

## Appendix S

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# M2 TRIGGER POINTS MEMO

# MEMORANDUM

**Date** 09 June 2011  
**Reference** 5083-UA003269-GD-R-00  
**From**  
**To** Steve Neal  
**Copies**  
**Subject** Lodge Hill – M2 J1 – Trigger points

## Introduction

This memo considers the trigger points for implementing the junction improvements to Junction 1 of the M2 which are described in Hyder memo 5080-UA003269-GDM-01. Junction improvements were recommended to be made to the following sections of this junction:

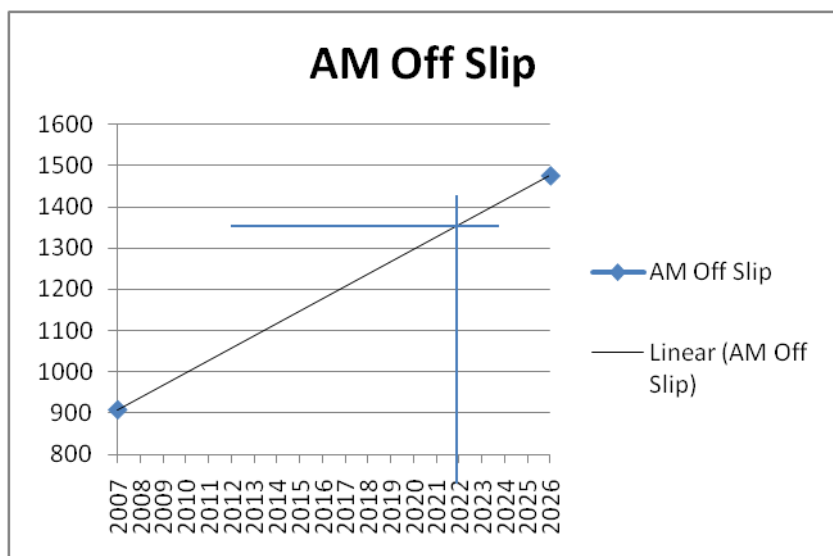
- M2 J1 A289 SB Merge (Diagram 3)
- M2 J1 A289 WD Diverge (Diagram 2)

### M2 J1 A289 SB Merge (Diagram 3)

Referring to the DMRB analysis in Hyder memo 5080-UA003269-GDM-01 it can be seen that this feature is relatively close to its design capacity in the base year assessment. It is therefore suggested that traffic mitigation should be operational early on in the development, such as at the first occupation.

### M2 J1 A289 WD Diverge (Diagram 2)

This feature only exceeds the DMRB threshold by a relatively small amount and it is therefore appropriate that improvements should be made once the development is underway. The DMRB figure 2/5, reproduced in Hyder memo 5080-UA003269-GDM-01, shows that diverging flows over 1350veh/hr would exceed the current design flow for this diverge. In 2007 the AM peak diverging flow is 907 and in 2026 including Lodge Hill this values reaches 1475veh/hr. The inset graph shows that by using interpolation that the diverge flows will reach 1350veh/hr in 2022, at which time mitigation measures should be employed.



## Conclusion

This memo considers the trigger points for the implementation of traffic mitigation measures which are outlined in Hyder memo 5080-UA003269-GDM-01. The trigger points are as follows:

- M2 J1 A289 SB Merge (Diagram 3) – This feature is close to its design capacity currently which suggests that improvements should be made early on in the development, such as by the first occupation.
- M2 J1 A289 WD Diverge (Diagram 2) – The assessment shows that this Diverge will exceed its current design capacity in 2022 at which point the mitigation measures could be implemented.

## Appendix T

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# LINK FLOW DIFFERENCES

## DO SOMETHING - 2026 + Lodge Hill + Four Elms Improvements

AAWT, AADT are in vehicles

2026DS

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17578	106645	121551	40%	63.84
2	M2J1	M2J2	17733	107587	122625	35%	82.87
3	M2J2	M2J3	17147	104030	118571	35%	85.13
4	M2J3	M2J4	14602	88590	100972	38%	76.64
5	Frindsbury Hill rdbt	A228/B2002	3570	21660	24687	6%	19.74
6	B2002/A2	B2002/A228	1741	10564	12040	4%	29.75
7	M2J2	A228/Cuxton Rd	3613	21919	24982	10%	30.13
8	M2J1	A289/A226	11615	70470	80319	19%	74.93
9	A289/A226	A226/Gravesend Rd	4118	24986	28478	6%	56.79
10	A289/A226	A289/B2000	12316	74720	85163	17%	67.38
11	B2000/B2010	Hollywood Ln	2135	12953	14763	5%	40.42
12	A226/B2010	B2010/B2000	3546	21514	24521	6%	33.56
13	A226/B2010	A2/B2010	1736	10531	12003	4%	29.75
14	A226/A289	A226/B2010	2689	16313	18594	4%	25.72
15	A226/B2010	A2/A226	1954	11853	13510	5%	44.15
16	M1J1/A2	A2/B2010	2476	15020	17120	10%	42.68
17	A2/B2010	A2/A226	2023	12274	13989	11%	39.54
18	A289/rdbt	A289/Maritime Way	8996	54576	62204	7%	66.01
19	A2/A229	A2/A230	1583	9605	10947	11%	14.90
20	A2/A230	A229/M2J3	6470	39254	44740	13%	31.83
21	B2097/M2J3	B2097/A2	4463	27080	30864	8%	52.20
22	A2/B2002	A2/B2097	7092	43030	49044	5%	16.45
23	A228/Priory Rd	A2/High St	1349	8183	9327	7%	43.75
24	Lodge Hill	Ratcliffe Hwy	7729	46890	53444	10%	67.86
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8519	51683	58906	13%	32.12
26	Anthony's Way rdbt	Anthone's Way	5113	31019	35354	16%	20.13
27	Maritime way rdbt	Maritime Way South	5967	36203	41263	4%	33.79
28	Maritime way rdbt	Maritime Way North	3291	19967	22758	3%	17.52
29	Maritime way rdbt	Pier Rd	6852	41569	47379	7%	71.80
30	Four Elms Hill rdbt	Lodge Hill	12736	77270	88070	15%	32.77
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	8149	49437	56347	11%	37.27
32	Four Elms Hill rdbt	Hoo Rd	1605	9740	11102	6%	19.62
33	Four Elms Hill rdbt	A289/B2000	9683	58746	66957	17%	84.97
34	Four Elms Hill rdbt	Lodge Hill (through rdbt)	5581	33861	38593	16%	24.87
35	Four Elms Hill rdbt	A289/B2000 (through rdbt)	6083	36906	42064	17%	64.73
36	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	4618	28020	31936	13%	23.99
37	A289/Medway Rd rdbt	A289/Lower Rainham Rd	6373	38665	44070	5%	52.08
38	A289/Lower Rainham Rd	A289/A2	4806	29158	33233	5%	63.20
39	A289/A2	A278/A2 rdbt	7810	47382	54005	5%	45.31
40	A278/A2 rdbt	A278/M2J4	4934	29933	34116	7%	70.65
41	Brewers Rd/A2	A226/Pear Tree Ln	563	3418	3895	25%	42.00
42	A226/Gravesend Rd	A226 E Milton Rd	819	4971	5665	1%	58.69
43	A227/A2	A227/Wrotham Rd	144	872	993	7%	76.89
44	M2 J1 EB offslip		4130	25054	28556	22%	71.07
45	M2 J1 WB offslip		3341	20268	23101	8%	80.00
46	M2 J1 EB onslip		3256	19757	22519	17%	63.53
47	M2 J1 WB onslip		3712	22523	25672	20%	65.08
48	M2 J2 EB offslip		1634	9914	11299	18%	33.89
49	M2 J2 WB offslip		1618	9818	11190	12%	12.56
50	M2 J2 EB onslip		1172	7108	8102	10%	81.18
51	M2 J2 WB onslip		1738	10542	12015	20%	76.03
52	M2 J3 SB offslip		3916	23759	27080	13%	27.73
53	M2 J3 NB offslip		3466	21029	23968	10%	31.29
54	M2 J3 SB onslip		2565	15560	17735	10%	68.20
55	M2 J3 NB onslip		4638	28137	32070	11%	58.16
56	M2 J4 EB offslip		2296	13930	15876	12%	74.43
57	M2 J4 WB offslip		1647	9993	11390	6%	63.42
58	M2 J4 EB onslip		1366	8286	9444	12%	60.26
59	M2 J4 WB onslip		3032	18396	20968	8%	58.24

## DO MINIMUM - 2026 Reference Case

AAWT, AADT are in vehicles

2026DM

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17149	104041	118583	39%	65.50
2	M2J1	M2J2	16647	100995	115111	37%	85.80
3	M2J2	M2J3	16770	101746	115967	35%	86.38
4	M2J3	M2J4	14139	85784	97774	40%	78.30
5	Frindsbury Hill rdbt	A228/B2002	3781	22938	26143	8%	34.48
6	B2002/A2	B2002/A228	1810	10981	12516	4%	29.09
7	M2J2	A228/Cuxton Rd	3224	19562	22296	12%	32.55
8	M2J1	A289/A226	10406	63134	71958	18%	82.01
9	A289/A226	A226/Gravesend Rd	4507	27345	31167	5%	56.65
10	A289/A226	A289/B2000	11161	67714	77178	15%	80.28
11	B2000/B2010	Hollywood Ln	2021	12262	13976	3%	41.33
12	A226/B2010	B2010/B2000	3306	20060	22864	5%	34.74
13	A226/B2010	A2/B2010	1440	8735	9956	4%	30.80
14	A226/A289	A226/B2010	2561	15536	17707	5%	26.94
15	A226/B2010	A2/A226	2064	12525	14275	4%	44.15
16	M1J1/A2	A2/B2010	2330	14135	16110	8%	43.97
17	A2/B2010	A2/A226	2005	12162	13862	9%	39.59
18	A289/rdbt	A289/Maritime Way	8908	54044	61597	6%	65.46
19	A2/A229	A2/A230	1433	8696	9911	12%	15.89
20	A2/A230	A229/M2J3	6364	38611	44007	13%	32.23
21	B2097/M2J3	B2097/A2	4303	26103	29752	9%	52.23
22	A2/B2002	A2/B2097	6864	41643	47463	5%	18.37
23	A228/Priory Rd	A2/High St	1382	8383	9554	8%	43.66
24	Lodge Hill	Ratcliffe Hwy	8739	53018	60429	12%	65.67
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8668	52586	59936	11%	32.41
26	Anthony's Way rdbt	Anthone's Way	5051	30644	34927	14%	20.45
27	Maritime way rdbt	Maritime Way South	5892	35750	40746	3%	33.29
28	Maritime way rdbt	Maritime Way North	3317	20121	22934	3%	17.80
29	Maritime way rdbt	Pier Rd	6856	41596	47410	6%	70.81
30	Four Elms Hill rdbt	Lodge Hill	8422	51096	58237	12%	68.27
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	7075	42923	48922	9%	46.85
32	Four Elms Hill rdbt	Hoo Rd	1492	9050	10315	4%	16.41
33	Four Elms Hill rdbt	A289/B2000	8127	49307	56198	15%	92.96
34	Four Elms Hill rdbt	Lodge Hill(through rdbt)	6312	38294	43647	14%	43.38
35	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	4763	28895	32933	11%	27.97
36	A289/Medway Rd rdbt	A289/Lower Rainham Rd	6269	38032	43347	5%	50.55
37	A289/Lower Rainham Rd	A289/A2	4648	28201	32143	5%	63.45
38	A289/A2	A278/A2 rdbt	7945	48202	54939	5%	45.24
39	A278/A2 rdbt	A278/M2J4	4779	28996	33048	7%	70.64
40	Brewers Rd/A2	A226/Pear Tree Ln	262	1588	1810	33%	44.44
41	A226/Gravesend Rd	A226 E Milton Rd	937	5683	6478	1%	58.61
42	A227/A2	A227/Wrotham Rd	77	465	530	12%	78.00
43	M2 J1 EB offslip		3525	21384	24373	22%	77.68
44	M2 J1 WB offslip		2696	16354	18640	8%	80.00
45	M2 J1 EB onslip		3198	19403	22114	15%	69.94
46	M2 J1 WB onslip		3383	20526	23395	18%	67.17
47	M2 J2 EB offslip		1432	8691	9905	18%	34.26
48	M2 J2 WB offslip		1599	9701	11057	13%	31.22
49	M2 J2 EB onslip		1301	7894	8997	9%	79.37
50	M2 J2 WB onslip		1342	8140	9278	25%	78.47
51	M2 J3 SB offslip		4089	24806	28274	12%	30.18
52	M2 J3 NB offslip		3276	19876	22654	11%	23.37
53	M2 J3 SB onslip		2633	15977	18210	10%	67.81
54	M2 J3 NB onslip		4435	26904	30665	11%	59.42
55	M2 J4 EB offslip		2220	13468	15350	13%	75.09
56	M2 J4 WB offslip		1689	10245	11677	6%	65.21
57	M2 J4 EB onslip		1365	8284	9442	12%	59.72
58	M2 J4 WB onslip		2779	16858	19214	8%	59.69

