Luton Rising
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November 2023

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

8.98 Applicant's Response to Issue Specific Hearing 4 Action 2: Covid 19 Additional Modelling Technical Note 1

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.98

The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.98 APPLICANT'S RESPONSE TO ISSUE SPECIFIC HEARING 4 ACTION 2: COVID 19 ADDITIONAL MODELLING TECHNICAL NOTE 1 TRENDS ANALYSIS

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Issue 1	November 2023	Additional Submission – Deadline 4

Contents

1 INTRODUCTION

1.1.1 As a part of the London Luton Airport application for development consent (DCO) application, the Examining Authority (ExA) made a procedural decision via a Rule 9 Letter to the Applicant to take account of the potential impacts of Covid-19 on the traffic modelling. Luton Rising (the Applicant) responded to the ExA with a proposed methodology and timescales to undertake the work. The proposed methodology was based on the Department for Transport's (DfT) recently updated guidance, TAG Unit M4 – Forecasting and Uncertainty, May 2023 (Ref 1).

1.1.2 At Issue Specific Hearing 4 (ISH4) on 28 September 2023, the ExA requested "the Applicant submit technical notes 1 and 2 in relation to the ongoing work undertaken to update the transport modelling in line with Department for Transport guidance". This is identified as Action Point 2 in the **Action Points from ISH4 [EV9-006]**.

1.1.3 The proposed work, as set out in the Rule 9 Response letter dated 27 June 2023 **[AS-064]**, listed several tasks.

1.1.4 This technical note covers the following tasks referenced in the letter:

a. Task 1: Stakeholder Meetings 1 – Scope;
b. Task 2: Collate available 2016 to 2023 Strategic Road Network (SRN) traffic count data and other national travel data (on-line);
c. Task 3: Request 2016 to 2023 Local Road Network (LRN) traffic count data from LHAs;
d. Task 4: Review of DfT Rail COVID-19 Scenarios;
e. Task 5: Analyse traffic count, rail patronage and travel characteristics data to determine national and local trends since 2016; and
f. Task 6: Technical Note 1 on 2016 to 2023 trends.

1.1.5 The initial task was to collate recent data to cover the pre- and post-Covid-19 period and includes the analysis of road traffic between 2016 (the London Luton Airport DCO strategic transport model base year) and 2023 (most recent available data) to help understand the impacts that the Covid-19 pandemic has had on travel characteristics and volumes.

1.1.6 A parallel task was to update the future year forecasting assumptions. The projected growth in background (non-airport) traffic within the strategic modelling that has informed the DCO application was based on the DfT's National Trip End Model (NTEM) v7.2 (which was current at the time of undertaking the model runs). In August 2022, a new version of NTEM v8 was published by the DfT and updated goods vehicles projections were published in December 2022, via the National Road Traffic Projections (NRTP22), which replaced the Road Traffic Forecasts 2018 (RTF18) which informed the strategic modelling.

2 TRACKING COVID-19 IMPACT ON ROAD NETWORK

2.1 Introduction

2.1.1 In order to track the impacts of Covid-19 on recent traffic volumes and patterns, a set of 'historical' data were collated on both the Strategic Road Network (SRN) and Local Road Network (LRN) within the strategic traffic model extent.

2.2 Strategic Road Network

2.2.1 Locations were identified on the SRN which include:

a. M1 mainline sections between J8 and J12;
b. A1081 between M1 J10 and J10a;
c. A414 east of M1 J8 (south of St Albans);
d. M25 west and east of J21 & 21a (with M1);
e. A1 north and south J8; and
f. A5183 (west of M1 and Slip End).

2.2.2 Selection criteria were set to include, ideally, October (base model data collection month) from 2016 to 2022, September (to capture the trends of post Covid-19 – first assumed month of post-Covid-19 is September 2022) from 2016 to 2022 and April (most recent available data on WebTRIS (Ref 2) from 2016 to 2023. Data were processed to analyse:

a. AM peak hour (08:00 - 09:00);
b. Interpeak hour (average 10:00 – 16:00);
c. PM peak hour (17:00 – 18:00); and
d. Daily in the form of Annual Average Daily Traffic (AADT).

2.2.3 The data, where available, were split by vehicle type, i.e. Cars, Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs).

2.2.4 With all selection criteria applied, the list has been reduced to:

a. M1 mainline sections between J8 and J12;
b. A1081 between M1 J10 and J10a; and
c. M25 west and east of J21&21a.

Analysis

2.2.5 Historic data for the M1, M25 and A1081 were downloaded from National Highways' WebTRIS dataset after identifying the count locations with the most available traffic data for the months of April, September, and October. The directional data were then merged to obtain the two-way 'historic' traffic data, so the overall trends could be understood.

2.2.6 Bank holidays, school holidays and other unique days such as rail-strikes (in 2022 and 2023) were excluded from the analysis. The dataset was then further analysed by daily, weekday morning AM peak, PM evening peak, and inter-peak periods to compare the 2016 and 2023 traffic flows and to understand the

Covid-19 impacts from 2020 onwards. It was assumed the Covid-19 period commenced in March 2020 and extended through to August 2022.

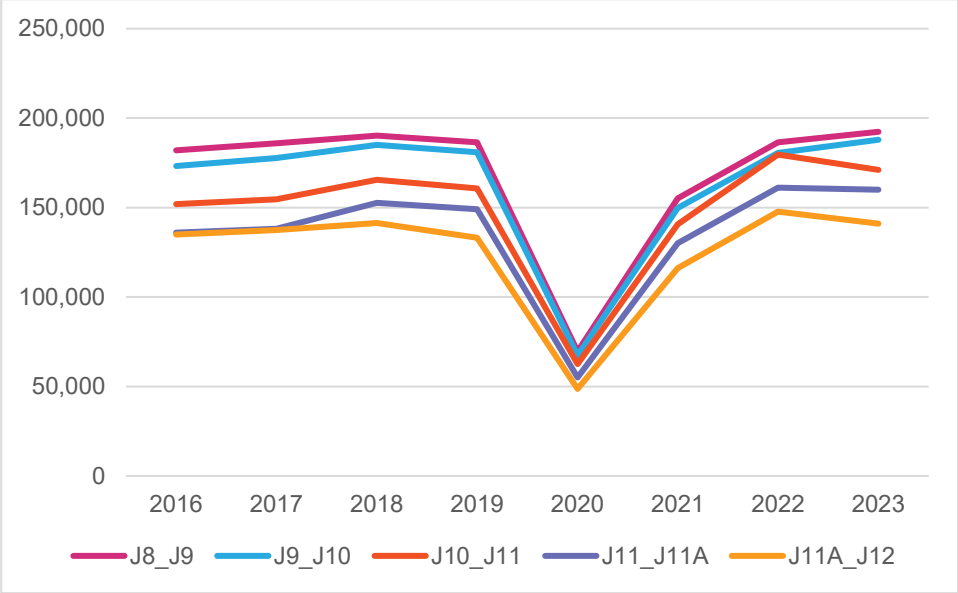
2.2.7 The following sections will discuss the April 2016 to April 2023 data only, as this is the month that shows the full trends between 2016 and 2023.

M1 mainline between J8 and J12

2.2.8 Between Junctions 8 and 12 along the M1 the two-way daily traffic (AADT) shows an increase between 2016 and 2023 with the highest increase occurring between Junctions 11 and 11A.

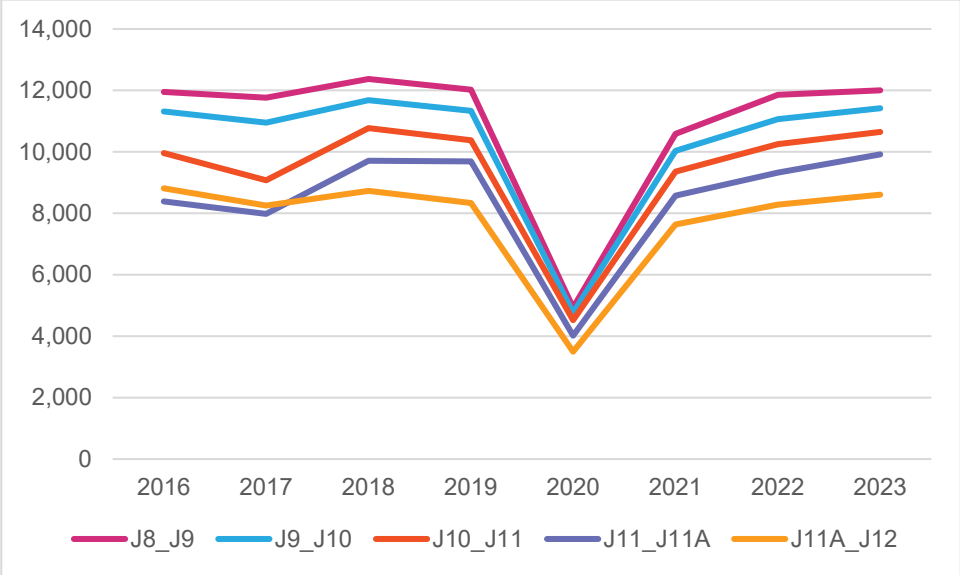
2.2.9 **Figure 1** shows the two-way daily traffic flows between April 2016 and 2023 per section.

Figure 1 M1 Two-Way Daily Traffic Flow (AADT) April 2016 – April 2023



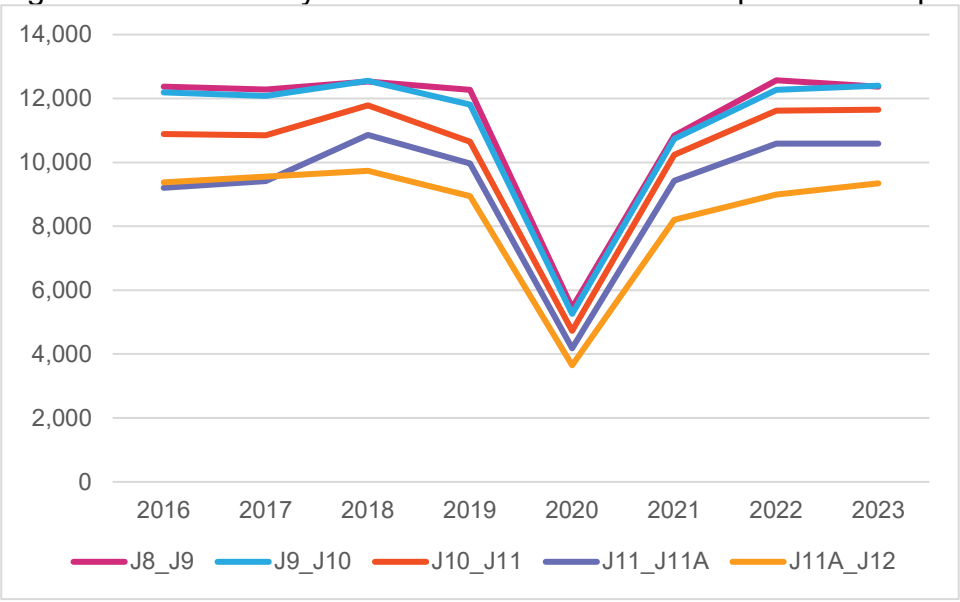
2.2.10 Between Junctions 8 and 12 along the M1, the AM peak hour shows an average of around 5% increase between 2016 and 2023 with the highest increase occurring between Junctions 11 and 11A. **Figure 2** shows the two-way AM peak hour traffic flows between April 2016 and 2023.

Figure 2 M1 Two-Way AM Peak Hour Traffic Flow April 2016 – April 2023



2.2.11 Between Junctions 8 and 12 along the M1, the PM peak hour also shows an average of around 5% increase between 2016 and 2023 with the highest increase occurring between Junctions 11 and 11A. **Figure 3** shows the two-way PM peak hour traffic flows between April 2016 and 2023.

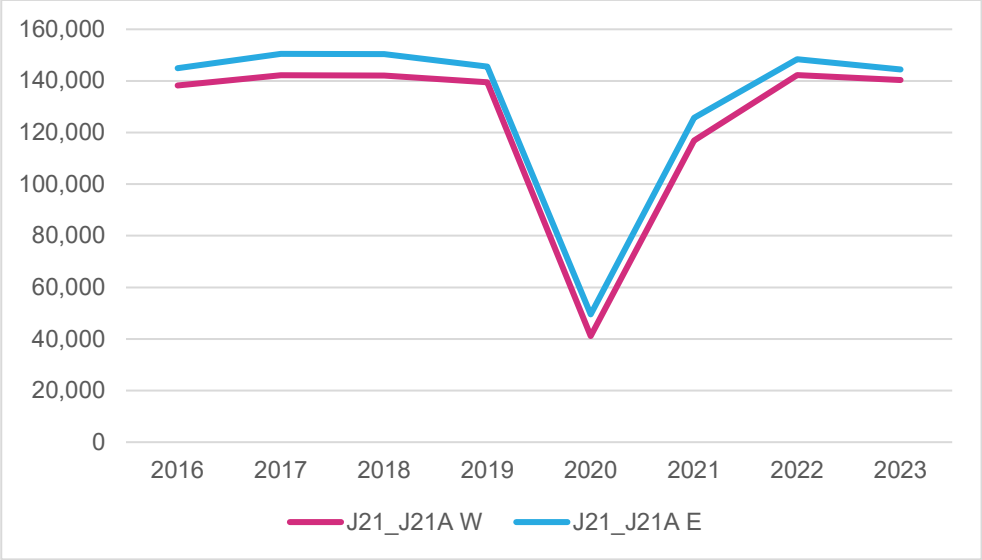
Figure 3 M1 Two-Way PM Peak Hour Traffic Flow April 2016 – April 2023



M25 west and east of J21 and 21a

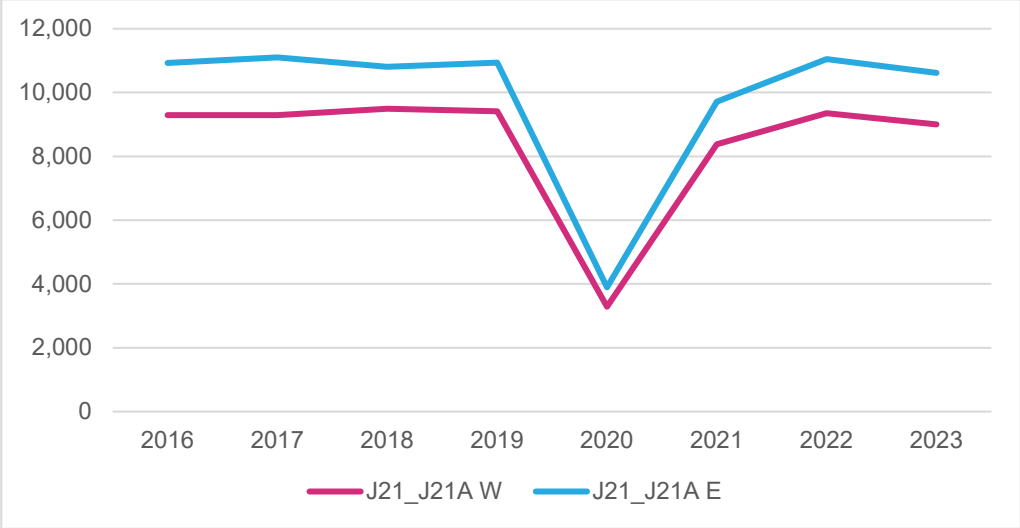
2.2.12 Between the east and west of Junctions 21 and 21a of the M25, the two-way daily traffic (AADT) shows similar levels of traffic flows between 2016 and 2023. **Figure 4** shows the two-way daily traffic flows between April 2016 and 2023.

