Devon County Council

GREATER EXETER MODEL UPDATE

70105008
OCTOBER 2023

PUBLIC

Devon County Council

GREATER EXETER MODEL UPDATE

FORECASTING ADDENDUM REPORT PUBLIC

PROJECT NO. 70105008

OUR REF. NO. 70105008

DATE: OCTOBER 2023

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	DRAFT	REV1	REV2	REV3
Date	July 2023		August 2023	October 2023
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Signature				
Project number	70105008	70105008	70105008	70105008
Report number	1	1	1	1
File reference		\\uk.wspgroup.com\central data\Projects\70105xxx\70105008 - Devon - 21763 - Exeter Strategic Model Update\03 WIP\06 Reports\Forecasting Addendum		

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1 INTRODUCTION

1.1.1. WSP has been commissioned by Devon County Council (DCC) to prepare 2040 forecasts for the Greater Exeter model which include all developments from the forthcoming Exeter, East Devon, Mid Devon and Teignbridge Local Plans. DCC has also requested that the 2030 Greater Exeter model forecasts are updated to follow the same methodology as the 2040 modelling.

1.1.2. This report is an addendum to the Forecasting Report and summarises the approach to producing the new model forecasts.

1.1.3. The approach to developing future year demand matrices is based on the DCC forecasting tool that was used previously by DCC to create the existing model forecasts for 2030. A more detailed technical note has been produced to describe the forecasting methodology which is automated by this tool (see Appendix A). It has been necessary to deviate from the previous methodology in some areas when preparing the 2040 forecasts, but this is explained within this note.

1.1.4. Following this introductory chapter, this technical note is structured as follows:

- Chapter 2 – Base Model: this chapter summarises the checks undertaken to assess whether the existing Greater Exeter base model was fit for purpose before commencing the modelling work.
- Chapter 3 – Methodology: this chapter details the methodology followed to produce the 2040 forecasts and update the existing 2030 forecasts to be consistent.
- Chapter 4 – Results: this chapter presents the modelling results including a series of plots showing traffic flows and network delays/capacity.
- Chapter 5 – Summary: this chapter provides a summary of the note and key conclusions.

2 BASE MODEL ASSESSMENT

2.1.1. An assessment was carried out prior to commencing the modelling work to ensure that the existing Greater Exeter base model was fit for purpose. The main concern was that the COVID-19 pandemic is likely to have affected traffic levels since the base model year of 2017, and so the model may not be correctly representing current traffic flows in and around Exeter.

2.1.2. In order to understand the effect of the pandemic on traffic levels in Exeter, DCC have carried out a study to compare observed flows in 2017 with observed flows in 2022, both in the Exeter area and also on the Strategic Road Network (SRN). Figure 2-1 and Figure 2-2 show the results of this comparison.

Figure 2-1 - Comparison of 2017-2022 Flow on Exeter Roads

		2017				2022				2017 to 2022 Difference				2017 to 2022 percentage change			
		AM	IP	PM	Daily	AM	IP	PM	Daily	AM	IP	PM	Daily	AM	IP	PM	Daily
A379 Exminster	Total	604	666	754	9574	639	696	831	9939	35	30	77	365	6%	4%	10%	4%
	Northbound	396	336	304	4909	398	345	331	5052	2	9	27	143	1%	3%	9%	3%
	Southbound	207	331	450	4665	241	352	500	4887	34	21	50	222	16%	6%	11%	5%
Alphington Road	Total	1899	1969	1991	29002	1680	1782	1781	26007	-219	-187	-211	-2995	-12%	-10%	-11%	-10%
	Inbound	995	965	955	14141	851	870	864	12610	-144	-96	-91	-1531	-14%	-10%	-10%	-11%
	Outbound	905	1003	1037	14872	829	913	917	13397	-76	-91	-120	-1475	-8%	-9%	-12%	-10%
Broadclyst	Total	865	572	791	8956	826	583	763	8778	-39	11	-29	-178	-5%	2%	-4%	-2%
	Northbound	348	295	482	4517	360	301	444	4447	12	6	-38	-70	3%	2%	-8%	-2%
	Southbound	518	277	309	4440	466	282	319	4331	-52	5	10	-109	-10%	2%	3%	-2%
Cowick Street	Total	1011	971	1027	14026	910	895	974	12691	-101	-77	-53	-1335	-10%	-8%	-5%	-10%
	Westbound	364	487	593	6970	358	460	564	6437	-6	-27	-29	-533	-2%	-6%	-5%	-8%
	Eastbound	647	484	434	7056	552	435	410	6254	-95	-49	-25	-802	-15%	-10%	-6%	-11%
Cowley Bridge Road	Total	1208	940	1178	14531	1064	911	1085	13722	-144	-29	-93	-809	-12%	-3%	-8%	-6%
	Northbound	341	479	792	7358	369	463	688	6935	28	-16	-104	-423	8%	-3%	-13%	-6%
	Southbound	867	461	386	7173	696	448	397	6787	-171	-13	11	-386	-20%	-3%	3%	-5%
Halfmoon	Total	1138	819	1184	13291	1015	796	1109	12563	-123	-22	-76	-728	-11%	-3%	-6%	-5%
	Westbound	347	403	772	6608	357	391	683	6219	10	-12	-89	-389	3%	-3%	-12%	-6%
	Eastbound	790	416	413	6683	658	405	426	6344	-132	-10	13	-339	-17%	-2%	3%	-5%
Heavitree Road	Total	1192	1237	1169	17542	1213	1245	1247	18308	21	8	78	766	2%	1%	7%	4%
	Eastbound	476	584	572	8135	538	647	649	9430	62	63	77	1295	13%	11%	14%	16%
	Westbound	716	652	598	9407	675	598	598	8878	-41	-54	1	-529	-6%	-8%	0%	-6%
Honiton Road	Total	1871	1800	2053	27335	1712	1697	1965	25795	-159	-103	-89	-1540	-8%	-6%	-4%	-6%
	Inbound	909	894	955	13314	832	842	925	12667	-77	-53	-31	-647	-8%	-6%	-3%	-5%
	Outbound	963	907	1101	14094	880	856	1040	13129	-83	-52	-61	-965	-9%	-6%	-5%	-7%
Peamore	Total	1950	1218	1686	19258	1523	1123	1496	17149	-427	-95	-190	-2109	-22%	-8%	-11%	-11%
	Northbound	1520	660	631	10765	1112	608	637	9694	-408	-52	6	-1071	-27%	-8%	1%	-10%
	Southbound	430	558	1054	8493	411	515	859	7454	-19	-43	-196	-1039	-4%	-8%	-19%	-12%
Pinhoe Road	Total	1584	1368	1813	21175	1462	1367	1724	20615	-122	-1	-90	-560	-8%	0%	-5%	-3%
	Eastbound	613	562	747	8632	614	598	770	9007	1	35	22	375	0%	6%	3%	4%
	Westbound	971	806	1066	12543	849	769	954	11608	-122	-37	-112	-935	-13%	-5%	-11%	-7%
Topsham Road	Total	1982	1776	1876	26092	1769	1701	1946	24816	-212	-76	70	-1276	-11%	-4%	4%	-5%
	Southbound	927	871	997	12836	810	827	984	12085	-117	-44	-14	-751	-13%	-5%	-1%	-6%
	Northbound	1054	905	878	13256	960	873	962	12731	-95	-31	83	-525	-9%	-3%	9%	-4%

Figure 2-2 - Comparison of 2017-2022 Flows on SRN

			Weekday 2017				Weekday 2022				2017 to 2022 Difference				2017 to 2022 percentage change			
Junction	Source	Direction	AM	IP	PM	Daily	AM	IP	PM	Daily	AM	IP	PM	Daily	AM	IP	PM	Daily
J29	Webtris	NB Onslip	449	389	757	6651	425	390	609	6214	-24	1	-148	-437	-5%	0%	-20%	-7%
	Webtris	NB Offslip	1683	1092	1407	17103	1452	1155	1411	17297	-231	63	4	194	-14%	6%	0%	1%
Moor Lane J29 Approach	C2	**Both Directions**	**3201**	**1898**	**3181**	**32961**	**2602**	**1817**	**2651**	**29788**	**-599**	**-81**	**-531**	**-3173**	**-19%**	**-4%**	**-17%**	**-10%**
	C2	Eastbound	987	961	2064	16333	985	923	1573	14850	-2	-38	-492	-1483	0%	-4%	-24%	-9%
	C2	Westbound	2213	937	1117	16629	1618	894	1078	14938	-595	-43	-39	-1691	-27%	-5%	-3%	-10%
J30	Webtris	SB Onslip	985	960	1942	15678	944	994	1624	15047	-41	34	-318	-631	-4%	4%	-16%	-4%
	Webtris	SB Offslip	1429	809	948	12971	1229	873	972	13128	-200	64	25	157	-14%	8%	3%	1%
	C2	SB Offslip	1460	807	957	13068	1278	870	993	13288	-182	63	36	220	-12%	8%	4%	2%
	C2	NB Offslip	2135	921	1205	16060	1616	889	1032	14238	-519	-31	-173	-1822	-24%	-3%	-14%	-11%
J30 - A379 Approach	C2	WB	1877	899	1018	14611	1327	999	1116	14391	-550	99	98	-220	-29%	11%	10%	-2%
	C2	EB	899	943	1552	14368	817	1007	1341	14180	-82	64	-211	-188	-9%	7%	-14%	-1%
	C2	Rbt entry NE Bound	628	654	854	9518	487	678	835	9527	-141	24	-19	9	-22%	4%	-2%	0%
	C2	Rbt Entry SW Bound	270	290	698	4850	330	330	505	4653	60	40	-193	-197	22%	14%	-28%	-4%
J30 Services	C2	**Total**	**3548**	**2865**	**3333**	**42242**	**2542**	**2336**	**2682**	**33864**	**-1006**	**-529**	**-651**	**-8378**	**-28%**	**-18%**	**-20%**	**-20%**
	C2	Services to J30	1149	1306	1776	19042	1100	1197	1589	17100	-49	-109	-187	-1942	-4%	-8%	-11%	-10%
	C2	J30 to Services	2400	1559	1354	23201	1442	1139	1094	16764	-958	-420	-260	-6437	-40%	-27%	-19%	-28%
J30 - Sidmouth Road	C2	**Total**	**3939**	**3103**	**4078**	**47436**	**3912**	**3187**	**4061**	**47664**	**-27**	**84**	**-17**	**228**	**-1%**	**3%**	**0%**	**0%**
	C2	WB	2027	1553	1864	23498	1823	1606	2037	23691	-204	53	173	193	-10%	3%	9%	1%
	C2	EB	1912	1550	2214	23937	2089	1581	2024	23973	177	31	-190	36	9%	2%	-9%	0%
M5 - Mainline through J30	Webtris	Southbound	2048	2141	2978	32882	2033	2147	2686	31522	-15	6	-292	-1359	-1%	0%	-10%	-4%
	Webtris	Northbound	2770	2307	2386	33132	2377	2336	2282	32087	-394	29	-104	-1046	-14%	1%	-4%	-3%

2.1.3. In most cases, traffic flows are lower in 2022 than in 2017, and so it is considered that the existing model will provide a robust assessment as it is likely to be more closely aligned to the higher traffic flows from 2017.

2.1.4. In some cases flows have increased since 2017, however these are relatively small increases. The largest increase is on the A379 between Exeter and Exminster. This is likely to be due to recent development sites delivered in the Exminster area. The other increase in flows is on Heavitree Road which is likely to be due to the closure of Magdalen Road. Whilst these changes are not represented in the base year model, they are included in the future year scenarios and therefore will be captured in the updated traffic forecasts.

3 METHODOLOGY

3.1 CREATING THE 2040 DEMAND MATRICES

3.1.1. The modelling approach for creating the 2040 demand matrices is consistent, where possible, with previous forecasting work undertaken by DCC which supported the Greater Exeter Local Authority Plans. A forecasting tool was prepared previously by DCC to automate the forecasting process and the steps outlined in this chapter align with the steps within that tool. The steps are not described in detail in this note because this was included in the methodology note provided in Appendix A. However, the sections below provide a summary of each step and describe any changes made to the methodology, alongside key input assumptions.

STEP 01A – APPLY LOCAL BACKGROUND TRAFFIC ADJUSTMENTS

3.1.2. In Step 01A, the 2017 base year matrices are scaled to the 2040 forecast year to account for local background growth and windfall development. This is undertaken on a sector-to-sector basis using the factors shown in the tables below. The factors applied are negative because traffic flows across the city have remained constant despite significant development being occupied, showing vehicle trip rates per house have decreased. More details of this are included in the original Forecasting Report.

3.1.3. This part of the process differs from the previous methodology because factors have not been applied to wider external movements (i.e. movements within the sector 'Rest of UK'). This is because a separate adjustment was made at the end of the process to adjust flows on the SRN. Additionally, no adjustments were made to reduce LGV and HGV demand because it was not deemed reasonable to reduce the number of LGV and HGV movements, considering recent upward trends evident in traffic count data. A growth in LGV and HGV trips is applied in Step 03 where demand is adjusted to align with national projections.

3.1.4. The background growth factors applied to the 2017 matrices to generate 2040 matrices are presented in Table 3-1, Table 3-2 and Table 3-3, for the AM peak, interpeak and PM peak respectively. These have been capped at -1% per year for 2017 to 2030 and -0.5% per year for 2030 to 2040 as agreed in previous technical notes.

Table 3-1 - Adjustment factors applied in the AM peak

	2017 – 2040 reduction factor PRE-WINDFALL					
Car		**Exeter**	**Mid Devon**	**East Devon**	**Teignbridge**	**Rest of UK**
	Exeter	-15.3%	-18.0%	-18.0%	-14.8%	0.0%
	Mid Devon	-18.0%	0.0%	0.0%	0.0%	0.0%
	East Devon	-18.0%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-14.8%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-2 - Adjustment factors applied in the interpeak period

	2017 – 2040 reduction factor PRE-WINDFALL					
Car		Exeter	Mid Devon	East Devon	Teignbridge	Rest of UK
	Exeter	-15.3%	-17.7%	5.3%	-14.1%	0.0%
	Mid Devon	-17.7%	0.0%	0.0%	0.0%	0.0%
	East Devon	5.3%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-14.1%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-3 - Adjustment factors applied in the PM peak

	2017 – 2040 reduction factor PRE-WINDFALL					
Car		Exeter	Mid Devon	East Devon	Teignbridge	Rest of UK
	Exeter	-15.3%	-18.0%	-18.0%	-16.4%	0.0%
	Mid Devon	-18.0%	0.0%	0.0%	0.0%	0.0%
	East Devon	-18.0%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-16.4%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

STEP 01B – ACCOUNT FOR WINDFALL DEVELOPMENTS

3.1.5. Step 01B involves including traffic growth to account for windfall development sites, where the exact location and quantum of development is unknown and so they cannot be point loaded into the traffic model. As detailed in the methodology note in Appendix A, windfall growth was only applied to the East Devon district movements, as this was the only district where the projected housing and employment growth from the proposed Local Plan developments was less than the projected growth in NTEM version 8. Table 3-4 shows the amount of growth applied to trips to and from East Devon to represent windfall sites.

Table 3-4 - Windfall factors (East Devon District)

	Windfall factors
AM	5.0%
IP	8.9%
PM	5.2%

STEPS 02A– APPLY LOCAL PLAN DEVELOPMENTS

Point Loaded Developments

3.1.6. In Step 02 the Local Plan developments are added to the demand matrices. The list of developments added in this step has been extended to reflect sites which are expected to be delivered between 2030 and 2040. The sites previously input up to 2030 are unchanged and details of this are included in the original Forecasting Report.

3.1.7. Table 3-5 shows the total amount of additional development that has been included in the model for the period 2030-40. Appendix B contains a full list of each development input to the model between 2030 and 2040.

Table 3-5 - Total quantum of point loaded development (2030-40)

District	Residential (dwellings)	Employment (hectares)
Exeter	6,211	0
Mid Devon[1]	3,250	4
East Devon	6,919	34
Teignbridge	4,560	22
Total	**20,940**	**60**

Trip Rates

3.1.8. An estimate of the trip generation for each development site is calculated within the forecasting process by applying trip rates to the expected quantum of residential and employment land uses at each site.

3.1.9. Residential trip rates were based on the following technical notes prepared by DCC, and represent all vehicle types (a user class split is applied within the forecasting process as explained later in this report):

- TR1 - Trip Rate note for Greater Exeter Strategic Plan developments JM v1.docx
- TR2 - Trip Rate for New Communities.docx'

3.1.10. Similar to the previous modelling, specific trip rates were applied for sites representing whole new communities including the following:

- Culm Garden Village (Mid Devon district)
- East Devon New Community (East Devon district)
- Bradmore New Neighbourhood, Newton Abbot (Teignbridge district)

3.1.11. The low / no car usage was only applied to Exeter developments in discussion with Exeter City Council.

3.1.12. Trip generation for the Cranbrook site was based on separate traffic modelling undertaken by DCC (the Cranbrook cordon model) and therefore did not use the trip rates presented below.

3.1.13. A full list of development sites with their assumed land uses and estimated trip generation is provided in Appendix B.

[1] Only the additional development allocated to the Culm Garden Village to take this to 5,000 dwellings was included at this stage because there is currently no detail available on where Mid Devon are going to allocate their future development beyond the existing adopted Local Plan Review.

Residential

3.1.14. Table 3-6 presents the trip rates applied to residential sites.

Table 3-6 - Trip rates for residential developments

Location Type		Car Usage	Vehicle Trip Rate (per dwelling)					
			AM Peak		Interpeak		PM Peak	
			Arrivals	Departs	Arrivals	Departs	Arrivals	Departs
Exeter	Central	Regular	0.06	0.25	0.07	0.11	0.14	0.13
		Low	0.03	0.13	0.03	0.06	0.07	0.07
		No	0.01	0.03	0.01	0.01	0.01	0.01
Exeter	Edge	Regular	0.15	0.35	0.17	0.16	0.35	0.19
		Low	0.08	0.18	0.09	0.08	0.18	0.10
		No	0.02	0.04	0.02	0.02	0.04	0.02
Towns	Central (Large)	Regular	0.09	0.36	0.10	0.16	0.21	0.19
Towns	Small	Regular	0.14	0.44	0.16	0.20	0.32	0.23
Towns	Edge (Large)	Regular	0.16	0.50	0.19	0.23	0.37	0.27
Rural	Rural	Regular	0.16	0.50	0.19	0.23	0.37	0.27
New Community		Regular	0.07	0.27	0.08	0.12	0.16	0.14

Employment

3.1.15. For employment sites, the TRICS database has been used to provide trip rates. Data was extracted for sites in the South West of England, and for surveys carried out prior to the COVID-19 pandemic (i.e. no later than February 2020). Table 3-7 and Table 3-8 present the trip rates that were applied. For sites where employment land uses are not known, an even split between the three land use types listed has been assumed.

