Stockport Metropolitan Borough Council

STOCKPORT LOCAL PLAN - REGULATION 18

Traffic Modelling Report

October 2025

Stockport Metropolitan Borough Council

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Traffic Modelling Report

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Traffic Modelling Report

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1. Stockport Metropolitan Borough Council (Council) has commissioned WSP to assess the highway impact of several Local Plan test scenarios. The Draft Local Plan sets out the developments and policies proposed by SMBC. The Local Plan has yet to be finalised. This assessment informs the evidence base for the Regulation 18 Preferred Options draft Local Plan.

1.1.2. The assessment has been carried out using the Stockport Strategic SATURN Highway Model.

1.1.3. The Council has housing and employment targets that they are required to meet by 2042 and the modelling undertaken has assessed the highway impacts of each strategy approach. The impacts assessed include:

- Network travel time;
- Network speed;
- Journey routes;
- Link flows; and
- Carbon emissions.

1.2 REPORT STRUCTURE

1.2.1. The report is structured as follows:

- Chapter 2 Model Overview;
- Chapter 3 Forecast Method;
- Chapter 4 Model Outputs;
- Chapter 5 Carbon Emissions; and
- Chapter 6 Summary and Conclusions.

2 MODEL OVERVIEW

2.1 MODEL PROPERTIES

2.1.1. The base year of the Stockport Strategic SATURN Highway Model (SSSM) model is 2022. It should be noted that the A523 Poynton Relief Road was not open to traffic until March 2023.

2.1.2. The peak hours modelled are listed below.

- Morning Peak (AM) 8:00 – 9:00
- Inter-peak (IP) 10:00 – 16:00 (average hour)
- Evening Peak (PM) 17:00 – 18:00

There are five user classes modelled and three vehicle types as listed below:

- UC1: Commute – Car
- UC2: Business – Car
- UC3: Other – Car
- UC4: Light Goods Vehicles (LGV)
- UC5: Heavy Goods Vehicles (HGV)

2.1.3. The highway network represents all roads of significance in Stockport, south Manchester and north Cheshire East. The remainder of the network in Greater Manchester includes all motorways, A road, B roads, and road carrying bus services. These networks combine to form the simulation network where the interaction of traffic at each junction is modelled. Outside of this area the network is coded as buffer.

2.1.4. The model was updated in December 2024 to improve validation in Stockport town centre.

2.1.5. Full details of the SSSM are given in *HFAS Report 2219: Local Model Validation Report v4.1, February 2025*.

3 TRAFFIC FORECASTING

3.1 LOCAL PLAN REGUALATION 18 TEST MODELLING SCENARIOS

3.1.1. The Local Plan Regulation 18 traffic modelling comprises four test scenarios comprising different levels of housing and employment. Each test scenario has a different mix of housing and employment demand, which are summarised in Table 3-1 overleaf.

Housing allocations have been modelled at a sector level. Details on site specific allocations is not available at this stage of strategy testing. The borough has been sub-divided into 22 sectors for this purpose as described below and shown in **Figure 3-1**.

- Adswood
- Bramhall
- Bredbury
- Brinnington
- Cheadle
- Cheadle Hulme
- Davenport, Stepping Hill and Great Moor
- Edgeley and Cheadle Heath
- Gatley
- Hazel Grove
- Heald Green
- High Lane
- Manor and Portwood
- Marple
- Mellor, Marple Bridge and Compstall
- Offerton
- Reddish
- Romiley
- Stockport town centre
- The Heatons
- Woodford
- Woodley

Figure 3-1 – Stockport Borough Sector System

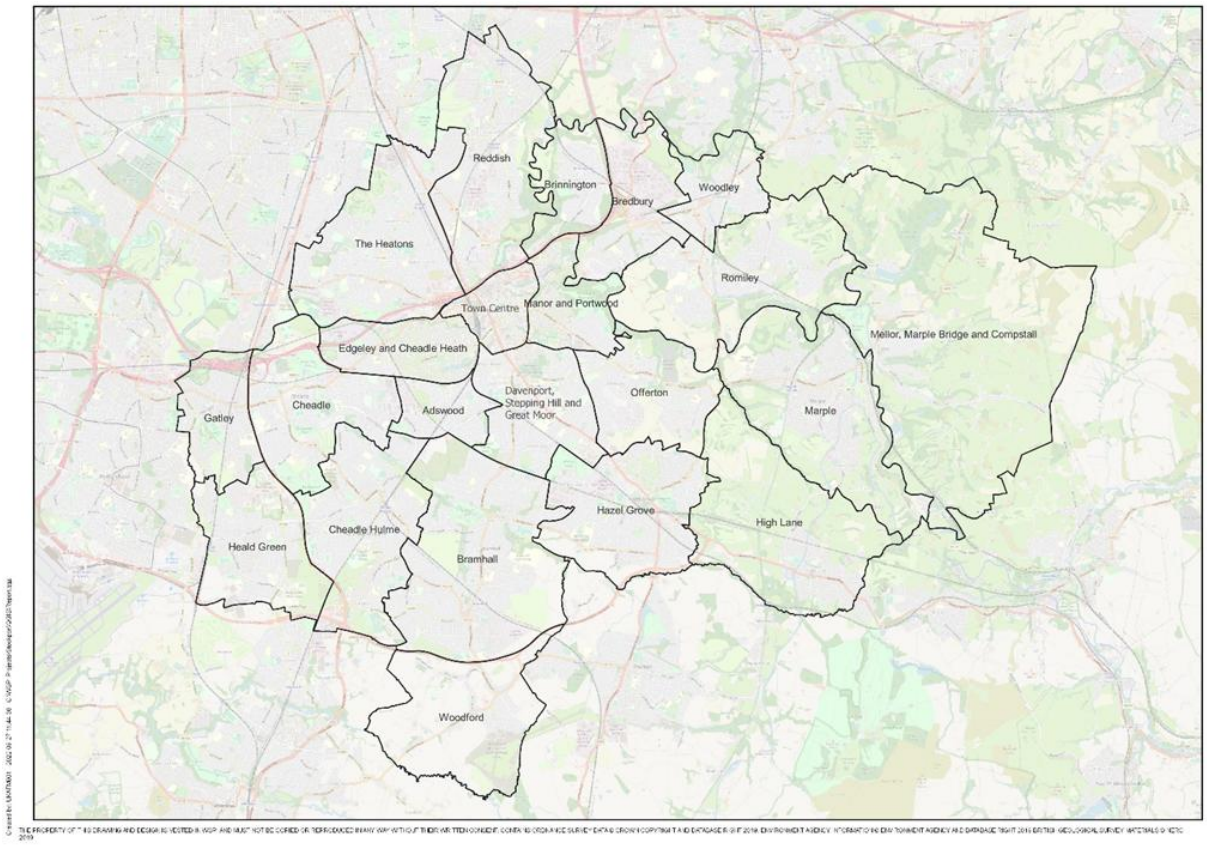


Table 3-1 – Local Plan Reg 18 Test Housing and Employment Scenarios

Test Scenario	Description	Land Supply + Small Sites + Rail Stations	Town Centre Additional Housing	District Centre Additional Housing	Grey / Green Belt Additional Housing	Other Sites	Total Housing	% Local Housing Need*	Shortfall relative to LHN	Green Belt Additional B2/B8 Floorspace (sqm)**
S1	HA1 (Baseline) / EA1	13,730	2,000	770	0	0	16,500	52%	15,137	0
S2	HA2 / EA2	13,730	2,000	770	6,070	0	22,570	71%	9,067	107,000
S3	HA3 / EA3	13,730	2,000	770	8,970	0	25,470	81%	6,167	125,000
S4	HA4 / EA3	13,730	2,000	770	8,970	6,167	31,637	100%	0	125,000

Notes:

Stockport's 2042 housing baseline position equates to 16,500 new homes

*The Local Housing Need (LHN) for the Local Plan period is circa 31,637 new homes - previously calculated to be 19,125 new homes in May 2024

**B2/B8 employment land use split assumed to be 10% B2 and 90% B8 where

- **Employment Approach 1:** Employment needs met with no green belt release
- **Employment Approach 2:** Allocations at Heathside Park Road (32,000 sqm) and Bredbury (75,000 sqm) to reflect the Bredbury Inspector's findings
- **Employment Approach 3:** Allocations at Heathside Park Road (32,000 sqm), Bredbury (75,000 sqm) and Bramhall (18,000 sqm)

3.1.2. In terms of Local Plan test scenarios for the housing:

- Test scenario 1 assumes a baseline position of 16,500 new homes requiring no grey or green belt release
- Test scenario 2 assumes an additional 6,070 new homes requiring grey or green belt releases over and above the baseline position
- Test scenario 3 assumes an additional 8,970 new homes requiring grey or green belt releases over and above the baseline position
- Test scenario 4 assumes an additional 8,970 new homes requiring grey or green belt releases over and above the baseline position, and a further 6,167 new homes distributed pro rata across the borough to tally with the government's local housing need target.

3.1.3. The distribution of new homes at a sector level was supplied by the Council's planning team and summarised below in terms of houses and apartment units.

Table 3-2 – Sectoral Distribution of Local Plan Housing Under Test Scenarios 1 to 4

Location	Approach 1		Approach 2		Approach 3		Approach 4	
	Houses	Apar'ts	Houses	Apar'ts	Houses	Apar'ts	Houses	Apar'ts
Adswood	38	38	38	38	38	38	48	48
Bramhall	566	459	926	499	1,376	549	1,593	725
Bredbury	120	90	120	90	120	90	169	126
Brinnington	40	15	130	25	220	35	227	38
Cheadle	181	233	181	233	181	233	248	318
Cheadle Hulme	50	476	181	490	631	540	638	608
Davenport, Stepping Hill & Great Moor	77	146	77	146	77	146	110	207
Edgeley& Cheadle Heath	69	358	69	358	69	358	90	464
Gatley	19	25	19	25	19	25	20	27
Hazel Grove	288	518	1,354	637	1,489	652	1,556	771
Heald Green	421	166	1,681	306	1,951	336	2,145	412
High Lane	23	6	743	86	923	106	927	107
Manor and Portwood	218	57	218	57	218	57	312	81
Marple	131	227	131	227	131	227	164	283
Mellor, Marple Bridge & Compstall	62	143	179	156	314	171	342	235
Offerton	47	31	348	65	438	75	451	83
Reddish	348	918	348	918	348	918	513	1,354
Romiley	88	183	313	208	403	218	437	289
Stockport Town Centre	392	8,312	392	8,312	392	8,312	542	11,481
The Heatons	181	154	181	154	181	154	259	219
Woodford	370	107	1,405	222	2,035	292	2,213	343
Woodley	52	55	209	72	299	82	316	100

Location	Approach 1		Approach 2		Approach 3		Approach 4	
	Houses	Apar'ts	Houses	Apar'ts	Houses	Apar'ts	Houses	Apar'ts
Total	3,783	12,717	9,246	13,324	11,856	13,614	13,317	18,320
	16,500		**22,570**		**25,470**		**31,637**	
% Local Housing Need	52%		71%		81%		100%	

3.1.4. A full breakdown of the alternative Local Plan housing approaches can be found in **Appendix A**.

3.1.5. Employment Approach 1 does not model specific sites, but the growth due to employment is spread across the Stockport models zones, informed by the National Trip End Model (NTEM 8) targets.

3.1.6. For the other employment approaches specific employment sites are modelled at a zonal level, along with background growth to align with NTEM 8 growth targets. Details on any site-specific allocations are not available at this stage of local plan strategy testing. Employment land use for each site was a combination of B2 and B8 split with a ratio of 10/90. The trips for an employment site were only distributed to/from the zone in which the development was located.

