

December 2023

# London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

## **8.139 Applicant's Response to Applicant's Response to Issue Specific Hearing 7 Action 3 - Ivinghoe Junction Modelling Review**

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.139

**The Planning Act 2008**

**The Infrastructure Planning (Examination Procedure) Rules 2010**

**London Luton Airport Expansion Development Consent  
Order 202x**

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Specific Hearing 7 Action 3 - Ivinghoe Junction Modelling Review**

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# 1 INTRODUCTION

- 1.1.1 This Note is to address an action requested by the Examining Authority (“ExA”). The request was raised on the ExA’s Actions List [EV14-008] following the Issue Specific Hearing (ISH) 7 on 28<sup>th</sup> November 2023. This Action is referred to as “Action 3”.
- 1.1.2 The Action is: *“Review how the Ivinghoe junction is modelled to determine whether what is shown on the trip distribution plan is representative.”*
- 1.1.3 The junction and B489 road was highlighted as a concern by Buckinghamshire Council (BC) at ISH7, previously at ISH4 and raised in the summer 2023 during ongoing engagement with the Applicant. BC is concerned about the traffic impact of the Proposed Scheme on the junction of B489 and B488 to the immediate southeast of Ivinghoe. The location of the junction is shown in Figure 1.
- 1.1.4 The forecast total traffic increase in traffic at the junction, as a result of the proposed airport expansion, is only up to 38 equivalent passenger car units (PCUs) per hour by the year 2043, which, in relation to the overall total increase in traffic, is only up to 2.1%.
- 1.1.5 To explain and summarise the potential impact on the B489, and the junction of interest, this response is structured around three main points:
- a. Airport Trip Distribution;
  - b. Peak hour flow differences; and
  - c. Peak hour flow at the junction of B489 and B488.

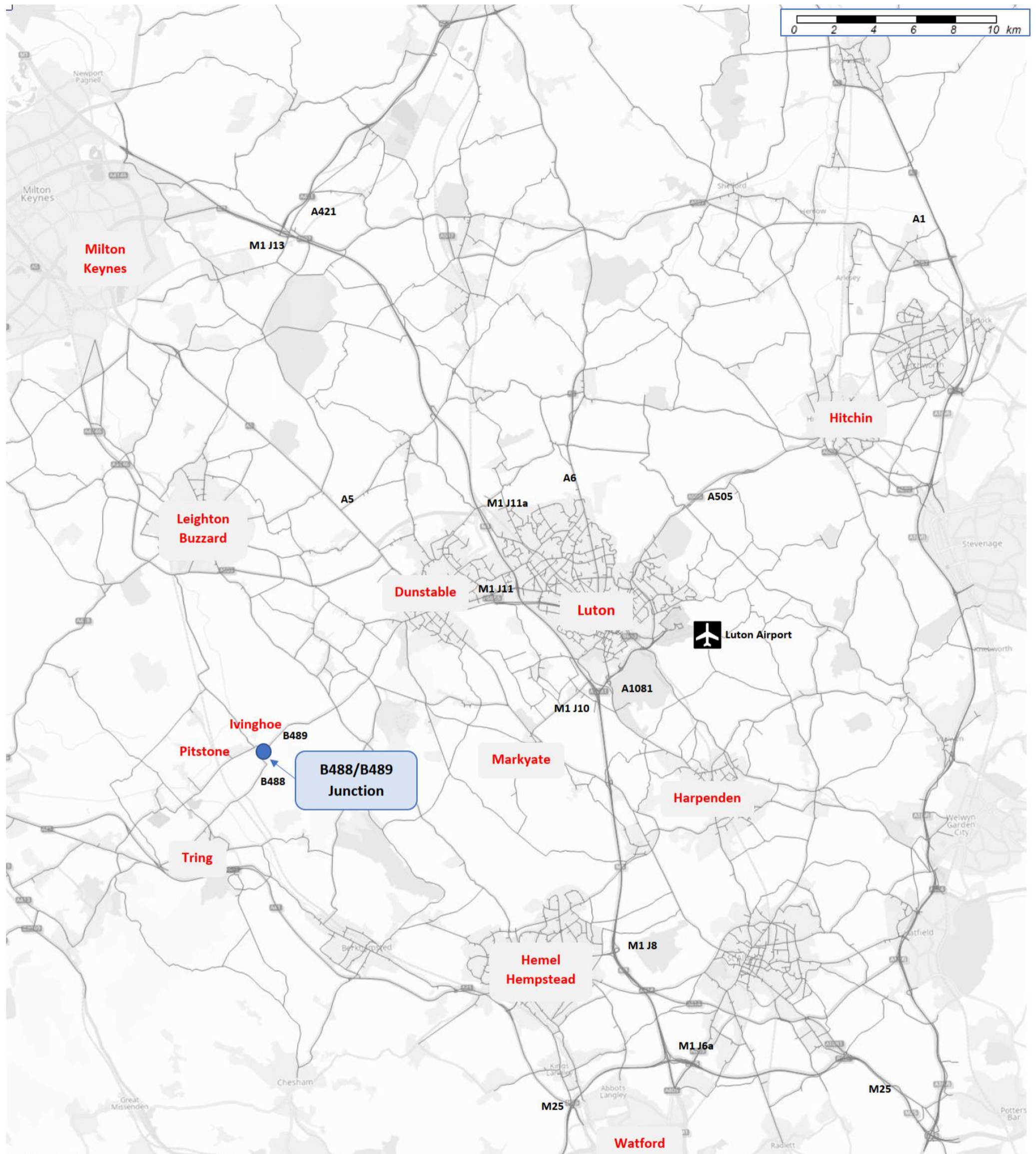


Figure 1 – Location of B488 / B489 Junction, Ivinghoe



## 2 THE STRATEGIC MODEL

2.1.1 The Central Bedfordshire and Luton Transport Model, Luton Airport version (CBLTM-LTN), as defined in the **Transport Assessment - Part 1 of 4 (Chapters 1-4) [APP-203]**, has been used to inform this note. The Applicant considers the strategic model to be a suitable tool to assess the relative change in traffic on the B489 in Buckinghamshire, as a result of the proposed London Luton Airport expansion for the following reasons:

- a. The model has been calibrated and validated as per the Department for Transport's (DfT) Transport Appraisal Guidance (TAG) guidance and considered fit for purpose by all Host Authorities and National Highways.
- b. The model includes Buckinghamshire within its modelled simulation network, with the fully modelled area covering much of the county. This is shown in the Highway Local Model Validation Report (LMVR) **7.02 Transport Assessment Appendices – Part 1 of 3 Appendix E1 Highway LMVR Report [APP-201]**, Figure 4.1 CBLTM-LTN Fully Modelled Area and in the LMVR Figure 7.1 Luton Airport and Non-Airport CBLTM-LTN Zones. Both are re-produced below as Figure 2 and Figure 3.

