

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	277	69	729	926	0.299	276	1411	0.3	0.5	6.476	A
2 - A206 (N) - AHEAD	681	170	729	1630	0.418	680	276	0.5	0.8	4.022	A
3 - A226 London Road (E)	796	199	961	1496	0.532	794	448	0.7	1.2	5.488	A
4 - B255 (S) - LEFT TURN	288	72	783	961	0.300	287	972	0.3	0.4	5.447	A
5 - B255 (S) - AHEAD	1105	276	783	1656	0.667	1101	287	1.1	2.0	6.682	A
6 - A226 London Road (W)	717	179	1425	1394	0.514	715	459	0.6	1.1	5.407	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	277	69	731	925	0.299	277	1415	0.5	0.5	6.497	A
2 - A206 (N) - AHEAD	681	170	731	1629	0.418	681	277	0.8	0.8	4.036	A
3 - A226 London Road (E)	796	199	963	1495	0.532	795	449	1.2	1.2	5.527	A
4 - B255 (S) - LEFT TURN	288	72	785	960	0.300	288	974	0.4	0.4	5.463	A
5 - B255 (S) - AHEAD	1105	276	785	1655	0.668	1105	288	2.0	2.1	6.763	A
6 - A226 London Road (W)	717	179	1429	1391	0.515	717	460	1.1	1.1	5.462	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	226	57	599	996	0.227	227	1160	0.5	0.3	5.482	A
2 - A206 (N) - AHEAD	556	139	599	1715	0.324	557	227	0.8	0.5	3.309	A
3 - A226 London Road (E)	650	162	788	1611	0.403	651	368	1.2	0.7	4.034	A
4 - B255 (S) - LEFT TURN	235	59	642	1038	0.226	235	797	0.4	0.3	4.578	A
5 - B255 (S) - AHEAD	902	225	642	1749	0.516	906	235	2.1	1.1	4.447	A
6 - A226 London Road (W)	585	146	1172	1575	0.372	587	377	1.1	0.6	3.735	A

09:00 - 09:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	189	47	501	1049	0.181	190	969	0.3	0.3	4.906	A
2 - A206 (N) - AHEAD	466	116	501	1778	0.262	466	190	0.5	0.4	2.915	A
3 - A226 London Road (E)	544	136	659	1697	0.321	545	308	0.7	0.5	3.358	A
4 - B255 (S) - LEFT TURN	197	49	537	1066	0.180	197	667	0.3	0.2	4.088	A
5 - B255 (S) - AHEAD	755	189	537	1819	0.415	757	197	1.1	0.7	3.522	A
6 - A226 London Road (W)	490	123	979	1712	0.286	491	315	0.6	0.4	3.019	A

2031 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dav, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J8 - A226 / A206 / B255 Roundabout	Standard Roundabout		1, 2, 3, 4, 5, 6	8.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2031 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.09

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A206 (N) - LEFT TURN		ONE HOUR	✓	337	100.000
2 - A206 (N) - AHEAD		ONE HOUR	✓	1082	100.000
3 - A226 London Road (E)		ONE HOUR	✓	614	100.000
4 - B255 (S) - LEFT TURN		ONE HOUR	✓	300	100.000
5 - B255 (S) - AHEAD		ONE HOUR	✓	874	100.000
6 - A226 London Road (W)		ONE HOUR	✓	754	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
From		1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN	0	337	0	0	0	0
	2 - A206 (N) - AHEAD	48	0	0	836	0	198
	3 - A226 London Road (E)	205	0	1	195	0	213
	4 - B255 (S) - LEFT TURN	0	0	0	0	300	0
	5 - B255 (S) - AHEAD	533	0	312	29	0	0
	6 - A226 London Road (W)	195	0	241	317	0	1

Vehicle Mix

Heavy Vehicle Percentages

		To					
From		1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN	0	7	0	0	0	0
	2 - A206 (N) - AHEAD	0	0	0	2	0	1
	3 - A226 London Road (E)	7	0	0	7	0	2
	4 - B255 (S) - LEFT TURN	0	0	0	0	1	0
	5 - B255 (S) - AHEAD	4	0	5	0	0	0
	6 - A226 London Road (W)	2	0	0	1	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A206 (N) - LEFT TURN	0.47	9.29	0.9	A	309	464
2 - A206 (N) - AHEAD	0.82	13.58	4.4	B	993	1490
3 - A226 London Road (E)	0.62	9.19	1.7	A	583	845
4 - B255 (S) - LEFT TURN	0.33	5.52	0.5	A	275	413
5 - B255 (S) - AHEAD	0.57	5.16	1.4	A	802	1203
6 - A226 London Road (W)	0.54	5.23	1.2	A	692	1038

Main Results for each time segment

16:45 - 17:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	254	63	676	955	0.266	252	736	0.0	0.4	5.470	A
2 - A206 (N) - AHEAD	815	204	676	1664	0.490	811	252	0.0	1.0	4.273	A
3 - A226 London Road (E)	462	116	1072	1422	0.325	460	415	0.0	0.5	3.929	A
4 - B255 (S) - LEFT TURN	226	56	499	1117	0.202	225	1033	0.0	0.3	4.071	A
5 - B255 (S) - AHEAD	658	165	499	1845	0.357	656	225	0.0	0.6	3.151	A
6 - A226 London Road (W)	568	142	846	1807	0.314	566	309	0.0	0.5	2.924	A

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	303	76	809	883	0.343	302	881	0.4	0.6	6.621	A
2 - A206 (N) - AHEAD	973	243	809	1578	0.617	970	302	1.0	1.6	6.002	A
3 - A226 London Road (E)	552	138	1283	1282	0.430	551	497	0.5	0.8	5.164	A
4 - B255 (S) - LEFT TURN	269	67	597	1063	0.254	269	1236	0.3	0.3	4.579	A
5 - B255 (S) - AHEAD	786	196	597	1779	0.442	785	269	0.6	0.8	3.769	A
6 - A226 London Road (W)	678	170	1013	1688	0.402	677	370	0.5	0.7	3.589	A

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	371	93	990	787	0.471	369	1077	0.6	0.9	9.196	A
2 - A206 (N) - AHEAD	1192	298	990	1461	0.816	1181	369	1.6	4.2	12.670	B
3 - A226 London Road (E)	676	169	1563	1095	0.617	672	608	0.8	1.7	8.894	A
4 - B255 (S) - LEFT TURN	330	83	729	991	0.333	329	1507	0.3	0.5	5.494	A
5 - B255 (S) - AHEAD	962	241	729	1692	0.569	960	329	0.8	1.4	5.110	A
6 - A226 London Road (W)	830	208	1238	1527	0.544	828	451	0.7	1.2	5.182	A

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	371	93	992	785	0.472	371	1080	0.9	0.9	9.290	A
2 - A206 (N) - AHEAD	1192	298	992	1459	0.817	1191	371	4.2	4.4	13.576	B
3 - A226 London Road (E)	676	169	1574	1087	0.621	675	610	1.7	1.7	9.185	A
4 - B255 (S) - LEFT TURN	330	83	733	988	0.334	330	1516	0.5	0.5	5.523	A
5 - B255 (S) - AHEAD	962	241	733	1689	0.570	962	330	1.4	1.4	5.161	A
6 - A226 London Road (W)	830	208	1242	1525	0.545	830	453	1.2	1.2	5.232	A

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	303	76	813	882	0.343	304	885	0.9	0.6	6.691	A
2 - A206 (N) - AHEAD	973	243	813	1576	0.617	984	304	4.4	1.7	6.292	A
3 - A226 London Road (E)	552	138	1297	1272	0.434	555	499	1.7	0.8	5.312	A
4 - B255 (S) - LEFT TURN	269	67	604	1059	0.254	270	1249	0.5	0.3	4.611	A
5 - B255 (S) - AHEAD	786	196	604	1775	0.443	788	270	1.4	0.8	3.810	A
6 - A226 London Road (W)	678	170	1018	1685	0.403	680	374	1.2	0.7	3.623	A

18:00 - 18:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	254	63	680	953	0.266	254	740	0.6	0.4	5.521	A
2 - A206 (N) - AHEAD	815	204	680	1662	0.490	818	254	1.7	1.0	4.350	A
3 - A226 London Road (E)	462	116	1080	1417	0.326	463	418	0.8	0.5	3.976	A
4 - B255 (S) - LEFT TURN	226	56	503	1115	0.202	226	1040	0.3	0.3	4.092	A
5 - B255 (S) - AHEAD	658	165	503	1842	0.357	659	226	0.8	0.6	3.173	A
6 - A226 London Road (W)	568	142	851	1804	0.315	569	311	0.7	0.5	2.945	A

2031 Base + Dav, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dav, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J8 - A226 / A206 / B255 Roundabout	Standard Roundabout		1, 2, 3, 4, 5, 6	6.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2031 Base + Dav	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D3

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A206 (N) - LEFT TURN		ONE HOUR	✓	271	100.000
2 - A206 (N) - AHEAD		ONE HOUR	✓	619	100.000
3 - A226 London Road (E)		ONE HOUR	✓	769	100.000
4 - B255 (S) - LEFT TURN		ONE HOUR	✓	261	100.000
5 - B255 (S) - AHEAD		ONE HOUR	✓	1020	100.000
6 - A226 London Road (W)		ONE HOUR	✓	669	100.000

Origin-Destination Data

Demand (PCU/hr)

To						
From	1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN					
	2 - A206 (N) - AHEAD					
	3 - A226 London Road (E)					
	4 - B255 (S) - LEFT TURN					
	5 - B255 (S) - AHEAD					
	0	271	0	0	0	0
	30	0	0	433	0	156
	287	0	1	215	0	286
	0	0	0	0	261	0
	766	0	220	14	0	0
	205	0	222	241	0	1

Vehicle Mix

Heavy Vehicle Percentages

To						
From	1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN					
	2 - A206 (N) - AHEAD					
	3 - A226 London Road (E)					
	4 - B255 (S) - LEFT TURN					
	5 - B255 (S) - AHEAD					
	0	16	0	0	0	0
	4	0	0	8	0	2
	11	0	0	5	0	4
	0	0	0	0	2	0
	3	0	6	0	0	0
	2	0	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A206 (N) - LEFT TURN	0.33	6.86	0.6	A	248	373
2 - A206 (N) - AHEAD	0.42	4.15	0.8	A	568	852
3 - A226 London Road (E)	0.58	6.13	1.5	A	724	1085
4 - B255 (S) - LEFT TURN	0.31	5.71	0.5	A	240	360
5 - B255 (S) - AHEAD	0.69	7.51	2.3	A	936	1404
6 - A226 London Road (W)	0.54	5.91	1.2	A	614	921

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	204	51	524	1036	0.197	203	981	0.0	0.3	4.989	A
2 - A206 (N) - AHEAD	486	116	524	1763	0.264	464	203	0.0	0.4	2.942	A
3 - A226 London Road (E)	594	148	656	1699	0.349	591	332	0.0	0.6	3.460	A
4 - B255 (S) - LEFT TURN	197	49	571	1077	0.183	196	677	0.0	0.2	4.160	A
5 - B255 (S) - AHEAD	768	192	571	1797	0.427	765	196	0.0	0.8	3.606	A
6 - A226 London Road (W)	504	126	1003	1695	0.297	502	332	0.0	0.4	3.082	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	243	61	628	981	0.248	243	1174	0.3	0.4	5.639	A
2 - A206 (N) - AHEAD	556	139	628	1696	0.328	556	243	0.4	0.5	3.351	A
3 - A226 London Road (E)	709	177	786	1613	0.440	708	398	0.6	0.8	4.239	A
4 - B255 (S) - LEFT TURN	235	59	683	1016	0.231	235	810	0.2	0.3	4.698	A
5 - B255 (S) - AHEAD	917	229	683	1723	0.533	916	235	0.8	1.2	4.616	A
6 - A226 London Road (W)	602	150	1201	1554	0.387	601	398	0.4	0.6	3.858	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	298	74	767	906	0.329	297	1435	0.4	0.6	6.829	A
2 - A206 (N) - AHEAD	681	170	767	1605	0.424	680	297	0.5	0.8	4.130	A
3 - A226 London Road (E)	868	217	961	1496	0.580	866	486	0.8	1.5	6.071	A
4 - B255 (S) - LEFT TURN	288	72	836	932	0.309	287	991	0.3	0.5	5.691	A
5 - B255 (S) - AHEAD	1123	281	836	1621	0.693	1119	287	1.2	2.3	7.367	A
6 - A226 London Road (W)	737	184	1468	1363	0.540	735	487	0.6	1.2	5.834	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	298	74	770	905	0.329	298	1440	0.6	0.6	6.860	A
2 - A206 (N) - AHEAD	681	170	770	1604	0.425	681	298	0.8	0.8	4.145	A
3 - A226 London Road (E)	868	217	963	1495	0.581	868	488	1.5	1.5	6.131	A
4 - B255 (S) - LEFT TURN	288	72	838	931	0.309	288	994	0.5	0.5	5.710	A
5 - B255 (S) - AHEAD	1123	281	838	1620	0.694	1123	288	2.3	2.3	7.511	A
6 - A226 London Road (W)	737	184	1473	1360	0.542	737	488	1.2	1.2	5.908	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	243	61	631	979	0.249	244	1181	0.6	0.4	5.671	A
2 - A206 (N) - AHEAD	556	139	631	1694	0.328	557	244	0.8	0.5	3.367	A
3 - A226 London Road (E)	709	177	788	1611	0.440	711	400	1.5	0.8	4.280	A
4 - B255 (S) - LEFT TURN	235	59	686	1014	0.232	236	814	0.5	0.3	4.721	A
5 - B255 (S) - AHEAD	917	229	686	1720	0.533	922	236	2.3	1.2	4.697	A
6 - A226 London Road (W)	602	150	1208	1549	0.388	604	399	1.2	0.7	3.903	A

09:00 - 09:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	204	51	527	1034	0.197	204	987	0.4	0.3	5.015	A
2 - A206 (N) - AHEAD	466	116	527	1761	0.265	466	204	0.5	0.4	2.954	A
3 - A226 London Road (E)	594	148	659	1697	0.350	595	334	0.8	0.6	3.487	A
4 - B255 (S) - LEFT TURN	197	49	574	1076	0.183	197	680	0.3	0.2	4.181	A
5 - B255 (S) - AHEAD	768	192	574	1795	0.428	770	197	1.2	0.8	3.645	A
6 - A226 London Road (W)	504	126	1010	1691	0.298	505	334	0.7	0.4	3.107	A

2031 Base + Dav, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dav, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	J8 - A226 / A206 / B255 Roundabout	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1			Standard Roundabout		1, 2, 3, 4, 5, 6	10.60	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2031 Base + Dav	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D4

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A206 (N) - LEFT TURN		ONE HOUR	✓	391	100.000
2 - A206 (N) - AHEAD		ONE HOUR	✓	1082	100.000
3 - A226 London Road (E)		ONE HOUR	✓	690	100.000
4 - B255 (S) - LEFT TURN		ONE HOUR	✓	300	100.000
5 - B255 (S) - AHEAD		ONE HOUR	✓	926	100.000
6 - A226 London Road (W)		ONE HOUR	✓	796	100.000

Origin-Destination Data

Demand (PCU/hr)

		To					
From		1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN	0	391	0	0	0	0
	2 - A206 (N) - AHEAD	48	0	0	836	0	198
	3 - A226 London Road (E)	230	0	1	219	0	240
	4 - B255 (S) - LEFT TURN	0	0	0	0	300	0
	5 - B255 (S) - AHEAD	533	0	364	29	0	0
	6 - A226 London Road (W)	195	0	283	317	0	1

Vehicle Mix

Heavy Vehicle Percentages

		To					
From		1 - A206 (N) - LEFT TURN	2 - A206 (N) - AHEAD	3 - A226 London Road (E)	4 - B255 (S) - LEFT TURN	5 - B255 (S) - AHEAD	6 - A226 London Road (W)
	1 - A206 (N) - LEFT TURN	0	6	0	0	0	0
	2 - A206 (N) - AHEAD	0	0	0	2	0	1
	3 - A226 London Road (E)	6	0	0	6	0	2
	4 - B255 (S) - LEFT TURN	0	0	0	0	1	0
	5 - B255 (S) - AHEAD	4	0	4	0	0	0
	6 - A226 London Road (W)	2	0	0	1	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A206 (N) - LEFT TURN	0.59	12.71	1.5	B	359	538
2 - A206 (N) - AHEAD	0.86	17.89	5.7	C	993	1490
3 - A226 London Road (E)	0.70	11.42	2.4	B	633	949
4 - B255 (S) - LEFT TURN	0.34	5.80	0.5	A	275	413
5 - B255 (S) - AHEAD	0.62	5.92	1.7	A	850	1275
6 - A226 London Road (W)	0.60	6.18	1.5	A	731	1096

Main Results for each time segment

16:45 - 17:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	294	74	747	917	0.321	292	754	0.0	0.5	6.087	A
2 - A206 (N) - AHEAD	815	204	747	1619	0.503	811	292	0.0	1.0	4.510	A
3 - A226 London Road (E)	519	130	1072	1422	0.365	517	486	0.0	0.6	4.148	A
4 - B255 (S) - LEFT TURN	226	56	538	1095	0.206	225	1051	0.0	0.3	4.170	A
5 - B255 (S) - AHEAD	697	174	538	1819	0.383	695	225	0.0	0.6	3.323	A
6 - A226 London Road (W)	599	150	904	1766	0.339	597	329	0.0	0.5	3.102	A