Table 3-3 – Employment Approaches

Location	Employment Approach 1		Employment Approach 2		Employment Approach 3	
	B2 (GFA sqm)	B8 (GFA sqm)	B2 (GFA sqm)	B8 (GFA sqm)	B2 (GFA sqm)	B8 (GFA sqm)
Heathside Park Road, Edgeley	-	-	3,200	28,800	3,200	28,800
Bredbury	-	-	7,500	67,500	7,500	67,500
Bramhall	-	-	-	-	1,800	16,200
Employment Total	**-**	**-**	**10,700**	**96,300**	**12,500**	**112,500**

OTHER DEVELOPMENTS

3.1.7. Outside of the Stockport local authority area there is the need to explicitly model all large scale committed developments. An Uncertainty Log has been developed based upon the A34 MRN forecasting work and updated with information provided by the Council during the previous Local Plan modelling exercise in 2022. The Uncertainty Log includes surrounding Local Authorities outside of Stockport including High Peak, Manchester, Trafford, Cheshire East and Tameside Councils.

3.1.8. Each development has been given a certainty of being built in accordance with DfT TAG. The number of housing units per site is given for residential developments, and the Gross Floor Area (GFA) in square metres is given for employment sites. The employment sites were assigned a land use type which was used for calculating trips generated. Most of the sites were B1, B2, B8 or a mix of the three, there was one site that had a land use of A2.

3.1.9. There were some employment sites in Cheshire East which had the site area stated instead of GFA. The GFA had to be calculated because it is used to determine number of trips. In order to do this an estimate of the ratio of site area to GFA had to be made. In Appendix F of the 'Yorkshire Forward

Report' there are estimates for how many sqm per hectare of a site is used for the desired land use. For the employment sites without a GFA, these estimates were used to calculate one using a percentage of desired land/hectare.

3.1.10. The estimates are shown below in **Figure 3-2** and **Figure 3-3**

Figure 3-2 - Table showing sqm used for desired land use per hectare of a Greenfield plot

	Sq m per hectare	Hectares	Count
B1	3,500	54	55
B2	3,200	30	23
B8	3,500	34	18
Mixed B2/B8	3,100	11	5
Mixed B1/2/8	3,900	15	5
All	3,500	169	106

Source: RTP

Figure 3-3 - Table showing sqm used for desire land use per hectare of a Brownfield plot

	Sq m per hectare	Hectares	Count
B1	6,000	50	94
B2	3,300	68	65
B8	4,000	45	49
Mixed B2/B8	4,900	5	4
Mixed B1/2/8	5,000	9	10
All	4,100	247	222

Source: RTP

3.1.11. The trips generated by each employment site were calculated using the Gross Floor Area of the site and an employment density or trip rate. However, the number of jobs created by each employment site was also needed to adjust the background growth factors.

3.1.12. Where the number of jobs was not given in the information in the Uncertainty Log, the employment densities, i.e. jobs per GFA, used were taken from the Homes & Communities Agency's 'Employment Density Guide 3rd Edition' shown in **Figure 3-4.**

3.1.13. The number of jobs created were summed up by local authority and used to adjust the TEMPro (NTEM 8) growth factors for background growth.

Figure 3-4 - Employment density table from Homes & Communities Agency 'Employment Density Guide 3rd Edition'

Use Class	Sub-Category	Sub-Sector	Density (sqm)	Notes
B1a Offices	General Office	Corporate	13	NIA
		Professional Services	12	NIA
		Public Sector	12	NIA
		TMT	11	NIA
		Finance & Insurance	10	NIA
	Call Centres		8	NIA
B1b	R&D Space		40-60	NIA lower densities will be achieved in units with higher provision of shared or communal spaces
B1c	Light Industrial		47	NIA
B2	Industrial & Manufacturing		36	GIA
B8	Storage & Distribution	National Distribution Centre	95	GEA
		Regional Distribution Centre	77	GEA
		'Final Mile' Distribution Centre	70	GEA
Mixed B Class	Small Business Workspace	Incubator	30-60	B1a, B1b – the density will relate to balance between spaces, as the share of B1a increases so too will employment densities.
		Maker Spaces	15-40	B1c, B2, B8 - Difference between 'planned space' density and utilisation due to membership model
		Studio	20-40	B1c, B8
		Co-Working	10-15	B1a - Difference between 'planned space' density and utilisation due to membership model
		Managed Workspace	12-47	B1a, b, c
B8 / Sui Generis	Data Centres	Wholesale	200-950	
		Wholesale Dark Site	440-1,400	
		Co-location Facility	180-540	
A1	Retail	High Street	15-20	NIA
		Foodstore	15-20	NIA
		Retail Warehouse	90	NIA
A2	Finance & Professional Services		16	NIA
A3	Restaurants & Cafes		15-20	NIA
C1	Hotels	Limited Service / Budget	1 per 5 beds	FTE per bed
		Mid-scale	1 per 3 beds	FTE per bed
		Upscale	1 per 2 beds	FTE per bed
		Luxury	1 per 1 bed	FTE per bed
D2	Fitness Centres	Budget	100	GIA
		Mid Market	65	GIA – both types tend to generate between 40-50 jobs per gym
		Family		
	Cinema		200	GIA
	Visitor & Cultural Attractions		30-300	The diversity of the cultural attraction sector means a very wide range exists
	Amusement & Entertainment Centres		70	Potential range of 20-100sqm

3.1.14. Committed developments (housing, employment and highway schemes) from the uncertainty log are included in **Appendix B**.

3.2 TRIP RATES

3.2.1. A technical note has been written about the methodology for deriving trips rates, *TN2 Stockport LP Development Trip Rates_v6*. A summary of the process is provided in this section.

3.2.2. The Places for Everyone modelling used person trip rates. The A34 modelling trip rates didn't include LGV or HGV trip rates. Therefore, neither were appropriate to use to assess the impacts of the Local Plan.

3.2.3. **Table 3-4** below shows the differences between the different sets of trip rates. The trip rates used in this project were taken from TRICS. These trip rates are given in **Table 3-5** to **Table 3-7** below.

Table 3-4 - Comparison between trip rate parameters

Parameter	Places for Everyone	A34 Modelling	Stockport Local Plan
Source	Unknown but based on Trafford Park Metrolink business case	TRICS 7.7.4	TRICS 7.8.4
Regions	unknown	England including Greater London	England without Greater London
Locations	Town Centre Everything except Town Centre	Town Centre Edge of Town Centre Suburban Area Edge of Town	Town Centre Everything except Town Centre
Mode of Trip Rates	Number of person trips	Vehicle trips	Vehicle trips
Type of Trip Rates	Average	Average and 85th percentile	Average
Days selected	unknown	Weekdays	Weekdays
Trip Rate Modes	Highway/Public Transport/Active	Car	Car/LGV/OGV
Time Period	Peak period	Peak hour	Peak hour
AM Period	7:00-10:00	8:00-9:00	8:00-9:00
IP Period	10:00-16:00	Average hour between 10:00-16:00	Average hour between 10:00-16:00
PM Period	16:00-19:00	17:00-18:00	17:00-18:00
Survey Types	Manual	Manual	Manual

Table 3-5 - Car trip rates from TRICS

Car		Arrival			Departure		
Land Use	Unit	AM	IP	PM	AM	IP	PM
B1a TC	100sqm GFA	0.411	0.100	0.029	0.026	0.123	0.381
B2 TC	100sqm GFA	0.217	0.386	0.253	0.253	0.313	0.398
Apartments Non-TC	Dwelling	0.047	0.062	0.147	0.162	0.064	0.069
House Non-TC	Dwelling	0.085	0.105	0.225	0.250	0.101	0.108
B1a Non-TC	100sqm GFA	1.247	0.233	0.110	0.107	0.287	1.095
B1c Non-TC	100sqm GFA	0.351	0.100	0.031	0.021	0.120	0.343
B2 Non-TC	100sqm GFA	0.134	0.057	0.036	0.028	0.065	0.144
B8 Non-TC	100sqm GFA	0.088	0.036	0.017	0.019	0.047	0.103

3.2.4. The car trip rates have been further disaggregated by trip purpose (business, commute and other) for application in the highway model. For the Stage 1 modelling this is a global factor based upon the overall matrix totals for the relevant time period.

Table 3-6 - LGV trip rates from TRICS

LGV		Arrival			Departure		
Land Use	Unit	AM	IP	PM	AM	IP	PM
B1a TC	100sqm GFA	0.016	0.007	0.008	0.016	0.007	0.009
B2 TC	100sqm GFA	0.145	0.392	0.144	0.180	0.374	0.434
Apartments Non-TC	Dwelling	0.008	0.010	0.007	0.009	0.011	0.004
House Non-TC	Dwelling	0.014	0.016	0.021	0.017	0.016	0.011
B1a Non-TC	100sqm GFA	0.037	0.029	0.011	0.032	0.029	0.017
B1c Non-TC	100sqm GFA	0.022	0.029	0.009	0.016	0.030	0.015
B2 Non-TC	100sqm GFA	0.034	0.029	0.010	0.030	0.029	0.020
B8 Non-TC	100sqm GFA	0.015	0.015	0.007	0.018	0.015	0.011

Table 3-7 - HGV trip rates from TRICS

HGV		Arrival			Departure		
Land Use	Unit	AM	IP	PM	AM	IP	PM
B1a TC	100sqm GFA	0.002	0.000	0.000	0.003	0.000	0.000
B2 TC	100sqm GFA	0.000	0.036	0.000	0.000	0.036	0.000
Apartments Non-TC	Dwelling	0.001	0.001	0.000	0.001	0.001	0.000
House Non-TC	Dwelling	0.002	0.002	0.001	0.002	0.002	0.001
B1a Non-TC	100sqm GFA	0.005	0.003	0.000	0.003	0.003	0.000
B1c Non-TC	100sqm GFA	0.023	0.020	0.009	0.015	0.019	0.007
B2 Non-TC	100sqm GFA	0.009	0.011	0.005	0.009	0.010	0.005
B8 Non-TC	100sqm GFA	0.044	0.039	0.039	0.049	0.039	0.030

3.2.5. An earlier local plan modelling project undertaken in 2022 applied a “town centre” trip rate for apartments in Stockport town centre. On review ahead of local plan modelling work in 2024, these trip rates were viewed to be unreliable due to the lack of surveys that informed the final values. As such the “non-town centre” apartment trip rates were applied to all apartment dwellings regardless of location.

3.3 TRIP GENERATION AND DISTRIBUTION

3.3.1. The trips per development site were calculated using trip rates in **Table 3-5** to **Table 3-7**. The trips were calculated for Car, LGV and HGV separately. The car trips needed to be split between user classes - UC1 commute, UC2 business and UC3 other. This was done by using the base year A34 matrix totals. The ratio of UC1, UC2 and UC3 was calculated using the matrix totals for those user classes, and the ratio of the split was applied to the car trips to give the trips per user class.

