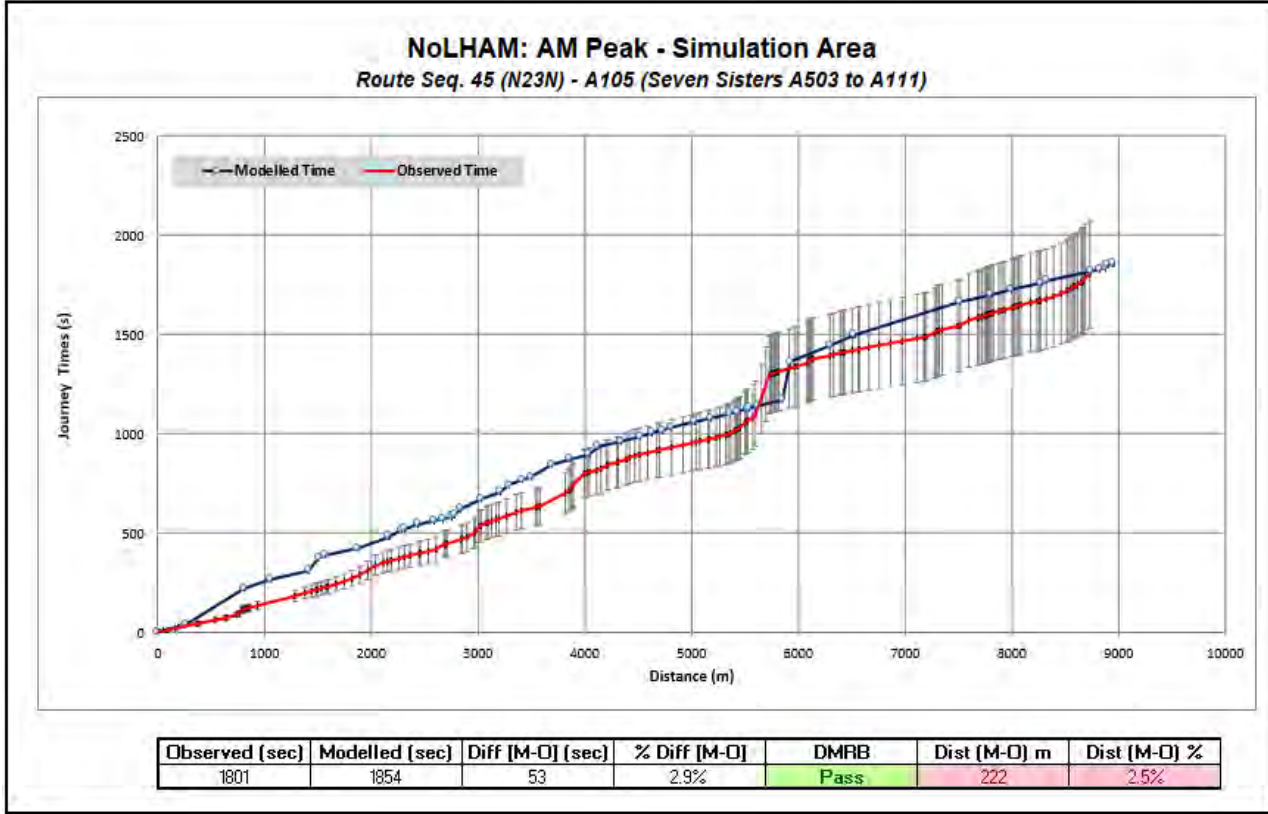
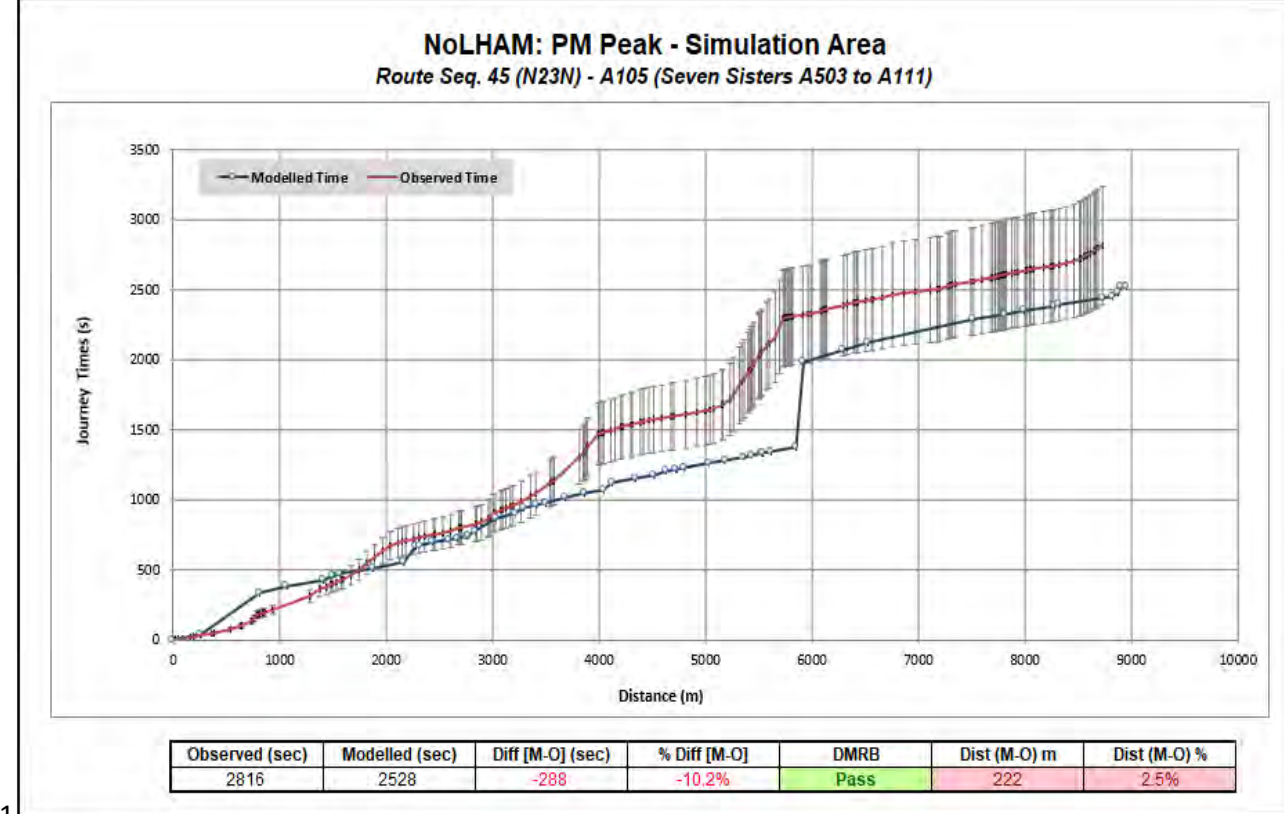