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	351	88	894	838	0.419	350	903	0.5	0.8	7.801	A
2 - A206 (N) - AHEAD	973	243	894	1523	0.639	970	350	1.0	1.8	6.583	A
3 - A226 London Road (E)	620	155	1282	1282	0.484	619	581	0.6	1.0	5.664	A
4 - B255 (S) - LEFT TURN	269	67	644	1037	0.260	269	1257	0.3	0.4	4.731	A
5 - B255 (S) - AHEAD	833	208	644	1749	0.476	831	269	0.6	0.9	4.076	A
6 - A226 London Road (W)	716	179	1082	1639	0.437	715	394	0.5	0.8	3.925	A

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	430	108	1093	732	0.588	427	1103	0.8	1.5	12.422	B
2 - A206 (N) - AHEAD	1192	298	1093	1394	0.855	1177	427	1.8	5.3	15.958	C
3 - A226 London Road (E)	759	190	1559	1097	0.692	754	711	1.0	2.3	10.813	B
4 - B255 (S) - LEFT TURN	330	83	784	960	0.344	329	1529	0.4	0.5	5.756	A
5 - B255 (S) - AHEAD	1020	255	784	1656	0.616	1017	329	0.9	1.6	5.834	A
6 - A226 London Road (W)	877	219	1322	1488	0.597	874	479	0.8	1.5	6.087	A

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	430	108	1096	730	0.589	430	1107	1.5	1.5	12.710	B
2 - A206 (N) - AHEAD	1192	298	1096	1392	0.856	1190	430	5.3	5.7	17.889	C
3 - A226 London Road (E)	759	190	1573	1088	0.698	759	713	2.3	2.4	11.422	B
4 - B255 (S) - LEFT TURN	330	83	790	957	0.345	330	1542	0.5	0.5	5.799	A
5 - B255 (S) - AHEAD	1020	255	790	1651	0.617	1020	330	1.6	1.7	5.921	A
6 - A226 London Road (W)	877	219	1327	1494	0.599	877	483	1.5	1.5	6.177	A

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	351	88	898	836	0.420	354	909	1.5	0.8	7.967	A
2 - A206 (N) - AHEAD	973	243	898	1520	0.640	988	354	5.7	1.8	7.075	A
3 - A226 London Road (E)	620	155	1302	1269	0.489	625	584	2.4	1.0	5.901	A
4 - B255 (S) - LEFT TURN	269	67	653	1032	0.261	270	1275	0.5	0.4	4.773	A
5 - B255 (S) - AHEAD	833	208	653	1743	0.478	835	270	1.7	1.0	4.137	A
6 - A226 London Road (W)	716	179	1089	1634	0.438	719	399	1.5	0.8	3.978	A

18:00 - 18:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A206 (N) - LEFT TURN	294	74	751	915	0.322	295	759	0.8	0.5	6.168	A
2 - A206 (N) - AHEAD	815	204	751	1616	0.504	818	295	1.8	1.0	4.606	A
3 - A226 London Road (E)	519	130	1080	1416	0.367	521	489	1.0	0.6	4.211	A
4 - B255 (S) - LEFT TURN	226	56	542	1093	0.206	226	1059	0.4	0.3	4.196	A
5 - B255 (S) - AHEAD	697	174	542	1816	0.384	699	226	1.0	0.7	3.355	A
6 - A226 London Road (W)	599	150	909	1762	0.340	601	332	0.8	0.5	3.128	A

Summary of junction performance

	AM		
	Queue (PCU)	Delay (s)	RFC
	AM - 2022 Observed		
1 - B255 Station Road (N)	0.2	3.58	0.14
2 - Station Approach (E)	0.1	4.69	0.06
3 - A206 St Clements Way (S)	1.5	3.86	0.59
4 - A206 Crossways Boulevard (W)	0.3	1.78	0.23
	AM - 2031 Base		
1 - B255 Station Road (N)	0.2	3.78	0.16
2 - Station Approach (E)	0.1	4.94	0.06
3 - A206 St Clements Way (S)	1.8	4.38	0.63
4 - A206 Crossways Boulevard (W)	0.4	1.84	0.25
	AM - 2031 Base + Dev		
1 - B255 Station Road (N)	0.2	3.84	0.16
2 - Station Approach (E)	0.1	4.98	0.06
3 - A206 St Clements Way (S)	1.9	4.51	0.65
4 - A206 Crossways Boulevard (W)	0.4	1.85	0.25

	PM		
	Queue (PCU)	Delay (s)	RFC
	PM - 2022 Observed		
1 - B255 Station Road (N)	0.2	5.16	0.17
2 - Station Approach (E)	0.2	7.14	0.10
3 - A206 St Clements Way (S)	0.7	2.78	0.41
4 - A206 Crossways Boulevard (W)	0.9	2.28	0.45
	PM - 2031 Base		
1 - B255 Station Road (N)	0.3	5.91	0.20
2 - Station Approach (E)	0.2	8.18	0.12
3 - A206 St Clements Way (S)	0.9	2.98	0.45
4 - A206 Crossways Boulevard (W)	1.0	2.50	0.50
	PM - 2031 Base + Dev		
1 - B255 Station Road (N)	0.3	6.30	0.22
2 - Station Approach (E)	0.2	8.64	0.13
3 - A206 St Clements Way (S)	0.9	3.05	0.46
4 - A206 Crossways Boulevard (W)	1.1	2.60	0.52

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: J9 - A206 Station Road (Existing) v1.0.j9
Path: C:\DSN\Work\226728 - Northfleet
Report generation date: 21/09/2022 17:31:10

- »AM - 2022 Observed, AM
- »AM - 2031 Base, AM
- »AM - 2031 Base + Dev, AM
- »PM - 2022 Observed, PM
- »PM - 2031 Base, PM
- »PM - 2031 Base + Dev, PM

File summary

File Description

Title	Northfleet
Location	J9 - A206 / Station Road / Station Approach Roundabout
Site number	
Date	21/09/2022
Version	
Status	Existing Junction Layout
Identifier	
Client	
Jobnumber	226728
Enumerator	David Noyce
Description	A206 (South) - Arm C - Intercept Adjustments used to account for unequal lane usage of third lane (used by right turners and u-turners).

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2022 Observed	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2022 Observed	PM	ONE HOUR	16:45	18:15	15	✓		
D3 : Dev		AM	ONE HOUR	07:45	09:15	15			
D4 : Dev		PM	ONE HOUR	16:45	18:15	15			
D5 2031 Base		AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.08
D6 2031 Base		PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.09
D7 2031 Base + Dev		AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D3
D8 2031 Base + Dev		PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D4

AM - 2022 Observed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM	✓	✓	D1,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	3.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-642
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Arm		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2450
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 Observed	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	153	100.000
2 - Station Approach (E)		ONE HOUR	✓	55	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	1258	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	608	100.000

Origin-Destination Data

Demand (PCU/hr)

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From	1 - B255 Station Road (N)	2	99	48
	2 - Station Approach (E)	1	36	18
	3 - A206 St Clements Way (S)	68	143	1010
	4 - A206 Crossways Boulevard (W)	31	542	20

Vehicle Mix

Heavy Vehicle Percentages

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From	1 - B255 Station Road (N)	0	1	0
	2 - Station Approach (E)	0	29	50
	3 - A206 St Clements Way (S)	1	1	5
	4 - A206 Crossways Boulevard (W)	3	12	18

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.14	3.58	0.2	A	140	211
2 - Station Approach (E)	0.06	4.69	0.1	A	50	76
3 - A206 St Clements Way (S)	0.59	3.86	1.5	A	1154	1732
4 - A206 Crossways Boulevard (W)	0.23	1.78	0.3	A	558	837

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	115	29	569	1339	0.086	115	77	0.0	0.1	2.959	A
2 - Station Approach (E)	41	10	642	1276	0.032	41	42	0.0	0.0	3.919	A
3 - A206 St Clements Way (S)	947	237	67	2392	0.396	944	616	0.0	0.7	2.607	A
4 - A206 Crossways Boulevard (W)	458	114	188	3016	0.152	457	823	0.0	0.2	1.580	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	138	34	680	1272	0.108	137	92	0.1	0.1	3.193	A
2 - Station Approach (E)	49	12	767	1199	0.041	49	50	0.0	0.1	4.211	A
3 - A206 St Clements Way (S)	1131	283	80	2381	0.475	1130	737	0.7	0.9	3.020	A
4 - A206 Crossways Boulevard (W)	547	137	225	2982	0.183	546	984	0.2	0.3	1.660	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	168	42	833	1180	0.143	168	112	0.1	0.2	3.582	A
2 - Station Approach (E)	61	15	940	1092	0.055	60	62	0.1	0.1	4.691	A
3 - A206 St Clements Way (S)	1385	346	98	2365	0.586	1383	902	0.9	1.5	3.841	A
4 - A206 Crossways Boulevard (W)	669	167	276	2937	0.228	669	1205	0.3	0.3	1.783	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	168	42	833	1179	0.143	168	112	0.2	0.2	3.583	A
2 - Station Approach (E)	61	15	940	1092	0.055	61	62	0.1	0.1	4.693	A
3 - A206 St Clements Way (S)	1385	346	98	2365	0.586	1385	903	1.5	1.5	3.858	A
4 - A206 Crossways Boulevard (W)	669	167	276	2936	0.228	669	1207	0.3	0.3	1.783	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	138	34	681	1271	0.108	138	92	0.2	0.1	3.195	A
2 - Station Approach (E)	49	12	768	1198	0.041	50	50	0.1	0.1	4.216	A
3 - A206 St Clements Way (S)	1131	283	80	2380	0.475	1133	738	1.5	1.0	3.037	A
4 - A206 Crossways Boulevard (W)	547	137	226	2982	0.183	547	987	0.3	0.3	1.661	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	115	29	570	1338	0.086	115	77	0.1	0.1	2.961	A
2 - Station Approach (E)	41	10	643	1275	0.032	41	42	0.1	0.0	3.924	A
3 - A206 St Clements Way (S)	947	237	67	2392	0.396	948	618	1.0	0.7	2.620	A
4 - A206 Crossways Boulevard (W)	458	114	189	3015	0.152	458	826	0.3	0.2	1.584	A

AM - 2031 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM	✓	✓	D1,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	3.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-642
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Am		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2450
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2031 Base	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.08

Vehicle mix varies over turn		Vehicle mix varies over entry	Vehicle mix source		PCU Factor for a HV (PCU)	
✓		✓	HV Percentages		2.00	

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	165	100.000
2 - Station Approach (E)		ONE HOUR	✓	59	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	1359	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	657	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
From	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)	
	2	4	107	52	
	1	0	39	19	
	73	40	154	1091	
	33	16	585	22	

Vehicle Mix

Heavy Vehicle Percentages

		To			
From	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)	
	0	0	1	0	
	0	0	29	50	
	1	37	1	5	
	3	50	12	18	

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.16	3.78	0.2	A	152	227
2 - Station Approach (E)	0.06	4.94	0.1	A	55	82
3 - A206 St Clements Way (S)	0.63	4.38	1.8	A	1247	1870
4 - A206 Crossways Boulevard (W)	0.25	1.84	0.4	A	603	904

Main Results for each time segment

07:45 - 08:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	124	31	614	1312	0.095	124	83	0.0	0.1	3.050	A
2 - Station Approach (E)	45	11	693	1245	0.036	45	45	0.0	0.0	4.033	A
3 - A206 St Clements Way (S)	1023	256	72	2387	0.428	1020	665	0.0	0.8	2.759	A
4 - A206 Crossways Boulevard (W)	494	124	203	3002	0.165	493	888	0.0	0.2	1.612	A

08:00 - 08:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	149	37	735	1239	0.120	148	99	0.1	0.1	3.321	A
2 - Station Approach (E)	53	13	829	1161	0.046	53	54	0.0	0.1	4.370	A
3 - A206 St Clements Way (S)	1221	305	86	2375	0.514	1220	796	0.8	1.1	3.271	A
4 - A206 Crossways Boulevard (W)	590	148	243	2966	0.199	590	1063	0.2	0.3	1.702	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	182	45	899	1139	0.160	182	121	0.1	0.2	3.783	A
2 - Station Approach (E)	65	16	1015	1046	0.063	65	66	0.1	0.1	4.936	A
3 - A206 St Clements Way (S)	1496	374	106	2358	0.634	1493	974	1.1	1.8	4.356	A
4 - A206 Crossways Boulevard (W)	723	181	298	2917	0.248	723	1301	0.3	0.4	1.843	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	182	45	900	1139	0.160	182	121	0.2	0.2	3.785	A
2 - Station Approach (E)	65	16	1015	1045	0.063	65	67	0.1	0.1	4.938	A
3 - A206 St Clements Way (S)	1496	374	106	2358	0.634	1496	975	1.8	1.8	4.384	A
4 - A206 Crossways Boulevard (W)	723	181	298	2916	0.248	723	1303	0.4	0.4	1.843	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	149	37	736	1238	0.120	149	99	0.2	0.1	3.325	A
2 - Station Approach (E)	53	13	830	1160	0.046	53	54	0.1	0.1	4.374	A
3 - A206 St Clements Way (S)	1221	305	87	2375	0.514	1224	797	1.8	1.1	3.295	A
4 - A206 Crossways Boulevard (W)	590	148	244	2965	0.199	591	1066	0.4	0.3	1.705	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	124	31	616	1311	0.095	125	83	0.1	0.1	3.056	A
2 - Station Approach (E)	45	11	695	1243	0.036	45	46	0.1	0.1	4.038	A
3 - A206 St Clements Way (S)	1023	256	72	2387	0.428	1024	667	1.1	0.8	2.776	A
4 - A206 Crossways Boulevard (W)	494	124	204	3002	0.165	495	892	0.3	0.2	1.613	A

AM - 2031 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM	✓	✓	D1,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	3.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-642
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Am		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2450
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2031 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D3

Vehicle mix varies over turn		Vehicle mix varies over entry	Vehicle mix source		PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages		2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	168	100.000
2 - Station Approach (E)		ONE HOUR	✓	60	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	1382	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	672	100.000

Origin-Destination Data

Demand (PCU/hr)

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From	1 - B255 Station Road (N)	2	110	52
	2 - Station Approach (E)	1	40	19
	3 - A206 St Clements Way (S)	74	154	1112
	4 - A206 Crossways Boulevard (W)	33	600	22

Vehicle Mix

Heavy Vehicle Percentages

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From	1 - B255 Station Road (N)	0	1	0
	2 - Station Approach (E)	0	28	50
	3 - A206 St Clements Way (S)	1	1	5
	4 - A206 Crossways Boulevard (W)	3	12	18

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.16	3.84	0.2	A	154	232
2 - Station Approach (E)	0.06	4.98	0.1	A	55	83
3 - A206 St Clements Way (S)	0.65	4.51	1.9	A	1268	1902
4 - A206 Crossways Boulevard (W)	0.25	1.85	0.4	A	616	924

Main Results for each time segment

07:45 - 08:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	127	32	626	1305	0.097	126	83	0.0	0.1	3.075	A
2 - Station Approach (E)	45	11	706	1236	0.037	45	46	0.0	0.1	4.041	A
3 - A206 St Clements Way (S)	1040	260	72	2387	0.436	1037	679	0.0	0.8	2.790	A
4 - A206 Crossways Boulevard (W)	506	126	205	3001	0.168	505	904	0.0	0.2	1.616	A

08:00 - 08:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	151	38	749	1230	0.123	151	100	0.1	0.1	3.356	A
2 - Station Approach (E)	54	14	845	1151	0.047	54	55	0.1	0.1	4.389	A
3 - A206 St Clements Way (S)	1242	311	86	2375	0.523	1241	813	0.8	1.1	3.325	A
4 - A206 Crossways Boulevard (W)	604	151	245	2965	0.204	604	1082	0.2	0.3	1.708	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	185	46	917	1129	0.164	185	122	0.1	0.2	3.838	A
2 - Station Approach (E)	67	17	1034	1034	0.064	66	68	0.1	0.1	4.975	A
3 - A206 St Clements Way (S)	1521	380	106	2358	0.645	1518	995	1.1	1.9	4.480	A
4 - A206 Crossways Boulevard (W)	739	185	300	2915	0.254	739	1324	0.3	0.4	1.853	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	185	46	918	1128	0.164	185	122	0.2	0.2	3.841	A
2 - Station Approach (E)	67	17	1035	1033	0.064	67	68	0.1	0.1	4.978	A
3 - A206 St Clements Way (S)	1521	380	106	2358	0.645	1521	996	1.9	1.9	4.513	A
4 - A206 Crossways Boulevard (W)	739	185	301	2914	0.254	739	1326	0.4	0.4	1.854	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	151	38	750	1230	0.123	151	100	0.2	0.1	3.362	A
2 - Station Approach (E)	54	14	846	1150	0.047	54	55	0.1	0.1	4.393	A
3 - A206 St Clements Way (S)	1242	311	87	2375	0.523	1245	814	1.9	1.2	3.351	A
4 - A206 Crossways Boulevard (W)	604	151	246	2964	0.204	604	1085	0.4	0.3	1.712	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	127	32	628	1303	0.097	127	84	0.1	0.1	3.078	A
2 - Station Approach (E)	45	11	708	1235	0.037	46	46	0.1	0.1	4.047	A
3 - A206 St Clements Way (S)	1040	260	72	2387	0.436	1042	682	1.2	0.8	2.811	A
4 - A206 Crossways Boulevard (W)	506	126	206	3000	0.169	506	908	0.3	0.2	1.619	A