Figure 4 M25 Two-Way Daily Traffic Flow (AADT) April 2016 – April 2023



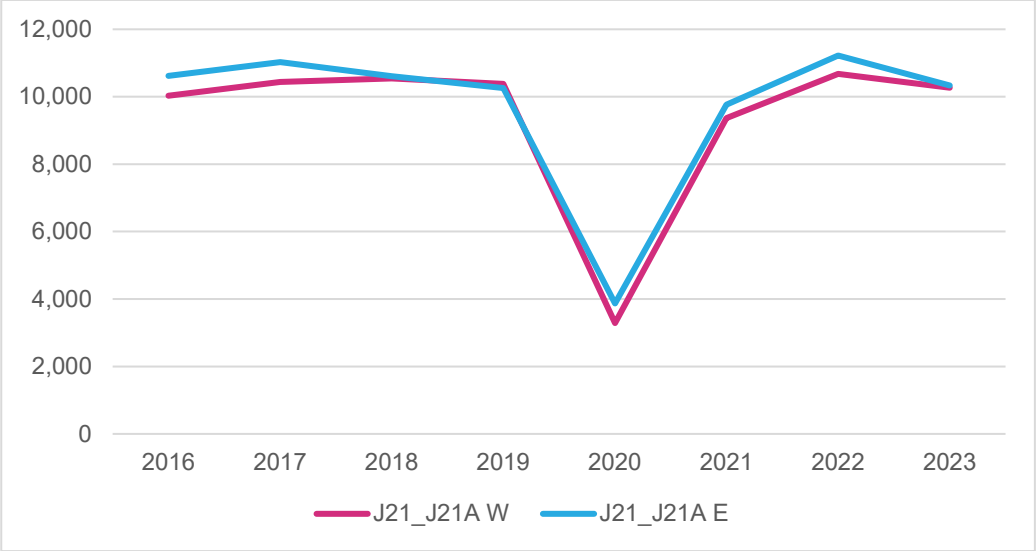
2.2.13 Between the east and west of Junctions 21 and 21a of the M25, the two-way AM peak traffic shows similar level of traffic flows between 2016 and 2023, although the 2023 volume is slightly lower by around 3% on the eastern side, while higher by 1.5% on the western side. **Figure 5** shows the two-way AM peak hour traffic flows between April 2016 and 2023.

Figure 5 M25 Two-Way AM Peak Hour Traffic Flow April 2016 – April 2023



2.2.14 Between the east and west of Junctions 21 and 21a of the M25, the two-way PM peak traffic also shows similar level of traffic flows between 2016 and 2023. **Figure 6** shows the two-way PM peak hour traffic flows between April 2016 and 2023.

Figure 6 M1 Two-Way PM Peak Hour Traffic Flow April 2016 – April 2023

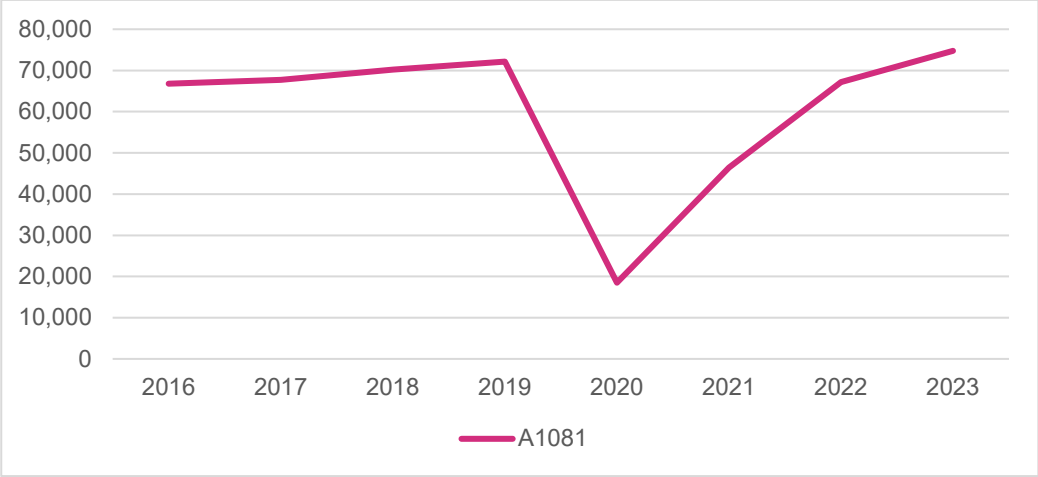


A1081 between M1 J10 and J10a

2.2.15 Between Junctions 10 and 10a along the A1081, the two-way daily traffic shows a 12% increase between 2016 and 2023.

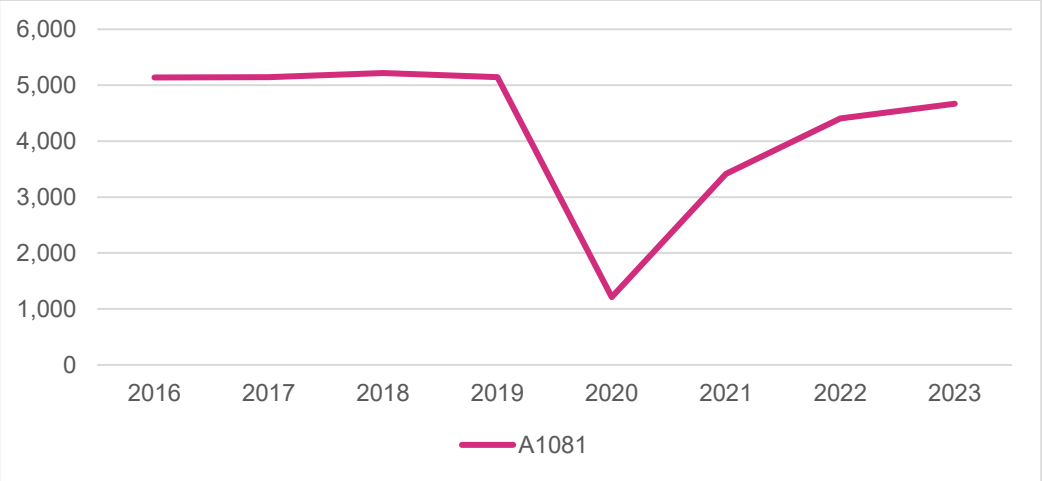
2.2.16 Figure 7 shows the two-way daily traffic flows between April 2016 and 2023. It is worth noting that this increase is mainly driven with the inter-peak period, as the AM peak hour shows a decrease in traffic between 2016 and 2023, whereas the PM peak hour shows similar levels of traffic between the two years.

Figure 7 A1081 Two-Way Daily Traffic (AADT) Flow April 2016 – April 2023



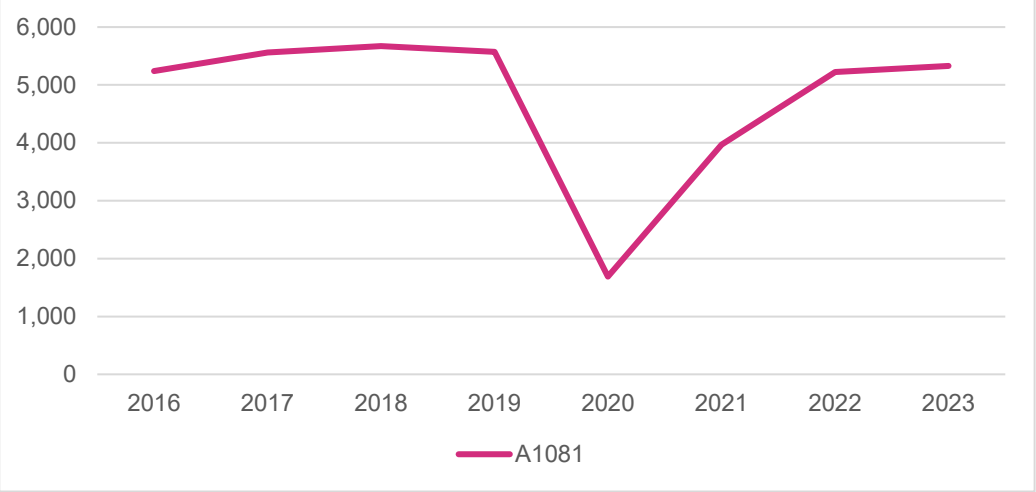
2.2.17 Between Junctions 10 and 10a along the A1081, the two-way AM peak hour traffic shows a 9% decrease between 2016 and 2023 as shown in **Figure 8** shows the two-way AM peak hour traffic flows between April 2016 and 2023.

Figure 8 A1081 Two-Way AM Peak Hour Traffic Flow April 2016 – April 2023



2.2.18 Between Junctions 10 and 10a along the A1081, the two-way PM peak hour traffic shows similar level of traffic flows between 2016 and 2023. **Figure 9** shows the two-way PM peak hour traffic flows between April 2016 and 2023.

Figure 9 A1081 Two-Way PM Peak Hour Traffic Flow April 2016 – April 2023



2.3 Local Road Network

2.3.1 Counts have been obtained from Hertfordshire County Council, Central Bedfordshire Council and Luton Borough Council. Each set of counts have been assessed individually by council. **Figure 10** shows the locations of each of the count sites. The site IDs and the locations they correspond to are detailed in each of the following subsections.

Figure 10 Count Locations

Hertfordshire County Council

2.3.2 Counts were received from Hertfordshire County Council for three locations, which include:

a. A5183 east of Markyate and west of M1 J9 (Site 128);
b. A505 west of Hitchin (Site 232); and
c. B653 between Bower Heath and East Hyde (Site 371).

2.3.3 The data were provided for the three sites with varying levels of information and monthly availability. **Table 1** provides a summary of the data availability.

Table 1 Hertfordshire County Council Count Data Availability

Site		2016	2017	2018	2019	2020	2021	2022	2023
128	Not Classified	Apr, Sept	Apr, Sept, Oct	Apr, Oct	Sept, Oct	Apr, Sept, Oct	Apr, Sept, Oct	Sept, Oct	×
	Classified	Nov	Nov	Nov	Nov	Nov	Nov	Nov	×
232	Not Classified	×	×	×	×	×	×	×	×
	Classified	×	×	×	×	×	×	×	Apr
371	Not Classified	×	×	×	×	×	×	×	×
	Classified	Apr, Sept, Oct	Apr, Sept, Oct	Sept, Oct	Apr	Sept, Oct	Apr, Sept, Oct	Apr, Sept, Oct	Apr

2.3.4 Data were processed to analyse:

a. AM peak hour (08:00 - 09:00);
b. Interpeak hour (average 10:00 – 16:00);
c. PM peak hour (17:00 – 18:00); and

d. Daily in the form of AADT.

2.3.5 The data, where available, were analysed by vehicle type, i.e. Cars, LGVs and HGVs.

Analysis

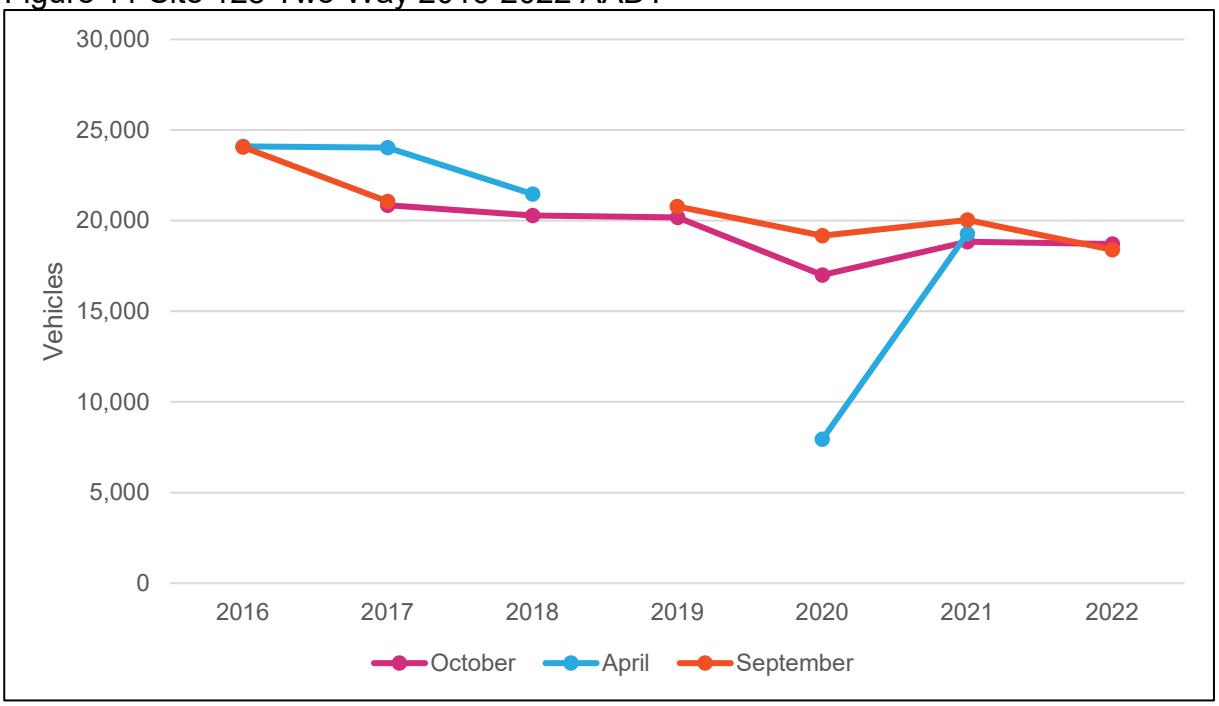
Site 128 (A5183 East of Markyate)

2.3.6 The A5183 east of Markyate is a single carriageway road which connects Markyate to the M1 Junction 9. The data have been analysed for the years where data were available to provide the set of figures below. **Figure 11** shows two-way flows showing a reduction of vehicles overall, with the AADT traffic reducing by 11% from October 2017 to October 2022.