Table 3-7 - Employment trip rates – arrivals

Land Use	Trip Rate per 100 sq m								
	AM			IP			PM		
	Car	LGV	OGV	Car	LGV	OGV	Car	LGV	OGV
E (Office)	1.640	0.000	0.000	0.340	0.047	0.007	0.100	0.040	0.000
B2 (Industrial)	0.153	0.084	0.093	0.076	0.068	0.077	0.028	0.044	0.015
B8 (Warehousing)	0.800	0.010	0.000	1.576	0.255	0.135	0.420	0.025	0.005

Table 3-8 - Employment trip rates – departures

Land Use	Trip Rate per 100 sq m								
	AM			IP			PM		
	Car	LGV	OGV	Car	LGV	OGV	Car	LGV	OGV
E (Office)	0.200	0.000	0.000	0.267	0.033	0.000	2.000	0.040	0.000
B2 (Industrial)	0.046	0.084	0.066	0.079	0.061	0.079	0.216	0.057	0.027
B8 (Warehousing)	0.020	0.010	0.000	1.620	0.299	0.179	1.357	0.026	0.005

User Class Split

3.1.16. For consistency with previous Greater Exeter modelling work, specific proportions were provided by DCC to divide development trips into vehicle types and trip purposes. This was based on the proportions in the 2017 base model.

Trip Distribution

3.1.17. For consistency with previous work, the trip distribution for each development site is based on the distribution from an existing model zone near to the site.

3.1.18. However, for the following sites, the distribution has been manually adjusted to generate a more accurate representation of the distribution of traffic than was possible using an existing base zone. Where possible, the distribution previously modelled by DCC in other modelling work was replicated:

- East Devon New Community
- Culm Garden Village
- Peamore
- Newton Abbot

3.1.19. For Cranbrook, the distribution from the Cranbrook cordon model was replicated as far as possible in terms of the wider distribution on the highway network.

3.1.20. Checks were undertaken to ensure that a reasonable amount of the development traffic is traveling to and from Exeter. For sites in Newton Abbot and the Culm Garden Village development in Cullompton, the traffic flows to and from Exeter were compared with DCC's models of Newton Abbot and Cullompton respectively. They were found to be inconsistent, and so adjustments were made to the 2040 assignments to replicate the traffic flows on the A38, A380 and M5 corridors, as evident in these other models.

Cranbrook

3.1.21. Further network detail was added to the 2040 model in the Cranbrook area, as detailed in the methodology note in Appendix A. The distribution for the Cranbrook zones from DCC's Cranbrook cordon model was retained as far as possible, and the trip generation was matched exactly.

STEPS 02B – ACCOUNTING FOR PARK & CHANGE SITES

3.1.22. As agreed with DCC, there were no changes made to the steps in the forecasting process which account for park and change trips. The process was run as it was for the previous Greater Exeter modelling.

STEPS 03 – ADJUSTING SRN TRAFFIC TO NRTP FORECASTS

3.1.23. For simplicity, it was agreed with DCC that it would not be necessary to follow the steps for constraining trips on the SRN to National Road Traffic Projections (NRTP). Instead, the trips on the SRN were constrained to the latest NRTP dataset using the select link analysis function within SATURN to isolate and factor traffic flows passing through the model area to NRTP levels for 2040.

3.2 UPDATING THE EXISTING 2030 DEMAND MATRICES

3.2.1. The existing 2030 demand matrices have also been updated to be consistent with the revised methodology adopted for the 2040 future year. Table 3-9, Table 3-10 and Table 3-11 show the background growth factors applied for the AM, interpeak and PM peak respectively, and Table 3-12 presents the windfall adjustment factors that were applied for the 2030 year. All other steps are the same as described above for the 2040 year.

Table 3-9 - Adjustment factors applied in the AM peak

	2017 – 2030 reduction factor PRE-WINDFALL					
Car		Exeter	Mid Devon	East Devon	Teignbridge	Rest of UK
	Exeter	-11.1%	-13.0%	-13.0%	-10.4%	0.0%
	Mid Devon	-13.0%	0.0%	0.0%	0.0%	0.0%
	East Devon	-13.0%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-10.4%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-10 - Adjustment factors applied in the interpeak period

	2017 – 2030 reduction factor PRE-WINDFALL					
Car		Exeter	Mid Devon	East Devon	Teignbridge	Rest of UK
	Exeter	-11.1%	-13.0%	3.9%	-10.4%	0.0%
	Mid Devon	-13.0%	0.0%	0.0%	0.0%	0.0%
	East Devon	3.9%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-10.4%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-11 - Adjustment factors applied in the PM peak

	2017 – 2030 reduction factor PRE-WINDFALL					
Car		Exeter	Mid Devon	East Devon	Teignbridge	Rest of UK
	Exeter	-11.1%	-13.0%	-13.0%	-11.7%	0.0%
	Mid Devon	-13.0%	0.0%	0.0%	0.0%	0.0%
	East Devon	-13.0%	0.0%	0.0%	0.0%	0.0%
	Teignbridge	-11.7%	0.0%	0.0%	0.0%	0.0%
	Rest of UK	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-12 - Windfall factors applied additional to background growth in East Devon

	Windfall factors
AM	4.97%
IP	6.97%
PM	5.14%

3.3 CREATING THE 2040 NETWORK

3.3.1. Table 3-13 provides a listing of enhancements that were made when creating the 2040 network. These improved the accuracy of the network and addressed a number of issues that had been identified around route choice and model convergence. It is noted that no network changes were made to the 2030 network beyond those already included and mentioned in the original Forecasting Report.

Table 3-13 - Model network refinements

Network refinement made	Reason
Additional network detail added in Cranbrook to replicate the network in the Cranbrook cordon model	To improve the network detail and route choice in this area and to make the results consistent with other models.
New zone connections added to the network to replicate the access points for the Local Plan developments. These connections were coded with unlimited capacity to ensure all development trips were able to enter the network.	To allow the Local Plan development trips to access the network
Value of Time and Vehicle Operating Costs updated.	To reflect updates to TAG databook (January 2023).
Traffic signal stage times updated at the Pinhoe Road / Mount Pleasant Road / Polsloe Road junction (node 1100) to match the cycle time of 120 seconds	To improve route choice along Prince Charles Road.
Signals optimised at Pinhoe Road / Hill Barton Road / Sainsburys junction (node 1110) in the interpeak model	This was causing convergence issues when assigning.
Coding updated at A30 Ide roundabout to reduce delays and stop vehicles choosing to route around the roundabout instead of turning left from the A377 onto the A30 eastbound slip road.	To improve route choice. Note that the base model was also updated with these changes.
Number of lanes on M5 northbound between Junction 31 and Junction 30 reduced from 4 to 3.	To better reflect the road layout as evident in recent aerial photographs and on-street imagery.

Network refinement made	Reason
Empty zones added to the network at Newton Abbot, Junction 28 and on the SRN	To be used for the SRN adjustment.
Saturation flow decreased on Bishops Court Lane	To stop traffic using it as a rat-run between A3052 and A30 as this is not considered to be realistic.
Saturation flow increased on the B3181 in Cullompton	To remove large delays arising from development traffic as these were not considered to be realistic. A new junction improvement is being proposed at J28 to mitigate the impact of the development so these changes account for this, before a preferred option for the junction improvement is made.
Markham's Farm development access updated to allow traffic to use both accesses on to Ide Lane and Shillingford Road	This arrangement better reflects how this development will be accessed. Note that it was ensured that traffic was not using the through link as rat-run Shillingford and the A30
Inclusion of the link through the East Devon New Community site, linking the A30 at the airport junction with the A3052.	This is a significant piece of new highway infrastructure that will come forward between 2030 and 2040.

LOCAL PLAN DEVELOPMENTS

3.3.4. The model network was updated to include zone connections and new highway infrastructure associated with the additional Local Plan development sites.

3.3.5. There are empty zones in various locations throughout the existing network which were used for representing the developments. In addition to these, 21 further zones were added to the model.

Developments in the Exeter District

3.3.6. Each additional Local Plan development in the district of Exeter is point loaded to the network via an individual zone in a representative location.

Developments outside the Exeter District

3.3.7. The following sites in the Teignbridge and East Devon districts were point loaded individually, either because they are located near to Exeter or because there are several possible route choices to access Exeter and therefore it is important that they are located accurately in the model:

- EE4: Attwell's Farm, Exeter (Teignbridge district)
- EE1: Markham's Farm, Exeter (Teignbridge district)
- EE2: Peamore and West Exe, Exeter (Teignbridge district)
- V16: Lamacroft Farm, Kennford (Teignbridge district)
- V8: Burnt Meadow, Doddiscombsleigh (Teignbridge district)
- V18: Lower Uppacott, Tedburn St Mary (Teignbridge district)

- Land north of the Science Park (East Devon district)
- Land north of Sowton Village (East Devon district)
- Land east of the airport (East Devon district)
- Land east of the airport and north of the A30 (East Devon district)
- Land north of Topsham (East Devon district)
- East Devon New Community (East Devon district)
- Clyst St Mary (East Devon district)
- Broadclyst (East Devon district)
- Whimple (East Devon district)
- Tipton St John (East Devon district)

3.3.8. Further out from Exeter, the network is sparser and so it is less important that the developments are loaded as precisely. To ensure a robust approach, the developments were combined based on the route they would travel into Exeter, and the combined developments were point loaded along this route. This allows an assessment of the cumulative impacts of these development on the study in and around Exeter without expanding the model to cover these areas in detail.

3.3.9. However, it is noted that the Culm Garden Village site in the Mid Devon district was still point loaded as an individual zone.

ASSIGNMENT CHECKING

3.3.10. The models were assigned using SATURN version 11.5.05H.

3.3.11. As agreed with DCC, the traffic signal timings were optimised globally in the 2040 Greater Exeter model network following the SRN demand matrix adjustments. A check was carried out to ensure any resulting re-routing as a result of the traffic signal update was reasonable.

3.3.12. Further checks of routing, trip distribution, delays, flows and model convergence were also undertaken with minor adjustments made as required to address issues identified above.

4 RESULTS

4.1 MATRIX TOTALS

4.1.1. Table 4-1 shows the resulting growth in total vehicle trips in the model between base and future years. The future year totals shown include the adjustments made to align growth with NRTP data.

Table 4-1 - Base and Future Year Matrix Totals

Vehicle Type	AM Peak				
	Trips			% Growth	
	2017	**2030**	**2040**	**2017-30**	**2017-40**
Car	34,824	39,814	45,998	14%	32%
LGV	5,390	6,797	7,889	26%	46%
HGV	5,483	6,263	8,002	14%	46%
All Vehicles	45,697	52,874	61,889	16%	35%
	Inter-peak				
	2017	**2030**	**2040**	**2017-30**	**2017-40**
Car	24,621	28,887	35,875	17%	46%
LGV	4,306	5,347	6,545	24%	52%
HGV	3,685	4,224	5,555	15%	51%
All Vehicles	32,612	38,458	47,975	18%	47%
	PM Peak				
	2017	**2030**	**2040**	**2017-30**	**2017-40**
Car	34,027	39,471	46,236	16%	36%
LGV	4,453	5,712	6,769	28%	52%
HGV	3,561	4,174	5,349	17%	50%
All Vehicles	42,041	49,357	58,354	17%	39%

4.2 NETWORK PLOTS

4.2.1. The following network plots have been produced for the AM and PM peak hours: In addition, plots showing differences between the scenarios are provided in Appendix D:

- Actual flow plots (2017, 2030, 2040)
- Delay plots (2017, 2030, 2040)
- Worst turn V/C ratio plots (2017, 2030, 2040)

4.2.2. It is noted that the Volume / Capacity ratio (V/C) 'traffic light' plots identify junctions where at least one turning movement at the junction has a V/C ratio over 90%.

4.3 NETWORK DIFFERENCE PLOTS

4.3.1. In addition to the network plots showing flows, delays and junction V/C ratios, a series of 'difference plots' have been prepared to compare the network performance in each of the modelled years. These are presented in Appendix D and include the following:

- Actual flow difference plots (showing increases in flows around the network)
- Delay difference plots (showing increases in delays around the network)

- Worst turn V/C ratio difference plots (showing where junction V/C ratios are increasing around the network)

4.3.2. In each case, these plots compare the following:

- Base year 2017 vs 2030 future year
- Future year 2030 vs future year 2040

FLOW DIFFERENCES

4.3.3. The largest increases in traffic flow are forecast to occur on the primary routes such as the M5 and A30. This is inevitable as these are the primary corridors for access to Exeter and other areas further afield. The largest increases occur on the M5 between J29 and J31; this is a mixture of traffic from Cranbrook and sites further east (via the A30), but also additional traffic coming from the M5 to the north.

4.3.4. Within Exeter, the forecast flow increases in both future years are typically less than 200 PCUs. Between 2017 and 2030 the model predicts increases on a number of routes across the city but between 2030 and 2040 the increases are more limited to the main corridors, for example the A377 corridor to the west of the city and Rydon Lane/Moor Lane to the east. The model also shows an increase in traffic on the B3181 route to and from Exeter. This is likely to be due to new traffic to and from the Cranbrook area which can use this as an alternative route to the main A30 corridor, particularly the north-west expansion of the town.

DELAY DIFFERENCES

4.3.5. The model shows that there are likely to be increases in delay at locations throughout the network in the future years as a result of the growth in traffic. Between 2017 and 2030 there are increases in delay evident within Exeter, mostly in the range of 30 to 90 seconds, but greater than this in some locations. Between 2030 and 2040 many of the increases in delay are located outside of Exeter on more rural links. There are also increases in delay on the SRN links which are due to the speed-flow relationships modelled on these links (i.e. where link speeds are assumed to reduce with increased flow). The largest increases occur on minor roads that are not suitable in accommodating large increases in traffic, so saturation flows have been reduced.

JUNCTION V/C DIFFERENCES

4.3.6. In the future years many of the junctions in Exeter show an increased V/C ratio due to higher traffic flows on the network. There are some junctions which were already over-capacity in the base year and remain so in the future years, but others which were below capacity and now have at least one turn that is over-capacity. For example, there are a number of nodes in the Cranbrook area to the east of M5 J29 in the 2040 scenario which had a worst turn V/C ratio of less than 90% in the 2030 year but have a ratio of over 100% by 2040. The model also indicates that there are nodes within SRN junctions which come close to capacity, or become over-capacity, in the future years. For example, the A377 entry to the A30/A377 roundabout and entries at M5 J29 and J31.

4.4 IMPACT ON THE STRATEGIC ROAD NETWORK

4.4.1. In addition to the network plots above, separate diagrams have been prepared to demonstrate the traffic impact on the Strategic Road Network around the Greater Exeter study area. These are included within Appendix E. As requested by National Highways, these diagrams show the traffic flows after each of the individual stages in the forecasting process as follows:

- 2017 base
- After stage 1a (growth factors)
- After stage 1b (windfall factors)
- After stage 2 (add point loaded developments)
- After stage 3 (NRTP factoring)

5 SUMMARY

5.1.1. This Forecasting Report Addendum has summarised the traffic modelling work that has been undertaken to produce updated forecasts for the Greater Exeter model. The modelling approach was based on the DCC forecasting tool that was developed previously by DCC but has been updated to reflect forthcoming development in Exeter, East Devon, Mid Devon and Teignbridge as set out in Local Plans.

5.1.2. Initially an assessment was undertaken to check that the Greater Exeter base model was fit for purpose and is still reflective of present-day traffic flows following the COVID-19 pandemic. Comparisons of observed flows pre and post pandemic were made for roads in Exeter and on the SRN. In most cases traffic flows in 2022 were slightly lower than in the model base year of 2017. It is therefore considered that the model will provide a robust assessment of growth and network performance in future years.

5.1.3. The updated forecasts reflect a growth in the overall vehicle demand in the model during the peak periods of 16-17% by 2030 and 35-39% by 2040. Network plots have been provided to show how this growth translates to traffic flows, delays and junction V/C ratios in the network.

5.1.4. Network difference plots have been provided to compare the 2017 year with 2030, and the 2030 year with 2040. These comparisons show a growth in traffic on the primary routes within Exeter and on the SRN which is expected. There are also increases in delays and V/C at various locations throughout the network.

5.1.5. To further understand the traffic forecasts for the SRN, additional flow diagrams have been included which show the transition from base year to future year flows at each stage of the forecasting process.

Appendix A

METHODOLOGY NOTE

CONFIDENTIAL

TECHNICAL NOTE

SUBJECT:	GESP Model Update Methodology Note		
DATE:	03 May 2023		
PROJECT:	70105008	**AUTHOR:**	Joanna Riley
CHECKED:	Kerry Hellewell	**APPROVED:**	Kerry Hellewell

INTRODUCTION

WSP have been commissioned by Devon County Council (DCC) to update the existing 2030 Greater Exeter Strategic Plan (GESP) forecasts to 2040 to include all developments from the forthcoming Exeter, East Devon, Mid Devon and Teignbridge Local Plans.

This technical note details the proposed methodology WSP will follow for the modelling exercise and sets out any assumptions that will be made. WSP will be following the modelling approach that was developed by DCC to create the forecast matrices from the 2017 base year matrices with changes made where appropriate to generate a 2040 forecast.

PROPOSED METHODOLOGY

Creating the Assignments

The modelling approach is consistent with previous forecasting work undertaken by DCC which was intended to support a Greater Exeter Strategic Plan. The steps outlined below detail the steps identified in DCC's Guidance Notes (*00_Guidance Note.xlsx*) for producing the forecast matrices, which was provided to WSP to be used for this project. The steps that are described below (Steps 01 to 03) reference the forecasting stages that are specified in the DCC Guidance Note.

STEP 01A – APPLY LOCAL BACKGROUND TRAFFIC ADJUSTMENTS

In Step 01, the 2017 base year matrices are scaled to the 2040 forecast year to account for local background growth and windfall development. For the previous GESP modelling work, the forecast year was 2030 and reduction factors used are presented in Table 5 of the *Greater Exeter Traffic Model Forecasting Report* (dated October 2021), with the windfall assumed shown in Table 4 of the same report. Note that the reduction factors for Mid Devon were constrained to 1% per annum to ensure consistency between the overall growth rates and national trip rate trends. Further detail can be found in the *GF1 – Traffic Growth Factors Note* (dated May 2020) produced by DCC.