PM - 2022 Observed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM	✓	✓	D2,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	2.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-712
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Arm		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2380
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022 Observed	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source
✓	✓	HV Percentages
		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	129	100.000
2 - Station Approach (E)		ONE HOUR	✓	69	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	867	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	1228	100.000

Origin-Destination Data

Demand (PCU/hr)

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From				
1 - B255 Station Road (N)	0	6	82	41
2 - Station Approach (E)	2	0	49	18
3 - A206 St Clements Way (S)	111	38	64	654
4 - A206 Crossways Boulevard (W)	63	26	1127	12

Vehicle Mix

Heavy Vehicle Percentages

To				
	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
From				
1 - B255 Station Road (N)	0	0	0	0
2 - Station Approach (E)	0	0	36	50
3 - A206 St Clements Way (S)	2	41	0	4
4 - A206 Crossways Boulevard (W)	0	30	2	33

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.17	5.16	0.2	A	118	178
2 - Station Approach (E)	0.10	7.14	0.2	A	63	95
3 - A206 St Clements Way (S)	0.41	2.78	0.7	A	796	1193
4 - A206 Crossways Boulevard (W)	0.45	2.28	0.9	A	1127	1690

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	97	24	952	1107	0.088	97	132	0.0	0.1	3.562	A
2 - Station Approach (E)	52	13	996	1057	0.049	52	53	0.0	0.1	4.936	A
3 - A206 St Clements Way (S)	653	163	55	2332	0.280	651	993	0.0	0.4	2.238	A
4 - A206 Crossways Boulevard (W)	925	231	161	3040	0.304	923	544	0.0	0.4	1.742	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	116	29	1138	995	0.117	116	158	0.1	0.1	4.096	A
2 - Station Approach (E)	62	16	1191	937	0.066	62	63	0.1	0.1	5.675	A
3 - A206 St Clements Way (S)	779	195	66	2323	0.336	779	1188	0.4	0.5	2.439	A
4 - A206 Crossways Boulevard (W)	1104	276	193	3012	0.367	1103	651	0.4	0.6	1.935	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	142	36	1394	840	0.169	142	194	0.1	0.2	5.152	A
2 - Station Approach (E)	76	19	1459	772	0.098	76	77	0.1	0.1	7.132	A
3 - A206 St Clements Way (S)	955	239	80	2310	0.413	954	1454	0.5	0.7	2.775	A
4 - A206 Crossways Boulevard (W)	1352	338	237	2972	0.455	1351	797	0.6	0.9	2.277	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	142	36	1395	839	0.169	142	194	0.2	0.2	5.161	A
2 - Station Approach (E)	76	19	1460	771	0.099	76	77	0.1	0.2	7.143	A
3 - A206 St Clements Way (S)	955	239	80	2310	0.413	955	1456	0.7	0.7	2.777	A
4 - A206 Crossways Boulevard (W)	1352	338	237	2972	0.455	1352	798	0.9	0.9	2.279	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	116	29	1140	994	0.117	116	158	0.2	0.1	4.104	A
2 - Station Approach (E)	62	16	1193	936	0.066	62	63	0.2	0.1	5.688	A
3 - A206 St Clements Way (S)	779	195	66	2323	0.336	780	1190	0.7	0.5	2.444	A
4 - A206 Crossways Boulevard (W)	1104	276	193	3011	0.367	1105	653	0.9	0.6	1.938	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	97	24	954	1106	0.088	97	133	0.1	0.1	3.571	A
2 - Station Approach (E)	52	13	999	1056	0.049	52	53	0.1	0.1	4.947	A
3 - A206 St Clements Way (S)	653	163	55	2332	0.280	653	996	0.5	0.4	2.245	A
4 - A206 Crossways Boulevard (W)	925	231	162	3040	0.304	925	546	0.6	0.4	1.748	A

PM - 2031 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM	✓	✓	D2,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	3.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-712
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Am		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2380
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2031 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.09

Vehicle mix varies over turn		Vehicle mix varies over entry	Vehicle mix source		PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages		2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	141	100.000
2 - Station Approach (E)		ONE HOUR	✓	75	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	945	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	1339	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
From		1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
	1 - B255 Station Road (N)	0	7	89	45
	2 - Station Approach (E)	2	0	53	20
	3 - A206 St Clements Way (S)	121	41	70	713
	4 - A206 Crossways Boulevard (W)	69	28	1228	13

Vehicle Mix

Heavy Vehicle Percentages

		To			
From		1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)
	1 - B255 Station Road (N)	0	0	0	0
	2 - Station Approach (E)	0	0	36	50
	3 - A206 St Clements Way (S)	2	41	0	4
	4 - A206 Crossways Boulevard (W)	0	30	2	33

Results

Results Summary for whole modelled period

Am	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.20	5.91	0.3	A	129	194
2 - Station Approach (E)	0.12	8.18	0.2	A	69	104
3 - A206 St Clements Way (S)	0.45	2.98	0.9	A	867	1301
4 - A206 Crossways Boulevard (W)	0.50	2.50	1.0	A	1228	1842

Main Results for each time segment

16:45 - 17:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	106	26	1038	1056	0.100	105	144	0.0	0.1	3.786	A
2 - Station Approach (E)	57	14	1088	1002	0.057	56	57	0.0	0.1	5.249	A
3 - A206 St Clements Way (S)	711	178	60	2328	0.306	710	1082	0.0	0.5	2.325	A
4 - A206 Crossways Boulevard (W)	1008	252	176	3027	0.333	1006	593	0.0	0.5	1.825	A

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	126	32	1241	933	0.136	126	172	0.1	0.2	4.462	A
2 - Station Approach (E)	68	17	1298	871	0.078	67	69	0.1	0.1	6.182	A
3 - A206 St Clements Way (S)	850	212	71	2318	0.367	849	1295	0.5	0.6	2.562	A
4 - A206 Crossways Boulevard (W)	1203	301	211	2996	0.402	1203	710	0.5	0.7	2.058	A

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	155	39	1519	764	0.203	154	211	0.2	0.3	5.899	A
2 - Station Approach (E)	83	21	1590	691	0.120	83	84	0.1	0.2	8.159	A
3 - A206 St Clements Way (S)	1040	260	87	2304	0.452	1039	1585	0.6	0.9	2.975	A
4 - A206 Crossways Boulevard (W)	1474	368	258	2953	0.499	1472	869	0.7	1.0	2.492	A

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	155	39	1521	763	0.203	155	211	0.3	0.3	5.913	A
2 - Station Approach (E)	83	21	1591	690	0.120	83	84	0.2	0.2	8.179	A
3 - A206 St Clements Way (S)	1040	260	88	2304	0.452	1040	1587	0.9	0.9	2.980	A
4 - A206 Crossways Boulevard (W)	1474	368	258	2953	0.499	1474	870	1.0	1.0	2.496	A

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	126	32	1243	931	0.136	127	173	0.3	0.2	4.475	A
2 - Station Approach (E)	68	17	1301	869	0.078	68	69	0.2	0.1	6.198	A
3 - A206 St Clements Way (S)	850	212	72	2318	0.367	851	1297	0.9	0.6	2.568	A
4 - A206 Crossways Boulevard (W)	1203	301	211	2996	0.402	1205	711	1.0	0.7	2.063	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	106	26	1040	1054	0.100	106	145	0.2	0.1	3.797	A
2 - Station Approach (E)	57	14	1089	1000	0.057	57	57	0.1	0.1	5.264	A
3 - A206 St Clements Way (S)	711	178	60	2328	0.306	712	1086	0.6	0.5	2.331	A
4 - A206 Crossways Boulevard (W)	1008	252	177	3027	0.333	1008	595	0.7	0.5	1.832	A

PM - 2031 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D7 - 2031 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM	✓	✓	D2,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Use circulating lanes	Junction type	Arm order	Junction Delay (s)	Junction LOS
1	J9 - A206 / Station Road / Station Approach Roundabout		Standard Roundabout	1, 2, 3, 4	3.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B255 Station Road (N)	
2	Station Approach (E)	
3	A206 St Clements Way (S)	
4	A206 Crossways Boulevard (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - B255 Station Road (N)	3.40	6.70	20.1	12.0	50.0	21.0	
2 - Station Approach (E)	3.00	6.50	20.4	26.0	50.0	19.0	
3 - A206 St Clements Way (S)	9.70	10.90	5.1	20.0	50.0	35.0	
4 - A206 Crossways Boulevard (W)	9.00	10.40	11.9	24.0	50.0	18.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - B255 Station Road (N)	None		
2 - Station Approach (E)	None		
3 - A206 St Clements Way (S)	Direct	Low lane usage in offside lane	-712
4 - A206 Crossways Boulevard (W)	None		

Roundabout Slope and Intercept used in model

Arm		Final slope	Final Intercept (PCU/hr)
1 - B255 Station Road (N)		0.605	1683
2 - Station Approach (E)		0.618	1672
3 - A206 St Clements Way (S)		0.867	2380
4 - A206 Crossways Boulevard (W)		0.904	3186

The slope and Intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type
D8	2031 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple

Vehicle mix varies over turn		Vehicle mix varies over entry	Vehicle mix source		PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages		2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B255 Station Road (N)		ONE HOUR	✓	145	100.000
2 - Station Approach (E)		ONE HOUR	✓	77	100.000
3 - A206 St Clements Way (S)		ONE HOUR	✓	971	100.000
4 - A206 Crossways Boulevard (W)		ONE HOUR	✓	1388	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
From	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)	
	0	7	93	45	
	2	0	55	20	
	125	42	70	734	
	69	28	1277	13	

Vehicle Mix

Heavy Vehicle Percentages

		To			
From	1 - B255 Station Road (N)	2 - Station Approach (E)	3 - A206 St Clements Way (S)	4 - A206 Crossways Boulevard (W)	
	0	0	0	0	
	0	0	34	50	
	2	40	0	4	
	0	30	2	33	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B255 Station Road (N)	0.22	6.30	0.3	A	133	199
2 - Station Approach (E)	0.13	8.64	0.2	A	71	106
3 - A206 St Clements Way (S)	0.46	3.05	0.9	A	891	1337
4 - A206 Crossways Boulevard (W)	0.52	2.60	1.1	A	1273	1910

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	109	27	1075	1033	0.105	108	147	0.0	0.1	3.892	A
2 - Station Approach (E)	58	15	1125	977	0.059	58	58	0.0	0.1	5.345	A
3 - A206 St Clements Way (S)	731	183	60	2328	0.314	729	1124	0.0	0.5	2.349	A
4 - A206 Crossways Boulevard (W)	1045	261	180	3024	0.345	1042	609	0.0	0.5	1.860	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	130	33	1286	906	0.144	130	176	0.1	0.2	4.639	A
2 - Station Approach (E)	69	17	1346	841	0.083	69	69	0.1	0.1	6.369	A
3 - A206 St Clements Way (S)	873	218	71	2318	0.377	872	1344	0.5	0.6	2.600	A
4 - A206 Crossways Boulevard (W)	1247	312	215	2992	0.417	1247	729	0.5	0.7	2.113	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	159	40	1574	731	0.218	159	215	0.2	0.3	6.287	A
2 - Station Approach (E)	85	21	1648	655	0.130	85	85	0.1	0.2	8.618	A
3 - A206 St Clements Way (S)	1069	267	87	2304	0.464	1068	1645	0.6	0.9	3.040	A
4 - A206 Crossways Boulevard (W)	1528	382	263	2948	0.518	1526	892	0.7	1.1	2.593	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	159	40	1576	730	0.218	159	216	0.3	0.3	6.304	A
2 - Station Approach (E)	85	21	1650	654	0.130	85	85	0.2	0.2	8.644	A
3 - A206 St Clements Way (S)	1069	267	88	2304	0.464	1069	1647	0.9	0.9	3.045	A
4 - A206 Crossways Boulevard (W)	1528	382	264	2948	0.518	1528	893	1.1	1.1	2.597	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	130	33	1288	904	0.144	130	176	0.3	0.2	4.656	A
2 - Station Approach (E)	69	17	1349	840	0.083	70	70	0.2	0.1	6.388	A
3 - A206 St Clements Way (S)	873	218	72	2318	0.377	874	1347	0.9	0.6	2.609	A
4 - A206 Crossways Boulevard (W)	1247	312	215	2992	0.417	1249	730	1.1	0.7	2.118	A

18:00 - 18:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - B255 Station Road (N)	109	27	1078	1031	0.106	109	148	0.2	0.1	3.904	A
2 - Station Approach (E)	58	15	1129	975	0.060	58	58	0.1	0.1	5.362	A
3 - A206 St Clements Way (S)	731	183	60	2328	0.314	732	1127	0.6	0.5	2.359	A
4 - A206 Crossways Boulevard (W)	1045	261	180	3023	0.346	1045	611	0.7	0.5	1.865	A

Appendix L

Report control

Document:	Framework Travel Plan
Project:	Northfleet Harbourside, Gravesham
Client:	Northfleet Central 1 Limited
Job number:	226728
File origin:	X:\Projects\220000\226728 - Northfleet Central, Gravesham\WORD\Framework Documents\R04-BH-Travel Plan 220927.docx

Document checking

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Issue	Date	Status	Checked for issue

R04	28/09/22	Final	RS
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- Figure 2.1 – Walking Routes and 2km Isochrones
- Figure 2.2 – Cycling Routes and 5km Isochrones

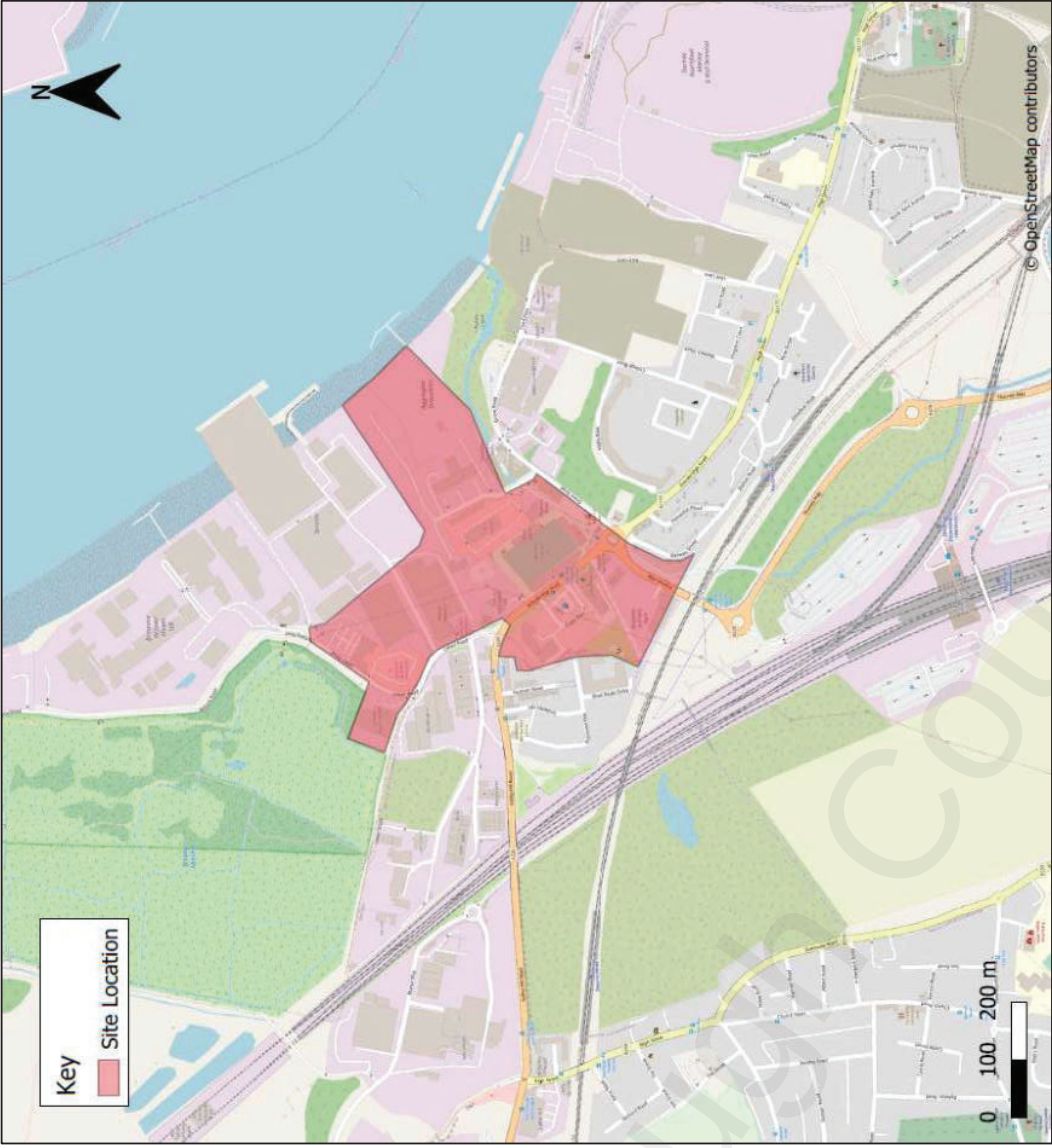
Appendices

- Appendix A – Site Layout
- Appendix B – Walking Isochrones
- Appendix C – Cycling Isochrones
- Appendix D – Walking and Cycling Route Assessment

1 Introduction

- 1.1 Vectos have been appointed by Northfleet Central 1 Limited to provide transport planning in support of an outline planning application for a mixed-use development on land at and surrounding the Ebbsfleet United Football Ground. The site location is illustrated in **Figure 1.1** below whilst a plan of the proposed development is included in **Appendix A**.