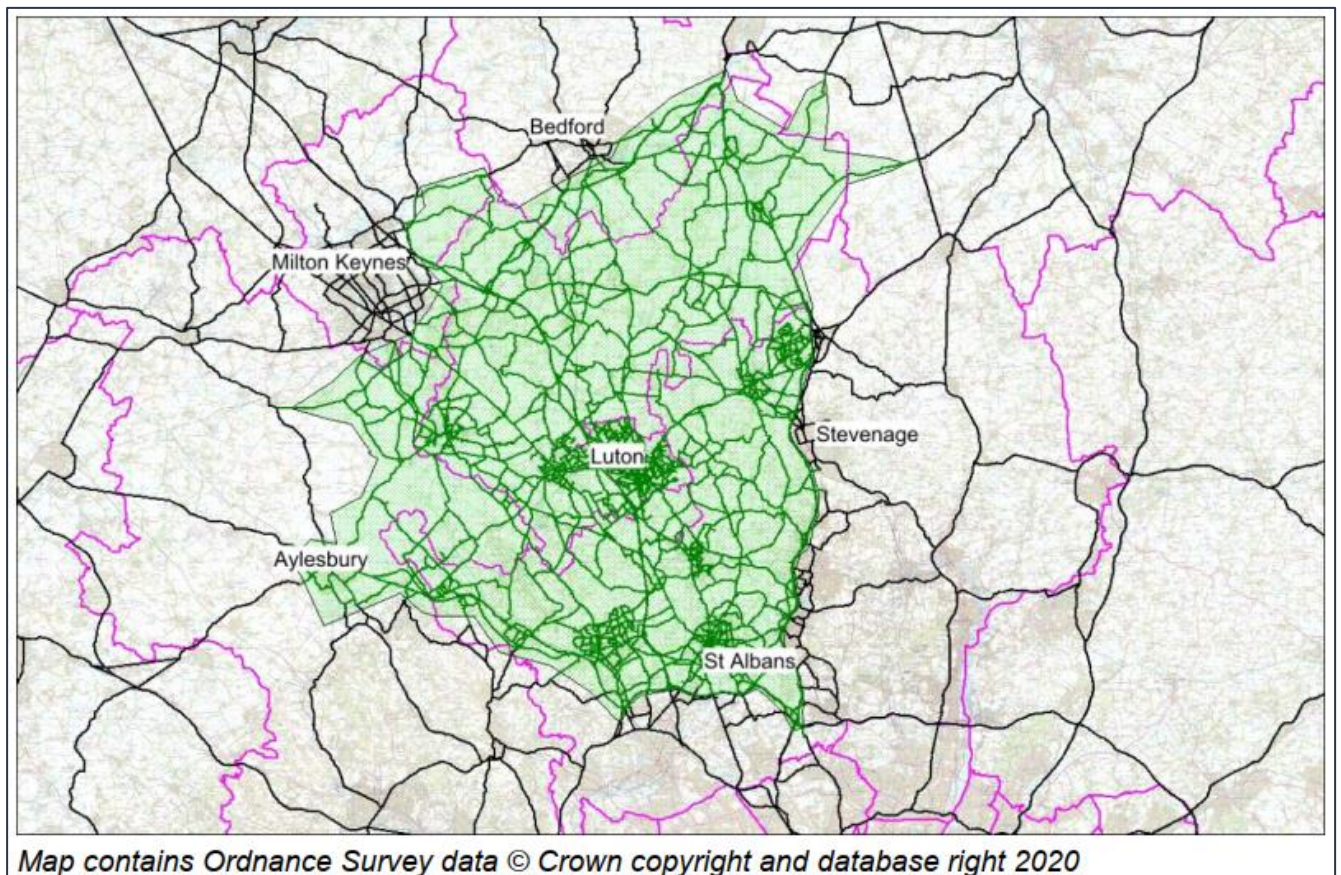


Figure 2 – CBLTM-LTN Fully Modelled Area

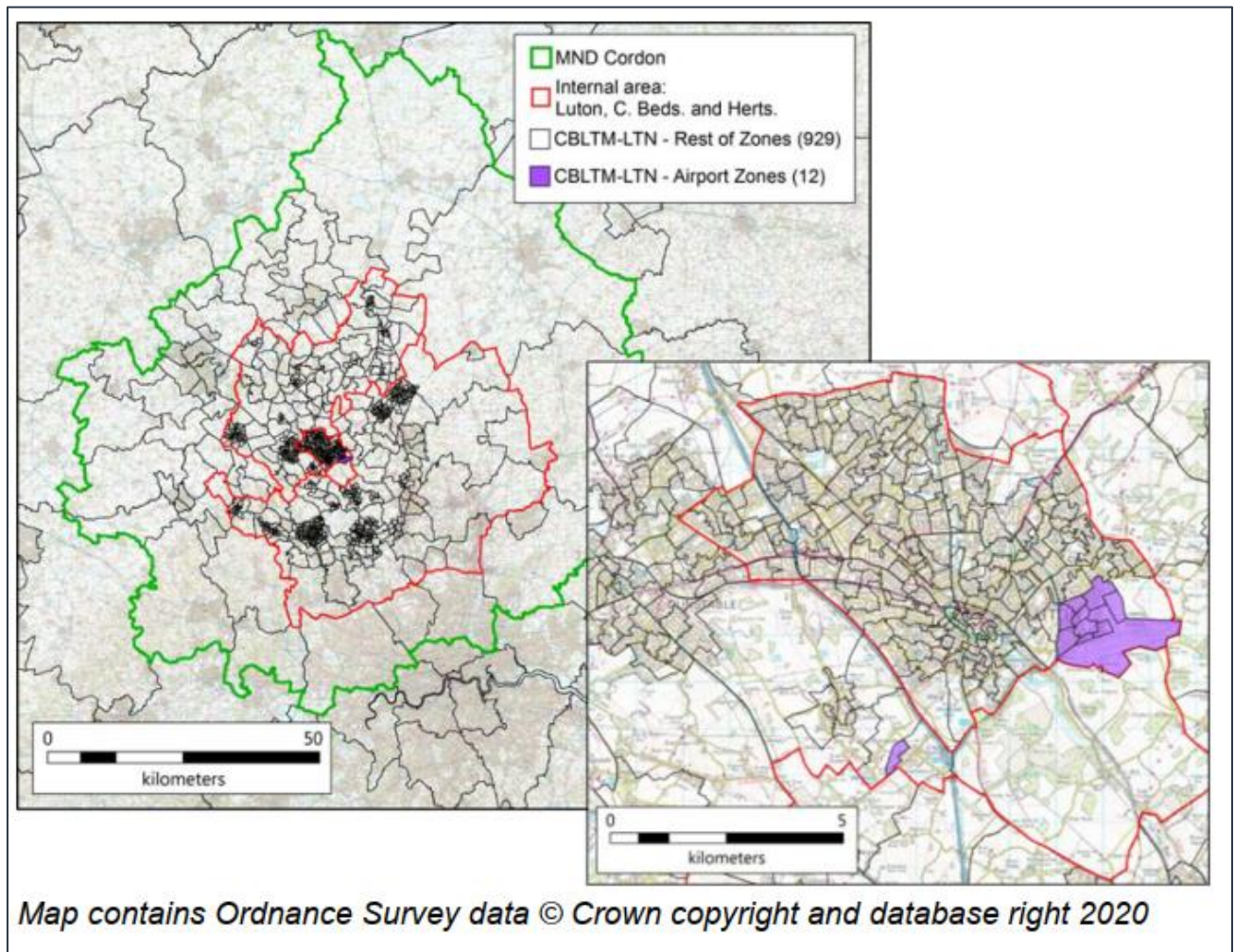


Figure 3 – CBLTM-LTN Zoning

- c. The mobile phone demand data, upon which the model travel demands have been built, includes the whole of Buckinghamshire, as shown in the Highway LMVR Figure 5.7 CBLTM-LTN Mobile Network Cordon, as re-produced in Figure 4 below.



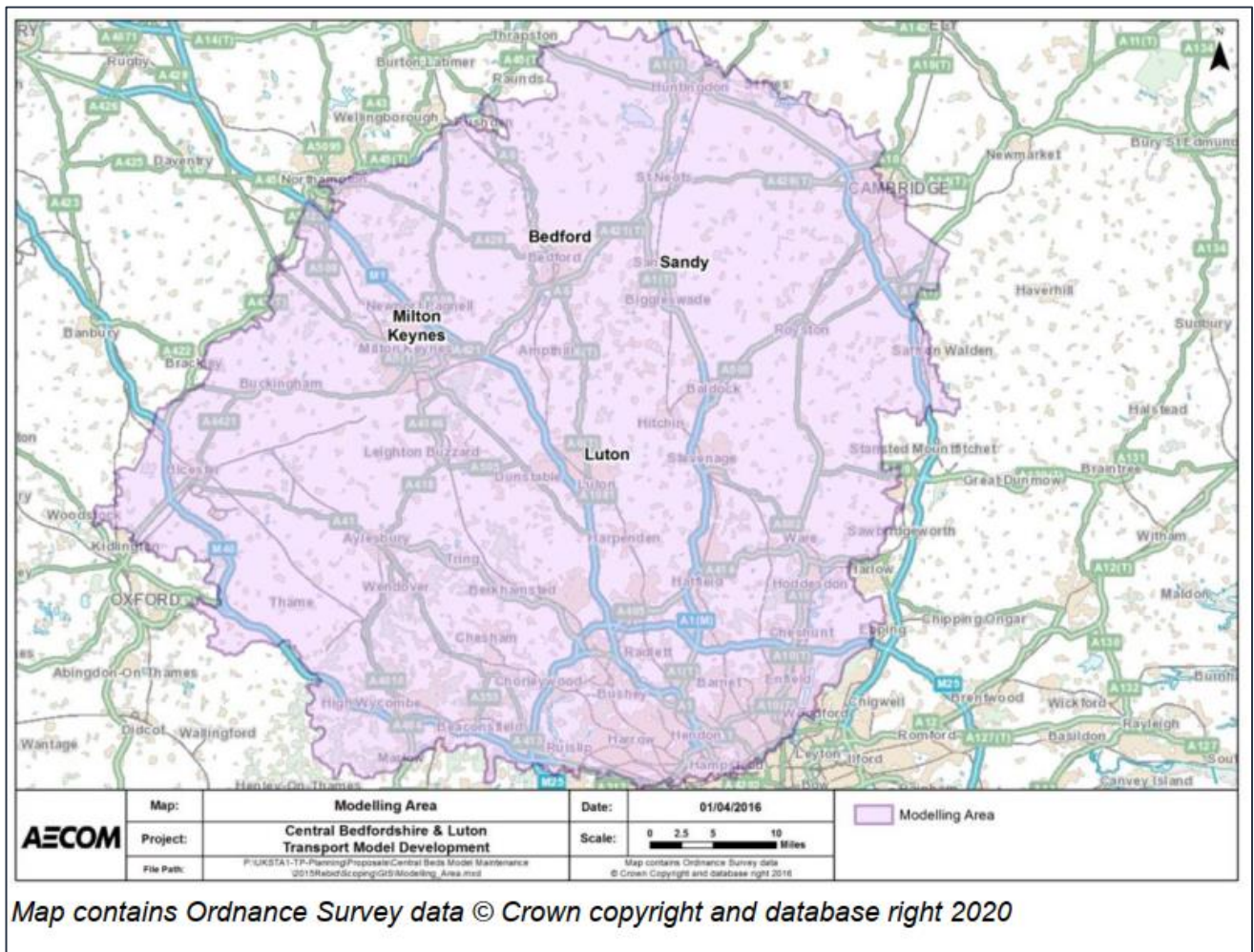


Figure 4 – CBLTM-LTN Mobile Network Cordon

- d. The model has also been calibrated / validated to traffic movements across screenlines for demands to/from the county, as shown in LMVR Figure 11.2 ‘Initial Assignment Calibration’ Screenline Classification (Calibration=blue | Validation=Red) – Overview.
- e. The level of existing and future forecast airport traffic travelling to/from Buckinghamshire is observed and then forecast to remain relatively low, when compared to other areas as shown in the airport trip distribution plans.
- f. The level of traffic impact within Buckinghamshire is forecast to be relatively low, as shown in Strategic Modelling Forecasting Report **7.02 Transport Assessment Appendices – Part 2 of 3, Appendix F Strategic Modelling Forecasting Report [APP-201]**.

## 2.2 Further information on CBLTM-LTN validation near the B489 corridor

2.2.1 The CBLTM-LTN is a strategic model covering a large area and the focus on calibration and validation is concentrated around the scheme, and its area of impact. Therefore, the CBLTM-LTN core calibration and validation area covers the area surrounding London Luton Airport as reported in



Figure 11.3 of **7.02 Transport Assessment Appendices – Part 1 of 3 Appendix E1 Highway LMVR Report [APP-201]**, which is replicated below as Figure 5.

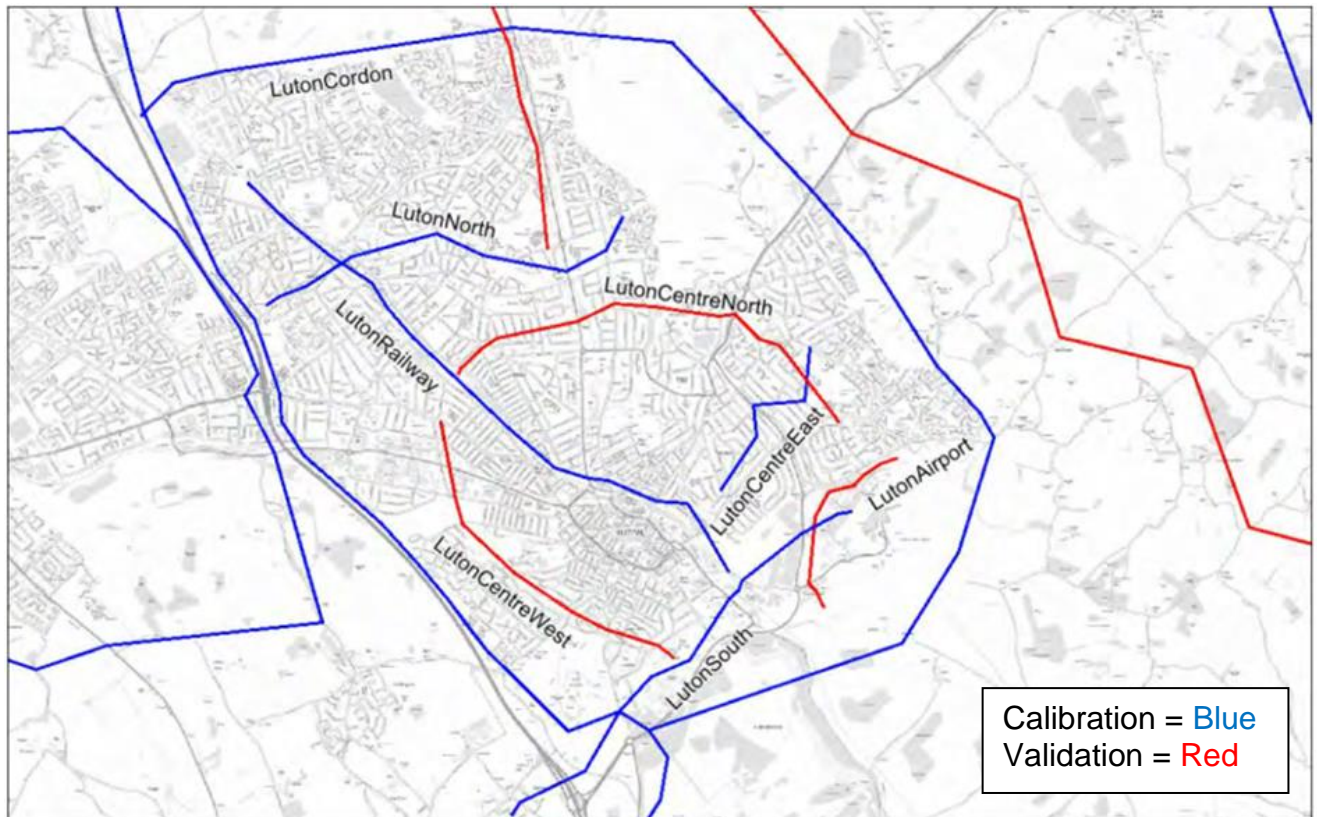


Figure 5 – CBLTM-LTN Core Validation and Calibration screenlines

2.2.2 For the wider area, Figure 11.2 of the LMVR **7.02 Transport Assessment Appendices – Part 1 of 3 Appendix E1 Highway LMVR Report [APP-201]**, shows further screenlines which include one titled 'Dunstable Leighton Buzzard', which is also replicated below as Figure 6.

