



Norwich Northern Distributor Road

Major Schemes Business Case
Sensitivity Test for DfT

Part NNDR from A140 to A47(T) Volume 2 - Appendices

December 2009
Norfolk County Council

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Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
01	03/12/2009	Mo Shahkarami	Brian Witten	Gerry Kelly	Final

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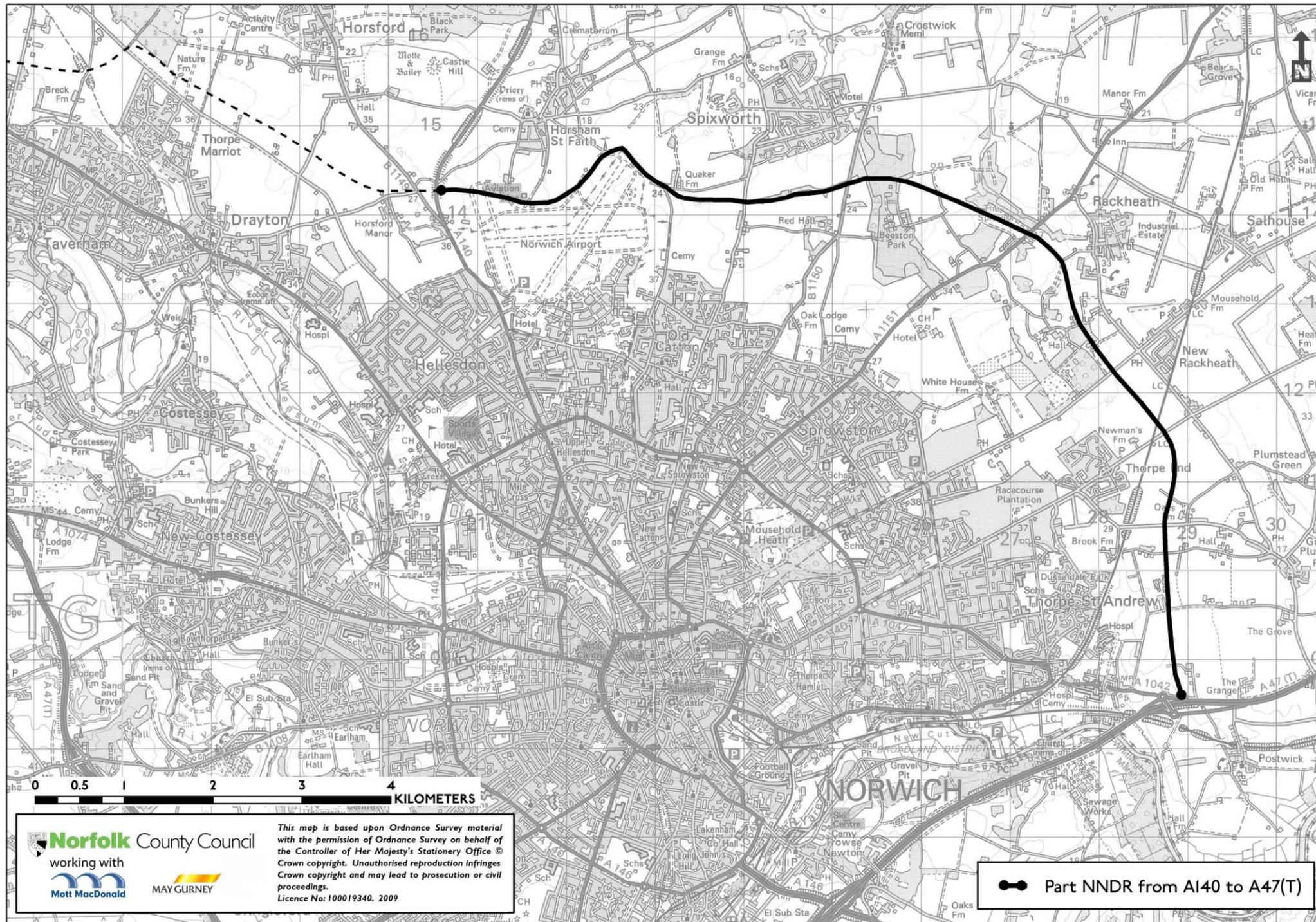
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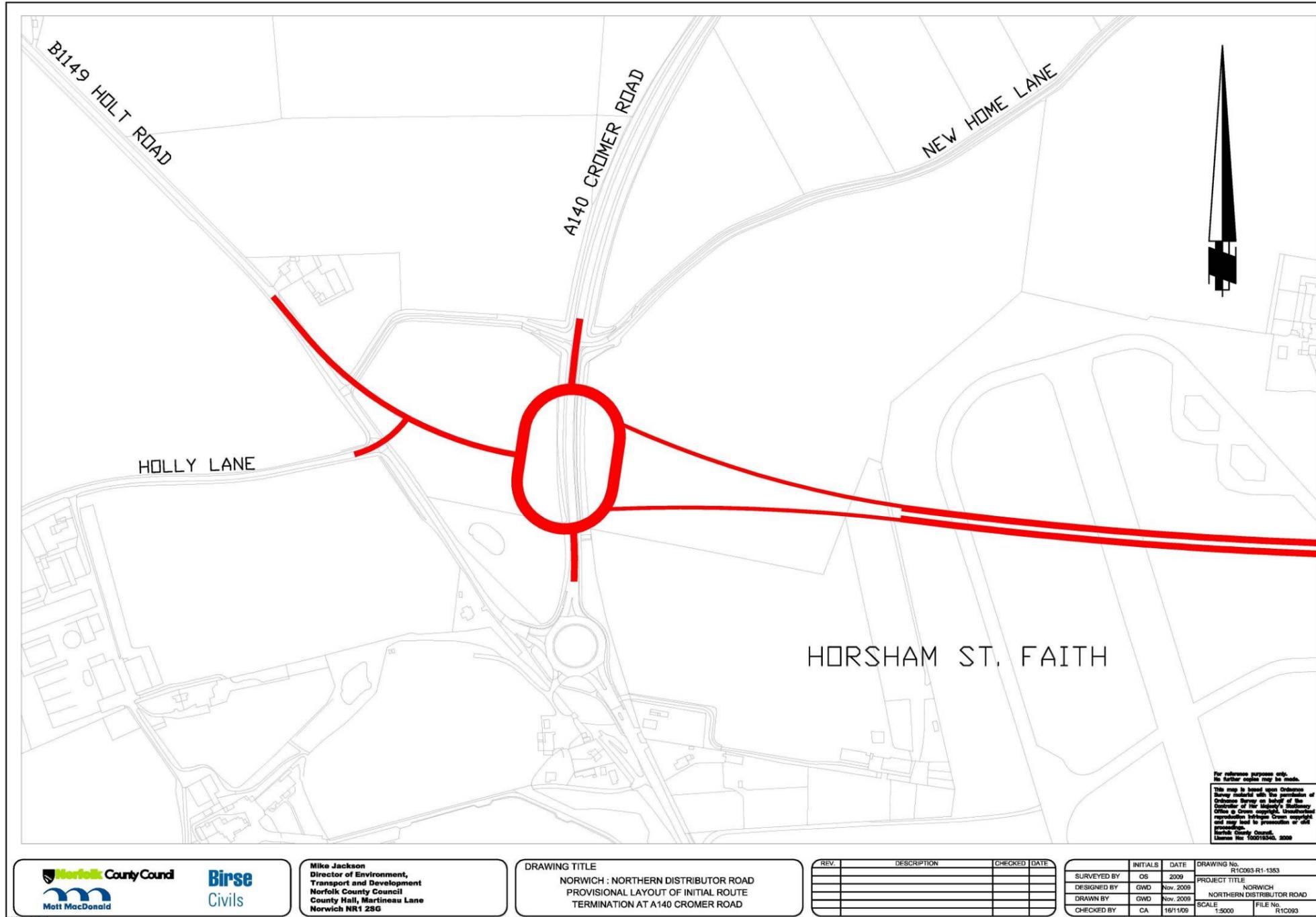
Appendix A. Plan of Part NNDR from A140 to A47(T)

Figure A.1: Plan of NNDR from A140 to A47(T)



Appendix B. Amended A140 Junction Layout

Figure B.1: Amended A140 Junction Layout



 		Mike Jackson Director of Environment, Transport and Development Norfolk County Council County Hall, Martineau Lane Norwich NR1 2SG	DRAWING TITLE NORWICH : NORTHERN DISTRIBUTOR ROAD PROVISIONAL LAYOUT OF INITIAL ROUTE TERMINATION AT A140 CROMER ROAD		REV. DESCRIPTION CHECKED DATE	INITIALS DATE	DRAWING NO. R1C093-R1-1353																									
			<table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																	<table border="1"> <tr><td>SURVEYED BY</td><td>OS</td><td>2009</td></tr> <tr><td>DESIGNED BY</td><td>GWD</td><td>Nov. 2009</td></tr> <tr><td>DRAWN BY</td><td>GWD</td><td>Nov. 2009</td></tr> <tr><td>CHECKED BY</td><td>CA</td><td>16/11/09</td></tr> </table>	SURVEYED BY	OS	2009	DESIGNED BY	GWD	Nov. 2009	DRAWN BY	GWD	Nov. 2009	CHECKED BY	CA	16/11/09
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DESIGNED BY	GWD	Nov. 2009																														
DRAWN BY	GWD	Nov. 2009																														
CHECKED BY	CA	16/11/09																														

Appendix C. Traffic Flows (PCUs)

Figure C.1: Location Of Traffic Flow Sites

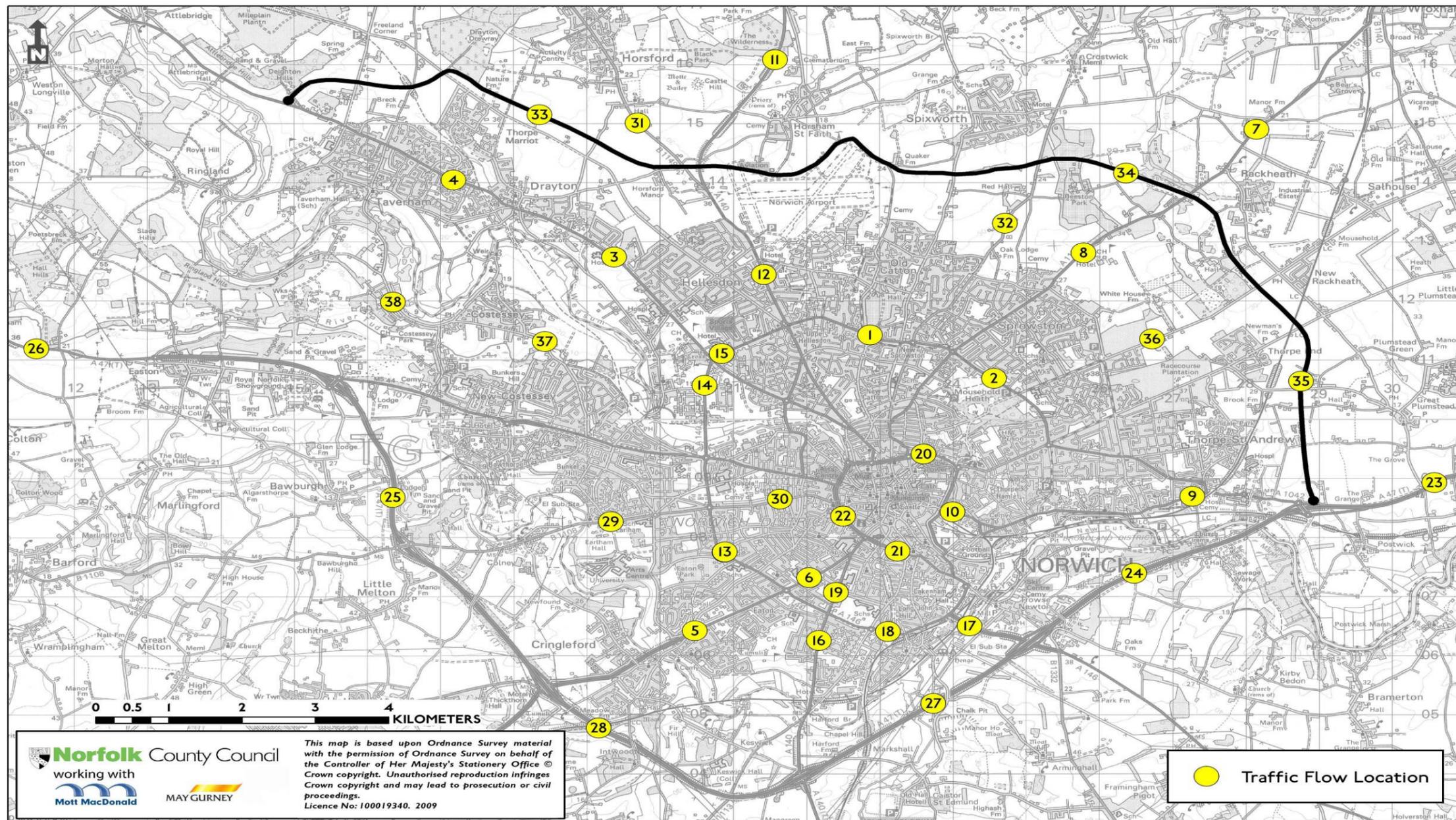


Table C.1: 2006 and 2016 Key Road Flows , Base Year, Core Scenario, Part NNDR DM and Part NNDR DS

Ref	Road	BASE YEAR			CORE SCENARIO									PART NNDR								
		2006 Flow			2016 DM Flows			2016 DS Flows			2016 DS - DM Flows			2016 DM Flows			2016 DS Flows			2016 DS - DM Flows		
		AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM
1	A1042	1938	2218	2332	2080	2306	2340	2034	2065	2347	-47	-241	7	2080	2306	2340	2071	2063	2379	-9	-243	40
2	A1042	2022	1995	2151	2081	2071	2109	1798	1796	2215	-283	-275	106	2081	2071	2109	1821	1757	2203	-260	-313	94
3	A1067	1072	965	1227	1090	1142	1410	978	907	1153	-111	-234	-258	1090	1142	1410	1051	974	1386	-39	-167	-24
4	A1067	1042	967	1334	1079	1129	1507	520	655	837	-559	-474	-669	1079	1129	1507	1098	1216	1481	19	87	-26
5	A11	2421	1705	2330	2603	2193	2419	2543	2112	2404	-60	-81	-15	2603	2193	2419	2559	1773	2413	-44	-420	-6
6	A11	932	702	811	1005	863	926	928	805	794	-76	-58	-132	1005	863	926	950	687	801	-55	-176	-124
7	A1151	1257	855	1377	1453	1069	1451	1268	1081	1423	-185	12	-27	1453	1069	1451	1202	1037	1372	-251	-33	-79
8	A1151	896	856	1001	1007	1018	1202	1047	1184	1589	40	166	388	1007	1018	1202	1060	1260	1668	53	242	466
9	A1242	997	647	1236	877	665	1341	781	537	949	-95	-127	-392	877	665	1341	801	497	933	-75	-168	-407
10	A1242	764	447	586	761	489	626	570	407	435	-191	-83	-191	761	489	626	571	361	435	-190	-129	-192
11	A140	1144	894	1270	1252	1013	1349	1267	1029	1384	15	16	35	1252	1013	1349	1130	940	1272	-122	-73	-76
12	A140	1590	1151	1522	1506	1153	1717	1365	1087	1678	-141	-66	-38	1506	1153	1717	1488	1087	1606	-18	-66	-111
13	A140	1331	1374	1644	1252	1244	1236	1279	1249	1206	27	5	-30	1252	1244	1236	1288	1201	1211	36	-44	-24
14	A140	2529	2281	2380	2648	2492	2644	2628	2424	2663	-21	-67	19	2648	2492	2644	2655	2362	2670	7	-130	25
15	A140	2189	2022	2019	2284	2199	2422	2228	2050	2295	-56	-149	-127	2284	2199	2422	2268	2054	2386	-15	-145	-36
16	A140	1666	1263	1509	1498	1295	1562	1522	1270	1480	23	-25	-82	1498	1295	1562	1523	1285	1472	25	-10	-90
17	A146	3405	2218	3397	3460	2558	3305	3525	2679	3434	65	122	129	3460	2558	3305	3518	2342	3438	58	-215	133
18	A146	1472	987	1467	1085	843	1200	1063	902	1194	-22	59	-6	1085	843	1200	1062	860	1208	-23	16	8
19	A146	719	469	525	703	572	737	719	561	659	15	-11	-78	703	572	737	717	541	664	14	-32	-73
20	A147	2080	1781	1898	2548	2470	2620	2566	2530	2565	18	59	-55	2548	2470	2620	2579	2476	2595	32	6	-25
21	A147	1490	1062	1530	1626	1339	1552	2037	1959	2196	410	620	644	1626	1339	1552	2037	1781	2200	411	442	648
22	A147	2423	1740	2096	2492	1962	2504	2511	2297	2508	19	335	4	2492	1962	2504	2509	2255	2491	17	293	-13
23	A47	3689	2630	3752	3685	2958	3854	3464	2929	3572	-221	-29	-282	3685	2958	3854	3476	2633	3614	-210	-324	-240
24	A47	4128	2429	4111	5499	3340	5296	5326	3808	5729	-172	468	433	5499	3340	5296	5463	3481	5845	-36	141	549
25	A47	4311	2438	3900	5271	3384	5022	4772	3029	4533	-499	-355	-489	5271	3384	5022	4943	3130	4763	-328	-254	-259
26	A47	2399	1541	2129	2600	1928	2226	2398	1771	2122	-202	-158	-104	2600	1928	2226	2611	1895	2251	11	-34	25

