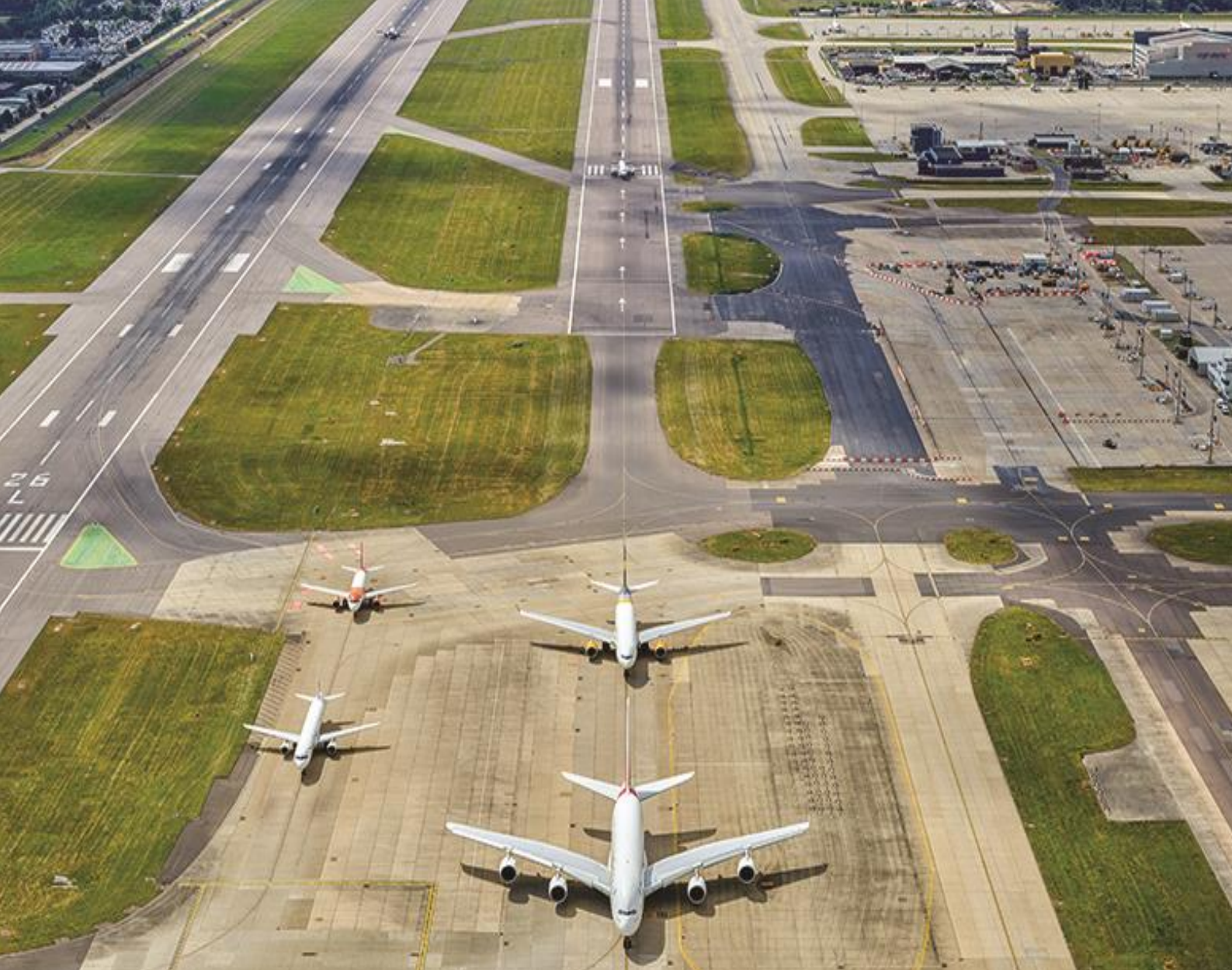


Gatwick Airport Northern Runway Project

Accounting for Covid-19 in Transport Modelling - Appendices

Book 8

VERSION: 1.0

DATE: January 2024

Application Document Ref: 8.5

PINS Reference Number: TR020005

Contents

Appendix 1 - TEMPro (NTEM) v7.2 to v8

1.1. TEMPro (NTEM) v8 release notes

NTEM 8.0 dataset- summary of changes from version 7.2

Version 8.0 of the NTEM dataset has been updated with the following changes:

- Forecasting horizon was extended to 2061 from the previous 2051
- Population projections at local authority district level have been changed by using the 2018-based forecasts, 0% future EU migration variant
- Household information for 2021 to 2061 was derived using the 2018-based Principal scenario to fill the gaps in the 0% future EU migration scenario.
- Dwellings projections were updated:
  - For England - local plans to meet housing requirements set by the National Planning Policy Framework and live tables on housing supply.
  - For Scotland - existing local development plan information on effective five-year land supply which was assembled by the Improvement Service for the Planning Performance Framework figures.
  - For Wales - dwelling stock estimates were taken from the Welsh Government Dwelling stock estimates available from the StatsWales website for each local authority at 31st March each year, as at 31 March 2020. The housing data was provided by Transport for Wales, collated from the Local Authorities.
- Employment projections - the Working Futures jobs by sector, gender and working status was used to estimate medium term jobs. For long term growth the Office of Business Research (OBR) forecasts of unemployment (and hence employment) was used
- Income Index or GDP per household has been changed in the car ownership model
- Car purchase cost index has been changed in the car ownership model but is held constant throughout the forecast period
- Car running cost index has been changed in the car ownership model. Motoring costs specifically average fuel and non-fuel costs per kilometre were updated using the TAG databook (version 1.15, July 2021).

1.2. NTEM 7.2 vs NTEM 8

Table 1: Source of growth projections

Local authority		NTEM v7.2	NTEM v8	Model
Surrey	Epsom and Ewell	AMR 2014/2015	Core Strategy 2007	Core Strategy 2007
	Mole Valley	AMR 2013/2014	Core Strategy	Core Strategy
	Reigate and Banstead	Local Plan: Core Strategy	Local Plan: Core Strategy	Local Plan: Core Strategy
	Tandridge	AMR 2013/2014	Our Local Plan 2033	Our Local Plan 2033
West Sussex	Crawley	AMR 2013/2045	Local Plan 2015 - 2030	Local Plan 2015 - 2030
	Horsham	AMR 2015/2016	Development Framework 2015	Development Framework 2015
	Mid Sussex	SHLAA 2015	District Plan 2014 – 2031	District Plan 2014 – 2031
East Sussex	Wealden	AMR 2013/2014	Adopted Core Strategy 2013	Adopted Core Strategy 2013
London	Sutton	SHLAA 2013	The London Plan	Local Plan 2018
	Croydon	SHLAA 2013	The London Plan	Local Plan 2018

Table 2: NTEM 7.2 to NTEM 8 housing and employment % difference

Housing				
Local Authority		**NTEM 7.2 vs NTEM 8**		
		2023	**2029**	**2047**
West Sussex	Horsham	-60%	-50%	-41%
	Crawley	-65%	-51%	-42%
	Mid Sussex	-64%	-52%	-49%
Surrey	Mole Valley	-86%	-81%	-73%
	Reigate and Banstead	-58%	-51%	-48%
	Tandridge	20%	51%	91%
	Epsom and Ewell	-63%	-50%	-44%
East Sussex	Wealden	-54%	-43%	-33%
London	Sutton	-16%	-5%	-6%
	Croydon	-58%	-52%	-53%
Employment				
Local Authority		**NTEM 7.2 vs NTEM 8**		
		2023	**2029**	**2047**
West Sussex	Horsham	43%	44%	-25%
	Crawley	24%	25%	-32%
	Mid Sussex	39%	45%	-23%
Surrey	Mole Valley	43%	44%	-25%
	Reigate and Banstead	40%	45%	-23%
	Tandridge	44%	50%	-22%
	Epsom and Ewell	53%	58%	-18%
East Sussex	Wealden	13%	36%	-20%
London	Sutton	37%	54%	-9%
	Croydon	48%	61%	-9%

Appendix 2 – 2023 Model Verification – Scatter plots

Figure 1: AM1 2016 vs 2023 observed counts scatter plot

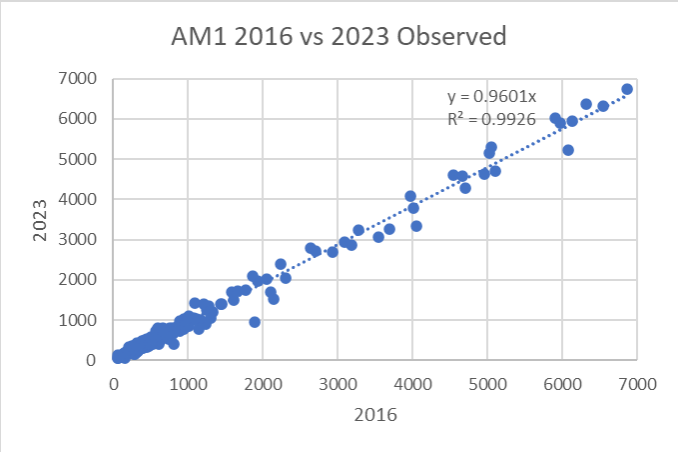


Figure 2: AM1 2016 vs 2023 modelled counts scatter plot

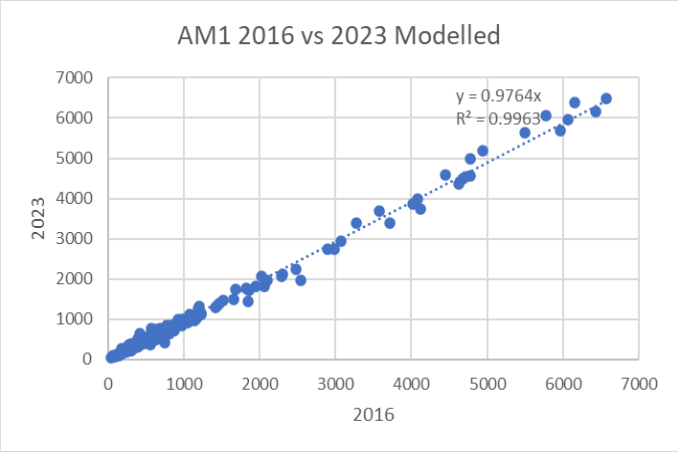


Figure 3: AM1 2023 observed vs modelled counts scatter plot

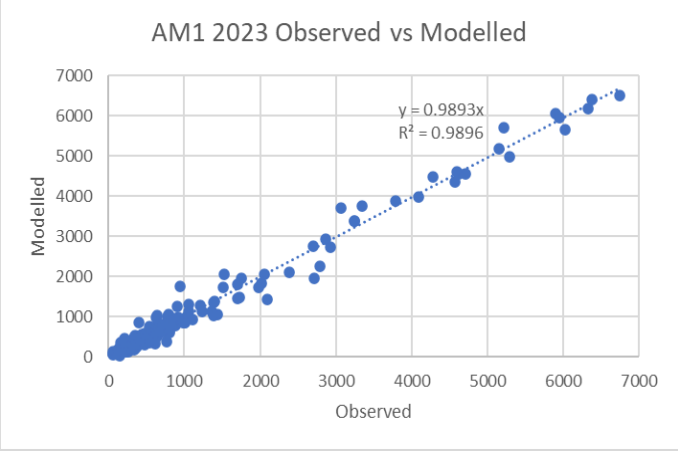


Figure 4: AM2 2016 vs 2023 observed counts scatter plot

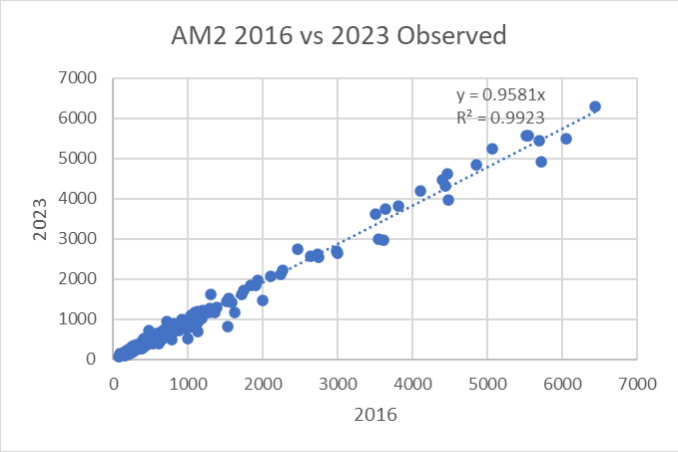


Figure 5: AM2 2016 vs 2023 modelled counts scatter plot

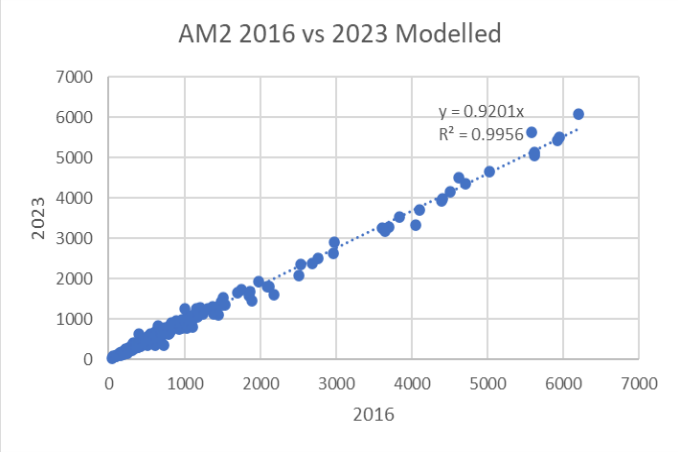


Figure 6: AM2 2023 observed vs modelled counts scatter plot

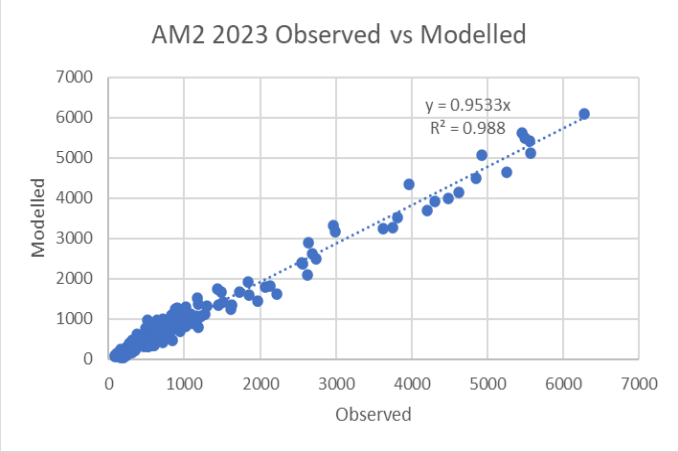


Figure 7: IP 2016 vs 2023 observed counts scatter plot

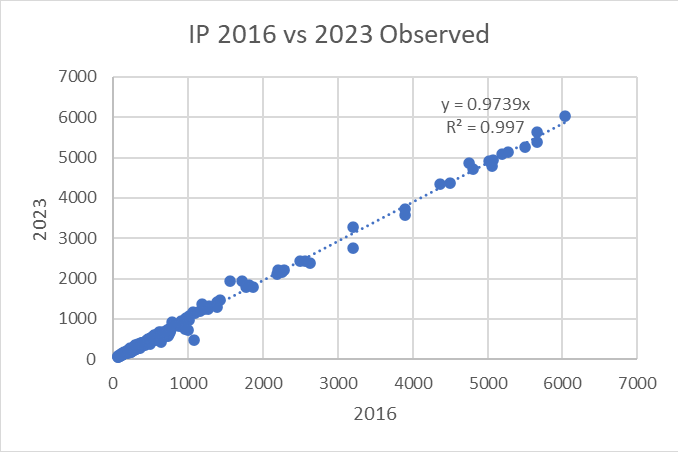


Figure 8: IP 2016 vs 2023 modelled counts scatter plot

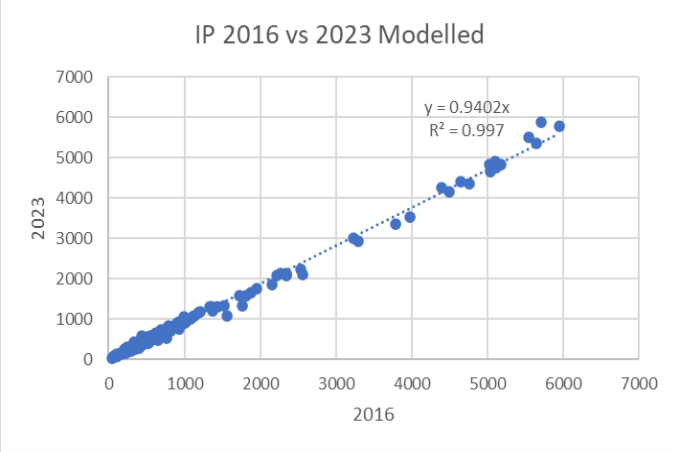


Figure 9: IP 2023 observed vs modelled counts scatter plot

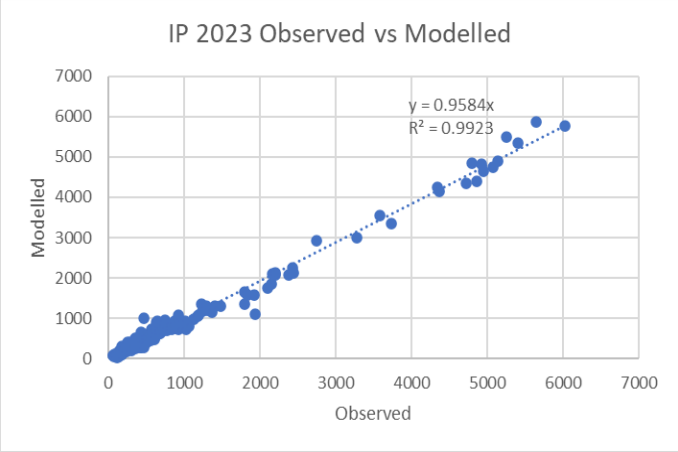


Figure 10: PM 2016 vs 2023 observed counts scatter plot

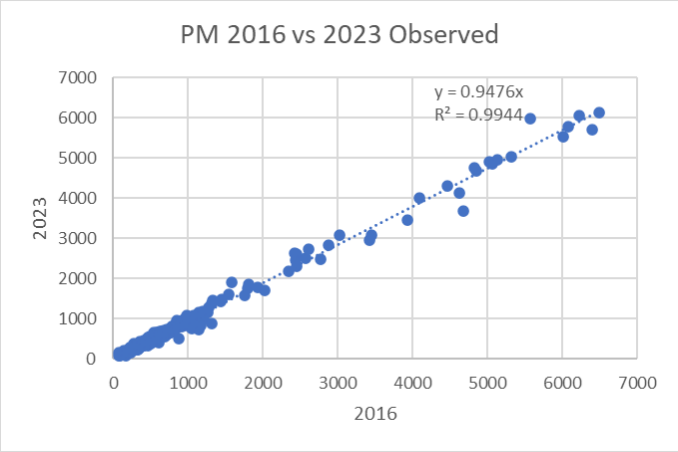


Figure 11: PM 2016 vs 2023 modelled counts scatter plot

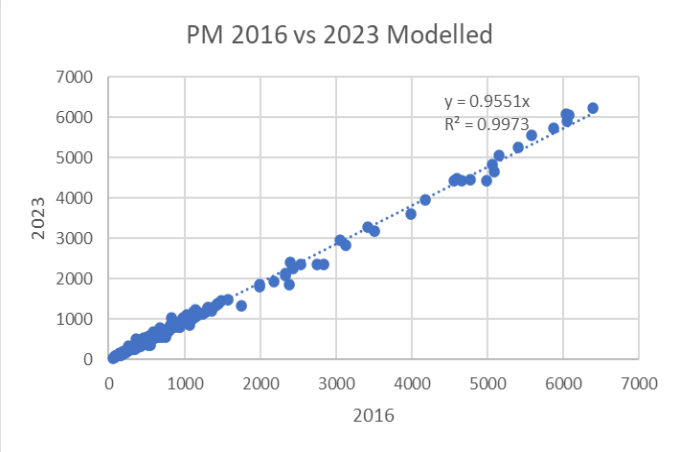
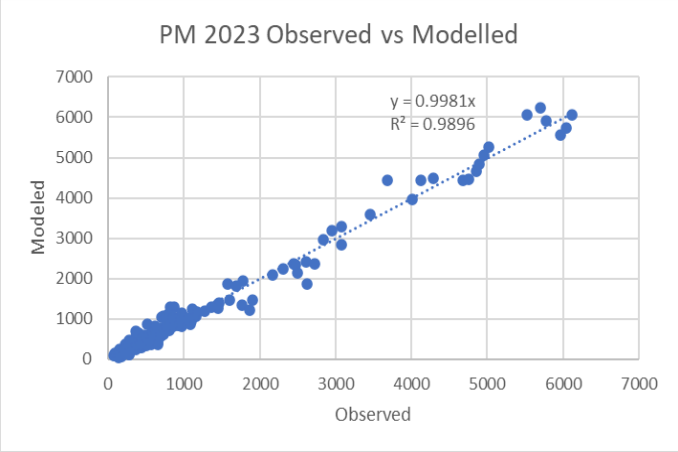


Figure 12: PM 2023 observed vs modelled counts scatter plot



Appendix 3 – Highway Demand

Reference Demand

Table 3: 24hr reference highway demand (future baseline sensitivity)

	Demand (thousands PCUs)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
Business	7,312	5,669	5,759	5,905	6,074	-22%	-21%	-19%	-17%	-31%	-31%	-32%	-34%
Commute	20,794	21,260	21,556	22,008	22,489	2%	4%	6%	8%	-7%	-7%	-8%	-11%
Other	44,494	44,909	45,787	47,163	48,893	1%	3%	6%	10%	-13%	-14%	-15%	-18%
LGV	10,801	13,406	13,718	14,787	16,363	24%	27%	37%	52%	4%	3%	2%	4%
HGV	5,291	5,651	5,745	5,924	6,126	7%	9%	12%	16%	6%	6%	7%	7%
Air passengers	80	95	98	102	106	19%	23%	28%	33%	0%	0%	0%	0%
Airport employees	16	19	19	20	20	16%	18%	21%	25%	0%	0%	0%	0%
TOTAL	**88,787**	**91,009**	**92,682**	**95,908**	**100,071**	**3%**	**4%**	**8%**	**13%**	**-10%**	**-11%**	**-12%**	**-14%**

Table 4: AM reference highway demand (future baseline sensitivity)

	Demand (thousands PCUs)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
Business	1,112	863	877	900	926	-22%	-21%	-19%	-17%	-31%	-31%	-32%	-34%
Commute	4,663	4,760	4,825	4,923	5,025	2%	3%	6%	8%	-7%	-7%	-8%	-11%
Other	4,604	4,653	4,745	4,886	5,064	1%	3%	6%	10%	-13%	-14%	-16%	-18%
LGV	1,581	1,964	2,009	2,166	2,397	24%	27%	37%	52%	4%	3%	3%	4%
HGV	759	811	825	850	880	7%	9%	12%	16%	6%	6%	7%	7%
Air passengers	8	11	12	12	12	41%	49%	58%	61%	0%	0%	0%	0%
Airport employees	2	3	3	3	3	16%	18%	21%	25%	0%	0%	0%	0%
TOTAL	**12,729**	**13,065**	**13,295**	**13,741**	**14,308**	**3%**	**4%**	**8%**	**12%**	**-9%**	**-10%**	**-11%**	**-13%**

Table 5: IP reference highway demand (future baseline sensitivity)

	Demand (thousands PCUs)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
Business	3,299	2,554	2,594	2,658	2,732	-23%	-21%	-19%	-17%	-31%	-31%	-32%	-34%
Commute	6,709	6,873	6,970	7,117	7,275	2%	4%	6%	8%	-7%	-7%	-8%	-11%
Other	20,557	20,734	21,137	21,766	22,552	1%	3%	6%	10%	-13%	-14%	-15%	-18%
LGV	6,314	7,838	8,021	8,646	9,568	24%	27%	37%	52%	4%	3%	2%	4%
HGV	3,482	3,719	3,780	3,897	4,029	7%	9%	12%	16%	6%	6%	7%	7%
Air passengers	29	32	32	33	35	8%	10%	13%	18%	0%	0%	0%	0%
Airport employees	5	6	6	6	6	16%	18%	21%	25%	0%	0%	0%	0%
TOTAL	**40,396**	**41,755**	**42,540**	**44,123**	**46,197**	**3%**	**5%**	**9%**	**14%**	**-9%**	**-10%**	**-11%**	**-13%**

Table 6: PM reference highway demand (future baseline sensitivity)

	Demand (thousands PCUs)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
Business	1,151	895	909	933	961	-22%	-21%	-19%	-16%	-31%	-31%	-32%	-34%
Commute	4,277	4,366	4,426	4,517	4,612	2%	3%	6%	8%	-7%	-7%	-8%	-11%
Other	6,293	6,362	6,489	6,685	6,932	1%	3%	6%	10%	-13%	-14%	-15%	-18%
LGV	1,768	2,196	2,247	2,422	2,680	24%	27%	37%	52%	4%	3%	2%	4%
HGV	721	770	783	808	836	7%	9%	12%	16%	6%	6%	7%	7%
Air passengers	7	8	8	9	10	13%	15%	21%	32%	0%	0%	0%	0%
Airport employees	2	2	2	2	2	14%	15%	18%	21%	0%	0%	0%	0%
TOTAL	**14,218**	**14,600**	**14,865**	**15,376**	**16,033**	**3%**	**5%**	**8%**	**13%**	**-10%**	**-10%**	**-11%**	**-13%**

Post VDM

Table 7: 24hr future baseline sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Business	7,312	8,143	8,294	8,616	9,149	5,657	5,749	5,893	6,053	-31%	-31%	-32%	-34%
Commute	20,794	22,640	22,963	23,676	24,860	21,055	21,324	21,715	22,085	-7%	-7%	-8%	-11%
Other	44,494	51,535	52,843	55,303	58,958	44,753	45,553	46,790	48,324	-13%	-14%	-15%	-18%
LGV	10,801	12,847	13,346	14,430	15,782	13,406	13,718	14,787	16,363	4%	3%	2%	4%
HGV	5,291	5,352	5,407	5,540	5,714	5,651	5,745	5,924	6,126	6%	6%	7%	7%
Air passengers	80	83	85	89	93	84	86	90	94	1%	1%	1%	1%
Airport employees	16	18	18	18	19	18	18	19	19	1%	1%	2%	2%
TOTAL	**88,787**	**100,619**	**102,957**	**107,673**	**114,574**	**90,624**	**92,194**	**95,217**	**99,064**	**-10%**	**-10%**	**-12%**	**-14%**