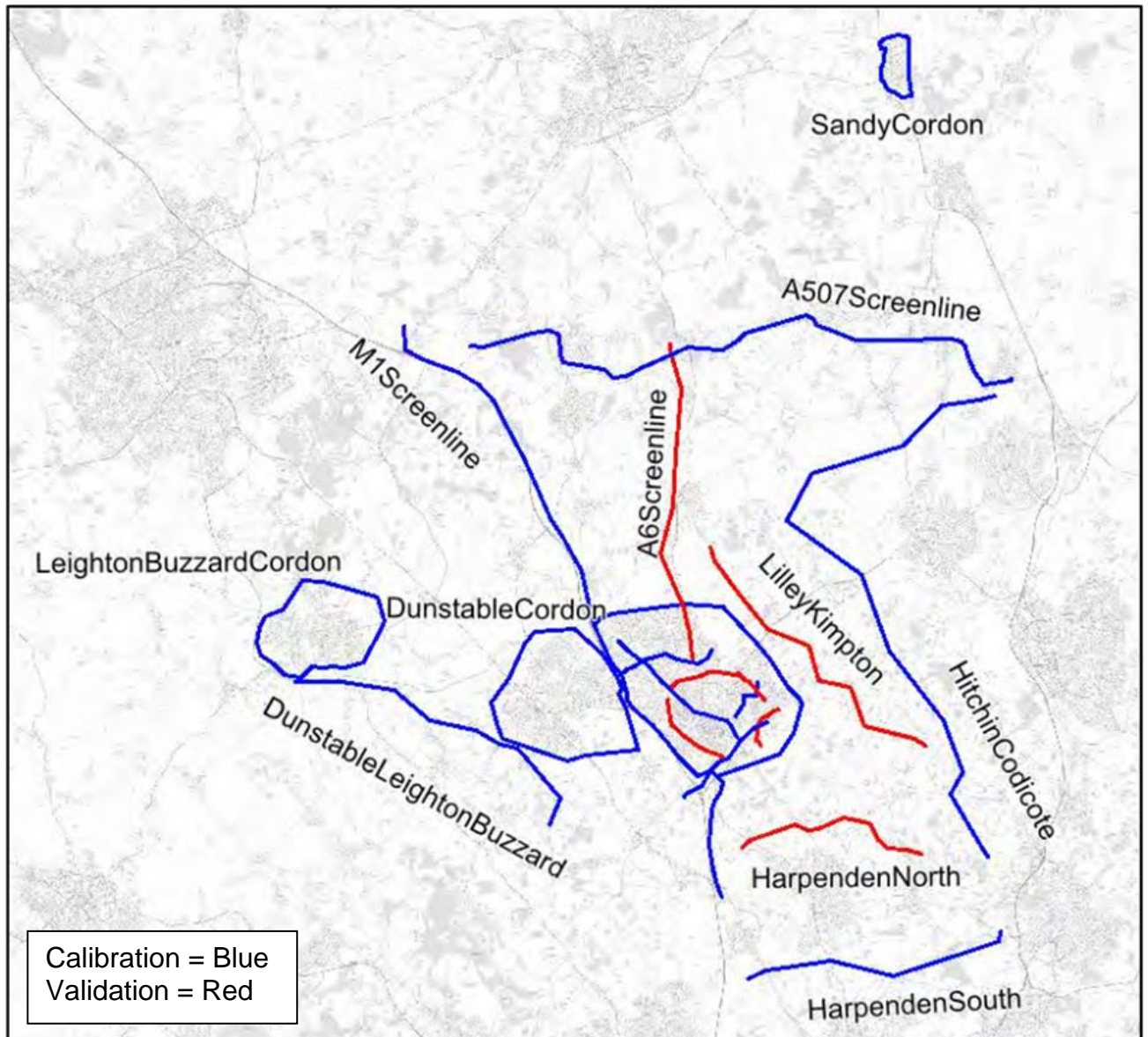


Figure 6 – CBLTM-LTN Wider Validation and Calibration screenlines

2.2.3 To add further context of the importance of this screenline, considering the topic of this Note, the locations of the individual count sites have been plotted and shown in Figure 7.



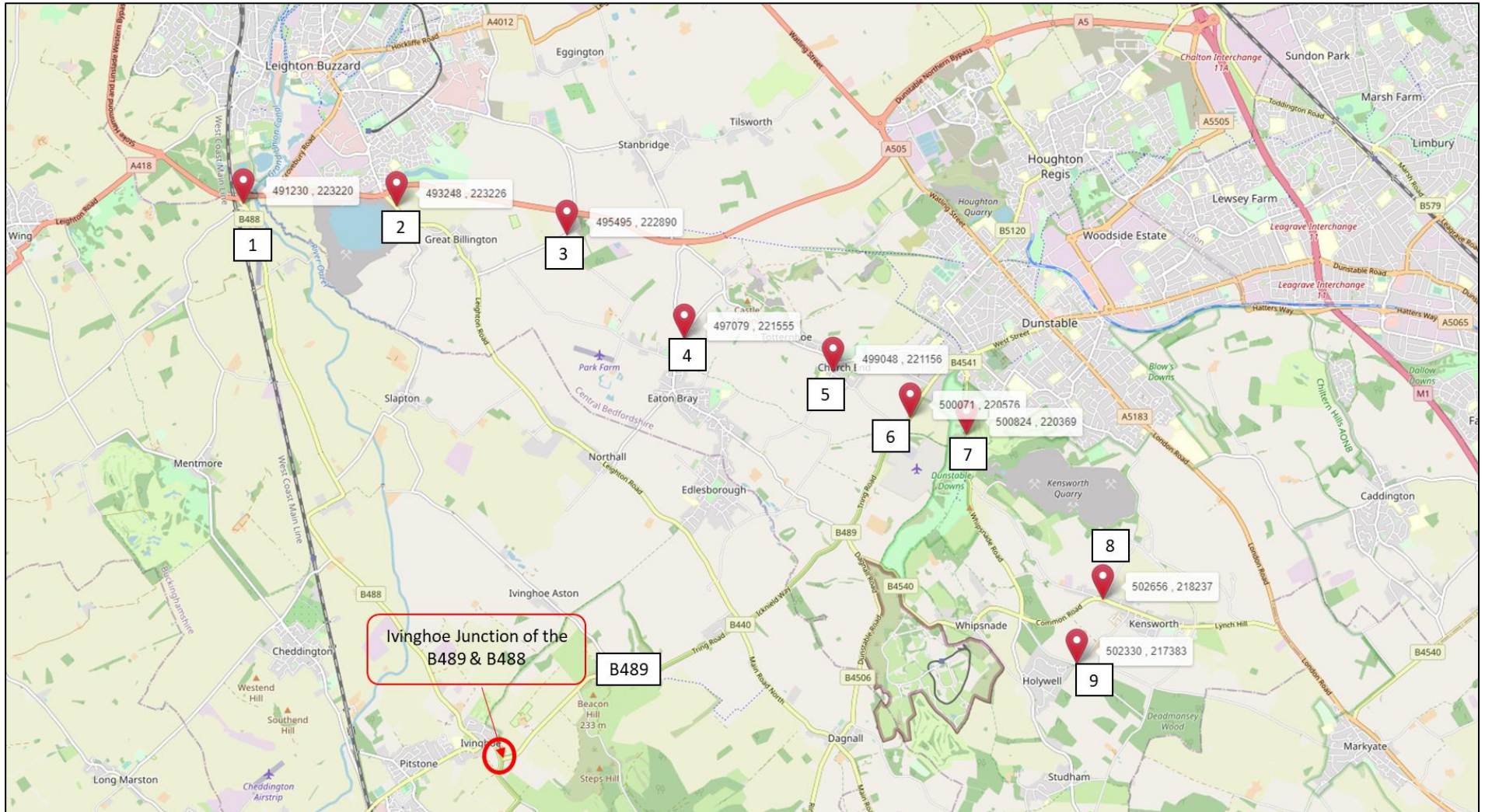


Figure 7 – Dunstable Leighton Buzzard Screenline Count Locations



- 2.2.4 The validation results for the 'Dunstable Leighton Buzzard' screenline shows a strong match between modelled and observed traffic flows, to the recommended level of the DfT TAG guidance. The results are reported in Table 11.8 of the LMVR **7.02 Transport Assessment Appendices – Part 1 of 3 Appendix E1 Highway LMVR Report [APP-201]**, and reproduced, with the addition of the modelled and observed traffic flows below in Table 1. Whereas the individual counts performance is included in Appendix A of this Note.

<b>AM Peak Flow in Vehicle per Hour</b>							
<i>Direction</i>	<i>Counts</i>	<i>Observed</i>	<i>Modelled</i>	<i>Difference</i>	<i>%</i>	<i>Screen line</i>	<i>%Links</i>
Northbound	9	1,831	1,821	-10	-0.5%	✓	100%
Southbound	9	2,420	2,422	2	0.1%	✓	89%
<b>Inter-Peak Flow in Vehicle per Hour</b>							
Northbound	9	1,389	1,394	5	0.4%	✓	100%
Southbound	9	1,355	1,359	4	0.3%	✓	100%
<b>PM Peak Flow in Vehicle per Hour</b>							
Northbound	9	2,640	2,645	5	0.2%	✓	78%
Southbound	9	1,912	1,928	16	0.8%	✓	100%

Table 1 – 'Dunstable Leighton Buzzard' Screenline Performance

- 2.2.5 The screenline performance provides confidence in the base model in relation to traffic travelling to and from the Buckinghamshire road network.

## 2.3 B489 and Ivinghoe Junction within CBLTM-LTN

- 2.3.1 The B489 within the CBLTM-LTN is coded with an appropriate level of representation, including the areas of Ivinghoe and Pitstone, with a predicted lower speed within. Also, the B488 is also included within the model network with adequate representation.
- 2.3.2 The junction of the B489 and B488 is coded as a priority junction, as existing, with no capacity issues at approach arms, within the base, and all future forecast models.
- 2.3.3 Regarding routing, traffic east of Ivinghoe wishing to travel to/from the A41 to/from Aylesbury have two options, either via the B489 through the villages of Ivinghoe and Pitstone, or through Tring via the B488. Timewise, within the strategic model, the two routes provide broadly similar journey times (and match similar conclusions obtained from Google Maps Journey Planner). Travelling via the B489 through Ivinghoe and Pitstone will be shorter than via the B488 and Tring by around one mile. Therefore, the strategic model prioritises routing via the B489 and Ivinghoe and Pitstone, versus the B488 and Tring.
- 2.3.4 Considering the above, the Applicant considers the strategic model is "fit for purpose" and to be a suitable tool to assess the relative change in traffic on the B489 in Buckinghamshire.