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27	A47	4332	2575	4206	5785	3635	5545	5488	3663	5473	-297	28	-72	5785	3635	5545	5646	3682	5676	-139	47	131
28	A47	5055	2904	4853	6585	4117	6401	6272	4019	5971	-312	-98	-429	6585	4117	6401	6376	4004	6185	-209	-113	-216
29	B1108	2127	1641	2168	2471	1854	2283	2462	1750	2319	-10	-104	36	2471	1854	2283	2469	1685	2365	-2	-169	82
30	B1108	1003	844	824	1096	857	982	960	791	956	-136	-66	-26	1096	857	982	999	630	944	-97	-227	-39
31	B1149	933	564	932	1013	649	992	1174	715	1187	162	65	195	1013	649	992	1216	707	1151	204	57	159
32	B1150	951	635	1029	897	740	951	846	531	714	-50	-209	-237	897	740	951	766	506	662	-130	-234	-288
33	NDR	N/A	N/A	N/A	N/A	N/A	N/A	2752	1491	2746	N/A	N/A	N/A	#N/A								
34	NDR	N/A	N/A	N/A	N/A	N/A	N/A	4852	2532	4811	N/A	N/A	N/A	#N/A	#N/A	#N/A	4256	2221	4227	#N/A	#N/A	#N/A
35	NDR	N/A	N/A	N/A	N/A	N/A	N/A	3568	2169	3765	N/A	N/A	N/A	#N/A	#N/A	#N/A	3483	1869	3709	#N/A	#N/A	#N/A
36	Salhouse Road	984	620	916	1095	788	868	1099	734	1093	4	-54	225	1095	788	868	1061	710	1047	-34	-78	179
37	Town House Road	471	84	248	553	99	246	507	109	244	-46	11	-2	553	99	246	501	97	243	-52	-2	-4
38	West End	489	329	592	370	249	454	304	209	340	-66	-40	-114	370	249	454	378	228	407	8	-21	-48

Table C.2: 2006 and 2031 Key Road Flows , Base Year, Core Scenario, Part NNDR DM and Part NNDR DS

Ref	Road	BASE YEAR			CORE SCENARIO									PART NNDR								
		2006 Flow			2031 DM Flows			2031 DS Flows			2031 DS - DM Flows			2031 DM Flows			2031 DS Flows			2031 DS - DM Flows		
		AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM	AM	IP	PM
1	A1042	1938	2218	2332	2077	2378	2362	2098	2199	2375	21	-179	14	2077	2378	2362	2110	2220	2438	33	-158	77
2	A1042	2022	1995	2151	2194	2147	2141	1933	2036	2203	-262	-111	62	2194	2147	2141	1953	2057	2165	-241	-89	24
3	A1067	1072	965	1227	1139	1221	1384	1024	968	1197	-116	-253	-187	1139	1221	1384	1100	1141	1385	-39	-81	1
4	A1067	1042	967	1334	1001	1279	1590	525	729	898	-477	-550	-692	1001	1279	1590	1014	1228	1573	13	-51	-17
5	A11	2421	1705	2330	2714	2329	2517	2688	2243	2498	-26	-86	-20	2714	2329	2517	2698	2254	2502	-17	-75	-15
6	A11	932	702	811	1019	903	1104	1026	839	923	7	-64	-181	1019	903	1104	1031	837	918	12	-66	-186
7	A1151	1257	855	1377	1528	1208	1456	1347	1282	1523	-180	73	68	1528	1208	1456	1360	1220	1487	-167	12	31
8	A1151	896	856	1001	1121	1100	1413	1360	1451	1788	239	351	375	1121	1100	1413	1304	1422	1827	183	322	413
9	A1242	997	647	1236	1209	794	1691	945	590	1161	-264	-204	-530	1209	794	1691	991	584	1142	-218	-210	-549
10	A1242	764	447	586	814	634	718	594	425	466	-220	-209	-252	814	634	718	596	425	470	-218	-209	-248
11	A140	1144	894	1270	1397	1198	1477	1415	1232	1513	18	35	35	1397	1198	1477	1206	1095	1337	-191	-102	-140

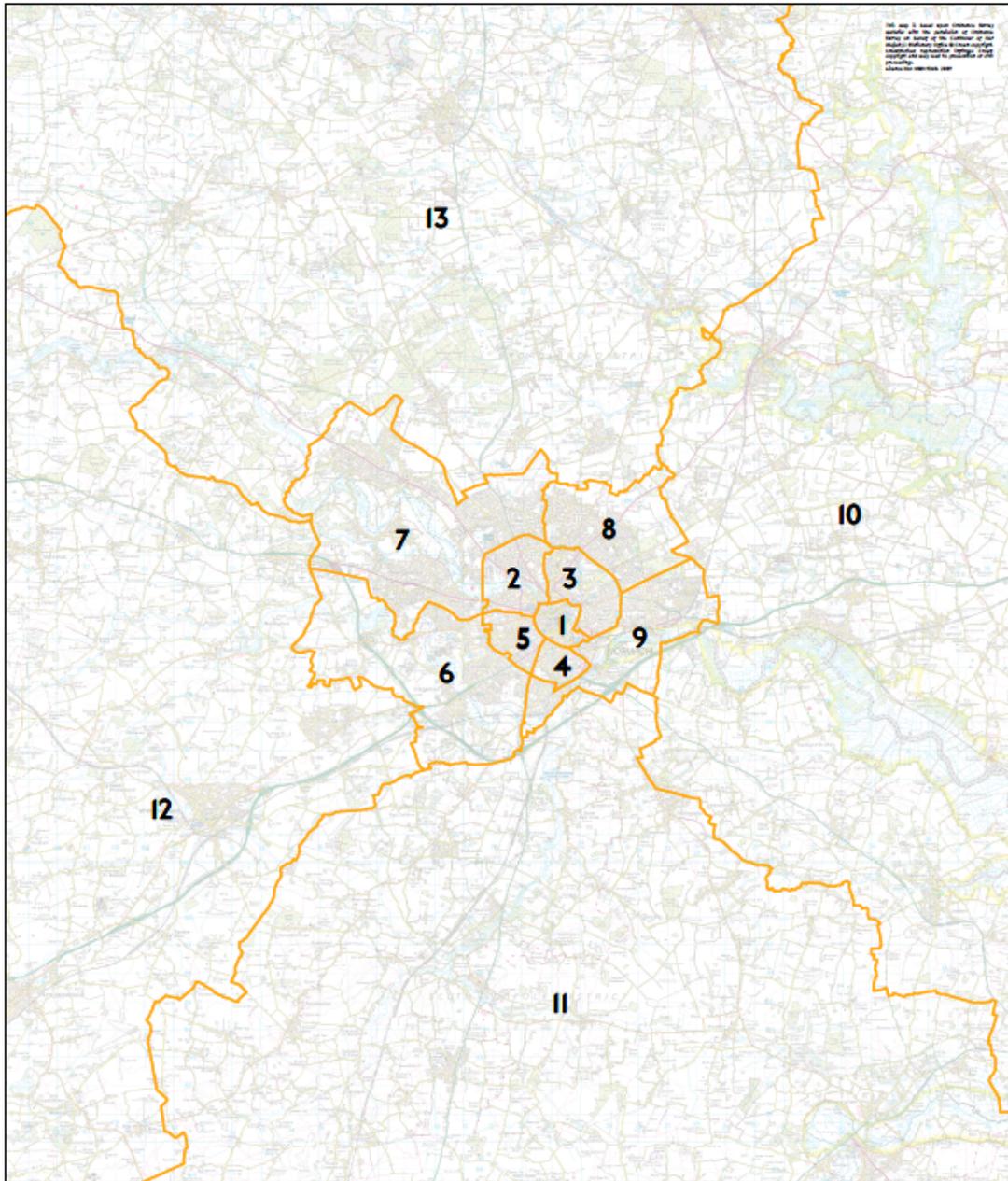
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12	A140	1590	1151	1522	1620	1354	1847	1521	1248	1806	-100	-106	-41	1620	1354	1847	1617	1322	1748	-3	-32	-99
13	A140	1331	1374	1644	1242	1384	1356	1266	1385	1280	24	1	-76	1242	1384	1356	1269	1384	1274	27	0	-82
14	A140	2529	2281	2380	2833	2736	2690	2759	2675	2774	-73	-61	84	2833	2736	2690	2820	2700	2722	-13	-36	32
15	A140	2189	2022	2019	2367	2391	2482	2316	2293	2456	-51	-98	-26	2367	2391	2482	2373	2346	2494	7	-45	12
16	A140	1666	1263	1509	1528	1417	1527	1516	1410	1540	-12	-7	12	1528	1417	1527	1506	1410	1530	-22	-7	2
17	A146	3405	2218	3397	3307	2984	3627	3420	3050	3748	113	67	121	3307	2984	3627	3340	3053	3740	33	70	113
18	A146	1472	987	1467	1116	1034	1414	1134	1066	1290	18	32	-124	1116	1034	1414	1153	1068	1300	36	34	-114
19	A146	719	469	525	721	604	798	741	609	772	20	4	-25	721	604	798	743	612	759	22	8	-39
20	A147	2080	1781	1898	2534	2505	2617	2562	2503	2654	29	-3	37	2534	2505	2617	2569	2505	2684	35	-1	67
21	A147	1490	1062	1530	1884	1542	1659	2102	2018	2282	218	476	623	1884	1542	1659	2101	2019	2287	217	477	628
22	A147	2423	1740	2096	2445	2104	2432	2571	2378	2430	126	274	-2	2445	2104	2432	2568	2383	2428	122	279	-4
23	A47	3689	2630	3752	4186	3456	4134	3602	3422	3788	-584	-34	-346	4186	3456	4134	3649	3450	3786	-537	-6	-348
24	A47	4128	2429	4111	5875	4191	5815	5774	4714	6372	-101	523	557	5875	4191	5815	5883	4767	6519	8	576	704
25	A47	4311	2438	3900	5856	4158	5667	5484	3707	5258	-372	-451	-409	5856	4158	5667	5579	3957	5419	-276	-201	-248
26	A47	2399	1541	2129	2594	2124	2308	2532	2013	2193	-62	-111	-115	2594	2124	2308	2609	2129	2298	15	5	-10
27	A47	4332	2575	4206	6078	4630	6235	5926	4603	6217	-152	-27	-18	6078	4630	6235	6004	4786	6375	-74	156	140
28	A47	5055	2904	4853	7290	5252	7542	7001	5043	7258	-290	-208	-284	7290	5252	7542	7108	5262	7377	-182	10	-165
29	B1108	2127	1641	2168	2628	2187	2515	2580	2031	2561	-48	-156	46	2628	2187	2515	2612	2040	2555	-16	-146	40
30	B1108	1003	844	824	1194	884	985	1054	823	960	-140	-60	-25	1194	884	985	1083	836	983	-111	-48	-2
31	B1149	933	564	932	1139	736	1146	1095	843	1307	-44	108	161	1139	736	1146	1381	843	1380	242	108	234
32	B1150	951	635	1029	1057	836	990	1070	682	924	12	-154	-67	1057	836	990	950	672	901	-107	-165	-89
33	NDR	N/A	N/A	N/A	N/A	N/A	N/A	3687	1970	3655	N/A	N/A	N/A	#N/A								
34	NDR	N/A	N/A	N/A	N/A	N/A	N/A	5350	3332	5566	N/A	N/A	N/A	#N/A	#N/A	#N/A	4955	2872	5200	#N/A	#N/A	#N/A
35	NDR	N/A	N/A	N/A	N/A	N/A	N/A	3407	2823	4001	N/A	N/A	N/A	#N/A	#N/A	#N/A	3374	2685	3990	#N/A	#N/A	#N/A
36	Salhouse Road	984	620	916	1141	940	897	1150	878	1290	10	-63	394	1141	940	897	1207	857	1232	67	-83	336
37	Town House Road	471	84	248	651	113	272	579	127	284	-72	14	12	651	113	272	585	120	266	-66	7	-6
38	West End	489	329	592	462	303	477	349	251	387	-113	-52	-90	462	303	477	490	290	476	27	-12	-1

Appendix D. Trip Totals by Sector (PCUs)

Figure D.1: NATS Model Sectors



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Mott MacDonald County Hall Martineau Lane Norwich NR1 2US Tel: 01603 787538 Fax: 01603 787483 Web: www.mottmac.com	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV.</th> <th>DESCRIPTION</th> <th>CHECKED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Draft for Evaluation</td> <td>SC</td> <td>08/07/09</td> </tr> <tr> <td>B</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>C</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>D</td> <td>---</td> <td>---</td> <td>---</td> </tr> </tbody> </table>	REV.	DESCRIPTION	CHECKED	DATE	A	Draft for Evaluation	SC	08/07/09	B	---	---	---	C	---	---	---	D	---	---	---	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DRAWN BY</th> <th>INIT.</th> <th>DATE</th> <th>GIS FILE REF:</th> </tr> </thead> <tbody> <tr> <td>ZWC</td> <td>ZWC</td> <td>08/07/09</td> <td>NATS_Zone4.mxd</td> </tr> <tr> <th>CHECKED BY</th> <th>INIT.</th> <th>DATE</th> <th>PROJECT TITLE</th> </tr> <tr> <td>---</td> <td>---</td> <td>---</td> <td>Norfolk Northern Distributor Route - MSBC</td> </tr> <tr> <th>APPROVED BY</th> <th>INIT.</th> <th>DATE</th> <th>SCALE</th> </tr> <tr> <td>---</td> <td>---</td> <td>---</td> <td>Not to Scale</td> </tr> </tbody> </table>	DRAWN BY	INIT.	DATE	GIS FILE REF:	ZWC	ZWC	08/07/09	NATS_Zone4.mxd	CHECKED BY	INIT.	DATE	PROJECT TITLE	---	---	---	Norfolk Northern Distributor Route - MSBC	APPROVED BY	INIT.	DATE	SCALE	---	---	---	Not to Scale
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Table D.1: 2006 Base Year Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1917	355	757	318	337	252	229	151	386	102	41	91	34	4970
2	429	1095	637	256	167	390	924	295	65	175	99	140	103	4775
3	803	471	753	70	81	83	222	383	459	320	128	100	116	3989
4	464	15	44	192	203	263	117	4	211	69	63	55	37	1737
5	429	184	126	344	461	489	233	20	131	142	116	220	78	2973
6	361	296	43	833	418	1566	644	10	558	231	202	355	110	5627
7	631	1157	381	213	323	925	3412	684	345	672	337	505	1005	10590
8	507	583	1187	38	32	37	735	722	470	348	126	161	219	5165
9	924	103	486	505	326	774	705	261	1221	364	197	142	133	6141
10	662	243	292	283	125	583	623	481	750	182	323	391	117	5055
11	575	242	155	300	137	463	360	176	526	270	94	407	410	4115
12	751	240	175	341	207	764	540	109	356	755	514	208	244	5204
13	344	279	159	207	89	363	991	242	235	178	319	291	488	4185
SUM	8797	5263	5195	3900	2906	6952	9735	3538	5713	3808	2559	3066	3094	64526