3.3.2. The trips generated from SLP residential plans are in **Table 3-8** below.

3.3.3. The trips generated by the residential sites outside of Stockport are listed in **Table 3-9** below.

3.3.4. The trips generated by the employment sites from the approaches are listed in **Table 3-10** below.

3.3.5. The trips from the employment sites outside of Stockport are listed in **Table 3-11** below.

Table 3-8 - Trips generated by the residential sites of Housing Approaches

	AM		IP		PM		Total Trips
	Arr	Dep	Arr	Dep	Arr	Dep	
Housing Approach 1	1,094	3,205	1,394	1,417	2,893	1,382	11,384
Housing Approach 2	1,680	4,779	2,110	2,113	4,336	2,082	17,099
Housing Approach 3	1,960	5,531	2,452	2,446	5,025	2,417	19,830
Housing Approach 4	2,371	6,733	2,975	2,977	6,111	2,935	24,103

Table 3-9 – Trips generated by each residential site outside Stockport

Site ID	Site Name	AM		IP		PM		Total Trips
		Arrival	Departure	Arrival	Departure	Arrival	Departure	
27	Little Stanneylands, Wilmslow	20	54	25	24	49	24	196
28	North Cheshire Garden Village, Handforth	152	404	185	179	371	180	1,469
29	Land between Clay Lane and Sagars Road, Handforth	25	67	31	30	62	30	245
30	Parkgate Extension, Knutsford	20	54	25	24	49	24	196
31	Royal London, Wilmslow	18	47	22	21	43	21	171
32	South Macclesfield Dev Area, Macclesfield	106	282	129	125	259	126	1,028
33	Land East of Manchester Road, Knutsford	25	67	31	30	62	30	245
34	Land South of Longridge, Knutsford	23	61	28	27	56	27	220
35	Land West of Manchester Road, Knutsford	8	20	9	9	19	9	73
36	Land at Congleton Road, Macclesfield	30	81	37	36	74	36	294
37	Land at Sprink Farm, Poynton	15	40	18	18	37	18	147
38	Land adjacent to Hazelbadge Road, Poynton	15	40	18	18	37	18	147
39	Land South of Chester Road, Poynton	15	40	18	18	37	18	147
40	Land North of Northwich Road, Knutsford	18	47	22	21	43	21	171
41	Heathfield Farm, Wilmslow	15	40	18	18	37	18	147

Site ID	Site Name	AM		IP		PM		Total Trips
		Arrival	Departure	Arrival	Departure	Arrival	Departure	
42	Land between Chelford Road and Whirley Road, Macclesfield	15	40	18	18	37	18	147
43	CS29 Alderley Park, Congleton Road, Nether Alderley, Macclesfield	28	74	34	33	68	33	269
44	Land East of Fence Avenue, Macclesfield	25	67	31	30	62	30	245
45	Central Macclesfield	51	135	62	60	124	60	490
46	Gaw End Lane, Macclesfield	30	81	37	36	74	36	294
47	Land South of Chelford Road, Macclesfield	20	54	25	24	49	24	196
48	Adderley Place, Glossop	13	35	16	15	32	16	127
49	Birch Vale IE, New Mills	10	27	12	12	25	12	98
50	Tongue Lane, Buxton	14	37	17	17	34	17	136
51	Harpur Hill Campus, Buxton	15	41	19	18	38	18	150
52	Land off Glossop Road, Gamesley, Glossop	16	42	19	19	39	19	153
53	Bridge Mills, Tintwistle	12	32	15	14	29	14	117
54	Charlestown Works, Glossop	127	338	155	150	310	151	1,231
55	Shaw Lane, Hadfield	11	30	14	13	28	14	111
56	Granby Road, Buxton	7	20	9	9	18	9	71
57	Waterswallows, Buxton	33	89	41	39	82	40	323
58	Hogshaw, Buxton	11	28	13	12	26	13	103
59	Forge Works, Chinley	18	49	22	22	45	22	178
60	Hallsteads, Dove Holes	10	27	13	12	25	12	100
61	Burlow Road, Buxton	28	74	34	33	68	33	269
62	Foxlow Farm, Buxton	40	106	49	47	98	47	387
63	Macclesfield Road / Ling Longs, Whaley Bridge	11	29	13	13	26	13	105
64	Roughfields, Glossop	10	27	13	12	25	12	100
65	Derby Road, New Mills	11	29	13	13	26	13	105
66	Ollersett Road, New Mills	24	64	29	28	59	29	234
67	Dukes Drive, Buxton	34	91	42	40	83	41	331
68	Oakwood Lodge Day Centre, Northenden	2	5	2	2	5	2	20
69	MEA School Fields, Woodhouse Park	15	40	18	17	36	18	144

Site ID	Site Name	AM		IP		PM		Total Trips
		Arrival	Departure	Arrival	Departure	Arrival	Departure	
70	Greenbrow Road / Wastdale Road sites, Baguley	9	24	11	11	22	11	89
71	Chorlton District Centre, Chorlton	35	94	43	42	86	42	343
72	Siemens / Elizabeth Slinger Road site, Chorlton Park	10	26	12	11	23	11	93
73	Former Laundry, Burnage Lane, Burnage	6	15	7	7	14	7	55
74	Sites at and adjacent to former Withington Hospital, West Didsbury	29	77	35	34	71	34	281
79	Former Robertson's Jam Factory, Fitzroy Street, Audenshaw	33	89	41	39	82	40	323
80	Former Hartshead High School, Greenhurst Road, Ashton-under-Lyne	20	52	24	23	48	23	191
81	Remainder of land between Hey Farm & Micklehurst Estate, Huddersfield Road, Mossley	18	48	22	21	44	21	173
82	Land at Lock Lane, Partington	56	148	68	65	136	66	538
83	Wharfside Strategic Location, Wharfside	170	452	207	200	415	202	1,645
84	L & M Site, Norman Road, Broadheath	16	44	20	19	40	19	159
85	Land bound by Bridgewater Way - Chester Road, Virgill Street and Princess Street	37	98	45	43	90	44	355
86	Trafford Wharf Road, Trafford Park	36	95	44	42	87	42	347
87	Land adjacent to Manchester Ship Canal, Partington	56	148	68	65	136	66	538
88	Pomona Docks, Pomona Island	53	141	65	63	130	63	515
89	Trafford Waters, Land between Manchester Ship Canal and Trafford Boulevard, Trafford Park	303	807	369	357	741	360	2,937
90	The Square, Town Square, Sale	20	54	25	24	50	24	198
91	Former Itron Site, Talbot Road, Stretford	28	76	35	34	70	34	276
92	Trafford Plaza, Seymour Grove, Old Trafford	18	47	21	21	43	21	170

Site ID	Site Name	AM		IP		PM		Total Trips
		Arrival	Departure	Arrival	Departure	Arrival	Departure	
93	Sale West Estate, Sale	27	71	32	31	65	32	257
94	391 Palatine Road, Northenden	24	63	29	28	58	28	229
95	Godley Green, Land Off Mottram Old Road, Hyde, SK14 3BE	217	578	264	256	531	258	2,105

Table 3-10 - Trips generated by Stockport approaches employment sites

	AM		IP		PM		Total Trips
	Arr	Dep	Arr	Dep	Arr	Dep	
Employment Approach 2	161	90	97	108	66	157	679
Employment Approach 3	188	105	113	127	77	183	793

Table 3-11 - Trips generated by all other employment sites

Site ID	Name	AM		IP		PM		Total Trips
		Arr	Dep	Arr	Dep	Arr	Dep	
1	Staden Lane, Buxton	11	1	2	3	1	10	28
2	Rossington Park, Hadfield	7	4	4	5	3	7	31
3	Nestle, Station Road, Buxton	0	0	0	0	0	0	0
4	Hogs Yard, Whaley Bridge	30	3	6	7	3	26	75
5	Morrisons extension, Buxton	28	23	45	44	39	41	219
6	Nestle Waters UK Ltd, Waterswallows Lane, Buxton	21	12	13	14	9	20	88
7	Airport City North - Land Off Ringway Road West and North of M56 Spur	1,462	161	301	362	137	1,261	3,685
8	Manchester Campus	18	11	11	13	8	18	79
9	Airport City South - Global Logistics Hub - A538 Sunbank Lane	230	135	141	158	99	225	988
10	Wythenshawe Hospital	754	83	155	187	71	651	1,900
11	Sharston Industrial Area, 69 Shentonfield Road, Sharston	2	1	1	1	1	2	9
12	Land South of Barton Bridge, Trafford Way, Trafford Park	25	15	15	17	11	24	107
13	Sawfield Nurseries, Fairy Lane, Sale	17	10	11	12	7	17	75

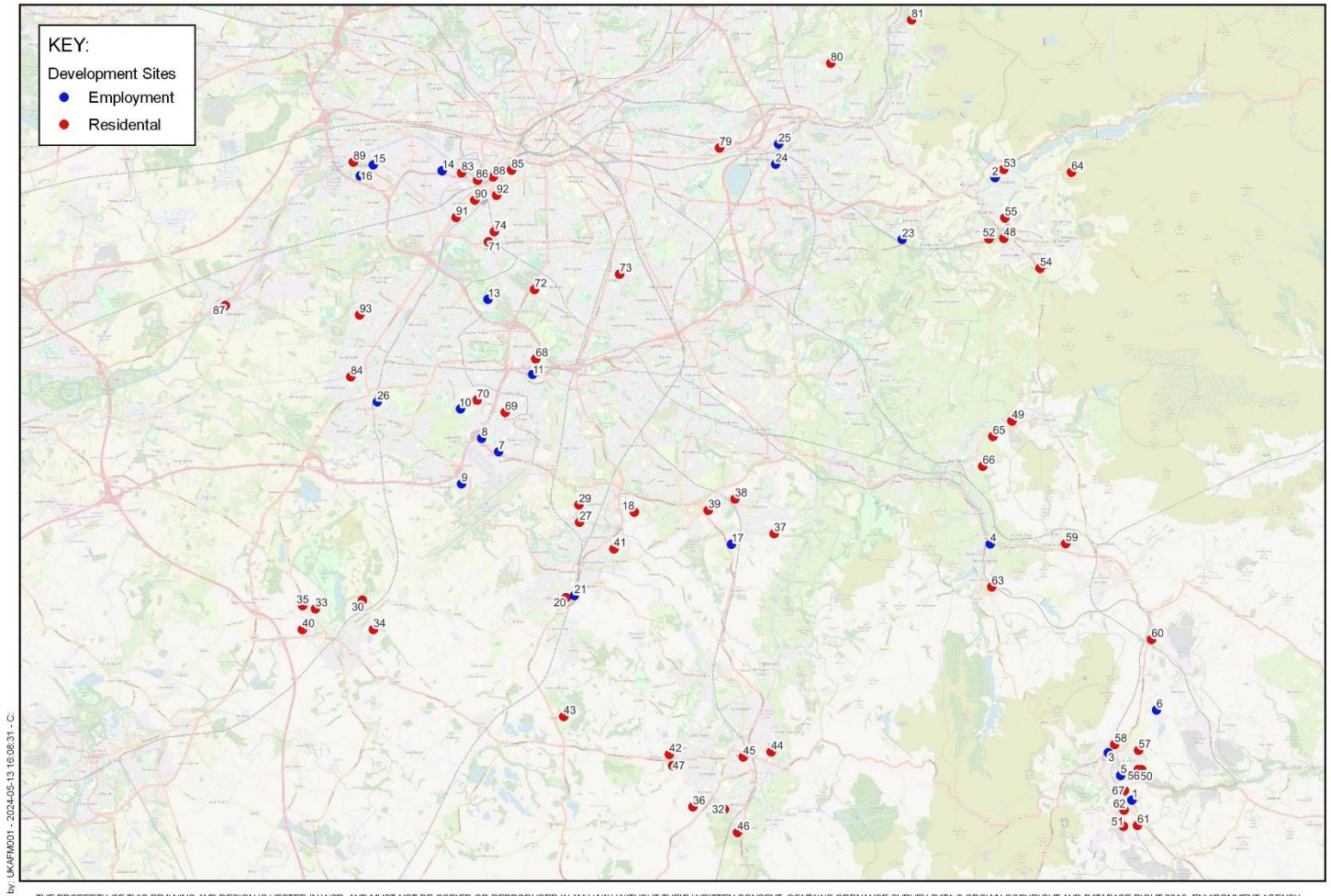
Site ID	Name	AM		IP		PM		Total Trips
		Arr	Dep	Arr	Dep	Arr	Dep	
14	F And G Commercials (Manchester) Limited, Trafford Park Road, Trafford Park	3	2	2	2	1	3	15
15	Evans Halshaw Commercials, Mosley Road, Trafford Park	111	20	31	36	16	98	313
16	Land between Manchester Ship Canal and Trafford Boulevard, Old Barton Road, Urmston	1,031	114	212	255	97	890	2,598
17	Adlington Business Park Extension, Poynton	29	11	13	15	8	27	103
18	North Cheshire Garden Village, Handforth	148	32	50	56	25	133	444
19	Parkgate Extension, Knutsford	32	15	19	21	11	31	130
20	Royal London, Wilmslow	177	19	36	44	17	152	445
21	Wilmslow Business Park, Wilmslow	235	30	53	63	25	204	610
22	South Macclesfield Dev Area, Macclesfield	90	16	25	29	13	79	252
23	Plot B, Hattersley Industrial Estate, Stockport Road, Longdendale	20	3	5	6	2	18	54
24	Shepley Industrial Estate Extension, Shepley Road, Audenshaw	54	8	13	16	6	47	145
25	Oxford Street Mills, Oxford Street East, Ashton-under-Lyne	37	5	9	11	4	32	98
26	Land at Oakfield Road / Moss Lane, Altrincham	16	2	4	5	1	15	44

3.3.7. The distribution of the development trips was calculated by using a number of parent zones. For Stockport residential options, the trips were assigned to the zones within the relevant housing sector. This was in proportion to the existing trips levels in the base year matrices. The distribution applied was a combination of all the zones that comprised the individual housing sector.