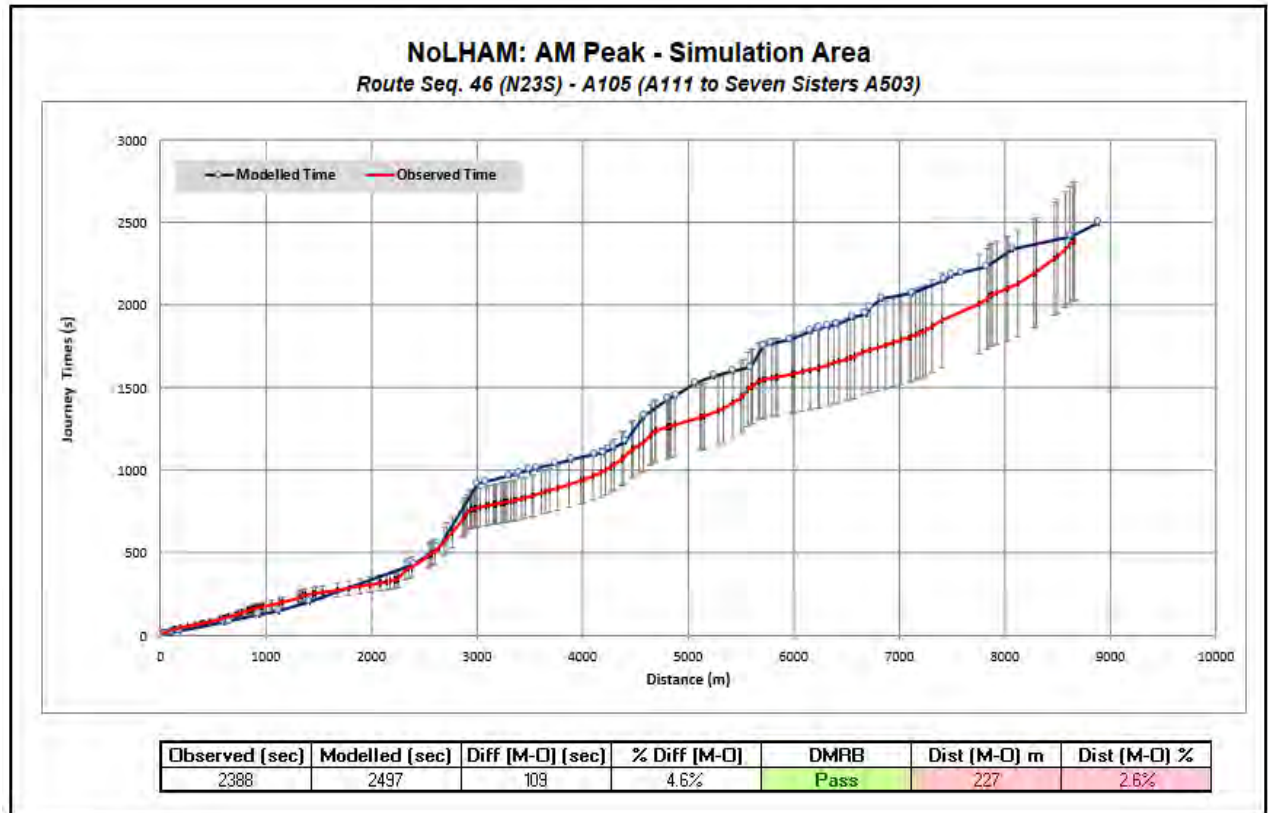
R 109-AM



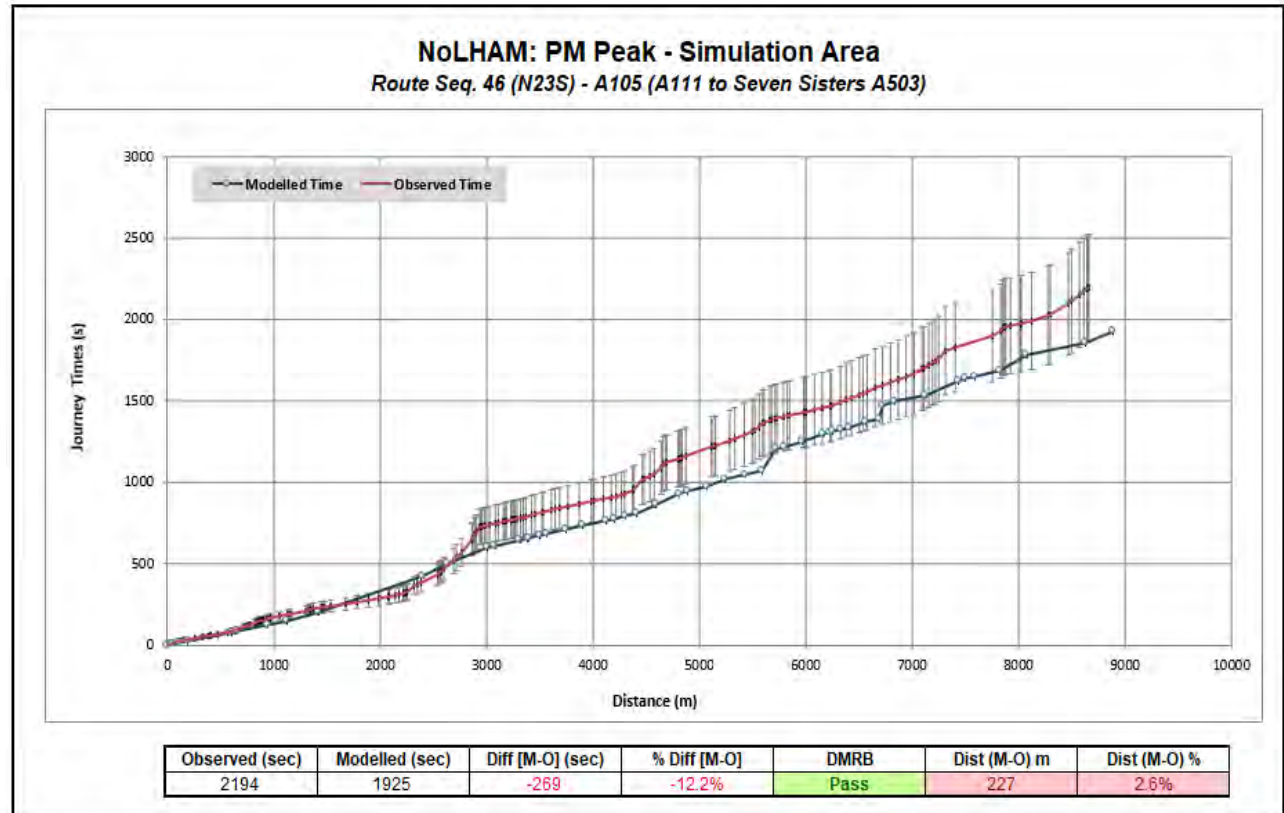
R109- PM



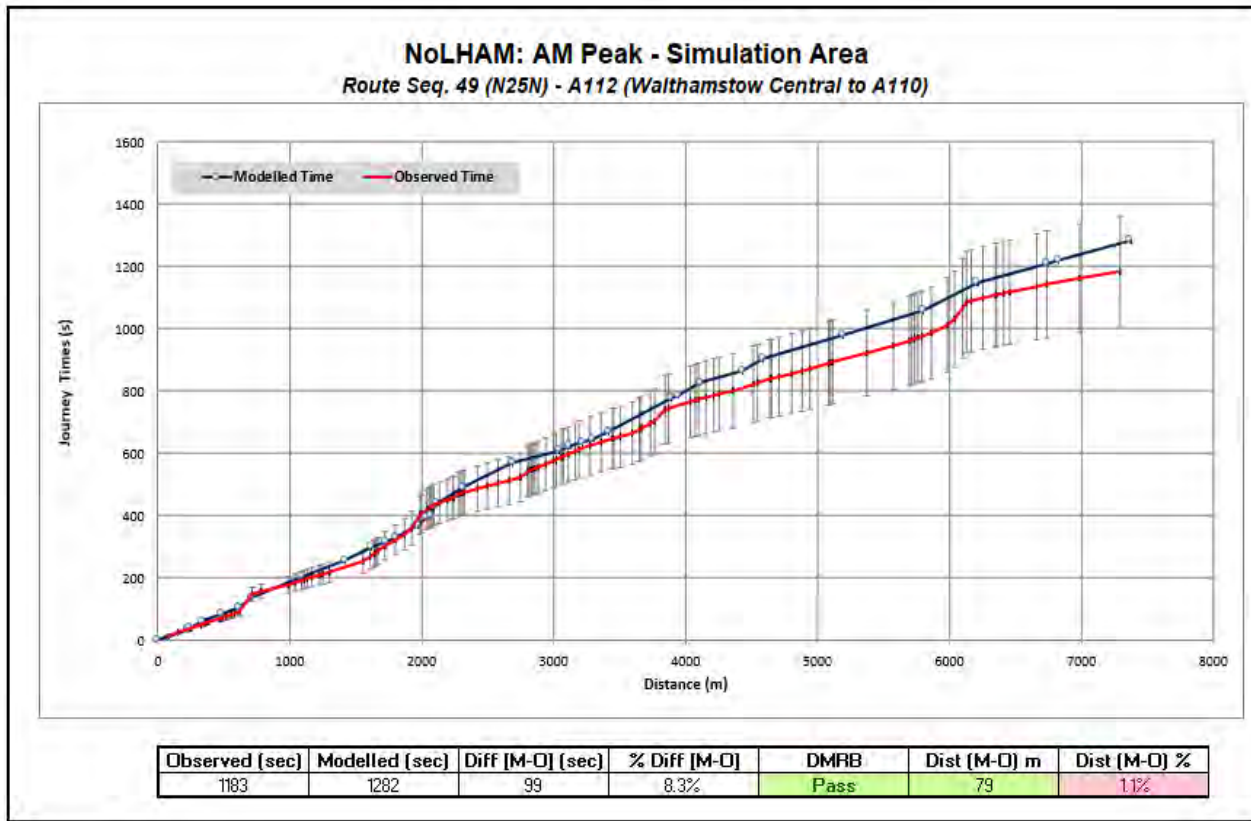
R 110-AM



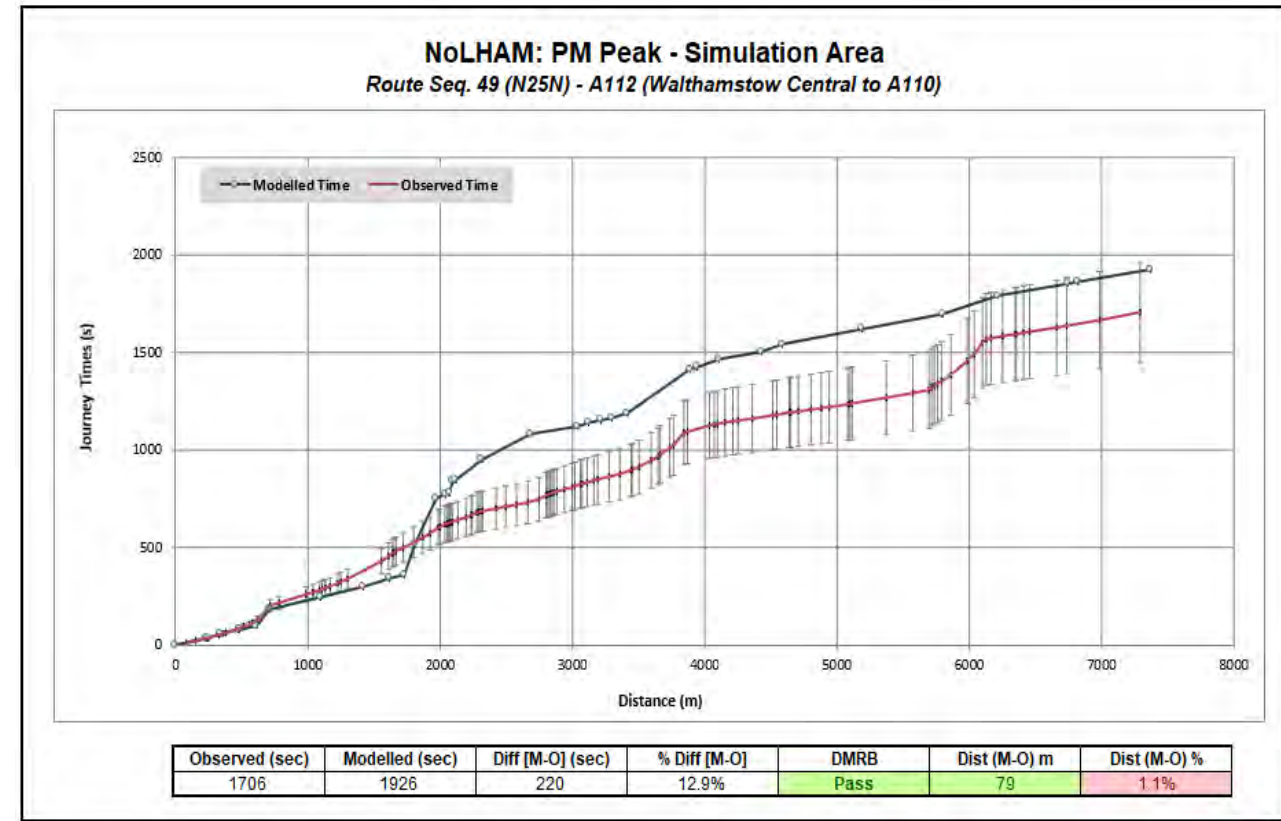
R 110-PM



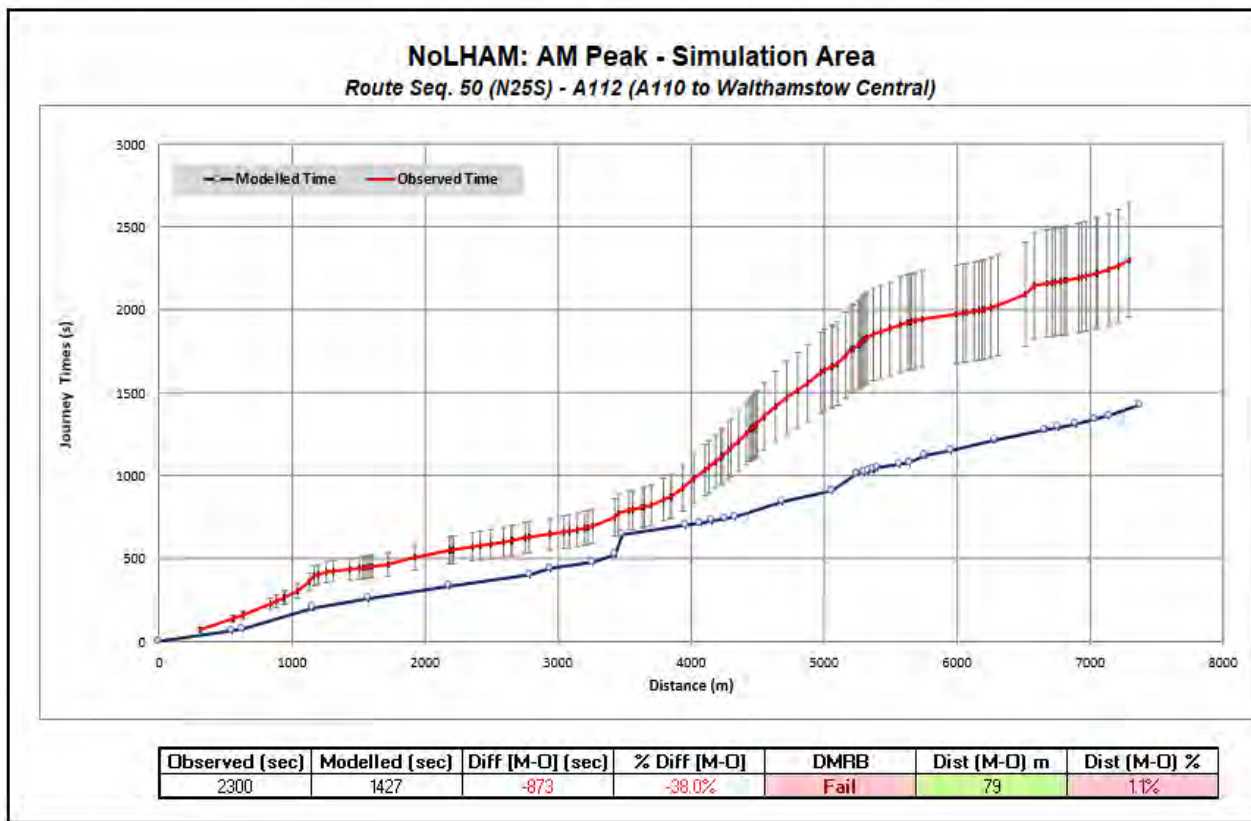
R 113-AM



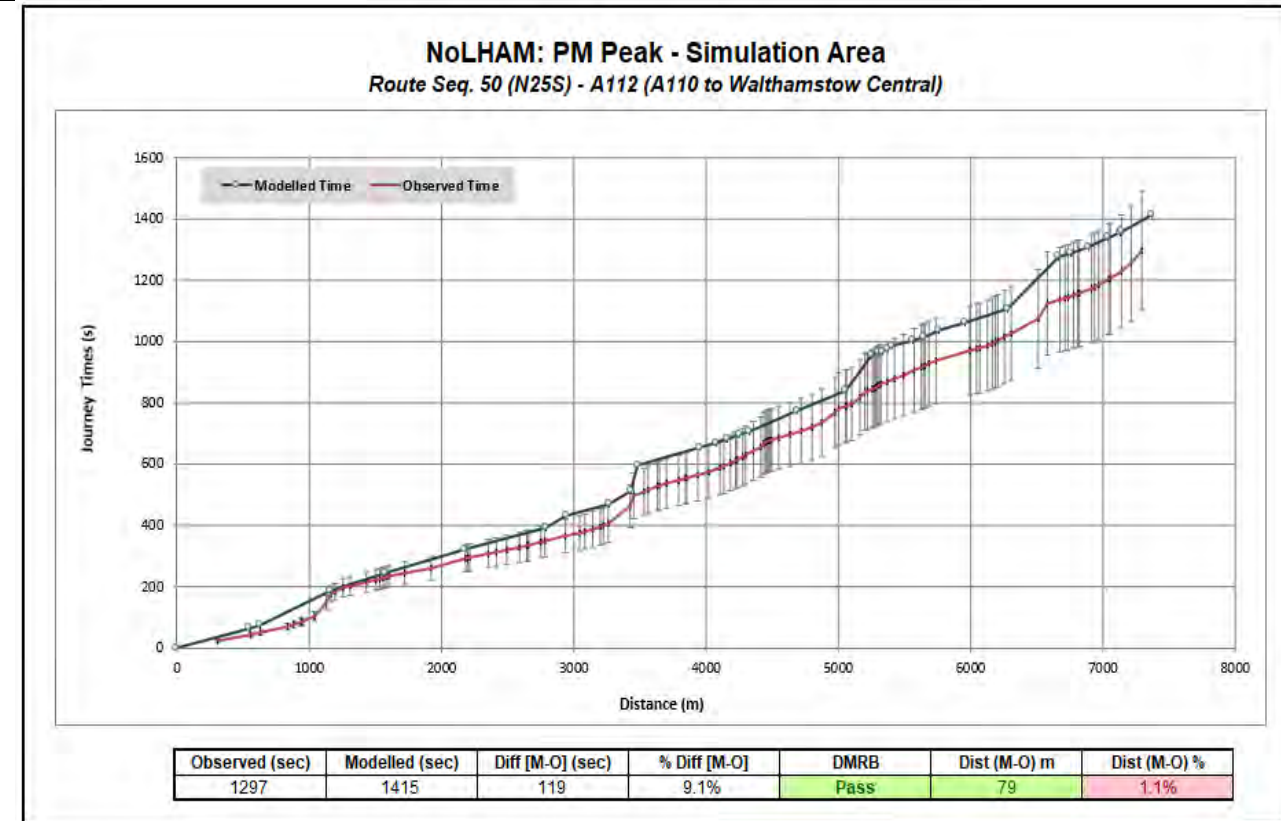
R113- PM



R 114-AM

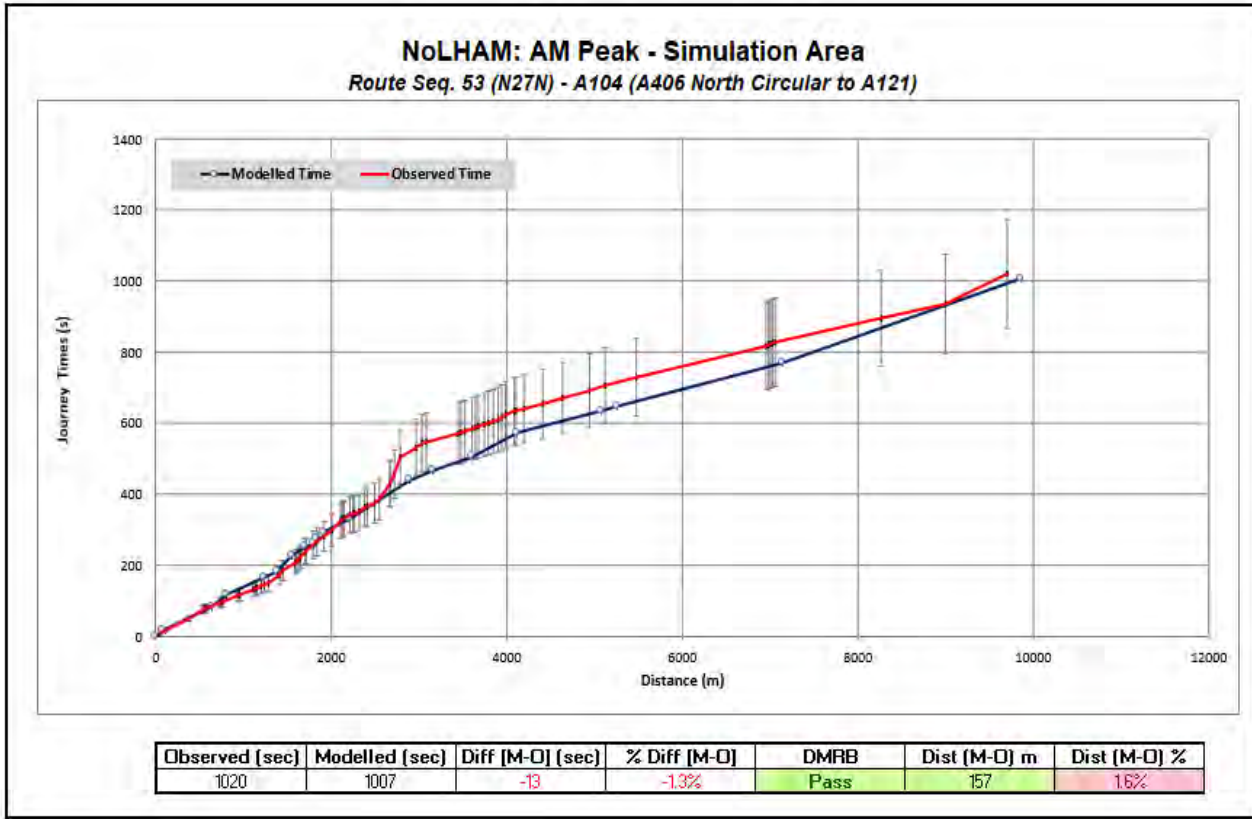


R 114-PM

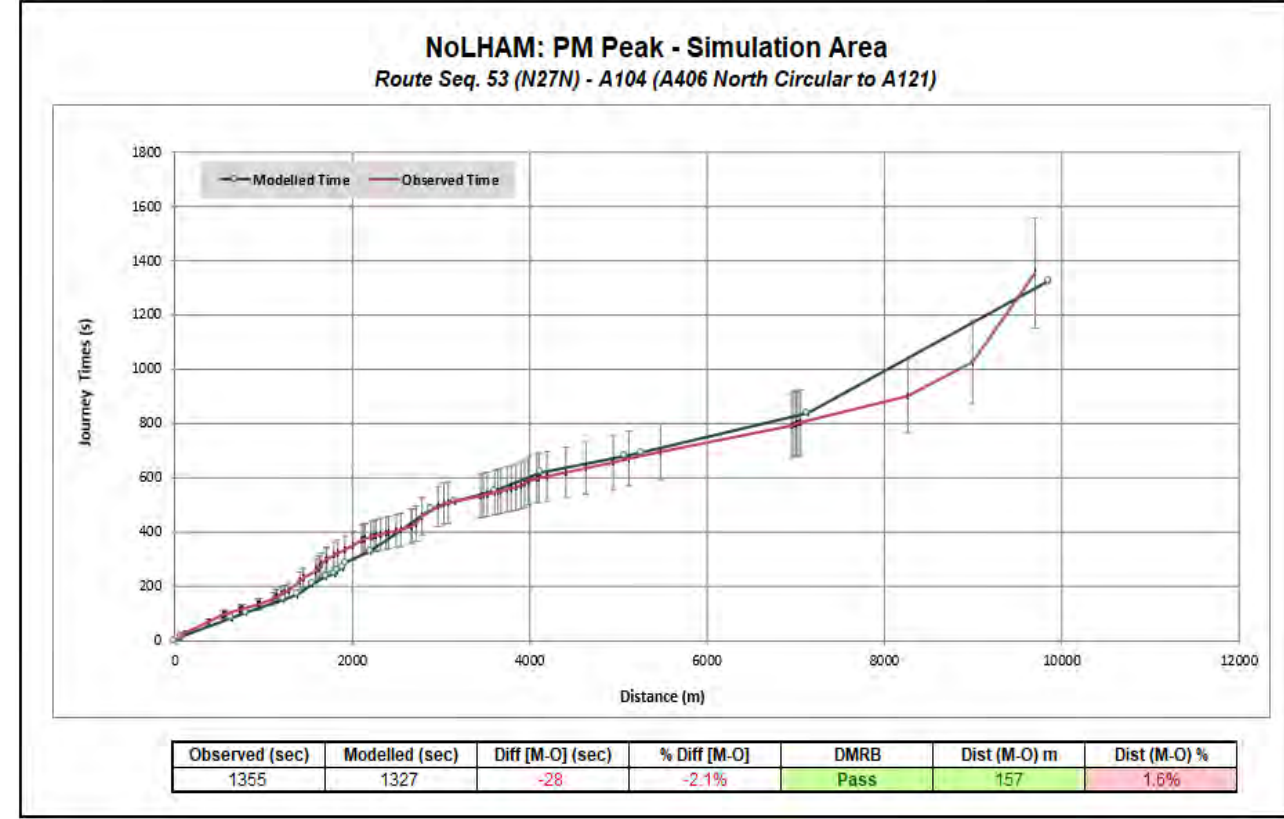




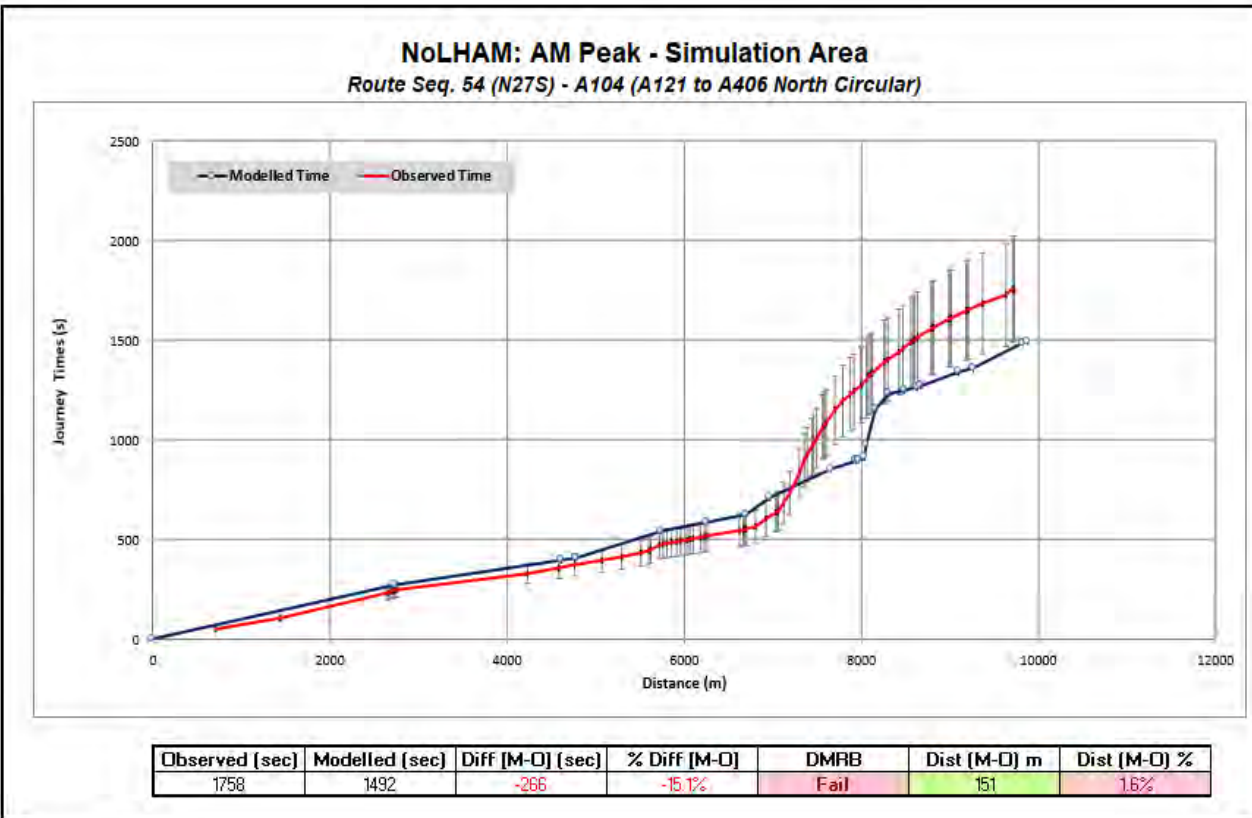
R 117-AM



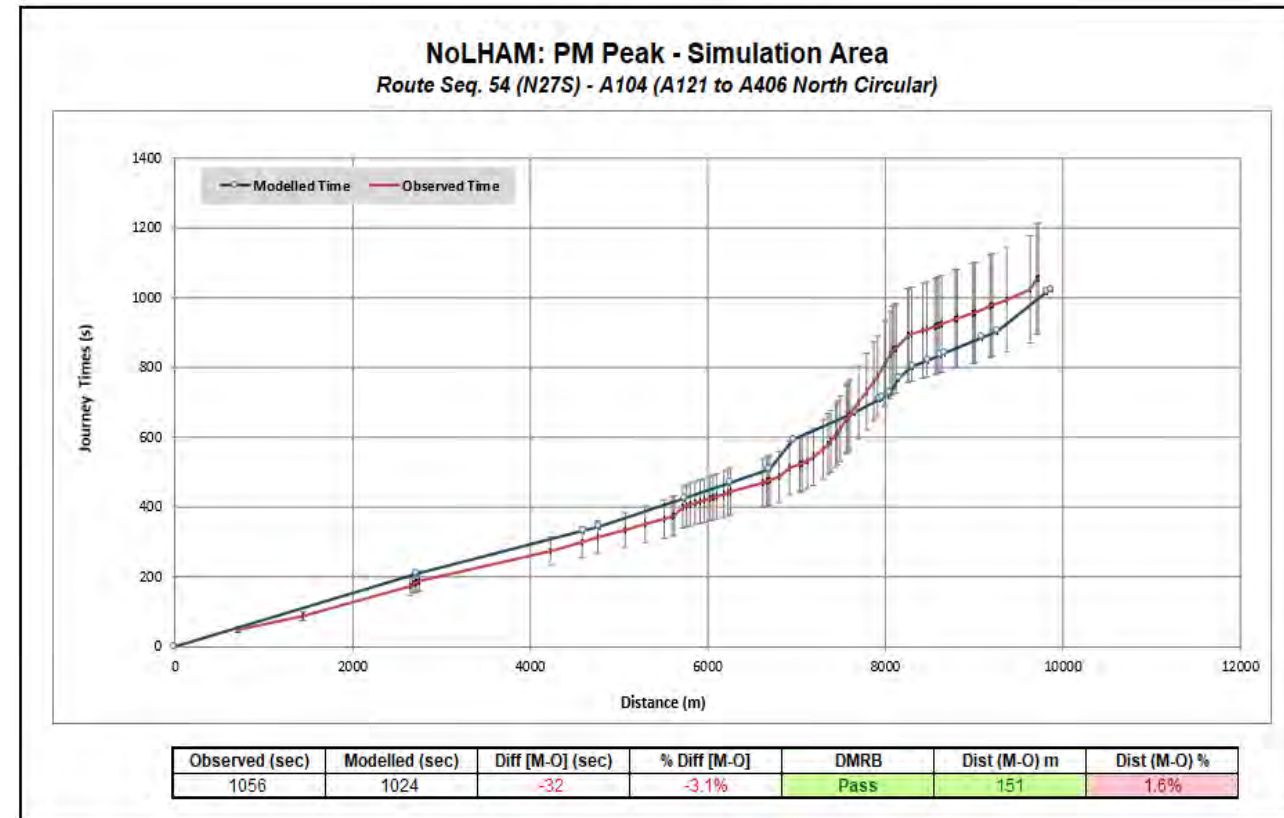
R117- PM



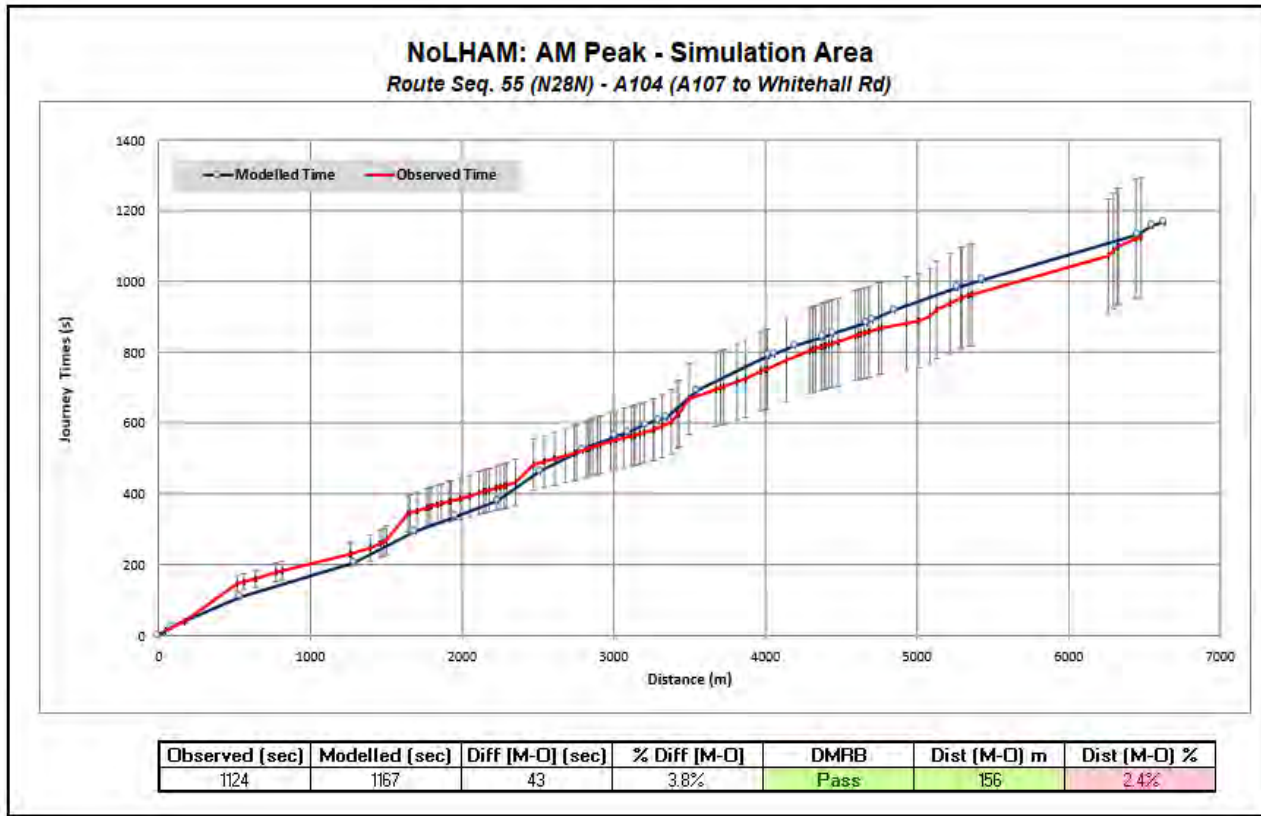
R 118-AM



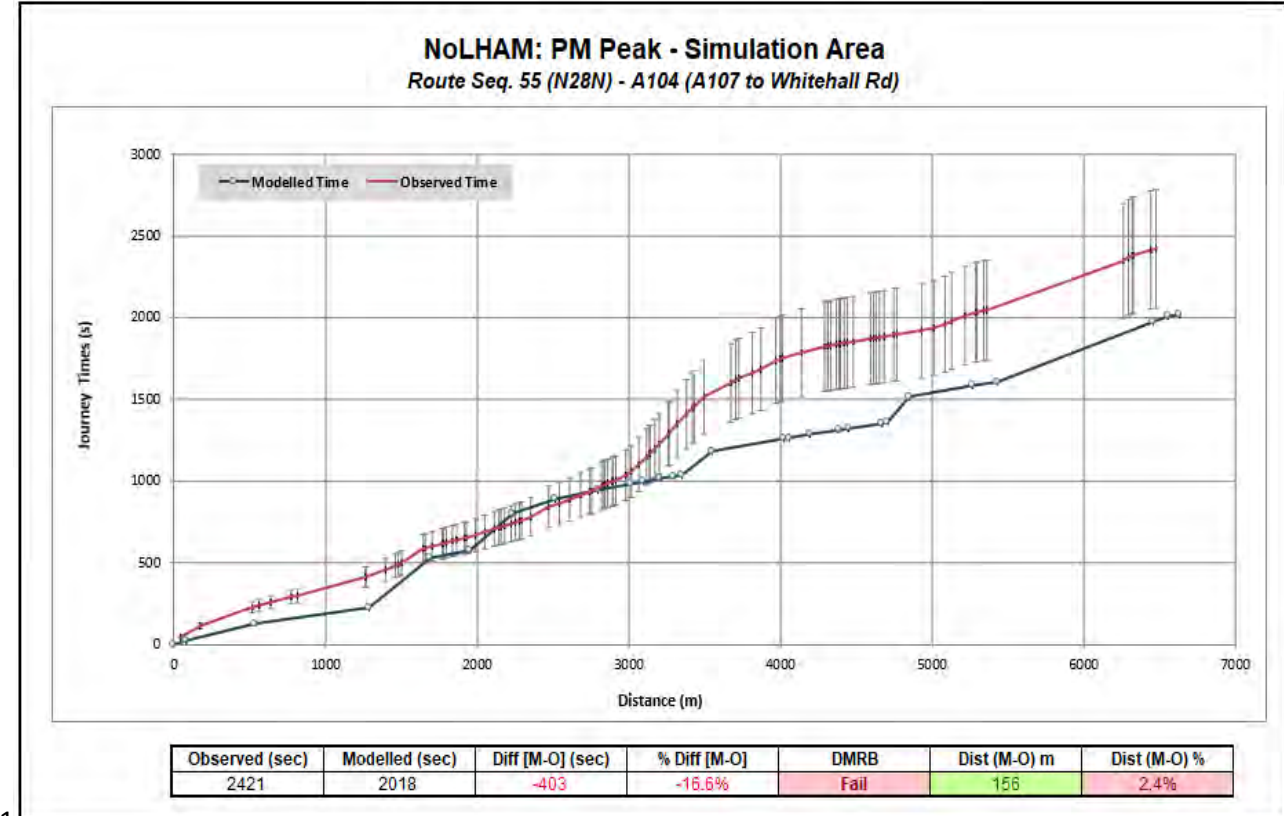
R 118-PM



R 119-AM

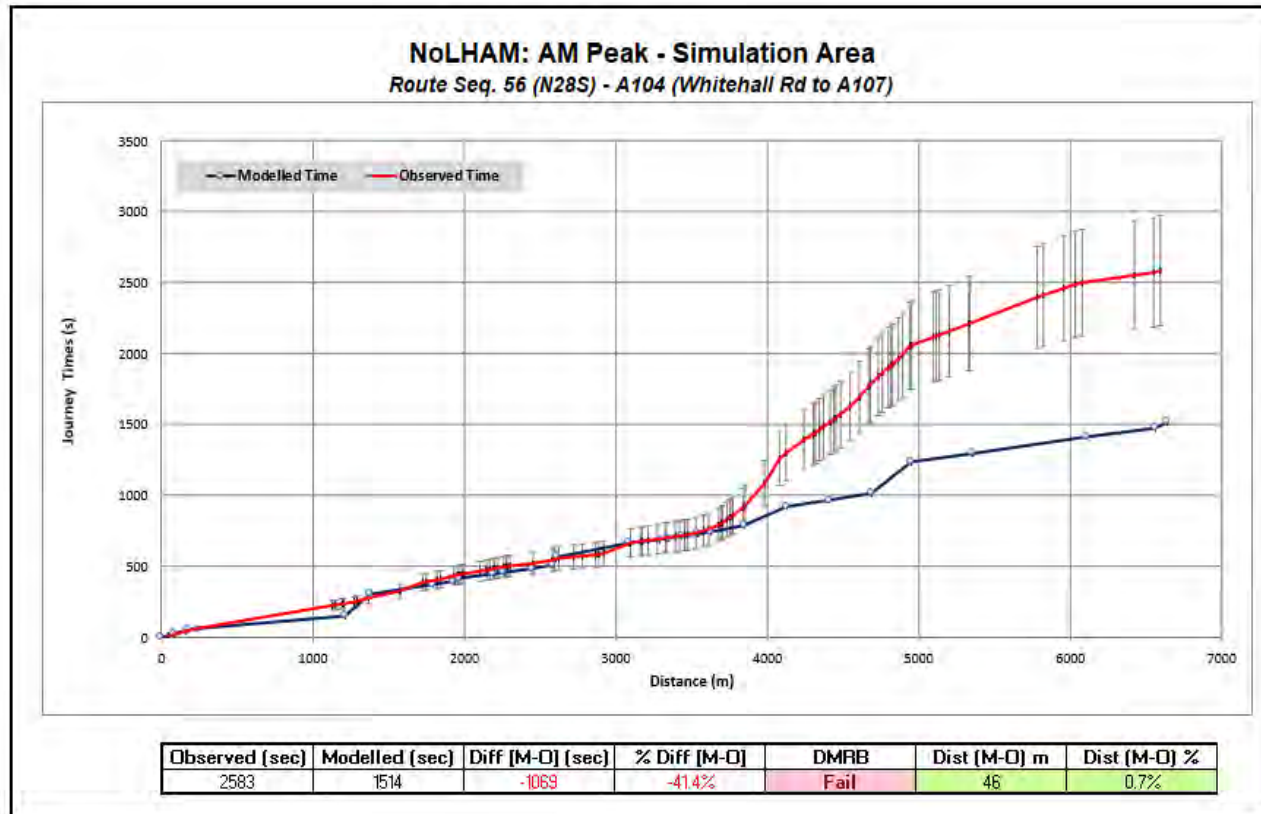


R119- PM

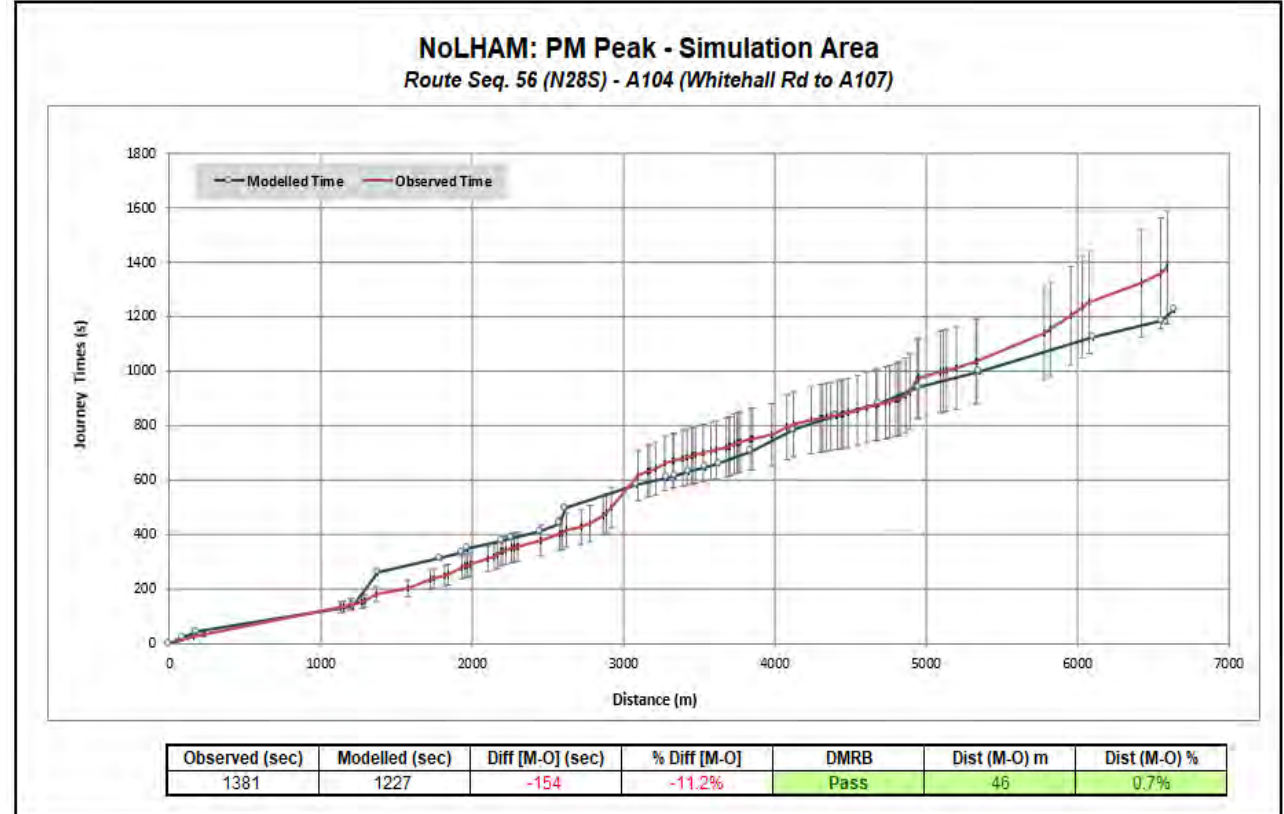


1

R 120-AM

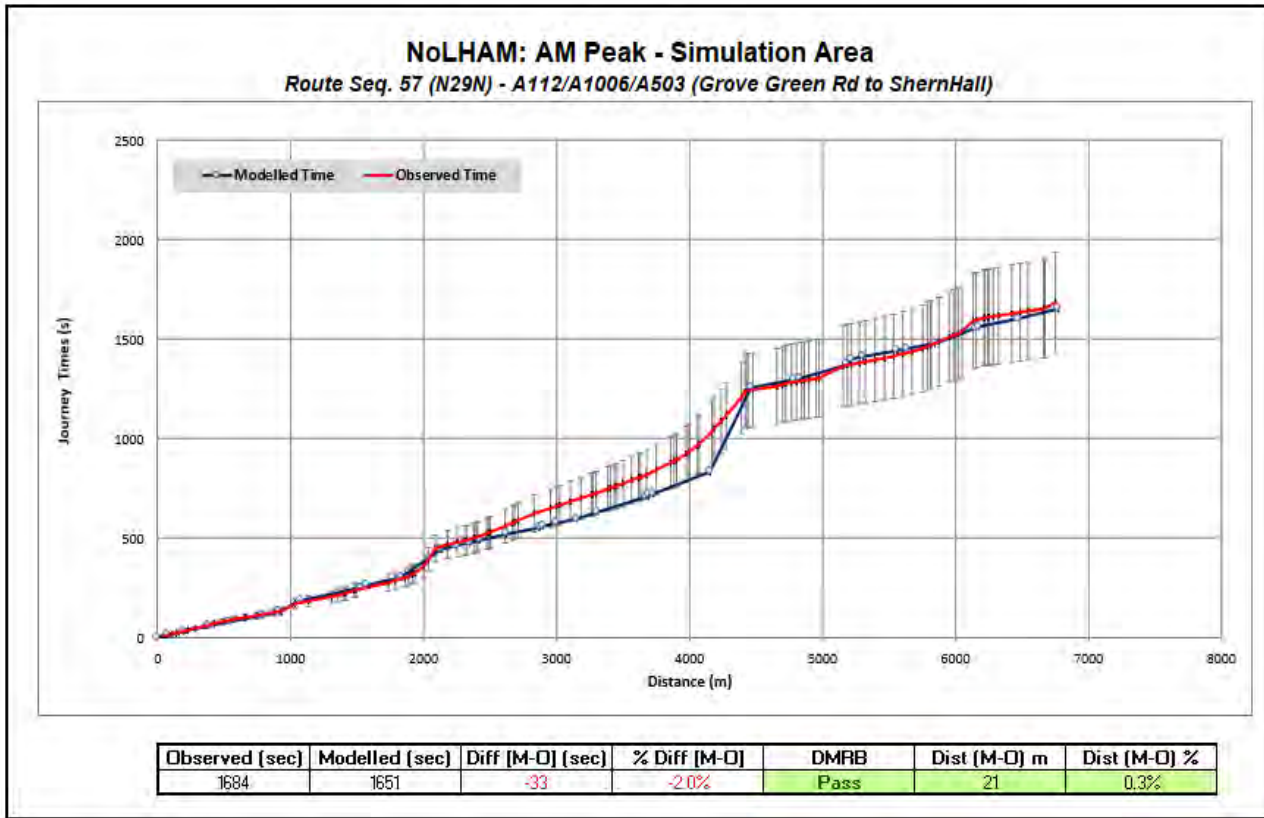


R 120-PM

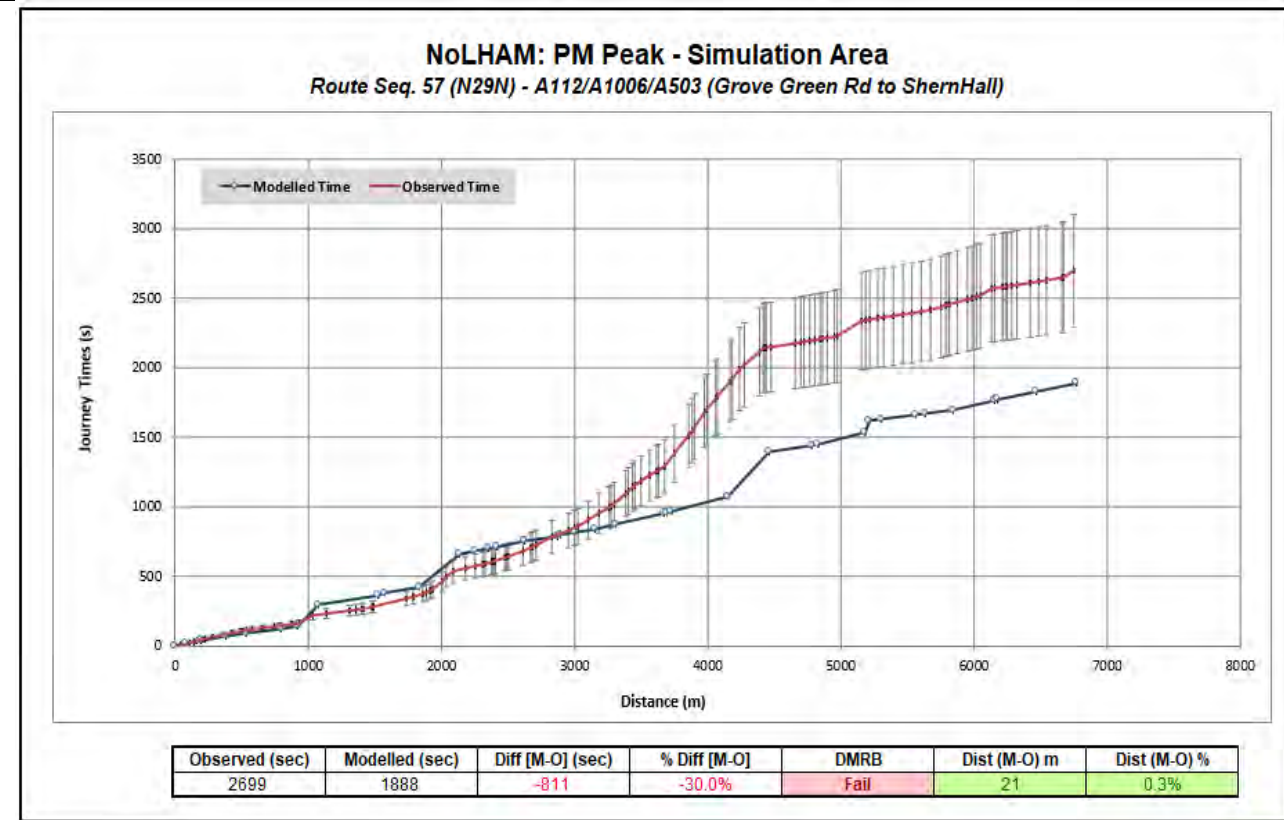




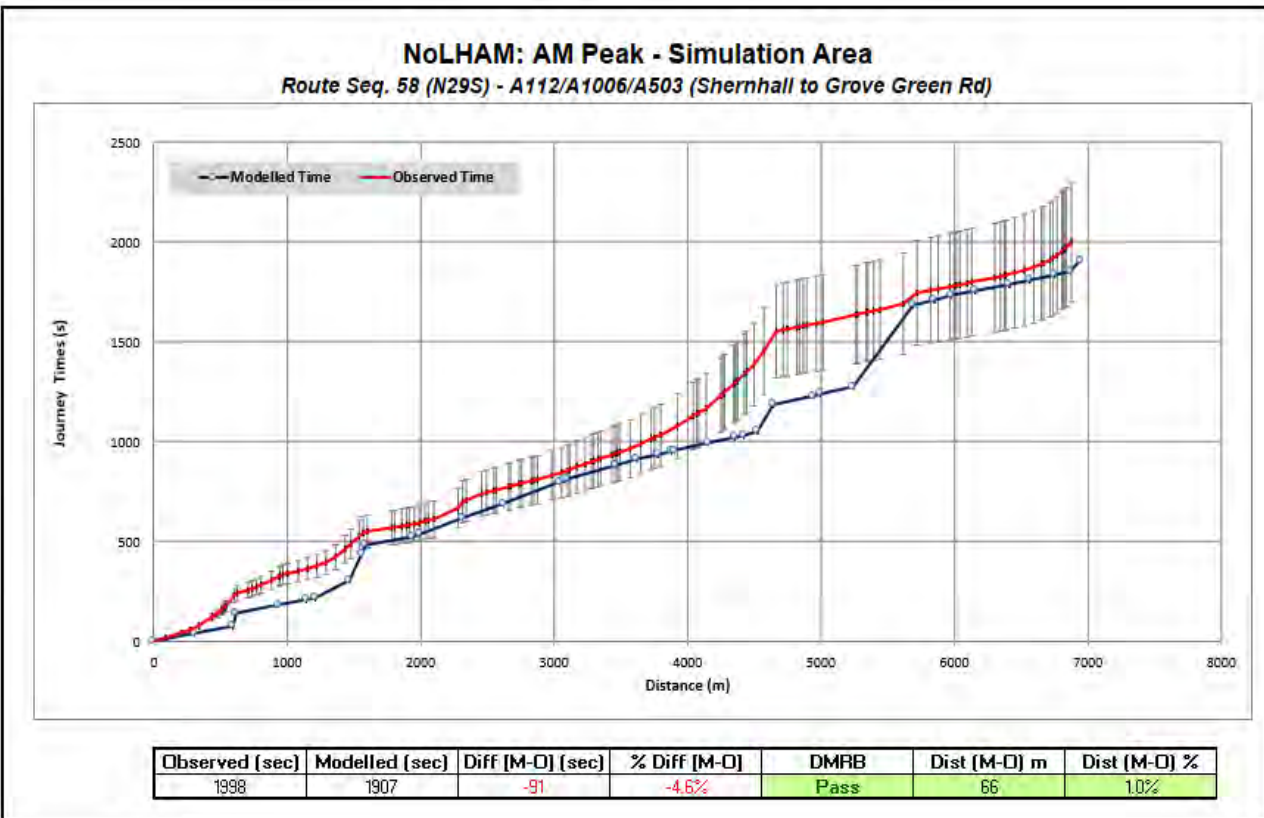
R 121-AM



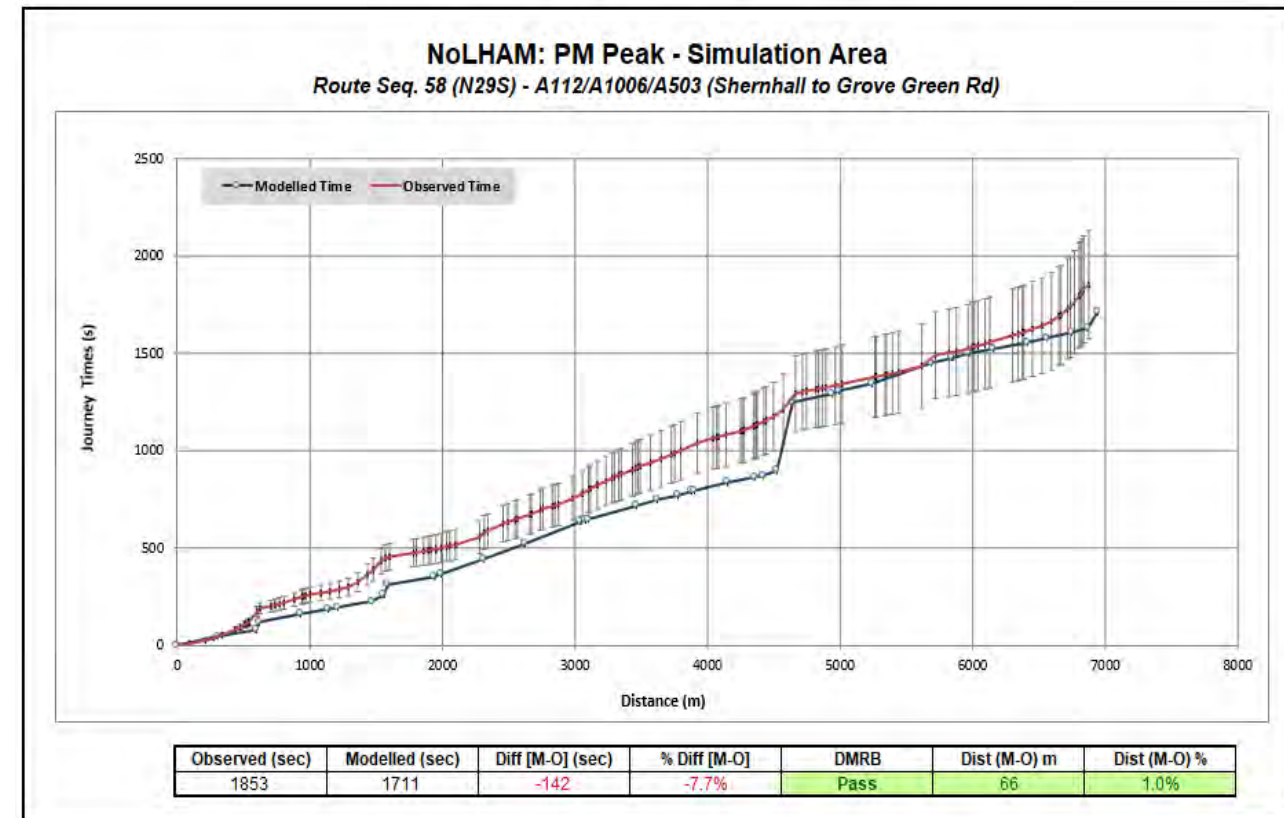
R121- PM



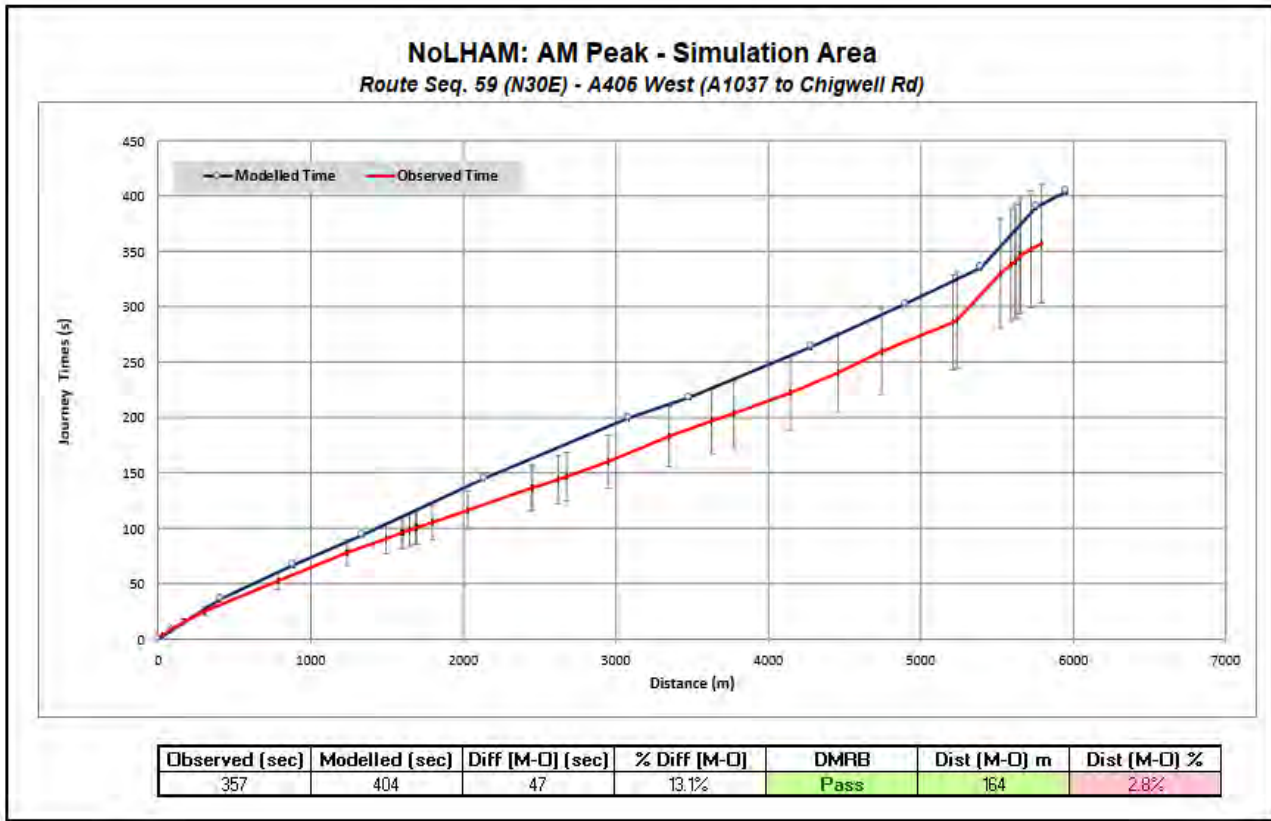
R 122-AM



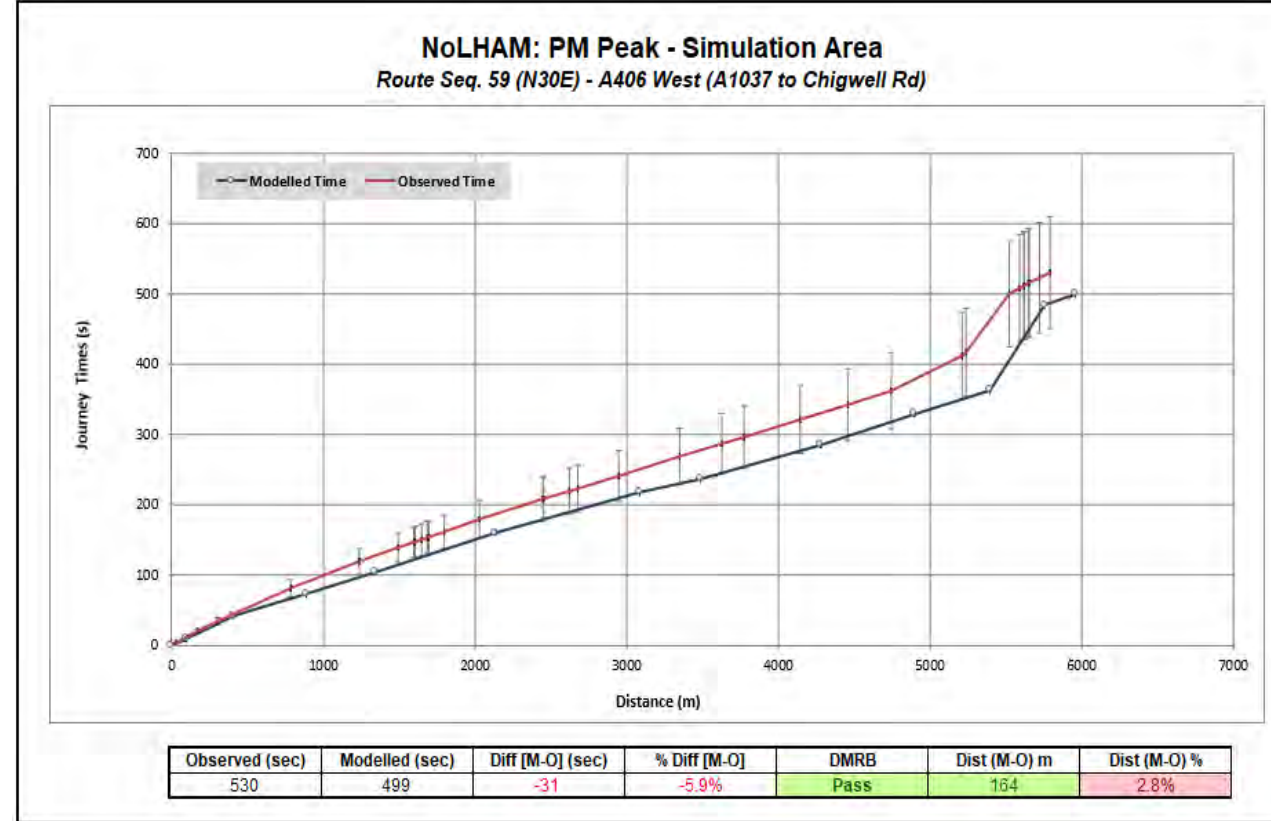
R 122-PM



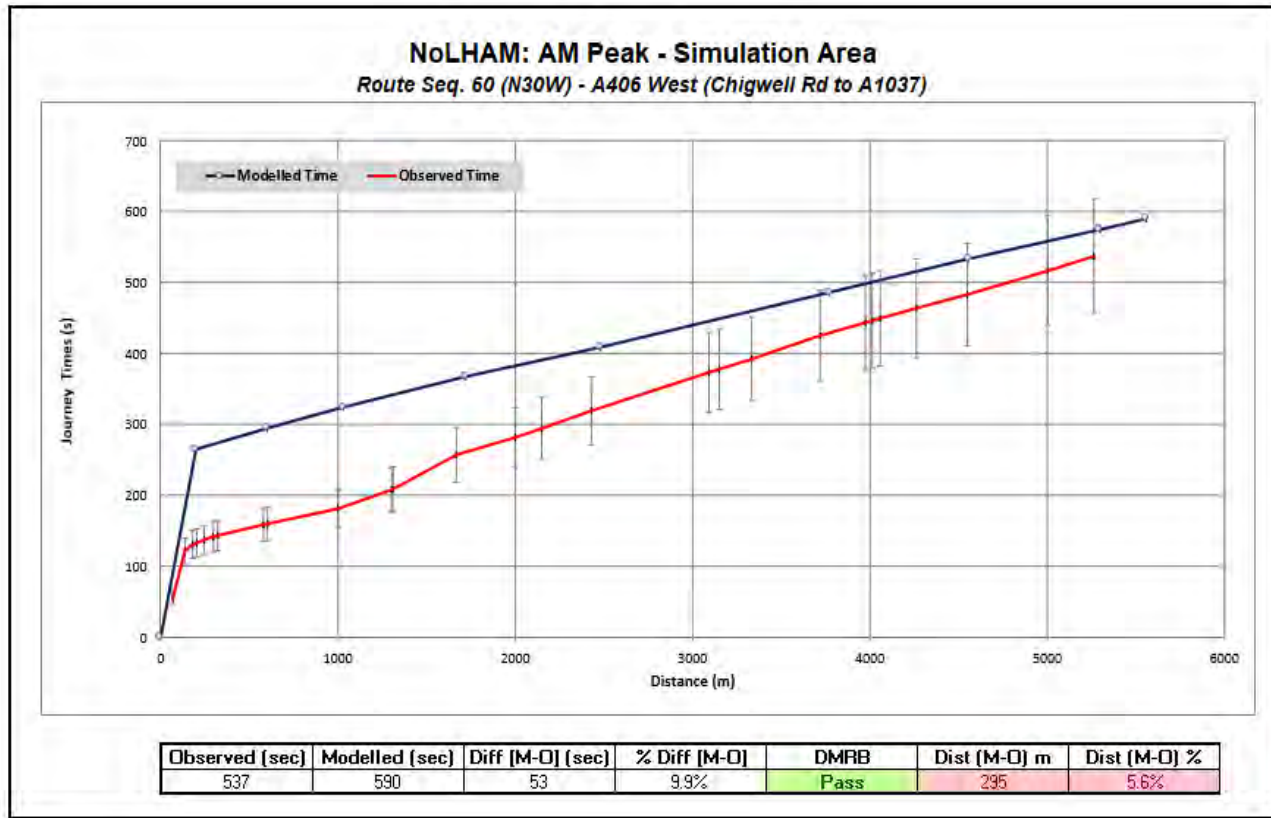
R 123-AM



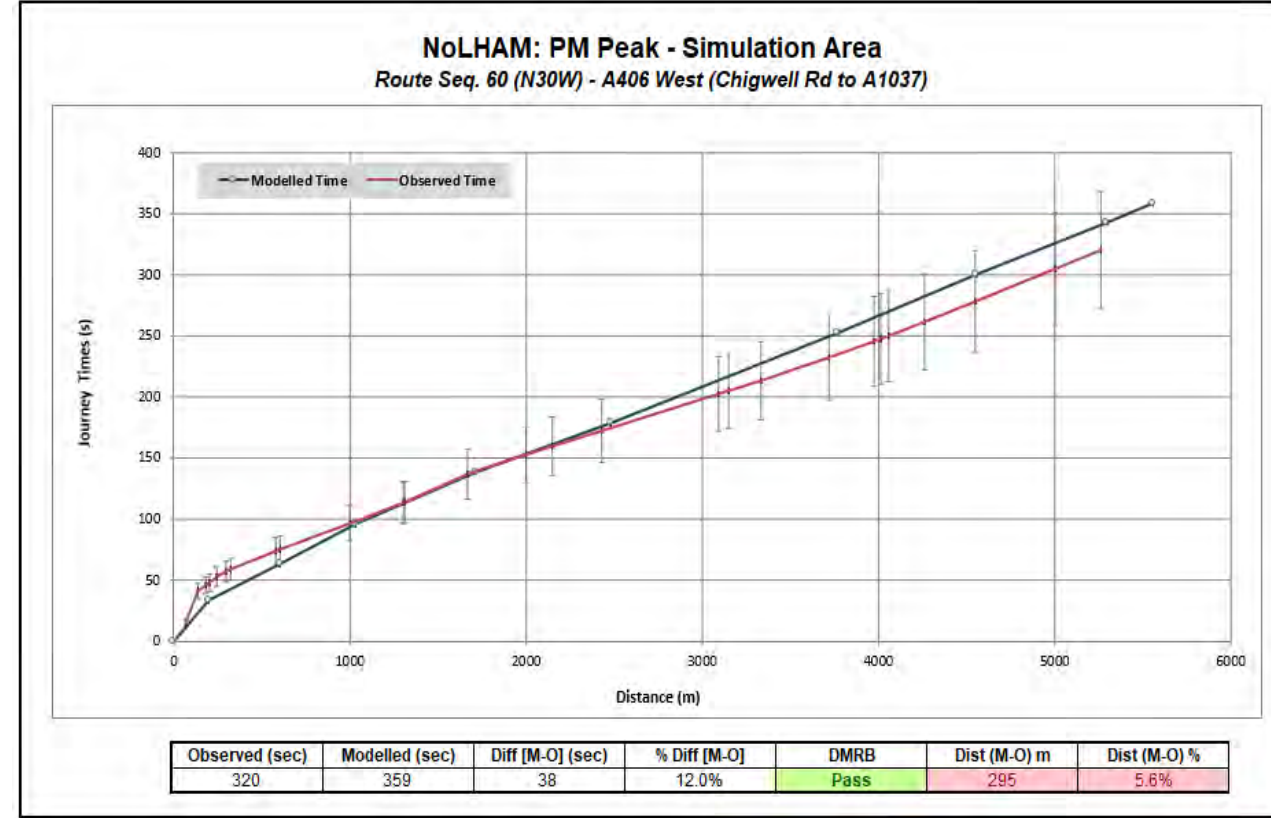
R123- PM



R 124-AM

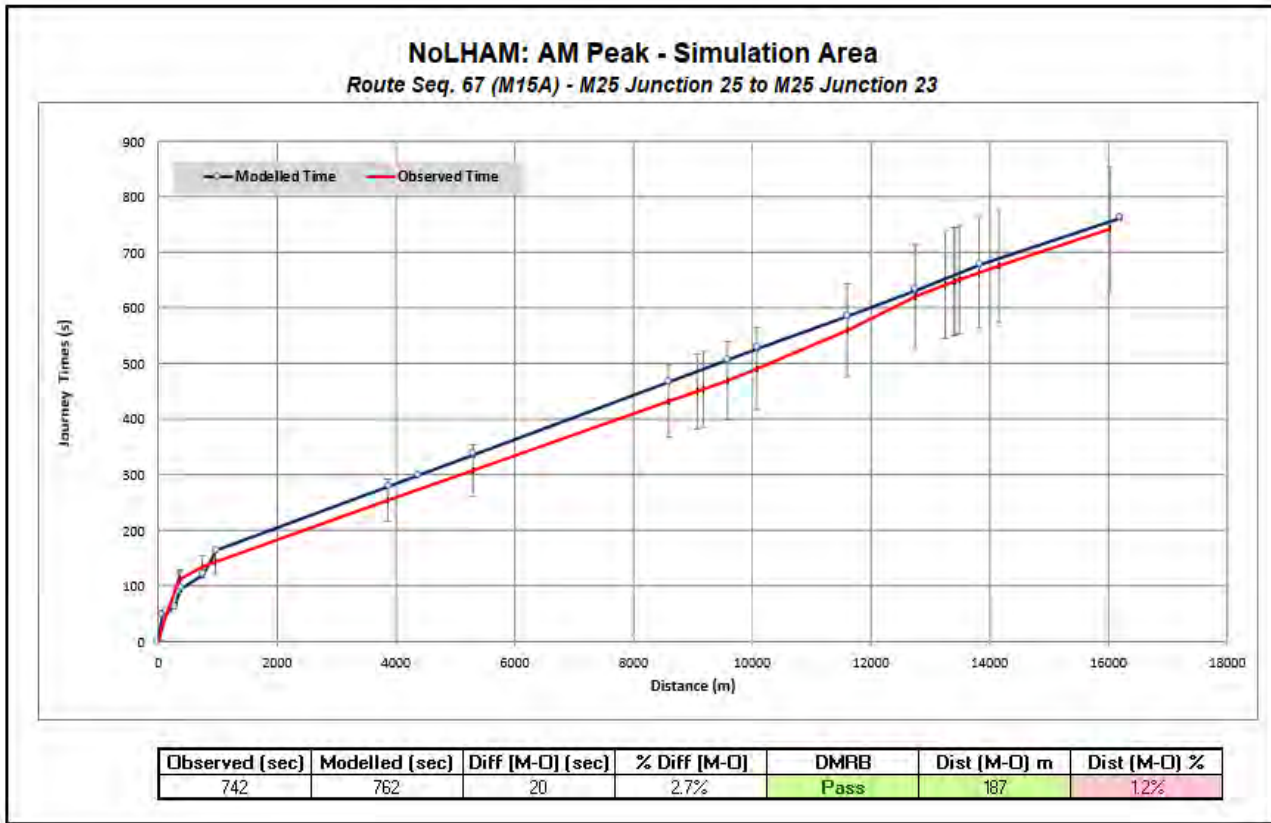


R 124-PM

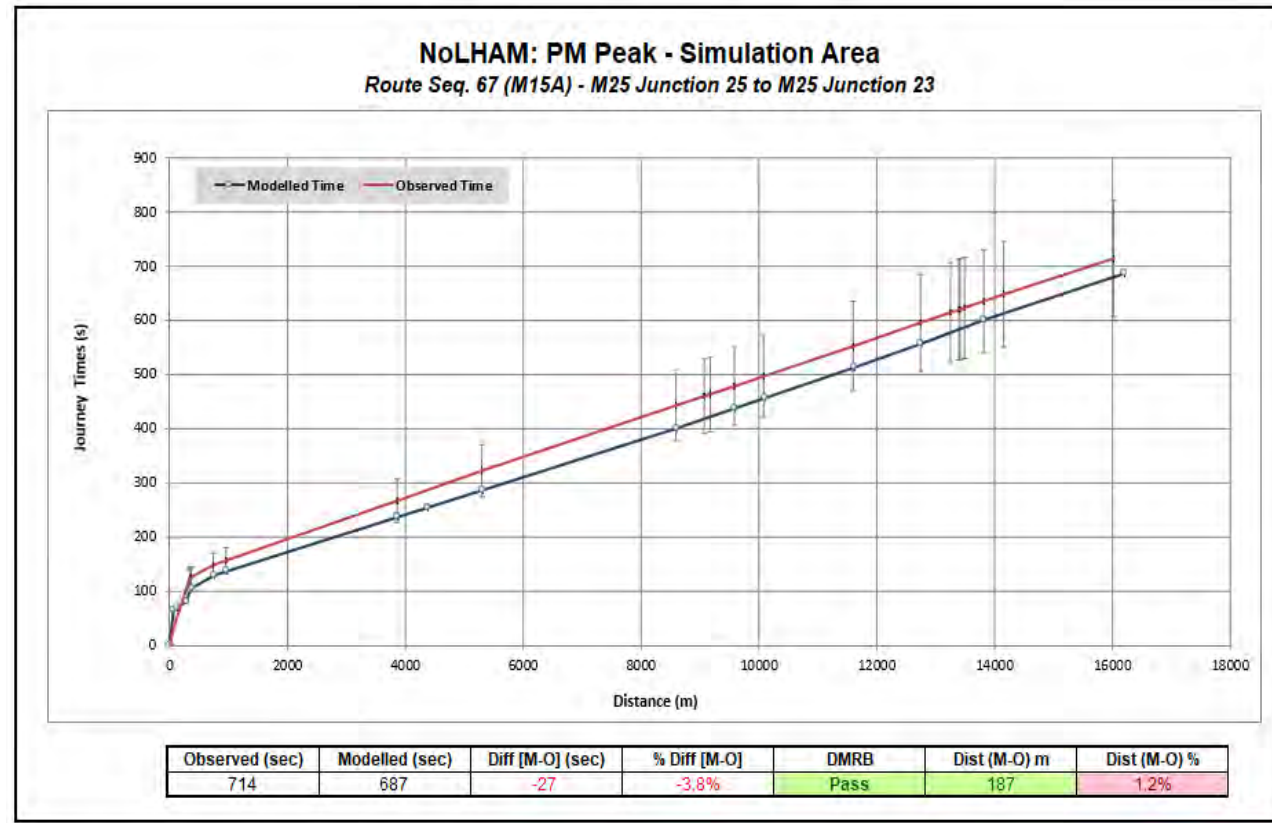