Table D.2: 2006 Base Year Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2672	183	157	72	86	190	320	259	312	302	280	274	132	5239
2	88	657	460	113	279	296	893	222	159	148	71	135	99	3620
3	156	409	599	131	174	66	350	366	381	185	72	59	73	3021
4	78	55	92	147	174	239	106	42	221	87	82	101	32	1456
5	84	485	129	238	374	228	165	43	127	60	57	80	41	2111
6	198	341	66	426	348	1011	593	15	430	251	231	353	171	4434
7	281	738	270	130	222	623	2489	484	244	349	199	339	564	6932
8	213	265	293	27	26	49	507	783	557	361	54	91	147	3373
9	335	161	383	189	155	407	551	467	807	459	244	133	80	4371
10	330	153	181	87	42	242	326	346	447	111	251	455	109	3080
11	307	72	80	84	58	235	199	60	251	194	105	246	167	2058
12	269	132	62	94	79	356	358	100	141	459	254	125	174	2603
13	187	108	74	26	43	190	646	168	115	109	184	147	385	2382
SUM	5198	3759	2846	1764	2060	4132	7503	3355	4192	3075	2084	2538	2174	44680

Table D.3: 2006 Base Year Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1684	177	474	145	178	301	550	458	455	694	528	623	455	6722
2	393	798	470	170	213	304	1326	266	113	218	203	202	230	4906
3	506	408	854	136	85	115	506	639	274	271	140	141	172	4247
4	407	17	63	118	156	252	177	28	436	208	242	248	171	2523
5	541	184	131	288	384	463	329	34	71	102	106	165	82	2880
6	158	133	97	452	483	1249	661	51	484	422	427	583	296	5496
7	169	651	413	145	159	761	2677	1013	454	537	296	450	1150	8875
8	141	217	626	20	17	39	831	903	757	564	182	102	268	4667
9	346	73	497	322	197	430	617	691	1111	732	401	245	205	5867
10	152	142	291	48	138	236	507	471	390	270	429	566	129	3769
11	63	110	145	68	141	229	394	133	216	362	185	476	254	2776
12	107	158	148	60	235	393	513	190	153	621	542	187	351	3658
13	101	148	139	43	83	104	892	270	109	239	325	209	453	3115
SUM	4768	3216	4348	2015	2469	4876	9980	5147	5023	5240	4006	4197	4216	59501

Table D.4: 2016 Reference Case Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2140	372	829	337	382	295	265	181	466	140	54	137	47	5645
2	438	1097	635	258	176	414	977	392	71	188	113	170	113	5042
3	838	499	777	71	90	93	241	498	510	360	142	129	132	4380
4	455	14	47	187	206	274	125	4	227	76	67	59	38	1779
5	465	191	136	345	513	547	264	23	151	162	131	252	78	3258
6	391	297	43	855	441	1729	794	11	735	250	232	444	116	6338
7	700	1202	405	242	348	1148	3935	861	454	792	395	680	1134	12296
8	600	780	1465	43	38	42	843	906	699	404	155	193	271	6439
9	947	108	540	505	331	915	826	391	1439	420	238	170	165	6995
10	708	271	318	293	134	668	708	671	960	219	370	482	133	5935
11	636	260	168	335	163	538	419	291	691	329	119	513	470	4932
12	884	274	191	386	257	917	654	148	501	883	651	259	317	6322
13	356	294	174	217	99	430	1108	287	300	202	369	377	546	4759
SUM	9558	5659	5728	4074	3178	8010	11159	4664	7204	4425	3036	3865	3560	74120

Table D.5: 2016 Reference Case Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2813	193	158	70	86	202	348	321	332	338	322	352	142	5677
2	92	653	465	108	287	295	938	272	170	165	80	163	108	3796
3	154	415	612	126	187	69	376	457	428	210	84	76	79	3273
4	75	52	89	136	170	249	111	45	225	89	97	127	33	1498
5	83	495	142	234	407	252	188	47	135	68	64	103	44	2262
6	209	334	69	448	364	1156	724	16	534	288	273	456	196	5067
7	320	785	292	137	262	720	2870	591	289	401	253	421	644	7985
8	272	330	379	32	30	55	620	1045	722	493	82	110	188	4358
9	359	171	426	191	163	517	634	616	972	579	321	178	95	5222
10	363	170	209	91	45	283	383	491	557	131	277	518	134	3652
11	352	81	93	97	66	272	247	91	328	215	123	292	194	2451
12	351	154	77	117	104	456	442	122	190	525	305	187	226	3256
13	209	121	85	27	47	215	730	215	143	134	215	188	436	2765
SUM	5652	3954	3096	1814	2218	4741	8611	4329	5025	3636	2496	3171	2519	51262

Table D.6: 2016 Reference Case Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1810	172	462	140	175	316	587	501	482	746	573	735	478	7177
2	412	795	473	162	230	298	1357	295	116	237	216	229	241	5061
3	504	410	853	134	96	119	529	800	309	292	150	159	179	4534
4	454	15	59	104	151	300	168	31	412	196	249	263	162	2564
5	558	186	133	278	417	496	385	33	68	102	118	196	83	3053
6	198	137	105	476	543	1379	843	58	593	463	483	693	330	6301
7	208	688	448	163	183	833	3154	1139	516	587	327	553	1266	10065
8	179	243	775	21	22	44	913	1110	1018	779	267	134	306	5811
9	429	80	545	347	220	622	749	849	1276	864	505	316	235	7037
10	191	148	315	48	142	255	588	576	445	294	503	661	153	4319
11	82	128	155	73	158	262	446	154	285	410	222	603	293	3271
12	138	182	176	62	258	450	640	223	177	777	680	243	447	4453
13	132	154	153	43	86	110	993	315	128	271	379	258	522	3544
SUM	5295	3338	4652	2051	2681	5484	11352	6084	5825	6018	4672	5043	4695	67190

Table D.7: 2016 Trip Totals, Do Minimum AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2009	362	823	340	379	290	265	185	468	153	57	182	48	5561
2	412	1077	626	245	172	398	979	399	69	189	117	194	119	4996
3	778	493	769	68	90	94	244	491	521	351	154	128	136	4317
4	429	13	45	191	204	267	123	4	229	79	67	61	41	1753
5	437	193	135	337	504	535	271	23	145	163	126	261	83	3213
6	401	286	40	824	422	1706	794	10	738	245	254	449	120	6289
7	661	1177	388	239	337	1074	3797	855	447	808	428	678	1114	12003
8	585	753	1446	41	36	39	850	909	688	413	155	195	270	6380
9	905	111	523	502	324	898	850	381	1402	414	255	195	170	6930
10	707	250	279	281	128	669	718	656	874	218	410	559	153	5902
11	630	249	160	327	155	518	412	282	653	318	122	537	511	4874
12	940	258	184	367	240	870	635	152	497	891	677	268	327	6306
13	348	284	172	214	94	410	1088	287	293	214	408	389	533	4734
SUM	9242	5506	5590	3976	3085	7768	11026	4634	7024	4456	3230	4096	3625	73258

Table D.8: 2016 Trip Totals, Do Minimum IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2728	183	150	66	79	190	333	311	320	348	377	399	151	5635
2	87	639	465	107	283	291	920	271	171	167	89	178	112	3780
3	147	408	609	125	183	68	368	439	431	210	97	85	85	3255
4	71	49	88	134	166	244	110	44	219	93	100	138	34	1490
5	78	489	143	229	396	244	186	46	133	70	71	116	47	2248
6	194	325	68	443	352	1116	719	15	538	300	297	473	206	5046
7	310	769	291	140	256	715	2771	585	302	416	293	462	660	7970
8	265	327	381	32	29	55	608	1023	718	501	93	118	193	4343
9	344	169	422	187	159	517	650	601	948	572	334	205	102	5210
10	346	166	204	88	44	279	382	473	527	126	307	566	143	3651
11	338	80	92	95	65	263	243	90	313	216	119	309	210	2433
12	343	150	77	117	102	440	427	120	193	548	324	181	228	3250
13	216	120	86	27	47	209	711	202	144	139	243	199	420	2763
SUM	5467	3874	3076	1790	2161	4631	8428	4220	4957	3706	2744	3429	2591	51074

Table D.9: 2016 Trip Totals, Do Minimum PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1703	151	427	129	155	299	546	470	444	750	609	831	486	7000
2	405	793	484	161	229	293	1340	300	112	228	207	224	250	5026
3	494	421	859	135	97	117	525	765	308	265	139	173	189	4487
4	441	16	58	103	154	292	171	30	397	202	235	268	162	2529
5	555	184	134	270	412	485	373	32	65	95	123	196	86	3010
6	180	130	102	472	519	1367	806	54	602	468	475	700	330	6205
7	205	689	450	165	185	845	3067	1093	536	601	342	581	1264	10023
8	184	254	780	22	22	45	845	1084	1038	781	264	149	314	5782
9	421	84	555	349	221	628	771	827	1265	826	498	325	240	7010
10	188	147	295	48	142	252	593	540	417	279	533	717	157	4308
11	81	127	150	70	157	254	431	152	285	393	220	609	302	3231
12	134	175	162	63	250	457	612	214	194	797	701	244	449	4452
13	124	149	153	41	81	111	972	299	125	282	421	277	498	3533
SUM	5115	3320	4609	2028	2624	5445	11052	5860	5788	5967	4767	5294	4727	66596

Table D.10: 2016 Difference Between Do Minimum and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-131	-10	-6	3	-3	-5	0	4	2	13	3	45	1	-84
2	-26	-20	-9	-13	-4	-16	2	7	-2	1	4	24	6	-46
3	-60	-6	-8	-3	0	1	3	-7	11	-9	12	-1	4	-63
4	-26	-1	-2	4	-2	-7	-2	0	2	3	0	2	3	-26
5	-28	2	-1	-8	-9	-12	7	0	-6	1	-5	9	5	-45
6	10	-11	-3	-31	-19	-23	0	-1	3	-5	22	5	4	-49
7	-39	-25	-17	-3	-11	-74	-138	-6	-7	16	33	-2	-20	-293
8	-15	-27	-19	-2	-2	-3	7	3	-11	9	0	2	-1	-59
9	-42	3	-17	-3	-7	-17	24	-10	-37	-6	17	25	5	-65
10	-1	-21	-39	-12	-6	1	10	-15	-86	-1	40	77	20	-33
11	-6	-11	-8	-8	-8	-20	-7	-9	-38	-11	3	24	41	-58
12	56	-16	-7	-19	-17	-47	-19	4	-4	8	26	9	10	-16
13	-8	-10	-2	-3	-5	-20	-20	0	-7	12	39	12	-13	-25
SUM	-316	-153	-138	-98	-93	-242	-133	-30	-180	31	194	231	65	-862

Table D.11: 2016 Difference Between Do Minimum and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-85	-10	-8	-4	-7	-12	-15	-10	-12	10	55	47	9	-42
2	-5	-14	0	-1	-4	-4	-18	-1	1	2	9	15	4	-16
3	-7	-7	-3	-1	-4	-1	-8	-18	3	0	13	9	6	-18
4	-4	-3	-1	-2	-4	-5	-1	-1	-6	4	3	11	1	-8
5	-5	-6	1	-5	-11	-8	-2	-1	-2	2	7	13	3	-14
6	-15	-9	-1	-5	-12	-40	-5	-1	4	12	24	17	10	-21
7	-10	-16	-1	3	-6	-5	-99	-6	13	15	40	41	16	-15
8	-7	-3	2	0	-1	0	-12	-22	-4	8	11	8	5	-15
9	-15	-2	-4	-4	-4	0	16	-15	-24	-7	13	27	7	-12
10	-17	-4	-5	-3	-1	-4	-1	-18	-30	-5	30	48	9	-1
11	-14	-1	-1	-2	-1	-9	-4	-1	-15	1	-4	17	16	-18
12	-8	-4	0	0	-2	-16	-15	-2	3	23	19	-6	2	-6
13	7	-1	1	0	0	-6	-19	-13	1	5	28	11	-16	-2
SUM	-185	-80	-20	-24	-57	-110	-183	-109	-68	70	248	258	72	-188

Table D.12: 2016 Difference Between Do Minimum and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-107	-21	-35	-11	-20	-17	-41	-31	-38	4	36	96	8	-177
2	-7	-2	11	-1	-1	-5	-17	5	-4	-9	-9	-5	9	-35
3	-10	11	6	1	1	-2	-4	-35	-1	-27	-11	14	10	-47
4	-13	1	-1	-1	3	-8	3	-1	-15	6	-14	5	0	-35
5	-3	-2	1	-8	-5	-11	-12	-1	-3	-7	5	0	3	-43
6	-18	-7	-3	-4	-24	-12	-37	-4	9	5	-8	7	0	-96
7	-3	1	2	2	2	12	-87	-46	20	14	15	28	-2	-42
8	5	11	5	1	0	1	-68	-26	20	2	-3	15	8	-29
9	-8	4	10	2	1	6	22	-22	-11	-38	-7	9	5	-27
10	-3	-1	-20	0	0	-3	5	-36	-28	-15	30	56	4	-11
11	-1	-1	-5	-3	-1	-8	-15	-2	0	-17	-2	6	9	-40
12	-4	-7	-14	1	-8	7	-28	-9	17	20	21	1	2	-1
13	-8	-5	0	-2	-5	1	-21	-16	-3	11	42	19	-24	-11
SUM	-180	-18	-43	-23	-57	-39	-300	-224	-37	-51	95	251	32	-594

Table D.13: 2031 Reference Case Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2603	453	1013	406	462	355	322	218	567	170	64	164	56	6853
2	534	1336	773	312	214	501	1181	470	85	228	137	205	137	6113
3	1016	606	951	86	109	112	291	603	617	435	172	154	158	5310
4	554	17	56	229	252	331	152	5	277	93	82	72	46	2166
5	566	233	165	419	619	658	319	28	183	193	160	303	93	3939
6	465	365	52	1017	522	2036	930	13	854	294	274	524	137	7483
7	817	1404	471	280	408	1338	4613	1002	528	906	461	784	1318	14330
8	691	906	1713	49	43	48	972	1059	814	467	182	218	310	7472
9	1136	129	638	609	401	1075	968	457	1689	487	282	196	194	8261
10	818	312	366	338	155	756	811	757	1102	252	428	546	153	6794
11	755	305	199	393	188	630	497	339	803	381	138	592	546	5766
12	1035	320	223	452	296	1062	760	170	580	1004	757	291	365	7315
13	409	336	200	249	113	490	1271	328	342	232	432	428	624	5454
SUM	11399	6722	6820	4839	3782	9392	13087	5449	8441	5142	3569	4477	4137	87256