### 3 B489 TRAFFIC

#### 3.1 Airport Trip Distribution

- 3.1.1 The Airport trip distribution has been reported in the Strategic Modelling Forecasting Report **7.02 Transport Assessment Appendices – Part 2 of 3, Appendix F Strategic Modelling Forecasting Report [APP-201]** and daily airport trip distribution plans which was submitted at Deadline 5 **[REP1-019]**. This shows the forecast airport demand, for both passengers and staff, in the form of Average Daily Traffic (ADT) representing an October busy day, with the existing airport demand distribution having been derived from Civil Aviation Authority (CAA) data.
- 3.1.2 The Trip Distribution Plans show that the existing and future forecast daily airport volumes of traffic travelling along the B489 are small relative to the total traffic generation for the airport. For airport passengers, the plans show a very thin blue line along the B489 in all scenarios. Whereas, for airport staff there is no visible red line, indicating extremely low volumes, which is explained further in this report.
- 3.1.3 The following Trip Distribution Plans have been replicated within this response as:
- a. **Figure 8** 2016 Base Passenger Trip Distribution
  - b. **Figure 9** 2016 Base Staff Trip Distribution
  - c. **Figure 10** 2043 Without Expansion (18mppa) Passenger Trip Distribution
  - d. **Figure 11** 2043 Without Expansion (18mppa) Staff Trip Distribution
  - e. **Figure 12** 2043 With Expansion (32mppa) Passenger Trip Distribution
  - f. **Figure 13** 2043 With Expansion (32mppa) Staff Trip Distribution
- 3.1.4 From the 2016 base data underlying Figures 8 and 9, the overall proportions of daily airport traffic travelling on the B489 corridor are low relative to total airport traffic, both for staff and passengers, where the percentage is around 4% of passengers and 1% of staff.
- 3.1.5 In the future years without expansion (18mppa), these percentages remain at 4% of total airport passengers and 1% of total airport staff.
- 3.1.6 With the proposed expansion, this is forecast to change slightly to 3% of total airport passengers and remain at 1% of total airport staff.
- 3.1.7 The bandwidths along the B489 within the trip distribution plans are therefore very thin for airport passengers, compared with other routes, and non-existent for airport staff due to the very small percentage and overall total volumes.
- 3.1.8 Further information on the 'with expansion' AM, inter and PM peak hour airport distribution for 2027, 2039 and 2043 has also been reported within the Strategic Modelling Forecasting Report **7.02 Transport Assessment**

**Appendices – Part 2 of 3, Appendix F Strategic Modelling Forecasting Report [APP-201]**, Figure 5.5: Forecasting Routing to / From Luton Airport, which is reproduced in this note as Figure 14. The figure shows very low airport traffic volumes to the west of the M1 through Buckinghamshire to the extent that it is very hard to see any thin green lines due to the flows being so low.







