Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 1	1	-	70	67.45837	Y	0000-0100	814	55.11%	32.18%	0.03%	3.09%	1.11%	0.30%	0.58%	0.12%	0.11%	0.88%	0.29%	0.20%	0.43%	0.03%	2.06%	3.33%	0.15%	0.00%	100%
Road 1	1	-	70	68.24991	Y	0100-0200	555	55.51%	29.94%	0.04%	3.37%	1.21%	0.38%	0.74%	0.14%	0.16%	1.28%	0.42%	0.29%	0.63%	0.03%	2.07%	3.61%	0.19%	0.00%	100%
Road 1	1	-	70	68.64883	Y	0200-0300	424	55.98%	27.62%	0.04%	3.65%	1.31%	0.46%	0.90%	0.15%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	2.05%	3.88%	0.24%	0.00%	100%
Road 1	1	-	70	68.97862	Y	0300-0400	317	56.35%	25.33%	0.04%	3.95%	1.42%	0.54%	1.06%	0.16%	0.27%	2.10%	0.69%	0.48%	1.04%	0.03%	2.08%	4.19%	0.28%	0.00%	100%
Road 1	1	-	70	69.02687	Y	0400-0500	299	56.82%	22.93%	0.04%	4.25%	1.53%	0.62%	1.23%	0.17%	0.32%	2.53%	0.83%	0.57%	1.26%	0.03%	2.07%	4.48%	0.32%	0.00%	100%
Road 1	1	-	70	68.61325	Y	0500-0600	422	57.29%	20.49%	0.05%	4.56%	1.64%	0.71%	1.40%	0.18%	0.38%	2.95%	0.97%	0.67%	1.47%	0.03%	2.07%	4.77%	0.36%	0.00%	100%
Road 1	1	-	70	66.0652	Y	0600-0700	1186	57.87%	17.91%	0.05%	4.87%	1.75%	0.81%	1.59%	0.20%	0.44%	3.44%	1.12%	0.78%	1.70%	0.03%	2.01%	5.03%	0.41%	0.00%	100%
Road 1	1	-	70	62.14991	Y	0700-0800	2143	58.38%	15.34%	0.05%	5.18%	1.86%	0.90%	1.77%	0.21%	0.50%	3.91%	1.27%	0.88%	1.93%	0.03%	2.00%	5.34%	0.46%	0.00%	100%
Road 1	1	-	70	60.49273	Y	0800-0900	2337	62.10%	18.99%	0.05%	4.44%	1.60%	0.68%	1.34%	0.13%	0.23%	1.76%	0.88%	0.61%	1.34%	0.04%	1.55%	3.90%	0.35%	0.00%	100%
Road 1	1	-	70	63.39358	Y	0900-1000	1955	56.84%	18.42%	0.08%	7.85%	2.82%	1.43%	2.82%	0.17%	0.17%	1.34%	0.63%	0.44%	0.96%	0.04%	1.99%	3.25%	0.74%	0.00%	100%
Road 1	1	-	70	63.72725	Y	1000-1100	1840	51.73%	23.57%	0.09%	8.95%	3.22%	1.72%	3.38%	0.12%	0.16%	1.24%	0.24%	0.17%	0.36%	0.10%	2.10%	1.96%	0.88%	0.00%	100%
Road 1	1	-	70	64.09357	Y	1100-1200	1748	53.62%	22.47%	0.08%	7.82%	2.81%	1.74%	3.42%	0.19%	0.12%	0.96%	0.37%	0.26%	0.57%	0.02%	1.90%	2.76%	0.89%	0.00%	100%
Road 1	1	-	70	67.74477	Y	1200-1300	647	53.65%	18.61%	0.10%	9.16%	3.29%	1.97%	3.87%	0.10%	0.34%	2.63%	0.69%	0.48%	1.05%	0.07%	1.54%	1.45%	1.01%	0.00%	100%
Road 1	1	-	70	67.66259	Y	1300-1400	653	47.37%	19.57%	0.12%	11.05%	3.97%	2.01%	3.94%	0.16%	0.34%	2.63%	1.22%	0.85%	1.86%	0.08%	1.67%	2.13%	1.03%	0.00%	100%
Road 1	1	-	70	67.68642	Y	1400-1500	668	54.35%	16.84%	0.10%	9.30%	3.34%	2.06%	4.04%	0.10%	0.28%	2.21%	0.55%	0.38%	0.84%	0.04%	1.56%	2.94%	1.06%	0.00%	100%
Road 1	1	-	70	67.69486	Y	1500-1600	667	53.52%	19.25%	0.10%	9.61%	3.45%	2.18%	4.29%	0.09%	0.22%	1.72%	0.23%	0.16%	0.35%	0.04%	1.60%	2.07%	1.12%	0.00%	100%
Road 1	1	-	70	67.52504	Y	1600-1700	722	53.48%	18.48%	0.11%	10.12%	3.63%	1.54%	3.03%	0.09%	0.17%	1.33%	0.70%	0.48%	1.06%	0.04%	1.66%	3.26%	0.79%	0.00%	100%
Road 1	1	-	70	67.27427	Y	1700-1800	842	63.22%	13.60%	0.07%	6.55%	2.35%	0.78%	1.54%	0.12%	0.15%	1.14%	0.73%	0.51%	1.12%	0.02%	1.40%	6.28%	0.40%	0.00%	100%
Road 1	1	-	70	67.30136	Y	1800-1900	854	68.85%	15.22%	0.05%	4.70%	1.69%	0.57%	1.12%	0.12%	0.02%	0.19%	0.50%	0.34%	0.75%	0.01%	1.48%	4.08%	0.29%	0.00%	100%
Road 1	1	-	70	67.65968	Y	1900-2000	748	65.86%	20.83%	0.04%	4.24%	1.52%	0.19%	0.37%	0.13%	0.03%	0.24%	0.50%	0.34%	0.76%	0.07%	1.69%	3.12%	0.10%	0.00%	100%
Road 1	1	-	70	68.0903	Y	2000-2100	610	64.01%	23.38%	0.04%	3.78%	1.36%	0.35%	0.68%	0.10%	0.01%	0.08%	0.44%	0.30%	0.67%	0.03%	1.77%	2.83%	0.18%	0.00%	100%
Road 1	1	-	70	68.19019	Y	2100-2200	580	57.47%	31.00%	0.04%	3.66%	1.32%	0.24%	0.48%	0.12%	0.01%	0.08%	0.34%	0.23%	0.52%	0.03%	1.98%	2.36%	0.12%	0.00%	100%
Road 1	1	-	70	68.26278	Y	2200-2300	566	53.83%	36.09%	0.03%	3.35%	1.20%	0.19%	0.37%	0.09%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.83%	2.72%	0.10%	0.00%	100%
Road 1	1	-	70	68.64295	Y	2300-0000	437	54.06%	33.90%	0.04%	3.69%	1.32%	0.29%	0.56%	0.10%	0.06%	0.47%	0.15%	0.11%	0.24%	0.03%	1.84%	2.99%	0.15%	0.00%	100%
Road 2	2	-	70	69.18514	Y	0000-0100	246	49.32%	28.80%	0.09%	8.36%	3.00%	0.80%	1.58%	0.14%	0.10%	0.78%	0.26%	0.18%	0.39%	0.04%	2.77%	2.98%	0.41%	0.00%	100%
Road 2	2	-	70	69.42952	Y	0100-0200	170	49.08%	26.48%	0.09%	9.01%	3.24%	1.01%	1.98%	0.15%	0.15%	1.13%	0.37%	0.26%	0.56%	0.04%	2.74%	3.19%	0.52%	0.00%	100%
Road 2	2	-	70	69.55229	Y	0200-0300	131	48.90%	24.13%	0.10%	9.67%	3.47%	1.22%	2.39%	0.16%	0.19%	1.48%	0.48%	0.33%	0.73%	0.04%	2.69%	3.39%	0.62%	0.00%	100%
Road 2	2	-	70	69.6561	Y	0300-0400	99	48.63%	21.86%	0.11%	10.32%	3.71%	1.41%	2.77%	0.17%	0.23%	1.81%	0.59%	0.41%	0.90%	0.04%	2.69%	3.62%	0.72%	0.00%	100%
Road 2	2	-	70	69.66711	Y	0400-0500	95	48.44%	19.55%	0.11%	10.97%	3.94%	1.61%	3.17%	0.18%	0.28%	2.15%	0.70%	0.49%	1.07%	0.04%	2.65%	3.82%	0.83%	0.00%	100%
Road 2	2	-	70	69.51816	Y	0500-0600	136	48.23%	17.25%	0.12%	11.63%	4.18%	1.81%	3.56%	0.19%	0.32%	2.49%	0.81%	0.56%	1.24%	0.04%	2.61%	4.02%	0.93%	0.00%	100%
Road 2	2	-	70	68.61161	Y	0600-0700	386	48.12%	14.89%	0.13%	12.25%	4.40%	2.03%	3.99%	0.20%	0.37%	2.86%	0.93%	0.64%	1.42%	0.04%	2.51%	4.19%	1.04%	0.00%	100%
Road 2	2	-	70	67.42465	Y	0700-0800	706	47.93%	12.60%	0.13%	12.89%	4.63%	2.23%	4.39%	0.21%	0.41%	3.21%	1.04%	0.72%	1.58%	0.03%	2.46%	4.38%	1.15%	0.00%	100%
Road 2	2	-	70	67.39388	Y	0800-0900	745	52.64%	16.10%	0.12%	11.40%	4.09%	1.75%	3.45%	0.13%	0.19%	1.50%	0.75%	0.52%	1.14%	0.05%	1.96%	3.31%	0.90%	0.00%	100%
Road 2	2	-	70	67.34595	Y	0900-1000	703	42.75%	13.85%	0.19%	17.87%	6.42%	3.26%	6.41%	0.16%	0.13%	1.01%	0.47%	0.33%	0.72%	0.05%	2.24%	2.45%	1.68%	0.00%	100%
Road 2	2	-	70	67.35666	Y	1000-1100	687	37.45%	17.06%	0.20%	19.62%	7.05%	3.77%	7.42%	0.10%	0.12%	0.90%	0.17%	0.12%	0.26%	0.11%	2.28%	1.42%	1.94%	0.00%	100%
Road 2	2	-	70	67.56933	Y	1100-1200	638	39.72%	16.65%	0.18%	17.54%	6.30%	3.90%	7.66%	0.18%	0.09%	0.71%	0.28%	0.19%	0.42%	0.03%	2.11%	2.04%	2.00%	0.00%	100%
Road 2	2	-	70	66.54646	Y	1200-1300	1015	57.11%	19.81%	0.07%	6.42%	2.30%	1.38%	2.71%	0.13%	0.36%	2.80%	0.73%	0.51%	1.12%	0.10%	2.20%	1.54%	0.71%	0.00%	100%
Road 2	2	-	70	66.45276	Y	1300-1400	1015	50.89%	21.03%	0.08%	7.82%	2.81%	1.42%	2.79%	0.21%	0.36%	2.82%	1.31%	0.91%	2.00%	0.12%	2.41%	2.28%	0.73%	0.00%	100%
Road 2	2	-	70	66.46934	Y	1400-1500	1045	57.95%	17.96%	0.07%	6.53%	2.35%	1.44%	2.84%	0.13%	0.30%	2.36%	0.59%	0.41%	0.89%	0.06%	2.25%	3.14%	0.74%	0.00%	100%
Road 2	2	-	70	66.4997	Y	1500-1600	1041	57.24%	20.58%	0.07%	6.77%	2.43%	1.54%	3.02%	0.12%	0.24%	1.84%	0.24%	0.17%	0.37%	0.05%	2.30%	2.22%	0.79%	0.00%	100%
Road 2	2	-	70	66.19929	Y	1600-1700	1134	56.87%	19.65%	0.07%	7.08%	2.54%	1.08%	2.12%	0.12%	0.18%	1.41%	0.74%	0.52%	1.13%	0.06%	2.38%	3.47%	0.55%	0.00%	100%
Road 2	2	-	70	65.66586	Y	1700-1800	1356	65.50%	14.09%	0.05%	4.47%	1.60%	0.54%	1.05%	0.15%	0.15%	1.18%	0.76%	0.53%	1.16%	0.03%	1.96%	6.51%	0.27%	0.00%	100%
Road 2	2	-	70	65.63631	Y	1800-1900	1392	70.50%	15.59%	0.03%	3.17%	1.14%	0.39%	0.76%	0.15%	0.02%	0.19%	0.51%	0.35%	0.77%	0.01%	2.04%	4.18%	0.20%	0.00%	100%
Road 2	2	-	70	66.16181	Y	1900-2000	1229	66.91%	21.16%	0.03%	2.83%	1.02%	0.12%	0.25%	0.15%	0.03%	0.24%	0.50%	0.35%	0.77%	0.10%	2.31%	3.17%	0.06%	0.00%	100%
Road 2	2	-	70	66.86927	Y	2000-2100	1002	65.01%	23.74%	0.03%	2.53%	0.91%	0.23%	0.45%	0.12%	0.01%	0.08%	0.45%	0.31%	0.68%	0.05%	2.42%	2.88%	0.12%	0.00%	100%
Road 2	2	-	70	67.01849	Y	2100-2200	955	58.21%	31.40%	0.03%	2.44%	0.88%	0.16%	0.32%	0.14%	0.01%	0.08%	0.34%	0.24%	0.52%	0.04%	2.71%	2.39%	0.08%	0.00%	100%
Road 2	2	-	70	67.13266	Y	2200-2300	934	54.44%	36.50%	0.02%	2.23%	0.80%	0.12%	0.24%	0.11%	0.01%	0.08%	0.03%	0.02%	0.04%	0.04%	2.49%	2.75%	0.06%	0.00%	100%
Road 2	2	-	70	67.77002	Y	2300-0000	719	54.83%	34.38%	0.03%	2.46%	0.88%	0.19%	0.38%	0.12%	0.06%	0.48%	0.16%	0.11%	0.24%	0.04%	2.51%	3.04%	0.10%	0.00%	100%
Road 3	3	-	70	67.42782	Y	0000-0100	825	55.09%	32.17%	0.03%	3.14%	1.13%	0.30%	0.59%	0.21%	0.11%	0.88%	0.29%	0.20%	0.43%	0.03%	1.93%	3.33%	0.16%	0.00%	100%
Road 3	3	-	70	68.22835	Y	0100-0200	562	55.48%	29.93%	0.04%	3.43%	1.23%	0.38%	0.75%	0.22%	0.16%	1.28%	0.42%	0.29%	0.63%	0.03%	1.93%	3.61%	0.20%	0.00%	100%
Road 3	3	-	70	68.63174	Y	0200-0300	430	55.93%	27.60%	0.04%	3.72%	1.33%	0.47%	0.92%	0.24%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	1.91%	3.87%	0.24%	0.00%	100%
Road 3	3	-	70	68.96544	Y	0300-0400	322	56.29%	25.31%	0.04%	4.02%	1.44%	0.55%	1.08%	0.26%	0.27%	2.10%	0.69%	0.48%	1.04%	0.03%	1.94%	4.19%	0.28%	0.00%	100%
Road 3	3	-	70	69.014	Y	0400-0500	304	56.75%	22.90%	0.05%	4.32%	1.55%	0.63%	1.25%	0.28%	0.32%	2.52%	0.82%	0.57%	1.26%	0.03%	1.93%	4.47%	0.33%	0.00%	100%
Road 3	3	-	70	68.59449	Y	0500-0600	428	57.21%	20.46%	0.05%	4.64%	1.67%	0.72%	1.42%	0.30%	0.38%	2.95%	0.97%	0.67%	1.47%	0.03%	1.93%	4.77%	0.37%	0.00%	100%
Road 3	3	-	70	66.01045	Y	0600-0700	1203	57.78%	17.88%	0.05%	4.95%	1.78%	0.82%	1.61%	0.32%	0.44%	3.44%	1.12%	0.77%	1.70%	0.03%	1.88%	5.03%	0.42%	0.00%	100%
Road 3	3	-	70	61.68924	Y	0700-0800	2175	58.27%	15.31%	0.06%	5.27%	1.89%	0.91%	1.79%	0.34%	0.50%	3.90%	1.26%	0.88%	1.93%	0.03%	1.86%	5.33%	0.47%	0.00%	100%
Road 3	3	-	70	60.02496	Y	0800-0900	2369	62.02%	18.97%	0.05%	4.52%	1.62%	0.69%	1.36%	0.21%	0.23%	1.76%	0.88%	0.61%	1.34%	0.04%	1.44%	3.90%	0.36%	0.00%	100%
Road 3	3	-	70	63.29198	Y	0900-1000	1985	56.70%	18.37%	0.08%	7.97%	2.86%	1.45%	2.86%	0.28%	0.17%	1.34%	0.63%	0.44%	0.96%	0.04%	1.85%	3.24%	0.75%	0.00%	100%
Road 3	3	-	70	63.63121	Y	1000-1100	1868	51.60%	23.51%	0.09%	9.09%	3.26%	1.75%	3.44%	0.19%	0.16%	1.24%	0.24%	0.17%	0.36%	0.09%	1.96%	1.96%	0.90%	0.00%	100%
Road 3	3	-	70	63.99876	Y	1100-1200	1775	53.46%	22.41%	0.08%	7.94%	2.85%	1.76%	3.47%	0.32%	0.12%	0.95%	0.37%	0.26%	0.57%	0.02%	1.77%	2.75%	0.91%	0.00%	100%
Road 3	3	-	70	67.48347	Y	1200-1300	714	52.18%	18.10%	0.10%	9.45%	3.39%	2.03%	3.99%	1.32%	0.33%	2.56%	0.67%	0.47%	1.02%	0.08%	1.86%	1.41%	1.04%	0.00%	100%
Road 3	3	-	70	67.36626	Y	1300-1400	727	45.68%	18.87%	0.12%	11.30%	4.06%	2.05%	4.03%	2.03%	0.32%	2.53%	1.18%	0.82%	1.80%	0.10%	2.00%	2.05%	1.05%	0.00%	100%
Road 3	3	-	70	67.41883	Y	1400-1500	736	52.88%	16.39%	0.10%	9.60%	3.45%	2.12%	4.17%	1.25%	0.28%	2.15%	0.54%	0.37%	0.81%	0.05%	1.89%	2.86%	1.09%	0.00%	100%