Table D.14: 2031 Reference Case Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3369	232	190	84	103	243	417	381	397	401	384	419	168	6788
2	110	790	558	131	345	354	1112	324	203	195	95	193	128	4538
3	186	498	735	151	224	83	445	540	512	248	101	90	93	3906
4	90	62	106	164	205	298	132	53	270	106	115	151	39	1791
5	100	593	171	281	489	299	223	55	162	80	75	121	53	2702
6	252	400	82	536	436	1359	851	19	630	338	322	535	229	5989
7	384	935	346	164	312	852	3385	689	341	471	299	494	760	9432
8	326	392	448	37	35	63	723	1221	844	579	96	127	220	5111
9	432	206	510	229	195	608	738	725	1150	681	378	208	111	6171
10	433	202	250	109	54	334	451	581	656	155	321	595	156	4297
11	421	96	111	116	78	322	293	107	386	246	143	340	227	2886
12	419	183	93	140	123	538	520	142	223	605	356	217	264	3823
13	250	145	101	32	56	253	865	253	167	156	251	221	503	3253
SUM	6772	4734	3701	2174	2655	5606	10155	5090	5941	4261	2936	3711	2951	60687

Table D.15: 2031 Reference Case Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2158	208	552	167	212	377	689	584	569	857	677	855	543	8448
2	492	953	567	194	276	358	1583	340	135	270	251	262	274	5955
3	604	491	1024	161	116	141	609	930	364	334	174	183	203	5334
4	543	18	70	125	181	347	193	35	489	223	289	304	182	2999
5	661	223	159	332	500	587	448	38	80	117	138	226	93	3602
6	236	163	123	561	644	1598	966	66	680	523	558	797	371	7286
7	247	810	532	193	216	980	3653	1310	600	660	381	632	1443	1165
8	211	286	920	25	26	52	1044	1279	1171	878	305	152	345	7
9	510	95	645	408	260	717	857	974	1487	984	580	359	266	6694
10	224	174	372	56	167	295	668	662	513	337	576	754	172	8142
11	96	152	183	86	187	305	515	177	328	466	258	693	338	4970
12	163	213	203	72	302	520	730	251	202	874	786	274	500	3784
13	157	182	180	51	101	126	1151	361	147	307	441	295	597	5090
SUM	6302	3968	5530	2431	3188	6403	1310	6	7007	6765	6830	5414	5786	5327
														7805
														7

Table D.16: 2031 Trip Totals, Do Minimum AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2418	447	1016	420	462	351	316	227	578	192	76	226	62	6791
2	475	1340	767	291	206	468	1182	484	82	227	147	254	150	6073
3	898	613	971	81	103	106	294	612	652	441	188	137	173	5269
4	496	15	51	255	260	313	143	5	286	101	100	75	48	2148
5	510	237	160	431	635	649	320	27	171	188	165	313	105	3911
6	473	348	48	977	500	2054	941	13	819	276	329	539	139	7456
7	729	1350	430	249	372	1202	4539	975	481	945	526	812	1307	13917
8	702	837	1699	44	37	40	956	1067	797	501	183	217	342	7422
9	1075	131	624	625	387	1027	978	446	1657	491	326	227	204	8198
10	839	270	300	303	136	714	819	768	978	256	524	670	204	6781
11	791	272	168	387	178	601	467	288	730	400	155	654	645	5736
12	1113	288	191	401	271	997	755	159	531	1040	828	351	397	7322
13	385	318	195	227	99	427	1279	330	314	260	512	470	625	5441
SUM	10904	6466	6620	4691	3646	8949	12989	5401	8076	5318	4059	4945	4401	86465

Table D.17: 2031 Trip Totals, Do Minimum IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3240	217	178	77	93	221	388	361	377	416	516	498	187	6769
2	102	773	566	129	336	346	1085	316	203	199	117	219	138	4529
3	172	494	732	150	217	81	436	510	514	250	130	106	105	3897
4	81	57	103	160	199	289	132	50	261	114	129	170	41	1786
5	91	578	169	277	476	289	219	53	160	83	96	147	57	2695
6	224	381	81	528	418	1304	839	18	644	362	379	557	249	5984
7	364	900	342	165	298	843	3226	670	362	496	389	572	794	9421
8	311	383	450	37	34	62	695	1199	837	603	120	138	235	5104
9	401	199	506	223	189	612	764	689	1115	674	411	260	122	6165
10	402	190	236	103	49	320	441	550	595	144	422	671	174	4297
11	404	93	106	113	74	308	286	102	364	248	158	373	260	2889
12	415	173	89	140	119	507	489	137	227	646	403	212	268	3825
13	252	141	101	30	55	240	827	234	166	164	318	248	477	3253
SUM	6459	4579	3659	2132	2557	5422	9827	4889	5825	4399	3588	4171	3107	60614

Table D.18: 2031 Trip Totals, Do Minimum PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2007	174	488	147	178	340	603	584	523	897	758	1027	575	8301
2	482	982	586	190	277	357	1565	340	128	241	225	263	295	5931
3	601	514	1057	160	115	135	586	899	372	289	149	207	217	5301
4	528	19	68	133	193	330	187	32	488	232	269	325	173	2977
5	657	222	158	333	516	568	420	37	78	104	151	235	96	3575
6	210	158	113	554	610	1606	928	58	689	497	522	863	382	7190
7	236	821	529	192	215	1010	3551	1243	620	668	388	717	1428	11618
8	216	293	926	25	25	50	957	1277	1201	897	267	166	378	6678
9	506	97	665	422	261	720	846	959	1524	908	567	378	274	8127
10	209	158	334	57	159	282	660	613	477	316	642	884	182	4973
11	95	146	173	90	185	296	478	171	341	457	261	738	354	3785
12	153	200	176	75	290	540	701	235	228	889	815	294	509	5105
13	139	170	177	45	88	125	1117	343	139	322	527	346	556	4094
SUM	6039	3954	5450	2423	3112	6359	12599	6791	6808	6717	5541	6443	5419	77655

Table D.19: 2031 Difference Between Do Minimum and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-185	-6	3	14	0	-4	-6	9	11	22	12	62	6	-62
2	-59	4	-6	-21	-8	-33	1	14	-3	-1	10	49	13	-40
3	-118	7	20	-5	-6	-6	3	9	35	6	16	-17	15	-41
4	-58	-2	-5	26	8	-18	-9	0	9	8	18	3	2	-18
5	-56	4	-5	12	16	-9	1	-1	-12	-5	5	10	12	-28
6	8	-17	-4	-40	-22	18	11	0	-35	-18	55	15	2	-27
7	-88	-54	-41	-31	-36	-136	-74	-27	-47	39	65	28	-11	-413
8	11	-69	-14	-5	-6	-8	-16	8	-17	34	1	-1	32	-50
9	-61	2	-14	16	-14	-48	10	-11	-32	4	44	31	10	-63
10	21	-42	-66	-35	-19	-42	8	11	-124	4	96	124	51	-13
11	36	-33	-31	-6	-10	-29	-30	-51	-73	19	17	62	99	-30
12	78	-32	-32	-51	-25	-65	-5	-11	-49	36	71	60	32	7
13	-24	-18	-5	-22	-14	-63	8	2	-28	28	80	42	1	-13
SUM	-495	-256	-200	-148	-136	-443	-98	-48	-365	176	490	468	264	-791

Table D.20: 2031 Difference Between Do Minimum and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-129	-15	-12	-7	-10	-22	-29	-20	-20	15	132	79	19	-19
2	-8	-17	8	-2	-9	-8	-27	-8	0	4	22	26	10	-9
3	-14	-4	-3	-1	-7	-2	-9	-30	2	2	29	16	12	-9
4	-9	-5	-3	-4	-6	-9	0	-3	-9	8	14	19	2	-5
5	-9	-15	-2	-4	-13	-10	-4	-2	-2	3	21	26	4	-7
6	-28	-19	-1	-8	-18	-55	-12	-1	14	24	57	22	20	-5
7	-20	-35	-4	1	-14	-9	-159	-19	21	25	90	78	34	-11
8	-15	-9	2	0	-1	-1	-28	-22	-7	24	24	11	15	-7
9	-31	-7	-4	-6	-6	4	26	-36	-35	-7	33	52	11	-6
10	-31	-12	-14	-6	-5	-14	-10	-31	-61	-11	101	76	18	0
11	-17	-3	-5	-3	-4	-14	-7	-5	-22	2	15	33	33	3
12	-4	-10	-4	0	-4	-31	-31	-5	4	41	47	-5	4	2
13	2	-4	0	-2	-1	-13	-38	-19	-1	8	67	27	-26	0
SUM	-313	-155	-42	-42	-98	-184	-328	-201	-116	138	652	460	156	-73

Table D.21: 2031 Difference Between Do Minimum and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-151	-34	-64	-20	-34	-37	-86	0	-46	40	81	172	32	-147
2	-10	29	19	-4	1	-1	-18	0	-7	-29	-26	1	21	-24
3	-3	23	33	-1	-1	-6	-23	-31	8	-45	-25	24	14	-33
4	-15	1	-2	8	12	-17	-6	-3	-1	9	-20	21	-9	-22
5	-4	-1	-1	1	16	-19	-28	-1	-2	-13	13	9	3	-27
6	-26	-5	-10	-7	-34	8	-38	-8	9	-26	-36	66	11	-96
7	-11	11	-3	-1	-1	30	-102	-67	20	8	7	85	-15	-39
8	5	7	6	0	-1	-2	-87	-2	30	19	-38	14	33	-16
9	-4	2	20	14	1	3	-11	-15	37	-76	-13	19	8	-15
10	-15	-16	-38	1	-8	-13	-8	-49	-36	-21	66	130	10	3
11	-1	-6	-10	4	-2	-9	-37	-6	13	-9	3	45	16	1
12	-10	-13	-27	3	-12	20	-29	-16	26	15	29	20	9	15
13	-18	-12	-3	-6	-13	-1	-34	-18	-8	15	86	51	-41	-2
SUM	-263	-14	-80	-8	-76	-44	-507	-216	43	-113	127	657	92	-402

Table D.22: 2016 Trip Totals, Do Something AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2028	369	823	329	376	292	270	181	452	126	58	189	48	5541
2	410	1086	637	240	171	408	979	404	69	168	114	196	112	4994
3	772	510	795	63	86	96	252	504	535	295	148	130	128	4314
4	434	12	43	192	202	270	122	3	228	79	66	61	41	1753
5	449	190	134	341	505	540	267	22	144	152	126	268	78	3216
6	418	291	40	840	427	1719	805	10	681	240	257	451	111	6290
7	666	1170	391	221	333	1076	3702	866	484	972	425	662	1044	12012
8	572	786	1482	39	35	42	867	863	685	385	151	205	290	6402
9	916	116	541	501	316	864	866	379	1411	383	230	182	229	6934
10	693	244	271	279	123	659	885	596	812	204	404	559	182	5911
11	640	245	154	333	155	523	408	281	599	316	122	541	556	4873
12	983	259	183	377	241	862	622	158	448	914	677	266	315	6305
13	314	249	158	185	86	378	983	277	523	265	469	359	497	4743
SUM	9295	5527	5652	3940	3056	7729	11028	4544	7071	4499	3247	4069	3631	73288

Table D.23: 2016 Trip Totals, Do Something IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2710	183	148	65	79	191	338	313	312	346	375	412	151	5623
2	86	641	464	107	284	293	921	275	171	162	89	179	108	3780
3	146	412	610	124	181	68	372	444	429	203	97	86	84	3256
4	69	48	84	136	166	244	109	43	219	96	100	138	36	1488
5	76	487	142	233	397	245	185	46	133	68	71	117	46	2246
6	193	325	68	447	353	1121	722	16	523	309	296	471	203	5047
7	307	766	289	139	256	716	2716	593	318	474	292	457	648	7971
8	264	332	385	32	29	55	613	998	713	507	97	120	198	4343
9	346	171	425	189	160	509	652	597	943	562	332	203	120	5209
10	344	158	192	90	41	282	421	452	501	124	306	576	163	3650
11	338	79	91	95	64	261	241	93	307	211	119	307	226	2432
12	343	149	76	118	102	439	423	122	189	552	324	180	235	3252
13	209	114	82	25	45	202	687	203	171	166	256	198	405	2763
SUM	5431	3865	3056	1800	2157	4626	8400	4195	4929	3780	2754	3444	2623	51060

Table D.24: 2016 Trip Totals, Do Something PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1652	150	399	115	151	299	549	532	425	777	607	876	484	7016
2	382	798	489	158	230	297	1342	322	118	221	205	230	235	5027
3	475	423	863	128	95	116	527	800	313	251	138	176	183	4488
4	431	15	54	102	154	300	168	30	389	194	227	273	190	2527
5	563	183	133	270	410	487	373	35	65	93	122	199	81	3014
6	181	132	102	478	525	1375	816	58	567	473	474	704	321	6206
7	190	677	444	163	182	850	2968	1132	567	778	335	564	1173	10023
8	173	259	772	22	22	45	903	1043	1045	752	277	156	317	5786
9	412	85	551	344	223	584	803	831	1239	770	452	305	413	7012
10	174	136	252	47	140	252	718	505	381	256	538	734	179	4312
11	78	126	145	69	156	251	429	158	265	386	214	596	364	3237
12	128	177	161	65	253	450	606	228	183	803	690	242	465	4451
13	119	143	148	38	76	106	918	299	159	346	449	263	472	3536
SUM	4958	3304	4513	1999	2617	5412	11120	5973	5716	6100	4728	5318	4877	66635

Table D.25: 2016 Difference Between Do Something and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-112	-3	-6	-8	-6	-3	5	0	-14	-14	4	52	1	-104
2	-28	-11	2	-18	-5	-6	2	12	-2	-20	1	26	-1	-48
3	-66	11	18	-8	-4	3	11	6	25	-65	6	1	-4	-66
4	-21	-2	-4	5	-4	-4	-3	-1	1	3	-1	2	3	-26
5	-16	-1	-2	-4	-8	-7	3	-1	-7	-10	-5	16	0	-42
6	27	-6	-3	-15	-14	-10	11	-1	-54	-10	25	7	-5	-48
7	-34	-32	-14	-21	-15	-72	-233	5	30	180	30	-18	-90	-284
8	-28	6	17	-4	-3	0	24	-43	-14	-19	-4	12	19	-37
9	-31	8	1	-4	-15	-51	40	-12	-28	-37	-8	12	64	-61
10	-15	-27	-47	-14	-11	-9	177	-75	-148	-15	34	77	49	-24
11	4	-15	-14	-2	-8	-15	-11	-10	-92	-13	3	28	86	-59
12	99	-15	-8	-9	-16	-55	-32	10	-53	31	26	7	-2	-17
13	-42	-45	-16	-32	-13	-52	-125	-10	223	63	100	-18	-49	-16
SUM	-263	-132	-76	-134	-122	-281	-131	-120	-133	74	211	204	71	-832

Table D.26: 2016 Difference Between Do Something and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-103	-10	-10	-5	-7	-11	-10	-8	-20	8	53	60	9	-54
2	-6	-12	-1	-1	-3	-2	-17	3	1	-3	9	16	0	-16
3	-8	-3	-2	-2	-6	-1	-4	-13	1	-7	13	10	5	-17
4	-6	-4	-5	0	-4	-5	-2	-2	-6	7	3	11	3	-10
5	-7	-8	0	-1	-10	-7	-3	-1	-2	0	7	14	2	-16
6	-16	-9	-1	-1	-11	-35	-2	0	-11	21	23	15	7	-20
7	-13	-19	-3	2	-6	-4	-154	2	29	73	39	36	4	-14
8	-8	2	6	0	-1	0	-7	-47	-9	14	15	10	10	-15
9	-13	0	-1	-2	-3	-8	18	-19	-29	-17	11	25	25	-13
10	-19	-12	-17	-1	-4	-1	38	-39	-56	-7	29	58	29	-2
11	-14	-2	-2	-2	-2	-11	-6	2	-21	-4	-4	15	32	-19
12	-8	-5	-1	1	-2	-17	-19	0	-1	27	19	-7	9	-4
13	0	-7	-3	-2	-2	-13	-43	-12	28	32	41	10	-31	-2
SUM	-221	-89	-40	-14	-61	-115	-211	-134	-96	144	258	273	104	-202