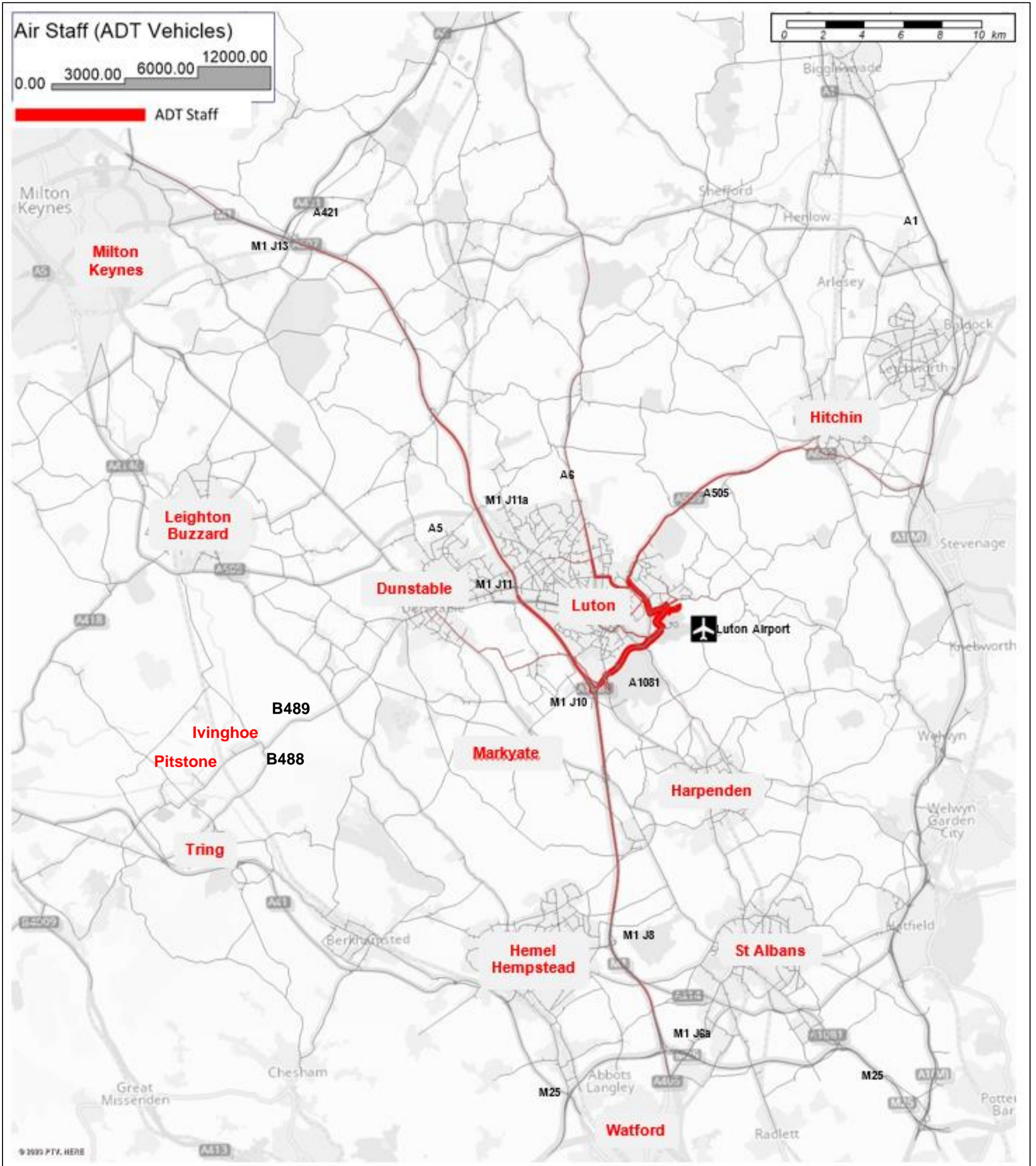


Figure 9 - 2016 Base Staff Trip Distribution



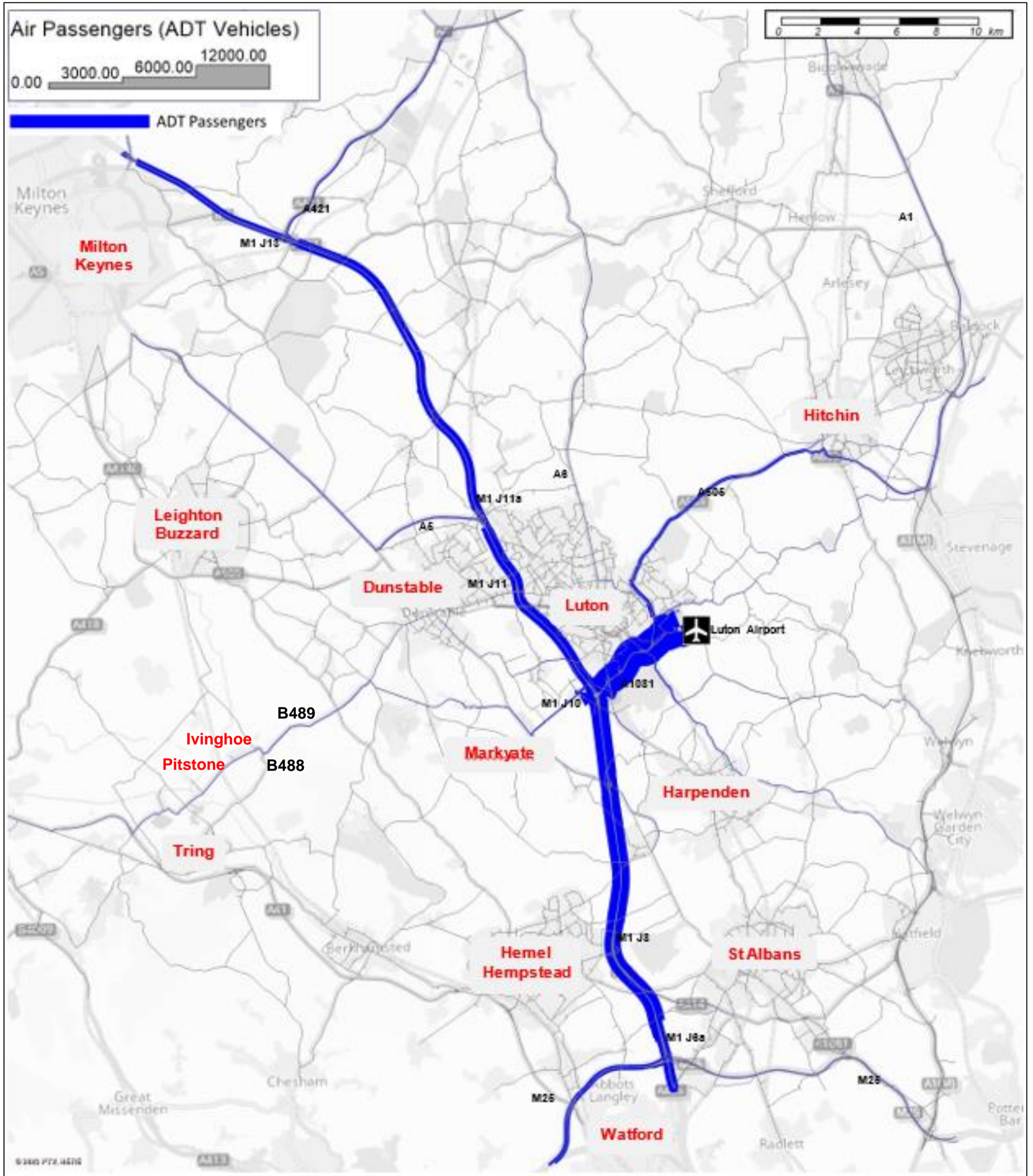


Figure 10 - 2043 Without Expansion (18mppa) Passenger Trip Distribution







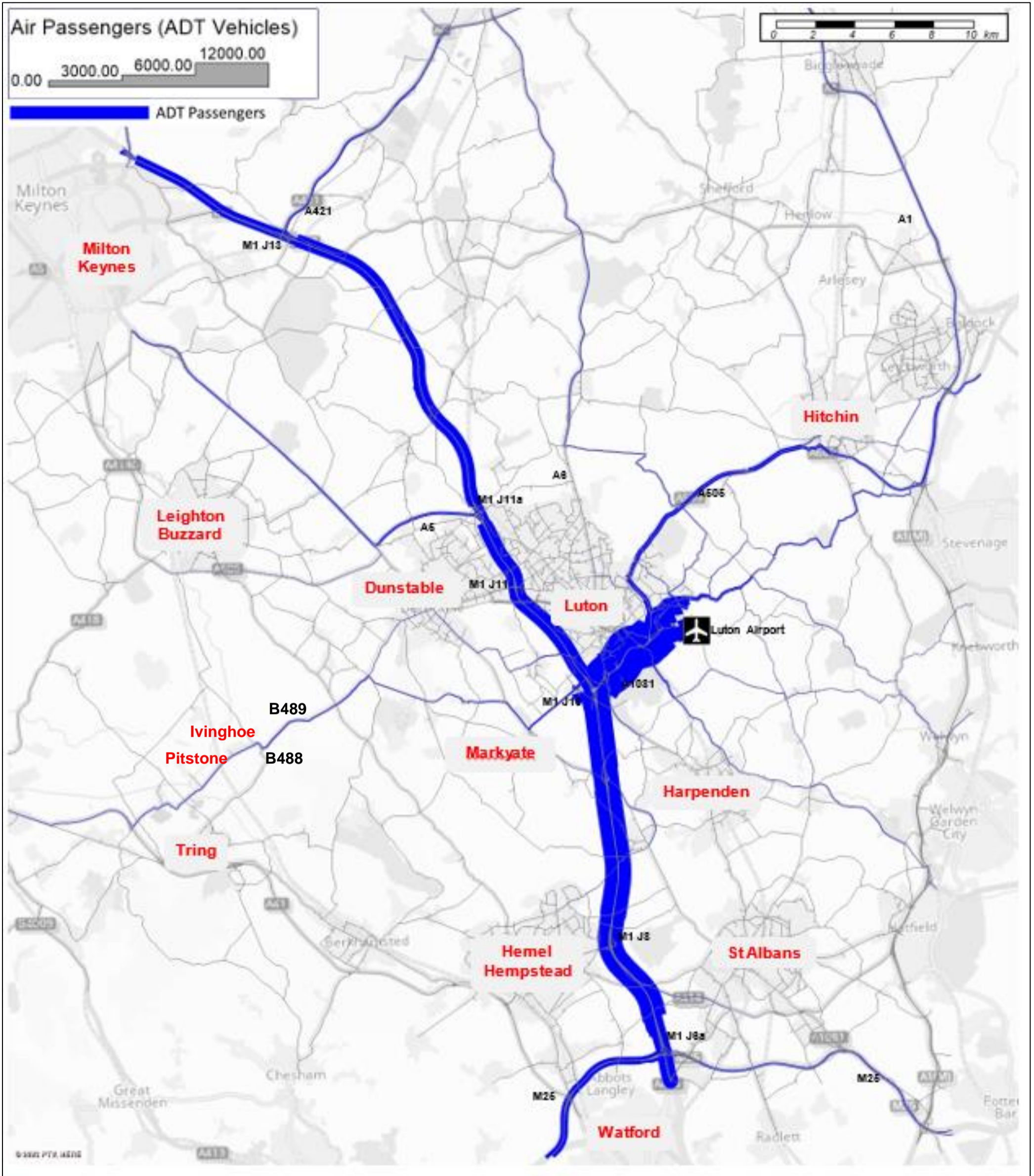


Figure 12 - 2043 With Expansion (32mppa) Passenger Trip Distribution



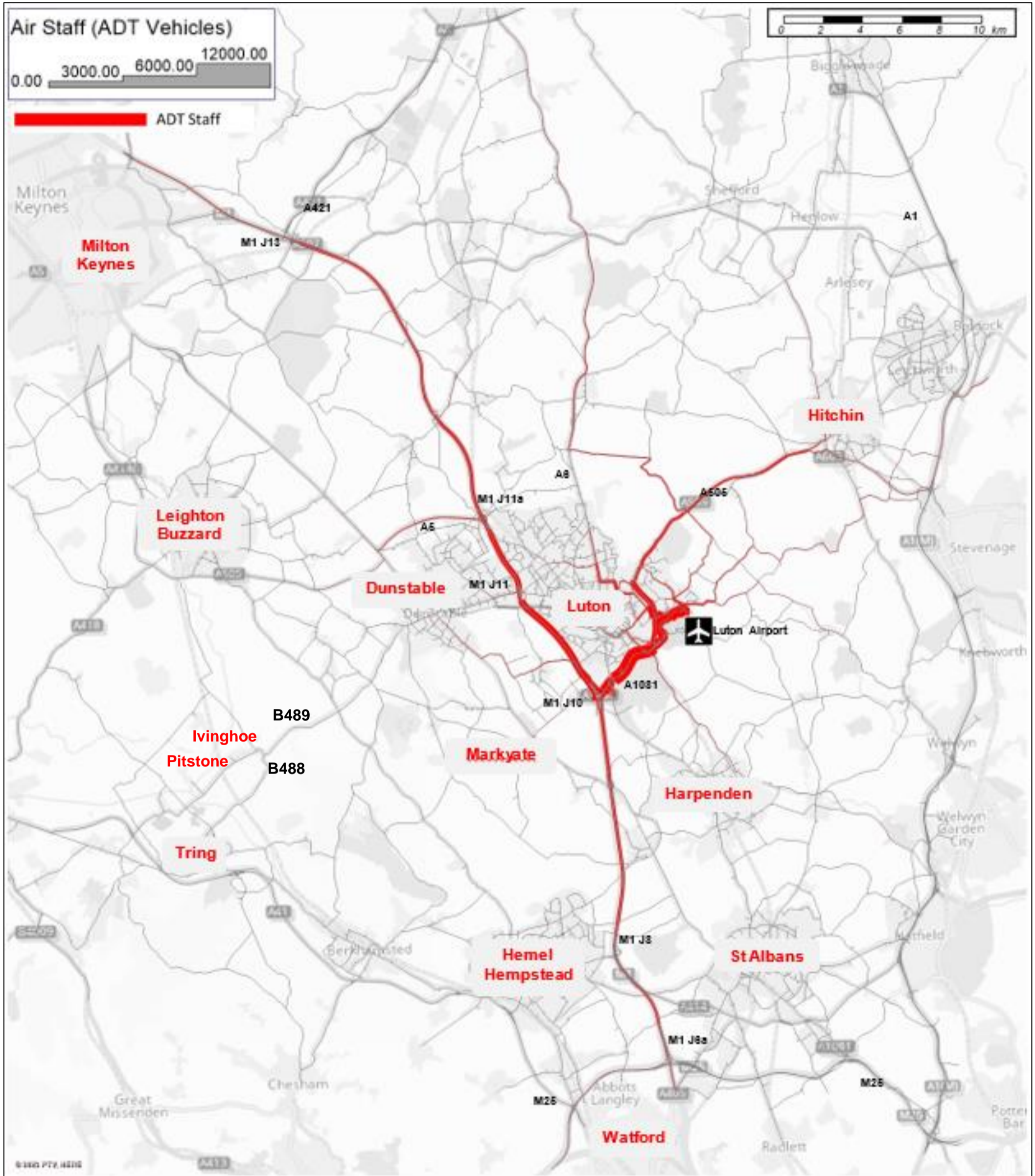


Figure 13 - 2043 With Expansion (32mppa) Staff Trip Distribution



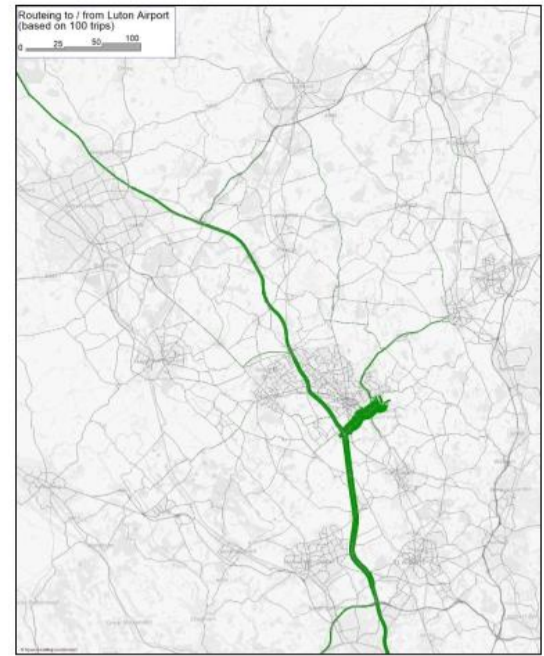
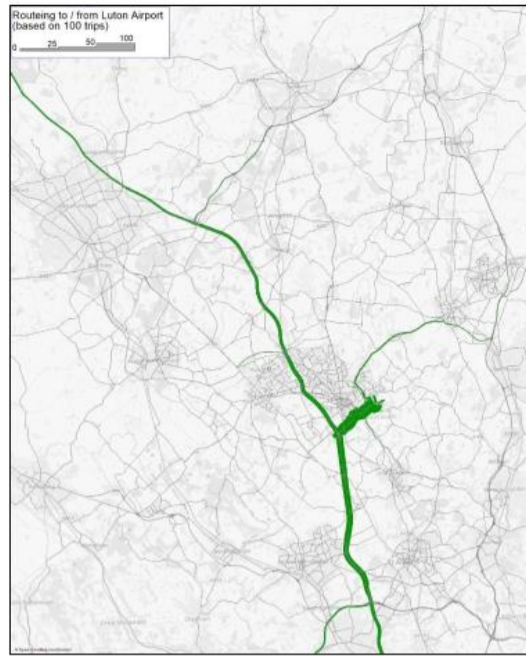
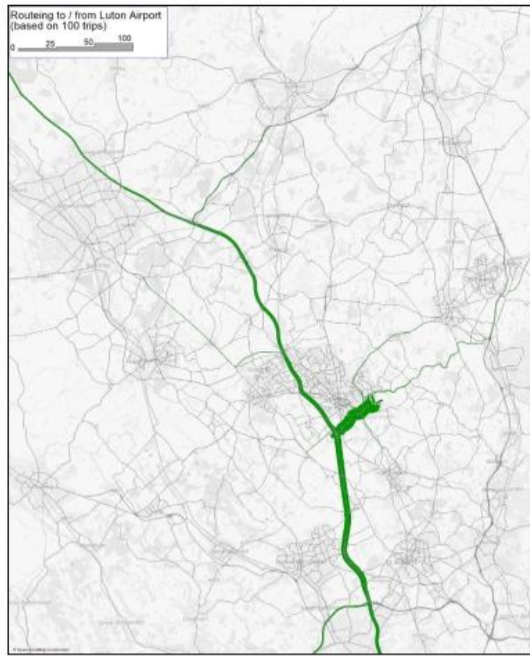
AM Peak Hour (08:00 to 09:00)

Interpeak Hour (between 10:00 to 16:00)