Road 3	3	-	70	67.42799	Y	1500-1600	735	52.08%	18.73%	0.10%	9.92%	3.56%	2.25%	4.43%	1.17%	0.21%	1.68%	0.22%	0.15%	0.34%	0.04%	1.93%	2.02%	1.16%	0.00%	100%
Road 3	3	-	70	67.24079	Y	1600-1700	795	52.07%	18.00%	0.11%	10.45%	3.75%	1.59%	3.13%	1.19%	0.17%	1.30%	0.68%	0.47%	1.04%	0.05%	2.01%	3.18%	0.82%	0.00%	100%
Road 3	3	-	70	66.96751	Y	1700-1800	925	61.69%	13.27%	0.07%	6.77%	2.43%	0.81%	1.60%	1.51%	0.14%	1.12%	0.72%	0.50%	1.09%	0.03%	1.70%	6.13%	0.42%	0.00%	100%
Road 3	3	-	70	67.00006	Y	1800-1900	937	67.26%	14.87%	0.05%	4.87%	1.75%	0.59%	1.16%	1.58%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	1.80%	3.99%	0.30%	0.00%	100%
Road 3	3	-	70	67.39842	Y	1900-2000	821	64.36%	20.35%	0.05%	4.39%	1.58%	0.19%	0.38%	1.60%	0.03%	0.23%	0.49%	0.34%	0.74%	0.09%	2.05%	3.04%	0.10%	0.00%	100%
Road 3	3	-	70	67.88601	Y	2000-2100	667	62.75%	22.92%	0.04%	3.93%	1.41%	0.36%	0.71%	1.25%	0.01%	0.08%	0.43%	0.30%	0.65%	0.04%	2.16%	2.78%	0.18%	0.00%	100%
Road 3	3	-	70	67.9888	Y	2100-2200	636	56.20%	30.32%	0.04%	3.80%	1.36%	0.25%	0.49%	1.49%	0.01%	0.08%	0.33%	0.23%	0.50%	0.03%	2.41%	2.31%	0.13%	0.00%	100%
Road 3	3	-	70	68.08064	Y	2200-2300	618	52.86%	35.44%	0.04%	3.49%	1.25%	0.19%	0.38%	1.12%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	2.23%	2.68%	0.10%	0.00%	100%
Road 3	3	-	70	68.49761	Y	2300-0000	478	53.01%	33.24%	0.04%	3.84%	1.38%	0.30%	0.59%	1.23%	0.06%	0.46%	0.15%	0.11%	0.23%	0.03%	2.24%	2.94%	0.15%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 4	4	-	70	69.08989	Y	0000-0100	278	49.89%	29.14%	0.08%	7.83%	2.81%	0.75%	1.48%	0.73%	0.10%	0.79%	0.26%	0.18%	0.39%	0.03%	2.12%	3.01%	0.39%	0.00%	100%
Road 4	4	-	70	69.36333	Y	0100-0200	192	49.69%	26.80%	0.09%	8.45%	3.03%	0.94%	1.86%	0.79%	0.15%	1.15%	0.37%	0.26%	0.57%	0.03%	2.11%	3.23%	0.49%	0.00%	100%
Road 4	4	-	70	69.50067	Y	0200-0300	148	49.54%	24.45%	0.09%	9.06%	3.25%	1.14%	2.24%	0.84%	0.19%	1.50%	0.49%	0.34%	0.74%	0.03%	2.06%	3.43%	0.59%	0.00%	100%
Road 4	4	-	70	69.61676	Y	0300-0400	112	49.30%	22.16%	0.10%	9.68%	3.48%	1.32%	2.60%	0.91%	0.24%	1.84%	0.60%	0.42%	0.91%	0.03%	2.07%	3.67%	0.68%	0.00%	100%
Road 4	4	-	70	69.62927	Y	0400-0500	107	49.13%	19.83%	0.11%	10.30%	3.70%	1.51%	2.97%	0.96%	0.28%	2.18%	0.71%	0.50%	1.09%	0.03%	2.04%	3.87%	0.78%	0.00%	100%
Road 4	4	-	70	69.46373	Y	0500-0600	153	48.96%	17.51%	0.11%	10.92%	3.92%	1.70%	3.34%	1.02%	0.32%	2.52%	0.83%	0.57%	1.26%	0.03%	2.01%	4.08%	0.87%	0.00%	100%
Road 4	4	-	70	68.45542	Y	0600-0700	434	48.87%	15.12%	0.12%	11.51%	4.13%	1.91%	3.75%	1.07%	0.37%	2.91%	0.94%	0.65%	1.44%	0.03%	1.93%	4.25%	0.98%	0.00%	100%
Road 4	4	-	70	67.13658	Y	0700-0800	794	48.72%	12.80%	0.13%	12.12%	4.35%	2.10%	4.13%	1.12%	0.42%	3.26%	1.06%	0.73%	1.61%	0.03%	1.89%	4.45%	1.08%	0.00%	100%
Road 4	4	-	70	67.09859	Y	0800-0900	838	53.46%	16.35%	0.11%	10.71%	3.85%	1.65%	3.24%	0.72%	0.19%	1.52%	0.76%	0.53%	1.16%	0.04%	1.51%	3.36%	0.85%	0.00%	100%
Road 4	4	-	70	67.08184	Y	0900-1000	783	43.87%	14.21%	0.18%	16.97%	6.09%	3.10%	6.09%	0.87%	0.13%	1.04%	0.49%	0.34%	0.74%	0.04%	1.75%	2.51%	1.59%	0.00%	100%
Road 4	4	-	70	67.11365	Y	1000-1100	761	38.66%	17.61%	0.20%	18.75%	6.73%	3.60%	7.09%	0.56%	0.12%	0.93%	0.18%	0.12%	0.27%	0.08%	1.79%	1.47%	1.85%	0.00%	100%
Road 4	4	-	70	67.3284	Y	1100-1200	710	40.77%	17.09%	0.17%	16.66%	5.98%	3.70%	7.28%	0.95%	0.09%	0.73%	0.28%	0.20%	0.43%	0.02%	1.64%	2.10%	1.90%	0.00%	100%
Road 4	4	-	70	66.35517	Y	1200-1300	1066	56.00%	19.42%	0.07%	7.01%	2.52%	1.51%	2.96%	0.95%	0.35%	2.74%	0.72%	0.50%	1.10%	0.08%	1.79%	1.51%	0.77%	0.00%	100%
Road 4	4	-	70	66.22917	Y	1300-1400	1073	49.58%	20.48%	0.09%	8.48%	3.05%	1.54%	3.03%	1.48%	0.35%	2.75%	1.28%	0.89%	1.95%	0.10%	1.94%	2.22%	0.79%	0.00%	100%
Road 4	4	-	70	66.27277	Y	1400-1500	1098	56.83%	17.61%	0.07%	7.13%	2.56%	1.58%	3.10%	0.90%	0.30%	2.31%	0.58%	0.40%	0.88%	0.05%	1.82%	3.08%	0.81%	0.00%	100%
Road 4	4	-	70	66.30315	Y	1500-1600	1094	56.12%	20.18%	0.08%	7.39%	2.65%	1.68%	3.30%	0.84%	0.23%	1.81%	0.24%	0.17%	0.36%	0.04%	1.87%	2.17%	0.86%	0.00%	100%
Road 4	4	-	70	65.99675	Y	1600-1700	1189	55.83%	19.30%	0.08%	7.75%	2.78%	1.18%	2.32%	0.86%	0.18%	1.39%	0.73%	0.51%	1.11%	0.05%	1.93%	3.41%	0.61%	0.00%	100%
Road 4	4	-	70	65.45439	Y	1700-1800	1417	64.54%	13.89%	0.05%	4.90%	1.76%	0.59%	1.16%	1.06%	0.15%	1.17%	0.75%	0.52%	1.14%	0.03%	1.60%	6.41%	0.30%	0.00%	100%
Road 4	4	-	70	65.43888	Y	1800-1900	1452	69.63%	15.39%	0.04%	3.49%	1.25%	0.42%	0.83%	1.09%	0.02%	0.19%	0.50%	0.35%	0.76%	0.01%	1.67%	4.13%	0.22%	0.00%	100%
Road 4	4	-	70	66.00438	Y	1900-2000	1279	66.22%	20.94%	0.03%	3.12%	1.12%	0.14%	0.27%	1.10%	0.03%	0.24%	0.50%	0.35%	0.76%	0.08%	1.89%	3.13%	0.07%	0.00%	100%
Road 4	4	-	70	66.75073	Y	2000-2100	1040	64.49%	23.55%	0.03%	2.79%	1.00%	0.26%	0.50%	0.86%	0.01%	0.08%	0.44%	0.31%	0.67%	0.04%	1.99%	2.85%	0.13%	0.00%	100%
Road 4	4	-	70	66.90487	Y	2100-2200	992	57.71%	31.14%	0.03%	2.70%	0.97%	0.18%	0.35%	1.02%	0.01%	0.08%	0.34%	0.24%	0.52%	0.03%	2.22%	2.37%	0.09%	0.00%	100%
Road 4	4	-	70	67.0323	Y	2200-2300	968	54.10%	36.27%	0.03%	2.47%	0.89%	0.14%	0.27%	0.76%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	2.05%	2.74%	0.07%	0.00%	100%
Road 4	4	-	70	67.68751	Y	2300-0000	746	54.42%	34.12%	0.03%	2.72%	0.98%	0.21%	0.42%	0.85%	0.06%	0.48%	0.16%	0.11%	0.24%	0.03%	2.06%	3.01%	0.11%	0.00%	100%
Road 31	31	-	50	29.3237	Y	0000-0100	19	37.76%	22.05%	0.05%	4.94%	1.77%	0.48%	0.93%	3.61%	0.08%	0.60%	0.20%	0.14%	0.30%	0.36%	24.21%	2.28%	0.24%	0.00%	100%
Road 31	31	-	50	29.53121	Y	0100-0200	13	37.66%	20.31%	0.06%	5.34%	1.92%	0.60%	1.17%	3.91%	0.11%	0.87%	0.28%	0.20%	0.43%	0.36%	24.03%	2.45%	0.31%	0.00%	100%
Road 31	31	-	50	29.6373	Y	0200-0300	10	37.71%	18.61%	0.06%	5.75%	2.07%	0.72%	1.42%	4.19%	0.15%	1.14%	0.37%	0.26%	0.57%	0.35%	23.65%	2.61%	0.37%	0.00%	100%
Road 31	31	-	50	29.72267	Y	0300-0400	8	37.46%	16.84%	0.06%	6.14%	2.20%	0.84%	1.65%	4.50%	0.18%	1.40%	0.46%	0.32%	0.69%	0.37%	23.68%	2.79%	0.43%	0.00%	100%
Road 31	31	-	50	29.73473	Y	0400-0500	7	37.45%	15.12%	0.07%	6.55%	2.35%	0.96%	1.89%	4.79%	0.21%	1.67%	0.54%	0.38%	0.83%	0.36%	23.39%	2.95%	0.49%	0.00%	100%
Road 31	31	-	50	29.61993	Y	0500-0600	10	37.40%	13.38%	0.07%	6.96%	2.50%	1.08%	2.13%	5.09%	0.25%	1.93%	0.63%	0.44%	0.96%	0.35%	23.15%	3.12%	0.56%	0.00%	100%
Road 31	31	-	50	28.92784	Y	0600-0700	29	37.68%	11.66%	0.08%	7.40%	2.66%	1.23%	2.41%	5.37%	0.29%	2.24%	0.73%	0.50%	1.11%	0.31%	22.42%	3.28%	0.63%	0.00%	100%
Road 31	31	-	50	28.03557	Y	0700-0800	52	37.70%	9.91%	0.08%	7.82%	2.81%	1.36%	2.67%	5.66%	0.32%	2.52%	0.82%	0.57%	1.25%	0.30%	22.07%	3.45%	0.70%	0.00%	100%
Road 31	31	-	50	28.14275	Y	0800-0900	52	43.69%	13.36%	0.08%	7.30%	2.62%	1.12%	2.21%	3.82%	0.16%	1.24%	0.62%	0.43%	0.95%	0.46%	18.62%	2.75%	0.58%	0.00%	100%
Road 31	31	-	50	28.11764	Y	0900-1000	50	35.31%	11.44%	0.12%	11.39%	4.09%	2.08%	4.09%	4.55%	0.11%	0.84%	0.39%	0.27%	0.60%	0.48%	21.18%	2.02%	1.07%	0.00%	100%
Road 31	31	-	50	28.15731	Y	1000-1100	48	31.43%	14.32%	0.13%	12.71%	4.56%	2.44%	4.80%	2.96%	0.10%	0.75%	0.15%	0.10%	0.22%	1.01%	21.86%	1.19%	1.25%	0.00%	100%
Road 31	31	-	50	28.3211	Y	1100-1200	44	33.23%	13.93%	0.12%	11.33%	4.07%	2.52%	4.95%	5.07%	0.08%	0.59%	0.23%	0.16%	0.35%	0.26%	20.12%	1.71%	1.29%	0.00%	100%
Road 31	31	-	50	27.30327	Y	1200-1300	76	35.24%	12.22%	0.12%	11.86%	4.26%	2.55%	5.01%	11.60%	0.22%	1.73%	0.45%	0.31%	0.69%	0.49%	10.98%	0.95%	1.31%	0.00%	100%
Road 31	31	-	50	26.96086	Y	1300-1400	83	28.53%	11.79%	0.14%	13.13%	4.71%	2.38%	4.68%	16.51%	0.20%	1.58%	0.74%	0.51%	1.12%	0.55%	10.92%	1.28%	1.22%	0.00%	100%
Road 31	31	-	50	27.23442	Y	1400-1500	78	35.81%	11.10%	0.13%	12.09%	4.34%	2.67%	5.26%	10.99%	0.19%	1.46%	0.36%	0.25%	0.55%	0.29%	11.20%	1.94%	1.37%	0.00%	100%
Road 31	31	-	50	27.23256	Y	1500-1600	78	35.25%	12.67%	0.13%	12.49%	4.48%	2.84%	5.58%	10.28%	0.15%	1.14%	0.15%	0.10%	0.23%	0.25%	11.44%	1.37%	1.46%	0.00%	100%
Road 31	31	-	50	27.03472	Y	1600-1700	84	35.33%	12.21%	0.14%	13.18%	4.73%	2.01%	3.95%	10.53%	0.11%	0.88%	0.46%	0.32%	0.70%	0.32%	11.93%	2.16%	1.03%	0.00%	100%
Road 31	31	-	50	26.85875	Y	1700-1800	94	43.45%	9.35%	0.09%	8.87%	3.19%	1.06%	2.09%	13.86%	0.10%	0.79%	0.50%	0.35%	0.77%	0.17%	10.49%	4.32%	0.55%	0.00%	100%
Road 31	31	-	50	26.89501	Y	1800-1900	94	47.88%	10.59%	0.07%	6.45%	2.32%	0.78%	1.54%	14.63%	0.02%	0.13%	0.34%	0.24%	0.52%	0.06%	11.19%	2.84%	0.40%	0.00%	100%
Road 31	31	-	50	27.24736	Y	1900-2000	83	45.49%	14.39%	0.06%	5.77%	2.07%	0.25%	0.50%	14.67%	0.02%	0.16%	0.34%	0.24%	0.52%	0.53%	12.70%	2.15%	0.13%	0.00%	100%
Road 31	31	-	50	27.82209	Y	2000-2100	66	45.58%	16.65%	0.06%	5.31%	1.91%	0.49%	0.95%	11.77%	0.01%	0.06%	0.31%	0.22%	0.48%	0.26%	13.70%	2.02%	0.25%	0.00%	100%
Road 31	31	-	50	27.83266	Y	2100-2200	65	39.56%	21.34%	0.05%	4.97%	1.79%	0.33%	0.65%	13.66%	0.01%	0.06%	0.23%	0.16%	0.35%	0.20%	14.84%	1.63%	0.17%	0.00%	100%
Road 31	31	-	50	28.03751	Y	2200-2300	60	38.97%	26.13%	0.05%	4.78%	1.72%	0.27%	0.52%	10.70%	0.01%	0.06%	0.02%	0.01%	0.03%	0.21%	14.41%	1.97%	0.14%	0.00%	100%
Road 31	31	-	50	28.44111	Y	2300-0000	47	38.46%	24.12%	0.05%	5.17%	1.86%	0.40%	0.79%	11.64%	0.04%	0.34%	0.11%	0.08%	0.17%	0.21%	14.22%	2.13%	0.21%	0.00%	100%
Road 32	32	-	50	28.7691	Y	0000-0100	40	46.77%	27.31%	0.03%	3.33%	1.20%	0.32%	0.63%	4.25%	0.10%	0.74%	0.24%	0.17%	0.37%	0.17%	11.38%	2.82%	0.16%	0.00%	100%
Road 32	32	-	50	29.14856	Y	0100-0200	27	46.85%	25.27%	0.04%	3.61%	1.30%	0.40%	0.79%	4.61%	0.14%	1.08%	0.35%	0.24%	0.54%	0.17%	11.35%	3.05%	0.21%	0.00%	100%
Road 32	32	-	50	29.34123	Y	0200-0300	21	47.04%	23.21%	0.04%	3.91%	1.40%	0.49%	0.97%	4.96%	0.18%	1.43%	0.46%	0.32%	0.71%	0.17%	11.20%	3.26%	0.25%	0.00%	100%
Road 32	32	-	50	29.49843	Y	0300-0400	16	47.01%	21.13%	0.04%	4.19%	1.50%	0.57%	1.12%	5.36%	0.22%	1.75%	0.57%	0.40%	0.87%	0.17%	11.28%	3.49%	0.29%	0.00%	100%
Road 32	32	-	50	29.52063	Y	0400-0500	15	47.16%	19.03%	0.05%	4.49%	1.61%	0.66%	1.30%	5.73%	0.27%	2.10%	0.69%	0.48%	1.04%	0.17%	11.18%	3.71%	0.34%	0.00%	100%
Road 32	32	-	50	29.31417	Y	0500-0600	21	47.29%	16.91%	0.05%	4.79%	1.72%	0.74%	1.46%	6.11%	0.31%	2.44%	0.80%	0.55%	1.22%	0.17%	11.11%	3.94%	0.38%	0.00%	100%