Table D.27: 2016 Difference Between Do Something and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-158	-22	-63	-25	-24	-17	-38	31	-57	31	34	141	6	-161
2	-30	3	16	-4	0	-1	-15	27	2	-16	-11	1	-6	-34
3	-29	13	10	-6	-1	-3	-2	0	4	-41	-12	17	4	-46
4	-23	0	-5	-2	3	0	0	-1	-23	-2	-22	10	28	-37
5	5	-3	0	-8	-7	-9	-12	2	-3	-9	4	3	-2	-39
6	-17	-5	-3	2	-18	-4	-27	0	-26	10	-9	11	-9	-95
7	-18	-11	-4	0	-1	17	-186	-7	51	191	8	11	-93	-42
8	-6	16	-3	1	0	1	-10	-67	27	-27	10	22	11	-25
9	-17	5	6	-3	3	-38	54	-18	-37	-94	-53	-11	178	-25
10	-17	-12	-63	-1	-2	-3	130	-71	-64	-38	35	73	26	-7
11	-4	-2	-10	-4	-2	-11	-17	4	-20	-24	-8	-7	71	-34
12	-10	-5	-15	3	-5	0	-34	5	6	26	10	-1	18	-2
13	-13	-11	-5	-5	-10	-4	-75	-16	31	75	70	5	-50	-8
SUM	-337	-34	-139	-52	-64	-72	-232	-111	-109	82	56	275	182	-555

Table D.28: 2031 Trip Totals, Do Something AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2449	453	1024	400	454	351	321	226	554	162	77	232	61	6764
2	478	1356	780	284	205	479	1174	494	83	206	141	253	142	6075
3	899	627	1009	73	97	106	300	636	677	374	176	132	162	5268
4	506	14	49	254	253	315	141	4	284	104	98	75	51	2148
5	526	233	157	433	636	655	315	27	168	177	165	323	99	3914
6	501	345	46	988	505	2064	954	13	763	277	332	540	129	7457
7	755	1344	438	235	370	1210	4420	998	530	1099	533	798	1208	13938
8	670	862	1732	40	35	41	997	1037	804	464	174	224	368	7448
9	1083	135	648	615	372	977	996	453	1668	464	285	213	297	8206
10	817	269	300	307	131	705	1017	692	892	240	516	676	229	6791
11	802	265	160	394	175	604	462	299	667	396	154	662	693	5733
12	1195	286	189	408	274	985	728	171	476	1068	821	343	380	7324
13	342	278	183	194	91	397	1133	332	591	314	585	433	577	5450
SUM	11023	6467	6715	4625	3598	8889	12958	5382	8157	5345	4057	4904	4396	86516

Table D.29: 2031 Trip Totals, Do Something IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3204	215	173	75	92	222	393	366	366	422	513	524	191	6756
2	100	772	561	127	334	347	1089	325	203	196	116	221	136	4527
3	170	496	730	145	213	81	442	522	511	245	129	107	105	3896
4	79	56	96	164	198	290	131	49	261	118	128	171	45	1786
5	88	575	166	280	476	291	219	54	160	82	96	150	57	2694
6	222	381	80	532	418	1309	843	19	626	372	375	556	251	5984
7	361	894	339	164	296	844	3153	682	384	570	390	565	777	9419
8	310	396	452	36	34	63	715	1149	834	606	125	142	242	5104
9	402	203	503	225	188	601	771	696	1104	662	404	256	149	6164
10	401	183	222	106	47	326	490	523	565	142	418	680	196	4299
11	402	92	104	113	73	304	285	108	355	243	157	371	283	2890
12	415	173	88	140	119	505	485	141	220	651	401	209	279	3826
13	244	134	97	29	53	231	794	235	202	195	336	245	458	3253
SUM	6398	4570	3611	2136	2541	5414	9810	4869	5791	4504	3588	4197	3169	60598

Table D.30: 2031 Trip Totals, Do Something PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1945	175	459	134	172	349	634	633	495	855	783	1121	576	8331
2	446	988	596	187	277	360	1572	366	134	242	228	268	267	5931
3	565	518	1065	149	112	135	599	931	375	279	148	214	209	5299
4	515	18	63	131	192	340	187	31	481	222	259	327	212	2978
5	668	220	156	333	508	574	422	39	77	103	150	237	87	3574
6	213	159	115	565	623	1621	938	63	640	509	518	863	364	7191
7	219	812	530	193	216	1010	3437	1288	661	877	386	692	1298	11619
8	203	306	933	25	24	51	1014	1216	1208	840	293	187	379	6679
9	488	99	657	417	263	667	894	961	1488	861	512	359	463	8129
10	192	152	284	57	161	288	794	566	430	290	650	902	207	4973
11	92	148	166	88	186	295	485	177	308	448	253	716	432	3794
12	147	207	177	78	298	534	696	248	208	906	798	292	521	5110
13	134	164	174	44	83	120	1051	344	181	395	548	329	528	4095
SUM	5827	3966	5375	2401	3115	6344	12723	6863	6686	6827	5526	6507	5543	77703

Table D.31: 2031 Difference Between Do Something and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-154	0	11	-6	-8	-4	-1	8	-13	-8	13	68	5	-89
2	-56	20	7	-28	-9	-22	-7	24	-2	-22	4	48	5	-38
3	-117	21	58	-13	-12	-6	9	33	60	-61	4	-22	4	-42
4	-48	-3	-7	25	1	-16	-11	-1	7	11	16	3	5	-18
5	-40	0	-8	14	17	-3	-4	-1	-15	-16	5	20	6	-25
6	36	-20	-6	-29	-17	28	24	0	-91	-17	58	16	-8	-26
7	-62	-60	-33	-45	-38	-128	-193	-4	2	193	72	14	-110	-392
8	-21	-44	19	-9	-8	-7	25	-22	-10	-3	-8	6	58	-24
9	-53	6	10	6	-29	-98	28	-4	-21	-23	3	17	103	-55
10	-1	-43	-66	-31	-24	-51	206	-65	-210	-12	88	130	76	-3
11	47	-40	-39	1	-13	-26	-35	-40	-136	15	16	70	147	-33
12	160	-34	-34	-44	-22	-77	-32	1	-104	64	64	52	15	9
13	-67	-58	-17	-55	-22	-93	-138	4	249	82	153	5	-47	-4
SUM	-376	-255	-105	-214	-184	-503	-129	-67	-284	203	488	427	259	-740

Table D.32: 2031 Difference Between Do Something and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-165	-17	-17	-9	-11	-21	-24	-15	-31	21	129	105	23	-32
2	-10	-18	3	-4	-11	-7	-23	1	0	1	21	28	8	-11
3	-16	-2	-5	-6	-11	-2	-3	-18	-1	-3	28	17	12	-10
4	-11	-6	-10	0	-7	-8	-1	-4	-9	12	13	20	6	-5
5	-12	-18	-5	-1	-13	-8	-4	-1	-2	2	21	29	4	-8
6	-30	-19	-2	-4	-18	-50	-8	0	-4	34	53	21	22	-5
7	-23	-41	-7	0	-16	-8	-232	-7	43	99	91	71	17	-13
8	-16	4	4	-1	-1	0	-8	-72	-10	27	29	15	22	-7
9	-30	-3	-7	-4	-7	-7	33	-29	-46	-19	26	48	38	-7
10	-32	-19	-28	-3	-7	-8	39	-58	-91	-13	97	85	40	2
11	-19	-4	-7	-3	-5	-18	-8	1	-31	-3	14	31	56	4
12	-4	-10	-5	0	-4	-33	-35	-1	-3	46	45	-8	15	3
13	-6	-11	-4	-3	-3	-22	-71	-18	35	39	85	24	-45	0
SUM	-374	-164	-90	-38	-114	-192	-345	-221	-150	243	652	486	218	-89

Table D.33: 2031 Difference Between Do Something and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-213	-33	-93	-33	-40	-28	-55	49	-74	-2	106	266	33	-117
2	-46	35	29	-7	1	2	-11	26	-1	-28	-23	6	-7	-24
3	-39	27	41	-12	-4	-6	-10	1	11	-55	-26	31	6	-35
4	-28	0	-7	6	11	-7	-6	-4	-8	-1	-30	23	30	-21
5	7	-3	-3	1	8	-13	-26	1	-3	-14	12	11	-6	-28
6	-23	-4	-8	4	-21	23	-28	-3	-40	-14	-40	66	-7	-95
7	-28	2	-2	0	0	30	-216	-22	61	217	5	60	-145	-38
8	-8	20	13	0	-2	-1	-30	-63	37	-38	-12	35	34	-15
9	-22	4	12	9	3	-50	37	-13	1	-123	-68	0	197	-13
10	-32	-22	-88	1	-6	-7	126	-96	-83	-47	74	148	35	3
11	-4	-4	-17	2	-1	-10	-30	0	-20	-18	-5	23	94	10
12	-16	-6	-26	6	-4	14	-34	-3	6	32	12	18	21	20
13	-23	-18	-6	-7	-18	-6	-100	-17	34	88	107	34	-69	-1
SUM	-475	-2	-155	-30	-73	-59	-383	-144	-79	-3	112	721	216	-354

Appendix E. PCU Kilometres by Sector

Table E.1: 2006 Base Year PCU Kilometres, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2754	955	1640	586	672	1091	1386	656	1204	2570	714	4198	637	19063
2	1219	2223	1702	606	519	1679	3820	1177	359	3829	5627	7387	2391	32538
3	1669	1305	1490	233	288	513	1339	1203	1904	6185	4772	4098	2384	27383
4	805	66	153	238	379	1126	1366	24	525	1444	3034	2711	1143	13014
5	950	619	429	722	540	1522	1429	117	551	3623	5605	8114	2160	26381
6	1448	1060	247	3564	1018	4331	3924	90	6401	6041	7873	11057	2925	49979
7	3939	4206	2259	2134	1582	5171	13200	3587	4064	16656	17994	21060	13528	109380
8	2285	2600	3800	234	188	332	3709	2293	2085	5942	6569	9843	4444	44324
9	3012	638	1818	1509	1091	6420	11270	1002	4918	5830	10335	7522	3422	58787
10	11069	3904	4922	4853	2147	12274	15708	7896	10718	4178	17849	24817	5746	126081
11	19231	7086	4667	7032	3750	14393	15337	4445	15793	16940	3048	22133	28034	161889
12	28684	8084	8636	11431	5593	22820	20110	4249	12425	71301	36638	15663	13314	258948
13	7027	6257	3232	5740	2315	10283	17065	4152	5134	5087	26790	15703	15700	124485
SUM	84092	39003	34995	38882	20082	81955	109663	30891	66081	149626	146848	154306	95828	1052252

Table E.2: 2006 Base Year PCU Kilometres, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3930	541	329	152	220	939	2160	1116	1290	5517	14106	10772	3485	44557
2	263	1394	1243	475	861	1421	3592	878	923	2776	4078	6676	2081	26661
3	337	1164	1266	414	586	412	1993	1143	1569	2911	3112	2655	1876	19438
4	168	209	310	188	322	1062	1110	240	599	1878	2033	3426	903	12448
5	203	1624	438	456	476	815	972	247	482	1194	2587	2892	958	13344
6	985	1459	388	2205	1031	3144	3481	136	4187	6009	7675	10463	5392	46555
7	1800	3109	1580	1300	1250	3193	10622	2483	3238	8182	10167	15395	9230	71549
8	945	1166	970	154	149	391	3015	2236	2488	4555	2033	4212	2802	25116
9	1314	947	1419	522	501	3562	7400	2255	3489	6040	7252	6709	2144	43554
10	5473	2902	2764	1779	927	5831	7985	4515	6147	2252	23811	37593	4228	106207
11	15113	4107	3626	2119	2320	7703	9979	2604	7540	11190	9486	21155	14979	111921
12	10395	7229	2791	3247	2882	10512	15750	4989	7074	42060	21942	4206	8161	141238
13	4502	2046	1663	732	923	5920	10574	2941	2892	4343	15894	7938	11435	71803
SUM	45428	27897	18787	13743	12448	44905	78633	25783	41918	98907	124176	134092	67674	734391

Table E.3: 2006 Base Year PCU Kilometres, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2493	592	1416	353	479	1492	3955	2487	2229	12271	18281	25064	11755	82867
2	1430	1741	1183	704	704	1387	6208	1459	705	4000	6593	6479	5296	37889
3	1169	1222	2089	485	327	671	3587	2344	996	4644	4615	6093	4333	32575
4	691	91	235	159	305	1244	2083	180	1089	3859	6464	8479	5303	30182
5	1532	689	510	584	518	1485	2140	220	284	1868	3447	4309	2250	19836
6	829	603	664	2799	1632	3618	4016	506	5430	10154	14361	17309	8582	70503
7	1074	2989	2306	1384	1016	3892	11640	6396	5730	13389	13291	17247	17752	98106
8	652	1010	1984	126	116	326	5235	2602	3834	8538	5465	5092	5096	40076
9	1373	476	2108	884	657	4541	10273	3252	4140	11038	12082	8671	4763	64258
10	3351	3440	6403	1192	3739	6187	13035	7744	5823	5794	24134	40481	4280	125603
11	1770	5750	5004	2869	6383	9026	21403	6485	10356	23079	7729	34173	20905	154932
12	5162	7302	5752	2984	8384	12051	20576	11288	8538	43834	35892	8758	18278	188799
13	2372	3207	2940	1460	2366	2824	12716	5466	3129	9796	24295	10437	13948	94956
SUM	23898	29112	32594	15983	26626	48744	116867	50429	52283	152264	176649	192592	122541	1040582

Table E.4: 2016 PCU Kilometres, Do Minimum AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3118	995	1817	619	751	1329	1769	858	1496	3862	959	8743	1007	27323
2	1250	2286	1750	619	551	1776	4190	1764	400	4062	7074	11575	2877	40174
3	1744	1397	1510	225	321	595	1485	1715	2229	6824	7319	5268	2726	33358
4	769	64	171	235	382	1245	1588	24	585	1617	2694	2771	1302	13447
5	999	648	458	733	614	1758	1763	142	624	3913	5933	9867	2419	29871
6	1424	1013	236	3671	1104	4787	4969	115	9142	6446	12412	13430	3197	61946
7	4339	4423	2392	2627	1723	6163	15201	4606	6491	21752	25962	28902	15220	139801
8	2485	3738	5144	263	223	382	4569	3006	3421	7139	8284	12784	5665	57103
9	2917	677	1945	1609	1120	8445	14273	1570	6297	6587	13357	11727	4314	74838
10	11025	3966	4443	4963	2199	14817	18856	11245	12669	5020	23551	39076	8108	159938
11	21172	7220	4913	7483	4634	15893	17553	7898	18488	20217	4125	29500	36602	195698
12	35457	8604	9165	12479	6427	25978	23285	6080	16945	81616	48656	19386	17869	311947
13	7448	6505	3336	6175	2503	12243	19016	5165	6556	6738	37662	21665	17348	152360
SUM	94147	41536	37280	41701	22552	95411	128517	44188	85343	175793	197988	214694	118654	1297804