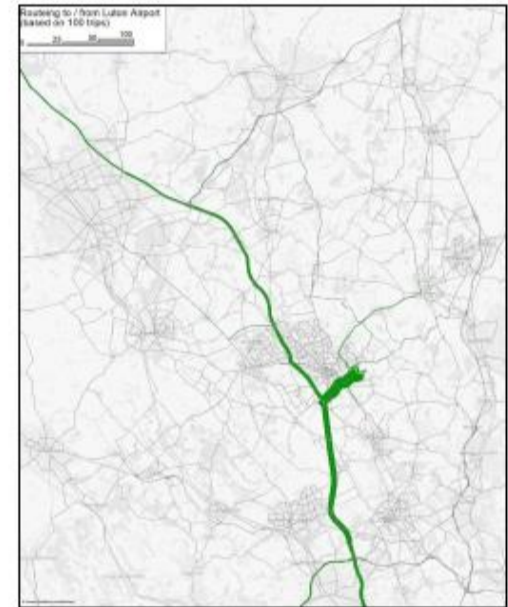
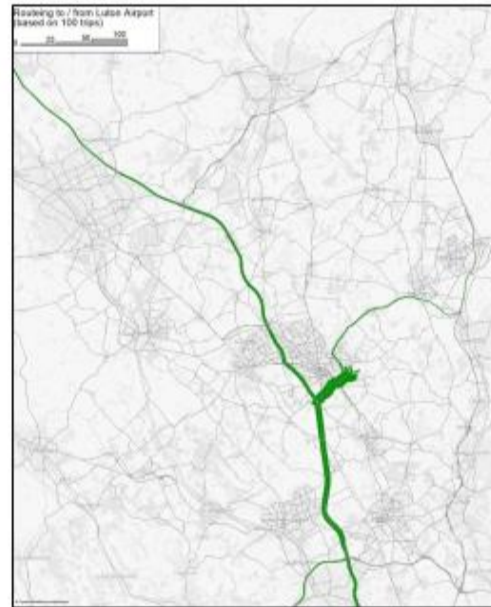
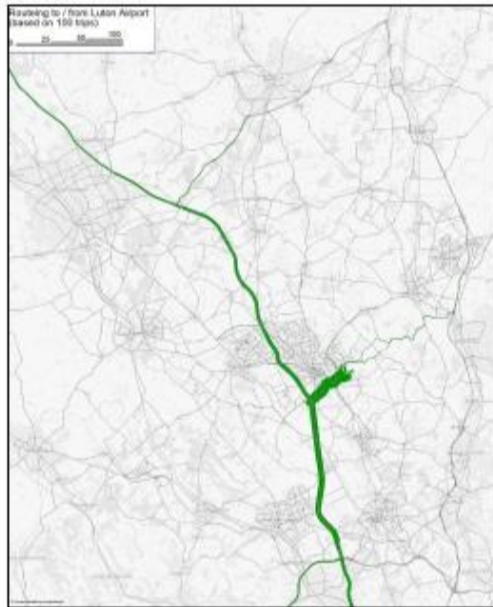
PM Peak Hour (17:00 to 18:00)

2027

Terminal 1



Terminal 1



2039

Terminal 2

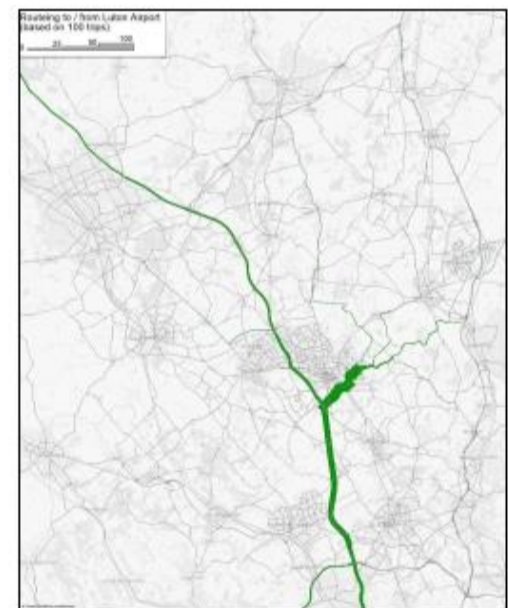
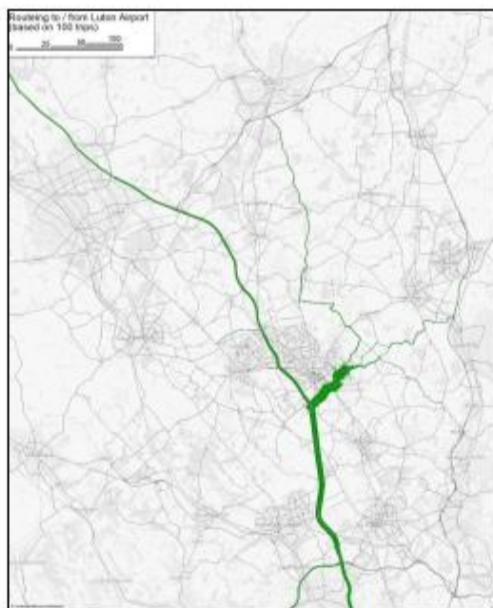






Figure 14 - Forecast Routing to / From Luton Airport TAG-based "With" Expansion Scenario

- 3.1.9 BC asked the Applicant to provide more details about the daily numerical values of the airport trips, and to also provide the information for the traffic for the hours that are outside of the modelled peak hours.
- 3.1.10 The Applicant has extracted the daily airport traffic, from the reported Trip Distribution Plans, travelling along the B489, and then profiled the traffic over 24-hours utilising the airport passengers trip generation profile. The results are shown in Figure 15 and detailed in Table 2.
- 3.1.11 Table 2 shows that the highest hourly increase in airport traffic along the B489 is 17 vehicles per hour by direction, and a maximum of 33 vehicles per hour two-way. It is worth noting that the traffic demands are associated with the airport traffic only, and do not represent the overall effect due to traffic re-assignment, which is discussed in the next Section 3.2 and Section 3.3.
- 3.1.12 BC's concerns in relation to traffic during early hours, namely between 05:00 and 07:00, have also been looked at and the modelling shows that the forecast hourly increase within these two hours is 21 vehicles. It is worth noting that the highest hourly increase in traffic demand is forecast to be for the hour beginning 07:00, as shown in both Figure 15 and Table 2.



Hour Start	Eastbound (Airport inbound) - 18mppa	Westbound (Airport outbound) - 18mppa	Two-way 18mppa	Eastbound (Airport inbound) - 32mppa	Westbound (Airport outbound) - 32mppa	Two-way 32mppa	Eastbound Difference (32-18mppa)	Westbound difference (32-18mppa)	Two-way Difference (32-18mppa)
00:00	13	13	26	17	18	36	4	5	10
01:00	5	6	11	8	9	17	3	3	6
02:00	6	7	13	7	8	15	1	2	3
03:00	14	8	22	20	13	33	7	5	12
04:00	26	16	41	37	25	62	12	9	21
05:00	22	13	35	27	17	44	5	4	9
06:00	16	9	25	25	16	40	9	7	15
07:00	10	8	18	27	24	51	17	16	33
08:00	21	20	41	29	28	57	8	8	16
09:00	11	11	22	22	20	42	11	9	20
10:00	19	13	32	30	23	54	11	10	22
11:00	19	14	33	33	26	59	13	12	25
12:00	23	18	41	31	26	57	8	8	16
13:00	26	23	49	37	35	72	11	12	23
14:00	18	17	35	25	24	49	7	7	14
15:00	23	17	41	29	23	51	5	5	11
16:00	22	17	39	33	28	60	11	11	21
17:00	21	16	37	28	23	51	7	7	13
18:00	23	21	44	32	29	61	8	8	17
19:00	18	18	36	23	23	45	4	5	9
20:00	13	14	27	19	20	38	5	6	11
21:00	12	13	25	14	15	29	2	2	4
22:00	11	13	24	12	14	26	1	1	2
23:00	9	11	20	14	18	32	6	6	12
<b>24-hours</b>	<b>404</b>	<b>335</b>	<b>739</b>	<b>578</b>	<b>504</b>	<b>1,082</b>	<b>174</b>	<b>169</b>	<b>343</b>

Table 2 – B489 (east of the Junction with B488) Daily Traffic Profile

\*(18mppa = Future Baseline, 32mppa = Assessment Phase 2b)

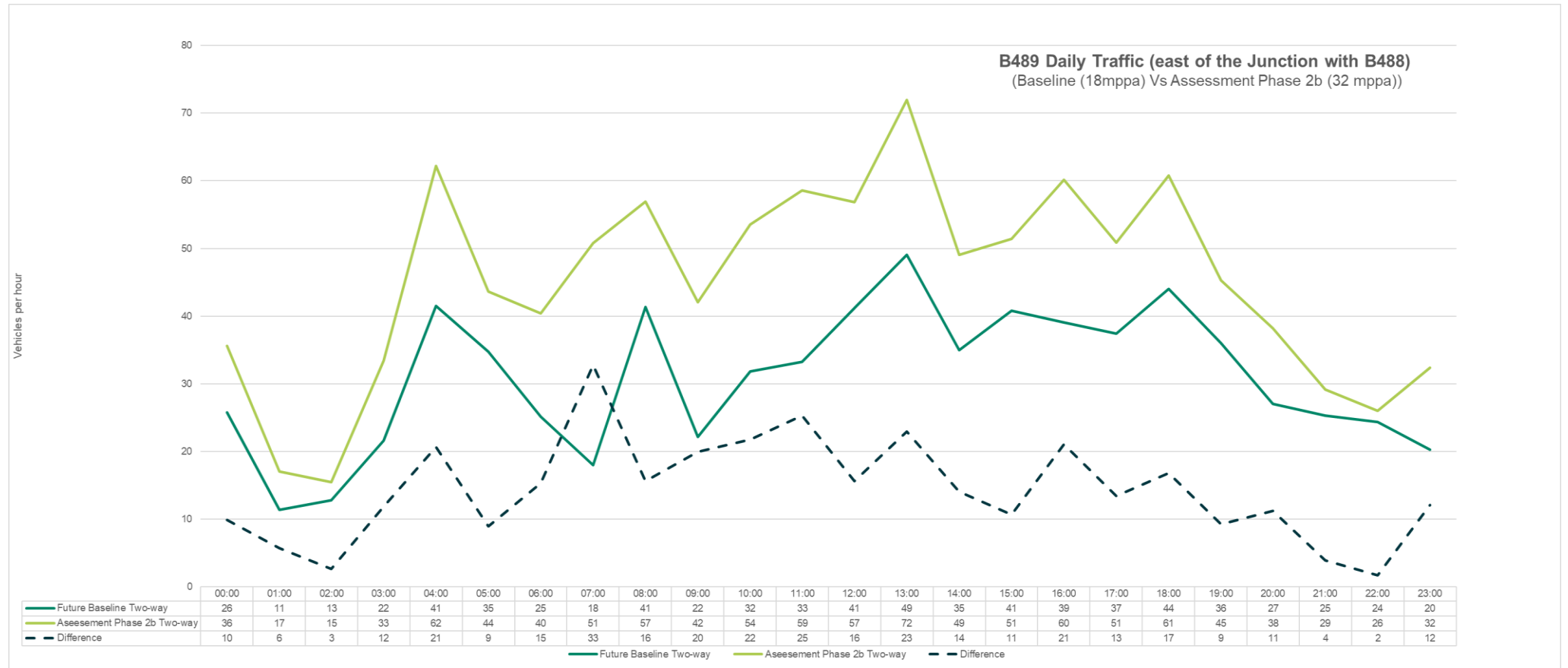


Figure 15 – B489 Daily Traffic (east of the Junction with B488) – 18 vs 32 mppa

## 3.2 Peak Hour Flow Differences Across Study Area

- 3.2.1 Within the Strategic Modelling Forecasting Report (**7.02 Transport Assessment Appendices – Part 2 of 3 Appendix F: Strategic Modelling Forecasting Report [APP-201]**) there is an extensive level of outputs reported. This includes traffic flow difference plots showing the impact of the additional airport traffic on the network.
- 3.2.2 Figures 5.3 and 5.4 in the Strategic Modelling Forecasting Report show the level of impact and indicate only very small increases in areas to the west of the M1, which includes the BC road network. For ease of reference these figures have been replicated below as Figures 16 and 17.
- 3.2.3 Figure 16 shows the wider road network which includes some of the Buckinghamshire' road network with labels to highlight the location of the B489 to the north-east of Ivinghoe. Figure 17 shows a zoomed-in area adjacent to the airport and the M1, to provide more detailed information on the traffic impact which is predominantly on the road network to the east of Buckinghamshire and therefore mainly impacting Luton, Central Bedfordshire and Hertfordshire.