2.3.7 The other months (April and September) show similar trends, with April 2016 to April 2021 reducing by 20% and September 2016 reducing by 24% to September 2022. These decreases equate to between a 2% and 4% decrease in traffic volumes per year.

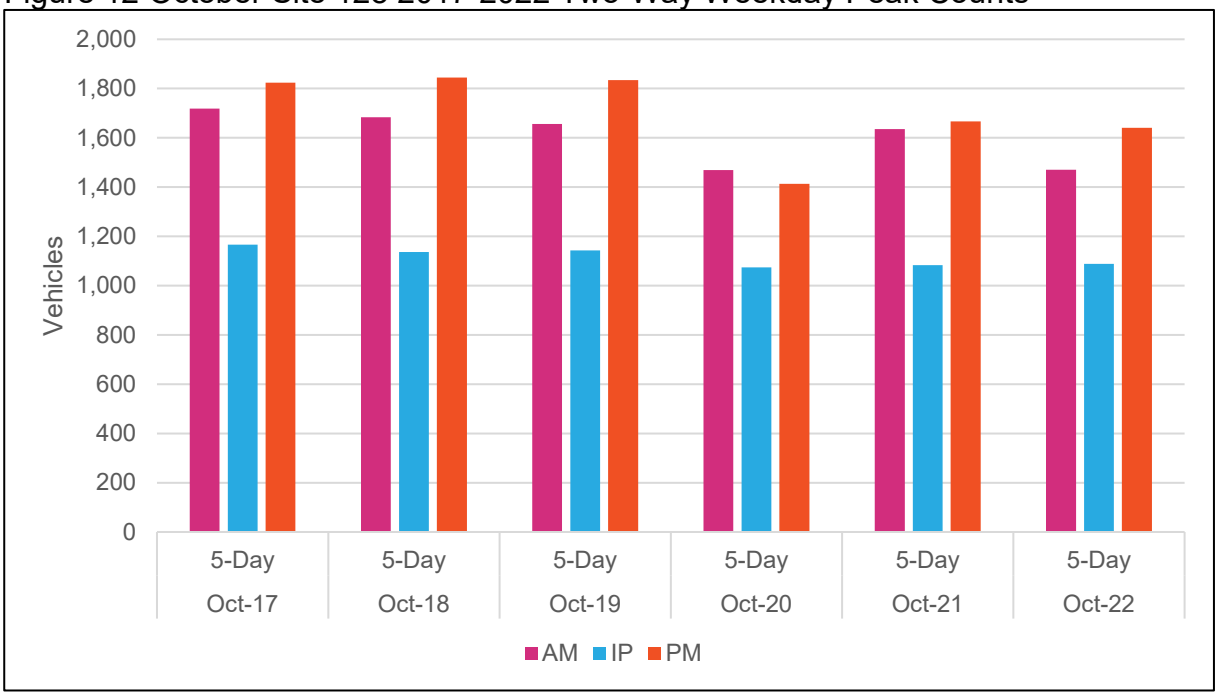
2.3.8 The gaps in the graphs correspond to the gaps in the data, specifically April 2019 and 2022 and September 2018. Due to the gaps in these months, the October month has been added below (in Figure 12) but the analysis for April and September can be seen in the Appendices.

Figure 11 Site 128 Two-Way 2016-2022 AADT



2.3.9 In addition to the analysis over time, the data has been analysed for six consecutive years from October 2017 to October 2022 by peak hour as shown in **Figure 12**. This analysis highlights that aside from a discrepancy in 2020, traffic has generally decreased per peak year-on-year.

Figure 12 October Site 128 2017-2022 Two-Way Weekday Peak Counts



2.3.10 When analysing the traffic by direction, these trends have changed since 2018, likely due to the completion of the A5 connection to the M1 via J11A north of Markyate and Dunstable.

2.3.11 An example of this is provided in **Figure 13** and **Figure 14**, which shows that prior to 2018, the traffic was higher in the AM on the eastbound movement, but since then, is higher in the PM. Volumes are also lower in October 2022, post Covid-19, than in October 2019, pre-Covid-19.

2.3.12 **Figure 15** tracks the proportions of vehicle types with a slight increase in cars and slight decrease in HGVs.

Figure 13 October Site 128 Eastbound 2016-2022 Weekday Peak Counts

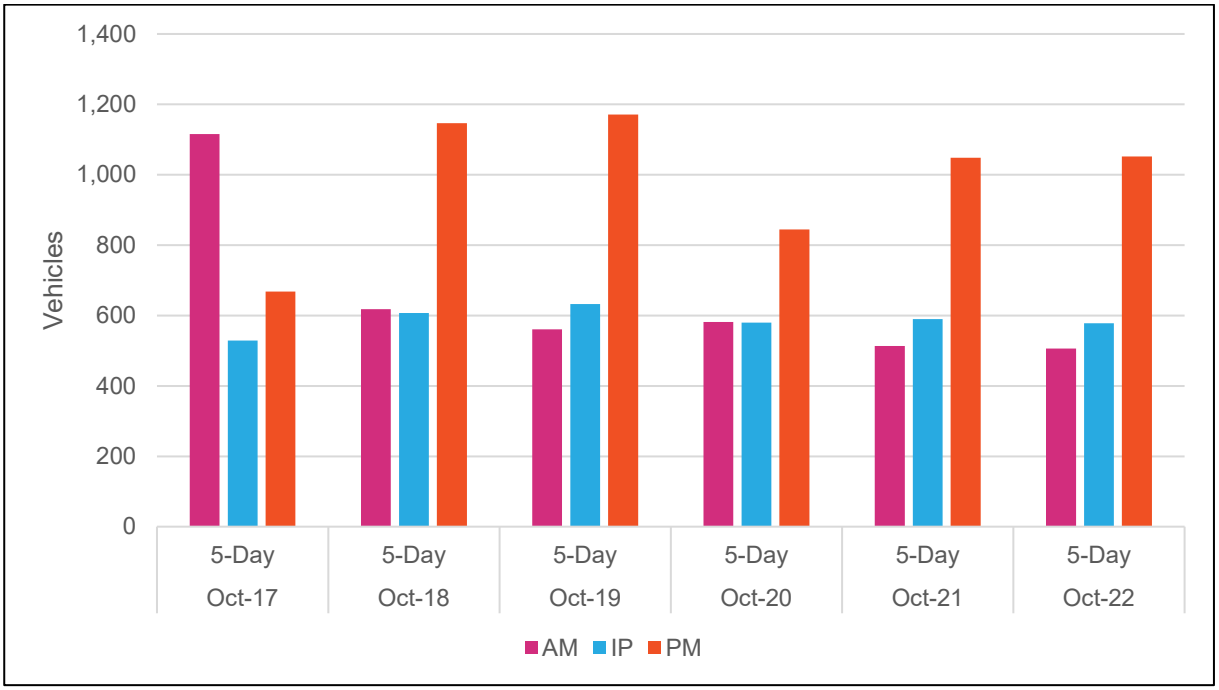


Figure 14 October Site 128 Westbound 2016-2022 Weekday Peak Counts

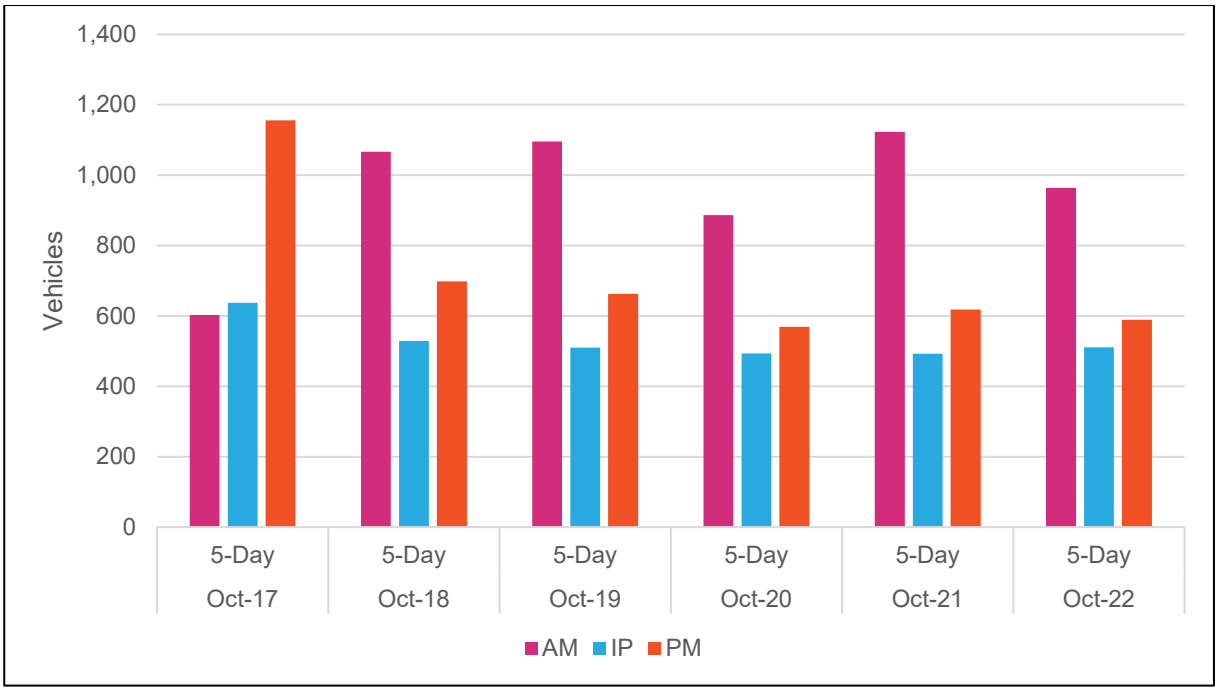
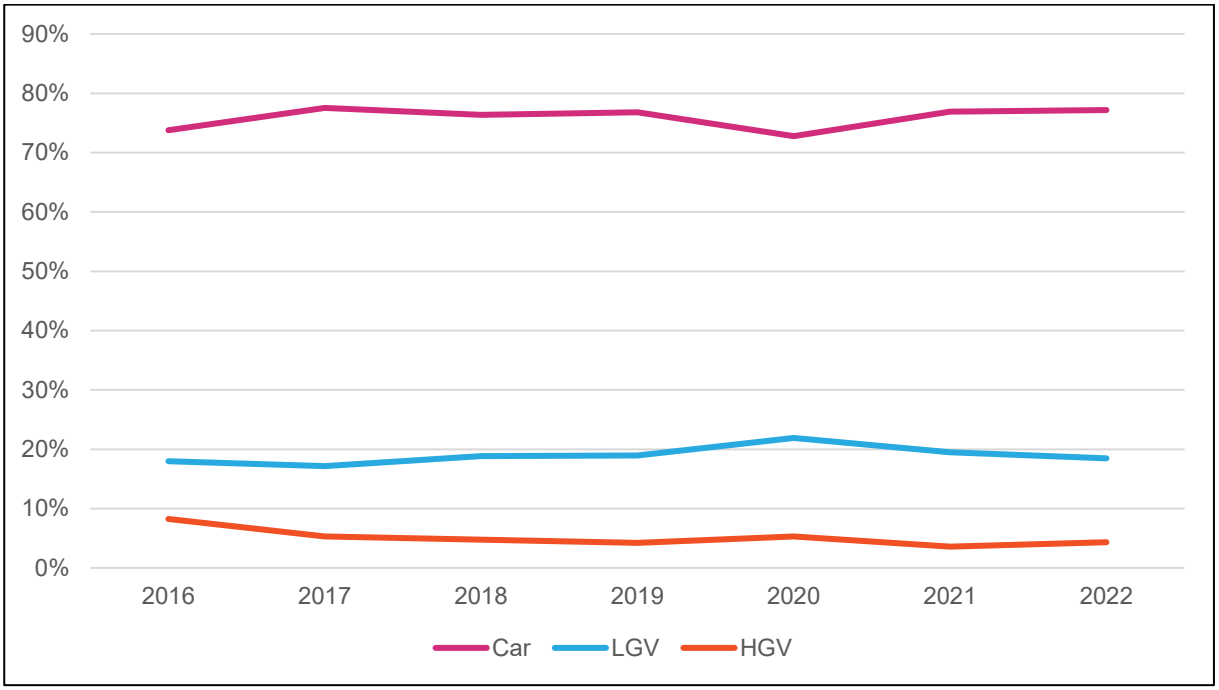


Figure 15 Site 128 Classified Counts – Vehicle Split



Site 232 (A505 West of Hitchin)

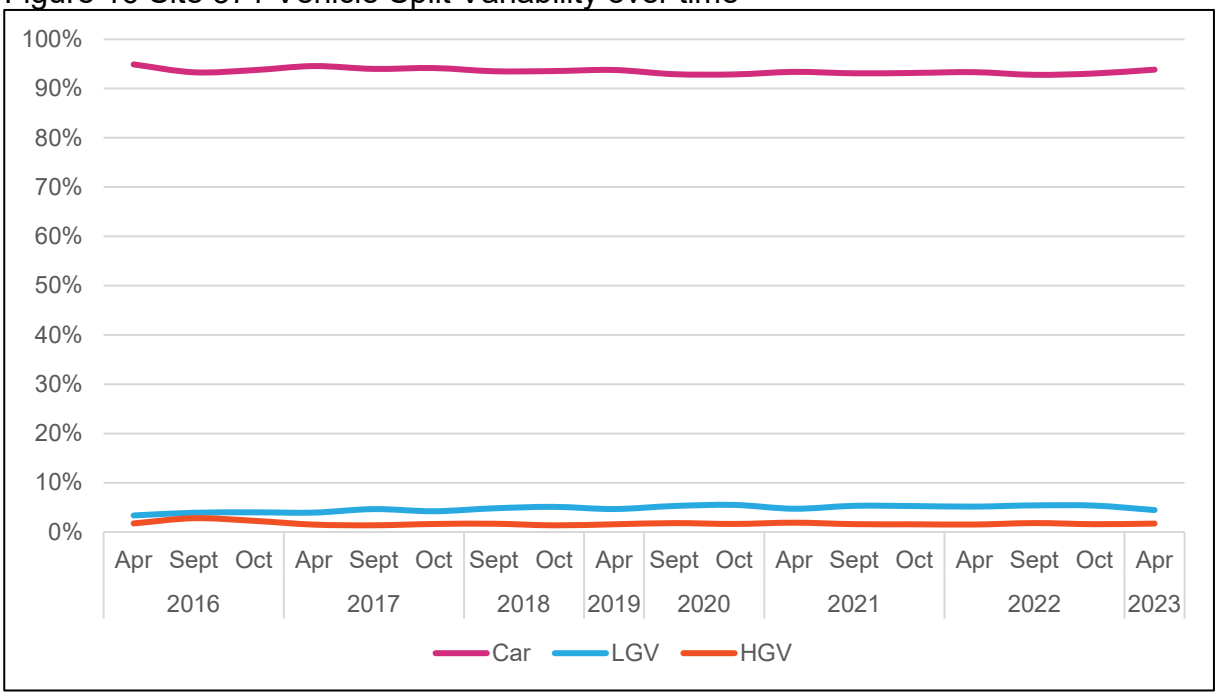
2.3.13 The A505 connects Hitchin to Luton. The data available for the location only covers one week in April 2023. Whilst the data cannot provide information on changes in traffic volume over time, analysis can be made on the vehicle split proportions and the peak traffic flows, which can be seen in the appendices. Cars make up 91% of the road users on the road and the peaks have low variability throughout the week.