LOCAL BACKGROUND TRAFFIC ADJUSTMENTS

Factors used for the 2040 forecast scenarios have been developed based on the same assumptions used for the 2030 forecasts, but with annual traffic adjustment factors for the period between 2030 and 2040 half of those which were used between 2017 and 2030. The resulting adjustment factors to be used for cars for the 2040 forecast scenarios are shown in Table 1. Growth factors for trips to and from zones outside the GESP area have been obtained from the DfT's Road Traffic Forecasts 2018, Scenario 1.

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Table 1: Adjustment factors applied to car trips between 2017 and 2040

		Trip adjustment factors 2017 to 2040				
		Exeter	Mid Devon	East Devon	Teignbridge	Rest
Exeter	AM	-15.3%	-18.0%	-18.1%	-14.8%	0.0%
	IP	-15.3%	-17.7%	5.3%	-14.1%	0.0%
	PM	-15.3%	-18.0%	-18.0%	-16.4%	0.0%
Mid Devon	AM	-18.0%	0.0%	0.0%	0.0%	0.0%
	IP	-17.7%	0.0%	0.0%	0.0%	0.0%
	PM	-18.0%	0.0%	0.0%	0.0%	0.0%
East Devon	AM	-18.1%	0.0%	0.0%	0.0%	0.0%
	IP	5.3%	0.0%	0.0%	0.0%	0.0%
	PM	-18.0%	0.0%	0.0%	0.0%	0.0%
Teignbridge	AM	-14.8%	0.0%	0.0%	0.0%	0.0%
	IP	-14.1%	0.0%	0.0%	0.0%	0.0%
	PM	-16.4%	0.0%	0.0%	0.0%	0.0%
Rest of modelled area	AM	0.0%	0.0%	0.0%	0.0%	30.2%
	IP	0.0%	0.0%	0.0%	0.0%	30.2%
	PM	0.0%	0.0%	0.0%	0.0%	30.2%

The factors are the same for LGVs and HGVs, except for the 'Rest of modelled area' values, which are 20% and 0.1% for LGVs and HGVs respectively.

STEP 01B – ACCOUNT FOR WINDFALL DEVELOPMENTS

WINDFALL

Step 01B involves including traffic growth to account for windfall development sites, where the exact location and quantum of development is unknown and so they cannot be point loaded into the traffic model. The number of windfall developments that need to be accounted for have been determined by comparing the latest NTEM8 household growth values for 2017 to 2040, and the housing development quantums provided to WSP by DCC. These are shown in Table 2. This shows that the quantum of point loaded developments within each district is broadly in line with, or more than, forecasts from NTEM8, with the exception of the East Devon district.

The difference in the number of houses forecast for East Devon between 2017 and 2040 in the current local plan projection and NTEM8 will be used to calculate a growth factor for East Devon using the *'Alternative Planning Assumptions'* feature in TEMPro. The adjusted TEMPro growth factors for each time period shown in

Table 3 will be applied to all zones in East Devon.

Table 2: Windfall sites (2017 - 2040)

District	Point Loaded (2017-2040)	NTEM Growth (2017 - 2040)	Difference
Teignbridge	12,327	12,492	-165
Exeter	13,246	10,036	3,210
East Devon	14,976	17,396	-2,420
Mid Devon	8,570	6,931	1,639

Table 3: TEMPro adjusted growth factors

District	Time Period	Growth factor (unadjusted for TEMPro)	Growth factor (adjusted for TEMPro)
East Devon	AM	4%	1.03%
	IP		1.11%
	PM		1.10%

STEPS 02A TO 02K – APPLY LOCAL PLAN DEVELOPMENTS

POINT LOADED DEVELOPMENTS

Step 02 applies the Local Plan developments to the matrices based on various input files. Previously, developments were included that were planned to be built by 2030. It is assumed that all developments were implemented correctly previously, and that no additional development is planned up to 2030. No checks will be performed on these. WSP will add the developments planned between 2030 and 2040, and retain the developments previously input up to 2030. The only exception is Axminster where the NW development has reduced in size. Less development has therefore been added to Axminster to account for this.

Table 4 presents the number of households planned between 2017 and 2030 (modelled in the previous GESP work) and between 2017 and 2040 (to be modelled as part of this commission).

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Table 4: Point loaded developments

District	Point Loaded Developments (2017 to 2030)	Point Loaded Developments (2017 to 2040)
Exeter	7,895	13,246
Mid Devon	5,320	8,570[1]
East Devon	7,335	14,976
Teignbridge	7,767	12,327
Total	28,317	49,119

TRIP RATES

Table 5 presents the residential trip rates that will be used for each Local Plan residential development. The AM peak trip rates are taken from DCC's technical note *TR1-Trip Rate note for GESP developments JM v1.docx (*dated 10/01/2019*)* and *TR2 - Trip Rate for New Communities.docx (*unspecified date*)*. Inter-peak and PM peak hour trip rates were calculated from the AM peak hour trip rates using conversion factors from Table 7 of the *Greater Exeter Traffic Model Forecasting Report.pdf* (dated October 2021).

The trip rates in Table 5 will be applied to each residential site in accordance with its location, as specified by DCC. The 'New Community' trip rates will be applied to the following sites:

- Culm Garden Village (Mid Devon district)
- East Devon New Community (East Devon district)
- GC14: Bradmore New Neighbourhood, Newton Abbot (Teignbridge district)

Trip generation for the Cranbrook site will be taken from the Cranbrook cordon model developed by DCC.

For employment sites, trip rates have been extracted from TRICS. Data was extracted for the South West of England, and for surveys carried out prior to the COVID-19 pandemic (i.e. no later than February 2020). Trip rates for each proposed land use are presented in Table 6 and Table 7.

[1] This only includes full build out of the Culm Garden Village to 5,000 dwellings as Mid Devon do not yet have a draft local plan beyond the adopted one to 2033.

TECHNICAL NOTE

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CRANBROOK

Table 5: Trip rates for residential developments[2]

Location Type		**Car Usage**	**Residential Development Vehicle Trip Rates**					
			AM Peak		Interpeak		PM Peak	
			Arrival	Departure	Arrival	Departure	Arrival	Departure
Exeter	Central	Regular	0.06	0.25	0.07	0.11	0.14	0.13
		Low	0.03	0.13	0.03	0.06	0.07	0.07
		No	0.01	0.03	0.01	0.01	0.01	0.01
Exeter	Edge	Regular	0.15	0.35	0.17	0.16	0.35	0.19
		Low	0.08	0.18	0.09	0.08	0.18	0.10
		No	0.02	0.04	0.02	0.02	0.04	0.02
Towns	Central (Large)	Regular	0.09	0.36	0.10	0.16	0.21	0.19
Towns	Small	Regular	0.14	0.44	0.16	0.20	0.32	0.23
Towns	Edge (Large)	Regular	0.16	0.50	0.19	0.23	0.37	0.27
Rural	Rural	Regular	0.16	0.50	0.19	0.23	0.37	0.27
New Community		Regular	0.07	0.27	0.08	0.12	0.16	0.14

[2] Following consultation with National Highways, it was requested that trip rates and distributions from Transport Assessments be used where available. However it is not proposed to alter the methodology or assumptions for any sites that were included in the original 2030 forecasts, and no Transport Assessments are available for any of the additional Local Plan sites. These have been used where applicable for the 2030 forecast development.

TECHNICAL NOTE

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Table 6: Employment trip rates - arrivals

Land Use	Arrivals								
	AM Trip Rate			IP Trip Rate			PM Trip Rate		
	Car	LGV	OGV	Car	LGV	OGV	Car	LGV	OGV
E (Office)	1.640	0.000	0.000	0.340	0.047	0.007	0.100	0.040	0.000
B2 (Industrial)	0.153	0.084	0.093	0.076	0.068	0.077	0.028	0.044	0.015
B8 (Warehousing)	0.800	0.010	0.000	1.576	0.255	0.135	0.420	0.025	0.005

Table 7: Employment trip rates - departures

Land Use	Departures								
	AM Trip Rate			IP Trip Rate			PM Trip Rate		
	Car	LGV	OGV	Car	LGV	OGV	Car	LGV	OGV
E (Office)	0.200	0.000	0.000	0.267	0.033	0.000	2.000	0.040	0.000
B2 (Industrial)	0.046	0.084	0.066	0.079	0.061	0.079	0.216	0.057	0.027
B8 (Warehousing)	0.020	0.010	0.000	1.620	0.299	0.179	1.357	0.026	0.005

USER CLASS SPLIT

For consistency with previous GESP modelling work, WSP will use the '*LBG1730 Average*' split that has been used for the majority of other new zones input to the forecasting process.

For the new communities mentioned above however, the user class split applied to the East Devon New Community zone in Scenario 1 of the modelling for this new community will be used.

TRIP DISTRIBUTION

For consistency with previous work, and in agreement with DCC, for each new Local Plan development WSP will use the distribution of an existing zone in the town that the site is located in.

For the East Devon New Community, WSP will use the distribution applied in the modelling work carried out to assess the site in Scenario 1[3] of the previous modelling work.

For Cranbrook, the distribution from the Cranbrook cordon model will be replicated as far as possible in terms of the wider distribution on the highway network.

ASSIGNMENT OF POINT LOADED DEVELOPMENTS

Vehicle operating costs and values of time will be updated in line with the most recent values from TAG Databook v1.20.2 (released January 2023).

[3] Note that Scenario 1 refers to the model scenario created when assessing the impact of the East Devon New Community using the 2030 GESP model.

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Traffic signals will be optimised in the 2040 GESP network. Checks will be carried out to ensure any resulting rerouting is reasonable.

There are empty zones in various locations throughout the existing network which will be used for Local Plan developments. There are, however, not enough empty zones for all the developments. As agreed with DCC, WSP will therefore add additional zones to the model to represent the remaining developments, and will update the forecasting process as necessary.

STEPS 02L TO 02P – ACCOUNTING FOR PARK & CHANGE SITES

As agreed with DCC, there will be no changes made to the steps in the forecasting process which account for park and change trips. The process will be run as it was for the previous GESP modelling.

STEPS 03A TO 03J – ADJUSTING SRN TRAFFIC TO NRTP FORECASTS

For simplicity, it has been agreed with DCC that the steps created for constraining trips on the Strategic Road Network (SRN) to Road Traffic Forecasts (RTF) will not be followed as it is a complex and convoluted process which would need updating to account for the update from RTF 2018 to the latest National Road Traffic Projections (NRTP) (published in December 2022). Instead, WSP will constrain trips on the SRN to the latest NRTP using select link analysis on key SRN routes. Target growth factors will be determined for SRN links based upon NRTP forecasts for traffic growth between 2017 and 2040. Separate forecasts will be determined for different road types and vehicle types. These will be compared to the modelled increase in traffic on the SRN as a result of the GESP modelling assessment. Manual adjustments will then be made where SRN growth is not in line with NRTP growth.

DELIVERABLES

Once the modelling exercise is complete, the following deliverables will be issued to DCC for distribution to the district councils and National Highways:

- Comparison flow and V/C ratio plots between 2030 and 2040 for the full GESP development
- Comparison flow and V/C ratio plots between 2030 and 2040 for the developments located within each district
- Forecasting Report Addendum

Appendix B

LIST OF DEVELOPMENT SITES

CONFIDENTIAL

Appendix B.1

TRIP RATES

CONFIDENTIAL

Trip Rates Applied to Development Sites

District	Site Name	Land Use	Location Type Reference	Resi Quantum (dw)	SATURN Zone	Emp Quantum (ha)	Emp Quantum (100sqm)	Car Use (Exeter only)	Residential Trip Rate						Employment Trip Rate																					
									All Vehicles						Car						LGV						HGV						All Vehicles					
									AM		IP		PM		AM		IP		PM		AM		IP		PM		AM		IP		PM		AM		IP		PM	
									Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
Exeter	Marsh Barton	Residential	Exeter Edge	1880	906			Low	0.075	0.175	0.087	0.07875	0.175	0.095																								
	Water Lane	Residential	Exeter Central	1180	926			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	East Gate	Residential	Exeter Central	750	921			No	0.006	0.025	0.00696	0.01125	0.014	0.013																								
	Red Cow / St Davids	Residential	Exeter Central	430	805			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Sandy Gate	Residential	Exeter Edge	250	939			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	North Gate	Residential	Exeter Central	200	930			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	West Gate	Residential	Exeter Central	200	928			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	South Gate	Residential	Exeter Central	170	929			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Land at St Bridget Nurseries, Old Rydon Lane / St Bridget Nurseries, Old Rydon Lane	Residential	Exeter Central	334	919			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Land to the north, south and west of the Met Office	Residential	Exeter Central	225	824			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Land south of the A379	Residential	Exeter Central	184	844			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	12-31 Sidwell Street	Residential	Exeter Central	51	922			No	0.006	0.025	0.00696	0.01125	0.014	0.013																								
	Land east of Newcourt Road, Topsham	Residential	Exeter Edge	43	713			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	Devon & Exeter Squash Club, Prince of Wales Road	Residential	Exeter Central	40	815			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Land at Newcourt Road, Topsham	Residential	Exeter Edge	38	713			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	Land adjoining Silverlands, Chudleigh Road	Residential	Exeter Central	37	718			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Belle Isle Depot, Belle Isle Drive	Residential	Exeter Central	33	927			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Land west of Newcourt Road, Topsham	Residential	Exeter Edge	31	713			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	Chestnut Avenue	Residential	Exeter Central	26	920			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Former overflow car park, Tesco, Russell Way	Residential	Exeter Central	18	845			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Land behind 66 Chudleigh Road	Residential	Exeter Central	16	718			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Land east of Pinn Lane	Residential	Exeter Central	14	825			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Land at Hamlin Lane	Residential	Exeter Central	13	803			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	Yeomans Gardens, Newcourt Road, Topsham	Residential	Exeter Edge	13	713			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	Fever & Boutique, 12 Mary Arches Street	Residential	Exeter Central	10	827			No	0.006	0.025	0.00696	0.01125	0.014	0.013																								
	88 Honiton Road	Residential	Exeter Central	10	820			Regular	0.06	0.25	0.0696	0.1125	0.14	0.13																								
	Garages at Lower Wear Road	Residential	Exeter Central	9	925			Low	0.03	0.125	0.0348	0.05625	0.07	0.065																								
	99 Howell Road	Residential	Exeter Central	6	804			No	0.006	0.025	0.00696	0.01125	0.014	0.013																								
Teignbridge	GC6: Cattlemarket, Newton Abbot	Residential	Towns Central (Large)	50	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC8: Wolborough Street car park, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC10: Coach Road, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC11: Hopkins Lane, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC12: Forde Close, Newton Abbot	Residential	Towns Central (Large)	150	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC13: Newfoundland Way Car Park, NA	Residential	Towns Central (Large)	20	843			Regular	0.09	0.36	0.1044	0.162	0.21	0.19																								
	GC14: Bradmore, Newton Abbot	Residential	New Community	1050	841			Regular	0.16	0.5	0.1856	0.225	0.37	0.27																								
	GC15: Howton Road (Perry Lane), NA	Residential	Rural Rural	70	841			Regular	0.16	0.5	0.1856	0.225	0.37	0.27																								
	GC16: Undercleave, Canada Hill	Residential	Towns Edge (Large)	25	843			Regular	0.16	0.5	0.1856	0.225	0.37	0.27																								
	GC17: East of Buckland Road, NA	Residential	Towns Edge (Large)	30	843			Regular	0.16	0.5	0.1856	0.225	0.37	0.27																								
	GC19: Broadway Road, Kingsteignton	Residential	Towns Small	50	843			Regular	0.14	0.44	0.1624	0.198	0.32	0.23																								
	EE1: Markham's Farm, Exeter	Residential	Exeter Edge	450	829			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	EE1: Markham's Farm, Exeter	Residential	Exeter Edge	450	938			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	EE2: Peamore and West Exe, Exeter	Residential	Exeter Edge	900	832			Regular	0.15	0.35	0.174	0.1575	0.35	0.19																								
	EE4: Attwell's Farm, Exeter	Residential	Exeter Edge	300	828			Regular	0.150	0.350	0.174	0.158	0.350	0.190																								
	RT1: Le Molay Littry Way, Bovey Tracey	Residential	Towns Small	20	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	RT2: Bradley Bends, Bovey Tracey	Residential	Towns Small	190	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	RT3: Inner Bell, Chudleigh	Residential	Towns Small	30	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V2: Forder Lane, Bishopsteignton	Residential	Towns Small	55	843			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V3: Bakers Yard, Bishopsteignton	Residential	Towns Small	15	843			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V4: Easterways, Broadhempston	Residential	Rural Rural	15	924			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	V6: Knight's Mead, Chudleigh Knighton	Residential	Towns Small	15	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V7: East Street, Denbury	Residential	Rural Rural	25	924			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	V8: Burnt Meadow, Doddiscombsleigh	Residential	Rural Rural	10	837			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	V9: Zig Zag Quarry, Kingskerswell	Residential	Towns Small	100	843			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V10: Benedicts Road, Liverton	Residential	Towns Small	30	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V13: Blackstone Cross, Ipplepen	Residential	Towns Small	100	924			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V14: Blackberry Hill, Ipplepen	Residential	Towns Small	10	924			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V16: Lamacroft Farm, Kennford	Residential	Towns Small	50	836			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V17: Staplake Road, Starcross	Residential	Towns Small	15	923			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	V18: Lower Uppacott, Tedburn	Residential	Towns Small	40	838			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	Highweek Way, Newton Abbot	Residential	Towns Central (Large)	40	843			Regular	0.090	0.360	0.104	0.162	0.210	0.190																								
	Tollgate, Chudleigh Knighton	Residential	Towns Small	60	842			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	Berry Knowles Farm	Residential	Towns Edge (Large)	135	841			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	Ilford Park,	Employment -	Rural Rural		842	7	700	Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.864	0.089	0.664	0.655	0.182	1.191	0.031	0.031	0.123	0.131	0.036	0.041	0.031	0.022	0.073	0.086	0.007	0.011	0.926	0.142	0.860	0.872	0.225	1.242
	West Exe Park	Employment -	Exeter Edge		832	7	667	Regular	0.150	0.350	0.174	0.158	0.350	0.190	1.220	0.110	0.958	0.943	0.260	1.678	0.005	0.005	0.151	0.166	0.033	0.033	0.000	0.000	0.071	0.089	0.003	0.003	1.225	0.115	1.179	1.198	0.295	1.714
	North of Perry Cross / Staplehill Road,	Employment -	Rural Rural		841	4	433	Regular	0.160	0.500	0.186	0.225	0.370	0.270	1.220	0.110	0.958	0.943	0.260	1.678	0.005	0.005	0.151	0.166	0.033	0.033	0.000	0.000	0.071	0.089	0.003	0.003	1.225	0.115	1.179	1.198	0.295	1.714
	Horsemills Field	Employment -	Rural Rural		842	1	57	Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	Parkhill Cross	Employment -	Towns Small		924	0	33	Regular	0.140	0.440	0.162	0.198	0.320	0.230	1.220	0.110	0.958	0.943	0.260	1.678	0.005	0.005	0.151	0.166	0.033	0.033	0.000	0.000	0.071	0.089	0.003	0.003	1.225	0.115	1.179	1.198	0.295	1.714
	Dawlish Business Park	Employment -	Towns Small		923	1	100	Regular	0.140	0.440	0.162	0.198	0.320	0.230	1.220	0.110	0.958	0.943	0.260	1.678	0.005	0.005	0.151	0.166	0.033	0.033	0.000	0.000	0.071	0.089	0.003	0.003	1.225	0.115	1.179	1.198	0.295	1.714
	Little Liverton Business Park	Employment -	Rural Rural		842	1	133	Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.864	0.089	0.664	0.655	0.182	1.191	0.031	0.031	0.123	0.131	0.036	0.041	0.031	0.022	0.073	0.086	0.007	0.011	0.926	0.142	0.860	0.872	0.225	1.242
	Ruby Farm	Employment -	Rural Rural		924	0	33	Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.864	0.089	0.664	0.655	0.182	1.191	0.031	0.031	0.123	0.131	0.036	0.041	0.031	0.022	0.073	0.086	0.007	0.011	0.926	0.142	0.860	0.872	0.225	1.242
Mid Devon	Culm Garden Village	Employment -	New Community	3250	723	4	400	Regular	0.070	0.270	0.081	0.122	0.162	0.144	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
East Devon	East Devon New Community	Residential an	New Community	2500	907	6	583	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.864	0.089	0.664	0.655	0.182	1.191	0.031	0.031	0.123	0.131	0.036	0.041	0.031	0.022	0.073	0.086	0.007	0.011	0.926	0.142	0.860	0.872	0.225	1.242
	North of the Science Park	Employment -	Exeter Edge		851	1	143	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	North of Sowton Village	Employment -	Exeter Edge		850	6	567	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	East of the airport	Employment -	Exeter Edge		852	3	257	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	East of the airport and north of the A30	Employment -	Exeter Edge		852	4	400	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	North of Topsham	Residential an	Exeter Edge	580	937	1	80	Regular	0.150	0.350	0.174	0.158	0.350	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Lymp_07	Residential an	Towns Edge (Large)	100	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Lymp_14	Residential an	Towns Edge (Large)	59	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_17	Residential an	Towns Edge (Large)	400	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Lymp_09	Residential an	Towns Edge (Large)	54	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_06	Residential an	Towns Edge (Large)	44	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_04a	Residential an	Towns Edge (Large)	70	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Lymp_10a	Residential an	Towns Edge (Large)	85	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Lymp_08	Residential an	Towns Edge (Large)	14	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_08&16	Residential an	Towns Edge (Large)	45	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_23	Residential an	Towns Edge (Large)	12	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Exmo_20b	Residential an	Towns Edge (Large)	150	931			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Axmi_02	Residential an	Towns Small	100	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Axmi_11a	Residential an	Towns Small	100	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_GH/ED/80a	Residential an	Towns Small	200	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Gitti_05	Residential an	Towns Edge (Large)	100	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_01	Residential an	Towns Edge (Large)	79	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_13	Residential an	Towns Edge (Large)	10	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_06	Residential an	Towns Edge (Large)	30	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_05	Residential an	Towns Central (Large)	40	876			Regular	0.090	0.360	0.104	0.162	0.210	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_10	Residential an	Towns Edge (Large)	21	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Gitti_06	Residential an	Towns Central (Large)	31	876			Regular	0.090	0.360	0.104	0.162	0.210	0.190	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_14	Residential an	Towns Edge (Large)	30	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Honi_07	Residential an	Towns Edge (Large)	30	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_GH/ED/39a	Residential an	Towns Edge (Large)	100	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Otry_10	Residential an	Towns Edge (Large)	20	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Otry_09	Residential an	Towns Edge (Large)