Figure 1.1: Site Location



- 1.2 The site falls within the administrative boundaries of Kent County Council (KCC) and Gravesham Borough Council (GBC).
- 1.3 The Proposed Development will comprise:
 - Site clearance including the existing industrial uses on-site and remediation of brownfield land as relevant;
 - Realignment of the A226 Galley Hill Road / Stonebridge Road;

- Up to 3,500 residential units (Use Class C3);
- A new multi-use stadium (with associated facilities) with up to 8,000 seats and up to 15,000m2 Gross External Area (GEA) (Sui Generis Use);
- Up to 22,500m2 (GEA) Use Class E(a) retail floorspace;
- Up to 9,500m2 (GEA) Use Class E(b) food and beverage floorspace;
- Up to 18,000m2 (GEA) Use Class E(g) office floorspace;
- Up to 5,000m2 (GEA) 'other' flexible use, comprising local services, indoor sport, recreation and fitness, medical or health services, crèche or nursery, etc.) (Use Class E(c, d, e, f));
- Up to 4,000m2 (GEA) (Use Class F2) local community use;
- Up to 300 room hotel (Use Class C1), comprising up to 20,000m2 (GEA) floorspace;
- Other Sui Generis Uses
- Car, cycle parking and e-charging facilities; and
- Provision of landscaping, public realm and associated works.

1.4 This Framework Travel Plan (FTP) relates to the entirety of the proposed development, including both the commercial and residential aspects of the site. This FTP considers guidance contained within the National Planning Practice Guidance (NPPG) and the Gravesham Core Strategy.

Mission Statement

1.5 The predominate aim of this FTP is to put in place the management tools deemed necessary to enable future site users of the development to make more informed decisions about their travel, which minimises the adverse effects of their travel on the environment. This is achieved by setting out a strategy for eliminating the barriers keeping site users from using sustainable modes which in effect self manages single-occupancy vehicle use.

Scope

1.6 This FTP has been written as a standalone document and contains all the relevant information needed to effectively implement and monitor the Travel Plan itself.

1.7 The remainder of this document is structured as follows:

- **Section 2** – Outlines the existing site;
- **Section 3** – Outlines the baseline travel patterns for residents at the site;
- **Section 4** – Sets out the objectives and targets of the Travel Plan;

- **Section 5** – Outlines the Travel Plan strategy;
- **Section 6** – Sets out the measures that will be implemented to help achieve the objectives and targets of the Travel Plan;
- **Section 7** – Outlines the monitoring and review programme which will ensure the Travel Plan continues to develop;
- **Section 8** – Sets out the Action Plan for the site.

2 Existing Site Context

2.1 This section of the FTP provides an overview of the development site and the background to the development proposals.

Active Travel

Walking

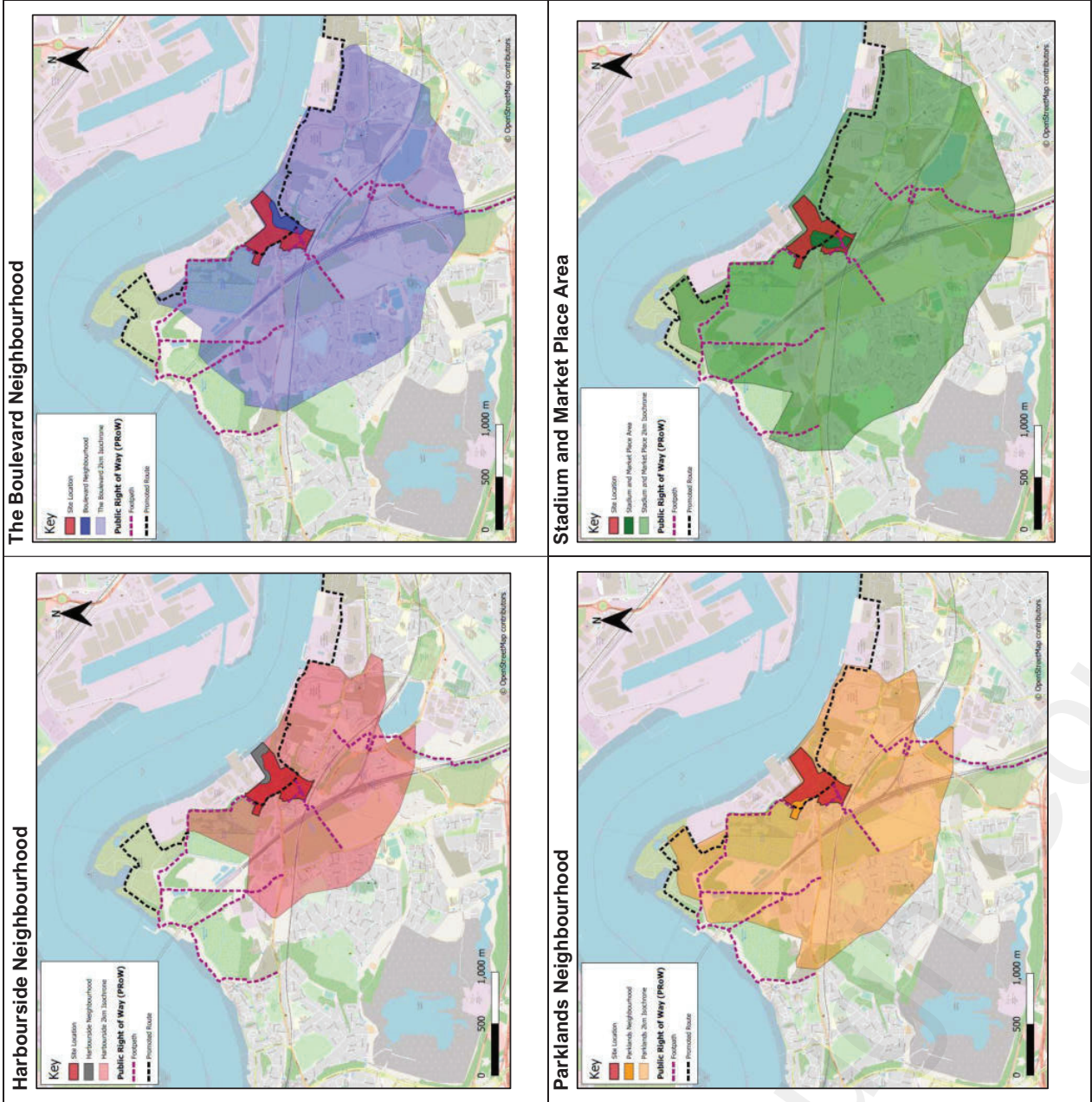
2.2 The transport network surrounding the site has excellent pedestrian and cycling connectivity with several footway and cycleway connections in the local area.

2.3 Footways are present along both sides of the A226 with street lighting provided throughout. The footways are adequately surfaced, with dropped kerbs and tactile paving present at times. These footways continue along the B175 (Stonebridge Road) and the A226 to the north with footway connections also provided from the site to Ebbsfleet International station.

2.4 Further pedestrian routes are also available in the form of PROWs. To the south, a pedestrian footpath provides access to the site via a footway over the railway line towards Swanscombe. An additional promoted PROW route travels through the site with a general north south alignment. This route travels northwest from Gravesend passing through the site and into the marshes.

2.5 These routes and the 2km isochrones associated with each of the character areas across the site are illustrated within **Figure 2.2** overleaf. Full size plans are shown in **Appendix B**.

Figure 2.2: Walking Routes and 2km Isochrones



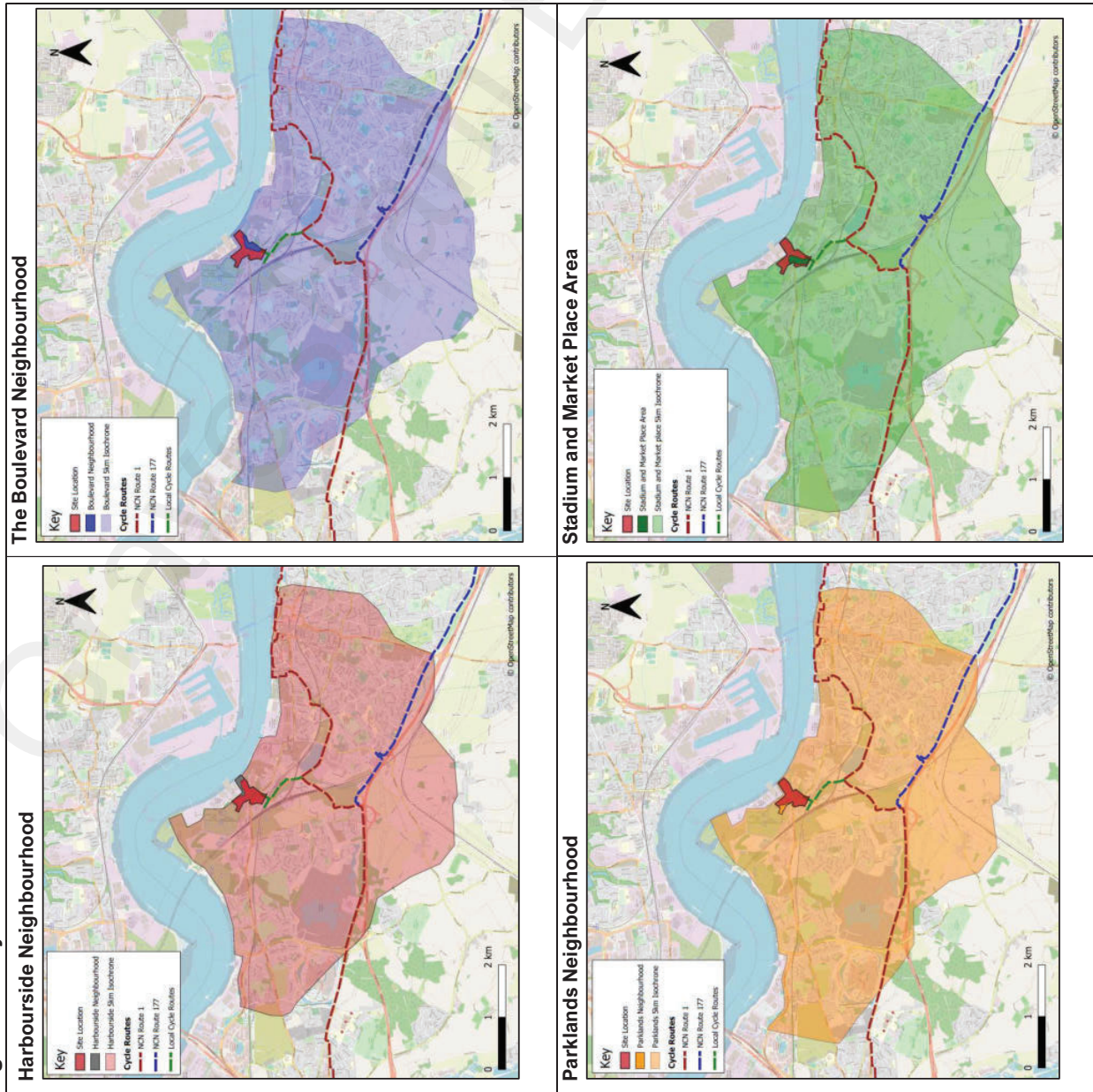
Cycling

2.6 Regarding cycling, there is a local cycle route along the A226 to the south of the site that consists of an off carriageway shared cycleway. This carriageway continues to travel southbound along the A226 (Thames Way) towards Gravesend. At the A226/A2260 junction, 1.2km from the site the local cycle route changes to become NCN Route 1, however the route characteristics remain the same.

2.7 NCN Route 1 is a long-distance cycle route that runs from Kent to Essex passing through central London. In closer proximity to the site, the route provides access to Gravesend to the east and Dartford to the west. Further to the south, NCN Route 1 provides access to NCN Route 177. **Figure**

2.3 overleaf highlights these key cycle routes along with the 5km isochrone associated with each of the key character areas across the site. Full size plans are shown in **Appendix C**.

Figure 2.3: Cycle Routes and 5km Isochrones



Existing Offsite Walking / Cycling Assessment

- 2.8 A desk-based audit has been completed to review the existing walking and cycling routes that are not located within the site boundary. Routes within the site boundary have not been included within this assessment as the proposals for this development involve the complete redevelopment of the area and as such an assessment of these routes would not be beneficial or representative of the future site.
- 2.9 It is also noted that The Green Corridors and KCC Active Travel teams are considering / proposing several walking/cycling schemes across the Ebbsfleet / Gravesham area. These schemes include:
- Improvements to the cycle route along Thames Way;
 - A feasibility study looking to improve the Fastrack service and the walking/cycling facilities along Stonebridge Road between Lower Road and Grove Road. This is the section of Grove Road through the proposed site.
 - A feasibility study looking to improve the walking/cycling connections along the A226 between Craylands Land and Lower Road.
 - Improvements to Northfleet High Street

2.10 The routes that have been assessed are from the site boundary to the following locations:

- Ebbsfleet International Station
- Northfleet Railway Station
- Swanscombe Station

2.11 Overall, this assessment determined that there are more than adequate walking routes between the site and three local stations. The assessment of these routes is shown in **Appendix D**.

Public Transport

2.12 The site has excellent connectivity to the surrounding public transport network and has access to regular bus and rail services within a few minutes' walk of any area within the proposed red line boundary.

Bus Services

2.13 There are several bus stops within walking distance of the site, including one stop within the site at the Ebbsfleet United Football Ground. A second bus stop, Taunton Road is located along the A226 approximately 200m north of the Ebbsfleet United Football Ground. Both bus stops provide raised kerbs and timetables are present.

2.14 An overview of the bus services servicing these bus stops is presented within **Table 2.1** overleaf.

Table 2.1: Bus Routes and Frequencies

Stop Name	Route Number	Route	Approximate Frequency		
			Weekday	Saturday	Sunday
Ebbsfleet Football Ground Bus Stop	AZ Fastrack	Dartford – Gravesend	5 per day	5 per day	5 per day
Ebbsfleet Football Ground Bus Stop	B Fastrack	Temple Hill – Gravesend	5 per hour	5 per hour	3 per hour
Ebbsfleet Football Ground Bus Stop	34	New Barn – Wilmington	1 per day (School Bus)	No Service	No Service
Ebbsfleet Football Ground Bus Stop	3	Gravesend – Wilmington Grammar School	1 per day (School Bus)	No Service	No Service
Ebbsfleet Football Ground Bus Stop	306	Sevenoaks – Bluewater	1 morning Service	5 evening services	No Service
Ebbsfleet Football Ground Bus Stop	308	Gravesend – Sevenoaks	1 per hour	1.5 per hour	No Service
Taunton Road Bus Stop	480	Dartford – Riverview Park	3 per hour	3 per hour	2 per hour
Taunton Road Bus Stop	490	Dartford – Gravesend	3 per hour	3 per hour	2 per hour

2.15 **Table 2.1** highlights the range of bus services available from the site, indicating that the site and its users would be able to travel using buses thus minimising the need to travel using private vehicles.

Rail Services

2.16 The closest railway station to the site is Northfleet Rail Station which is located approximately 450m to the southeast of the site. This station can also be reached using the 480 and 490 bus services which stop at the Hive bus stop situated approximately 240m from Northfleet Station on the B2175 High Street. Rail services from Northfleet travel to destinations including London Charing Cross and Luton.

2.17 Ebbsfleet International Station is also located in close proximity to the site, approximately 800m to the south of Ebbsfleet United Football Club. Ebbsfleet International Station has provision for approximately 3,000 car parking spaces and approximately 100 cycle parking spaces. London St Pancras can be reached in 20 minutes from Ebbsfleet International.

2.18 **Table 2.2** presents the rail services operating at both Northfleet Station and Ebbsfleet International, along with their frequencies.

Table 2.2: Rail Routes and Frequencies

Station	Operator	Route	Approximate Frequency	
			Weekday	Saturday
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Ramsgate	2 per hour	2 per hour
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Maidstone West	3 per day	No Service
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Gravesend	2 per hour	1 per hour
Northfleet Station	Southeastern	St Pancras International – Northfleet – Rainham	2 per hour	2 per hour
Northfleet Station	Southeastern	London Charing Cross – Northfleet – Gravesend	2 per hour	2 per hour
Northfleet Station	Thameslink	Luton – Northfleet – Rainham	2 per hour	2 per hour

2.19 Considering the results presented in **Table 2.3**, there are a wide range of rail services available to those using the site. These services operate at a high frequency and provide access to several locations.