Table 8: 24hr with Project sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Business	7,312	8,143	8,295	8,616	9,149	5,657	5,749	5,893	6,053	-31%	-31%	-32%	-34%
Commute	20,794	22,640	22,963	23,676	24,861	21,055	21,324	21,714	22,085	-7%	-7%	-8%	-11%
Other	44,494	51,535	52,844	55,304	58,960	44,753	45,555	46,792	48,327	-13%	-14%	-15%	-18%
LGV	10,801	12,848	13,348	14,432	15,784	13,406	13,720	14,789	16,365	4%	3%	2%	4%
HGV	5,291	5,353	5,409	5,542	5,715	5,652	5,747	5,926	6,127	6%	6%	7%	7%
Air passengers	80	85	97	102	106	86	98	103	107	1%	1%	1%	1%
Airport employees	16	16	18	18	19	16	18	19	19	1%	1%	1%	2%
TOTAL	**88,787**	**100,620**	**102,973**	**107,691**	**114,594**	**90,626**	**92,211**	**95,236**	**99,084**	**-10%**	**-10%**	**-12%**	**-14%**

Table 9: AM future baseline sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Business	1,112	1,240	1,263	1,313	1,394	862	876	899	923	-30%	-31%	-32%	-34%
Commute	4,663	5,073	5,143	5,300	5,565	4,725	4,783	4,867	4,946	-7%	-7%	-8%	-11%
Other	4,604	5,342	5,479	5,736	6,113	4,634	4,717	4,845	5,001	-13%	-14%	-16%	-18%
LGV	1,581	1,881	1,954	2,113	2,311	1,964	2,009	2,166	2,397	4%	3%	3%	4%
HGV	759	769	777	796	822	811	825	850	880	6%	6%	7%	7%
Air passengers	8	9	10	10	10	10	10	11	11	2%	3%	3%	3%
Airport employees	2	2	2	2	2	2	2	3	3	2%	3%	3%	5%
TOTAL	**12,729**	**14,315**	**14,628**	**15,270**	**16,218**	**13,007**	**13,223**	**13,640**	**14,161**	**-9%**	**-10%**	**-11%**	**-13%**

Table 10: AM with Project sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Business	1,112	1,240	1,263	1,313	1,394	862	876	899	923	-30%	-31%	-32%	-34%
Commute	4,663	5,073	5,142	5,299	5,565	4,725	4,783	4,867	4,946	-7%	-7%	-8%	-11%
Other	4,604	5,342	5,479	5,736	6,114	4,634	4,718	4,845	5,001	-13%	-14%	-16%	-18%
LGV	1,581	1,881	1,954	2,113	2,311	1,964	2,010	2,166	2,397	4%	3%	3%	4%
HGV	759	769	777	796	822	811	825	851	880	6%	6%	7%	7%
Air passengers	8	10	12	12	13	10	12	13	13	2%	1%	1%	2%
Airport employees	2	2	2	2	3	2	2	3	3	3%	1%	2%	2%
TOTAL	**12,729**	**14,316**	**14,630**	**15,272**	**16,220**	**13,008**	**13,225**	**13,643**	**14,164**	**-9%**	**-10%**	**-11%**	**-13%**

Table 11: IP future baseline sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Business	3,299	3,673	3,741	3,883	4,121	2,550	2,591	2,654	2,725	-31%	-31%	-32%	-34%
Commute	6,709	7,303	7,407	7,637	8,020	6,802	6,888	7,013	7,135	-7%	-7%	-8%	-11%
Other	20,557	23,795	24,394	25,522	27,208	20,681	21,046	21,611	22,313	-13%	-14%	-15%	-18%
LGV	6,314	7,513	7,805	8,439	9,229	7,838	8,021	8,646	9,568	4%	3%	2%	4%
HGV	3,482	3,521	3,557	3,643	3,757	3,719	3,780	3,897	4,029	6%	6%	7%	7%
Air passengers	29	27	27	28	29	27	28	29	30	1%	1%	1%	2%
Airport employees	5	5	5	5	6	5	5	5	6	1%	1%	1%	2%
TOTAL	**40,396**	**45,838**	**46,936**	**49,157**	**52,370**	**41,621**	**42,358**	**43,855**	**45,805**	**-9%**	**-10%**	**-11%**	**-13%**

Table 12: IP with Project sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Business	3,299	3,673	3,741	3,884	4,121	2,550	2,591	2,654	2,725	-31%	-31%	-32%	-34%
Commute	6,709	7,303	7,408	7,636	8,020	6,802	6,888	7,013	7,135	-7%	-7%	-8%	-11%
Other	20,557	23,795	24,394	25,522	27,209	20,681	21,047	21,612	22,314	-13%	-14%	-15%	-18%
LGV	6,314	7,514	7,806	8,440	9,231	7,838	8,022	8,647	9,569	4%	3%	2%	4%
HGV	3,482	3,521	3,558	3,644	3,758	3,719	3,781	3,898	4,030	6%	6%	7%	7%
Air passengers	29	28	31	32	34	28	31	33	34	1%	1%	1%	1%
Airport employees	5	5	5	5	6	5	5	6	6	1%	1%	1%	1%
TOTAL	**40,396**	**45,839**	**46,942**	**49,165**	**52,378**	**41,623**	**42,365**	**43,863**	**45,812**	**-9%**	**-10%**	**-11%**	**-13%**

Table 13: PM future baseline sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Business	1,151	1,284	1,308	1,359	1,445	892	907	931	957	-30%	-31%	-32%	-34%
Commute	4,277	4,660	4,726	4,873	5,117	4,333	4,389	4,469	4,543	-7%	-7%	-8%	-11%
Other	6,293	7,295	7,481	7,828	8,344	6,339	6,452	6,626	6,842	-13%	-14%	-15%	-18%
LGV	1,768	2,104	2,186	2,363	2,584	2,196	2,247	2,422	2,680	4%	3%	2%	4%
HGV	721	729	737	756	780	770	783	808	836	6%	6%	7%	7%
Air passengers	7	7	7	7	8	7	7	8	8	1%	1%	1%	1%
Airport employees	2	2	2	2	2	2	2	2	2	2%	2%	2%	4%
TOTAL	**14,218**	**16,081**	**16,447**	**17,189**	**18,281**	**14,540**	**14,788**	**15,265**	**15,868**	**-10%**	**-10%**	**-11%**	**-13%**

Table 14: PM with Project sensitivity post-VDM highway demand comparison to the application

	Demand (thousands PCUs)									% Difference			
	Application Modelling					Sensitivity Modelling							
	2016	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Business	1,151	1,284	1,308	1,359	1,445	892	908	931	957	-30%	-31%	-32%	-34%
Commute	4,277	4,660	4,726	4,873	5,117	4,333	4,389	4,469	4,543	-7%	-7%	-8%	-11%
Other	6,293	7,295	7,481	7,828	8,345	6,339	6,452	6,626	6,842	-13%	-14%	-15%	-18%
LGV	1,768	2,104	2,186	2,363	2,585	2,196	2,247	2,422	2,681	4%	3%	2%	4%
HGV	721	730	737	756	780	770	783	808	836	6%	6%	7%	7%
Air passengers	7	7	8	9	9	7	9	9	9	1%	1%	1%	1%
Airport employees	2	2	2	2	2	2	2	2	2	2%	2%	2%	3%
TOTAL	**14,218**	**16,081**	**16,448**	**17,190**	**18,282**	**14,540**	**14,790**	**15,267**	**15,870**	**-10%**	**-10%**	**-11%**	**-13%**

Appendix 4 – Rail Demand

Reference Demand

Table 15: 24hr reference rail demand (future baseline sensitivity)

	Demand (thousands trips)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
CA Business	500	455	469	490	521	-9%	-6%	-2%	4%	-26%	-26%	-27%	-28%
CA Commute	3,216	3,112	3,204	3,343	3,527	-3%	0%	4%	10%	-19%	-18%	-18%	-19%
CA Other	879	1,048	1,078	1,123	1,180	19%	23%	28%	34%	-3%	-4%	-5%	-7%
NCA Business	179	145	147	149	151	-19%	-18%	-17%	-15%	-23%	-24%	-23%	-22%
NCA Commute	1,321	1,126	1,140	1,150	1,157	-15%	-14%	-13%	-12%	-16%	-16%	-15%	-14%
NCA Other	523	540	545	548	548	3%	4%	5%	5%	0%	-1%	-2%	0%
Total Business	679	601	616	639	673	-12%	-9%	-6%	-1%	-25%	-25%	-26%	-27%
Total Commute	4,537	4,238	4,344	4,493	4,685	-7%	-4%	-1%	3%	-18%	-18%	-18%	-18%
Total Other	1,402	1,588	1,623	1,672	1,728	13%	16%	19%	23%	-2%	-3%	-4%	-5%
Air passengers	457	595	618	644	670	30%	35%	41%	47%	0%	0%	0%	0%
Airport employees	35	40	41	42	43	16%	17%	20%	24%	0%	0%	0%	0%
TOTAL	**7,110**	**7,062**	**7,242**	**7,489**	**7,799**	**-1%**	**2%**	**5%**	**10%**	**-14%**	**-14%**	**-14%**	**-15%**

Table 16: AM reference rail demand (future baseline sensitivity)

	Demand (thousands trips)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
CA Business	86	79	81	85	91	-8%	-6%	-1%	5%	-26%	-26%	-27%	-28%
CA Commute	1,025	997	1,027	1,072	1,133	-3%	0%	5%	10%	-19%	-18%	-18%	-19%
CA Other	67	82	84	88	94	22%	26%	32%	40%	-3%	-4%	-5%	-7%
NCA Business	32	26	26	27	27	-18%	-17%	-16%	-15%	-23%	-24%	-23%	-22%
NCA Commute	424	363	368	372	374	-14%	-13%	-12%	-12%	-16%	-16%	-15%	-13%
NCA Other	41	44	44	45	45	5%	7%	8%	9%	0%	-1%	-2%	-1%
Total Business	118	105	108	112	118	-11%	-9%	-5%	0%	-25%	-25%	-26%	-26%
Total Commute	1,450	1,360	1,395	1,444	1,507	-6%	-4%	0%	4%	-18%	-18%	-17%	-18%
Total Other	108	125	128	133	139	16%	18%	23%	28%	-2%	-3%	-4%	-5%
Air passengers	41	63	66	70	71	53%	61%	71%	74%	0%	0%	0%	0%
Airport employees	6	6	6	7	7	15%	17%	20%	24%	0%	0%	0%	0%
TOTAL	**1,722**	**1,659**	**1,703**	**1,765**	**1,842**	**-4%**	**-1%**	**2%**	**7%**	**-17%**	**-17%**	**-17%**	**-17%**

Table 17: IP reference rail demand (future baseline sensitivity)

	Demand (thousands trips)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
CA Business	202	183	189	197	210	-9%	-7%	-2%	4%	-26%	-26%	-27%	-28%
CA Commute	624	600	617	642	677	-4%	-1%	3%	9%	-19%	-19%	-19%	-19%
CA Other	417	494	508	528	554	19%	22%	27%	33%	-3%	-4%	-5%	-7%
NCA Business	71	57	58	59	60	-19%	-18%	-17%	-15%	-23%	-24%	-23%	-22%
NCA Commute	252	214	216	218	219	-15%	-14%	-14%	-13%	-16%	-16%	-15%	-14%
NCA Other	246	253	255	257	256	3%	4%	4%	4%	0%	-1%	-2%	0%
Total Business	273	241	247	256	269	-12%	-9%	-6%	-1%	-25%	-25%	-26%	-27%
Total Commute	876	814	833	861	896	-7%	-5%	-2%	2%	-18%	-18%	-18%	-18%
Total Other	663	747	763	785	810	13%	15%	18%	22%	-2%	-3%	-4%	-5%
Air passengers	213	253	260	268	279	19%	23%	26%	31%	0%	0%	0%	0%
Airport employees	10	11	12	12	12	16%	18%	21%	25%	0%	0%	0%	0%
TOTAL	**2,034**	**2,066**	**2,115**	**2,182**	**2,268**	**2%**	**4%**	**7%**	**12%**	**-12%**	**-12%**	**-12%**	**-13%**

Table 18: PM reference rail demand (future baseline sensitivity)

	Demand (thousands trips)					Growth from 2016		% Difference from application modelling					
	2016	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
CA Business	96	88	90	95	101	-8%	-6%	-1%	5%	-26%	-26%	-27%	-28%
CA Commute	707	689	711	741	782	-2%	1%	5%	11%	-18%	-18%	-18%	-19%
CA Other	157	187	192	200	211	19%	23%	28%	35%	-3%	-4%	-5%	-7%
NCA Business	35	28	29	29	30	-18%	-17%	-16%	-15%	-24%	-24%	-23%	-22%
NCA Commute	297	254	258	260	261	-14%	-13%	-12%	-12%	-16%	-16%	-15%	-13%
NCA Other	92	95	96	97	97	4%	5%	5%	5%	0%	-1%	-2%	0%
Total Business	131	116	119	124	130	-11%	-9%	-5%	0%	-25%	-25%	-26%	-27%
Total Commute	1,003	943	969	1,001	1,043	-6%	-3%	0%	4%	-18%	-17%	-17%	-17%
Total Other	249	282	289	297	308	14%	16%	20%	24%	-2%	-3%	-4%	-5%
Air passengers	59	76	78	82	89	30%	33%	39%	51%	0%	0%	0%	0%
Airport employees	5	6	6	6	6	13%	15%	17%	21%	0%	0%	0%	0%
TOTAL	**1,447**	**1,424**	**1,461**	**1,510**	**1,576**	**-2%**	**1%**	**4%**	**9%**	**-15%**	**-15%**	**-15%**	**-15%**

Post VDM Demand

Table 19: 24hr future baseline sensitivity post-VDM rail demand comparison to the application

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	500	644	662	699	766	469	480	503	544	-27%	-27%	-28%	-29%
CA Commute	3,216	4,081	4,217	4,468	4,873	3,335	3,455	3,661	3,967	-18%	-18%	-18%	-19%
CA Other	879	1,321	1,425	1,638	1,991	1,266	1,350	1,526	1,834	-4%	-5%	-7%	-8%
NCA Business	179	190	193	194	194	145	147	149	151	-23%	-24%	-23%	-22%
NCA Commute	1,321	1,346	1,360	1,358	1,338	1,126	1,140	1,150	1,157	-16%	-16%	-15%	-14%
NCA Other	523	539	550	557	550	540	545	548	548	0%	-1%	-2%	0%
Total Business	679	834	855	893	960	614	628	652	696	-26%	-27%	-27%	-28%
Total Commute	4,537	5,428	5,577	5,826	6,211	4,460	4,595	4,811	5,124	-18%	-18%	-17%	-18%
Total Other	1,402	1,860	1,975	2,195	2,541	1,806	1,895	2,074	2,382	-3%	-4%	-5%	-6%
Air passengers	457	696	730	758	787	687	720	747	774	-1%	-1%	-1%	-2%
Airport employees	35	46	47	50	53	44	45	48	51	-4%	-4%	-4%	-5%
TOTAL	**7,110**	**8,864**	**9,184**	**9,723**	**10,552**	**7,612**	**7,883**	**8,333**	**9,026**	**-14%**	**-14%**	**-14%**	**-14%**

Table 20: 24hr with Project sensitivity post-VDM rail demand comparison to the application

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
CA Business	500	644	662	699	766	469	480	503	544	-27%	-27%	-28%	-29%
CA Commute	3,216	4,081	4,217	4,469	4,873	3,335	3,455	3,661	3,967	-18%	-18%	-18%	-19%
CA Other	879	1,321	1,425	1,639	1,991	1,266	1,350	1,526	1,834	-4%	-5%	-7%	-8%
NCA Business	179	190	193	194	194	145	147	149	151	-23%	-24%	-23%	-22%
NCA Commute	1,321	1,346	1,360	1,358	1,338	1,126	1,140	1,150	1,157	-16%	-16%	-15%	-14%
NCA Other	523	539	550	557	550	540	545	548	548	0%	-1%	-2%	0%
Total Business	679	834	855	894	960	614	628	653	696	-26%	-27%	-27%	-28%
Total Commute	4,537	5,428	5,577	5,827	6,211	4,460	4,595	4,812	5,124	-18%	-18%	-17%	-18%
Total Other	1,402	1,860	1,975	2,195	2,541	1,806	1,895	2,075	2,382	-3%	-4%	-5%	-6%
Air passengers	457	762	907	967	1,012	752	898	957	1,002	-1%	-1%	-1%	-1%
Airport employees	35	54	58	60	63	51	56	58	60	-4%	-4%	-4%	-4%
TOTAL	**7,110**	**8,937**	**9,372**	**9,943**	**10,788**	**7,684**	**8,073**	**8,554**	**9,264**	**-14%**	**-14%**	**-14%**	**-14%**

Table 21: AM post-VDM rail demand (future baseline sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	86	112	115	122	134	82	84	88	96	-27%	-27%	-28%	-29%
CA Commute	1,025	1,304	1,347	1,426	1,555	1,066	1,105	1,170	1,267	-18%	-18%	-18%	-19%
CA Other	67	102	110	127	154	98	104	118	142	-4%	-5%	-7%	-8%
NCA Business	32	34	34	35	35	26	26	27	27	-23%	-24%	-23%	-22%
NCA Commute	424	433	438	438	431	363	367	371	373	-16%	-16%	-15%	-13%
NCA Other	41	43	44	45	44	43	44	44	44	0%	-1%	-2%	-1%
Total Business	118	146	150	157	169	108	110	115	123	-26%	-26%	-27%	-27%
Total Commute	1,450	1,737	1,785	1,864	1,986	1,428	1,472	1,541	1,640	-18%	-18%	-17%	-17%
Total Other	108	145	154	171	198	141	148	162	186	-3%	-4%	-6%	-6%
Air passengers	41	78	84	89	92	76	81	87	89	-2%	-3%	-3%	-3%
Airport employees	6	7	8	8	9	7	7	8	8	-3%	-3%	-4%	-5%
TOTAL	**1,722**	**2,113**	**2,180**	**2,289**	**2,454**	**1,760**	**1,818**	**1,912**	**2,046**	**-17%**	**-17%**	**-16%**	**-17%**

Table 22: AM post-VDM rail demand (with Project sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	86	112	115	122	134	82	84	88	96	-27%	-27%	-28%	-29%
CA Commute	1,025	1,303	1,347	1,427	1,555	1,066	1,105	1,170	1,267	-18%	-18%	-18%	-19%
CA Other	67	102	110	127	154	98	104	118	142	-4%	-5%	-7%	-8%
NCA Business	32	34	34	35	35	26	26	27	27	-23%	-24%	-23%	-22%
NCA Commute	424	433	438	438	431	363	367	371	373	-16%	-16%	-15%	-13%
NCA Other	41	43	44	45	44	43	44	44	44	0%	-1%	-2%	-1%
Total Business	118	146	150	157	169	108	110	115	123	-26%	-26%	-27%	-27%
Total Commute	1,450	1,737	1,785	1,864	1,986	1,428	1,472	1,541	1,640	-18%	-18%	-17%	-17%
Total Other	108	145	154	171	198	141	148	162	186	-3%	-4%	-6%	-6%
Air passengers	41	89	104	115	121	87	103	113	120	-2%	-1%	-1%	-1%
Airport employees	6	8	9	9	10	8	9	9	10	-3%	-2%	-2%	-3%
TOTAL	**1,722**	**2,125**	**2,202**	**2,317**	**2,484**	**1,772**	**1,842**	**1,940**	**2,078**	**-17%**	**-16%**	**-16%**	**-16%**

Table 23: IP post-VDM rail demand (future baseline sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	202	258	265	280	307	188	192	201	218	-27%	-28%	-28%	-29%
CA Commute	624	789	815	864	944	643	666	706	765	-19%	-18%	-18%	-19%
CA Other	417	619	667	766	930	593	632	713	855	-4%	-5%	-7%	-8%
NCA Business	71	75	76	77	77	57	58	59	60	-23%	-24%	-23%	-22%
NCA Commute	252	256	258	258	254	214	216	218	219	-16%	-16%	-15%	-14%
NCA Other	246	252	257	260	256	253	255	256	255	0%	-1%	-2%	0%
Total Business	273	333	342	357	383	245	250	260	277	-26%	-27%	-27%	-28%
Total Commute	876	1,045	1,073	1,122	1,198	857	882	924	985	-18%	-18%	-18%	-18%
Total Other	663	872	924	1,026	1,186	846	887	969	1,110	-3%	-4%	-6%	-6%
Air passengers	213	298	309	317	329	295	305	313	324	-1%	-1%	-1%	-2%
Airport employees	10	13	13	14	15	12	13	13	14	-4%	-4%	-4%	-5%
TOTAL	**2,034**	**2,561**	**2,661**	**2,835**	**3,110**	**2,255**	**2,337**	**2,479**	**2,710**	**-12%**	**-12%**	**-13%**	**-13%**

Table 24: IP post-VDM rail demand (with Project sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	202	258	265	280	307	188	192	201	218	-27%	-28%	-28%	-29%
CA Commute	624	789	815	864	944	643	666	706	765	-19%	-18%	-18%	-19%
CA Other	417	619	667	766	930	593	632	713	855	-4%	-5%	-7%	-8%
NCA Business	71	75	76	77	77	57	58	59	60	-23%	-24%	-23%	-22%
NCA Commute	252	256	258	258	254	214	216	218	219	-16%	-16%	-15%	-14%
NCA Other	246	252	257	260	256	253	255	256	255	0%	-1%	-2%	0%
Total Business	273	333	342	357	383	245	250	260	277	-26%	-27%	-27%	-28%
Total Commute	876	1,045	1,073	1,122	1,198	857	882	924	984	-18%	-18%	-18%	-18%
Total Other	663	872	925	1,026	1,186	846	887	969	1,110	-3%	-4%	-6%	-6%
Air passengers	213	331	376	399	417	327	372	395	413	-1%	-1%	-1%	-1%
Airport employees	10	15	16	17	18	14	16	16	17	-4%	-4%	-4%	-4%
TOTAL	**2,034**	**2,596**	**2,732**	**2,921**	**3,202**	**2,289**	**2,407**	**2,564**	**2,802**	**-12%**	**-12%**	**-12%**	**-12%**

Table 25: PM post-VDM rail demand (future baseline sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	96	124	128	135	148	90	93	97	105	-27%	-27%	-28%	-29%
CA Commute	707	895	924	977	1,062	735	761	805	869	-18%	-18%	-18%	-18%
CA Other	157	238	258	298	364	228	244	277	336	-4%	-5%	-7%	-8%
NCA Business	35	37	38	38	38	28	29	29	30	-23%	-24%	-23%	-22%
NCA Commute	297	303	307	306	301	254	257	259	261	-16%	-16%	-15%	-13%
NCA Other	92	95	97	98	97	95	96	97	97	0%	-1%	-2%	0%
Total Business	131	161	165	173	186	119	121	126	135	-26%	-27%	-27%	-27%
Total Commute	1,003	1,198	1,231	1,283	1,363	988	1,019	1,064	1,130	-18%	-17%	-17%	-17%
Total Other	249	333	355	396	462	323	340	374	433	-3%	-4%	-6%	-6%
Air passengers	59	86	89	93	102	86	88	93	101	-1%	-1%	-1%	-1%
Airport employees	5	7	7	7	8	6	7	7	7	-4%	-3%	-4%	-5%
TOTAL	**1,447**	**1,786**	**1,848**	**1,953**	**2,120**	**1,522**	**1,575**	**1,664**	**1,805**	**-15%**	**-15%**	**-15%**	**-15%**

Table 26: PM post-VDM rail demand (with Project sensitivity comparison to the application)

	Demand (thousands trips)									% Difference			
	Application Modelling					Sensitivity Modelling				Sensitivity vs Application			
	2016	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
CA Business	96	124	128	135	148	90	93	97	105	-27%	-27%	-28%	-29%
CA Commute	707	895	925	977	1,062	735	761	805	869	-18%	-18%	-18%	-18%
CA Other	157	238	258	298	365	228	244	277	336	-4%	-5%	-7%	-8%
NCA Business	35	37	38	38	38	28	29	29	30	-23%	-24%	-23%	-22%
NCA Commute	297	303	307	306	301	254	257	259	261	-16%	-16%	-15%	-13%
NCA Other	92	95	97	98	97	95	96	97	97	0%	-1%	-2%	0%
Total Business	131	161	165	173	186	119	121	126	135	-26%	-27%	-27%	-27%
Total Commute	1,003	1,198	1,231	1,284	1,363	988	1,019	1,064	1,130	-18%	-17%	-17%	-17%
Total Other	249	333	355	396	462	323	340	374	433	-3%	-4%	-6%	-6%
Air passengers	59	92	112	118	124	91	111	117	123	-1%	-1%	-1%	-1%
Airport employees	5	8	8	8	9	7	8	8	9	-3%	-3%	-4%	-4%
TOTAL	**1,447**	**1,792**	**1,872**	**1,979**	**2,143**	**1,529**	**1,599**	**1,690**	**1,829**	**-15%**	**-15%**	**-15%**	**-15%**

Appendix 5 - Convergence

Variable Demand Model

Table 27: VDM convergence – future baseline sensitivity and with Project sensitivity

Scenario	% Gap at completion	Converged (Gap <0.1%)?
Future Baseline Sensitivity 2029	0.03%	Yes
Future Baseline Sensitivity 2032	0.03%	Yes
Future Baseline Sensitivity 2038	0.04%	Yes
Future Baseline Sensitivity 2047	0.06%	Yes
With Project Sensitivity 2029	0.03%	Yes
With Project Sensitivity 2032	0.04%	Yes
With Project Sensitivity 2038	0.04%	Yes
With Project Sensitivity 2047	0.06%	Yes

Highway Assignment Model

Table 28: Highway Assignment Model convergence – future baseline sensitivity and with Project sensitivity

Scenario	Measure of convergence	Model Acceptable Values	AM1	AM2	IP	PM
2029 Future Baseline Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.012	0.0044	0.0074	0.0071
			0.0059	0.0036	0.0070	0.0092
			0.0071	0.0050	0.0072	0.0054
			0.0061	0.011	0.0045	0.0094
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.1	98.9	98.4	98.8
			97.8	98.1	98.2	98.4
			97.7	97.7	98.0	98.0
			97.6	98.4	98.1	98.3
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.5	99.0	99.2	98.7
			98.6	98.9	99.2	98.5
			98.5	99.0	99.2	98.7
			98.3	99.1	99.2	98.6
2032 Future Baseline Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.0051	0.0072	0.0076	0.0087
			0.0064	0.0097	0.0070	0.0071
			0.0085	0.0052	0.0071	0.0071
			0.0077	0.0059	0.0046	0.0085
			98.4	97.8	98.2	98.0