Table E.5: 2016 PCU Kilometres, Do Minimum IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4256	544	315	137	201	943	2300	1412	1379	6491	21370	17979	4063	61390
2	269	1339	1239	445	872	1390	3799	1135	999	3069	5580	9130	2522	31788
3	321	1131	1240	389	604	430	2131	1523	1752	3299	5051	4213	2287	24371
4	159	200	304	172	310	1126	1215	257	611	2038	2576	5152	1021	15141
5	188	1546	457	432	497	900	1114	261	508	1359	3751	5274	1122	17409
6	982	1356	397	2357	1064	3556	4404	140	5712	7441	11662	14776	6823	60670
7	1990	3336	1720	1425	1469	3820	11936	3096	4216	10134	17177	23313	11322	94954
8	1181	1500	1337	188	169	440	3948	3031	3371	6351	3716	6024	3836	35092
9	1476	969	1560	529	521	5042	9321	3016	4317	7949	10665	11572	2974	59911
10	5588	3039	3008	1781	934	6657	9435	5890	7470	2557	31319	47969	5656	131303
11	16526	4436	3958	2209	2478	8787	11673	3574	9082	12713	10497	26723	18826	131482
12	12344	7766	3322	3766	3430	12033	17771	6315	9426	47951	27637	6224	10786	168771
13	4722	2220	1848	745	1009	6521	11658	3595	3607	5549	22855	12016	12442	88787
SUM	50002	29382	20705	14575	13558	51645	90705	33245	52450	116901	173856	190365	83680	921069

Table E.6: 2016 PCU Kilometres, Do Minimum PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2556	499	1042	284	415	1394	3831	2520	2138	12590	24022	37462	12534	101287
2	1410	1632	1165	629	711	1289	6188	1506	620	3927	6916	7136	5931	39060
3	1136	1145	1955	451	341	651	3566	2824	1019	4337	4816	8632	4897	35770
4	882	84	215	145	291	1463	2096	193	997	3812	6522	10329	5161	32190
5	1369	655	473	534	544	1611	2487	188	259	1715	5244	6045	2441	23565
6	1026	612	721	3014	1916	4127	5220	561	7266	11778	16369	22672	10528	85810
7	1293	3294	2555	1663	1193	4439	13325	6723	7418	15636	16794	24897	20060	119290
8	890	1168	2588	144	142	380	5503	3321	5097	12075	8181	8248	6313	54050
9	1751	520	2313	1002	744	7129	13608	4079	4747	12433	16341	12314	5865	82846
10	4030	3380	6302	1189	3856	6383	15835	8423	6025	6100	33959	56046	5552	157080
11	2151	6046	5099	2776	6480	9407	24060	7188	12339	25132	9744	44758	24982	180162
12	6519	7845	6045	3277	8692	13242	23088	12793	10693	55587	46019	10113	22407	226320
13	2940	3223	3057	1398	2285	3006	13668	6048	3517	12054	35266	15829	15151	117442
SUM	27953	30103	33530	16506	27610	54521	132475	56367	62135	177176	230193	264481	141822	1254872

Table E.7: 2016 Difference in PCU Kilometres Between Do Minimum and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	364	40	177	33	79	238	383	202	292	1292	245	4545	370	8260
2	31	63	48	13	32	97	370	587	41	233	1447	4188	486	7636
3	75	92	20	-8	33	82	146	512	325	639	2547	1170	342	5975
4	-36	-2	18	-3	3	119	222	0	60	173	-340	60	159	433
5	49	29	29	11	74	236	334	25	73	290	328	1753	259	3490
6	-24	-47	-11	107	86	456	1045	25	2741	405	4539	2373	272	11967
7	400	217	133	493	141	992	2001	1019	2427	5096	7968	7842	1692	30421
8	200	1138	1344	29	35	50	860	713	1336	1197	1715	2941	1221	12779
9	-95	39	127	100	29	2025	3003	568	1379	757	3022	4205	892	16051
10	-44	62	-479	110	52	2543	3148	3349	1951	842	5702	14259	2362	33857
11	1941	134	246	451	884	1500	2216	3453	2695	3277	1077	7367	8568	33809
12	6773	520	529	1048	834	3158	3175	1831	4520	10315	12018	3723	4555	52999
13	421	248	104	435	188	1960	1951	1013	1422	1651	10872	5962	1648	27875
SUM	10055	2533	2285	2819	2470	13456	18854	13297	19262	26167	51140	60388	22826	245552

Table E.8: 2016 Difference in PCU Kilometres Between Do Minimum and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	326	3	-14	-15	-19	4	140	296	89	974	7264	7207	578	16833
2	6	-55	-4	-30	11	-31	207	257	76	293	1502	2454	441	5127
3	-16	-33	-26	-25	18	18	138	380	183	388	1939	1558	411	4933
4	-9	-9	-6	-16	-12	64	105	17	12	160	543	1726	118	2693
5	-15	-78	19	-24	21	85	142	14	26	165	1164	2382	164	4065
6	-3	-103	9	152	33	412	923	4	1525	1432	3987	4313	1431	14115
7	190	227	140	125	219	627	1314	613	978	1952	7010	7918	2092	23405
8	236	334	367	34	20	49	933	795	883	1796	1683	1812	1034	9976
9	162	22	141	7	20	1480	1921	761	828	1909	3413	4863	830	16357
10	115	137	244	2	7	826	1450	1375	1323	305	7508	10376	1428	25096
11	1413	329	332	90	158	1084	1694	970	1542	1523	1011	5568	3847	19561
12	1949	537	531	519	548	1521	2021	1326	2352	5891	5695	2018	2625	27533
13	220	174	185	13	86	601	1084	654	715	1206	6961	4078	1007	16984
SUM	4574	1485	1918	832	1110	6740	12072	7462	10532	17994	49680	56273	16006	186678

Table E.9: 2016 Difference in PCU Kilometres Between Do Minimum and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	63	-93	-374	-69	-64	-98	-124	33	-91	319	5741	12398	779	18420
2	-20	-109	-18	-75	7	-98	-20	47	-85	-73	323	657	635	1171
3	-33	-77	-134	-34	14	-20	-21	480	23	-307	201	2539	564	3195
4	191	-7	-20	-14	-14	219	13	13	-92	-47	58	1850	-142	2008
5	-163	-34	-37	-50	26	126	347	-32	-25	-153	1797	1736	191	3729
6	197	9	57	215	284	509	1204	55	1836	1624	2008	5363	1946	15307
7	219	305	249	279	177	547	1685	327	1688	2247	3503	7650	2308	21184
8	238	158	604	18	26	54	268	719	1263	3537	2716	3156	1217	13974
9	378	44	205	118	87	2588	3335	827	607	1395	4259	3643	1102	18588
10	679	-60	-101	-3	117	196	2800	679	202	306	9825	15565	1272	31477
11	381	296	95	-93	97	381	2657	703	1983	2053	2015	10585	4077	25230
12	1357	543	293	293	308	1191	2512	1505	2155	11753	10127	1355	4129	37521
13	568	16	117	-62	-81	182	952	582	388	2258	10971	5392	1203	22486
SUM	4055	991	936	523	984	5777	15608	5938	9852	24912	53544	71889	19281	214290

Table E.10: 2031 PCU Kilometres, Do Minimum AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3764	1260	2282	791	938	1603	2118	1069	1859	4825	1338	12411	1344	35602
2	1434	2921	2198	741	681	2120	5158	2211	498	4926	9495	17209	3691	53283
3	2015	1762	1992	270	374	674	1806	2168	2861	8739	10169	6343	3487	42660
4	916	78	199	313	503	1471	1866	32	731	2068	4535	4080	1595	18387
5	1201	810	546	947	789	2145	2110	168	735	4489	8442	12551	3185	38118
6	1770	1289	286	4481	1341	5875	5987	151	10167	7446	18196	17205	3735	77929
7	6121	5066	2692	2901	1943	7198	18303	5324	7251	27073	36034	38420	18290	176616
8	2758	4200	6125	290	236	403	5257	3557	3981	8816	11111	16910	7403	71047
9	3457	809	2341	1934	1332	9499	16383	1854	7282	7884	18256	15555	5266	91852
10	12440	4311	4764	5436	2312	15726	21898	13224	13811	5970	32465	52595	11636	196588
11	26707	8098	5337	8955	5470	19123	20604	8387	21061	26523	5464	39029	48807	243565
12	41939	9946	9998	14195	7478	31064	28010	6872	18706	94816	64020	26088	22392	375524
13	8284	7303	3784	6611	2629	13189	22526	6051	7064	8622	52283	28048	20325	186719
SUM	112806	47853	42544	47865	26026	110090	152026	51068	96007	212197	271808	286444	151156	1607890

Table E.11: 2031 PCU Kilometres, Do Minimum IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	5128	667	381	169	246	1112	2637	1659	1622	7801	32647	25347	4995	84411
2	321	1646	1518	542	1056	1654	4502	1344	1195	3682	8098	12430	3217	41205
3	374	1386	1505	460	729	520	2543	1773	2096	3963	7962	5920	2887	32118
4	183	236	357	211	373	1367	1472	295	738	2568	3783	7286	1261	20130
5	231	1857	551	523	605	1075	1328	304	619	1668	6032	8129	1397	24319
6	1144	1633	486	2854	1284	4169	5194	174	6938	9247	17170	19353	8617	78263
7	2184	3915	2031	1735	1737	4550	13931	3552	5186	12371	25745	32743	13937	123617
8	1332	1768	1590	222	201	495	4530	3573	3964	7865	5523	7654	4798	43515
9	1666	1152	1862	631	621	6034	11176	3482	5142	9419	14888	16672	3740	76485
10	6324	3479	3443	2079	1047	7737	11016	6794	8332	2928	48638	59399	7186	168402
11	20142	5189	4706	2742	2851	10563	14053	4271	10835	15270	15003	34274	23752	163651
12	14550	9018	4007	4601	4118	13990	20535	7507	11229	55635	35483	7862	13027	201562
13	5564	2586	2156	856	1190	7503	13467	4136	4185	6729	32474	16824	14068	111738
SUM	59143	34532	24593	17625	16058	60769	106384	38864	62081	139146	253446	253893	102882	1169416

Table E.12: 2031 PCU Kilometres, Do Minimum PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3027	597	1239	335	500	1699	4258	3325	2540	14879	34429	54057	14757	135642
2	1729	2056	1441	754	883	1581	7257	1766	769	4178	8244	8910	7132	46700
3	1370	1403	2443	542	420	760	3965	3356	1257	4669	5383	12647	5605	43820
4	1069	100	253	190	372	1722	2320	211	1249	4335	7634	14322	5626	39403
5	1730	804	561	669	697	1956	2837	215	311	1891	7867	8596	2759	30893
6	1235	748	808	3602	2255	4871	6120	627	8301	12572	19644	33064	12620	106467
7	1508	3913	3026	1994	1400	5315	15646	7686	8884	17875	21189	35046	23162	146644
8	1058	1381	3151	166	163	422	6419	3967	6031	13932	8628	11121	7873	64312
9	2067	615	2790	1199	887	8217	15099	4735	5759	13545	20776	16068	6819	98576
10	4382	3622	7169	1415	4323	7217	17963	9420	6804	6965	45459	77595	7079	199413
11	2593	7221	6337	3697	8198	11573	27526	8494	15143	30474	12632	58559	31219	223666
12	7544	9225	6679	3967	10075	15813	26895	14523	12703	63744	56385	12287	26489	266329
13	3299	3656	3497	1524	2460	3465	15579	6844	3927	14236	48117	22583	17026	146213
SUM	32611	35341	39394	20054	32633	64611	151884	65169	73678	203295	296387	364855	168166	1548078

Table E.13: 2031 Difference in PCU Kilometres Between Do Minimum and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1010	305	642	205	266	512	732	413	655	2255	624	8213	707	16539
2	215	698	496	135	162	441	1338	1034	139	1097	3868	9822	1300	20745
3	346	457	502	37	86	161	467	965	957	2554	5397	2245	1103	15277
4	111	12	46	75	124	345	500	8	206	624	1501	1369	452	5373
5	251	191	117	225	249	623	681	51	184	866	2837	4437	1025	11737
6	322	229	39	917	323	1544	2063	61	3766	1405	10323	6148	810	27950
7	2182	860	433	767	361	2027	5103	1737	3187	10417	18040	17360	4762	67236
8	473	1600	2325	56	48	71	1548	1264	1896	2874	4542	7067	2959	26723
9	445	171	523	425	241	3079	5113	852	2364	2054	7921	8033	1844	33065
10	1371	407	-158	583	165	3452	6190	5328	3093	1792	14616	27778	5890	70507
11	7476	1012	670	1923	1720	4730	5267	3942	5268	9583	2416	16896	20773	81676
12	13255	1862	1362	2764	1885	8244	7900	2623	6281	23515	27382	10425	9078	116576
13	1257	1046	552	871	314	2906	5461	1899	1930	3535	25493	12345	4625	62234
SUM	28714	8850	7549	8983	5944	28135	42363	20177	29926	62571	124960	132138	55328	555638

Table E.14: 2031 Difference in PCU Kilometres Between Do Minimum and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1198	126	52	17	26	173	477	543	332	2284	18541	14575	1510	39854
2	58	252	275	67	195	233	910	466	272	906	4020	5754	1136	14544
3	37	222	239	46	143	108	550	630	527	1052	4850	3265	1011	12680
4	15	27	47	23	51	305	362	55	139	690	1750	3860	358	7682
5	28	233	113	67	129	260	356	57	137	474	3445	5237	439	10975
6	159	174	98	649	253	1025	1713	38	2751	3238	9495	8890	3225	31708
7	384	806	451	435	487	1357	3309	1069	1948	4189	15578	17348	4707	52068
8	387	602	620	68	52	104	1515	1337	1476	3310	3490	3442	1996	18399
9	352	205	443	109	120	2472	3776	1227	1653	3379	7636	9963	1596	32931
10	851	577	679	300	120	1906	3031	2279	2185	676	24827	21806	2958	62195
11	5029	1082	1080	623	531	2860	4074	1667	3295	4080	5517	13119	8773	51730
12	4155	1789	1216	1354	1236	3478	4785	2518	4155	13575	13541	3656	4866	60324
13	1062	540	493	124	267	1583	2893	1195	1293	2386	16580	8886	2633	39935
SUM	13715	6635	5806	3882	3610	15864	27751	13081	20163	40239	129270	119801	35208	435025

Table E.15: 2031 Difference in PCU Kilometres Between Do Minimum and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	534	5	-177	-18	21	207	303	838	311	2608	16148	28993	3002	52775
2	299	315	258	50	179	194	1049	307	64	178	1651	2431	1836	8811
3	201	181	354	57	93	89	378	1012	261	25	768	6554	1272	11245
4	378	9	18	31	67	478	237	31	160	476	1170	5843	323	9221
5	198	115	51	85	179	471	697	-5	27	23	4420	4287	509	11057
6	406	145	144	803	623	1253	2104	121	2871	2418	5283	15755	4038	35964
7	434	924	720	610	384	1423	4006	1290	3154	4486	7898	17799	5410	48538
8	406	371	1167	40	47	96	1184	1365	2197	5394	3163	6029	2777	24236
9	694	139	682	315	230	3676	4826	1483	1619	2507	8694	7397	2056	34318
10	1031	182	766	223	584	1030	4928	1676	981	1171	21325	37114	2799	73810
11	823	1471	1333	828	1815	2547	6123	2009	4787	7395	4903	24386	10314	68734
12	2382	1923	927	983	1691	3762	6319	3235	4165	19910	20493	3529	8211	77530
13	927	449	557	64	94	641	2863	1378	798	4440	23822	12146	3078	51257
SUM	8713	6229	6800	4071	6007	15867	35017	14740	21395	51031	119738	172263	45625	507496

