



Norwich - Northern Distributor Road

Major Scheme Business Case
Sensitivity Tests for DfT

Tests 2 to 6

Volume 6 – Appendices for Test 6
(Appendices DD, EE, FF, GG & HH)

December 2009
Norfolk County Council

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Appendix DD. Traffic Flows, Sensitivity Test 6

Figure DD.1: Traffic Flow Locations

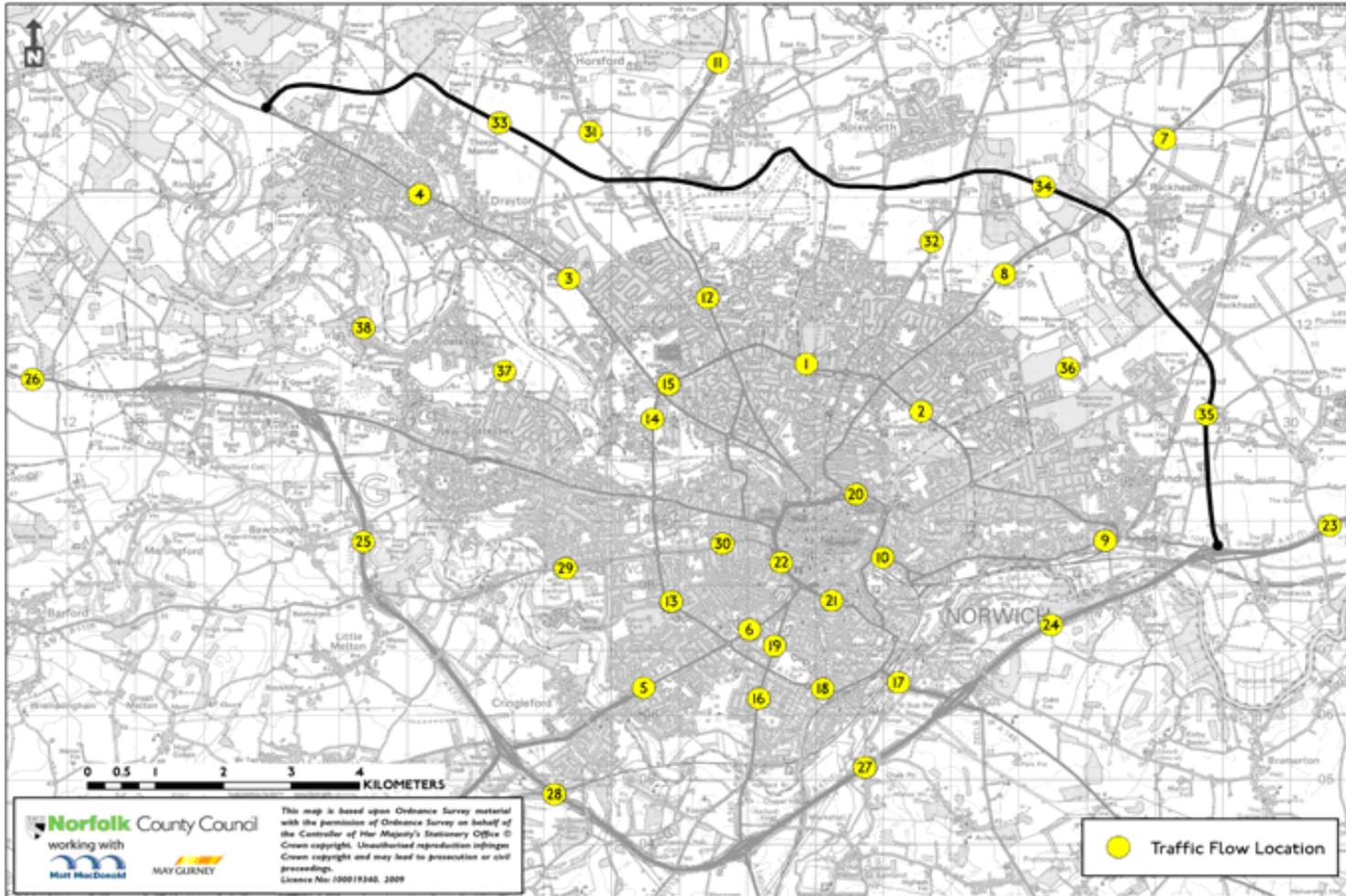


Table DD.1: 2006 and 2016 Key Road Flows, Base year, Core Scenario DM Test 6 and DS Test 6

Ref	Road	BASE YEAR			CORE SCENARIO									SENSITIVITY TEST 6								
		2006 Flow			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	2082	2303	2338	2094	2071	2369	11	-232	31
2	A1042	2022	1995	2151	2081	2071	2109	1798	1796	2215	-283	-275	106	2095	2078	2101	1878	1805	2244	-217	-274	143
3	A1067	1072	965	1227	1090	1142	1410	978	907	1153	-111	-234	-258	1107	1152	1407	973	901	1138	-134	-250	-269
4	A1067	1042	967	1334	1079	1129	1507	520	655	837	-559	-474	-669	1101	1152	1515	494	649	821	-606	-504	-694
5	A11	2421	1705	2330	2603	2193	2419	2543	2112	2404	-60	-81	-15	2628	2209	2434	2581	2156	2418	-48	-53	-16
6	A11	932	702	811	1005	863	926	928	805	794	-76	-58	-132	1025	855	930	948	814	824	-77	-41	-106
7	A1151	1257	855	1377	1453	1069	1451	1268	1081	1423	-185	12	-27	1464	1072	1449	1263	1105	1431	-201	32	-17
8	A1151	896	856	1001	1007	1018	1202	1047	1184	1589	40	166	388	1006	1015	1186	1017	1170	1445	11	155	259
9	A1242	997	647	1236	877	665	1341	781	537	949	-95	-127	-392	878	668	1321	737	535	914	-141	-133	-407
10	A1242	764	447	586	761	489	626	570	407	435	-191	-83	-191	769	491	621	565	405	427	-204	-86	-194
11	A140	1144	894	1270	1252	1013	1349	1267	1029	1384	15	16	35	1270	1022	1347	1282	1035	1387	12	13	40
12	A140	1590	1151	1522	1506	1153	1717	1365	1087	1678	-141	-66	-38	1514	1149	1699	1384	1071	1665	-131	-78	-34
13	A140	1331	1374	1644	1252	1244	1236	1279	1249	1206	27	5	-30	1259	1246	1233	1280	1260	1212	22	14	-21
14	A140	2529	2281	2380	2648	2492	2644	2628	2424	2663	-21	-67	19	2651	2503	2634	2622	2420	2671	-29	-83	37
15	A140	2189	2022	2019	2284	2199	2422	2228	2050	2295	-56	-149	-127	2285	2208	2415	2222	2054	2303	-63	-153	-112
16	A140	1666	1263	1509	1498	1295	1562	1522	1270	1480	23	-25	-82	1500	1295	1550	1515	1272	1475	15	-23	-75
17	A146	3405	2218	3397	3460	2558	3305	3525	2679	3434	65	122	129	3457	2574	3334	3553	2694	3438	96	120	104
18	A146	1472	987	1467	1085	843	1200	1063	902	1194	-22	59	-6	1116	846	1225	1088	884	1190	-28	38	-35
19	A146	719	469	525	703	572	737	719	561	659	15	-11	-78	703	573	746	724	559	668	21	-14	-78
20	A147	2080	1781	1898	2548	2470	2620	2566	2530	2565	18	59	-55	2551	2481	2656	2570	2524	2608	18	43	-47
21	A147	1490	1062	1530	1626	1339	1552	2037	1959	2196	410	620	644	1646	1318	1549	2017	1931	2168	371	613	619
22	A147	2423	1740	2096	2492	1962	2504	2511	2297	2508	19	335	4	2490	1964	2513	2527	2265	2505	37	301	-7
23	A47	3689	2630	3752	3685	2958	3854	3464	2929	3572	-221	-29	-282	3698	2977	3853	3428	2961	3557	-271	-16	-296
24	A47	4128	2429	4111	5499	3340	5296	5326	3808	5729	-172	468	433	5554	3422	5343	5312	3884	5707	-242	462	364
25	A47	4311	2438	3900	5271	3384	5022	4772	3029	4533	-499	-355	-489	5305	3495	5084	4815	3105	4557	-490	-390	-527
26	A47	2399	1541	2129	2600	1928	2226	2398	1771	2122	-202	-158	-104	2602	1969	2223	2485	1834	2099	-117	-136	-124
27	A47	4332	2575	4206	5785	3635	5545	5488	3663	5473	-297	28	-72	5829	3764	5607	5552	3781	5499	-277	17	-108

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28	A47	5055	2904	4853	6585	4117	6401	6272	4019	5971	-312	-98	-429	6615	4266	6464	6311	4140	6018	-303	-126	-447
29	B1108	2127	1641	2168	2471	1854	2283	2462	1750	2319	-10	-104	36	2485	1872	2302	2464	1752	2317	-20	-120	15
30	B1108	1003	844	824	1096	857	982	960	791	956	-136	-66	-26	1103	873	984	983	791	952	-120	-82	-32
31	B1149	933	564	932	1013	649	992	1174	715	1187	162	65	195	1009	650	990	1127	723	1209	118	73	219
32	B1150	951	635	1029	897	740	951	846	531	714	-50	-209	-237	897	737	966	868	529	715	-28	-208	-250
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	#N/A	#N/A	3099	1621	3052	#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	5236	2784	5337	#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	3765	2327	4062	#N/A	#N/A	#N/A
36	Salhouse Rd	984	620	916	1095	788	868	1099	734	1093	4	-54	225	1096	777	861	963	719	1107	-133	-57	246
37	Town House Rd	471	84	248	553	99	246	507	109	244	-46	11	-2	546	98	244	494	110	242	-52	11	-3
38	West End	489	329	592	370	249	454	304	209	340	-66	-40	-114	361	245	455	288	200	324	-73	-45	-131

Table DD.2: 2006 and 2031 Key Road Flows, Base year, Core Scenario DM Test 6 and DS Test 6

Ref	Road	BASE YEAR			CORE SCENARIO									SENSITIVITY TEST 6								
		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	2097	2385	2341	2132	2211	2377	34	-174	36
2	A1042	2022	1995	2151	2194	2147	2141	1933	2036	2203	-262	-111	62	2200	2154	2148	1985	2046	2206	-214	-107	58
3	A1067	1072	965	1227	1139	1221	1384	1024	968	1197	-116	-253	-187	1172	1233	1393	1006	963	1186	-166	-270	-207
4	A1067	1042	967	1334	1001	1279	1590	525	729	898	-477	-550	-692	1036	1307	1591	519	722	879	-518	-585	-712
5	A11	2421	1705	2330	2714	2329	2517	2688	2243	2498	-26	-86	-20	2754	2334	2526	2718	2246	2507	-36	-88	-19
6	A11	932	702	811	1019	903	1104	1026	839	923	7	-64	-181	1048	892	1082	1048	840	947	0	-53	-134
7	A1151	1257	855	1377	1528	1208	1456	1347	1282	1523	-180	73	68	1529	1219	1445	1326	1309	1442	-203	90	-3
8	A1151	896	856	1001	1121	1100	1413	1360	1451	1788	239	351	375	1137	1100	1397	1281	1460	1685	144	360	288
9	A1242	997	647	1236	1209	794	1691	945	590	1161	-264	-204	-530	1211	797	1667	921	589	1130	-290	-208	-537
10	A1242	764	447	586	814	634	718	594	425	466	-220	-209	-252	824	635	718	594	419	456	-230	-216	-262
11	A140	1144	894	1270	1397	1198	1477	1415	1232	1513	18	35	35	1403	1217	1464	1440	1238	1487	37	21	23
12	A140	1590	1151	1522	1620	1354	1847	1521	1248	1806	-100	-106	-41	1585	1352	1842	1527	1249	1792	-58	-104	-50