Scenario	Measure of convergence	Model Acceptable Values	AM1	AM2	IP	PM
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.6	98.1	98.5	98.6
			98.6	99.0	98.7	98.6
			97.9	98.6	98.4	98.5
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.6	98.7	99.1	98.4
			98.7	98.4	99.2	98.4
			98.7	98.9	99.2	98.5
			98.4	98.7	99.2	98.7
2038 Future Baseline Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.0084	0.0059	0.0076	0.013
			0.012	0.0096	0.0082	0.011
			0.013	0.0068	0.0076	0.017
			0.015	0.0095	0.0078	0.0093
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.2	97.9	97.9	97.7
			97.8	99.0	98.1	98.0
			98.0	98.2	98.5	97.7
			98.6	97.7	98.2	98.3
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.3	98.6	99.0	97.9
			98.0	98.4	99.0	98.2
			98.2	98.6	99.2	97.9
			98.2	98.3	99.0	98.3
2047 Future Baseline Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.0097	0.010	0.0079	0.0100
			0.016	0.0082	0.0072	0.011
			0.013	0.0074	0.0077	0.012
			0.017	0.011	0.0072	0.012
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.6	98.3	98.4	97.9
			96.8	97.9	97.9	98.0
			98.1	98.3	98.6	98.3
			97.6	98.3	98.1	98.1
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.2	98.6	99.0	97.9
			97.7	98.2	98.9	98.1
			98.0	98.0	99.1	98.1
			97.9	98.3	99.0	98.0
2029 With Project Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.012	0.0044	0.0050	0.0068
			0.012	0.0028	0.0084	0.012
			0.0075	0.0029	0.0045	0.0057
			0.0042	0.0030	0.0072	0.0065

Scenario	Measure of convergence	Model Acceptable Values	AM1	AM2	IP	PM
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.1	97.6	97.9	98.2
			97.8	97.8	98.2	98.2
			98.2	98.2	97.9	98.2
			97.8	97.5	98.0	97.8
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.3	98.6	99.2	98.6
			98.4	99.0	99.2	98.5
			98.5	99.0	99.2	98.7
			98.7	98.7	99.1	98.6
2032 With Project Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.0080	0.012	0.0066	0.013
			0.0076	0.012	0.0060	0.0075
			0.0071	0.0073	0.0069	0.0089
			0.010	0.0096	0.0068	0.011
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	97.9	98.6	98.4	98.5
			97.7	99.2	98.2	98.2
			98.4	99.6	97.6	97.8
			98.3	99.4	98.7	97.9
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.6	98.4	99.0	98.4
			98.2	98.7	99.0	98.6
			98.6	99.1	99.0	98.3
			98.4	99.0	99.2	98.2
2038 With Project Sensitivity	**Delta and %GAP**	Less than 0.1% or at least stable with convergence fully documented and all other criteria met	0.0087	0.011	0.0056	0.011
			0.014	0.0092	0.0069	0.0085
			0.017	0.0059	0.0086	0.0074
			0.013	0.011	0.0081	0.014
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.4	97.5	97.9	97.9
			98.1	98.5	98.3	98.7
			98.0	97.9	98.6	98.7
			98.2	98.2	98.4	98.1
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.6	98.6	99.0	98.1
			98.3	99.1	99.0	98.6
			98.3	98.4	99.1	98.5
			98.2	98.4	99.1	98.2
		Less than 0.1% or at least stable with	0.012	0.0057	0.0076	0.012
			0.0069	0.011	0.0065	0.014

Scenario	Measure of convergence	Model Acceptable Values	AM1	AM2	IP	PM
2047 With Project Sensitivity	**Delta and %GAP**	convergence fully documented and all other criteria met	0.013	0.010	0.010	0.010
			0.011	0.0085	0.0078	0.014
	Percentage of links with flow change (P)<1%	Four consecutive iterations greater than 97.5%	98.1	97.9	98.5	97.7
			98.8	98.4	98.7	97.6
			97.9	98.3	98.1	97.7
			98.4	98.1	98.2	97.6
	Percentage of links with delay change (P2)<1%	Four consecutive iterations greater than 98%	98.0	98.4	99.1	97.8
			98.7	98.2	99.0	98.1
			97.9	98.7	98.9	97.9
			98.2	98.7	99.0	97.8

Rail Assignment Model

Table 29: Rail Assignment Model Convergence - Baseline

Iteration 12 (final)	2029 Future Baseline sensitivity	2032 Future Baseline sensitivity	2038 Future Baseline sensitivity	2047 Future Baseline sensitivity
Gap AM Peak	0.04%	0.05%	0.05%	0.06%
Gap PM Peak	0.02%	0.03%	0.04%	0.06%

Iteration 12 (final)	2029 With Project sensitivity	2032 With Project sensitivity	2038 With Project sensitivity	2047 With Project sensitivity
Gap AM Peak	0.05%	0.05%	0.05%	0.06%
Gap PM Peak	0.02%	0.03%	0.04%	0.06%

Appendix 6 – Mode Shares

Passengers

Table 30: future baseline sensitivity air passenger surface access trips (thousands per day, High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Car (park & fly)	31.8	31.8	32.9	33.0	34.7	36.5	33.2	33.4	35.1	37.0	1.0%	1.2%	1.4%	1.5%
Car (kiss & fly)	22.3	22.6	22.7	23.3	23.6	23.7	22.9	23.5	23.8	24.0	0.7%	0.9%	1.0%	1.1%
Car rental	3.1	3.0	3.5	3.5	3.6	3.7	3.5	3.6	3.7	3.8	1.0%	1.2%	1.3%	1.6%
Taxi	22.3	25.4	26.7	27.9	29.5	31.4	27.1	28.3	30.0	31.9	1.4%	1.5%	1.5%	1.7%
Rail	45.7	54.0	69.6	73.0	75.8	78.7	68.7	72.0	74.7	77.4	-1.3%	-1.4%	-1.4%	-1.7%
Bus/coach	7.0	7.8	11.6	12.2	12.6	13.1	11.5	12.1	12.5	13.0	-0.4%	-0.6%	-0.8%	-1.0%
TOTAL	**132.1**	**144.6**	**166.9**	**172.8**	**179.8**	**187.1**	**166.9**	**172.8**	**179.8**	**187.1**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 31: with Project sensitivity air passenger surface access trips (thousands per day, High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	31.8	31.8	31.0	34.5	35.7	36.3	31.3	34.8	36.1	36.7	1.2%	0.9%	1.0%	1.0%
Car (kiss & fly)	22.3	22.6	23.7	27.3	28.2	28.5	23.9	27.4	28.4	28.7	0.9%	0.6%	0.7%	0.8%
Car rental	3.1	3.0	3.6	4.2	4.4	4.4	3.6	4.2	4.4	4.5	1.2%	0.8%	0.9%	0.9%
Taxi	22.3	25.4	27.8	32.5	35.0	37.4	28.2	32.9	35.4	37.9	1.6%	1.1%	1.2%	1.2%
Rail	45.7	54.0	76.2	90.7	96.7	101.2	75.2	89.8	95.7	100.2	-1.3%	-0.9%	-1.0%	-1.0%
Bus/coach	7.0	7.8	14.2	17.0	18.2	19.0	14.1	17.0	18.1	18.9	-0.4%	-0.1%	-0.3%	-0.3%
TOTAL	**132.1**	**144.6**	**176.4**	**206.2**	**218.1**	**226.9**	**176.4**	**206.2**	**218.1**	**226.9**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 32: future baseline to with Project sensitivity comparison of air passenger surface access trips (thousands per day, High June)

	Future Baseline Sensitivity				With Project Sensitivity				% Difference			
	FBS 29	FBS 32	FBS 38	FBS 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	33.2	33.4	35.1	37.0	31.3	34.8	36.1	36.7	-5.6%	4.1%	2.7%	-0.8%
Car (kiss & fly)	22.9	23.5	23.8	24.0	23.9	27.4	28.4	28.7	4.3%	16.8%	19.2%	19.7%
Car rental	3.5	3.6	3.7	3.8	3.6	4.2	4.4	4.5	3.9%	18.4%	20.0%	18.8%
Taxi	27.1	28.3	30.0	31.9	28.2	32.9	35.4	37.9	4.1%	16.1%	18.2%	18.6%
Rail	68.7	72.0	74.7	77.4	75.2	89.8	95.7	100.2	9.4%	24.9%	28.1%	29.5%
Bus/coach	11.5	12.1	12.5	13.0	14.1	17.0	18.1	18.9	22.8%	40.8%	44.6%	45.5%
TOTAL	**166.9**	**172.8**	**179.8**	**187.1**	**176.4**	**206.2**	**218.1**	**226.9**	**5.7%**	**19.3%**	**21.3%**	**21.3%**

Table 33: future baseline sensitivity air passenger surface mode shares (High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Car (park & fly)	24%	22%	20%	19%	19%	19%	20%	19%	20%	20%	1.0%	1.2%	1.4%	1.5%
Car (kiss & fly)	17%	16%	14%	13%	13%	13%	14%	14%	13%	13%	0.7%	0.9%	1.0%	1.2%
Car rental	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.0%	1.2%	1.3%	1.6%
Taxi	17%	18%	16%	16%	16%	17%	16%	16%	17%	17%	1.4%	1.5%	1.5%	1.7%
Rail	35%	37%	42%	42%	42%	42%	41%	42%	42%	41%	-1.3%	-1.4%	-1.4%	-1.6%
Bus/coach	5%	5%	7%	7%	7%	7%	7%	7%	7%	7%	-0.4%	-0.6%	-0.8%	-1.0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 34: with Project sensitivity air passenger surface mode shares (High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	24%	22%	18%	17%	16%	16%	18%	17%	17%	16%	1.2%	0.9%	1.0%	1.0%
Car (kiss & fly)	17%	16%	13%	13%	13%	13%	14%	13%	13%	13%	0.9%	0.6%	0.7%	0.8%
Car rental	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.2%	0.8%	0.9%	0.9%
Taxi	17%	18%	16%	16%	16%	16%	16%	16%	16%	17%	1.6%	1.1%	1.2%	1.2%
Rail	35%	37%	43%	44%	44%	45%	43%	44%	44%	44%	-1.3%	-0.9%	-1.0%	-1.0%
Bus/coach	5%	5%	8%	8%	8%	8%	8%	8%	8%	8%	-0.4%	-0.1%	-0.3%	-0.3%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 35: future baseline to with Project sensitivity comparison of air passenger surface access mode shares (High June)

	Future Baseline Sensitivity				With Project Sensitivity				% Difference			
	FBS 29	FBS 32	FBS 38	FBS 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	20%	19%	20%	20%	18%	17%	17%	16%	-10.7%	-12.7%	-15.3%	-18.2%
Car (kiss & fly)	14%	14%	13%	13%	14%	13%	13%	13%	-1.3%	-2.1%	-1.7%	-1.3%
Car rental	2%	2%	2%	2%	2%	2%	2%	2%	-1.7%	-0.8%	-1.1%	-2.0%
Taxi	16%	16%	17%	17%	16%	16%	16%	17%	-1.5%	-2.7%	-2.5%	-2.2%
Rail	41%	42%	42%	41%	43%	44%	44%	44%	3.5%	4.7%	5.6%	6.8%
Bus/coach	7%	7%	7%	7%	8%	8%	8%	8%	16.2%	18.0%	19.2%	20.0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 36: future baseline sensitivity air passenger surface mode shares (Annual average day)

	Demand (thousands trips per day, High June)										% Difference			
	Application Modelling						Sensitivity Modelling							
	Base 16	Base 18/19	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Car (park & fly)	23%	21%	19%	18%	19%	19%	19%	19%	19%	19%	1.1%	1.3%	1.4%	1.6%
Car (kiss & fly)	15%	14%	12%	12%	12%	12%	12%	12%	12%	12%	0.8%	0.9%	1.0%	1.2%
Car rental	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.1%	1.3%	1.4%	1.7%
Taxi	16%	16%	15%	15%	15%	16%	15%	15%	16%	16%	1.5%	1.6%	1.6%	1.8%
Rail	37%	40%	44%	45%	45%	44%	44%	44%	44%	44%	-1.2%	-1.3%	-1.4%	-1.6%
Bus/coach	6%	6%	7%	8%	8%	8%	7%	8%	8%	8%	-0.3%	-0.5%	-0.7%	-0.9%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 37: with Project sensitivity air passenger surface mode shares (Annual average day)

	Demand (thousands trips per day, High June)										% Difference			
	Application Modelling						Sensitivity Modelling							
	Base 16	Base 18/19	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	23%	21%	17%	16%	16%	15%	17%	16%	16%	16%	1.3%	0.9%	1.1%	1.1%
Car (kiss & fly)	15%	14%	12%	12%	12%	11%	12%	12%	12%	11%	0.9%	0.6%	0.8%	0.8%
Car rental	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1.2%	0.8%	1.0%	1.0%
Taxi	16%	16%	15%	15%	15%	15%	15%	15%	15%	15%	1.6%	1.2%	1.3%	1.3%
Rail	37%	40%	46%	46%	47%	47%	45%	46%	46%	46%	-1.2%	-0.9%	-1.0%	-1.0%
Bus/coach	6%	6%	9%	9%	9%	9%	9%	9%	9%	9%	-0.4%	-0.1%	-0.2%	-0.3%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 38: future baseline to with Project sensitivity comparison of air passenger surface access mode shares (Annual average day)

									% Difference			
	Future Baseline Sensitivity				With Project Sensitivity							
	FBS 29	FBS 32	FBS 38	FBS 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car (park & fly)	19%	19%	19%	19%	17%	16%	16%	16%	-11.0%	-13.1%	-15.7%	-18.6%
Car (kiss & fly)	12%	12%	12%	12%	12%	12%	12%	11%	-1.5%	-2.4%	-2.1%	-1.8%
Car rental	2%	2%	2%	2%	2%	2%	2%	2%	-2.0%	-1.1%	-1.5%	-2.5%
Taxi	15%	15%	16%	16%	15%	15%	15%	15%	-1.7%	-3.0%	-2.9%	-2.6%
Rail	44%	44%	44%	44%	45%	46%	46%	46%	3.3%	4.3%	5.2%	6.3%
Bus/coach	7%	8%	8%	8%	9%	9%	9%	9%	15.9%	17.6%	18.8%	19.5%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Employees

Table 39: future baseline sensitivity airport employee surface access trips (thousands per day, High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Car solo	15.0	14.8	16.4	16.6	16.9	17.2	16.6	16.8	17.2	17.6	1.1%	1.3%	1.5%	2.3%
Car share	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4%	2.3%	2.4%	3.1%
Company	1.4	1.4	1.5	1.6	1.6	1.6	1.5	1.6	1.6	1.6	0.1%	-0.2%	-0.4%	-1.0%
Rail	3.5	3.7	4.6	4.7	5.0	5.3	4.4	4.5	4.8	5.1	-3.9%	-4.0%	-4.4%	-5.2%
Bus/coach	4.3	4.4	5.7	5.8	6.0	6.4	5.6	5.8	5.9	6.2	-0.8%	-0.8%	-1.1%	-2.0%
Active	1.1	1.1	1.3	1.3	1.3	1.4	1.3	1.3	1.3	1.3	-1.7%	-1.6%	-1.9%	-3.1%
TOTAL	**27.4**	**27.6**	**31.7**	**32.2**	**33.0**	**34.1**	**31.7**	**32.2**	**33.0**	**34.1**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 40: with Project sensitivity airport employee surface access trips (thousands per day, High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car solo	15.0	14.8	14.5	16.1	16.5	17.0	14.7	16.2	16.7	17.3	1.4%	0.9%	1.3%	1.6%
Car share	2.1	2.1	2.8	3.0	3.0	2.9	2.9	3.1	3.0	3.0	2.7%	1.9%	2.1%	2.3%
Company	1.4	1.4	1.8	1.9	1.9	1.9	1.8	1.9	1.9	1.9	0.1%	0.2%	-0.1%	-0.4%
Rail	3.5	3.7	5.4	5.8	6.0	6.3	5.1	5.6	5.8	6.0	-3.9%	-3.5%	-3.9%	-4.1%
Bus/coach	4.3	4.4	6.9	7.4	7.6	7.8	6.8	7.4	7.6	7.8	-0.7%	0.0%	-0.3%	-0.6%
Active	1.1	1.1	1.5	1.6	1.6	1.6	1.5	1.6	1.6	1.6	-1.5%	-0.6%	-0.9%	-1.3%
TOTAL	**27.4**	**27.6**	**32.8**	**35.8**	**36.7**	**37.6**	**32.8**	**35.8**	**36.7**	**37.6**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 41: future baseline to with Project sensitivity comparison of airport employee surface access trips (thousands per day, High June)

	Future Baseline Sensitivity				With Project Sensitivity				% Difference			
	FBS 29	FBS 32	FBS 38	FBS 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car solo	16.6	16.8	17.2	17.6	14.7	16.2	16.7	17.3	-11.2%	-3.5%	-2.4%	-1.6%
Car share	2.3	2.3	2.3	2.3	2.9	3.1	3.0	3.0	25.3%	34.3%	32.4%	29.0%
Company	1.5	1.6	1.6	1.6	1.8	1.9	1.9	1.9	14.6%	22.0%	20.9%	19.0%
Rail	4.4	4.5	4.8	5.1	5.1	5.6	5.8	6.0	16.8%	23.1%	21.6%	19.4%
Bus/coach	5.6	5.8	5.9	6.2	6.8	7.4	7.6	7.8	21.3%	29.3%	27.7%	25.0%
Active	1.3	1.3	1.3	1.3	1.5	1.6	1.6	1.6	18.4%	25.0%	23.5%	21.1%
TOTAL	**31.7**	**32.2**	**33.0**	**34.1**	**32.8**	**35.8**	**36.7**	**37.6**	**3.5%**	**11.2%**	**11.0%**	**10.3%**

Table 42: future baseline sensitivity airport employee surface access mode shares (High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	FB 29	FB 32	FB 38	FB 47	FBS 29	FBS 32	FBS 38	FBS 47	2029	2032	2038	2047
Car solo	55%	54%	52%	52%	51%	50%	52%	52%	52%	52%	1.1%	1.3%	1.5%	2.3%
Car share	8%	8%	7%	7%	7%	7%	7%	7%	7%	7%	2.4%	2.3%	2.4%	3.1%
Company	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	0.1%	-0.2%	-0.4%	-1.0%
Rail	13%	14%	14%	15%	15%	16%	14%	14%	14%	15%	-3.9%	-4.0%	-4.4%	-5.2%
Bus/coach	16%	16%	18%	18%	18%	19%	18%	18%	18%	18%	-0.8%	-0.8%	-1.1%	-2.0%
Active	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	-1.7%	-1.6%	-1.9%	-3.1%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 43: with Project sensitivity airport employee surface access mode shares (High June)

	Application Modelling						Sensitivity Modelling				% Difference			
	Base 16	Base 18/19	WP 29	WP 32	WP 38	WP 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car solo	55%	54%	44%	45%	45%	45%	45%	45%	46%	46%	1.4%	0.9%	1.3%	1.6%
Car share	8%	8%	8%	8%	8%	8%	9%	9%	8%	8%	2.7%	1.9%	2.1%	2.3%
Company	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	0.1%	0.2%	-0.1%	-0.4%
Rail	13%	14%	16%	16%	16%	17%	16%	16%	16%	16%	-3.9%	-3.5%	-3.9%	-4.1%
Bus/coach	16%	16%	21%	21%	21%	21%	21%	21%	21%	21%	-0.7%	0.0%	-0.3%	-0.6%
Active	4%	4%	5%	4%	4%	4%	5%	4%	4%	4%	-1.5%	-0.6%	-0.9%	-1.3%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Table 44: future baseline to with Project sensitivity comparison of airport employee surface access mode shares (High June)

	Future Baseline Sensitivity				With Project Sensitivity				% Difference			
	FBS 29	FBS 32	FBS 38	FBS 47	WPS 29	WPS 32	WPS 38	WPS 47	2029	2032	2038	2047
Car solo	52%	52%	52%	52%	45%	45%	46%	46%	-14.2%	-13.2%	-12.1%	-10.8%
Car share	7%	7%	7%	7%	9%	9%	8%	8%	21.0%	20.8%	19.2%	16.9%
Company	5%	5%	5%	5%	5%	5%	5%	5%	10.7%	9.7%	8.9%	7.9%
Rail	14%	14%	14%	15%	16%	16%	16%	16%	12.9%	10.8%	9.5%	8.2%
Bus/coach	18%	18%	18%	18%	21%	21%	21%	21%	17.2%	16.4%	15.0%	13.3%
Active	4%	4%	4%	4%	5%	4%	4%	4%	14.4%	12.5%	11.2%	9.7%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Appendix 7 - Flow difference plots

Figure 13: Traffic flow change (veh) 2029 future baseline sensitivity compared to 2029 future baseline (DCO Application), AM1

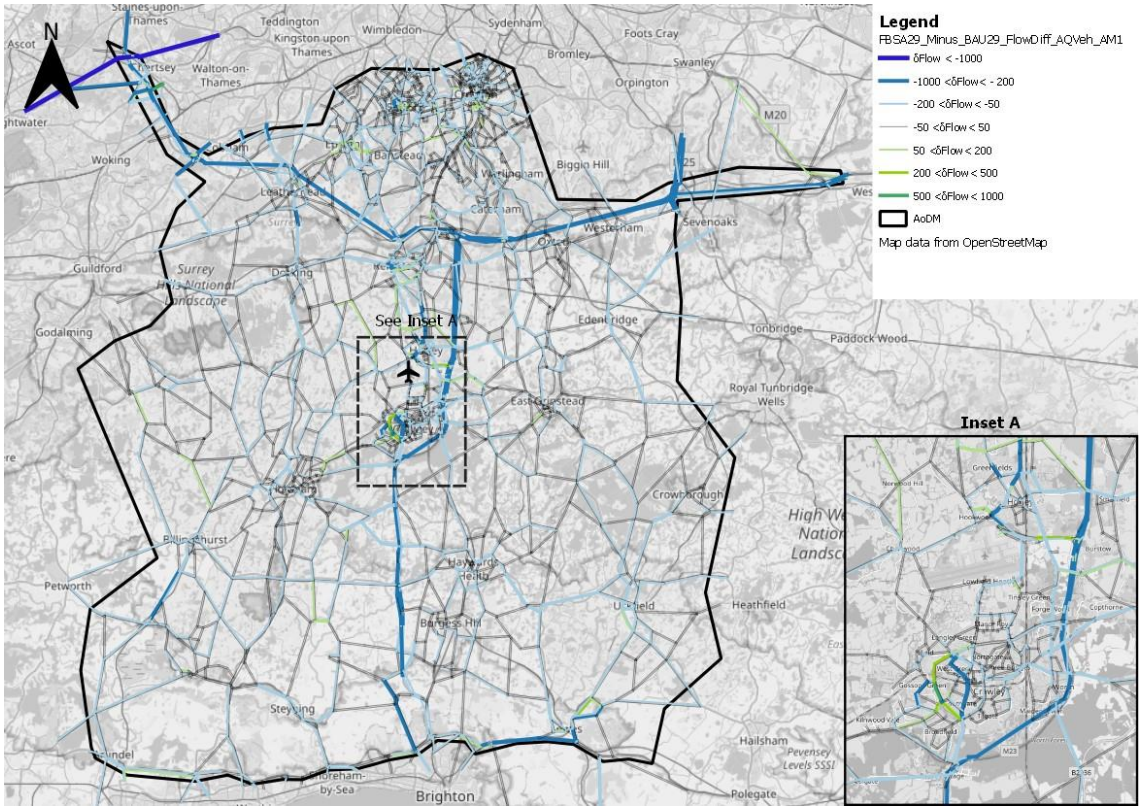


Figure 14: Traffic flow change (veh) 2029 future baseline sensitivity compared to 2029 future baseline (DCO Application), AM2

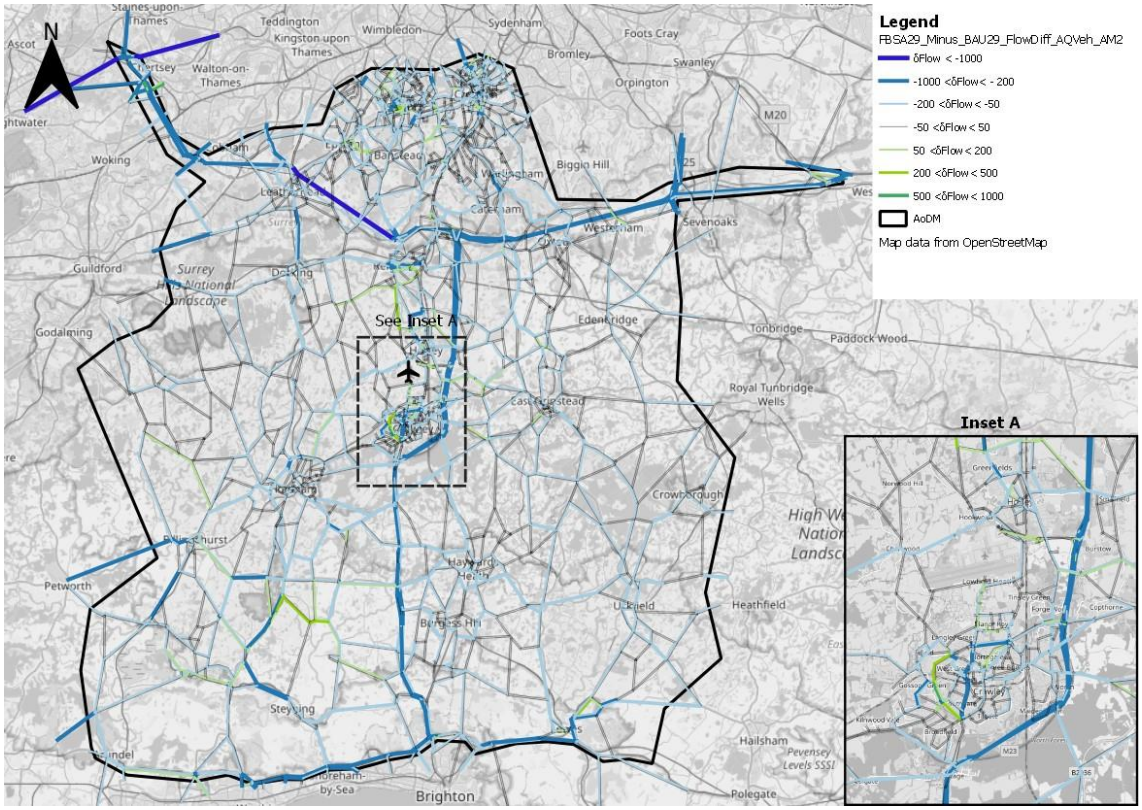


Figure 15: Traffic flow change (veh) 2029 future baseline sensitivity compared to 2029 future baseline (DCO Application), IP