Table E.16: 2016 PCU Kilometres, Do Something AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3658	1026	1945	701	800	1370	1809	859	1503	3321	986	9070	1014	28062
2	1274	2297	1768	620	551	1838	4156	1775	405	3733	6985	11589	2736	39727
3	1810	1457	1580	225	317	623	1535	1744	2315	5935	7282	5315	2643	32781
4	778	61	165	236	377	1267	1584	24	584	1631	2655	2801	1442	13605
5	1057	631	459	742	615	1788	1734	137	618	3697	5925	10177	2300	29880
6	1526	1023	237	3772	1118	4818	5060	121	8588	6514	12417	13438	3059	61691
7	4540	4344	2370	2480	1670	6125	14744	4939	7279	26087	25875	28290	14342	143085
8	2563	3863	5200	260	220	405	4951	2844	3788	7212	8315	13560	6392	59573
9	2980	709	2001	1576	1090	7957	14137	1632	6165	6290	12276	11125	6326	74264
10	10891	3980	4350	5190	2164	15012	23122	10742	11897	4735	23443	39167	8954	163647
11	21304	7085	4649	7490	4617	15866	17442	8463	17524	20471	4120	29680	39261	197972
12	37042	8591	9031	12725	6429	25649	23010	6422	15428	82332	48639	19330	18001	312629
13	7355	5951	3212	5843	2351	11750	17539	5621	11353	8151	42059	20935	16461	158581
SUM	96778	41018	36967	41860	22319	94468	130823	45323	87447	180109	200977	214477	122931	1315497

Table E.17: 2016 PCU Kilometres, Do Something IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4609	539	326	150	208	856	1799	1436	1208	5685	20625	16839	3887	58167
2	271	1337	1240	447	870	1400	3784	1151	1002	3096	5574	9141	2460	31773
3	327	1141	1245	399	621	436	2144	1533	1746	3321	5038	4218	2291	24460
4	168	196	306	175	308	1127	1194	270	619	2168	2577	5162	1186	15456
5	205	1536	453	438	496	907	1102	261	509	1357	3758	5325	1100	17447
6	935	1355	395	2374	1069	3579	4407	149	5673	7892	11586	14716	6961	61091
7	1551	3318	1709	1415	1446	3809	11682	3291	4566	11923	17090	22971	11167	95938
8	920	1526	1345	190	170	442	4207	3001	3737	6851	3985	6175	4269	36818
9	1254	986	1587	528	519	4900	9334	3353	4321	8056	10616	11510	3680	60644
10	4857	2941	2896	1891	899	7130	10559	5960	7291	2521	31573	48222	6232	132972
11	16303	4388	3904	2213	2453	8709	11562	3826	9012	12521	10486	26572	20420	132369
12	11955	7726	3273	3762	3390	11990	17586	6493	9291	48109	27643	6170	11522	168910
13	4394	2127	1802	754	981	6375	11347	3859	4491	6377	24512	12140	12177	91336
SUM	47749	29116	20481	14736	13430	51660	90707	34583	53466	119877	175063	189161	87352	927381

Table E.18: 2016 PCU Kilometres, Do Something PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2973	546	1158	300	417	1402	3709	3105	2074	12848	24182	39019	12777	104510
2	1386	1627	1164	621	711	1307	6126	1604	661	3953	6873	7285	5660	38978
3	1166	1152	1948	451	339	651	3545	2917	1042	4134	4775	8828	4872	35820
4	899	81	205	143	287	1491	2042	204	971	3706	6334	10490	6727	33580
5	1324	643	463	535	542	1616	2466	198	254	1685	5176	6123	2330	23355
6	1045	610	717	3052	1926	4156	5275	646	6935	12140	16261	22934	10673	86370
7	1263	3217	2487	1649	1168	4469	12908	7302	8310	20589	16513	24159	18717	122751
8	839	1188	2543	141	138	391	6098	3257	5689	12036	9112	8843	6792	57067
9	1703	523	2296	978	738	6494	13804	4388	4615	11820	15082	11743	10172	84356
10	3905	3223	5418	1157	3834	6511	19048	8338	5629	5665	34845	56557	6320	160450
11	2102	5942	4924	2733	6389	9184	24137	7797	11663	24641	9520	43763	29954	182749
12	6371	7936	6090	3306	8813	12943	22762	13860	10302	55920	45423	10071	23782	227579
13	2794	3110	3004	1386	2165	2953	12750	6431	4670	14193	36142	15178	14480	119256
SUM	27770	29798	32417	16452	27467	53568	134670	60047	62815	183330	230238	264993	153256	1276821

Table E.19: 2016 Difference in PCU Kilometres Between Do Something and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	904	71	305	115	128	279	423	203	299	751	272	4872	377	8999
2	55	74	66	14	32	159	336	598	46	-96	1358	4202	345	7189
3	141	152	90	-8	29	110	196	541	411	-250	2510	1217	259	5398
4	-27	-5	12	-2	-2	141	218	0	59	187	-379	90	299	591
5	107	12	30	20	75	266	305	20	67	74	320	2063	140	3499
6	78	-37	-10	208	100	487	1136	31	2187	473	4544	2381	134	11712
7	601	138	111	346	88	954	1544	1352	3215	9431	7881	7230	814	33705
8	278	1263	1400	26	32	73	1242	551	1703	1270	1746	3717	1948	15249
9	-32	71	183	67	-1	1537	2867	630	1247	460	1941	3603	2904	15477
10	-178	76	-572	337	17	2738	7414	2846	1179	557	5594	14350	3208	37566
11	2073	-1	-18	458	867	1473	2105	4018	1731	3531	1072	7547	11227	36083
12	8358	507	395	1294	836	2829	2900	2173	3003	11031	12001	3667	4687	53681
13	328	-306	-20	103	36	1467	474	1469	6219	3064	15269	5232	761	34096
SUM	12686	2015	1972	2978	2237	12513	21160	14432	21366	30483	54129	60171	27103	263245

Table E.20: 2016 Difference in PCU Kilometres Between Do Something and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	679	-2	-3	-2	-12	-83	-361	320	-82	168	6519	6067	402	13610
2	8	-57	-3	-28	9	-21	192	273	79	320	1496	2465	379	5112
3	-10	-23	-21	-15	35	24	151	390	177	410	1926	1563	415	5022
4	0	-13	-4	-13	-14	65	84	30	20	290	544	1736	283	3008
5	2	-88	15	-18	20	92	130	14	27	163	1171	2433	142	4103
6	-50	-104	7	169	38	435	926	13	1486	1883	3911	4253	1569	14536
7	-249	209	129	115	196	616	1060	808	1328	3741	6923	7576	1937	24389
8	-25	360	375	36	21	51	1192	765	1249	2296	1952	1963	1467	11702
9	-60	39	168	6	18	1338	1934	1098	832	2016	3364	4801	1536	17090
10	-616	39	132	112	-28	1299	2574	1445	1144	269	7762	10629	2004	26765
11	1190	281	278	94	133	1006	1583	1222	1472	1331	1000	5417	5441	20448
12	1560	497	482	515	508	1478	1836	1504	2217	6049	5701	1964	3361	27672
13	-108	81	139	22	58	455	773	918	1599	2034	8618	4202	742	19533
SUM	2321	1219	1694	993	982	6755	12074	8800	11548	20970	50887	55069	19678	192990

Table E.21: 2016 Difference in PCU Kilometres Between Do Something and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	480	-46	-258	-53	-62	-90	-246	618	-155	577	5901	13955	1022	21643
2	-44	-114	-19	-83	7	-80	-82	145	-44	-47	280	806	364	1089
3	-3	-70	-141	-34	12	-20	-42	573	46	-510	160	2735	539	3245
4	208	-10	-30	-16	-18	247	-41	24	-118	-153	-130	2011	1424	3398
5	-208	-46	-47	-49	24	131	326	-22	-30	-183	1729	1814	80	3519
6	216	7	53	253	294	538	1259	140	1505	1986	1900	5625	2091	15867
7	189	228	181	265	152	577	1268	906	2580	7200	3222	6912	965	24645
8	187	178	559	15	22	65	863	655	1855	3498	3647	3751	1696	16991
9	330	47	188	94	81	1953	3531	1136	475	782	3000	3072	5409	20098
10	554	-217	-985	-35	95	324	6013	594	-194	-129	10711	16076	2040	34847
11	332	192	-80	-136	6	158	2734	1312	1307	1562	1791	9590	9049	27817
12	1209	634	338	322	429	892	2186	2572	1764	12086	9531	1313	5504	38780
13	422	-97	64	-74	-201	129	34	965	1541	4397	11847	4741	532	24300
SUM	3872	686	-177	469	841	4824	17803	9618	10532	31066	53589	72401	30715	236239

Table E.22: 2031 PCU Kilometres, Do Something AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4472	1295	2459	856	977	1623	2136	1093	1849	4236	1366	12711	1350	36423
2	1494	2908	2242	742	668	2153	5084	2232	517	4640	9290	17029	3528	52527
3	2126	1818	2064	261	362	683	1824	2228	2978	7662	9860	6139	3382	41387
4	937	75	194	312	484	1479	1857	32	727	2123	4386	4121	1905	18632
5	1270	794	548	949	785	2166	2077	168	720	4340	8450	12971	3055	38293
6	1861	1243	275	4548	1343	5858	6056	169	9700	7776	18231	17234	3644	77938
7	5947	4987	2687	2747	1875	6944	17647	5728	8227	30257	36591	37753	17068	178458
8	2824	4293	6188	269	225	410	5794	3454	4407	8731	10943	17655	8241	73434
9	3509	842	2414	1837	1268	8730	16184	1979	7087	7663	16325	15094	8406	91338
10	12399	4519	4779	5693	2277	16087	26868	12368	12607	5635	32159	53186	12046	200623
11	26836	7862	5012	8952	5394	18931	20450	9466	19900	26623	5416	39581	51015	245438
12	44213	9835	9779	14425	7534	30628	27268	7756	17174	95766	63466	25825	22442	376111
13	8133	6733	3789	6186	2505	12874	20420	6684	12818	9852	57108	26435	19120	192657
SUM	116021	47204	42430	47777	25697	108566	153665	53357	98711	215304	273591	285734	155202	1623259

Table E.23: 2031 PCU Kilometres, Do Something IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	5763	688	396	183	257	1109	2562	1690	1572	7654	32671	25756	5096	85397
2	330	1641	1516	540	1061	1660	4498	1390	1215	3788	8111	12564	3174	41488
3	383	1399	1507	484	758	531	2577	1812	2096	4058	7909	5945	2940	32399
4	186	232	356	212	372	1369	1465	327	743	2677	3776	7328	1588	20631
5	246	1837	546	530	611	1081	1334	308	620	1719	6066	8310	1393	24601
6	1158	1628	482	2868	1270	4183	5210	191	6878	9631	17017	19372	8970	78858
7	2171	3891	2020	1734	1721	4547	13611	3879	5680	14604	25868	32382	13721	125829
8	1291	1841	1597	232	201	507	4985	3477	4524	8415	6093	8047	5358	46568
9	1670	1184	1890	635	619	5868	11266	4017	5170	9522	14600	16553	4737	77731
10	6179	3391	3294	2229	1024	8307	12341	6849	8122	2876	48113	59533	7708	169966
11	20045	5141	4580	2738	2810	10415	14229	4724	10647	14908	14894	34092	25831	165054
12	14908	8978	3935	4597	4073	13934	20386	7836	11010	55562	35279	7793	14182	202473
13	5402	2474	2114	912	1155	7427	13044	4459	5388	7551	34759	16734	13756	115175
SUM	59732	34325	24233	17894	15932	60938	107508	40959	63665	142965	255156	254409	108454	1186170

Table E.24: 2031 PCU Kilometres, Do Something PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3523	657	1416	376	495	1724	4266	3771	2523	14341	35981	56695	16450	142218
2	1657	2078	1452	754	872	1589	7226	1906	785	4444	8303	9036	6620	46722
3	1362	1432	2450	536	411	771	4043	3436	1254	4596	5303	13021	5610	44225
4	1082	98	241	185	364	1743	2318	223	1216	4263	7339	14316	7652	41040
5	1647	797	552	672	676	1938	2823	225	304	1905	7709	8572	2574	30394
6	1258	747	817	3663	2293	4938	6171	715	7760	13258	19273	32980	12660	106533
7	1449	3868	2989	2013	1404	5316	15130	8419	9932	23527	21056	33853	21251	150207
8	952	1416	3098	166	160	444	7229	3832	6712	13345	10243	12716	8260	68573
9	2010	631	2772	1176	884	7416	15421	5016	5564	13197	19199	15810	11629	100725
10	4294	3626	6109	1412	4405	7469	21158	9299	6293	6478	46669	77273	7736	202221
11	2536	7203	6063	3643	8142	11378	28037	9333	13760	29823	12306	56736	37353	226313
12	7447	9410	6758	4026	10359	15523	26423	15629	11925	64721	55548	12187	27667	267623
13	3142	3549	3569	1652	2348	3428	14563	7396	5342	16632	48156	21619	16255	147651
SUM	32359	35512	38286	20274	32813	63677	154808	69200	73370	210530	297085	364814	181717	1574445

Table E.25: 2031 Difference in PCU Kilometres Between Do Something and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1718	340	819	270	305	532	750	437	645	1666	652	8513	713	17360
2	275	685	540	136	149	474	1264	1055	158	811	3663	9642	1137	19989
3	457	513	574	28	74	170	485	1025	1074	1477	5088	2041	998	14004
4	132	9	41	74	105	353	491	8	202	679	1352	1410	762	5618
5	320	175	119	227	245	644	648	51	169	717	2845	4857	895	11912
6	413	183	28	984	325	1527	2132	79	3299	1735	10358	6177	719	27959
7	2008	781	428	613	293	1773	4447	2141	4163	13601	18597	16693	3540	69078
8	539	1693	2388	35	37	78	2085	1161	2322	2789	4374	7812	3797	29110
9	497	204	596	328	177	2310	4914	977	2169	1833	5990	7572	4984	32551
10	1330	615	-143	840	130	3813	11160	4472	1889	1457	14310	28369	6300	74542
11	7605	776	345	1920	1644	4538	5113	5021	4107	9683	2368	17448	22981	83549
12	15529	1751	1143	2994	1941	7808	7158	3507	4749	24465	26828	10162	9128	117163
13	1106	476	557	446	190	2591	3355	2532	7684	4765	30318	10732	3420	68172
SUM	31929	8201	7435	8895	5615	26611	44002	22466	32630	65678	126743	131428	59374	571007

Table E.26: 2031 Difference in PCU Kilometres Between Do Something and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1833	147	67	31	37	170	402	574	282	2137	18565	14984	1611	40840
2	67	247	273	65	200	239	906	512	292	1012	4033	5888	1093	14827
3	46	235	241	70	172	119	584	669	527	1147	4797	3290	1064	12961
4	18	23	46	24	50	307	355	87	144	799	1743	3902	685	8183
5	43	213	108	74	135	266	362	61	138	525	3479	5418	435	11257
6	173	169	94	663	239	1039	1729	55	2691	3622	9342	8909	3578	32303
7	371	782	440	434	471	1354	2989	1396	2442	6422	15701	16987	4491	54280
8	346	675	627	78	52	116	1970	1241	2036	3860	4060	3835	2556	21452
9	356	237	471	113	118	2306	3866	1762	1681	3482	7348	9844	2593	34177
10	706	489	530	450	97	2476	4356	2334	1975	624	24302	21940	3480	63759
11	4932	1034	954	619	490	2712	4250	2120	3107	3718	5408	12937	10852	53133
12	4513	1749	1144	1350	1191	3422	4636	2847	3936	13502	13337	3587	6021	61235
13	900	428	451	180	232	1507	2470	1518	2496	3208	18865	8796	2321	43372
SUM	14304	6428	5446	4151	3484	16033	28875	15176	21747	44058	130980	120317	40780	451779