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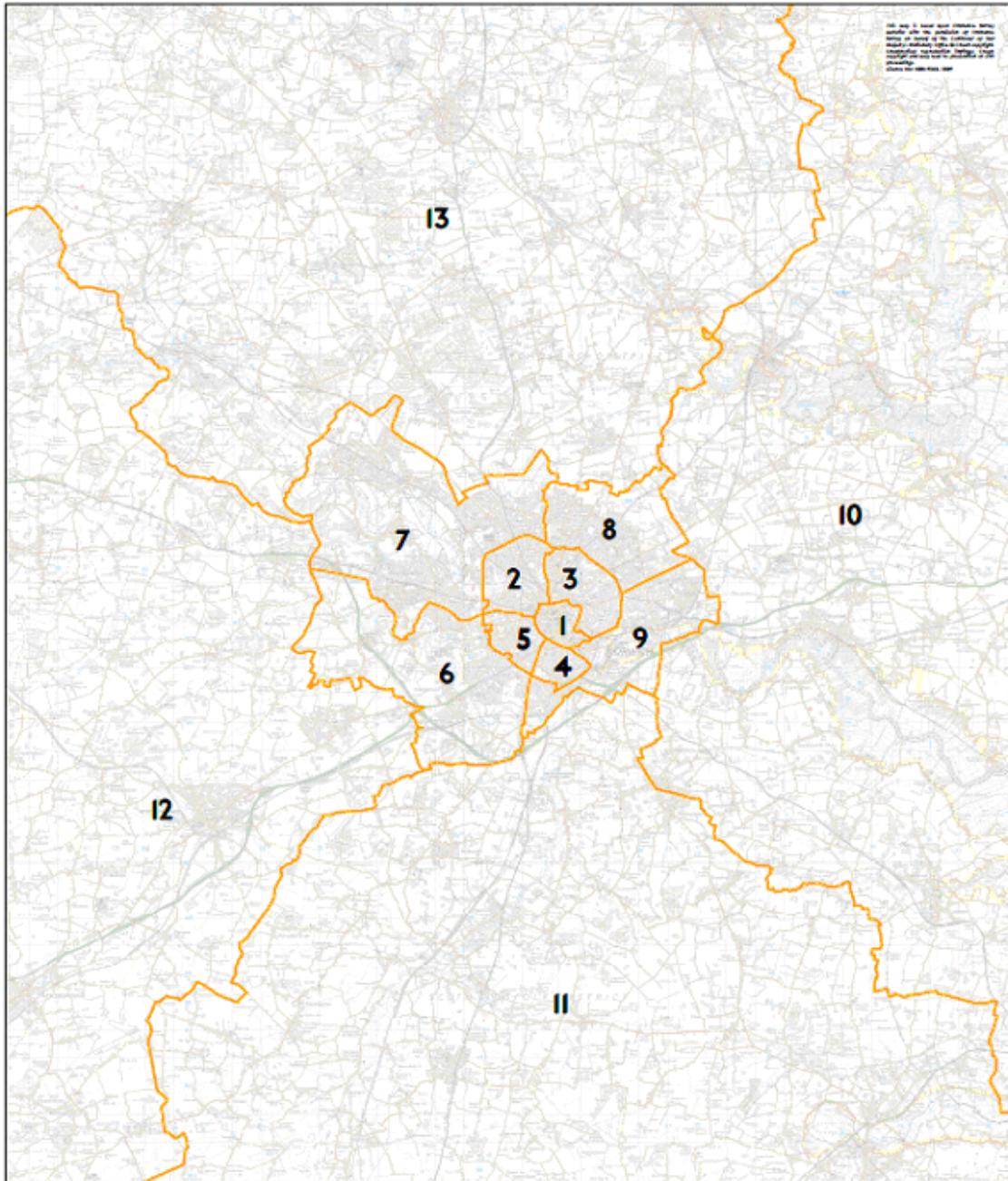
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13	A140	1331	1374	1644	1242	1384	1356	1266	1385	1280	24	1	-76	1229	1373	1334	1269	1375	1279	40	2	-55
14	A140	2529	2281	2380	2833	2736	2690	2759	2675	2774	-73	-61	84	2830	2725	2676	2736	2678	2784	-93	-48	108
15	A140	2189	2022	2019	2367	2391	2482	2316	2293	2456	-51	-98	-26	2362	2381	2479	2325	2301	2459	-38	-81	-20
16	A140	1666	1263	1509	1528	1417	1527	1516	1410	1540	-12	-7	12	1517	1410	1550	1529	1389	1552	12	-21	2
17	A146	3405	2218	3397	3307	2984	3627	3420	3050	3748	113	67	121	3260	2999	3631	3432	3060	3727	171	61	96
18	A146	1472	987	1467	1116	1034	1414	1134	1066	1290	18	32	-124	1149	1051	1427	1159	1075	1291	10	25	-136
19	A146	719	469	525	721	604	798	741	609	772	20	4	-25	727	609	800	745	611	767	18	2	-33
20	A147	2080	1781	1898	2534	2505	2617	2562	2503	2654	29	-3	37	2538	2520	2645	2554	2510	2692	16	-10	47
21	A147	1490	1062	1530	1884	1542	1659	2102	2018	2282	218	476	623	1883	1538	1688	2085	2012	2275	203	474	587
22	A147	2423	1740	2096	2445	2104	2432	2571	2378	2430	126	274	-2	2467	2105	2418	2587	2376	2409	120	271	-9
23	A47	3689	2630	3752	4186	3456	4134	3602	3422	3788	-584	-34	-346	4225	3455	4105	3602	3445	3750	-622	-10	-355
24	A47	4128	2429	4111	5875	4191	5815	5774	4714	6372	-101	523	557	5910	4295	5847	5758	4819	6307	-152	524	460
25	A47	4311	2438	3900	5856	4158	5667	5484	3707	5258	-372	-451	-409	5803	4248	5691	5465	3776	5257	-337	-471	-434
26	A47	2399	1541	2129	2594	2124	2308	2532	2013	2193	-62	-111	-115	2594	2133	2309	2526	2008	2175	-69	-125	-134
27	A47	4332	2575	4206	6078	4630	6235	5926	4603	6217	-152	-27	-18	6059	4806	6266	5918	4756	6191	-141	-50	-75
28	A47	5055	2904	4853	7290	5252	7542	7001	5043	7258	-290	-208	-284	7297	5454	7583	7008	5212	7274	-289	-242	-309
29	B1108	2127	1641	2168	2628	2187	2515	2580	2031	2561	-48	-156	46	2649	2204	2528	2600	2075	2594	-50	-129	66
30	B1108	1003	844	824	1194	884	985	1054	823	960	-140	-60	-25	1181	855	981	1074	831	960	-106	-24	-22
31	B1149	933	564	932	1139	736	1146	1095	843	1307	-44	108	161	1121	732	1129	1064	855	1313	-57	123	185
32	B1150	951	635	1029	1057	836	990	1070	682	924	12	-154	-67	1068	835	1003	1034	679	911	-35	-157	-92
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	#N/A	#N/A	3987	2163	3865	#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	5659	3666	5675	#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	3727	3041	4213	#N/A	#N/A	#N/A
36	Salhouse Rd	984	620	916	1141	940	897	1150	878	1290	10	-63	394	1139	932	903	1115	856	1219	-23	-76	316
37	Town House Rd	471	84	248	651	113	272	579	127	284	-72	14	12	640	114	274	560	126	269	-79	12	-5
38	West End	489	329	592	462	303	477	349	251	387	-113	-52	-90	454	290	506	308	241	382	-146	-49	-125

Appendix EE. Trip Totals (PCUs) by Sector, Sensitivity Test 6

Figure EE.1: NATS Model Sectors



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<p>Mott MacDonald County Hall Marineau Lane Norwich NR1 2SG Tel: 01603 787538 Fax: 01603 787483 Web: www.mottmac.com</p>	<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>SS</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	SS	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>---</td> <td>---</td> <td>---</td> <td>NATS_20064.mxd</td> </tr> <tr> <th>CHECKED BY</th> <td>---</td> <td>---</td> <th>PROJECT TITLE</th> </tr> <tr> <td>---</td> <td>---</td> <td>---</td> <td>Norfolk Northern Distributor Route - HSCB</td> </tr> <tr> <th>APPROVED BY</th> <td>---</td> <td>---</td> <th>SCALE</th> </tr> <tr> <td>---</td> <td>---</td> <td>---</td> <td>Not to Scale</td> </tr> <tr> <td colspan="3"></td> <th>FILE No.</th> </tr> <tr> <td colspan="3"></td> <td>233906</td> </tr> </tbody> </table>	DRAWN BY	INIT.	DATE	GIS FILE REF:	---	---	---	NATS_20064.mxd	CHECKED BY	---	---	PROJECT TITLE	---	---	---	Norfolk Northern Distributor Route - HSCB	APPROVED BY	---	---	SCALE	---	---	---	Not to Scale				FILE No.				233906
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			233906																																																			

Table EE.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 EE.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 EE.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 EE.4: 2016 Varied Parameters 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 EE.5: 2016 Varied Parameters 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 EE.6: 2016 Varied Parameters 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 EE.7: 2016 DM Varied Parameters Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1964	361	829	343	378	289	267	187	471	158	58	194	50	5549
2	403	1073	623	239	170	393	982	402	69	191	122	207	124	4998
3	757	494	770	68	90	96	247	488	528	352	164	130	141	4325
4	418	13	44	194	204	266	123	4	230	81	73	63	42	1755
5	428	195	135	336	503	531	276	24	143	165	130	263	88	3217
6	411	283	40	813	415	1700	795	10	740	245	268	449	123	6292
7	644	1169	382	238	331	1048	3743	853	445	817	449	675	1108	11902
8	579	742	1438	40	35	39	854	910	683	419	160	200	273	6372
9	888	114	517	503	322	891	857	378	1390	414	269	203	174	6920
10	711	242	264	275	126	665	722	652	841	217	436	595	164	5910
11	633	246	159	325	154	514	411	279	646	321	125	544	537	4894
12	969	253	182	359	233	851	624	152	494	895	694	279	333	6318
13	345	281	171	213	92	404	1077	286	289	220	437	398	527	4740
SUM	9150	5466	5554	3946	3053	7687	10978	4625	6969	4495	3385	4200	3684	73192

Table EE.8: 2016 DM Varied Parameters Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2699	180	148	65	77	184	325	306	314	352	411	420	155	5636
2	85	633	467	106	282	289	911	272	172	169	95	184	115	3780
3	144	406	609	125	181	68	365	432	432	211	106	90	88	3257
4	69	48	87	133	164	241	110	44	216	96	104	142	35	1489
5	76	486	144	227	391	240	185	46	133	71	77	123	49	2248
6	187	322	68	440	347	1099	719	15	540	306	312	479	213	5047
7	305	761	291	141	254	713	2723	583	308	424	318	482	669	7972
8	262	326	382	32	29	55	603	1013	717	506	101	122	197	4345
9	336	168	420	185	157	516	658	594	936	568	342	221	106	5207
10	336	163	200	86	43	275	379	463	508	122	342	588	147	3652
11	333	80	91	94	64	260	242	89	307	216	127	320	220	2443
12	340	148	76	117	101	432	419	120	195	558	338	181	229	3254
13	228	119	86	26	47	205	701	195	143	140	259	202	413	2764
SUM	5400	3840	3069	1777	2137	4577	8340	4172	4921	3739	2932	3554	2636	51094

Table EE.9: 2016 DM Varied Parameters Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1675	145	417	126	148	292	529	458	432	760	640	887	490	6999
2	402	792	489	162	227	291	1335	304	111	228	206	225	256	5028
3	491	427	864	136	96	117	525	753	310	257	136	185	195	4492
4	437	16	58	103	156	288	174	30	393	207	232	272	165	2531
5	556	183	135	268	412	482	372	33	64	94	129	198	89	3015
6	174	129	101	471	510	1360	798	53	606	471	477	709	334	6193
7	203	688	449	166	186	847	3028	1074	543	611	353	602	1264	10014
8	185	259	782	23	23	46	823	1077	1043	782	265	158	319	5785
9	417	86	558	350	222	631	781	821	1259	813	500	330	244	7012
10	186	147	285	48	143	249	595	522	403	272	556	751	158	4315
11	81	129	150	71	159	253	430	154	287	390	221	615	315	3255
12	131	173	156	63	248	463	603	212	200	803	709	248	453	4462
13	121	146	153	41	79	110	960	292	124	287	447	293	484	3537
SUM	5059	3320	4597	2028	2609	5429	10953	5783	5775	5975	4871	5473	4766	66638