Local Highway Network

2.20 This section describes the existing highway network relevant to the proposed site.

A226

2.21 The A226 has a general east-west alignment travelling between Dartford and Gravesend. The A226 comprises a two-way single carriageway with sections operating at both 30mph and 40mph. Throughout pedestrian footways are present on at least one side of the carriageway along with street lighting. The A226 runs through the site, along this section there is a ghost island right turn bay adjacent to the football ground, along with bus stops, pedestrian footways and street lighting.

2.22 To the west of the site the A226 continues for approximately 3km until it reaches the A206 / A226 / B255 roundabout junction. The A226 continues westbound from the roundabout towards Dartford. To the southeast the A226 continues for 3.7km until it reaches the Thames Way/London Road priority junction.

A206

2.23 The A206 has a general east west alignment travelling between the A206 / A226 / B255 roundabout and the M25 Junction 1A. Throughout this is a dual carriageway that is subject to a 40mph speed limit. The A206 has a pedestrian footway along at least one side of the carriageway throughout along

with an in-carriageway cycle lane for extended sections. To the west the A206 provides access to Junction 1A of the M25, to the east it provides access to the A206 / A226 / B255 roundabout

M25

2.24 The M25 is part of the strategic road network and provides an orbital route around London. The M25 also provides access to a number of key national routes including the M1 and M40 and its most immediate point of access is approximately 6.4km or an 11-minute drive time from the site.

A2206

2.25 1.1km to the southwest of the site, the A226 also provides a connection to the A2206. The A2206 comprises a two-way single carriageway road with sections operating at 40mph and 50mph. There is a shared cycle/footway travelling along the northern side of the carriageway, street lighting is present throughout. The A2206 provides a strategic link to the A2 corridor further south.

A2

2.26 The A2 has an east west alignment and provides a strategic link through Kent to both the east and west extending east to Dover and west beyond Kent into London. The A2 has multilane carriageways operating in both directions. This road operates at the national speed limit. The A2 is accessed and egressed using the most relevant slip roads, and its most immediate point of access is approximately 2.5km or a 4-minute drive time from the site.

Summary

2.27 This section outlines that the proposed site is well located to benefit from public and active travel. A number of PROWs and cycle lanes are present within the vicinity of the site suggesting that the site is easily accessible for both pedestrians and cyclists.

2.28 Furthermore, a wide range of both bus and rail services operating at a high frequency are accessible in close proximity to the site, again, suggesting that the site is easily accessible through the use of public transport modes. The site is also located in close proximity to major multilane carriageways that provide further means of access by car or public transport (bus) to the wider area, and is therefore considered to address the needs of people with disabilities and reduced mobility in relation to all modes of transport.

3 Baseline Travel Patterns

3.1 This section will set out the baseline mode split information for future residents of the proposed development. These will be used as a basis for setting future targets in this FTP.

Mode Share

3.2 Within the first six months of occupation of the site, travel surveys will be completed which will accurately identify the travel patterns of residents at the site. These will be carried out in the form of travel survey questionnaires and will identify a resident's main mode of travel to work. The exact nature of the survey will need to be discussed and agreed in advance with the relevant authorities. The baseline data will be a useful guide in the setting of realistic targets for mode shift over the life of the development. Details of the management of the survey are set out in **Sections 5 and 7**.

3.3 In the interim, and for the purpose of setting indicative targets as part of this FTP, the modal split has been determined using TRICS and Census data.

Residential Mode Share

3.4 The residential mode share for the site has been determined using the TRICS database. The sites selected for the trip generation that is presented within the TA have once again been consulted. However, in order to determine the mode share, only the sites with multimodal surveys have been consulted to determine the residential modal share.

3.5 The residential mode share is summarised in **Table 3.1**.

Table 3.1: Residential Modal Share

Mode	Mode Split
Underground, metro, light rail or tram	0%
Train	3%
Bus, minibus, or coach	9%
Taxi	0%
Motorcycle, scooter or moped	0%
Driving a car or van	29%
Passenger in a car or van	32%
Bicycle	2%
On foot	25%
Other method of travel to work	0%
Total	100%

3.6 **Table 3.1** indicates that approximately 39% of residents will use sustainable and active modes of transport such as walking, cycling or public transport to travel.

Commercial Mode Share

3.7 In order to determine the commercial mode share for the site the 2011 Census dataset (WU03EW) for the MSOA Gravesham 001 has been consulted. This has been used to give an indication of the expected mode split for employees. It should be acknowledged that the mode share presented is likely to change to reflect the baseline travel surveys undertaken once the site is operational. These changes will be discussed with the relevant authorities.

3.8 The assumed mode share for the commercial uses across the site are presented overleaf.

Table 3.2: Commercial Modal Share

Mode	Mode Split
Underground, metro, light rail or tram	0%
Train	1%
Bus, minibus, or coach	6%
Taxi	0%
Motorcycle, scooter or moped	2%
Driving a car or van	75%
Passenger in a car or van	5%
Bicycle	3%
On foot	8%
Other method of travel to work	1%
Total	100%

3.9 Consulting the results presented within **Table 3.2** it can be concluded that at present the majority of commercial trips are undertaken by car.

3.10 The mode shares shown above will be used to derive interim FTP targets. If, after the baseline travel surveys have been undertaken, it is found that the expected mode split is not accurate, the targets will be adjusted to reflect the actual mode split.

3.11 The undertaking of the baseline surveys represents the start of the FTP for monitoring purposes and will provide a basis for ratifying and adjusting the targets as set out in the FTP.

4 Objective and Targets

- 4.1 This section of the report sets out the overarching objectives for the FTP, as well as targets for the short and medium term. It includes indicators through which progress towards meeting the targets will be measured. Further information on monitoring and review of the FTP can be found in **Section 7**.
- **Objectives** are the high-level aims of the FTP. They help to give the Travel Plan direction and provide a clear focus.
 - **Targets** are the measurable goals by which progress will be assessed. The FTP sets out targets which will be sought to be achieved within the period covered by this Travel Plan.

Objectives

- 4.2 The TP’s overriding objective is:
- To engage with and encourage residents to use more sustainable ways of travelling to/from the site through more effective promotion of active modes. This will minimise the impact of the development on the surrounding highway network.*
- 4.3 The sub-objectives are:
- **Sub-objective 1:** To increase site user awareness of the advantages and availability of sustainable / active modes of transport;
 - **Sub-objective 2:** To promote the health and fitness benefits of active travel to all site users; and therefore
 - **Sub-objective 3:** To reduce the dependence of site users on travelling by private vehicles.

- 4.4 These objectives will be achieved by introducing a package of physical and management measures that will facilitate site user travel by sustainable modes.

Targets

- 4.5 Travel Plan targets are measurable goals by which progress can be assessed. These targets should be reviewed through a programme of monitoring (outlined in **Section 7**) to ensure they remain SMART (Specific, Measurable, Achievable, Realistic and Timed).
- 4.6 There are two types of targets, namely: ‘Action’ and ‘Aim’ targets.
- **Action Targets** are non-quantifiable actions that need to be achieved by a certain time.
 - **Aim Targets** are quantifiable and in the case of this FTP relate to the degree of modal shift the plan is seeking to achieve.

Action Targets

- 4.7 The action targets for this FTP in the short term are:
- To appoint a Travel Plan Co-Ordinator within first six months of occupation; and
 - To coordinate baseline travel surveys (see **Section 7**) within six months of the first occupation of the development.
- 4.8 A further action plan has been completed within **Section 8** of this FTP, this provides the key actions required before and within the first six months of occupation of the development.

Aim Targets

- 4.9 The aim targets of this FTP are focused on travel to the site.
- 4.10 The interim baseline travel patterns (as shown in **Table 1**) will be used to set targets until baseline travel surveys can be carried out. These will be carried out within six months of occupation of the development.
- 4.11 For this FTP, targets are set over a five-year period from the time of the initial baseline travel survey. The final target for this FTP should be achieved by the fifth anniversary of the first travel survey. There will be an interim review of the progress towards targets on the third anniversary of the initial baseline travel surveys. If the targets are not met by year five, the lifecycle of this FTP may be extended to a date agreeable with the developer and the relevant authorities. **Table 4.1** shows the target mode split for the development once the TP has been implemented.

Table 4.1: Travel Plan Aim Targets

Target	Indicator	Mode Split		
		Baseline (Year 0)	Interim Review (Year 3)	Final Target (Year 5)
Residential				
Achieve a 5-percentage point increase in sustainable mode share	Travel Surveys	39%	41%	44%
Achieve a 5-percentage point decrease in single occupancy vehicle movements	Travel Surveys	29%	27%	24%
Commercial				
Achieve a 5-percentage point increase in sustainable mode share	Travel Surveys	18%	20%	23%
Achieve a 5-percentage point decrease in single occupancy vehicle movements	Travel Surveys	75%	73%	70%

- 4.12 The targets listed in **Table 4.1** are based on both TRICS and census data and therefore may need to be adjusted once an accurate baseline mode share has been established from the baseline travel surveys. Any adjustments to the targets will be discussed and agreed with the relevant authorities.
- 4.13 Indicators are the elements which will be measured in order to assess progress towards meeting the final target. For the most part this will be the main mode listed by site users in the monitoring surveys conducted annually up to and including year five.
- 4.14 This target will be achieved by introducing a package of physical and management measures that will facilitate travel by sustainable modes. A description of these measures is set out in **Section 5**.
- 4.15 Details on the review and monitoring of these targets are set out in **Section 7**.

5 Travel Plan Strategy

Management

- 5.1 A Travel Plan Co-Ordinator (TPC) will be appointed whose role will be to encourage and foster a sustainable approach to the development where possible. A TPC will be named within the first six months of the occupation of the development.
- 5.2 The role of the TPC will be part-time and will vary throughout the year in response to campaigns / sustainable transport events / monitoring surveys taking place. The TPC will be allocated enough time to effectively manage and implement the TP as agreed.

Funding

- 5.3 The FTP, its accompanying measures and initiatives, and the TPC role will be funded by Northfleet Central 1 Limited, throughout the five-year period. The developer will ensure that the TPC has sufficient funding to effectively implement the FTP.

Travel Plan Coordinator Responsibilities

- 5.4 The TPC will be responsible for the administration of the FTP, the implementation of measures, and for the on-going monitoring and review of the FTP. They will have overall responsibility for ensuring that the measures are successfully delivered on time and to budget.
- 5.5 The TPC will report to the developer, relevant authorities and other involved stakeholders regarding the implementation and progression of the FTP.
- 5.6 The duties of the TPC will therefore include:
 - Providing guidance to, and be the main point of contact, for site users and issue travel information;
 - Liaising with site users to inform them of upcoming promotions and to gather feedback on the day-to-day operations of the FTP;
 - Communicating information regarding relevant national and local initiatives related to the promotion of sustainable travel;
 - Undertaking the travel surveys over the five-year period and supply evidence of this to the relevant authorities;
 - Taking responsibility for data collection and review of the FTP;
 - Designing and implementing effective marketing and awareness-raising campaigns to promote the FTP;
 - Liaising with external organisations, e.g. local authorities and retailers;

- Co-ordinating the monitoring programme for the FTP, including target setting and make necessary changes if the targets are not being met; and
- Establishing and maintaining a filing system for recording all correspondence relating to the FTP.

Marketing Strategy

- 5.7 An essential element of the strategy identified in this FTP, and one which largely determines its success, is the promotion of the FTP. In order to promote and increase awareness of the FTP, the following measures will be adopted:
- Display of key FTP information within Information Packs;
 - Arrange Q&A sessions and offer a personalised travel planning service if demand is identified;
 - Promote national travel initiatives and organise events such as organised cycle rides; and
 - The provision of Information Packs.

6 Measures and Initiatives

- 6.1 This section of the FTP outlines the specific physical and management measures to be implemented as part of the FTP. The implementation of these measures includes both ‘hard’ and ‘soft’ measures and is considered to be the core of the FTP.
- 6.2 The measures outlined below will be agreed with the relevant authorities as being suitable for the situation at the site. However, this list is not exhaustive and the TPC will be free to investigate other potential initiatives.
- 6.3 An Action Plan is also included in this report, at **Section 8**, which shows the measures / initiatives and a possible timescale for implementation.

Measures

Management and Promotion

- 6.4 A TPC will be appointed to manage the FTP. The developer will be responsible for appointing a member of staff to fulfil this role and will ensure that they have sufficient time and resources to undertake their responsibilities.
- 6.5 The TPC will be responsible for overseeing the implementation of the FTP. The TPC will provide personalised travel planning advice should demand be identified, as well as providing Information Packs.
- 6.6 This Information Pack will contain information regarding:
- Walking and cycling routes;
 - Bus and train station locations and timetable information;
 - Journey Planner tools;
 - Car sharing opportunities;
 - Contact details for the TPC; and
 - Brief overview of the FTP.
- 6.7 The TPC will continuously promote the FTP and its initiatives and will be responsible for investigating new ways for site users to become involved. The TPC will also publicise the on-going progress and successes of the FTP in order to encourage site users to travel sustainably.

Walking

- 6.8 The TPC will be responsible for promoting the benefits of walking to staff of the site. As well as providing information regarding local walking routes within the Information Packs, the TPC will promote public health campaigns such as Change 4 Life (NHS programme) and walking challenges

such as the 10,000 steps a day campaign. These highlight the health benefits associated with active travel.

- 6.9 The TPC will liaise with KCC and GBC to make sure that all footways and pedestrian routes are maintained and well-lit within and around the site.
- 6.10 Consideration will be given to the presence of communal umbrellas within the commercial aspects of the development. Other items may also be considered.
- 6.11 Other measures that may be introduced with the aim of increasing number of people travelling to and from the site on foot may be based around provision of the following facilities and benefits:
- Information on the pedestrian routes in and around the proposed site, relevant maps should be included on notice boards, a website and travel packs.
 - Promotion of a walk to work week
 - Encourage walking as a leisure activity by providing information regarding relevant walking websites.
 - Outline and promote the health benefits of walking

Cycling

- 6.12 Cycle parking will be provided in line with the required KCC cycle parking standards which seeks 1 space per unit for flats/maisonettes. This therefore equates to a total of 3,500 cycle parking spaces across the residential aspect of the development. 709 cycle parking spaces will also be provided across the non-residential aspects of the site, this cycle parking provision will again be in line with KCC cycle parking standards.
- 6.13 The provision will be provided by dedicated cycle stores including e-bike charging points located at each of the residential blocks. These stores will be highly accessible and visible to the public realm to enhance security and to encourage their use.
- 6.14 A number of new cycle routes will be introduced within the site boundary. A mobility hub will also be introduced as part of the proposals, this hub will include cycle hire to enable those who don't wish to own their own bike to be able to cycle at the site. As described previously, information regarding local cycle routes will be provided within Information Packs.
- 6.15 The TPC will also liaise with the relevant authorities to discuss ideas for awareness raising events and initiatives. Participation in national and local events for specific campaigns will also form a central role in raising awareness of travel options such as National Bike Week.
- 6.16 The TPC will investigate cycle training, on either an individual or group basis, depending on the number and ability of participants and availability of trainers. The aim is to make cyclists more confident and comfortable cycling on the road, therefore encouraging them to cycle to / from the site on a regular basis.

- 6.17 The TPC will liaise with local bike shops to investigate the potential for potential discounts or site user benefits. This information will be passed on to site users.

- 6.18 KCC's new cycle loan scheme provides free access to refurbished cycles with the aim of promoting active and sustainable ways to travel to and from work and/or education, which are provided through Cycle Community. For more information contact KentConnected@kent.gov.uk.

- 6.19 The development will provide information on local cycle network routes. This information will be provided on maps and made available to site users through the TP notice boards, website and Travel Pack.

Public Transport

- 6.20 Up-to-date timetables and journey planning tools, including route information and service frequencies, will be provided within the Information Packs.
- 6.21 The Fastrack service will be routed through the site, with two stops provided within the site boundary. The TPC will liaise with Fastrack and other commercial services to improve services, negotiate discounts and trial new initiatives, such as bulk ticket purchase.
- 6.22 Encourage participation in national events such as 'In work without my car day'.
- 6.23 In addition, links to the National Rail and Traveline websites as well as enquiry phone numbers will be advertised through all relevant means.
- Fastrack Bus Passes
- 6.24 Sustainable Travel Vouchers will be provided to residents of the site, these vouchers can be used by first time residents to cover the cost of Fastrack Bus Tickets in order to increase the number of people using public transport services. A voucher for the value of an Adult Annual Thameside ticket can be provided, totalling £820 for the year.
- 6.25 The Thameside region consists of two distinct regions; Gravesham to the east and Dartford to the west. Considering the sites location between these two areas, it is unlikely that residents will need to have a full Annual Thameside ticket. As such it is proposed that additional Fastrack bus tickets will be provided. These tickets will provide more travel flexibility for residents of the site:
- Annual Dartford Ticket
 - Annual Gravesend Ticket
- 6.26 **Table 6.1** presents a breakdown of the different costs of each ticket

Table 6.1: Bus Ticket Prices

Bus Ticket Region	Cost
Adult Annual Thameside	£820
Adult Annual Dartford	£620
Adult Annual Gravesend	£690

Other Measures

6.27 Travel awareness measures should play a key part of the FTP, for example:

- Car-free days to be promoted;
- Promote the use of a car sharing database such as Liftshare;
- Personalised travel information if the demand is identified;
- Promote participation in National Bike Week events; and
- Promoting the health and cost benefits of using sustainable transport.