District	Site Name	Land Use	Location Type Reference	Resi Quantum (dw)	SATURN Zone	Emp Quantum (ha)	Emp Quantum (100sqm)	Car Use (Exeter only)	Residential Trip Rate						Employment Trip Rate																	
									All Vehicles						Car						LGV						HGV					
									AM		IP		PM		AM		IP		PM		AM		IP		PM		AM		IP		PM	
									Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
	LP_Budl_03	Residential an	Towns Small	44	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Budl_02	Residential an	Towns Small	38	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Budl_01	Residential an	Towns Small	50	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Coly_02a	Residential	Towns Small	25	891			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Coly_02b	Residential	Towns Small	24	891			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Lymp_01	Residential an	Towns Small	14	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_GH/ED/72	Residential an	Towns Small	131	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_GH/ED/73	Residential an	Towns Small	46	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_GH/ED/75	Residential an	Towns Small	6	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_16	Residential an	Towns Small	67	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_10	Residential an	Towns Small	60	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_23	Residential an	Towns Small	18	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_20	Residential an	Towns Small	28	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Brhe_09	Residential	Rural Rural	10	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	LP_Char_04a	Residential an	Rural Rural	30	902			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Sowt_09	Residential an	Towns Small	35	849			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Sowt_03	Residential an	Towns Small	37	849			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Sowt_11a	Residential an	Towns Small	30	849			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Dunk_05	Residential an	Rural Rural	43	876			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_01	Residential an	Towns Small	17	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Wood_28	Residential an	Towns Small	33	931			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Feni_05	Residential	Towns Small	42	876			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Hawk_01	Residential an	Rural Rural	38	902			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Kilm_11	Residential	Towns Small	10	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Kilm_10	Residential	Towns Small	5	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Kilm_09	Residential	Towns Small	37	902			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Musb_01a	Residential	Rural Rural	15	891			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	LP_Musb_03a	Residential	Rural Rural	10	891			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	LP_Otto_02	Residential	Towns Small	8	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Otto_01	Residential	Towns Small	10	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Otto_03a	Residential	Towns Small	5	888			Regular	0.140	0.440	0.162	0.198	0.320	0.230																								
	LP_Sidm_34	Residential an	Rural Rural	38	935			Regular	0.160	0.500	0.186	0.225	0.370	0.270	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Otry_04	Residential	Rural Rural	45	934			Regular	0.160	0.500	0.186	0.225	0.370	0.270																								
	LP_West_01	Residential an	Towns Small	6	876			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_West_06	Residential an	Towns Small	25	876			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_West_04	Residential an	Towns Small	26	876			Regular	0.140	0.440	0.162	0.198	0.320	0.230	0.476	0.033	0.826	0.849	0.224	0.786	0.047	0.047	0.162	0.180	0.034	0.041	0.047	0.033	0.106	0.129	0.010	0.016	0.570	0.113	1.093	1.158	0.268	0.843
	LP_Whim_11	Residential	Towns Small	33	861			Regular	0.14	0.44	0.1624	0.198	0.32	0.23																								

Note that the Marsh Barton site trip rate has not been adjusted to account for the fact that existing employment floorspace is being converted into residential

Note that the Axminster quantum has been adjusted from the Local Plan value where the 'North West' development has reduced in size. Less development has therefore been added to Axminster in 2040 to account for this. Note that the development in Axminster was not adjusted for the 2030 future year.

Appendix B.2

TRIP GENERATION

CONFIDENTIAL

Trip Generation by Development Site

District	Site Name	Land Use	Location Type Reference	Resi Quantum (dw)	SATURN Zone	Emp Quantum (ha)	Emp Quantum (100sqm)	Car Use (Exeter only)	Trip Generation					
									All Vehicles					
									AM		IP		PM	
									Arrival	Departure	Arrival	Departure	Arrival	Departure
Exeter	Marsh Barton	Residential	Exeter Edge	1880	906			Low	141	329	164	148	329	179
	Water Lane	Residential	Exeter Central	1180	926			Low	35	148	41	66	83	77
	East Gate	Residential	Exeter Central	750	921			No	5	19	5	8	11	10
	Red Cow / St Davids	Residential	Exeter Central	430	805			Low	13	54	15	24	30	28
	Sandy Gate	Residential	Exeter Edge	250	939			Regular	38	88	44	39	88	48
	North Gate	Residential	Exeter Central	200	930			Low	6	25	7	11	14	13
	West Gate	Residential	Exeter Central	200	928			Low	6	25	7	11	14	13
	South Gate	Residential	Exeter Central	170	929			Low	5	21	6	10	12	11
	Land at St Bridget Nurseries, Old Rydon Lane / St Bridget Nurseries, Old Rydon Lane	Residential	Exeter Central	334	919			Regular	20	84	23	38	47	43
	Land to the north, south and west of the Met Office	Residential	Exeter Central	225	824			Regular	14	56	16	25	32	29
	Land south of the A379	Residential	Exeter Central	184	844			Regular	11	46	13	21	26	24
	12-31 Sidwell Street	Residential	Exeter Central	51	922			No	0	1	0	1	1	1
	Land east of Newcourt Road, Topsham	Residential	Exeter Edge	43	713			Regular	6	15	7	7	15	8
	Devon & Exeter Squash Club, Prince of Wales Road	Residential	Exeter Central	40	815			Low	1	5	1	2	3	3
	Land at Newcourt Road, Topsham	Residential	Exeter Edge	38	713			Regular	6	13	7	6	13	7
	Land adjoining Silverlands, Chudleigh Road	Residential	Exeter Central	37	718			Regular	2	9	3	4	5	5
	Belle Isle Depot, Belle Isle Drive	Residential	Exeter Central	33	927			Low	1	4	1	2	2	2
	Land west of Newcourt Road, Topsham	Residential	Exeter Edge	31	713			Regular	5	11	5	5	11	6
	Chestnut Avenue	Residential	Exeter Central	26	920			Low	1	3	1	1	2	2
	Former overflow car park, Tesco, Russell Way	Residential	Exeter Central	18	845			Regular	1	5	1	2	3	2
	Land behind 66 Chudleigh Road	Residential	Exeter Central	16	718			Regular	1	4	1	2	2	2
	Land east of Pinn Lane	Residential	Exeter Central	14	825			Regular	1	4	1	2	2	2
	Land at Hamlin Lane	Residential	Exeter Central	13	803			Low	0	2	0	1	1	1
	Yeomans Gardens, Newcourt Road, Topsham	Residential	Exeter Edge	13	713			Regular	2	5	2	2	5	2
	Fever & Boutique, 12 Mary Arches Street	Residential	Exeter Central	10	827			No	0	0	0	0	0	0
	88 Honiton Road	Residential	Exeter Central	10	820			Regular	1	3	1	1	1	1
	Garages at Lower Wear Road	Residential	Exeter Central	9	925			Low	0	1	0	1	1	1
	99 Howell Road	Residential	Exeter Central	6	804			No	0	0	0	0	0	0
Teignbridge	GC6: Cattlemarket, Newton Abbot	Residential	Towns Central (Large)	50	843			Regular	5	18	5	8	11	10
	GC8: Wolborough Street car park, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	2	7	2	3	4	4
	GC10: Coach Road, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	2	7	2	3	4	4
	GC11: Hopkins Lane, Newton Abbot	Residential	Towns Central (Large)	20	843			Regular	2	7	2	3	4	4
	GC12: Forde Close, Newton Abbot	Residential	Towns Central (Large)	150	843			Regular	14	54	16	24	32	29
	GC13: Newfoundland Way Car Park, NA	Residential	Towns Central (Large)	20	843			Regular	2	7	2	3	4	4
	GC14: Bradmore, Newton Abbot	Residential	New Community	1050	841			Regular	168	525	195	236	389	284
	GC15: Howton Road (Perry Lane), NA	Residential	Rural Rural	70	841			Regular	11	35	13	16	26	19
	GC16: Undercleave, Canada Hill	Residential	Towns Edge (Large)	25	843			Regular	4	13	5	6	9	7
	GC17: East of Buckland Road, NA	Residential	Towns Edge (Large)	30	843			Regular	5	15	6	7	11	8
	GC19: Broadway Road, Kingsteignton	Residential	Towns Small	50	843			Regular	7	22	8	10	16	12
	EE1: Markham's Farm, Exeter	Residential	Exeter Edge	450	829			Regular	68	158	78	71	158	86
	EE1: Markham's Farm, Exeter	Residential	Exeter Edge	450	938			Regular	68	158	78	71	158	86
	EE2: Peamore and West Exe, Exeter	Residential	Exeter Edge	900	832			Regular	135	315	157	142	315	171
	EE4: Attwell's Farm, Exeter	Residential	Exeter Edge	300	828			Regular	45	105	52	47	105	57
	RT1: Le Molay Littry Way, Bovey Tracey	Residential	Towns Small	20	842			Regular	3	9	3	4	6	5
	RT2: Bradley Bends, Bovey Tracey	Residential	Towns Small	190	842			Regular	27	84	31	38	61	44
	RT3: Inner Bell, Chudleigh	Residential	Towns Small	30	842			Regular	4	13	5	6	10	7
	V2: Forder Lane, Bishopsteignton	Residential	Towns Small	55	843			Regular	8	24	9	11	18	13
	V3: Bakers Yard, Bishopsteignton	Residential	Towns Small	15	843			Regular	2	7	2	3	5	3
	V4: Easterways, Broadhempston	Residential	Rural Rural	15	924			Regular	2	8	3	3	6	4
	V6: Knight's Mead, Chudleigh Knighton	Residential	Towns Small	15	842			Regular	2	7	2	3	5	3
	V7: East Street, Denbury	Residential	Rural Rural	25	924			Regular	4	13	5	6	9	7
	V8: Burnt Meadow, Doddiscombsleigh	Residential	Rural Rural	10	837			Regular	2	5	2	2	4	3
	V9: Zig Zag Quarry, Kingskerswell	Residential	Towns Small	100	843			Regular	14	44	16	20	32	23
	V10: Benedicts Road, Liverton	Residential	Towns Small	30	842			Regular	4	13	5	6	10	7
	V13: Blackstone Cross, Ipplepen	Residential	Towns Small	100	924			Regular	14	44	16	20	32	23
	V14: Blackberry Hill, Ipplepen	Residential	Towns Small	10	924			Regular	1	4	2	2	3	2
	V16: Lamacroft Farm, Kennford	Residential	Towns Small	50	836			Regular	7	22	8	10	16	12
	V17: Staplake Road, Starcross	Residential	Towns Small	15	923			Regular	2	7	2	3	5	3
	V18: Lower Uppacott, Tedburn	Residential	Towns Small	40	838			Regular	6	18	6	8	13	9
	Highweek Way, Newton Abbot	Residential	Towns Central (Large)	40	843			Regular	4	14	4	6	8	8
	Tollgate, Chudleigh Knighton	Residential	Towns Small	60	842			Regular	8	26	10	12	19	14