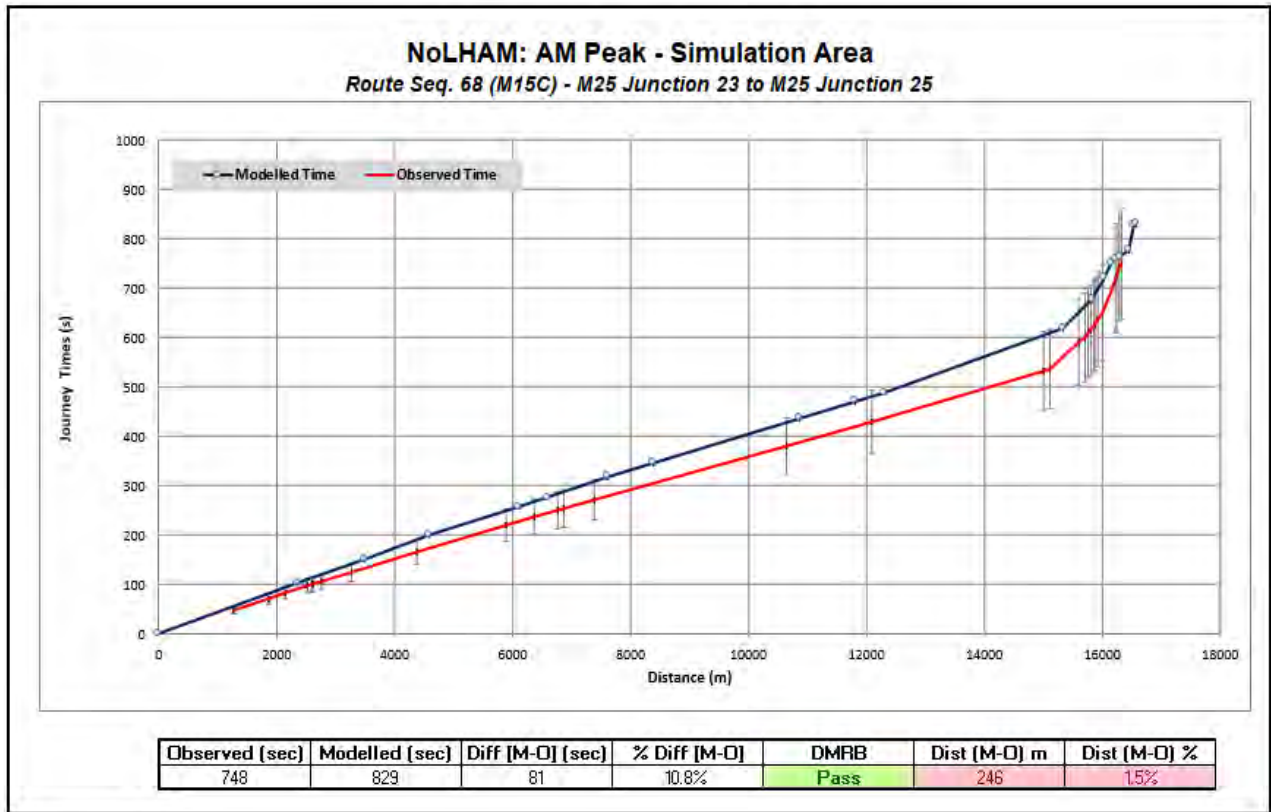
R 131-AM



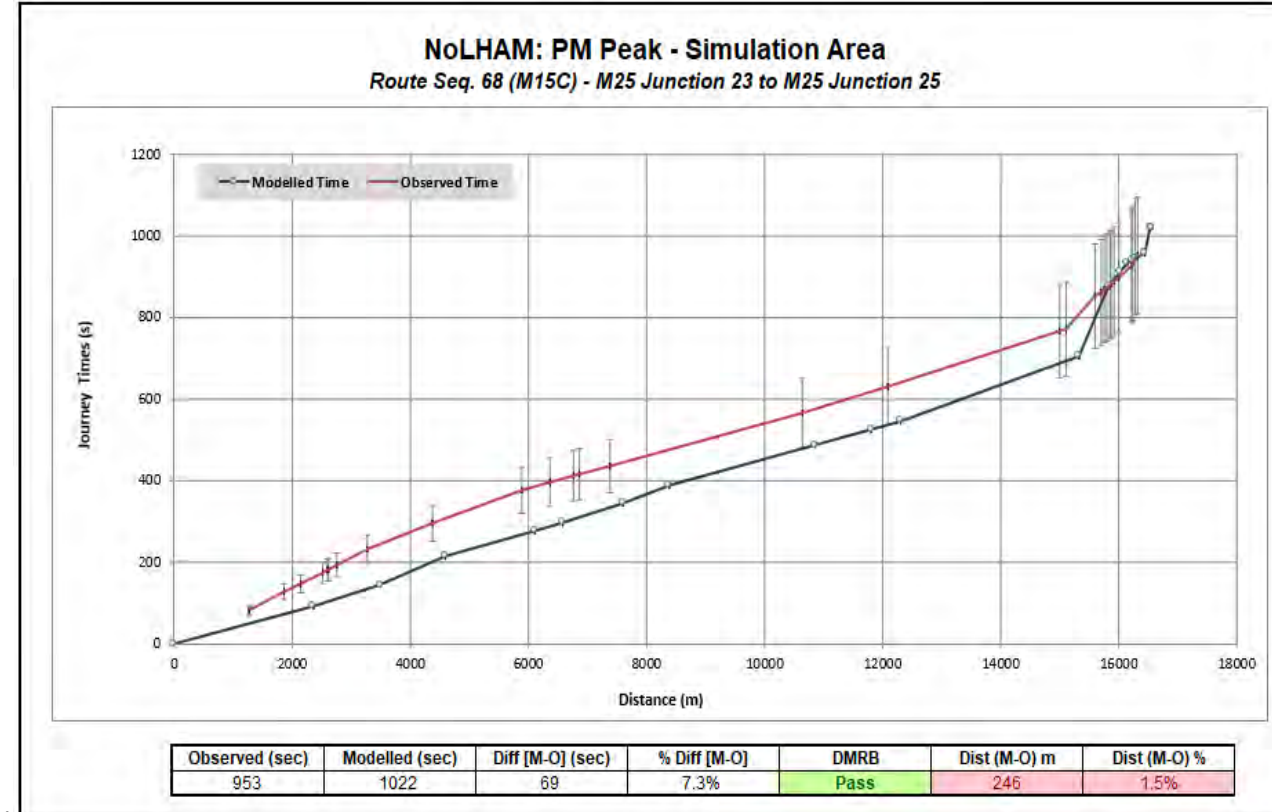
R131- PM



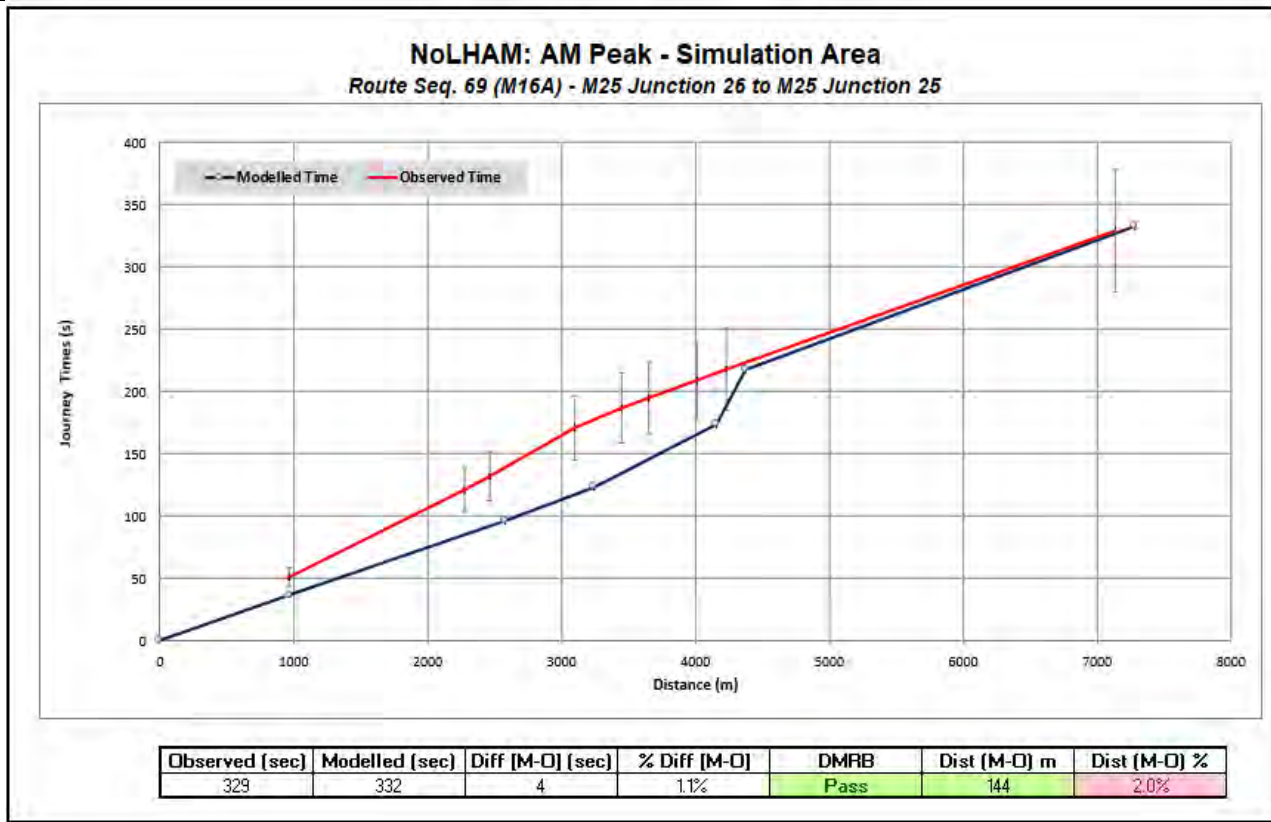
R 132-AM



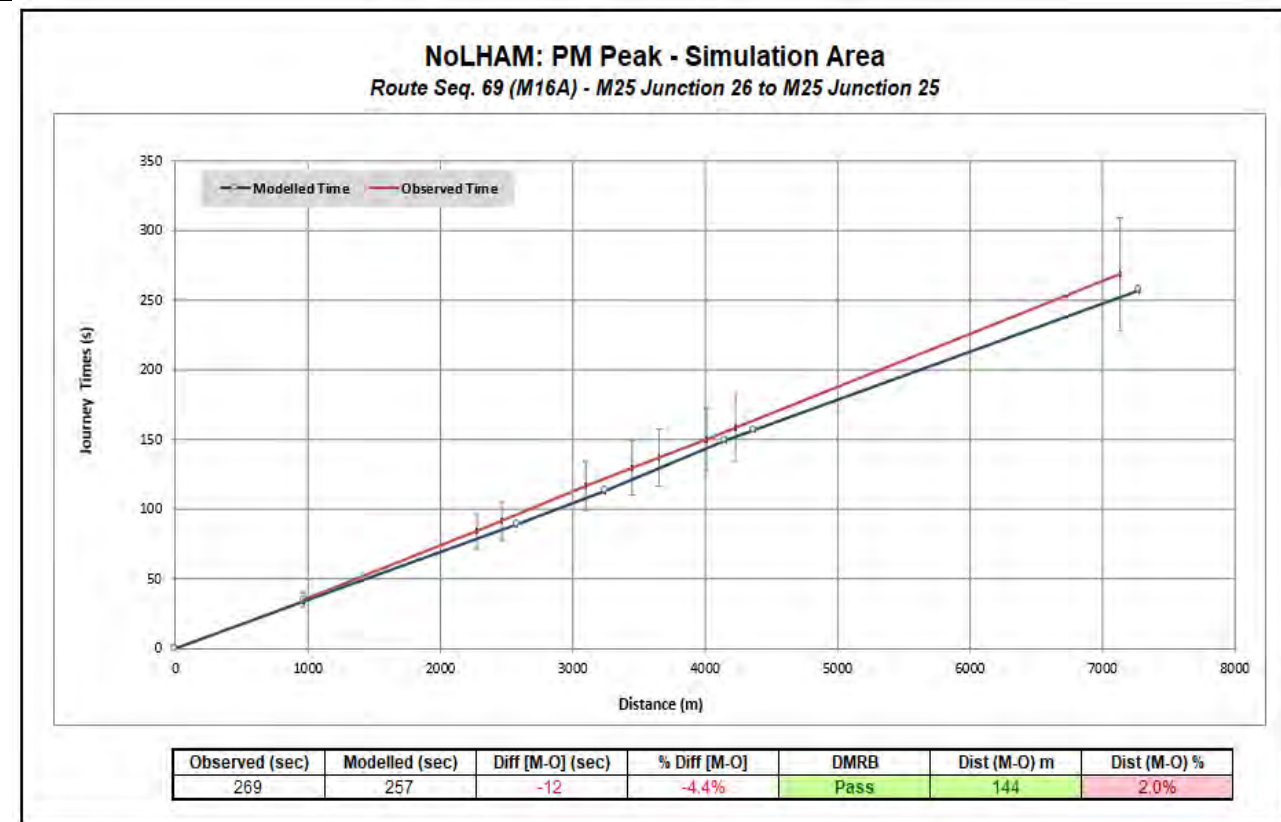
R 132-PM



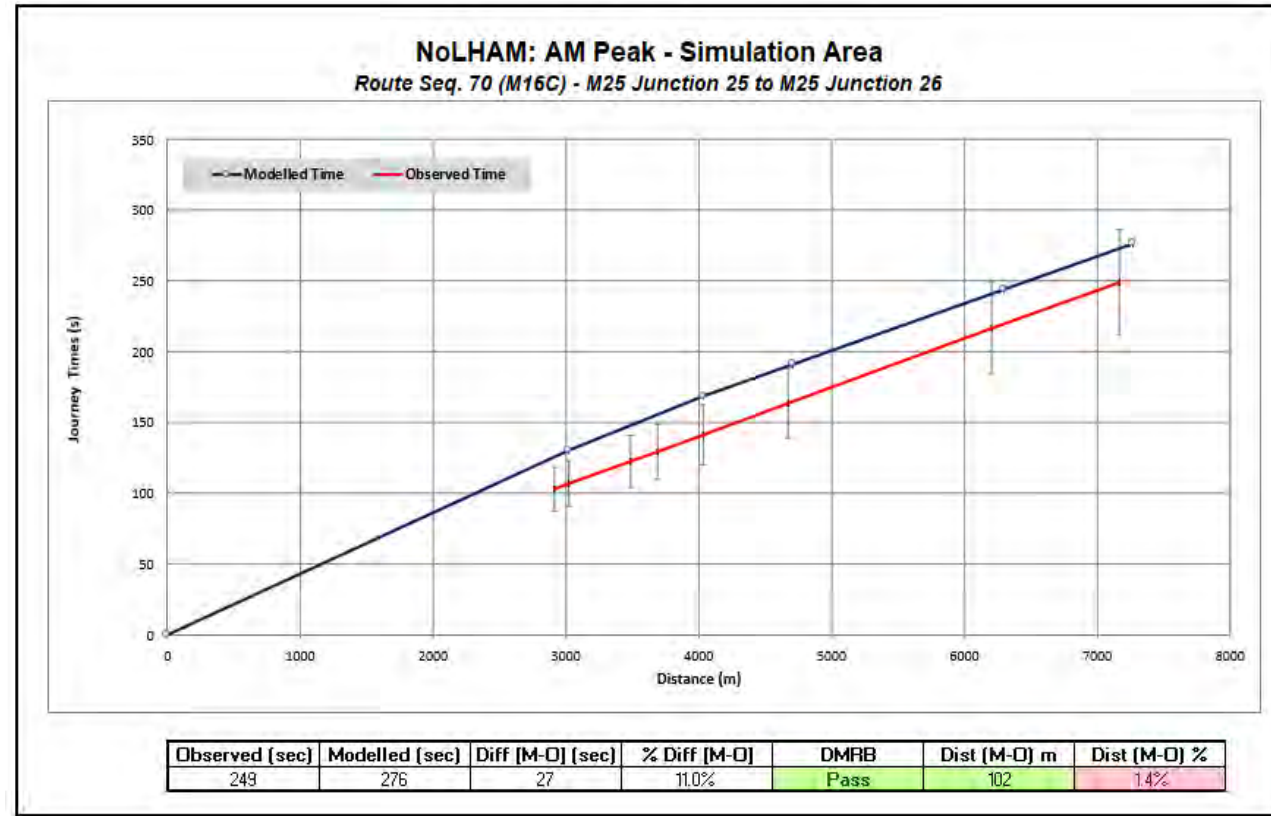
R 133-AM



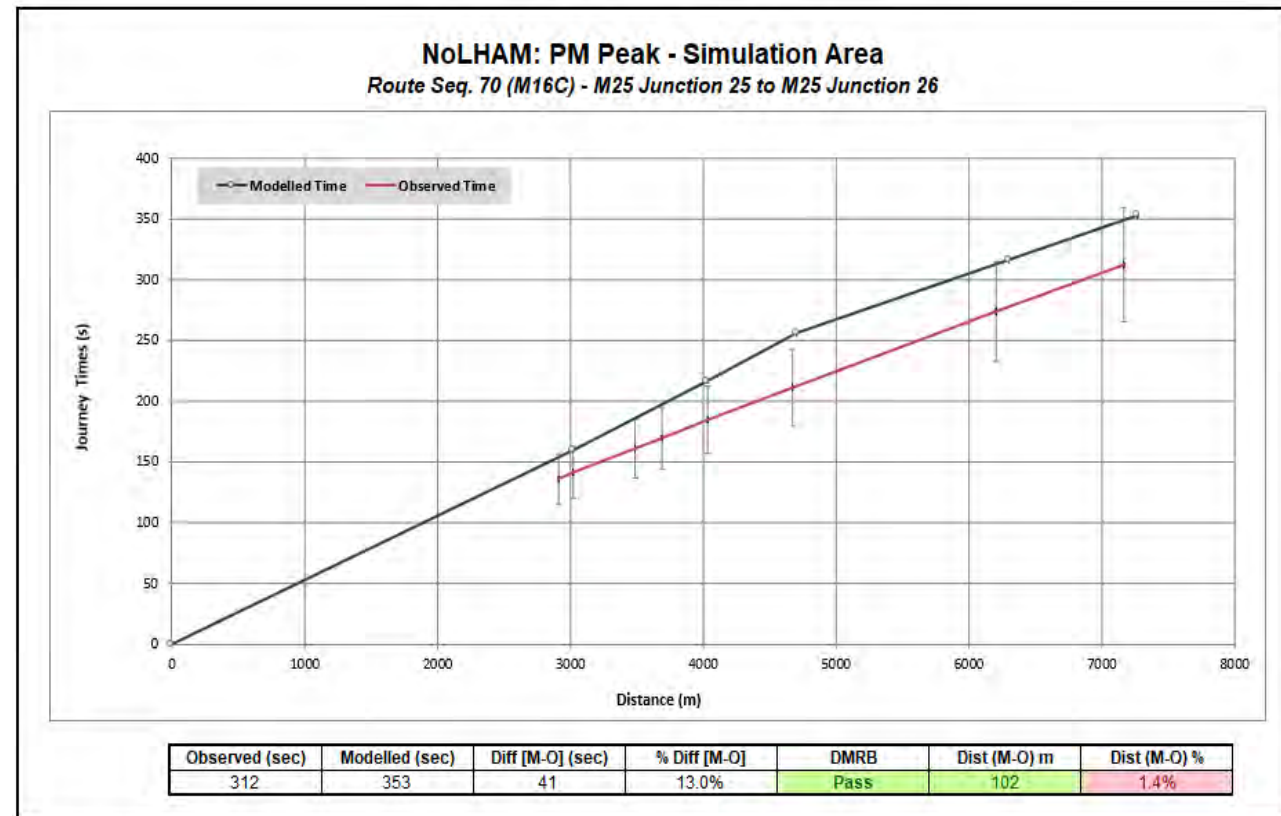
R133- PM



R 134-AM

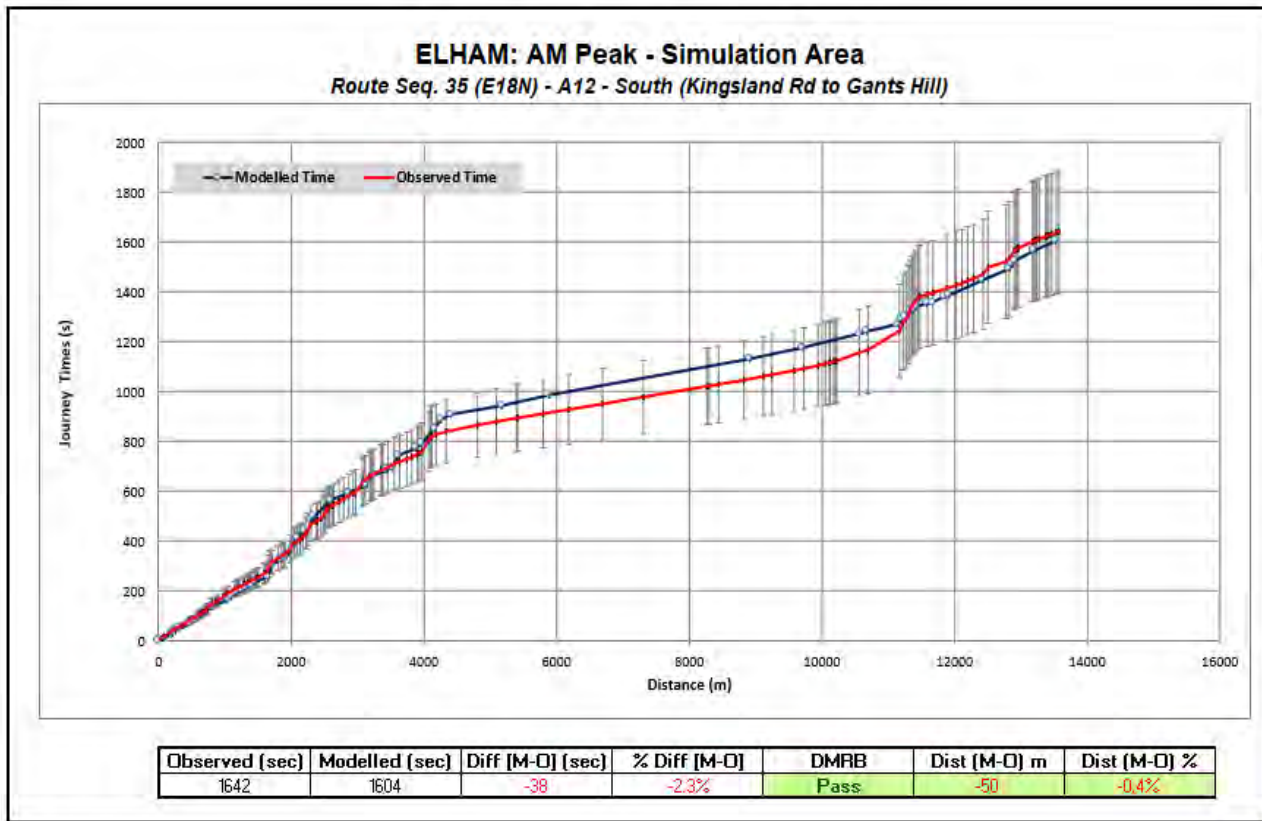


R 134-PM

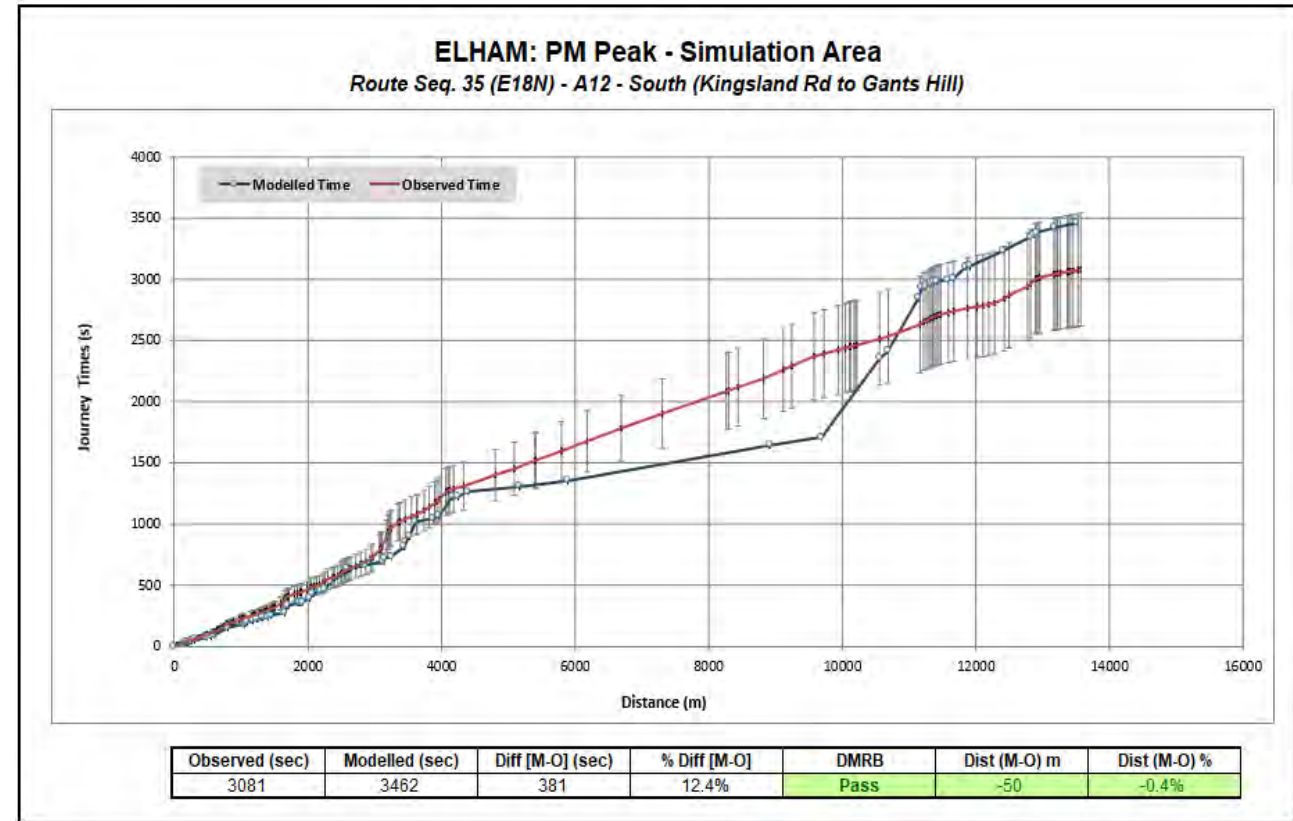




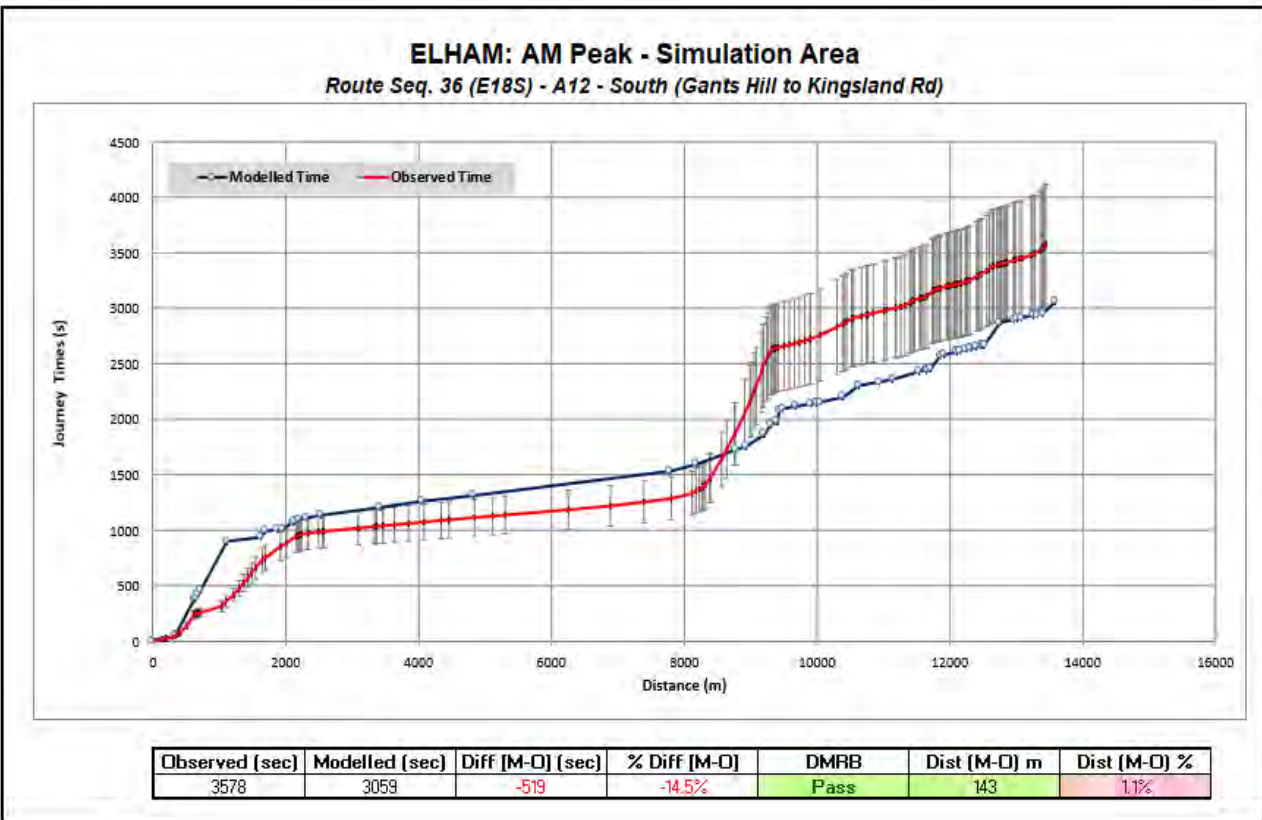
R 169-AM



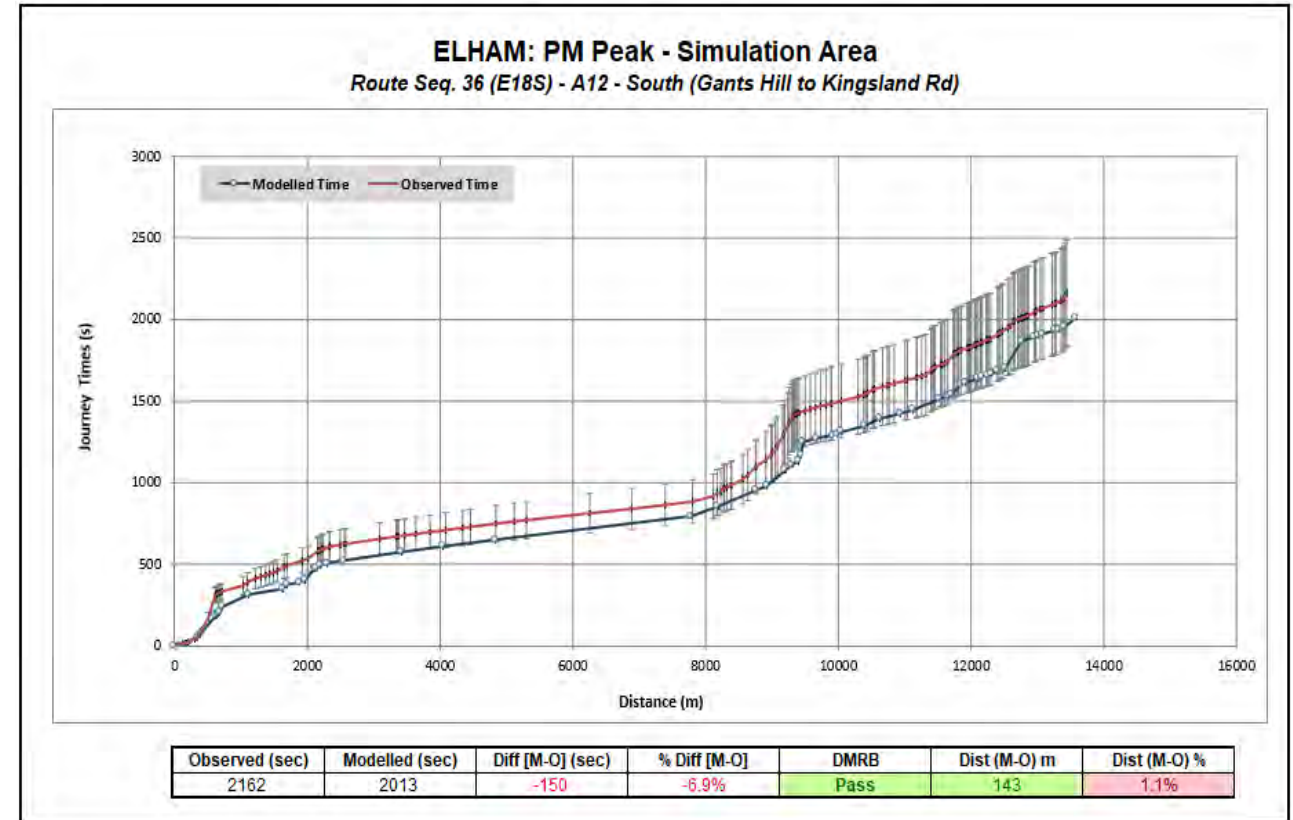
R169- PM



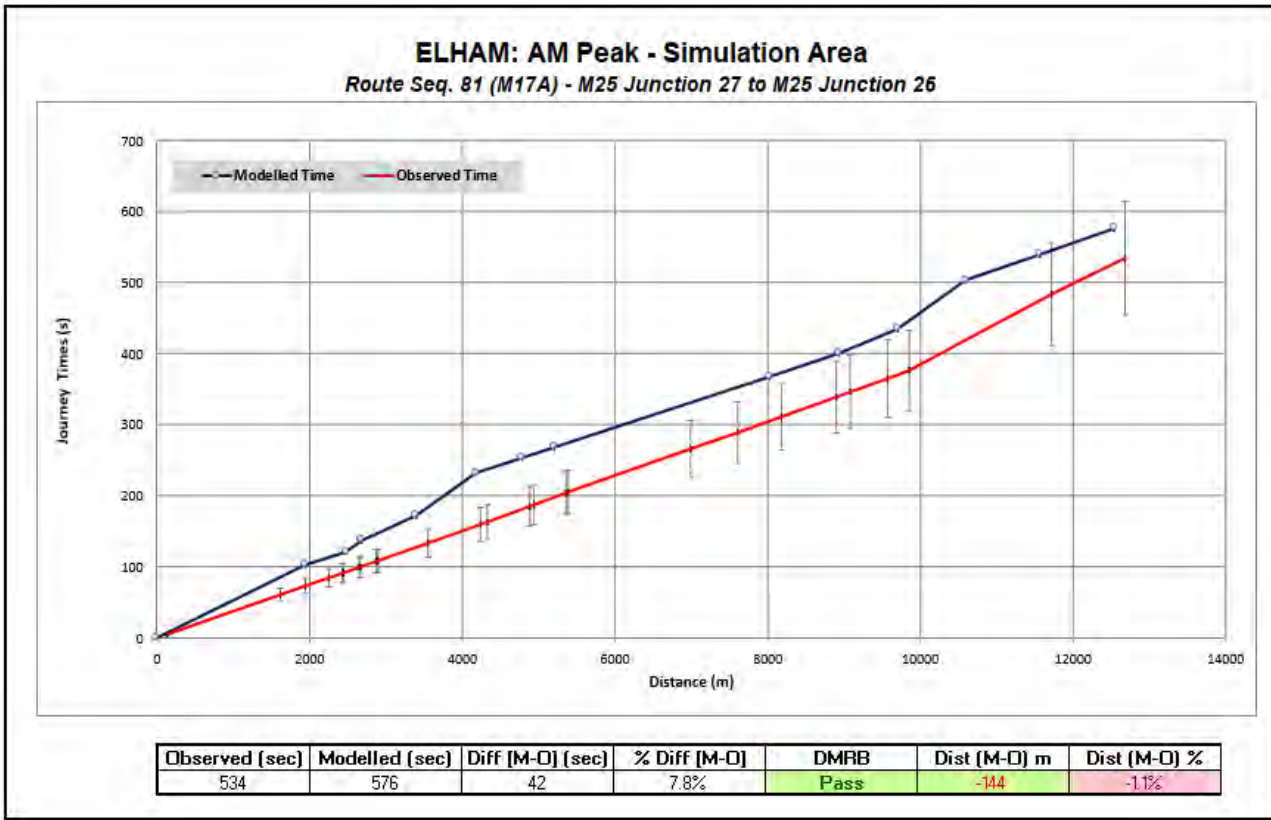
R 170-AM



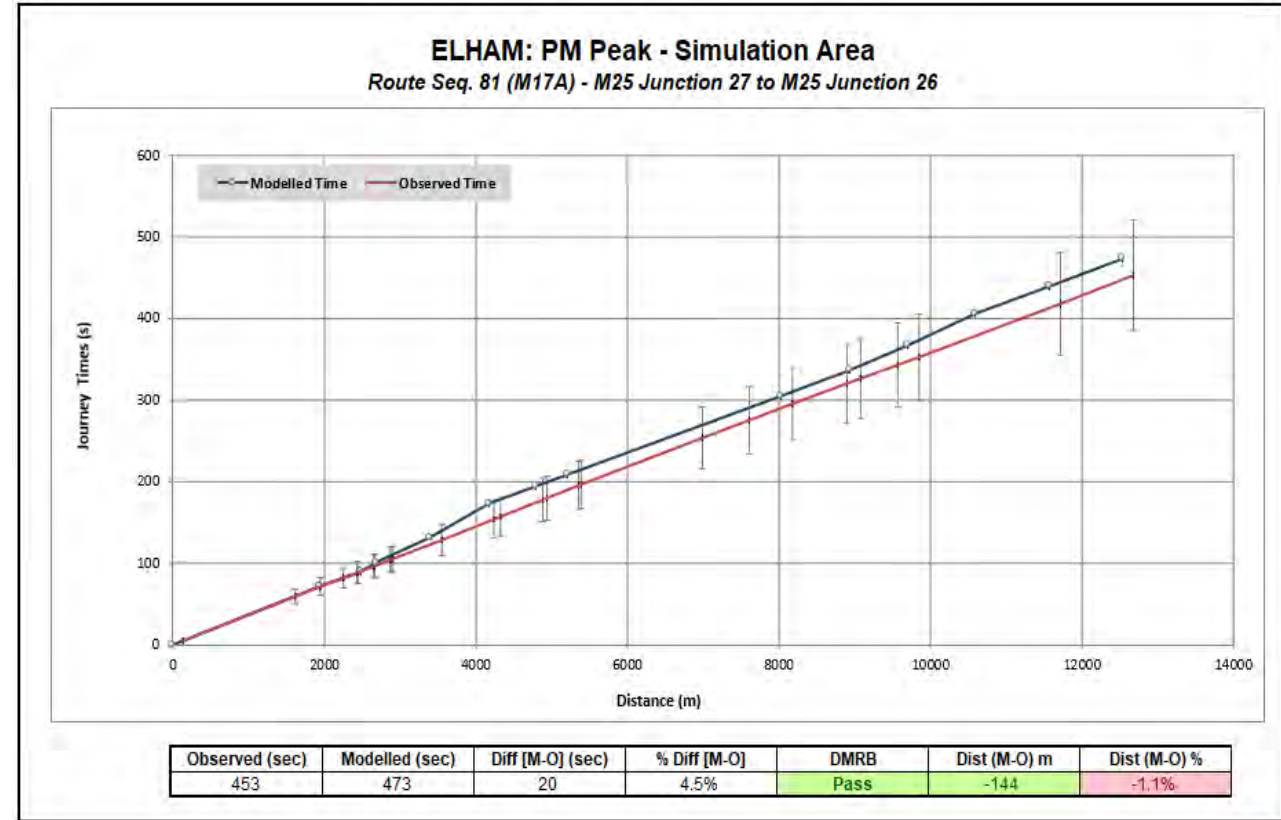
R 170-PM



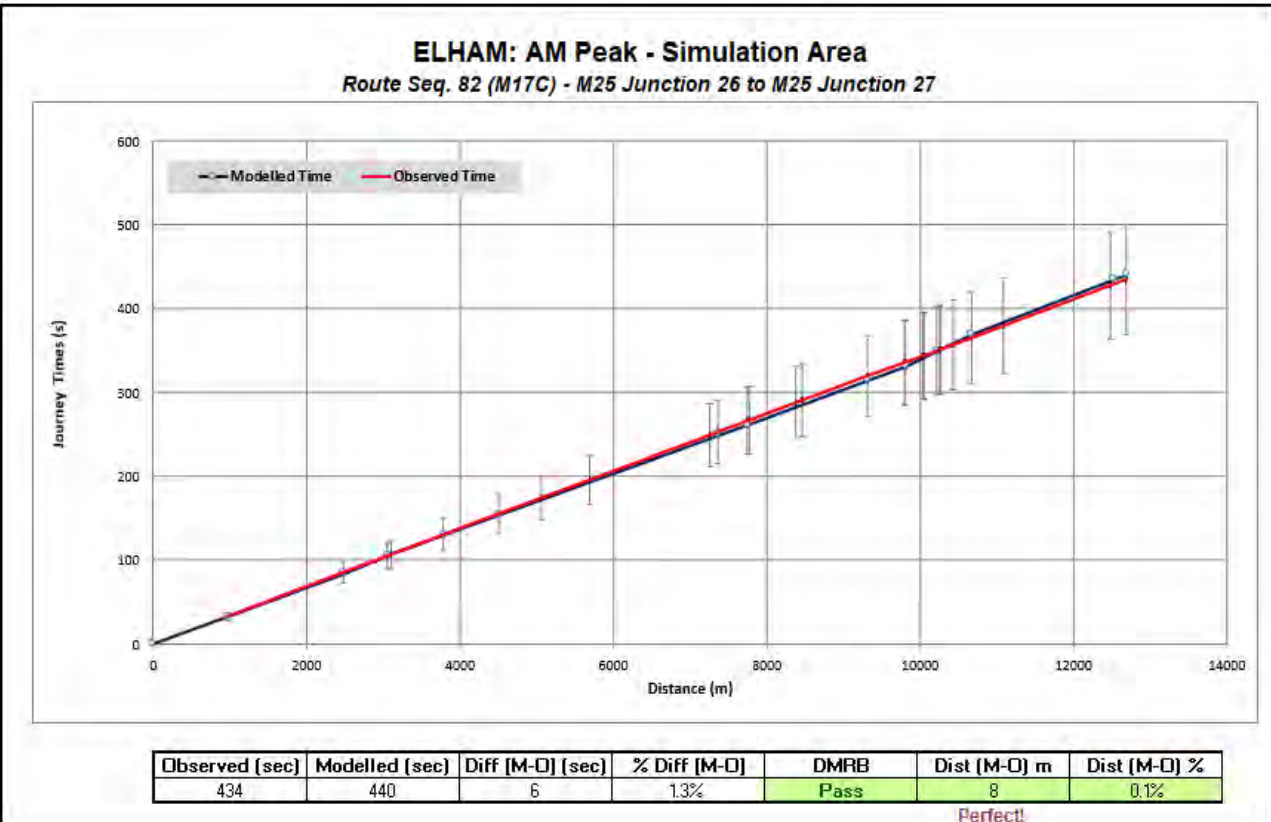
R 215-AM



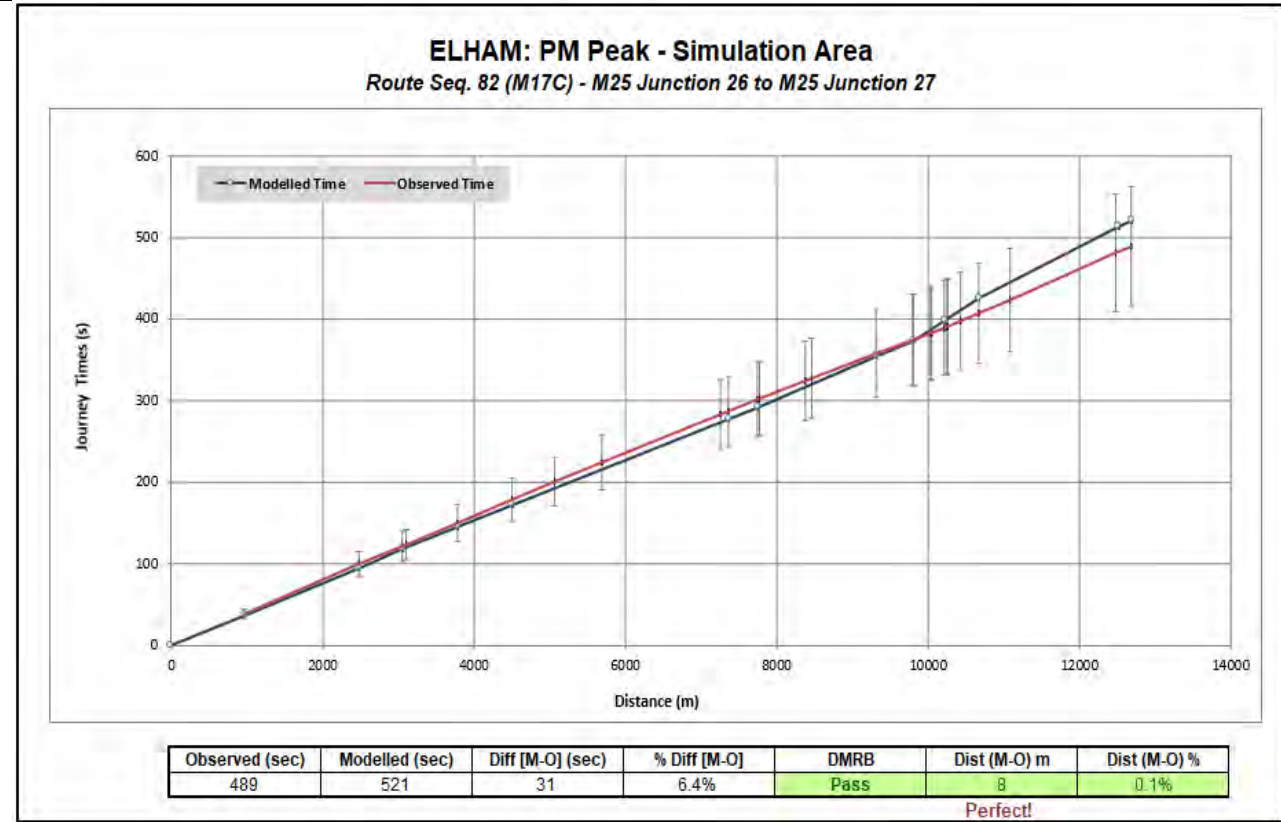
R 215- PM



R 216-AM



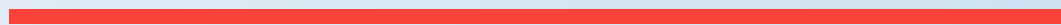
R 216-PM



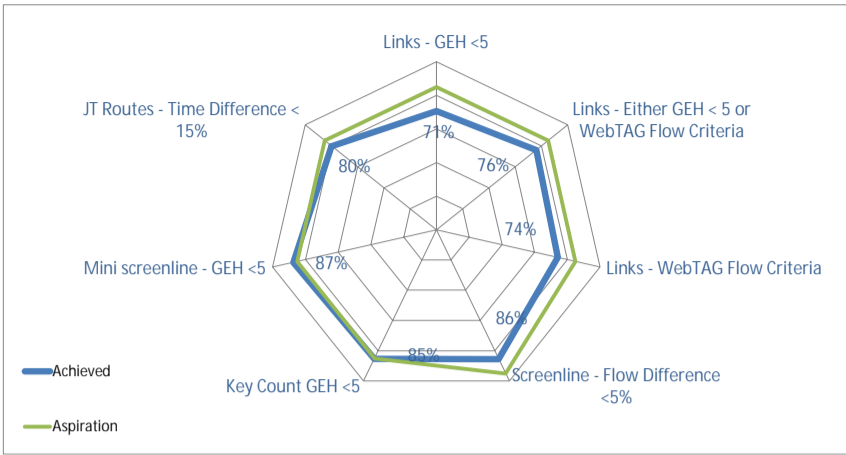


# Appendix F

TFL DASHBOARD RESULT



Top Line Statistics



Top Line Statistics

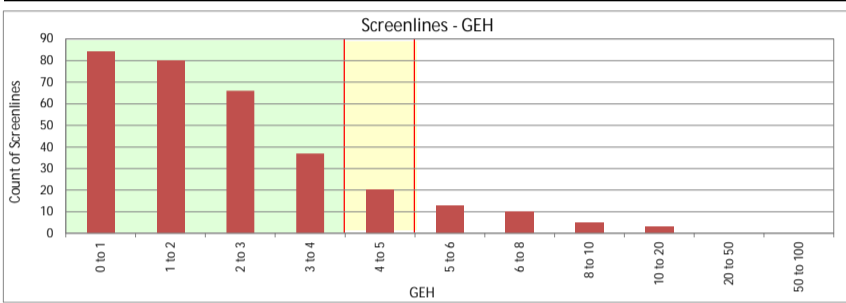
Submit Results

Criteria	Achieved	Aspiration	Test
Links - GEH <5	71%	85%	-
Links - Either GEH < 5 or WebTAG Flow Criteria	76%	85%	-
Links - WebTAG Flow Criteria	74%	85%	-
Screenline - Flow Difference <5%	86%	95%	-
Key Count GEH <5	85%	85%	-
Mini screenline - GEH <5	87%	85%	-
JT Routes - Time Difference < 15%	80%	85%	-