Road 32	32	-	50	28.05835	Y	0600-0700	60	47.67%	14.75%	0.05%	5.10%	1.83%	0.84%	1.66%	6.44%	0.36%	2.84%	0.92%	0.64%	1.40%	0.15%	10.77%	4.15%	0.43%	0.00%	100%
Road 32	32	-	50	26.44362	Y	0700-0800	109	47.85%	12.57%	0.06%	5.40%	1.94%	0.94%	1.84%	6.82%	0.41%	3.20%	1.04%	0.72%	1.58%	0.15%	10.63%	4.37%	0.48%	0.00%	100%
Road 32	32	-	50	26.5025	Y	0800-0900	113	53.53%	16.37%	0.05%	4.87%	1.75%	0.75%	1.47%	4.44%	0.19%	1.52%	0.76%	0.53%	1.16%	0.21%	8.66%	3.36%	0.38%	0.00%	100%
Road 32	32	-	50	26.72431	Y	0900-1000	99	46.50%	15.07%	0.09%	8.16%	2.93%	1.49%	2.93%	5.68%	0.14%	1.10%	0.52%	0.36%	0.79%	0.24%	10.59%	2.66%	0.77%	0.00%	100%
Road 32	32	-	50	26.89716	Y	1000-1100	93	42.56%	19.39%	0.10%	9.37%	3.36%	1.80%	3.54%	3.81%	0.13%	1.02%	0.20%	0.14%	0.30%	0.52%	11.24%	1.62%	0.92%	0.00%	100%
Road 32	32	-	50	27.06829	Y	1100-1200	89	43.70%	18.32%	0.08%	8.11%	2.91%	1.80%	3.54%	6.33%	0.10%	0.78%	0.30%	0.21%	0.46%	0.13%	10.04%	2.25%	0.93%	0.00%	100%
Road 32	32	-	50	27.90264	Y	1200-1300	60	31.28%	10.85%	0.18%	17.28%	6.21%	3.71%	7.30%	14.54%	0.20%	1.53%	0.40%	0.28%	0.61%	0.12%	2.75%	0.84%	1.91%	0.00%	100%
Road 32	32	-	50	27.58353	Y	1300-1400	68	24.72%	10.21%	0.19%	18.66%	6.70%	3.39%	6.66%	20.20%	0.18%	1.37%	0.64%	0.44%	0.97%	0.13%	2.67%	1.11%	1.74%	0.00%	100%
Road 32	32	-	50	27.84243	Y	1400-1500	62	31.73%	9.83%	0.18%	17.58%	6.31%	3.89%	7.64%	13.75%	0.17%	1.29%	0.32%	0.22%	0.49%	0.07%	2.80%	1.72%	2.00%	0.00%	100%
Road 32	32	-	50	27.83459	Y	1500-1600	62	31.16%	11.20%	0.19%	18.11%	6.50%	4.11%	8.09%	12.84%	0.13%	1.00%	0.13%	0.09%	0.20%	0.06%	2.86%	1.21%	2.11%	0.00%	100%
Road 32	32	-	50	27.73422	Y	1600-1700	66	31.66%	10.94%	0.20%	19.38%	6.96%	2.95%	5.80%	13.32%	0.10%	0.79%	0.41%	0.29%	0.63%	0.08%	3.02%	1.93%	1.52%	0.00%	100%
Road 32	32	-	50	27.67475	Y	1700-1800	72	40.15%	8.64%	0.14%	13.45%	4.83%	1.61%	3.17%	18.08%	0.09%	0.73%	0.47%	0.32%	0.71%	0.04%	2.74%	3.99%	0.83%	0.00%	100%
Road 32	32	-	50	27.78454	Y	1800-1900	70	45.44%	10.05%	0.10%	10.04%	3.61%	1.22%	2.40%	19.61%	0.02%	0.12%	0.33%	0.23%	0.50%	0.02%	3.00%	2.69%	0.63%	0.00%	100%
Road 32	32	-	50	28.13682	Y	1900-2000	60	44.53%	14.08%	0.10%	9.27%	3.33%	0.41%	0.80%	20.26%	0.02%	0.16%	0.34%	0.23%	0.51%	0.15%	3.51%	2.11%	0.21%	0.00%	100%
Road 32	32	-	50	28.55661	Y	2000-2100	47	45.32%	16.55%	0.09%	8.66%	3.11%	0.79%	1.56%	16.52%	0.01%	0.06%	0.31%	0.22%	0.47%	0.07%	3.85%	2.00%	0.41%	0.00%	100%
Road 32	32	-	50	28.58448	Y	2100-2200	46	39.59%	21.36%	0.09%	8.17%	2.93%	0.54%	1.06%	19.29%	0.01%	0.06%	0.23%	0.16%	0.36%	0.06%	4.19%	1.63%	0.28%	0.00%	100%
Road 32	32	-	50	28.73806	Y	2200-2300	42	39.48%	26.47%	0.08%	7.95%	2.85%	0.44%	0.87%	15.31%	0.01%	0.06%	0.02%	0.01%	0.03%	0.06%	4.12%	2.00%	0.23%	0.00%	100%
Road 32	32	-	50	28.97929	Y	2300-0000	33	38.51%	24.15%	0.09%	8.50%	3.05%	0.66%	1.30%	16.45%	0.04%	0.34%	0.11%	0.08%	0.17%	0.06%	4.02%	2.13%	0.34%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 33	33	-	50	29.38882	Y	0000-0100	6	3.08%	1.80%	0.01%	1.03%	0.37%	0.10%	0.20%	29.29%	0.01%	0.05%	0.02%	0.01%	0.02%	0.95%	62.83%	0.19%	0.05%	0.00%	100%
Road 33	33	-	50	29.57386	Y	0100-0200	4	3.01%	1.63%	0.01%	1.09%	0.39%	0.12%	0.24%	31.04%	0.01%	0.07%	0.02%	0.02%	0.03%	0.93%	61.12%	0.20%	0.06%	0.00%	100%
Road 33	33	-	50	29.66994	Y	0200-0300	3	2.97%	1.47%	0.01%	1.16%	0.42%	0.15%	0.29%	32.86%	0.01%	0.09%	0.03%	0.02%	0.04%	0.88%	59.32%	0.21%	0.08%	0.00%	100%
Road 33	33	-	50	29.74484	Y	0300-0400	2	2.88%	1.29%	0.01%	1.21%	0.43%	0.16%	0.32%	34.37%	0.01%	0.11%	0.04%	0.02%	0.05%	0.89%	57.89%	0.21%	0.08%	0.00%	100%
Road 33	33	-	50	29.75519	Y	0400-0500	2	2.83%	1.14%	0.01%	1.27%	0.46%	0.19%	0.37%	36.03%	0.02%	0.13%	0.04%	0.03%	0.06%	0.86%	56.25%	0.22%	0.10%	0.00%	100%
Road 33	33	-	50	29.64763	Y	0500-0600	3	2.78%	0.99%	0.01%	1.32%	0.48%	0.21%	0.41%	37.61%	0.02%	0.14%	0.05%	0.03%	0.07%	0.83%	54.71%	0.23%	0.11%	0.00%	100%
Road 33	33	-	50	29.01338	Y	0600-0700	10	2.79%	0.86%	0.01%	1.40%	0.50%	0.23%	0.46%	39.48%	0.02%	0.17%	0.05%	0.04%	0.08%	0.74%	52.79%	0.24%	0.12%	0.00%	100%
Road 33	33	-	50	28.18912	Y	0700-0800	18	2.75%	0.72%	0.02%	1.46%	0.52%	0.25%	0.50%	41.06%	0.02%	0.18%	0.06%	0.04%	0.09%	0.70%	51.22%	0.25%	0.13%	0.00%	100%
Road 33	33	-	50	28.543	Y	0800-0900	14	4.03%	1.23%	0.02%	1.72%	0.62%	0.26%	0.52%	34.96%	0.01%	0.11%	0.06%	0.04%	0.09%	1.34%	54.59%	0.25%	0.14%	0.00%	100%
Road 33	33	-	50	28.4066	Y	0900-1000	16	2.83%	0.92%	0.02%	2.33%	0.84%	0.43%	0.84%	36.15%	0.01%	0.07%	0.03%	0.02%	0.05%	1.21%	53.88%	0.16%	0.22%	0.00%	100%
Road 33	33	-	50	28.54476	Y	1000-1100	14	2.77%	1.26%	0.03%	2.86%	1.03%	0.55%	1.08%	25.90%	0.01%	0.07%	0.01%	0.01%	0.02%	2.82%	61.20%	0.11%	0.28%	0.00%	100%
Road 33	33	-	50	28.58225	Y	1100-1200	14	2.63%	1.10%	0.02%	2.29%	0.82%	0.51%	1.00%	39.86%	0.01%	0.05%	0.02%	0.01%	0.03%	0.65%	50.60%	0.14%	0.26%	0.00%	100%
Road 33	33	-	50	28.47301	Y	1200-1300	16	1.07%	0.37%	0.04%	3.38%	1.21%	0.73%	1.43%	53.95%	0.01%	0.05%	0.01%	0.01%	0.02%	1.58%	35.73%	0.03%	0.37%	0.00%	100%
Road 33	33	-	50	28.01161	Y	1300-1400	22	0.70%	0.29%	0.03%	3.04%	1.09%	0.55%	1.09%	62.44%	0.00%	0.04%	0.02%	0.01%	0.03%	1.45%	28.89%	0.03%	0.28%	0.00%	100%
Road 33	33	-	50	28.461	Y	1400-1500	16	1.11%	0.34%	0.04%	3.54%	1.27%	0.78%	1.54%	52.45%	0.01%	0.05%	0.01%	0.01%	0.02%	0.96%	37.41%	0.06%	0.40%	0.00%	100%
Road 33	33	-	50	28.48419	Y	1500-1600	16	1.12%	0.40%	0.04%	3.74%	1.34%	0.85%	1.67%	50.28%	0.00%	0.04%	0.00%	0.00%	0.01%	0.87%	39.15%	0.04%	0.44%	0.00%	100%
Road 33	33	-	50	28.31924	Y	1600-1700	18	1.10%	0.38%	0.04%	3.85%	1.38%	0.59%	1.15%	50.18%	0.00%	0.03%	0.01%	0.01%	0.02%	1.07%	39.82%	0.07%	0.30%	0.00%	100%
Road 33	33	-	50	28.057	Y	1700-1800	21	1.25%	0.27%	0.03%	2.40%	0.86%	0.29%	0.57%	61.10%	0.00%	0.02%	0.01%	0.01%	0.02%	0.51%	32.39%	0.12%	0.15%	0.00%	100%
Road 33	33	-	50	27.96744	Y	1800-1900	22	1.32%	0.29%	0.02%	1.67%	0.60%	0.20%	0.40%	61.94%	0.00%	0.00%	0.01%	0.01%	0.01%	0.17%	33.17%	0.08%	0.10%	0.00%	100%
Road 33	33	-	50	28.07559	Y	1900-2000	21	1.19%	0.38%	0.01%	1.42%	0.51%	0.06%	0.12%	58.96%	0.00%	0.00%	0.01%	0.01%	0.01%	1.48%	35.73%	0.06%	0.03%	0.00%	100%
Road 33	33	-	50	28.57657	Y	2000-2100	15	1.32%	0.48%	0.02%	1.45%	0.52%	0.13%	0.26%	52.27%	0.00%	0.00%	0.01%	0.01%	0.01%	0.82%	42.59%	0.06%	0.07%	0.00%	100%
Road 33	33	-	50	28.45217	Y	2100-2200	16	1.03%	0.55%	0.01%	1.22%	0.44%	0.08%	0.16%	54.44%	0.00%	0.00%	0.01%	0.00%	0.01%	0.56%	41.41%	0.04%	0.04%	0.00%	100%
Road 33	33	-	50	28.7195	Y	2200-2300	13	1.16%	0.78%	0.01%	1.34%	0.48%	0.07%	0.15%	49.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.66%	46.21%	0.06%	0.04%	0.00%	100%
Road 33	33	-	50	28.96575	Y	2300-0000	11	1.10%	0.69%	0.01%	1.40%	0.50%	0.11%	0.21%	51.31%	0.00%	0.01%	0.00%	0.00%	0.00%	0.64%	43.88%	0.06%	0.06%	0.00%	100%
Road 34	34	-	50	28.68096	Y	0000-0100	18	38.79%	22.66%	0.04%	3.57%	1.28%	0.34%	0.67%	3.69%	0.08%	0.62%	0.20%	0.14%	0.31%	0.37%	24.72%	2.34%	0.18%	0.00%	100%
Road 34	34	-	50	29.08875	Y	0100-0200	13	38.81%	20.93%	0.04%	3.87%	1.39%	0.43%	0.85%	4.00%	0.11%	0.90%	0.29%	0.20%	0.44%	0.37%	24.61%	2.52%	0.22%	0.00%	100%
Road 34	34	-	50	29.29745	Y	0200-0300	10	38.97%	19.23%	0.04%	4.18%	1.50%	0.53%	1.03%	4.31%	0.15%	1.18%	0.38%	0.27%	0.58%	0.36%	24.30%	2.70%	0.27%	0.00%	100%
Road 34	34	-	50	29.46445	Y	0300-0400	7	38.83%	17.46%	0.05%	4.47%	1.61%	0.61%	1.20%	4.64%	0.19%	1.45%	0.47%	0.33%	0.72%	0.38%	24.40%	2.89%	0.31%	0.00%	100%
Road 34	34	-	50	29.48948	Y	0400-0500	7	38.94%	15.72%	0.05%	4.79%	1.72%	0.70%	1.38%	4.95%	0.22%	1.73%	0.57%	0.39%	0.86%	0.37%	24.17%	3.07%	0.36%	0.00%	100%
Road 34	34	-	50	29.27094	Y	0500-0600	10	39.01%	13.95%	0.05%	5.11%	1.83%	0.79%	1.56%	5.28%	0.26%	2.01%	0.66%	0.46%	1.00%	0.37%	24.00%	3.25%	0.41%	0.00%	100%
Road 34	34	-	50	27.95143	Y	0600-0700	28	39.43%	12.20%	0.06%	5.45%	1.96%	0.90%	1.78%	5.58%	0.30%	2.35%	0.76%	0.53%	1.16%	0.33%	23.32%	3.43%	0.46%	0.00%	100%
Road 34	34	-	50	26.25949	Y	0700-0800	50	39.58%	10.40%	0.06%	5.78%	2.07%	1.00%	1.97%	5.91%	0.34%	2.65%	0.86%	0.60%	1.31%	0.32%	23.03%	3.62%	0.51%	0.00%	100%
Road 34	34	-	50	26.452	Y	0800-0900	50	45.64%	13.96%	0.06%	5.37%	1.93%	0.82%	1.62%	3.96%	0.17%	1.30%	0.65%	0.45%	0.99%	0.47%	19.33%	2.87%	0.42%	0.00%	100%
Road 34	34	-	50	26.50618	Y	0900-1000	47	37.94%	12.29%	0.09%	8.61%	3.09%	1.57%	3.09%	4.86%	0.11%	0.90%	0.42%	0.29%	0.64%	0.51%	22.61%	2.17%	0.81%	0.00%	100%
Road 34	34	-	50	26.61302	Y	1000-1100	44	34.10%	15.54%	0.10%	9.70%	3.48%	1.87%	3.67%	3.19%	0.10%	0.82%	0.16%	0.11%	0.24%	1.09%	23.58%	1.29%	0.96%	0.00%	100%
Road 34	34	-	50	26.9047	Y	1100-1200	41	35.87%	15.03%	0.09%	8.60%	3.09%	1.91%	3.76%	5.44%	0.08%	0.64%	0.25%	0.17%	0.38%	0.28%	21.58%	1.84%	0.98%	0.00%	100%
Road 34	34	-	50	28.90795	Y	1200-1300	14	7.97%	2.76%	0.06%	5.47%	1.96%	1.18%	2.31%	64.04%	0.05%	0.39%	0.10%	0.07%	0.16%	0.54%	12.12%	0.21%	0.60%	0.00%	100%
Road 34	34	-	50	28.49652	Y	1300-1400	19	5.11%	2.11%	0.05%	4.79%	1.72%	0.87%	1.71%	72.18%	0.04%	0.28%	0.13%	0.09%	0.20%	0.48%	9.54%	0.23%	0.45%	0.00%	100%
Road 34	34	-	50	28.90929	Y	1400-1500	14	8.35%	2.59%	0.06%	5.75%	2.06%	1.27%	2.50%	62.57%	0.04%	0.34%	0.08%	0.06%	0.13%	0.33%	12.75%	0.45%	0.65%	0.00%	100%
Road 34	34	-	50	28.94236	Y	1500-1600	13	8.51%	3.06%	0.06%	6.15%	2.21%	1.40%	2.75%	60.61%	0.04%	0.27%	0.04%	0.03%	0.05%	0.30%	13.48%	0.33%	0.72%	0.00%	100%
Road 34	34	-	50	28.84462	Y	1600-1700	14	8.41%	2.91%	0.07%	6.40%	2.30%	0.97%	1.92%	61.18%	0.03%	0.21%	0.11%	0.08%	0.17%	0.37%	13.87%	0.51%	0.50%	0.00%	100%
Road 34	34	-	50	28.557	Y	1700-1800	19	9.01%	1.94%	0.04%	3.75%	1.35%	0.45%	0.88%	70.14%	0.02%	0.16%	0.10%	0.07%	0.16%	0.17%	10.62%	0.90%	0.23%	0.00%	100%
Road 34	34	-	50	28.50704	Y	1800-1900	19	9.61%	2.13%	0.03%	2.64%	0.95%	0.32%	0.63%	71.68%	0.00%	0.03%	0.07%	0.05%	0.11%	0.06%	10.97%	0.57%	0.16%	0.00%	100%
Road 34	34	-	50	28.65712	Y	1900-2000	17	9.03%	2.86%	0.02%	2.34%	0.84%	0.10%	0.20%	71.05%	0.00%	0.03%	0.07%	0.05%	0.10%	0.51%	12.30%	0.43%	0.05%	0.00%	100%
Road 34	34	-	50	29.06406	Y	2000-2100	12	10.39%	3.79%	0.03%	2.47%	0.89%	0.23%	0.44%	65.43%	0.00%	0.01%	0.07%	0.05%	0.11%	0.29%	15.23%	0.46%	0.12%	0.00%	100%