7 Monitoring and Review

7.1 The FTP is part of a continuous process for improvement, requiring monitoring review and revision to ensure it remains relevant. This section sets out the proposals for monitoring and review of the FTP.

Monitoring

7.2 All monitoring will follow the most up to date DfT and GBC best practice guidance and will be the responsibility of the TPC.

7.3 The monitoring programme will begin with the initial baseline travel survey, to be undertaken within six months of occupation of the development.

7.4 The FTP will be monitored on a five-year cycle. Monitoring surveys will be undertaken in years 0, 3 and 5 on the anniversary of the initial baseline travel survey. The baseline survey represents the start of the travel plan for monitoring purposes.

7.5 The interim (Year 3) targets set out in this FTP may be revised on the results of the initial baseline travel survey if the modal split is found to be considerably different from the census data modal split. The targets will be discussed with the relevant authorities before being finalised.

7.6 If sustainable travel targets have not been met by the end of the FTP’s five-year lifespan, monitoring could be extended.

7.7 Additional monitoring of the following is also useful to judge whether the implementation or proportion of certain measures needs to be modified. The following factors should be monitored on a constant basis:

- Comments received relating to the operation and implications of the FTP; and
- Information gathered through the monitoring process will be recorded for input to the annual review (outlined below). The information will be made available to the relevant authorities.

Reporting

7.8 An FTP review will be undertaken by the TPC in years 3 and 5 to assess the progress of the FTP. This will outline the results of the survey, measures that have been implemented and any changes to targets and measures as a result of the survey data. The report will also incorporate the results of monitoring throughout the preceding period. The report will be issued to the relevant authorities within three months of completion of the survey. Any revisions to targets or measures will be agreed with the relevant authorities.

8 Action Plan

8.1 The Action Plan outlined in Table 3 overleaf sets out the measures included within the FTP that are directed at influencing travel.

vectos.

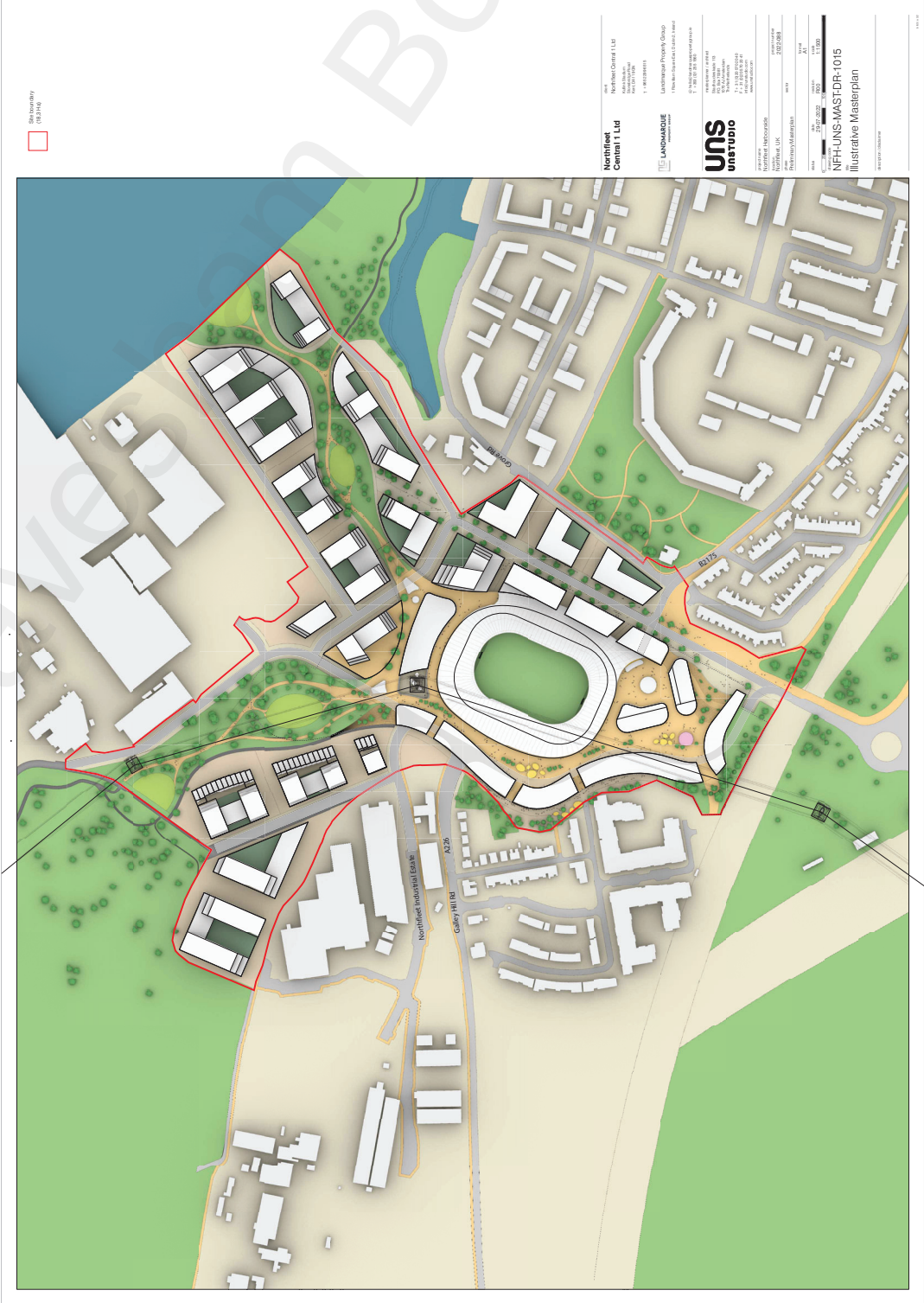
Table 3: Action Plan for Travel Plan Measures

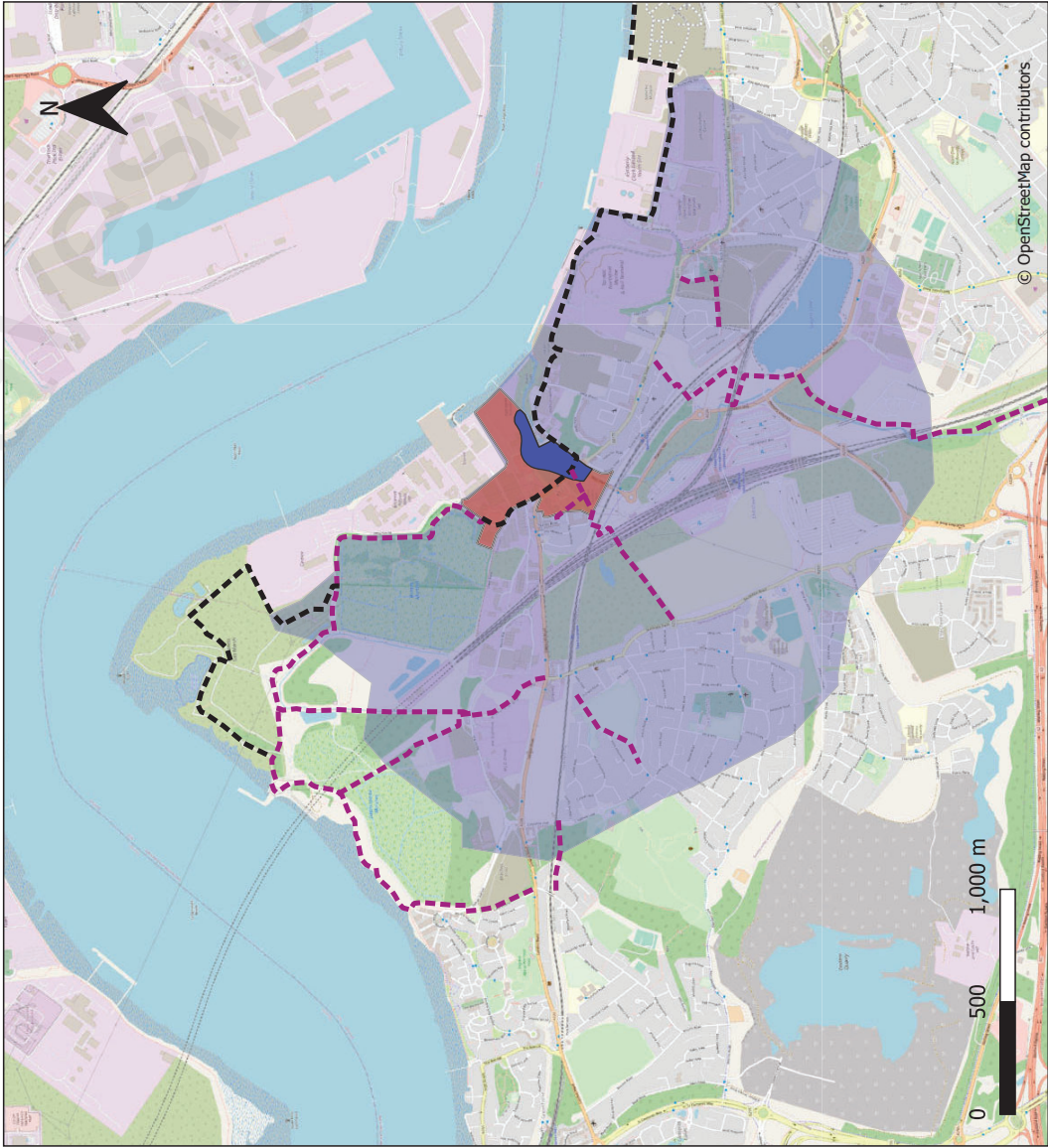
Measures	Notes	Timescale	Monitoring Method	Responsibility
General				
Appointment of Travel Plan Coordinator	Part time role	Within six months of the occupation of development	N/A	Developer
Information Packs	To be provided to all site users	Upon occupation	N/A	Developer
Cycling				
Provision of cycle parking	Provision to be in accordance with KCC standards	As part of construction	N/A	Developer
Provide cycle route maps and other information relating to cycle facilities	Site Users to be provided with relevant information	Ongoing	Monitor uptake through travel surveys	Estate Management Company
Promote available cycle training	Making cycling more accessible	Ongoing	TPC to monitor uptake through travel surveys	Estate Management Company
Walking				
Health benefits of walking to be promoted (10,000 Steps a Day)	Promoted in conjunction with the organisation of social walks and walk to work days	Spring and Summer (annually)	Monitor uptake through travel surveys	Occupiers/ Tenant Bodies and Estate Management Company
Information related to safe walking routes	Site Users to be provided with relevant information	Ongoing	Monitor uptake through travel surveys	Occupiers/ Tenant Bodies and Estate Management Company

Appendix A

Public Transport				
Journey planner information to be provided	Site users to be provided with relevant information, the Fastrack service will be routed through the site.	Ongoing	N/A	Occupiers/ Tenant Bodies and Estate Management Company
Promote initiatives to encourage sustainable travel such as commuter challenges and car-free days	Investigate local/national and regional options	Ongoing	TPC to monitor	Occupiers/ Tenant Bodies and Estate Management Company

Appendix B





- Key**
- Site Location
 - Boulevard Neighbourhood
 - The Boulevard 2km Isochrone
 - Public Right of Way (PROW)**
 - Footpath
 - Promoted Route

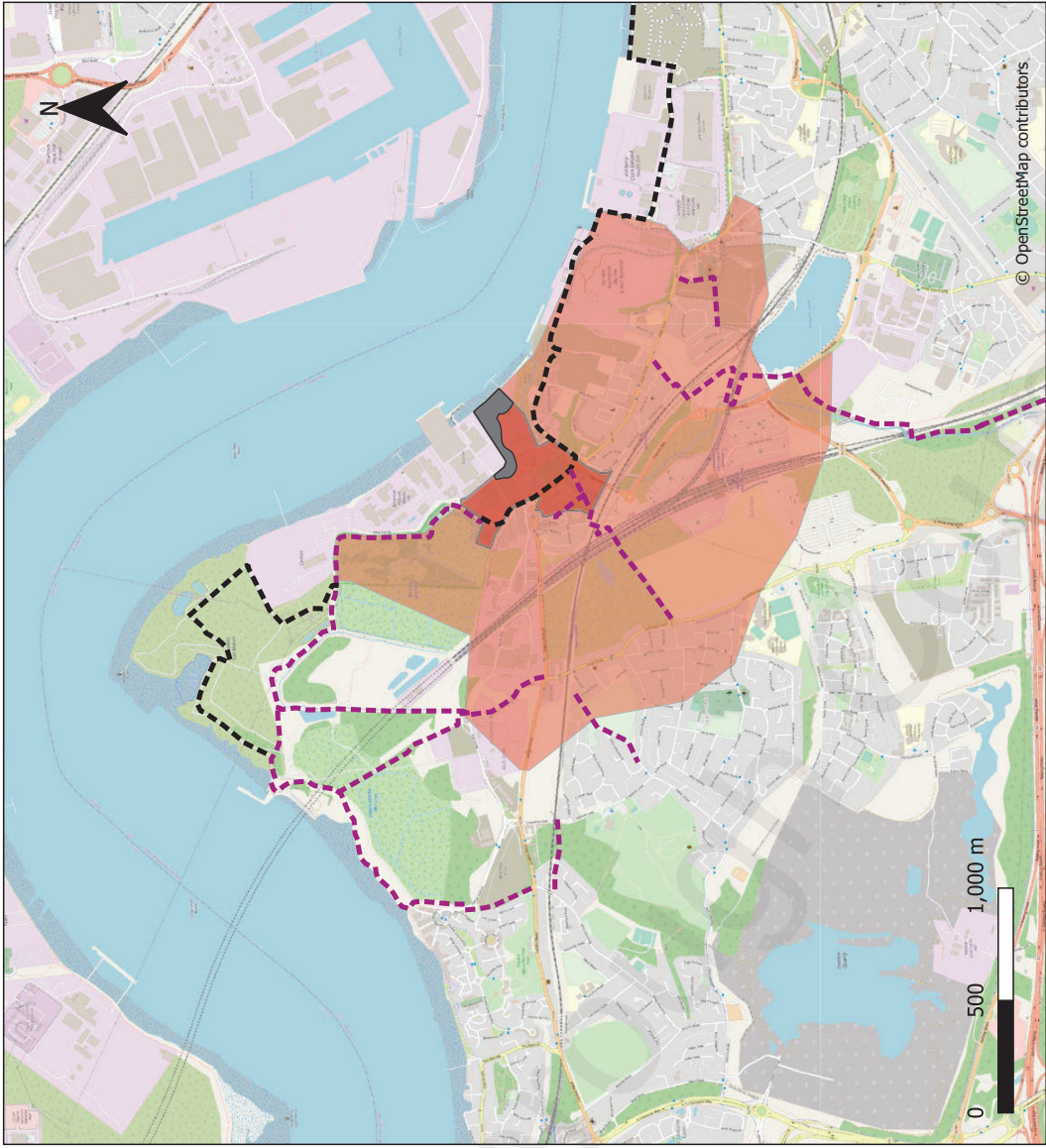
Northfleet Central 1 Ltd

Northfleet Harbourside, Gravesham

The Boulevard Neighbourhood
PROWs and 2km Isochrone

vectors.
— PART OF SLR

Drawn By: Checked By: 26/09/2022
BH DJ Figure 2.2.1



- Key**
- Site Location
 - Harbourside Neighbourhood
 - Harbourside 2km Isochrone
 - Public Right of Way (PROW)**
 - Footpath
 - Promoted Route