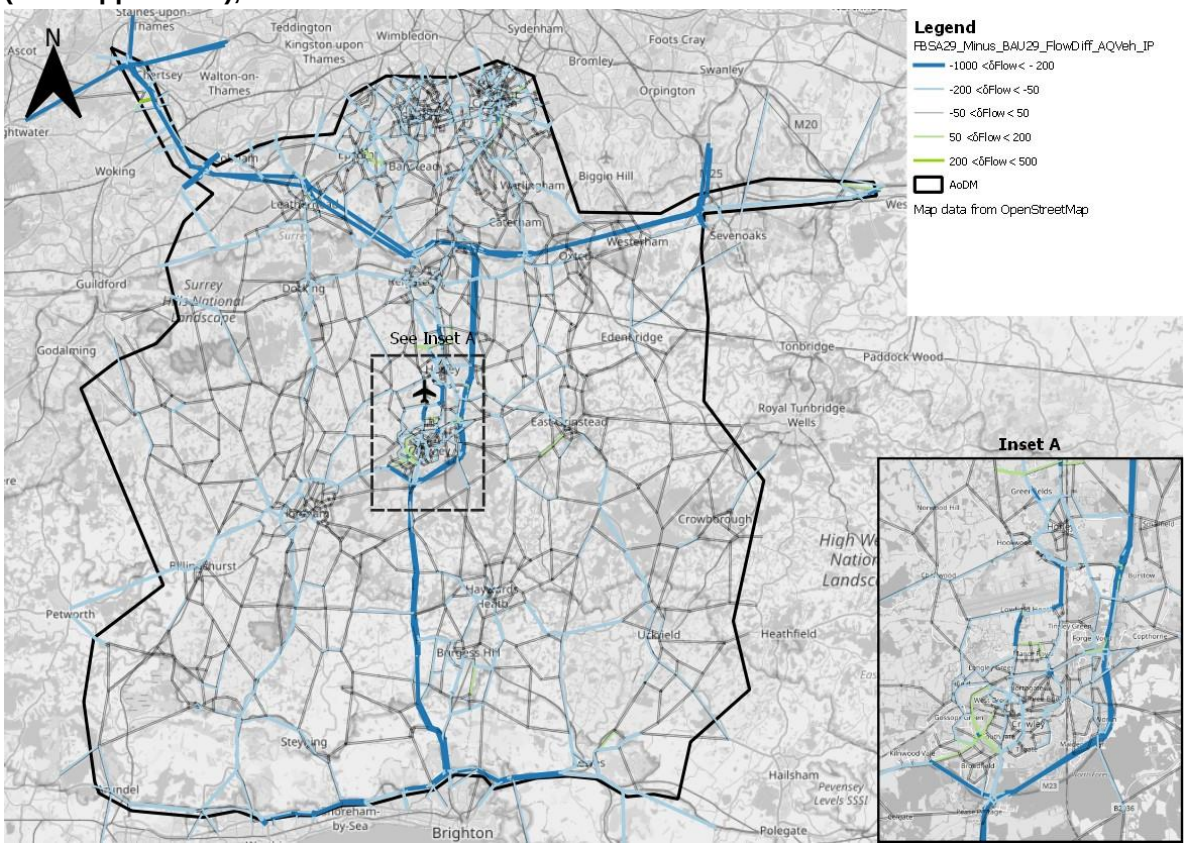


Figure 16: Traffic flow change (veh) 2029 future baseline sensitivity compared to 2029 future baseline (DCO Application), PM

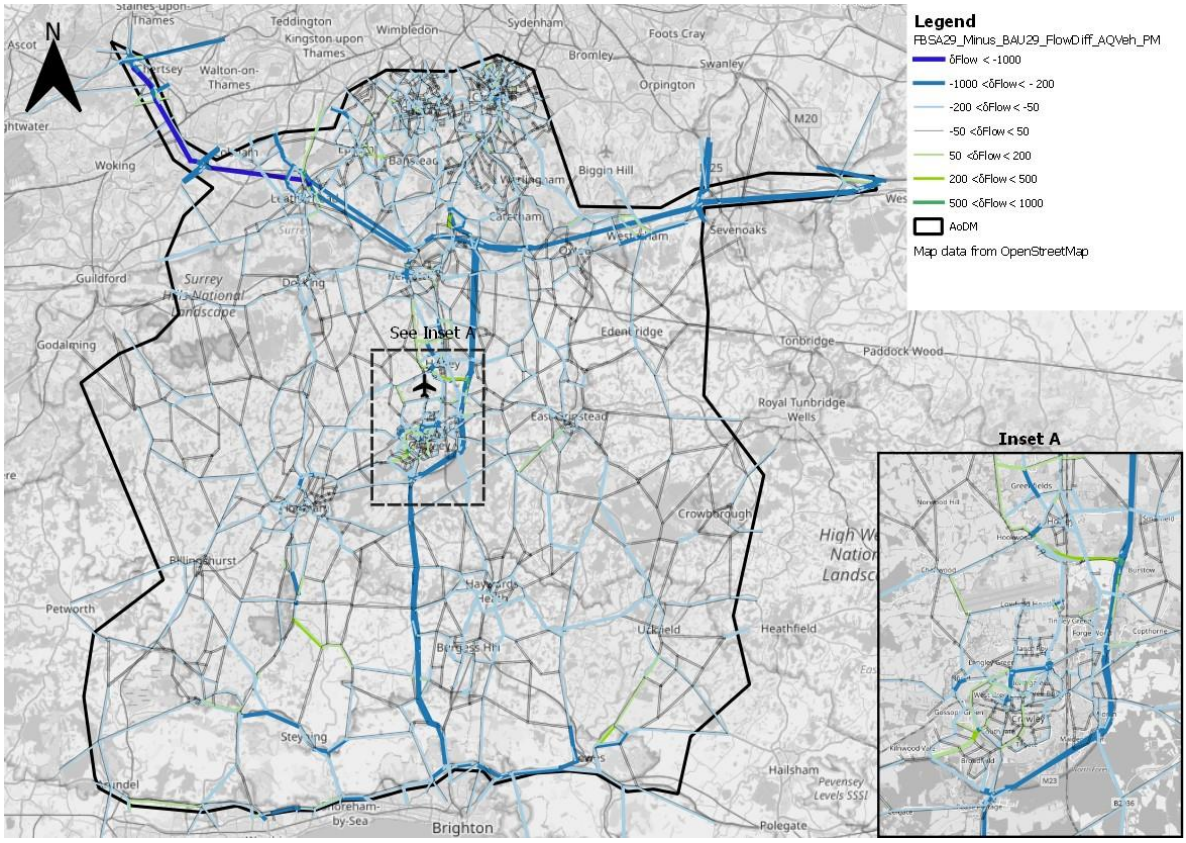


Figure 17: Traffic flow change (veh) 2032 future baseline sensitivity compared to 2032 future baseline (DCO Application), AM1

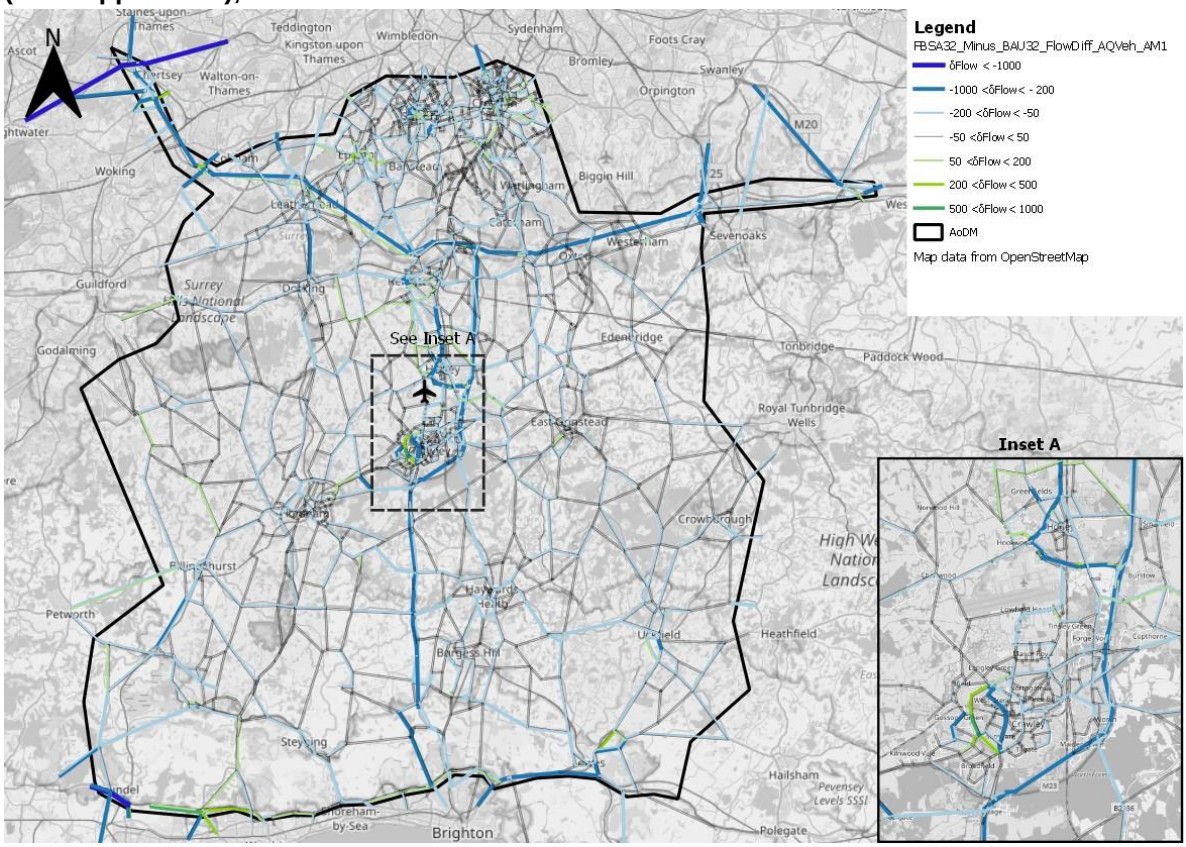


Figure 18: Traffic flow change (veh) 2032 future baseline sensitivity compared to 2032 future baseline (DCO Application), AM2

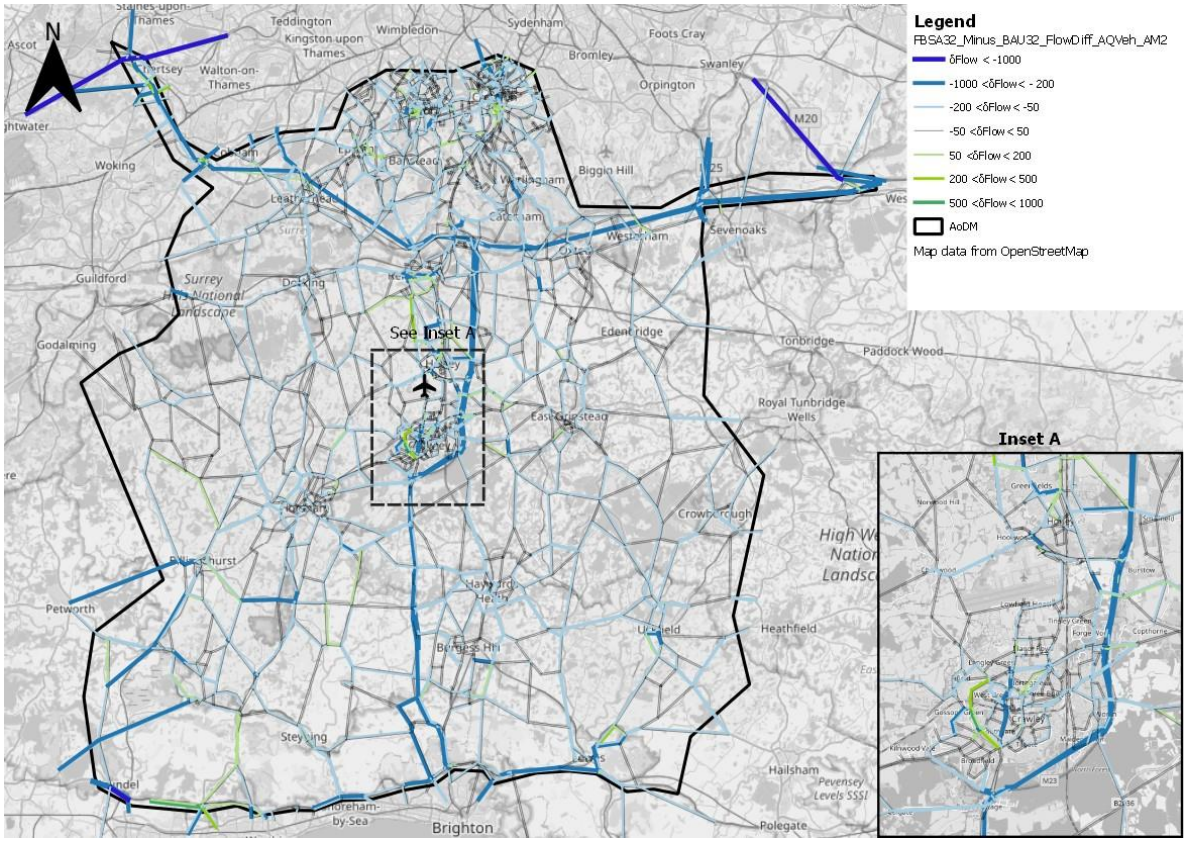


Figure 19: Traffic flow change (veh) 2032 future baseline sensitivity compared to 2032 future baseline (DCO Application), IP

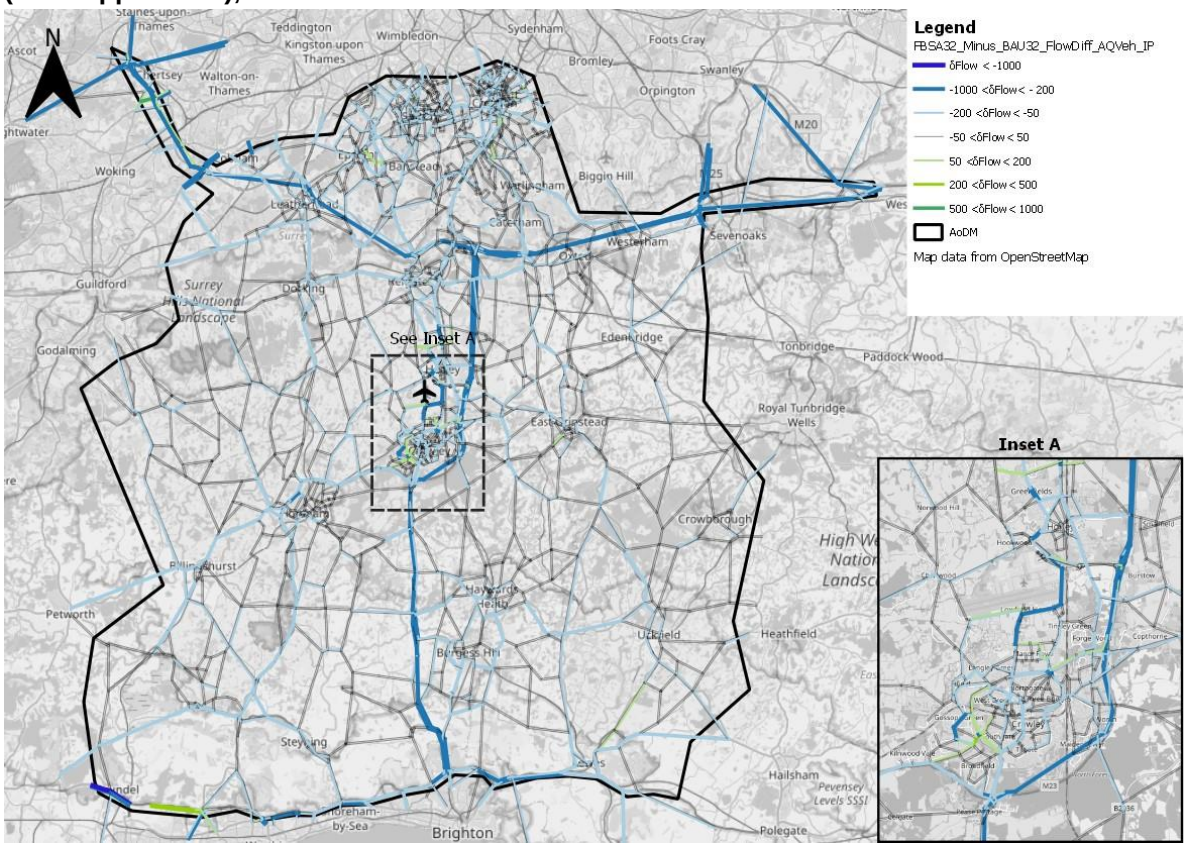


Figure 20: Traffic flow change (veh) 2032 future baseline sensitivity compared to 2032 future baseline (DCO Application), PM

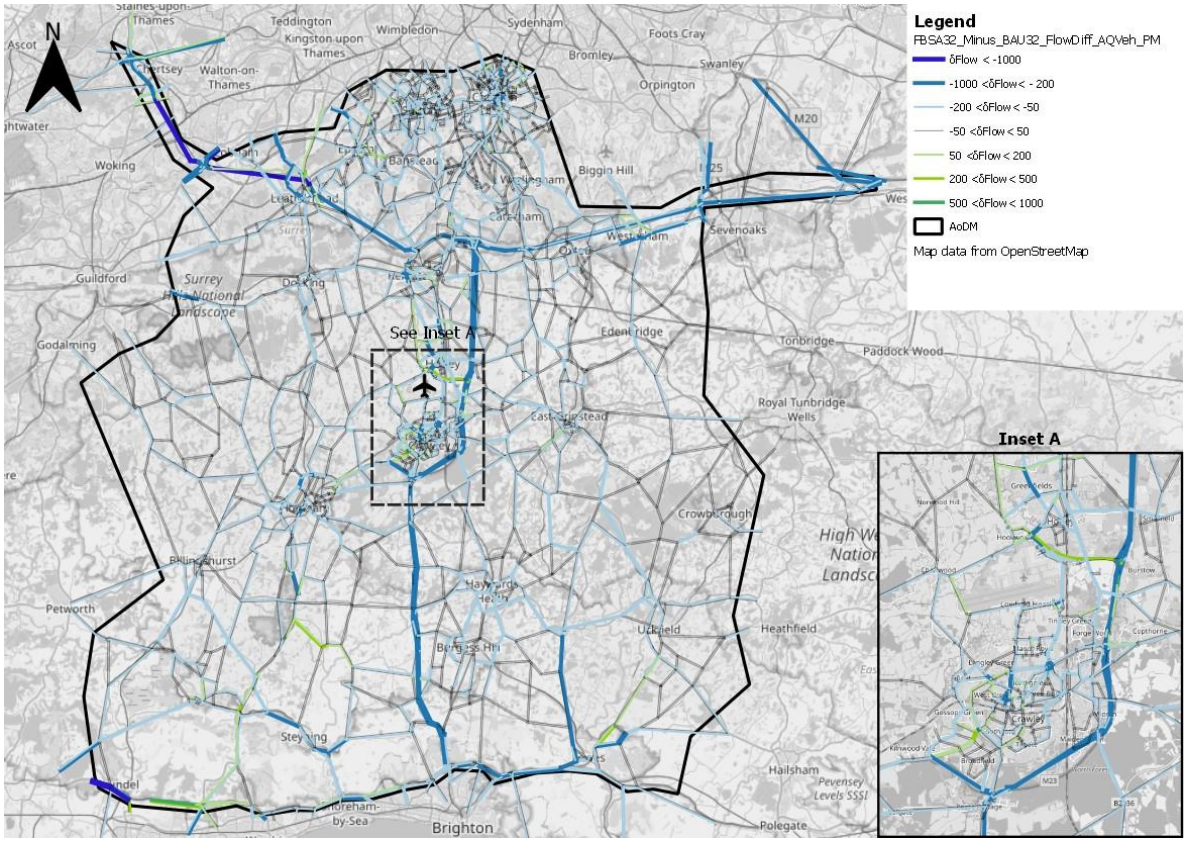


Figure 21: Traffic flow change (veh) 2038 future baseline sensitivity compared to 2038 future baseline (DCO Application), AM1

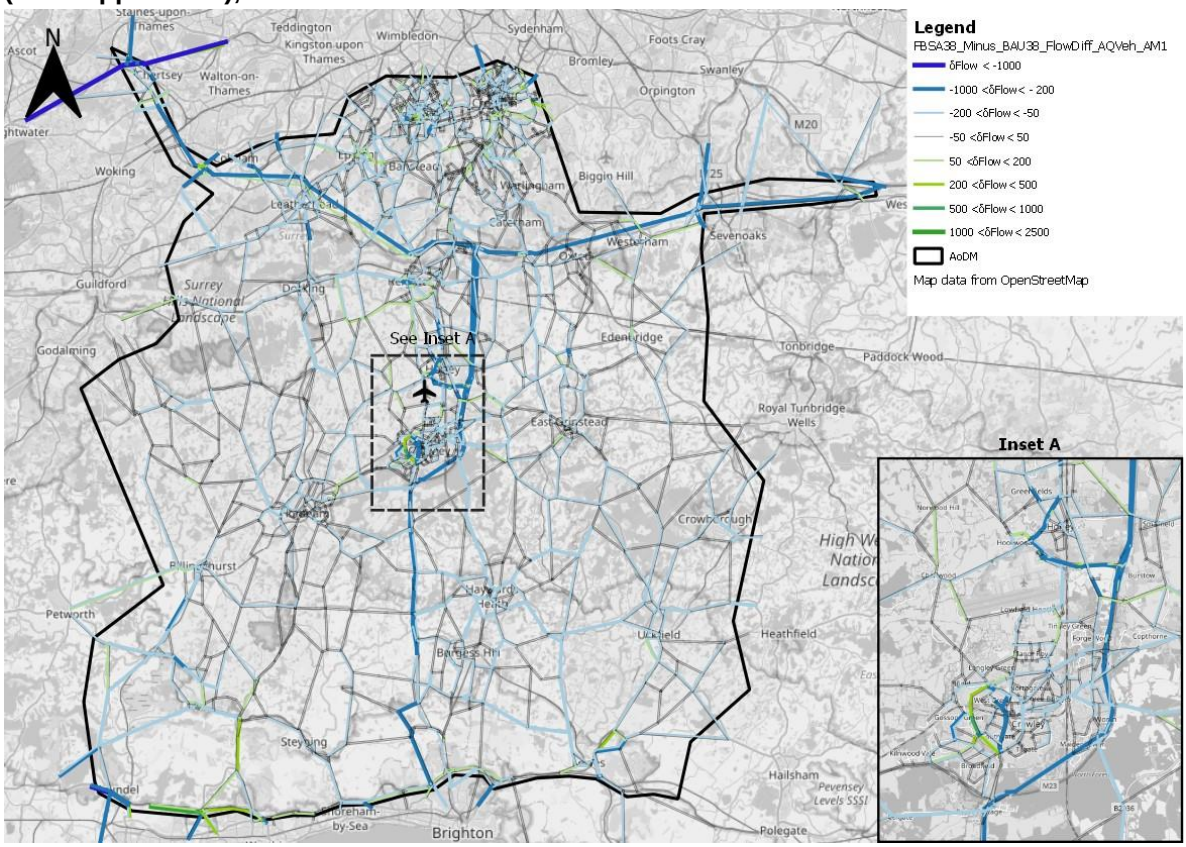


Figure 22: Traffic flow change (veh) 2038 future baseline sensitivity compared to 2038 future baseline (DCO Application), AM2

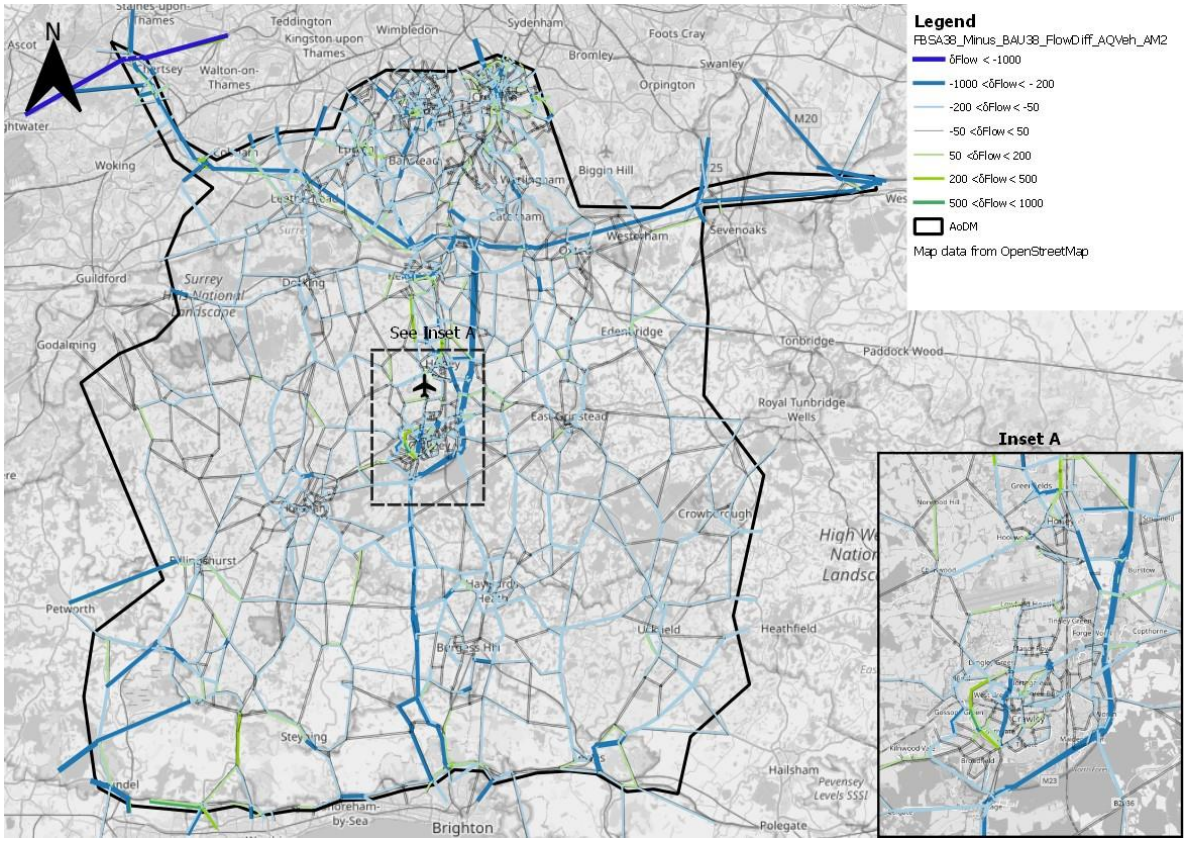


Figure 23: Traffic flow change (veh) 2038 future baseline sensitivity compared to 2038 future baseline (DCO Application), IP