3.3.8. For residential and employment trips outside of Stockport the development trips were given the same distribution as the base year distribution from the zone in which they were located. However, in some cases where base year land use was not similar, e.g. forecast employment site in a residential zone, a nearby parent zone(s) of similar land use would be applied.

3.3.9. The location of the housing and employment sites outside of Stockport are given in **Figure 3-5** below.

Figure 3-5 - Residential and Employment Site Locations outside of Stockport



3.4 TRAFFIC FORECASTING

3.4.1. Development trip matrices were created in the trip generation and distribution stage. The demand matrices were created by merging the existing SSSM base year matrix and TEMPRO growth factors with the trips generated by new development sites along with the development trip distribution.

3.4.2. Growth factors for 2042 (from 2022 base) were derived from TEMPRO (using NTEM v8 dataset) at a local authority level. The growth factors were adjusted using the alternative planning function. For housing the assumption was that all the housing growth within Stockport came from the Local Plan so the 2042 housing inputs were set to 2022 values. The alternative planning assumptions for jobs in Stockport 2042 in TEMPRO was set to the 2042 level minus the number of jobs expected from the 'approach' employment sites.

3.4.3. The planning assumptions for High Peak, Cheshire East, Tameside, Trafford, and Manchester were altered based upon the number of residential units and jobs that were explicitly modelled.

3.4.4. The growth factors for LGV and HGV were derived from DfT 'National Road Transport Projections 2022, Core scenario 1' in 'Table 1 – Traffic'.

3.5 FORECAST NETWORK

3.5.1. The committed highway schemes that were included in 2042 are listed below in **Table 3-12**.

Table 3-12 - Committed highway schemes

Development Log	Scheme Name	Assumed Opening	Source of Coding
Places for Everyone Major Committed Highway Schemes	Manchester Airport Rainbow Works	2025	A34 MRN
Places for Everyone Major Committed Highway Schemes	Stockport Town Centre Access Plan	2025	Stockport TCAP Model
Places for Everyone Major Committed Highway Schemes	Mottram Moor Link and A57T-A57 Link	2025	NoHam Model
A34 OBC Uncertainty Log	Poynton Relief Road	2025	A6 M60 Model
A34 OBC Uncertainty Log	A523 Junction Improvements	2025	A6 M60 Model
A34 OBC Uncertainty Log	A34 Coppice Way	2025	A34 MRN
A34 OBC Uncertainty Log	A34 Dumbell Improvements	2025	A34 MRN
A34 OBC Uncertainty Log	Heald Green - Land off Wilmslow Road	2025	A34 MRN
A34 OBC Uncertainty Log	Roscoe's Roundabout	2025	A34 MRN

3.5.2. For the rest of the model no changes were made to the signal timings and no mitigations were modelled for developments.

4 MODEL OUTPUTS

4.1 OVERVIEW

4.1.1. The completed forecast matrices were assigned to the forecast networks. Each forecast approach had AM peak, inter peak and PM peak model assignment. The model performance can be compared by exporting statistics from the completed SATURN model assignments. In order to highlight any differences between the options, only statistics for the Stockport Local Authority area are presented.

4.2 TRAVEL TIME, TRAVEL DISTANCE AND NETWORK SPEED

4.2.1. Three key indicators of model performance are travel time, travel distance and network speed. These are link based network statistics. Travel time is the total time taken by all vehicles (pcus) on links in Stockport and is calculated in pcu-hrs. Travel distance the total distance taken by all vehicles (pcus) on links in Stockport and is calculated in pcu-km. Network speed is calculated by dividing total travel time by total travel distance.

4.2.2. The travel time, travel distance and network speed for Stockport by modelled time period are presented in **Table 4-1** to **Table 4-3** below. A comparison to the 2022 base year values is also provided.

Table 4-1 – AM peak model statistics

Scenario	Travel Time (PCUhrs)		Travel Distance (PCUkms)		Speed (km/hr)	
2022 Base	10,297	0.0%	358,188	0.0%	34.8	0.0%
Test Scenario 1: HA1 / EA1	14,510	40.9%	446,057	24.5%	30.7	-11.6%
Test Scenario 2: HA2 / EA2	15,177	47.4%	453,665	26.7%	29.9	-14.1%
Test Scenario 3: HA3 / EA3	16,092	56.3%	462,768	29.2%	28.8	-17.3%
Test Scenario 4: HA4 / EA3	16,631	61.5%	467,963	30.6%	28.1	-19.1%

Table 4-2 – Inter peak model statistics

Scenario	Travel Time (PCUhrs)		Travel Distance (PCUkms)		Speed (km/hr)	
2022 Base	7,599	0.0%	303,950	0.0%	21.6	0.0%
Test Scenario 1: HA1 / EA1	9,977	31.3%	370,313	21.8%	19.6	-9.3%
Test Scenario 2: HA2 / EA2	10,280	35.3%	377,701	24.3%	19.5	-9.6%
Test Scenario 3: HA3 / EA3	10,786	41.9%	388,266	27.7%	19.3	-10.7%
Test Scenario 4: HA4 / EA3	11,043	45.3%	392,697	29.2%	18.8	-13.1%

Table 4-3 – PM peak model statistics

Scenario	Travel Time (PCUhrs)		Travel Distance (PCUkms)		Speed (km/hr)	
2022 Base	10,392	0.0%	355,692	0.0%	56.1	0.0%
Test Scenario 1: HA1 / EA1	14,177	36.4%	432,373	21.6%	49.4	-11.9%
Test Scenario 2: HA2 / EA2	14,814	42.5%	441,413	24.1%	49.1	-12.5%
Test Scenario 3: HA3 / EA3	15,759	51.6%	454,039	27.6%	48.4	-13.7%
Test Scenario 4: HA4 / EA3	16,242	56.3%	459,450	29.2%	48.1	-14.2%

4.2.3. The model outputs presented above show the change in predicted travel times, travel distance and network speeds from the base year of 2022 to the forecast modelled year of 2042. There is no mitigation modelled at this stage. The network is relatively unchanged from the base year in Stockport.

4.2.4. The increases in travel time and reductions in network speed are greater in the AM and PM peak hours than the inter peak period, reflecting the greater congestion in those time periods. The increase in travel distance is similar between all time periods indicating that routeing is stable.

4.3 JOURNEY TIMES

4.3.1. A further way of comparing the approaches is to examine end to end travel times on selected journey routes. Average speeds along each route have also been calculated and compared. There are 13 journey time routes which are based on the most significant routes around Stockport. The 13 routes are shown in **Figure 4-1**.

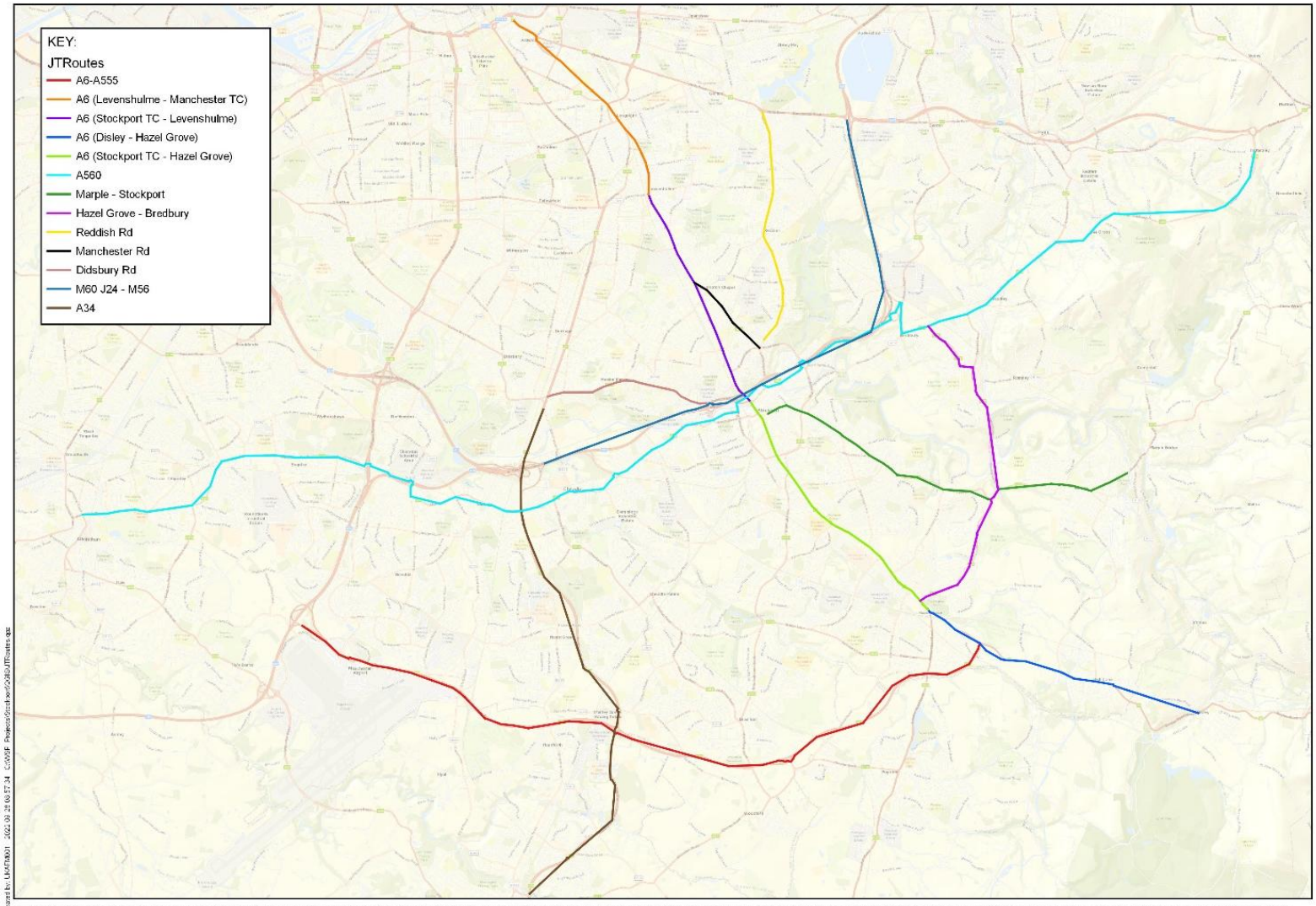
4.3.2. Journey times have been compared to the base year for three of these thirteen routes in **Table 4-4**. Only the AM and PM peak hour journey times are given. The direction of travel of each route has been selected to represent the tidality of flow. The routes chosen are:

- A6 – Stockport town centre to / from Hazel Grove;
- A34 – Wilmslow to / from East Didsbury; and
- A555 – Manchester airport to / from Hazel Grove

Table 4-4 – Journey times on selected routes

Scenario	A6 AM NB (mm:ss)	A6 PM SB (mm:ss)	A34 AM NB (mm:ss)	A34 PM SB (mm:ss)	A555 AM WB (mm:ss)	A555 PM EB (mm:ss)
2022 Base	17:50	17:35	13:35	13:06	16:46	18:21
Test Scenario 1: HA1 / EA1	+5:28	+3:53	+2:49	+3:23	+1:07	+1:49
Test Scenario 2: HA2 / EA2	+6:50	+4:43	+3:13	+3:59	+1:53	+2:40
Test Scenario 3: HA3 / EA3	+7:53	+5:52	+3:56	+4:44	+2:47	+3:56
Test Scenario 4: HA4 / EA3	+8:15	+6:10	+4:24	+4:53	+3:13	+4:26

Figure 4-1 - Stockport Journey Time Routes



4.3.3. As expected, the results of the journey routes presented show that the combination of Housing Approach 4 and Employment Approach 3 produces the greatest increase in journey times compared to the base. A full set of journey times and speeds for each route by time period and direction are included in **Appendix C**.