Site 371 (B653 between Bower Heath and East Hyde)

2.3.14 The B653 connects Bower Heath to East Hyde. It is a single carriageway road. Classified data have been analysed from 2016 to 2023. Firstly, the vehicle split per count period was compared, which showed that the splits have remained consistent over time, with the average split being 93% Car, 5% LGV and 2% HGV. This is shown in **Figure 16**.

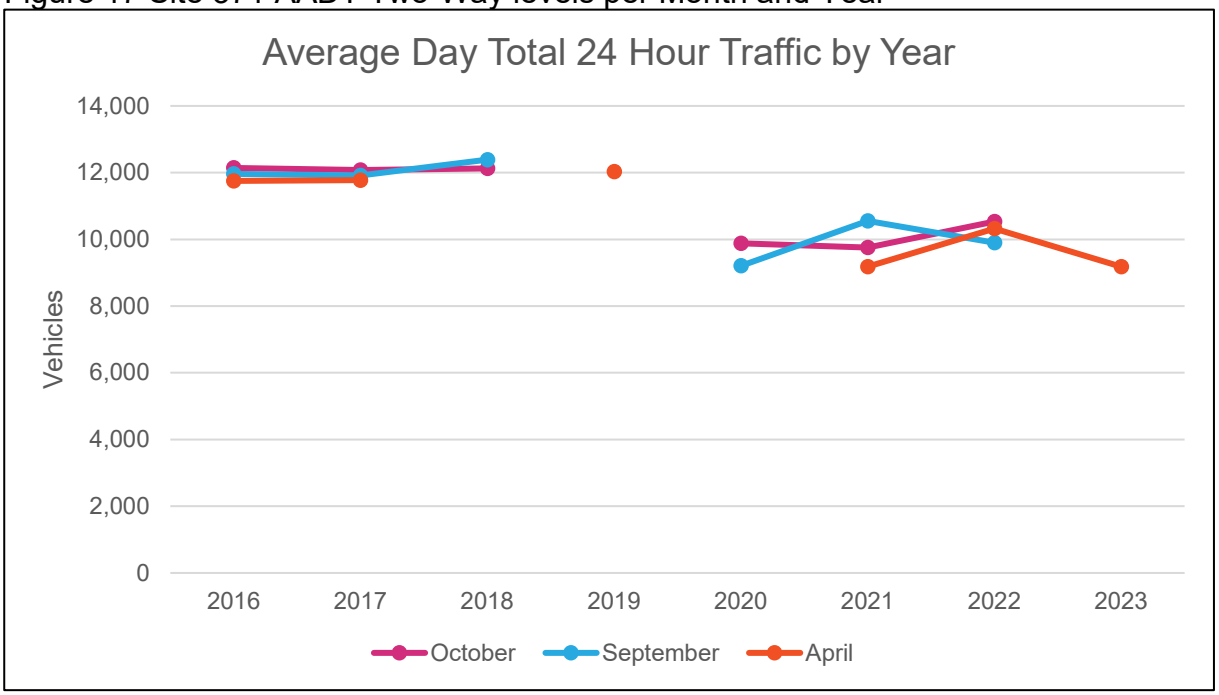
2.3.15 In terms of AADT trends, each month of data shows that pre-Covid-19 traffic levels were higher than post-Covid-19 levels. From October 2016 to October 2022, AADT levels have reduced by 13%. From September 2016 to September 2022, flows have reduced by 17%. From April 2016 to April 2022, flows have reduced by 12% and further decreased by 22% in 2023.

Figure 16 Site 371 Vehicle Split Variability over time



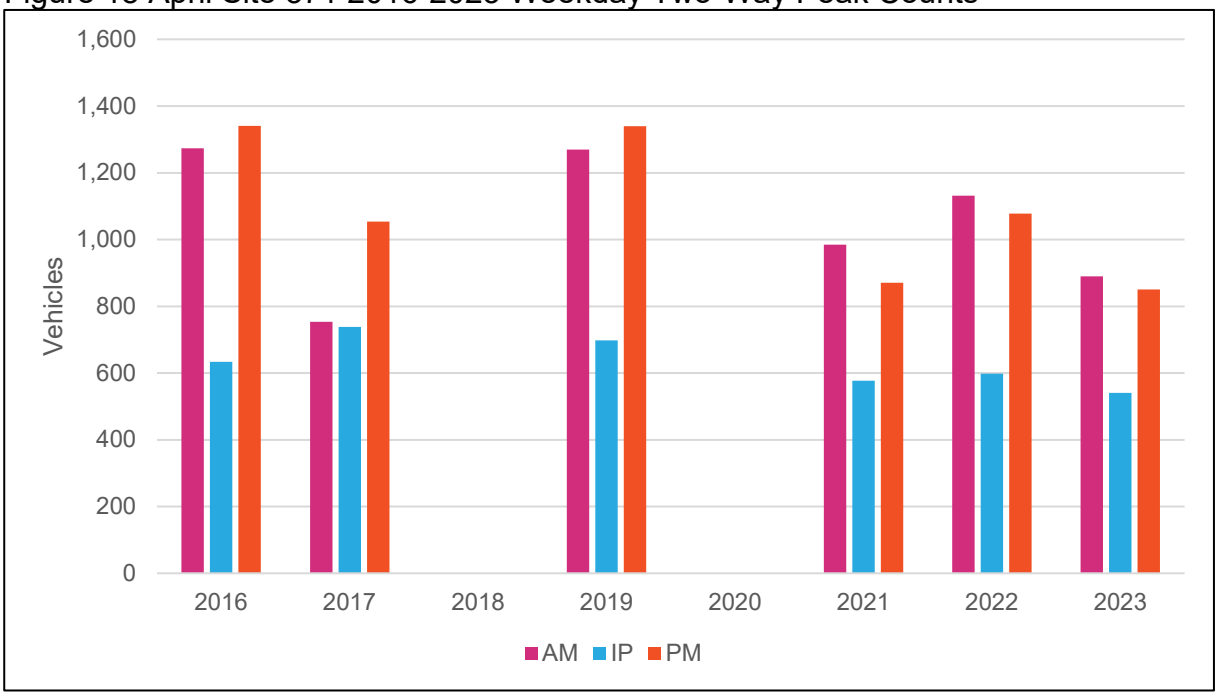
2.3.16 **Figure 17** shows the decrease in traffic over time by month and year. The gaps in the figures are where the data were unavailable. Due to April containing data for 2016 and 2023, this month has been analysed further below, with the other months shown in the Appendices.

Figure 17 Site 371 AADT Two-Way levels per Month and Year



2.3.17 Finally, each peak has been analysed separately with the breakdown by peak for AM, IP and PM respectively as shown in **Figure 18**. Each peak decreases over time, from April 2016 to April 2023, where the AM decreases by 30%, IP by 15% and PM by 37%. The decreases of over 30% in the morning and evening peaks is higher than the decrease in AADT, indicating the peaks are impacted more than other time periods.

Figure 18 April Site 371 2016-2023 Weekday Two-Way Peak Counts



Central Bedfordshire Council

2.3.18 Counts were received from Central Bedfordshire Council for two locations on the LRN which include:

a. Lower Harpenden Road (Site 40); and
b. B540 Church Road (Site 57).

2.3.19 The data were provided for the two sites over a period of two weeks for the years of 2016 and 2023. The counts are classified by vehicle class. Data were processed to analyse:

a. AM peak hour (08:00 – 09:00);
b. Interpeak hour (average 10:00 – 16:00);
c. PM peak hour (17:00 – 18:00); and
d. Daily in the form of AADT.

2.3.20 The data was split by vehicle type, i.e. Cars, LGVs and HGVs.

Analysis

Site 40 (Lower Harpenden Road)

2.3.21 Lower Harpenden Road runs south of London Luton Airport connecting the A1081 to New Mill End and East Hyde. The surveys show that traffic has reduced, with AADT decreasing from 2016 to 2023 by 19% as shown in **Figure 19**. Cars make up a large proportion of traffic using the road, making up 94% of the vehicles in 2016 and 90% of the vehicles in 2023.

2.3.22 The traffic in the peak hours reduces in each peak in 2023, with AM and PM falling by over 25% and IP falling by 15% as shown in **Figure 20.**

Figure 19 Site 40 Two-Way AADT 2016 and 2023

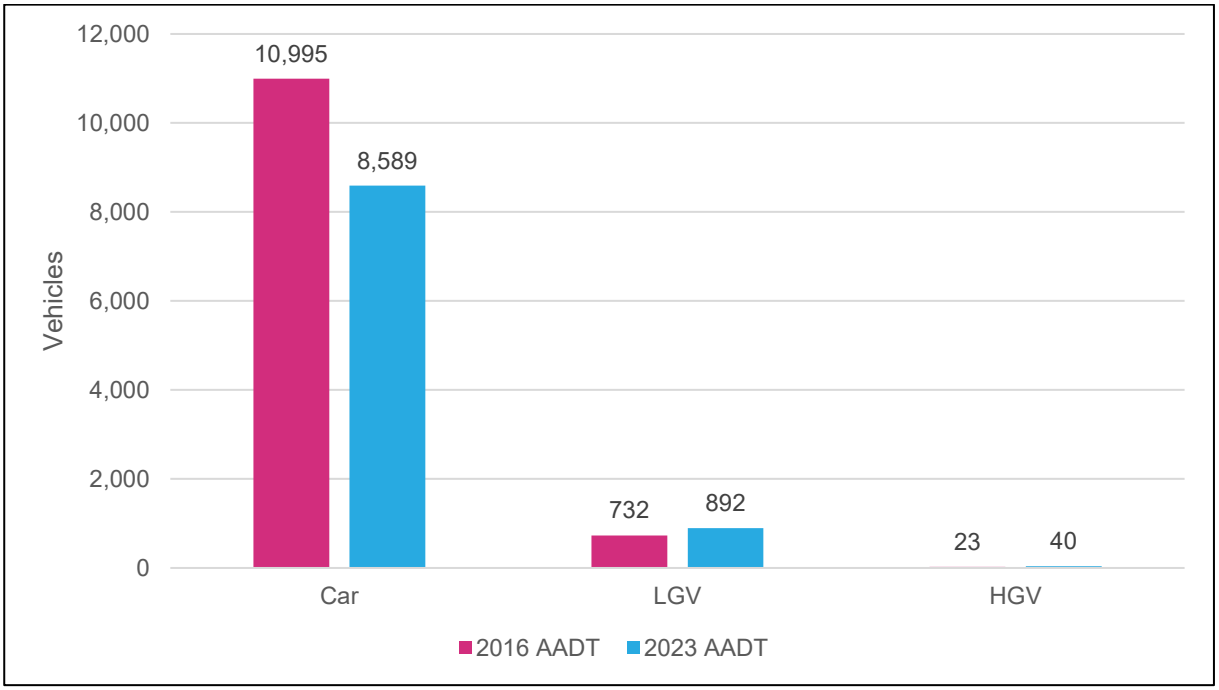
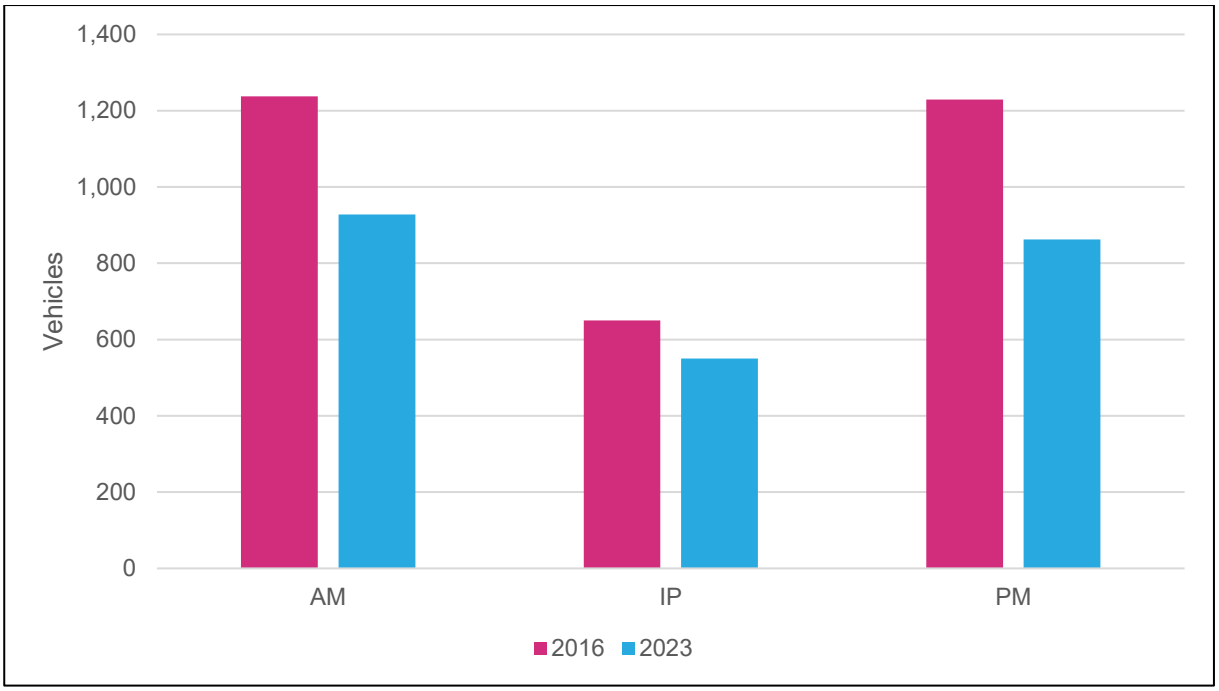


Figure 20 Site 40 Two-Way Traffic by Peak



Site 57 (B540 Church Road)

2.3.23 The B540 Church Road runs perpendicular to the M1 just north of Junction 10, connecting Slip End to Newlands Road. The surveys show that traffic has reduced, with AADT reducing from 2016 to 2023 by 23% as shown in **Figure 21**. Cars make up a large proportion of traffic using the road, making up 91% of the vehicles in 2016 and 90% of the vehicles in 2023.