## DO SOMETHING - 2022 + Lodge Hill + Four Elms Improvements

AAWT, AADT are in vehicles

2022DS

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17608	106830	121761	37%	64.30
2	M2J1	M2J2	16986	103051	117454	35%	85.32
3	M2J2	M2J3	16877	102395	116706	33%	86.50
4	M2J3	M2J4	14243	86413	98490	37%	78.64
5	Frindsbury Hill rdbt	A228/B2002	3208	19465	22185	5%	23.65
6	B2002/A2	B2002/A228	1834	11127	12682	4%	29.42
7	M2J2	A228/Cuxton Rd	3423	20770	23673	11%	31.22
8	M2J1	A289/A226	10922	66261	75522	19%	78.92
9	A289/A226	A226/Gravesend Rd	4141	25123	28635	6%	56.98
10	A289/A226	A289/B2000	12059	73160	83385	17%	69.40
11	B2000/B2010	Hollywood Ln	2297	13935	15883	4%	37.04
12	A226/B2010	B2010/B2000	3349	20320	23160	5%	37.19
13	A226/B2010	A2/B2010	1577	9571	10908	3%	29.69
14	A226/A289	A226/B2010	2737	16603	18924	4%	25.09
15	A226/B2010	A2/A226	1969	11944	13614	4%	44.16
16	M1J1/A2	A2/B2010	2388	14490	16515	9%	43.71
17	A2/B2010	A2/A226	2073	12580	14338	10%	39.78
18	A289/rdbt	A289/Maritime Way	8654	52504	59843	7%	66.65
19	A2/A229	A2/A230	1454	8824	10058	11%	16.15
20	A2/A230	A229/M2J3	6385	38735	44149	13%	31.27
21	B2097/M2J3	B2097/A2	4266	25881	29498	8%	53.58
22	A2/B2002	A2/B2097	7059	42825	48811	5%	17.44
23	A228/Priory Rd	A2/High St	1439	8733	9953	7%	43.57
24	Lodge Hill	Ratcliffe Hwy	7228	43854	49984	11%	68.19
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8458	51317	58490	13%	31.52
26	Anthony's Way rdbt	Anthone's Way	4620	28029	31947	17%	21.92
27	Maritime way rdbt	Maritime Way South	5992	36352	41432	4%	37.06
28	Maritime way rdbt	Maritime Way North	3067	18609	21210	3%	26.35
29	Maritime way rdbt	Pier Rd	6721	40779	46479	7%	71.85
30	Four Elms Hill rdbt	Lodge Hill	12060	73165	83391	14%	34.48
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	8236	49970	56955	12%	41.36
32	Four Elms Hill rdbt	Hoo Rd	1797	10905	12429	5%	20.76
33	Four Elms Hill rdbt	A289/B2000	9354	56749	64681	18%	87.52
34	Four Elms Hill rdbt	Lodge Hill (through rdbt)	5516	33468	38146	16%	25.91
35	Four Elms Hill rdbt	A289/B2000 (through rdbt)	6137	37233	42437	18%	66.81
36	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	5002	30350	34592	14%	24.25
37	A289/Medway Rd rdbt	A289/Lower Rainham Rd	6161	37377	42601	5%	54.32
38	A289/Lower Rainham Rd	A289/A2	4603	27924	31827	5%	64.95
39	A289/A2	A278/A2 rdbt	7757	47059	53637	4%	45.31
40	A278/A2 rdbt	A278/M2J4	4843	29383	33490	7%	71.51
41	Brewers Rd/A2	A226/Pear Tree Ln	391	2372	2703	34%	43.17
42	A226/Gravesend Rd	A226 E Milton Rd	814	4936	5626	1%	58.85
43	A227/A2	A227/Wrotham Rd	137	830	946	7%	76.84
44	M2 J1 EB offslip		3928	23832	27163	21%	73.38
45	M2 J1 WB offslip		2867	17395	19826	9%	80.00
46	M2 J1 EB onslip		3128	18975	21628	17%	67.55
47	M2 J1 WB onslip		3457	20974	23906	20%	66.58
48	M2 J2 EB offslip		1518	9208	10495	18%	33.99
49	M2 J2 WB offslip		1625	9858	11235	12%	24.49
50	M2 J2 EB onslip		1264	7671	8743	9%	79.84
51	M2 J2 WB onslip		1477	8958	10210	23%	77.71
52	M2 J3 SB offslip		3951	23971	27321	13%	28.78
53	M2 J3 NB offslip		3232	19610	22351	11%	22.49
54	M2 J3 SB onslip		2577	15636	17821	10%	68.05
55	M2 J3 NB onslip		4474	27142	30936	11%	59.19
56	M2 J4 EB offslip		2259	13706	15622	12%	74.55
57	M2 J4 WB offslip		1531	9289	10588	8%	65.67
58	M2 J4 EB onslip		1371	8320	9483	12%	60.78
59	M2 J4 WB onslip		2674	16222	18489	9%	60.06

## DO MINIMUM - 2022 Reference Case

AAWT, AADT are in vehicles

2022DM

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17201	104360	118946	37%	66.15
2	M2J1	M2J2	16229	98460	112222	36%	87.59
3	M2J2	M2J3	16367	99299	113177	34%	88.07
4	M2J3	M2J4	13888	84258	96034	38%	80.07
5	Frindsbury Hill rdbt	A228/B2002	3651	22148	25244	10%	34.36
6	B2002/A2	B2002/A228	1812	10994	12531	4%	29.93
7	M2J2	A228/Cuxton Rd	3271	19846	22620	12%	32.38
8	M2J1	A289/A226	10025	60824	69325	18%	83.69
9	A289/A226	A226/Gravesend Rd	4433	26895	30655	6%	57.02
10	A289/A226	A289/B2000	10968	66542	75843	15%	81.44
11	B2000/B2010	Hollywood Ln	1915	11617	13241	3%	41.44
12	A226/B2010	B2010/B2000	3110	18871	21508	5%	36.60
13	A226/B2010	A2/B2010	1401	8499	9687	4%	31.07
14	A226/A289	A226/B2010	2528	15337	17480	4%	27.60
15	A226/B2010	A2/A226	1762	10693	12187	4%	44.15
16	M1J1/A2	A2/B2010	2385	14467	16489	7%	43.77
17	A2/B2010	A2/A226	2052	12448	14188	8%	39.63
18	A289/rdbt	A289/Maritime Way	8831	53579	61068	6%	65.88
19	A2/A229	A2/A230	1347	8173	9315	12%	16.52
20	A2/A230	A229/M2J3	6279	38096	43420	13%	31.64
21	B2097/M2J3	B2097/A2	4261	25852	29465	9%	52.93
22	A2/B2002	A2/B2097	6894	41826	47671	5%	19.46
23	A228/Priory Rd	A2/High St	1496	9075	10344	7%	43.44
24	Lodge Hill	Ratcliffe Hwy	8464	51348	58525	12%	66.30
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8863	53774	61290	11%	37.77
26	Anthony's Way rdbt	Anthone's Way	4736	28734	32750	14%	20.79
27	Maritime way rdbt	Maritime Way South	5930	35975	41003	3%	37.84
28	Maritime way rdbt	Maritime Way North	3069	18618	21220	3%	27.02
29	Maritime way rdbt	Pier Rd	6848	41547	47354	6%	71.34
30	Four Elms Hill rdbt	Lodge Hill	8190	49687	56631	13%	68.84
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	6967	42271	48179	9%	44.19
32	Four Elms Hill rdbt	Hoo Rd	1423	8635	9842	4%	16.62
33	Four Elms Hill rdbt	A289/B2000	8057	48881	55713	14%	93.55
34	Four Elms Hill rdbt	Lodge Hill(through rdbt)	6224	37762	43040	15%	43.87
35	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	4795	29090	33156	10%	27.86
36	A289/Medway Rd rdbt	A289/Lower Rainham Rd	6158	37358	42579	5%	50.78
37	A289/Lower Rainham Rd	A289/A2	4576	27765	31646	5%	64.96
38	A289/A2	A278/A2 rdbt	7948	48223	54963	5%	45.24
39	A278/A2 rdbt	A278/M2J4	4825	29276	33368	7%	71.55
40	Brewers Rd/A2	A226/Pear Tree Ln	253	1536	1750	32%	44.51
41	A226/Gravesend Rd	A226 E Milton Rd	978	5933	6763	1%	58.73
42	A227/A2	A227/Wrotham Rd	67	408	466	13%	78.63
43	M2 J1 EB offslip		3542	21490	24493	21%	77.58
44	M2 J1 WB offslip		2478	15037	17138	8%	80.00
45	M2 J1 EB onslip		3039	18439	21017	15%	72.20
46	M2 J1 WB onslip		3398	20614	23495	17%	67.34
47	M2 J2 EB offslip		1356	8229	9380	18%	35.08
48	M2 J2 WB offslip		1575	9556	10892	13%	36.72
49	M2 J2 EB onslip		1213	7359	8388	9%	80.61
50	M2 J2 WB onslip		1293	7843	8939	25%	78.90
51	M2 J3 SB offslip		4000	24270	27662	12%	31.56
52	M2 J3 NB offslip		3187	19338	22041	11%	21.42
53	M2 J3 SB onslip		2673	16217	18483	10%	67.59
54	M2 J3 NB onslip		4329	26265	29936	10%	60.24
55	M2 J4 EB offslip		2199	13341	15205	12%	75.26
56	M2 J4 WB offslip		1555	9437	10756	8%	67.24
57	M2 J4 EB onslip		1366	8285	9444	12%	60.50
58	M2 J4 WB onslip		2469	14981	17075	9%	61.17

## DO SOMETHING - 2017 + Lodge Hill + Four Elms Improvements

AAWT, AADT are in vehicles

2017DS

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17405	105599	120358	35%	66.04
2	M2J1	M2J2	16153	97999	111697	34%	88.37
3	M2J2	M2J3	16008	97118	110692	33%	89.63
4	M2J3	M2J4	13491	81852	93292	36%	82.25
5	Frindsbury Hill rdbt	A228/B2002	2887	17514	19962	5%	31.90
6	B2002/A2	B2002/A228	1974	11978	13653	5%	28.51
7	M2J2	A228/Cuxton Rd	3340	20261	23093	11%	32.29
8	M2J1	A289/A226	10247	62168	70857	19%	82.75
9	A289/A226	A226/Gravesend Rd	4287	26007	29642	5%	57.30
10	A289/A226	A289/B2000	11634	70581	80446	16%	77.26
11	B2000/B2010	Hollywood Ln	2484	15070	17177	4%	40.19
12	A226/B2010	B2010/B2000	3252	19727	22484	5%	38.58
13	A226/B2010	A2/B2010	1520	9221	10510	3%	30.59
14	A226/A289	A226/B2010	2386	14476	16499	4%	28.49
15	A226/B2010	A2/A226	1736	10532	12004	4%	44.16
16	M1J1/A2	A2/B2010	2506	15202	17327	7%	42.99
17	A2/B2010	A2/A226	2113	12820	14612	8%	39.69
18	A289/rdbt	A289/Maritime Way	8701	52788	60166	7%	66.29
19	A2/A229	A2/A230	1333	8090	9221	11%	16.92
20	A2/A230	A229/M2J3	6118	37120	42308	12%	30.91
21	B2097/M2J3	B2097/A2	4082	24766	28227	8%	54.78
22	A2/B2002	A2/B2097	7014	42557	48505	5%	18.29
23	A228/Priory Rd	A2/High St	1316	7986	9102	7%	43.80
24	Lodge Hill	Ratcliffe Hwy	6931	42052	47929	12%	68.02
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8879	53867	61396	11%	33.17
26	Anthony's Way rdbt	Anthone's Way	4172	25312	28850	17%	22.89
27	Maritime way rdbt	Maritime Way South	5800	35186	40104	4%	39.83
28	Maritime way rdbt	Maritime Way North	2709	16433	18730	3%	43.48
29	Maritime way rdbt	Pier Rd	6652	40355	45996	7%	72.07
30	Four Elms Hill rdbt	Lodge Hill	10389	63032	71842	15%	51.80
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	8338	50586	57656	10%	64.76
32	Four Elms Hill rdbt	Hoo Rd	2031	12322	14044	5%	20.05
33	Four Elms Hill rdbt	A289/B2000	9004	54627	62262	17%	90.23
34	Four Elms Hill rdbt	Lodge Hill (through rdbt)	5266	31950	36416	15%	30.25
35	Four Elms Hill rdbt	A289/B2000 (through rdbt)	6329	38398	43765	15%	73.72
36	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	5892	35746	40742	11%	28.27
37	A289/Medway Rd rdbt	A289/Lower Rainham Rd	5929	35974	41002	5%	51.23
38	A289/Lower Rainham Rd	A289/A2	4396	26670	30397	5%	65.76
39	A289/A2	A278/A2 rdbt	7947	48212	54951	5%	45.22
40	A278/A2 rdbt	A278/M2J4	4737	28739	32756	7%	71.96
41	Brewers Rd/A2	A226/Pear Tree Ln	286	1734	1977	50%	44.09
42	A226/Gravesend Rd	A226 E Milton Rd	1055	6399	7294	1%	58.58
43	A227/A2	A227/Wrotham Rd	123	749	854	7%	76.69
44	M2 J1 EB offslip		3728	22619	25780	20%	75.98
45	M2 J1 WB offslip		2451	14870	16948	10%	80.00
46	M2 J1 EB onslip		3032	18398	20969	17%	71.94
47	M2 J1 WB onslip		3497	21217	24183	19%	66.76
48	M2 J2 EB offslip		1424	8641	9849	17%	34.85
49	M2 J2 WB offslip		1466	8892	10135	13%	39.45
50	M2 J2 EB onslip		1200	7282	8300	9%	80.77
51	M2 J2 WB onslip		1387	8415	9591	23%	78.56
52	M2 J3 SB offslip		4022	24403	27813	12%	26.07
53	M2 J3 NB offslip		3017	18305	20863	11%	23.63
54	M2 J3 SB onslip		2623	15914	18139	9%	67.80
55	M2 J3 NB onslip		4124	25021	28519	11%	61.58
56	M2 J4 EB offslip		2127	12906	14710	12%	76.22
57	M2 J4 WB offslip		1537	9326	10630	7%	68.36
58	M2 J4 EB onslip		1388	8424	9601	11%	61.09
59	M2 J4 WB onslip		2268	13759	15682	9%	62.36