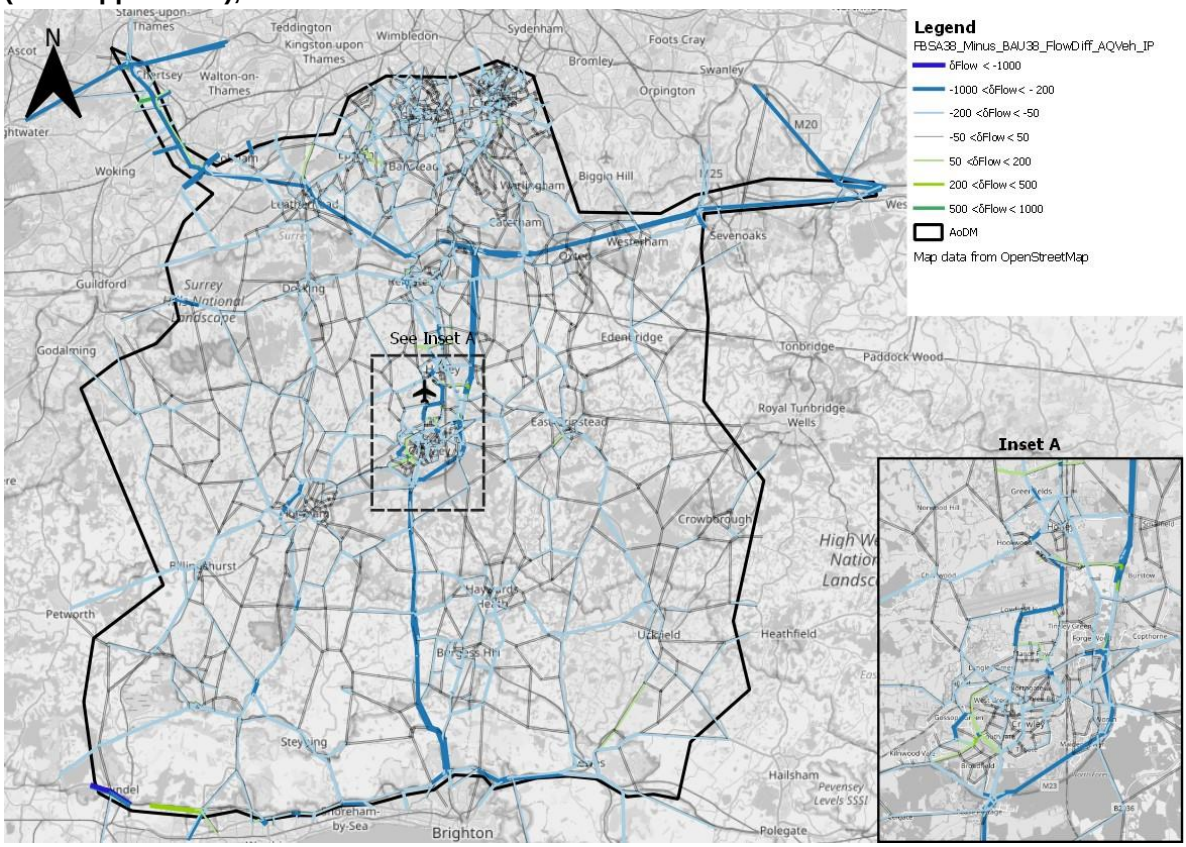


Figure 24: Traffic flow change (veh) 2038 future baseline sensitivity compared to 2038 future baseline (DCO Application), PM

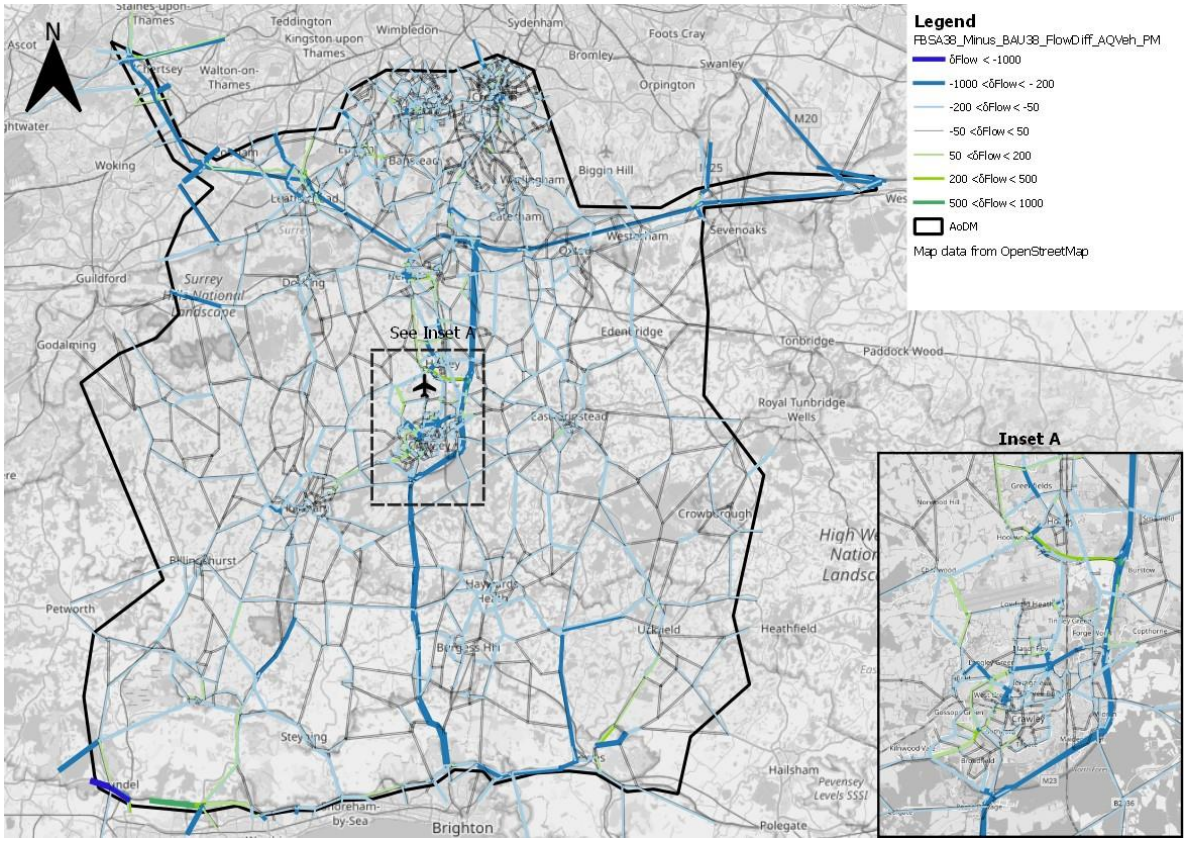


Figure 25: Traffic flow change (veh) 2047 future baseline sensitivity compared to 2047 future baseline (DCO Application), AM1

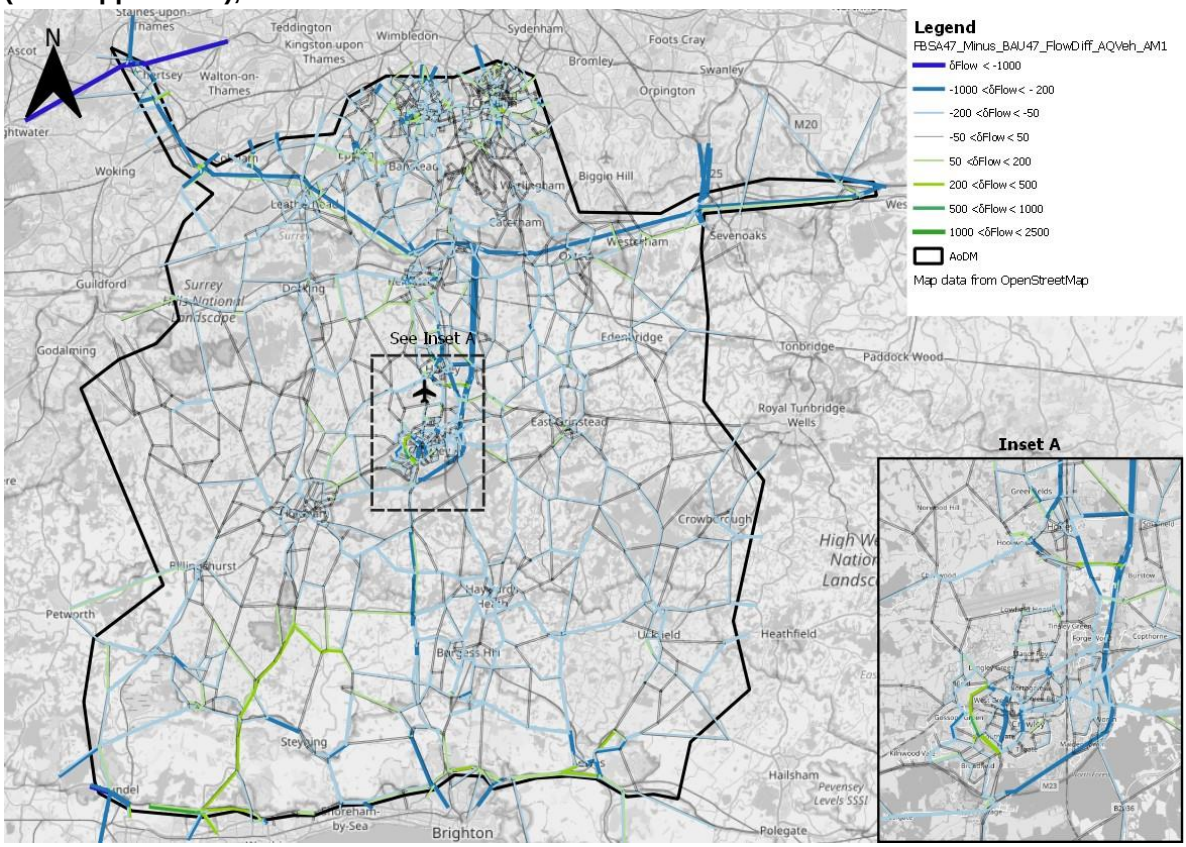


Figure 26: Traffic flow change (veh) 2047 future baseline sensitivity compared to 2047 future baseline (DCO Application), AM2

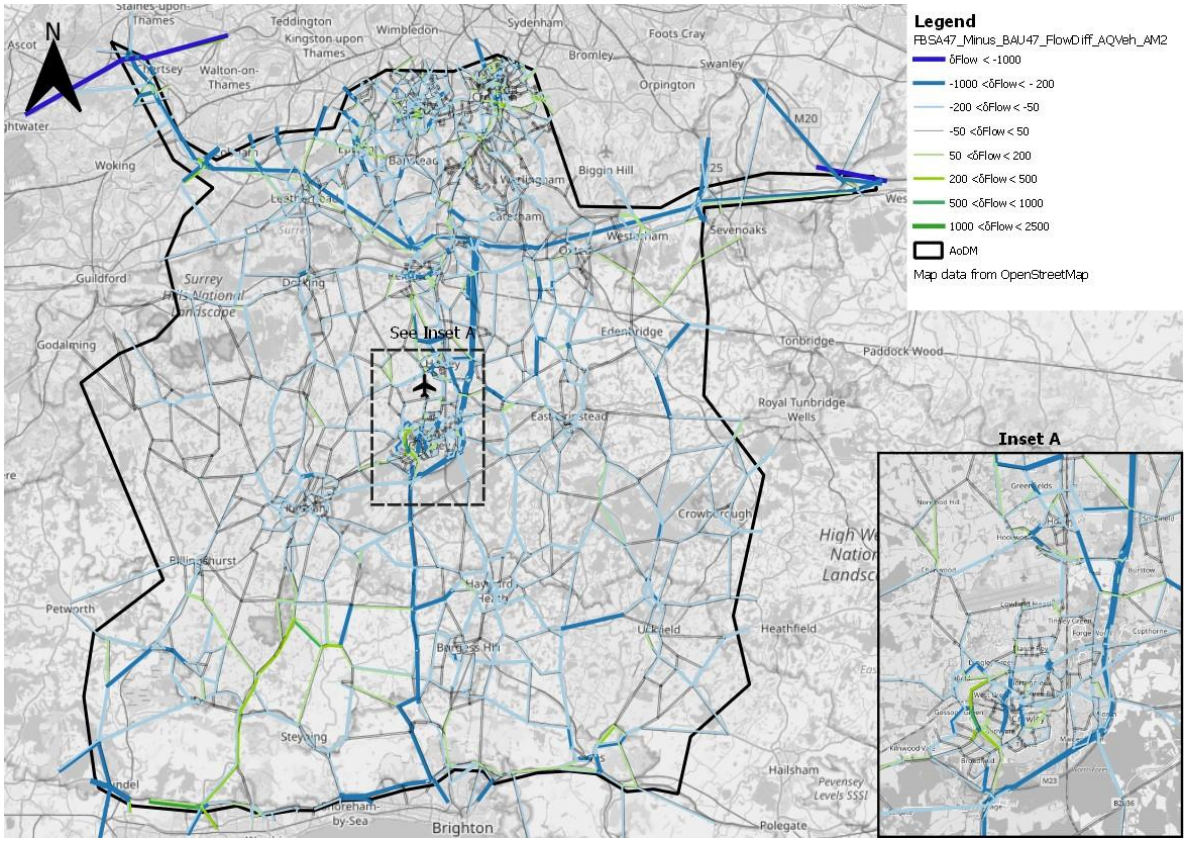


Figure 27: Traffic flow change (veh) 2047 future baseline sensitivity compared to 2047 future baseline (DCO Application), IP

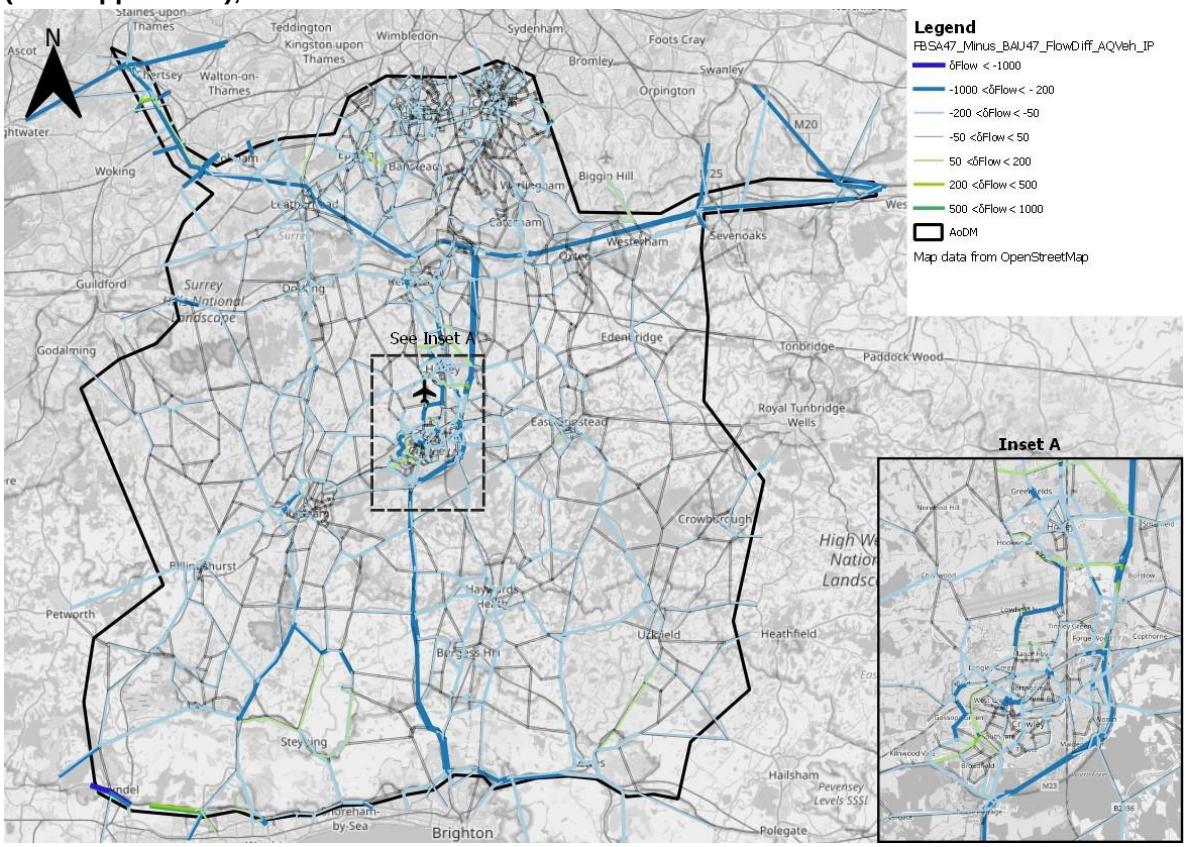


Figure 28: Traffic flow change (veh) 2047 future baseline sensitivity compared to 2047 future baseline (DCO Application), PM

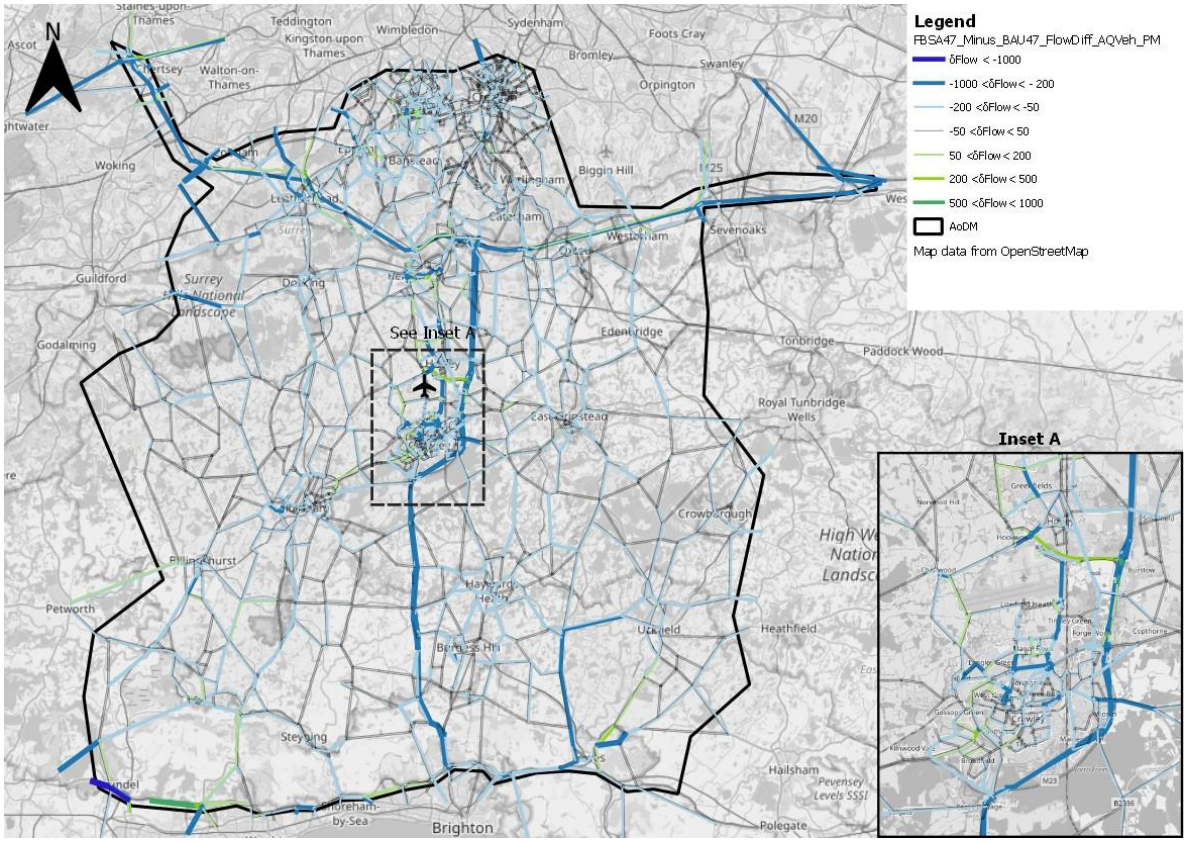


Figure 29: Traffic flow percentage change: 2029 future baseline sensitivity to 2029 future baseline (DCO Application), AM1

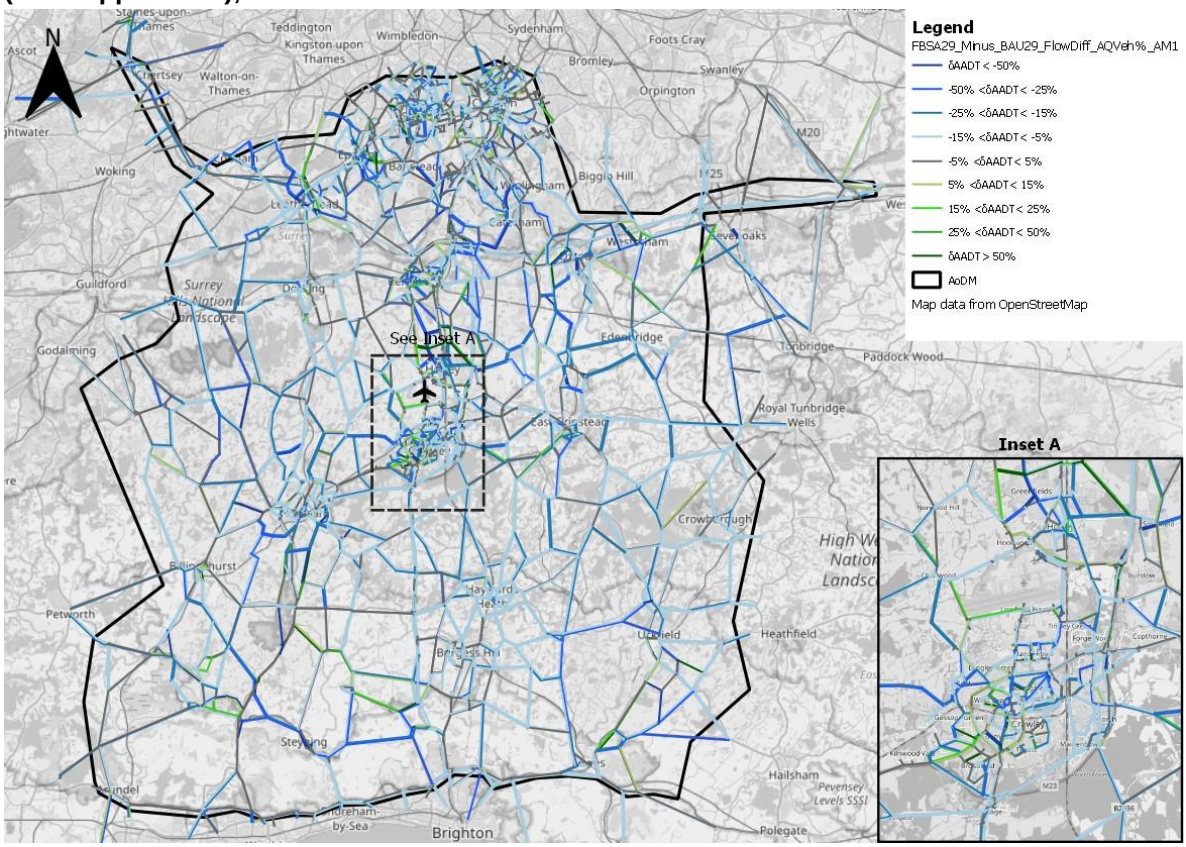


Figure 30: Traffic flow percentage change: 2029 future baseline sensitivity to 2029 future baseline (DCO Application), AM2

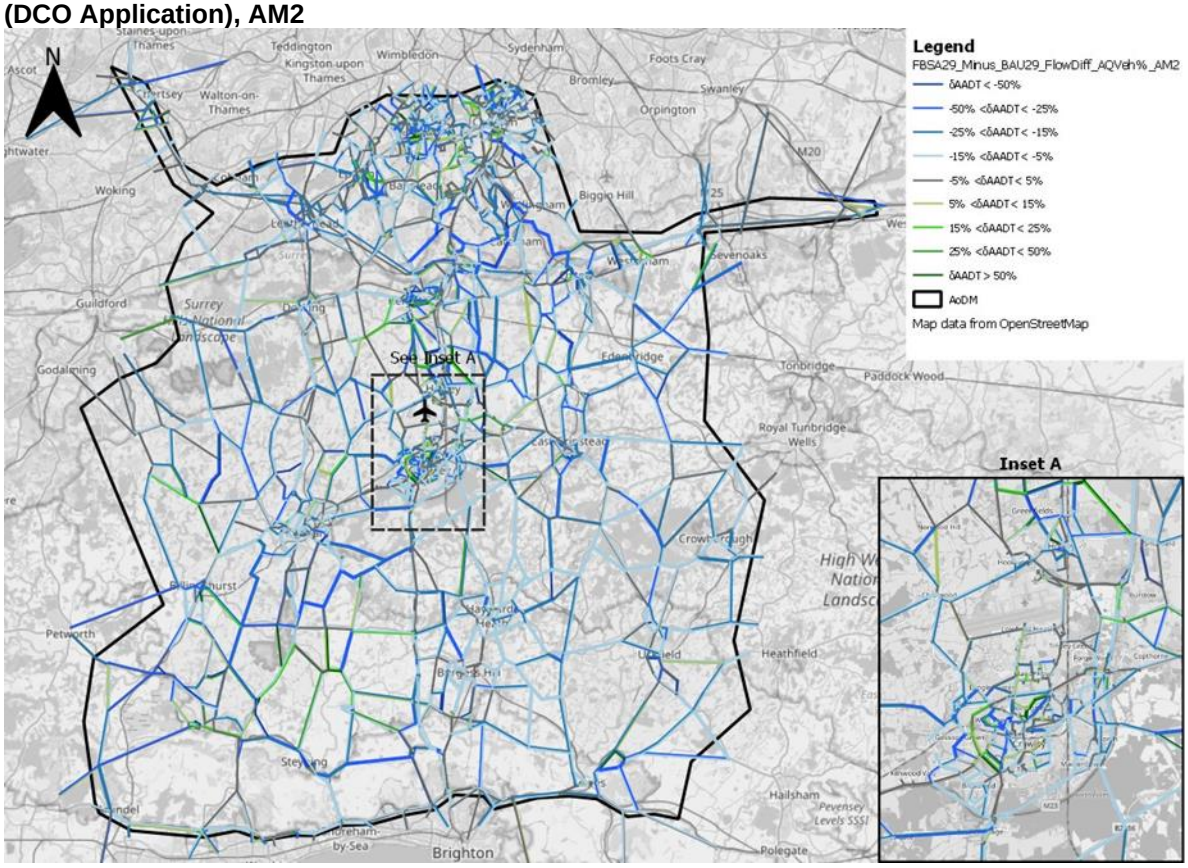


Figure 31: Traffic flow percentage change: 2029 future baseline sensitivity to 2029 future baseline (DCO Application), IP