2.3.24 The traffic in the peak hours reduces in each peak in 2023, with AM falling by 23%, PM falling by 32% and IP falling by 20% as shown in **Figure 22**.

Figure 21 Site 57 Two-Way AADT 2016 and 2023

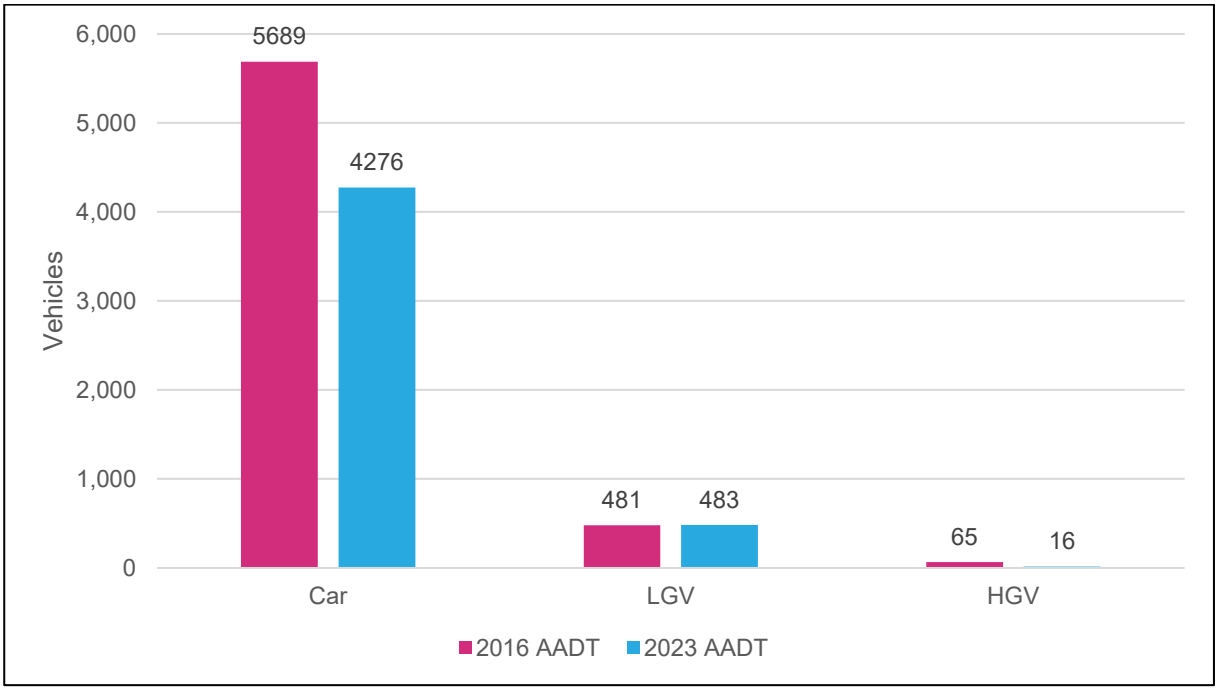
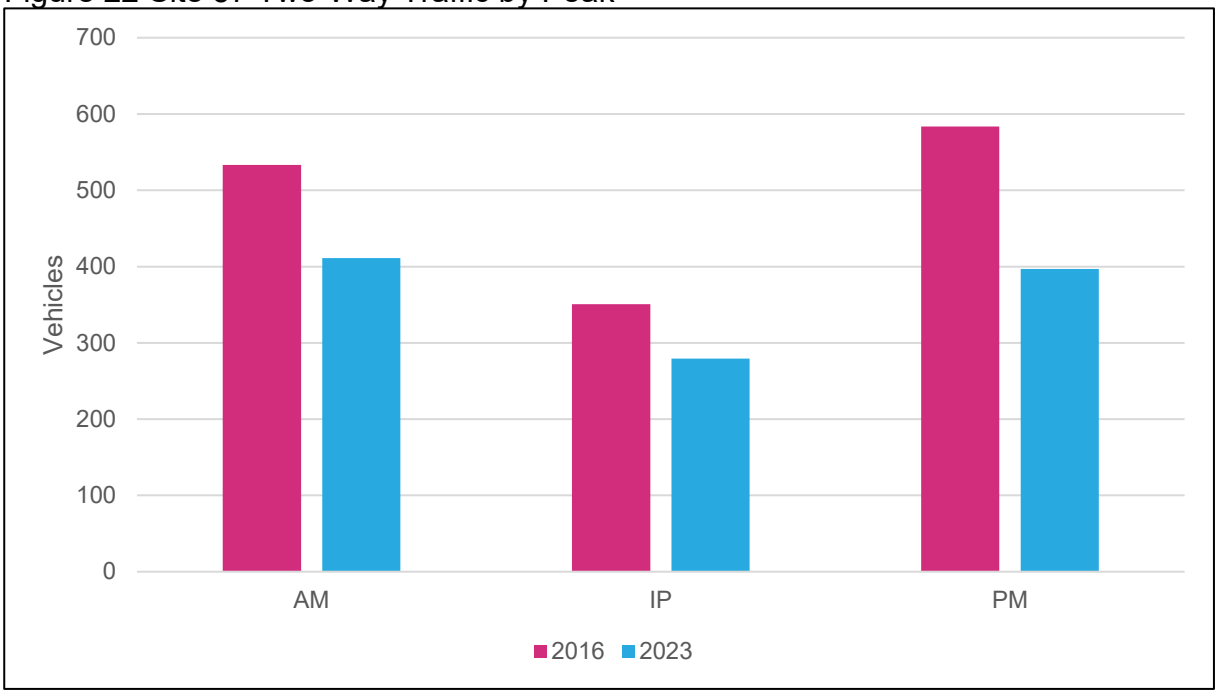


Figure 22 Site 57 Two-Way Traffic by Peak



Luton Borough Council

2.3.25 Counts were received from Luton Borough Council (LBC) for four locations around Luton :

a. Hatters Way;
b. A1081 New Airport Way;
c. Vauxhall Way / Hitching Rd / A505 Stopsley Way junction; and
d. A5228 Stockingstone Rd.

2.3.26 The data were provided for the four sites between the years of 2021 and 2023 only. For the A1081 New Airport Way flow data were also provided for 2019 and 2020. The counts were classified by vehicle type. However, the A1081 New Airport Way data were deemed to be unusable as the analysis showed unrealistically low volumes, hence this site was subsequently omitted from the analysis.

2.3.27 To obtain the 2016 traffic flows for the above sites, traffic data from the previously prepared 'Strategic Modelling: Data Collection Report' and the 'Strategic Modelling: Highway Local Model Validation Report' were used. A review of the traffic survey locations used in the reports was undertaken to find suitable count points that can be used to compare with the count data received from LBC. Of the four count sites, two were in the immediate vicinity (after omitting the A1081 New Airport Way) of the previously undertaken traffic count locations. However, there was no 2016 data available for the A5228 Stockingstone Rd site.

Analysis

Hatters Way

2.3.28 Hatters Way runs in an east-west direction between Junction 11 of the M1 and the A505 Telford Way. The surveys show that traffic volumes have reduced, with AADT decreasing overall from 2016 to 2023 by 14%. Cars make up a large proportion of traffic using the road, at 88% of the total in 2016 and 97% in 2023 as shown in **Figure 23**.

2.3.29 The traffic in the peak hours reduces in each peak in 2023, with the AM decreasing by 19%, PM by 13% and IP by 12% as shown in **Figure 24**.

Figure 23 Hatters Way AADT 2016 and 2023

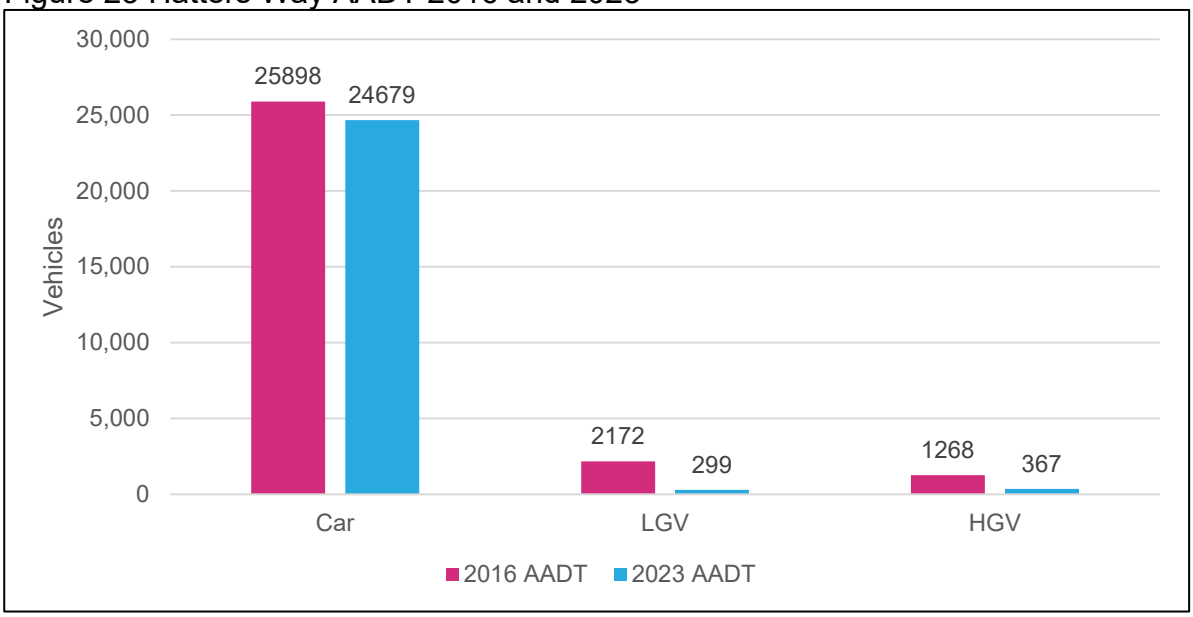
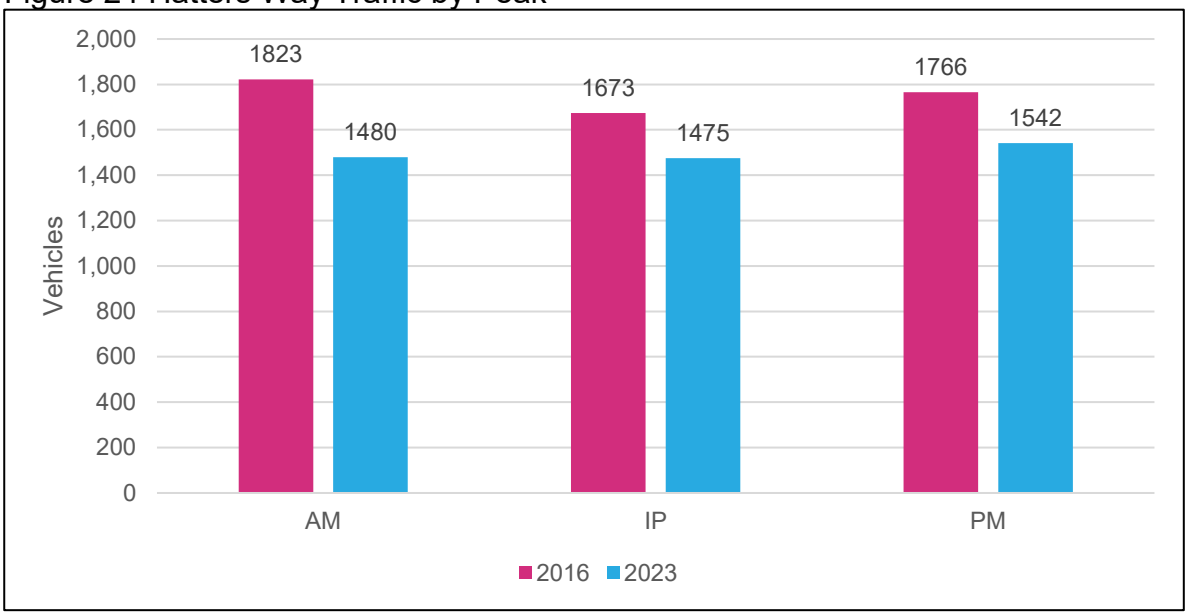


Figure 24 Hatters Way Traffic by Peak



Vauxhall Way Northbound

2.3.30 Vauxhall Way runs in a north-south direction connecting A1081 New Airport Way with Hitchin Rd / Stopsley Way / Vauxhall Way junction, which is also the location of the received LBC traffic counts. The only available data that could be compared with the 2016 flows from this location was the Vauxhall Way northbound direction.

2.3.31 The surveys show that traffic has reduced, with AADT decreasing from 2016 to 2023 by 18% in the northbound direction. Cars make up a large proportion of traffic using the road, at 90% of the total in 2016 and 92% in 2023.

2.3.32 The traffic in the 2023 peaks also reduces, with the AM peak traffic decreasing by 8%, the PM by 24% and IP by 19%.