## DO MINIMUM - 2017 Reference Case

AAWT, AADT are in vehicles

2017DM

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17271	104781	119426	34%	66.86
2	M2J1	M2J2	15659	95002	108280	34%	89.83
3	M2J2	M2J3	15729	95426	108764	33%	90.42
4	M2J3	M2J4	13404	81323	92689	36%	82.60
5	Frindsbury Hill rdbt	A228/B2002	3258	19766	22529	9%	30.84
6	B2002/A2	B2002/A228	1950	11831	13484	4%	28.11
7	M2J2	A228/Cuxton Rd	3260	19775	22539	12%	32.72
8	M2J1	A289/A226	9586	58159	66287	18%	85.66
9	A289/A226	A226/Gravesend Rd	4145	25149	28664	6%	58.54
10	A289/A226	A289/B2000	10234	62090	70769	15%	84.38
11	B2000/B2010	Hollywood Ln	1975	11985	13660	3%	41.42
12	A226/B2010	B2010/B2000	3036	18420	20994	5%	38.22
13	A226/B2010	A2/B2010	1269	7697	8773	4%	31.30
14	A226/A289	A226/B2010	2060	12499	14246	5%	31.19
15	A226/B2010	A2/A226	1582	9597	10939	5%	44.14
16	M1J1/A2	A2/B2010	2440	14805	16875	7%	43.47
17	A2/B2010	A2/A226	2145	13016	14835	8%	39.69
18	A289/rdbt	A289/Maritime Way	8647	52461	59793	6%	66.44
19	A2/A229	A2/A230	1229	7454	8495	12%	17.19
20	A2/A230	A229/M2J3	6047	36686	41813	12%	31.72
21	B2097/M2J3	B2097/A2	4115	24968	28458	9%	54.14
22	A2/B2002	A2/B2097	6786	41171	46925	5%	20.50
23	A228/Priory Rd	A2/High St	1334	8093	9224	7%	43.77
24	Lodge Hill	Ratcliffe Hwy	7732	46912	53468	13%	68.00
25	Frindsbury Hill rdbt	Anthony's Way rdbt	8787	53310	60761	11%	40.59
26	Anthony's Way rdbt	Anthone's Way	4150	25178	28697	15%	23.24
27	Maritime way rdbt	Maritime Way South	5711	34649	39492	4%	39.42
28	Maritime way rdbt	Maritime Way North	2707	16421	18716	3%	43.46
29	Maritime way rdbt	Pier Rd	6600	40043	45640	6%	72.14
30	Four Elms Hill rdbt	Lodge Hill	7523	45641	52020	13%	70.69
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	7065	42863	48854	9%	55.86
32	Four Elms Hill rdbt	Hoo Rd	1528	9269	10564	4%	18.54
33	Four Elms Hill rdbt	A289/B2000	7483	45402	51748	15%	95.17
34	Four Elms Hill rdbt	Lodge Hill(through rdbt)	5708	34629	39469	15%	45.61
35	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	5163	31327	35705	10%	27.19
36	A289/Medway Rd rdbt	A289/Lower Rainham Rd	5880	35675	40662	5%	51.49
37	A289/Lower Rainham Rd	A289/A2	4317	26193	29854	5%	65.94
38	A289/A2	A278/A2 rdbt	8018	48645	55444	5%	45.19
39	A278/A2 rdbt	A278/M2J4	4728	28688	32697	7%	71.98
40	Brewers Rd/A2	A226/Pear Tree Ln	219	1329	1515	51%	44.59
41	A226/Gravesend Rd	A226 E Milton Rd	947	5746	6550	1%	58.68
42	A227/A2	A227/Wrotham Rd	115	699	797	7%	76.58
43	M2 J1 EB offslip		3686	22361	25487	19%	76.60
44	M2 J1 WB offslip		2254	13676	15587	8%	80.00
45	M2 J1 EB onslip		2750	16684	19016	16%	74.56
46	M2 J1 WB onslip		3351	20331	23172	16%	67.92
47	M2 J2 EB offslip		1293	7845	8941	17%	35.64
48	M2 J2 WB offslip		1487	9021	10282	13%	42.54
49	M2 J2 EB onslip		1152	6991	7968	10%	81.36
50	M2 J2 WB onslip		1276	7740	8821	24%	79.34
51	M2 J3 SB offslip		3879	23535	26824	11%	32.87
52	M2 J3 NB offslip		2977	18063	20587	11%	22.08
53	M2 J3 SB onslip		2683	16278	18553	9%	67.49
54	M2 J3 NB onslip		4100	24874	28350	10%	61.78
55	M2 J4 EB offslip		2104	12768	14552	12%	76.31
56	M2 J4 WB offslip		1519	9215	10503	7%	68.59
57	M2 J4 EB onslip		1383	8393	9566	11%	61.10
58	M2 J4 WB onslip		2237	13571	15467	9%	62.55

2009 interpolated between 2007 and 2017

AAWT, AADT are in vehicles

2009

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17501	106179	121019	29%	67.05
2	M2J1	M2J2	14533	88171	100494	31%	93.29
3	M2J2	M2J3	14635	88789	101199	30%	93.73
4	M2J3	M2J4	12438	75462	86009	33%	86.75
5	Frindsbury Hill rdbt	A228/B2002	2765	16778	19123	8%	30.73
6	B2002/A2	B2002/A228	1684	10214	11642	6%	28.02
7	M2J2	A228/Cuxton Rd	3186	19327	22028	12%	33.49
8	M2J1	A289/A226	8809	53442	60912	17%	88.69
9	A289/A226	A226/Gravesend Rd	3610	21902	24964	6%	60.53
10	A289/A226	A289/B2000	8892	53950	61491	16%	89.13
11	B2000/B2010	Hollywood Ln	1610	9767	11132	3%	42.19
12	A226/B2010	B2010/B2000	2252	13662	15572	3%	39.05
13	A226/B2010	A2/B2010	1072	6504	7413	3%	31.89
14	A226/A289	A226/B2010	1597	9689	11044	5%	34.86
15	A226/B2010	A2/A226	1379	8366	9536	5%	44.15
16	M1J1/A2	A2/B2010	2485	15075	17181	6%	43.46
17	A2/B2010	A2/A226	2241	13594	15494	6%	39.70
18	A289/rdbt	A289/Maritime Way	7685	46624	53141	7%	68.27
19	A2/A229	A2/A230	1079	6546	7461	11%	18.32
20	A2/A230	A229/M2J3	5889	35728	40721	12%	31.13
21	B2097/M2J3	B2097/A2	3720	22566	25720	9%	56.31
22	A2/B2002	A2/B2097	6019	36515	41619	5%	21.92
23	A228/Priory Rd	A2/High St	1359	8247	9400	7%	43.75
24	Lodge Hill	Ratcliffe Hwy	6113	37085	42268	15%	70.69
25	Frindsbury Hill rdbt	Anthony's Way rdbt	7830	47502	54141	12%	51.55
26	Anthony's Way rdbt	Anthone's Way	3369	20439	23296	18%	24.77
27	Maritime way rdbt	Maritime Way South	5126	31101	35448	4%	42.84
28	Maritime way rdbt	Maritime Way North	2084	12643	14410	4%	43.08
29	Maritime way rdbt	Pier Rd	5874	35640	40622	7%	72.80
30	Four Elms Hill rdbt	Lodge Hill	6014	36488	41588	15%	73.59
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	6812	41328	47105	10%	66.04
32	Four Elms Hill rdbt	Hoo Rd	1283	7786	8874	5%	24.81
33	Four Elms Hill rdbt	A289/B2000	6477	39297	44789	17%	97.46
34	Four Elms Hill rdbt	Lodge Hill(through rdbt)	4566	27700	31572	18%	47.70
35	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	5346	32436	36969	11%	31.95
36	A289/Medway Rd rdbt	A289/Lower Rainham Rd	5540	33608	38306	5%	56.06
37	A289/Lower Rainham Rd	A289/A2	3979	24142	27516	5%	65.97
38	A289/A2	A278/A2 rdbt	7929	48104	54827	5%	45.22
39	A278/A2 rdbt	A278/M2J4	4243	25745	29343	7%	72.71
40	Brewers Rd/A2	A226/Pear Tree Ln	183	1108	1263	79%	44.91
41	A226/Gravesend Rd	A226 E Milton Rd	701	4254	4849	1%	58.72
42	A227/A2	A227/Wrotham Rd	109	659	751	6%	76.43
43	M2 J1 EB offslip		3899	23657	26964	15%	75.09
44	M2 J1 WB offslip		1767	10721	12220	10%	80.00
45	M2 J1 EB onslip		2265	13741	15661	15%	76.56
46	M2 J1 WB onslip		3437	20852	23767	14%	67.63
47	M2 J2 EB offslip		1106	6709	7646	13%	36.69
48	M2 J2 WB offslip		1290	7828	8922	13%	50.61
49	M2 J2 EB onslip		1014	6152	7012	10%	82.63
50	M2 J2 WB onslip		1096	6652	7582	25%	80.65
51	M2 J3 SB offslip		3662	22219	25325	11%	34.08
52	M2 J3 NB offslip		2617	15879	18098	11%	31.43
53	M2 J3 SB onslip		2448	14853	16929	9%	68.25
54	M2 J3 NB onslip		3598	21827	24878	10%	64.85
55	M2 J4 EB offslip		1873	11363	12951	12%	77.91
56	M2 J4 WB offslip		1462	8868	10107	7%	70.43
57	M2 J4 EB onslip		1403	8511	9701	9%	61.93
58	M2 J4 WB onslip		1829	11098	12649	10%	64.41

LinkNo	From	To	AM + PM Peak	18hr 6-24 AAWT	24hr 0-24 AADT	HGV percentage	Net spd (KPH)
1	A2/A227	M2J1	17559	106528	121418	28%	67.10
2	M2J1	M2J2	14251	86463	98548	31%	94.15
3	M2J2	M2J3	14361	87130	99308	29%	94.56
4	M2J3	M2J4	12197	73997	84339	33%	87.79
5	Frindsbury Hill rdbt	A228/B2002	2642	16031	18272	8%	30.70
6	B2002/A2	B2002/A228	1617	9810	11181	6%	28.00
7	M2J2	A228/Cuxton Rd	3167	19215	21900	13%	33.69
8	M2J1	A289/A226	8614	52263	59568	17%	89.44
9	A289/A226	A226/Gravesend Rd	3476	21091	24039	6%	61.02
10	A289/A226	A289/B2000	8557	51915	59171	16%	90.31
11	B2000/B2010	Hollywood Ln	1519	9213	10500	3%	42.38
12	A226/B2010	B2010/B2000	2056	12473	14216	3%	39.25
13	A226/B2010	A2/B2010	1023	6206	7073	3%	32.03
14	A226/A289	A226/B2010	1481	8987	10243	5%	35.78
15	A226/B2010	A2/A226	1328	8058	9185	5%	44.16
16	M1J1/A2	A2/B2010	2496	15142	17258	6%	43.45
17	A2/B2010	A2/A226	2265	13739	15659	6%	39.71
18	A289/rdbt	A289/Maritime Way	7444	45165	51478	7%	68.73
19	A2/A229	A2/A230	1041	6319	7202	11%	18.60
20	A2/A230	A229/M2J3	5849	35488	40448	11%	30.98
21	B2097/M2J3	B2097/A2	3621	21966	25036	9%	56.85
22	A2/B2002	A2/B2097	5827	35351	40292	5%	22.27
23	A228/Priory Rd	A2/High St	1366	8286	9444	7%	43.75
24	Lodge Hill	Ratcliffe Hwy	5708	34628	39468	15%	71.36
25	Frindsbury Hill rdbt	Anthony's Way rdbt	7590	46050	52486	12%	54.29
26	Anthony's Way rdbt	Anthone's Way	3174	19254	21946	19%	25.16
27	Maritime way rdbt	Maritime Way South	4980	30214	34437	4%	43.69
28	Maritime way rdbt	Maritime Way North	1928	11698	13333	4%	42.99
29	Maritime way rdbt	Pier Rd	5693	34540	39367	7%	72.97
30	Four Elms Hill rdbt	Lodge Hill	5637	34199	38979	16%	74.31
31	Four Elms Hill rdbt	Frindsbury Hill rdbt	6749	40945	46668	10%	68.59
32	Four Elms Hill rdbt	Hoo Rd	1222	7415	8452	5%	26.38
33	Four Elms Hill rdbt	A289/B2000	6226	37770	43049	17%	98.03
34	Four Elms Hill rdbt	Lodge Hill(through rdbt)	4280	25968	29597	18%	48.22
35	Four Elms Hill rdbt	Frindsbury Hill rdbt(through rdbt)	5392	32713	37285	11%	33.15
36	A289/Medway Rd rdbt	A289/Lower Rainham Rd	5454	33092	37717	5%	57.20
37	A289/Lower Rainham Rd	A289/A2	3895	23629	26932	5%	65.98
38	A289/A2	A278/A2 rdbt	7906	47969	54673	5%	45.23
39	A278/A2 rdbt	A278/M2J4	4122	25009	28505	6%	72.90
40	Brewers Rd/A2	A226/Pear Tree Ln	173	1052	1200	86%	44.99
41	A226/Gravesend Rd	A226 E Milton Rd	640	3881	4423	1%	58.72
42	A227/A2	A227/Wrotham Rd	107	649	739	6%	76.39
43	M2 J1 EB offslip		3953	23981	27333	14%	74.71
44	M2 J1 WB offslip		1645	9983	11378	11%	80.00
45	M2 J1 EB onslip		2144	13005	14822	15%	77.06
46	M2 J1 WB onslip		3459	20983	23916	14%	67.56
47	M2 J2 EB offslip		1059	6425	7323	13%	36.95
48	M2 J2 WB offslip		1241	7529	8582	13%	52.63
49	M2 J2 EB onslip		979	5942	6773	10%	82.95
50	M2 J2 WB onslip		1052	6381	7272	25%	80.98
51	M2 J3 SB offslip		3608	21891	24950	11%	34.38
52	M2 J3 NB offslip		2527	15333	17476	11%	33.77
53	M2 J3 SB onslip		2389	14497	16523	9%	68.43
54	M2 J3 NB onslip		3472	21066	24010	11%	65.62
55	M2 J4 EB offslip		1815	11012	12551	11%	78.30
56	M2 J4 WB offslip		1447	8781	10008	7%	70.90
57	M2 J4 EB onslip		1408	8541	9734	9%	62.14
58	M2 J4 WB onslip		1727	10479	11944	11%	64.87

## Appendix U

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# OPTION TESTING OF MITIGATION MEASURES

# MEMORANDUM

**Date** September 2011  
**Reference** 5086-UA003269-GDR-02  
**From** Mike Brain  
**To**  
**Copies**  
**Subject** Lodge Hill – Optioneering and Mitigation Measures

## 1 OPTIONEERING AND MITIGATION MEASURES

### 1.1 Historical Context

This memo provides a record of a range of possible access arrangements and mitigation measures to serve the predicted future growth in 2026 which have been explored to serve the residual traffic flows generated by Lodge Hill.

The memo refers to a 'preferred option' which comprises what was considered to be the optimum scheme in response to the prevailing constraints. This memo therefore serves as a historical record of the development of the mitigation measures. For details of scheme which was agreed subsequent to the optioneering discussed in this memo please refer to the Transport Assessment which was prepared in relation to the 2011 Outline Planning Application.

### 1.2 Introduction

The preferred option, shown in Hyder drawing number 0032-GD01460-GDD-00 in the 2009 Core Strategy Site Specific Information Transport Assessment finalised as 'evidence' and submitted to Medway Council in August 2011, was selected on its ability to provide the highest level of bus priority whilst accommodating the predicted traffic growth including Lodge Hill in 2026.

To give confidence in the deliverability of the proposals they are all achievable within the extents of the public highway and have been subjected to capacity analysis and swept path analysis.

The following areas are discussed in this section:

- The Study area
- Selection and description of preferred options including phasing
- Functional description of the preferred option

The details of the traffic modelling work carried out to support this work is provided in the following chapter.