Figure 16 (Part 1 / 2) – Forecast Change in Traffic Volumes (vehicles) between TAG-based “Without” and “With” Expansion, Simulation Network

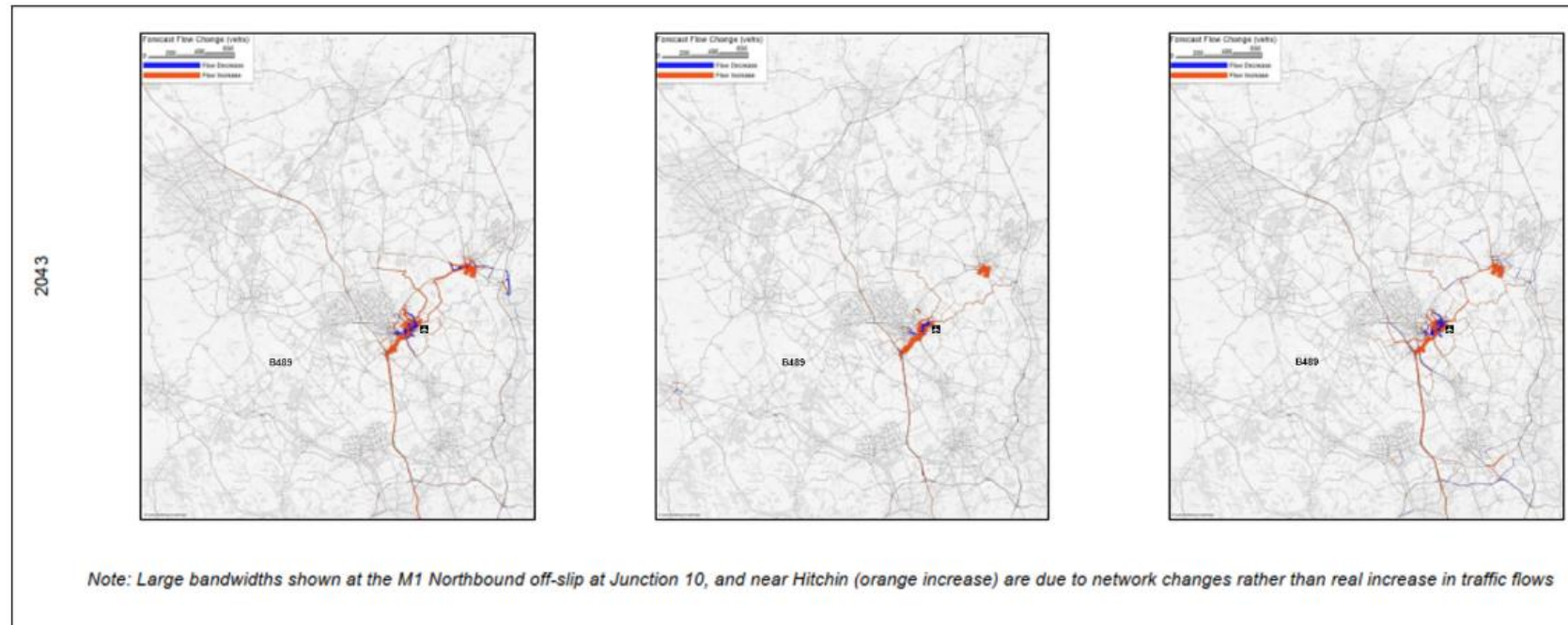


Figure 16 (Part 2 / 2) – Forecast Change in Traffic Volumes (vehicles) between TAG-based “Without” and “With” Expansion, Simulation Network



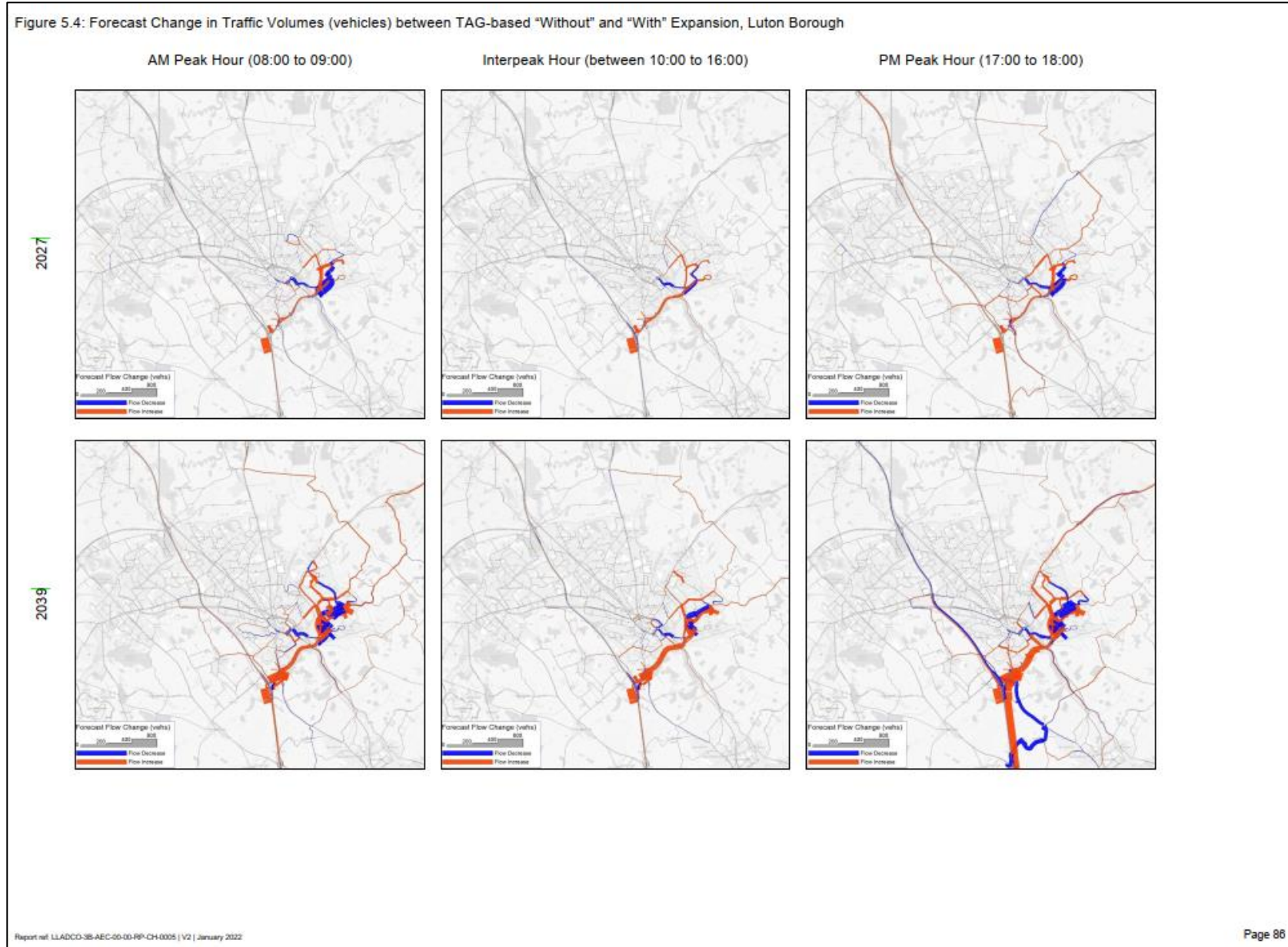


Figure 17 (Part 1 / 2) – Forecast Change in Traffic Volumes (vehicles) between TAG-based "Without" and "With" Expansion, Luton Borough

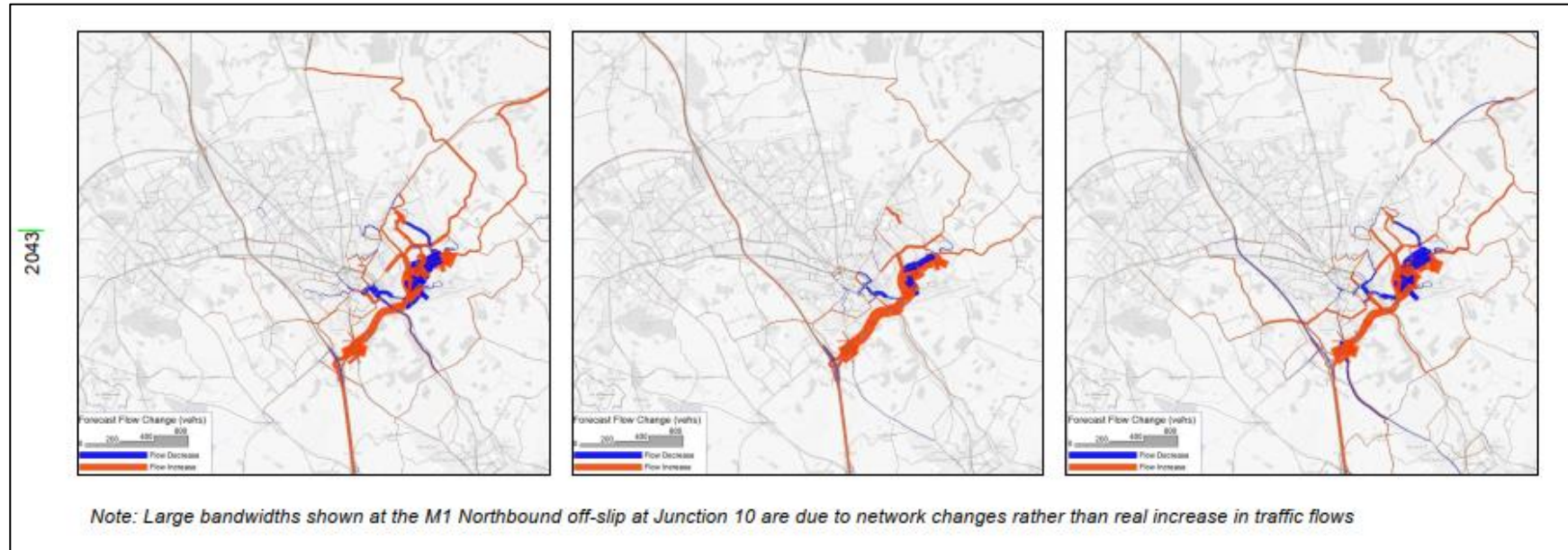


Figure 17 (Part 2 / 2) – Forecast Change in Traffic Volumes (vehicles) between TAG-based “Without” and “With” Expansion, Luton Borough



### 3.3 Peak Hour Flow Differences at Junction of B489 / B488, Ivinghoe

3.3.1 BC raised specific concerns in relation to the impact of the airport traffic on the junction of B489 and B488 immediately to the southeast of Ivinghoe. At a meeting on 8<sup>th</sup> August 2023 with BC, the Applicant presented peak hour flow extracts to illustrate the relative change in traffic levels as a result of the airport expansion. When considering the impact on road and junction capacity, it is the peak hourly traffic that would influence operational capacities.