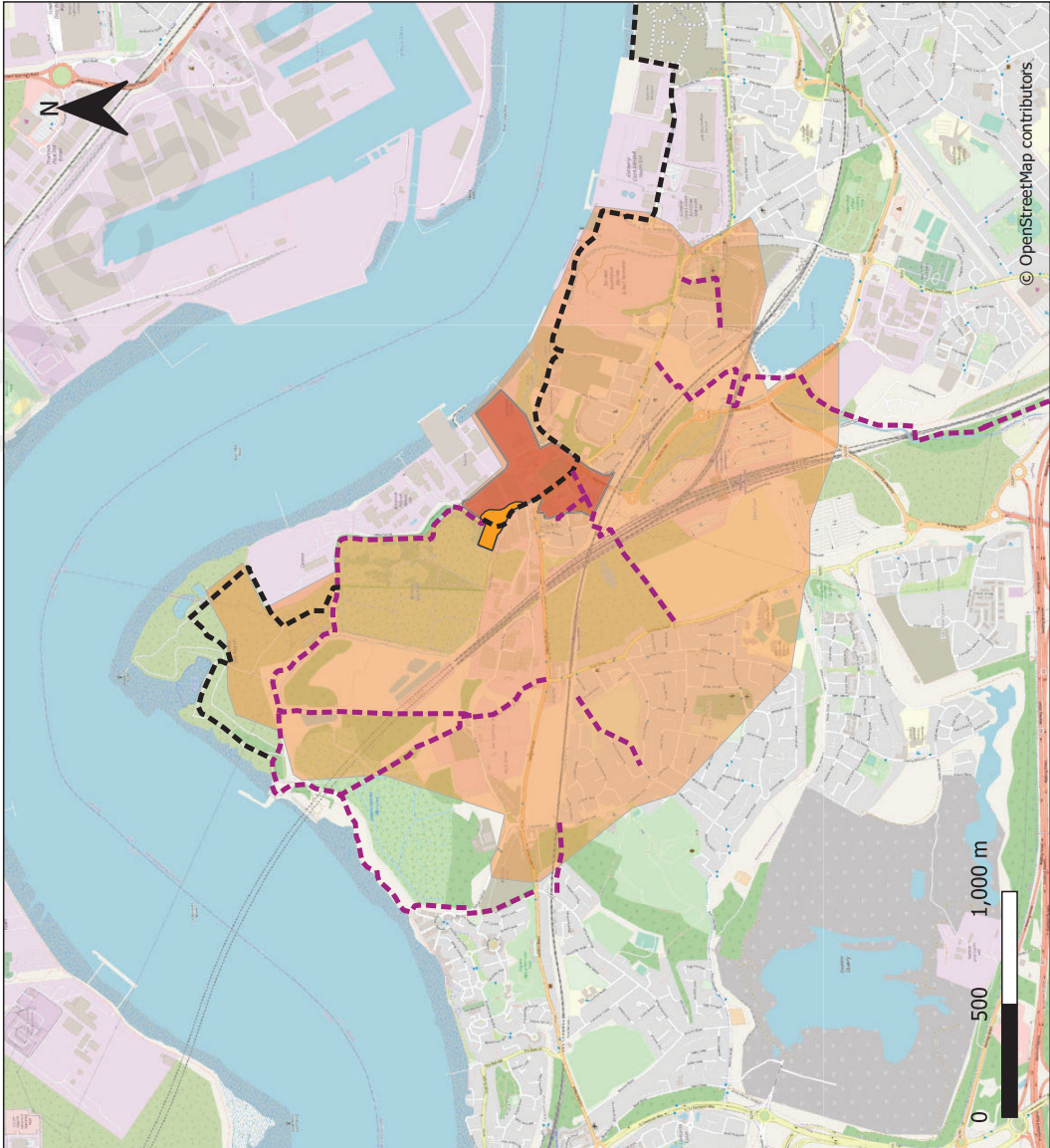
Northfleet Central 1 Ltd

Northfleet Harbourside, Gravesham

Harbourside Neighbourhood
PROWs and 2km Isochrone

vectors.
— PART OF SLR

Drawn By: Checked By: 26/09/2022
BH DJ Figure 2.2.1



Key

- Site Location
- Parklands Neighbourhood
- Parklands 2km Isochrone

Public Right of Way (PROW)

- Footpath
- Promoted Route

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Northfleet Harbourside, Gravesham

Parklands Neighbourhood PROWs and 2km Isochrone

vectors.
— PART OF SLR

Drawn By: Checked By: 26/09/2022
BH RS Figure 2.2.3



Key

- Site Location
- Stadium and Market place
- Stadium and Market place 2km Isochrone

Public Right of Way (PROW)

- Footpath
- Promoted Route

Northfleet Central 1 Ltd

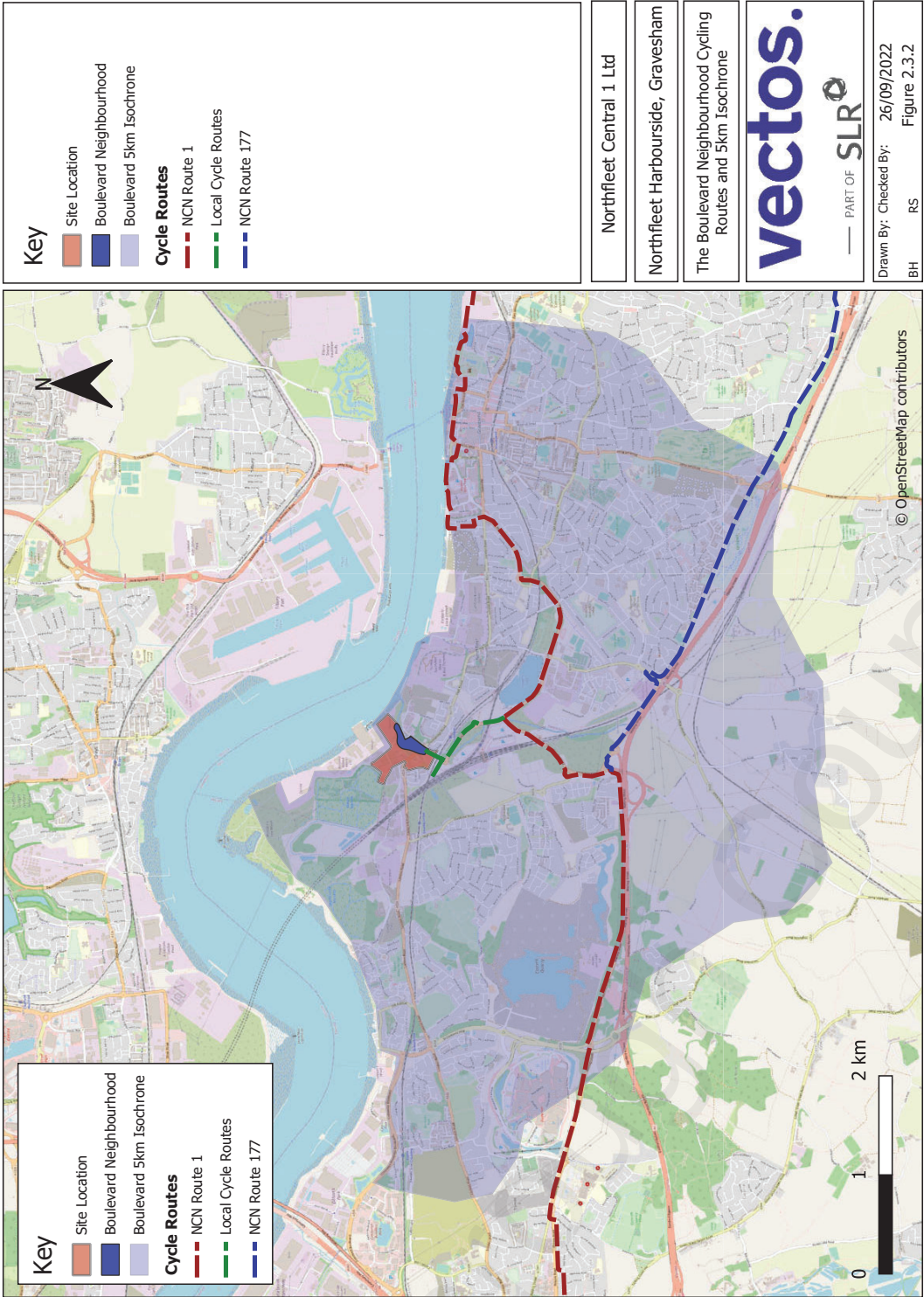
Northfleet Harbourside, Gravesham

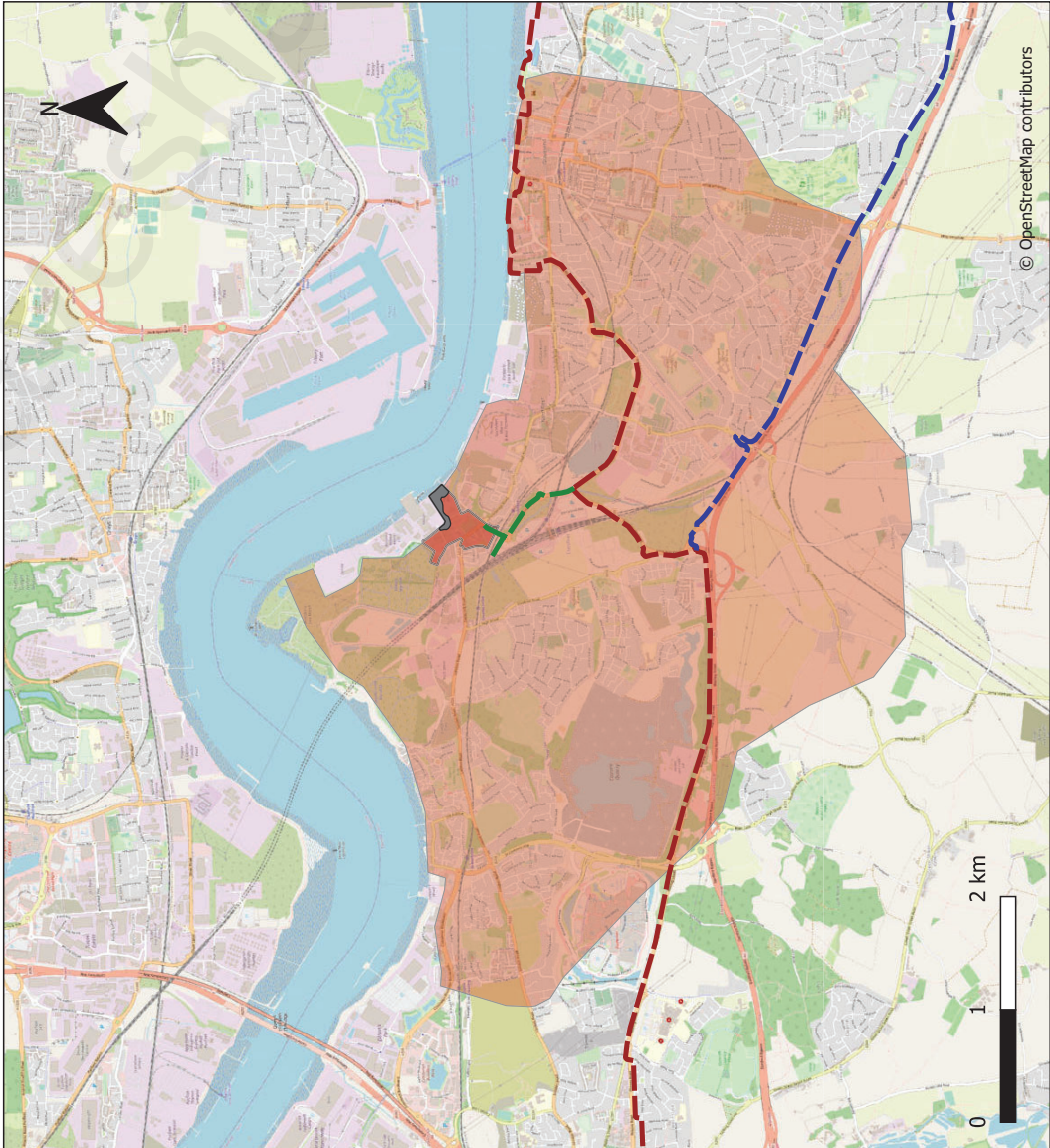
Stadium and Market Place PROWs and 2km Isochrone

vectors.
— PART OF SLR

Drawn By: Checked By: 26/09/2022
BH RS Figure 2.2.4

Appendix C





Key

- Site Location
- Harbourside Neighbourhood
- Harbourside 5km Isochrone

Cycle Routes

- NCN Route 1
- Local Cycle Routes
- NCN Route 177

Northfleet Central 1 Ltd

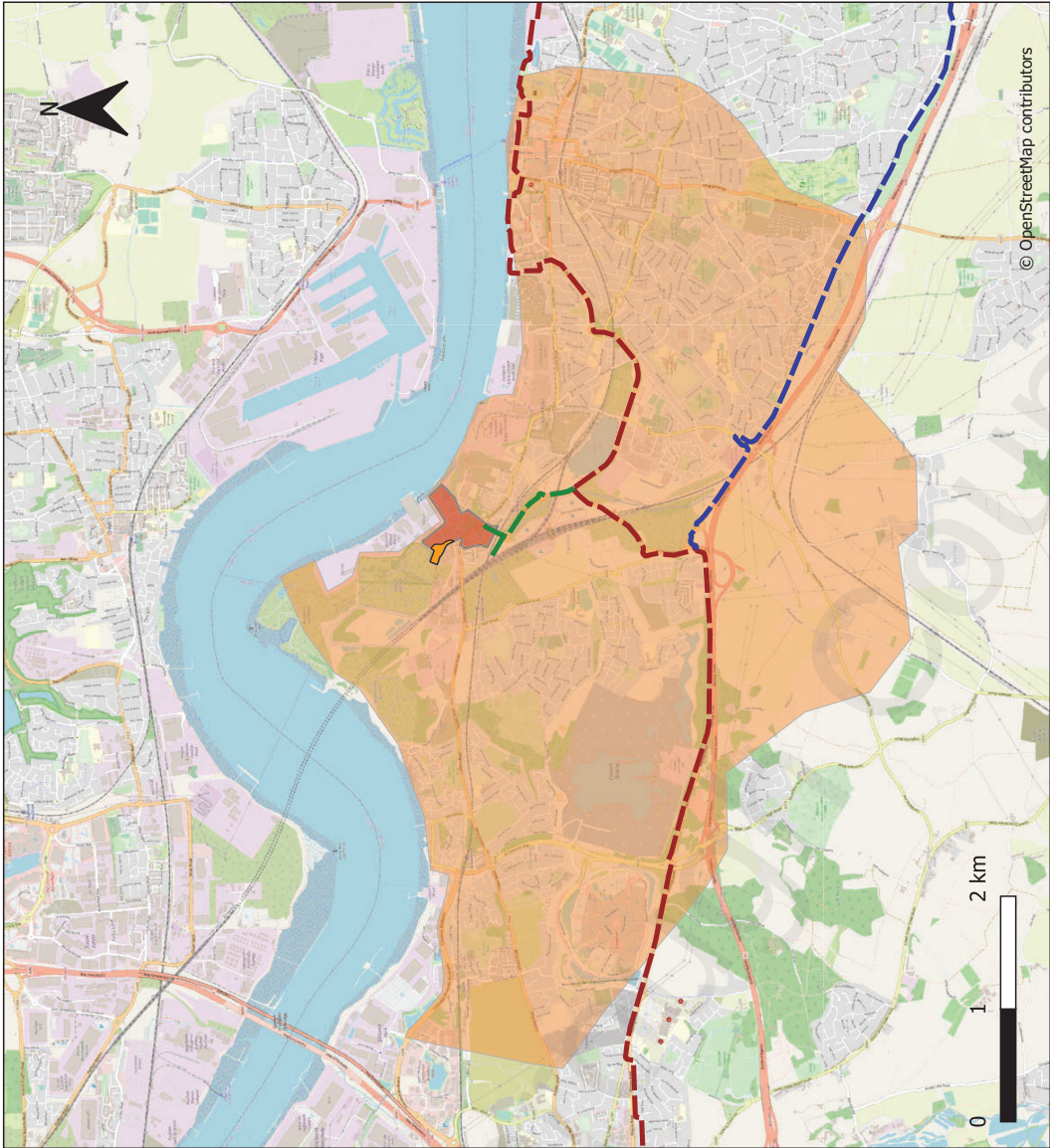
Northfleet Harbourside, Gravesham

Harbourside Neighbourhood Cycling Routes and 5km Isochrone

vectors.

— PART OF SLR

Drawn By: Checked By: 26/09/2022
BH RS Figure 2.3.2



Key

- Site Location
- Parklands Neighbourhood
- Parklands 5km Isochrone

Cycle Routes

- NCN Route 1
- Local Cycle Routes
- NCN Route 177

Northfleet Central 1 Ltd

Northfleet Harbourside, Gravesham

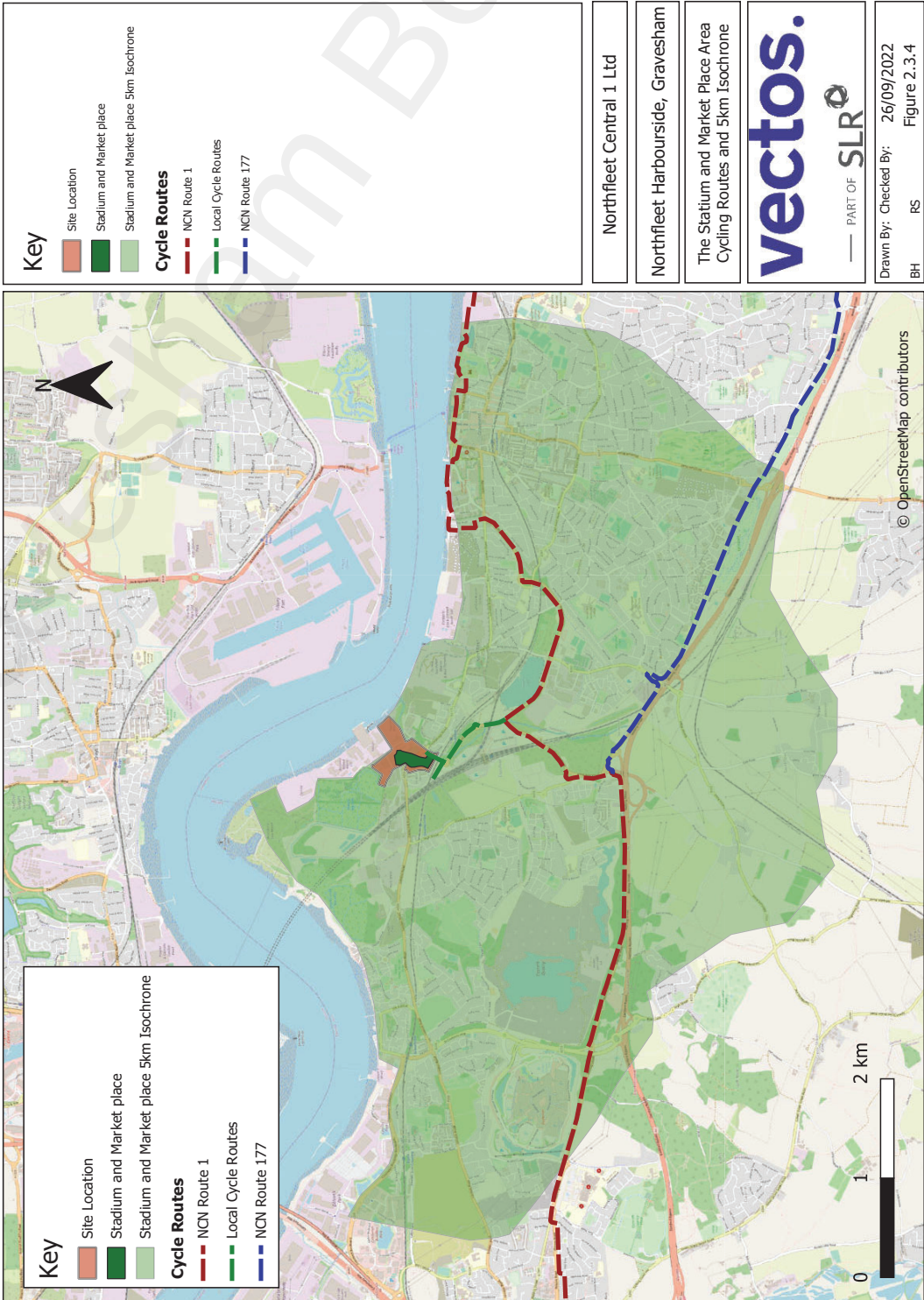
Parklands Neighbourhood Cycling Routes and 5km Isochrone

vectors.