Table E.27: 2031 Difference in PCU Kilometres Between Do Something and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1030	65	0	23	16	232	311	1284	294	2070	17700	31631	4695	59351
2	227	337	269	50	168	202	1018	447	80	444	1710	2557	1324	8833
3	193	210	361	51	84	100	456	1092	258	-48	688	6928	1277	11650
4	391	7	6	26	59	499	235	43	127	404	875	5837	2349	10858
5	115	108	42	88	158	453	683	5	20	37	4262	4263	324	10558
6	429	144	153	864	661	1320	2155	209	2330	3104	4912	15671	4078	36030
7	375	879	683	629	388	1424	3490	2023	4202	10138	7765	16606	3499	52101
8	300	406	1114	40	44	118	1994	1230	2878	4807	4778	7624	3164	28497
9	637	155	664	292	227	2875	5148	1764	1424	2159	7117	7139	6866	36467
10	943	186	-294	220	666	1282	8123	1555	470	684	22535	36792	3456	76618
11	766	1453	1059	774	1759	2352	6634	2848	3404	6744	4577	22563	16448	71381
12	2285	2108	1006	1042	1975	3472	5847	4341	3387	20887	19656	3429	9389	78824
13	770	342	629	192	-18	604	1847	1930	2213	6836	23861	11182	2307	52695
SUM	8461	6400	5692	4291	6187	14933	37941	18771	21087	58266	120436	172222	59176	533863

Appendix F. TUBA Results

Figure F.1: Sectors for TUBA Analysis

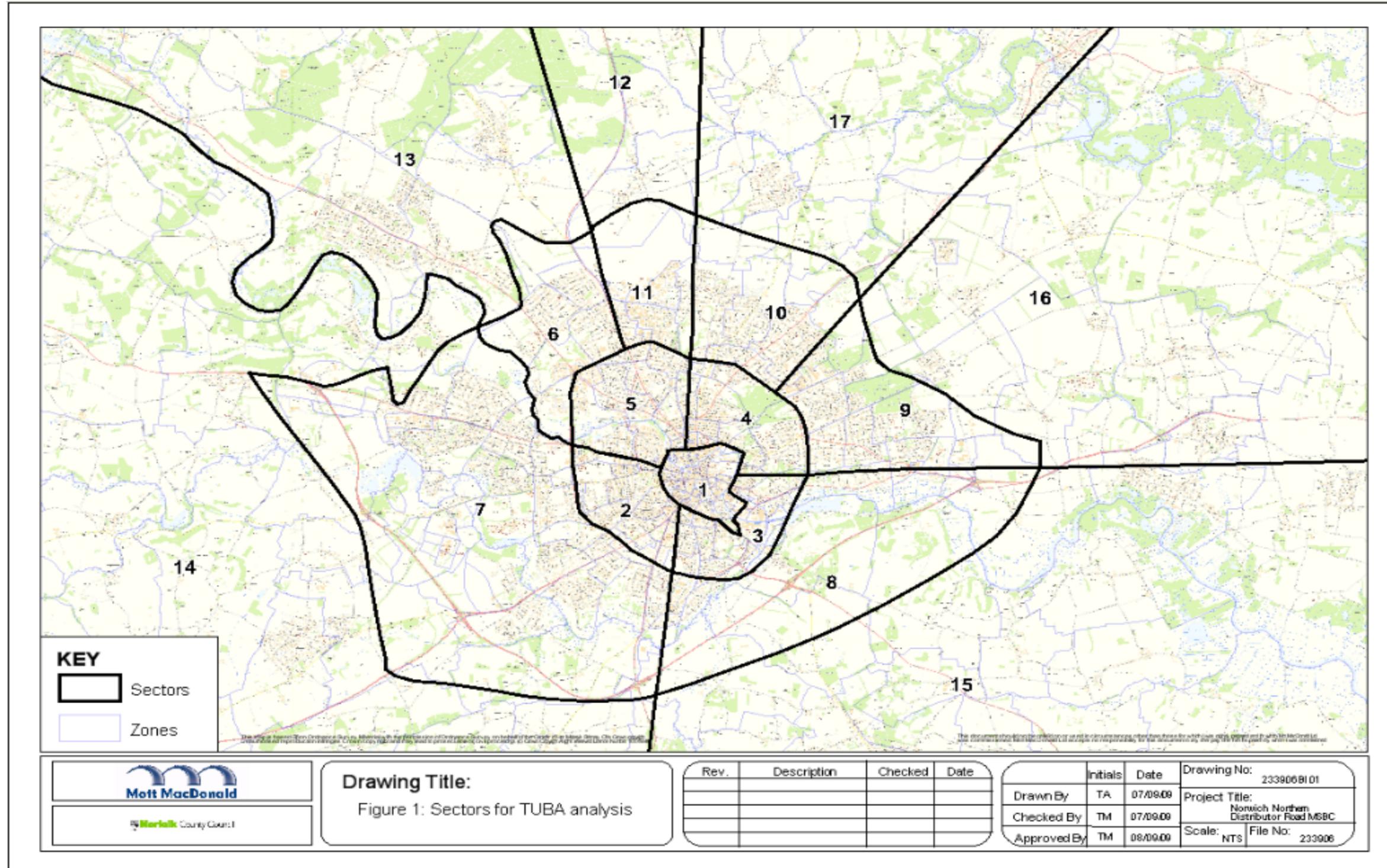


Table F.1: TUBA Costs

Consumers	ALL MODES	Road		Bus	
User benefits	TOTAL				
Travel Time	215280	208388		6892	
Vehicle operating costs	-21920	-21920		0	
User charges	28258	28267		-9	
During Construction & Maintenance	0	0		0	
NET CONSUMER BENEFITS	221618	214735		6883	
Business					
User benefits		Personal	Freight	Personal	Freight
Travel Time	206259	159554	46005	736	0
Vehicle operating costs	-1859	220	-2079	0	0
User charges	3930	2566	1368	-3	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	208366	162340	45293	733	0
Private Sector Provider Impacts					
Revenue	-30479		-29565		-914
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	-30479		-29565		-914
Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	177887				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (PVB)	399505				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2002, in 2002 prices

Public Accounts	ALL MODES	Road	Bus
Local Government Funding	TOTAL		
Revenue	7391	7391	0
Operating costs	3661	3661	0
Investment costs	6701	6701	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	17753	17753	0
Central Government Funding			
Revenue	0	0	0
Operating costs	0	0	0
Investment costs	80280	80280	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
Indirect Tax Revenues	-11271	-11161	-111
NET IMPACT	69009	69119	-111

TOTAL

TOTAL Present Value of Costs (PVC) 86762

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2002, in 2002 prices

Analysis of Monetised Costs and Benefits

Non-Exchequer Impacts

Consumer User Benefits	221618
Business User Benefits	208366
Private Sector Provider Impacts	-30479
Other Business Impacts	0

Accident Benefits Not assessed by TUBA

Carbon Benefits -2131

Net present Value of Benefits (PVB) 397374

Local Government Funding 17753

Central Government Funding 69009

Net present Value Costs (PVC) 86762

Overall Impact

Net present Value (NPV)	310612
Benefit to Cost Ratio (BCR)	4.580

Appraisal Period 2016 to 2075

Note: There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions

Sector Benefits

Table F.2: TUBA Sector Benefits

Ref	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	SUM
1	-48,621,863	2,622,006	-5,806,019	-2,247,237	-1,984,226	2,021,950	-814,939	-1,086,905	447,098	3,605,728	776,199	2,934,561	2,113,718	7,332,690	2,045,939	6,825,116	3,820,876	3,496,620	-27,762,700
2	1,267,694	331,381	-97,004	483,261	1,259,028	493,405	1,991,394	5,499	11,564	412,684	352,499	9,271	165,752	1,400,572	-126,117	818,221	277,258	532,517	9,588,879
3	-3,463,057	-748,737	-876,959	807,814	440,702	317,063	1,153,944	-550,786	872,290	1,408,344	486,737	2,361,180	2,053,511	3,278,210	-1,035,617	2,923,574	2,944,192	497,683	12,870,088
4	-1,627,180	-598,843	-1,796,238	363,385	969,172	913,326	185,181	-247,193	2,438,006	3,151,193	530,109	196,770	424,298	261,780	-720,040	796,164	375,255	190,547	5,805,692
5	-1,477,342	-290,546	-1,507,176	1,748,627	1,839,636	2,251,139	2,283,650	-57,594	3,093,569	1,731,206	1,185,812	-101,260	204,550	1,092,931	-325,824	2,003,109	410,136	335,198	14,419,821
6	-42,269	125,438	60,451	791,643	967,975	259,821	435,210	449,798	6,322,174	1,289,573	-105,679	-433,069	-584,316	203,826	4,133,232	7,142,168	1,006,013	20,035	22,042,024
7	-855,289	1,030,068	933,602	564,890	2,110,552	513,461	3,570,485	-1,964,740	-2,053,476	941,202	457,905	558,883	299,270	2,251,761	-1,043,406	4,967,922	4,703,527	614,768	17,601,385
8	-255,534	-26,774	-252,763	18,727	147,238	198,559	-3,530,422	-69,200	1,190,123	449,272	218,338	1,061,233	1,366,044	-150,140	-1,265,825	504,294	2,273,830	-113,123	1,763,877
9	-33,787	-104,656	1,347,152	4,535,282	4,275,236	8,329,409	-7,358,403	1,588,801	4,192,608	5,914,159	2,442,277	5,696,211	11,684,230	2,297,049	-1,306,753	3,278,281	4,316,674	502,053	51,595,823
10	2,182,680	423,904	2,433,733	7,826,117	5,465,604	3,599,646	1,708,237	1,006,870	11,078,631	1,098,147	3,612,584	995,276	2,733,647	2,883,481	4,184,240	3,823,214	213,888	1,043,799	56,313,698
11	15,332	197,974	177,948	779,633	568,473	413,471	586,568	318,551	4,061,940	295,203	20,732	-235,899	-734,379	253,245	6,132,060	5,792,003	140,446	265,523	19,048,824
12	788,394	40,008	1,428,449	352,114	214,713	-173,537	468,059	1,432,489	7,107,598	1,591,192	-100,460	36,998	-529,669	1,194,976	4,217,172	2,893,088	80,150	230,457	21,272,191
13	265,695	13,584	392,567	314,332	442,470	167,228	293,176	1,100,934	11,191,231	1,425,303	-702,993	-437,839	112,649	1,429,784	6,698,813	18,403,237	1,387,826	149,496	42,647,493
14	587,665	583,276	333,821	351,675	1,888,916	1,326,546	1,700,284	-605,854	2,954,533	2,221,901	887,253	2,491,499	1,784,484	1,272,821	-1,172,130	5,871,375	14,026,258	-108,274	36,396,049
15	-278,950	161,609	-780,603	-769,286	-72,728	3,603,682	-2,184,233	-1,190,815	-1,884,587	3,709,962	5,151,021	1,875,361	6,038,815	1,589,700	-1,109,918	-212,436	3,193,379	200,848	17,040,821
16	3,324,284	661,207	2,510,997	1,281,486	2,823,746	6,089,723	7,746,605	904,184	901,793	1,946,967	6,932,896	2,693,337	15,910,641	7,163,139	1,416,692	513,314	748,180	2,287,900	65,857,091
17	1,870,294	197,096	2,060,188	1,236,295	1,067,623	1,442,783	2,652,236	1,985,654	3,927,332	355,069	530,157	77,944	1,391,078	10,731,902	4,926,202	946,410	-25,880	10,207,578	45,579,961
18	135,048	129,986	33,425	54,644	234,298	225,547	201,757	-185,399	993,244	608,056	296,852	551,752	627,430	164,411	-230,526	942,391	4,712,079	0	9,494,995
SUM	-46,218,185	-496,031	595,571	18,493,402	22,658,428	31,993,222	11,088,789	2,834,294	56,845,671	32,155,161	22,972,239	20,332,209	45,061,753	44,652,138	25,418,194	68,231,445	44,604,087	20,353,625	421,576,012

Table F.3: TUBA Sector Benefits as a Percentage

Ref	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	SUM
1	-12%	-1%	-1%	-1%	0%	0%	0%	0%	0%	1%	0%	1%	1%	2%	0%	2%	1%	1%	-7%
2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
3	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	1%	1%	0%	3%
4	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
5	0%	0%	0%	0%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
6	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	2%	0%	0%	5%
7	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	4%
8	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
9	0%	0%	0%	1%	1%	2%	-2%	0%	1%	1%	1%	1%	3%	1%	0%	1%	1%	0%	12%
10	1%	0%	1%	2%	1%	1%	0%	0%	3%	0%	1%	0%	1%	1%	1%	1%	0%	0%	13%
11	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	5%
12	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	5%
13	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	2%	4%	0%	0%	10%
14	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	1%	0%	0%	0%	1%	3%	0%	9%
15	0%	0%	0%	0%	0%	1%	-1%	0%	0%	1%	1%	0%	1%	0%	0%	0%	1%	0%	4%
16	1%	0%	1%	0%	1%	1%	2%	0%	0%	0%	2%	1%	4%	2%	0%	0%	0%	1%	16%
17	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	3%	1%	0%	0%	2%	11%
18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
SUM	-11%	0%	0%	4%	5%	8%	3%	1%	13%	8%	5%	5%	11%	11%	6%	16%	11%	5%	100%

Appendix G. TUBA Warnings

Table G.1 shows a breakdown of the warnings output by TUBA.

Table G.1: Summary of TUBA Warnings

Warning Type	Number of warnings
Ratio of DM to DS Journey Time too Low	74232 (8723)
Ratio of DM to DS Journey Time too High	15480 (722)
Ratio of DM to DS Distance too Low	58593 (4779)
Ratio of DM to DS Distance too High	8199 (8199)
DM Speed too Low	25134
DS Speed too Low	32143
DM Time too High	19758
DS Time too High	19776

The TUBA warnings have been applied to an 18 sector system. Please find a map showing the location of the 18 sectors attached at **Figure F.1** in **Appendix F**.

Explanation of the serious TUBA warnings follows below:

Ratio of DM to DS Journey Time too Low

These warnings occur where there is a significant rise in journey time from Do Minimum to Do Something scenarios. The majority of the serious warnings relate to travel involving a trip end in Sector 1, which would be expected due to the traffic management measures to be implemented. The small number of serious warnings not involving a trip end in Sector 1, all have both trip ends in Sector 3 and are likely to involve trips passing through Sector 1 and would therefore the warnings would be expected due to the traffic management works highlighted above.

Ratio of DM to DS Journey Time too High

These warnings occur where there is a significant decrease in journey time from Do Minimum to Do Something scenarios. The majority of these serious warnings have a trip end in sectors 8 and 10 which are at either end of the proposed highway scheme and therefore significant decreases in journey time would be expected for these movements. The only other serious warnings are for trips having both trip ends in Sector 1. It is considered that these warnings occur because of local reassignment issues concerning the proposed traffic management works in Sector 1.

Ratio of DM to DS Distance too Low

These warnings occur where there is a significant rise in trip distance from Do Minimum to Do Something scenarios. All of the serious warnings have a trip end in Sector 1 and it is considered that these warnings are caused by local reassignment issues concerning the proposed traffic management works in Sector 1.

Ratio of DM to DS Distance too High

These warnings occur where there is a significant decrease in journey time from Do Minimum to Do Something scenarios. All of the serious warnings have a trip end in Sector 1 and it is considered that these warnings are caused by local re assignment issues.

DM Speed too Low & DS Speed too Low

These warnings occur where speeds are low. The majority of these warnings have a trip end in Sector 1, however there are also significant numbers of warnings in the sectors around the city centre (Sectors 2 - 5) and in Sector 11 to the north of the city centre. It is considered that these warnings relate to the congested nature of the network.

DM Time too High & DS Time too High

These warnings occur where journey times are high. All of these warnings relate to high journey times for trips with a trip end in Sector 18. This is expected as Sector 18 is an external sector comprising most of the UK.