4.4 LINK FLOWS

4.4.1. The AADT was compared across options key selected links. The AADT comparison is below in **Table 4-5** and **Figure 4-2** shows the link locations.

Table 4-5 – Daily Flows on selected links

Scenario	A6 Stepping Hill	A34 Kingsway	A5102 Bramhall Ln South	A626 Hall Street	A5145 Didsbury Road	A560 Cheadle
2022 Base	38,600	52,400	14,300	16,000	9,800	14,800
Test Scenario 1: HA1 / EA1	+9.1%	+24.8%	+40.6%	+19.4%	+18.4%	+21.6%
Test Scenario 2: HA2 / EA2	+10.9%	+27.3%	+49.0%	+21.3%	+18.4%	+23.6%
Test Scenario 3: HA3 / EA3	+13.0%	+30.9%	+60.8%	+24.4%	+20.4%	+29.1%
Test Scenario 4: HA4 / EA3	+13.5%	+31.7%	+65.0%	+26.9%	+22.4%	+31.8%

Figure 4-2 - Map showing the location of Selected Links (as per Table 4-5)

5 CARBON EMISSIONS

5.1 OVERVIEW

5.1.1. This section sets out the process for calculating the forecast carbon emitted by vehicles in Stockport. Using data outputted from the SATURN forecast models the carbon emissions can be estimated.

5.1.2. To calculate the carbon emissions for each modelled approach the time spent travelling (vehicle hours, Vhrs), distance travelled (vehicle kilometres, Vkms) and speed (kph) were extracted from the forecast models. The carbon emissions were calculated based upon fleet composition factors, i.e., the proportion of cars, LGV & HGV vehicle kilometres using petrol, diesel or electricity, fuel consumption rates and CO_2 emission rates per litre of fuel consumed.

5.1.3. The base model was 2022 with the Housing and Employment Approaches assessed in a 2042 forecast year. The fleet compositions between diesel, petrol and electric vehicles will change between 2022 and 2042 with an increasing proportion of electric vehicles. This is reflected in the fleet composition factors (TAG Table A 1.3.9). The factors for the emission calculations came from the DfT TAG data book v2.01, May 2025. The fleet mix came from Table A 1.3.9, energy consumption factors came from Table A 1.3.11 and the emission factors per litre of fuel came from Table A 3.3.

5.1.4. Three different methods were used to calculate the carbon emissions:

- **Link-based data** provides emissions by road type (SRN / Non-SRN), vehicle type and Stockport sector.
- **Cordon data** provides the emissions by trip type (internal, external, through and inbound); and
- **Trip length distribution data** gives the emissions by trip length (0-3 miles, 3-10 miles and >10miles).

5.2 LINK BASED DATA

5.2.1. Link based data was analysed by allocating links to a sector and road type (SRN or non-SRN). The sector was determined by the location of the B-node of the link. The links were then defined as 'motorway' (SRN) or 'other road' (non-SRN). This was done by loading the network in QGIS and then filtering to only select links with a speed over 100kph and more than 2 lanes. This selected the majority of the SRN. A manual check was carried out to correct any SRN links that had been wrongly assigned as a non-SRN link.

5.2.2. Flow and speed data were exported from the base and forecast models for selected links (i.e., Stockport links) and the Annual Average Daily Traffic (AADT) was calculated for each vehicle type (Car, LGV, HGV).

5.2.3. The AADT was calculated by combining the three modelled times periods, AM peak, inter peak, and PM peak, with conversion factors. The factors for AADT conversion were taken from the A34 MRN forecasting work. The factors are provided below in **Table 5-1** to **Table 5-4**.

Table 5-1 - Factors used for Rigid and Articulated OGV split

OGV to Rigid/ Articulated HGV Factors	Motorways		Other Roads	
	Rigid HGV	Articulated HGV	Rigid HGV	Articulated HGV
AM Peak Hour	0.399	0.601	0.709	0.291
Inter-Peak Hour	0.397	0.603	0.719	0.281
PM Peak Hour	0.299	0.701	0.569	0.431

Table 5-2 - Factors used for peak hour to peak period conversion

Hour to Period Factors	Motorways			Other Roads		
	AM Peak Hour to AM Peak Period	Inter-Peak Hour to Off-Peak Period	PM Peak Hour to PM Peak Period	AM Peak Hour to AM Peak Period	Inter-Peak Hour to Off-Peak Period	PM Peak Hour to PM Peak Period
Cars/Motorcycles	2.826	10.063	2.952	2.764	9.736	2.825
LGVs	3.032	10.063	3.151	3.141	9.736	3.155
Rigid HGVs	3.038	10.063	3.373	3.034	9.736	3.733
Articulated HGVs	3.061	10.063	3.282	2.975	9.736	2.937
Buses	3.550	10.063	3.234	2.934	9.736	3.073

Table 5-3 - Factors used to convert weekday flow to Saturday, Sunday, or Bank Holidays

Off-Peak Period Factors	Motorways	Other Roads
Weekday Off-Peak to Saturday	1.341	1.447
Weekday Off-Peak to Sunday	1.236	1.223
Weekday Off-Peak to Bank Holiday Off-Peak	1.236	1.223

Table 5-4 - Factors used to annualise 24hr flow

Day Factors	
Average Weekday - Annual Weekdays	253
Saturday - Annual Saturdays	52
Sunday - Annual Sundays	52
Bank Holiday - Annual Bank Holidays	8

5.2.4. Following conversion to AADT the total vehicle kilometres (Vkms) was calculated for each link by multiplying by the link distance. Total vehicle hours (Vhrs) were calculated by dividing distance (Vkms) by the speed. The total Vhrs and Vkms were summed up by sector, speed was then recalculated by dividing Vkms by Vhrs.

5.2.5. The total Vkms and Vhrs for Stockport (i.e. sum of the sectors) were then adjusted to DfT annual values for Stockport Local Authority Road network. Adjusting to DfT annual values was necessary because the model doesn't cover every road in the network or capture every vehicle movement. Factoring to DfT values ensures Carbon projections are in keeping with current approved data.

5.3 CORDON DATA

5.3.1. A cordon around Stockport Local Authority boundary was created in SATURN. This produced both cordon network and cordon demand matrices. The cordon demand was assigned onto the cordon network and distance and time skim matrices were produced.

5.3.2. Combining the demand, distance and time matrices allowed Vkms, and Vhrs to be calculated on a model basis (as opposed to a link by link basis described above). This was disaggregated by vehicle type, trip purpose, and trip origin and destination, i.e. internal, inbound, outbound or through.

5.3.3. These output Vkms and Vhrs were then converted to annual values using the factors given above in **Table 5-1** to **Table 5-4**. In the Cordon calculations every link is assumed to be 'Other Road', i.e., non-SRN, and the OGVs are all assumed to be Rigid HGVs meaning there are no AADT factors for Articulated HGVs.

5.3.4. The Vkm and Vhrs were then adjusted to DfT annual values for Stockport Local Authority Road network.

5.4 TRIP LENGTH DATA

5.4.1. Carbon emissions were calculated by trip length in Stockport. Distance skim matrices were extracted from the SATURN assignments. Trip Length Distribution (TLD) analysis was completed on the distance skim matrices and existing demand matrices for internal, inbound and outbound trips. The through trip data came from the cordon data.

5.4.2. The output from this analysis was distance travelled by vehicles in each distance band (0-3 miles, 3-10 miles and >10 miles) split by user class. Using the outputs, the AADT was then calculated for internal trips and adjusted to DfT values.

5.4.3. Outbound and Inbound trips needed to be capped at the Stockport Boundary because only the Stockport network was being assessed.

5.4.4. For Inbound trips it was assumed that only 50% of a trip would be in the Stockport Network. The inbound and outbound trips were balanced because it was expected that over a 24-hour period the total trips inbound would equal the outbound trips.

5.4.5. Speeds are needed for an input into the carbon emission calculations, and the speeds came from the Cordon data.

5.4.6. Total Vkms and Vhrs were summed up for each trip type and then vehicle trip.

5.5 CARBON OUTPUTS

5.5.1. The carbon outputs are given in annual kilograms of "Carbon dioxide equivalent" or "CO_2e". This is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.

LINK BASED CARBON

5.5.2. The total Carbon emissions for each link in Stockport is given in **Table 5-5.** The emissions are disaggregated by SRN / non-SRN and vehicle type. The change from the 2022 base year is given.

Table 5-5 – Comparison to base carbon emissions

Scenario	Total Vehicles Emissions ($kgCO_2e$)	Total SRN Emissions ($kgCO_2e$)	Total Non-SRN Emissions ($kgCO_2e$)	Total Cars Emissions ($kgCO_2e$)	Total LGVs Emissions ($kgCO_2e$)	Total HGVs Emissions ($kgCO_2e$)
2022 Base	333,652,540	84,427,461	249,225,079	240,236,406	61,553,392	31,862,742
Test Scenario 1: HA1 / EA1	-65.2%	-63.9%	-65.6%	-72.8%	-59.8%	-18.0%
Test Scenario 2: HA2 / EA2	-64.3%	-63.7%	-64.5%	-72.1%	-58.8%	-16.1%
Test Scenario 3: HA3 / EA3	-63.3%	-63.5%	-63.2%	-70.9%	-58.3%	-15.1%
Test Scenario 4: HA4 / EA3	-62.8%	-63.3%	-62.7%	-70.4%	-58.1%	-14.7%

5.5.3. The proportion of emissions by SRN / non-SRN link, and by vehicle type is presented in **Table 5-6** below.

Table 5-6 – Carbon emissions composition

Scenario	Total Vehicles CO_2e Emissions	Total SRN CO_2e Emissions	Total Non-SRN CO_2e Emissions	Total Cars CO_2e Emissions	Total LGVs CO_2e Emissions	Total HGVs CO_2e Emissions
2022 Base	100.0%	25.3%	74.7%	72.0%	18.4%	9.5%
Test Scenario 1: HA1 / EA1	100.0%	26.2%	73.8%	56.2%	21.3%	22.5%
Test Scenario 2: HA2 / EA2	100.0%	25.7%	74.3%	56.3%	21.3%	22.5%
Test Scenario 3: HA3 / EA3	100.0%	25.2%	74.8%	57.0%	20.9%	22.1%
Test Scenario 4: HA4 / EA3	100.0%	25.0%	75.0%	57.3%	20.8%	21.9%

TRIP LENGTH AND CORDON CARBON

5.5.4. Carbon emission by trip length have been calculated for the following trip lengths: 0-3 miles, 3-10 miles and >10 miles. Carbon emissions have also been calculated for internal trips in Stockport, trips to / from Stockport and trips that pas through Stockport. The proportions of the overall Carbon emissions are given in **Table 5-7** below.