Screenline	Screenlines (Calibration)		Screenlines (Validation)	
	Total	%	Total	%
Total number of screenlines	294		24	
Total flow difference across all screenlines		2%		2%
Screenlines with flow difference < 5%	252	86%	20	83%
Screenlines with flow difference < 7.5%	277	94%	23	96%
Screenlines with total flow error GEH < 4	246	84%	21	88%

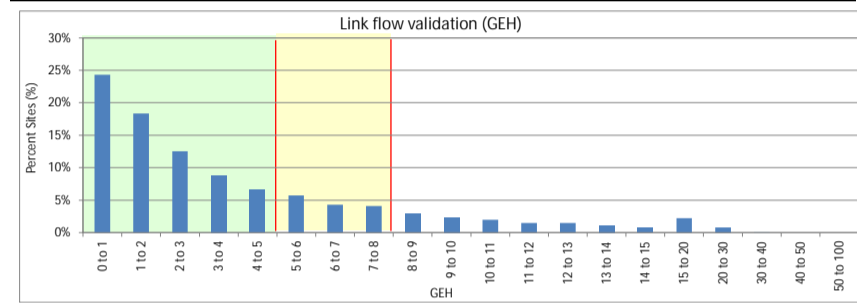
Screenline Summary - GEH

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		2%
Screenlines with flow difference <5%	272	86%
Screenlines with total flow difference GEH<4	267	84%

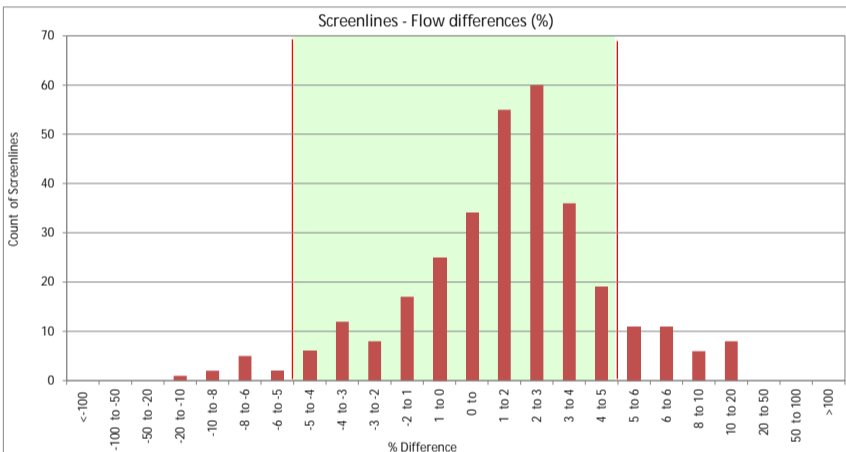


Counts Summary - GEH

Count	Total	%
No of counts	4,082	2%
Counts satisfying WebTAG Flow criteria	3,029	74%
Counts with GEH <5	2,882	71%
Counts with GEH <7.5	3,385	83%

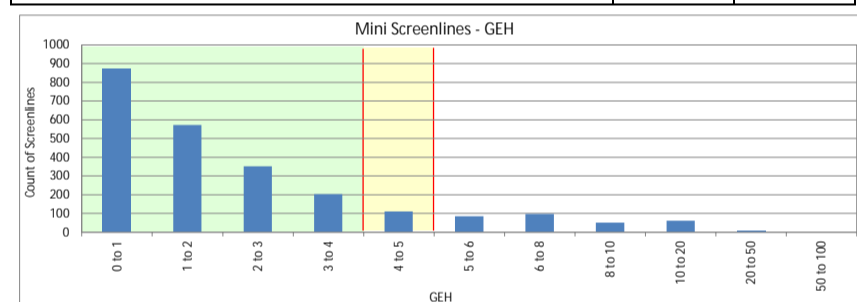


Screenline Summary - Flow Difference



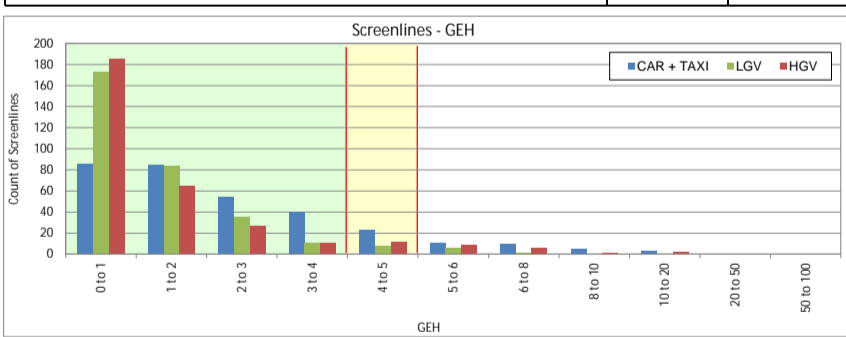
Mini Screenline Summary - GEH

Mini Screen Line	Total	%
Total number of mini screenlines	2,417	
Total flow difference across all mini screenlines		2%
Mini screenlines satisfying WebTAG Flow criteria	2,122	88%
Mini screenlines with total flow difference GEH<5	2,112	87%



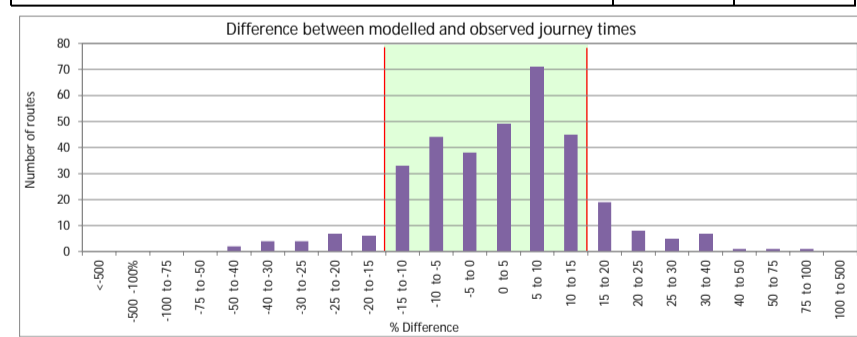
Screenline Summary by Vehicle type - GEH

Vehicle Type	Flow < 5%	GEH < 4
Car + Taxi	82%	84%
LGV	76%	95%
HGV	51%	91%



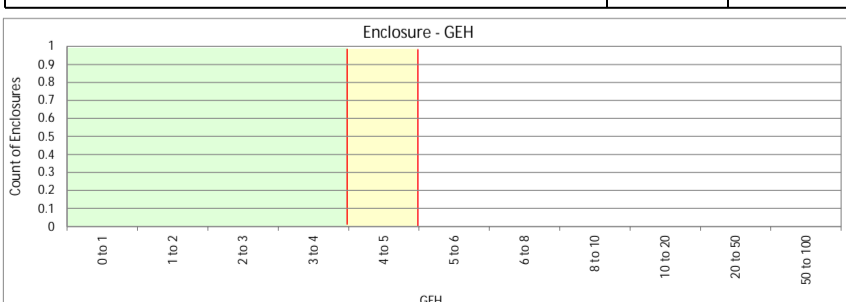
Journey Time Summary

Journey Time	Total	%
Number of Routes	352	
Total JT difference (Modelled - Observed) in Seconds	-6,826	-1%
Number of routes with difference<15% or 1 min if greater	281	79.8%

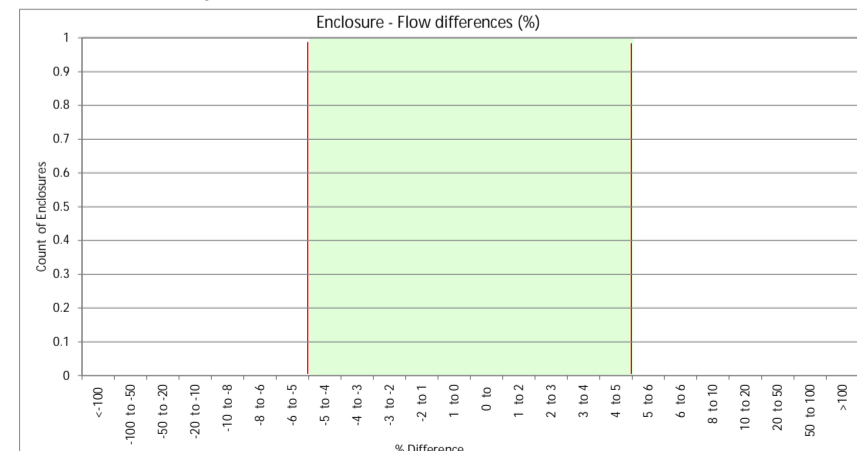


Enclosure Summary - GEH

Enclosure	Total	%
Total number of enclosures	0	
Total flow difference across all enclosures		#DIV/0!
Enclosures with flow difference <5%	0	#DIV/0!
Enclosures with total flow difference GEH<4	0	#DIV/0!



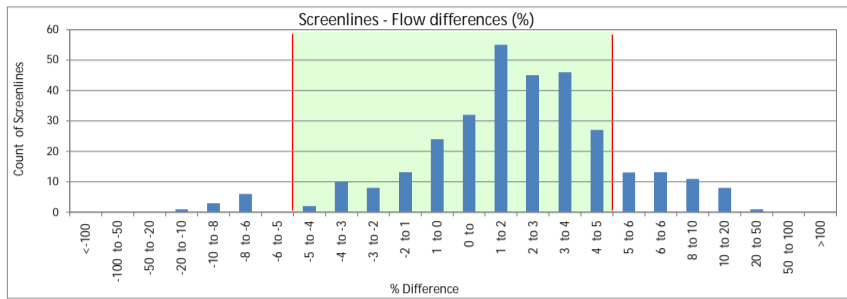
Enclosure Summary - Flow Difference





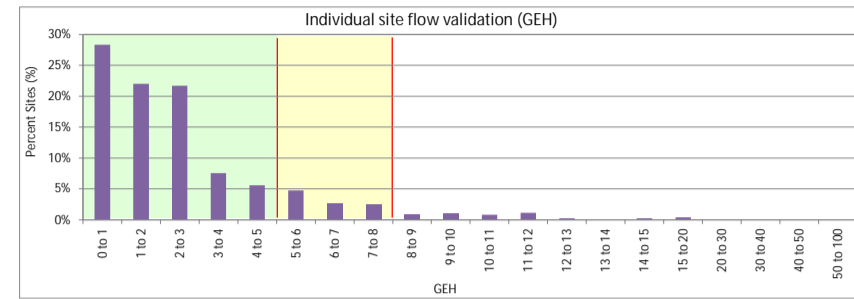
**Screenline Summary Car + Taxi - Flow Difference**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		2%
Screenlines with flow difference <5%	262	82%
Screenlines with total flow difference GEH<4	266	84%



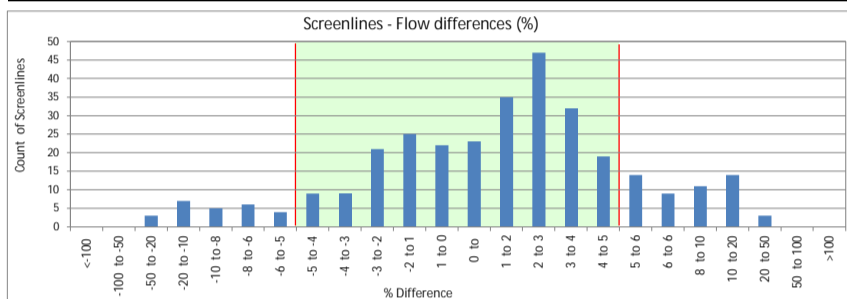
**Key Counts Summary Simulation - GEH**

Count	Total	%
No of counts	713	3%
Counts satisfying WebTAG Flow criteria	607	85%
Counts with GEH <5	608	85%
Counts with GEH <7.5	671	94%



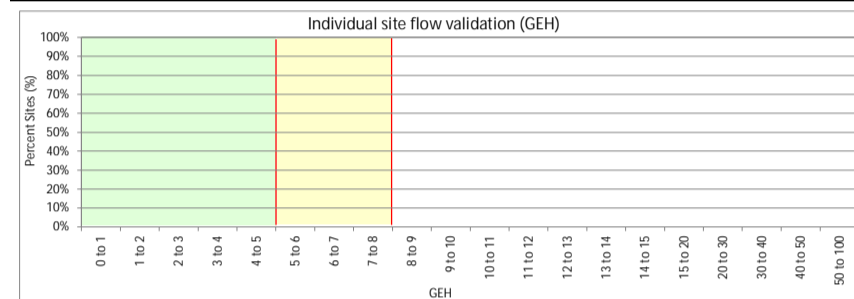
**Screenline Summary LGV - Flow Difference**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		1%
Screenlines with flow difference <5%	242	76%
Screenlines with total flow difference GEH<4	303	95%



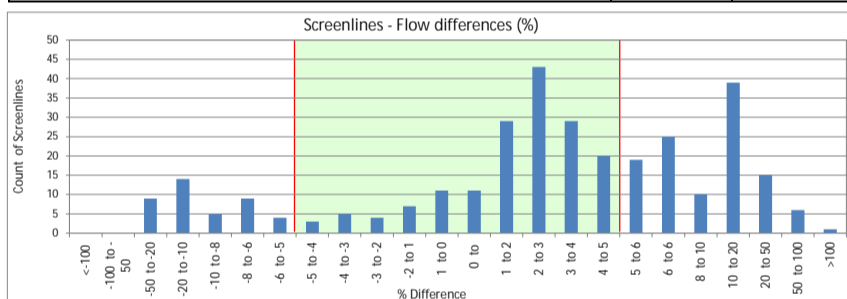
**Key Counts Summary Buffer - GEH**

Count	Total	%
No of counts	0	0%
Counts satisfying WebTAG Flow criteria	0	0%
Counts with GEH <5	0	0%
Counts with GEH <7.5	0	0%



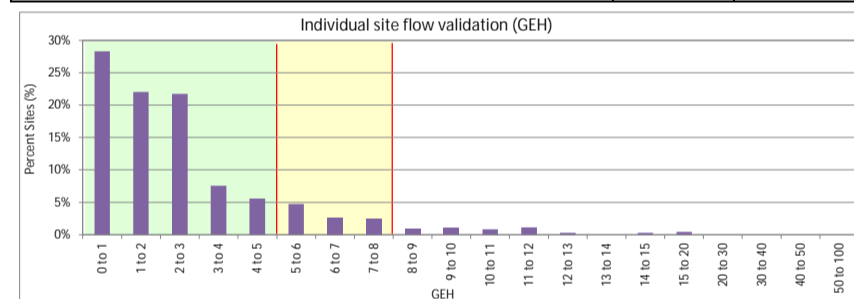
**Screenline Summary HGV - Flow Difference**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		5%
Screenlines with flow difference <5%	162	51%
Screenlines with total flow difference GEH<4	288	91%



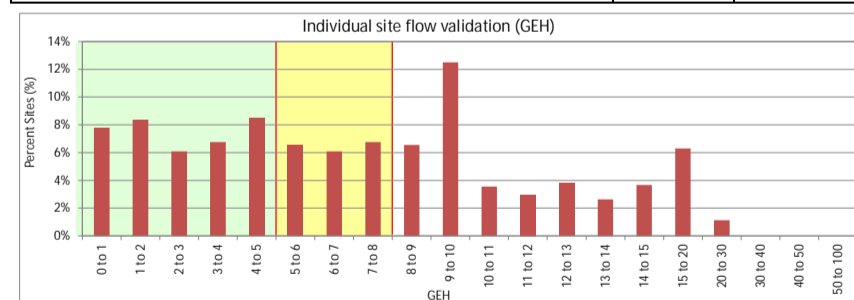
**Key Counts Summary - GEH**

Count	Total	%
No of counts	713	3%
Counts satisfying WebTAG Flow criteria	607	85%
Counts with GEH <5	608	85%
Counts with GEH <7.5	671	94%

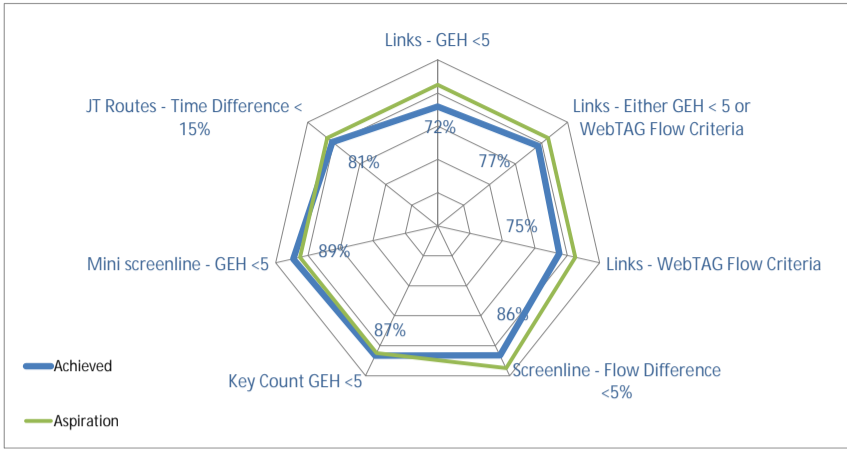


**Synthetic Counts Summary - GEH**

Count	Total	%
No of counts	872	3%
Counts satisfying WebTAG Flow criteria	644	74%
Counts with GEH <5	327	38%
Counts with GEH <7.5	456	52%



Top Line Statistics



Top Line Statistics

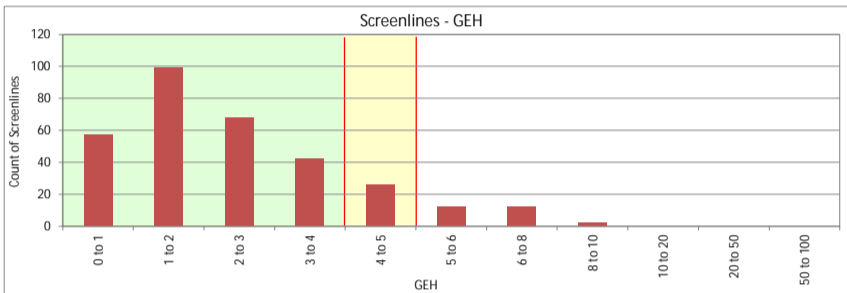
Submit Results

Criteria	Achieved	Aspiration	Test
Links - GEH <5	72%	85%	-
Links - Either GEH <5 or WebTAG Flow Criteria	77%	85%	-
Links - WebTAG Flow Criteria	75%	85%	-
Screenline - Flow Difference <5%	86%	95%	-
Key Count GEH <5	87%	85%	-
Mini screenline - GEH <5	89%	85%	-
JT Routes - Time Difference <15%	81%	85%	-

Screenline	Screenlines (Calibration)		Screenlines (Validation)	
	Total	%	Total	%
Total number of screenlines	294		24	
Total flow difference across all screenlines		2%		2%
Screenlines with flow difference <5%	251	85%	24	100%
Screenlines with flow difference <7.5%	278	95%	24	100%
Screenlines with total flow error GEH<4	243	83%	23	96%

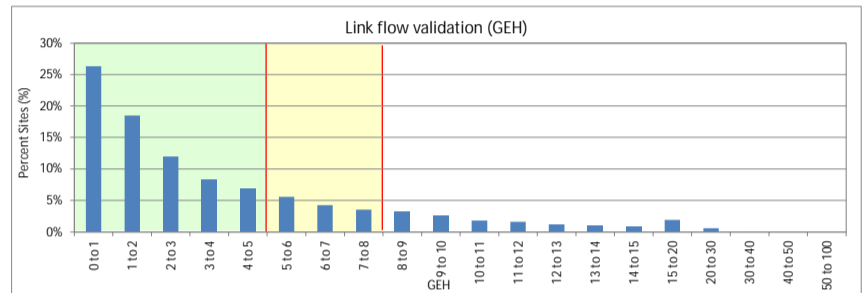
Screenline Summary - GEH

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		2%
Screenlines with flow difference <5%	275	86%
Screenlines with total flow difference GEH<4	266	84%

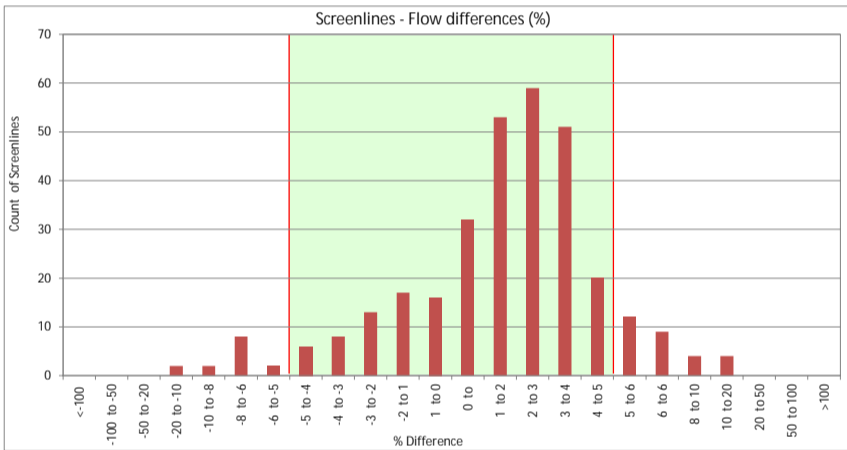


Counts Summary

Count	Total	%
No of counts	4,082	2%
Counts satisfying WebTAG Flow criteria	3,066	75%
Counts with GEH <5	2,937	72%
Counts with GEH <7.5	3,402	83%

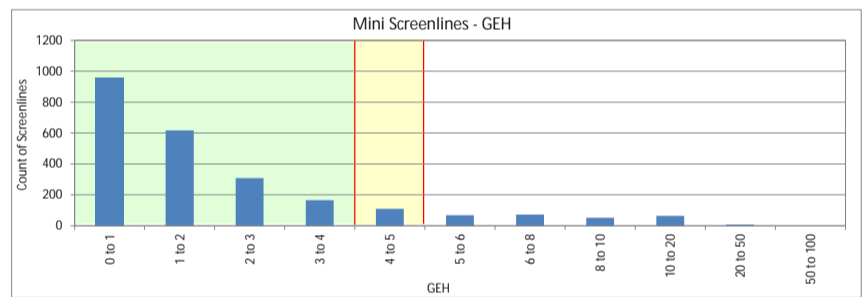


Screenline Summary - Flow Difference



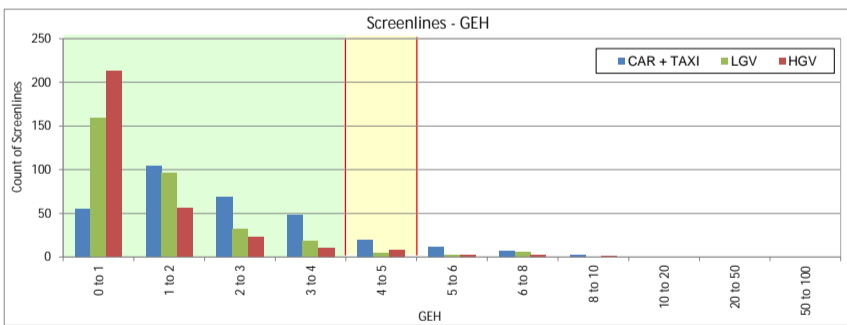
Mini Screenline Summary - GEH

Mini Screen Line	Total	%
Total number of mini screenlines	2,417	
Total flow difference across all mini screenlines		2%
Mini screenlines satisfying WebTAG Flow criteria	2,183	90%
Mini screenlines with total flow difference GEH<5	2,157	89%



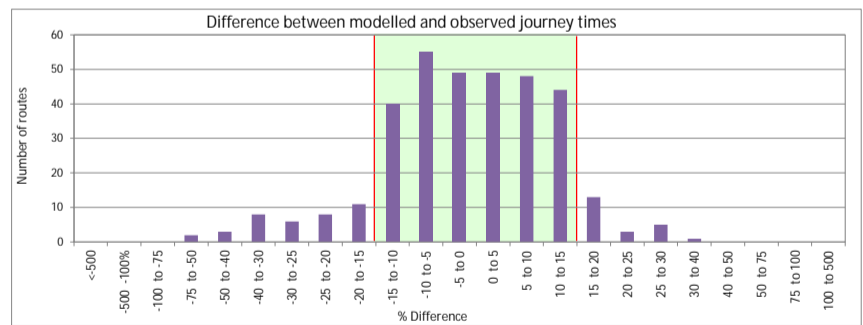
Screenline Summary by Vehicle type - GEH

Vehicle Type	Flow <5%	GEH <4
Car + Taxi	85%	87%
LGV	65%	96%
HGV	45%	95%



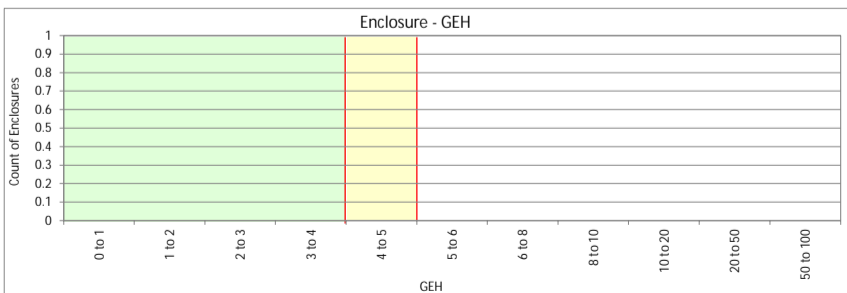
Journey Time Summary

Journey Time	Total	%
Number of Routes	352	
Total JT difference (Modelled - Observed) in Seconds	-34,653	-6%
Number of routes with difference <15% or 1 min if greater	285	81.0%

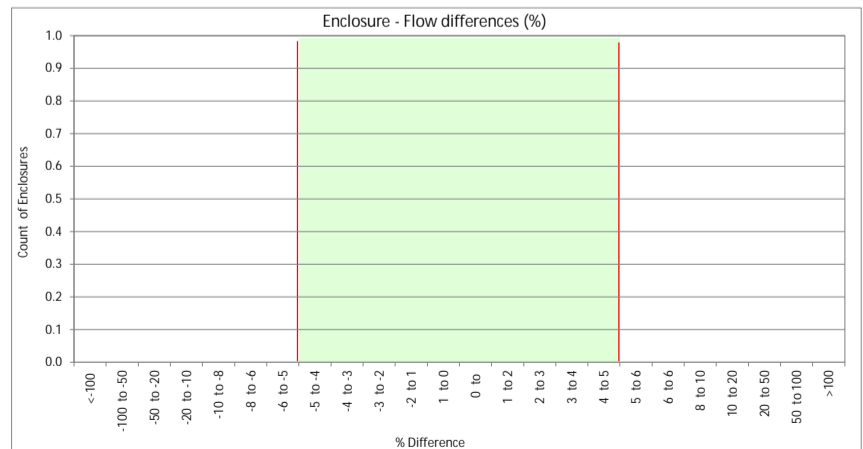


Enclosure Summary - GEH

Enclosures	Total	%
Total number of enclosures	0	
Total flow difference across all enclosures		#DIV/0!
Enclosures with flow difference <5%	0	#DIV/0!
Enclosures with total flow difference GEH<4	0	#DIV/0!



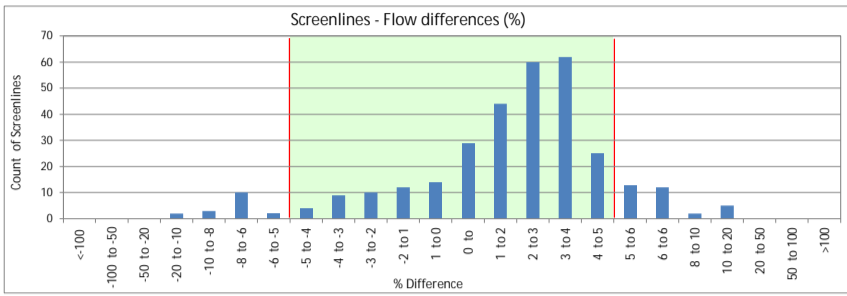
Enclosure Summary - Flow Difference





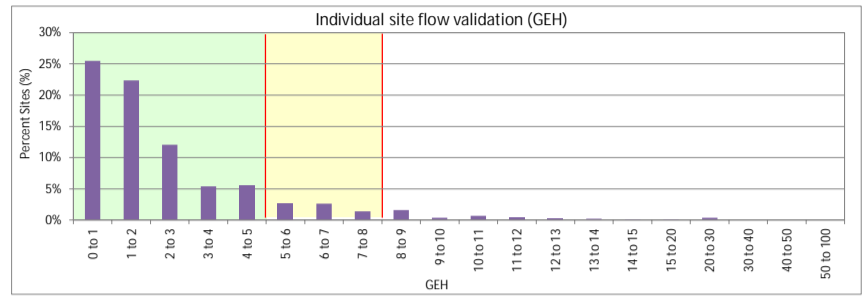
**Screenline Summary Car + Taxi - Flow Difference**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		2%
Screenlines with flow difference <5%	269	85%
Screenlines with total flow difference GEH<4	276	87%



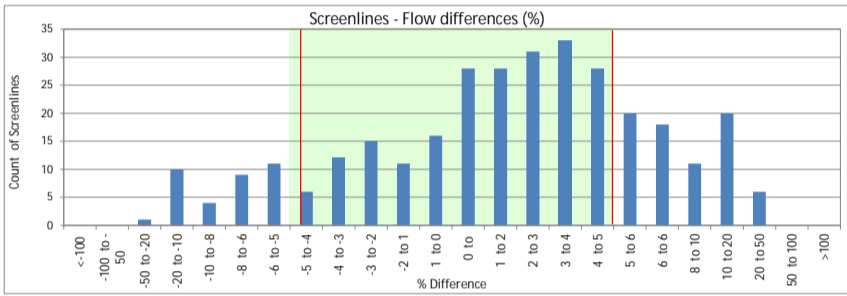
**Key Counts Summary Simulation**

Count	Total	%
No of counts	713	3%
Counts satisfying WebTAG Flow criteria	614	86%
Counts with GEH <5	618	87%
Counts with GEH <7.5	673	94%



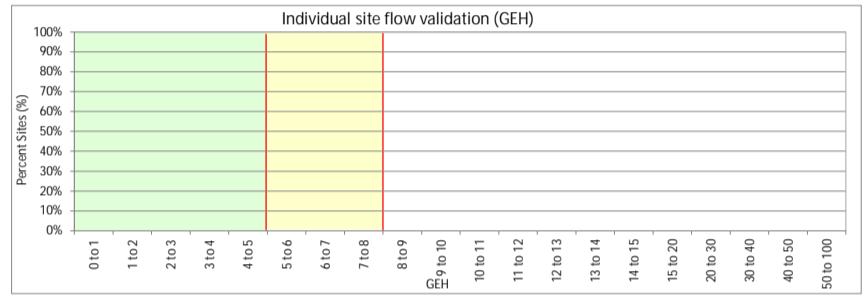
**Screenline Summary LGV - Flow Difference**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		2%
Screenlines with flow difference <5%	208	65%
Screenlines with total flow difference GEH<4	305	96%



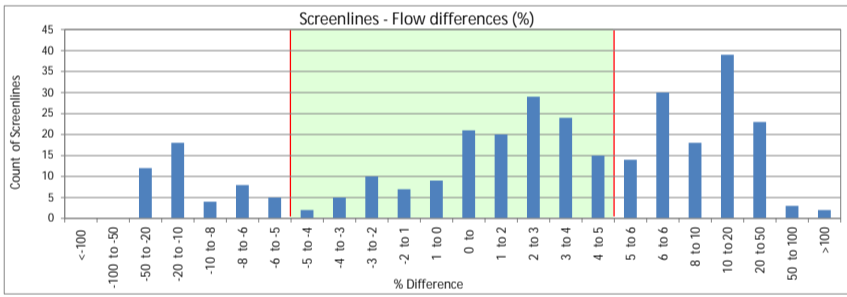
**Key Counts Summary Buffer**

Count	Total	%
No of counts	0	0%
Counts satisfying WebTAG Flow criteria	0	0%
Counts with GEH <5	0	0%
Counts with GEH <7.5	0	0%



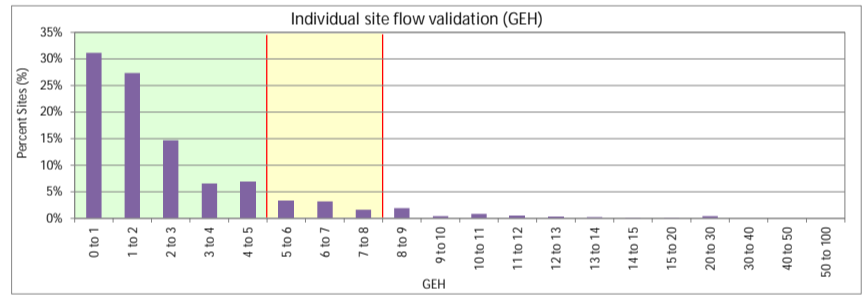
**Screenline Summary HGV**

Screenline	Total	%
Total number of screenlines	318	
Total flow difference across all screenlines		4%
Screenlines with flow difference <5%	142	45%
Screenlines with total flow difference GEH<4	303	95%



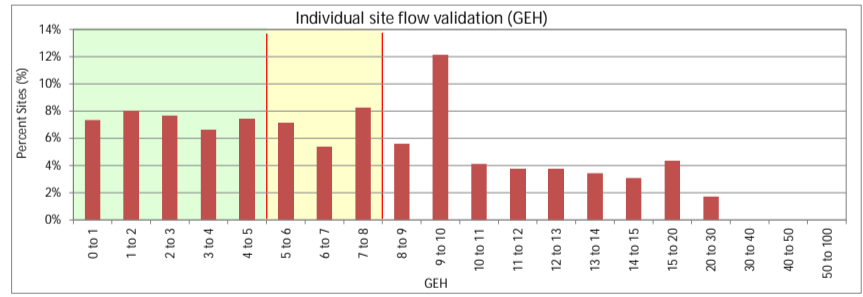
**Key Counts Summary**

Count	Total	%
No of counts	713	3%
Counts satisfying WebTAG Flow criteria	614	86%
Counts with GEH <5	618	87%
Counts with GEH <7.5	673	94%



**Synthetic Counts Summary - GEH**

Count	Total	%
No of counts	872	2%
Counts satisfying WebTAG Flow criteria	651	75%
Counts with GEH <5	324	37%
Counts with GEH <7.5	467	54%



# Appendix G

JUNCTIONS ALONG M25



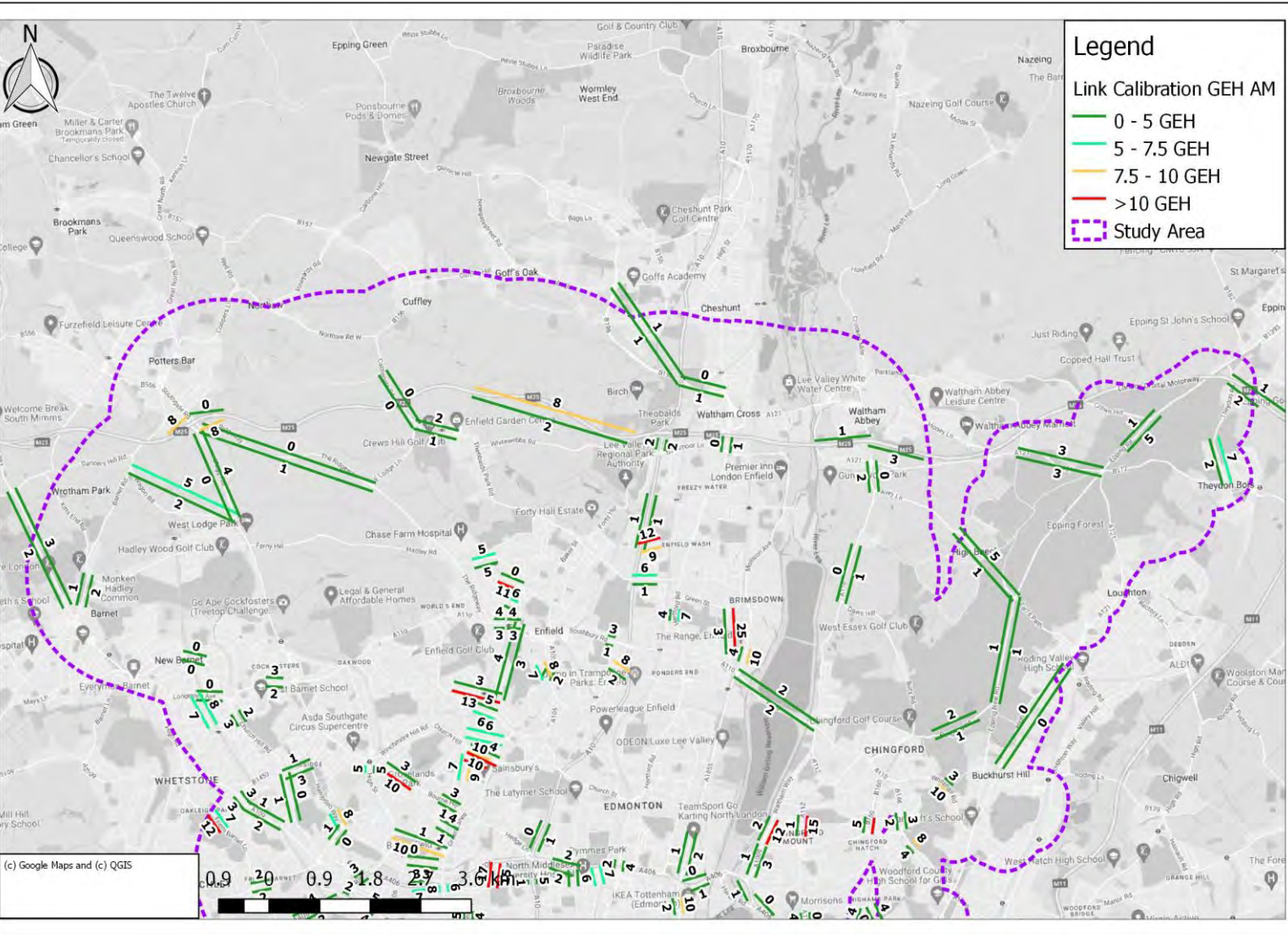


# Link Calibration GEH – AM

Date Modified: 14/01/22

Drawn By: Seharal, Sathishkumar

File: C:\Users\ins01800\Desktop\Enfield\GIS\Enfield.aprx



## Legend

- Link Calibration GEH AM
- 0 - 5 GEH
- 5 - 7.5 GEH
- 7.5 - 10 GEH
- >10 GEH
- Study Area

(c) Google Maps and (c) QGIS

# Link Calibration GEH – PM

Date Modified: 14/04/22

Drawn By: Sevaral, Sathishkumar

File: C:\Users\lms101600\Desktop\Enfield\GIS\Enfield.qgs

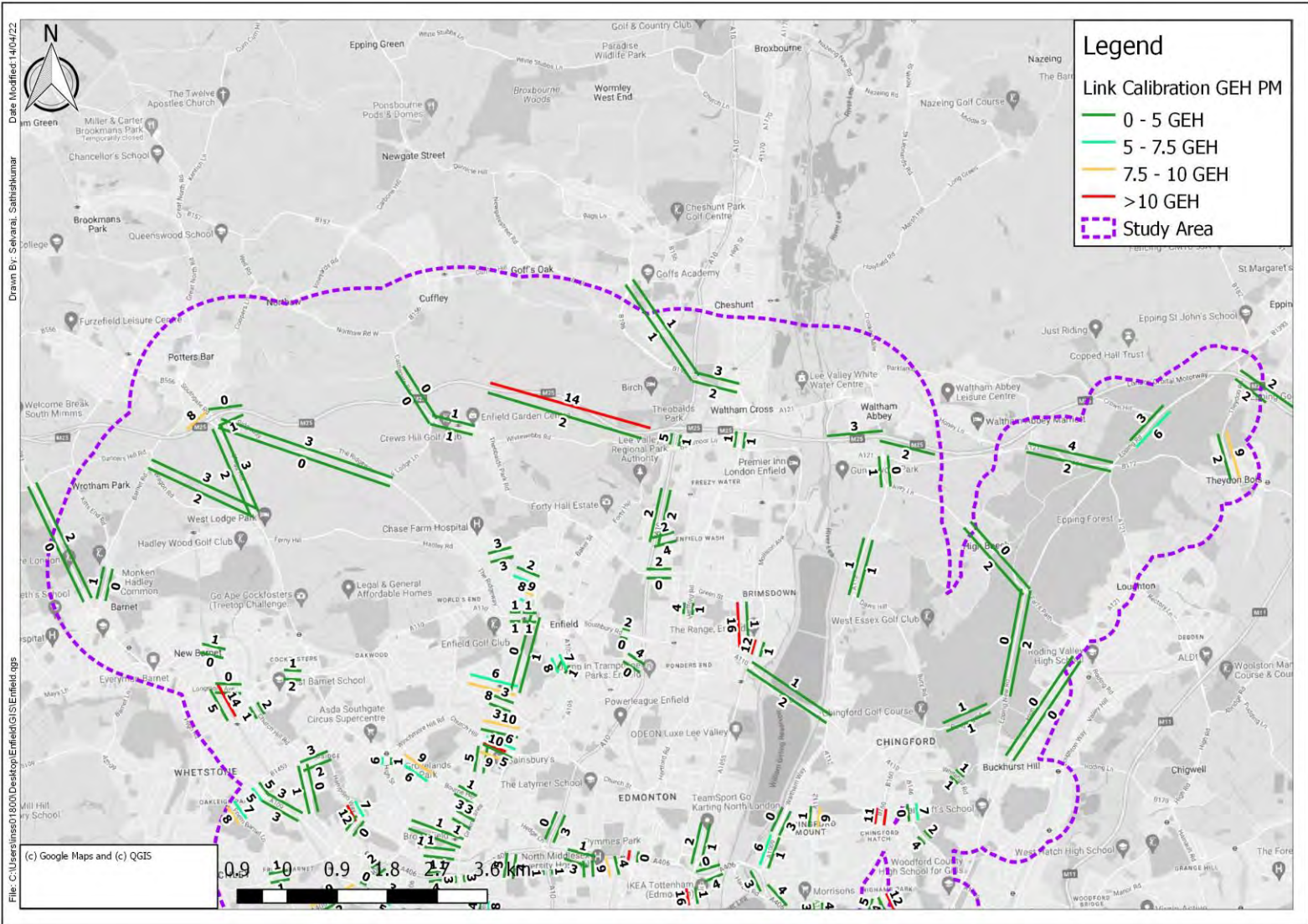
(c) Google Maps and (c) QGIS



## Legend

### Link Calibration GEH PM

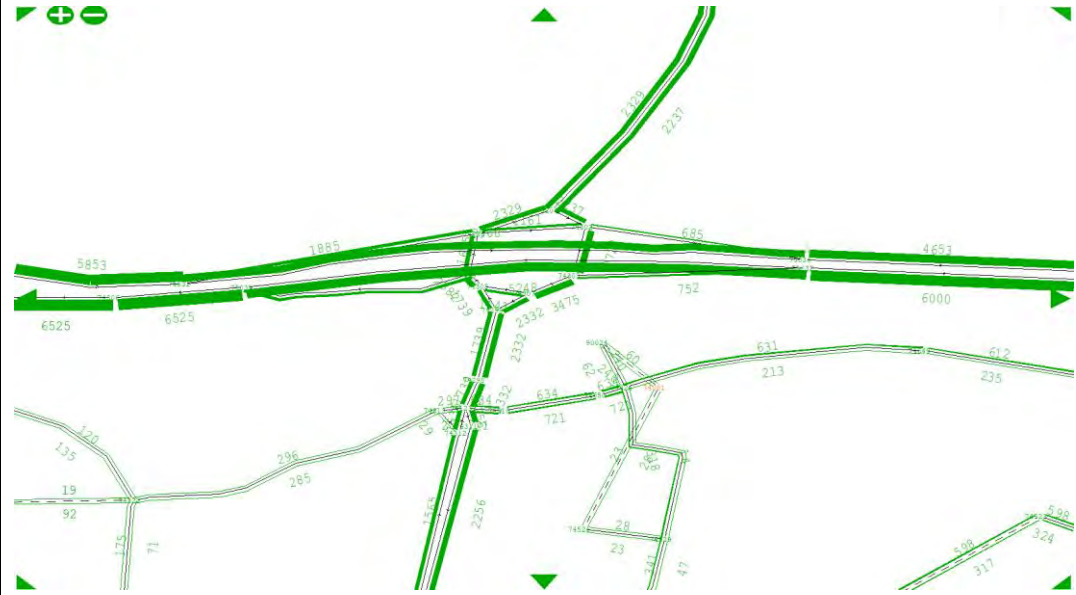
- 0 - 5 GEH
- 5 - 7.5 GEH
- 7.5 - 10 GEH
- > 10 GEH
- Study Area