## 1.3 The Study area

The study area comprises the Four Elms Roundabout, the Sans Pareil Roundabout and the Anthony's Way Roundabout and Junction 1 of the M2. Consideration has also been given to the operation of the Maritime Way junction and the junction between Bells Lane, Dux Court Road, and the A228.

Paramount in the determination of mitigation measures is the need to promote sustainable modes especially buses. These facilities have been described in detail in the earlier section dealing with the dedicated bus service.

## 1.4 The Four Elms Roundabout

This is an important junction due to its proximity to Lodge Hill and its function connecting the A228 to the A289. The operation of this junction and its suitability to serve the predicted demands generated by Lodge Hill were investigated by Peter Brett Associates in their report to Defence Estates in October 2007 entitled Land at Chattenden and Lodge Hill – Access and Transport issues. This study established several potential traffic capacity solutions to serve the predicted demands at 2026 including a triple roundabout, roundabout and flyover, signal gyratory one way and signal gyratory 2 way as illustrated in the figures below.



Figure 1-1 Triple roundabout

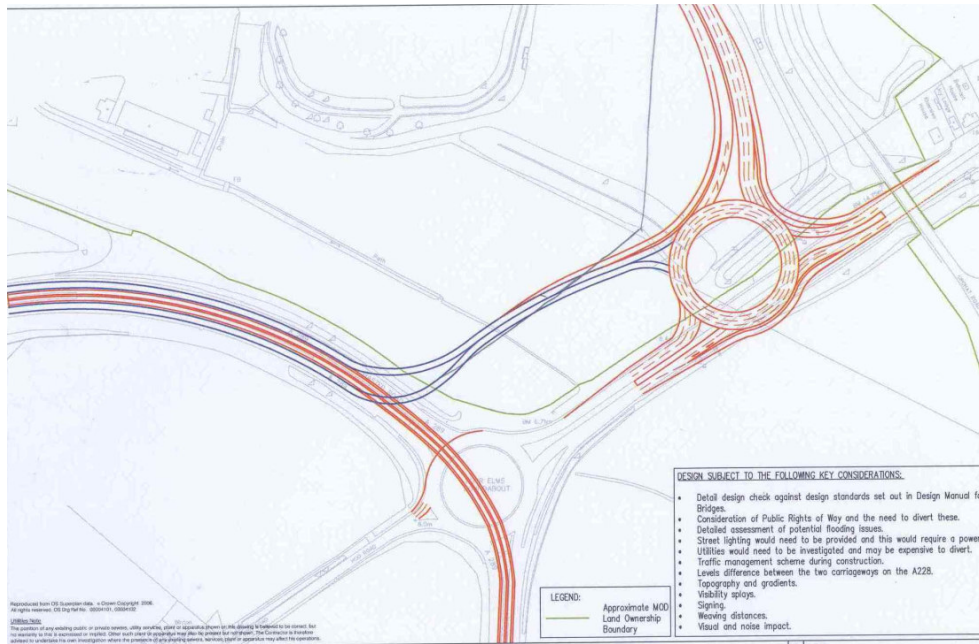


Figure 1-2 Roundabout and flyover

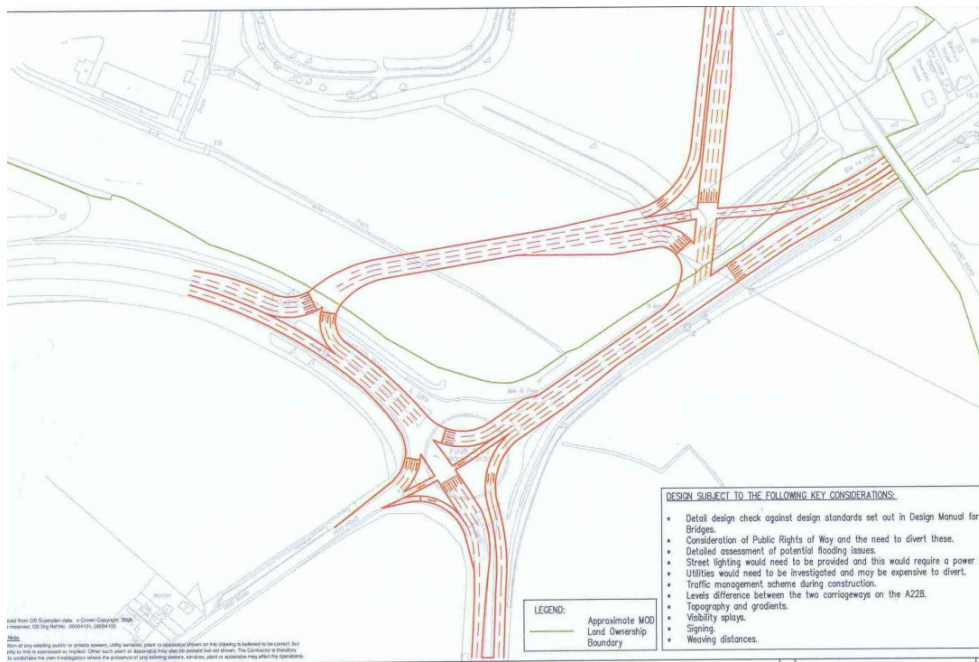
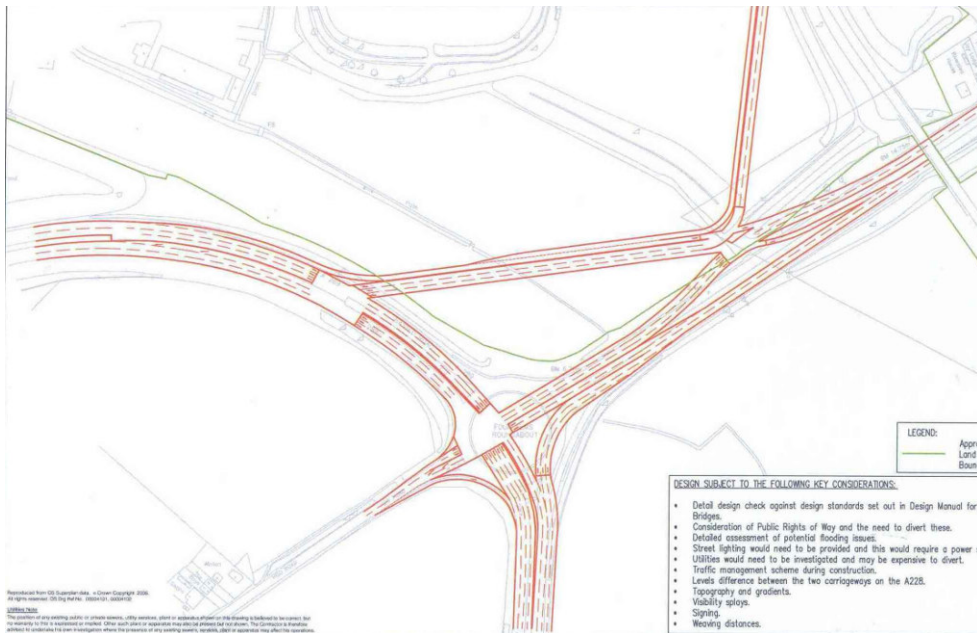


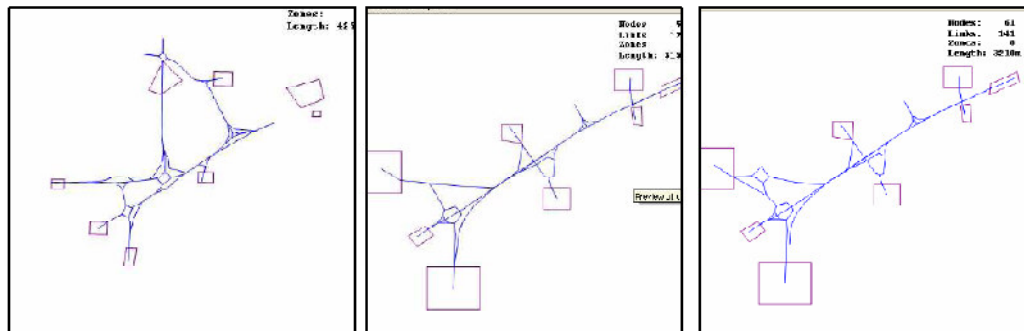
Figure 1-3 Signal Gyratory (one Way)



**Figure 1-4 Signal Gyrotory (two-way)**

This assessment tested headline traffic generation and distributions using conventional models such as Arcady and LINSIG. The report concluded that each of these solutions had the potential to serve the demand but it identified that further investigation would be required to establish this with certainty. Furthermore all of these options were dependent on land which is outside the control of the developer and therefore could not guarantee the delivery of the solutions posed.

Following this report Hyder commissioned PBA to consider how the access could be further developed to work within the highway constraints and tested more robustly using micro simulation modelling to give greater confidence in the solutions presented. From this several options were tested using Paramics these included:



**Figure 1-5 Three Roundabouts One roundabout plus signals Two roundabouts**

From these solutions the enlarged signalised roundabout incorporating a new off slip and improvements to the existing on slip emerged as a clear preferred solution as it served the traffic demand predicted at 2026. Furthermore this solution is also achievable within the highway boundary or land within the OPA red line boundary. The preferred solution also presents a less 'highways based' solution as it does not rely on significantly increasing the area of highway to achieve the increase in capacity. Furthermore the simplicity of the arrangement lends itself to the inclusion of the significant level of bus priority described in the dedicated bus service section.

## The preferred solution

The preferred solution is shown in Hyder Drawing number 0032-GD01460-GDD-00 in the 2009 CS SSI TA and can be explained by discussing its constituent parts:

- Bus priority
- Pedestrian Provision
- Four Elms Roundabout
- A228 Four Elms Hill
- Improved on slip
- New off slip
- Signalisation of Chattenden Lane junction

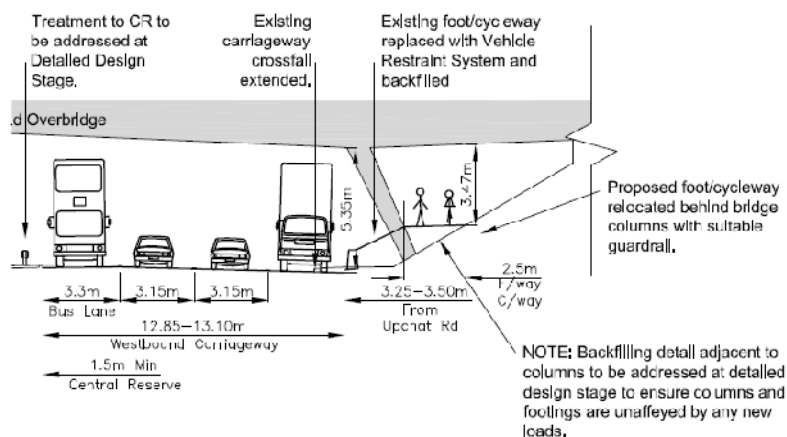
## Bus priority

Refer to the dedicated bus section, which discusses the very high level of bus priority provided at this junction in the preferred option

## Pedestrian provision

It is recognised that the A228 and the A289 represent significant severance to pedestrian and cyclist movement. These roads are by their nature distributors of significant levels of traffic to remove traffic from other roads where its presence may lead to undesired congestion and associated effects. The challenge would be to provide attractive pedestrian and cyclist priority whilst maintaining vehicle capacity as unattractive facilities are unlikely to be used and reduced capacity would be likely to create congestion in less desirable locations. As discussed in the section dealing with pedestrian priority the preferred option is the provision of a pedestrian / cyclist bridge at this location. This would provide an easy to understand and safe method to cross a busy and complex traffic junction. Given the complexity of the at grade solution it would also likely that a bridge would reduce pedestrian and vehicular delay. It is recommended that careful consideration should be given to the design of the bridge to make it an attractive gateway feature to promote walking and cycling.

The footpath on the southern side of Upchat Road could be realigned behind the piers of the bridge to maintain the current width of the pedestrian and cyclist provision; see the drawing extract included as Figure 1-6.



## Figure 1-6 Pedestrian facilities at the Upchat Bridge

To achieve this, the path could be re-graded along the Four Elms Hill to achieve a maximum longfall gradient of 6%. This could then link into a new section of footpath provided on the inside of the on slip road at the Upchat Road which continues on across Upchat Bridge and into the site. It is proposed that the entire route would be a lit, shared pedestrian and cyclist facility. Following the route out from the site the proposed arrangement ensures that pedestrians and cyclists have an uninterrupted journey from between the site and Wainscott via a route which takes advantage of the existing gradients.

## The roundabout

The proposals identify potential significant capacity improvements for this roundabout. The Inscribed Circle Diameter (ICD) of the roundabout is increased 100m allowing the circulatory carriageway to be widened to 3 lanes, and up to 4 lanes for a short section. The roundabout would also be fully signalised with the inclusion of a signalised bus gate allowing buses to get the first green signal onto the roundabout from the Four Elms Bus Lane. The signalisation also improves that capacity of the proposed arrangement by balancing the traffic flows approaching and circulating around the roundabout. Full signalisation would allow for greater coordination with other signal junctions within the vicinity as which are likely to become more commonplace driven by the need to provide bus priority, manage the exiting road network and maximise capacity. Signal control also offers benefits in terms of dealing with unexpected events as traffic could be controlled at these times a situation which would not possible with conventional roundabouts. The proposed arrangement maintains the current arrangement which provides a segregated left turn from the A228 to the A289 and it provides further capacity by providing a new segregated left turn into the A228 from the A289.

## A228 Four Elms Hill

It is proposed that the south west bound carriageway would be widened between the on slip at Upchat Road and the Four Elms Roundabout with the provision of an additional lane. The capacity may be further enhanced by the provision of a flare lane on the approach to the Four Elms Roundabout. Heading north eastwards on this section the current two lanes are maintained with the addition of a long auxiliary lane to allow the left turning traffic from the A289 to merge with the existing traffic lanes.

## Improved On Slip

The existing on slip from Upchat Lane onto the A228 would be reconfigured to reflect the priority of the movement to / from Lodge Hill. The priority junction at this location would also be reconfigured to remove the connection between Lodge Hill and the Upnors for traffic. This feature is designed to maintain the connection to the A228 for the residents of the Upnors whilst minimising the potential for traffic from Lodge Hill to rat run through the Upnors en-route to the Medway Tunnel.

## New Off Slip

A new two lane off slip from the A228 to Lodge Hill would be provided after the Upchat Lane Bridge and before Chattenden Lane to give access to Lodge Hill.