Table 5-7 - Trip Length and Cordon Carbon Emissions

Scenario	< 3 Miles CO_2e Emissions	3 to 10 Miles CO_2e Emissions	> 10 Miles CO_2e Emissions	Intra Trips CO_2e Emissions	To/From Trips CO_2e Emissions	Through Trips CO_2e Emissions
2022 Base	10.8%	24.2%	65.0%	23.4%	47.3%	29.2%
Test Scenario 1: HA1 / EA1	10.1%	22.2%	67.6%	21.9%	46.4%	31.7%
Test Scenario 2: HA2 / EA2	9.9%	22.7%	67.4%	22.4%	46.5%	31.0%
Test Scenario 3: HA3 / EA3	10.2%	23.1%	66.7%	23.0%	46.6%	30.4%
Test Scenario 4: HA4 / EA3	10.3%	23.4%	66.3%	23.4%	46.8%	29.9%

5.5.5. The full set of carbon emissions can be found in **Appendix D**.

6 SUMMARY

6.1 OVERVIEW OF WORK

6.1.1. WSP to assess the highway impact of several Local Plan test scenarios. The Local Plan Regulation 18 traffic modelling comprises four test scenarios comprising different levels of housing and employment. Each test scenario has a different mix of housing and employment demand.

6.1.2. All assessments were informed by outputs from the Stockport Strategic SATURN Model which was developed from the TfGM Greater Manchester GM SATURN Model. The base year of the model was 2022 and all modelling assessments were undertaken for a forecast year of 2042.

6.1.3. Committed land use developments of a significant scale outside of Stockport were included in the forecasting along with all committed highway schemes. Stockport land use developments were modelled at a zonal level, rather than at site specific locations. As such no mitigation was modelled to accommodate the development traffic.

6.1.4. A summary of each modelled test scenario is provided in the following sections.

6.2 LOCAL PLAN REGULATION 18 TEST MODELLING SCENARIOS

TEST SCENARIO 1 SUMMARY: HA1 (BASELINE) PLUS EA1

Housing and employment provision

- 2042 baseline of 16,500 new homes including an additional 2,000 homes in the town centre, and 770 homes spread across the district centres. This equates to 52% of the local housing need target. Employment needs met with no green belt release.

Traffic conditions

- Compared to base year conditions, there is predicted to be an increase of 20% in the total distance travelled on all roads across the borough in the evening peak with a corresponding increase of 36% in travel time, while average speeds are predicted to reduce by circa 2mph (from 21mph to 19mph). Average speeds in the inter-peak are predicted to be 23mph.

Carbon

- Compared to base year conditions, carbon dioxide equivalent emissions from road are predicted to fall by 65.2% from 2022 to 2042, with traffic on the SRN contributing to 26.2% of the total CO_2e emissions. Across all roads in the borough:
  - Cars are predicted to contribute to 56.2% of total CO_2e emissions from road, with LGVs 21.3%, and HGVs 22.5%
  - Journeys less than 3 miles are predicted to contribute to 10.1% of total CO_2e emissions from road, with 3 to 10 miles 22.2%, and greater than 10 miles 67.6%
  - Journeys made wholly within the borough are predicted to contribute to 21.9% of the total CO_2e emissions from road, with journeys to/from the borough 46.4%, and throughs trips 31.7%

Journey routes

- Compared to base year conditions, journeys on the A6 between Hazel Grove and the Town Centre are predicted to take just over 5 mins 30 secs longer northbound in the morning peak, and 3 mins 55 secs longer for the return journey in the evening peak. Journeys on the A34 between Wilmslow and East Didsbury are predicted to take 2 mins 50 secs longer northbound in the morning peak and 3 mins 25 secs longer for the return journey in the evening peak. Journeys on the A555 between Manchester Airport and A6 Hazel Grove are predicted to take 1 min 10 secs longer westbound in the morning peak and 1 min 50 secs longer for the return journey in the evening peak.

Traffic flows

- Compared to base year conditions, predicted traffic flow increases across the borough vary, due to the spatial distribution of future housing allocation, and the ability of the network to accommodate more traffic. Daily traffic levels on the A6 (Stepping Hill) are predicted to increase by 9%, which compares to increases of 25% on A34 Kingsway, 41% on A5102 Bramhall South, 19% on A626 Hall Street, 18% on A5135 Didsbury Road, and 22% on A560 (Cheadle).

TEST SCENARIO 2 SUMMARY: HA2 PLUS EA2

Housing and employment provision

- 22,570 new homes including 6,070 new homes on grey / greenbelt land equating to 71% of the local housing need target, plus 107,000 sqm of B2/B8, with allocations at Heathside Park Road (32,000 sqm) and Bredbury (75,000 sqm).

Traffic conditions

- Compared to base year conditions, there is predicted to be an increase of 22% in the total distance travelled on all roads across the borough in the evening peak with a corresponding increase of 42% in travel time, while average speeds are predicted to reduce by circa 3mph (from 21mph to 18mph). Average speeds in the inter-peak are predicted to be 23mph.

Carbon

- Compared to base year conditions, carbon dioxide equivalent emissions from road are predicted to fall by 64.3% from 2022 to 2042, with traffic on the SRN contributing to 25.7% of the total CO_2e emissions. Across all roads in the borough:
  - Cars are predicted to contribute to 56.3% of total CO2e emissions from road, with LGVs 21.3%, and HGVs 22.5%
  - Journeys less than 3 miles are predicted to contribute to 9.9% of total CO_2e emissions from road, with 3 to 10 miles 22.7%, and greater than 10 miles 67.4%
  - Journeys made wholly within the borough are predicted to contribute to 22.4% of the total CO_2e emissions from road, with journeys to/from the borough 46.5%, and throughs trips 31.0%

Journey routes

- Compared to base year conditions, journeys on the A6 between Hazel Grove and the Town Centre are predicted to take 6 mins 50 secs longer northbound in the morning peak, and 4 mins 45 secs longer for the return journey in the evening peak. Journeys on the A34 between Wilmslow and East Didsbury are predicted to take 3 mins 15 secs longer northbound in the morning peak and 4 mins longer for the return journey in the evening peak. Journeys on the A555 between Manchester Airport and A6 Hazel Grove are predicted to take 1 min 55 secs longer westbound in the morning peak and 2 mins 40 secs longer for the return journey in the evening peak.

Traffic flows

- Compared to base year conditions, predicted traffic flow increases across the borough vary, due to the spatial distribution of future housing allocation, and the ability of the network to accommodate more traffic. Daily traffic levels on the A6 (Stepping Hill) are predicted to increase by 11%, which compares to increases of 27% on A34 Kingsway, 49% on A5102 Bramhall South, 21% on A626 Hall Street, 18% on A5135 Didsbury Road, and 24% on A560 (Cheadle).

TEST SCENARIO 3 SUMMARY: HA3 PLUS EA3

Housing and employment provision

- 24,470 new homes including 8,970 new homes on grey / greenbelt land equating to 81% of the local housing need target, plus 125,000 sqm of B2/B8, with allocations at Heathside Park Road (32,000 sqm), Bredbury (75,000 sqm) and Bramhall (18,000 sqm).

Traffic conditions

- Compared to base year conditions, there is predicted to be an increase of 26% in the total distance travelled on all roads across the borough in the evening peak with a corresponding increase of 51% in travel time, while average speeds are predicted to reduce by circa 3mph (from 21mph to 18mph). Average speeds in the inter-peak are predicted to be 22mph.

Carbon

- Compared to base year conditions, carbon dioxide equivalent emissions from road are predicted to fall by 63.6% from 2022 to 2042, with traffic on the SRN contributing to 25.2% of the total CO_2e emissions. Across all roads in the borough:
  - Cars are predicted to contribute to 57.0% of total CO_2e emissions from road, with LGVs 20.9%, and HGVs 22.1%
  - Journeys less than 3 miles are predicted to contribute to 10.6% of total CO_2e emissions from road, with 3 to 10 miles 24.3%, and greater than 10 miles 65.2%
  - Journeys made wholly within the borough are predicted to contribute to 23.0% of the total CO_2e emissions from road, with journeys to/from the borough 46.6%, and throughs trips 30.4%

Journey routes

- Compared to base year conditions, journeys on the A6 between Hazel Grove and the Town Centre are predicted to take 7 mins 55 secs longer northbound in the morning peak, and 5 mins 50 secs longer for the return journey in the evening peak. Journeys on the A34 between Wilmslow and East Didsbury are predicted to take 3 mins 55 secs longer northbound in the morning peak and 4 mins 45 secs longer for the return journey in the evening peak. Journeys on the A555 between Manchester Airport and A6 Hazel Grove are predicted to take 2 mins 45 secs longer westbound in the morning peak and 3 mins 55 secs longer for the return journey in the evening peak.

Traffic flows

- Compared to base year conditions, predicted traffic flow increases across the borough vary, due to the spatial distribution of future housing allocation, and the ability of the network to accommodate more traffic. Daily traffic levels on the A6 (Stepping Hill) are predicted to increase by 13%, which compares to increases of 31% on A34 Kingsway, 61% on A5102 Bramhall South, 24% on A626 Hall Street, 20% on A5135 Didsbury Road, and 29% on A560 (Cheadle).

TEST SCENARIO 4 SUMMARY: HA4 PLUS EA3

Housing and employment provision

- 31,637 new homes including 8,970 new homes on grey / greenbelt land, and a further 6,167 new homes on other sites equating to 100% of the local housing need target, plus 125,000 sqm of B2/B8, with allocations at Heathside Park Road (32,000 sqm), Bredbury (75,000 sqm) and Bramhall (18,000 sqm).

Traffic conditions

- Compared to base year conditions, there is predicted to be an increase of 27% in the total distance travelled on all roads across the borough in the evening peak with a corresponding increase of 56% in travel time, while average speeds are predicted to reduce by circa 4mph (from 21mph to 17mph). Average speeds in the inter-peak are predicted to be 22mph.

Carbon

- Compared to base year conditions, carbon dioxide equivalent emissions from road are predicted to fall by 62.8% from 2022 to 2042, with traffic on the SRN contributing to 25.0% of the total CO_2e emissions. Across all roads in the borough:
  - Cars are predicted to contribute to 57.3% of total CO_2e emissions from road, with LGVs 20.8%, and HGVs 21.9%
  - Journeys less than 3 miles are predicted to contribute to 10.3% of total CO_2e emissions from road, with 3 to 10 miles 23.4%, and greater than 10 miles 66.3%
  - Journeys made wholly within the borough are predicted to contribute to 23.4% of the total CO_2e emissions from road, with journeys to/from the borough 46.8%, and throughs trips 29.9%

Journey routes

- Compared to base year conditions, journeys on the A6 between Hazel Grove and the Town Centre are predicted to take 8 mins 15 secs longer northbound in the morning peak, and 6 mins 10 secs longer for the return journey in the evening peak. Journeys on the A34 between Wilmslow and East Didsbury are predicted to take 4 mins 25 secs longer northbound in the morning peak and 4 mins 55 secs longer for the return journey in the evening peak. Journeys on the A555 between Manchester Airport and A6 Hazel Grove are predicted to take 3 mins 15 secs longer westbound in the morning peak and 4 mins 25 secs longer for the return journey in the evening peak.