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Drawn By: Checked By: 26/09/2022
BH RS Figure 2.3.3

Appendix D



Northfleet Harbourside, Gravesham Walking and Cycling Assessment

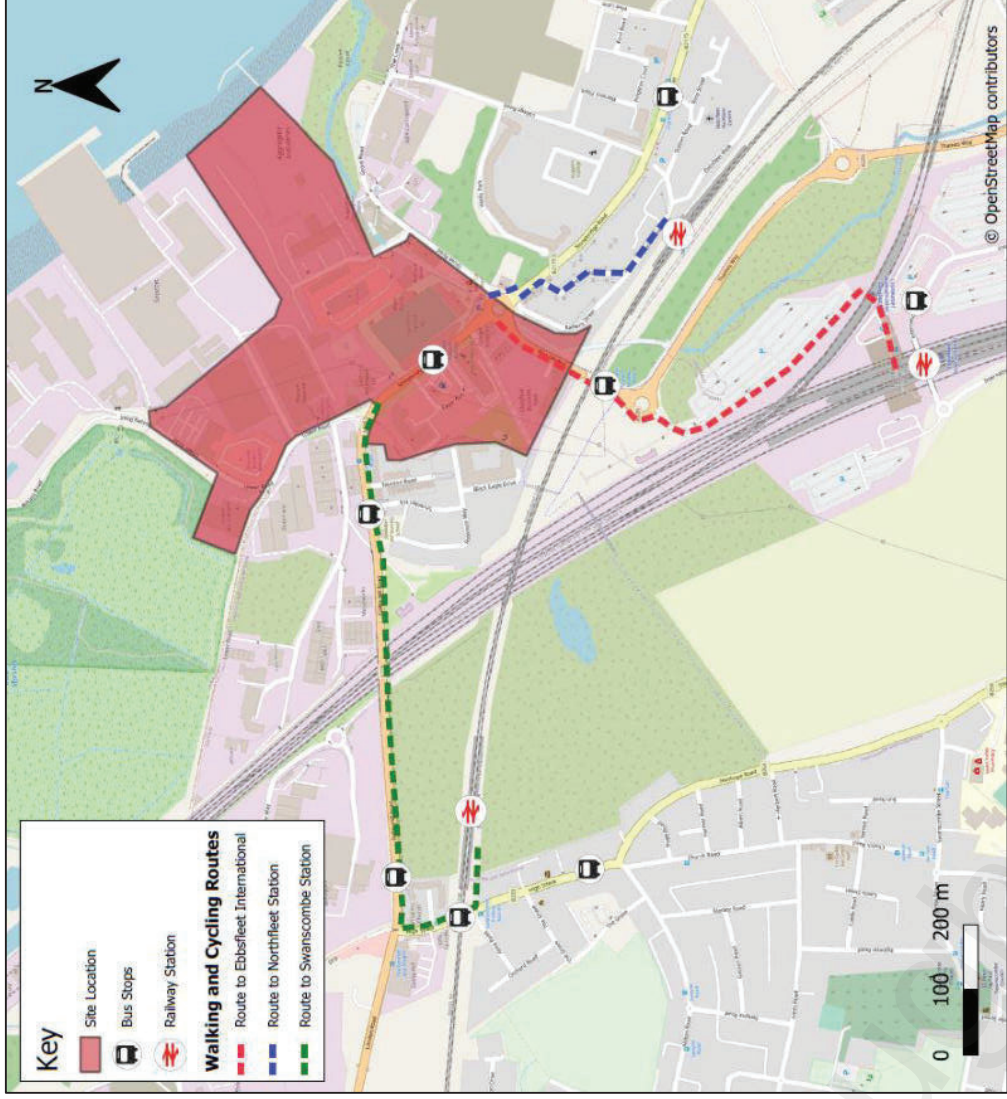
N05/226728

Introduction

1. The existing walking and cycling routes within close proximity to the site have been assessed.
2. This assessment has been undertaken in the form of a desk-based audit. Only the existing walking and cycling routes that are not located within the site boundary have been assessed. Routes within the site boundary have not been included within this assessment as the proposals for this development involve the complete redevelopment of the area and as such an assessment of these routes would not be beneficial or representative of the future site.
3. Throughout this assessment the Healthy Streets Indicators have been consulted.
4. The routes that have been assessed are from the site boundary to the following locations:
 - Ebbsfleet International Station
 - Northfleet Railway Station
 - Swanscombe Station

5. **Figure 1** presents the routes to these locations.

Figure 1: Walking and Cycling Routes



Route Assessments

Route to Ebbsfleet International

People chose to walk, cycle, and use public transport

6. This route has high quality, well surfaced footways on both sides of the A226 along with a dedicated cycle path running along the eastern side of the carriageway. It is noted that there is some overgrown vegetation on the approach to the Thamesway/Grove Road roundabout. To improve conditions along this section footways should be kept clear of vegetation to ensure that pedestrian movements (including wheelchairs) are not restricted.

People feel Safe

7. The route has street lighting throughout helping to make people feel safe after dark. No measures are suggested at this time.

Not too Noisy

8. At present there is a significant level of HGV movements along the A226. A number of these movements are associated with the existing industrial units in the area. It should be noted that the proposed development will lead to the removal of a number of these units and as such it can be assumed that the level of noise would reduce. Noting this, it is suggested that noise along this route could be further reduced with planting or screening.

Things to see and do

9. The route has little in the way of things to see and do. In order to improve this, planting and street furniture along the route could be introduced to improve the overall appearance of the site.

People Feel Relaxed

10. The footways along this route are large allowing pedestrians to shelter from vehicular traffic. As noted previously, lighting is also present along this route making people feel more relaxed. No new measures are suggested to enhance this indicator.

Easy to cross

11. There are dropped kerbs and tactile paving located at crossings along this route. It was noted that at points the location of the tactile paving is not in line with the pedestrian desire lines along this route, instead it is located further west which makes it redundant to many pedestrians.

Shade and Shelter

12. There is intermittent shade provided along this route, generally provided by trees and buildings along the route. There is also a lack of accessible rest areas with seating and shelter. The introduction of rest areas with shelter would mitigate this issue.

Places to stop and rest

13. There are no rest areas along this route, including benches or outdoor dining spaces. The introduction of rest areas with shelter would mitigate this issue.

Route to Northfleet Station

People chose to walk, cycle, and use public transport

14. This route has footways on both sides of the B2175 and Hamerton Road. A footway is located on just one side of Station Road. There are no dedicated cycle routes along these roads. Additional segregation for cyclists along this route, especially the B2175 could make this route more attractive and safer.

People feel Safe

15. The route has street lighting throughout helping to make people feel safe after dark. No measures are suggested at this time.

Not too Noisy

16. At present there is a significant level of HGV movements along the B2175 High Street. It should be noted that the proposed development will lead to the removal of a number of industrial units and as such it can be assumed that the level of noise would reduce. Along both Hamerton Road and Station Road it is much quieter. It is suggested that noise along the B2175 could be further reduced with planting or screening.

Things to see and do

17. The route has little in the way of things to see and do. In order to improve this, planting and street furniture along the route could be introduced to improve the overall appearance of the site.

People Feel Relaxed

18. The footways along the B2175 are of a considerable size allowing pedestrians to be relaxed around the passing traffic. As noted previously, lighting is also present along this route making people feel more relaxed. No new measures are suggested to enhance this indicator.

Easy to cross

19. There are dropped kerbs located at the B2175 crossing along this route. There is a lack of dedicated crossing points along both Hamerton Road and Station Road. However, as traffic flows along this route are very low this is of little concern.

Shade and Shelter

Along this route, buildings provide shade although this is subject to the time of day. Along the B2175 there are also some trees providing shelter.

Places to stop and rest

20. There are no rest areas along this route, including benches. The introduction of rest areas with shelter would mitigate this issue although due to the nature of the route there may be no opportunity to do this along the route.

Swanscombe Station

People chose to walk, cycle, and use public transport

21. This route has footways on both sides of the A226 (Galley Hill Road) and High Street. It was noted that along the A226 there is vegetation encroaching onto the pedestrian footway. Measures should be taken to ensure that footways are kept clear to ensure that pedestrians and wheelchairs are able to travel without restriction.

People feel Safe

22. The route has street lighting throughout helping to make people feel safe after dark. No measures are suggested at this time.

Not too Noisy

23. At present there is a significant level of HGV movements along the A226. As noted previously, the proposed development will lead to the removal of a number of these units and as such it can be assumed that the level of noise would reduce. It is suggested that noise along the A226 could be further reduced with planting or screening.

Things to see and do

24. The route has little in the way of things to see and do. In order to improve this, planting and street furniture along the route could be introduced to improve the overall appearance of the route.

People Feel Relaxed

25. The footway along the southern side of the A226 is wide allowing pedestrians to establish a gap between themselves and passing vehicles. Lighting is also present along this route making people feel more relaxed. No new measures are suggested to enhance this indicator.

Easy to cross

26. There are dropped kerbs located at the crossing points along this route. Specifically, there are two signalised pedestrian crossings along the A226. There is also a zebra crossing located along High Street.

Shade and Shelter

Along this route, shade is provided intermittently by both buildings and trees. No new measures are proposed at this time.

Places to stop and rest

27. There are no rest areas along this route, including benches. The introduction of rest areas with shelter would mitigate this issue although this may be difficult to achieve along the A226.

Summary

28. All three routes have been assessed with regard to their ability to accommodate both pedestrians and cyclists. A summary of each route is provided below:

Route to Ebbsfleet International

- In order to maximise the pedestrian usage of this route vegetation should be cleared from footways.
- Pedestrian crossings could be moved to ensure they are located along pedestrian desire lines. As such both pedestrians and wheelchair users would not need to deviate significantly from the most convenient route
- This route would be improved if its overall appearance is improved. This could be achieved through the introduction of planters along the route.
- The addition of accessible rest areas with shelter would likely attract more pedestrians to this route.

Route to Northfleet Station

- A segregated cycle lane would be beneficial for this route, and would act to increase the number of cyclists using the route.
- In order to dampen the noise produced by the HGVs along this route it is suggested that planting and screening could be introduced along the B2175.
- The introduction of planting would also act to improve the appearance of this route, improving the walking and cycling experience along the route.
- The introduction of sheltered seating would be beneficial to this route and would entice a greater number of people to walk and cycle this route.

Route to Swanscombe

- In order to maximise the pedestrian usage of this route vegetation should be cleared from footways.
- In order to dampen the noise produced by the HGVs along this route it is suggested that planting and screening could be introduced along the A226.
- The addition of accessible rest areas with shelter would likely attract more pedestrians to this route.

Contact

Appendix M

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Report control

Document: Framework Construction Traffic Management Plan
Project: Northfleet Harbourside, Gravesham
Client: Northfleet Central 1 Ltd
Job number: 226728

Document checking

Primary Author: Ben Hardy Initialled: BH
Contributor: Dan Jackson Initialled: DJ
Review by: Rory Spiller Initialled: RS

Northfleet Central 1 Ltd
Northfleet Harbourside, Gravesham

September 2022

Framework Construction Traffic Management Plan

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Northfleet Harbourside, Gravesham, Framework Construction Traffic Management Plan

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Issue	Date	Status	Checked for issue
R05	28/09/22	Final	RS

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Figures

Figure 2.1	– Site Boundary Plan
Figure 2.2	– Local Context Plan
Figure 2.3	– Regional Site Plan
Figure 4.1	– Access Routes

1 Introduction

- 1.1 Vectos have been appointed by Northfleet Central 1 Ltd to provide transport planning in support of an outline planning application for a mixed-use development on land at and surrounding the Ebbsfleet United Football Ground.
- Framework Construction Traffic Management Plan (CTMP) Objectives**
- 1.2 The main aim of this CTMP is to manage all types of construction vehicle activity to and from the site during the construction period. The CTMP will improve the safety and reliability of construction related vehicle movement in relation to the site, minimise any potential impacts on local traffic conditions and mitigate any potential for adverse environmental impacts.
- 1.3 This CTMP has been prepared with the following objectives:
- To ensure that construction traffic does not have a detrimental effect on the surrounding public highway and local community including protecting the safety for all road users (including vulnerable road users) during the construction period;
 - To reduce the impact of construction traffic on the conventional network peak traffic hours and afternoon peak; and
 - To identify measures to ensure safe and efficient movement of construction traffic.

Site Context

- 1.4 The site is located within Northfleet, 7.7km to the east of Dartford and 6.4km from Junction 1A of the M25. The site covers an area comprising Ebbsfleet United football ground, along with areas of industrial and warehousing use. The A226 (Stonebridge Road) passes through the centre of the site. The site is located within the administrative boundary of Gravesham Borough Council.

Development Proposals

- 1.5 The proposals for the site are as follows:
- “Outline planning application with all matters reserved, except for the primary means of access, for a mixed-use redevelopment involving the demolition of existing buildings and structures including site preparation / remediation works, and the development of residential units (Use Class C3), Use Class E floorspace including floorspace for retail, food and beverage, office floorspace and flexible Class E floorspace, floorspace for a new multi-use stadium with associated business and leisure facilities, floorspace for a hotel (Use Class C1), floorspace for community uses (Use Class F2) and other sui generis uses, delivery of open space and the realignment of the A226 Galley Hill Road / Stonebridge Road with hard / soft landscaping, car and cycle parking, highways works, infrastructure works, ancillary and associated works.”*
- 1.6 The proposed development comprises:

- Site clearance including the existing industrial uses on-site and remediation of brownfield land as relevant;
- Realignment of the A226 Galley Hill Road / Stonebridge Road;
- Up to 3,500 residential units (Use Class C3);
- A new multi-use stadium (with associated facilities) with up to 8,000 seats and up to 15,000m2 Gross External Area (GEA) (Sui Generis Use);
- Up to 22,500m2 (GEA) Use Class E(a) retail floorspace;
- Up to 9,500m2 (GEA) Use Class E(b) food and beverage floorspace;
- Up to 18,000m2 (GEA) Use Class E(g) office floorspace;
- Up to 5,000m2 (GEA) 'other' flexible use, comprising local services, indoor sport, recreation and fitness, medical or health services, crèche or nursery, etc.) (Use Class E(c, d, e, f));
- Up to 4,000m2 (GEA) (Use Class F2) local community use;
- Up to 300 room hotel (Use Class C1), comprising up to 20,000m2 (GEA) floorspace;
- Other Sui Generis Uses;
- Car, cycle parking and e-charging facilities; and
- Provision of landscaping, public realm and associated works.

CTMP Structure

1.7 The report is set out as listed below:

- **Chapter 2: Context, considerations, and challenges** – Key information about the site is provided to support access for construction staff;
- **Chapter 3: Construction Programme and Methodology** – provides information on the key construction processes and vehicle arrangements;
- **Chapter 4: Vehicle Routing and Access** – details the access routes to and from the site;
- **Chapter 5: Strategies to Reduce Impacts** – identifies the measures and initiatives that will be used to promote a safe and efficient construction period at this stage;
- **Chapter 6: Estimated Vehicle Movements** – provides an estimate of the number of vehicle movements associated with the construction of the development;
- **Chapter 7: Implementing, monitoring, and updating** – presents the proposed methodology for monitoring.

2 Context, Considerations and Challenges

Introduction

2.1 Information relating to transport accessibility to/from the site is provided in this section.

Guidance

2.2 This outline CTMP has been produced to support the planning submission. This document is an evolving document that will subsequently be updated.

Context Maps

2.3 **Figure 2.1** shows the site boundary plan. **Figure 2.2** shows the location of the site in relation to the surrounding local area. **Figure 2.3** shows a regional plan with the location of the site in the context of the Thameside Area.

Figure 2.1: Site Boundary Plan