3.3.2 Table 3 below summarises the overall increase in traffic at the junction of interest for all forecast modelled years, with the numbers taken from the same model runs that underly the flow differences presented in Figures 16 and 17. The table shows the relative total traffic increase on the junction and the percentage change between the With and Without Expansion runs in brackets.

Year	AM Peak			PM Peak		
	Without Expansion	With Expansion	Difference	Without Expansion	With Expansion	Difference
2027	1,589	1,594	5 (+0.3%)	1,595	1,607	12 (+0.7%)
2039	1,759	1,779	20 (+1.1%)	1,786	1,797	11 (+0.6%)
2043	1,812	1,850	38 (+2.1%)	1,833	1,861	28 (+1.5%)

*Note: The traffic values expressed in Passengers Car Units (PCU) per hour*

Table 3 – overall traffic summary for the B489 / B488 Junction

3.3.3 Table 3 shows the total traffic increase at the junction with these numbers being relatively small in volume, only up to 38 PCUs per hour, and in relation to the overall increase in traffic, only up to 2.1%. This is the effect of the combined impact of airport traffic, its associated mitigation and the re-distribution of background traffic, hence the values shown in Table 3 are different from the airport trip distribution shown in Table 2.

### 3.4 Pre-existing issues

3.4.1 BC has referred to pre-existing issues at the junction of the B489 and B488 in their **Local Impact Report**, paragraphs 3.3.18 and 3.3.19. It suggests that an improvement is needed regardless of any additional airport traffic. It also suggests options for junction re-prioritisation (BC Local Impact Report, paragraph 3.3.39), which could potentially divert traffic onto the B488 and Tring, within the Hertfordshire road network.

3.4.2 Within the Ivinghoe Parish Neighbourhood Plan 2014 – 2033 (Ref 1), the document refers to an existing issue related to traffic avoiding the busy junction of B488 and B489 [paragraph 5.6.6].

3.4.3 The Applicant has not yet seen clear evidence about the pre-existing issues referred to, nor believes the level of forecast additional traffic as a result of the airport expansion would be considered 'severe'.

## 4 SUMMARY AND KEY FINDINGS

### 4.1 Model Suitability

- 4.1.1 The CBLTM-LTN strategic model was calibrated and validated as per the DfT's TAG guidance and considered fit for purpose by all Host Authorities and National Highways.
- 4.1.2 The model includes Buckinghamshire within its modelled simulation network, with the fully modelled area covering much of the county. Also, the mobile phone demand data, upon which the model travel demands have been built, includes the whole of Buckinghamshire.
- 4.1.3 The model has also been calibrated / validated to screenlines for demands to/from the county of Buckinghamshire, in particular the "Dunstable Leighton Buzzard" Screenline, which performed well against observed counts. This adds to the confidence in the strategic model that the traffic demands travelling to and from the county shows a good match with observed counts.
- 4.1.4 With regards to the B489 corridor and the Ivinghoe junction of the B489 and B488, this is well represented in terms of network coding within the CBLTM-LTN.
- 4.1.5 Considering the above, the Applicant considers the CBLTM-LTN "fit for purpose" and able to assess the relative change and potential impacts of the proposed airport expansion upon the B489 corridor.

### 4.2 Traffic on B489 & B489/B488 Junction

- 4.2.1 The airport daily trip distribution along the B489 shows that the highest increase would be around 343 vehicles two-way.
- 4.2.2 When the airport traffic is distributed over 24 hours, the highest hourly increase in airport traffic along the B489 is 17 vehicles per hour in one direction, and 33 vehicles per hour two-way.
- 4.2.3 When considering the overall effect, which includes the traffic re-assignment, on the junction of the B489 and B488, the overall impact would be around 38 PCUs per hour in the AM and 28 PCUs in the PM peak hour, with both representing only a very small increase in the overall traffic.
- 4.2.4 It is worth noting that BC referred to pre-existing issues at the junction of the B489 and B488. This implies an improvement may be needed regardless of any potential additional traffic that would be generated by the airport expansion.
- 4.2.5 BC suggests options to look at including junction re-prioritisation, which could potentially divert traffic into the B488 and Tring within the Hertfordshire road network.

- 4.2.6 The Applicant has not yet seen clear evidence about the pre-existing issues referred to, nor does it believe the level of forecast additional traffic as a result of the airport expansion would be considered 'severe'.
- 4.2.7 In conclusion, it is considered that such a small numerical and percentage increase in total traffic cannot be considered as 'severe' and would not warrant the need for a capacity improvement at the B489/B488 junction as a result of the proposed airport expansion.



## REFERENCES

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Ref 1 Ivinghoe Parish Council (2018) *Ivinghoe Parish Neighbourhood Plan 2014–2033*. Available online.

### APPENDIX A 'DUNSTABLE LEIGHTON BUZZARD' SCREENLINE DETAILED PERFORMANCE

Map Ref	Direction	Location	Observed				Modelled				WebTAG			
			Car	LGV	HGV	Total	Car	LGV	HGV	Total	Car	LGV	HGV	Total
1	Northbound	B488; Att - Signpost; OSGR: SP 91230 23220	281	35	10	327	281	35	10	326	✓	✓	✓	✓
2	Northbound	A4146; Att - Signpost; OSGR: SP 93248 23226	235	35	21	291	234	35	21	290	✓	✓	✓	✓
3	Northbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	45	6	2	52	45	6	2	53	✓	✓	✓	✓
4	Northbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	139	17	5	162	132	20	6	159	✓	✓	✓	✓
5	Northbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	73	9	3	85	80	6	1	87	✓	✓	✓	✓
6	Northbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	310	39	11	361	284	38	13	335	✓	✓	✓	✓
7	Northbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	126	16	5	146	155	17	2	174	✓	✓	✓	✓
8	Northbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	206	26	7	240	233	9	3	244	✓	✓	✓	✓
9	Northbound	Buckwood Lane; 51.84568 -0.5159230	144	18	5	167	108	35	10	153	✓	✓	✓	✓
1	Southbound	B488; Att - Signpost; OSGR: SP 91230 23220	322	41	12	374	322	41	12	374	✓	✓	✓	✓
2	Southbound	A4146; Att - Signpost; OSGR: SP 93248 23226	479	71	43	593	487	71	43	601	✓	✓	✓	✓
3	Southbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	93	12	3	108	93	12	3	108	✓	✓	✓	✓
4	Southbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	223	28	8	259	197	29	7	234	✓	✓	✓	✓
5	Southbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	53	7	2	62	79	6	1	86	✓	✓	✓	✓
6	Southbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	414	52	15	481	310	45	20	376	✗	✓	✓	✗
7	Southbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	272	34	10	316	371	41	5	416	✓	✓	✓	✓
8	Southbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	175	22	6	203	178	24	4	207	✓	✓	✓	✓
9	Southbound	Buckwood Lane; 51.84568 -0.5159230	20	3	1	23	15	1	3	19	✓	✓	✓	✓

AM Peak Hour

Map Ref	Direction	Location	Observed				Modelled				WebTAG			
			Car	LGV	HGV	Total	Car	LGV	HGV	Total	Car	LGV	HGV	Total
1	Northbound	B488; Att - Signpost; OSGR: SP 91230 23220	184	36	14	233	184	36	14	233	✓	✓	✓	✓
2	Northbound	A4146; Att - Signpost; OSGR: SP 93248 23226	213	47	36	296	213	47	37	297	✓	✓	✓	✓
3	Northbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	42	8	3	53	42	8	3	53	✓	✓	✓	✓
4	Northbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	93	18	7	117	103	22	9	134	✓	✓	✓	✓
5	Northbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	49	10	4	63	39	6	2	46	✓	✓	✓	✓
6	Northbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	198	38	15	251	170	36	20	227	✓	✓	✓	✓
7	Northbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	139	27	10	176	169	30	5	204	✓	✓	✓	✓
8	Northbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	132	26	10	168	151	11	4	165	✓	✓	✓	✓
9	Northbound	Buckwood Lane; 51.84568 -0.5159230	25	5	2	32	6	20	8	34	✓	✓	✓	✓
1	Southbound	B488; Att - Signpost; OSGR: SP 91230 23220	170	33	13	216	171	33	13	216	✓	✓	✓	✓
2	Southbound	A4146; Att - Signpost; OSGR: SP 93248 23226	193	42	33	269	193	42	33	268	✓	✓	✓	✓
3	Southbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	46	9	3	58	46	9	4	59	✓	✓	✓	✓
4	Southbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	97	19	7	123	107	22	9	138	✓	✓	✓	✓
5	Southbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	48	9	4	61	39	6	1	46	✓	✓	✓	✓
6	Southbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	185	36	14	234	188	38	20	245	✓	✓	✓	✓
7	Southbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	134	26	10	170	130	24	3	158	✓	✓	✓	✓
8	Southbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	153	30	11	194	165	7	4	175	✓	✓	✓	✓
9	Southbound	Buckwood Lane; 51.84568 -0.5159230	23	5	2	30	13	30	9	52	✓	✓	✓	✓

Inter-Peak Average Hour

Map Ref	Direction	Location	Observed				Modelled				WebTAG			
			Car	LGV	HGV	Total	Car	LGV	HGV	Total	Car	LGV	HGV	Total
1	Northbound	B488; Att - Signpost; OSGR: SP 91230 23220	359	42	7	408	358	47	7	412	✓	✓	✓	✓
2	Northbound	A4146; Att - Signpost; OSGR: SP 93248 23226	480	62	23	566	480	62	23	565	✓	✓	✓	✓
3	Northbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	105	12	2	120	105	12	2	119	✓	✓	✓	✓
4	Northbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	217	26	4	247	200	26	4	230	✓	✓	✓	✓
5	Northbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	60	7	1	68	77	7	1	85	✓	✓	✓	✓
6	Northbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	520	62	10	592	407	55	13	474	✗	✓	✓	✗
7	Northbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	308	36	6	350	423	43	3	469	✗	✓	✓	✗
8	Northbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	212	25	4	241	248	29	2	279	✓	✓	✓	✓
9	Northbound	Buckwood Lane; 51.84568 -0.5159230	42	5	1	47	7	0	4	11	✓	✓	✓	✓
1	Southbound	B488; Att - Signpost; OSGR: SP 91230 23220	261	31	5	297	262	31	5	298	✓	✓	✓	✓
2	Southbound	A4146; Att - Signpost; OSGR: SP 93248 23226	319	41	16	376	318	42	19	378	✓	✓	✓	✓
3	Southbound	Stanbridge Road; Att - Telepole; OSGR: SP 95495 22890	64	8	1	73	64	8	2	73	✓	✓	✓	✓
4	Southbound	Totterhoe Road; Att - Telepole; OSGR: SP 97079 21555	175	21	3	199	181	22	4	207	✓	✓	✓	✓
5	Southbound	Church Road; Att - Telepole; OSGR: SP 99048 21156	72	9	1	82	66	8	1	75	✓	✓	✓	✓
6	Southbound	Icknield Way; Att - Signpost; OSGR: TL 00071 20576	304	36	6	346	275	37	8	320	✓	✓	✓	✓
7	Southbound	B4541; Att - Golf club sign; OSGR: TL 00824 20369	148	18	3	168	182	17	2	200	✓	✓	✓	✓
8	Southbound	Common Road; Att - Direction sign; OSGR: TL 02656 18237	258	31	5	294	306	16	1	323	✓	✓	✓	✓
9	Southbound	Buckwood Lane; 51.84568 -0.5159230	68	8	1	77	21	22	9	53	✓	✓	✓	✓

PM Peak Hour