Road 34	34	-	50	28.97862	Y	2100-2200	13	8.14%	4.39%	0.02%	2.09%	0.75%	0.14%	0.27%	68.54%	0.00%	0.01%	0.05%	0.03%	0.07%	0.20%	14.89%	0.33%	0.07%	0.00%	100%
Road 34	34	-	50	29.18952	Y	2200-2300	10	9.39%	6.30%	0.02%	2.35%	0.84%	0.13%	0.26%	62.94%	0.00%	0.01%	0.01%	0.00%	0.01%	0.24%	16.95%	0.48%	0.07%	0.00%	100%
Road 34	34	-	50	29.32986	Y	2300-0000	8	8.80%	5.52%	0.03%	2.41%	0.87%	0.19%	0.37%	64.96%	0.01%	0.08%	0.03%	0.02%	0.04%	0.23%	15.88%	0.49%	0.10%	0.00%	100%
Road 35	35	-	50	29.81869	Y	0000-0100	3	14.19%	8.29%	0.07%	6.48%	2.33%	0.62%	1.22%	65.14%	0.03%	0.23%	0.07%	0.05%	0.11%	0.00%	0.00%	0.86%	0.32%	0.00%	100%
Road 35	35	-	50	29.86632	Y	0100-0200	2	13.33%	7.19%	0.07%	6.59%	2.37%	0.74%	1.45%	66.35%	0.04%	0.31%	0.10%	0.07%	0.15%	0.00%	0.00%	0.87%	0.38%	0.00%	100%
Road 35	35	-	50	29.89026	Y	0200-0300	2	12.61%	6.22%	0.07%	6.71%	2.41%	0.84%	1.66%	67.33%	0.05%	0.38%	0.12%	0.09%	0.19%	0.00%	0.00%	0.87%	0.43%	0.00%	100%
Road 35	35	-	50	29.91156	Y	0300-0400	1	11.87%	5.34%	0.07%	6.78%	2.44%	0.93%	1.82%	68.43%	0.06%	0.44%	0.14%	0.10%	0.22%	0.00%	0.00%	0.88%	0.48%	0.00%	100%
Road 35	35	-	50	29.9109	Y	0400-0500	1	11.27%	4.55%	0.07%	6.88%	2.47%	1.01%	1.99%	69.26%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	0.89%	0.52%	0.00%	100%
Road 35	35	-	50	29.86598	Y	0500-0600	2	10.72%	3.83%	0.07%	6.96%	2.50%	1.08%	2.13%	70.05%	0.07%	0.55%	0.18%	0.13%	0.28%	0.00%	0.00%	0.89%	0.56%	0.00%	100%
Road 35	35	-	50	29.6029	Y	0600-0700	5	10.31%	3.19%	0.07%	7.07%	2.54%	1.17%	2.30%	70.51%	0.08%	0.61%	0.20%	0.14%	0.30%	0.00%	0.00%	0.90%	0.60%	0.00%	100%
Road 35	35	-	50	29.23948	Y	0700-0800	10	9.87%	2.59%	0.07%	7.14%	2.56%	1.24%	2.43%	71.12%	0.08%	0.66%	0.21%	0.15%	0.33%	0.00%	0.00%	0.90%	0.64%	0.00%	100%
Road 35	35	-	50	29.426	Y	0800-0900	8	14.82%	4.53%	0.09%	8.64%	3.10%	1.33%	2.61%	62.12%	0.05%	0.42%	0.21%	0.15%	0.32%	0.00%	0.00%	0.93%	0.68%	0.00%	100%
Road 35	35	-	50	29.33565	Y	0900-1000	9	10.12%	3.28%	0.12%	11.39%	4.09%	2.08%	4.09%	62.56%	0.03%	0.24%	0.11%	0.08%	0.17%	0.00%	0.00%	0.58%	1.07%	0.00%	100%
Road 35	35	-	50	29.48394	Y	1000-1100	7	11.19%	5.10%	0.16%	15.79%	5.67%	3.04%	5.97%	50.62%	0.03%	0.27%	0.05%	0.04%	0.08%	0.00%	0.00%	0.42%	1.56%	0.00%	100%
Road 35	35	-	50	29.35044	Y	1100-1200	9	8.78%	3.68%	0.11%	10.44%	3.75%	2.32%	4.56%	64.34%	0.02%	0.16%	0.06%	0.04%	0.09%	0.00%	0.00%	0.45%	1.19%	0.00%	100%
Road 35	35	-	50	28.70433	Y	1200-1300	19	27.66%	9.59%	0.07%	6.59%	2.37%	1.42%	2.78%	45.38%	0.17%	1.36%	0.36%	0.25%	0.54%	0.00%	0.00%	0.75%	0.73%	0.00%	100%
Road 35	35	-	50	28.3043	Y	1300-1400	24	19.46%	8.04%	0.07%	6.33%	2.27%	1.15%	2.26%	56.12%	0.14%	1.08%	0.50%	0.35%	0.77%	0.00%	0.00%	0.87%	0.59%	0.00%	100%
Road 35	35	-	50	28.70265	Y	1400-1500	19	28.71%	8.90%	0.07%	6.86%	2.46%	1.52%	2.98%	43.92%	0.15%	1.17%	0.29%	0.20%	0.44%	0.00%	0.00%	1.55%	0.78%	0.00%	100%
Road 35	35	-	50	28.74341	Y	1500-1600	19	29.04%	10.44%	0.08%	7.28%	2.61%	1.65%	3.25%	42.22%	0.12%	0.94%	0.12%	0.09%	0.19%	0.00%	0.00%	1.12%	0.85%	0.00%	100%
Road 35	35	-	50	28.64085	Y	1600-1700	21	28.88%	9.98%	0.08%	7.62%	2.74%	1.16%	2.28%	42.87%	0.09%	0.72%	0.38%	0.26%	0.57%	0.00%	0.00%	1.76%	0.60%	0.00%	100%
Road 35	35	-	50	28.282	Y	1700-1800	26	31.06%	6.68%	0.05%	4.49%	1.61%	0.54%	1.06%	49.36%	0.07%	0.56%	0.36%	0.25%	0.55%	0.00%	0.00%	3.09%	0.28%	0.00%	100%
Road 35	35	-	50	28.24615	Y	1800-1900	27	33.33%	7.37%	0.03%	3.18%	1.14%	0.39%	0.76%	50.76%	0.01%	0.09%	0.24%	0.17%	0.37%	0.00%	0.00%	1.98%	0.20%	0.00%	100%
Road 35	35	-	50	28.47434	Y	1900-2000	24	31.90%	10.09%	0.03%	2.86%	1.03%	0.13%	0.25%	51.24%	0.01%	0.11%	0.24%	0.17%	0.37%	0.00%	0.00%	1.51%	0.06%	0.00%	100%
Road 35	35	-	50	28.92053	Y	2000-2100	17	34.98%	12.78%	0.03%	2.88%	1.04%	0.26%	0.52%	45.01%	0.01%	0.04%	0.24%	0.17%	0.37%	0.00%	0.00%	1.55%	0.14%	0.00%	100%
Road 35	35	-	50	28.86917	Y	2100-2200	18	28.87%	15.58%	0.03%	2.57%	0.92%	0.17%	0.33%	49.66%	0.01%	0.04%	0.17%	0.12%	0.26%	0.00%	0.00%	1.19%	0.09%	0.00%	100%
Road 35	35	-	50	29.06831	Y	2200-2300	15	30.97%	20.77%	0.03%	2.69%	0.97%	0.15%	0.29%	42.38%	0.01%	0.05%	0.02%	0.01%	0.03%	0.00%	0.00%	1.57%	0.08%	0.00%	100%
Road 35	35	-	50	29.23499	Y	2300-0000	12	29.72%	18.63%	0.03%	2.83%	1.02%	0.22%	0.43%	44.80%	0.03%	0.26%	0.08%	0.06%	0.13%	0.00%	0.00%	1.65%	0.11%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 36	36	-	50	29.93871	Y	0000-0100	1	1.78%	1.04%	0.09%	8.25%	2.96%	0.79%	1.56%	82.96%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.11%	0.41%	0.00%	100%
Road 36	36	-	50	29.95418	Y	0100-0200	1	1.64%	0.88%	0.09%	8.23%	2.95%	0.92%	1.81%	82.83%	0.00%	0.04%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.47%	0.00%	100%
Road 36	36	-	50	29.96195	Y	0200-0300	1	1.52%	0.75%	0.09%	8.24%	2.96%	1.04%	2.04%	82.63%	0.01%	0.05%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.53%	0.00%	100%
Road 36	36	-	50	29.96899	Y	0300-0400	0	1.41%	0.63%	0.09%	8.19%	2.94%	1.12%	2.20%	82.63%	0.01%	0.05%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.57%	0.00%	100%
Road 36	36	-	50	29.96847	Y	0400-0500	0	1.32%	0.53%	0.09%	8.19%	2.94%	1.20%	2.36%	82.51%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.62%	0.00%	100%
Road 36	36	-	50	29.95219	Y	0500-0600	1	1.24%	0.44%	0.09%	8.19%	2.94%	1.27%	2.50%	82.43%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.65%	0.00%	100%
Road 36	36	-	50	29.85743	Y	0600-0700	2	1.18%	0.37%	0.09%	8.24%	2.96%	1.37%	2.68%	82.17%	0.01%	0.07%	0.02%	0.02%	0.03%	0.00%	0.00%	0.10%	0.70%	0.00%	100%
Road 36	36	-	50	29.72518	Y	0700-0800	4	1.12%	0.29%	0.09%	8.24%	2.96%	1.43%	2.81%	82.07%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	0.10%	0.73%	0.00%	100%
Road 36	36	-	50	29.8025	Y	0800-0900	3	1.81%	0.55%	0.11%	10.71%	3.85%	1.65%	3.24%	76.99%	0.01%	0.05%	0.03%	0.02%	0.04%	0.00%	0.00%	0.11%	0.85%	0.00%	100%
Road 36	36	-	50	29.75861	Y	0900-1000	3	1.15%	0.37%	0.14%	13.12%	4.71%	2.39%	4.71%	72.05%	0.00%	0.03%	0.01%	0.01%	0.02%	0.00%	0.00%	0.07%	1.23%	0.00%	100%
Road 36	36	-	50	29.8155	Y	1000-1100	2	1.30%	0.59%	0.20%	18.69%	6.71%	3.59%	7.06%	59.91%	0.00%	0.03%	0.01%	0.00%	0.01%	0.00%	0.00%	0.05%	1.85%	0.00%	100%
Road 36	36	-	50	29.76146	Y	1100-1200	3	0.98%	0.41%	0.12%	11.86%	4.26%	2.64%	5.18%	73.09%	0.00%	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	0.05%	1.35%	0.00%	100%
Road 36	36	-	50	29.23752	Y	1200-1300	10	2.95%	1.02%	0.05%	4.50%	1.61%	0.97%	1.90%	86.15%	0.02%	0.14%	0.04%	0.03%	0.06%	0.00%	0.00%	0.08%	0.50%	0.00%	100%
Road 36	36	-	50	28.8545	Y	1300-1400	15	1.75%	0.72%	0.04%	3.65%	1.31%	0.66%	1.30%	89.90%	0.01%	0.10%	0.05%	0.03%	0.07%	0.00%	0.00%	0.08%	0.34%	0.00%	100%
Road 36	36	-	50	29.2493	Y	1400-1500	10	3.13%	0.97%	0.05%	4.78%	1.72%	1.06%	2.08%	85.26%	0.02%	0.13%	0.03%	0.02%	0.05%	0.00%	0.00%	0.17%	0.54%	0.00%	100%
Road 36	36	-	50	29.28727	Y	1500-1600	9	3.24%	1.17%	0.05%	5.21%	1.87%	1.18%	2.33%	84.05%	0.01%	0.10%	0.01%	0.01%	0.02%	0.00%	0.00%	0.13%	0.61%	0.00%	100%
Road 36	36	-	50	29.22456	Y	1600-1700	10	3.21%	1.11%	0.06%	5.43%	1.95%	0.83%	1.63%	84.95%	0.01%	0.08%	0.04%	0.03%	0.06%	0.00%	0.00%	0.20%	0.42%	0.00%	100%
Road 36	36	-	50	28.931	Y	1700-1800	14	3.19%	0.69%	0.03%	2.95%	1.06%	0.35%	0.70%	90.35%	0.01%	0.06%	0.04%	0.03%	0.06%	0.00%	0.00%	0.32%	0.18%	0.00%	100%
Road 36	36	-	50	28.88873	Y	1800-1900	15	3.38%	0.75%	0.02%	2.07%	0.74%	0.25%	0.49%	91.87%	0.00%	0.01%	0.02%	0.02%	0.04%	0.00%	0.00%	0.20%	0.13%	0.00%	100%
Road 36	36	-	50	29.02873	Y	1900-2000	13	3.24%	1.02%	0.02%	1.86%	0.67%	0.08%	0.16%	92.66%	0.00%	0.01%	0.02%	0.02%	0.04%	0.00%	0.00%	0.15%	0.04%	0.00%	100%
Road 36	36	-	50	29.37259	Y	2000-2100	9	3.96%	1.45%	0.02%	2.09%	0.75%	0.19%	0.38%	90.80%	0.00%	0.00%	0.03%	0.02%	0.04%	0.00%	0.00%	0.18%	0.10%	0.00%	100%
Road 36	36	-	50	29.29545	Y	2100-2200	10	3.01%	1.63%	0.02%	1.72%	0.62%	0.11%	0.22%	92.43%	0.00%	0.00%	0.02%	0.01%	0.03%	0.00%	0.00%	0.12%	0.06%	0.00%	100%
Road 36	36	-	50	29.47909	Y	2200-2300	7	3.71%	2.48%	0.02%	2.06%	0.74%	0.11%	0.22%	90.39%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.19%	0.06%	0.00%	100%
Road 36	36	-	50	29.55571	Y	2300-0000	6	3.38%	2.12%	0.02%	2.06%	0.74%	0.16%	0.32%	90.87%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.19%	0.08%	0.00%	100%
Road 37	37	-	50	29.93871	Y	0000-0100	1	1.78%	1.04%	0.09%	8.25%	2.96%	0.79%	1.56%	82.96%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.11%	0.41%	0.00%	100%
Road 37	37	-	50	29.95418	Y	0100-0200	1	1.64%	0.88%	0.09%	8.23%	2.95%	0.92%	1.81%	82.83%	0.00%	0.04%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.47%	0.00%	100%
Road 37	37	-	50	29.96195	Y	0200-0300	1	1.52%	0.75%	0.09%	8.24%	2.96%	1.04%	2.04%	82.63%	0.01%	0.05%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.53%	0.00%	100%
Road 37	37	-	50	29.96899	Y	0300-0400	0	1.41%	0.63%	0.09%	8.19%	2.94%	1.12%	2.20%	82.63%	0.01%	0.05%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.57%	0.00%	100%
Road 37	37	-	50	29.96847	Y	0400-0500	0	1.32%	0.53%	0.09%	8.19%	2.94%	1.20%	2.36%	82.51%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.62%	0.00%	100%
Road 37	37	-	50	29.95219	Y	0500-0600	1	1.24%	0.44%	0.09%	8.19%	2.94%	1.27%	2.50%	82.43%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.65%	0.00%	100%
Road 37	37	-	50	29.85743	Y	0600-0700	2	1.18%	0.37%	0.09%	8.24%	2.96%	1.37%	2.68%	82.17%	0.01%	0.07%	0.02%	0.02%	0.03%	0.00%	0.00%	0.10%	0.70%	0.00%	100%
Road 37	37	-	50	29.72518	Y	0700-0800	4	1.12%	0.29%	0.09%	8.24%	2.96%	1.43%	2.81%	82.07%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	0.10%	0.73%	0.00%	100%
Road 37	37	-	50	29.8025	Y	0800-0900	3	1.81%	0.55%	0.11%	10.71%	3.85%	1.65%	3.24%	76.99%	0.01%	0.05%	0.03%	0.02%	0.04%	0.00%	0.00%	0.11%	0.85%	0.00%	100%
Road 37	37	-	50	29.75861	Y	0900-1000	3	1.15%	0.37%	0.14%	13.12%	4.71%	2.39%	4.71%	72.05%	0.00%	0.03%	0.01%	0.01%	0.02%	0.00%	0.00%	0.07%	1.23%	0.00%	100%
Road 37	37	-	50	29.8155	Y	1000-1100	2	1.30%	0.59%	0.20%	18.69%	6.71%	3.59%	7.06%	59.91%	0.00%	0.03%	0.01%	0.00%	0.01%	0.00%	0.00%	0.05%	1.85%	0.00%	100%
Road 37	37	-	50	29.76146	Y	1100-1200	3	0.98%	0.41%	0.12%	11.86%	4.26%	2.64%	5.18%	73.09%	0.00%	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	0.05%	1.35%	0.00%	100%