Traffic flows

- Compared to base year conditions, predicted traffic flow increases across the borough vary, due to the spatial distribution of future housing allocation, and the ability of the network to accommodate more traffic. Daily traffic levels on the A6 (Stepping Hill) are predicted to increase by 14%, which compares to increases of 32% on A34 Kingsway, 65% on A5102 Bramhall South, 27% on A626 Hall Street, 22% on A5135 Didsbury Road, and 32% on A560 (Cheadle).

Appendix A

STOCKPORT DEVELOPMENTS

Table A-1 – SLP Reg 18 Allocation Breakdown Test Scenario 1 (Housing Approach 1)

Location	Land Supply + Small Sites + Rail Stations		Town Centre Additional		District Centre Additional		Grey Green Belt Additional		Total	
	H	A	H	A	H	A	H	A	H	A
Adswood	38	38							38	38
Bramhall	514	417			52	42			566	459
Bredbury	120	90							120	90
Brinnington	40	15							40	15
Cheadle	157	201			25	32			181	233
Cheadle Hulme	36	340			14	136			50	476
Davenport, Stepping Hill and Great Moor	77	146							77	146
Edgeley and Cheadle Heath	48	247			21	111			69	358
Gatley	19	25							19	25
Hazel Grove	203	366			84	152			288	518
Heald Green	421	166							421	166
High Lane	23	6							23	6
Manor and Portwood	218	57							218	57
Marple	111	192			20	35			131	227
Mellor, Marple Bridge and Compstall	62	143							62	143
Offerton	47	31							47	31
Reddish	342	901			7	17			348	918
Romiley	81	169			7	14			88	183
Stockport Town Centre	302	6,402	90	1,910					392	8,312
The Heatons	181	154							181	154
Woodford	370	107							370	107
Woodley	52	55							52	55
Total	**3,462**	**10,268**	**90**	**1,910**	**231**	**539**			**3,783**	**12,717**
	13,730		**2,000**		**770**				**16,500**	

Table A-2 - SLP Reg 18 Allocation Breakdown Test Scenario 2 (Housing Approach 2)

Location	Land Supply + Small Sites + Rail Stations		Town Centre Additional		District Centre Additional		Grey / Green Belt Additional		Total	
	H	A	H	A	H	A	H	A	H	A
Adswood	38	38							38	38
Bramhall	514	417			52	42	360	40	926	499
Bredbury	120	90							120	90
Brinnington	40	15					90	10	130	25
Cheadle	157	201			25	32			181	233
Cheadle Hulme	36	340			14	136	131	15	181	490
Davenport, Stepping Hill and Great Moor	77	146							77	146
Edgeley and Cheadle Heath	48	247			21	111			69	358
Gatley	19	25							19	25
Hazel Grove	203	366			84	152	1,067	119	1,354	637
Heald Green	421	166					1,260	140	1,681	306
High Lane	23	6					720	80	743	86
Manor and Portwood	218	57							218	57
Marple	111	192			20	35			131	227
Mellor, Marple Bridge and Compstall	62	143					117	13	179	156
Offerton	47	31					302	34	348	65
Reddish	342	901			7	17			348	918
Romiley	81	169			7	14	225	25	313	208
Stockport Town Centre	302	6,402	90	1,910					392	8,312
The Heatons	181	154							181	154
Woodford	370	107					1,035	115	1,405	222
Woodley	52	55					158	18	209	72
Total	**3,462**	**10,268**	**90**	**1,910**	**231**	**539**	**5,463**	**607**	**9,246**	**13,324**
	13,730		**2,000**		**770**		**6,070**		**22,570**	

Table A-3 – SLP Reg 18 Allocation Breakdown Test Scenario 3 (Housing Approach 3)

Location	Land Supply + Small Sites + Rail Stations		Town Centre Additional		District Centre Additional		Grey / Green Belt Additional		Total	
	H	A	H	A	H	A	H	A	H	A
Adswood	38	38							38	38
Bramhall	514	417			52	42	810	90	1,376	549
Bredbury	120	90							120	90
Brinnington	40	15					180	20	220	35
Cheadle	157	201			25	32			181	233
Cheadle Hulme	36	340			14	136	581	65	631	540
Davenport, Stepping Hill and Great Moor	77	146							77	146
Edgeley and Cheadle Heath	48	247			21	111			69	358
Gatley	19	25							19	25
Hazel Grove	203	366			84	152	1,202	134	1,489	652
Heald Green	421	166					1,530	170	1,951	336
High Lane	23	6					900	100	923	106
Manor and Portwood	218	57							218	57
Marple	111	192			20	35			131	227
Mellor, Marple Bridge and Compstall	62	143					252	28	314	171
Offerton	47	31					392	44	438	75
Reddish	342	901			7	17			348	918
Romiley	81	169			7	14	315	35	403	218
Stockport Town Centre	302	6,402	90	1,910					392	8,312
The Heatons	181	154							181	154
Woodford	370	107					1,665	185	2,035	292
Woodley	52	55					248	28	299	82
Total	**3,462**	**10,268**	**90**	**1,910**	**231**	**539**	**8,073**	**897**	**11,856**	**13,614**
	13,730		**2,000**		**770**		**8,970**		**25,470**	

Table A-4 – SLP Reg 18 Allocation Breakdown Test Scenario 4 (Housing Approach 4)

Location	Land Supply + Small Sites + Rail Stations		Town Centre Additional		District Centre Additional		Grey / Green Belt Additional		Other Sites Additional		Total	
	H	A	H	A	H	A	H	A	H	A	H	A
Adswood	38	38							10	10	48	48
Bramhall	514	417			52	42	810	90	216	175	1,593	725
Bredbury	120	90							49	37	169	126
Brinnington	40	15					180	20	7	3	227	38
Cheadle	157	201			25	32			67	86	248	318
Cheadle Hulme	36	340			14	136	581	65	7	68	638	608
Davenport, Stepping Hill and Great Moor	77	146							32	61	110	207
Edgeley and Cheadle Heath	48	247			21	111			20	106	90	464
Gatley	19	25							2	2	20	27
Hazel Grove	203	366			84	152	1,202	134	66	120	1,556	771
Heald Green	421	166					1,530	170	195	77	2,145	412
High Lane	23	6					900	100	4	1	927	107
Manor and Portwood	218	57							94	25	312	81
Marple	111	192			20	35			32	56	164	283
Mellor, Marple Bridge and Compstall	62	143					252	28	28	63	342	235
Offerton	47	31					392	44	12	8	451	83
Reddish	342	901			7	17			165	435	513	1,354
Romiley	81	169			7	14	315	35	34	72	437	289
Stockport Town Centre	302	6,402	90	1,910					150	3,169	542	11,481
The Heatons	181	154							78	66	259	219
Woodford	370	107					1,665	185	177	51	2,213	343
Woodley	52	55					248	28	17	18	316	100
Total	**3,462**	**10,268**	**90**	**1,910**	**231**	**539**	**8,073**	**897**	**1,461**	**4,706**	**13,317**	**18,320**
	13,730		**2,000**		**770**		**8,970**		**6,167**		**31,637**	

Appendix B

COMMITTED SITES

Table B-1 – List of all the committed residential sites outside of Stockport

District	Site Name	Easting	Northing	Dwelling Total
Cheshire East	Little Stanneylands, Wilmslow	385103	383003	200
Manchester	Oakwood Lodge Day Centre	383391	389464	20
Manchester	MEA School Fields	382172	387357	147
Manchester	Greenbrow Rd sites Wastdale Road,	381059	387846	91
Cheshire East	North Cheshire Growth Village, Handforth	387278	383397	1500
Cheshire East	Land between Clay Lane and Sagars Rd, Handforth	385080	383692	250
High Peak	Adderley Place	401926	394188	130
High Peak	Birch Vale IE	402251	386984	100
High Peak	Tongue Lane	407418	373185	139
High Peak	Harpur Hill Campus	406694	370946	153
High Peak	Land off Glossop Road, Gamesley (Samas Roneo)	401336	394171	156
High Peak	Bridge Mills	401920	396910	119
High Peak	Charlestown Works	403360	393010	1257
High Peak	Shaw Lane	401967	394998	113
High Peak	Granby Road	407280	373200	73
High Peak	Waterswallows	407290	373960	330
High Peak	Hogshaw	406340	374190	105
High Peak	Forge Works	404385	382136	182
High Peak	Hallsteads	407795	378349	102
High Peak	Burlow Road	407247	370984	275
High Peak	Foxlow Farm	406714	371591	395
High Peak	Macclesfield Road /Ling Longs	401453	380423	107
High Peak	Roughfields	404601	396800	102
High Peak	Derby Road	401497	386371	107
High Peak	Ollersett Road	401094	385191	239
High Peak	Dukes Drive	406729	372364	338

District	Site Name	Easting	Northing	Dwelling Total
Manchester	Chorlton District Centre	381534	394088	350
Manchester	Siemens/Elizabeth Slinger Road site	383352	392198	95
Manchester	Former Laundry, Burnage Lane	386722	392794	56
Manchester	Sites at and adjacent to former Withington Hospital,	381767	394489	287
Trafford	Land at Lock Lane	371103	391625	550
Trafford	Wharfside Strategic Location	380483	396817	1680.36
Trafford	L & M Site, Norman Road	376060	388786	162
Trafford	Land bound by Bridgewater Way	382461	396914	363
Trafford	Trafford Wharf Road	381112	396523	354
Trafford	Land adjacent to Manchester Ship Canal	371103	391625	550
Trafford	Pomona Docks	381729	396646	526
Trafford	Trafford Waters	376205	397260	3000
Trafford	The Square	381003	395738	202
Trafford	Former Itron Site	380260	395057	282
Trafford	Trafford Plaza, Seymour Grove	381864	395921	174
Trafford	Sale West Estate	376422	391227	263
Stockport	Cheadle and Marple 6th Form College Site, Hibbert Lane	395661	388268	94
Stockport	Lapwing Centre and Castle Hill School, Blackberry Avenue	391490	392750	281
Stockport	Former BAE Aerodrome	389577	382382	920
Stockport	Offerton Industrial Estate	391120	389462	130
Cheshire East	Parkgate Extension, Knutsford	376477	379943	200
Cheshire East	Royal London, Wilmslow	384554	380017	175
Cheshire East	South Macc Dev Area, Macclesfield	390821	371628	1050
Cheshire East	Land East of Manchester Rd, Knutsford	374608	379623	250
Cheshire East	Land South of Longridge, Knutsford	376908	378791	225
Cheshire East	Land West of Manchester Rd, Knutsford	374104	379749	75
Cheshire East	Land at Congleton Road, Macclesfield	389578	371729	300

District	Site Name	Easting	Northing	Dwelling Total
Cheshire East	Land at Sprink Farm, Poynton	392820	382535	150
Cheshire East	Land adjacent to Hazelbadge Rd, Poynton	391271	383907	150
Cheshire East	Land South of Chester Rd, Poynton	390209	383462	150
Cheshire East	Land North of Northwich Rd, Knutsford	374087	378804	175
Cheshire East	Heathfield Farm, Wilmslow	386466	381945	150
Cheshire East	Land between Chelford Rd and Whirley Rd, Macclesfield	388641	373805	150
Cheshire East	Alderley Park, Congleton Road, Nether Alderley, Macclesfield	384452	375319	275
Cheshire East	Land East of Fence Avenue, Macclesfield	392690	373899	250
Cheshire East	Central Macclesfield	391579	373700	500
Cheshire East	Gaw End Lane, Macclesfield	391344	370709	300
Cheshire East	Land South Of Chelford Road, Macclesfield	388773	373363	200
Tameside	Former Robertson's Jam Factory	390683	397765	330
Tameside	Former Hartshead High School	395086	401094	195
Tameside	Remainder of land between Hey Farm & Micklehurst Estate, UDP Allocation H1(12)	398280	402796	177
Manchester	391 Palatine Road, Northenden	382720	399996	234
Tameside	Godley Green, Land Off Mottram Old Road, Hyde, SK14 3BE	397116	393620	2150