Figure 25 Vauxhall Way Northbound AADT 2016 and 2023

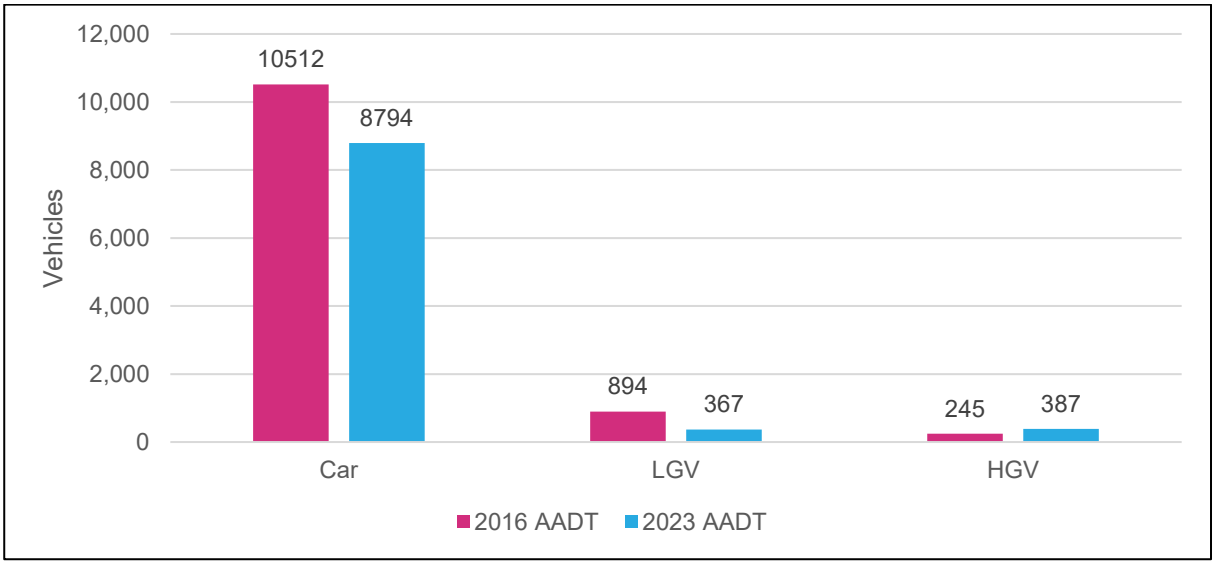
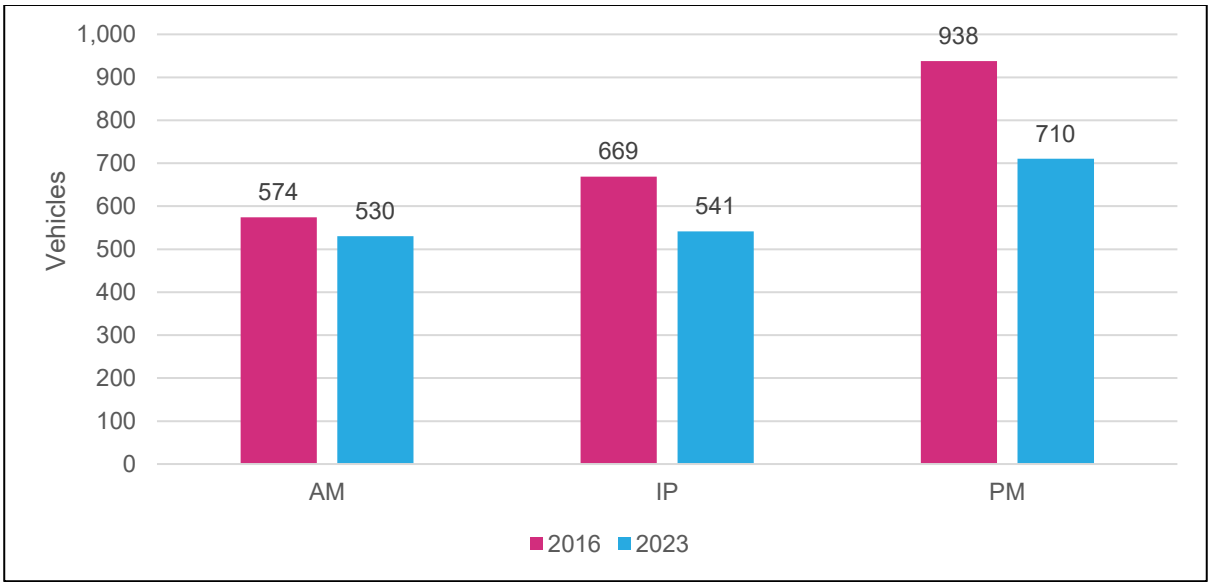


Figure 26 Vauxhall Way Northbound Traffic by Peak



3 RAIL TRENDS

3.1.1 The Covid-19 pandemic had a dramatic impact on rail demand when consecutive Lockdowns were put in place in 2020. At the end of the first lockdown (June 2020), less than one in every six pre-Covid-19 rail journeys were being made. For a couple of years, 2020-22, the long-term impacts of Covid-19 were unforeseen due to the unprecedented nature of the event.

3.1.2 In order to deal with the uncertainty around future rail demand and revenue forecasting, the DfT released a series of guidelines for producing rail demand forecasts reflecting long-term post-pandemic impacts. These guidelines have been regularly revised since the first release, with updates reflecting latest available evidence on rail demand recovery post-Covid-19, economic outlook (exogenous and inflation forecasts), passenger behavioural changes (more people working from home, less business travel, changes to leisure travel, etc.).

3.1.3 By early 2022, all Covid-19-related Lockdown restrictions had been lifted by the UK Government. Rail demand has been slowly stabilizing ever since. The latest available release of the DfT's Covid-19 guidance (Ref 3) provides the most up-to-date guidance for generating rail demand forecasts based on pre-Covid-19 rail demand levels. Although leisure demand is forecast to likely recover (and surpass) pre-2020 levels, business and commuting travel are likely to fall short of pre-pandemic demand levels.

3.1.4 The DfT's guidelines for demand forecasting and appraisal of rail schemes advocate the usage of the 'Covid-medium recovery' scenario as the central case. As such, a downward adjustment for rail demand applied post-model runs is recommended, aligning with the DfT's recommendations for forecasts using pre-Covid-19 bases.

4 DFT NATIONAL TRENDS

4.1.1 The DfT National Travel Survey 2022 was published in July 2023 and updated in August 2023 (Ref 4). In an article dated 7th September 2023 Local Transport Today summarised the key findings as follows:

4.1.2 *"Average trips made by people living in England increased by 14% in 2022 compared to 2021, but trip rates remain lower than in the pre-pandemic period, being 10% down on 2019, with 862 trips made on average in 2022, the newly released National Travel Survey reveals.*

4.1.3 *There were increases in trip rates amongst all transport modes compared to 2021, apart from cycling and London Underground trips which remained broadly similar. The rates for all modes were however still lower than 2019."*

4.1.4 The DfT National statistics – Provisional Road Traffic Estimates, Great Britain: July 2022 to June 2023, was published in September 2023 and the headline figures state:

4.1.5 *"Overall traffic levels in the year ending June 2023 were higher than in year ending June 2022 and below pre-pandemic levels."*

4.1.6 *"These provisional estimates are based on traffic data collected continuously from a network of around 300 automatic traffic counters. Final annual figures also incorporate manual traffic count data."*

4.1.7 The findings from the analysis of SRN and LRN count data reported within this note, and the DfT guidance on rail trends, are therefore in-line with the recent published national trends.

5 PLANNING DATA FORECASTS

5.1 Introduction

5.1.1 The strategic modelling suite is a multi-modal tool which is informed by planning data inputs, such as households, population and employment numbers. Moreover, the land-use proposals and local plans are also used to inform the forecasting assumptions.

5.1.2 As was reported in the DCO Transport Assessment, the future projections were constrained to DfT projections as per Transport Appraisal Guidance (TAG). The strategic modelling captures the land-use information and constrains the growth in traffic for the five local authority areas which represent the core modelling area. These are:

a. Luton;
b. Central Bedfordshire;
c. North Hertfordshire;
d. Dacorum; and
e. St Albans.

5.1.3 As mentioned above, the DCO modelling was undertaken based on the NTEM v7.2, whereas the most recent DfT projections are captured in NTEM v8. The following section summaries the future year assumptions between the two versions.

5.2 NTEM v7.2 vs NTEM v8

5.2.1 A comparison of the planning data was made between NTEM 7.2 and NTEM 8 for the five internal districts for households, population, and employment. Comparisons have also been made at a national level, as the SRN will be carrying some longer distance external to external traffic beyond the extent of internal districts and detailed model area.

5.2.2 Tables 1 to 9 show the growth from 2016 to the future forecast years. Overall, the forecast household and population growth rates were higher in NTEM 7.2 for all five districts, for all forecasting years of 2027, 2039 and 2043.

5.2.3 The household growth rates for the total internal area for the three forecast years range from 11% to 22% in NTEM 7.2 and 5% to 12% in NTEM 8.

Table 2. Forecast Household by District, 2027 – NTEM 7.2 vs NTEM 8

District	2016	2027		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	76,848	80,696	78,351	3,848	1,503	5%	2%
Central Bedfordshire	113,707	132,913	124,609	19,206	10,902	17%	10%
North Hertfordshire	56,092	66,521	58,524	10,429	2,432	19%	4%
St Albans	59,153	61,819	61,778	2,666	2,625	5%	4%
Dacorum	63,209	69,174	65,862	5,965	2,653	9%	4%
Total Internal Area	**369,008**	**411,122**	**389,125**	**42,114**	**20,116**	**11%**	**5%**

Table 3. Forecast Household by District, 2039 – NTEM 7.2 vs NTEM 8

District	2016	2039		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	76,848	82,053	78,561	5,205	1,713	7%	2%
Central Bedfordshire	113,707	147,113	135,779	33,407	22,072	29%	19%
North Hertfordshire	56,092	74,905	61,241	18,813	5,149	34%	9%
St Albans	59,153	63,475	64,167	4,321	5,013	7%	8%
Dacorum	63,209	73,866	68,708	10,657	5,499	17%	9%
Total Internal Area	**369,008**	**441,412**	**408,456**	**72,403**	**39,447**	**20%**	**11%**

Table 4. Forecast Household by District, 2043 – NTEM 7.2 vs NTEM 8

District	2016	2043		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	76,848	82,508	78,679	5,660	1,831	7%	2%
Central Bedfordshire	113,707	151,774	138,911	38,068	25,204	33%	22%
North Hertfordshire	56,092	77,708	62,043	21,616	5,951	39%	11%
St Albans	59,153	63,962	64,838	4,809	5,684	8%	10%
Dacorum	63,209	75,409	69,586	12,201	6,377	19%	10%
Total Internal Area	**369,008**	**451,362**	**414,056**	**82,354**	**45,048**	**22%**	**12%**

5.2.4 NTEM 8 shows negative growth in population in Luton from 2033, and for the modelled forecast years the population is forecast to reduce by -2% from 2016 to 2039 and 2043. The population growth from 2016 to 2039 and 2043 for the total internal area in NTEM 8 is less than half the growth of NTEM 7.2, at 7% in NTEM 8 compared with 16% in NTEM 7.2 by 2043. This aligns with the national trends stated in the 'NTEM 8 Short-Term Update, Atkins & Jacobs, April 2022' report (Ref 5).

Table 5. Forecast Population by District, 2027 – NTEM 7.2 vs NTEM 8

District	2016	2027		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	204,374	212,860	207,525	8,486	3,151	4%	2%
Central Bedfordshire	270,440	306,245	294,613	35,805	24,173	13%	9%
North Hertfordshire	129,763	150,098	135,180	20,335	5,417	16%	4%
St Albans	143,971	148,370	149,817	4,399	5,845	3%	4%
Dacorum	148,538	159,476	154,886	10,938	6,348	7%	4%
Total Internal Area	**897,086**	**977,049**	**942,021**	**79,963**	**44,935**	**9%**	**5%**

Table 6. Forecast Population by District, 2039 – NTEM 7.2 vs NTEM 8

District	2016	2039		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	204,374	218,383	200,811	14,009	-3,563	7%	-2%
Central Bedfordshire	270,440	328,180	309,310	57,740	38,870	21%	14%
North Hertfordshire	129,763	163,165	136,736	33,403	6,974	26%	5%
St Albans	143,971	152,302	149,704	8,331	5,733	6%	4%
Dacorum	148,538	167,567	156,774	19,029	8,236	13%	6%
Total Internal Area	**897,086**	**1,029,598**	**953,336**	**132,512**	**56,250**	**15%**	**6%**

Table 7. Forecast Population by District, 2043– NTEM 7.2 vs NTEM 8

District	2016	2043		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	204,374	219,495	199,267	15,121	-5,107	7%	-2%
Central Bedfordshire	270,440	333,603	313,347	63,162	42,907	23%	16%
North Hertfordshire	129,763	166,394	137,268	36,631	7,505	28%	6%
St Albans	143,971	153,073	149,717	9,101	5,745	6%	4%
Dacorum	148,538	169,481	157,474	20,943	8,936	14%	6%
Total Internal Area	**897,086**	**1,042,046**	**957,072**	**144,959**	**59,986**	**16%**	**7%**

5.2.5 The growth rates in employment are forecast to be slightly higher in NTEM8 in 2027 and 2039, and then the same by 2043.

Table 8. Forecast Employment by District, 2027 – NTEM 7.2 vs NTEM 8

District	2016	2027		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	101,182	105,744	108,349	4,562	7,167	5%	7%
Central Bedfordshire	111,070	116,172	118,682	5,102	7,612	5%	7%
North Hertfordshire	58,657	61,578	62,915	2,921	4,259	5%	7%
St Albans	69,080	72,171	74,498	3,091	5,418	4%	8%
Dacorum	73,624	76,688	79,024	3,064	5,400	4%	7%
Total Internal Area	**413,613**	**432,353**	**443,469**	**18,740**	**29,856**	**5%**	**7%**

Table 9. Forecast Employment by District, 2039 – NTEM 7.2 vs NTEM 8

District	2016	2039		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	101,182	109,381	110,973	8,200	9,791	8%	10%
Central Bedfordshire	111,070	120,169	121,556	9,099	10,487	8%	9%
North Hertfordshire	58,657	63,696	64,439	5,040	5,782	9%	10%
St Albans	69,080	74,654	76,303	5,574	7,222	8%	10%
Dacorum	73,624	79,327	80,938	5,702	7,314	8%	10%
Total Internal Area	**413,613**	**447,228**	**454,209**	**33,615**	**40,596**	**8%**	**10%**

Table 10. Forecast Employment by District, 2043 – NTEM 7.2 vs NTEM 8

District	2016	2043		Absolute Difference		Percentage Difference	
		NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8	NTEM 7.2	NTEM 8
Luton	101,182	110,811	111,152	9,629	9,970	10%	10%
Central Bedfordshire	111,070	121,739	121,752	10,669	10,682	10%	10%
North Hertfordshire	58,657	64,528	64,543	5,872	5,886	10%	10%
St Albans	69,080	75,630	76,425	6,550	7,345	9%	11%
Dacorum	73,624	80,363	81,068	6,739	7,444	9%	10%
Total Internal Area	**413,613**	**453,071**	**454,940**	**39,458**	**41,327**	**10%**	**10%**

5.2.6 **Figure 27** and **Figure 28** summarise the forecast growth from 2016 in households and employment respectively. Central Bedfordshire and North Hertfordshire have the highest growth, and Luton and St Albans have the lowest growth in households in both NTEM 7.2 and NTEM 8. The household growth rates for Luton range from 5% to 7% in NTEM 7.2, however, NTEM 8 shows a growth of 2% from 2016 to all three forecast years.