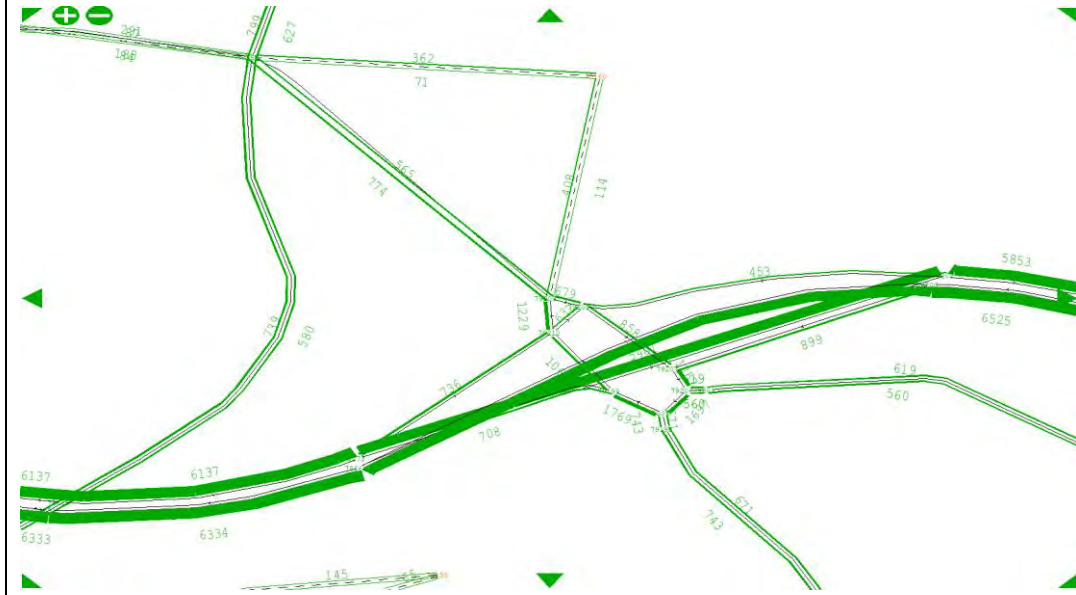


Actual Flow and Delay along M25 Junctions

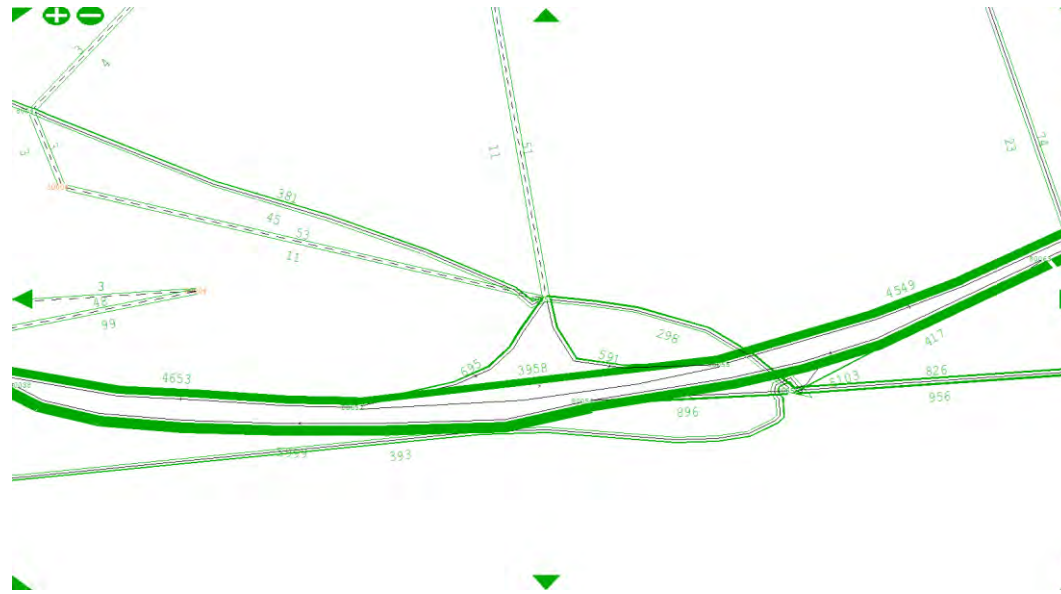
M25\_A10 Junction



M25\_Stagg Hill Junction

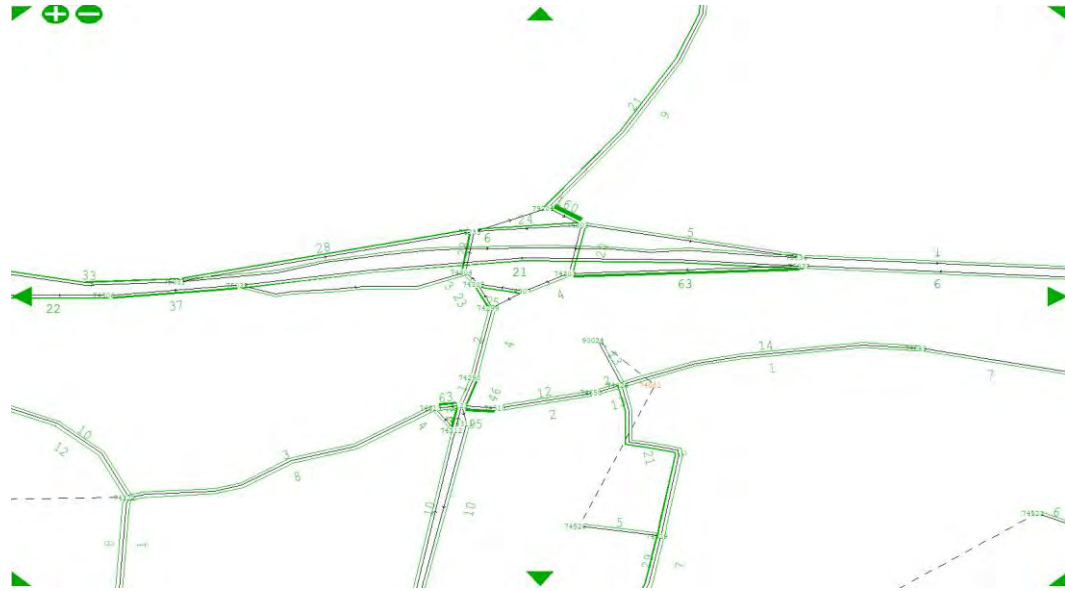


M25\_Honey Lane

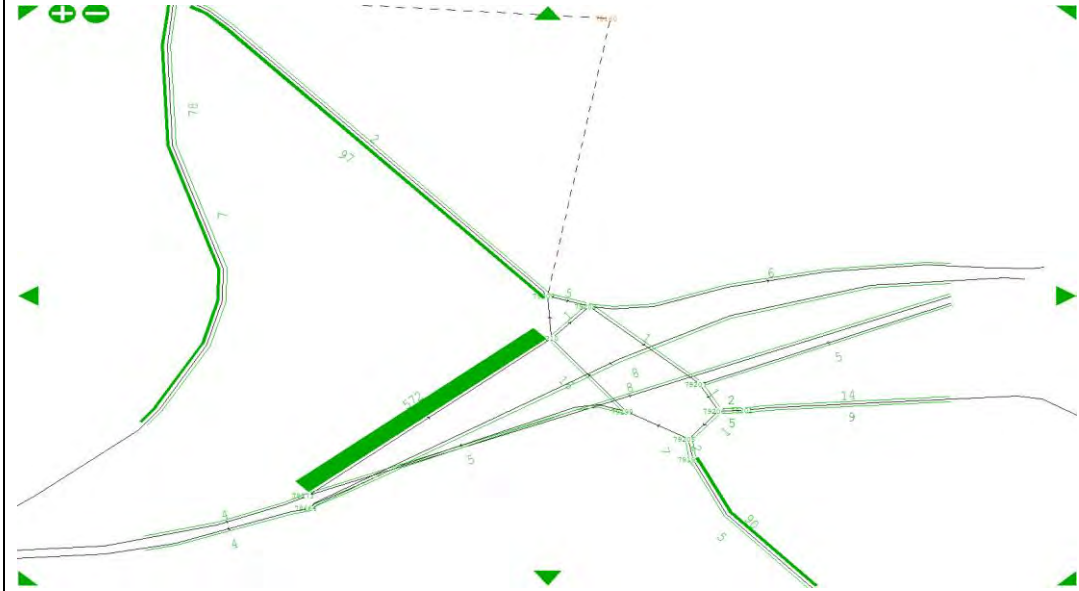


AM – Delay (sec)

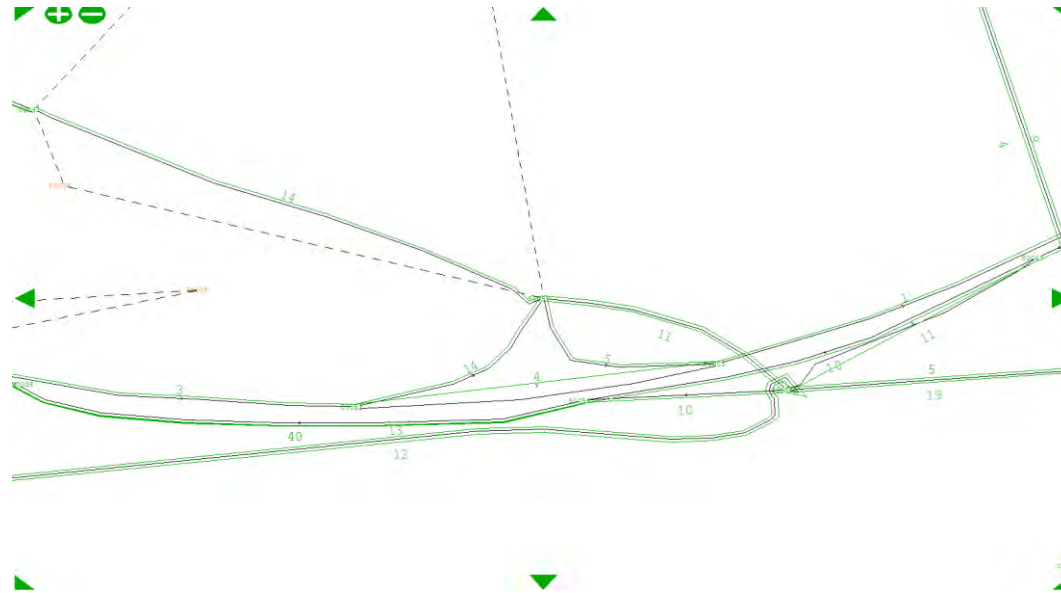
M25\_A10 Junction



M25\_Stagg Hill Junction



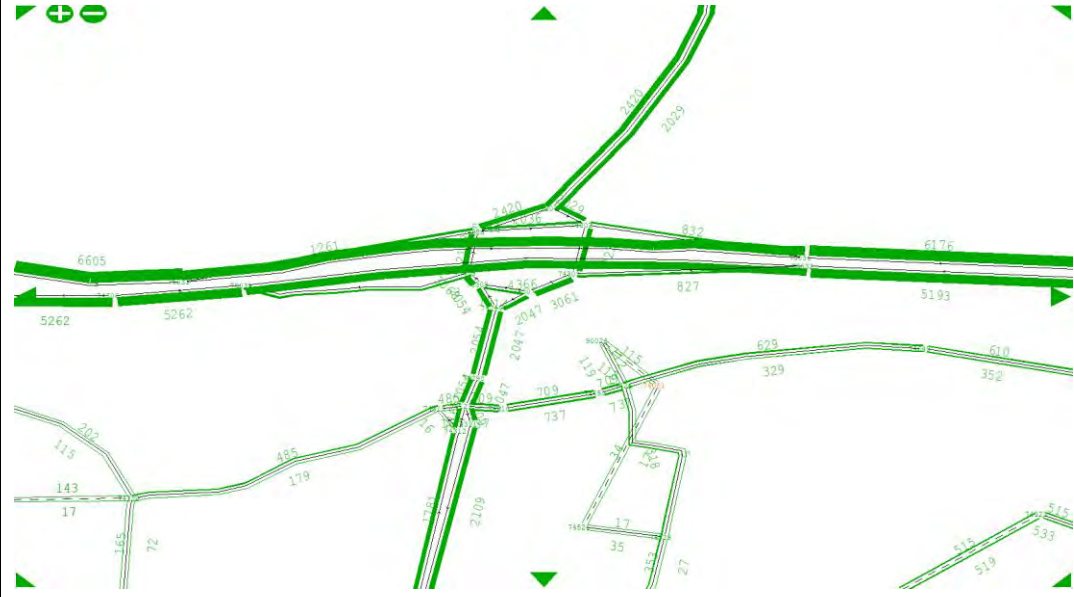
M25\_Honey Lane



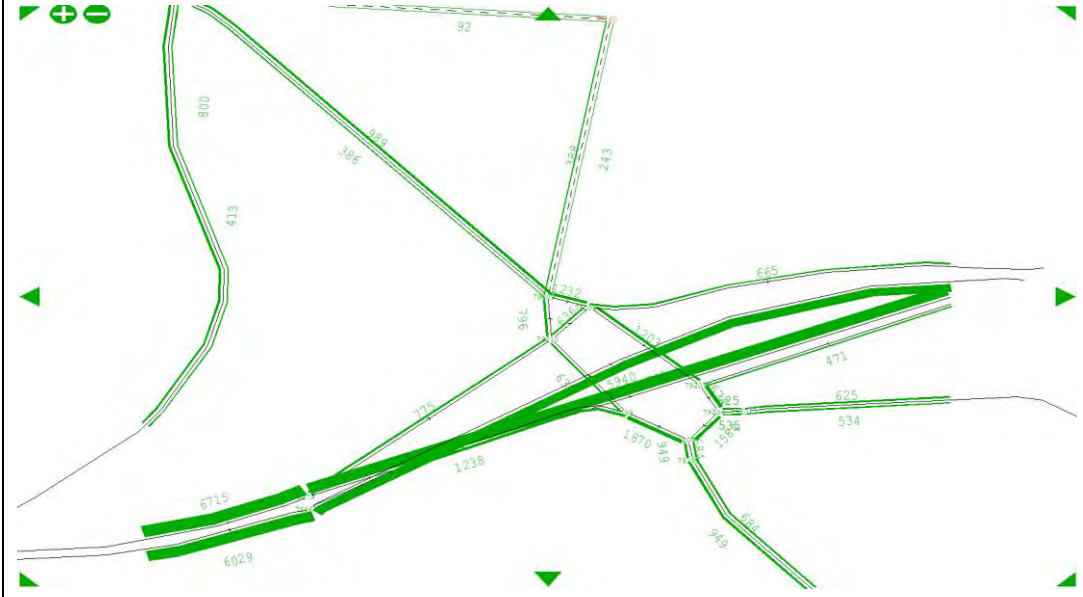


PM – Actual Flow(PCU/hr)

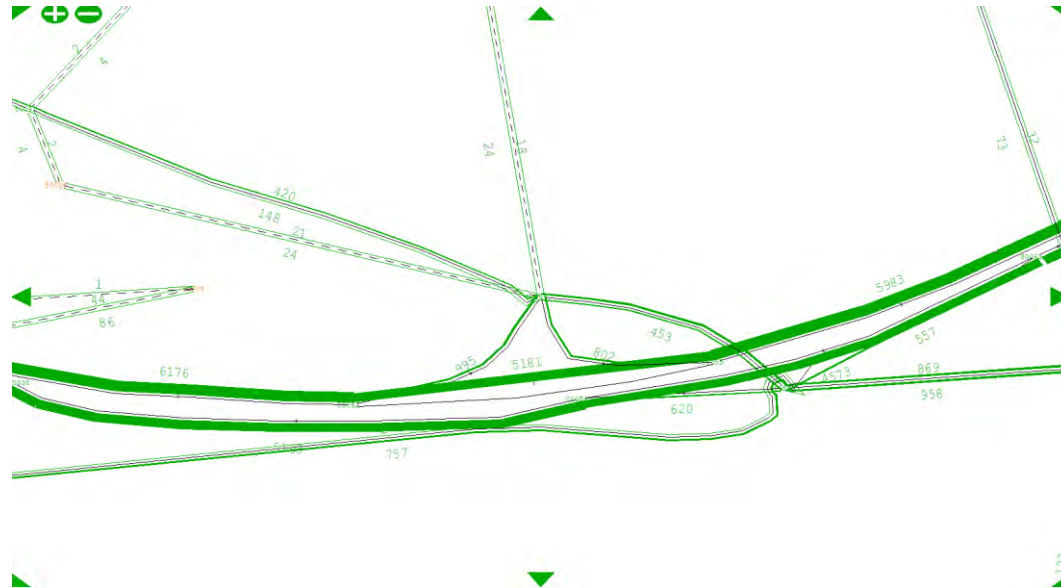
M25\_A10 Junction



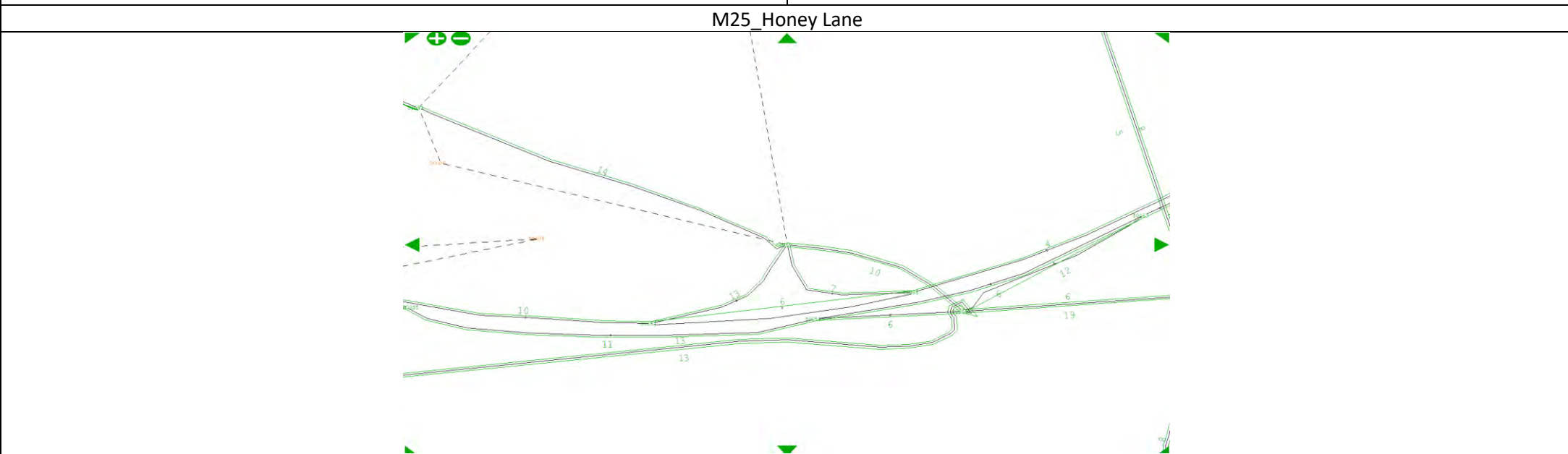
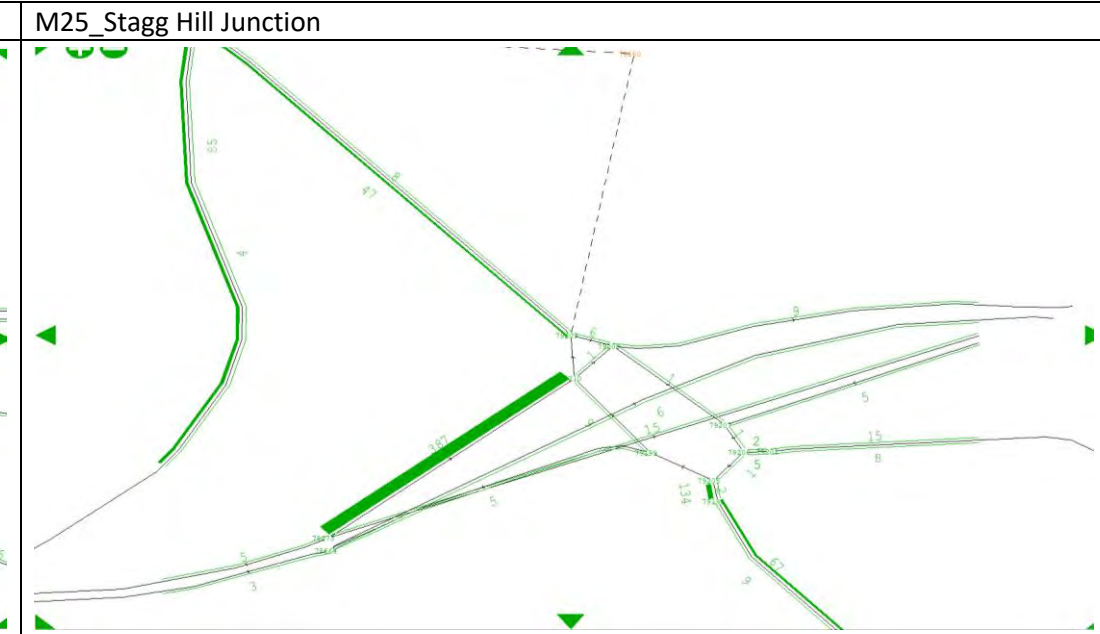
M25\_Stagg Hill Junction



M25\_Honey Lane



PM – Delay (sec)







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# Enfield Local Plan

*Forecast Assumptions Technical Note*





# TECHNICAL NOTE 1 - FUTURE BASELINE ASSUMPTIONS

<b>DATE:</b>	26 <sup>th</sup> January 2023	<b>CONFIDENTIALITY:</b>	Internal
<b>SUBJECT:</b>	Future Baseline Forecast Assumptions		
<b>PROJECT:</b>	Enfield Local Plan	<b>AUTHOR:</b>	Jay Lin
<b>CHECKED:</b>	Michael Johns	<b>APPROVED:</b>	Christine Elphicke

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## INTRODUCTION

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WSP has been appointed by the London Borough of Enfield (LBE) to support their new Local Plan development in the Borough. WSP will undertake an assessment on the impact of growth on the highway and public transport network from the 2016 base year and 2041 Reference Case forecast year.

On this basis we will be using Transport for London's (TfL's) Reference Case (RC) to create a 'Future Baseline' (without the Local Plan development). TfL's Reference Case was updated by TfL (in 2020), includes committed and funded infrastructure schemes and already has an allowance for a degree of growth in Enfield and to produce the Enfield 'Future Baseline' some of this growth may need to be removed.

The purpose of this Technical Note is to outline the Forecast Assumptions associated with modelling of the Future Baseline scenario (i.e. without LBE Local Plan Growth) using MoTiON, LoHAM and Railplan.

The versions of TfL's models that have been used are listed below:

- MoTiON: Multi-modal strategic transport Model of Travel in London (MoTiON) v3.0.19
- LoHAM: London Highway Assignment Model (LoHAM v4.3)
- Railplan: Public Transport Model (Railplan v8.0)

MoTiON is the multimodal demand model within TfL's strategic transport modelling suite. MoTiON uses numerous demand drivers including land use, socio-economic forecasts and transport supply to calculate future trip generation, trip distribution and mode choice. The trips that MoTiON calculates are then assigned to detailed strategic networks in Railplan (public transport) and LoHAM (highway) models to forecast detailed route choice and cost changes between transport and land use scenarios.

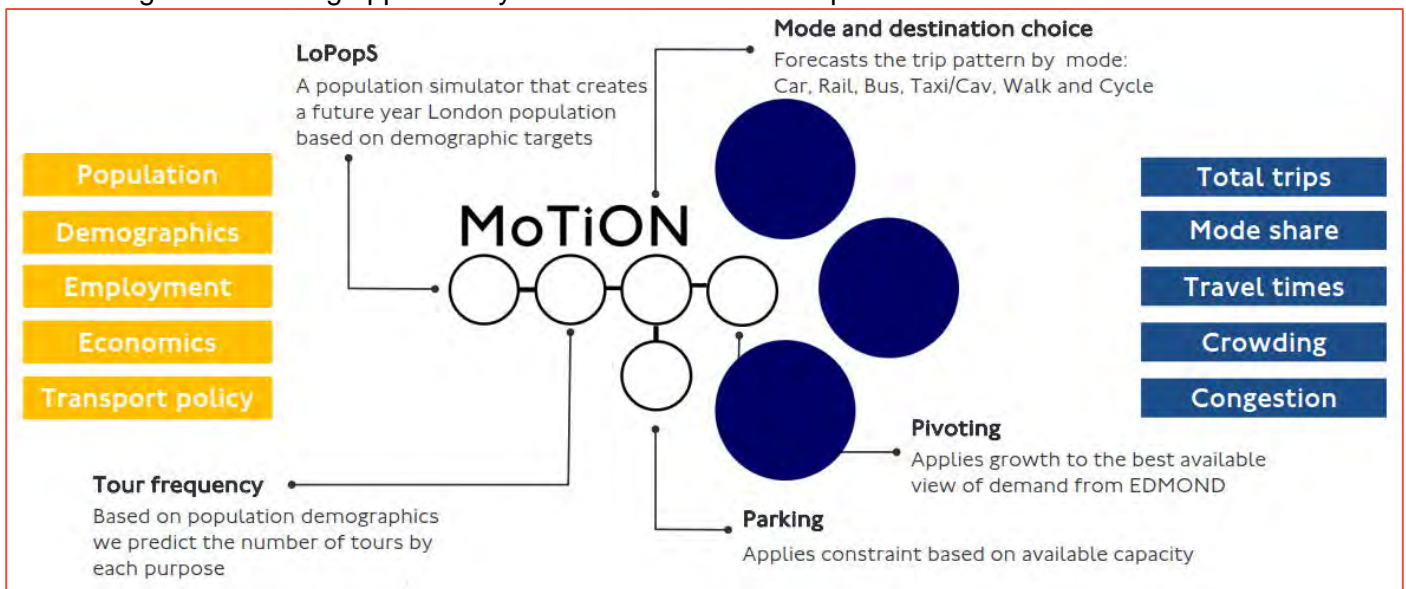


## LAND USE ASSUMPTIONS (MOTION)

### MoTiON

MoTiON uses five demand modules to forecast trip change and mode shift. These are:

- London Population Synthesizer (LoPopS), which creates a future year London population based on changes to socio-demographic information
- Tour Frequency, which is used to predict the number of tours based on population estimates
- Mode and destination choice model, which allocates tours to modes and distribute them to destination zones
- Parking. Parking model evaluates the impact on demand that constrained parking supply has within the Greater London Area, and allows travellers to choose to travel instead to a nearby location to park or alternatively to choose a different mode should there be no nearby provision
- Pivoting is a modelling approach by which the forecasts are produced.



**Figure 1: MoTiOn Modules**

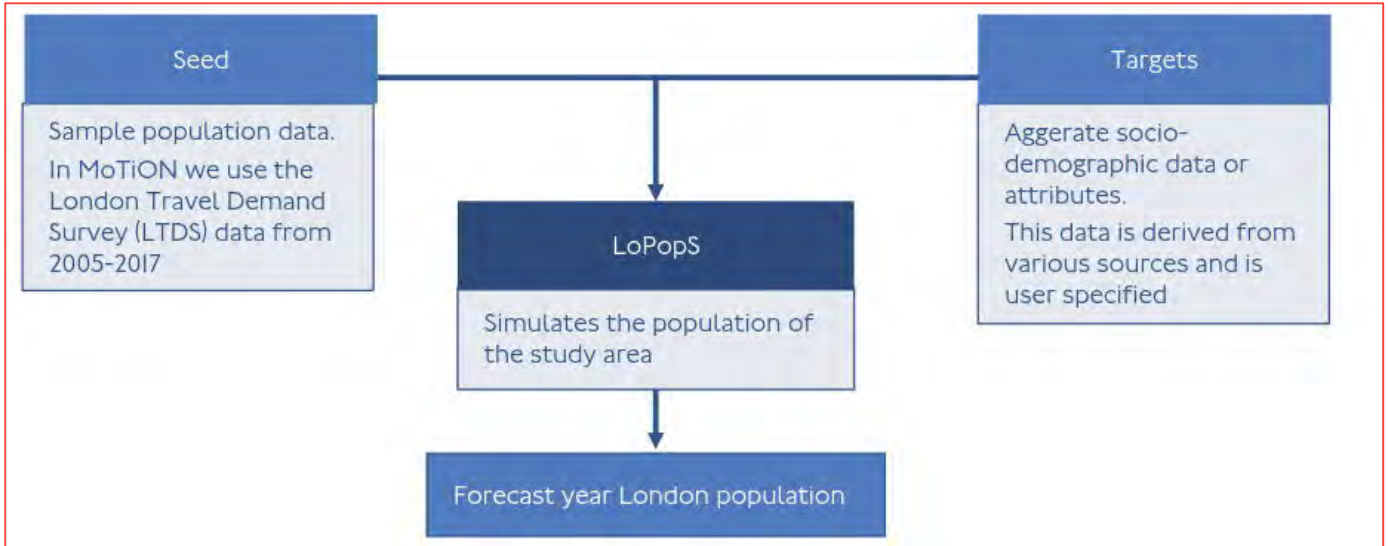
LoPops and the Choice Model have a particular relevance to generating the Future Baseline scenario and these are further described in the following text.

### TfL's 2041 Reference Case

#### LONDON POPULATION SYNTHESIZER (LOPOPS)

LoPopS creates a future year London population based on changes in socio-demographic information that can be specified for a future year, e.g. in forecast years there will be a higher population or more blue-collar workers. There are two main inputs required to run LoPopS: Seed and Target data sets (**Figure 2**). The Seed dataset is derived from the London Travel Demand Survey (LTDS) data set and default values have been derived by TfL and are included within TfL's 2041 RC. The Target dataset is created by the user using alternative information. Ideally, the user is expected to provide target values for each of the variables in the Seed database. However, due to the practical difficulty of deriving all targets values for a given forecast year, the user can provide targets values for only the policy variables of interest and/or variables where their targets values are derived from reliable data sources. LoPopS forecasts the missing targets values by using the relationships among these variables in a user defined reference run (e.g. TfL's 2041 Reference

Case run) and the new targets provided through a pivoting process. It is important that users only provide reliable targets and allow LoPopS to infill the missing targets.



**Figure 2: LoPopS Inputs**

The information, which is fed into MoTiON via LoPopS is listed in **Table 1** and the LoPopS assumptions within Enfield that are included in the 2016 Base and 2041 RC model ('2041\_Ref\_06') are detailed in Appendix B with a summary provided in **Table 2** and **Table 3**. **Figure 8** in Appendix A shows the MoTiON zones within the LBE.

The total population is set to increase in 2041 by 57,093 residents, representing a 17.2% population growth from the base 2016 base year population as shown in **Table 2**.

**Table 3** shows that total workers is set to grow by 15.3% across males, females, Blue Collar and White Collar workers in the 2041 RC model by an additional 24,284 workers.

The gender split in both the base and forecast year remained the same with 48.3% males and 51.7% females respectively as shown in **Table 2**.

The largest split amongst age groups is among the 18-65's in both the base year with 61.4% and in 2041 with 58.8%. The number of people in this age group is set to rise by 12.2% (or 24,890 residents). The ageing population, which includes the over 65's, is set to increase by 69.9% within the 2041 RC model with an additional 28,004 residents. The number of children under the age of 16 is estimated to increase the least by 3.4% between 2016 and 2041.

The largest income range within the borough is set to be under £35k with 53.8% in the base year and 54.3% in 2041.

**Table 3** shows that number of cars in 2041 is set to increase by 14.3% compared to the 2016 base year.

**Figure 9** in Appendix B graphically shows changes in total population assumed in MoTiON between 2016 and 2040.

**Table 1: LoPops Variables**

Category	Socio-Demographic Parameter	LoPops Variable Name
	Total Population	total
Workers	Workers - Males	wkmale
	Workers - Females	wkfemale
	Blue Collar workers	BCollar
Gender	Males	male
Age	Age Under 16	age16
	Age 18-65	age65
	Age 65+	age65p
Income	Income Less than £35k	inc35
	Income £35k-£75k	inc75
	Income £75k+	inc75p
	Number of Cars	ncars

**Table 2: 2016 and 2041 LoPops Socio-Demographic Assumptions – LB of Enfield**

	Socio-demographic Assumptions	2016 Base	2016 % split by type	2041 TfL's RC	2041 % split by type
	<b>Total Population</b>	<b>331,471</b>		<b>388,564</b>	
Workers	Total Workers	159,182	100.0%	183,466	100.0%
	Workers - Males	84,186	52.9%	97,191	53.0%
	Workers - Females	74,996	47.1%	86,275	47.0%
	Blue Collar workers	51,616	32.4%	60,295	32.9%
	White Collar workers	107,566	67.6%	123,171	67.1%
Gender	Males	159,978	48.3%	187,509	48.3%
	Females	171,493	51.7%	201,055	51.7%
Age	Age Under 16	79,608	24.0%	82,337	21.2%
	Age 16-17	8,343	2.5%	9,813	2.5%
	Age 18-65	203,444	61.4%	228,334	58.8%
	Age 65+	40,076	12.1%	68,080	17.5%
Income	<b>Total Household</b>	<b>129,601</b>	<b>100.0%</b>	<b>169,040</b>	<b>100.0%</b>
	Income Less than £35k	69,720	53.8%	91,785	54.3%
	Income £35k-£75k	44,147	34.1%	57,168	33.8%
	Income £75k+	15,734	12.1%	20,087	11.9%
	Number of Cars	123,871		141,626	
	Car ownership per household	0.96		0.84	



**Table 3: 2016 - 2041 Changes in LoPops Socio-Demographic Assumptions – LB of Enfield**

	Socio-demographic Assumptions	2016 Base	2041 TfL's RC	2016-2041 Growth	2016-2041 Growth, %
	<b>Total Population</b>	<b>331,471</b>	<b>388,564</b>	<b>57,093</b>	<b>17.2%</b>
Workers	Total Workers	159,182	183,466	24,284	15.3%
	Workers - Males	84,186	97,191	13,005	15.4%
	Workers - Females	74,996	86,275	11,279	15.0%
	Blue Collar workers	51,616	60,295	8,679	16.8%
	White Collar workers	107,566	123,171	15,605	14.5%
Gender	Males	159,978	187,509	27,531	17.2%
	Females	171,493	201,055	29,562	17.2%
Age	Age Under 16	79,608	82,337	2,729	3.4%
	Age 16-17	8,343	9,813	1,470	17.6%
	Age 18-65	203,444	228,334	24,890	12.2%
	Age 65+	40,076	68,080	28,004	69.9%
Income	<b>Total Household</b>	<b>129,601</b>	<b>169,040</b>	<b>39,439</b>	<b>30.4%</b>
	Income Less than £35k	69,720	91,785	22,065	31.6%
	Income £35k-£75k	44,147	57,168	13,021	29.5%
	Income £75k+	15,734	20,087	4,353	27.7%
	Number of Cars	123,871	141,626	17,755	14.3%
	Car ownership per household	0.96	0.84	-0.12	-12.3%

## MODE-DESTINATION CHOICE MODELS - JOBS, SCHOOL PLACES AND RETAIL FLOOR SPACE ASSUMPTIONS

The mode-destination choice module allocates tours to modes and distribute them to destination zones. This results in tour matrices by mode, purpose and person segment.

The main inputs to this module are:

- Tour productions from the tour frequency models by zone, purpose and segment
- Level-of-service (LOS) information from the assignment models
  - Highway skims (time, distance, tolls)
  - Public transport level of service (fares, IVT etc.) – Cycling generalised costs
- Parking costs
- Walk distances
- Jobs, school places and retail floor space (for destination zones), and
- Model parameters determined in the model estimation

Below is a selection of parameters, which have particular relevance to the accurate land use representation in Enfield Future Baseline scenario:

- Number of jobs
- Retail Floor space
- School pupils by school type

The Land Use Assumptions within the Enfield zone boundaries are presented in Appendix C whereas a summary for the 2016 base year and 2041 RC year is presented in **Table 5** and **Table 6**.

The total employment is estimated to increase by 9.2% in the 2041 RC year with an additional 11,109 jobs. The largest increase is among retail employment with an additional 4,582 jobs by 22.3% in 2041. White Collar workers have the most number of jobs split of 60% for both the base and forecast year as shown in **Table 5**. Similarly, **Table 5** shows there are more secondary school places than primary school places with 67% for both the base and forecast year. **Table 6** shows that retail floor spaces is assumed to increase by 27.4% by an additional 134.73 NDMRFS'000sqm.

The MoTiON column variables used in the Tables are explained below in **Table 4**.

**Table 4: MoTiON Variables Translation**

	Translation	MoTiON Variable	Units
<b>Employment</b>	Total Employment	TotEmp	Number of jobs
	Employment density	Empden	Number of jobs per sq.m.
	White collar workers	WC_Employment	Number of people
	Blue collar workers	BC_Employment	Number of people
	Retail Employment	Retailemp_(Ret)	Number of jobs
	Service workers	Service_emp	Number of jobs
<b>School pupils by school type</b>	Secondary school pupils	Secondary_enrolments	Number of pupils
	Primary school pupils	Primary_enrolments	Number of pupils
<b>Retail Floor space</b>	Retail floor space	Retailfloorspace(NDMRFS'000sqm)	NDMRFS'000sqm

**Table 5: 2016 and 2041 Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

	Assumptions	2016 Base	2016 % split by type	2041 TfL's RC	2041 % split by type
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>		<b>131,312</b>	
	Employment density	71,769		77,839	
	White collar workers	72,679	60.5%	79,186	60.3%
	Blue collar workers	47,524	39.5%	52,126	39.7%
	Service Employment	7,659	6.4%	8,052	6.1%
	Retail Employment	20,528	17.1%	25,110	19.1%
School Places	<b>Primary</b>	<b>18,291</b>	<b>32.9%</b>	<b>19,079</b>	<b>32.8%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>67.1%</b>	<b>39,027</b>	<b>67.2%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>		<b>626</b>	

**Table 6: 2016 - 2041 Changes in Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

	Assumptions	2016 Base	2041 TfL's RC	2016-2041 Growth	2016-2041 Growth, %
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>	<b>131,312</b>	<b>11,109</b>	<b>9.2%</b>
	Employment density	71,769	77,839	6,071	8.5%
	White collar workers	72,679	79,186	6,507	9.0%
	Blue collar workers	47,524	52,126	4,602	9.7%
	Service Employment	7,659	8,052	392	5.1%
	Retail Employment	20,528	25,110	4,582	22.3%
School Places	<b>Primary</b>	<b>18,291</b>	<b>19,079</b>	<b>788</b>	<b>4.3%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>39,027</b>	<b>1,787</b>	<b>4.8%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>	<b>626</b>	<b>134.73</b>	<b>27.4%</b>

## PARKING MODULE

The Parking Model evaluates the impact on demand that constrained parking supply has within the Greater London Area and allows travellers to choose to travel instead to a nearby location to park or alternatively to choose a different mode should there be no nearby provision.

There are a number of inputs to the Parking Model, which have been derived from 2005 London Parking Supply Survey (LPSS). Within the model four parking types have been considered:

- Public Off-Street (POS)
- Public On-Street (OS)
- Private Non Residential (PNR) - assumed to be Workplace Parking only
- Private Residential (PR)

Each model zone has its own supply and each type in the borough has its own tariff.

The model generates parking costs used within MoTiON for each of these purposes as well as shadow costs which assist in shifting demand away from constrained spaces. The main function of the Parking Model is to choose a parking destination based on a generalised cost component which consists of parking-related costs only, including a parking charge for average duration, parking search time and parking egress time.

MoTiON assumes that the number of parking spaces remains the same as the base year in all future years, except for private non-residential parking, which in Enfield decreases by 22% between 2016 and 2041 as summarised in **Table 7**. Detailed information for each MoTiON zone in LB of Enfield is presented in Appendix D.



**Table 7: 2016 - 2041 MoTiON Parking Supply Assumptions – LB of Enfield**

Parameter	2016 Base Year	2041 RC	2016-2041 Growth	2016-2041 Growth, %
Public Off-Street (POS)	25,827	25,827	0	0.0%
Private Non Residential (PNR)	29,132	22,723	-6,409	-22.0%
Private Residential (PR)	0	0	0	
Public On-Street (OS)	55,251	55,251	0	0.0%
<b>Total</b>	<b>110,211</b>	<b>103,802</b>	<b>-6,409</b>	<b>-5.8%</b>

TfL advise that one can change parking supply in a forecast scenario if one thinks that the development will result in a change in supply directly. It should be noted here that changes to the parking supply in the model will significantly increase the run time of MoTiON (by around 35 hours) and therefore should be considered carefully. For the purpose of Future Baseline scenario development, we propose that no changes are made to parking supply in the model.

## ENFIELD FUTURE BASELINE LAND USE ASSUMPTIONS (MOTION)

TfL's 2041 RC assumes a substantial level of housing and jobs is delivered between 2016 and 2041, which includes a certain level of Local Plan growth. This growth needs to be removed to create LBE Future Baseline scenario. However, it has been agreed with LBE that a certain level of growth should be retained to account for development that has been completed since 2016 and the development that is committed to be completed by 2041.

Information about development completions and commitments have been provided to WSP by LBE. The data has been processed and allocated to the correct MoTiON zones as presented in Appendix E with a summary provided in **Table 8**.

**Table 8: Completions and Commitments – Summary**

Completions, net change	2016/17 – 2019/20	2020/21	2021/22	2022/41	Total
Housing, number of units	2,333	724	1,118	11,759	15,934
All jobs*	-1,961	526	38.99	3,051	1,656
Retail, sq. m	-8,155	-417	-2,091	41,564	30,901
Retail, jobs*	-466	-24	-120	2375	1765

\*Estimated using Employment Density Assumptions. Source: [https://www.london.gov.uk/sites/default/files/lesd\\_final\\_report\\_may-2016.pdf](https://www.london.gov.uk/sites/default/files/lesd_final_report_may-2016.pdf) (Table 3.3)

### LONDON POPULATION SYNTHESIZER (LOPOPS)

The 2041 TfL's RC model LoPopS assumptions have been adjusted accordingly to produce 2041 Future Baseline assumptions as detailed in Appendix F with a summary provided in **Table 9** and **Table 10**.

In Future Baseline the total number of households will increase by 15,934, which represents a 12.3% increase from 2016 values.

The number of households within the LoPopS assumptions has been adjusted explicitly, whereas all other parameters have been adjusted from the 2041 pro rata to the changes in the number of households.

The household sizes reduce from 2016 to 2041 as demographics and lifestyle evolve compared to the existing situation. Considering that the Future Baseline scenario aims to represent trip generation within Enfield which is either completed or committed, the decision has been made to adopt 2041 household sizes in converting the household numbers to population numbers.

The population increases across the borough are illustrated in the Appendix.

**Table 9: 2016 and 2041 LoPops Socio-Demographic Assumptions – LB of Enfield**

Socio-demographic Assumptions		2016 Base	2016 % split by type	2041 Future Baseline	2041% split by type
	<b>Total Population</b>	<b>331,471</b>		<b>334,901</b>	
Workers	Total Workers	159,182	100.0%	159,018	100.0%
	Workers - Males	84,186	52.9%	84,286	53.0%
	Workers - Females	74,996	47.1%	74,732	47.0%
	Blue Collar workers	51,616	32.4%	52,482	33.0%
	White Collar workers	107,566	67.6%	106,536	67.0%
Gender	Males	159,978	48.3%	163,162	48.7%
	Females	171,493	51.7%	171,739	51.3%
Age	Age Under 16	79,608	24.0%	71,450	21.3%
	Age 16-17	8,343	2.5%	5,903	1.8%
	Age 18-65	203,444	61.4%	198,857	59.4%
	Age 65+	40,076	12.1%	58,691	17.5%
Income	<b>Total Household</b>	<b>129,601</b>	<b>100.0%</b>	<b>145,535</b>	<b>100.0%</b>
	Income Less than £35k	69,720	53.8%	77,028	52.9%
	Income £35k-£75k	44,147	34.1%	50,863	34.9%
	Income £75k+	15,734	12.1%	17,644	12.1%
	Number of Cars	123,871		119,916	
	Car ownership per household	0.96		0.82	

**Table 10: 2016 - 2041 Future Baseline Changes in LoPops Socio-Demographic Assumptions – LB of Enfield**

Socio-demographic Assumptions		2016 Base	2041 Future Baseline	2016-2041 Growth	2016-2041 Growth, %
	<b>Total Population</b>	<b>331,471</b>	<b>334,901</b>	<b>3,430</b>	<b>1.0%</b>
Workers	Total Workers	159,182	159,018	-164	-0.1%
	Workers - Males	84,186	84,286	100	0.1%
	Workers - Females	74,996	74,732	-264	-0.4%
	Blue Collar workers	51,616	52,482	867	1.7%
	White Collar workers	107,566	106,536	-1,031	-1.0%
Gender	Males	159,978	163,162	3,183	2.0%
	Females	171,493	171,739	246	0.1%
Age	Age Under 16	79,608	71,450	-8,159	-10.2%
	Age 16-17	8,343	5,903	-2,440	-29.2%
	Age 18-65	203,444	198,857	-4,587	-2.3%
	Age 65+	40,076	58,691	18,615	46.4%
Income	<b>Total Household</b>	<b>129,601</b>	<b>145,535</b>	<b>15,934</b>	<b>12.3%</b>
	Income Less than £35k	69,720	77,028	7,309	10.5%
	Income £35k-£75k	44,147	50,863	6,716	15.2%
	Income £75k+	15,734	17,644	1,910	12.1%
	Number of Cars	123,871	119,916	-3,955	-3.2%
	Car ownership per household	0.96	0.82	-0.13	-13.8%



## MODE-DESTINATION CHOICE MODELS - JOBS, SCHOOL PLACES AND RETAIL FLOOR SPACE ASSUMPTIONS

The 2041 TfL's RC model assumptions for the 'Total Employment' and 'Retail Floor Space' have been adjusted downwards to only include completions between 2016/17 and 2021/22 and schemes which are committed to be built out to 2041. These parameters have been adjusted explicitly based on the values provided by LBE, while other parameters representing segmentation of jobs and employment in the area have been adjusted pro rata to the main parameters.