Table EE.10: 2016 DM Difference in Trip Totals Between Varied Parameters and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-176	-11	0	6	-4	-6	2	6	5	18	4	57	3	-96
2	-35	-24	-12	-19	-6	-21	5	10	-2	3	9	37	11	-44
3	-81	-5	-7	-3	0	3	6	-10	18	-8	22	1	9	-55
4	-37	-1	-3	7	-2	-8	-2	0	3	5	6	4	4	-24
5	-37	4	-1	-9	-10	-16	12	1	-8	3	-1	11	10	-41
6	20	-14	-3	-42	-26	-29	1	-1	5	-5	36	5	7	-46
7	-56	-33	-23	-4	-17	-100	-192	-8	-9	25	54	-5	-26	-394
8	-21	-38	-27	-3	-3	-3	11	4	-16	15	5	7	2	-67
9	-59	6	-23	-2	-9	-24	31	-13	-49	-6	31	33	9	-75
10	3	-29	-54	-18	-8	-3	14	-19	-119	-2	66	113	31	-25
11	-3	-14	-9	-10	-9	-24	-8	-12	-45	-8	6	31	67	-38
12	85	-21	-9	-27	-24	-66	-30	4	-7	12	43	20	16	-4
13	-11	-13	-3	-4	-7	-26	-31	-1	-11	18	68	21	-19	-19
SUM	-408	-193	-174	-128	-125	-323	-181	-39	-235	70	349	335	124	-928

Table EE.11: 2016 DM Difference in Trip Totals Between Varied Parameters and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-114	-13	-10	-5	-9	-18	-23	-15	-18	14	89	68	13	-41
2	-7	-20	2	-2	-5	-6	-27	0	2	4	15	21	7	-16
3	-10	-9	-3	-1	-6	-1	-11	-25	4	1	22	14	9	-16
4	-6	-4	-2	-3	-6	-8	-1	-1	-9	7	7	15	2	-9
5	-7	-9	2	-7	-16	-12	-3	-1	-2	3	13	20	5	-14
6	-22	-12	-1	-8	-17	-57	-5	-1	6	18	39	23	17	-20
7	-15	-24	-1	4	-8	-7	-147	-8	19	23	65	61	25	-13
8	-10	-4	3	0	-1	0	-17	-32	-5	13	19	12	9	-13
9	-23	-3	-6	-6	-6	-1	24	-22	-36	-11	21	43	11	-15
10	-27	-7	-9	-5	-2	-8	-4	-28	-49	-9	65	70	13	0
11	-19	-1	-2	-3	-2	-12	-5	-2	-21	1	4	28	26	-8
12	-11	-6	-1	0	-3	-24	-23	-2	5	33	33	-6	3	-2
13	19	-2	1	-1	0	-10	-29	-20	0	6	44	14	-23	-1
SUM	-252	-114	-27	-37	-81	-164	-271	-157	-104	103	436	383	117	-168

Table EE.12: 2016 DM Difference in Trip Totals Between Varied Parameters and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-135	-27	-45	-14	-27	-24	-58	-43	-50	14	67	152	12	-178
2	-10	-3	16	0	-3	-7	-22	9	-5	-9	-10	-4	15	-33
3	-13	17	11	2	0	-2	-4	-47	1	-35	-14	26	16	-42
4	-17	1	-1	-1	5	-12	6	-1	-19	11	-17	9	3	-33
5	-2	-3	2	-10	-5	-14	-13	0	-4	-8	11	2	6	-38
6	-24	-8	-4	-5	-33	-19	-45	-5	13	8	-6	16	4	-108
7	-5	0	1	3	3	14	-126	-65	27	24	26	49	-2	-51
8	6	16	7	2	1	2	-90	-33	25	3	-2	24	13	-26
9	-12	6	13	3	2	9	32	-28	-17	-51	-5	14	9	-25
10	-5	-1	-30	0	1	-6	7	-54	-42	-22	53	90	5	-4
11	-1	1	-5	-2	1	-9	-16	0	2	-20	-1	12	22	-16
12	-7	-9	-20	1	-10	13	-37	-11	23	26	29	5	6	9
13	-11	-8	0	-2	-7	0	-33	-23	-4	16	68	35	-38	-7
SUM	-236	-18	-55	-23	-72	-55	-399	-301	-50	-43	199	430	71	-552

Table EE.13: 2031 Varied Parameters 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 EE.14: 2031 Varied Parameters 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 EE.15: 2031 Varied Parameters 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	11657
8	211	286	920	25	26	52	1044	1279	1171	878	305	152	345	6694
9	510	95	645	408	260	717	857	974	1487	984	580	359	266	8142
10	224	174	372	56	167	295	668	662	513	337	576	754	172	4970
11	96	152	183	86	187	305	515	177	328	466	258	693	338	3784
12	163	213	203	72	302	520	730	251	202	874	786	274	500	5090
13	157	182	180	51	101	126	1151	361	147	307	441	295	597	4096
SUM	6302	3968	5530	2431	3188	6403	13106	7007	6765	6830	5414	5786	5327	78057

Table EE.16: 2031 DM Varied Parameters Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2343	445	1028	426	463	350	314	231	584	199	80	244	64	6771
2	454	1341	760	282	204	457	1181	485	80	226	158	283	156	6067
3	858	619	978	80	103	107	296	613	665	441	200	136	181	5277
4	476	15	50	265	264	307	139	5	290	104	112	73	49	2149
5	490	239	158	435	643	646	322	27	168	187	175	311	113	3914
6	483	339	46	956	490	2067	944	13	811	269	356	539	142	7455
7	704	1328	414	240	359	1146	4475	962	465	958	578	825	1294	13748
8	712	817	1688	43	36	38	942	1062	787	511	188	231	351	7406
9	1047	134	619	634	383	1007	974	442	1644	492	345	245	210	8176
10	837	257	279	293	131	692	813	755	934	252	572	737	235	6787
11	806	263	159	384	173	588	453	277	707	406	161	682	700	5759
12	1132	279	181	387	263	968	742	158	515	1051	871	377	413	7337
13	376	312	192	218	95	402	1273	324	301	269	573	495	616	5446
SUM	10718	6388	6552	4643	3607	8775	12868	5354	7951	5365	4369	5178	4524	86292

Table EE.17: 2031 DM Varied Parameters Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3187	210	173	75	88	211	373	350	367	422	595	526	195	6772
2	99	764	568	128	330	341	1073	313	204	201	132	231	144	4528
3	166	491	731	149	213	80	432	497	515	251	151	111	111	3898
4	77	56	102	158	196	284	131	49	257	119	138	177	43	1787
5	86	570	168	274	469	282	216	52	159	85	112	162	60	2695
6	213	373	81	522	409	1278	836	18	650	374	411	561	262	5988
7	355	884	339	165	291	836	3149	663	371	508	442	610	809	9422
8	303	378	450	37	33	61	685	1190	830	615	136	142	244	5104
9	386	197	503	219	185	612	777	673	1095	667	431	289	129	6163
10	384	185	228	98	47	309	435	533	562	138	493	705	183	4300
11	397	92	104	110	73	300	283	99	355	249	171	391	279	2903
12	412	169	87	139	116	489	474	135	228	662	432	215	271	3829
13	256	138	101	29	54	230	804	225	165	167	358	264	464	3255
SUM	6321	4507	3635	2103	2504	5313	9668	4797	5758	4458	4002	4384	3194	60644

Table EE.18: 2031 DM Varied Parameters Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1955	161	464	139	164	325	570	587	505	919	821	1098	587	8295
2	479	989	595	189	276	353	1554	345	127	234	224	261	304	5930
3	600	520	1066	161	114	132	577	888	377	274	143	230	223	5305
4	522	19	68	137	200	320	185	32	484	240	264	337	171	2979
5	653	221	158	333	522	557	411	37	77	101	170	237	99	3576
6	202	155	110	551	597	1603	915	56	694	496	515	891	391	7176
7	230	818	525	190	212	1012	3492	1217	626	678	401	776	1416	11593
8	218	296	929	25	24	49	923	1276	1206	900	259	179	393	6677
9	501	98	670	426	262	717	842	952	1532	886	576	388	278	8128
10	201	152	315	57	156	277	655	586	457	308	676	955	186	4981
11	94	146	172	92	191	293	465	170	348	460	264	760	370	3825
12	148	195	167	75	284	538	689	230	240	898	830	306	519	5119
13	130	162	175	42	81	122	1092	330	134	329	586	386	532	4101
SUM	5933	3932	5414	2417	3083	6298	12370	6706	6807	6723	5729	6804	5469	77685

Table EE.19: 2031 DM Difference in Trip Totals Between Varied Parameters and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-260	-8	15	20	1	-5	-8	13	17	29	16	80	8	-82
2	-80	5	-13	-30	-10	-44	0	15	-5	-2	21	78	19	-46
3	-158	13	27	-6	-6	-5	5	10	48	6	28	-18	23	-33
4	-78	-2	-6	36	12	-24	-13	0	13	11	30	1	3	-17
5	-76	6	-7	16	24	-12	3	-1	-15	-6	15	8	20	-25
6	18	-26	-6	-61	-32	31	14	0	-43	-25	82	15	5	-28
7	-113	-76	-57	-40	-49	-192	-138	-40	-63	52	117	41	-24	-582
8	21	-89	-25	-6	-7	-10	-30	3	-27	44	6	13	41	-66
9	-89	5	-19	25	-18	-68	6	-15	-45	5	63	49	16	-85
10	19	-55	-87	-45	-24	-64	2	-2	-168	0	144	191	82	-7
11	51	-42	-40	-9	-15	-42	-44	-62	-96	25	23	90	154	-7
12	97	-41	-42	-65	-33	-94	-18	-12	-65	47	114	86	48	22
13	-33	-24	-8	-31	-18	-88	2	-4	-41	37	141	67	-8	-8
SUM	-681	-334	-268	-196	-175	-617	-219	-95	-490	223	800	701	387	-964

Table EE.20: 2031 DM Difference in Trip Totals Between Varied Parameters and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-182	-22	-17	-9	-15	-32	-44	-31	-30	21	211	107	27	-16
2	-11	-26	10	-3	-15	-13	-39	-11	1	6	37	38	16	-10
3	-20	-7	-4	-2	-11	-3	-13	-43	3	3	50	21	18	-8
4	-13	-6	-4	-6	-9	-14	-1	-4	-13	13	23	26	4	-4
5	-14	-23	-3	-7	-20	-17	-7	-3	-3	5	37	41	7	-7
6	-39	-27	-1	-14	-27	-81	-15	-1	20	36	89	26	33	-1
7	-29	-51	-7	1	-21	-16	-236	-26	30	37	143	116	49	-10
8	-23	-14	2	0	-2	-2	-38	-31	-14	36	40	15	24	-7
9	-46	-9	-7	-10	-10	4	39	-52	-55	-14	53	81	18	-8
10	-49	-17	-22	-11	-7	-25	-16	-48	-94	-17	172	110	27	3
11	-24	-4	-7	-6	-5	-22	-10	-8	-31	3	28	51	52	17
12	-7	-14	-6	-1	-7	-49	-46	-7	5	57	76	-2	7	6
13	6	-7	0	-3	-2	-23	-61	-28	-2	11	107	43	-39	2
SUM	-451	-227	-66	-71	-151	-293	-487	-293	-183	197	1066	673	243	-43

Table EE.21: 2031 DM Difference in Trip Totals Between Varied Parameters and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-203	-47	-88	-28	-48	-52	-119	3	-64	62	144	243	44	-153
2	-13	36	28	-5	0	-5	-29	5	-8	-36	-27	-1	30	-25
3	-4	29	42	0	-2	-9	-32	-42	13	-60	-31	47	20	-29
4	-21	1	-2	12	19	-27	-8	-3	-5	17	-25	33	-11	-20
5	-8	-2	-1	1	22	-30	-37	-1	-3	-16	32	11	6	-26
6	-34	-8	-13	-10	-47	5	-51	-10	14	-27	-43	94	20	-110
7	-17	8	-7	-3	-4	32	-161	-93	26	18	20	144	-27	-64
8	7	10	9	0	-2	-3	-121	-3	35	22	-46	27	48	-17
9	-9	3	25	18	2	0	-15	-22	45	-98	-4	29	12	-14
10	-23	-22	-57	1	-11	-18	-13	-76	-56	-29	100	201	14	11
11	-2	-6	-11	6	4	-12	-50	-7	20	-6	6	67	32	41
12	-15	-18	-36	3	-18	18	-41	-21	38	24	44	32	19	29
13	-27	-20	-5	-9	-20	-4	-59	-31	-13	22	145	91	-65	5
SUM	-369	-36	-116	-14	-105	-105	-736	-301	42	-107	315	1018	142	-372