Road 37	37	-	50	29.23752	Y	1200-1300	10	2.95%	1.02%	0.05%	4.50%	1.61%	0.97%	1.90%	86.15%	0.02%	0.14%	0.04%	0.03%	0.06%	0.00%	0.00%	0.08%	0.50%	0.00%	100%
Road 37	37	-	50	28.8545	Y	1300-1400	15	1.75%	0.72%	0.04%	3.65%	1.31%	0.66%	1.30%	89.90%	0.01%	0.10%	0.05%	0.03%	0.07%	0.00%	0.00%	0.08%	0.34%	0.00%	100%
Road 37	37	-	50	29.2493	Y	1400-1500	10	3.13%	0.97%	0.05%	4.78%	1.72%	1.06%	2.08%	85.26%	0.02%	0.13%	0.03%	0.02%	0.05%	0.00%	0.00%	0.17%	0.54%	0.00%	100%
Road 37	37	-	50	29.28727	Y	1500-1600	9	3.24%	1.17%	0.05%	5.21%	1.87%	1.18%	2.33%	84.05%	0.01%	0.10%	0.01%	0.01%	0.02%	0.00%	0.00%	0.13%	0.61%	0.00%	100%
Road 37	37	-	50	29.22456	Y	1600-1700	10	3.21%	1.11%	0.06%	5.43%	1.95%	0.83%	1.63%	84.95%	0.01%	0.08%	0.04%	0.03%	0.06%	0.00%	0.00%	0.20%	0.42%	0.00%	100%
Road 37	37	-	50	28.931	Y	1700-1800	14	3.19%	0.69%	0.03%	2.95%	1.06%	0.35%	0.70%	90.35%	0.01%	0.06%	0.04%	0.03%	0.06%	0.00%	0.00%	0.32%	0.18%	0.00%	100%
Road 37	37	-	50	28.88873	Y	1800-1900	15	3.38%	0.75%	0.02%	2.07%	0.74%	0.25%	0.49%	91.87%	0.00%	0.01%	0.02%	0.02%	0.04%	0.00%	0.00%	0.20%	0.13%	0.00%	100%
Road 37	37	-	50	29.02873	Y	1900-2000	13	3.24%	1.02%	0.02%	1.86%	0.67%	0.08%	0.16%	92.66%	0.00%	0.01%	0.02%	0.02%	0.04%	0.00%	0.00%	0.15%	0.04%	0.00%	100%
Road 37	37	-	50	29.37259	Y	2000-2100	9	3.96%	1.45%	0.02%	2.09%	0.75%	0.19%	0.38%	90.80%	0.00%	0.00%	0.03%	0.02%	0.04%	0.00%	0.00%	0.18%	0.10%	0.00%	100%
Road 37	37	-	50	29.29545	Y	2100-2200	10	3.01%	1.63%	0.02%	1.72%	0.62%	0.11%	0.22%	92.43%	0.00%	0.00%	0.02%	0.01%	0.03%	0.00%	0.00%	0.12%	0.06%	0.00%	100%
Road 37	37	-	50	29.47909	Y	2200-2300	7	3.71%	2.48%	0.02%	2.06%	0.74%	0.11%	0.22%	90.39%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.19%	0.06%	0.00%	100%
Road 37	37	-	50	29.55571	Y	2300-0000	6	3.38%	2.12%	0.02%	2.06%	0.74%	0.16%	0.32%	90.87%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.19%	0.08%	0.00%	100%
Road 38	38	-	50	29.68643	Y	0000-0100	5	36.80%	21.49%	0.04%	3.39%	1.22%	0.33%	0.64%	32.44%	0.07%	0.59%	0.19%	0.13%	0.29%	0.00%	0.00%	2.22%	0.17%	0.00%	100%
Road 38	38	-	50	29.77615	Y	0100-0200	4	35.90%	19.36%	0.04%	3.58%	1.29%	0.40%	0.79%	34.31%	0.11%	0.83%	0.27%	0.19%	0.41%	0.00%	0.00%	2.33%	0.21%	0.00%	100%
Road 38	38	-	50	29.82131	Y	0200-0300	3	35.12%	17.33%	0.04%	3.77%	1.35%	0.47%	0.93%	35.99%	0.14%	1.07%	0.35%	0.24%	0.53%	0.00%	0.00%	2.43%	0.24%	0.00%	100%
Road 38	38	-	50	29.85999	Y	0300-0400	2	34.19%	15.37%	0.04%	3.94%	1.41%	0.54%	1.06%	37.85%	0.16%	1.27%	0.42%	0.29%	0.63%	0.00%	0.00%	2.54%	0.28%	0.00%	100%
Road 38	38	-	50	29.86225	Y	0400-0500	2	33.44%	13.50%	0.04%	4.11%	1.48%	0.60%	1.19%	39.45%	0.19%	1.49%	0.49%	0.34%	0.74%	0.00%	0.00%	2.63%	0.31%	0.00%	100%
Road 38	38	-	50	29.79736	Y	0500-0600	3	32.70%	11.70%	0.04%	4.28%	1.54%	0.67%	1.31%	41.03%	0.22%	1.69%	0.55%	0.38%	0.84%	0.00%	0.00%	2.72%	0.34%	0.00%	100%
Road 38	38	-	50	29.40995	Y	0600-0700	9	32.18%	9.96%	0.05%	4.45%	1.60%	0.74%	1.45%	42.25%	0.25%	1.91%	0.62%	0.43%	0.95%	0.00%	0.00%	2.80%	0.38%	0.00%	100%
Road 38	38	-	50	28.89051	Y	0700-0800	17	31.53%	8.29%	0.05%	4.60%	1.65%	0.80%	1.57%	43.64%	0.27%	2.11%	0.68%	0.47%	1.04%	0.00%	0.00%	2.88%	0.41%	0.00%	100%
Road 38	38	-	50	29.046	Y	0800-0900	15	40.40%	12.35%	0.05%	4.75%	1.71%	0.73%	1.44%	32.52%	0.15%	1.15%	0.57%	0.40%	0.87%	0.00%	0.00%	2.54%	0.37%	0.00%	100%
Road 38	38	-	50	29.04286	Y	0900-1000	15	32.41%	10.50%	0.08%	7.35%	2.64%	1.34%	2.64%	38.47%	0.10%	0.77%	0.36%	0.25%	0.55%	0.00%	0.00%	1.85%	0.69%	0.00%	100%
Road 38	38	-	50	29.21862	Y	1000-1100	12	33.51%	15.27%	0.10%	9.53%	3.42%	1.83%	3.60%	29.11%	0.10%	0.80%	0.15%	0.11%	0.24%	0.00%	0.00%	1.27%	0.94%	0.00%	100%
Road 38	38	-	50	29.09372	Y	1100-1200	14	29.13%	12.21%	0.07%	6.98%	2.51%	1.55%	3.05%	40.97%	0.07%	0.52%	0.20%	0.14%	0.31%	0.00%	0.00%	1.50%	0.80%	0.00%	100%
Road 38	38	-	50	27.71205	Y	1200-1300	31	16.97%	5.89%	0.23%	22.06%	7.92%	4.74%	9.32%	28.35%	0.11%	0.83%	0.22%	0.15%	0.33%	0.00%	0.00%	0.46%	2.43%	0.00%	100%
Road 38	38	-	50	27.17578	Y	1300-1400	38	12.36%	5.11%	0.23%	21.94%	7.88%	3.98%	7.83%	36.27%	0.09%	0.69%	0.32%	0.22%	0.49%	0.00%	0.00%	0.55%	2.05%	0.00%	100%
Road 38	38	-	50	27.64978	Y	1400-1500	32	17.28%	5.36%	0.24%	22.52%	8.08%	4.98%	9.79%	26.91%	0.09%	0.70%	0.17%	0.12%	0.27%	0.00%	0.00%	0.94%	2.56%	0.00%	100%
Road 38	38	-	50	27.64255	Y	1500-1600	32	17.00%	6.11%	0.24%	23.24%	8.35%	5.28%	10.38%	25.16%	0.07%	0.55%	0.07%	0.05%	0.11%	0.00%	0.00%	0.66%	2.71%	0.00%	100%
Road 38	38	-	50	27.5713	Y	1600-1700	33	17.47%	6.04%	0.26%	25.16%	9.03%	3.83%	7.53%	26.41%	0.06%	0.43%	0.23%	0.16%	0.35%	0.00%	0.00%	1.07%	1.97%	0.00%	100%
Road 38	38	-	50	27.54	Y	1700-1800	35	22.74%	4.89%	0.19%	17.92%	6.43%	2.15%	4.22%	36.78%	0.05%	0.41%	0.26%	0.18%	0.40%	0.00%	0.00%	2.26%	1.10%	0.00%	100%
Road 38	38	-	50	27.70615	Y	1800-1900	34	26.40%	5.84%	0.14%	13.72%	4.93%	1.67%	3.28%	40.91%	0.01%	0.07%	0.19%	0.13%	0.29%	0.00%	0.00%	1.57%	0.86%	0.00%	100%
Road 38	38	-	50	28.13224	Y	1900-2000	28	26.51%	8.38%	0.14%	12.98%	4.66%	0.57%	1.12%	43.34%	0.01%	0.09%	0.20%	0.14%	0.30%	0.00%	0.00%	1.25%	0.29%	0.00%	100%
Road 38	38	-	50	28.63563	Y	2000-2100	21	28.56%	10.43%	0.13%	12.84%	4.61%	1.17%	2.31%	37.40%	0.00%	0.04%	0.20%	0.14%	0.30%	0.00%	0.00%	1.26%	0.60%	0.00%	100%
Road 38	38	-	50	28.625	Y	2100-2200	21	24.23%	13.07%	0.12%	11.75%	4.22%	0.78%	1.53%	42.41%	0.00%	0.04%	0.14%	0.10%	0.22%	0.00%	0.00%	1.00%	0.40%	0.00%	100%
Road 38	38	-	50	28.85795	Y	2200-2300	18	25.93%	17.38%	0.13%	12.27%	4.41%	0.68%	1.34%	36.11%	0.01%	0.04%	0.01%	0.01%	0.02%	0.00%	0.00%	1.31%	0.35%	0.00%	100%
Road 38	38	-	50	29.04331	Y	2300-0000	15	24.47%	15.34%	0.13%	12.70%	4.56%	0.99%	1.94%	37.54%	0.03%	0.21%	0.07%	0.05%	0.11%	0.00%	0.00%	1.35%	0.51%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 39	39	-	50	28.63259	Y	0000-0100	25	52.13%	30.44%	0.06%	5.75%	2.07%	0.55%	1.09%	2.67%	0.11%	0.83%	0.27%	0.19%	0.41%	0.00%	0.00%	3.15%	0.28%	0.00%	100%
Road 39	39	-	50	29.04696	Y	0100-0200	17	52.07%	28.09%	0.06%	6.22%	2.23%	0.70%	1.37%	2.89%	0.15%	1.20%	0.39%	0.27%	0.60%	0.00%	0.00%	3.39%	0.36%	0.00%	100%
Road 39	39	-	50	29.25498	Y	0200-0300	13	52.06%	25.69%	0.07%	6.70%	2.40%	0.84%	1.66%	3.10%	0.20%	1.58%	0.51%	0.36%	0.78%	0.00%	0.00%	3.61%	0.43%	0.00%	100%
Road 39	39	-	50	29.43037	Y	0300-0400	10	51.97%	23.36%	0.07%	7.18%	2.58%	0.98%	1.93%	3.35%	0.25%	1.94%	0.63%	0.44%	0.96%	0.00%	0.00%	3.86%	0.50%	0.00%	100%
Road 39	39	-	50	29.45072	Y	0400-0500	10	51.95%	20.96%	0.08%	7.66%	2.75%	1.12%	2.21%	3.56%	0.30%	2.31%	0.75%	0.52%	1.15%	0.00%	0.00%	4.09%	0.58%	0.00%	100%
Road 39	39	-	50	29.208	Y	0500-0600	14	51.91%	18.57%	0.09%	8.15%	2.92%	1.27%	2.49%	3.79%	0.34%	2.68%	0.88%	0.61%	1.33%	0.00%	0.00%	4.33%	0.65%	0.00%	100%
Road 39	39	-	50	27.72439	Y	0600-0700	39	51.96%	16.08%	0.09%	8.61%	3.09%	1.43%	2.80%	3.97%	0.40%	3.09%	1.00%	0.70%	1.53%	0.00%	0.00%	4.52%	0.73%	0.00%	100%
Road 39	39	-	50	25.79357	Y	0700-0800	71	51.95%	13.65%	0.09%	9.09%	3.26%	1.57%	3.10%	4.18%	0.45%	3.48%	1.13%	0.78%	1.72%	0.00%	0.00%	4.75%	0.81%	0.00%	100%
Road 39	39	-	50	25.709	Y	0800-0900	75	56.77%	17.36%	0.08%	8.00%	2.87%	1.23%	2.42%	2.66%	0.21%	1.61%	0.81%	0.56%	1.23%	0.00%	0.00%	3.57%	0.63%	0.00%	100%
Road 39	39	-	50	25.91088	Y	0900-1000	67	48.59%	15.74%	0.14%	13.22%	4.75%	2.41%	4.74%	3.35%	0.15%	1.15%	0.54%	0.37%	0.82%	0.00%	0.00%	2.78%	1.24%	0.00%	100%
Road 39	39	-	50	26.07137	Y	1000-1100	64	43.84%	19.97%	0.16%	14.95%	5.37%	2.87%	5.65%	2.21%	0.13%	1.05%	0.20%	0.14%	0.31%	0.00%	0.00%	1.66%	1.48%	0.00%	100%
Road 39	39	-	50	26.26631	Y	1100-1200	61	45.24%	18.96%	0.14%	13.00%	4.67%	2.89%	5.68%	3.70%	0.10%	0.81%	0.32%	0.22%	0.48%	0.00%	0.00%	2.33%	1.48%	0.00%	100%
Road 39	39	-	50	25.69916	Y	1200-1300	67	39.72%	13.78%	0.14%	13.43%	4.82%	2.89%	5.67%	13.14%	0.25%	1.95%	0.51%	0.35%	0.78%	0.00%	0.00%	1.07%	1.48%	0.00%	100%
Road 39	39	-	50	25.12299	Y	1300-1400	73	32.16%	13.28%	0.16%	14.86%	5.34%	2.70%	5.30%	18.70%	0.23%	1.78%	0.83%	0.58%	1.27%	0.00%	0.00%	1.44%	1.39%	0.00%	100%
Road 39	39	-	50	25.59432	Y	1400-1500	69	40.38%	12.51%	0.14%	13.69%	4.92%	3.03%	5.95%	12.46%	0.21%	1.64%	0.41%	0.28%	0.62%	0.00%	0.00%	2.19%	1.56%	0.00%	100%
Road 39	39	-	50	25.61	Y	1500-1600	68	39.84%	14.33%	0.15%	14.17%	5.09%	3.22%	6.33%	11.68%	0.16%	1.28%	0.17%	0.12%	0.26%	0.00%	0.00%	1.54%	1.65%	0.00%	100%
Road 39	39	-	50	25.3638	Y	1600-1700	73	40.19%	13.89%	0.16%	15.06%	5.41%	2.29%	4.51%	12.03%	0.13%	1.00%	0.53%	0.36%	0.80%	0.00%	0.00%	2.45%	1.18%	0.00%	100%
Road 39	39	-	50	24.9963	Y	1700-1800	84	48.56%	10.45%	0.10%	9.96%	3.58%	1.19%	2.35%	15.56%	0.11%	0.88%	0.56%	0.39%	0.86%	0.00%	0.00%	4.83%	0.61%	0.00%	100%
Road 39	39	-	50	25.12764	Y	1800-1900	83	53.87%	11.91%	0.08%	7.29%	2.62%	0.89%	1.74%	16.54%	0.02%	0.15%	0.39%	0.27%	0.59%	0.00%	0.00%	3.19%	0.45%	0.00%	100%
Road 39	39	-	50	25.87884	Y	1900-2000	72	52.36%	16.56%	0.07%	6.67%	2.40%	0.29%	0.58%	16.96%	0.02%	0.19%	0.39%	0.27%	0.60%	0.00%	0.00%	2.48%	0.15%	0.00%	100%
Road 39	39	-	50	26.79951	Y	2000-2100	56	52.91%	19.33%	0.06%	6.19%	2.22%	0.57%	1.11%	13.73%	0.01%	0.07%	0.36%	0.25%	0.55%	0.00%	0.00%	2.34%	0.29%	0.00%	100%
Road 39	39	-	50	26.8879	Y	2100-2200	55	46.51%	25.09%	0.06%	5.87%	2.11%	0.39%	0.76%	16.13%	0.01%	0.07%	0.27%	0.19%	0.42%	0.00%	0.00%	1.91%	0.20%	0.00%	100%
Road 39	39	-	50	27.17821	Y	2200-2300	51	45.60%	30.57%	0.06%	5.62%	2.02%	0.31%	0.61%	12.58%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	2.31%	0.16%	0.00%	100%
Road 39	39	-	50	27.73823	Y	2300-0000	40	44.90%	28.16%	0.06%	6.07%	2.18%	0.47%	0.93%	13.65%	0.05%	0.39%	0.13%	0.09%	0.20%	0.00%	0.00%	2.49%	0.24%	0.00%	100%
Road 40	40	-	50	28.18225	Y	0000-0100	34	52.77%	30.82%	0.04%	3.76%	1.35%	0.36%	0.71%	4.98%	0.11%	0.84%	0.27%	0.19%	0.42%	0.00%	0.00%	3.19%	0.19%	0.00%	100%
Road 40	40	-	50	28.73776	Y	0100-0200	23	52.83%	28.50%	0.04%	4.08%	1.47%	0.46%	0.90%	5.41%	0.16%	1.22%	0.40%	0.28%	0.60%	0.00%	0.00%	3.44%	0.23%	0.00%	100%
Road 40	40	-	50	29.01707	Y	0200-0300	18	52.95%	26.13%	0.05%	4.40%	1.58%	0.55%	1.09%	5.81%	0.21%	1.61%	0.52%	0.36%	0.79%	0.00%	0.00%	3.67%	0.28%	0.00%	100%