District	Site Name	Land Use	Location Type Reference	Resi Quantum (dw)	SATURN Zone	Emp Quantum (ha)	Emp Quantum (100sqm)	Car Use (Exeter only)	Trip Generation					
									All Vehicles					
									AM		IP		PM	
									Arrival	Departure	Arrival	Departure	Arrival	Departure
	Berry Knowles Farm	Residential	Towns Edge (Large)	135	841			Regular	22	68	25	30	50	36
	Ilford Park,	Employment - B2, B8, E	Rural Rural		842	7	700	Regular	648	99	602	610	158	870
	West Exe Park	Employment - B8, E	Exeter Edge		832	7	667	Regular	817	77	786	799	197	1142
	North of Perry Cross / Staplehill Road,	Employment - B8, E	Rural Rural		841	4	433	Regular	531	50	511	519	128	743
	Horsemills Field	Employment - B2, B8	Rural Rural		842	1	57	Regular	32	6	62	66	15	48
	Parkhill Cross	Employment - B8, E	Towns Small		924	0	33	Regular	41	4	39	40	10	57
	Dawlish Business Park	Employment - B8, E	Towns Small		923	1	100	Regular	122	12	118	120	30	171
	Little Liverton Business Park	Employment - B2, B8, E	Rural Rural		842	1	133	Regular	124	19	115	116	30	166
	Ruby Farm	Employment - B2, B8, E	Rural Rural		924	0	33	Regular	31	5	29	29	8	41
Mid Devon	Culm Garden Village	Employment - B2, B8	New Community	3250	723	4	400	Regular	455	923	701	858	635	804
	East Devon New Community	Residential and Employment B2, B8, E	New Community	2500	907	6	583	Regular	915	958	937	902	1006	1200
	North of the Science Park	Employment - B2, B8	Exeter Edge		851	1	143	Regular	82	16	157	166	38	121
	North of Sowton Village	Employment - B2, B8	Exeter Edge		850	6	567	Regular	323	64	620	656	152	478
	East of the airport	Employment - B2, B8	Exeter Edge		852	3	257	Regular	146	29	281	297	69	216
	East of the airport and north of the A30	Employment - B2, B8	Exeter Edge		852	4	400	Regular	228	45	437	463	107	337
	North of Topsham	Residential and Employment B2, B8	Exeter Edge	580	937	1	80	Regular	133	212	188	184	224	178
	LP_Lymp_07	Residential and Employment B2, B8	Towns Edge (Large)	100	931			Regular	16	50	19	23	37	27
	LP_Lymp_14	Residential and Employment B2, B8	Towns Edge (Large)	59	931			Regular	9	30	11	13	22	16
	LP_Exmo_17	Residential and Employment B2, B8	Towns Edge (Large)	400	931			Regular	64	200	74	90	148	108
	LP_Lymp_09	Residential and Employment B2, B8	Towns Edge (Large)	54	931			Regular	9	27	10	12	20	15
	LP_Exmo_06	Residential and Employment B2, B8	Towns Edge (Large)	44	931			Regular	7	22	8	10	16	12
	LP_Exmo_04a	Residential and Employment B2, B8	Towns Edge (Large)	70	931			Regular	11	35	13	16	26	19
	LP_Lymp_10a	Residential and Employment B2, B8	Towns Edge (Large)	85	931			Regular	14	43	16	19	31	23
	LP_Lymp_08	Residential and Employment B2, B8	Towns Edge (Large)	14	931			Regular	2	7	3	3	5	4
	LP_Exmo_08&16	Residential and Employment B2, B8	Towns Edge (Large)	45	931			Regular	7	23	8	10	17	12
	LP_Exmo_23	Residential and Employment B2, B8	Towns Edge (Large)	12	931			Regular	2	6	2	3	4	3
	LP_Exmo_20b	Residential and Employment B2, B8	Towns Edge (Large)	150	931			Regular	24	75	28	34	56	41
	LP_Axmi_02	Residential and Employment B2, B8	Towns Small	100	902			Regular	14	44	16	20	32	23
	LP_Axmi_11a	Residential and Employment B2, B8	Towns Small	100	902			Regular	14	44	16	20	32	23
	LP_GH/ED/80a	Residential and Employment B2, B8	Towns Small	200	902			Regular	28	88	32	40	64	46
	LP_Gitti_05	Residential and Employment B2, B8	Towns Edge (Large)	100	876			Regular	16	50	19	23	37	27
	LP_Honi_01	Residential and Employment B2, B8	Towns Edge (Large)	79	876			Regular	13	40	15	18	29	21
	LP_Honi_13	Residential and Employment B2, B8	Towns Edge (Large)	10	876			Regular	2	5	2	2	4	3
	LP_Honi_06	Residential and Employment B2, B8	Towns Edge (Large)	30	876			Regular	5	15	6	7	11	8
	LP_Honi_05	Residential and Employment B2, B8	Towns Central (Large)	40	876			Regular	4	14	4	6	8	8
	LP_Honi_10	Residential and Employment B2, B8	Towns Edge (Large)	21	876			Regular	3	11	4	5	8	6
	LP_Gitti_06	Residential and Employment B2, B8	Towns Central (Large)	31	876			Regular	3	11	3	5	7	6
	LP_Honi_14	Residential and Employment B2, B8	Towns Edge (Large)	30	876			Regular	5	15	6	7	11	8
	LP_Honi_07	Residential and Employment B2, B8	Towns Edge (Large)	30	876			Regular	5	15	6	7	11	8
	LP_GH/ED/39a	Residential and Employment B2, B8	Towns Edge (Large)	100	876			Regular	16	50	19	23	37	27
	LP_Otry_10	Residential and Employment B2, B8	Towns Edge (Large)	20	876			Regular	3	10	4	5	7	5
	LP_Otry_09	Residential and Employment B2, B8	Towns Edge (Large)	90	876			Regular	14	45	17	20	33	24
	LP_Otry_15	Residential and Employment B2, B8	Towns Edge (Large)	8	876			Regular	1	4	1	2	3	2
	LP_GH/ED/27	Residential and Employment B2, B8	Towns Edge (Large)	60	876			Regular	10	30	11	14	22	16
	LP_Otry_01b	Residential and Employment B2, B8	Towns Edge (Large)	70	876			Regular	11	35	13	16	26	19
	LP_GH/ED/29a	Residential and Employment B2, B8	Towns Edge (Large)	40	876			Regular	6	20	7	9	15	11
	LP_Seat_02	Residential and Employment B2, B8	Towns Small	40	891			Regular	6	18	6	8	13	9
	LP_Seat_09	Residential and Employment B2, B8	Towns Small	7	891			Regular	1	3	1	1	2	2
	LP_Seat_03	Residential and Employment B2, B8	Towns Small	70	891			Regular	10	31	11	14	22	16
	LP_Seat_05	Residential and Employment B2, B8	Towns Small	100	891			Regular	14	44	16	20	32	23
	LP_Sidm_01	Residential and Employment B2, B8	Towns Small	127	935			Regular	18	56	21	25	41	29
East Devon	LP_Sidm_17	Residential and Employment B2, B8	Towns Small	11	935			Regular	2	5	2	2	4	3
	LP_Sidm_06a	Residential and Employment B2, B8	Towns Small	30	935			Regular	4	13	5	6	10	7
	LP_Brcl_09	Residential and Employment B2, B8	Towns Small	15	936			Regular	2	7	2	3	5	3
	LP_Brcl_12	Residential and Employment B2, B8	Towns Small	136	936			Regular	19	60	22	27	44	31
	LP_Brcl_29	Residential and Employment B2, B8	Towns Small	24	936			Regular	3	11	4	5	8	6
	LP_Budl_06	Residential and Employment B2, B8	Towns Small	20	888			Regular	3	9	3	4	6	5
	LP_Budl_03	Residential and Employment B2, B8	Towns Small	44	888			Regular	6	19	7	9	14	10
	LP_Budl_02	Residential and Employment B2, B8	Towns Small	38	888			Regular	5	17	6	8	12	9
	LP_Budl_01	Residential and Employment B2, B8	Towns Small	50	888			Regular	7	22	8	10	16	12
	LP_Coly_02a	Residential	Towns Small	25	891			Regular	4	11	4	5	8	6

District	Site Name	Land Use	Location Type Reference	Resi Quantum (dw)	SATURN Zone	Emp Quantum (ha)	Emp Quantum (100sqm)	Car Use (Exeter only)	Trip Generation					
									All Vehicles					
									AM		IP		PM	
									Arrival	Departure	Arrival	Departure	Arrival	Departure
	LP_Coly_02b	Residential	Towns Small	24	891			Regular	3	11	4	5	8	6
	LP_Lymp_01	Residential and Employment B2, B8	Towns Small	14	931			Regular	2	6	2	3	4	3
	LP_GH/ED/72	Residential and Employment B2, B8	Towns Small	131	931			Regular	18	58	21	26	42	30
	LP_GH/ED/73	Residential and Employment B2, B8	Towns Small	46	931			Regular	6	20	7	9	15	11
	LP_GH/ED/75	Residential and Employment B2, B8	Towns Small	6	931			Regular	1	3	1	1	2	1
	LP_Wood_16	Residential and Employment B2, B8	Towns Small	67	888			Regular	9	29	11	13	21	15
	LP_Wood_10	Residential and Employment B2, B8	Towns Small	60	888			Regular	8	26	10	12	19	14
	LP_Wood_23	Residential and Employment B2, B8	Towns Small	18	888			Regular	3	8	3	4	6	4
	LP_Wood_20	Residential and Employment B2, B8	Towns Small	28	888			Regular	4	12	5	6	9	6
	LP_Brhe_09	Residential	Rural Rural	10	876			Regular	2	5	2	2	4	3
	LP_Char_04a	Residential and Employment B2, B8	Rural Rural	30	902			Regular	5	15	6	7	11	8
	LP_Sowt_09	Residential and Employment B2, B8	Towns Small	35	849			Regular	5	15	6	7	11	8
	LP_Sowt_03	Residential and Employment B2, B8	Towns Small	37	849			Regular	5	16	6	7	12	9
	LP_Sowt_11a	Residential and Employment B2, B8	Towns Small	30	849			Regular	4	13	5	6	10	7
	LP_Dunk_05	Residential and Employment B2, B8	Rural Rural	43	876			Regular	7	22	8	10	16	12
	LP_Wood_01	Residential and Employment B2, B8	Towns Small	17	931			Regular	2	7	3	3	5	4
	LP_Wood_28	Residential and Employment B2, B8	Towns Small	33	931			Regular	5	15	5	7	11	8
	LP_Feni_05	Residential	Towns Small	42	876			Regular	6	18	7	8	13	10
	LP_Hawk_01	Residential and Employment B2, B8	Rural Rural	38	902			Regular	6	19	7	9	14	10
	LP_Kilm_11	Residential	Towns Small	10	902			Regular	1	4	2	2	3	2
	LP_Kilm_10	Residential	Towns Small	5	902			Regular	1	2	1	1	2	1
	LP_Kilm_09	Residential	Towns Small	37	902			Regular	5	16	6	7	12	9
	LP_Musb_01a	Residential	Rural Rural	15	891			Regular	2	8	3	3	6	4
	LP_Musb_03a	Residential	Rural Rural	10	891			Regular	2	5	2	2	4	3
	LP_Otto_02	Residential	Towns Small	8	888			Regular	1	4	1	2	3	2
	LP_Otto_01	Residential	Towns Small	10	888			Regular	1	4	2	2	3	2
	LP_Otto_03a	Residential	Towns Small	5	888			Regular	1	2	1	1	2	1
	LP_Sidm_34	Residential and Employment B2, B8	Rural Rural	38	935			Regular	6	19	7	9	14	10
	LP_Otry_04	Residential	Rural Rural	45	934			Regular	7	23	8	10	17	12
	LP_West_01	Residential and Employment B2, B8	Towns Small	6	876			Regular	1	3	1	1	2	1
	LP_West_06	Residential and Employment B2, B8	Towns Small	25	876			Regular	4	11	4	5	8	6
	LP_West_04	Residential and Employment B2, B8	Towns Small	26	876			Regular	4	11	4	5	8	6
	LP_Whim_11	Residential	Towns Small	33	861			Regular	5	15	5	7	11	8

Appendix C

NETWORK PLOTS

CONFIDENTIAL

Appendix C.1

ACTUAL FLOWS

CONFIDENTIAL

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow (PCUs/hr)

0 - 250

250 - 500

500 - 750

750 - 1000

>1000

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Actual Flow 2017 AM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow (PCUs/hr)

0 - 250

250 - 500

500 - 750

750 - 1000

>1000

1,000 0 1,000 2,000 3,000 m

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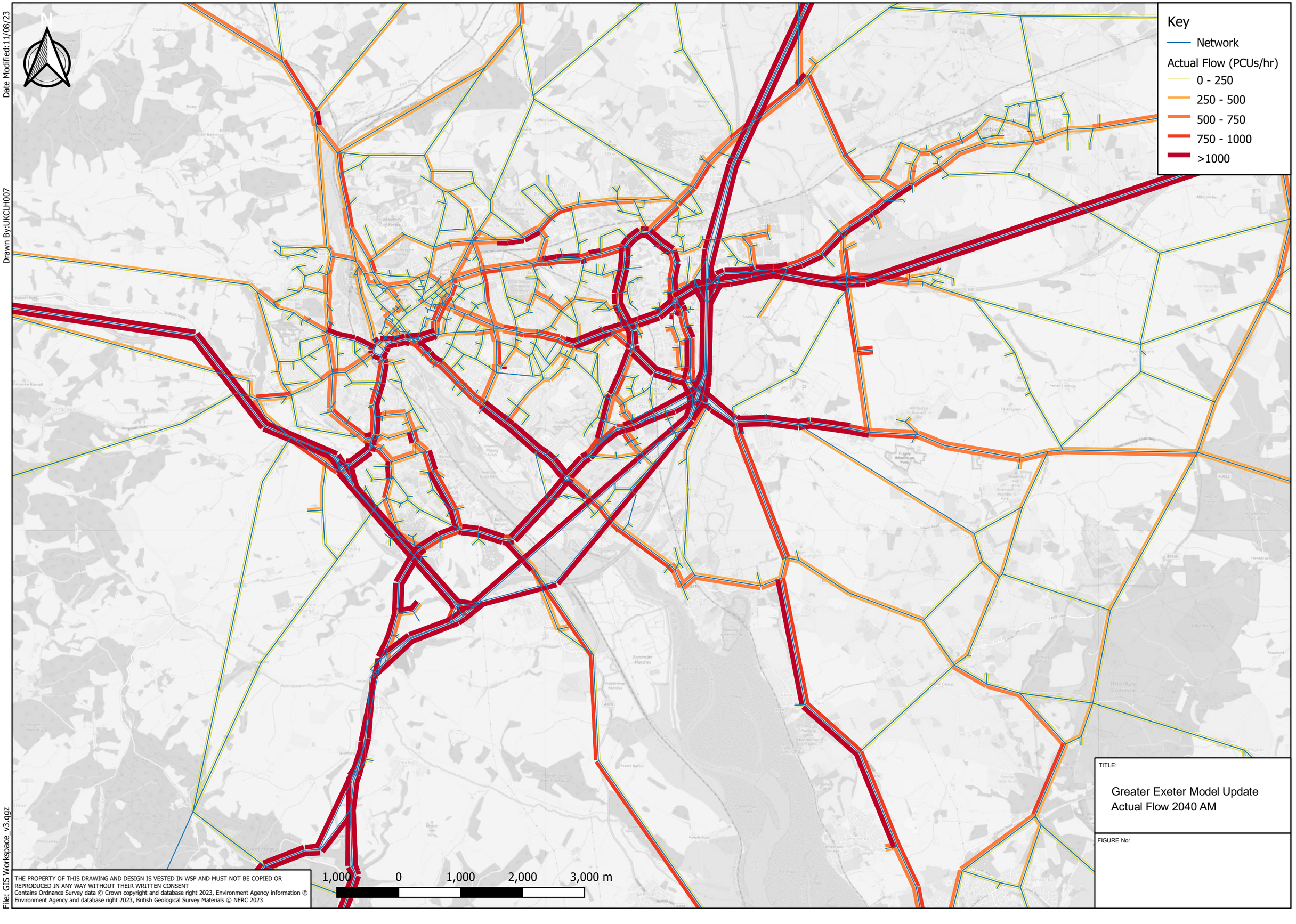
TITLE:

Greater Exeter Model Update
Actual Flow 2030 AM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007



File: GIS Workspace_v3.qgz

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TITLE:

Greater Exeter Model Update
Actual Flow 2040 AM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow (PCUs/hr)

0 - 250

250 - 500

500 - 750

750 - 1000

>1000

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Actual Flow 2017 PM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow (PCUs/hr)

0 - 250

250 - 500

500 - 750

750 - 1000

>1000

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Actual Flow 2030 PM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow (PCUs/hr)

0 - 250

250 - 500

500 - 750

750 - 1000

>1000

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Actual Flow 2040 PM

FIGURE No:

Appendix C.2

DELAYS

CONFIDENTIAL

Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update Delay 2017 AM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update Delay 2030 AM

FIGURE No:

Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

TITLE:

Greater Exeter Model Update Delay 2040 AM

FIGURE No:

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Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Delay 2017 PM

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Delay 2030 PM

FIGURE No:

Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay (seconds)

0 - 30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
Delay 2040 PM

FIGURE No:

Appendix C.3

VOLUME / CAPACITY

CONFIDENTIAL

Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn Node V/C%

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2017
AM Node Worst Turn V/C%

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn Node V/C%

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2030
AM Node Worst Turn V/C%

FIGURE No:

Date Modified:02/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn Node V/C (%)

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2040
AM Node Worst Turn V/C%

FIGURE No:

Date Modified:01/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn Node V/C (%)

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2017
PM Node Worst Turn V/C%

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

N

Key

Network

Worst Turn Node V/C%

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2030 PM Node Worst Turn V/C%

FIGURE No:

File: GIS Workspace_v3.qgz

Date Modified:02/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn Node V/C (%)

<90

90 - 100

>100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2040
PM Node Worst Turn V/C%

FIGURE No:

Appendix D

NETWORK DIFFERENCE PLOTS

CONFIDENTIAL

Appendix D.1

ACTUAL FLOW DIFFERENCES

CONFIDENTIAL

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow Difference (PCUs/hr)

<50

50 - 100

100 - 200

200 - 300

300 - 500

>500

1,000 0 1,000 2,000 3,000 m

TITLE:

Greater Exeter Model Update
2017 vs 2030 AM Actual Flow Increase

FIGURE No:

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Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow Difference (PCUs/hr)

<50

50 - 100

100 - 200

200 - 300

300 - 500

>500

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
2030 vs 2040 AM Actual Flow Increase

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow Difference (PCUs/hr)

<50

50 - 100

100 - 200

200 - 300

300 - 500

>500

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2017 vs 2030 PM Actual Flow Increase

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Actual Flow Difference (PCUs/hr)

<50

50 - 100

100 - 200

200 - 300

300 - 500

>500

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
2030 vs 2040 PM Actual Flow Increase

FIGURE No:

Appendix D.2

DELAY DIFFERENCES

CONFIDENTIAL

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay Difference (seconds)

<30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
2017 vs 2030 AM Delay Increase

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay Difference (seconds)

<30

30 - 60

60 - 90

90 - 120

>120

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update
2030 vs 2040 AM Delay Increase

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Delay Difference (seconds)

<30

30 - 60

60 - 90

90 - 120

>120

125

158

72

45

36

35

43

91

46

57

56

39

55

42

58

49

58

32

1,000 0 1,000 2,000 3,000 m

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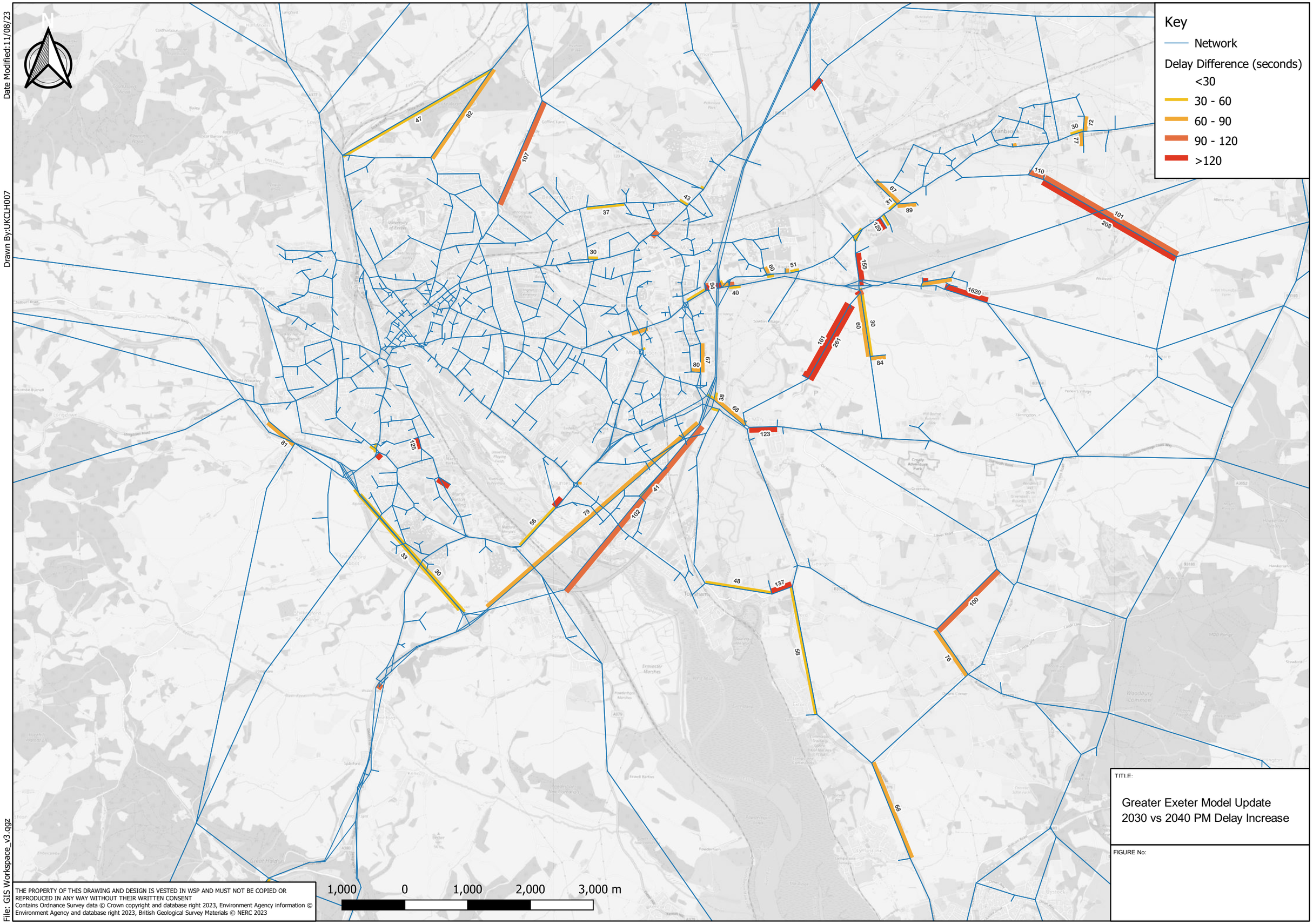
TITLE:

Greater Exeter Model Update
2017 vs 2030 PM Delay Increase

FIGURE No:



TITLE:

Greater Exeter Model Update
2030 vs 2040 PM Delay Increase

FIGURE No:

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Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

Appendix D.3

VOLUME / CAPACITY DIFFERENCES

CONFIDENTIAL

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn V/C Difference (%)

- Was <90, now >100
- Was between 90 - 100, now >100
- Remains >100
- Was <90, now between 90 - 100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2017 vs 2030 AM Node Worst Turn V/C% Difference

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn V/C Difference (%)

- Was <90, now >100
- Was between 90 - 100, now >100
- Remains >100
- Was <90, now between 90 - 100

1,000 0 1,000 2,000 3,000 m

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TITLE:
Greater ExeterModel Update 2030 vs 2040 AM Node Worst Turn V/C% Difference

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn V/C Difference (%)

- Was <90, now >100
- Was between 90 - 100, now >100
- Remains >100
- Was <90, now between 90 - 100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2017 vs 2030 PM Node Worst Turn V/C% Difference

FIGURE No:

Date Modified:11/08/23

Drawn By:UKCLH007

File: GIS Workspace_v3.qgz

N

Key

Network

Worst Turn V/C Difference (%)

- Was <90, now >100
- Was between 90 - 100, now >100
- Remains >100
- Was <90, now between 90 - 100

1,000 0 1,000 2,000 3,000 m

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TITLE:

Greater Exeter Model Update 2030 vs 2040 PM Node Worst Turn V/C% Difference

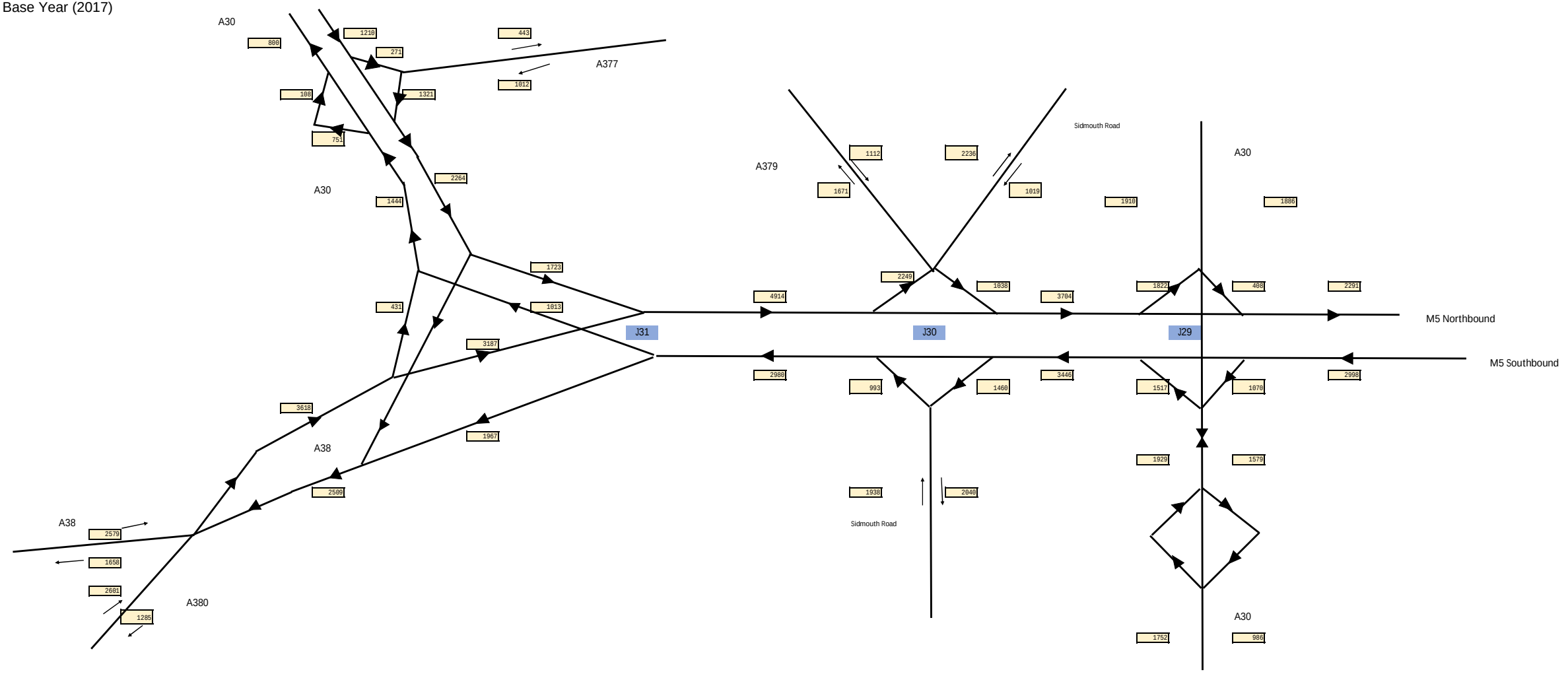
FIGURE No:

Appendix E

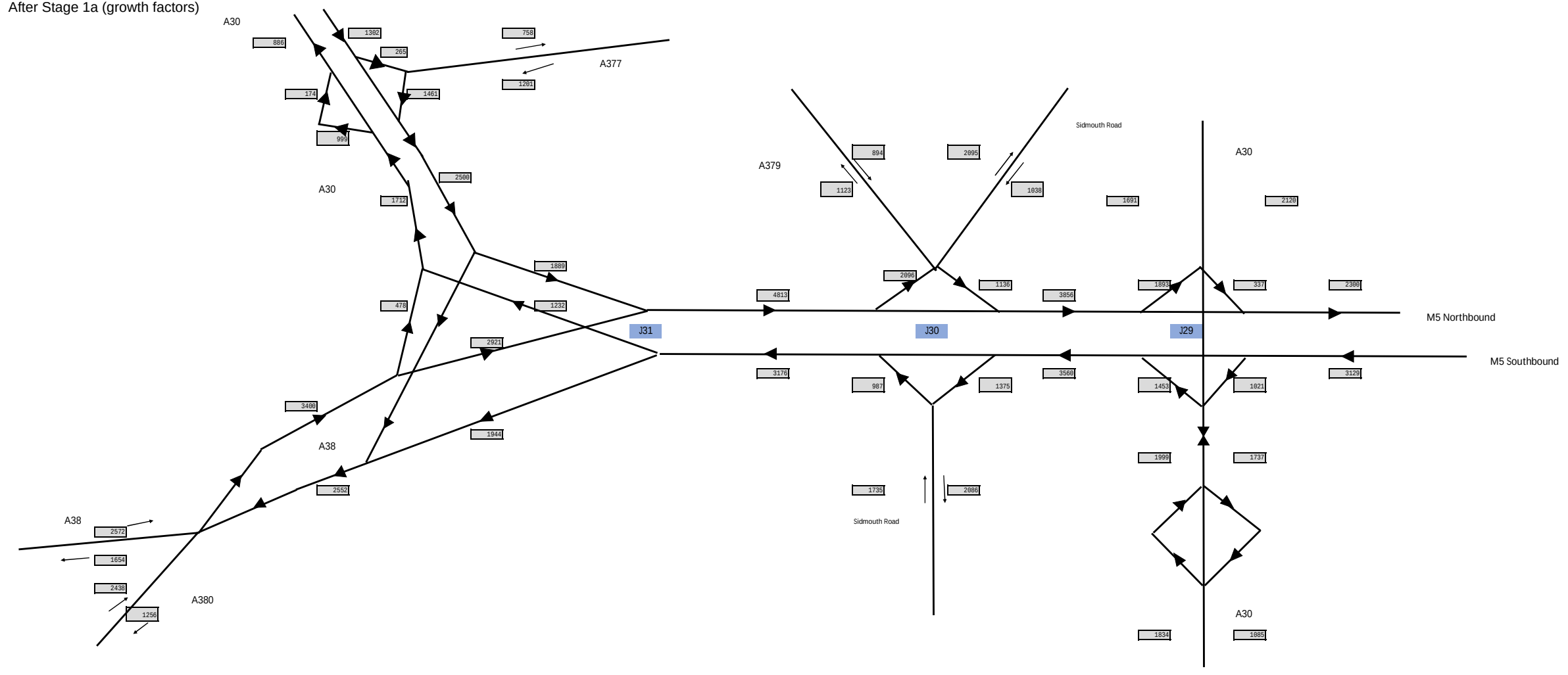
SRN FLOW DIAGRAMS

CONFIDENTIAL

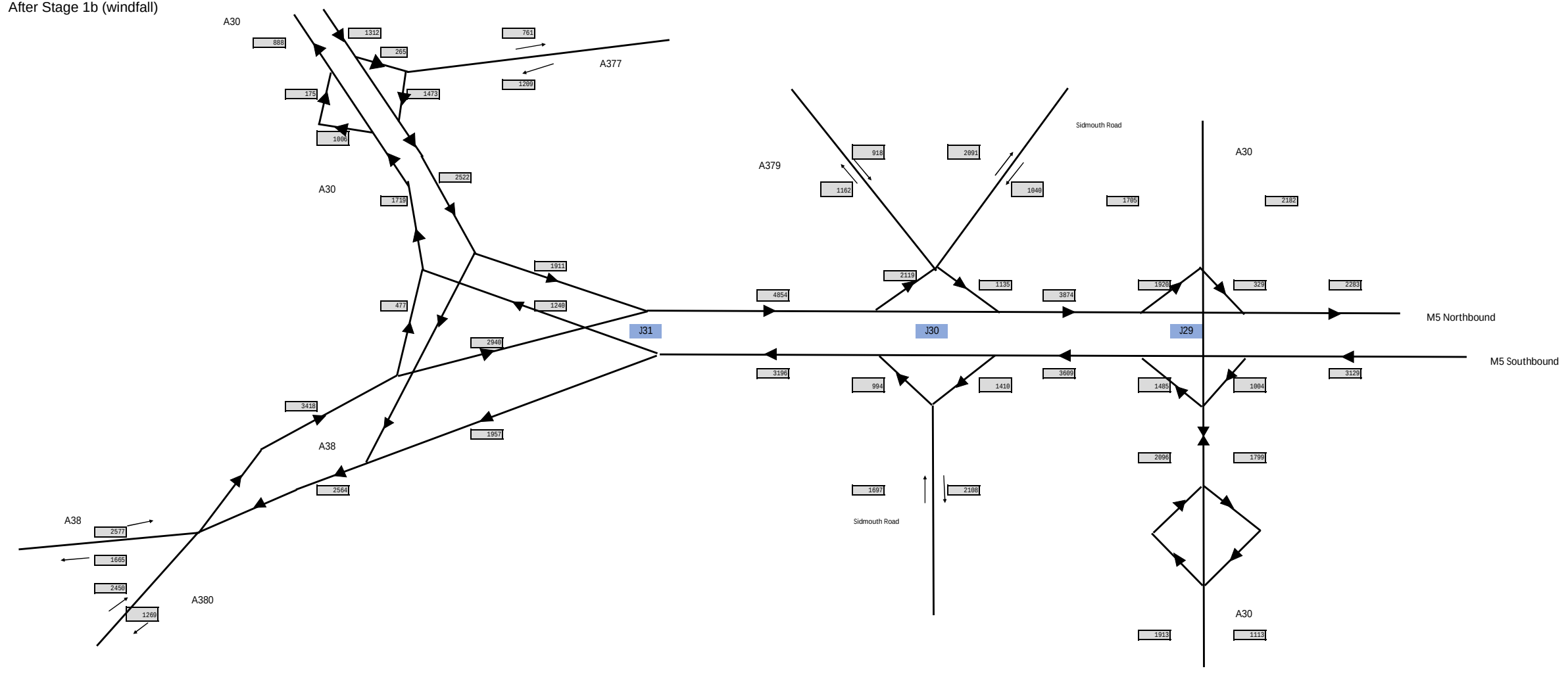
SRN Network Flows (PCUs)
AM Peak
Base Year (2017)



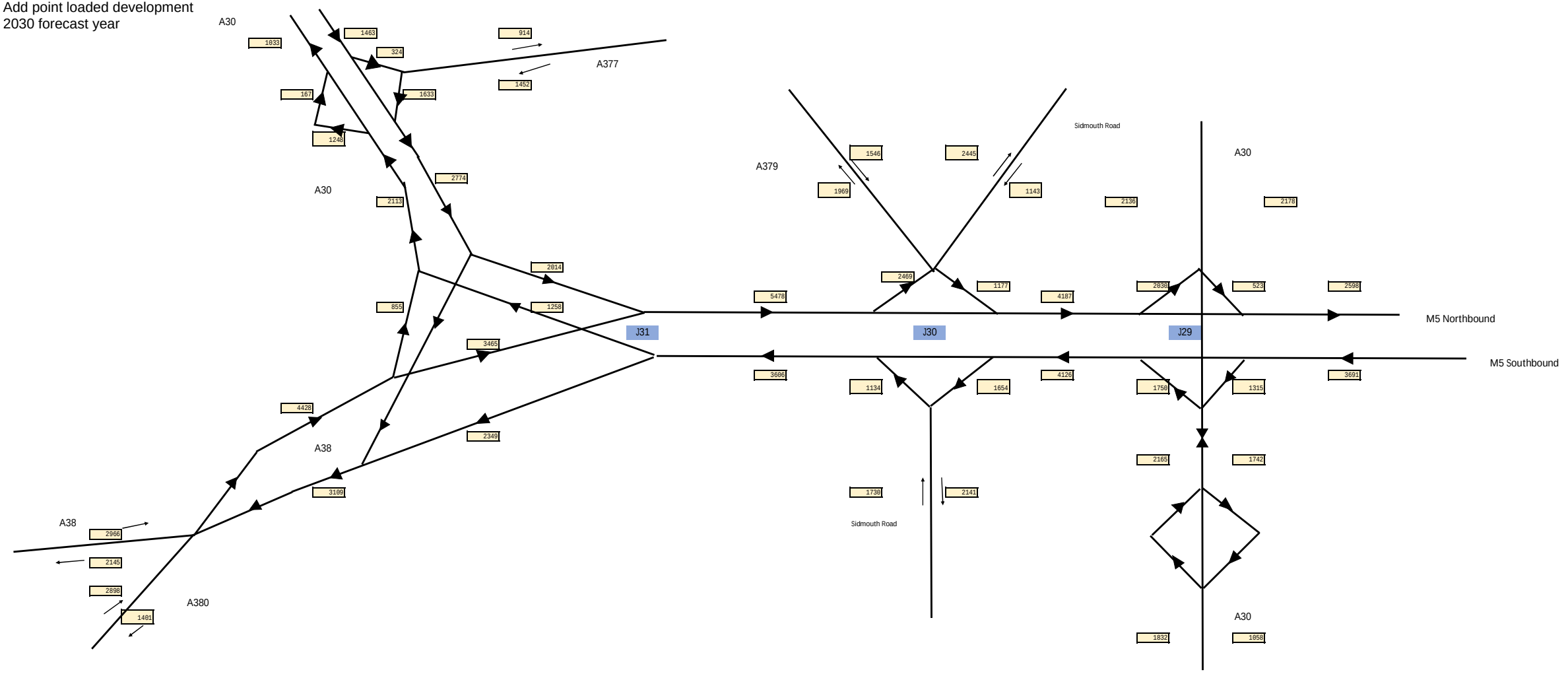
SRN Network Flows (PCUs)
AM Peak
After Stage 1a (growth factors)



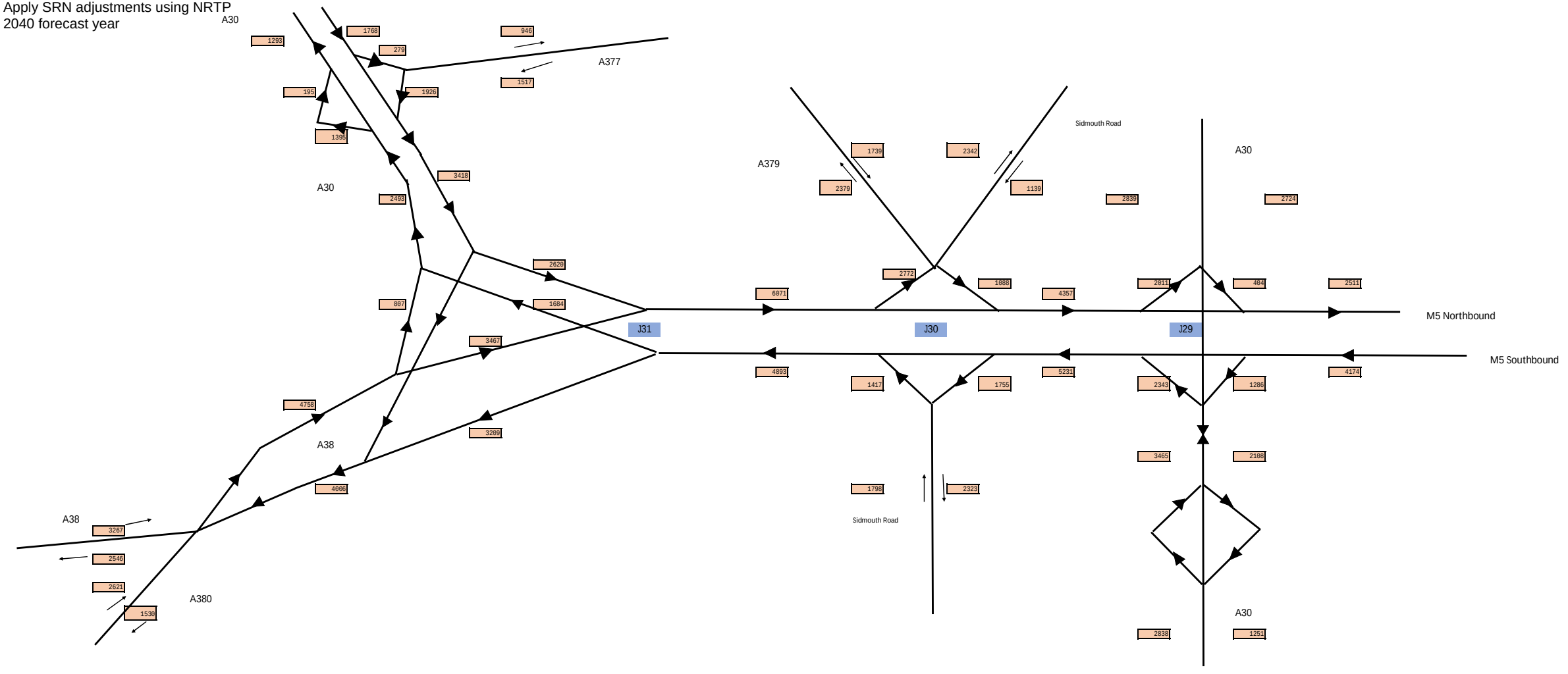
SRN Network Flows (PCUs)
AM Peak
After Stage 1b (windfall)