Table EE.22: 2016 DS Varied Parameters Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1986	372	832	328	376	294	274	182	448	118	60	205	48	5523
2	404	1089	639	234	171	412	981	406	69	157	120	208	109	4999
3	749	520	806	62	85	102	259	506	544	261	159	133	131	4317
4	426	12	42	195	201	271	122	3	230	80	72	63	39	1756
5	444	191	135	343	504	540	268	23	143	145	133	269	79	3217
6	439	291	41	840	423	1717	808	10	665	237	274	443	103	6291
7	658	1163	388	213	328	1036	3541	861	529	1172	436	634	973	11932
8	552	791	1476	39	34	43	892	833	655	346	157	257	331	6406
9	888	120	536	497	312	846	895	368	1368	357	232	202	302	6923
10	657	222	245	266	117	644	1007	523	740	188	420	625	272	5926
11	651	244	154	335	155	526	404	287	571	310	126	544	588	4895
12	1014	249	169	361	232	804	592	182	468	1000	674	254	326	6325
13	297	239	150	171	80	371	940	273	605	259	520	378	470	4753
SUM	9165	5503	5613	3884	3018	7606	10983	4457	7035	4630	3383	4215	3771	73263

Table EE.23: 2016 DS Varied Parameters Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2698	179	143	62	76	185	331	307	301	345	407	438	152	5624
2	83	635	465	107	283	294	911	278	172	161	95	187	110	3781
3	144	411	611	123	179	68	370	439	430	199	107	90	86	3257
4	67	47	82	136	164	243	109	43	216	100	104	143	36	1490
5	73	484	142	233	392	242	185	46	133	67	78	126	47	2248
6	187	322	68	446	348	1109	724	16	518	319	311	475	205	5048
7	301	753	285	140	252	712	2602	596	339	525	314	480	672	7971
8	260	332	387	32	29	56	615	974	702	510	107	131	211	4346
9	339	172	425	187	158	506	663	588	923	548	339	219	141	5208
10	326	149	180	87	39	273	443	421	470	117	336	614	198	3653
11	337	79	90	94	63	256	238	94	298	207	126	317	247	2446
12	337	146	75	117	100	426	414	127	189	573	334	173	245	3256
13	218	107	80	23	44	188	657	198	191	204	272	198	385	2765
SUM	5370	3816	3033	1787	2127	4558	8262	4127	4882	3875	2930	3591	2735	51093

Table EE.24: 2016 DS Varied Parameters Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1613	145	380	108	145	300	542	548	406	739	653	971	473	7023
2	378	798	498	158	230	300	1344	337	118	201	204	232	233	5031
3	474	432	874	126	95	117	544	796	316	226	137	178	178	4493
4	431	16	54	102	156	301	173	30	380	192	224	280	193	2532
5	564	183	135	270	410	487	374	36	63	88	127	202	78	3017
6	179	131	103	482	519	1374	808	60	554	474	482	716	309	6191
7	186	672	442	164	181	847	2829	1145	593	926	339	569	1123	10016
8	172	265	768	22	22	47	922	1009	1032	699	286	204	342	5790
9	402	87	548	342	224	563	868	798	1204	705	433	345	494	7013
10	158	125	222	44	135	242	802	447	344	233	553	821	191	4317
11	77	129	145	69	158	250	428	162	258	377	214	595	398	3260
12	122	175	158	63	246	440	577	269	189	827	684	227	487	4464
13	113	133	142	29	69	91	861	319	194	438	468	269	413	3539
SUM	4869	3291	4469	1979	2590	5359	11072	5956	5651	6125	4804	5609	4912	66686

Table EE.25: 2016 DS Difference in Trip Totals Between Varied Parameters and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-154	0	3	-9	-6	-1	9	1	-18	-22	6	68	1	-122
2	-34	-8	4	-24	-5	-2	4	14	-2	-31	7	38	-4	-43
3	-89	21	29	-9	-5	9	18	8	34	-99	17	4	-1	-63
4	-29	-2	-5	8	-5	-3	-3	-1	3	4	5	4	1	-23
5	-21	0	-1	-2	-9	-7	4	0	-8	-17	2	17	1	-41
6	48	-6	-2	-15	-18	-12	14	-1	-70	-13	42	-1	-13	-47
7	-42	-39	-17	-29	-20	-112	-394	0	75	380	41	-46	-161	-364
8	-48	11	11	-4	-4	1	49	-73	-44	-58	2	64	60	-33
9	-59	12	-4	-8	-19	-69	69	-23	-71	-63	-6	32	137	-72
10	-51	-49	-73	-27	-17	-24	299	-148	-220	-31	50	143	139	-9
11	15	-16	-14	0	-8	-12	-15	-4	-120	-19	7	31	118	-37
12	130	-25	-22	-25	-25	-113	-62	34	-33	117	23	-5	9	3
13	-59	-55	-24	-46	-19	-59	-168	-14	305	57	151	1	-76	-6
SUM	-393	-156	-115	-190	-160	-404	-176	-207	-169	205	347	350	211	-857

Table EE.26: 2016 DS Difference in Trip Totals Between Varied Parameters and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-115	-14	-15	-8	-10	-17	-17	-14	-31	7	85	86	10	-53
2	-9	-18	0	-1	-4	-1	-27	6	2	-4	15	24	2	-15
3	-10	-4	-1	-3	-8	-1	-6	-18	2	-11	23	14	7	-16
4	-8	-5	-7	0	-6	-6	-2	-2	-9	11	7	16	3	-8
5	-10	-11	0	-1	-15	-10	-3	-1	-2	-1	14	23	3	-14
6	-22	-12	-1	-2	-16	-47	0	0	-16	31	38	19	9	-19
7	-19	-32	-7	3	-10	-8	-268	5	50	124	61	59	28	-14
8	-12	2	8	0	-1	1	-5	-71	-20	17	25	21	23	-12
9	-20	1	-1	-4	-5	-11	29	-28	-49	-31	18	41	46	-14
10	-37	-21	-29	-4	-6	-10	60	-70	-87	-14	59	96	64	1
11	-15	-2	-3	-3	-3	-16	-9	3	-30	-8	3	25	53	-5
12	-14	-8	-2	0	-4	-30	-28	5	-1	48	29	-14	19	0
13	9	-14	-5	-4	-3	-27	-73	-17	48	70	57	10	-51	0
SUM	-282	-138	-63	-27	-91	-183	-349	-202	-143	239	434	420	216	-169

Table EE.27: 2016 DS Difference in Trip Totals Between Varied Parameters and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-197	-27	-82	-32	-30	-16	-45	47	-76	-7	80	236	-5	-154
2	-34	3	25	-4	0	2	-13	42	2	-36	-12	3	-8	-30
3	-30	22	21	-8	-1	-2	15	-4	7	-66	-13	19	-1	-41
4	-23	1	-5	-2	5	1	5	-1	-32	-4	-25	17	31	-32
5	6	-3	2	-8	-7	-9	-11	3	-5	-14	9	6	-5	-36
6	-19	-6	-2	6	-24	-5	-35	2	-39	11	-1	23	-21	-110
7	-22	-16	-6	1	-2	14	-325	6	77	339	12	16	-143	-49
8	-7	22	-7	1	0	3	9	-101	14	-80	19	70	36	-21
9	-27	7	3	-5	4	-59	119	-51	-72	-159	-72	29	259	-24
10	-33	-23	-93	-4	-7	-13	214	-129	-101	-61	50	160	38	-2
11	-5	1	-10	-4	0	-12	-18	8	-27	-33	-8	-8	105	-11
12	-16	-7	-18	1	-12	-10	-63	46	12	50	4	-16	40	11
13	-19	-21	-11	-14	-17	-19	-132	4	66	167	89	11	-109	-5
SUM	-426	-47	-183	-72	-91	-125	-280	-128	-174	107	132	566	217	-504

Table EE.28: 2031 DS Varied Parameters Trip Totals, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2391	455	1033	398	452	351	325	228	552	152	82	255	62	6736
2	460	1361	786	271	202	477	1181	498	82	188	150	275	139	6070
3	860	643	1025	70	95	109	312	638	695	330	191	134	172	5274
4	489	14	48	263	255	311	139	4	288	107	111	73	48	2150
5	513	234	159	439	643	653	316	27	165	171	177	317	102	3916
6	525	337	46	976	497	2078	963	13	740	271	361	527	122	7456
7	732	1315	430	221	354	1150	4182	995	580	1338	572	776	1138	13783
8	648	872	1706	39	34	41	1035	993	760	406	182	322	410	7448
9	1044	140	637	616	363	948	1033	436	1609	430	292	261	377	8186
10	764	234	267	291	122	672	1158	602	806	219	558	788	327	6808
11	825	255	155	393	171	597	446	299	626	398	162	682	748	5757
12	1207	271	173	386	264	920	690	204	490	1156	833	337	411	7342
13	315	273	175	175	84	376	1099	318	649	302	670	482	540	5458
SUM	10773	6404	6640	4538	3536	8683	12879	5255	8042	5468	4341	5229	4596	86384

Table EE.29: 2031 DS Varied Parameters Trip Totals, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3141	207	166	71	87	211	384	360	351	427	589	557	203	6754
2	96	763	560	126	329	344	1078	327	204	195	132	235	139	4528
3	164	495	730	143	207	80	442	515	510	240	150	113	110	3899
4	75	54	93	163	195	285	131	48	256	124	137	179	48	1788
5	83	566	165	280	468	284	218	53	159	81	112	168	59	2696
6	211	374	80	528	408	1286	844	19	623	388	407	562	257	5987
7	350	873	333	164	288	828	2990	686	418	639	440	614	802	9425
8	303	398	451	36	33	63	722	1108	817	607	144	163	263	5108
9	387	203	501	221	185	593	788	680	1072	639	418	294	180	6161
10	372	168	204	100	42	311	520	478	510	131	479	747	238	4300
11	392	90	100	110	71	294	283	107	341	238	169	392	316	2903
12	406	166	86	138	115	482	471	147	220	677	426	205	292	3831
13	246	124	93	27	50	211	754	227	225	238	376	254	430	3255
SUM	6226	4481	3562	2107	2478	5272	9625	4755	5706	4624	3979	4483	3337	60635

Table EE.30: 2031 DS Varied Parameters Trip Totals, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1904	166	433	124	161	341	612	676	469	821	860	1176	586	8329
2	438	996	610	185	277	360	1572	380	133	219	227	266	268	5931
3	562	534	1084	147	112	134	612	916	379	251	143	223	208	5305
4	518	19	62	135	198	332	189	31	476	225	255	331	208	2979
5	671	218	158	334	512	567	413	40	76	98	169	237	84	3577
6	210	156	114	570	616	1624	923	63	630	511	519	871	366	7173
7	212	800	523	193	211	1011	3256	1284	691	1025	397	720	1271	11594
8	203	315	938	25	24	52	1007	1182	1188	785	296	269	397	6681
9	478	102	656	420	264	641	952	923	1462	795	502	412	524	8131
10	173	137	248	55	154	277	874	492	391	267	684	1019	213	4984
11	91	149	166	91	193	294	478	176	303	444	256	724	466	3831
12	138	201	167	76	286	517	660	292	216	930	791	279	566	5119
13	124	149	168	33	73	102	983	355	211	483	594	365	462	4102
SUM	5722	3942	5327	2388	3081	6252	12531	6810	6625	6854	5693	6892	5619	77736

Table EE.31: 2031 DS Difference in Trip Totals Between Varied Parameters and Reference Case, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-212	2	20	-8	-10	-4	3	10	-15	-18	18	91	6	-117
2	-74	25	13	-41	-12	-24	0	28	-3	-40	13	70	2	-43
3	-156	37	74	-16	-14	-3	21	35	78	-105	19	-20	14	-36
4	-65	-3	-8	34	3	-20	-13	-1	11	14	29	1	2	-16
5	-53	1	-6	20	24	-5	-3	-1	-18	-22	17	14	9	-23
6	60	-28	-6	-41	-25	42	33	0	-114	-23	87	3	-15	-27
7	-85	-89	-41	-59	-54	-188	-431	-7	52	432	111	-8	-180	-547
8	-43	-34	-7	-10	-9	-7	63	-66	-54	-61	0	104	100	-24
9	-92	11	-1	7	-38	-127	65	-21	-80	-57	10	65	183	-75
10	-54	-78	-99	-47	-33	-84	347	-155	-296	-33	130	242	174	14
11	70	-50	-44	0	-17	-33	-51	-40	-177	17	24	90	202	-9
12	172	-49	-50	-66	-32	-142	-70	34	-90	152	76	46	46	27
13	-94	-63	-25	-74	-29	-114	-172	-10	307	70	238	54	-84	4
SUM	-626	-318	-180	-301	-246	-709	-208	-194	-399	326	772	752	459	-872