5.2.7 In terms of employment, as shown in **Figure 28**, the planning data from NTEM 7.2 and NTEM 8 show less variation in growth rates between the five districts than the forecast for household growth.

Figure 27 Forecast Household Growth from 2016 by District

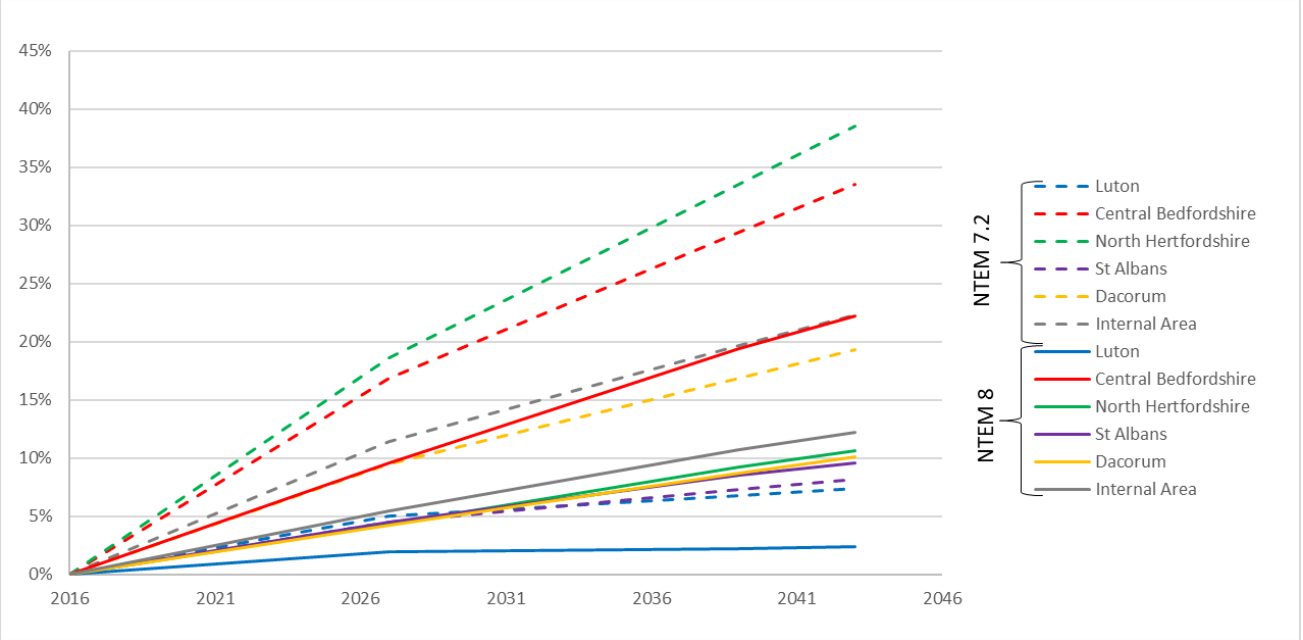
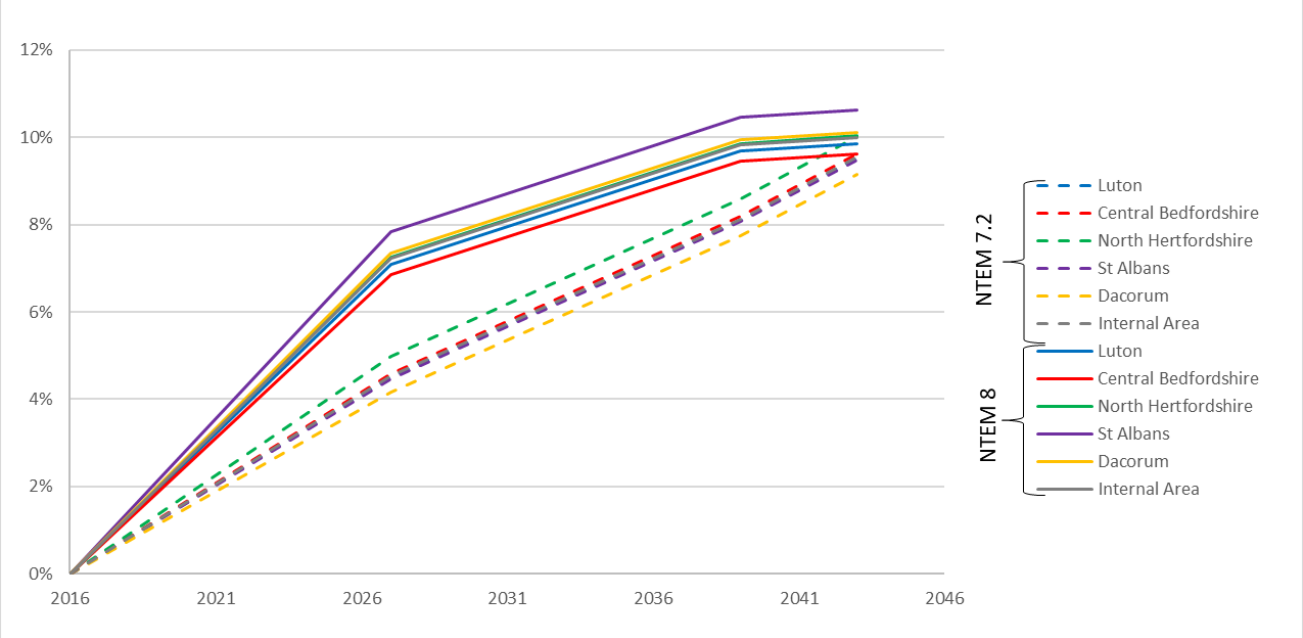


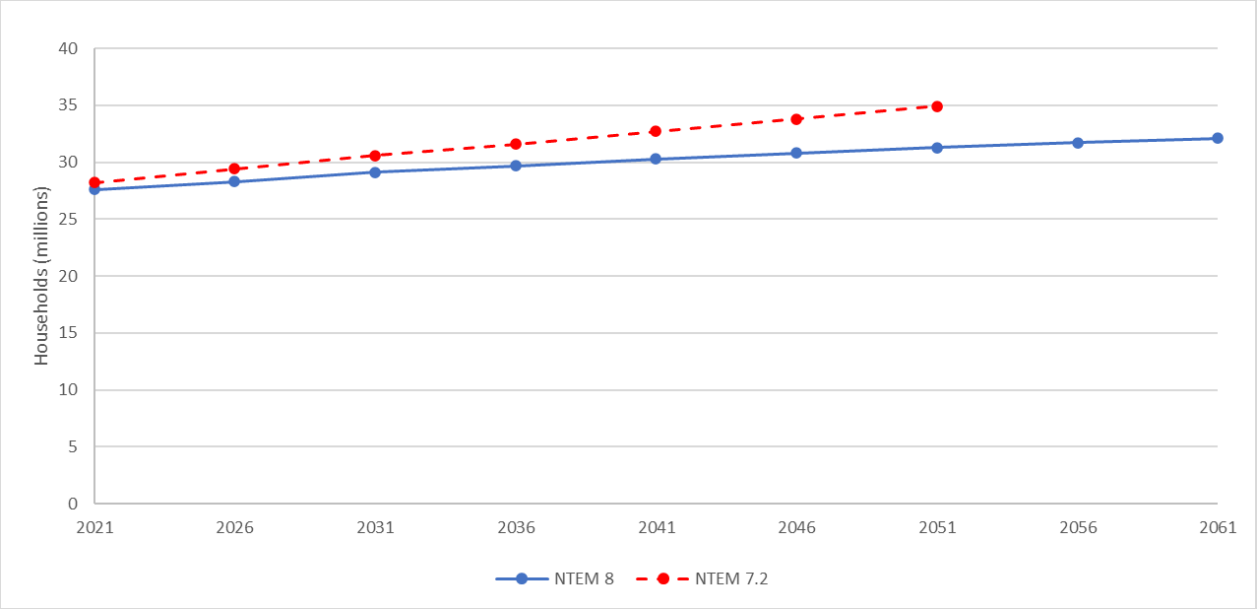
Figure 28 Forecast Employment Growth from 2016 by District



National Household Changes from NTEM 7.2

5.2.8 **Figure 29** shows the input assumptions for households in NTEM 8.0 compared with NTEM 7.2, extending to the respective 'horizon' years of 2061 and 2051. In 2021 the number of households is 2.4% lower than the projections in NTEM 7.2. As population growth is lower, household growth is also lower, with 10.2% fewer households in 2051.

Figure 29 Comparison of input projections of households in Great Britain (millions)

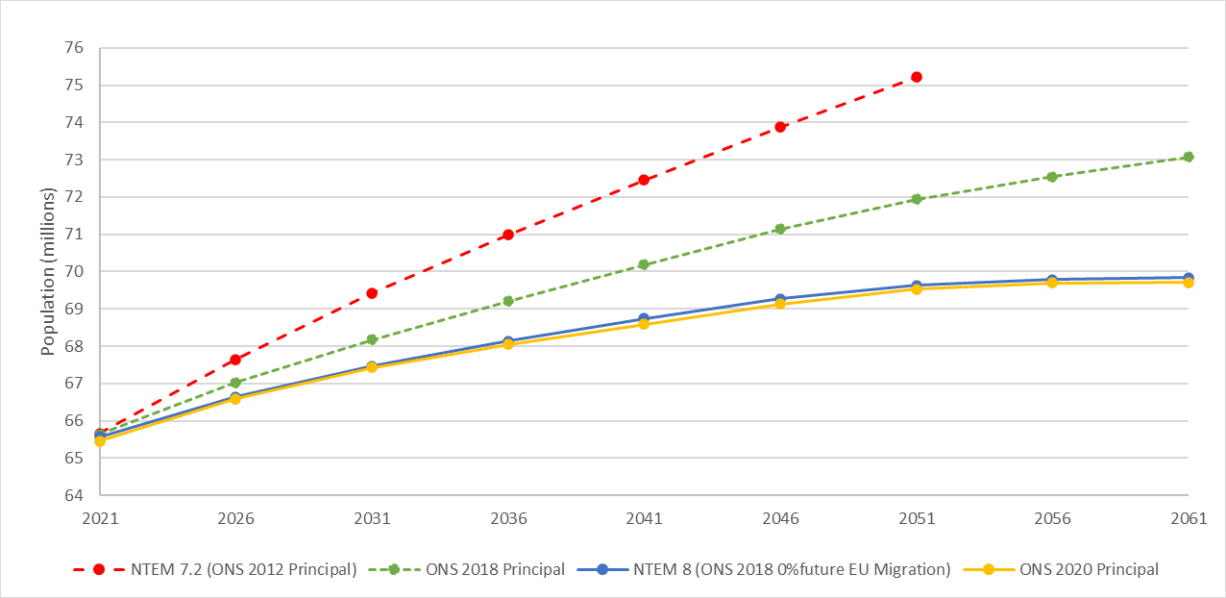


Source: Work Order T0115 - NTEM Short-Term Update Data Report

National Population Projections Change from NTEM 7.2

5.2.9 It is stated in the 'NTEM Short-Term Update Data' report that 2018-based population projections have similar numbers of people in 2021 as the 2012-based projections from which NTEM 7.2 forecasts were derived. The more recent 2018-based projections, however, have a much lower level of population growth over time. **Figure 30** shows the population levels in four alternative Office for National Statistics (ONS) projection datasets. The population growth from 2021 to 2051 in NTEM 8 is 6.2% compared with 14.6% growth in NTEM 7.2.

Figure 30 GB population projections: NTEM 8.0 vs NTEM 7.2

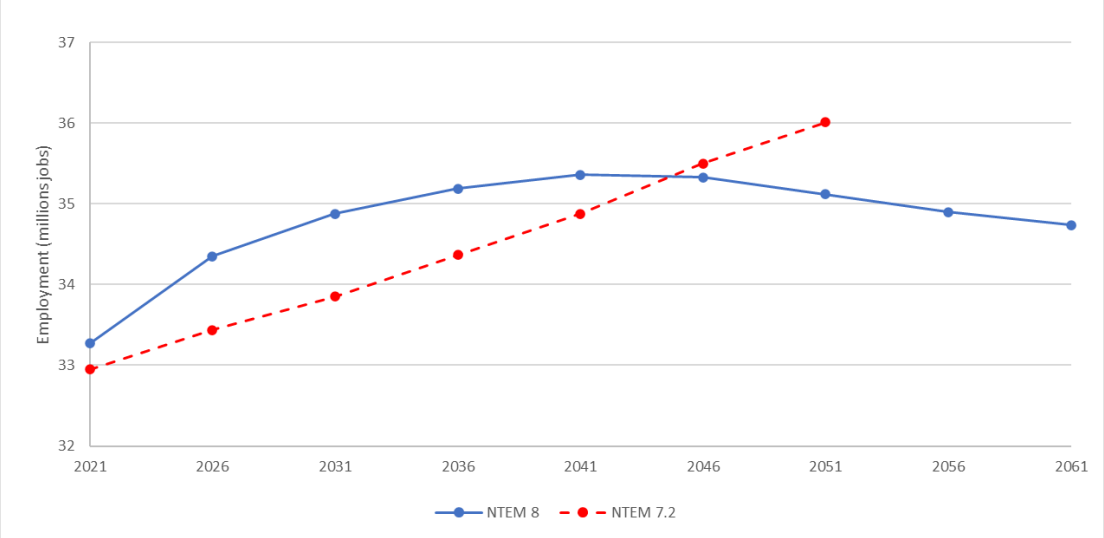


Source: Work Order T0115 - NTEM Short-Term Update Data Report

National Employment Changes from NTEM 7.2

5.2.10 **Figure 31** shows the comparison of employment forecasts for Great Britain between NTEM 7.2 and NTEM 8 which is taken from the 'NTEM Short-Term Update data Report'. NTEM 8 forecasts higher levels of growth than NTEM 7.2 in the short term, however, the growth levels in the long term are projected to fall slightly from 2043. In summary, the employment growth rates are higher in NTEM 8 until 2045, and then lower than NTEM 7.2.