Road 40	40	-	50	29.2509	Y	0300-0400	13	52.96%	23.81%	0.05%	4.73%	1.70%	0.65%	1.27%	6.28%	0.25%	1.97%	0.64%	0.45%	0.98%	0.00%	0.00%	3.94%	0.33%	0.00%	100%
Road 40	40	-	50	29.28026	Y	0400-0500	13	53.06%	21.41%	0.05%	5.06%	1.82%	0.74%	1.46%	6.70%	0.30%	2.36%	0.77%	0.53%	1.17%	0.00%	0.00%	4.18%	0.38%	0.00%	100%
Road 40	40	-	50	28.96576	Y	0500-0600	18	53.14%	19.01%	0.06%	5.39%	1.94%	0.84%	1.65%	7.14%	0.35%	2.74%	0.90%	0.62%	1.37%	0.00%	0.00%	4.43%	0.43%	0.00%	100%
Road 40	40	-	50	27.04043	Y	0600-0700	51	53.34%	16.51%	0.06%	5.71%	2.05%	0.95%	1.86%	7.50%	0.41%	3.17%	1.03%	0.71%	1.57%	0.00%	0.00%	4.64%	0.49%	0.00%	100%
Road 40	40	-	50	24.90963	Y	0700-0800	94	53.45%	14.05%	0.06%	6.04%	2.17%	1.05%	2.06%	7.92%	0.46%	3.58%	1.16%	0.80%	1.77%	0.00%	0.00%	4.89%	0.54%	0.00%	100%
Road 40	40	-	50	24.8924	Y	0800-0900	99	58.61%	17.92%	0.06%	5.34%	1.92%	0.82%	1.61%	5.05%	0.21%	1.66%	0.83%	0.58%	1.27%	0.00%	0.00%	3.68%	0.42%	0.00%	100%
Road 40	40	-	50	24.99539	Y	0900-1000	85	52.00%	16.85%	0.10%	9.14%	3.28%	1.67%	3.28%	6.61%	0.16%	1.23%	0.58%	0.40%	0.88%	0.00%	0.00%	2.98%	0.86%	0.00%	100%
Road 40	40	-	50	25.33609	Y	1000-1100	79	48.13%	21.93%	0.11%	10.61%	3.81%	2.04%	4.01%	4.48%	0.15%	1.15%	0.22%	0.15%	0.34%	0.00%	0.00%	1.83%	1.05%	0.00%	100%
Road 40	40	-	50	25.43525	Y	1100-1200	77	48.50%	20.33%	0.09%	9.01%	3.23%	2.00%	3.94%	7.31%	0.11%	0.87%	0.34%	0.23%	0.51%	0.00%	0.00%	2.49%	1.03%	0.00%	100%
Road 40	40	-	50	26.11862	Y	1200-1300	57	31.53%	10.94%	0.19%	18.05%	6.48%	3.88%	7.63%	15.41%	0.20%	1.55%	0.41%	0.28%	0.62%	0.00%	0.00%	0.85%	1.99%	0.00%	100%
Road 40	40	-	50	25.50521	Y	1300-1400	64	24.83%	10.26%	0.20%	19.42%	6.97%	3.52%	6.93%	21.32%	0.18%	1.38%	0.64%	0.45%	0.98%	0.00%	0.00%	1.11%	1.81%	0.00%	100%
Road 40	40	-	50	26.00718	Y	1400-1500	59	31.99%	9.91%	0.19%	18.36%	6.59%	4.06%	7.98%	14.57%	0.17%	1.30%	0.32%	0.22%	0.49%	0.00%	0.00%	1.73%	2.09%	0.00%	100%
Road 40	40	-	50	25.99492	Y	1500-1600	59	31.42%	11.30%	0.20%	18.93%	6.80%	4.30%	8.45%	13.61%	0.13%	1.01%	0.13%	0.09%	0.20%	0.00%	0.00%	1.22%	2.21%	0.00%	100%
Road 40	40	-	50	25.8311	Y	1600-1700	62	32.01%	11.06%	0.21%	20.31%	7.29%	3.09%	6.08%	14.15%	0.10%	0.80%	0.42%	0.29%	0.64%	0.00%	0.00%	1.95%	1.59%	0.00%	100%
Road 40	40	-	50	25.7175	Y	1700-1800	68	40.55%	8.73%	0.15%	14.08%	5.06%	1.69%	3.32%	19.20%	0.09%	0.73%	0.47%	0.33%	0.72%	0.00%	0.00%	4.03%	0.87%	0.00%	100%
Road 40	40	-	50	25.95058	Y	1800-1900	66	46.07%	10.19%	0.11%	10.55%	3.79%	1.28%	2.52%	20.89%	0.02%	0.13%	0.33%	0.23%	0.50%	0.00%	0.00%	2.73%	0.66%	0.00%	100%
Road 40	40	-	50	26.64873	Y	1900-2000	56	45.48%	14.38%	0.10%	9.81%	3.52%	0.43%	0.85%	21.76%	0.02%	0.16%	0.34%	0.24%	0.52%	0.00%	0.00%	2.15%	0.22%	0.00%	100%
Road 40	40	-	50	27.42443	Y	2000-2100	43	46.50%	16.98%	0.10%	9.21%	3.31%	0.84%	1.66%	17.82%	0.01%	0.06%	0.32%	0.22%	0.49%	0.00%	0.00%	2.06%	0.43%	0.00%	100%
Road 40	40	-	50	27.48903	Y	2100-2200	42	40.73%	21.97%	0.09%	8.71%	3.13%	0.58%	1.13%	20.86%	0.01%	0.06%	0.24%	0.17%	0.37%	0.00%	0.00%	1.67%	0.30%	0.00%	100%
Road 40	40	-	50	27.76955	Y	2200-2300	39	40.68%	27.28%	0.09%	8.49%	3.05%	0.47%	0.93%	16.58%	0.01%	0.06%	0.02%	0.02%	0.03%	0.00%	0.00%	2.06%	0.24%	0.00%	100%
Road 40	40	-	50	28.18664	Y	2300-0000	31	39.59%	24.83%	0.09%	9.06%	3.25%	0.70%	1.39%	17.78%	0.04%	0.35%	0.11%	0.08%	0.17%	0.00%	0.00%	2.19%	0.36%	0.00%	100%
Road 41	41	-	50	29.41406	Y	0000-0100	10	1.58%	0.92%	0.01%	0.52%	0.19%	0.05%	0.10%	0.00%	0.00%	0.03%	0.01%	0.01%	0.01%	1.43%	95.02%	0.10%	0.03%	0.00%	100%
Road 41	41	-	50	29.59927	Y	0100-0200	7	1.59%	0.86%	0.01%	0.57%	0.20%	0.06%	0.12%	0.00%	0.00%	0.04%	0.01%	0.01%	0.02%	1.44%	94.94%	0.10%	0.03%	0.00%	100%
Road 41	41	-	50	29.69612	Y	0200-0300	5	1.61%	0.80%	0.01%	0.62%	0.22%	0.08%	0.15%	0.00%	0.01%	0.05%	0.02%	0.01%	0.02%	1.41%	94.85%	0.11%	0.04%	0.00%	100%
Road 41	41	-	50	29.7691	Y	0300-0400	4	1.60%	0.72%	0.01%	0.66%	0.24%	0.09%	0.18%	0.00%	0.01%	0.06%	0.02%	0.01%	0.03%	1.46%	94.76%	0.12%	0.05%	0.00%	100%
Road 41	41	-	50	29.78298	Y	0400-0500	4	1.62%	0.65%	0.01%	0.71%	0.26%	0.10%	0.21%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	1.44%	94.66%	0.13%	0.05%	0.00%	100%
Road 41	41	-	50	29.69382	Y	0500-0600	5	1.63%	0.58%	0.01%	0.76%	0.27%	0.12%	0.23%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	1.44%	94.57%	0.14%	0.06%	0.00%	100%
Road 41	41	-	50	29.16475	Y	0600-0700	14	1.70%	0.52%	0.01%	0.84%	0.30%	0.14%	0.27%	0.00%	0.01%	0.10%	0.03%	0.02%	0.05%	1.32%	94.46%	0.15%	0.07%	0.00%	100%
Road 41	41	-	50	28.50028	Y	0700-0800	25	1.72%	0.45%	0.01%	0.90%	0.32%	0.16%	0.31%	0.00%	0.01%	0.12%	0.04%	0.03%	0.06%	1.29%	94.36%	0.16%	0.08%	0.00%	100%
Road 41	41	-	50	28.7155	Y	0800-0900	21	2.32%	0.71%	0.01%	0.97%	0.35%	0.15%	0.29%	0.00%	0.01%	0.07%	0.03%	0.02%	0.05%	2.27%	92.52%	0.15%	0.08%	0.00%	100%
Road 41	41	-	50	28.61579	Y	0900-1000	23	1.65%	0.54%	0.01%	1.34%	0.48%	0.24%	0.48%	0.00%	0.01%	0.04%	0.02%	0.01%	0.03%	2.09%	92.84%	0.09%	0.13%	0.00%	100%
Road 41	41	-	50	28.59301	Y	1000-1100	23	1.39%	0.63%	0.01%	1.42%	0.51%	0.27%	0.54%	0.00%	0.00%	0.03%	0.01%	0.00%	0.01%	4.18%	90.79%	0.05%	0.14%	0.00%	100%
Road 41	41	-	50	28.82969	Y	1100-1200	19	1.65%	0.69%	0.01%	1.41%	0.51%	0.31%	0.62%	0.00%	0.00%	0.03%	0.01%	0.01%	0.02%	1.21%	93.28%	0.08%	0.16%	0.00%	100%
Road 41	41	-	50	28.82841	Y	1200-1300	19	0.91%	0.31%	0.02%	1.66%	0.60%	0.36%	0.70%	0.00%	0.01%	0.04%	0.01%	0.01%	0.02%	4.04%	91.11%	0.02%	0.18%	0.00%	100%
Road 41	41	-	50	28.7105	Y	1300-1400	21	0.73%	0.30%	0.02%	1.84%	0.66%	0.33%	0.66%	0.00%	0.01%	0.04%	0.02%	0.01%	0.03%	4.55%	90.60%	0.03%	0.17%	0.00%	100%
Road 41	41	-	50	28.79225	Y	1400-1500	20	0.92%	0.28%	0.02%	1.69%	0.61%	0.37%	0.73%	0.00%	0.00%	0.04%	0.01%	0.01%	0.01%	2.39%	92.68%	0.05%	0.19%	0.00%	100%
Road 41	41	-	50	28.77045	Y	1500-1600	20	0.89%	0.32%	0.02%	1.71%	0.61%	0.39%	0.76%	0.00%	0.00%	0.03%	0.00%	0.00%	0.01%	2.06%	92.96%	0.03%	0.20%	0.00%	100%
Road 41	41	-	50	28.61477	Y	1600-1700	23	0.85%	0.29%	0.02%	1.73%	0.62%	0.26%	0.52%	0.00%	0.00%	0.02%	0.01%	0.01%	0.02%	2.50%	92.96%	0.05%	0.14%	0.00%	100%
Road 41	41	-	50	28.65675	Y	1700-1800	22	1.21%	0.26%	0.01%	1.35%	0.48%	0.16%	0.32%	0.00%	0.00%	0.02%	0.01%	0.01%	0.02%	1.50%	94.43%	0.12%	0.08%	0.00%	100%
Road 41	41	-	50	28.58528	Y	1800-1900	23	1.27%	0.28%	0.01%	0.93%	0.34%	0.11%	0.22%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.49%	96.17%	0.08%	0.06%	0.00%	100%
Road 41	41	-	50	28.54146	Y	1900-2000	24	1.04%	0.33%	0.01%	0.72%	0.26%	0.03%	0.06%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	3.88%	93.58%	0.05%	0.02%	0.00%	100%
Road 41	41	-	50	28.78249	Y	2000-2100	20	0.99%	0.36%	0.01%	0.62%	0.22%	0.06%	0.11%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	1.83%	95.70%	0.04%	0.03%	0.00%	100%
Road 41	41	-	50	28.71283	Y	2100-2200	21	0.80%	0.43%	0.01%	0.55%	0.20%	0.04%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	1.31%	96.54%	0.03%	0.02%	0.00%	100%
Road 41	41	-	50	28.83906	Y	2200-2300	19	0.81%	0.54%	0.01%	0.54%	0.19%	0.03%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.38%	96.38%	0.04%	0.02%	0.00%	100%
Road 41	41	-	50	29.09836	Y	2300-0000	15	0.81%	0.51%	0.01%	0.59%	0.21%	0.05%	0.09%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	1.40%	96.26%	0.04%	0.02%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 42	42	-	50	29.36768	Y	0000-0100	18	40.31%	23.54%	0.04%	3.63%	1.30%	0.35%	0.69%	0.00%	0.08%	0.64%	0.21%	0.14%	0.32%	0.39%	25.75%	2.43%	0.18%	0.00%	100%
Road 42	42	-	50	29.56462	Y	0100-0200	12	40.46%	21.83%	0.04%	3.94%	1.42%	0.44%	0.87%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.39%	25.72%	2.63%	0.23%	0.00%	100%
Road 42	42	-	50	29.66545	Y	0200-0300	9	40.78%	20.12%	0.04%	4.28%	1.54%	0.54%	1.06%	0.00%	0.16%	1.24%	0.40%	0.28%	0.61%	0.38%	25.48%	2.82%	0.28%	0.00%	100%
Road 42	42	-	50	29.74582	Y	0300-0400	7	40.78%	18.33%	0.05%	4.59%	1.65%	0.63%	1.23%	0.00%	0.19%	1.52%	0.50%	0.34%	0.76%	0.40%	25.68%	3.03%	0.32%	0.00%	100%
Road 42	42	-	50	29.75851	Y	0400-0500	7	41.04%	16.56%	0.05%	4.94%	1.77%	0.72%	1.42%	0.00%	0.23%	1.82%	0.60%	0.41%	0.91%	0.39%	25.52%	3.23%	0.37%	0.00%	100%
Road 42	42	-	50	29.6563	Y	0500-0600	9	41.25%	14.76%	0.06%	5.28%	1.90%	0.82%	1.61%	0.00%	0.27%	2.13%	0.70%	0.48%	1.06%	0.39%	25.44%	3.44%	0.42%	0.00%	100%
Road 42	42	-	50	29.03756	Y	0600-0700	26	41.85%	12.95%	0.06%	5.65%	2.03%	0.94%	1.84%	0.00%	0.32%	2.49%	0.81%	0.56%	1.23%	0.35%	24.80%	3.64%	0.48%	0.00%	100%
Road 42	42	-	50	28.24865	Y	0700-0800	47	42.16%	11.08%	0.06%	6.02%	2.16%	1.04%	2.05%	0.00%	0.36%	2.82%	0.92%	0.63%	1.39%	0.34%	24.58%	3.85%	0.54%	0.00%	100%
Road 42	42	-	50	28.30825	Y	0800-0900	48	47.61%	14.56%	0.06%	5.47%	1.97%	0.84%	1.65%	0.00%	0.17%	1.35%	0.68%	0.47%	1.03%	0.50%	20.21%	2.99%	0.43%	0.00%	100%
Road 42	42	-	50	28.34758	Y	0900-1000	44	40.01%	12.96%	0.09%	8.88%	3.19%	1.62%	3.19%	0.00%	0.12%	0.95%	0.44%	0.31%	0.68%	0.54%	23.91%	2.29%	0.83%	0.00%	100%
Road 42	42	-	50	28.37001	Y	1000-1100	43	35.37%	16.11%	0.10%	9.84%	3.53%	1.89%	3.72%	0.00%	0.11%	0.85%	0.16%	0.11%	0.25%	1.13%	24.51%	1.34%	0.97%	0.00%	100%
Road 42	42	-	50	28.54628	Y	1100-1200	39	38.08%	15.96%	0.09%	8.92%	3.20%	1.98%	3.90%	0.00%	0.09%	0.68%	0.27%	0.18%	0.40%	0.30%	22.96%	1.96%	1.02%	0.00%	100%
Road 42	42	-	50	29.80782	Y	1200-1300	4	23.81%	8.26%	0.12%	11.61%	4.17%	2.50%	4.91%	0.00%	0.15%	1.17%	0.31%	0.21%	0.47%	1.72%	38.69%	0.64%	1.28%	0.00%	100%
Road 42	42	-	50	29.79115	Y	1300-1400	5	19.87%	8.21%	0.14%	13.24%	4.76%	2.40%	4.73%	0.00%	0.14%	1.10%	0.51%	0.36%	0.78%	1.99%	39.65%	0.89%	1.23%	0.00%	100%
Road 42	42	-	50	29.80136	Y	1400-1500	4	24.02%	7.45%	0.12%	11.75%	4.22%	2.60%	5.11%	0.00%	0.13%	0.98%	0.24%	0.17%	0.37%	1.01%	39.20%	1.30%	1.33%	0.00%	100%
Road 42	42	-	50	29.79825	Y	1500-1600	4	23.32%	8.39%	0.13%	11.97%	4.30%	2.72%	5.35%	0.00%	0.10%	0.75%	0.10%	0.07%	0.15%	0.88%	39.48%	0.90%	1.40%	0.00%	100%
Road 42	42	-	50	29.78029	Y	1600-1700	5	23.19%	8.01%	0.13%	12.54%	4.50%	1.91%	3.75%	0.00%	0.07%	0.58%	0.30%	0.21%	0.46%	1.10%	40.85%	1.42%	0.98%	0.00%	100%