Table EE.32: 2031 DS Difference in Trip Totals Between Varied Parameters and Reference Case, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-228	-25	-24	-13	-16	-32	-33	-21	-46	26	205	138	35	-34
2	-14	-27	2	-5	-16	-10	-34	3	1	0	37	42	11	-10
3	-22	-3	-5	-8	-17	-3	-3	-25	-2	-8	49	23	17	-7
4	-15	-8	-13	-1	-10	-13	-1	-5	-14	18	22	28	9	-3
5	-17	-27	-6	-1	-21	-15	-5	-2	-3	1	37	47	6	-6
6	-41	-26	-2	-8	-28	-73	-7	0	-7	50	85	27	28	-2
7	-34	-62	-13	0	-24	-24	-395	-3	77	168	141	120	42	-7
8	-23	6	3	-1	-2	0	-1	-113	-27	28	48	36	43	-3
9	-45	-3	-9	-8	-10	-15	50	-45	-78	-42	40	86	69	-10
10	-61	-34	-46	-9	-12	-23	69	-103	-146	-24	158	152	82	3
11	-29	-6	-11	-6	-7	-28	-10	0	-45	-8	26	52	89	17
12	-13	-17	-7	-2	-8	-56	-49	5	-3	72	70	-12	28	8
13	-4	-21	-8	-5	-6	-42	-111	-26	58	82	125	33	-73	2
SUM	-546	-253	-139	-67	-177	-334	-530	-335	-235	363	1043	772	386	-52

Table EE.33: 2031 DS Difference in Trip Totals Between Varied Parameters and Reference Case, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-254	-42	-119	-43	-51	-36	-77	92	-100	-36	183	321	43	-119
2	-54	43	43	-9	1	2	-11	40	-2	-51	-24	4	-6	-24
3	-42	43	60	-14	-4	-7	3	-14	15	-83	-31	40	5	-29
4	-25	1	-8	10	17	-15	-4	-4	-13	2	-34	27	26	-20
5	10	-5	-1	2	12	-20	-35	2	-4	-19	31	11	-9	-25
6	-26	-7	-9	9	-28	26	-43	-3	-50	-12	-39	74	-5	-113
7	-35	-10	-9	0	-5	31	-397	-26	91	365	16	88	-172	-63
8	-8	29	18	0	-2	0	-37	-97	17	-93	-9	117	52	-13
9	-32	7	11	12	4	-76	95	-51	-25	-189	-78	53	258	-11
10	-51	-37	-124	-1	-13	-18	206	-170	-122	-70	108	265	41	14
11	-5	-3	-17	5	6	-11	-37	-1	-25	-22	-2	31	128	47
12	-25	-12	-36	4	-16	-3	-70	41	14	56	5	5	66	29
13	-33	-33	-12	-18	-28	-24	-168	-6	64	176	153	70	-135	6
SUM	-580	-26	-203	-43	-107	-151	-575	-197	-140	24	279	1106	292	-321

Appendix FF. PCU Kilometres by Sector, Sensitivity Test 6

Table FF.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 FF.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 FF.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 FF.4: 2016 DM Varied Parameters PCU Kilometres, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3032	993	1825	623	746	1322	1782	860	1506	4017	996	10013	1059	28774
2	1220	2280	1740	601	549	1755	4219	1778	399	4106	7795	13466	3011	42919
3	1681	1398	1507	223	321	604	1500	1703	2264	6890	8457	5612	2815	34975
4	746	63	167	238	380	1231	1583	24	589	1666	3063	3104	1383	14237
5	967	654	457	728	611	1740	1790	144	616	3960	6396	10294	2638	30995
6	1435	1001	232	3613	1079	4778	4970	117	9180	6413	14475	13879	3298	64470
7	4222	4363	2351	2606	1695	6004	14946	4589	6467	22227	29540	30666	15292	144968
8	2419	3692	5098	260	221	375	4534	3005	3389	7302	8953	14154	5759	59161
9	2844	691	1918	1604	1114	8386	14361	1555	6266	6631	14741	13148	4453	77712
10	11004	3814	4169	4833	2134	14626	18977	11196	12106	5030	26181	44670	8972	167712
11	21377	7124	4886	7449	4596	15911	17557	7859	18407	20560	4314	30849	38825	199714
12	36122	8472	9088	12292	6290	25672	23074	6140	16987	82027	51262	21063	18383	316872
13	7401	6446	3287	6168	2485	12108	18876	5181	6469	7040	42161	22628	17269	157519
SUM	94470	40991	36725	41238	22221	94512	128169	44151	84645	177869	218334	233546	123157	1340028

Table FF.5: 2016 DM Varied Parameters PCU Kilometres, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4188	533	310	132	194	916	2252	1386	1356	6653	25562	20874	4233	68589
2	264	1330	1246	445	868	1378	3759	1137	1003	3120	6456	10211	2653	33870
3	313	1126	1243	387	602	429	2120	1498	1759	3348	6228	4802	2438	26293
4	155	196	303	171	307	1116	1221	256	605	2105	2922	5849	1059	16265
5	183	1536	460	429	491	888	1112	261	507	1396	4656	6557	1174	19650
6	946	1343	400	2354	1045	3505	4402	140	5754	7602	13527	16202	7207	64427
7	1957	3303	1712	1443	1453	3805	11746	3081	4330	10405	20434	26681	11680	102030
8	1167	1495	1341	189	169	442	3930	3001	3374	6490	4420	6500	3985	36503
9	1440	964	1558	523	516	5094	9486	2984	4300	7965	11915	13693	3176	63614
10	5390	2981	2924	1729	904	6510	9333	5709	7162	2494	37698	51430	5977	140241
11	16483	4452	3960	2207	2465	8705	11693	3567	9038	13003	11733	28795	19850	135951
12	12270	7717	3305	3781	3441	11874	17578	6329	9522	48600	29471	6563	10965	171416
13	4555	2192	1844	730	1009	6364	11414	3430	3588	5685	25585	12977	12244	91617
SUM	49311	29168	20606	14520	13464	51026	90046	32779	52298	118866	200607	211134	86641	970466

Table FF.6: 2016 DM Varied Parameters PCU Kilometres, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2475	476	1010	277	392	1351	3713	2454	2068	12763	27753	42704	12802	110238
2	1403	1633	1184	631	709	1284	6183	1525	615	3919	7180	7310	6130	39706
3	1125	1154	1969	453	340	644	3565	2771	1025	4205	4835	10459	5074	37619
4	861	86	216	145	295	1448	2126	193	985	3907	6507	11347	5262	33378
5	1369	652	475	531	547	1599	2478	189	255	1690	6307	6708	2536	25336
6	976	601	707	3016	1860	4063	5169	542	7312	11830	17242	25373	10788	89479
7	1281	3289	2545	1681	1198	4450	13147	6585	7547	16021	18477	28120	20416	124757
8	894	1201	2594	147	143	384	5411	3293	5135	12152	8391	9452	6504	55701
9	1736	534	2329	1005	744	7197	13774	4060	4739	12308	17714	13341	6025	85506
10	3986	3373	6057	1191	3874	6294	15877	8148	5806	5992	38057	62629	5821	167105
11	2164	6146	5264	2903	6631	9518	24054	7267	12565	25556	10361	46885	26270	185584
12	6445	7776	5836	3306	8607	13517	22835	12698	10918	56239	47401	10311	22743	228632
13	2861	3148	3049	1370	2204	2964	13405	5859	3483	12416	38979	18119	14860	122717
SUM	27576	30069	33235	16656	27544	54713	131737	55584	62453	178998	249204	292758	145231	1305758

Table FF.7: 2016 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	278	38	185	37	74	231	396	204	302	1447	282	5815	422	9711
2	1	57	38	-5	30	76	399	601	40	277	2168	6079	620	10381
3	12	93	17	-10	33	91	161	500	360	705	3685	1514	431	7592
4	-59	-3	14	0	1	105	217	0	64	222	29	393	240	1223
5	17	35	28	6	71	218	361	27	65	337	791	2180	478	4614
6	-13	-59	-15	49	61	447	1046	27	2779	372	6602	2822	373	14491
7	283	157	92	472	113	833	1746	1002	2403	5571	11546	9606	1764	35588
8	134	1092	1298	26	33	43	825	712	1304	1360	2384	4311	1315	14837
9	-168	53	100	95	23	1966	3091	553	1348	801	4406	5626	1031	18925
10	-65	-90	-753	-20	-13	2352	3269	3300	1388	852	8332	19853	3226	41631
11	2146	38	219	417	846	1518	2220	3414	2614	3620	1266	8716	10791	37825
12	7438	388	452	861	697	2852	2964	1891	4562	10726	14624	5400	5069	57924
13	374	189	55	428	170	1825	1811	1029	1335	1953	15371	6925	1569	33034
SUM	10378	1988	1730	2356	2139	12557	18506	13260	18564	28243	71486	79240	27329	287776

Table FF.8: 2016 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	258	-8	-19	-20	-26	-23	92	270	66	1136	11456	10102	748	24032
2	1	-64	3	-30	7	-43	167	259	80	344	2378	3535	572	7209
3	-24	-38	-23	-27	16	17	127	355	190	437	3116	2147	562	6855
4	-13	-13	-7	-17	-15	54	111	16	6	227	889	2423	156	3817
5	-20	-88	22	-27	15	73	140	14	25	202	2069	3665	216	6306
6	-39	-116	12	149	14	361	921	4	1567	1593	5852	5739	1815	17872
7	157	194	132	143	203	612	1124	598	1092	2223	10267	11286	2450	30481
8	222	329	371	35	20	51	915	765	886	1935	2387	2288	1183	11387
9	126	17	139	1	15	1532	2086	729	811	1925	4663	6984	1032	20060
10	-83	79	160	-50	-23	679	1348	1194	1015	242	13887	13837	1749	34034
11	1370	345	334	88	145	1002	1714	963	1498	1813	2247	7640	4871	24030
12	1875	488	514	534	559	1362	1828	1340	2448	6540	7529	2357	2804	30178
13	53	146	181	-2	86	444	840	489	696	1342	9691	5039	809	19814
SUM	3883	1271	1819	777	1016	6121	11413	6996	10380	19959	76431	77042	18967	236075

Table FF.9: 2016 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	-18	-116	-406	-76	-87	-141	-242	-33	-161	492	9472	17640	1047	27371
2	-27	-108	1	-73	5	-103	-25	66	-90	-81	587	831	834	1817
3	-44	-68	-120	-32	13	-27	-22	427	29	-439	220	4366	741	5044
4	170	-5	-19	-14	-10	204	43	13	-104	48	43	2868	-41	3196
5	-163	-37	-35	-53	29	114	338	-31	-29	-178	2860	2399	286	5500
6	147	-2	43	217	228	445	1153	36	1882	1676	2881	8064	2206	18976
7	207	300	239	297	182	558	1507	189	1817	2632	5186	10873	2664	26651
8	242	191	610	21	27	58	176	691	1301	3614	2926	4360	1408	15625
9	363	58	221	121	87	2656	3501	808	599	1270	5632	4670	1262	21248
10	635	-67	-346	-1	135	107	2842	404	-17	198	13923	22148	1541	41502
11	394	396	260	34	248	492	2651	782	2209	2477	2632	12712	5365	30652
12	1283	474	84	322	223	1466	2259	1410	2380	12405	11509	1553	4465	39833
13	489	-59	109	-90	-162	140	689	393	354	2620	14684	7682	912	27761
SUM	3678	957	641	673	918	5969	14870	5155	10170	26734	72555	100166	22690	265176

Table FF.10: 2031 DM Varied Parameters PCU Kilometres, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3621	1253	2318	795	935	1586	2099	1082	1877	5012	1434	14707	1453	38172
2	1365	2914	2165	720	673	2062	5154	2212	485	4882	11282	21812	3881	59607
3	1903	1770	1998	265	371	667	1794	2164	2927	8819	12158	7100	3645	45581
4	867	76	192	325	506	1428	1816	30	737	2124	5299	4235	1705	19340
5	1139	818	541	948	806	2125	2123	170	715	4435	9912	13077	3588	40397
6	1771	1261	273	4363	1305	5857	5976	150	10182	7145	21872	18361	3821	82337
7	5931	4888	2568	2674	1842	6599	17891	5197	6939	27920	45398	43856	18452	190155
8	2704	4071	6059	281	229	380	5084	3530	3901	9059	12038	20541	7702	75579
9	3345	823	2317	1945	1320	9285	16254	1834	7223	7967	20604	19448	5475	97840
10	12323	4071	4362	5156	2194	15051	21680	12928	12986	5874	37695	65282	14304	213906
11	27012	7846	5066	8778	5351	18841	20009	8066	20465	27210	5868	44326	53759	252597
12	42447	9700	9579	13780	7291	30471	27785	6872	18341	95756	70780	29958	23625	386385
13	8072	7186	3645	6340	2560	12368	22476	5957	6786	9018	62918	30622	20263	198211
SUM	112500	46677	41083	46370	25383	106720	150141	50192	93564	215221	317258	333325	161673	1700107