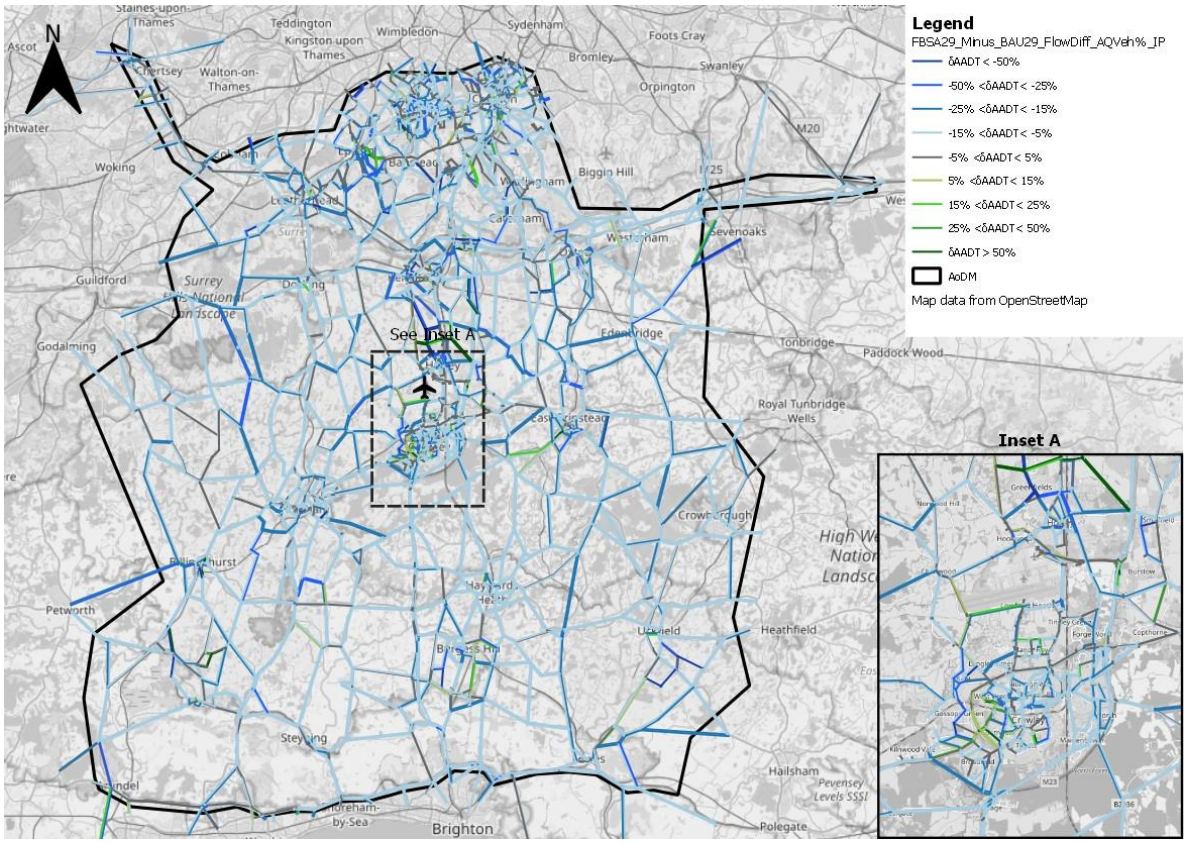


Figure 32: Traffic flow percentage change: 2029 future baseline sensitivity to 2029 future baseline (DCO Application), PM

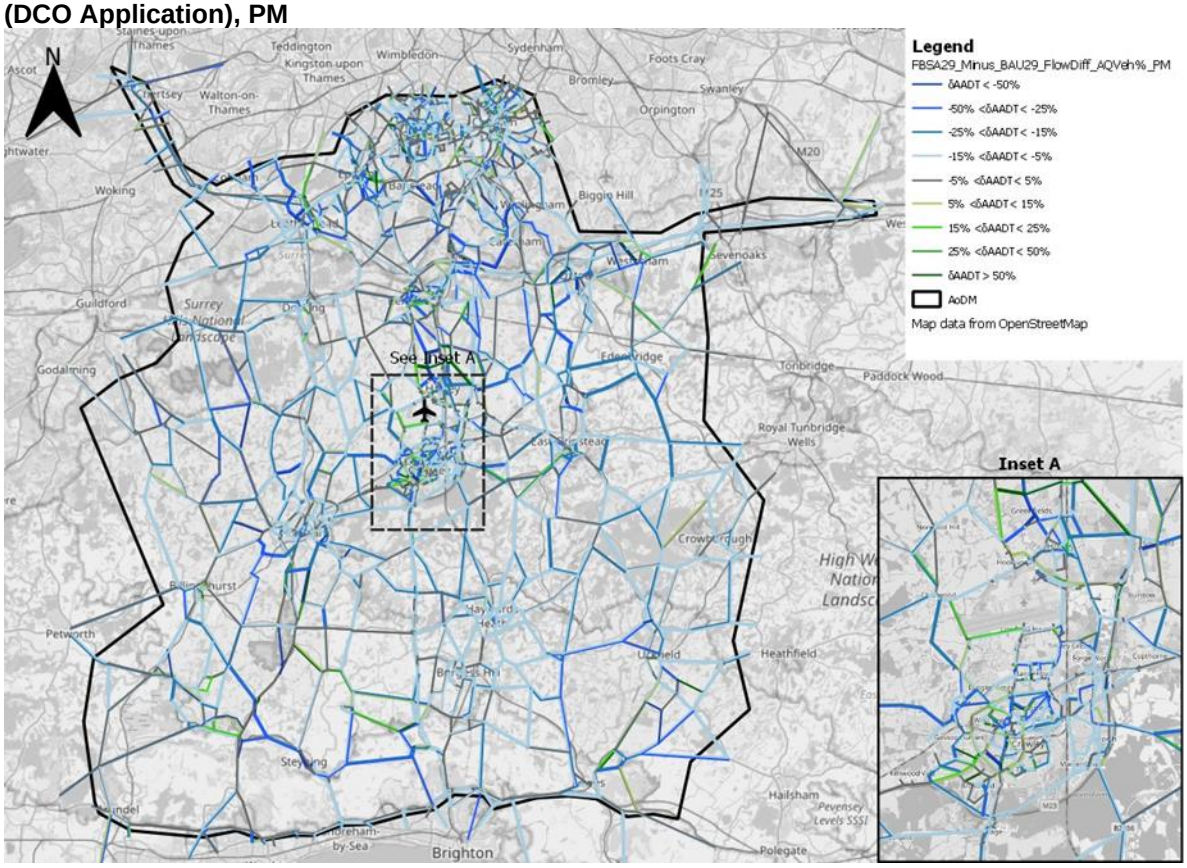


Figure 33: Traffic flow percentage change: 2032 future baseline sensitivity to 2032 future baseline (DCO Application), AM1

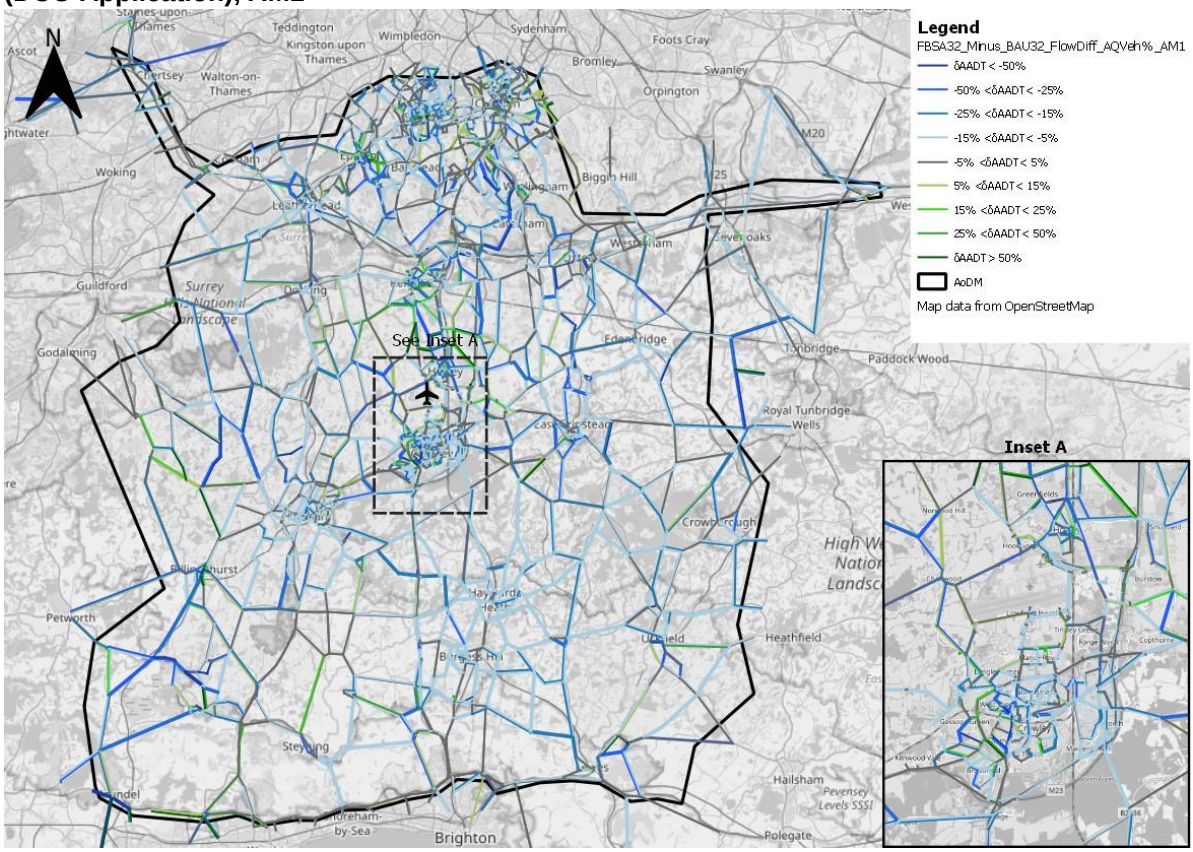


Figure 34: Traffic flow percentage change: 2032 future baseline sensitivity to 2032 future baseline (DCO Application), AM2

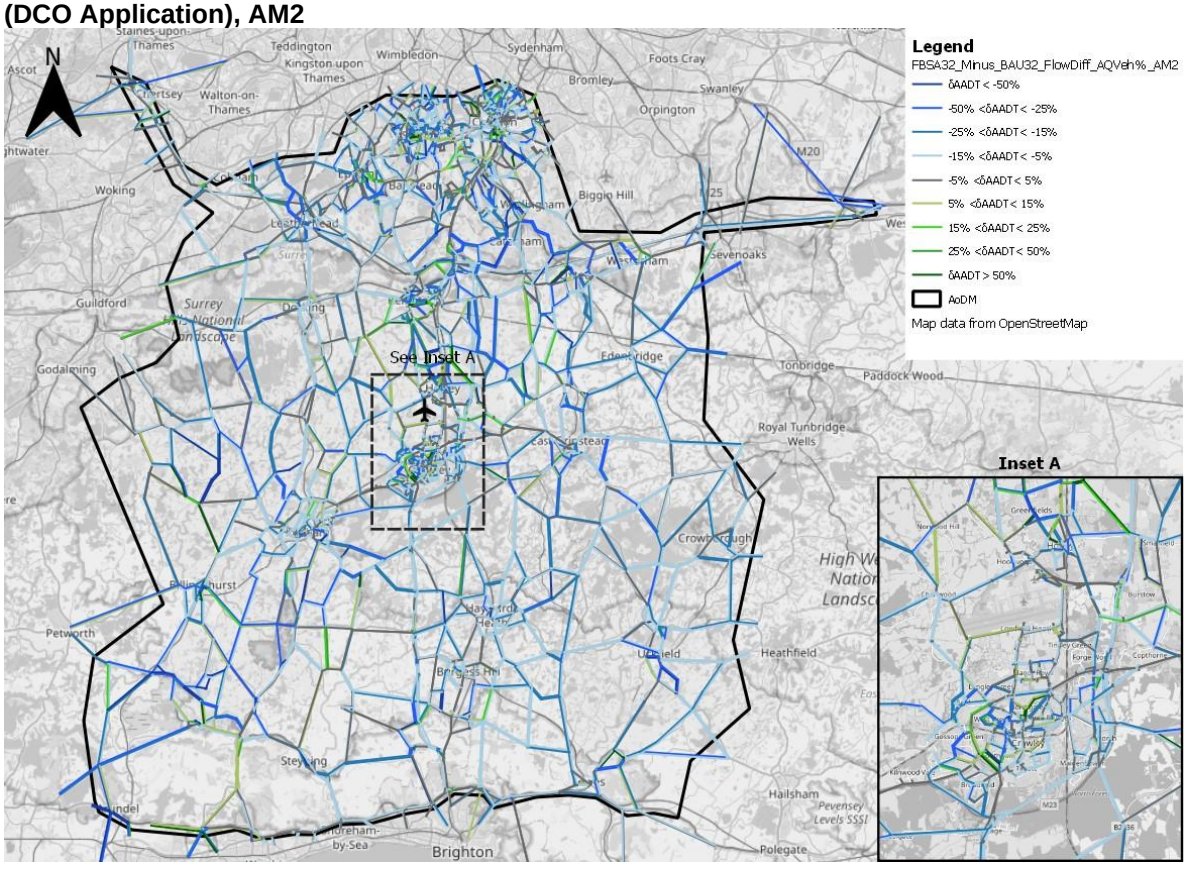


Figure 35: Traffic flow percentage change: 2032 future baseline sensitivity to 2032 future baseline (DCO Application), IP

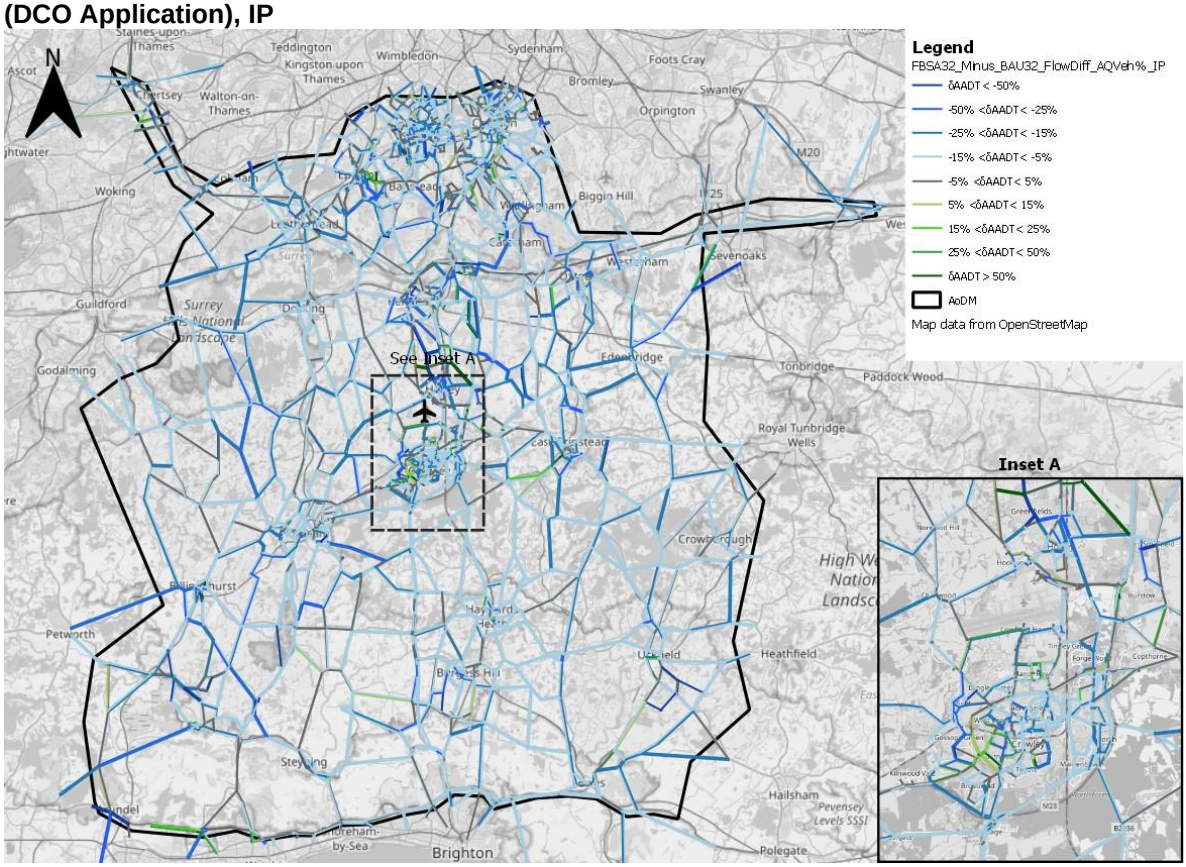


Figure 36: Traffic flow percentage change: 2032 future baseline sensitivity to 2032 future baseline (DCO Application), PM

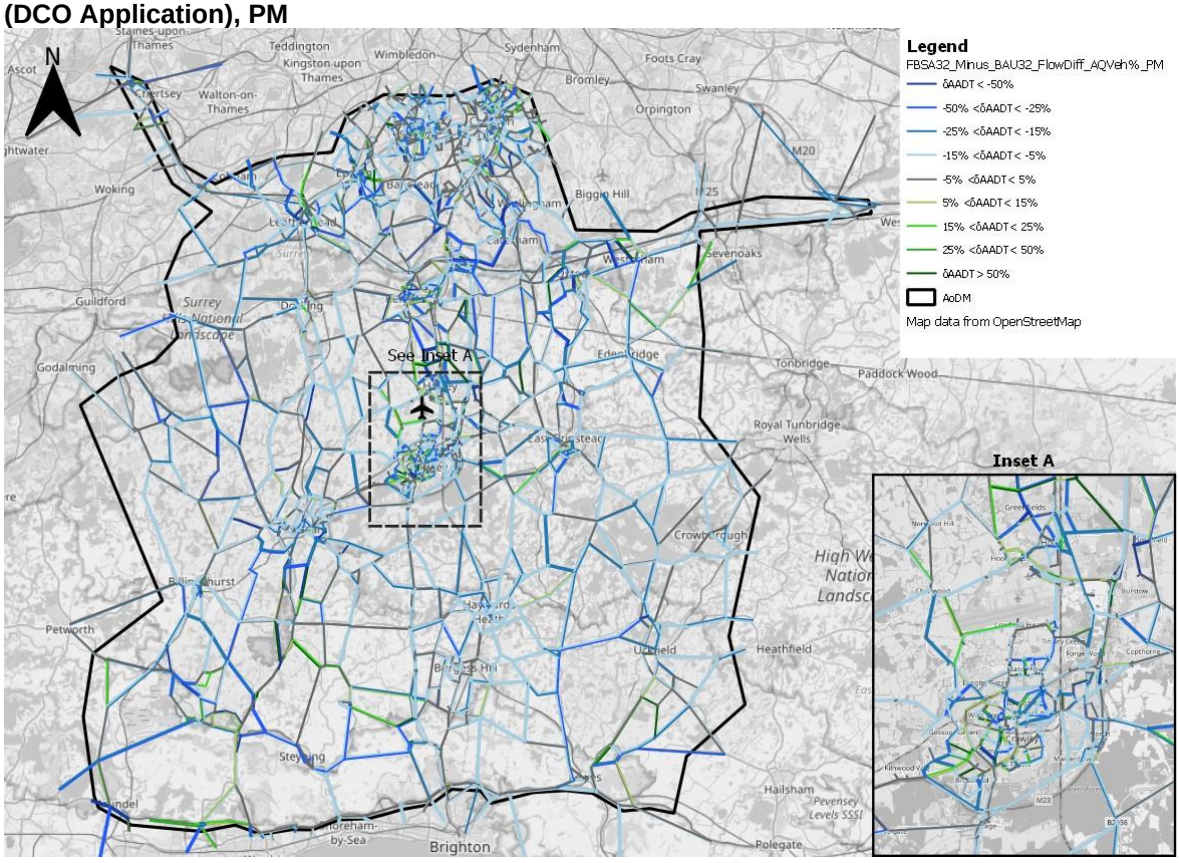


Figure 37: Traffic flow percentage change: 2038 future baseline sensitivity to 2038 future baseline (DCO Application), AM1

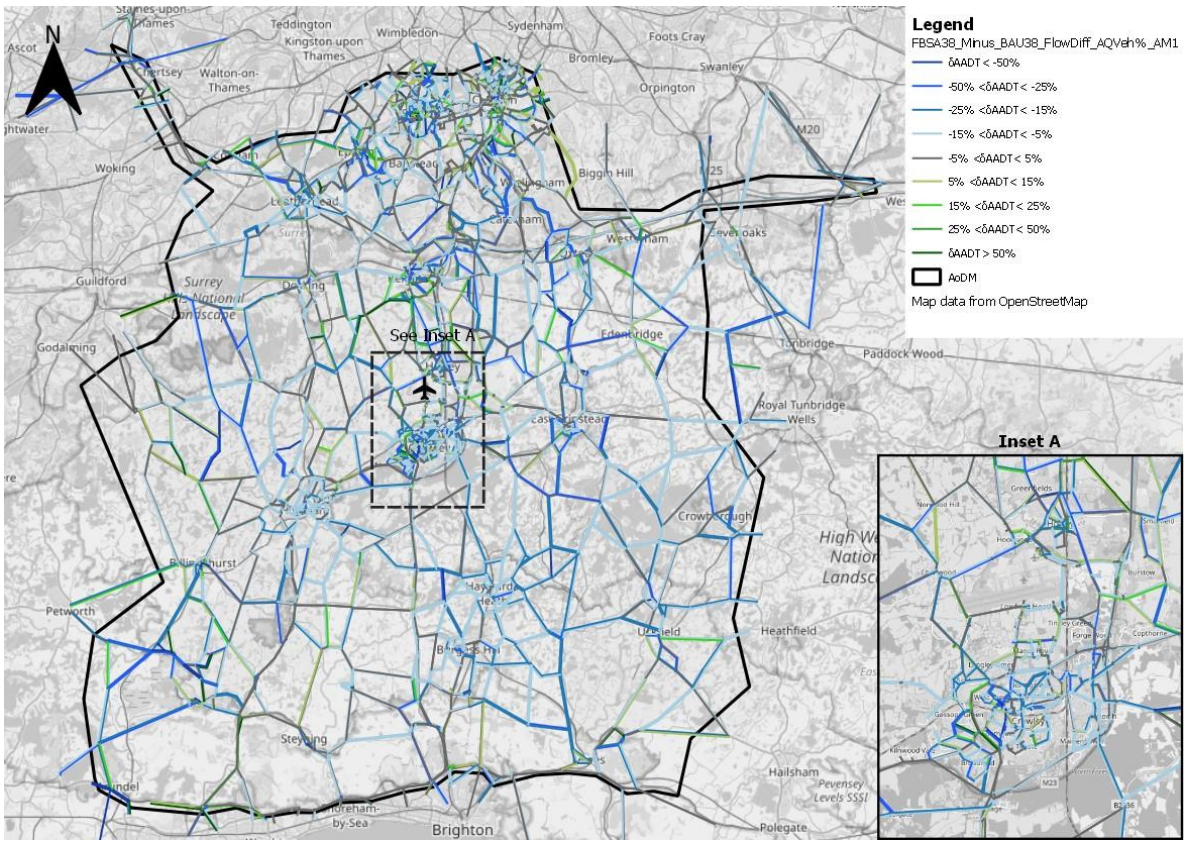


Figure 38: Traffic flow percentage change: 2038 future baseline sensitivity to 2038 future baseline (DCO Application), AM2

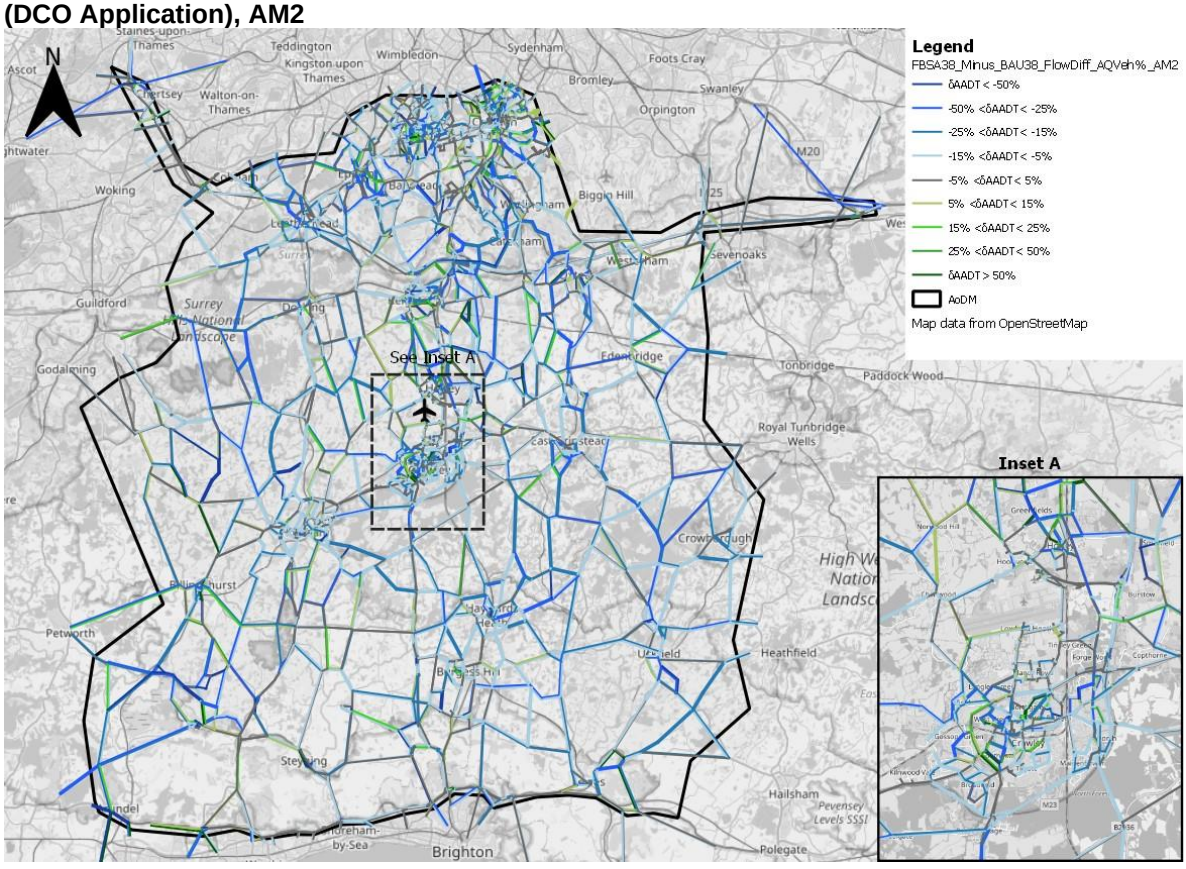


Figure 39: Traffic flow percentage change: 2038 future baseline sensitivity to 2038 future baseline (DCO Application), IP