Road 42	42	-	50	29.78675	Y	1700-1800	5	31.44%	6.77%	0.10%	9.30%	3.34%	1.12%	2.19%	0.00%	0.07%	0.57%	0.36%	0.25%	0.56%	0.63%	39.61%	3.12%	0.57%	0.00%	100%
Road 42	42	-	50	29.78613	Y	1800-1900	5	34.70%	7.67%	0.07%	6.77%	2.43%	0.82%	1.62%	0.00%	0.01%	0.09%	0.25%	0.17%	0.38%	0.21%	42.31%	2.06%	0.42%	0.00%	100%
Road 42	42	-	50	29.79622	Y	1900-2000	5	31.37%	9.92%	0.06%	5.76%	2.07%	0.25%	0.50%	0.00%	0.01%	0.11%	0.24%	0.16%	0.36%	1.89%	45.66%	1.48%	0.13%	0.00%	100%
Road 42	42	-	50	29.83098	Y	2000-2100	4	30.16%	11.02%	0.05%	5.09%	1.83%	0.47%	0.91%	0.00%	0.00%	0.04%	0.21%	0.14%	0.31%	0.91%	47.29%	1.33%	0.24%	0.00%	100%
Road 42	42	-	50	29.82805	Y	2100-2200	4	25.80%	13.92%	0.05%	4.70%	1.69%	0.31%	0.61%	0.00%	0.00%	0.04%	0.15%	0.11%	0.23%	0.69%	50.48%	1.06%	0.16%	0.00%	100%
Road 42	42	-	50	29.84255	Y	2200-2300	4	25.26%	16.94%	0.05%	4.49%	1.61%	0.25%	0.49%	0.00%	0.00%	0.04%	0.01%	0.01%	0.02%	0.70%	48.72%	1.28%	0.13%	0.00%	100%
Road 42	42	-	50	29.87677	Y	2300-0000	3	25.14%	15.77%	0.05%	4.90%	1.76%	0.38%	0.75%	0.00%	0.03%	0.22%	0.07%	0.05%	0.11%	0.71%	48.48%	1.39%	0.20%	0.00%	100%
Road 43	43	-	50	29.42386	Y	0000-0100	5	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.48%	98.52%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.60626	Y	0100-0200	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	98.51%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.70171	Y	0200-0300	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.46%	98.54%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.77347	Y	0300-0400	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.52%	98.48%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.78728	Y	0400-0500	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	98.50%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.70014	Y	0500-0600	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	98.50%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.18328	Y	0600-0700	7	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.38%	98.62%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.53516	Y	0700-0800	12	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.35%	98.65%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.75	Y	0800-0900	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.40%	97.60%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.65523	Y	0900-1000	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.20%	97.80%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.63353	Y	1000-1100	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.40%	95.60%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.86653	Y	1100-1200	9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.28%	98.72%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.80951	Y	1200-1300	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.25%	95.75%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.69001	Y	1300-1400	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.79%	95.21%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.77353	Y	1400-1500	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.51%	97.49%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.75195	Y	1500-1600	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.17%	97.83%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.58873	Y	1600-1700	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.61%	97.39%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.625	Y	1700-1800	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.56%	98.44%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.5445	Y	1800-1900	12	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	99.50%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.49158	Y	1900-2000	12	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.98%	96.02%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.74063	Y	2000-2100	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.88%	98.12%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.66607	Y	2100-2200	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.34%	98.66%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	28.79711	Y	2200-2300	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.41%	98.59%	0.00%	0.00%	0.00%	100%
Road 43	43	-	50	29.06658	Y	2300-0000	7	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	98.56%	0.00%	0.00%	0.00%	100%
Road 44	44	-	50	29.98971	Y	0000-0100	0	54.36%	31.75%	0.05%	5.12%	1.84%	0.49%	0.97%	0.00%	0.11%	0.86%	0.28%	0.20%	0.43%	0.00%	0.00%	3.28%	0.25%	0.00%	100%
Road 44	44	-	50	29.99286	Y	0100-0200	0	54.53%	29.41%	0.06%	5.56%	2.00%	0.62%	1.22%	0.00%	0.16%	1.26%	0.41%	0.28%	0.62%	0.00%	0.00%	3.55%	0.32%	0.00%	100%
Road 44	44	-	50	29.99445	Y	0200-0300	0	54.73%	27.01%	0.06%	6.01%	2.16%	0.76%	1.49%	0.00%	0.21%	1.66%	0.54%	0.37%	0.82%	0.00%	0.00%	3.79%	0.39%	0.00%	100%
Road 44	44	-	50	29.99578	Y	0300-0400	0	54.87%	24.67%	0.07%	6.47%	2.32%	0.88%	1.74%	0.00%	0.26%	2.05%	0.67%	0.46%	1.02%	0.00%	0.00%	4.08%	0.45%	0.00%	100%
Road 44	44	-	50	29.99595	Y	0400-0500	0	55.07%	22.22%	0.07%	6.93%	2.49%	1.02%	2.00%	0.00%	0.31%	2.45%	0.80%	0.55%	1.22%	0.00%	0.00%	4.34%	0.52%	0.00%	100%
Road 44	44	-	50	29.99419	Y	0500-0600	0	55.27%	19.77%	0.08%	7.40%	2.66%	1.15%	2.26%	0.00%	0.37%	2.85%	0.93%	0.65%	1.42%	0.00%	0.00%	4.60%	0.59%	0.00%	100%
Road 44	44	-	50	29.98336	Y	0600-0700	0	55.53%	17.18%	0.08%	7.85%	2.82%	1.30%	2.56%	0.00%	0.42%	3.30%	1.07%	0.74%	1.63%	0.00%	0.00%	4.83%	0.67%	0.00%	100%
Road 44	44	-	50	29.96939	Y	0700-0800	1	55.74%	14.65%	0.09%	8.32%	2.99%	1.44%	2.84%	0.00%	0.48%	3.73%	1.21%	0.84%	1.84%	0.00%	0.00%	5.09%	0.74%	0.00%	100%
Road 44	44	-	50	29.968	Y	0800-0900	1	59.69%	18.25%	0.07%	7.18%	2.58%	1.10%	2.17%	0.00%	0.22%	1.70%	0.85%	0.59%	1.29%	0.00%	0.00%	3.75%	0.57%	0.00%	100%
Road 44	44	-	50	29.97041	Y	0900-1000	0	52.39%	16.97%	0.13%	12.16%	4.37%	2.22%	4.36%	0.00%	0.16%	1.24%	0.58%	0.40%	0.88%	0.00%	0.00%	3.00%	1.14%	0.00%	100%
Road 44	44	-	50	29.97136	Y	1000-1100	0	46.98%	21.40%	0.14%	13.67%	4.91%	2.63%	5.17%	0.00%	0.14%	1.13%	0.22%	0.15%	0.33%	0.00%	0.00%	1.78%	1.35%	0.00%	100%
Road 44	44	-	50	29.97319	Y	1100-1200	0	49.06%	20.56%	0.13%	12.03%	4.32%	2.67%	5.26%	0.00%	0.11%	0.88%	0.34%	0.24%	0.52%	0.00%	0.00%	2.52%	1.37%	0.00%	100%
Road 44	44	-	50	29.99074	Y	1200-1300	0	37.27%	12.93%	0.22%	21.35%	7.67%	4.59%	9.02%	0.00%	0.23%	1.83%	0.48%	0.33%	0.73%	0.00%	0.00%	1.00%	2.36%	0.00%	100%
Road 44	44	-	50	29.99004	Y	1300-1400	0	31.54%	13.03%	0.26%	24.69%	8.87%	4.48%	8.81%	0.00%	0.22%	1.75%	0.81%	0.57%	1.24%	0.00%	0.00%	1.42%	2.30%	0.00%	100%
Road 44	44	-	50	29.99037	Y	1400-1500	0	37.43%	11.60%	0.22%	21.50%	7.72%	4.76%	9.35%	0.00%	0.20%	1.52%	0.38%	0.26%	0.58%	0.00%	0.00%	2.03%	2.44%	0.00%	100%
Road 44	44	-	50	29.99021	Y	1500-1600	0	36.36%	13.07%	0.23%	21.92%	7.87%	4.98%	9.79%	0.00%	0.15%	1.17%	0.15%	0.11%	0.23%	0.00%	0.00%	1.41%	2.56%	0.00%	100%
Road 44	44	-	50	29.98992	Y	1600-1700	0	37.28%	12.88%	0.25%	23.67%	8.50%	3.60%	7.08%	0.00%	0.12%	0.93%	0.49%	0.34%	0.74%	0.00%	0.00%	2.28%	1.85%	0.00%	100%
Road 44	44	-	50	29.9905	Y	1700-1800	0	50.17%	10.80%	0.18%	17.43%	6.26%	2.09%	4.11%	0.00%	0.12%	0.91%	0.58%	0.40%	0.89%	0.00%	0.00%	4.99%	1.07%	0.00%	100%
Road 44	44	-	50	29.99134	Y	1800-1900	0	58.23%	12.87%	0.14%	13.35%	4.79%	1.62%	3.19%	0.00%	0.02%	0.16%	0.42%	0.29%	0.64%	0.00%	0.00%	3.45%	0.83%	0.00%	100%
Road 44	44	-	50	29.993	Y	1900-2000	0	58.12%	18.38%	0.13%	12.54%	4.50%	0.55%	1.09%	0.00%	0.03%	0.21%	0.44%	0.30%	0.67%	0.00%	0.00%	2.75%	0.28%	0.00%	100%
Road 44	44	-	50	29.99427	Y	2000-2100	0	56.58%	20.66%	0.12%	11.21%	4.03%	1.03%	2.02%	0.00%	0.01%	0.07%	0.39%	0.27%	0.59%	0.00%	0.00%	2.50%	0.53%	0.00%	100%
Road 44	44	-	50	29.99469	Y	2100-2200	0	51.46%	27.76%	0.11%	11.01%	3.95%	0.73%	1.43%	0.00%	0.01%	0.07%	0.30%	0.21%	0.46%	0.00%	0.00%	2.11%	0.37%	0.00%	100%
Road 44	44	-	50	29.99497	Y	2200-2300	0	48.76%	32.69%	0.11%	10.18%	3.66%	0.56%	1.11%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.47%	0.29%	0.00%	100%
Road 44	44	-	50	29.99597	Y	2300-0000	0	48.15%	30.19%	0.12%	11.02%	3.96%	0.86%	1.69%	0.00%	0.05%	0.42%	0.14%	0.10%	0.21%	0.00%	0.00%	2.67%	0.44%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 49	49	-	50	29.86879	Y	0000-0100	2	1.76%	1.03%	0.01%	0.65%	0.23%	0.06%	0.12%	95.94%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.11%	0.03%	0.00%	100%
Road 49	49	-	50	29.90244	Y	0100-0200	1	1.63%	0.88%	0.01%	0.65%	0.23%	0.07%	0.14%	96.16%	0.00%	0.04%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.04%	0.00%	100%
Road 49	49	-	50	29.91944	Y	0200-0300	1	1.52%	0.75%	0.01%	0.65%	0.24%	0.08%	0.16%	96.34%	0.01%	0.05%	0.01%	0.01%	0.02%	0.00%	0.00%	0.11%	0.04%	0.00%	100%
Road 49	49	-	50	29.93454	Y	0300-0400	1	1.41%	0.63%	0.01%	0.65%	0.23%	0.09%	0.18%	96.53%	0.01%	0.05%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.05%	0.00%	100%
Road 49	49	-	50	29.93372	Y	0400-0500	1	1.33%	0.54%	0.01%	0.65%	0.24%	0.10%	0.19%	96.68%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.05%	0.00%	100%
Road 49	49	-	50	29.8998	Y	0500-0600	1	1.25%	0.45%	0.01%	0.66%	0.24%	0.10%	0.20%	96.81%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.10%	0.05%	0.00%	100%
Road 49	49	-	50	29.70274	Y	0600-0700	4	1.19%	0.37%	0.01%	0.66%	0.24%	0.11%	0.22%	96.89%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	0.10%	0.06%	0.00%	100%
Road 49	49	-	50	29.42872	Y	0700-0800	8	1.13%	0.30%	0.01%	0.66%	0.24%	0.12%	0.23%	96.99%	0.01%	0.08%	0.02%	0.02%	0.04%	0.00%	0.00%	0.10%	0.06%	0.00%	100%
Road 49	49	-	50	29.61	Y	0800-0900	5	1.92%	0.59%	0.01%	0.91%	0.33%	0.14%	0.27%	95.50%	0.01%	0.05%	0.03%	0.02%	0.04%	0.00%	0.00%	0.12%	0.07%	0.00%	100%
Road 49	49	-	50	29.55897	Y	0900-1000	6	1.31%	0.42%	0.01%	1.19%	0.43%	0.22%	0.43%	95.73%	0.00%	0.03%	0.01%	0.01%	0.02%	0.00%	0.00%	0.07%	0.11%	0.00%	100%
Road 49	49	-	50	29.71657	Y	1000-1100	4	1.74%	0.79%	0.02%	1.98%	0.71%	0.38%	0.75%	93.29%	0.01%	0.04%	0.01%	0.01%	0.01%	0.00%	0.00%	0.07%	0.20%	0.00%	100%
Road 49	49	-	50	29.56052	Y	1100-1200	6	1.11%	0.46%	0.01%	1.06%	0.38%	0.24%	0.46%	96.05%	0.00%	0.02%	0.01%	0.01%	0.01%	0.00%	0.00%	0.06%	0.12%	0.00%	100%