Table FF.11: 2031 DM Varied Parameters PCU Kilometres, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	5005	639	367	158	227	1056	2543	1608	1577	8056	42614	30250	5299	99399
2	310	1626	1522	533	1041	1632	4458	1328	1197	3758	10318	14789	3459	45971
3	358	1374	1505	458	711	512	2505	1728	2101	4033	10906	6951	3162	36304
4	175	230	354	209	368	1345	1481	287	729	2683	4724	8692	1321	22598
5	219	1827	549	518	594	1050	1312	297	616	1726	8336	11216	1479	29739
6	1083	1593	484	2840	1249	4087	5187	167	7051	9614	21708	22315	9355	86733
7	2120	3837	2008	1739	1694	4493	13627	3507	5357	12821	33140	40785	14573	139701
8	1297	1744	1589	220	197	489	4463	3549	3938	8173	7437	8595	5137	46828
9	1597	1137	1856	621	610	6125	11430	3399	5115	9457	18157	21532	4103	85139
10	5963	3336	3283	1981	982	7386	10803	6474	7806	2801	61716	66923	7942	187396
11	20079	5159	4642	2704	2779	10303	13919	4211	10703	15576	17096	38714	25771	171656
12	14455	8888	3939	4592	4093	13629	20115	7454	11342	56540	39682	8925	13406	207060
13	5446	2506	2132	818	1168	7175	12976	3950	4119	6967	39351	20340	13724	120672
SUM	58107	33896	24230	17391	15713	59282	104819	37959	61651	142205	315185	300027	108731	1279196

Table FF.12: 2031 DM Varied Parameters PCU Kilometres, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2898	548	1159	313	452	1615	3980	3356	2433	15260	43037	63250	15224	153525
2	1722	2064	1459	743	871	1561	7214	1782	746	4032	9102	9107	7454	47857
3	1366	1409	2464	540	411	738	3897	3295	1267	4419	5260	16830	5758	47654
4	1051	101	252	195	385	1659	2295	208	1235	4458	7491	17088	5542	41960
5	1704	802	563	664	702	1919	2779	215	304	1824	10965	10241	2851	35533
6	1161	726	777	3569	2154	4801	6031	591	8363	12462	20493	39382	13157	113667
7	1472	3881	2981	2002	1387	5310	15337	7447	9013	18332	24175	43977	23686	159000
8	1065	1392	3156	168	161	412	6176	3896	6061	14100	8580	13567	8403	67137
9	2049	618	2810	1209	887	8208	14979	4702	5819	13322	24244	18783	7027	104657
10	4219	3479	6717	1415	4262	7080	17719	8907	6453	6841	52513	92508	7496	219609
11	2594	7302	6572	3815	8954	11715	26921	8432	15468	31460	13987	64617	33366	235203
12	7386	9047	6313	3968	9796	15823	26398	14224	13045	64537	58980	12822	27285	269624
13	3122	3407	3407	1405	2226	3367	15012	6463	3719	14889	57380	28280	16477	159154
SUM	31809	34776	38630	20006	32648	64208	148738	63518	73926	205936	336207	430452	173726	1654580

Table FF.13: 2031 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	867	298	678	209	263	495	713	426	673	2442	720	10509	816	19109
2	146	691	463	114	154	383	1334	1035	126	1053	5655	14425	1490	27069
3	234	465	508	32	83	154	455	961	1023	2634	7386	3002	1261	18198
4	62	10	39	87	127	302	450	6	212	680	2265	1524	562	6326
5	189	199	112	226	266	603	694	53	164	812	4307	4963	1428	14016
6	323	201	26	799	287	1526	2052	60	3781	1104	13999	7304	896	32358
7	1992	682	309	540	260	1428	4691	1610	2875	11264	27404	22796	4924	80775
8	419	1471	2259	47	41	48	1375	1237	1816	3117	5469	10698	3258	31255
9	333	185	499	436	229	2865	4984	832	2305	2137	10269	11926	2053	39053
10	1254	167	-560	303	47	2777	5972	5032	2268	1696	19846	40465	8558	87825
11	7781	760	399	1746	1601	4448	4672	3621	4672	10270	2820	22193	25725	90708
12	13763	1616	943	2349	1698	7651	7675	2623	5916	24455	34142	14295	10311	1E+05
13	1045	929	413	600	245	2085	5411	1805	1652	3931	36128	14919	4563	73726
SUM	28408	7674	6088	7488	5301	24765	40478	19301	27483	65595	2E+05	2E+05	65845	6E+05

Table FF.14: 2031 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1075	98	38	6	7	117	383	492	287	2539	28508	19478	1814	54842
2	47	232	279	58	180	211	866	450	274	982	6240	8113	1378	19310
3	21	210	239	44	125	100	512	585	532	1122	7794	4296	1286	16866
4	7	21	44	21	46	283	371	47	130	805	2691	5266	418	10150
5	16	203	111	62	118	235	340	50	134	532	5749	8324	521	16395
6	98	134	96	635	218	943	1706	31	2864	3605	14033	11852	3963	40178
7	320	728	428	439	444	1300	3005	1024	2119	4639	22973	25390	5343	68152
8	352	578	619	66	48	98	1448	1313	1450	3618	5404	4383	2335	21712
9	283	190	437	99	109	2563	4030	1144	1626	3417	10905	14823	1959	41585
10	490	434	519	202	55	1555	2818	1959	1659	549	37905	29330	3714	81189
11	4966	1052	1016	585	459	2600	3940	1607	3163	4386	7610	17559	10792	59735
12	4060	1659	1148	1345	1211	3117	4365	2465	4268	14480	17740	4719	5245	65822
13	944	460	469	86	245	1255	2402	1009	1227	2624	23457	12402	2289	48869
SUM	12679	5999	5443	3648	3265	14377	26186	12176	19733	43298	2E+05	2E+05	41057	5E+05

Table FF.15: 2031 DM Difference in PCU Kilometres Between Varied Parameters and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	405	-44	-257	-40	-27	123	25	869	204	2989	24756	38186	3469	70658
2	292	323	276	39	167	174	1006	323	41	32	2509	2628	2158	9968
3	197	187	375	55	84	67	310	951	271	-225	645	10737	1425	15079
4	360	10	17	36	80	415	212	28	146	599	1027	8609	239	11778
5	172	113	53	80	184	434	639	-5	20	-44	7518	5932	601	15697
6	332	123	113	770	522	1183	2015	85	2933	2308	6132	22073	4575	43164
7	398	892	675	618	371	1418	3697	1051	3283	4943	10884	26730	5934	60894
8	413	382	1172	42	45	86	941	1294	2227	5562	3115	8475	3307	27061
9	676	142	702	325	230	3667	4706	1450	1679	2284	12162	10112	2264	40399
10	868	39	314	223	523	893	4684	1163	630	1047	28379	52027	3216	94006
11	824	1552	1568	946	2571	2689	5518	1947	5112	8381	6258	30444	12461	80271
12	2224	1745	561	984	1412	3772	5822	2936	4507	20703	23088	4064	9007	80825
13	750	200	467	-55	-140	543	2296	997	590	5093	33085	17843	2529	64198
SUM	7911	5664	6036	4023	6022	15464	31871	13089	21643	53672	2E+05	2E+05	51185	6E+05

Table FF.16: 2016 DS Varied Parameters PCU Kilometres, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3452	1035	1943	688	792	1374	1834	857	1474	3120	1044	10782	1057	29452
2	1240	2290	1767	603	549	1856	4159	1772	400	3414	7774	13563	2743	42130
3	1737	1489	1598	216	313	655	1576	1746	2351	5250	8507	5782	2796	34016
4	751	58	160	239	373	1266	1580	22	587	1617	3037	3205	1411	14306
5	1036	635	464	743	610	1786	1732	138	611	3555	6505	10640	2366	30821
6	1575	1027	240	3790	1100	4819	5077	127	8363	6400	14530	13641	2744	63433
7	5116	4262	2330	2341	1611	5836	14066	4978	8115	32161	28759	29561	14815	153951
8	2460	3861	5180	259	216	415	5349	2747	3560	6652	8992	17842	7553	65086
9	2863	732	1981	1542	1067	7679	14633	1572	5936	5921	13071	13327	9018	79342
10	10381	3615	3938	4965	2071	14771	26494	9567	10827	4410	25901	46548	13358	176846
11	21630	7014	4644	7480	4602	15995	17206	8704	16938	20616	4331	30643	41573	201376
12	37826	8398	8650	12080	6205	24161	22551	7247	16327	84758	49946	20144	18523	316816
13	7144	5850	3111	5261	2195	11445	16947	6147	13380	8448	48689	22454	15756	166827
SUM	97211	40266	36006	40207	21704	92058	133204	45624	88869	186322	221086	238132	133713	1374402

Table FF.17: 2016 DS Varied Parameters PCU Kilometres, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4823	535	316	144	203	932	2265	1401	1303	6499	25597	21266	4099	69383
2	271	1334	1244	451	871	1405	3760	1162	1011	3095	6512	10413	2568	34097
3	326	1143	1249	403	621	439	2150	1514	1752	3280	6242	4900	2408	26427
4	157	192	300	175	305	1122	1204	269	610	2268	2929	5891	1235	16657
5	198	1527	458	441	491	895	1101	263	509	1370	4671	6755	1158	19837
6	965	1346	400	2391	1053	3542	4430	153	5549	8202	13426	16153	7165	64775
7	1933	3272	1693	1440	1441	3787	11180	3433	5013	13420	20164	26689	11881	105346
8	1157	1525	1364	195	172	447	4350	2932	3705	7080	4819	7157	4846	39749
9	1444	995	1591	525	516	4882	9528	3330	4237	7922	11768	13704	4689	65131
10	5286	2780	2702	1831	845	6904	11125	5574	6857	2397	36837	51938	8056	143132
11	16538	4380	3892	2205	2450	8550	11472	3906	8859	12427	11743	28629	22257	137308
12	12610	7617	3262	3738	3332	11693	17442	6803	9324	48450	29217	6373	12243	172104
13	4430	1996	1773	704	950	5905	11071	3795	5156	8035	27274	12904	11658	95651
SUM	50138	28642	20244	14643	13250	50503	91078	34535	53885	124445	201199	212772	94263	989597

Table FF.18: 2016 DS Varied Parameters PCU Kilometres, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	2805	516	1064	277	400	1399	3724	3192	1877	12272	28610	46114	12802	115052
2	1366	1637	1194	622	714	1320	6161	1678	658	3604	7111	7593	5825	39483
3	1157	1186	1982	447	340	658	3703	2896	1053	3676	4826	10605	4832	37361
4	885	84	205	143	292	1503	2111	204	945	3700	6289	11693	6884	34938
5	1314	647	473	535	542	1613	2465	207	248	1626	6162	6916	2159	24907
6	1026	604	724	3097	1898	4122	5237	657	6719	12327	17248	26045	10290	89994
7	1222	3183	2473	1654	1146	4433	12392	7503	8662	25009	17655	27284	18918	131534
8	832	1226	2524	144	139	404	6587	3140	5594	11266	9592	11949	8316	61713
9	1649	537	2293	968	741	6128	14944	4178	4438	10906	15724	15014	12315	89835
10	3633	3046	4799	1095	3669	6257	22020	7383	5075	5233	39049	66033	7203	174495
11	2092	6031	5101	2873	6518	9215	24175	7931	11542	24721	10056	45365	32913	188533
12	6169	7844	6005	3296	8536	12680	22048	16147	10361	56849	45420	9598	25116	230069
13	2693	2945	2876	1061	1957	2402	11927	7200	6297	18287	39205	16776	12753	126379
SUM	26843	29486	31713	16212	26892	52134	137494	62316	63469	189476	246947	300985	160326	1344293