## Signalisation of Chattenden Lane junction

To provide bus priority it is proposed to signalise Chattenden Lane junction with the A228. The junction would be arranged to allow buses only to turn right at this junction. The proposed junction arrangement would raise the profile of the existing pedestrian crossing at this location

as the signals are called more frequently which offers potential safety benefits to the users of the crossing.

## Capacity

Paramics modelling has been used to develop the mitigation measures and access arrangements for the Four Elms Roundabout which show these arrangements have sufficient capacity to serve 100% of the traffic generated by Lodge Hill in 2026 including the background growth. This point is further reinforced by the Saturn modelling presented in section 13 which concurs with this assertion.

## Phasing

Hyder drawing numbers 0029-GD01460-GDD-00 to 0032-GD01460-GDD-00 show a potential sequence to phase in the improvements at the Four Elms Roundabout throughout the construction of the scheme. The drawings relate to the following trigger points.

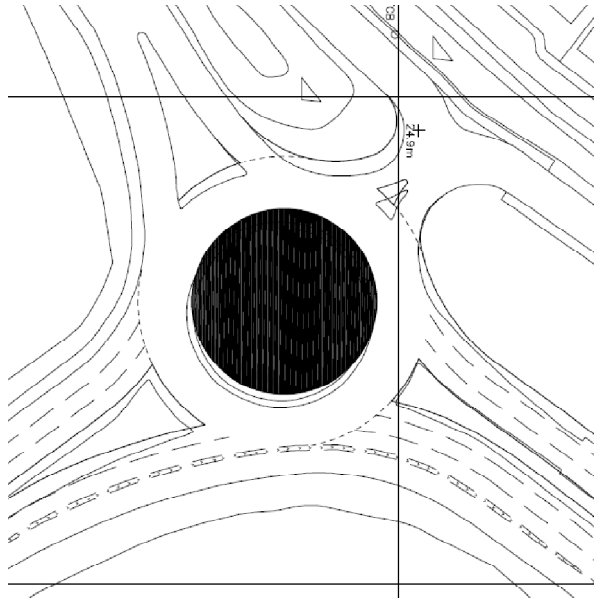
- Phase 1 - Up to approximately 10% of residential development before phase 2 required
- Phase 2 - Up to approximately 30% of residential development before phase 3 required
- Phase 3 - Up to approximately 50% of residential development before phase 4 required
- Phase 4 - Up to the full development

The phasing aims to provide sufficient capacity throughout the development stages whilst minimise the front loading of these mitigation measures and the need for abortive work

## The Sans Pareil Roundabout.

Initial assessments of this junction within the Saturn Model show that it does not provide sufficient capacity to serve the predicted traffic flows in 2026 without generating significant queuing and delay.

The first options considered an improvement of the current roundabout by providing additional traffic lanes on the approach this is shown in the drawing extract Figure 1-7.



**Figure 1-7 Potential enlargement of Sans Pareil roundabout**

This arrangement was assessed using the traffic flow data for the 2026 demand flows with Arcady which indicated that this junction arrangement would operate in excess of its capacity. It is considered that this junction arrangement represents that largest conventional four arm roundabout arrangement that would be achievable within the highway boundaries.

The next option considered was the full signalisation of the junction with the aim of establishing the highest level of bus priority whilst providing sufficient capacity to serve the flow of general traffic. The signal arrangement is shown in the drawing extract Figure 1-8.

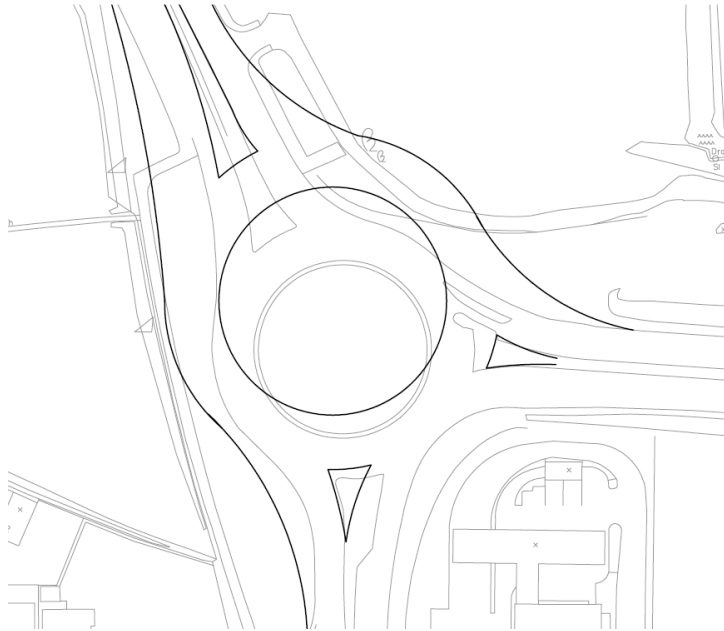


**Figure 1-8 Preferred option – signalisation of Sans Pareil roundabout**

The signal arrangement provides two linked signal junctions, the Anthony's Way junction, and the Wainscott Road Frindsbury Hill junction. The signal timings have been established using LinSig and the geometric design of the junction using Auto track. The results of the LinSig modelling show that if the traffic growth predicted for 2026 arises that the junction should operate close to its design capacity for the peak hour. It is considered that this junction arrangement offering four lanes at the stop lines to serve 2 lane stop lines would be likely to represent the highest level of capacity that is desirable and that the link capacity is likely provide the ultimate limit to capacity. It is considered unlikely that the peak traffic level used to test these proposals will be realised in 2026 as peak spreading and modal shift are likely to become commonplace as the network would be placed under greater stress by rising traffic levels. These points are discussed in more detail in the modelling section.

## 1.5 The Anthony's Way Junction

Again preliminary investigations revealed that this junction in its current form would be operating well in excess of its current capacity in 2026. The first option considered was the potential to increase the size and therefore capacity of this junction whilst retaining its configuration as a conventional roundabout. A roundabout was overlaid on the current arrangement with an ICD of 80 m (approximately the same size as the current Four Elms Roundabout. The initial assessment of this junction using Arcady revealed that although this junction has significantly more capacity it would be likely to be operating above its design capacity in 2026. Furthermore the current Highway boundary is very close to the kerblines of the existing arrangement and enlargement of this type would require purchasing 3<sup>rd</sup> party land to guarantee delivery.



**Figure 1-9 Enlargement of Anthony's Way junction**

The next step considered as for the Sans Pareil roundabout is a full signalisation of the junction. Again a signal arrangement was designed using LinSig and geometrically checked using Auto track. The initial analysis shows that the junction would operate within its capacity at peak times.



**Figure 1-10 Preferred option – Signalisation of Anthony's Way junction**

## 1.6 Speed limits

The predicted growth in Medway by 2026 will lead to intensification in the level of traffic and associated pressure on available road space in the roads surrounding Lodge Hill. It is therefore suggested that if the full mitigation measures are implemented that the 40 mph speed limit in force on the A228 adjacent to Chattenden would be extended to include the Four Elms roundabout, the Sans Pareil and Anthony's Way junctions.

## 1.7 Summary

This section has identified that without the new settlement at Lodge Hill that much of the study area would be likely to be operating in excess of its design capacity in 2026.

Various potential schemes have been assessed to determine their suitability to serve the predicted, with Lodge Hill, flows in 2026. Traffic modelling has shown that the preferred mitigation measures allow the network to operate within its design capacity after the construction and occupation of Lodge Hill in 2026. Evidence of this is provided in the following chapter which discusses the modelling work undertaken.

Whilst providing sufficient capacity to serve the flow of general; traffic the mitigation measures provide a very high level of bus priority extending throughout the study area. These measures

would reduce journey times, improve reliability, and generally promote the use of the bus. The mitigation measures have been prepared using swept path analysis to ensure that they are geometrically suitable. In addition, this solution can be achieved within land within the highway boundary or in land within the OPA red line boundary.

This memo provides a historical record of the optioneering exercise carried out during the development of the mitigation measures. For details of scheme which was agreed following the optioneering exercise described in this memo please refer to the Transport Assessment which was prepared in relation to the 2011 Outline Planning Application.

## Appendix V

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# REVISED EXTERNAL TRAFFIC GENERATION FIGURES

AM		Medway Model Trip Rates			TRICS Multi Modal average Trip Rates																							
Trips / Unit or Trips / 100m <sup>2</sup>		Veh			Ped						Cyc			Occup			PSV			OGV			Veh			Total		
		In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	0.250	0.350	0.600	0.043	0.188	0.231	0.006	0.035	0.041	0.008	0.020	0.028	0.182	0.625	0.807	0.002	0.002	0.004	0.003	0.002	0.005	0.150	0.389	0.539	0.239	0.868	1.107
2 PTAL-1	Unit	0.090	0.210	0.300	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3 PTAL-2	Unit	0.070	0.170	0.240	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4 Rented houses	Unit	0.156	0.218	0.374	0.057	0.290	0.347	0.002	0.017	0.019	0.000	0.005	0.005	0.136	0.347	0.483	0.000	0.000	0.000	0.005	0.002	0.007	0.099	0.191	0.290	0.196	0.658	0.854
5 PTAL-1	Unit	0.090	0.210	0.300	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 PTAL-2	Unit	0.070	0.170	0.240	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7 Private flats	Unit	0.060	0.230	0.290	0.031	0.142	0.173	0.001	0.041	0.042	0.003	0.004	0.007	0.080	0.280	0.360	0.000	0.000	0.000	0.001	0.001	0.002	0.075	0.231	0.306	0.115	0.468	0.583
8 Rented flats	100 sqm	0.050	0.190	0.240	0.072	0.190	0.262	0.006	0.049	0.055	0.003	0.008	0.011	0.096	0.196	0.292	0.000	0.000	0.000	0.003	0.003	0.006	0.073	0.138	0.211	0.176	0.444	0.620
9 Local Retail	100 sqm	5.144	4.828	9.972	4.552	4.295	8.847	0.009	0.000	0.009	0.089	0.071	0.160	5.659	5.305	10.964	0.009	0.000	0.009	0.089	0.089	0.178	4.721	4.366	9.087	10.309	9.671	19.980
10 Retail Parks	100 sqm	0.540	0.270	0.810																								
11 B1 offices	100 sqm	1.090	0.290	1.380	0.093	0.019	0.112	0.090	0.008	0.098	0.034	0.002	0.036	1.633	0.214	1.847	0.003	0.003	0.006	0.016	0.012	0.028	1.432	0.201	1.633	1.851	0.244	2.095
12 B2 Industrial	100 sqm	0.840	0.380	1.220	0.026	0.007	0.033	0.031	0.001	0.032	0.007	0.002	0.009	0.491	0.244	0.735	0.005	0.001	0.006	0.017	0.030	0.047	0.436	0.208	0.644	0.556	0.254	0.810
13 Community Centre	100 sqm	0.461	0.307	0.768	0.922	0.653	1.575	0.346	0.461	0.807	0.038	0.000	0.038	0.000	0.000	0.538	0.192	0.730	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14 Food super store	100 sqm	4.200	2.740	6.940	0.783	0.720	1.503	0.168	0.114	0.282	0.078	0.070	0.148	4.908	2.852	7.760	0.011	0.010	0.021	0.034	0.034	0.068	3.869	2.317	6.186	5.936	3.756	9.692
15 GARDEN CENTRE	100 sqm	0.351	0.054	0.405	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16 Hotel	Per Bed	0.150	0.210	0.360	0.097	0.233	0.330	0.049	0.046	0.095	0.005	0.003	0.008	0.212	0.471	0.683	0.000	0.000	0.000	0.007	0.010	0.017	0.194	0.376	0.570	0.363	0.754	1.117
17 Sports and leisure centres	100 sqm	0.640	0.520	1.160	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
18 Leisure Parks	100 sqm	0.500	0.350	0.850	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
19 Restaurants	100 sqm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 Primary School	100 sqm	4.933	3.597	8.530	13.644	3.292	16.936	0.522	0.068	0.590	0.045	0.045	0.090	10.965	1.680	12.645	0.023	0.023	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21 Secondary School	100 sqm	1.765	1.133	2.898	4.552	0.326	4.878	3.579	0.055	3.634	0.655	0.004	0.659	2.698	0.193	2.891	0.072	0.070	0.142	0.007	0.011	0.018	1.919	1.252	3.171	11.484	0.578	12.062
22 GP Surgeries	100 sqm	4.890	2.129	7.019	1.699	1.210	2.909	0.302	0.187	0.489	0.058	0.029	0.087	4.191	1.872	6.063	0.000	0.000	0.000	0.014	0.014	0.028	3.715	1.757	5.472	6.250	3.298	9.548
23 Nursing Homes	Unit	0.071	0.058	0.129	0.043	0.032	0.075	0.004	0.007	0.011	0.004	0.007	0.011	0.072	0.036	0.108	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.036	0.097	0.122	0.083	0.205
24 Private Hospital	100 sqm	1.403	0.411	1.814	0.102	0.051	0.153	0.041	0.000	0.041	0.020	0.020	0.040	2.111	0.605	2.716	0.000	0.000	0.000	0.051	0.041	0.092	1.548	0.492	2.040	2.275	0.676	2.951

PM		Medway Model Trip Rates			TRICS Multi Modal average Trip Rates																							
Trips / Unit or Trips / 100m <sup>2</sup>		Veh			Ped						Cyc			Occup			PSV			OGV			Veh			Total		
		In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	0.310	0.270	0.580	0.080	0.053	0.133	0.016	0.006	0.022	0.017	0.012	0.029	0.505	0.324	0.829	0.001	0.001	0.002	0.001	0.001	0.002	0.371	0.227	0.598	0.618	0.396	1.014
2 PTAL-1	Unit	0.180	0.130	0.310	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3 PTAL-2	Unit	0.140	0.100	0.240	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4 Rented houses	Unit	0.247	0.215	0.462	0.146	0.114	0.260	0.010	0.012	0.022	0.012	0.015	0.027	0.327	0.265	0.592	0.000	0.000	0.000	0.000	0.000	0.000	0.235	0.166	0.401	0.495	0.406	0.901
5 PTAL-1	Unit	0.180	0.130	0.310	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 PTAL-2	Unit	0.140	0.100	0.240	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7 Private flats	Unit	0.210	0.090	0.300	0.124	0.046	0.170	0.009	0.000	0.009	0.003	0.003	0.006	0.255	0.146	0.401	0.000	0.000	0.000	0.000	0.000	0.000	0.205	0.111	0.316	0.392	0.195	0.587
8 Rented flats	100 sqm	0.150	0.064	0.215	0.176	0.113	0.289	0.023	0.001	0.024	0.006	0.006	0.012	0.182	0.137	0.319	0.000	0.000	0.000	0.001	0.001	0.002	0.131	0.110	0.241	0.386	0.257	0.643
9 Local Retail	100 sqm	6.112	6.401	12.513	3.277	3.321	6.598	0.115	0.124	0.239	0.106	0.115	0.221	6.448	6.660	13.108	0.018	0.018	0.036	0.027	0.035	0.062	5.048	5.252	10.300	9.946	10.221	20.167
10 Retail Parks	100 sqm	1.220	1.340	2.560	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11 B1 offices	100 sqm	0.140	0.790	0.930	0.020	0.087	0.107	0.007	0.072	0.079	0.004	0.032	0.036	0.180	1.337	1.517	0.002	0.003	0.005	0.004	0.004	0.008	0.165	1.172	1.337	0.213	1.528	1.741
12 B2 Industrial	100 sqm	0.220	0.720	0.940	0.007	0.019	0.026	0.000	0.001	0.001	0.005	0.018	0.023	0.162	0.432	0.594	0.003	0.000	0.003	0.013	0.008	0.021	0.127	0.362	0.489	0.175	0.470	0.645
13 Community Centre	100 sqm	0.841	0.673	1.514	1.809	0.841	2.650	0.673	0.210	0.883	0.000	0.084	0.084	0.084	0.000	0.084	1.052	0.547	1.599	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14 Food super store	100 sqm	7.610	8.040	15.650	1.620	0.984	2.604	0.171	0.160	0.331	0.097	0.084	0.181	9.845	10.333	20.178	0.000	0.004	0.004	0.008	0.011	0.019	6.224	6.631	12.855	11.734	11.561	23.295
15 GARDEN CENTRE	100 sqm	0.108	0.270	0.378	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16 Hotel	Per Bed	0.190	0.140	0.330	0.255	0.171	0.426	0.036	0.002	0.038	0.010	0.003	0.013	0.383	0.205	0.588	0.000	0.000	0.000	0.003	0.003	0.006	0.263	0.				