It has been assumed that the number of school pupils will grow in line with the population growth as summarised in **Table 10**.

The final values are detailed in Appendix G with a summary provided in **Table 11** and **Table 12** including a image of the growth in employment between 2016 and the 2041 Future Baseline.

It has been estimated based on the completion and commitment data the total employment in LB of Enfield will reduce by approximately 0.3%, which is a loss of around -322 jobs in the borough.

**Table 11: 2016 and 2041 Future Baseline - Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

Assumptions		2016 Base	2016 % split by type	2041 Future Baseline	2041 % split by type
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>		<b>121,859</b>	
	Employment density	71,769		70,696	
	White collar workers	72,679	60.5%	73,400	60.2%
	Blue collar workers	47,524	39.5%	48,459	39.8%
	Service Employment	7,659	6.4%	7,551	6.2%
	Retail Employment	20,528	17.1%	22,293	18.3%
School Places	<b>Primary</b>	<b>18,291</b>	<b>32.9%</b>	<b>20,334</b>	<b>32.9%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>67.1%</b>	<b>41,400</b>	<b>67.1%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>		<b>522</b>	

**Table 12: 2016 - 2041 Future Baseline Changes in Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

Assumptions		2016 Base	2041 Future Baseline	2016-2041 Growth	2016-2041 Growth, %
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>	<b>121,859</b>	<b>1,656</b>	<b>1.4%</b>
	Employment density	71,769	70,696	-1,073	-1.5%
	White collar workers	72,679	73,400	721	1.0%
	Blue collar workers	47,524	48,459	935	2.0%
	Service Employment	7,659	7,551	-108	-1.4%
	Retail Employment	20,528	22,293	1,765	8.6%
School Places	<b>Primary</b>	<b>18,291</b>	<b>20,334</b>	<b>2,043</b>	<b>11.2%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>41,400</b>	<b>4,160</b>	<b>11.2%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>	<b>522</b>	<b>30.90</b>	<b>6.3%</b>

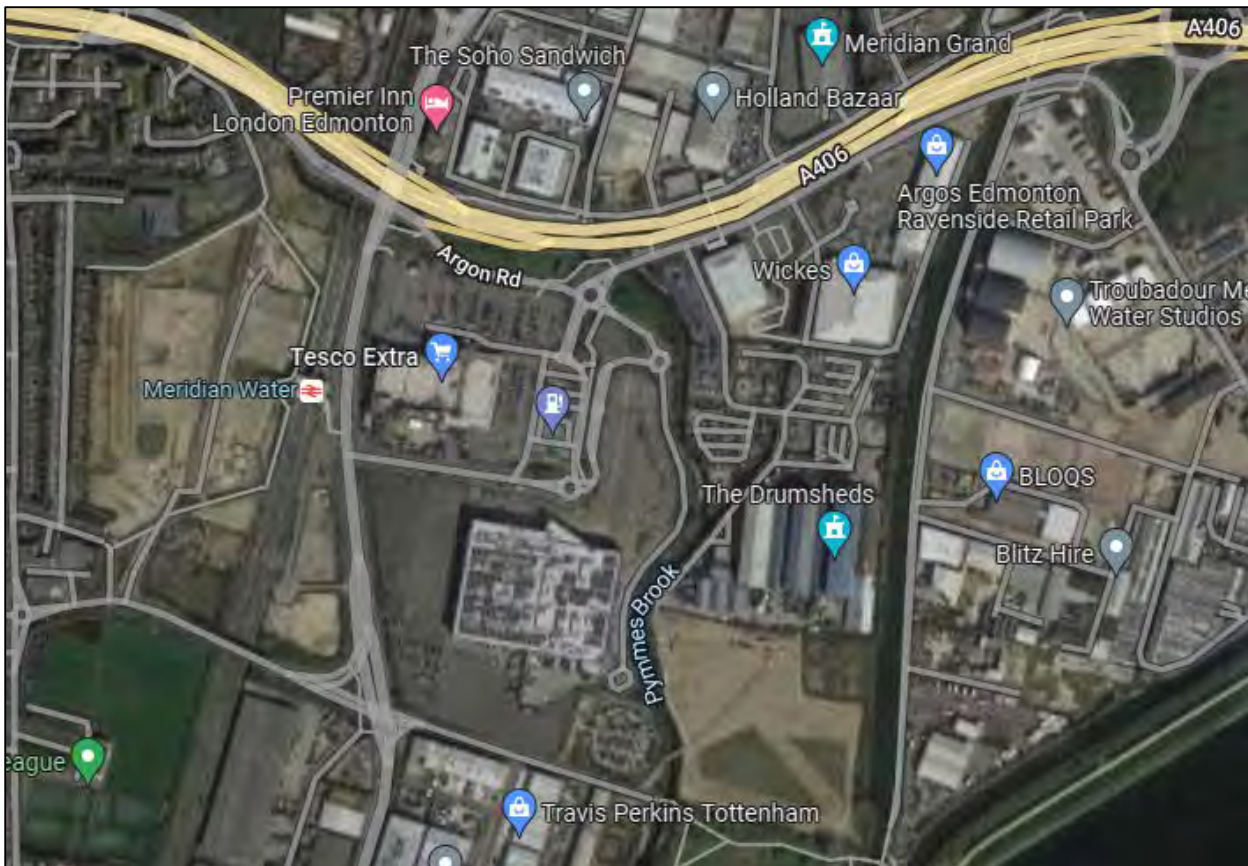
## COMMITMENT AND COMPLETION ASSUMPTIONS

WSP outlined their approach to all stakeholders, TfL, National Highways (NH) and Network Rail (NR) in a presentation from 7<sup>th</sup> October 2022 that all housing developments less than 500 homes and all employment sites less than 500 jobs will use the MoTiON zone the development sits within to derive all the MoTiON inputs. All developments bigger than 500 homes or 500 jobs a more detailed assessment of the MoTiON assumptions will be undertaken.

For the commitment and completion information LBE have provided there are three sites which have more than 500 homes these are:

- Meridian Water 3,277 dwellings (flats)
- Colosseum Retail Pak 1,587 dwellings (flats)
- Edmonton Green Shopping Centre, 1,115 dwellings (flats) gained permission on 18<sup>th</sup> November 2022

The Meridian Water development is located directly south of the A406, see Figure 3, there are plans for 5,000 dwellings, flats, at the site of which 3,277 have planning permission. Meridian Water train station is located within the site, with 977 dwellings west of the railway line and the remainder to the east of the railway line. The new dwellings will have good access to public transport. It would not be suitable for the Meridian Water development to use the existing assumptions within the MoTiON zone that it lies within. It is therefore proposed to use the assumptions from the Lee Bridge development in Waltham Forest, MoTiON zone 716 from TfL's 2026 Reference Case as the development has been built out since 2016, see Figure 4. All assumptions will be used from Lea Bridge with the exception of, low-income households which shall assume the 40% of affordable dwellings proposed for the site and the car ownership for the site which will be based on the proposed car parking supply equating to around 0.2 cars per household.



**Figure 3: Meridian Water Location**





**Figure 4: Lee Bridge and MoTiON Zone 716**

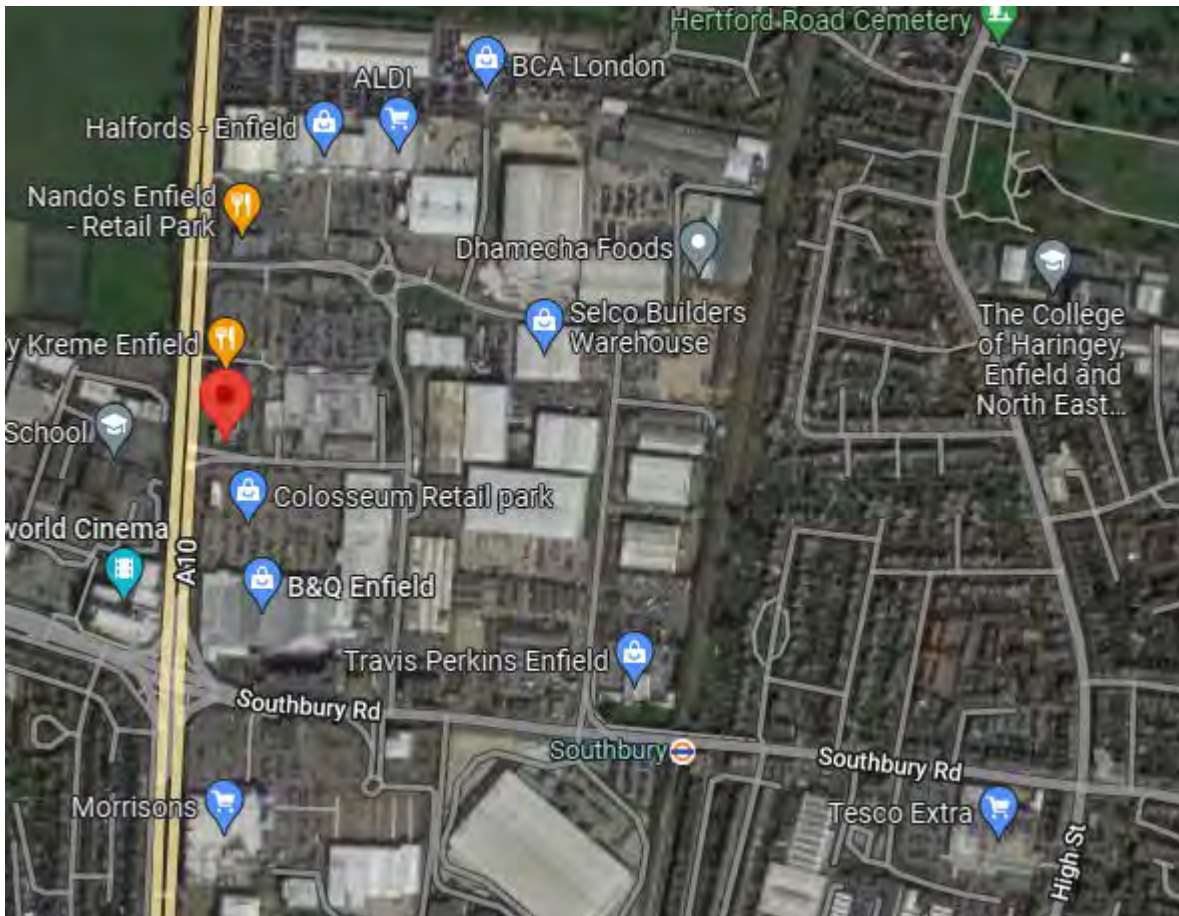


**Table 13** presents the proposed demographic assumptions using MoTiON zone 716 and how these compare to the assumptions if we just used the MoTiON zone it sits within, MoTiON zone 654.

**Table 13: Meridian Water Proposed Population Assumptions**

	Socio-demographic Assumptions	Meridian Water MOTiON Zone 654	Meridian Water MOTiON Zone 716	Differences
	<b>Total Dwellings</b>	<b>3,277</b>	<b>3,277</b>	<b>0</b>
	<b>Total Population</b>	<b>7,375</b>	<b>7,879</b>	<b>504</b>
Workers	Total Workers	3,195	3,977	782
	Workers - Males	2,000	2,196	195
	Workers - Females	1,195	1,781	586
	Blue Collar workers	1,445	1,698	253
	White Collar workers	1,749	2,279	529
Gender	Males	3,506	3,997	492
	Females	3,869	3,881	12
Age	Age Under 16	1,857	1,967	109
	Age 16-17	223	176	-47
	Age 18-65	4,356	5,054	698
	Age 65+	938	682	-257
Income	<b>Total Household</b>	<b>3,277</b>	<b>3,277</b>	<b>0</b>
	Income Less than £35k	1,311	1,311	0
	Income £35k-£75k	1,756	1,705	-51
	Income £75k+	210	261	51
	Number of Cars	648	648	0
	Car ownership per household	0.198	0.198	0.000

The Colosseum Retail Park is located to the east of the A10 just north of Southbury Road and mid way between A406 and M25, see Figure 5, planning permission has been granted for 1,587 dwellings which will be flats. Southbury train station is located to the southeast of the site. It would not be suitable for the Colosseum Retail Park housing development to use the existing assumptions within the MoTiON zone that it lies within. As for Meridien Water it is therefore proposed to use the assumptions from the Lee Bridge development in Waltham Forest., MoTiON zone 716 from TfL's 2026 Reference Case as the development has been built out since 2016, see Figure 4. All assumptions will be used from Lea Bridge with the exception of, low income households which shall assume the 35% of affordable dwellings proposed for the site and the car ownership for the site which will be based on the proposed car parking supply equating to around 0.2 cars per household.



**Figure 5: Colosseum Retail Park Location**

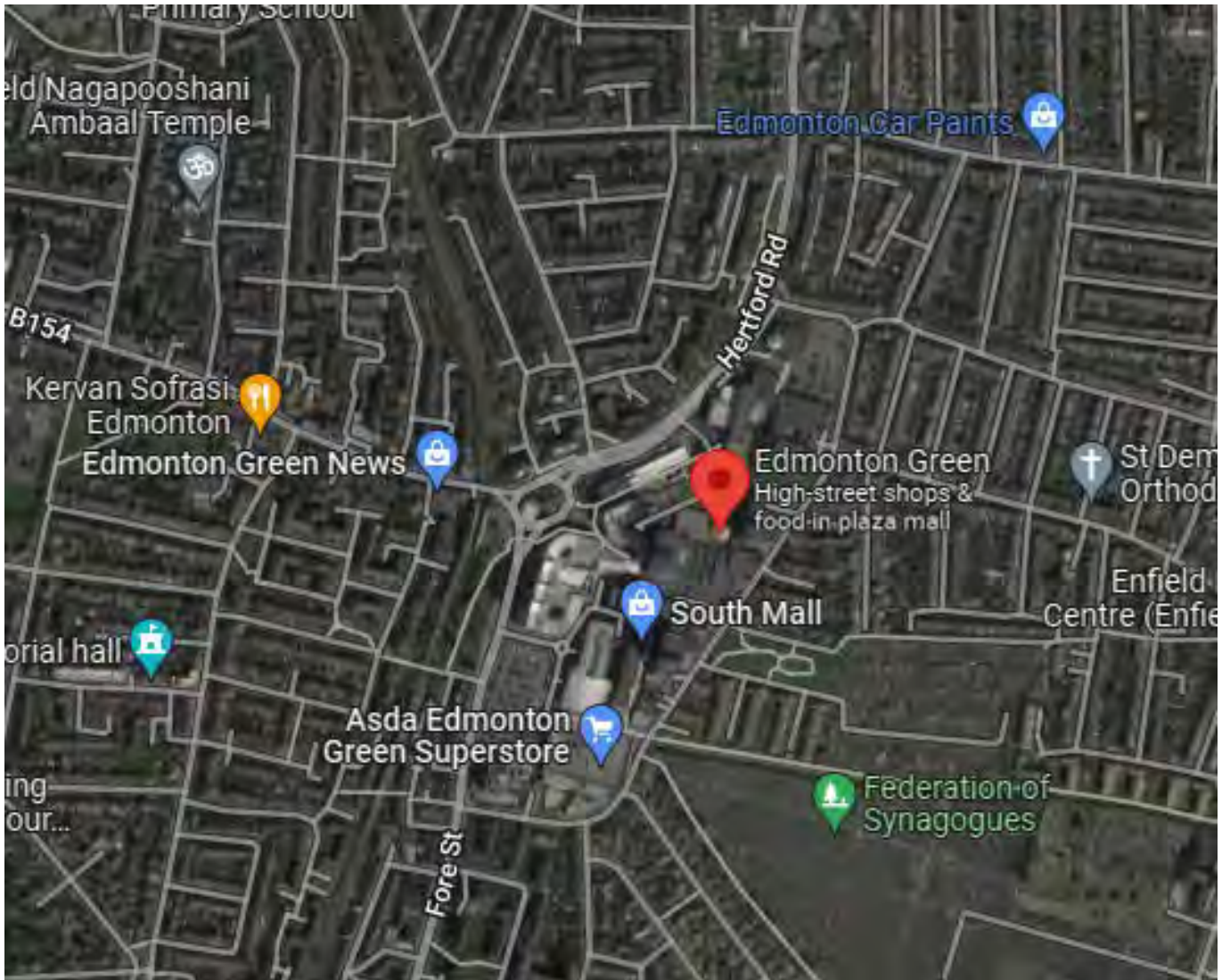
**Table 14** presents the proposed demographic assumptions using MoTiON zone 716 and how these compare to the assumptions if we just used the MoTiON zone it sits within, MoTiON zone 1198.

**Table 14: Colosseum Retail Park Proposed Population Assumptions**

Socio-demographic Assumptions		Colosseum Retail Park MOTiON Zone 1198	Colosseum Retail Park MOTiON Zone 716	Differences
	<b>Total Dwellings</b>	<b>1,587</b>	<b>1,587</b>	<b>0</b>
	<b>Total Population</b>	<b>3,630</b>	<b>3,816</b>	<b>186</b>
Workers	Total Workers	1,859	1,926	67
	Workers - Males	1,303	1,063	-239
	Workers - Females	556	863	306
	Blue Collar workers	565	822	258
	White Collar workers	1,295	1,104	-191
Gender	Males	1,743	1,936	192
	Females	1,886	1,880	-7
Age	Age Under 16	843	952	109
	Age 16-17	95	85	-10
	Age 18-65	2,200	2,448	247
	Age 65+	491	330	-161
Income	<b>Total Household</b>	<b>1,587</b>	<b>1,587</b>	<b>0</b>
	Income Less than £35k	555	555	0
	Income £35k-£75k	816	895	79
	Income £75k+	216	137	-79
	Number of Cars	317	317	0
	Car ownership per household	0.200	0.200	0.000



The Edmonton Green Shopping Centre is located to the east of the A10 near B154, Hertford Road and Fore Street, see Figure 6, planning permission has recently been granted, on 18<sup>th</sup> November 2022, been granted for 1,115 dwellings which will be flats. Edmonton Green train station is located to the west of the site. Following discussions with LBE it was decided that it would be appropriate for the new dwellings to use the demographic assumptions for the MoTiON zone the development sits within. All assumptions will be used from the existing zone with the exception of, low-income households which shall assume the 40% of affordable dwellings proposed for the site and the car ownership for the site which is assumed to be 0 cars per household.



**Figure 6: Edmonton Green Shopping Centre Location**

The proposed assumptions for the Edmonton Green Shopping Centre are presented in **Table 15**.

**Table 15: Edmonton Green Shopping Centre Proposed Population Assumptions**

	Socio-demographic Assumptions	Edmonton Green Shopping Centre
	<b>Total Dwellings</b>	<b>1,115</b>
	<b>Total Population</b>	<b>2,536</b>
Workers	Total Workers	1,005
	Workers - Males	534
	Workers - Females	471
	Blue Collar workers	454
	White Collar workers	551
Gender	Males	1,207
	Females	1,329
Age	Age Under 16	649
	Age 16-17	75
	Age 18-65	1,507
	Age 65+	305
Income	<b>Total Household</b>	<b>1,115</b>
	Income Less than £35k	446
	Income £35k-£75k	617
	Income £75k+	52
	Number of Cars	0
	Car ownership per household	0.000



## **HIGHWAY INFRASTRUCTURE SCHEMES (LOHAM ASSUMPTIONS)**

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A list of highway schemes included within TfL's LoHAM v4.03 Forecast Year RC has been summarised in **Table 31** included in Appendix H. This list has been copied from 'LoHAM v4.03 Forecast Year Reference Case Fact Sheet', TfL.

The list of planned and committed strategic highway schemes included in **Table 31** has been reviewed by Enfield and it has been concluded that they reflect the current commitments at the strategic level well. The only addition which is required is the coding of the Meridian Water link road which is currently not within the LoHAM model but represented by the zone connectors. It has been agreed that WSP will obtain the highway network coding used in the NoHAM highway modelling work undertaken by Jacobs and Arup. WSP are currently waiting to obtain the coding so it can be incorporated into LoHAM.



## PLANNED AND COMMITTED PUBLIC TRANSPORT SCHEMES

A list of public transport schemes included within TfL's Railplan 8.0 is reproduced in **Table 32** in Appendix I. This list has been copied from Railplan 7.3 documentation supplied by TfL as the public transport schemes included in Railplan 7.3 and Railplan 8.0 are identical.

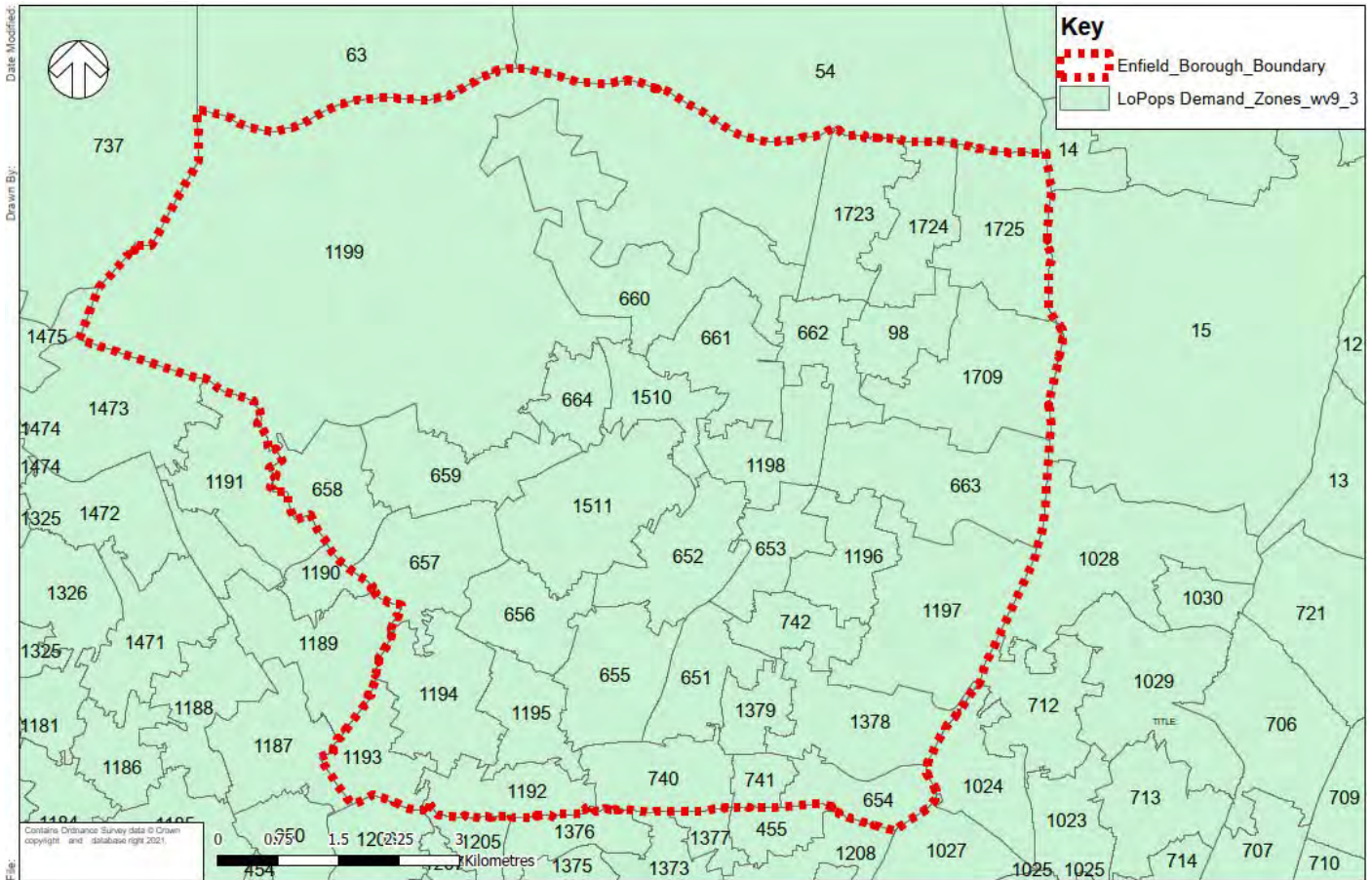
The list of planned and funded strategic public transport schemes included in **Table 32** has been reviewed by Enfield and it has been concluded that they reflect the current commitments at the strategic level well.

For information the walk network around Meridian Water is illustrated in Figure 7.



**Figure 7: Meridian Water Future Baseline Railplan Walk Network Assumptions**

# APPENDIX A – MOTION ZONE BOUNDARIES



**Figure 8: MoTiON Zone System in the London Borough of Enfield**



## APPENDIX B – TFL’S 2016 AND 2041 RC POPULATION ASSUMPTIONS

Table 16: LoPops assumptions within Enfield in MoTiON – TfL’s 2016 Base Year

MoTiON Zone	Total Population	Workers - Males	Workers - Females	Blue Collar workers	Gender Males	Age Under 16	Age 18-65	Age 65+	Household Income £35k	Household Income £35k-£75k	Household Income £75k+	Car Ownership Number of Cars
<i>zone</i>	<i>total</i>	<i>wkmale</i>	<i>wkfemale</i>	<i>BCollar</i>	<i>male</i>	<i>age16</i>	<i>age65</i>	<i>age65p</i>	<i>inc35</i>	<i>inc75</i>	<i>inc75p</i>	<i>ncars</i>
98	9768	2307	1963	1907	4657	2828	5692	945	2277	1139	197	3579
651	12570	2888	2580	2281	6037	3519	7455	1197	2933	1464	237	3939
652	12150	3367	2997	1504	5919	2267	7594	2030	1827	2033	1078	6134
653	7090	1908	1724	1270	3446	1683	4326	902	1373	1048	291	3031
654	4383	1063	872	875	2083	1218	2642	395	1097	470	56	1232
655	12096	3228	2956	1891	5919	2542	7411	1842	2147	1849	658	5172
656	6101	1822	1580	650	3024	1188	3977	823	683	1051	774	3095
657	11333	2995	2680	1189	5442	2371	7196	1527	1925	1924	907	4883
658	7044	1859	1662	1009	3353	1269	4323	1307	1428	900	356	2696
659	8700	2254	2068	868	4181	1726	5275	1489	1319	1420	765	4257
660	12579	3140	3109	1729	5984	2902	7762	1652	2724	1843	704	5423
661	11554	3016	2920	1543	5562	2610	7017	1645	2077	1845	762	5342
662	8618	1947	1759	1592	4115	2483	5013	855	2160	957	152	2974
663	12621	2955	2450	2423	6100	3615	7588	1037	3320	1186	140	3469
664	5636	1695	1459	533	2765	850	3621	1070	925	1035	524	2727
740	11183	2690	2416	2121	5350	2916	6986	998	2744	1221	220	3433
741	6660	1466	1272	1296	3165	1965	3973	527	1864	490	43	1393
742	15062	3291	3098	2765	7174	4432	8864	1357	3765	1633	216	3892
1192	12741	3672	3197	2236	6336	2334	8764	1402	2429	1989	663	3966
1193	8187	2449	2016	1413	4076	1627	5350	1053	1556	1174	450	2700
1194	10318	2896	2518	1022	5096	2012	6449	1645	1206	1645	1146	4971
1195	10385	3032	2677	1452	5107	1917	7005	1285	1708	1665	797	3759
1196	13265	3134	2757	2552	6423	3545	7799	1548	3150	1556	240	4324
1197	7076	1569	1392	1379	3397	1966	4327	559	1958	683	80	1945
1198	9520	2523	2444	1505	4573	2491	5936	847	2092	1311	347	3417
1199	13622	3852	3341	1363	6572	2663	8313	2317	2112	2175	1310	7270
1378	9142	1960	1728	1664	4353	2609	5544	724	2873	690	58	2048
1379	6941	1351	1226	1100	3305	2179	4076	469	2109	525	38	1447
1510	5959	1619	1439	681	2890	1113	3669	1066	1131	956	372	2367
1511	11756	3301	2751	1003	5866	2302	7036	2163	1536	1956	1342	6187
1709	3730	842	760	657	1777	996	2246	378	1003	338	52	1107
1723	11582	2685	2383	2196	5476	3204	6841	1212	2907	1246	231	4076
1724	13418	3206	2876	2487	6349	3606	8017	1393	3380	1569	271	4592
1725	8684	2206	1924	1456	4104	2661	5357	417	1981	1160	255	3025
<b>TOTAL</b>	<b>331,471</b>	<b>84,186</b>	<b>74,996</b>	<b>51,616</b>	<b>159,978</b>	<b>79,608</b>	<b>203,444</b>	<b>40,076</b>	<b>69,720</b>	<b>44,147</b>	<b>15,734</b>	<b>123,871</b>





Table 17: LoPops assumptions within Enfield in MoTiON – TfL’s 2041 Reference Case

MoTiON Zone	Total Population	Workers - Males	Workers - Females	Blue Collar workers	Gender Males	Age Under 16	Age 18-65	Age 65+	Household Income Less than £35k	Household Income £35k-£75k	Household Income £75k+	Car Ownership Number of Cars
<i>zone</i>	<i>total</i>	<i>wkmale</i>	<i>wkfemale</i>	<i>BCollar</i>	<i>male</i>	<i>age16</i>	<i>age65</i>	<i>age65p</i>	<i>inc35</i>	<i>inc75</i>	<i>inc75p</i>	<i>ncars</i>
98	10664	2474	2106	2048	5084	2749	6066	1516	2767	1384	239	3846
651	13649	3078	2750	2434	6556	3407	7877	1929	3544	1768	286	4207
652	13426	3688	3283	1652	6541	2136	7821	3193	2228	2479	1315	6623
653	7738	2043	1846	1362	3761	1600	4504	1440	1663	1268	353	3246
654	14813	3526	2891	2903	7041	3731	8749	1885	4447	1906	228	4411
655	13298	3471	3179	2038	6508	2404	7637	2937	2619	2256	803	5585
656	6635	1965	1705	694	3289	1118	4101	1295	819	1260	928	3284
657	12510	3280	2935	1307	6007	2264	7515	2467	2339	2338	1102	5248
658	8274	2133	1907	1160	3939	1264	4666	2180	1873	1181	467	3128
659	9592	2462	2259	951	4610	1621	5407	2339	1607	1730	932	4590
660	13718	3401	3367	1877	6526	2743	8064	2626	3269	2212	845	5757
661	12546	3248	3144	1666	6040	2449	7210	2588	2489	2210	913	5664
662	9471	2102	1899	1720	4522	2423	5358	1393	2637	1169	185	3212
663	15365	3526	2924	2895	7426	3948	9047	1896	4563	1630	192	4211
664	6248	1862	1603	588	3066	792	3690	1665	1123	1257	637	2929
740	13423	3171	2848	2504	6421	3118	8175	1780	3712	1651	298	4105
741	10151	2195	1904	1942	4824	2712	5970	1161	3306	868	76	2180
742	16812	3609	3398	3036	8007	4411	9662	2272	4687	2032	269	4279
1192	14150	4044	3521	2467	7037	2271	9322	2292	2983	2442	815	4303
1193	12733	3712	3055	2145	6340	2198	7852	2435	2761	2082	799	4232
1194	11413	3175	2761	1108	5637	1915	6684	2584	1481	2020	1408	5404
1195	11453	3311	2923	1590	5632	1844	7343	2074	2081	2029	972	4048
1196	14467	3356	2952	2735	7005	3395	8179	2488	3821	1887	291	4637
1197	7974	1736	1541	1529	3828	1979	4779	957	2456	857	101	2155
1198	10742	2794	2707	1671	5159	2495	6512	1453	2620	1642	434	3781
1199	17567	4854	4211	1725	8475	2940	9960	4255	3006	3096	1864	9164
1378	10462	2203	1942	1872	4981	2678	6217	1258	3649	877	74	2296
1379	7603	1453	1318	1184	3620	2166	4420	775	2563	639	46	1552
1510	6794	1830	1626	772	3295	1066	3863	1743	1422	1202	467	2631
1511	14040	3904	3253	1420	7006	2314	7748	3688	2024	2578	1768	7221
1709	4047	898	811	701	1929	958	2371	599	1209	407	63	1179
1723	12797	2915	2586	2387	6051	3133	7327	1973	3574	1532	285	4431
1724	14576	3422	3070	2658	6897	3460	8432	2249	4066	1888	326	4882
1725	9413	2350	2050	1554	4449	2635	5806	695	2377	1391	306	3205
<b>TOTAL</b>	<b>388,564</b>	<b>97,191</b>	<b>86,275</b>	<b>60,295</b>	<b>187,509</b>	<b>82,337</b>	<b>228,334</b>	<b>68,080</b>	<b>91,785</b>	<b>57,168</b>	<b>20,087</b>	<b>141,626</b>



Table 18: LoPops Assumptions within Enfield in MoTiON – 2016-2041 Growth

MoTiON Zone	Total Population	Workers - Males	Workers - Females	Blue Collar workers	Gender Males	Age Under 16	Age 18-65	Age 65+	Household Income Less than £35k	Household Income £35k-£75k	Household Income £75k+	Car Ownership Number of Cars
<i>zone</i>	<i>total</i>	<i>wkmale</i>	<i>wkfemale</i>	<i>BCollar</i>	<i>male</i>	<i>age16</i>	<i>age65</i>	<i>age65p</i>	<i>inc35</i>	<i>inc75</i>	<i>inc75p</i>	<i>ncars</i>
98	896	167	143	141	427	-79	374	571	490	245	42	267
651	1079	190	170	153	519	-112	422	732	611	304	49	268
652	1276	321	286	148	622	-131	227	1163	401	446	237	489
653	648	135	122	92	315	-83	178	538	290	220	62	215
654	10430	2463	2019	2028	4958	2513	6107	1490	3350	1436	172	3179
655	1202	243	223	147	589	-138	226	1095	472	407	145	413
656	534	143	125	44	265	-70	124	472	136	209	154	189
657	1177	285	255	118	565	-107	319	940	414	414	195	365
658	1230	274	245	151	586	-5	343	873	445	281	111	432
659	892	208	191	83	429	-105	132	850	288	310	167	333
660	1139	261	258	148	542	-159	302	974	545	369	141	334
661	992	232	224	123	478	-161	193	943	412	365	151	322
662	853	155	140	128	407	-60	345	538	477	212	33	238
663	2744	571	474	472	1326	333	1459	859	1243	444	52	742
664	612	167	144	55	301	-58	69	595	198	222	113	202
740	2240	481	432	383	1071	202	1189	782	968	430	78	672
741	3491	729	632	646	1659	747	1997	634	1442	378	33	787
742	1750	318	300	271	833	-21	798	915	922	399	53	387
1192	1409	372	324	231	701	-63	558	890	554	453	152	337
1193	4546	1263	1039	732	2264	571	2502	1382	1205	908	349	1532
1194	1095	279	243	86	541	-97	235	939	275	375	262	433
1195	1068	279	246	138	525	-73	338	789	373	364	175	289
1196	1202	222	195	183	582	-150	380	940	671	331	51	313
1197	898	167	149	150	431	13	452	398	498	174	21	210
1198	1222	271	263	166	586	4	576	606	528	331	87	364
1199	3945	1002	870	362	1903	277	1647	1938	894	921	554	1894
1378	1320	243	214	208	628	69	673	534	776	187	16	248
1379	662	102	92	84	315	-13	344	306	454	114	8	105
1510	835	211	187	91	405	-47	194	677	291	246	95	264
1511	2284	603	502	417	1140	12	712	1525	488	622	426	1034
1709	317	56	51	44	152	-38	125	221	206	69	11	72
1723	1215	230	203	191	575	-71	486	761	667	286	54	355
1724	1158	216	194	171	548	-146	415	856	686	319	55	290
1725	729	144	126	98	345	-26	449	278	396	231	51	180
<b>TOTAL</b>	<b>57,093</b>	<b>13,005</b>	<b>11,279</b>	<b>8,679</b>	<b>27,531</b>	<b>2,729</b>	<b>24,890</b>	<b>28,004</b>	<b>22,065</b>	<b>13,021</b>	<b>4,353</b>	<b>17,755</b>

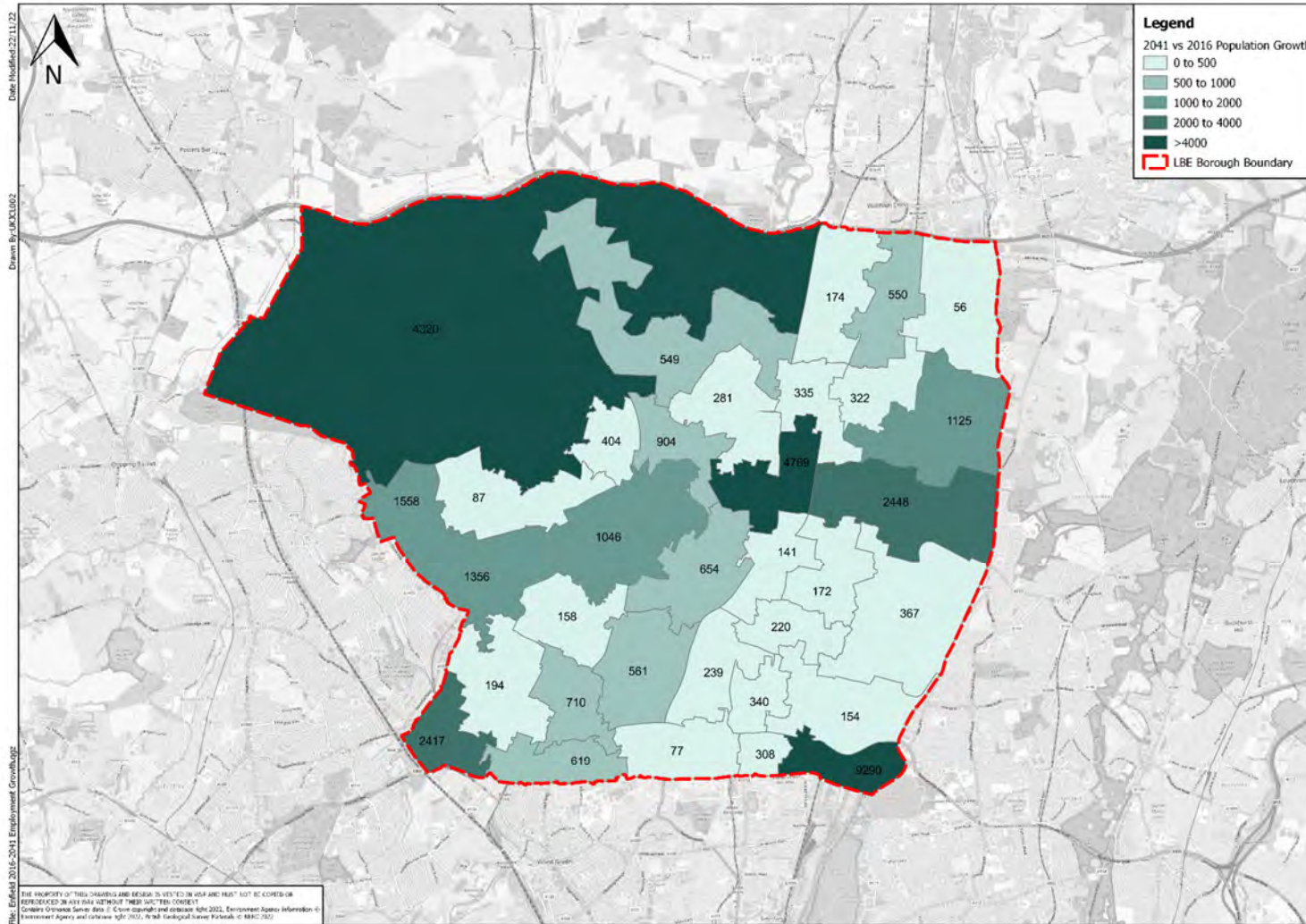


Figure 9: MoTiON 2016- 2041 Planning Data - Population Growth (Population)



## APPENDIX C - TFL'S 2016 AND 2041 RC EMPLOYMENT, JOBS AND SCHOOL ASSUMPTIONS

Table 19: Employment, Jobs and School Assumptions within Enfield in MoTiON – TfL's 2016 Base Year

MoTiON Zone	Number of Jobs						School Places		Retail Floor Space
	Total Employment	Employment density	White collar workers	Blue collar workers	Service Employment	Retail Employment	Primary	Secondary	Retail floor space
zone	TotEmployment	Empdensity	WC_Employment	BC_Employment	Service_emp	Retail emp_(Ret)	Secondary enrolments	Primary enrolments	Retailfloorspace(ND MRFS'000sqm)
98	1873	1678	800	1073	169	472	3	209	4
651	2575	1841	1607	967	127	214	2314	2215	4
652	3234	1634	2109	1125	283	347	820	1756	13
653	2393	2055	1406	987	143	310	0	1525	7
654	2426	2244	813	1613	59	1131	0	168	20
655	2429	1224	1354	1076	125	419	1270	1194	12
656	1857	1270	1276	581	187	195	125	150	5
657	6857	3539	4800	2056	503	1157	18	2000	25
658	2373	1567	1722	651	279	287	1162	639	8
659	2072	1020	1359	713	230	268	1218	747	5
660	4081	982	2595	1485	275	644	4	1731	8
661	2742	1457	1826	916	311	162	2186	1124	10
662	2123	1813	1327	797	171	400	83	1259	8
663	5232	1697	2520	2713	220	1130	1429	2711	32
664	1253	1394	890	363	122	126	0	0	1
740	5454	3572	3914	1540	164	478	0	1463	4
741	1903	4123	1155	748	109	285	0	1317	12
742	2527	2535	1349	1178	214	329	11	443	22
1192	3257	2651	1725	1533	311	408	0	1317	17
1193	2913	2547	1601	1311	244	389	702	735	5
1194	2076	995	1497	579	219	176	0	842	14
1195	3982	3277	2627	1355	352	645	820	661	16
1196	2727	1952	1736	991	164	330	564	3379	7
1197	2651	745	1293	1357	192	423	0	0	22
1198	6190	4017	3039	3151	233	2233	579	1773	26
1199	9188	378	7389	1799	470	433	1070	1664	17
1378	5050	2411	2421	2629	351	1372	27	0	45
1379	2116	2733	1464	653	88	271	0	961	13
1510	6919	6071	5068	1852	278	706	1802	463	42
1511	4648	1490	2626	2022	454	1351	57	679	37
1709	6055	2132	2382	3673	100	1743	0	661	9
1723	1991	1081	1072	919	133	226	979	929	7
1724	2631	1724	1380	1251	233	529	247	734	6
1725	4406	1920	2539	1867	147	939	801	1791	8
<b>TOTAL</b>	<b>120,203</b>	<b>71,769</b>	<b>72,679</b>	<b>47,524</b>	<b>7,659</b>	<b>20,528</b>	<b>18,291</b>	<b>37,240</b>	<b>491</b>