Table FF.19: 2016 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	698	80	303	102	120	283	448	201	270	550	330	6584	420	10389
2	21	67	65	-3	30	177	339	595	41	-415	2147	6176	352	9592
3	68	184	108	-17	25	142	237	543	447	-935	3735	1684	412	6633
4	-54	-8	7	1	-6	140	214	-2	62	173	3	494	268	1292
5	86	16	35	21	70	264	303	21	60	-68	900	2526	206	4440
6	127	-33	-7	226	82	488	1153	37	1962	359	6657	2584	-181	13454
7	1177	56	71	207	29	665	866	1391	4051	15505	10765	8501	1287	44571
8	175	1261	1380	25	28	83	1640	454	1475	710	2423	7999	3109	20762
9	-149	94	163	33	-24	1259	3363	570	1018	91	2736	5805	5596	20555
10	-688	-289	-984	112	-76	2497	10786	1671	109	232	8052	21731	7612	50765
11	2399	-72	-23	448	852	1602	1869	4259	1145	3676	1283	8510	13539	39487
12	9142	314	14	649	612	1341	2441	2998	3902	13457	13308	4481	5209	57868
13	117	-407	-121	-479	-120	1162	-118	1995	8246	3361	21899	6751	56	42342
SUM	13119	1263	1011	1325	1622	10103	23541	14733	22788	36696	74238	83826	37885	3E+05

Table FF.20: 2016 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	893	-6	-13	-8	-17	-7	105	285	13	982	11491	10494	614	24826
2	8	-60	1	-24	10	-16	168	284	88	319	2434	3737	487	7436
3	-11	-21	-17	-11	35	27	157	371	183	369	3130	2245	532	6989
4	-11	-17	-10	-13	-17	60	94	29	11	390	896	2465	332	4209
5	-5	-97	20	-15	15	80	129	16	27	176	2084	3863	200	6493
6	-20	-113	12	186	22	398	949	17	1362	2193	5751	5690	1773	18220
7	133	163	113	140	191	594	558	950	1775	5238	9997	11294	2651	33797
8	212	359	394	41	23	56	1335	696	1217	2525	2786	2945	2044	14633
9	130	48	172	3	15	1320	2128	1075	748	1882	4516	6995	2545	21577
10	-187	-122	-62	52	-82	1073	3140	1059	710	145	13026	14345	3828	36925
11	1425	273	266	86	130	847	1493	1302	1319	1237	2257	7474	7278	25387
12	2215	388	471	491	450	1181	1692	1814	2250	6390	7275	2167	4082	30866
13	-72	-50	110	-28	27	-15	497	854	2264	3692	11380	4966	223	23848
SUM	4710	745	1457	900	802	5598	12445	8752	11967	25538	77023	78680	26589	3E+05

Table FF.21: 2016 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	312	-76	-352	-76	-79	-93	-231	705	-352	1	10329	21050	1047	32185
2	-64	-104	11	-82	10	-67	-47	219	-47	-396	518	1114	529	1594
3	-12	-36	-107	-38	13	-13	116	552	57	-968	211	4512	499	4786
4	194	-7	-30	-16	-13	259	28	24	-144	-159	-175	3214	1581	4756
5	-218	-42	-37	-49	24	128	325	-13	-36	-242	2715	2607	-91	5071
6	197	1	60	298	266	504	1221	151	1289	2173	2887	8736	1708	19491
7	148	194	167	270	130	541	752	1107	2932	11620	4364	10037	1166	33428
8	180	216	540	18	23	78	1352	538	1760	2728	4127	6857	3220	21637
9	276	61	185	84	84	1587	4671	926	298	-132	3642	6343	7552	25577
10	282	-394	-1604	-97	-70	70	8985	-361	-748	-561	14915	25552	2923	48892
11	322	281	97	4	135	189	2772	1446	1186	1642	2327	11192	12008	33601
12	1007	542	253	312	152	629	1472	4859	1823	13015	9528	840	6838	41270
13	321	-262	-64	-399	-409	-422	-789	1734	3168	8491	14910	6339	-1195	31423
SUM	2945	374	-881	229	266	3390	20627	11887	11186	37212	70298	1E+05	37785	3E+05

Table FF.22: 2031 DS Varied Parameters PCU Kilometres, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	4166	1292	2439	840	960	1615	2173	1086	1813	3998	1490	15568	1431	38871
2	1407	2914	2209	711	657	2148	5117	2242	502	4145	10951	21386	3583	57972
3	1988	1859	2091	248	354	700	1886	2224	3058	6781	12041	7085	3712	44027
4	887	70	187	322	481	1451	1829	31	733	2163	5146	4230	1871	19401
5	1245	798	558	962	789	2149	2074	168	709	4183	9992	13374	3199	40200
6	1931	1215	271	4479	1317	5898	6082	177	9361	7583	21908	17801	3331	81354
7	6390	4799	2599	2496	1768	6482	16617	5799	9106	37177	45075	42271	17717	198296
8	2679	4320	6073	262	216	413	6375	3315	4034	7815	11976	26604	9446	83528
9	3331	868	2361	1810	1229	8420	16837	1887	6800	7227	18001	21022	11124	100917
10	11659	3816	4248	5414	2103	15379	30859	10905	11317	5217	37794	68277	16811	223799
11	27243	7561	4800	8786	5308	18639	19669	9573	18880	27396	5880	43752	55744	253231
12	44760	9429	9232	13584	7285	28908	26600	8812	17828	98008	67764	28289	24019	384518
13	7599	6776	3578	5458	2353	12164	20098	7047	14408	10660	70644	30249	18174	209208
SUM	115285	45717	40646	45372	24820	104366	156216	53266	98549	222353	318662	339908	170162	1735322

Table FF.23: 2031 DS Varied Parameters PCU Kilometres, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	5541	651	375	170	240	1059	2553	1655	1502	7846	42523	31324	5475	100914
2	316	1623	1511	536	1043	1649	4472	1396	1219	3774	10347	15237	3361	46484
3	367	1394	1510	473	736	526	2579	1786	2091	4004	10788	7097	3198	36549
4	175	224	345	211	365	1346	1481	318	727	2822	4698	8803	1696	23211
5	228	1808	540	530	598	1054	1323	306	612	1722	8334	11856	1482	30393
6	1092	1591	479	2876	1235	4117	5227	193	6842	10140	21419	22730	9353	87294
7	2136	3790	1978	1745	1664	4445	12905	4028	6321	16580	32944	41594	14593	144723
8	1257	1845	1595	226	197	508	5225	3369	4465	8619	8187	10238	6209	51940
9	1596	1185	1882	623	606	5834	11579	3945	5032	9313	17490	22552	6282	87919
10	5752	3115	2989	2116	921	7881	13049	6257	7322	2678	59879	68304	9865	190128
11	19867	5072	4470	2680	2727	10078	14028	4722	10370	14903	16999	38918	28993	173827
12	14722	8788	3856	4556	3953	13382	20117	8145	11057	56306	39142	8599	15216	207839
13	5420	2271	2094	845	1090	6708	12652	4379	6130	9380	41707	19231	13045	124952
SUM	58469	33357	23624	17587	15375	58587	107190	40499	63690	148087	314457	306483	118768	1306173

Table FF.24: 2031 DS Varied Parameters PCU Kilometres, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	3300	616	1286	335	460	1692	4275	4119	2319	13939	45857	66428	16663	161289
2	1615	2089	1487	746	872	1595	7263	1978	768	3951	9139	9342	6861	47706
3	1344	1480	2505	529	414	768	4172	3397	1270	4086	5230	17011	5608	47814
4	1081	101	240	190	377	1706	2353	217	1207	4350	7193	16728	7487	43230
5	1680	788	563	672	681	1928	2756	232	296	1831	10624	10117	2397	34565
6	1226	729	801	3690	2226	4888	6055	711	7575	13418	20356	38492	12900	113067
7	1404	3784	2936	2021	1356	5308	14389	8577	10414	28072	23678	41731	22017	165687
8	961	1468	3117	168	158	450	7430	3706	6520	12577	10610	18141	9544	74850
9	1959	644	2775	1178	890	6984	16494	4798	5418	12301	21843	22252	13113	110649
10	3925	3303	5307	1362	4208	7171	23892	8058	5684	6028	54480	93296	8395	225109
11	2531	7301	6269	3793	8797	11429	27705	9215	13736	30620	13602	61443	40943	237384
12	7128	9243	6446	3991	9896	15085	25502	18104	11990	65530	56024	11845	29811	270595
13	2956	3251	3361	1229	2047	2806	13581	7913	6818	20246	56474	26971	14360	162013
SUM	31110	34797	37093	19904	32382	61810	155867	71025	74015	216949	335110	433797	190099	1693958

Table FF.25: 2031 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, AM Peak

AM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1412	337	799	254	288	524	787	430	609	1428	776	11370	794	19808
2	188	691	507	105	138	469	1297	1065	143	316	5324	13999	1192	25434
3	319	554	601	15	66	187	547	1021	1154	596	7269	2987	1328	16644
4	82	4	34	84	102	325	463	7	208	719	2112	1519	728	6387
5	295	179	129	240	249	627	645	51	158	560	4387	5260	1039	13819
6	483	155	24	915	299	1567	2158	87	2960	1542	14035	6744	406	31375
7	2451	593	340	362	186	1311	3417	2212	5042	20521	27081	21211	4189	88916
8	394	1720	2273	28	28	81	2666	1022	1949	1873	5407	16761	5002	39204
9	319	230	543	301	138	2000	5567	885	1882	1397	7666	13500	7702	42130
10	590	-88	-674	561	-44	3105	15151	3009	599	1039	19945	43460	11065	97718
11	8012	475	133	1754	1558	4246	4332	5128	3087	10456	2832	21619	27710	91342
12	16076	1345	596	2153	1692	6088	6490	4563	5403	26707	31126	12626	10705	1E+05
13	572	519	346	-282	38	1881	3033	2895	9274	5573	43854	14546	2474	84723
SUM	31193	6714	5651	6490	4738	22411	46553	22375	32468	72727	2E+05	2E+05	74334	7E+05

Table FF.26: 2031 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, IP

IP	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	1611	110	46	18	20	120	393	539	212	2329	28417	20552	1990	56357
2	53	229	268	61	182	228	880	518	296	998	6269	8561	1280	19823
3	30	230	244	59	150	114	586	643	522	1093	7676	4442	1322	17111
4	7	15	35	23	43	284	371	78	128	944	2665	5377	793	10763
5	25	184	102	74	122	239	351	59	130	528	5747	8964	524	17049
6	107	132	91	671	204	973	1746	57	2655	4131	13744	12267	3961	40739
7	336	681	398	445	414	1252	2283	1545	3083	8398	22777	26199	5363	73174
8	312	679	625	72	48	117	2210	1133	1977	4064	6154	6026	3407	26824
9	282	238	463	101	105	2272	4179	1690	1543	3273	10238	15843	4138	44365
10	279	213	225	337	-6	2050	5064	1742	1175	426	36068	30711	5637	83921
11	4754	965	844	561	407	2375	4049	2118	2830	3713	7513	17763	14014	61906
12	4327	1559	1065	1309	1071	2870	4367	3156	3983	14246	17200	4393	7055	66601
13	918	225	431	113	167	788	2078	1438	3238	5037	25813	11293	1610	53149
SUM	13041	5460	4837	3844	2927	13682	28557	14716	21772	49180	2E+05	2E+05	51094	6E+05

Table FF.27 : 2031 DS Difference in PCU Kilometres Between Varied Parameters and Base Year, PM Peak

PM	1	2	3	4	5	6	7	8	9	10	11	12	13	SUM
1	807	24	-130	-18	-19	200	320	1632	90	1668	27576	41364	4908	78422
2	185	348	304	42	168	208	1055	519	63	-49	2546	2863	1565	9817
3	175	258	416	44	87	97	585	1053	274	-558	615	10918	1275	15239
4	390	10	5	31	72	462	270	37	118	491	729	8249	2184	13048
5	148	99	53	88	163	443	616	12	12	-37	7177	5808	147	14729
6	397	126	137	891	594	1270	2039	205	2145	3264	5995	21183	4318	42564
7	330	795	630	637	340	1416	2749	2181	4684	14683	10387	24484	4265	67581
8	309	458	1133	42	42	124	2195	1104	2686	4039	5145	13049	4448	34774
9	586	168	667	294	233	2443	6221	1546	1278	1263	9761	13581	8350	46391
10	574	-137	-1096	170	469	984	10857	314	-139	234	30346	52815	4115	99506
11	761	1551	1265	924	2414	2403	6302	2730	3380	7541	5873	27270	20038	82452
12	1966	1941	694	1007	1512	3034	4926	6816	3452	21696	20132	3087	11533	81796
13	584	44	421	-231	-319	-18	865	2447	3689	10450	32179	16534	412	67057
SUM	7212	5685	4499	3921	5756	13066	39000	20596	21732	64685	2E+05	2E+05	67558	7E+05

Appendix GG. TUBA Results, Sensitivity Test 6

Figure GG.1: Economic Efficiency of the Transport System (TEE)