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Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																							
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh			Total		
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	846	1185	2031	146	636	782	20	118	139	27	68	95	616	2116	2732	7	7	14	10	7	17	508	1317	1825	809	2938	3747
2 PTAL-1	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3 PTAL-2	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4 Rented houses	Unit	76	106	181	28	141	168	1	8	9	0	2	2	66	168	234	0	0	0	2	1	3	48	93	141	95	319	414
5 PTAL-1	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 PTAL-2	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7 Private flats	Unit	22	84	106	11	52	63	0	15	15	1	1	3	29	103	132	0	0	0	0	0	1	28	85	112	42	172	214
8 Rented flats	100 sqm	38	145	183	55	145	200	5	37	42	2	6	8	73	150	223	0	0	0	2	2	5	56	105	161	134	339	473
9 Local Retail	100 sqm	101	95	196	89	84	174	0	0	0	2	1	3	111	104	216	0	0	0	2	2	3	93	86	179	203	190	393
10 Retail Parks	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11 B1 offices	100 sqm	382	102	483	33	7	39	32	3	34	12	1	13	572	75	646	1	1	2	6	4	10	501	70	572	648	85	733
12 B2 Industrial	100 sqm	59	27	85	2	0	2	2	0	2	0	0	1	34	17	51	0	0	0	1	2	3	31	15	45	39	18	57
13 Community Centre	100 sqm	4	2	6	7	5	12	3	4	6	0	0	0	0	0	0	4	1	6	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	130	85	214	24	22	46	5	4	9	2	2	5	152	88	240	0	0	1	1	1	2	119	72	191	183	116	299
15 GARDEN CENTRE	100 sqm	2	0	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16 Hotel	Per Bed	20	28	48	13	31	44	7	6	13	1	0	1	28	63	92	0	0	0	1	1	2	26	50	76	49	101	150
17 Sports and leisure centres	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
18 Leisure Parks	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Primary School	100 sqm	476	347	823	1316	318	1634	50	7	57	4	4	9	1058	162	1220	2	2	4	0	0	780	580	1360	2429	491	2920	
21 Secondary School	100 sqm	229	147	377	592	42	634	465	7	472	85	1	86	351	25	376	9	9	18	1	1	2	249	163	412	1493	75	1568
22 GP Surgeries	100 sqm	70	30	100	24	17	41	4	3	7	1	0	1	60	27	86	0	0	0	0	0	0	53	25	78	89	47	136
23 Nursing Homes	Unit	9	7	15	5	4	9	0	1	1	0	1	1	9	4	13	0	0	0	0	0	0	7	4	12	15	10	25
24 Private Hospital	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>TOTAL</b>		<b>2462</b>	<b>2390</b>	<b>4852</b>	<b>2345</b>	<b>1505</b>	<b>3850</b>	<b>595</b>	<b>212</b>	<b>807</b>	<b>139</b>	<b>89</b>	<b>227</b>	<b>3159</b>	<b>3102</b>	<b>6261</b>	<b>24</b>	<b>21</b>	<b>45</b>	<b>27</b>	<b>22</b>	<b>49</b>	<b>2498</b>	<b>2665</b>	<b>5163</b>	<b>6228</b>	<b>4901</b>	<b>11128</b>
<b>Total Based on Census Data</b>		<b>2462</b>	<b>2390</b>	<b>4852</b>	<b>389</b>	<b>377</b>	<b>766</b>	<b>549</b>	<b>533</b>	<b>1083</b>	<b>55</b>	<b>54</b>	<b>109</b>	<b>2753</b>	<b>2672</b>	<b>5425</b>	<b>17</b>	<b>17</b>	<b>34</b>				<b>2462</b>	<b>2390</b>	<b>4852</b>	<b>3763</b>	<b>3654</b>	<b>7417</b>

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Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																							
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh			Total		
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	1049	914	1963	271	179	450	54	20	74	58	41	98	1709	1097	2806	3	3	7	3	3	7	1256	768	2024	2092	1340	3432
2 PTAL-1	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3 PTAL-2	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4 Rented houses	Unit	120	104	224	71	55	126	5	6	11	6	7	13	159	129	287	0	0	0	0	0	0	114	81	194	240	197	437
5 PTAL-1	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 PTAL-2	Unit	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7 Private flats	Unit	77	33	110	46	17	62	3	0	3	1	1	2	94	54	147	0	0	0	0	0	0	75	41	116	144	72	215
8 Rented flats	100 sqm	115	49	164	134	86	221	18	1	18	5	5	9	139	105	243	0	0	0	1	1	2	100	84	184	295	196	491
9 Local Retail	100 sqm	120	126	246	64	65	130	2	2	5	2	2	4	127	131	258	0	0	1	1	1	1	99	103	202	196	201	396
10 Retail Parks	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11 B1 offices	100 sqm	49	277	326	7	30	37	2	25	28	1	11	13	63	468	531	1	1	2	1	1	3	58	410	468	75	535	609
12 B2 Industrial	100 sqm	15	50	66	0	1	2	0	0	0	0	1	2	11	30	42	0	0	0	1	1	1	9	25	34	12	33	45
13 Community Centre	100 sqm	6	5	12	14	6	20	5	2	7	0	1	1	0	1	0	8	4	12	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	235	248	483	50	30	80	5	5	10	3	3	6	304	319	623	0	0	0	0	0	1	192	205	397	362	357	719
15 GARDEN CENTRE	100 sqm	1	1	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16 Hotel	Per Bed	25	19	44	34	23	57	5	0	5	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143
17 Sports and leisure centres	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
18 Leisure Parks	100 sqm	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Primary School	100 sqm	29	53	82	7	26	33	0	0	0	0	0	0	44	72	116	0	0	0	0	0	33	59	92	50	99	149	
21 Secondary School	100 sqm	26	43	69	12	12	24	0	22	22	0	2	2	33	76	109	0	1	1	0	0	33	52	84	45	111	156	
22 GP Surgeries	100 sqm	37	54	91	10	13	23	1	1	2	0	0	1	45	66	112	0	0	1	0	0	32	48	81	57	80	137	
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	1			



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Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total						
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh						
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way				
1 Private houses	Unit	846	1185	2031	146	636	782	20	118	139	27	68	95	616	2116	2732	7	7	14	10	7	17	508	1317	1825	809	2938	3747	
2 PTAL-1	Unit																												
3 PTAL-2	Unit																												
4 Rented houses	Unit	76	106	181	28	141	168	1	8	9	0	2	2	66	168	234	0	0	0	2	1	3	48	93	141	95	319	414	
5 PTAL-1	Unit																												
6 PTAL-2	Unit																												
7 Private flats	Unit	22	84	106	11	52	63	0	15	15	1	1	3	29	103	132	0	0	0	0	0	1	28	85	112	42	172	214	
8 Rented flats	100 sqm	38	145	183	55	145	200	5	37	42	2	6	8	73	150	223	0	0	0	2	2	5	56	105	161	134	339	473	
9 Local Retail	100 sqm	71	66	137	89	84	174	0	0	0	2	1	3	111	104	216	0	0	0	2	2	3	65	60	125	203	190	393	
10 Retail Parks	100 sqm																												
11 B1 offices	100 sqm	382	102	483	33	7	39	32	3	34	12	1	13	572	75	646	1	1	2	6	4	10	501	70	572	648	85	733	
12 B2 Industrial	100 sqm	59	27	85	2	0	2	2	0	2	0	0	1	34	17	51	0	0	0	1	2	3	31	15	45	39	18	57	
13 Community Centre	100 sqm	4	2	6	7	5	12	3	4	6	0	0	0	0	0	0	4	1	6	0	0	0	0	0	0	0	0	0	
14 Food super store	100 sqm	91	59	150	24	22	46	5	4	9	2	2	5	152	88	240	0	0	1	1	1	2	84	50	134	183	116	299	
15 GARDEN CENTRE	100 sqm	2	0	2																									
16 Hotel	Per Bed	20	28	48	13	31	44	7	6	13	1	0	1	28	63	92	0	0	0	1	1	2	26	50	76	49	101	150	
17 Sports and leisure centres	100 sqm																												
18 Leisure Parks	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19 Restaurants	100 sqm																												
20 Primary School	100 sqm	381	278	658	1316	318	1634	50	7	57	4	4	9	1058	162	1220	2	2	4	0	0	0	624	464	1088	2429	491	2920	
21 Secondary School	100 sqm	184	118	301	592	42	634	465	7	472	85	1	86	351	25	376	9	9	18	1	1	2	200	130	330	1493	75	1568	
22 GP Surgeries	100 sqm	70	30	100	24	17	41	4	3	7	1	0	1	60	27	86	0	0	0	0	0	0	53	25	78	89	47	136	
23 Nursing Homes	Unit	9	7	15	5	4	9	0	1	1	0	1	1	9	4	13	0	0	0	0	0	0	7	4	12	15	10	25	
24 Private Hospital	100 sqm																												
<b>TOTAL</b>		<b>2251</b>	<b>2237</b>	<b>4489</b>	<b>2345</b>	<b>1505</b>	<b>3850</b>	<b>595</b>	<b>212</b>	<b>807</b>	<b>139</b>	<b>89</b>	<b>227</b>	<b>3159</b>	<b>3102</b>	<b>6261</b>	<b>24</b>	<b>21</b>	<b>45</b>	<b>27</b>	<b>22</b>	<b>49</b>	<b>2229</b>	<b>2469</b>	<b>4698</b>	<b>6228</b>	<b>4901</b>	<b>11128</b>	
Total Based on Census Data		2251	2237	4489	356	353	709	502	499	1002	51	50	101	2517	2501	5019	16	16	32				2251	2237	4489	3442	3420	6862	

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Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total						
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh						
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way				
1 Private houses	Unit	1049	914	1963	271	179	450	54	20	74	58	41	98	1709	1097	2806	3	3	7	3	3	7	1256	768	2024	2092	1340	3432	
2 PTAL-1	Unit																												
3 PTAL-2	Unit																												
4 Rented houses	Unit	120	104	224	71	55	126	5	6	11	6	7	13	159	129	287	0	0	0	0	0	0	114	81	194	240	197	437	
5 PTAL-1	Unit																												
6 PTAL-2	Unit																												
7 Private flats	Unit	77	33	110	46	17	62	3	0	3	1	1	2	94	54	147	0	0	0	0	0	0	75	41	116	144	72	215	
8 Rented flats	100 sqm	115	49	164	134	86	221	18	1	18	5	5	9	139	105	243	0	0	0	1	1	2	100	84	184	295	196	491	
9 Local Retail	100 sqm	84	88	172	64	65	130	2	2	5	2	2	4	127	131	258	0	0	1	1	1	1	69	72	142	196	201	396	
10 Retail Parks	100 sqm																												
11 B1 offices	100 sqm	49	277	326	7	30	37	2	25	28	1	11	13	63	468	531	1	1	2	1	1	3	58	410	468	75	535	609	
12 B2 Industrial	100 sqm	15	50	66	0	1	2	0	0	0	0	1	2	11	30	42	0	0	0	1	1	1	9	25	34	12	33	45	
13 Community Centre	100 sqm	6	5	12	14	6	20	5	2	7	0	1	1	1	0	1	8	4	12	0	0	0	0	0	0	0	0	0	
14 Food super store	100 sqm	164	174	338	50	30	80	5	5	10	3	3	6	304	319	623	0	0	0	0	0	1	135	143	278	362	357	719	
15 GARDEN CENTRE	100 sqm	1	1	2																									
16 Hotel	Per Bed	25	19	44	34	23	57	5	0	5	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143	
17 Sports and leisure centres	100 sqm																												
18 Leisure Parks	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19 Restaurants	100 sqm																												
20 Primary School	100 sqm	29	53	82	7	26	33	0	0	0	0	0	0	44	72	116	0	0	0	0	0	0	33	59	92	50	99	149	
21 Secondary School	100 sqm	26	43	69	12	12	24	0	22	22	0	2	2	33	76	109	0	1	1	0	0	0	33	52	84	45	111	156	
22 GP Surgeries	100 sqm	37	54	91	10	13	23	1	1	2	0	0	1	45	66	112	0	0	1	0	0	0	32	48	81	57	80	137	
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	18	12	15	28	
24 Private Hospital	100 sqm																												
<b>TOTAL</b>		<b>1804</b>	<b>1874</b>	<b>3678</b>	<b>720</b>	<b>546</b>	<b>1266</b>	<b>101</b>	<b>84</b>	<b>185</b>	<b>79</b>	<b>75</b>	<b>155</b>	<b>2790</b>	<b>2587</b>	<b>5377</b>	<b>13</b>	<b>10</b>	<b>23</b>	<b>8</b>	<b>8</b>	<b>15</b>	<b>1956</b>	<b>1818</b>	<b>3774</b>	<b>3671</b>	<b>3287</b>	<b>6959</b>	
Total Based on Census Data		1804	1874	3678	285	296	581	403	418	821	41	42	83	2017	2095	4112	13	13	26				1804	1874	3678	2758	2865	5623	