**Table 20: Employment, Jobs and School Assumptions within Enfield in MoTiON – TfL’s 2041 Reference Case**

MoTiON Zone	Number of Jobs					School Places		Retail Floor Space	
	Total Employment	Employment density	White collar workers	Blue collar workers	Service Employment	Retail Employment	Primary	Secondary	Retail floor space
zone	TotEmp	Empden	WC_Employment	BC_Employment	Service_emp	Retail emp_(Ret)	Secondary_enrolments	Primary_enrolments	Retailfloorspace(ND MRFS'000sqm)
98	1784	1599	762	1022	158	472	3	209	5
651	3099	2216	1935	1164	152	270	2314	2215	5
652	3459	1747	2256	1203	296	437	820	1756	17
653	2722	2338	1599	1123	160	390	0	1525	9
654	3762	3480	1260	2502	93	1719	0	271	30
655	2917	1469	1625	1291	149	527	1270	1194	15
656	2017	1379	1385	631	199	245	125	150	7
657	7351	3793	5146	2205	520	1456	18	2000	32
658	2515	1661	1825	690	288	361	1240	677	10
659	2239	1102	1468	770	243	338	1218	747	6
660	4409	1061	2804	1605	288	810	4	1731	10
661	2861	1521	1905	956	320	204	2186	1124	13
662	2073	1770	1295	777	166	400	83	1259	10
663	5921	1920	2851	3070	241	1422	1598	3010	40
664	1369	1523	972	397	131	159	0	0	1
740	5630	3688	4041	1589	166	601	0	1599	5
741	1958	4242	1188	769	109	340	0	1887	15
742	2689	2698	1435	1254	221	414	11	445	27
1192	3422	2786	1812	1610	317	514	0	1317	21
1193	2985	2610	1641	1344	244	461	1014	1053	6
1194	2155	1033	1554	601	223	222	0	842	17
1195	4246	3494	2801	1445	362	812	820	661	20
1196	2789	1996	1776	1014	164	393	564	3379	9
1197	2791	784	1362	1429	195	532	0	0	28
1198	6588	4276	3234	3354	233	2631	590	1794	35
1199	10426	429	8385	2041	530	545	1239	1913	21
1378	5544	2647	2658	2886	364	1727	28	0	57
1379	2085	2693	1442	643	87	271	0	961	17
1510	7461	6546	5464	1996	295	870	1845	470	51
1511	4998	1602	2823	2175	454	1700	61	723	47
1709	6142	2163	2416	3726	100	1830	0	661	11
1723	2195	1192	1182	1014	144	284	980	929	9
1724	2672	1751	1402	1270	233	570	247	734	7
1725	6042	2633	3481	2561	206	1182	801	1791	10
<b>TOTAL</b>	<b>131,312</b>	<b>77,839</b>	<b>79,186</b>	<b>52,126</b>	<b>8,052</b>	<b>25,110</b>	<b>19,079</b>	<b>39,027</b>	<b>626</b>



**Table 21: Employment, Jobs and School Assumptions within Enfield in MoTiON – 2016-2041 Growth**

MoTiON Zone	Number of Jobs						School Places		Retail Floor Space
	Total Employment	Employment density	White collar workers	Blue collar workers	Service Employment	Retail Employment	Primary	Secondary	Retail floor space
zone	TotEmp	Empden	WC_Employment	BC_Employment	Service_emp	Retail emp_(Ret)	Secondary_enrolments	Primary_enrolments	Retailfloorspace (NDMRFS'000sqm)
98	-89	-79	-38	-51	-11	0	0	0	1
651	524	375	327	197	25	55	0	0	1
652	225	113	147	78	13	90	0	0	3
653	329	283	194	136	17	80	0	0	2
654	1336	1236	448	888	34	588	0	103	10
655	487	245	272	216	24	108	0	0	3
656	160	109	110	50	12	50	0	0	1
657	494	255	346	148	17	299	0	0	6
658	142	94	103	39	9	74	78	38	2
659	167	82	109	57	12	69	0	0	1
660	328	79	209	119	13	166	0	0	2
661	119	63	79	40	9	42	0	0	3
662	-51	-43	-32	-19	-5	0	0	0	2
663	688	223	332	357	21	292	169	299	8
664	116	129	83	34	9	33	0	0	0
740	176	115	126	50	2	124	0	136	1
741	55	119	33	22	0	55	0	570	3
742	162	163	86	76	7	85	0	2	6
1192	165	134	87	78	7	106	0	0	4
1193	72	63	40	33	0	72	312	318	1
1194	79	38	57	22	4	46	0	0	4
1195	264	217	174	90	10	167	0	0	4
1196	62	44	40	23	0	62	0	0	2
1197	140	39	68	72	3	109	0	0	6
1198	398	259	196	203	0	398	11	21	9
1199	1237	51	995	242	60	112	169	249	4
1378	494	236	237	257	13	355	1	0	12
1379	-31	-40	-21	-10	-1	0	0	0	5
1510	541	475	396	145	17	165	43	7	10
1511	350	112	197	152	0	349	4	44	10
1709	87	31	34	53	0	87	0	0	2
1723	204	111	110	94	11	58	1	0	2
1724	41	27	21	19	0	41	0	0	1
1725	1636	713	943	693	59	243	0	0	2
<b>TOTAL</b>	<b>11,109</b>	<b>6,071</b>	<b>6,507</b>	<b>4,602</b>	<b>392</b>	<b>4,582</b>	<b>788</b>	<b>1,787</b>	<b>135</b>



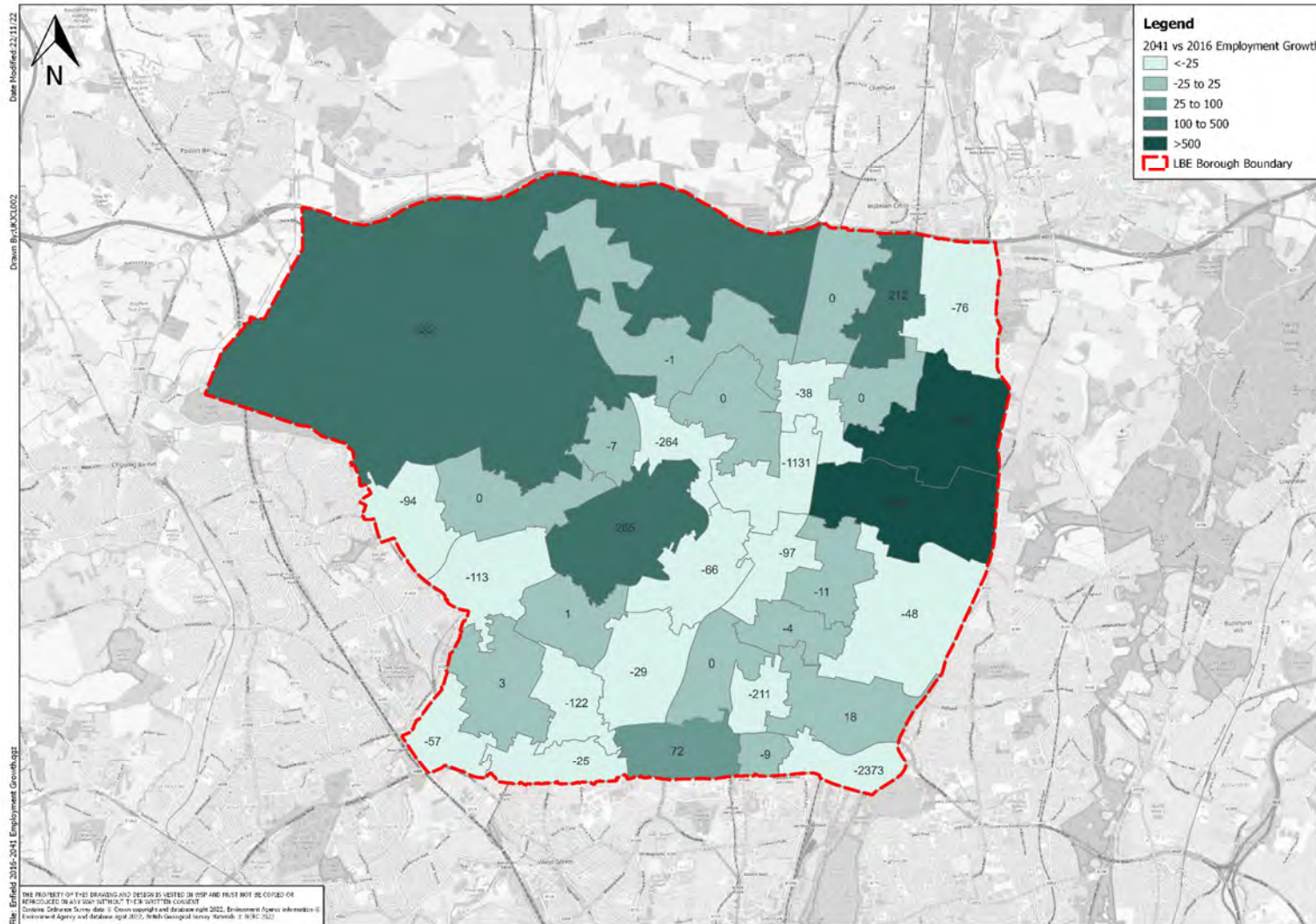


Figure 10: MoTiOn 2041 Planning Data - Employment Growth (TotEmp)



## APPENDIX D – MOTION PARKING SUPPLY ASSUMPTIONS

Table 22: Parking Supply Assumptions within Enfield in MoTiON – TfL’s 2016 Base Year

zone	Parking Supply			
	Public Off-Street (POS)	Private Non Residential (PNR)	Private Residential (PR)	Public On Street (OS)
98	404	446	0	915
651	819	927	0	1646
652	1380	1553	0	2903
653	547	612	0	1196
654	331	367	0	654
655	1041	1173	0	2089
656	910	1024	0	1960
657	664	797	0	1598
658	434	485	0	1059
659	709	801	0	1483
660	583	650	0	1339
661	1615	1815	0	3251
662	542	600	0	1344
663	737	807	0	1654
664	539	609	0	1056
740	520	640	0	1024
741	248	277	0	500
742	445	493	0	947
1192	656	730	0	1374
1193	422	470	0	929
1194	777	868	0	1748
1195	651	726	0	1368
1196	256	304	0	560
1197	673	738	0	1468
1198	1454	1603	0	3353
1199	2795	3138	0	6086
1378	710	785	0	1432
1379	423	476	0	867
1510	795	897	0	1776
1511	1969	2204	0	4415
1709	938	1027	0	1988
1723	207	249	0	425
1724	245	303	0	384
1725	389	538	0	460
<b>Total</b>	<b>25,827</b>	<b>29,132</b>	<b>0</b>	<b>55,251</b>

**Table 23: Parking Supply Assumptions within Enfield in MoTiON – TfL’s 2041 Reference Case**

zone	Parking Supply			
	Public Off-Street (POS)	Private Non Residential (PNR)	Private Residential (PR)	Public On Street (OS)
98	404	348	0	915
651	819	723	0	1646
652	1380	1212	0	2903
653	547	478	0	1196
654	331	286	0	654
655	1041	915	0	2089
656	910	799	0	1960
657	664	622	0	1598
658	434	378	0	1059
659	709	625	0	1483
660	583	507	0	1339
661	1615	1416	0	3251
662	542	468	0	1344
663	737	629	0	1654
664	539	475	0	1056
740	520	500	0	1024
741	248	216	0	500
742	445	384	0	947
1192	656	570	0	1374
1193	422	367	0	929
1194	777	677	0	1748
1195	651	567	0	1368
1196	256	237	0	560
1197	673	575	0	1468
1198	1454	1250	0	3353
1199	2795	2448	0	6086
1378	710	612	0	1432
1379	423	371	0	867
1510	795	700	0	1776
1511	1969	1719	0	4415
1709	938	801	0	1988
1723	207	194	0	425
1724	245	236	0	384
1725	389	420	0	460
<b>Total</b>	<b>25,827</b>	<b>22,723</b>	<b>0</b>	<b>55,251</b>



**Table 24: Parking Supply Assumptions within Enfield in MoTiON – within Enfield in MoTiON – 2016-2041 Growth**

zone	Parking Supply			
	Public Off-Street (POS)	Private Non Residential (PNR)	Private Residential (PR)	Public On Street (OS)
98	0	-98	0	0
651	0	-204	0	0
652	0	-342	0	0
653	0	-135	0	0
654	0	-81	0	0
655	0	-258	0	0
656	0	-225	0	0
657	0	-175	0	0
658	0	-107	0	0
659	0	-176	0	0
660	0	-143	0	0
661	0	-399	0	0
662	0	-132	0	0
663	0	-178	0	0
664	0	-134	0	0
740	0	-141	0	0
741	0	-61	0	0
742	0	-108	0	0
1192	0	-161	0	0
1193	0	-103	0	0
1194	0	-191	0	0
1195	0	-160	0	0
1196	0	-67	0	0
1197	0	-162	0	0
1198	0	-353	0	0
1199	0	-690	0	0
1378	0	-173	0	0
1379	0	-105	0	0
1510	0	-197	0	0
1511	0	-485	0	0
1709	0	-226	0	0
1723	0	-55	0	0
1724	0	-67	0	0
1725	0	-118	0	0
<b>Total/Average</b>	<b>0</b>	<b>-6,409</b>	<b>0</b>	<b>0</b>



## APPENDIX E – DEVELOPMENT COMPLETIONS 2016/17 – 2019/20

**Table 25: Development Completions within Enfield based on MoTiON Zones 2016/17 – 2019/20**

zone	Housing, dw.	All jobs	Retail, sq m	Retail, jobs
98	67	-12	-215	-12
651	6	-20	-349	-20
652	19	-76	-650	-37
653	32	-133	-633	-36
654	5	-1904	1900	109
655	31	-39	-172	-10
656	34	-6	-192	-11
657	70	-118	0	0
658	73	-103	100	6
659	6	-150	-2617	-150
660	179	-23	-320	-18
661	18	-25	-440	-25
662	15	-27	0	0
663	311	1088	1036	59
664	39	-7	0	0
740	14	60	0	0
741	14	-9	0	0
742	41	-37	-588	-34
1192	133	-28	-114	-7
1193	313	-133	-1330	-76
1194	8	6	100	6
1195	109	-134	-606	-35
1196	14	6	209	12
1197	8	-238	-3320	-190
1198	132	-405	4216	241
1199	257	376	-1306	-75
1378	15	18	0	0
1379	7	-87	1299	74
1510	53	-392	-2236	-128
1511	221	-898	-270	-15
1709	5	1445	0	0
1723	9	0	0	0
1724	64	212	0	0
1725	11	-166	-1657	-95
	<b>2,333</b>	<b>-1961</b>	<b>-8,155</b>	<b>-466</b>

\* All values represent the net change

## APPENDIX E – DEVELOPMENT COMPLETIONS 2020/21

**Table 26: Development Completions within Enfield based on MoTiON Zones 2020/21**

zone	Housing, dw.	All jobs	Retail, sq m	Retail, jobs
98	13	-6	-115	-7
651	3	-6	0	0
652	15	-2	0	1
653	6	0	0	0
654	7	-89	0	0
655	4	0	0	0
656	2	0	0	0
657	8	0	0	0
658	112	15	0	0
659	1	0	0	0
660	4	4	63	4
661	4	0	0	0
662	0	0	0	0
663	139	6	0	0
664	4	0	0	0
740	4	12	0	0
741	4	0	0	0
742	9	0	0	0
1192	47	-1	0	-1
1193	135	0	0	0
1194	3	0	0	0
1195	17	-12	-50	-3
1196	7	0	0	0
1197	0	0	0	0
1198	1	0	0	0
1199	58	-670	0	0
1378	7	0	0	0
1379	14	-27	0	0
1510	5	-5	-127	-7
1511	7	580	0	0
1709	24	143	0	0
1723	19	0	0	0
1724	39	-11	-188	-11
1725	2	595	0	0
	724	526	-417	-24

\* All values represent the net change

## APPENDIX E – DEVELOPMENT COMPLETIONS 2021/22

**Table 27: Development Completions within Enfield based on MoTiON Zones 2021/22**

zone	Housing, dw.	All jobs	Retail, sq m	Retail, jobs
98	6	0	0	0
651	43	0	0	0
652	28	-50	-447	-26
653	6	0	0	0
654	4	-75	0	0
655	13	0	0	0
656	10	-8	-69	-4
657	26	66	-105	-6
658	142	0	0	0
659	12	0	0	0
660	12	4	0	0
661	64	36	0	0
662	9	-12	0	0
663	233	126	368	21
664	41	-2	-49	-3
740	7	-2	0	0
741	0	0	0	0
742	12	-24	-394	-23
1192	13	-5	-25	-2
1193	27	-2	-41	-2
1194	26	3	0	0
1195	17	-13	0	0
1196	15	-9	-38	-3
1197	63	0	0	0
1198	65	-439	0	0
1199	85	-15	0	0
1378	13	-19	-503	-28
1379	24	-22	0	0
1510	13	29	96	5
1511	33	563	-102	-6
1709	9	-38	0	0
1723	10	2	92	5
1724	35	-50	-874	-50
1725	2	-5	0	0
	1118	39	-2091	-120

\* All values represent the net change



## APPENDIX E – DEVELOPMENT COMMITMENTS 2022/41

**Table 28: Development Completions within Enfield based on MoTiON Zones 2022/41**

zone	Housing, dw.	All jobs	Retail, sq m	Retail, jobs
98	33	0	0	0
651	36	0	0	0
652	204	0	0	0
653	10	0	0	0
654	3426	0	0	0
655	168	0	0	0
656	19	0	0	0
657	465	307	0	0
658	267	0	0	0
659	16	0	0	0
660	35	0	0	0
661	28	0	0	0
662	103	0	0	0
663	218	361	0	0
664	94	0	0	0
740	4	0	0	0
741	25	0	0	0
742	20	0	0	0
1192	54	0	0	0
1193	694	29	371	21
1194	38	0	0	0
1195	142	0	0	0
1196	28	0	0	0
1197	70	0	0	0
1198	1680	0	0	0
1199	1691	0	0	0
1378	1141	2270	39731	2270
1379	86	0	0	0
1510	302	0	0	0
1511	169	0	0	0
1709	382	84	1462	84
1723	28	0	0	0
1724	76	0	0	0
1725	7	0	0	0
	11759	3051	41564.	2375

\* All values represent the net change





## APPENDIX F – ENFIELD 2041 FUTURE BASELINE POPULATION ASSUMPTIONS

Table 29: LoPops assumptions within Enfield in MoTiON – Enfield 2041 Future Baseline

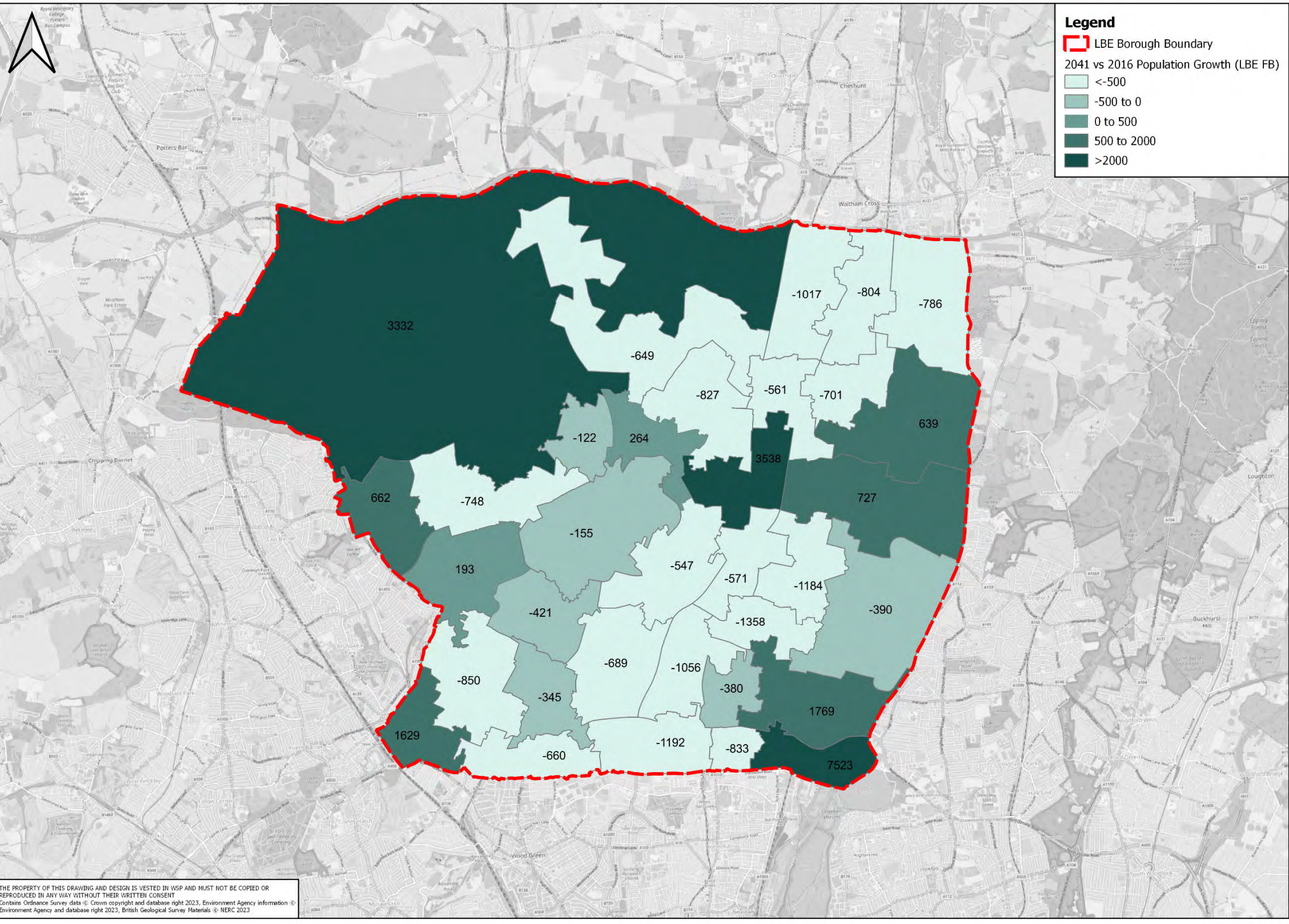
MoTiON Zone	Total Population	Workers - Males	Workers - Females	Blue Collar workers	Gender Males	Age Under 16	Age 18-65	Age 65+	Household Income			Car Ownership
<i>zone</i>	<i>total</i>	<i>wkmale</i>	<i>wkfemale</i>	<i>BCollar</i>	<i>male</i>	<i>age16</i>	<i>age65</i>	<i>age65p</i>	Income Less than £35k	Income £35k-£75k	Income £75k+	Number of Cars
									<i>inc35</i>	<i>inc75</i>	<i>inc75p</i>	<i>ncars</i>
98	9067	2103	1791	1741	4323	2337	5158	1289	2352	1177	203	3270
651	11514	2596	2320	2053	5530	2874	6645	1627	2989	1492	241	3549
652	11603	3187	2837	1428	5653	1846	6759	2759	1926	2142	1136	5724
653	6519	1721	1555	1147	3169	1348	3795	1213	1401	1069	297	2735
654	11905	3154	2567	2487	5911	2981	7432	1194	2519	2223	323	1847
655	11406	2977	2727	1748	5582	2062	6551	2519	2246	1935	689	4791
656	5680	1682	1459	594	2815	957	3510	1109	701	1079	794	2811
657	11526	3022	2704	1204	5534	2086	6924	2273	2155	2154	1015	4835
658	7706	1987	1776	1080	3669	1177	4346	2030	1744	1100	435	2913
659	7953	2041	1873	788	3822	1344	4483	1939	1332	1434	773	3805
660	11929	2958	2928	1632	5675	2385	7013	2284	2843	1924	735	5006
661	10727	2777	2688	1424	5164	2094	6165	2213	2128	1890	780	4843
662	8057	1788	1615	1463	3847	2061	4558	1185	2243	994	157	2732
663	13348	3063	2540	2515	6451	3430	7859	1647	3964	1416	167	3658
664	5513	1643	1415	519	2706	699	3256	1469	991	1109	562	2585
740	9992	2360	2120	1864	4780	2321	6085	1325	2763	1229	222	3056
741	5827	1260	1093	1115	2769	1557	3427	666	1898	498	44	1251
742	13704	2942	2770	2475	6527	3595	7876	1852	3820	1657	219	3488
1192	12081	3453	3006	2106	6008	1939	7959	1957	2547	2085	696	3674
1193	9816	2862	2355	1654	4888	1694	6053	1877	2129	1605	616	3262
1194	9468	2634	2290	919	4676	1589	5545	2144	1229	1676	1168	4483
1195	10040	2902	2562	1394	4937	1616	6437	1818	1824	1779	852	3548
1196	12081	2803	2465	2284	5850	2835	6830	2078	3191	1576	243	3872
1197	6686	1456	1292	1282	3209	1659	4007	802	2059	719	85	1807
1198	13058	3467	3192	2260	6375	3099	8051	1580	2809	2307	511	3571
1199	16955	4685	4064	1665	8180	2838	9613	4107	2901	2988	1799	8845
1378	10911	2297	2025	2406	6402	3442	7991	1617	3367	1319	111	2394
1379	6561	1254	1137	1022	3124	1869	3814	669	2212	551	39	1339
1510	6223	1676	1489	707	3018	976	3538	1596	1302	1101	428	2410
1511	11601	3226	2688	1173	5789	1912	6402	3047	1672	2130	1461	5967
1709	4369	969	876	757	2082	1034	2560	647	1305	439	68	1273
1723	10565	2407	2135	1971	4996	2587	6049	1629	2951	1265	235	3658
1724	12614	2961	2657	2300	5969	2994	7297	1946	3519	1634	282	4225
1725	7898	1972	1720	1304	3733	2211	4872	583	1994	1167	257	2689
<b>TOTAL</b>	<b>334,901</b>	<b>84,286</b>	<b>74,732</b>	<b>52,482</b>	<b>163,162</b>	<b>71,450</b>	<b>198,857</b>	<b>58,691</b>	<b>77,028</b>	<b>50,863</b>	<b>17,644</b>	<b>119,916</b>



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Drawn By: UKJCL002

File: Enfield\_2016-2041\_Employment\_Growth.aprx



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## APPENDIX G – ENFIELD 2041 FUTURE BASELINE - EMPLOYMENT, JOBS AND SCHOOL ASSUMPTIONS

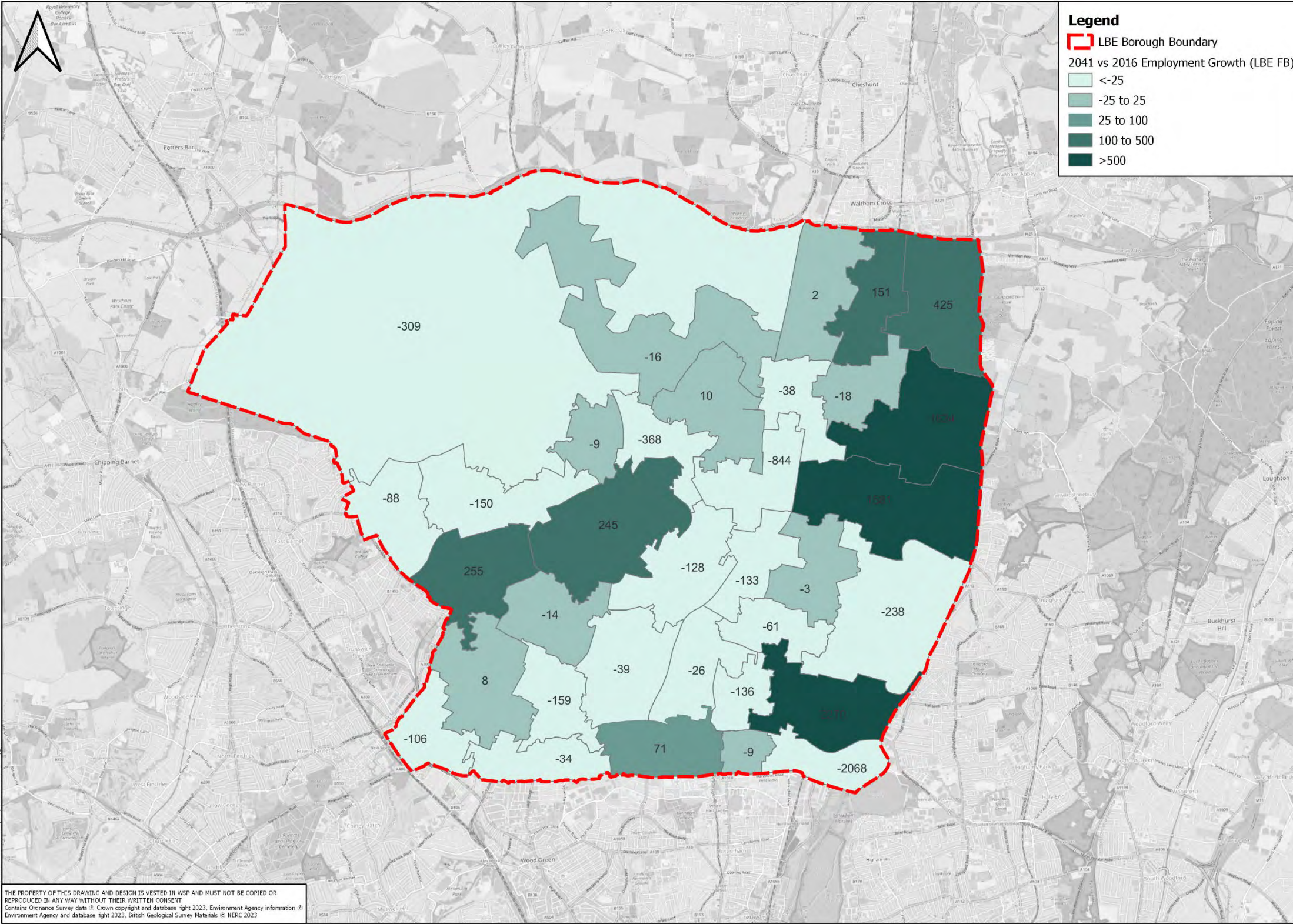
Table 30: Employment, Jobs and School Assumptions within Enfield in MoTiON – 2041 Future Baseline

MoTiON Zone	Number of Jobs						School Places		Retail Floor Space
	Total Employment	Employment density	White collar workers	Blue collar workers	Service Employment	Retail Employment	Primary	Secondary	Retail floor space
zone	TotEmp	Empden	WC_Employment	BC_Employment	Service_emp	Retail emp_(Ret)	Secondary_enrolments	Primary_enrolments	Retailfloorspace(ND MRFS'000sqm)
98	1854	1662	792	1062	164	453	3	232	4
651	2549	1823	1591	958	125	194	2572	2462	3
652	3106	1569	2026	1080	266	285	912	1952	12
653	2259	1940	1327	932	133	274	0	1695	6
654	358	331	120	238	9	1240	0	187	21
655	2390	1204	1332	1058	122	409	1412	1327	12
656	1842	1260	1266	577	182	180	139	167	5
657	7112	3670	4979	2133	503	1151	20	2223	25
658	2285	1509	1658	626	262	293	1292	710	8
659	1922	946	1261	661	208	119	1354	830	2
660	4065	978	2585	1480	266	629	4	1924	8
661	2753	1463	1833	920	308	137	2430	1250	10
662	2085	1780	1303	782	167	400	92	1400	8
663	6813	2209	3281	3532	278	1210	1589	3014	34
664	1244	1384	883	361	119	123	0	0	1
740	5524	3618	3965	1560	162	478	0	1626	4
741	1894	4104	1150	744	105	285	0	1464	12
742	2466	2474	1316	1150	203	272	12	492	21
1192	3224	2624	1707	1517	299	399	0	1464	17
1193	2806	2454	1543	1263	230	331	780	817	4
1194	2084	999	1503	581	215	182	0	936	14
1195	3823	3146	2522	1301	326	608	912	735	15
1196	2724	1949	1734	990	160	340	627	3756	7
1197	2412	678	1177	1235	168	233	0	0	19
1198	5346	3470	2624	2722	189	2474	644	1971	30
1199	8879	366	7141	1738	451	359	1190	1850	16
1378	7320	3495	3509	3811	480	3614	30	0	84
1379	1980	2557	1369	611	82	346	0	1068	14
1510	6551	5748	4798	1753	259	576	2003	515	39
1511	4893	1568	2764	2129	445	1329	63	755	37
1709	7689	2707	3025	4664	125	1827	0	735	10
1723	1993	1082	1073	920	131	231	1088	1033	7
1724	2782	1823	1459	1322	243	468	275	816	4
1725	4831	2105	2783	2048	165	844	890	1991	7
<b>TOTAL</b>	<b>121,859</b>	<b>70,696</b>	<b>73,400</b>	<b>48,459</b>	<b>7,551</b>	<b>22,293</b>	<b>20,334</b>	<b>41,400</b>	<b>522</b>

Date Modified: 27/01/23

Drawn By: JKCLO02

File: Enfield\_2016-2041\_Employment\_Growth.qxd



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## APPENDIX H – 2041 RC STRATEGIC HIGHWAY SCHEMES

Table 31: LoHAM v4.3 Schemes Introduced between 2016 and 2021/2026/2031/2041

Scheme Name	Forecast Case Year
Brent Cross at North Circular junction with A5, M1, A41 Hendon Way, and further local improvements	2021
Coulsdon Town Centre Improvement	2021
E28 Link and LO3 Safeguarding (Olympic Park)	2021
Bow Roundabout (Olympic Park)	2021
Engineers Way	2021
H02 Cadogan Terrace Traffic Calming (Olympic Park)	2021
H03B* Eastway Improvements (Olympic Park)	2021
Highway in the vicinity of Aquatics / Stratford City Southern Access Road (Olympic Park)	2021
Highway Link Assessment (Olympic Park)	2021
L10 North Loop Road / Velodrome Link (Olympic Park)	2021
Lea Interchange/Waterden Rd (Olympic Park)	2021
Marshgate Lane / Southern Loop Road (Olympic Park)	2021
N15-2* North-South Residential Traffic Priorities - Implementation (Olympic Park)	2021
North Loop Road / Temple Mill Lane (Olympic Park)	2021
OPTEMS - as of 2009 OPTEMS Strategy (Olympic Park)	2021
Park Street / Velodrome Link (Olympic Park)	2021
Ruckholt Road (Olympic Park)	2021
Stratford City (Olympic Park)	2021
TH07 & TH08 Cadogan Terrace & 'Missing Link' Enhancements (Olympic Park)	2021
WF01* Ruckholt Road Area (Olympic Park)	2021
White Post Lane/E28 link, Waterden Road/Carpenters Road (Olympic Park)	2021
Victoria Nova	2021
West End / Tottenham Court Road Project - build stages 1 - 4	2021
Archway	2021
Lewisham Gateway	2021
Englefield Road (Cs1)	2021
Bank Station Closure	2021
CS4 - Woolwich to London Bridge	2021
West End / Tottenham Court Road Project - build stage 5	2021

Scheme Name	Forecast Case Year
Westminster Bridge roundabout	2021
Davies Street / Brook Street two-way	2021
Baker Street 2 way	2021
London Bridge Thameslink	2021
NEW/H/5/005 Modifications to Traffic Movements at the Junction of the A1020 and Jenkins Lane	2021
Charlie Brown Roundabout	2021
Crystal Palace parade	2021
Berkeley Street / Piccadilly new crossings	2021
Bloomsbury Square closures	2021
New Bond Street	2021
Sussex Gardens	2021
Union Street Closure J08/274	2021
Highbury Scheme	2021
Mini Holland Hoe Street	2021
Berkeley Square north signal removal J01/074	2021
Brunswick Square closures	2021
Davies Street re-opening (Crossrail)	2021
Dean Street reopening (Crossrail)	2021
Edgware Road	2021
Elephant Park / Heygate Street	2021
Hanover Square	2021
Marlborough Road RT onto Pall Mall	2021
Marshall Street closure	2021
Moorgate SB Right Turn	2021
Paddington Area Crossrail re-opening	2021
Upper / Lower Marsh	2021
Lambeth Bridge North Roundabout	2021
Lambeth Bridge South Roundabout	2021
Canning Town Highway Scheme	2021
Hammersmith Better Junction	2026
London Wall	2021



Scheme Name	Forecast Case Year
Strand / Aldwych	2021
Waterloo IMAX roundabout	2021
Hayes By-pass and Gaswork	2021
Monier Road (Olympic Park)	2021
Holborn Prevention of Death	2021
St. Paul's Gyratory Removal	2021
East-West Cycle Super Highway Outer - Eastbourne Terrace to Westbourne Terrace	2021
East-West Cycle Super Highway Extension	2021
Woodberry Down	2021
Widmore Road Tweedy Road	2021
Wick Road	2021
Stratford G Removal	2021
Euston Road design 5	2021
Dingwall Loop	2021
A12-Devas Street	2021
Quietway 2 - Portland Place	2021
Torrington Place eastbound	2021
Lower Clapton Road - Urswick Road	2021
J10/361 and J9/313 ATM Updates	2021
J11/016 and J11/017	2021
J12/037 Updates	2021
J28/016 Updates	2021
30-361 MILLBROOK PARK - PURSLEY ROAD - BITTACY RISE	2021
Lower Road Gyratory	2026
Judd Street	2021
Vauxhall Gyratory	2026
Silvertown	2026
A21 Tonbrige Pembury	2021
Old Street Roundabout	2021
Nags Head Gyratory	2026
Marble Arch	2026
Great West Way Windmill	2021



Scheme Name	Forecast Case Year
20mph inside ccz	2021
Whipps Cross	2021
A40 Speedlimit Change	2021
M4 smart Motorway	2026
M25 Junction 10-16	2026
M25Junction 10-A3	2026
M25 Junction 25	2026
M25 Junction 28	2026



## APPENDIX I – 2041 RC STRATEGIC PUBLIC TRANSPORT SCHEMES

Table 32: Railplan 8.0 Funded Schemes Introduced between 2016 and 2021/2026/2031/2041

CODE	Scheme	TOC / Area	Year	Comment
<b>London Overground</b>				
OV01	London Overground SLC3 - East London Line Phase 2b to Clapham Jn	East London	2016	December 2012 ELL/SLL extension 4 tph Highbury & Islington - Clapham Jn
OV02	West Croydon - Highbury & Islington, Clapham Jn - Dalston Jn	East London	2016	From December 2015, West Croydon services extended to Highbury & Islington while Clapham Jn services terminate at Dalston Jn; 48th SA to TAA refers
OV03	West Anglia Devolution: Chingford, Enfield Town, Cheshunt, Romford/Upminster	West Anglia	2016	TfL responsibility from 31 May 2015, re tagged OV
OV04	LO Capacity Improvement - 5 car 378	East / North / West London	2016	Complete by end 2015 inc Watford DCs
OV05	West Anglia replacement stock	West Anglia	2021	New 4 car Aventra ordered 2015, in service 2018
OV07	Gospel Oak - Barking Electrification	Gospel Oak Barking	2021	New 4 car Aventra ordered 2015, in service 2018
OV08	LO Capacity Improvement - 10 tph NLL etc	North / West London	2021	5 car 378; 5 tph each of Richmond & Clapham Jn - Stratford peaks from May 2019 subject to stock availability; 4 tph off peak introduced May 2018
	LO Capacity Improvement - +2 tph	East London	2021	5 car 378; addtl 2 tph Dalston Jn - Crystal Palace all day; as part of Digital Railway Initiative; May 2020 subject to stock availability
	LO Capacity (HIF Bid)	East London	2026	5 car 378; addtl 2 tph Highbury & I - Clapham Jn all day; as part of ??? HIF Bid
OV09	Watford DC replacement stock	Watford DC	2021	New 4 car Aventra ordered 2015, in service 2018
OV10	Watford DC 4 tph all day	Watford DC	2021	4 car Aventra, expected December 2018
OV11	Gospel Oak - Barking extended to Barking Riverside	Gospel Oak Barking	2021	By 2021; TWAO approved August 2017
<b>National Rail</b>				
NR01	HLOS1	Various	2016	Various capacity increases, complete by 2014
NR02	West Anglia Devolution: Shenfield - Liverpool St	Crossrail 1	2016	TfL responsibility from 31 May 2015, re-tagged CR

CODE	Scheme	TOC / Area	Year	Comment
NR03	Lea Bridge station	West Anglia	2016	Opened 16 May 2016, between Tottenham Hale and Stratford
NR04	Chiltern Evergreen 3 Phase 2 (Bicester to Oxford)	Chiltern	2016	Opened to Oxford Parkway October 2015, to Oxford (GWR) December 2016
NR05	Southern West London Line enhanced capacity	West London	2016	5 and 8 car services from 2014
NR06	New Gatwick Express Stock	Gat Ex	2016	Ordered by franchisee 2014
NR07	Major Station improvements: East Croydon, Brockley, Streatham	Station improvements	2016	East Croydon, Brockley, Streatham
NR08	Revised stock on South West Trains providing 10 car on Main Line Suburban and Windsor Lines	SWT	2016	Classes 458/5, 456 and new class 707, Desiro City
NR09	London Midland Project 110 (Full)	WCML	2016	Complete December 2014
NR10	Virgin Dec 2013 timetable – enhanced Scottish service	WCML	2016	Enhanced Scottish service
NR11	HLOS2	Various	2021	Control Period 5 2014 - 2019, various capacity increases
NR12	Thameslink Upgrade	Thameslink	2021	Complete by December 2019, 24 tph plus changes to Moorgate, Kings Cross, Southern and SouthEastern services; 20 tph from Dec 2018, 22 tph from May 2019
NR13	Thameslink revised service pattern	Thameslink	2021	Revised Service Pattern proposed by new Franchise in 2014 and amended through consultation and timetable development
NR14	Crossrail 1	Crossrail 1	2026	24 tph Reading / Heathrow - Shenfield / Abbey Wood; core Paddington - Abbey Wood now anticipated to open Spring 2022. Dates for inclusion of GWML and GEML connections unknown.
NR15	Revised Essex Thameside service provision (stock and calling pattern)	c2c	2021	Revised c2c service provision as of December 2015 timetable but with alterations over following months
NR16	Additional capacity as per 2014 franchise commitment	c2c	2021	10x6 car Adventuras ordered Dec 2017 for delivery by Sept 2021
NR17	West Anglia CP5 upgrade	West Anglia	2021	Stratford - Angel Road upgrade, complete by 2019

CODE	Scheme	TOC / Area	Year	Comment
NR19	East Anglia replacement stock	All	2021	As part of franchise award, all stock on franchise is replaced; classes 720, 745 and 755
NR20	IEP on ECML replacing IC125 & IC225	ECML	2021	IEP replacing IC125 & IC225 by 2021, VTEC franchise commitments
NR21	ECML additional intercity services (VTEC)	ECML	2021	Extend 4 of 6 off peak Newcastle services to/from Edinburgh, approved 2016 and in operation
NR26	Great Northern: longer high capacity trains, SDO	GN	2021	Replacement Stock (Class 717) on Moorgate services, as proposed by new franchisee in 2014
NR27	Midland Main Line Electrification	MML	2021	Corby by 2019; beyond cancelled by DfT July 2017; to be revived later
NR28	New South Western franchise in operation August 2017	SWT	2021	<a href="https://www.gov.uk/government/news/first-mtr-south-western-trains-limited-wins-south-western-franchise">https://www.gov.uk/government/news/first-mtr-south-western-trains-limited-wins-south-western-franchise</a>
NR29	5 and 10 car Bombardier Aventura stock all in service by December 2020 providing a 46% increase in peak capacity	SWT	2021	<a href="http://www.globalrailnews.com/2017/06/20/fir-stgroup-and-mtr-place-895m-order-with-bombardier-for-new-south-western-trains/">http://www.globalrailnews.com/2017/06/20/fir-stgroup-and-mtr-place-895m-order-with-bombardier-for-new-south-western-trains/</a>
NR32	Great Western Electrification – Suburban (Didcot / Newbury)	GWML	2021	Mainly 387/1 stock, to Didcot in Jan 2018, Newbury by 2019; Oxford deferred, possibly 2026
NR33	Great Western Electrification - Long Distance	GWML	2021	Cardiff by 2019, Swansea cancelled, Bristol deferred; all IEPs to be Dual Mode
NR34	HS2 phase 1 and associated NR changes	HS2	2031	Open 2029 to Old Oak Common with changes to Crossrail and GWML; to Euston (assume 2031) with changes to WCML services
NR35	Line speed improvements possibly earlier"			
<b>London Underground</b>				
LU01	Changes since 2011		2016	Significant timetable changes, e.g. Met Line
LU02	Northern Line Phase 1 upgrade (24 tph)	Northern	2016	Introduced Dec 2014 (WTT55); 24tph both core branches in peak hour, 30tph on Morden branch
LU03	Subsurface Partial upgrade	Subsurface	2016	Revise in 2021 as per current plans

CODE	Scheme	TOC / Area	Year	Comment
LU04	Victoria Line Upgrade (34.29tph, 105 sec headway)	Victoria	2016	Introduced May 2016 (WTT 39) but not quite throughout line throughout peak
LU05	Victoria Line Inter peak 26.67 tph (135 sec headway)	Victoria	2016	Introduced March 2015 (WTT 37)
LU06	Jubilee Line enhancements in lieu of additional stock, e.g. 32 tph in peak	Jubilee	2021	32 tph with 1 in 5 reversing at North Greenwich in the East and 1 in 6 at each of West Hampstead, Willesden Green and Wembley Park in the North West
	Northern Line extended PM Peak	Northern	2021	24 tph for 2 hours, some services reversing at Golders Green & Finchley Central
LU07	Northern Line Extension to Battersea	Northern	2021	
LU08	Victoria Line Upgrade (36.00tph, 100 sec headway)	Victoria	2021	Expected throughout both peaks August 2019 (WTT42)
LU09	Station Improvements		2021	Vauxhall, TCR, Bond St, Tottenham Hale, Victoria, Finsbury Park, Elephant and Castle
	Piccadilly Line initial upgrade (27tph) and new fleet	Piccadilly	2026	27 tph peaks, 24 tph inter peak
LU10	Subsurface Full upgrade	Subsurface	2026	New stock deployed by 2015, upgrade complete 2022 (was 2018). Increase to 30tph in the central area only is possible in late-2021 (but still constrained to current service levels on the Met main and District line branches); full end-state service pattern expected to be implemented in 2023.
LU11	Subsurface Full upgrade	Subsurface	2026	District Line will provide 8 tph from each of Wimbledon, Richmond and Ealing Broadway plus the Wimbledon to Edgware Road service
LU12	Station Improvements		2026	Bank, Holborn
<b>DLR</b>				
DK01	Inter peak service enhancements (Base Service Plan A)		2016	In place from Feb 2015
DK02	North Route Double Tracking Phase 1 (Base Service Plan B)		2016	Introduced Aug 2015
DK03	Changes due to Crossrail (Base Service Plan E*)		2021	Redeploy capacity April 2019 as a result of Crossrail opening prior to delivery of new trains
DK04	Rolling Stock Replacement		2026	



CODE	Scheme	TOC / Area	Year	Comment
	Programme v5 (KO5): Full deployment July 2024			
	Rolling Stock Replacement Programme v5.1 (KO9): HIF Award (Lewisham 30 tph and Airport 22.5) July 2025		2026	
<b>Tram</b>				
CT01	Key Output 0: Wimbledon higher frequency (double tracking)		2016	Implemented in 2015
	"Foundation" (KO0.5): timetable change Feb 2018		2021	



# TECHNICAL NOTE 2 – LOCAL PLAN REGULATION 19 AND BEYOND

<b>DATE:</b>	7 <sup>th</sup> March 2024	<b>CONFIDENTIALITY:</b>	Public
<b>SUBJECT:</b>	Local Plan Regulation 19 and Beyond Forecast Assumptions		
<b>PROJECT:</b>	Enfield Local Plan	<b>AUTHOR:</b>	Alice Connolly
<b>CHECKED:</b>	Michael Johns	<b>APPROVED:</b>	Christine Elphicke

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## INTRODUCTION

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WSP has been appointed by the London Borough of Enfield (LBE) to support their new Local Plan development in the Borough. WSP have undertaken an assessment on the impact of growth on the highway and public transport network in a 2041 forecast year, produced from a 2016 base year.