Consumers	ALL MODES	Road	Bus		
User benefits	TOTAL				
Travel Time	299912	291549	8362		
Vehicle operating costs	-42744	-42744	0		
User charges	22093	22117	-23		
During Construction & Maintenance	0	0	0		
NET CONSUMER BENEFITS	279261	270922	8339		
Business					
User benefits		Personal	Freight	Personal	Freight
Travel Time	284018	212967	70129	922	0
Vehicle operating costs	-817	1627	-2444	0	0
User charges	3752	2345	1412	-5	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	286953	216939	69098	917	0
Private Sector Provider Impacts					
Revenue	-31758	-25261		-6497	
Operating costs	0	0		0	
Investment costs	0	0		0	
Grant/subsidy	0	0		0	
Subtotal	-31758	-25261		-6497	
Other business Impacts					
Developer contributions	0	0		0	
NET BUSINESS IMPACT	255195				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (PVB)	534456				

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	6315	6315	0
Operating costs	4181	4181	0
Investment costs	7791	7791	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	18287	18287	0
Central Government Funding			
Revenue	0	0	0
Operating costs	0	0	0
Investment costs	90589	90589	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
Indirect Tax Revenues	-28062	-27072	-990
NET IMPACT	62527	63517	-990
TOTAL			
TOTAL Present Value of Costs (PVC)	80814		

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

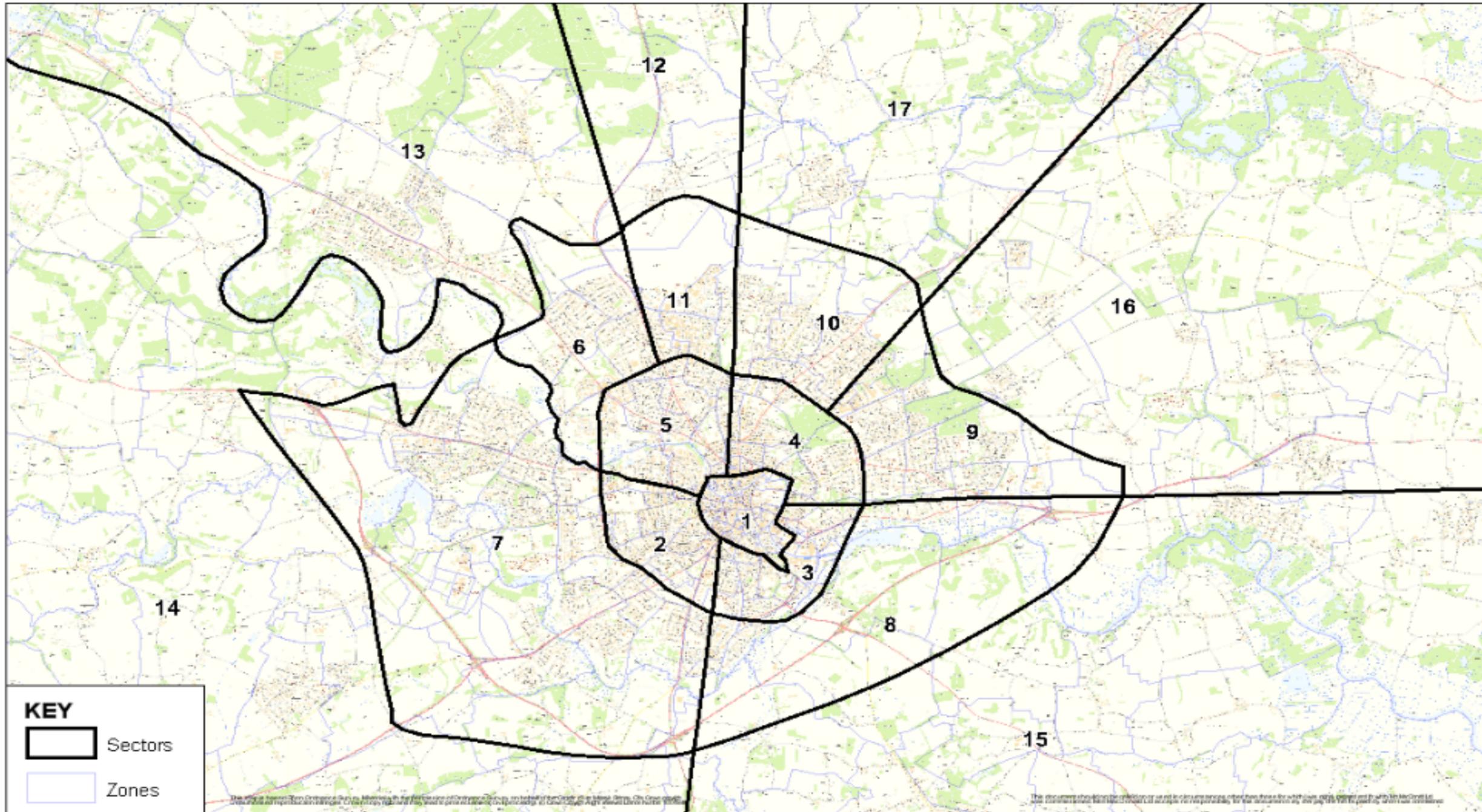
Note: All entries are present values discounted to 2002, in 2002 prices

Analysis of Monetised Costs and Benefits

Non-Exchequer Impacts	
Consumer User Benefits	279261
Business User Benefits	286953
Private Sector Provider Impacts	-31758
Other Business Impacts	0
Accident Benefits	Not assessed by TUBA
Carbon Benefits	-5126
Net present Value of Benefits (PVB)	529330
Local Government Funding	18287
Central Government Funding	62527
Net present Value Costs (PVC)	80814
Overall Impact	
Net present Value (NPV)	448516
Benefit to Cost Ratio (BCR)	6.550
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.

Figure GG.2: Sectors for TUBA Analysis



 	<p>Drawing Title: Figure 1: Sectors for TUBA analysis</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: small;">Rev.</th> <th style="font-size: small;">Description</th> <th style="font-size: small;">Checked</th> <th style="font-size: small;">Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Rev.	Description	Checked	Date													<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: small;"> </th> <th style="font-size: small;">Initials</th> <th style="font-size: small;">Date</th> </tr> </thead> <tbody> <tr> <td style="font-size: x-small;">Drawn By</td> <td>TA</td> <td>07/09/09</td> </tr> <tr> <td style="font-size: x-small;">Checked By</td> <td>TM</td> <td>07/09/09</td> </tr> <tr> <td style="font-size: x-small;">Approved By</td> <td>TM</td> <td>08/09/09</td> </tr> </tbody> </table>		Initials	Date	Drawn By	TA	07/09/09	Checked By	TM	07/09/09	Approved By	TM	08/09/09	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small;">Drawing No:</td> <td>233906B101</td> </tr> <tr> <td style="font-size: x-small;">Project Title:</td> <td>Norwich Northern Distributor Road MSBC</td> </tr> <tr> <td style="font-size: x-small;">Scale:</td> <td>NTS</td> </tr> <tr> <td style="font-size: x-small;">File No:</td> <td>233906</td> </tr> </table>	Drawing No:	233906B101	Project Title:	Norwich Northern Distributor Road MSBC	Scale:	NTS	File No:	233906
Rev.	Description	Checked	Date																																					
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Project Title:	Norwich Northern Distributor Road MSBC																																							
Scale:	NTS																																							
File No:	233906																																							

Table GG.1: Test 6 TUBA Sector Time Benefits

Row Labels	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Grand Total
1	-46149573	-2554418	-5531431	-2016159	-1972260	1620115	-1805236	-1219684	53527	3393948	798583	2516519	3954256	4826470	1090452	5809828	3436030	2256518	-31492515
2	1164486	296574	-88859	609728	1139050	425433	2027512	2271	25207	404596	366100	238539	297294	1667554	-131449	771627	229530	857169	10302362
3	-2585310	-671783	-691991	924091	502996	266515	1254344	-537321	721476	1293057	465628	2120482	2702678	4933664	-1198708	2873704	2710056	827869	15911447
4	-1191478	-630309	-1778568	423898	1130094	756330	414954	-278145	2149536	2833910	471328	241413	959845	627308	-767841	580570	290397	397980	6631222
5	-999461	-22119	-1377375	2391053	2451258	2169840	3788738	-53702	3196977	1780251	1455445	362486	875931	1866154	-488191	1640588	368391	704025	20110289
6	157499	161943	105018	897107	1326809	330037	438865	487158	6226691	1496147	252402	66449	2521942	1933356	4343871	6889843	1107424	466264	29208825
7	705044	1423791	2125832	754282	3241187	1018009	7105897	-1460047	-1453952	929143	613422	2170401	367525	5065313	-355361	5747896	5667576	1530591	35196549
8	-73000	19598	-207011	33490	147140	221249	-3107807	-65683	1187711	443702	230483	1036246	1895056	980208	-1365080	482560	2314633	-30057	4143438
9	766138	-77762	1837179	4264274	4496277	7677700	-6251812	1590291	4151193	5202746	2284218	5616013	17002152	8683486	-1356695	2770901	3934184	2405471	64995954
10	2303526	403335	2306774	7014982	5224396	3279875	1802903	978951	9998267	966289	3623871	841540	4756859	5976698	3774470	3324451	28505	1644610	58250302
11	102455	323402	280740	867959	899976	20084	1338963	296145	3522433	245511	9778	120959	626136	3090227	5574566	5178380	79283	1893073	24470070
12	758917	83063	1210907	298629	344788	-13023	726532	1455370	6810506	1405145	27018	28249	1472916	2708390	4087314	2818587	62955	498696	24784959
13	1862879	-30716	815540	676919	1008510	2053184	292498	1626073	15323602	2640051	1112400	2317040	-1183677	985756	11245536	30965417	4421763	778071	76910846
14	2094814	846593	1782370	754086	2461899	2193917	3740913	58034	6651682	5432373	4235501	4310464	1243524	3508020	1881530	11986109	18558474	248483	71988786
15	311488	81252	-694722	-643174	-27899	3310901	-1638599	-1050617	-1745525	2892053	4677509	1771859	10109150	4854807	-1083110	-334359	3444059	1916342	26151415
16	3394527	615374	2537357	1177853	2514581	6002985	8098911	966930	932491	1458351	6558337	2492041	25854136	14277879	1622388	426942	670888	4212532	83814503
17	1727892	165251	1796861	1081940	991688	1393184	2853905	1851771	3403477	111242	471132	62382	3753787	13680725	4662423	814849	-40366	10799423	49581566
18	205287	164114	132899	129407	304578	302568	425145	-129759	1308931	854815	570678	574502	872323	401142	398231	1106567	5346913	-352	12967989
Grand Total	-35443870	597183	4561520	19640365	26185068	33028903	21506626	4518036	62464230	33783330	28223833	26887584	78081833	80067157	31934346	83854460	52630695	31406708	583928007

Table GG.2: Test 6 TUBA Sector Time Benefits as a Percentage

Row Labels	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Grand Total
1	-8%	0%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	1%	1%	0%	-5%
2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	3%
4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
5	0%	0%	0%	0%	0%	0%	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%	1%	0%	0%	5%
7	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	6%
8	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
9	0%	0%	0%	1%	1%	1%	-1%	0%	1%	1%	0%	1%	3%	1%	0%	0%	1%	0%	11%
10	0%	0%	0%	1%	1%	1%	0%	0%	2%	0%	1%	0%	1%	1%	1%	1%	0%	0%	10%
11	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	1%	1%	0%	0%	4%
12	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	4%
13	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	2%	5%	1%	0%	13%
14	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	1%	1%	0%	1%	0%	2%	3%	0%	12%
15	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%	1%	0%	0%	1%	0%	4%
16	1%	0%	0%	0%	0%	1%	1%	0%	0%	0%	1%	0%	4%	2%	0%	0%	0%	1%	14%
17	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	2%	1%	0%	0%	2%	8%
18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%
Grand Total	-6%	0%	1%	3%	4%	6%	4%	1%	11%	6%	5%	5%	13%	14%	5%	14%	9%	5%	100%

Appendix HH. TUBA Warnings Sensitivity Test 6

Table HH.1: Test 6 Highway Lambda Sensitivity - Summary of TUBA Warnings

Warning Type	Number of warnings
Ratio of DM to DS Journey Time too Low	68495 (7562)
Ratio of DM to DS Journey Time too High	15827 (423)
Ratio of DM to DS Distance too Low	57291 (4687)
Ratio of DM to DS Distance too High	7270 (7270)
DM Speed too Low	23428
DS Speed too Low	28585
DM Time too High	19758
DS Time too High	19764

Explanation of the serious TUBA warnings is as 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. A large proportion 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 reassignment 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.