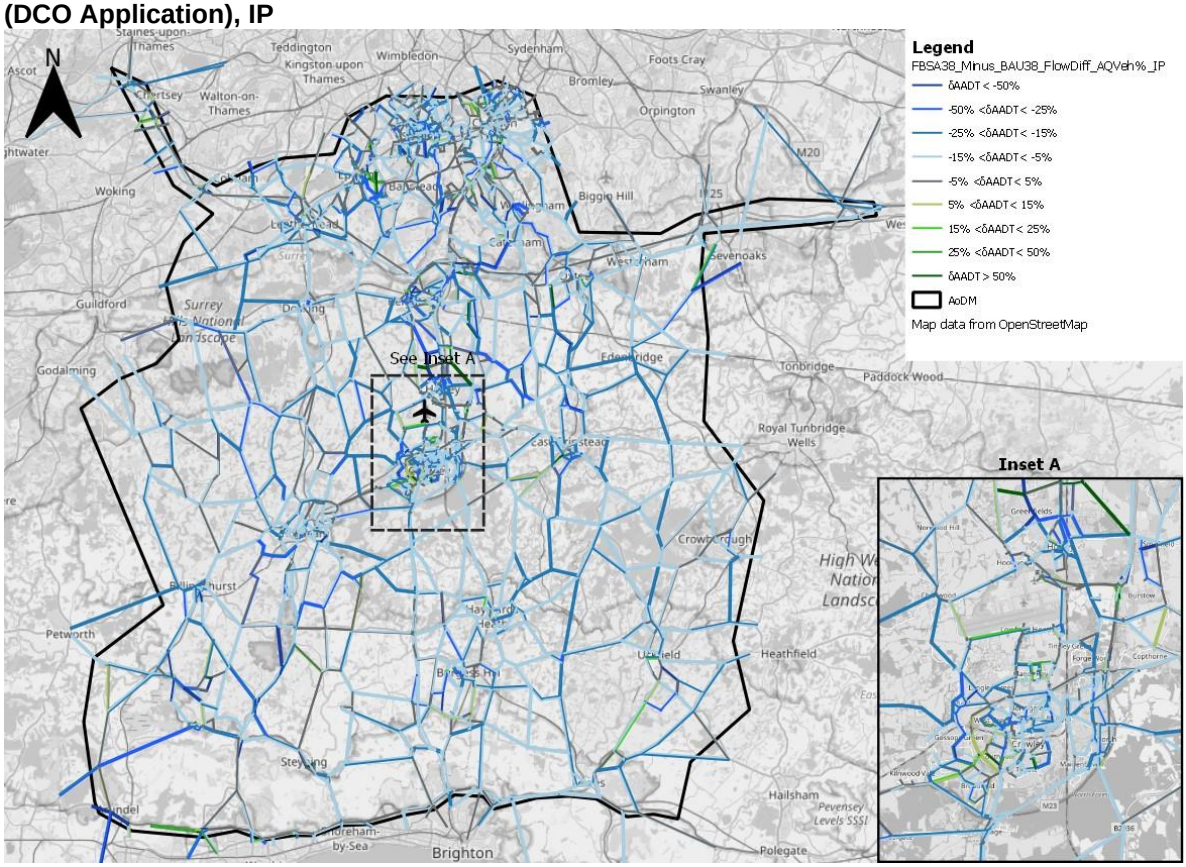


Figure 40: Traffic flow percentage change: 2038 future baseline sensitivity to 2038 future baseline (DCO Application), PM

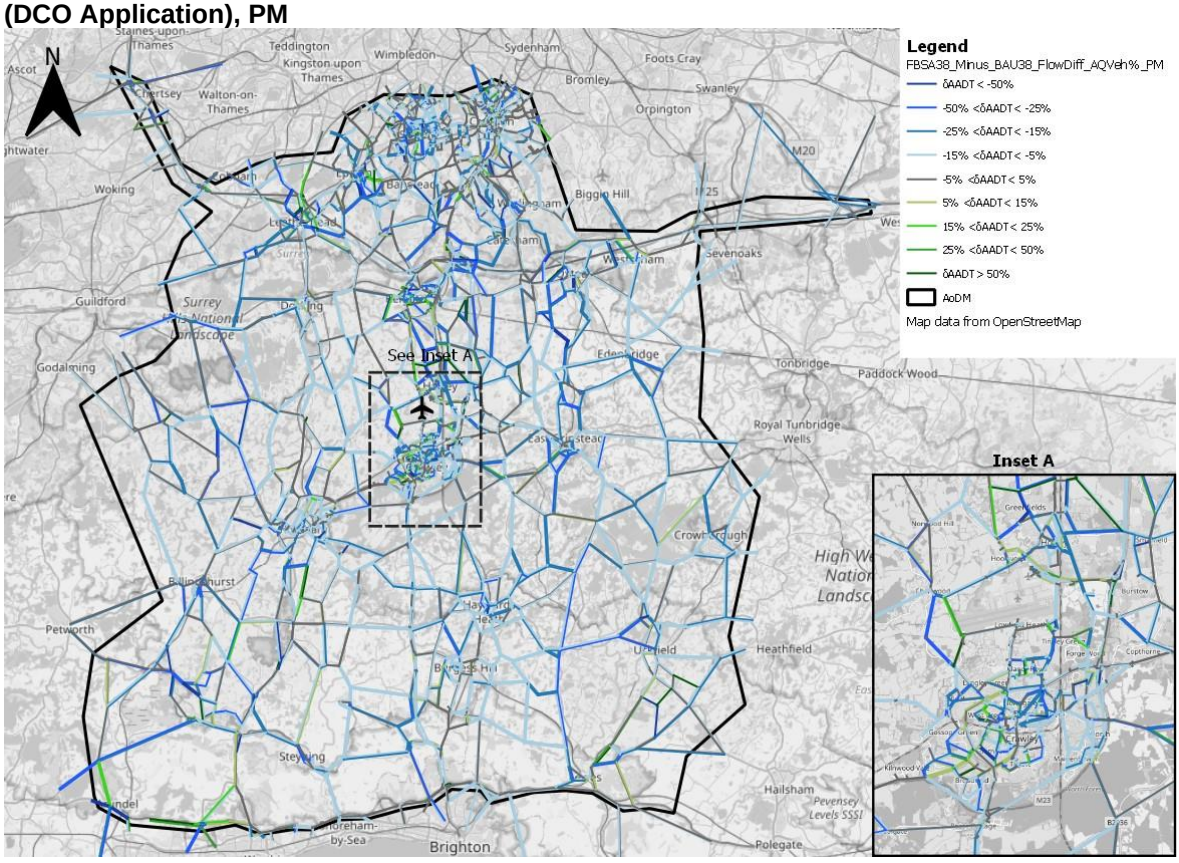


Figure 41: Traffic flow percentage change: 2047 future baseline sensitivity to 2047 future baseline (DCO Application), AM1

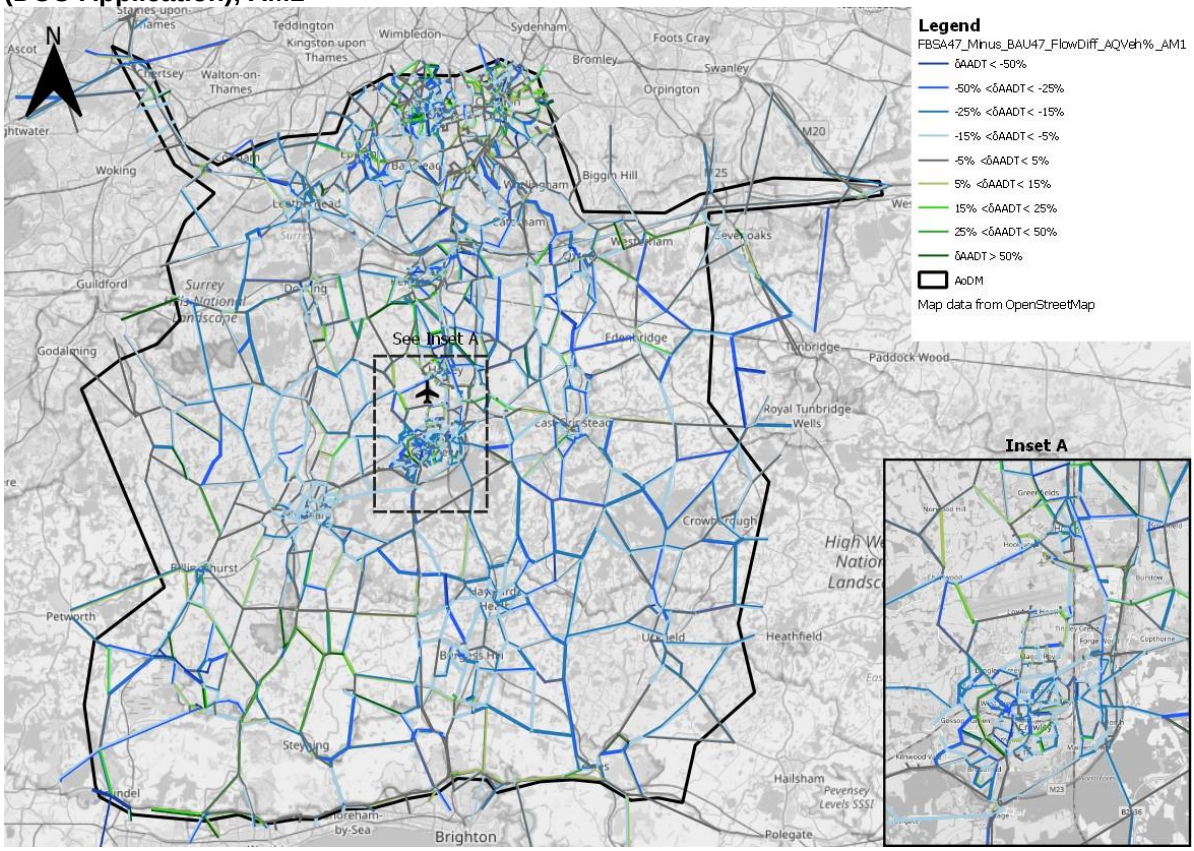


Figure 42: Traffic flow percentage change: 2047 future baseline sensitivity to 2047 future baseline (DCO Application), AM2

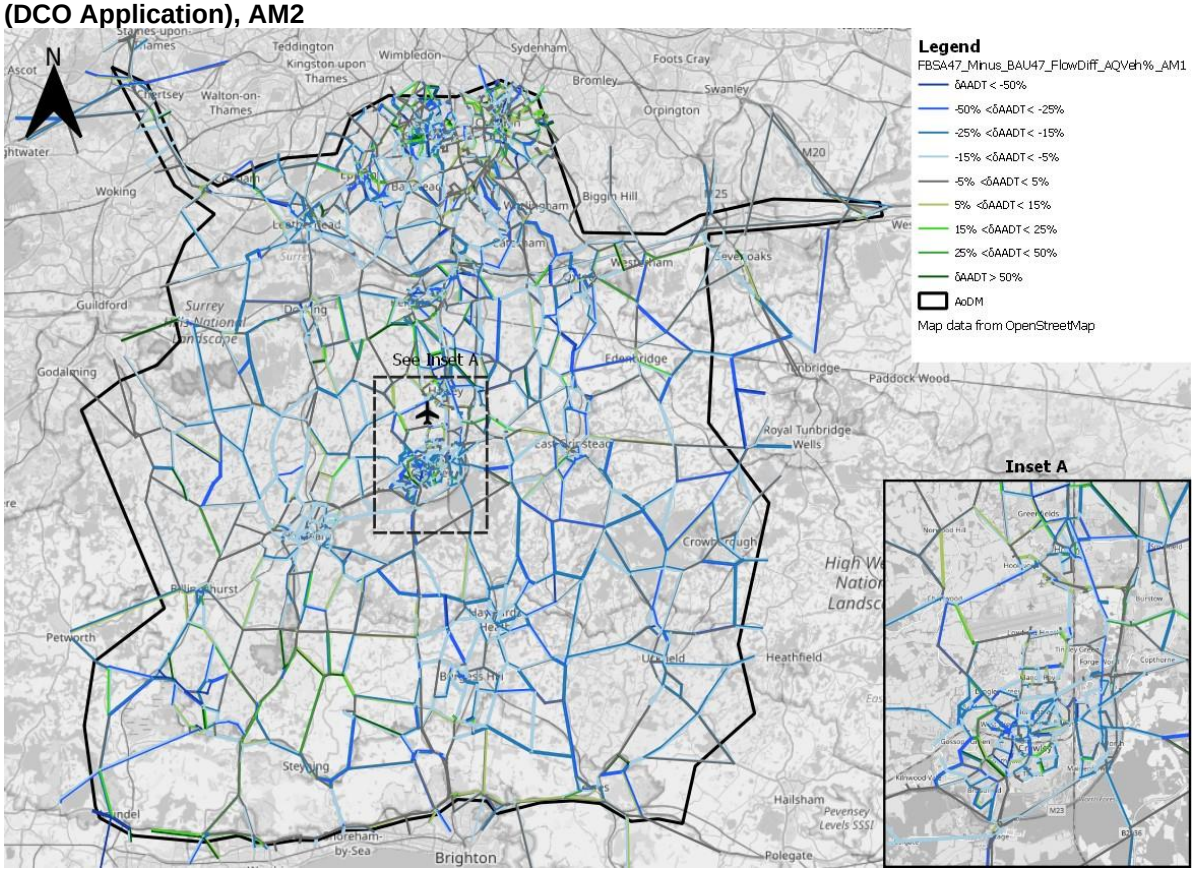


Figure 43: Traffic flow percentage change: 2047 future baseline sensitivity to 2047 future baseline (DCO Application), IP

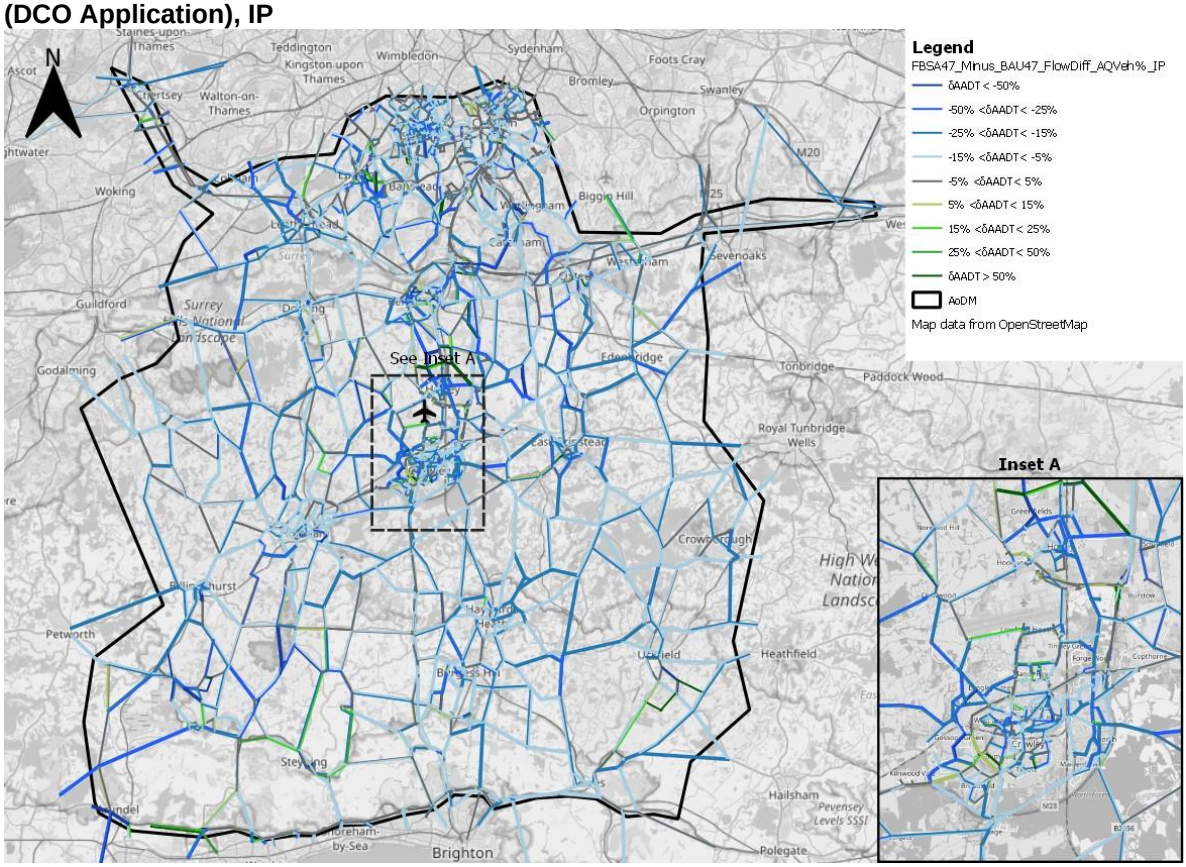


Figure 44: Traffic flow percentage change: 2047 future baseline sensitivity to 2047 future baseline (DCO Application), PM

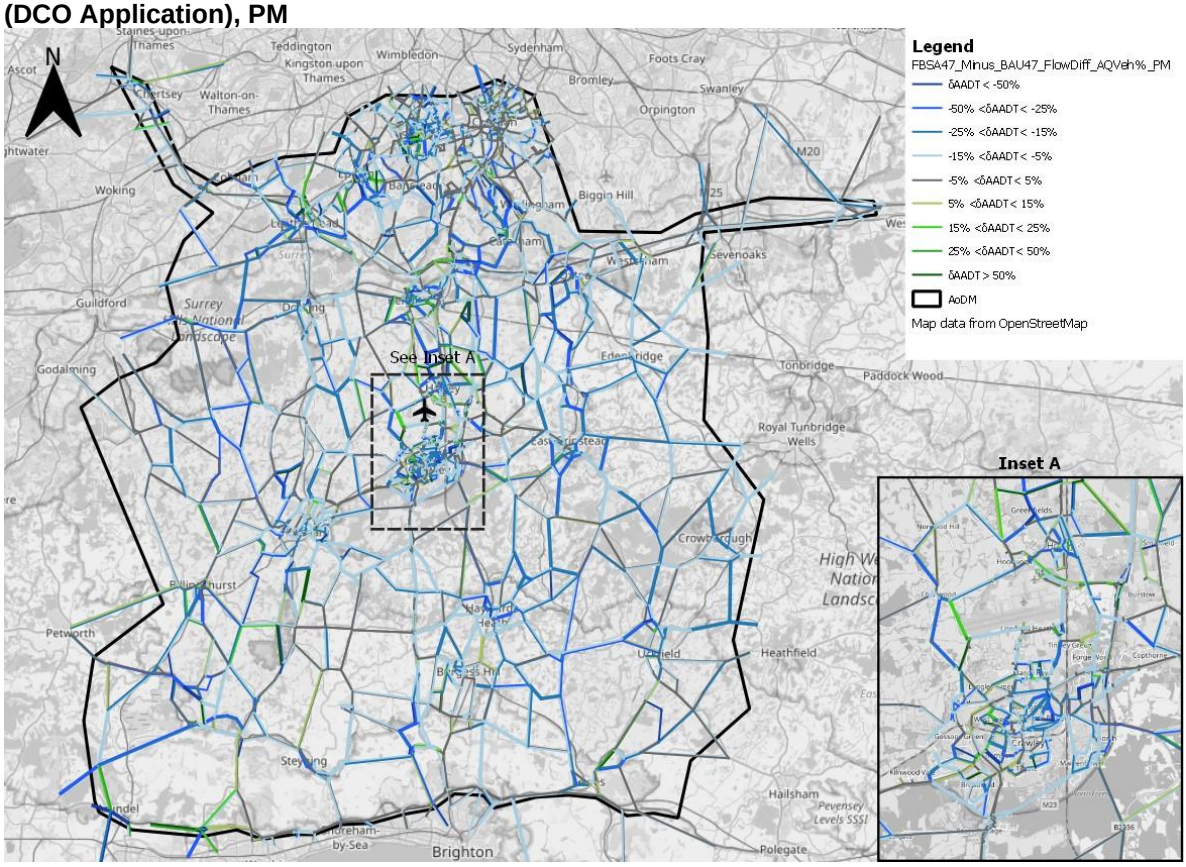


Figure 45: Traffic flow change (veh) 2029 with Project sensitivity test less 2047 future baseline sensitivity test, AM1

Figure 46: Traffic flow change (veh) 2029 with Project sensitivity test less 2047 future baseline sensitivity test, AM2

Figure 47: Traffic flow change (veh) 2029 with Project sensitivity test less 2047 future baseline sensitivity test, IP

Figure 48: Traffic flow change (veh) 2029 with Project sensitivity test less 2047 future baseline sensitivity test, PM

Figure 49: Traffic flow change (veh) 2032 with Project sensitivity test less 2047 future baseline sensitivity test, AM1

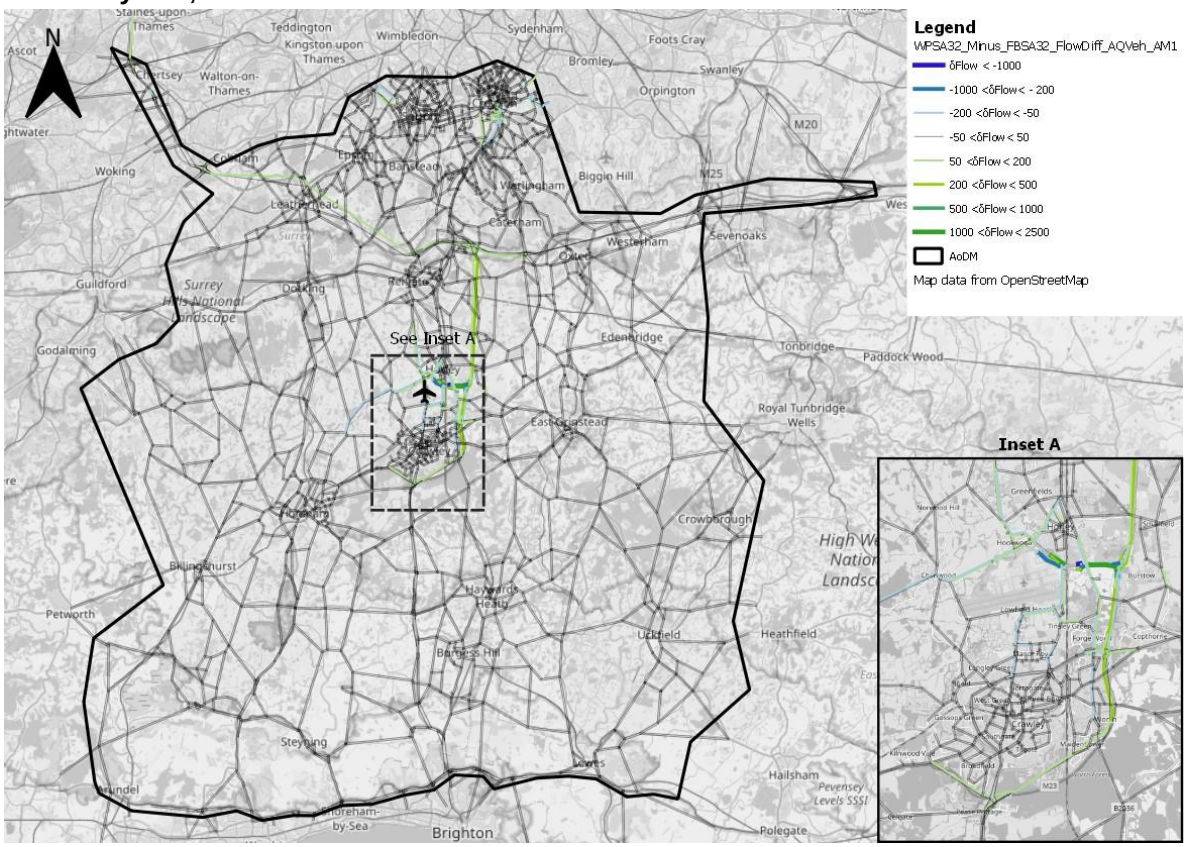


Figure 50: Traffic flow change (veh) 2032 with Project sensitivity test less 2047 future baseline sensitivity test, AM2

Figure 51: Traffic flow change (veh) 2032 with Project sensitivity test less 2047 future baseline sensitivity test, IP

Figure 52: Traffic flow change (veh) 2032 with Project sensitivity test less 2047 future baseline sensitivity test, PM

Figure 53: Traffic flow change (veh) 2038 with Project sensitivity test less 2047 future baseline sensitivity test, AM1

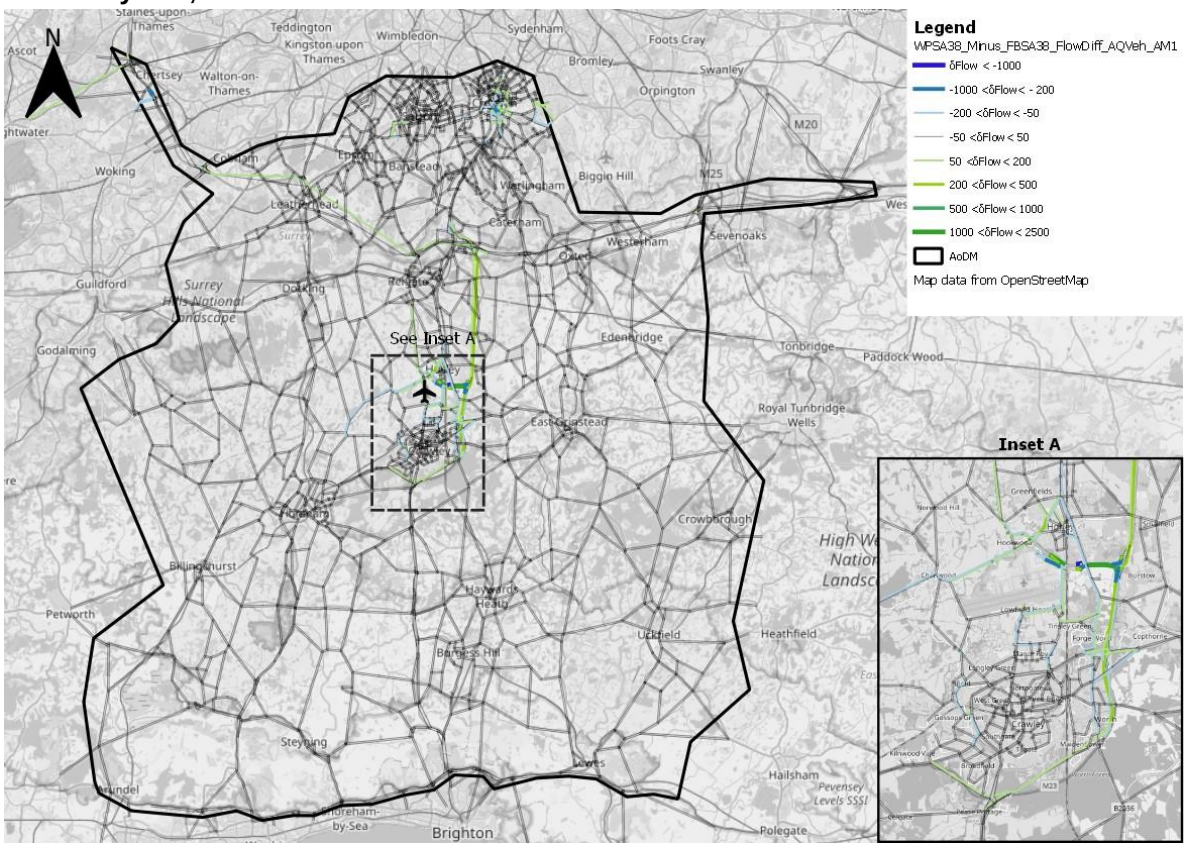


Figure 54: Traffic flow change (veh) 2038 with Project sensitivity test less 2047 future baseline sensitivity test, AM2