Table B-2 - Table of all committed employment sites

District	Site Name/Address	Easting	Northing	Land Use	GFA
Manchester	Airport City North	381903	385797	B1	113,443
Manchester	Manchester Campus	381233	386333	B8	12,500
Manchester	69 Shentonfield Road, Sharston Industrial Area, Manchester M22 4RW	383262	388850	B8	1,350
Cheshire East	North Cheshire Growth Village, Handforth	387278	383397	B1/B2	42,000
High Peak	Staden Lane	407026	371986	B8	858
High Peak	Rossington Park	401580	396580	B8	4,960

District	Site Name/Address	Easting	Northing	Land Use	GFA
High Peak	Nestle, Station Road	406085	373868	B1	65
High Peak	Hogs Yard	401396	382119	B1	2,323
High Peak	Morrisons extension	406575	372959	A2	1,253
High Peak	Nestle Waters Uk Ltd Waterswallows Lane Fairfield	408000	375557	B8	14,000
Manchester	Airport City South, Global Logistics Hub - A538 Sunbank Lane	380428	384537	B8	156,500
Manchester	Wythenshawe Hospital	380400	387500	B1	58,500
Trafford	Land South Off Barton Bridge, Trafford Way, Trafford Park	400097	344742	B8	17,000
Trafford	Sawfield Nurseries, Fairy Lane, Sale, M33 2ju, West Didsbury Storage Limited.	381503	391818	B8	11,813
Trafford	F And G Commercials (Manchester) Limited, Trafford Park Road, Trafford Park, Manchester, M17 1hg. F & G Holding Ltd.	379713	396898	B8	2,338
Trafford	Evans Halshaw Commericals, Mosley Road, Trafford Park, Manchester, M17 1pd. Industrial Property Investment Fund.	376990	397141	B1/B2/B8	20,898
Trafford	Land At Oakfield Road/Moss Lane, Altrincham, Wa15 8ep	377105	387791	B1	3,833
Trafford	Land Between Manchester Ship Canal and Trafford Boulevard/Old Barton Road, Urmston	376470	396708	B1	80,000
Cheshire East	Adlington Business Park Extension, Poynton	391125	382115	B1/B8	12,542
Cheshire East	Parkgate Extension, Knutsford	376477	379943	B2/B8	21,000
Cheshire East	Royal London, Wilmslow	384554	380017	B1	13,700
Cheshire East	Wilmslow Business Park, Wilmslow	384887	380101	B1/B2/B8	25,000
Cheshire East	South Macc Dev Area, Macclesfield	390821	371628	B1/B2/B8	19,500
Tameside	Plot B Hattersley Industrial Estate, Stockport Road, Longdendale	397903	394147	B1/B8	2,746
Tameside	Shepley Industrial Estate Extension, Shepley Road, Audenshaw	392901	397117	B1/B2/B8	7,410
Tameside	Oxford Street Mills, Oxford Street East, Ashton-Under-Lyne	393019	397908	B1/B2/B8	5,011

Appendix C

JOURNEY ROUTE TIMES

Table C-1 - Journey Routes Times for the Modelled Test Scenarios

ID	Route Name	Base 2022			Test Scenario 1: 2042 HA1 / EA1			Test Scenario 2: 2042 HA2 / EA2			Test Scenario 3: 2042 HA3 / EA3			Test Scenario 4: 2042 HA4 / EA3		
		AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM
1	A555 - A6 Hazel Grove - Manchester Airport NB(WB)	17:50	15:25	14:26	23:18	16:08	16:46	24:41	16:15	16:44	25:44	16:18	16:36	26:05	16:14	16:37
2	A555 - Manchester Airport - A6 Hazel Grove SB(EB)	16:33	15:17	17:35	20:19	16:38	21:28	20:57	16:46	22:18	21:09	17:05	23:27	21:17	17:06	23:45
3	A34 Wilmslow - East Disbury NB	13:35	11:27	14:58	16:25	12:33	16:33	16:48	12:39	16:40	17:32	12:55	17:10	17:59	12:58	17:23
4	A34 East Didsbury - Wilmslow SB	15:54	11:38	13:06	20:28	12:23	16:29	20:38	12:26	17:05	20:53	12:31	17:49	21:09	12:32	17:59
5	A6 Disley - Hazel Grove NB	11:57	10:43	11:50	13:40	11:13	12:17	15:10	11:26	12:31	16:30	11:38	12:43	16:49	11:40	12:47
6	A6 Hazel Grove - Disley SB	10:54	10:11	12:32	11:24	11:05	15:20	11:30	11:28	16:02	11:36	11:46	17:07	11:39	11:52	17:22
7	A6 Hazel Grove - Stockport TC NB	16:46	13:45	14:59	17:53	14:39	16:04	18:39	14:55	16:23	19:33	15:13	16:46	19:59	15:25	17:09
8	A6 Stockport TC - Hazel Grove SB	15:49	13:03	18:21	17:19	13:42	20:10	17:39	13:53	21:01	17:59	14:03	22:17	18:35	14:09	22:48
9	A6 Stockport TC - Levenshulme NB	12:07	8:49	10:46	12:38	9:49	11:37	12:43	9:55	11:39	13:11	10:11	11:41	13:27	10:23	11:46
10	A6 Levenshulme - Stockport TC SB	10:43	7:44	9:45	11:16	8:00	9:57	11:17	8:01	9:59	11:23	8:06	10:05	11:30	8:12	10:12
11	A6 Levenshulme - Manchester TC NB	11:33	8:11	10:18	11:59	8:18	10:26	12:02	8:18	10:28	12:19	8:19	10:30	12:22	8:19	10:31
12	A6 Manchester TC -Levenshulme SB	11:01	8:54	11:39	11:12	9:26	12:47	11:11	9:27	12:49	11:09	9:36	13:09	11:10	9:38	13:16
13	A560 Altrincham - Mottram NB	1:00:44	47:23	59:43	1:04:39	49:11	1:04:56	1:05:41	49:31	1:05:39	1:08:01	50:01	1:07:42	1:08:56	51:43	1:08:34
14	A560 Mottram - Altrincham SB	1:01:32	46:46	54:51	1:07:23	48:21	57:13	1:08:41	48:40	57:30	1:10:06	49:12	58:28	1:12:18	49:28	59:04
15	A626 Marple - Stockport NB	19:22	15:17	17:48	21:58	16:34	18:36	22:55	16:53	18:50	24:32	17:22	19:13	24:58	17:39	19:42
16	A626 Stockport - Marple SB	15:48	13:36	17:09	18:48	15:06	20:46	19:07	15:23	21:40	19:26	15:48	23:23	20:11	16:00	24:11
17	A627 Hazel Grove - Bredbury NB	11:31	11:55	11:25	12:07	12:56	13:04	12:26	13:08	13:10	12:52	13:26	12:55	13:05	13:35	12:53
18	A627 Bredbury - Hazel Grove SB	11:54	9:54	12:04	13:50	10:30	12:33	14:18	10:43	12:53	15:02	10:59	13:16	15:42	11:08	13:26

ID	Route Name	Base 2022			Test Scenario 1: 2042 HA1 / EA1			Test Scenario 2: 2042 HA2 / EA2			Test Scenario 3: 2042 HA3 / EA3			Test Scenario 4: 2042 HA4 / EA3		
		AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM
19	B6167 Reddish Rd NB	11:26	8:36	10:10	11:51	9:08	11:05	11:52	9:09	11:09	12:02	9:16	11:17	12:05	9:19	11:23
20	B6167 Reddish Rd SB	10:56	7:59	9:16	11:39	8:21	9:23	11:37	8:22	9:23	11:36	8:26	9:28	11:45	8:32	9:31
21	A6188 Manchester Rd NB	4:56	3:35	4:18	5:26	3:35	4:26	5:31	3:35	4:27	5:43	3:37	4:26	5:51	3:37	4:28
22	A6188 Manchester Rd SB	4:39	3:32	4:07	4:49	3:41	4:20	4:49	3:42	4:21	4:50	3:44	4:27	4:50	3:45	4:30
23	A5145 Didsbury Rd NB	9:02	6:41	7:02	9:28	7:19	7:17	9:33	7:21	7:22	9:54	7:28	7:45	10:09	7:31	7:47
24	A5145 Didsbury Rd SB	7:01	5:21	6:40	7:21	6:25	7:17	7:22	5:25	7:16	7:23	6:29	8:05	7:25	6:15	8:13
25	M60 J24 Denton - M56 Cheadle NB	8:06	7:37	10:14	8:46	8:07	13:37	8:50	8:09	14:03	8:50	8:13	14:39	8:56	8:16	14:52
26	M56 Cheadle - M60 J24 Denton SB	11:09	10:39	10:09	15:18	11:39	12:04	15:42	11:42	12:12	16:28	11:47	12:31	17:20	11:56	13:01

Appendix D

CARBON EMISSIONS

Table D-1 – Link-based Carbon Emissions for Modelled Test Scenarios

Scenario	Total kgCO2e	SRN kgCO2e	Non-SRN kgCO2e	Car kgCO2e	LGV kgCO2e	HGV kgCO2e
2022 Base	333,652,540	84,427,461	249,225,079	240,236,406	61,553,392	31,862,742
Test Scenario 1: HA1 / EA1	116,182,013	30,449,726	85,732,286	65,327,102	24,721,666	26,133,245
Test Scenario 2: HA2 / EA2	119,104,545	30,625,353	88,479,192	67,019,225	25,345,971	26,739,350
Test Scenario 3: HA3 / EA3	122,572,988	30,847,840	91,725,148	69,856,890	25,654,354	27,061,744
Test Scenario 4: HA4 / EA3	124,018,446	30,961,258	93,057,188	71,067,519	25,770,483	27,180,443

Table D-2 - Cordon Carbon Emissions for Modelled Test Scenarios

Scenario	Total kgCO2e	Internal I-I Total kgCO2e	Inbound E-I Total kgCO2e	Outbound I-E Total kgCO2e	Through E-E Total kgCO2e
2022 Base	336,744,494	78,960,429	79,448,756	79,932,094	98,403,214
Test Scenario 1: HA1 / EA1	119,197,301	26,090,321	26,858,588	28,418,118	37,830,273
Test Scenario 2: HA2 / EA2	121,987,072	27,378,231	27,594,835	29,143,598	37,870,408
Test Scenario 3: HA3 / EA3	125,952,690	28,977,153	28,608,147	30,112,786	38,254,604
Test Scenario 4: HA4 / EA3	127,712,989	29,847,420	29,041,313	30,695,636	38,128,620

Table D-3 – Trip Length Distribution Carbon Emissions for Modelled Test Scenarios

Scenario	Total kgCO2e	0-3 miles kgCO2e	3-10 miles kgCO2e	>10miles kgCO2e
2022 Base	336,744,494	36,424,080	81,384,823	218,935,589
Test Scenario 1: HA1 / EA1	119,197,301	12,123,298	26,644,212	81,000,833
Test Scenario 2: HA2 / EA2	121,987,072	12,157,896	27,931,106	83,048,459
Test Scenario 3: HA3 / EA3	125,952,690	12,830,498	29,146,742	83,975,450
Test Scenario 4: HA4 / EA3	127,712,989	13,152,180	29,874,305	84,686,504

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