Hyder Consulting (UK) Ltd 10 Medawar Road The Surrey Research Park Guildford GU2 7AR		
Client	Land Securities	
Project Title	Lodge Hill	
Drawing Title	Trip Generation reduced due to Retail and School Linked Trips	
Drawn	MNB	Checked
Date	July 11	Approved
Drg. No.	Table D	Rev. 02



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Trips / Unit or Trips / 100m <sup>2</sup>	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																							
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh			Total		
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	812	1137	1950	146	636	782	20	118	139	27	68	95	616	2116	2732	7	7	14	10	7	17	487	1264	1752	809	2938	3747
2 PTAL-1	Unit																											
3 PTAL-2	Unit																											
4 Rented houses	Unit	73	102	174	28	141	168	1	8	9	0	2	2	66	168	234	0	0	0	2	1	3	46	89	135	95	319	414
5 PTAL-1	Unit																											
6 PTAL-2	Unit																											
7 Private flats	Unit	21	81	102	11	52	63	0	15	15	1	1	3	29	103	132	0	0	0	0	0	1	26	81	108	42	172	214
8 Rented flats	100 sqm	36	139	175	55	145	200	5	37	42	2	6	8	73	150	223	0	0	0	2	2	5	53	101	155	134	339	473
9 Local Retail	100 sqm	71	66	137	89	84	174	0	0	0	2	1	3	111	104	216	0	0	0	2	2	3	65	60	125	203	190	393
10 Retail Parks	100 sqm																											
11 B1 offices	100 sqm	305	81	386	33	7	39	32	3	34	12	1	13	572	75	646	1	1	2	6	4	10	501	70	572	648	85	733
12 B2 Industrial	100 sqm	47	21	68	2	0	2	2	0	2	0	0	1	34	17	51	0	0	0	1	2	3	31	15	45	39	18	57
13 Community Centre	100 sqm	4	2	6	7	5	12	3	4	6	0	0	0	0	0	0	4	1	6	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	91	59	150	24	22	46	5	4	9	2	2	5	152	88	240	0	0	1	1	1	2	84	50	134	183	116	299
15 GARDEN CENTRE	100 sqm	2	0	2																								
16 Hotel	Per Bed	20	28	48	13	31	44	7	6	13	1	0	1	28	63	92	0	0	0	1	1	2	26	50	76	49	101	150
17 Sports and leisure centres	100 sqm																											
18 Leisure Parks	100 sqm																											
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Primary School	100 sqm	339	247	586	1316	318	1634	50	7	57	4	4	9	1058	162	1220	2	2	4	0	0	0	555	413	968	2429	491	2920
21 Secondary School	100 sqm	163	105	268	592	42	634	465	7	472	85	1	86	351	25	376	9	9	18	1	1	2	178	116	294	1493	75	1568
22 GP Surgeries	100 sqm	70	30	100	24	17	41	4	3	7	1	0	1	60	27	86	0	0	0	0	0	0	53	25	78	89	47	136
23 Nursing Homes	Unit	9	7	15	5	4	9	0	1	1	0	1	1	9	4	13	0	0	0	0	0	0	7	4	12	15	10	25
24 Private Hospital	100 sqm																											
<b>TOTAL</b>		<b>2062</b>	<b>2107</b>	<b>4169</b>	<b>2345</b>	<b>1505</b>	<b>3850</b>	<b>595</b>	<b>212</b>	<b>807</b>	<b>139</b>	<b>89</b>	<b>227</b>	<b>3159</b>	<b>3102</b>	<b>6261</b>	<b>24</b>	<b>21</b>	<b>45</b>	<b>27</b>	<b>22</b>	<b>49</b>	<b>2113</b>	<b>2339</b>	<b>4452</b>	<b>6228</b>	<b>4901</b>	<b>11128</b>

Total Based on Census Data	Veh			On foot			All PT			Bicycle			Occup			Other			Veh			All People					
	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way			
	2062	2107	4169	326	333	658	460	470	930	46	47	94	2306	2356	4662	15	15	29				2062	2107	4169	3152	3221	6374

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Trips / Unit or Trips / 100m <sup>2</sup>	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																							
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh			Total		
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	1007	877	1885	271	179	450	54	20	74	58	41	98	1709	1097	2806	3	3	7	3	3	7	1206	738	1943	2092	1340	3432
2 PTAL-1	Unit																											
3 PTAL-2	Unit																											
4 Rented houses	Unit	115	100	215	71	55	126	5	6	11	6	7	13	159	129	287	0	0	0	0	0	0	109	77	187	240	197	437
5 PTAL-1	Unit																											
6 PTAL-2	Unit																											
7 Private flats	Unit	74	32	106	46	17	62	3	0	3	1	1	2	94	54	147	0	0	0	0	0	0	72	39	111	144	72	215
8 Rented flats	100 sqm	110	47	157	134	86	221	18	1	18	5	5	9	139	105	243	0	0	0	1	1	2	96	81	177	295	196	491
9 Local Retail	100 sqm	84	88	172	64	65	130	2	2	5	2	2	4	127	131	258	0	0	1	1	1	1	69	72	142	196	201	396
10 Retail Parks	100 sqm																											
11 B1 offices	100 sqm	39	221	260	7	30	37	2	25	28	1	11	13	63	468	531	1	1	2	1	1	3	58	410	468	75	535	609
12 B2 Industrial	100 sqm	12	40	53	0	1	2	0	0	0	0	1	2	11	30	42	0	0	0	1	1	1	9	25	34	12	33	45
13 Community Centre	100 sqm	6	5	12	14	6	20	5	2	7	0	1	1	1	0	1	8	4	12	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	164	174	338	50	30	80	5	5	10	3	3	6	304	319	623	0	0	0	0	0	1	135	143	278	362	357	719
15 GARDEN CENTRE	100 sqm	1	1	2																								
16 Hotel	Per Bed	25	19	44	34	23	57	5	0	5	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143
17 Sports and leisure centres	100 sqm																											
18 Leisure Parks	100 sqm																											
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Primary School	100 sqm	26	48	73	7	26	33	0	0	0	0	0	0	44	72	116	0	0	0	0	0	0	29	53	82	50	99	149
21 Secondary School	100 sqm	23	38	62	12	12	24	0	22	22	0	2	2	33	76	109	0	1	1	0	0	0	29	46	75	45	111	156
22 GP Surgeries	100 sqm	37	54	91	10	13	23	1	1	2	0	0	1	45	66	112	0	0	1	0	0	0	32	48	81	57	80	137
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	18	12	15	28
24 Private Hospital	100 sqm																											
<b>TOTAL</b>		<b>1731</b>	<b>1754</b>	<b>3485</b>	<b>720</b>	<b>546</b>	<b>1266</b>	<b>101</b>	<b>84</b>	<b>185</b>	<b>79</b>	<b>75</b>	<b>155</b>	<b>2790</b>	<b>2587</b>	<b>5377</b>	<b>13</b>	<b>10</b>	<b>23</b>	<b>8</b>	<b>8</b>	<b>15</b>	<b>1887</b>	<b>1767</b>	<b>3654</b>	<b>3671</b>	<b>3287</b>	<b>6959</b>

Total Based on Census Data	Veh		
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Trips / Unit or Trips / 100m <sup>2</sup>	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total																																									
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh		In	Out	2-Way	In	Out	2-Way																																		
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out							2-Way																																	
1 Private houses	Unit	691	967	1657	146	636	782	20	118	139	27	68	95	616	2116	2732	7	7	14	10	7	17	487	1264	1752	809	2938	3747																																				
2 PTAL-1	Unit																																																															
3 PTAL-2	Unit																																																															
4 Rented houses	Unit	62	86	148	28	141	168	1	8	9	0	2	2	66	168	234	0	0	0	2	1	3	46	89	135	95	319	414																																				
5 PTAL-1	Unit																																																															
6 PTAL-2	Unit																																																															
7 Private flats	Unit	18	69	87	11	52	63	0	15	15	1	1	3	29	103	132	0	0	0	0	0	1	26	81	108	42	172	214																																				
8 Rented flats	100 sqm	31	118	149	55	145	200	5	37	42	2	6	8	73	150	223	0	0	0	2	2	5	53	101	155	134	339	473																																				
9 Local Retail	100 sqm	11	11	22	14	14	28	0	0	0	0	0	1	18	17	34	0	0	0	0	0	1	10	10	20	32	30	63																																				
10 Retail Parks	100 sqm																																																															
11 B1 offices	100 sqm	214	57	270	23	5	27	22	2	24	8	0	9	400	52	453	1	1	1	4	3	7	351	49	400	453	60	513																																				
12 B2 Industrial	100 sqm	33	15	48	1	0	2	2	0	2	0	0	24	12	36	0	0	0	1	1	2	21	10	32	27	12	40																																					
13 Community Centre	100 sqm	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0																																				
14 Food super store	100 sqm	15	9	24	4	4	7	1	1	1	0	0	1	24	14	38	0	0	0	0	0	0	13	8	21	29	19	48																																				
15 GARDEN CENTRE	100 sqm	2	0	2																																																												
16 Hotel	Per Bed	20	28	48	13	31	44	7	6	13	1	0	1	28	63	92	0	0	0	1	1	2	26	50	76	49	101	150																																				
17 Sports and leisure centres	100 sqm																																																															
18 Leisure Parks	100 sqm																																																															
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																			
20 Primary School	100 sqm	34	25	59	132	32	163	5	1	6	0	0	1	106	16	122	0	0	0	0	0	0	56	41	97	243	49	292																																				
21 Secondary School	100 sqm	54	35	89	195	14	209	154	2	156	28	0	28	116	8	124	3	3	6	0	0	1	59	38	97	493	25	517																																				
22 GP Surgeries	100 sqm	7	3	10	2	2	4	0	0	1	0	0	0	6	3	9	0	0	0	0	0	0	5	3	8	9	5	14																																				
23 Nursing Homes	Unit	9	7	15	5	4	9	0	1	1	0	1	1	9	4	13	0	0	0	0	0	0	7	4	12	15	10	25																																				
24 Private Hospital	100 sqm																																																															
TOTAL		1199	1430	2629	630	1079	1709	217	192	409	70	81	150	1515	2726	4241	12	11	23	22	17	39	1162	1749	2911	2431	4079	6509																																				
Driving a car or van		On foot			All PT			Bicycle			Occup			Veh			All People																																															
In		Out			2-Way			In			Out			2-Way			In			Out			2-Way																																									
Total Based on Census Data		1199			1430			2629			195			232			427			112			133			245			28			33			61			1199			1430			2629			1199			1430			2629			1533			1828			3361		

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Trips / Unit or Trips / 100m <sup>2</sup>	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total																													
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh		In	Out	2-Way	In	Out	2-Way																						
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out							2-Way																					
1 Private houses	Unit	856	746	1602	230	152	383	46	17	63	49	35	83	1453	932	2385	3	3	6	3	3	6	1025	627	1652	1778	1139	2918																								
2 PTAL-1	Unit																																																			
3 PTAL-2	Unit																																																			
4 Rented houses	Unit	98	85	183	60	47	107	4	5	9	5	6	11	135	109	244	0	0	0	0	0	0	93	66	159	204	167	371																								
5 PTAL-1	Unit																																																			
6 PTAL-2	Unit																																																			
7 Private flats	Unit	63	27	90	39	14	53	3	0	3	1	1	2	80	46	125	0	0	0	0	0	0	61	33	95	122	61	183																								
8 Rented flats	100 sqm	94	40	134	114	73	187	15	1	16	4	4	8	118	89	207	0	0	0	1	1	1	82	68	150	250	167	417																								
9 Local Retail	100 sqm	13	14	28	10	10	21	0	0	1	0	0	1	20	21	41	0	0	0	0	0	0	11	12	23	31	32	63																								
10 Retail Parks	100 sqm																																																			
11 B1 offices	100 sqm	27	155	182	5	21	26	2	18	19	1	8	9	44	328	372	0	1	1	1	1	2	40	287	328	52	374	427																								
12 B2 Industrial	100 sqm	9	28	37	0	1	1	0	0	0	0	1	1	8	21	29	0	0	0	1	0	1	6	18	24	9	23	32																								
13 Community Centre	100 sqm	1	1	1	1	1	2	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0																								
14 Food super store	100 sqm	26	28	54	8	5	13	1	1	2	0	0	1	49	51	100	0	0	0	0	0	22	23	44	58	57	115																									
15 GARDEN CENTRE	100 sqm	1	1	2																																																
16 Hotel	Per Bed	25	19	44	34	23	57	5	0	5	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143																								
17 Sports and leisure centres	100 sqm																																																			
18 Leisure Parks	100 sqm																																																			
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																							
20 Primary School	100 sqm	3	5	7	1	3	3	0	0	0	0	0	0	4	7	12	0	0	0	0	0	0	3	5	8	5	10	15																								
21 Secondary School	100 sqm	8	13	20	4	4	8	0	7	7	0	1	1	11	25	36	0	0	0	0	0	0	10	15	25	15	37	52																								
22 GP Surgeries	100 sqm	4	5	9	1	1	2	0	0	0	0	0	0	5	7	11	0	0	0	0	0	0	3	5	8	6	8	14																								
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	18	12	15	28																								
24 Private Hospital	100 sqm																																																			
TOTAL		1233	1175	2408	508	357	865	76	49	126	64	57	121	1987	1677	3664	4	4	9	6	5	11	1398	1193	2591	2634	2142	4776																								
Driving a car or van		On foot			All PT			Bicycle			Occup			Veh			All People																																			
In		Out			2-Way			In			Out			2-Way			In			Out			2-Way																													
Total Based on Census Data		1233			1175			2408			200			191			391			115			109			224			28			27			56			1233			1175			2408			1576			1503		