On this basis we will be using LBE's 2041 Future Baseline model that WSP have developed to create a Local Plan Regulation 19 and Beyond. The basis of the Future Baseline is outlined in 'Technical Note 1 – Future Baseline Assumptions (January 2023)' and has been agreed with by TfL, National Highways (NH) and Network Rail (NR).

The purpose of this Technical Note is to outline the Forecast Assumptions associated with modelling of the Local Plan Regulation 19 and Beyond (i.e. with LBE Local Plan Growth and beyond) which will be input into MoTiON, and subsequently inform the assignment modelling in LoHAM and Railplan.

The versions of TfL's models that have been used are listed below:

MoTiON:	Multi-modal strategic transport Model of Travel in London (MoTiON) v3.0.19
LoHAM:	London Highway Assignment Model (LoHAM v4.3)
Railplan:	Public Transport Model (Railplan v8.0)

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## ENFIELD LOCAL PLAN REGULATION 19 AND BEYOND LAND USE ASSUMPTIONS (MOTION)

Information about the Local Plan Regulation 19 and Beyond proposals have been provided to WSP by LBE. The data has been processed and allocated to the correct MoTiON zones as presented in Appendix A with a summary provided in **Table 1**.

**Table 1: Local Plan Regulation 19 and Beyond Dwelling and Job Summary**

	2016/17 – 2019/20	2020/21	2021/22	2022/41	Local Plan Regulation 19 and Beyond	Total
Housing, number of units	2,333	724	1,118	11,759	25,044	40,978
All jobs*	-1,961	526	39	3,051	28,721	30,377
Retail, sq. m	-8,155	-417	-2,091	41,564	64,145	95,045
Retail, jobs*	-466	-24	-120	2,375	3,665	5,430

\*Estimated using Employment Density Assumptions. Source: [https://www.london.gov.uk/sites/default/files/lesd\\_final\\_report\\_may-2016.pdf](https://www.london.gov.uk/sites/default/files/lesd_final_report_may-2016.pdf) (Table 3.3)

## LONDON POPULATION SYNTHESIZER (LOPOPS)

The 2041 TfL's Reference Case (RC) model LoPopS assumptions have been adjusted accordingly to produce 2041 Local Plan Regulation 19 and Beyond assumptions as detailed in Appendix B with a summary provided in **Table 2** and **Table 3**. This summary includes the population and households accounted for in the 2041 Future Baseline.

In Local Plan Regulation 19 and Beyond the total number of households will increase by 40,978, which represents a 31.6% increase from 2016 values.

The number of households within the LoPopS assumptions has been adjusted explicitly, whereas all other parameters have been adjusted from the 2041 base pro rata to the changes in the number of households.

The household sizes reduce from 2016 to 2041 as demographics and lifestyle evolve compared to the existing situation. Considering that the Local Plan Regulation 19 and Beyond aims to represent trip generation within Enfield, the decision has been made to adopt 2041 household sizes in converting the household numbers to population numbers.



**Table 2: 2016 and 2041 LoPopS Socio-Demographic Assumptions – LB of Enfield**

	Socio-demographic Assumptions	2016 Base	2016% split by type	2041 LBE LP Reg 19+	2041% split by type
	<b>Total Population</b>	<b>331,471</b>		<b>391,868</b>	
Workers	Total Workers	159,182	100.0%	187,367	100.0%
	Workers - Males	84,186	52.9%	99,543	53.1%
	Workers - Females	74,996	47.1%	87,823	46.9%
	Blue Collar workers	51,616	32.4%	59,949	32.0%
	White Collar workers	107,566	67.6%	127,418	68.0%
Gender	Males	159,978	48.3%	189,723	48.4%
	Females	171,493	51.7%	202,145	51.6%
Age	Age Under 16	79,608	24.0%	82,098	21.0%
	Age 16-17	8,343	2.5%	9,729	2.5%
	Age 18-65	203,444	61.4%	230,788	58.9%
	Age 65+	40,076	12.1%	69,253	17.7%
Income	<b>Total Household</b>	<b>129,601</b>	<b>100.0%</b>	<b>170,579</b>	<b>100.0%</b>
	Income Less than £35k	69,720	53.8%	87,014	51.0%
	Income £35k-£75k	44,147	34.1%	61,601	36.1%
	Income £75k+	15,734	12.1%	21,964	12.9%
	Number of Cars	123,871		140,232	
	Car ownership per household	0.96		0.82	

**Table 3: 2016 - 2041 LBE Local Plan Changes in LoPopS Socio-Demographic Assumptions – LB of Enfield**

	Socio-demographic Assumptions	2016 Base	2041 LBE LP Reg 19+	2016-2041 Growth	2016-2041 Growth, %
	<b>Total Population</b>	<b>331,471</b>	<b>391,868</b>	<b>60,397</b>	<b>18.2%</b>
Workers	Total Workers	159,182	187,367	28,185	17.7%
	Workers - Males	84,186	99,543	15,357	18.2%
	Workers - Females	74,996	87,823	12,827	17.1%
	Blue Collar workers	51,616	59,949	8,333	16.1%
	White Collar workers	107,566	127,418	19,852	18.5%
Gender	Males	159,978	189,723	29,745	18.6%
	Females	171,493	202,145	30,651	17.9%
Age	Age Under 16	79,608	82,098	2,490	3.1%
	Age 16-17	8,343	9,729	1,386	16.6%
	Age 18-65	203,444	230,788	27,344	13.4%
	Age 65+	40,076	69,253	29,177	72.8%
Income	<b>Total Household</b>	<b>129,601</b>	<b>170,579</b>	<b>40,978</b>	<b>31.6%</b>
	Income Less than £35k	69,720	87,014	17,295	24.8%
	Income £35k-£75k	44,147	61,601	17,454	39.5%
	Income £75k+	15,734	21,964	6,230	39.6%
	Number of Cars	123,871	140,232	16,362	13.2%
	Car ownership per household	0.96	0.82	-0.13	-14.0%

## MODE-DESTINATION CHOICE MODELS - JOBS, SCHOOL PLACES AND RETAIL FLOOR SPACE ASSUMPTIONS

The 2041 TfL's RC model assumptions for the 'Total Employment' and 'Retail Floor Space' have been adjusted to include completions between 2016/17 and 2019/20, schemes which are committed to be built out to 2041 and Local Plan Regulation 19 and Beyond employment assumptions. These parameters have been adjusted explicitly based on the values provided by LBE, while other parameters representing segmentation of jobs and employment in the area have been adjusted pro rata to the main parameters.

It has been assumed that the number of school pupils will grow in line with the population growth as summarised in **Table 3**.

The final values including a map of the borough of the increases are detailed in Appendix C with a summary provided in **Table 4** and **Table 5**.

It has been estimated based on the completion, commitment and Local Plan Regulation 19 and Beyond data the total employment in LB of Enfield will increase by approximately 25.3%, which is an increase of around 30,377 jobs in the borough.

**Table 4: 2016 and 2041 Local Plan Regulation 19 and Beyond - Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

Assumptions		2016 Base	2016 % split by type	2041 LBE LP Reg 19+	2041 % split by type
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>		<b>150,580</b>	
	Employment density	71,769		91,781	
	White collar workers	72,679	60.5%	87,272	58.0%
	Blue collar workers	47,524	39.5%	63,309	42.0%
	Service Employment	7,659	6.4%	8,368	5.6%
	Retail Employment	20,528	17.1%	25,958	17.2%
School Places	<b>Primary</b>	<b>18,291</b>	<b>32.9%</b>	<b>20,334</b>	<b>32.9%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>67.1%</b>	<b>41,400</b>	<b>67.1%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>		<b>555</b>	

**Table 5: 2016 - 2041 Local Plan Regulation 19 and Beyond Changes in Jobs, School Places and Retail Floor Space Assumptions – LB of Enfield**

Assumptions		2016 Base	2041 LBE LP Reg 19+	2016-2041 Growth	2016-2041 Growth, %
Number of Jobs	<b>Total Employment</b>	<b>120,203</b>	<b>150,580</b>	<b>30,377</b>	<b>25.3%</b>
	Employment density	71,769	91,781	20,012	27.9%
	White collar workers	72,679	87,272	14,593	20.1%
	Blue collar workers	47,524	63,309	15,784	33.2%
	Service Employment	7,659	8,368	709	9.3%
	Retail Employment	20,528	25,958	5,430	26.5%
School Places	<b>Primary</b>	<b>18,291</b>	<b>20,334</b>	<b>2,043</b>	<b>11.2%</b>
	<b>Secondary</b>	<b>37,240</b>	<b>41,400</b>	<b>4,160</b>	<b>11.2%</b>
Retail Floor Space	<b>Retail floor space</b>	<b>491</b>	<b>555</b>	<b>64</b>	<b>13.1%</b>

## DEVELOPMENTS WITH MORE THAN 500 DWELLING OR 500 JOBS

WSP outlined their approach to all stakeholders, TfL, National Highways (NH) and Network Rail (NR) in a presentation from 7<sup>th</sup> October 2022 that all housing developments less than 500 homes and all employment sites less than 500 jobs will use the MoTiON zone the development sits within to derive all the MoTiON inputs. All developments bigger than 500 homes or 500 jobs a more detailed assessment of the MoTiON assumptions will be undertaken.

For Local Plan Regulation 19 and Beyond the information LBE have provided identifies nine sites have more than 500 houses. **Table 6** outlines the sites and the proposed MoTiON Zone for the demographic assumptions.

**Table 6: Local Plan Regulation 19 and Beyond Developments with more than 500 Dwellings**

Development	MoTiON Zone
Sainsburys, Crown Road	1198
Morrisons, Southbury Road	1198
Joyce Avenue and Snells Park Estate	741
IKEA store; Tesco Extra, 1 Glover Drive; Meridian Water Willoughby Lane And Meridian Way	654
Land at Crews Hill	660
Land at Chase Park	1199
Southbury Leisure Park	1198
Tesco Ponders End	663
Land known as Brimsdown Sports Ground	1709

For Local Plan Regulation 19 and Beyond the information LBE have provided identifies seven sites which would result in more than 500 jobs. **Table 7** outlines the sites and the proposed MoTiON Zone they are located within.

**Table 7: Local Plan Regulation 19 and Beyond Developments with more than 500 Jobs**

Development	MoTiON Zone
Sainsburys, Crown Road	1198
Meridian Water	1198
Sainsburys Green Lanes	655
Ravenside Retail Park	654
Land to the south of Millmarsh Lane, Brimsdown Industrial Estate	1709
Land West of Rammey Marsh	1725
Land East of Junction 24	1199



## **HIGHWAY INFRASTRUCTURE SCHEMES**

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The basis of the future year highway transport schemes, in Local Plan Regulation 19 and Beyond, will be the same as assumed within the Future Baseline modelling.

## **PUBLIC TRANSPORT SCHEMES**

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The basis of the future year public transport schemes, in Local Plan Regulation 19 and Beyond, will be the same as assumed within the Future Baseline modelling.

## **PARKING MODULE**

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It will be assumed that the parking assumptions will remain the same as they are in the LBE Future Baseline and TfL Reference Case models.

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## APPENDIX A – DEVELOPMENT PROPOSALS LOCAL PLAN REGULATION 19 AND BEYOND

**Table 8: Local Plan Regulation 19 and Beyond Development Proposals within Enfield based on MoTiON Zones**

zone	Housing, dw.	All, jobs	Retail, sq m	Retail, jobs
98	251	0	0	0
651	0	0	0	0
652	0	0	0	0
653	0	0	0	0
654	2,681	16,325	27,000	1,543
655	397	685	11,993	685
656	0	0	0	0
657	48	0	0	0
658	0	0	0	0
659	52	0	0	0
660	7,599	81	0	0
661	36	0	0	0
662	42	0	0	0
663	578	286	0	0
664	0	0	0	0
740	260	0	0	0
741	1,246	337	0	0
742	146	0	0	0
1192	134	0	0	0
1193	203	0	0	0
1194	201	0	0	0
1195	213	165	2,880	165
1196	59	0	0	0
1197	0	153	0	0
1198	2,199	2,863	22,272	1,273
1199	6,323	764	0	0
1378	305	497	0	0
1379	39	0	0	0
1510	542	0	0	0
1511	543	0	0	0
1709	532	4,398	0	0
1723	0	0	0	0
1724	415	0	0	0
1725	0	2,166	0	0
	25,044	28,721	64,145	3,665

\* All values represent the net change

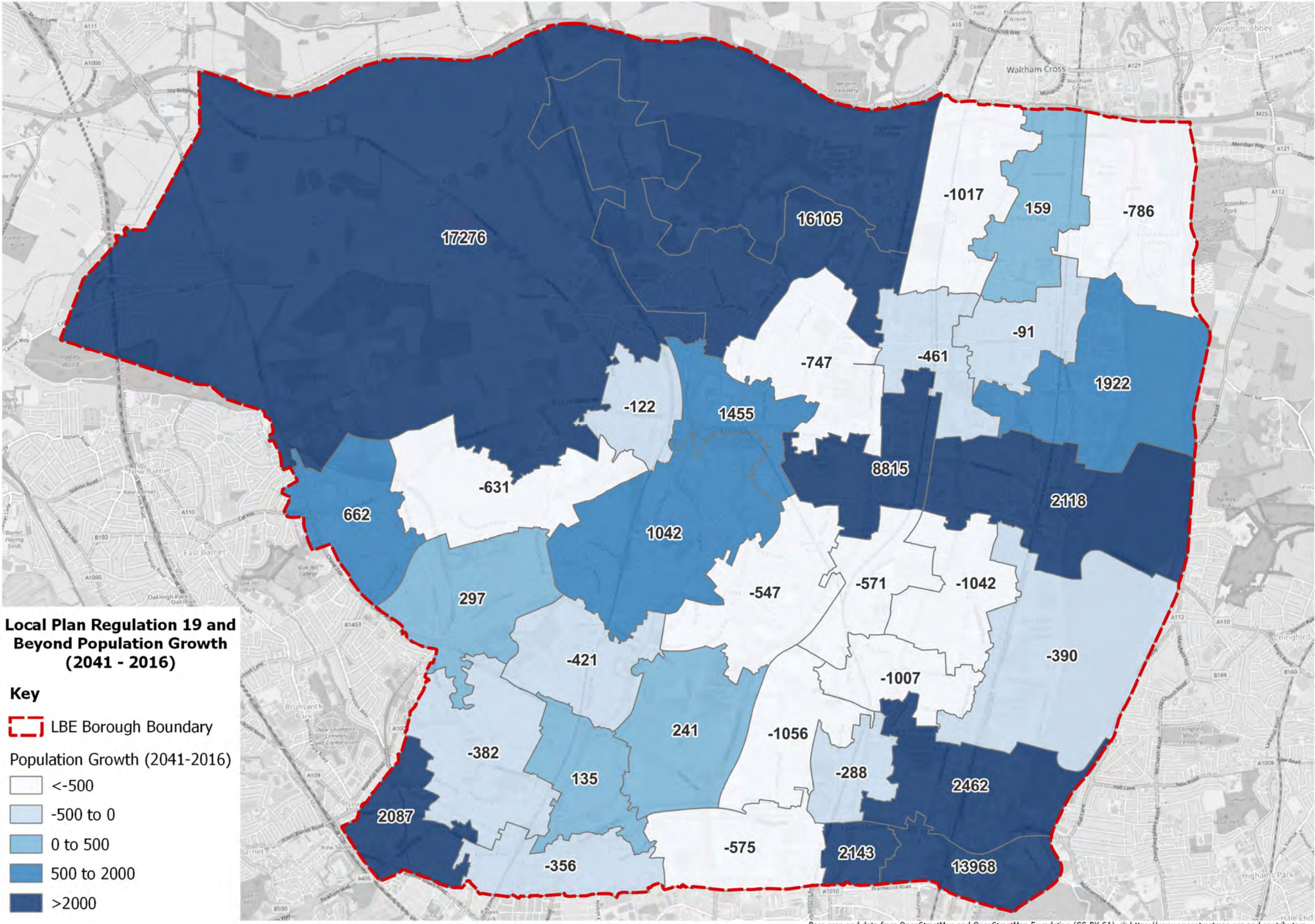


## APPENDIX B – ENFIELD 2041 LOCAL PLAN REGULATION 19 AND BEYOND POPULATION ASSUMPTIONS

Table 9: LoPopS assumptions within Enfield in MoTiON – Enfield 2041 Local Plan Regulation 19 and Beyond

MoTiON Zone	Total Population	Workers - Males	Workers - Females	Blue Collar workers	Gender Males	Age Under 16	Age 18-65	Age 65+	Income Less than £35k	Household Income £35k-£75k	Income £75k+	Car Ownership Number of Cars
zone	total	wkmale	wkfemale	BCollar	male	age16	age65	age65p	inc35	inc75	inc75p	ncars
98	9,677	2,245	1,911	1,858	4,613	2,494	5,504	1,376	2,511	1,256	217	3,490
651	11,514	2,596	2,320	2,053	5,530	2,874	6,645	1,627	2,989	1,492	241	3,549
652	11,603	3,187	2,837	1,428	5,653	1,846	6,759	2,759	1,926	2,142	1,136	5,724
653	6,519	1,721	1,555	1,147	3,169	1,348	3,795	1,213	1,401	1,069	297	2,735
654	18,351	4,950	4,024	3,876	9,182	4,590	11,567	1,752	3,592	3,618	537	2,383
655	12,336	3,220	2,949	1,891	6,037	2,230	7,085	2,725	2,429	2,093	745	5,181
656	5,680	1,682	1,459	594	2,815	957	3,510	1,109	701	1,079	794	2,811
657	11,630	3,049	2,728	1,215	5,584	2,105	6,986	2,293	2,174	2,173	1,025	4,879
658	7,706	1,987	1,776	1,080	3,669	1,177	4,346	2,030	1,744	1,100	435	2,913
659	8,069	2,071	1,900	800	3,878	1,364	4,549	1,968	1,352	1,456	784	3,861
660	28,683	7,581	6,945	3,286	13,756	5,196	16,516	6,331	5,724	4,873	2,503	13,724
661	10,807	2,798	2,708	1,435	5,203	2,110	6,211	2,229	2,144	1,904	786	4,879
662	8,157	1,810	1,635	1,481	3,894	2,087	4,614	1,200	2,271	1,007	159	2,766
663	14,739	3,382	2,805	2,777	7,124	3,787	8,678	1,819	4,187	1,734	204	3,826
664	5,513	1,643	1,415	519	2,706	699	3,256	1,469	991	1,109	562	2,585
740	10,608	2,506	2,251	1,979	5,074	2,464	6,461	1,407	2,933	1,305	236	3,244
741	8,803	1,904	1,651	1,684	4,184	2,352	5,177	1,007	2,263	1,308	115	1,281
742	14,055	3,017	2,841	2,538	6,694	3,688	8,077	1,899	3,918	1,699	225	3,577
1192	12,385	3,540	3,082	2,159	6,159	1,988	8,159	2,006	2,611	2,138	713	3,766
1193	10,274	2,995	2,465	1,731	5,116	1,774	6,336	1,965	2,228	1,680	645	3,415
1194	9,935	2,764	2,403	965	4,907	1,667	5,819	2,249	1,289	1,759	1,226	4,704
1195	10,520	3,041	2,685	1,460	5,173	1,694	6,745	1,905	1,912	1,864	892	3,718
1196	12,223	2,836	2,494	2,311	5,919	2,868	6,910	2,102	3,228	1,595	246	3,918
1197	6,686	1,456	1,292	1,282	3,209	1,659	4,007	802	2,059	719	85	1,807
1198	18,336	4,934	4,389	3,386	9,047	4,413	11,430	2,046	3,596	3,530	701	4,089
1199	30,898	8,538	7,407	3,034	14,907	5,171	17,519	7,484	5,288	5,445	3,279	16,119
1378	11,604	2,444	2,154	2,076	5,525	2,970	6,896	1,395	3,609	1,377	116	1,990
1379	6,652	1,271	1,153	1,036	3,167	1,895	3,867	678	2,243	559	40	1,358
1510	7,414	1,997	1,774	842	3,596	1,163	4,215	1,902	1,552	1,312	510	2,871
1511	12,798	3,559	2,965	1,294	6,386	2,109	7,062	3,362	1,845	2,350	1,612	6,582
1709	5,651	1,254	1,132	979	2,694	1,338	3,311	836	1,571	670	104	1,592
1723	10,565	2,407	2,135	1,971	4,996	2,587	6,049	1,629	2,951	1,265	235	3,658
1724	13,577	3,187	2,860	2,476	6,424	3,223	7,854	2,095	3,787	1,758	304	4,547
1725	7,898	1,972	1,720	1,304	3,733	2,211	4,872	583	1,994	1,167	257	2,689
<b>391,868</b>	<b>99,543</b>	<b>87,823</b>	<b>59,949</b>	<b>189,723</b>	<b>82,098</b>	<b>230,788</b>	<b>69,253</b>	<b>87,014</b>	<b>61,601</b>	<b>21,964</b>	<b>140,232</b>	





**Local Plan Regulation 19 and Beyond Population Growth (2041 - 2016)**

**Key**

- LBE Borough Boundary
- Population Growth (2041-2016)**
- <-500
- 500 to 0
- 0 to 500
- 500 to 2000
- >2000



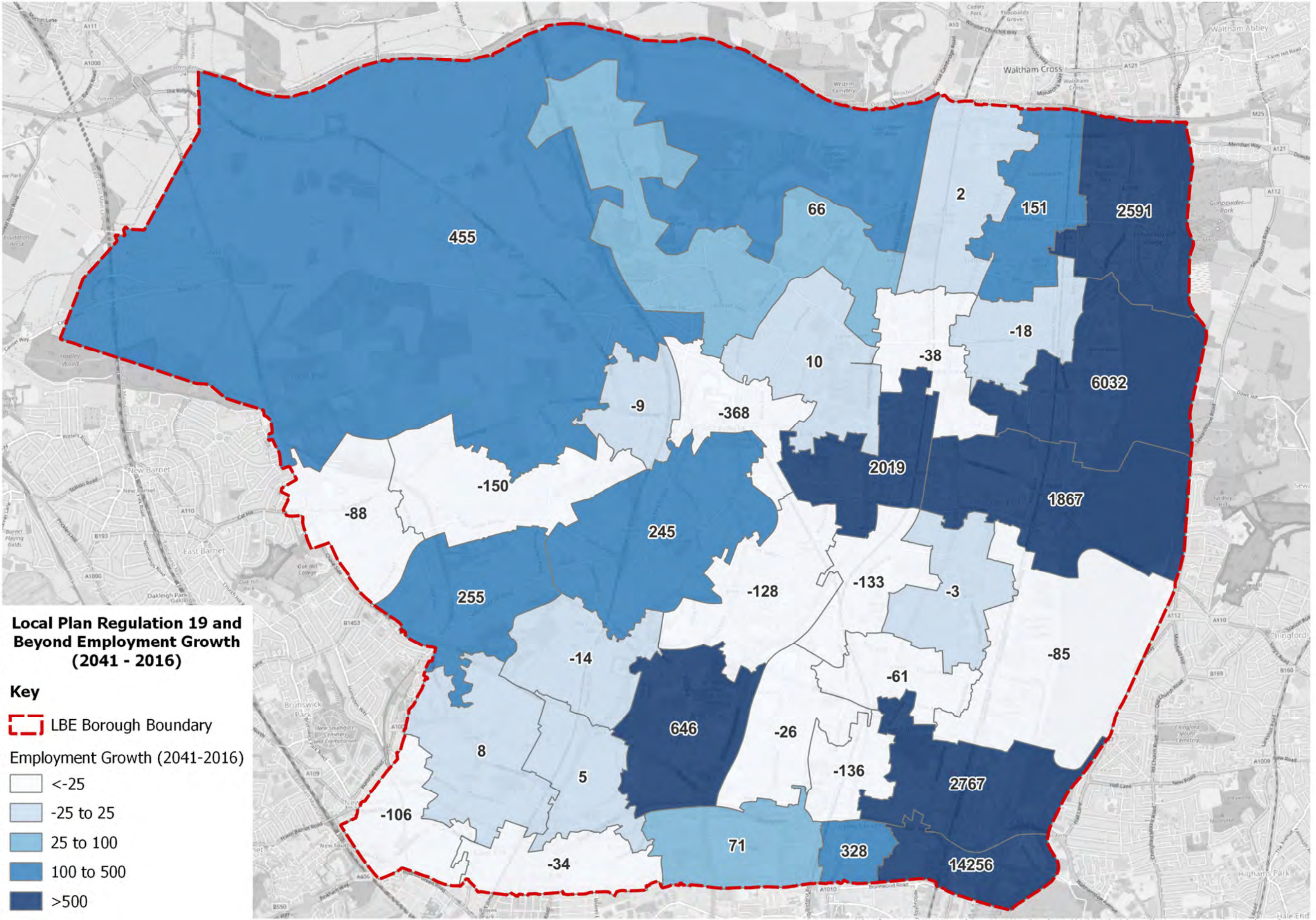


## APPENDIX C – ENFIELD 2041 LOCAL PLAN REGULATION 19 AND BEYOND - EMPLOYMENT, JOBS AND SCHOOL ASSUMPTIONS

Table 10: Employment, Jobs and School Assumptions within Enfield in MoTiON – 2041 Local Plan Regulation 19 and Beyond

MoTiON Zone	Number of Jobs						School Places		Retail Floor Space
	Total Employment	Employment density	White collar workers	Blue collar workers	Service Employment	Retail Employment	Primary	Secondary	Retail floor space
zone	TotEmp	Empden	WC_Employment	BC_Employment	Service_emp	Retail emp_(Ret)	Secondary_enrolments	Primary_enrolments	Retailfloorspace(NDMRFS'000sqm)
98	1,854	1,662	792	1,062	164	453	3	232	4
651	2,549	1,823	1,591	958	125	194	2,572	2,462	4
652	3,106	1,569	2,026	1,080	266	285	912	1,952	13
653	2,259	1,940	1,327	932	133	274	0	1,695	7
654	16,682	15,429	9,741	6,941	412	2,782	0	187	47
655	3,076	1,549	1,714	1,362	157	1,094	1,412	1,327	24
656	1,842	1,260	1,266	577	182	180	139	167	5
657	7,112	3,670	4,979	2,133	503	1,151	20	2,223	25
658	2,285	1,509	1,658	626	262	293	1,292	710	8
659	1,922	946	1,261	661	208	119	1,354	830	5
660	4,146	998	2,637	1,509	271	629	4	1,924	8
661	2,753	1,463	1,833	920	308	137	2,430	1,250	10
662	2,085	1,780	1,303	782	167	400	92	1,400	8
663	7,099	2,302	3,419	3,681	289	1,210	1,589	3,014	32
664	1,244	1,384	883	361	119	123	0	0	1
740	5,524	3,618	3,965	1,560	162	478	0	1,626	4
741	2,231	4,835	1,354	877	124	285	0	1,464	12
742	2,466	2,474	1,316	1,150	203	272	12	492	22
1192	3,224	2,624	1,707	1,517	299	399	0	1,464	17
1193	2,806	2,454	1,543	1,263	230	331	780	817	5
1194	2,084	999	1,503	581	215	182	0	936	14
1195	3,987	3,281	2,630	1,357	340	773	912	735	19
1196	2,724	1,949	1,734	990	160	340	627	3,756	7
1197	2,566	721	1,252	1,314	179	233	0	0	22
1198	8,209	5,328	4,030	4,179	290	3,746	644	1,971	48
1199	9,643	397	7,141	2,502	490	359	1,190	1,850	17
1378	7,817	3,733	3,748	4,069	513	3,614	30	0	45
1379	1,980	2,557	1,369	611	82	346	0	1,068	13
1510	6,551	5,748	4,798	1,753	259	576	2,003	515	42
1511	4,893	1,568	2,764	2,129	445	1,329	63	755	37
1709	12,087	4,256	4,435	7,652	196	1,827	0	735	9
1723	1,993	1,082	1,073	920	131	231	1,088	1,033	7
1724	2,782	1,823	1,459	1,322	243	468	275	816	6
1725	6,997	3,049	3,020	3,977	239	844	890	1,991	8
<b>TOTAL</b>	<b>150,580</b>	<b>91,781</b>	<b>87,272</b>	<b>63,309</b>	<b>8,368</b>	<b>25,958</b>	<b>20,334</b>	<b>41,400</b>	<b>555</b>





**Local Plan Regulation 19 and Beyond Employment Growth (2041 - 2016)**

**Key**

- LBE Borough Boundary
- Employment Growth (2041-2016)
- <-25
- 25 to 25
- 25 to 100
- 100 to 500
- >500



First Issued September 2023  
Last revision March 2024



# Enfield Local Plan

*Transport Modelling Outputs*



# MoTiON Results

- MoTiON TfL's Four Stage Demand Model and uses population and employment inputs to generate trips by mode and origin and destination
- Detailed results have been shared with TfL whilst MoTiON was running and following its completion

# MoTiON Results

MoTiON Mode Share for LBE Future Baseline and LBE Regulation 19  
 Mode Share remains consistent between two model runs

	LBE Future Baseline (It7)		LBE Regulation (It7)	
	Demand	Mode Share	Demand	Mode Share
<b>Cycle</b>	15081	1.9%	18294	2.0%
<b>Walk</b>	211640	26.3%	246631	26.5%
<b>Rail</b>	86156	10.7%	97701	10.5%
<b>Bus</b>	131063	16.3%	151652	16.3%
<b>PHV</b>	11164	1.4%	12840	1.4%
<b>Car D</b>	250715	31.1%	291455	31.3%
<b>Car P</b>	100081	12.4%	113698	12.2%
<b>Total</b>	805900		932271	

In LBE Regulation 19 there is a small increase in walk trips, 0.2%, a slight reduction in rail trips, 0.2%, and a slight increase in car driver trips, 0.2% and decrease in car passenger trips, 0.2%. Changes though are very small indicating the proposed Local Plan is not changing the way people travel in the borough.





# MoTiON Results

- The 24 hour Productions/ Attractions increase in LBE Regulation 19 compared to LBE Future Baseline as a result of the increases in housing and jobs

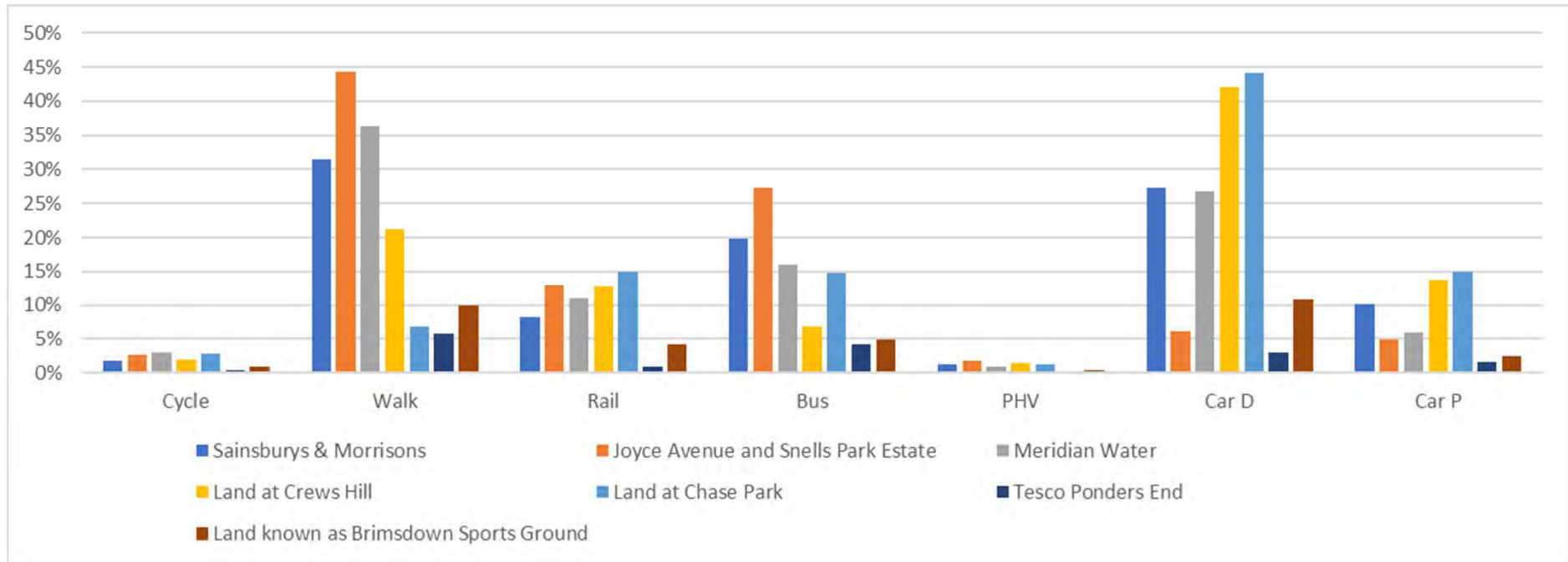
LBE Future Baseline (It7)		LBE Regulation 19 (It7)		Difference	
Productions	Attractions	Productions	Attractions	Productions	Attractions
				81,908	63,389

- Regulation 19 Local Plan generating 145,000 trips by all modes over 24 hours
- 25,044 Regulation 19 dwellings generate an additional 81,908 all mode 24 hour trips which is 3.27 per dwelling
- 28,721 Scenario 1 jobs generate an additional 63,389 all mode 24 hour trips 2.21 trips per job

# MoTiON Results

- Key Housing Developments – 500+ dwellings

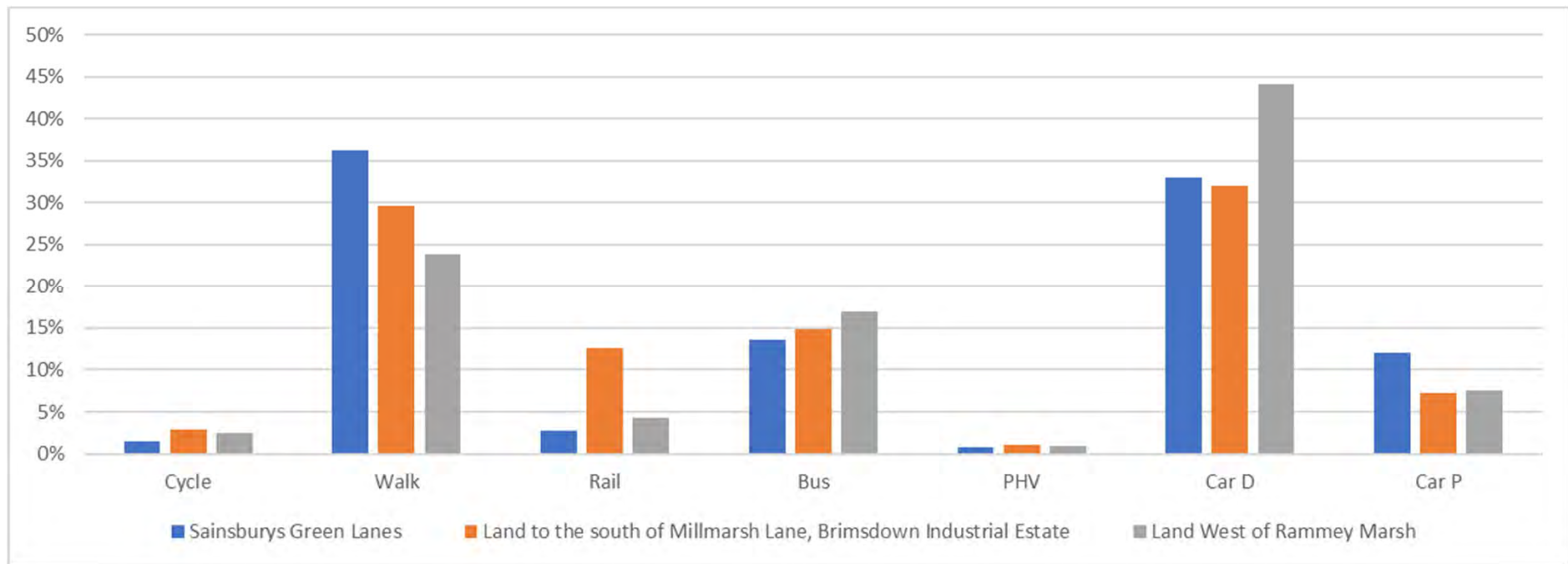
MoTiON Zone	Developments	Dwellings	Jobs	Cycle	Walk	Rail	Bus	PHV	Car D	Car P
1198	Sainsburys & Morrisons	2199	2863	2%	32%	8%	20%	1%	27%	10%
663	Tesco Ponders End	578	286	0%	6%	1%	4%	0%	3%	2%
741	Joyce Avenue and Snells Park Estate	1246	337	3%	44%	13%	27%	2%	6%	5%
654	Meridian Water	2681	16325	3%	36%	11%	16%	1%	27%	6%
660	Land at Crews Hill	7599	81	2%	21%	13%	7%	1%	42%	14%
1199	Land at Chase Park	6323	764	3%	7%	15%	15%	1%	44%	15%
1709	Land known as Brimsdown Sports Ground	532	4398	1%	10%	4%	5%	0%	11%	2%



# MoTiON Results

- Key Employment Developments – 500+ jobs

MoTiON Zone	Developments	Dwellings	Jobs	Cycle	Walk	Rail	Bus	PHV	Car D	Car P
655	Sainsburys Green Lanes	397	685	2%	36%	3%	14%	1%	33%	12%
	Land to the south of Millmarsh Lane, Brimsdown Industrial Estate									
1709	Estate	532	4398	3%	30%	13%	15%	1%	32%	7%
1725	Land West of Rammev Marsh	0	2166	2%	24%	4%	17%	1%	44%	7%



# Highway Modelling Results

- Highway trips to and from LBE have increased in LBE Local Plan Regulation 19 compared to the Future Baseline with the increased housing and job assumptions

Peak Hour	LBE Future Baseline (It7)		LBE Local Plan Regulation 19 (It7)		Difference	
	Origin	Destination	Origin	Destination	Origin	Destination
<b>AM</b>	31,398	29,744	34,874	33,125	3,476	3,381
<b>IP</b>	28,255	27,204	30,743	29,572	2,488	2,368
	31,744	31,295	35,663	34,854	3,919	3,559



# Highway Modelling Results

- Detailed analysis has been undertaken on the volume of trips being generated by the two large greenbelt developments of Crews Hill and Chase Park
- MoTiON was generating around 1,300 peak hour trips as a result of the additional 6300 dwellings proposed at Chase Park and 7600 dwellings at Crews Hill, which WSP felt was low
- WSP have undertaken a peak hour trip generation analysis and derived a revised trip rate based on TRICS
- WSP have undertaken a sensitivity test in the highway model with the higher trips rate to understand the impact of the greenbelt sites

	Number of Peak Hour Trips	
	AM Peak Hour	PM Peak Hour
MoTiON	0.2 trip per dwelling	0.21 trips per dwelling
WSP Refined Trip Generation	0.47 per dwelling	0.35 trips per dwelling

# LoHAM Results

- Two scenarios presented:
  - **Original** – presents the original MoTiON trip rates for Chase Park 5,718 dwellings and Crews Hill 7,500 dwellings
  - **Trip Rate Sensitivity** - presents the revised WSP trip rates for Chase Park 3,600 dwellings and Crews Hill 5,500 dwellings. **This scenario only is presented in the next slides.**

	Highway Assignment	Number of Peak Hour Trips as a result of New dwellings	
		AM Peak Hour	PM Peak Hour
MoTiON	Original		Chase Park 1,332 Crews Hill 0.23 trips per dwelling
			Chase Park 1,260 Crews Hill 1,925 0.35 trips per dwelling

# AM Peak Traffic Flows



# AM Peak Base Traffic Flows



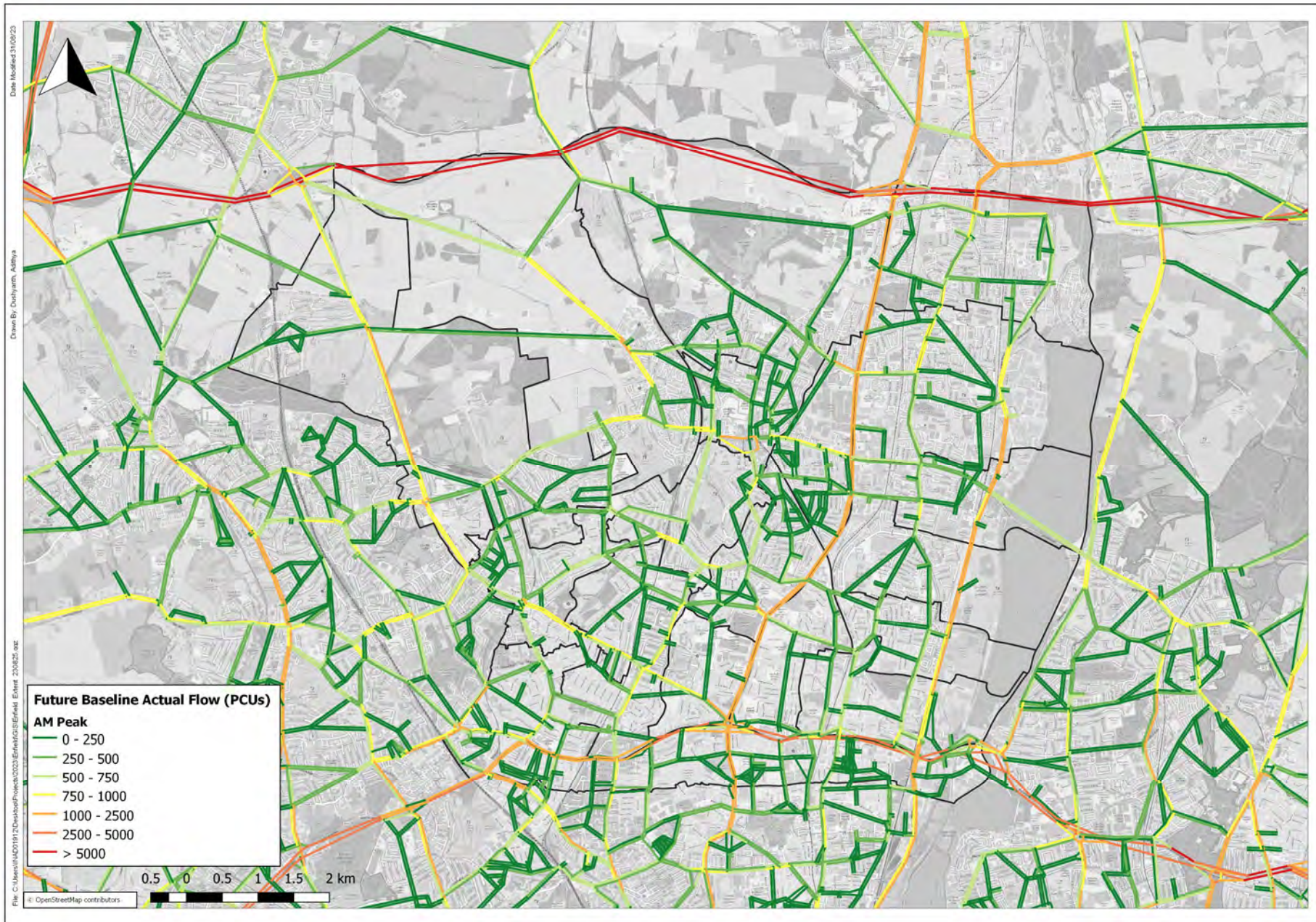


# AM Peak Base Traffic Flows with Figures





# AM Peak Future Baseline Traffic Flows









# AM Peak Local Plan Regulation 19+Beyond Traffic Flows