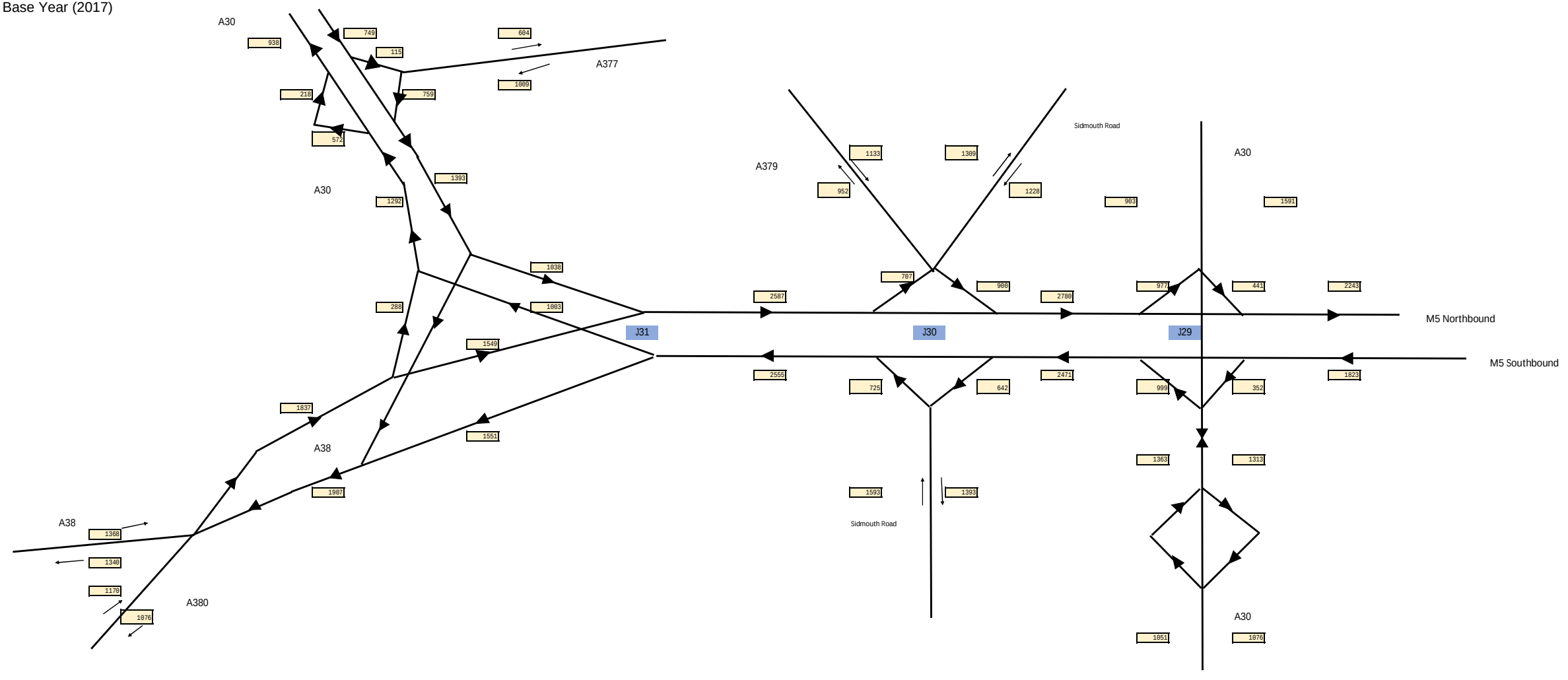
SRN Network Flows (PCUs)
AM Peak
Add point loaded development
2030 forecast year



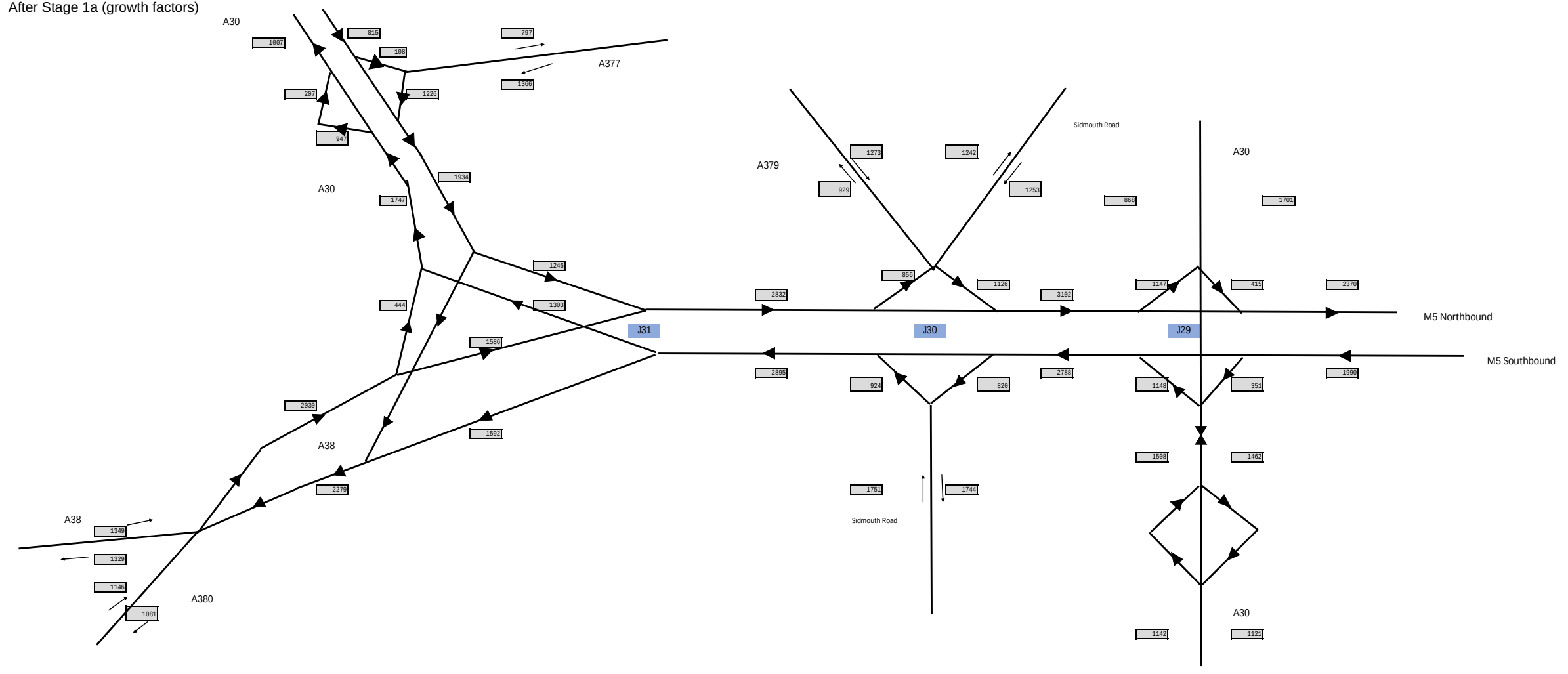
SRN Network Flows (PCUs)
AM Peak
Add point loaded development
Apply SRN adjustments using NRTP
2040 forecast year



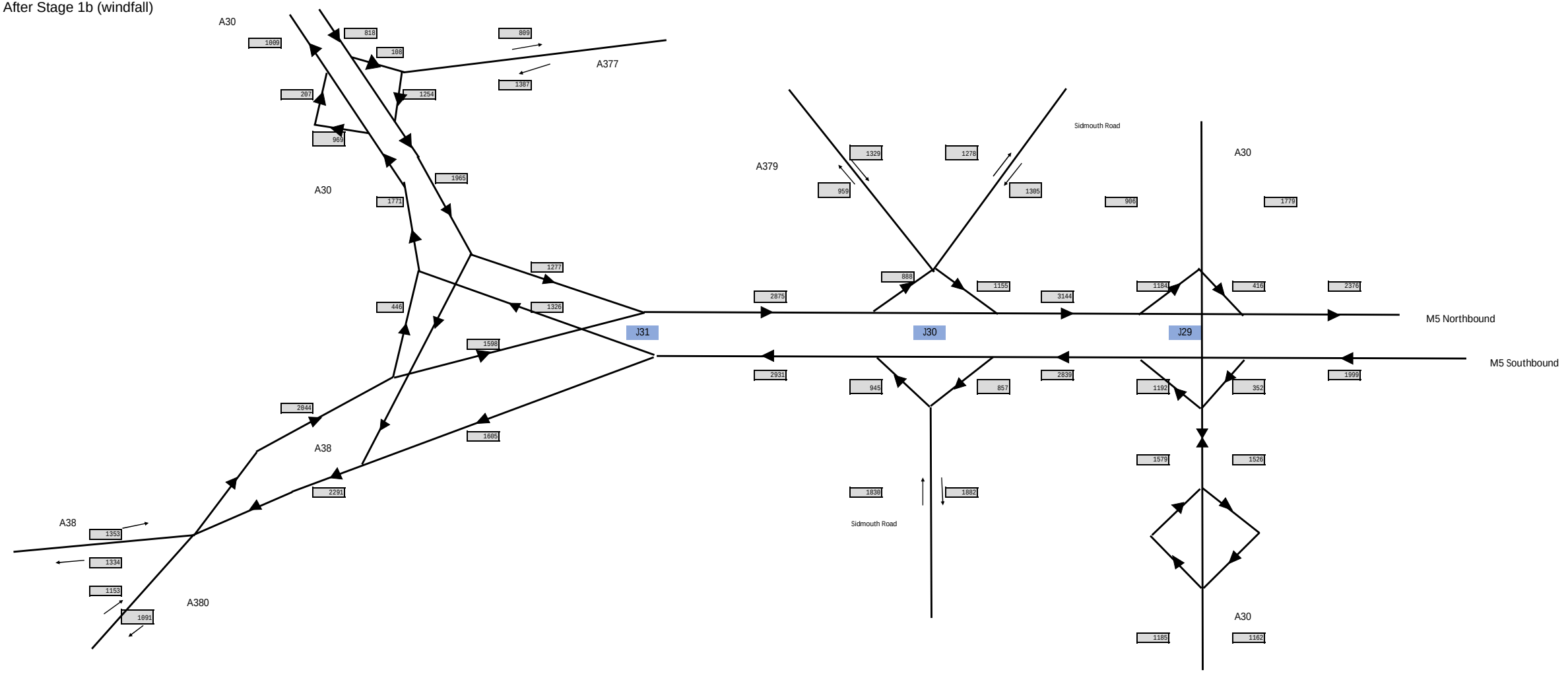
SRN Network Flows (PCUs)
Interpeak
Base Year (2017)



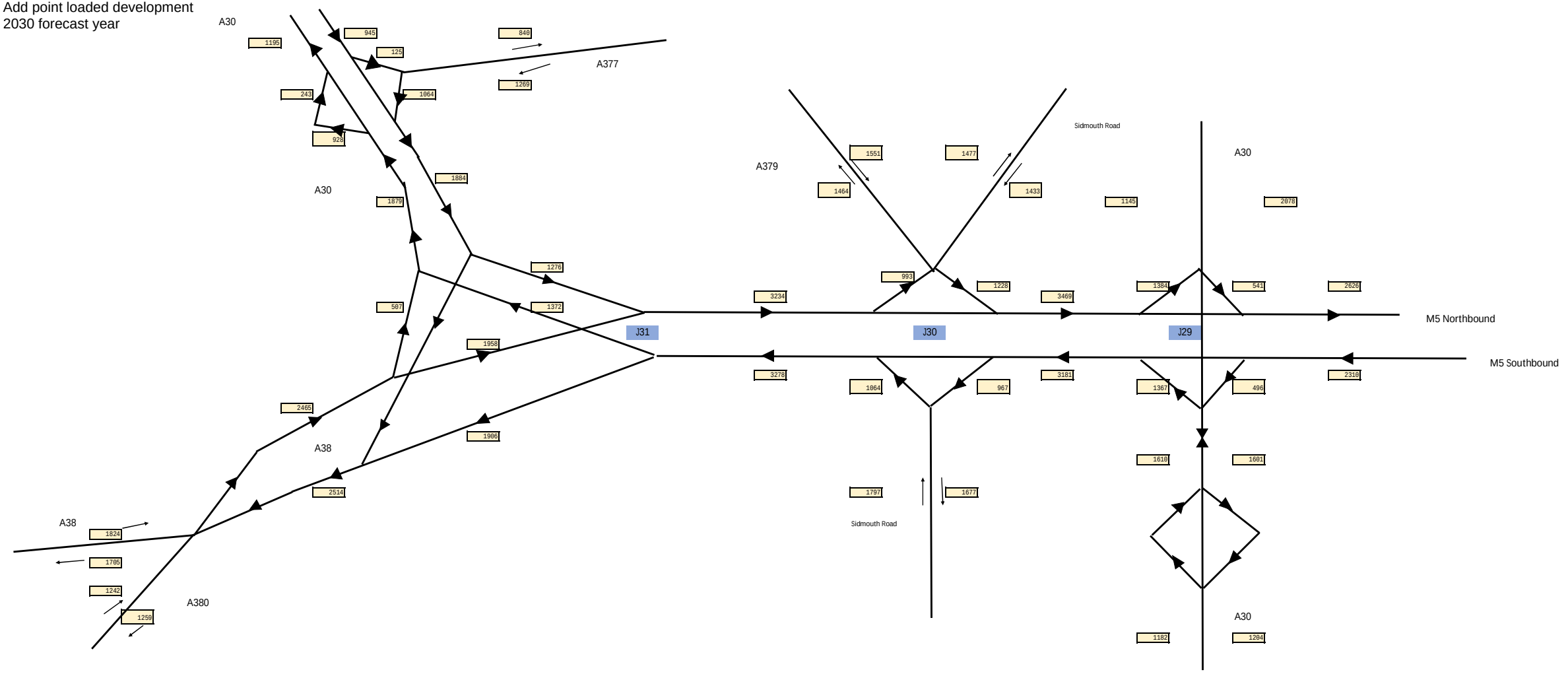
SRN Network Flows (PCUs)
Interpeak
After Stage 1a (growth factors)



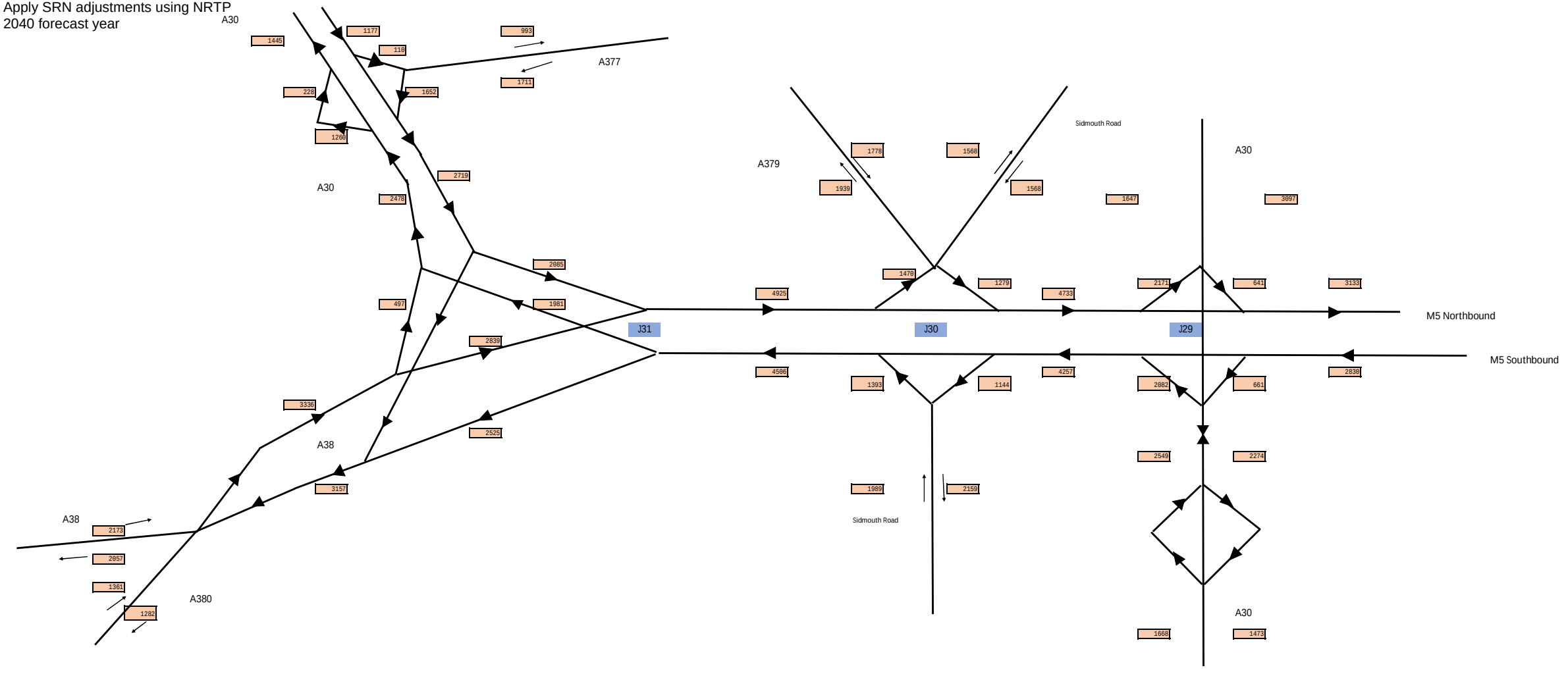
SRN Network Flows (PCUs)
Interpeak
After Stage 1b (windfall)