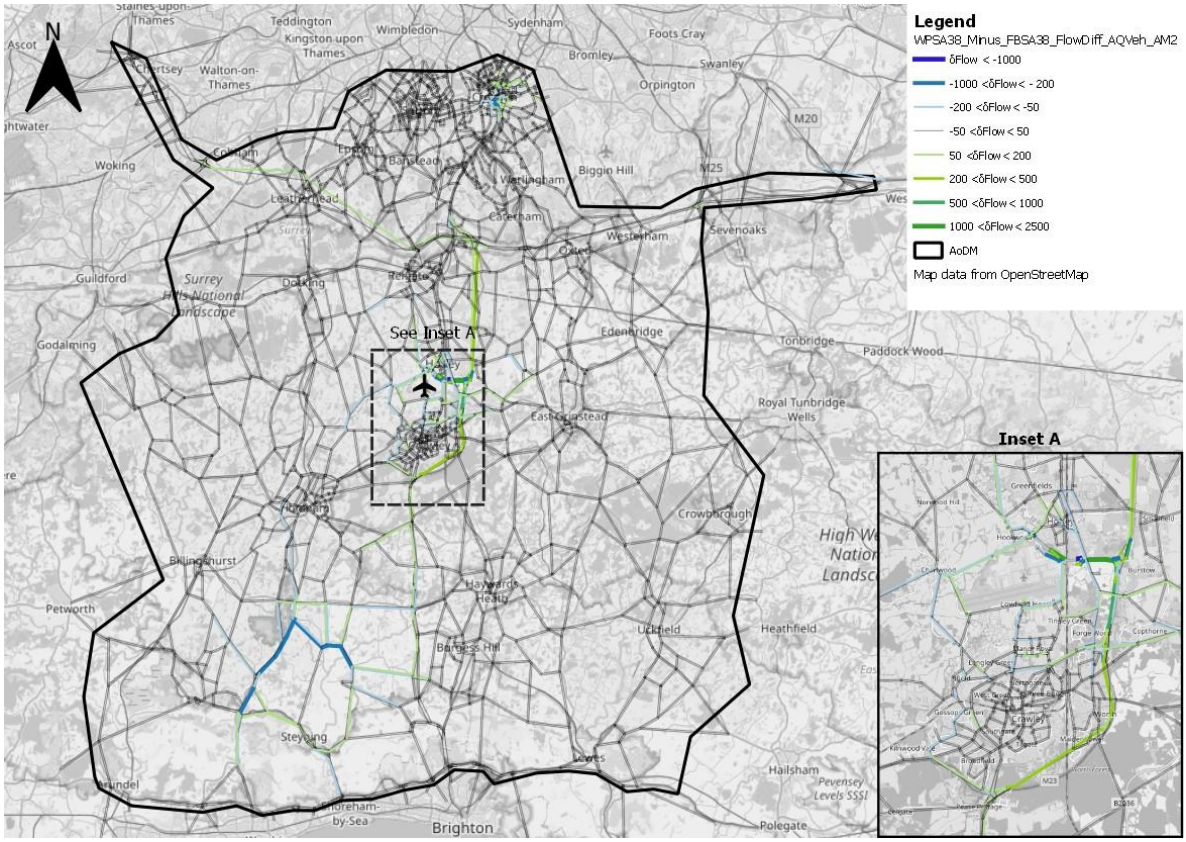


Figure 55: Traffic flow change (veh) 2038 with Project sensitivity test less 2047 future baseline sensitivity test, IP

Figure 56: Traffic flow change (veh) 2038 with Project sensitivity test less 2047 future baseline sensitivity test, PM

Figure 57: Traffic flow change (veh) 2047 with Project sensitivity test less 2047 future baseline sensitivity test, AM1

Figure 58: Traffic flow change (veh) 2047 with Project sensitivity test less 2047 future baseline sensitivity test, AM2

Figure 59: Traffic flow change (veh) 2047 with Project sensitivity test less 2047 future baseline sensitivity test, IP

Figure 60: Traffic flow change (veh) 2047 with Project sensitivity test less 2047 future baseline sensitivity test, PM

Appendix 8 – Rail network performance – Assignment statistics

Table 45: Rail assignment network statistics, Future Baseline

		Application Modelling				Sensitivity Modelling				Difference (Sensitivity vs Application)			
Period	Metric	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
24hr	Pax Trips (million)	8.09	8.38	8.88	9.67	6.86	7.10	7.52	8.18	-15%	-15%	-15%	-15%
	Pax KM (million)	219.24	230.37	254.31	295.98	186.10	196.08	217.37	254.73	-15%	-15%	-15%	-14%
	Pax Hr (million)	4.18	4.36	4.72	5.33	3.54	3.70	4.01	4.54	-15%	-15%	-15%	-15%
	Avg Speed (km/h)	52	53	54	56	53	53	54	56	0%	0%	1%	1%
	Avg km/trip	27	28	29	31	27	28	29	31	0%	0%	1%	2%
	Avg mins/trip	31	31	32	33	31	31	32	33	0%	0%	0%	1%
AM	Pax Trips (million)	2.01	2.08	2.18	2.34	1.67	1.72	1.81	1.94	-17%	-17%	-17%	-17%
	Pax KM (million)	45.41	47.04	50.38	55.98	37.19	38.60	41.44	46.22	-18%	-18%	-18%	-17%
	Pax Hr (million)	0.96	0.99	1.05	1.15	0.79	0.81	0.87	0.95	-18%	-18%	-18%	-18%
	Avg Speed (km/h)	47	47	48	49	47	47	48	49	0%	0%	0%	0%
	Avg km/trip	23	23	23	24	22	22	23	24	-1%	-1%	-1%	0%
	Avg mins/trip	29	29	29	30	28	28	29	29	-1%	-1%	-1%	-1%
IP	Pax Trips (million)	2.24	2.33	2.50	2.75	1.95	2.02	2.15	2.37	-13%	-14%	-14%	-14%
	Pax KM (million)	69.55	73.75	83.01	99.50	60.34	64.14	72.46	87.46	-13%	-13%	-13%	-12%
	Pax Hr (million)	1.22	1.29	1.41	1.63	1.06	1.11	1.23	1.42	-13%	-13%	-13%	-13%
	Avg Speed (km/h)	57	57	59	61	57	58	59	62	0%	0%	1%	1%
	Avg km/trip	31	32	33	36	31	32	34	37	0%	1%	1%	2%
	Avg mins/trip	33	33	34	36	33	33	34	36	0%	0%	1%	1%
PM	Pax Trips (million)	1.68	1.74	1.84	1.99	1.42	1.47	1.55	1.68	-15%	-15%	-15%	-15%
	Pax KM (million)	39.68	41.67	45.89	53.22	33.80	35.62	39.45	46.15	-15%	-15%	-14%	-13%
	Pax Hr (million)	0.78	0.82	0.89	1.00	0.66	0.69	0.75	0.85	-16%	-15%	-15%	-15%
	Avg Speed (km/h)	51	51	52	53	51	52	53	54	1%	1%	1%	2%
	Avg km/trip	24	24	25	27	24	24	25	27	1%	1%	2%	3%
	Avg mins/trip	28	28	29	30	28	28	29	30	0%	0%	0%	1%
OP	Pax Trips (million)	2.16	2.23	2.37	2.58	1.83	1.90	2.01	2.19	-15%	-15%	-15%	-15%
	Pax KM (million)	64.60	67.92	75.03	87.29	54.77	57.73	64.02	74.90	-15%	-15%	-15%	-14%
	Pax Hr (million)	1.21	1.27	1.37	1.55	1.03	1.08	1.17	1.32	-15%	-15%	-15%	-15%
	Avg Speed (km/h)	53	54	55	56	53	54	55	57	0%	0%	0%	0%
	Avg km/trip	30	30	32	34	30	30	32	34	0%	0%	1%	1%
	Avg mins/trip	34	34	35	36	34	34	35	36	0%	0%	0%	1%

Table 46: Rail assignment network statistics, with Project

		Application Modelling				Sensitivity Modelling				Difference (Sensitivity vs Application)			
Period	Metric	2029	2032	2038	2047	2029	2032	2038	2047	2029	2032	2038	2047
24hr	Pax Trips (million)	8.10	8.40	8.90	9.69	6.87	7.12	7.54	8.20	-15%	-15%	-15%	-15%
	Pax KM (million)	219.84	231.81	256.04	297.79	186.69	197.58	219.13	256.54	-15%	-15%	-14%	-14%
	Pax Hr (million)	4.19	4.38	4.75	5.36	3.55	3.72	4.03	4.56	-15%	-15%	-15%	-15%
	Avg Speed (km/h)	52	53	54	56	53	53	54	56	0%	0%	1%	1%
	Avg km/trip	27	28	29	31	27	28	29	31	0%	0%	1%	2%
	Avg mins/trip	31	31	32	33	31	31	32	33	0%	0%	0%	1%
AM	Pax Trips (million)	2.02	2.08	2.18	2.34	1.67	1.72	1.81	1.94	-17%	-17%	-17%	-17%
	Pax KM (million)	45.51	47.21	50.60	56.21	37.29	38.79	41.68	46.46	-18%	-18%	-18%	-17%
	Pax Hr (million)	0.96	0.99	1.06	1.16	0.79	0.82	0.87	0.95	-18%	-18%	-18%	-18%
	Avg Speed (km/h)	47	48	48	49	47	48	48	49	0%	0%	0%	0%
	Avg km/trip	23	23	23	24	22	23	23	24	-1%	-1%	-1%	0%
	Avg mins/trip	29	29	29	30	28	28	29	29	-1%	-1%	-1%	-1%
IP	Pax Trips (million)	2.25	2.34	2.51	2.76	1.95	2.02	2.16	2.38	-13%	-14%	-14%	-14%
	Pax KM (million)	69.84	74.30	83.69	100.23	60.63	64.71	73.15	88.19	-13%	-13%	-13%	-12%
	Pax Hr (million)	1.23	1.29	1.42	1.64	1.07	1.12	1.23	1.43	-13%	-13%	-13%	-13%
	Avg Speed (km/h)	57	57	59	61	57	58	59	62	0%	0%	1%	1%
	Avg km/trip	31	32	33	36	31	32	34	37	0%	1%	1%	2%
	Avg mins/trip	33	33	34	36	33	33	34	36	0%	0%	1%	1%
PM	Pax Trips (million)	1.68	1.74	1.84	1.99	1.42	1.47	1.55	1.69	-15%	-15%	-15%	-15%
	Pax KM (million)	39.73	41.84	46.08	53.38	33.85	35.79	39.64	46.30	-15%	-14%	-14%	-13%
	Pax Hr (million)	0.78	0.82	0.89	1.00	0.66	0.69	0.75	0.85	-16%	-15%	-15%	-15%
	Avg Speed (km/h)	51	51	52	53	51	52	53	54	1%	1%	2%	2%
	Avg km/trip	24	24	25	27	24	24	25	27	1%	1%	2%	3%
	Avg mins/trip	28	28	29	30	28	28	29	30	0%	0%	0%	1%
OP	Pax Trips (million)	2.16	2.24	2.38	2.59	1.83	1.90	2.02	2.20	-15%	-15%	-15%	-15%
	Pax KM (million)	64.76	68.46	75.67	87.98	54.92	58.29	64.66	75.58	-15%	-15%	-15%	-14%
	Pax Hr (million)	1.22	1.27	1.38	1.56	1.03	1.08	1.18	1.33	-15%	-15%	-15%	-15%
	Avg Speed (km/h)	53	54	55	57	53	54	55	57	0%	0%	0%	1%
	Avg km/trip	30	31	32	34	30	31	32	34	0%	0%	1%	1%
	Avg mins/trip	34	34	35	36	34	34	35	36	0%	0%	0%	1%

Appendix 9 – Rail Crowding

Table 47: Load factors: Morning peak northbound, fast trains, Future Baseline 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.53	0.61	0.35	0.31	1.07	0.48	0.59	0.57	0.4	0.81	-0.05	-0.02	0.22	0.08	-0.26
07:00	AM	0.61	0.76	0.92	0.84	1.20	0.49	0.64	0.8	0.73	1.01	-0.12	-0.12	-0.12	-0.11	-0.18
08:00	AM	0.70	0.87	1.05	0.96	1.37	0.56	0.73	0.91	0.83	1.16	-0.14	-0.13	-0.14	-0.13	-0.21
09:00	IP	0.44	0.85	0.85	0.66	1.31	0.38	0.75	0.78	0.59	1.2	-0.06	-0.1	-0.07	-0.07	-0.11
10:00	IP	0.28	0.53	0.54	0.42	0.82	0.24	0.47	0.49	0.37	0.76	-0.04	-0.06	-0.04	-0.05	-0.07

Table 48: Load factors: Morning peak northbound, fast trains, With Project 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.55	0.61	0.35	0.31	1.07	0.5	0.59	0.57	0.4	0.81	-0.05	-0.02	0.22	0.08	-0.26
07:00	AM	0.62	0.76	0.92	0.84	1.20	0.49	0.65	0.8	0.73	1.02	-0.12	-0.12	-0.12	-0.11	-0.18
08:00	AM	0.70	0.87	1.06	0.97	1.37	0.57	0.74	0.92	0.84	1.16	-0.14	-0.13	-0.14	-0.13	-0.21
09:00	IP	0.44	0.89	0.89	0.68	1.34	0.38	0.79	0.81	0.61	1.24	-0.06	-0.1	-0.07	-0.07	-0.11
10:00	IP	0.28	0.56	0.56	0.43	0.85	0.24	0.5	0.51	0.39	0.78	-0.04	-0.06	-0.05	-0.05	-0.07

Table 49: Load factors: Morning peak northbound, fast trains, With Project to Future Baseline comparison 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07:00	AM	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	-0.01	0.01	0.00	0.00	0.01
08:00	AM	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00
09:00	IP	0.00	0.04	0.04	0.02	0.03	0.00	0.04	0.03	0.02	0.04	0.00	0.00	-0.01	0.00	0.01
10:00	IP	0.00	0.03	0.02	0.01	0.03	0.00	0.03	0.02	0.02	0.02	0.00	0.00	0.00	0.01	-0.01

Table 50: Load factors: Morning peak northbound, fast trains, Future Baseline 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.56	0.65	0.37	0.33	1.12	0.5	0.62	0.59	0.42	0.85	-0.05	-0.03	0.23	0.09	-0.27
07:00	AM	0.64	0.8	0.95	0.86	1.24	0.51	0.67	0.82	0.75	1.04	-0.13	-0.12	-0.12	-0.11	-0.19
08:00	AM	0.73	0.91	1.09	0.99	1.41	0.59	0.77	0.94	0.86	1.19	-0.15	-0.14	-0.14	-0.13	-0.22
09:00	IP	0.47	0.9	0.9	0.69	1.38	0.41	0.79	0.82	0.62	1.26	-0.06	-0.11	-0.08	-0.08	-0.12
10:00	IP	0.3	0.57	0.57	0.44	0.87	0.26	0.5	0.52	0.39	0.79	-0.04	-0.07	-0.05	-0.05	-0.07

Table 51: Load factors: Morning peak northbound, fast trains, With Project 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.58	0.64	0.36	0.32	1.11	0.53	0.62	0.59	0.41	0.85	-0.05	-0.03	0.23	0.09	-0.27
07:00	AM	0.64	0.82	0.96	0.87	1.25	0.52	0.70	0.84	0.76	1.06	-0.13	-0.12	-0.12	-0.11	-0.19
08:00	AM	0.74	0.94	1.10	1.0	1.43	0.59	0.80	0.97	0.87	1.21	-0.15	-0.13	-0.14	-0.13	-0.22
09:00	IP	0.48	0.97	0.95	0.73	1.43	0.42	0.86	0.87	0.65	1.31	-0.06	-0.11	-0.08	-0.08	-0.11
10:00	IP	0.30	0.61	0.6	0.46	0.90	0.26	0.54	0.55	0.41	0.83	-0.04	-0.07	-0.05	-0.05	-0.07

Table 52: Load factors: Morning peak northbound, fast trains, With Project to Future Baseline comparison 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.02	-0.01	-0.01	-0.01	-0.01	0.03	0.00	0.00	-0.01	0.00	0.01	0.01	0.01	0.00	0.01
07:00	AM	0.00	0.02	0.01	0.01	0.01	0.01	0.03	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.01
08:00	AM	0.01	0.03	0.01	0.01	0.02	0.00	0.03	0.03	0.01	0.02	-0.01	0.00	0.02	0.00	0.00
09:00	IP	0.01	0.07	0.05	0.04	0.05	0.01	0.07	0.05	0.03	0.05	0.00	0.00	0.00	-0.01	0.00
10:00	IP	0.00	0.04	0.03	0.02	0.03	0.00	0.04	0.03	0.02	0.04	0.00	0.00	0.00	0.00	0.01

Table 53: Load factors: Morning peak northbound, fast trains, Future Baseline 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.62	0.72	0.39	0.35	1.22	0.55	0.68	0.63	0.44	0.93	-0.06	-0.04	0.24	0.09	-0.29
07:00	AM	0.7	0.87	1	0.91	1.32	0.56	0.73	0.87	0.79	1.1	-0.15	-0.14	-0.13	-0.12	-0.21
08:00	AM	0.81	1	1.15	1.04	1.51	0.64	0.84	1	0.9	1.26	-0.17	-0.16	-0.15	-0.14	-0.24
09:00	IP	0.54	1.01	0.98	0.76	1.51	0.47	0.88	0.89	0.67	1.37	-0.08	-0.13	-0.09	-0.09	-0.14
10:00	IP	0.34	0.64	0.61	0.48	0.95	0.29	0.55	0.56	0.42	0.86	-0.05	-0.08	-0.06	-0.06	-0.09

Table 54: Load factors: Morning peak northbound, fast trains, With Project 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.64	0.71	0.39	0.35	1.21	0.58	0.67	0.63	0.44	0.92	-0.06	-0.03	0.24	0.09	-0.29
07:00	AM	0.71	0.89	1.02	0.92	1.33	0.57	0.76	0.89	0.80	1.12	-0.14	-0.13	-0.13	-0.12	-0.21
08:00	AM	0.81	1.02	1.17	1.05	1.52	0.65	0.87	1.02	0.92	1.28	-0.16	-0.15	-0.14	-0.13	-0.24
09:00	IP	0.55	1.09	1.04	0.80	1.58	0.48	0.96	0.96	0.71	1.44	-0.07	-0.13	-0.09	-0.09	-0.14
10:00	IP	0.35	0.69	0.66	0.51	1.00	0.30	0.61	0.60	0.45	0.91	-0.05	-0.08	-0.06	-0.06	-0.09

Table 55: Load factors: Morning peak northbound, fast trains, With Project to Future Baseline comparison 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge	Three Bridges to Gatwick	Gatwick to East Croydon	East Croydon to Clapham Jcn	Clapham Jcn to Victoria	East Croydon to London Bridge
06:00	OP3	0.02	-0.01	0.00	0.00	-0.01	0.03	-0.01	0.00	0.00	-0.01	0.01	0.00	0.00	0.00	0.00
07:00	AM	0.01	0.02	0.02	0.01	0.01	0.01	0.03	0.02	0.01	0.02	0.00	0.01	0.00	0.00	0.01
08:00	AM	0.00	0.02	0.02	0.01	0.01	0.01	0.03	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.01
09:00	IP	0.01	0.08	0.06	0.04	0.07	0.01	0.08	0.07	0.04	0.07	0.00	0.00	0.01	0.00	0.00
10:00	IP	0.01	0.05	0.05	0.03	0.05	0.01	0.06	0.04	0.03	0.05	0.00	0.01	-0.01	0.00	0.00

Table 56: Load factors: Evening peak southbound, fast trains, Future Baseline 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.34	0.45	0.68	0.44	0.22	0.39	0.51	0.65	0.53	0.24	0.06	0.05	-0.03	0.09	0.01
16:00	PM	0.75	0.87	1.01	0.64	0.42	0.68	0.79	0.89	0.58	0.36	-0.07	-0.08	-0.12	-0.06	-0.06
17:00	PM	0.92	1.06	1.24	0.79	0.51	0.84	0.97	1.09	0.71	0.44	-0.08	-0.09	-0.15	-0.08	-0.08
18:00	OP1	0.81	0.86	1.62	0.86	0.70	0.72	0.78	0.87	0.73	0.57	-0.09	-0.08	-0.75	-0.14	-0.14
19:00	OP1	0.62	0.66	1.24	0.66	0.54	0.55	0.60	0.67	0.56	0.43	-0.07	-0.06	-0.57	-0.11	-0.11

Table 57: Load factors: Evening peak southbound, fast trains, With Project 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.35	0.47	0.70	0.46	0.23	0.41	0.53	0.66	0.56	0.24	0.06	0.06	-0.03	0.09	0.01
16:00	PM	0.76	0.87	1.01	0.65	0.42	0.69	0.80	0.89	0.59	0.36	-0.07	-0.08	-0.12	-0.06	-0.06
17:00	PM	0.93	1.07	1.24	0.80	0.52	0.84	0.98	1.09	0.72	0.44	-0.08	-0.09	-0.15	-0.08	-0.08
18:00	OP1	0.81	0.87	1.62	0.87	0.71	0.73	0.79	0.87	0.73	0.57	-0.09	-0.08	-0.75	-0.14	-0.14
19:00	OP1	0.62	0.67	1.24	0.67	0.54	0.56	0.60	0.67	0.56	0.44	-0.07	-0.06	-0.58	-0.11	-0.11

Table 58: Load factors: Evening peak southbound, fast trains, With Project to Future Baseline comparison 2029

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.03	0.01	0.00	0.00	0.00	0.01	0.00
16:00	PM	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
17:00	PM	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
18:00	OP1	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
19:00	OP1	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Table 59: Load factors: Evening peak southbound, fast trains, Future Baseline 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.35	0.48	0.71	0.47	0.24	0.41	0.53	0.68	0.56	0.26	0.06	0.05	-0.03	0.09	0.01
16:00	PM	0.78	0.90	1.04	0.68	0.44	0.71	0.83	0.91	0.61	0.38	-0.07	-0.08	-0.13	-0.07	-0.07
17:00	PM	0.96	1.11	1.27	0.84	0.54	0.87	1.01	1.12	0.75	0.46	-0.09	-0.10	-0.15	-0.08	-0.08
18:00	OP1	0.84	0.91	1.69	0.92	0.75	0.76	0.83	0.91	0.78	0.60	-0.09	-0.08	-0.79	-0.15	-0.15
19:00	OP1	0.65	0.70	1.30	0.71	0.57	0.58	0.63	0.69	0.59	0.46	-0.07	-0.06	-0.60	-0.11	-0.11

Table 60: Load factors: Evening peak southbound, fast trains, With Project 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.38	0.52	0.76	0.53	0.25	0.45	0.59	0.72	0.64	0.27	0.07	0.07	-0.04	0.11	0.02
16:00	PM	0.81	0.94	1.05	0.72	0.45	0.74	0.86	0.93	0.66	0.38	-0.07	-0.08	-0.13	-0.06	-0.07
17:00	PM	0.99	1.15	1.29	0.88	0.55	0.91	1.05	1.14	0.80	0.47	-0.08	-0.09	-0.15	-0.08	-0.08
18:00	OP1	0.87	0.94	1.71	0.97	0.76	0.79	0.86	0.92	0.82	0.61	-0.08	-0.08	-0.80	-0.15	-0.15
19:00	OP1	0.67	0.72	1.31	0.74	0.58	0.60	0.66	0.70	0.63	0.47	-0.06	-0.06	-0.61	-0.11	-0.11

Table 61: Load factors: Evening peak southbound, fast trains, With Project to Future Baseline comparison 2032

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.03	0.05	0.05	0.06	0.01	0.04	0.06	0.04	0.08	0.01	0.01	0.01	-0.01	0.02	0.00
16:00	PM	0.03	0.03	0.02	0.04	0.00	0.03	0.03	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00
17:00	PM	0.03	0.04	0.02	0.05	0.01	0.04	0.04	0.02	0.05	0.01	0.00	0.00	0.00	0.01	0.00
18:00	OP1	0.02	0.03	0.02	0.04	0.01	0.03	0.04	0.01	0.05	0.01	0.01	0.01	-0.01	0.00	0.00
19:00	OP1	0.02	0.02	0.01	0.03	0.01	0.02	0.03	0.01	0.03	0.01	0.00	0.01	-0.01	0.00	0.00

Table 62: Load factors: Evening peak southbound, fast trains, Future Baseline 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.37	0.51	0.77	0.52	0.29	0.44	0.58	0.73	0.62	0.31	0.07	0.06	-0.04	0.10	0.02
16:00	PM	0.84	0.97	1.09	0.76	0.50	0.76	0.88	0.96	0.67	0.43	-0.07	-0.09	-0.13	-0.08	-0.08
17:00	PM	1.03	1.19	1.33	0.92	0.62	0.94	1.08	1.17	0.83	0.52	-0.09	-0.11	-0.16	-0.10	-0.10
18:00	OP1	0.91	0.99	1.84	1.04	0.85	0.82	0.90	0.97	0.87	0.68	-0.10	-0.09	-0.87	-0.17	-0.18
19:00	OP1	0.70	0.76	1.41	0.80	0.65	0.63	0.69	0.75	0.66	0.52	-0.07	-0.07	-0.67	-0.13	-0.13

Table 63: Load factors: Evening peak southbound, fast trains, With Project 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.41	0.57	0.82	0.59	0.30	0.49	0.64	0.77	0.71	0.32	0.08	0.08	-0.05	0.12	0.02
16:00	PM	0.86	1.00	1.10	0.80	0.50	0.79	0.92	0.97	0.72	0.43	-0.07	-0.08	-0.13	-0.07	-0.08
17:00	PM	1.06	1.22	1.35	0.97	0.62	0.97	1.12	1.19	0.88	0.52	-0.08	-0.10	-0.16	-0.09	-0.09
18:00	OP1	0.94	1.03	1.86	1.09	0.86	0.85	0.95	0.98	0.92	0.69	-0.09	-0.08	-0.88	-0.17	-0.17
19:00	OP1	0.72	0.79	1.43	0.84	0.66	0.65	0.73	0.75	0.71	0.53	-0.07	-0.06	-0.67	-0.13	-0.13

Table 64: Load factors: Evening peak southbound, fast trains, With Project to Future Baseline comparison 2038

		Application Modelling					Sensitivity Modelling					Difference				
Hour starting	In period	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges	Victoria to Clapham Jcn	Clapham Jcn to East Croydon	London Bridge to East Croydon	East Croydon to Gatwick	Gatwick to Three Bridges
15:00	IP	0.03	0.05	0.05	0.07	0.01	0.05	0.07	0.04	0.09	0.01	0.01	0.01	-0.01	0.02	0.00
16:00	PM	0.02	0.03	0.01	0.04	0.00	0.03	0.03	0.02	0.05	0.00	0.00	0.01	0.00	0.01	0.00
17:00	PM	0.03	0.03	0.02	0.05	0.00	0.03	0.04	0.02	0.06	0.00	0.01	0.01	0.00	0.01	0.00
18:00	OP1	0.03	0.03	0.02	0.05	0.01	0.03	0.05	0.01	0.05	0.02	0.01	0.01	-0.01	0.01	0.00
19:00	OP1	0.02	0.03	0.02	0.04	0.01	0.03	0.03	0.01	0.04	0.01	0.01	0.01	-0.01	0.00	0.00