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Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total								
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh		In	Out					
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out			2-Way				
1 Private houses	Unit	691	967	1657	146	636	782	20	118	139	27	68	95	616	2116	2732	7	7	14	10	7	17	487	1264	1752	809	2938	3747			
2 PTAL-1	Unit																														
3 PTAL-2	Unit																														
4 Rented houses	Unit	62	86	148	28	141	168	1	8	9	0	2	2	66	168	234	0	0	0	2	1	3	46	89	135	95	319	414			
5 PTAL-1	Unit																														
6 PTAL-2	Unit																														
7 Private flats	Unit	18	69	87	11	52	63	0	15	15	1	1	3	29	103	132	0	0	0	0	0	1	26	81	108	42	172	214			
8 Rented flats	100 sqm	31	118	149	55	145	200	5	37	42	2	6	8	73	150	223	0	0	0	2	2	5	53	101	155	134	339	473			
9 Local Retail	100 sqm	33	31	65	42	40	82	0	0	0	1	1	1	52	49	101	0	0	0	1	1	2	31	28	59	95	89	185			
10 Retail Parks	100 sqm																														
11 B1 offices	100 sqm	241	64	305	26	5	31	25	2	27	9	1	10	452	59	511	1	1	2	4	3	8	396	56	452	512	67	579			
12 B2 Industrial	100 sqm	37	17	54	1	0	2	0	2	0	0	0	0	27	13	41	0	0	0	1	2	3	24	12	36	31	14	45			
13 Community Centre	100 sqm	1	1	2	2	1	4	1	1	2	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0			
14 Food super store	100 sqm	43	28	71	11	10	22	2	2	4	1	1	2	71	41	113	0	0	0	0	0	1	39	24	63	86	55	141			
15 GARDEN CENTRE	100 sqm	2	0	2																											
16 Hotel	Per Bed	20	28	48	13	31	44	7	6	13	1	0	1	28	63	92	0	0	0	1	1	2	26	50	76	49	101	150			
17 Sports and leisure centres	100 sqm																														
18 Leisure Parks	100 sqm																														
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
20 Primary School	100 sqm	102	74	176	395	95	490	15	2	17	1	1	3	317	49	366	1	1	1	0	0	0	167	124	291	729	147	876			
21 Secondary School	100 sqm	54	35	89	195	14	209	154	2	156	28	0	28	116	8	124	3	3	6	0	0	1	59	38	97	493	25	517			
22 GP Surgeries	100 sqm	21	9	30	7	5	12	1	1	2	0	0	0	18	8	26	0	0	0	0	0	0	16	8	23	27	14	41			
23 Nursing Homes	Unit	9	7	15	5	4	9	0	1	1	0	1	1	9	4	13	0	0	0	0	0	0	7	4	12	15	10	25			
24 Private Hospital	100 sqm																														
<b>TOTAL</b>		<b>1363</b>	<b>1534</b>	<b>2897</b>	<b>938</b>	<b>1181</b>	<b>2119</b>	<b>233</b>	<b>196</b>	<b>429</b>	<b>73</b>	<b>83</b>	<b>156</b>	<b>1875</b>	<b>2832</b>	<b>4707</b>	<b>13</b>	<b>12</b>	<b>25</b>	<b>23</b>	<b>19</b>	<b>42</b>	<b>1378</b>	<b>1879</b>	<b>3256</b>	<b>3116</b>	<b>4290</b>	<b>7406</b>			
Driving a car or van		On foot			All PT			Bicycle			Occup			Veh		All People															
In		Out		2-Way		In		Out		2-Way		In		Out		2-Way															
Total Based on Census Data		1363		1534		2897		221		249		471		127		143		270		32		35		67		1363		1534		2897	

PM

Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation Veh			TRICS Multi Modal average Traffic Generation																		Total						
		In	Out	2-Way	Ped			PT			Cyc			Occup			PSV			OGV			Veh		In	Out			
					In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out			2-Way		
1 Private houses	Unit	856	746	1602	230	152	383	46	17	63	49	35	83	1453	932	2385	3	3	6	3	3	6	1025	627	1652	1778	1139	2918	
2 PTAL-1	Unit																												
3 PTAL-2	Unit																												
4 Rented houses	Unit	98	85	183	60	47	107	4	5	9	5	6	11	135	109	244	0	0	0	0	0	0	93	66	159	204	167	371	
5 PTAL-1	Unit																												
6 PTAL-2	Unit																												
7 Private flats	Unit	63	27	90	39	14	53	3	0	3	1	1	2	80	46	125	0	0	0	0	0	0	61	33	95	122	61	183	
8 Rented flats	100 sqm	94	40	134	114	73	187	15	1	16	4	4	8	118	89	207	0	0	0	1	1	1	82	68	150	250	167	417	
9 Local Retail	100 sqm	40	41	81	30	31	61	1	1	2	1	1	2	60	62	121	0	0	0	0	0	1	33	34	67	92	94	186	
10 Retail Parks	100 sqm																												
11 B1 offices	100 sqm	31	175	206	6	24	30	2	20	22	1	9	10	50	370	419	1	1	1	1	1	2	46	324	370	59	422	481	
12 B2 Industrial	100 sqm	10	32	42	0	1	1	0	0	0	0	1	9	24	33	0	0	0	1	0	1	7	20	27	10	26	36		
13 Community Centre	100 sqm	2	2	3	4	2	6	2	0	2	0	0	0	0	0	0	2	1	4	0	0	0	0	0	0	0	0	0	
14 Food super store	100 sqm	77	82	159	24	14	38	2	2	5	1	1	3	143	150	293	0	0	0	0	0	0	63	67	131	170	168	338	
15 GARDEN CENTRE	100 sqm	1	1	2																									
16 Hotel	Per Bed	25	19	44	34	23	57	5	0	5	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143	
17 Sports and leisure centres	100 sqm																												
18 Leisure Parks	100 sqm																												
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20 Primary School	100 sqm	8	14	22	2	8	10	0	0	0	0	0	0	13	22	35	0	0	0	0	0	0	9	16	25	15	30	45	
21 Secondary School	100 sqm	8	13	20	4	4	8	0	7	7	0	1	1	11	25	36	0	0	0	0	0	0	10	15	25	15	37	52	
22 GP Surgeries	100 sqm	11	16	27	3	4	7	0	0	1	0	0	0	14	20	34	0	0	0	0	0	0	10	15	24	17	24	41	
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	18	12	15	28	
24 Private Hospital	100 sqm																												
<b>TOTAL</b>		<b>1328</b>	<b>1301</b>	<b>2630</b>	<b>551</b>	<b>398</b>	<b>949</b>	<b>80</b>	<b>54</b>	<b>135</b>	<b>66</b>	<b>60</b>	<b>126</b>	<b>2146</b>	<b>1889</b>	<b>4035</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>1480</b>	<b>1319</b>	<b>2799</b>	<b>2836</b>	<b>2402</b>	<b>5238</b>	
Driving a car or van		On foot			All PT			Bicycle			Occup			Veh		All People													
In		Out		2-Way		In		Out		2-Way		In		Out		2-Way													
Total Based on Census Data		1328		1301		2630		216		211		427		124		121		245		31		30		61		1328			



AM

Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation			TRICS Multi Modal average Traffic Generation																		Total					
		Veh			Ped			PT			Cyc			Occup			PSV			OGV			Veh			All People		
		In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	687	949	1636	146	636	782	23	136	160	27	68	95	616	2116	2732	7	7	14	10	7	17	484	1246	1731	809	2938	3747
2 PTAL-1	Unit																											
3 PTAL-2	Unit																											
4 Rented houses	Unit	61	85	147	28	141	168	1	9	11	0	2	2	66	168	234	0	0	0	2	1	3	46	88	134	95	319	414
5 PTAL-1	Unit																											
6 PTAL-2	Unit																											
7 Private flats	Unit	18	67	85	11	52	63	0	17	18	1	1	3	29	103	132	0	0	0	0	0	1	26	79	105	42	172	214
8 Rented flats	100 sqm	30	113	143	55	145	200	5	43	48	2	6	8	73	150	223	0	0	0	0	2	2	53	95	148	134	339	473
9 Local Retail	100 sqm	33	31	64	42	40	82	0	0	0	1	1	1	52	49	101	0	0	0	0	1	1	31	28	59	95	89	185
10 Retail Parks	100 sqm																											
11 B1 offices	100 sqm	237	64	301	26	5	31	29	3	31	9	1	10	452	59	511	1	1	2	4	3	8	392	55	447	512	67	579
12 B2 Industrial	100 sqm	37	17	54	1	0	2	2	0	2	0	0	0	27	13	41	0	0	0	1	2	3	24	12	36	31	14	45
13 Community Centre	100 sqm	1	1	1	2	1	4	1	1	2	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	42	28	70	11	10	22	3	2	5	1	1	2	71	41	113	0	0	0	0	0	1	39	23	62	86	55	141
15 GARDEN CENTRE	100 sqm	2	0	2																			0	0	0			
16 Hotel	Per Bed	19	27	46	13	31	44	8	7	15	1	0	1	28	63	92	0	0	0	1	1	2	25	49	74	49	101	150
17 Sports and leisure centres	100 sqm																											
18 Leisure Parks	100 sqm																											
19 Restaurants	100 sqm																											
20 Primary School	100 sqm	99	74	173	395	95	490	17	2	20	1	1	3	317	49	366	1	1	1	0	0	0	164	124	288	729	147	876
21 Secondary School	100 sqm	31	34	65	195	14	209	177	3	179	28	0	28	116	8	124	3	3	6	0	0	1	36	38	73	493	25	517
22 GP Surgeries	100 sqm	21	9	30	7	5	12	1	1	2	0	0	0	18	8	26	0	0	0	0	0	0	16	7	23	27	14	41
23 Nursing Homes	Unit	8	7	15	5	4	9	1	1	2	0	1	1	9	4	13	0	0	0	0	0	0	7	4	11	15	10	25
24 Private Hospital	100 sqm																											
<b>TOTAL</b>		<b>1328</b>	<b>1505</b>	<b>2833</b>	<b>938</b>	<b>1181</b>	<b>2119</b>	<b>268</b>	<b>226</b>	<b>494</b>	<b>73</b>	<b>83</b>	<b>156</b>	<b>1875</b>	<b>2832</b>	<b>4707</b>	<b>13</b>	<b>12</b>	<b>25</b>	<b>23</b>	<b>19</b>	<b>42</b>	<b>1343</b>	<b>1850</b>	<b>3193</b>	<b>3116</b>	<b>4290</b>	<b>7406</b>
<b>Total Based on Census Data</b>		<b>1328</b>	<b>1505</b>	<b>2833</b>	<b>210</b>	<b>238</b>	<b>447</b>	<b>331</b>	<b>365</b>	<b>697</b>	<b>30</b>	<b>34</b>	<b>64</b>	<b>1485</b>	<b>1682</b>	<b>3168</b>	<b>9</b>	<b>11</b>	<b>20</b>				<b>1328</b>	<b>1505</b>	<b>2833</b>	<b>2030</b>	<b>2300</b>	<b>4331</b>

PM

Trips / Unit or Trips / 100m²	Unit	Medway Model Trip Generation			TRICS Multi Modal average Traffic Generation																		Total					
		Veh			Ped			PT			Cyc			Occup			PSV			OGV			Veh			All People		
		In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way	In	Out	2-Way
1 Private houses	Unit	849	743	1593	230	152	383	53	20	73	49	35	83	1453	932	2385	3	3	6	3	3	6	1018	624	1642	1778	1139	2918
2 PTAL-1	Unit																											
3 PTAL-2	Unit																											
4 Rented houses	Unit	97	84	182	60	47	107	5	6	10	5	6	11	135	109	244	0	0	0	0	0	0	92	65	157	204	167	371
5 PTAL-1	Unit																											
6 PTAL-2	Unit																											
7 Private flats	Unit	62	27	89	39	14	53	3	0	3	1	1	2	80	46	125	0	0	0	0	0	0	61	33	94	122	61	183
8 Rented flats	100 sqm	91	40	131	114	73	187	17	1	18	4	4	8	118	89	207	0	0	0	1	1	1	79	68	148	250	167	417
9 Local Retail	100 sqm	39	41	81	30	31	61	1	1	3	1	1	2	60	62	121	0	0	0	0	0	1	32	34	66	92	94	186
10 Retail Parks	100 sqm																											
11 B1 offices	100 sqm	31	172	202	6	24	30	2	23	25	1	9	10	50	370	419	1	1	1	1	1	2	45	321	366	59	422	481
12 B2 Industrial	100 sqm	10	32	42	0	1	1	0	0	0	0	1	1	9	24	33	0	0	0	1	0	1	7	20	27	10	26	36
13 Community Centre	100 sqm	2	1	3	4	2	6	2	1	2	0	0	0	0	0	0	2	1	4	0	0	0	0	0	0	0	0	0
14 Food super store	100 sqm	77	81	158	24	14	38	3	3	6	1	1	3	143	150	293	0	0	0	0	0	0	63	67	130	170	168	338
15 GARDEN CENTRE	100 sqm	1	1	2																								
16 Hotel	Per Bed	25	19	43	34	23	57	6	0	6	1	0	2	51	27	79	0	0	0	0	0	1	35	23	58	92	51	143
17 Sports and leisure centres	100 sqm																											
18 Leisure Parks	100 sqm																											
19 Restaurants	100 sqm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Primary School	100 sqm	8	14	22	2	8	10	0	0	0	0	0	0	13	22	35	0	0	0	0	0	0	9	16	25	15	30	45
21 Secondary School	100 sqm	8	12	19	4	4	8	0	8	8	0	1	1	11	25	36	0	0	0	0	0	0	10	14	24	15	37	52
22 GP Surgeries	100 sqm	11	16	27	3	4	7	0	0	1	0	0	0	14	20	34	0	0	0	0	0	0	10	14	24	17	24	41
23 Nursing Homes	Unit	6	9	15	0	0	1	0	0	0	2	1	3	10	14	24	0	0	0	0	0	0	7	11	18	12	15	28
24 Private Hospital	100 sqm																											
<b>TOTAL</b>		<b>1316</b>	<b>1293</b>	<b>2609</b>	<b>551</b>	<b>398</b>	<b>949</b>	<b>92</b>	<b>63</b>	<b>155</b>	<b>66</b>	<b>60</b>	<b>126</b>	<b>2146</b>	<b>1889</b>	<b>4035</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>1468</b>	<b>1311</b>	<b>2779</b>	<b>2836</b>	<b>2402</b>	<b>5238</b>
<b>Total Based on Census Data</b>		<b>1316</b>	<b>1293</b>	<b>2609</b>	<b>208</b>	<b>204</b>	<b>412</b>	<b>306</b>	<b>297</b>	<b>602</b>	<b>30</b>	<b>29</b>	<b>59</b>	<b>1472</b>	<b>1446</b>	<b>2918</b>	<b>9</b>	<b>9</b>	<b>18</b>				<b>1316</b>	<b>1293</b>	<b>2609</b>	<b>2012</b>	<b>1977</b>	<b>3989</b>

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