Figure 31 NTEM 8.0 Core Employment forecasts for GB compared with NTEM 7.2

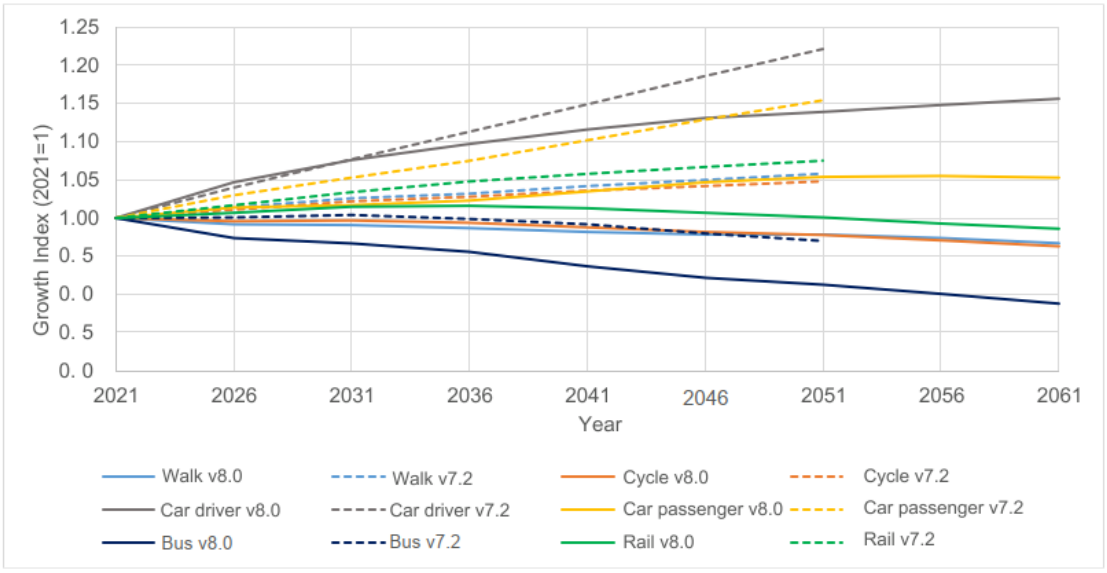


Source: Work Order T0115 - NTEM Short-Term Update Data Report

Trips by Mode

5.2.11 **Figure 32** shows the growth in total trip productions by mode through time in both NTEM 7.2 and NTEM 8. As shown in the figure below, the growth rate is lower for all modes in NTEM 8. Car driver trips remain the main mode of travel in both versions of the NTEM.

Figure 32 Growth in trip productions by mode in NTEM 8 and NTEM 7.2

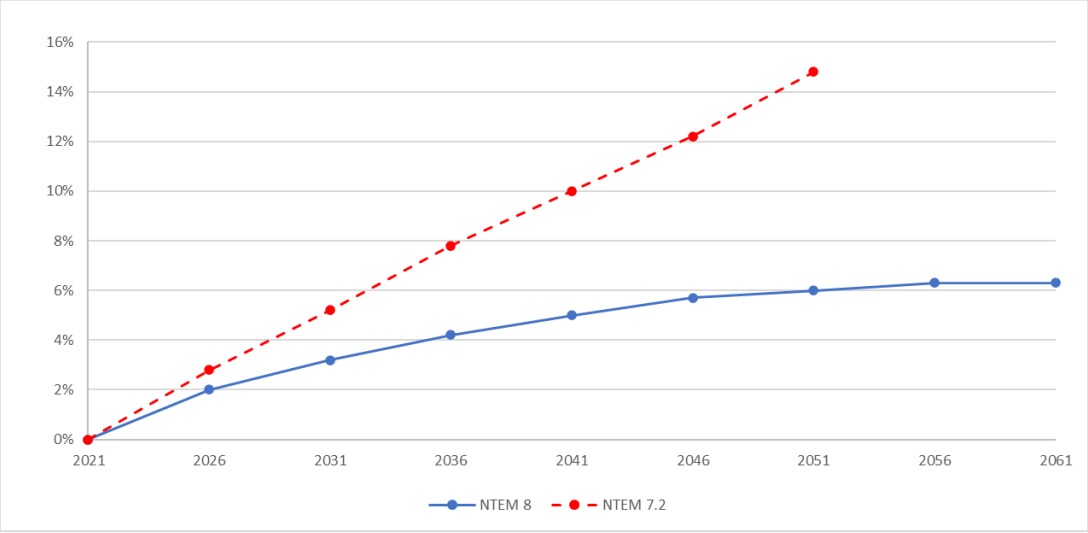


Source: Work Order T0115 - NTEM Short-Term Update Data Report

Trip Ends by Purpose

5.2.12 As shown in **Figure 33** total trip productions grow by 6% from 2021 to 2051 in NTEM 8 compared with 15% growth in NTEM 7.2 over the same period. The growth from 2021 to 2051 in NTEM 8 is similar to the growth to 2033 in NTEM 7.2.

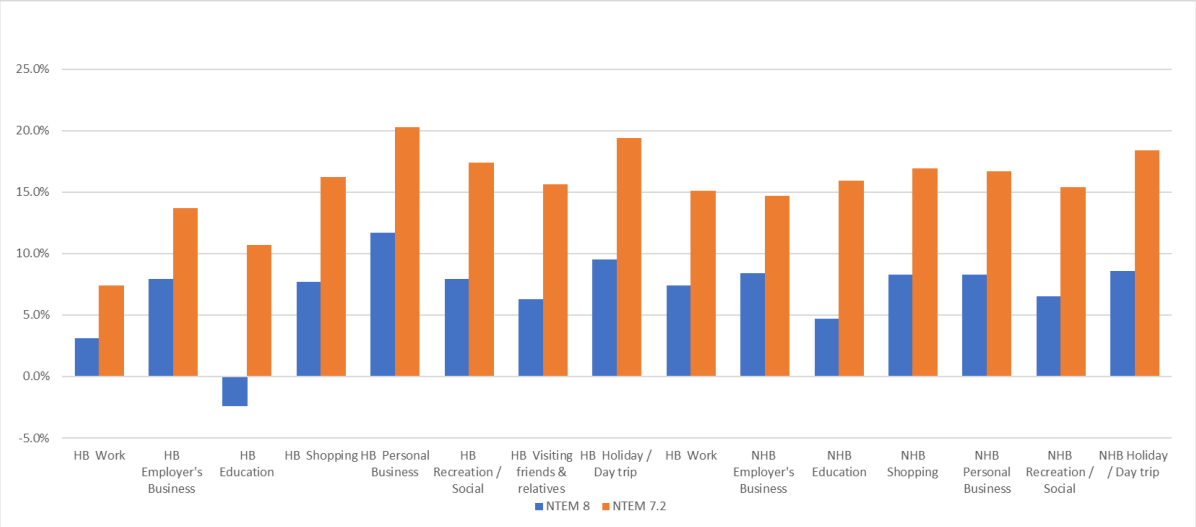
Figure 33 Growth in trip productions through time NTEM 7.2 and NTEM 8



Source: Work Order T0115 - NTEM Short-Term Update Data Report

5.2.13 As shown in **Figure 34** there is variation in trip productions growth by trip purpose. Productions for all trip purposes have a lower level of growth in NTEM 8 than in NTEM 7.2. Home-based personal business trips have the highest growth in both NTEM 7.2 and NTEM 8. Home-based education trips decrease through time in NTEM 8.

Figure 34 Trip productions by purpose - % change from 2021 to 2051 in NTEM 7.2 and NTEM 8.0

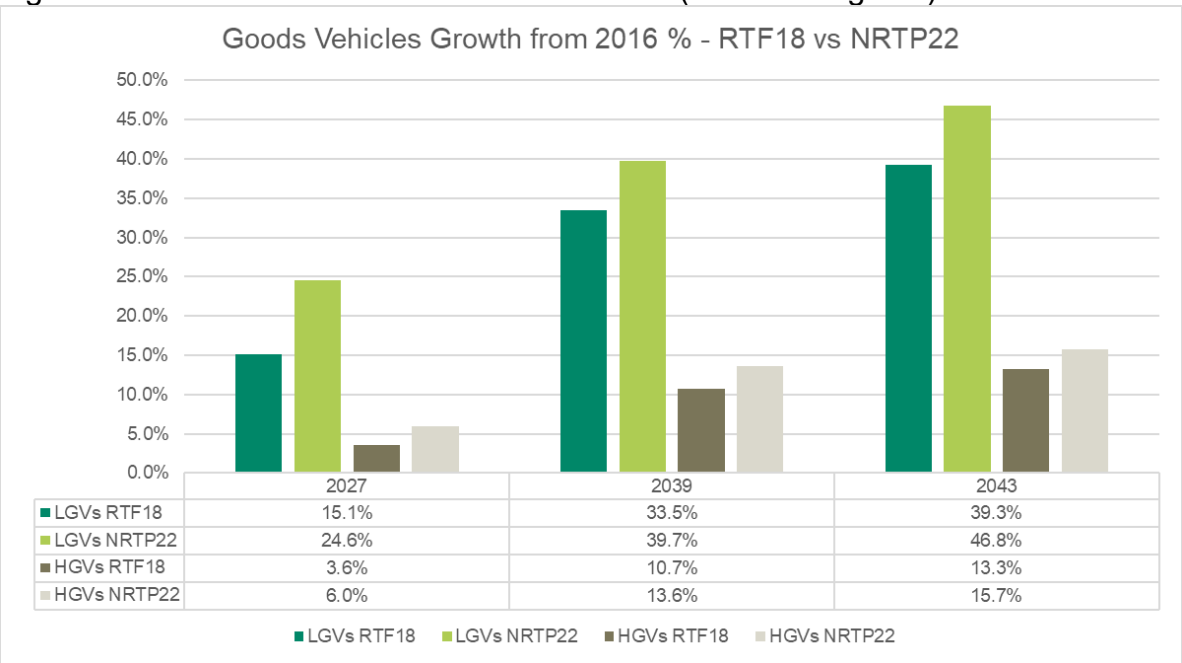


Source: Work Order T0115 - NTEM Short-Term Update Data Report

5.3 Goods Vehicles Growth Comparison

5.3.1 A comparison between the RTF18 and the NRTP22 has been conducted to understand the level of differences in projections for the relevant years. This shows that both LGVs and HGVs are forecast to have slightly higher growth in NRTP22 when compared with the growth in RTF18.

Figure 35 Goods Vehicles Growth from 2016 % (Eastern England)



	2027	2039	2043
LGVs RTF18	15.1%	33.5%	39.3%
LGVs NRTP22	24.6%	39.7%	46.8%
HGVs RTF18	3.6%	10.7%	13.3%
HGVs NRTP22	6.0%	13.6%	15.7%

5.3.2 While the percentage changes between the two sets of data show increases, it is worth noting that both LGVs and HGVs represent the smaller proportions of the overall traffic, i.e. compared with Cars in particular on local road network. Hence these goods vehicle specific increases would not be likely to result in significant increases on the overall traffic volumes.

6 KEY FINDINGS

6.1 Tracking Covid-19 Impacts on Existing Travel Patters

6.1.1 The available SRN data show that traffic volumes in 2023 data have not picked up to the same level of 2016 nor 2019 (pre-Covid-19) in all locations. The M1 shows, on average that the 2023 traffic levels have recovered to above 2016 (and 2019) levels, both daily and peak traffic, although the level varies by section. Whereas the M25 2023 traffic levels show similar levels to the 2016, on both daily and peak traffic.

6.1.2 The A1081 shows that on a daily basis, the 2023 traffic levels have increased above 2016 levels, but it is noted that this is driven by the inter-peak traffic, as the AM morning peak shows lower traffic in 2023 compared with 2016 and 2019, while the PM evening peak shows similar levels.

6.1.3 The analysis of the data that was available for the LRN, shows that for all sites traffic volumes in 2023 have not picked up to the same level as 2016 and 2019. Therefore, and despite the limitations of the data, the analysis clearly suggests that the traffic volumes on local roads have not reached pre-Covid-19 levels.

6.1.4 The DfT analysis for rail demands indicate that the demands have not picked up to pre-Covid-19 levels, and the DfT guidance recommends a downward adjustment for rail demand forecasts post model runs.

6.1.5 The findings from the analysis of SRN and LRN count data, and the DfT guidance on rail trends, are in-line with the recent published national trends.

6.2 DfT Growth Projections

6.2.1 The NTEM 8 projections show significantly lower levels of growth for both population and households, and the employment projections show slightly higher growth, when compared with NTEM 7.2. Overall, the trip productions in NTEM 8 show significant reductions. This would indicate that with the modelling updates being undertaken to incorporate NTEM 8, it is likely that the overall growth in traffic will be lower than the previous modelling, which was based on NTEM 7.2.

6.3 Discussion

6.3.1 The NTEM data show that with updates to the strategic model runs with the recent DfT growth projections, it is likely that the forecast traffic volumes will be at slightly lower levels when compared to the strategic traffic modelling work that informed the DCO application.

6.3.2 In terms of Covid-19, the impact varies by location. Traffic volumes on the SRN have largely recovered to pre-Covid-19 levels in many locations, whereas certain locations have not. Whereas LRN analysis shows that the traffic volumes have not picked up to pre-Covid-19 levels.

6.3.3 The DfT analysis for rail demands indicate that the demands have not picked up to pre-Covid-19 levels and recommend a downward adjustment for rail demands post model runs.

6.3.4 Considering the above, it is possible that there may be a case for a post-model slight downward adjustment to updated traffic forecasts.

REFERENCES

Ref 1 Department for Transport (2023) TAG Unit M4 Forecasting and Uncertainty
Ref 2 National Highways (2023) WebTRIS
Ref 3 Rail Demand Forecasting During Covid v19.4 (May 2023)
Ref 4 Department for Transport (2023) National Travel Survey
Ref 5 Department for Transport (2023) Trip End Model Presentation Program (TEMPro) download