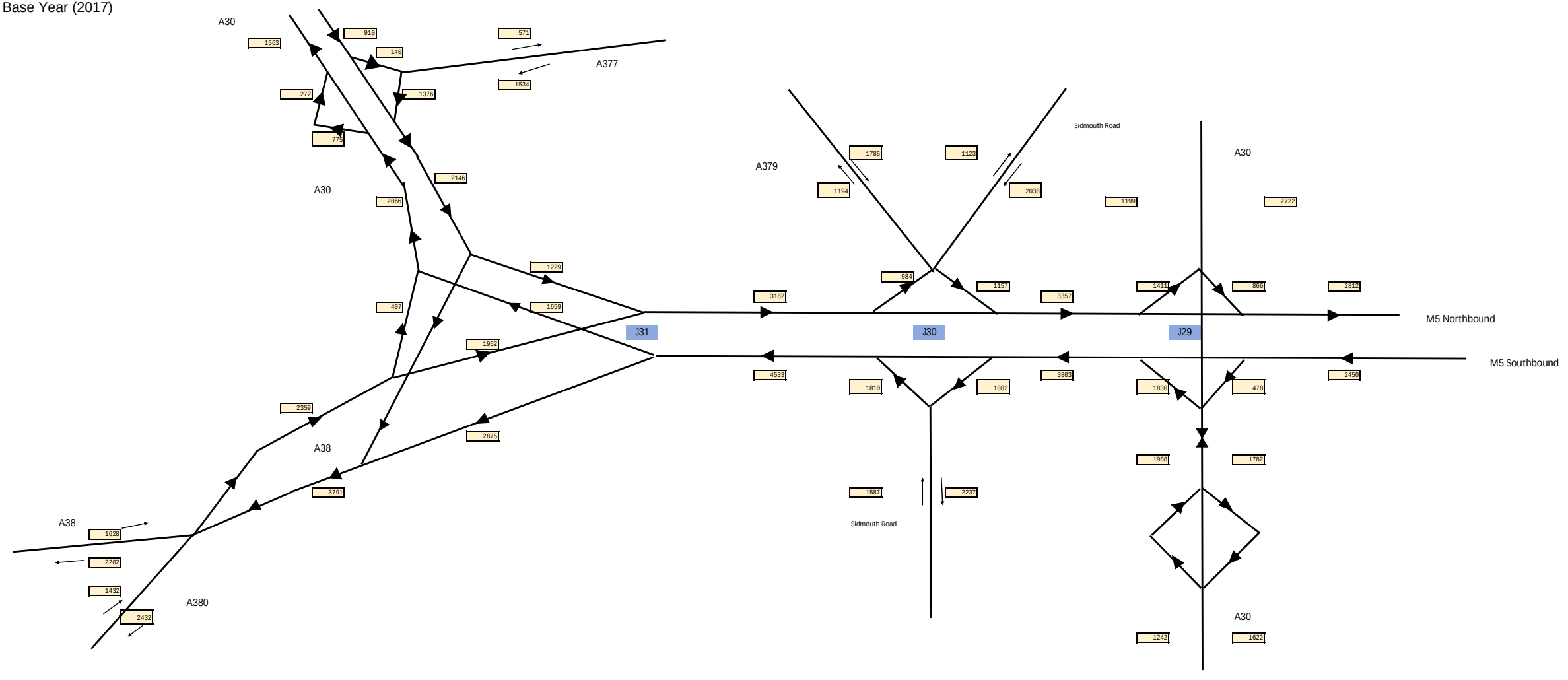
SRN Network Flows (PCUs)
Interpeak
Add point loaded development
2030 forecast year



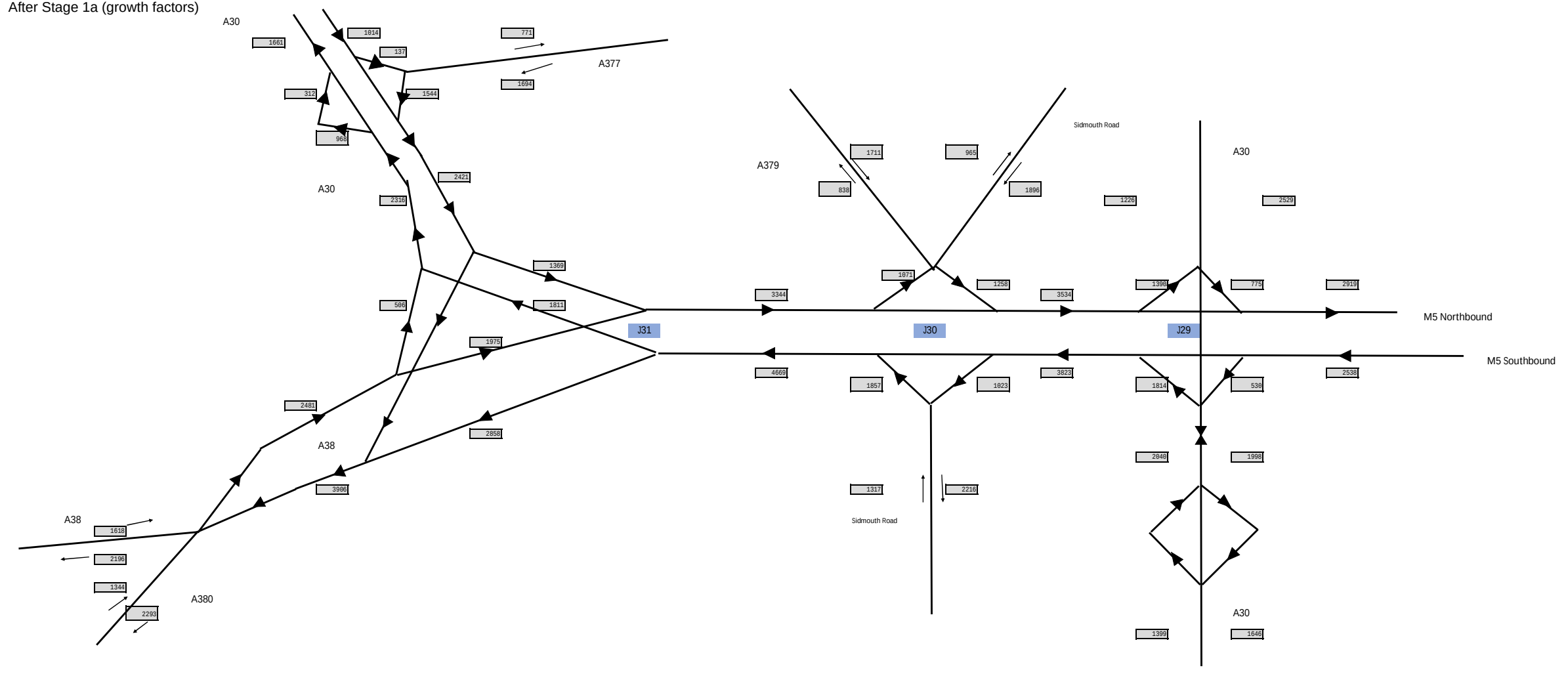
SRN Network Flows (PCUs)
Interpeak
Add point loaded development
Apply SRN adjustments using NRTP
2040 forecast year



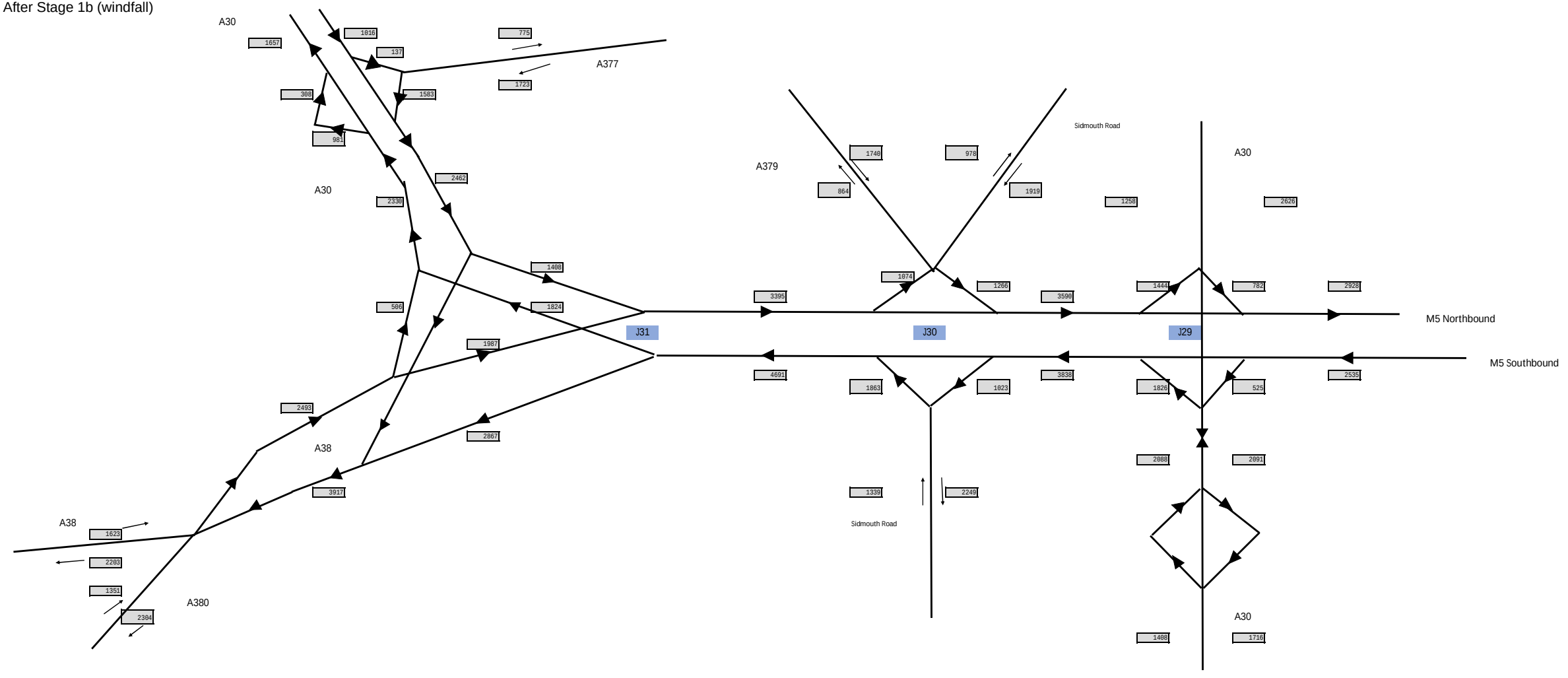
SRN Network Flows (PCUs)
PM Peak
Base Year (2017)



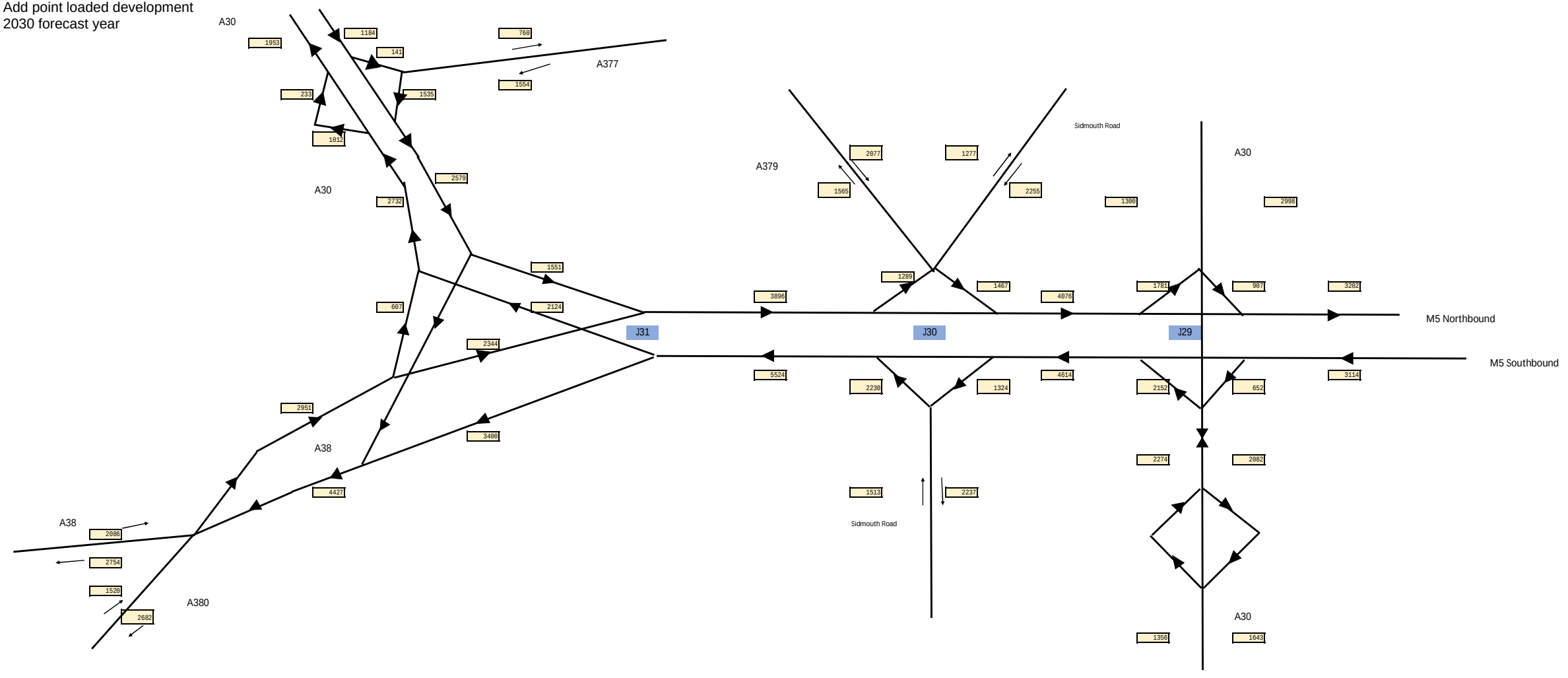
SRN Network Flows (PCUs)
PM Peak
After Stage 1a (growth factors)



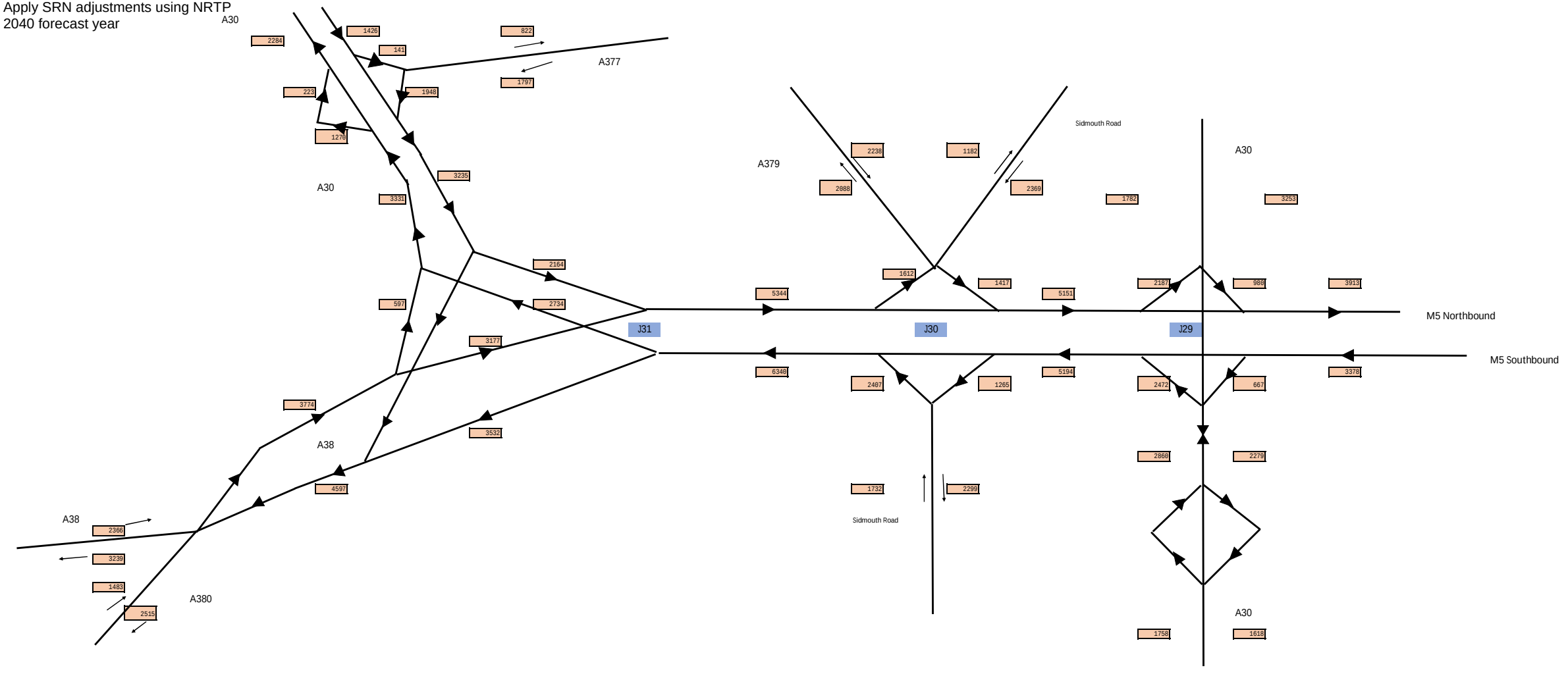
SRN Network Flows (PCUs)
PM Peak
After Stage 1b (windfall)



SRN Network Flows (PCUs)
PM Peak
Add point loaded development
2030 forecast year



SRN Network Flows (PCUs)
PM Peak
Add point loaded development
Apply SRN adjustments using NRTP
2040 forecast year



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