Road 49	49	-	50	29.30101	Y	1200-1300	9	0.00%	0.00%	0.03%	2.51%	0.90%	0.54%	1.06%	94.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	100%
Road 49	49	-	50	28.92334	Y	1300-1400	14	0.00%	0.00%	0.02%	1.98%	0.71%	0.36%	0.71%	96.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	0.00%	100%
Road 49	49	-	50	29.31553	Y	1400-1500	9	0.00%	0.00%	0.03%	2.69%	0.96%	0.59%	1.17%	94.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.31%	0.00%	100%
Road 49	49	-	50	29.35485	Y	1500-1600	9	0.00%	0.00%	0.03%	2.95%	1.06%	0.67%	1.32%	93.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.34%	0.00%	100%
Road 49	49	-	50	29.29354	Y	1600-1700	9	0.00%	0.00%	0.03%	3.06%	1.10%	0.47%	0.92%	94.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.24%	0.00%	100%
Road 49	49	-	50	28.9935	Y	1700-1800	13	0.00%	0.00%	0.02%	1.61%	0.58%	0.19%	0.38%	97.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	100%
Road 49	49	-	50	28.94443	Y	1800-1900	14	0.00%	0.00%	0.01%	1.12%	0.40%	0.14%	0.27%	97.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	100%
Road 49	49	-	50	29.07286	Y	1900-2000	12	0.00%	0.00%	0.01%	1.00%	0.36%	0.04%	0.09%	98.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	100%
Road 49	49	-	50	29.40876	Y	2000-2100	8	0.00%	0.00%	0.01%	1.15%	0.41%	0.10%	0.21%	98.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	100%
Road 49	49	-	50	29.32879	Y	2100-2200	9	0.00%	0.00%	0.01%	0.93%	0.33%	0.06%	0.12%	98.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	100%
Road 49	49	-	50	29.51042	Y	2200-2300	7	0.00%	0.00%	0.01%	1.14%	0.41%	0.06%	0.12%	98.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	100%
Road 49	49	-	50	29.58104	Y	2300-0000	6	0.00%	0.00%	0.01%	1.13%	0.41%	0.09%	0.17%	98.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	100%
Road 50	50	-	50	29.94513	Y	0000-0100	1	2.80%	1.63%	0.02%	2.27%	0.82%	0.22%	0.43%	91.43%	0.01%	0.04%	0.01%	0.01%	0.02%	0.00%	0.00%	0.17%	0.11%	0.00%	100%
Road 50	50	-	50	29.9592	Y	0100-0200	1	2.59%	1.40%	0.02%	2.28%	0.82%	0.25%	0.50%	91.71%	0.01%	0.06%	0.02%	0.01%	0.03%	0.00%	0.00%	0.17%	0.13%	0.00%	100%
Road 50	50	-	50	29.96629	Y	0200-0300	0	2.42%	1.19%	0.02%	2.29%	0.82%	0.29%	0.57%	91.92%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	0.17%	0.15%	0.00%	100%
Road 50	50	-	50	29.97262	Y	0300-0400	0	2.25%	1.01%	0.02%	2.28%	0.82%	0.31%	0.61%	92.18%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	0.17%	0.16%	0.00%	100%
Road 50	50	-	50	29.97227	Y	0400-0500	0	2.11%	0.85%	0.02%	2.29%	0.82%	0.34%	0.66%	92.35%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	0.17%	0.17%	0.00%	100%
Road 50	50	-	50	29.95807	Y	0500-0600	1	1.99%	0.71%	0.02%	2.30%	0.82%	0.36%	0.70%	92.52%	0.01%	0.10%	0.03%	0.02%	0.05%	0.00%	0.00%	0.17%	0.18%	0.00%	100%
Road 50	50	-	50	29.87551	Y	0600-0700	2	1.90%	0.59%	0.02%	2.32%	0.83%	0.38%	0.76%	92.58%	0.01%	0.11%	0.04%	0.03%	0.06%	0.00%	0.00%	0.17%	0.20%	0.00%	100%
Road 50	50	-	50	29.76071	Y	0700-0800	3	1.81%	0.47%	0.02%	2.33%	0.84%	0.40%	0.79%	92.70%	0.02%	0.12%	0.04%	0.03%	0.06%	0.00%	0.00%	0.17%	0.21%	0.00%	100%
Road 50	50	-	50	29.834	Y	0800-0900	2	3.01%	0.92%	0.03%	3.12%	1.12%	0.48%	0.94%	89.71%	0.01%	0.09%	0.04%	0.03%	0.07%	0.00%	0.00%	0.19%	0.25%	0.00%	100%
Road 50	50	-	50	29.80947	Y	0900-1000	3	2.02%	0.65%	0.04%	4.05%	1.45%	0.74%	1.45%	88.96%	0.01%	0.05%	0.02%	0.02%	0.03%	0.00%	0.00%	0.12%	0.38%	0.00%	100%
Road 50	50	-	50	29.87145	Y	1000-1100	2	2.57%	1.17%	0.07%	6.46%	2.32%	1.24%	2.44%	82.87%	0.01%	0.06%	0.01%	0.01%	0.02%	0.00%	0.00%	0.10%	0.64%	0.00%	100%
Road 50	50	-	50	29.8107	Y	1100-1200	3	1.72%	0.72%	0.04%	3.64%	1.31%	0.81%	1.59%	89.61%	0.00%	0.03%	0.01%	0.01%	0.02%	0.00%	0.00%	0.09%	0.42%	0.00%	100%
Road 50	50	-	50	29.29098	Y	1200-1300	9	0.75%	0.26%	0.03%	2.74%	0.98%	0.59%	1.16%	93.10%	0.00%	0.04%	0.01%	0.01%	0.01%	0.00%	0.00%	0.02%	0.30%	0.00%	100%
Road 50	50	-	50	28.91272	Y	1300-1400	14	0.43%	0.18%	0.02%	2.17%	0.78%	0.39%	0.78%	94.95%	0.00%	0.02%	0.01%	0.01%	0.02%	0.00%	0.00%	0.02%	0.20%	0.00%	100%
Road 50	50	-	50	29.30515	Y	1400-1500	9	0.80%	0.25%	0.03%	2.93%	1.05%	0.65%	1.28%	92.58%	0.00%	0.03%	0.01%	0.01%	0.01%	0.00%	0.00%	0.04%	0.33%	0.00%	100%
Road 50	50	-	50	29.34439	Y	1500-1600	9	0.83%	0.30%	0.03%	3.21%	1.15%	0.73%	1.44%	91.86%	0.00%	0.03%	0.00%	0.00%	0.01%	0.00%	0.00%	0.03%	0.37%	0.00%	100%
Road 50	50	-	50	29.2826	Y	1600-1700	10	0.82%	0.28%	0.03%	3.34%	1.20%	0.51%	1.00%	92.46%	0.00%	0.02%	0.01%	0.01%	0.02%	0.00%	0.00%	0.05%	0.26%	0.00%	100%
Road 50	50	-	50	28.9825	Y	1700-1800	14	0.79%	0.17%	0.02%	1.77%	0.63%	0.21%	0.42%	95.76%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.08%	0.11%	0.00%	100%
Road 50	50	-	50	28.93405	Y	1800-1900	14	0.83%	0.18%	0.01%	1.23%	0.44%	0.15%	0.29%	96.71%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.05%	0.08%	0.00%	100%
Road 50	50	-	50	29.06422	Y	1900-2000	13	0.80%	0.25%	0.01%	1.10%	0.40%	0.05%	0.10%	97.21%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.04%	0.02%	0.00%	100%
Road 50	50	-	50	29.4017	Y	2000-2100	8	0.99%	0.36%	0.01%	1.25%	0.45%	0.11%	0.23%	96.47%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.04%	0.06%	0.00%	100%
Road 50	50	-	50	29.32219	Y	2100-2200	9	0.74%	0.40%	0.01%	1.02%	0.37%	0.07%	0.13%	97.18%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.03%	0.03%	0.00%	100%
Road 50	50	-	50	29.50414	Y	2200-2300	7	0.93%	0.62%	0.01%	1.24%	0.45%	0.07%	0.14%	96.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.04%	0.00%	100%
Road 50	50	-	50	29.57606	Y	2300-0000	6	0.84%	0.53%	0.01%	1.24%	0.44%	0.10%	0.19%	96.54%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.05%	0.00%	100%
Road 53	53	-	50	29.40822	Y	0000-0100	10	45.30%	26.45%	0.15%	14.05%	5.05%	1.35%	2.66%	0.00%	0.09%	0.72%	0.23%	0.16%	0.36%	0.00%	0.00%	2.74%	0.69%	0.00%	100%
Road 53	53	-	50	29.57851	Y	0100-0200	7	44.53%	24.02%	0.16%	14.96%	5.37%	1.67%	3.29%	0.00%	0.13%	1.03%	0.33%	0.23%	0.51%	0.00%	0.00%	2.90%	0.86%	0.00%	100%
Road 53	53	-	50	29.66348	Y	0200-0300	6	43.82%	21.62%	0.17%	15.84%	5.69%	1.99%	3.92%	0.00%	0.17%	1.33%	0.43%	0.30%	0.66%	0.00%	0.00%	3.04%	1.02%	0.00%	100%
Road 53	53	-	50	29.73769	Y	0300-0400	4	43.08%	19.37%	0.17%	16.73%	6.01%	2.28%	4.49%	0.00%	0.21%	1.61%	0.52%	0.36%	0.80%	0.00%	0.00%	3.20%	1.17%	0.00%	100%
Road 53	53	-	50	29.74216	Y	0400-0500	4	42.40%	17.11%	0.18%	17.57%	6.31%	2.58%	5.07%	0.00%	0.24%	1.89%	0.62%	0.43%	0.94%	0.00%	0.00%	3.34%	1.33%	0.00%	100%
Road 53	53	-	50	29.62138	Y	0500-0600	6	41.73%	14.93%	0.19%	18.41%	6.61%	2.86%	5.63%	0.00%	0.28%	2.15%	0.70%	0.49%	1.07%	0.00%	0.00%	3.48%	1.47%	0.00%	100%
Road 53	53	-	50	28.8918	Y	0600-0700	17	41.12%	12.72%	0.20%	19.15%	6.88%	3.17%	6.24%	0.00%	0.31%	2.45%	0.79%	0.55%	1.21%	0.00%	0.00%	3.58%	1.63%	0.00%	100%
Road 53	53	-	50	27.91636	Y	0700-0800	32	40.49%	10.64%	0.21%	19.92%	7.15%	3.45%	6.78%	0.00%	0.35%	2.71%	0.88%	0.61%	1.34%	0.00%	0.00%	3.70%	1.77%	0.00%	100%
Road 53	53	-	50	27.933	Y	0800-0900	33	45.44%	13.89%	0.19%	18.00%	6.46%	2.77%	5.44%	0.00%	0.17%	1.29%	0.65%	0.45%	0.98%	0.00%	0.00%	2.86%	1.42%	0.00%	100%
Road 53	53	-	50	27.66112	Y	0900-1000	34	33.60%	10.89%	0.27%	25.69%	9.22%	4.69%	9.22%	0.00%	0.10%	0.79%	0.37%	0.26%	0.57%	0.00%	0.00%	1.92%	2.41%	0.00%	100%
Road 53	53	-	50	27.60366	Y	1000-1100	34	28.66%	13.06%	0.29%	27.47%	9.86%	5.28%	10.38%	0.00%	0.09%	0.69%	0.13%	0.09%	0.20%	0.00%	0.00%	1.09%	2.71%	0.00%	100%
Road 53	53	-	50	27.81863	Y	1100-1200	32	30.83%	12.92%	0.26%	24.90%	8.94%	5.53%	10.88%	0.00%	0.07%	0.55%	0.21%	0.15%	0.33%	0.00%	0.00%	1.59%	2.84%	0.00%	100%
Road 53	53	-	50	28.10499	Y	1200-1300	29	39.24%	13.61%	0.21%	19.98%	7.17%	4.29%	8.44%	0.00%	0.25%	1.92%	0.50%	0.35%	0.77%	0.00%	0.00%	1.06%	2.20%	0.00%	100%
Road 53	53	-	50	27.97096	Y	1300-1400	30	33.38%	13.79%	0.24%	23.22%	8.34%	4.22%	8.29%	0.00%	0.24%	1.85%	0.86%	0.60%	1.31%	0.00%	0.00%	1.50%	2.16%	0.00%	100%
Road 53	53	-	50	28.03214	Y	1400-1500	30	39.45%	12.23%	0.21%	20.14%	7.23%	4.46%	8.76%	0.00%	0.21%	1.61%	0.40%	0.28%	0.61%	0.00%	0.00%	2.14%	2.29%	0.00%	100%
Road 53	53	-	50	28.00465	Y	1500-1600	30	38.38%	13.80%	0.21%	20.56%	7.38%	4.67%	9.18%	0.00%	0.16%	1.24%	0.16%	0.11%	0.25%	0.00%	0.00%	1.49%	2.40%	0.00%	100%
Road 53	53	-	50	27.93721	Y	1600-1700	32	39.24%	13.56%	0.23%	22.14%	7.95%	3.37%	6.63%	0.00%	0.13%	0.98%	0.51%	0.36%	0.78%	0.00%	0.00%	2.39%	1.73%	0.00%	100%
Road 53	53	-	50	28.021	Y	1700-1800	33	51.97%	11.18%	0.17%	16.05%	5.76%	1.92%	3.78%	0.00%	0.12%	0.94%	0.60%	0.42%	0.92%	0.00%	0.00%	5.16%	0.99%	0.00%	100%
Road 53	53	-	50	28.17748	Y	1800-1900	32	59.82%	13.23%	0.13%	12.19%	4.38%	1.48%	2.91%	0.00%	0.02%	0.16%	0.43%	0.30%	0.66%	0.00%	0.00%	3.55%	0.76%	0.00%	100%
Road 53	53	-	50	28.51469	Y	1900-2000	27	59.38%	18.78%	0.12%	11.39%	4.09%	0.50%	0.99%	0.00%	0.03%	0.21%	0.45%	0.31%	0.68%	0.00%	0.00%	2.81%	0.26%	0.00%	100%
Road 53	53	-	50	28.78465	Y	2000-2100	22	57.80%	21.11%	0.11%	10.18%	3.66%	0.93%	1.83%	0.00%	0.01%	0.07%	0.40%	0.27%	0.60%	0.00%	0.00%	2.56%	0.48%	0.00%	100%
Road 53	53	-	50	28.87118	Y	2100-2200	21	52.48%	28.31%	0.10%	9.98%	3.58%	0.66%	1.30%	0.00%	0.01%	0.08%	0.31%	0.21%	0.47%	0.00%	0.00%	2.16%	0.34%	0.00%	100%
Road 53	53	-	50	28.92976	Y	2200-2300	20	49.64%	33.28%	0.10%	9.21%	3.31%	0.51%	1.00%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.51%	0.26%	0.00%	100%
Road 53	53	-	50	29.14511	Y	2300-0000	16	49.14%	30.81%	0.10%	10.00%	3.59%	0.78%	1.53%	0.00%	0.06%	0.43%	0.14%	0.10%	0.21%	0.00%	0.00%	2.72%	0.40%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 54	54	-	50	28.66824	Y	0000-0100	25	52.81%	30.84%	0.07%	6.66%	2.39%	0.64%	1.26%	0.00%	0.11%	0.84%	0.27%	0.19%	0.42%	0.00%	0.00%	3.19%	0.33%	0.00%	100%
Road 54	54	-	50	29.07201	Y	0100-0200	17	52.78%	28.47%	0.08%	7.20%	2.59%	0.81%	1.58%	0.00%	0.16%	1.22%	0.40%	0.27%	0.60%	0.00%	0.00%	3.43%	0.41%	0.00%	100%
Road 54	54	-	50	29.27456	Y	0200-0300	13	52.79%	26.05%	0.08%	7.75%	2.78%	0.98%	1.92%	0.00%	0.21%	1.60%	0.52%	0.36%	0.79%	0.00%	0.00%	3.66%	0.50%	0.00%	100%
Road 54	54	-	50	29.44563	Y	0300-0400	10	52.74%	23.71%	0.09%	8.32%	2.99%	1.14%	2.23%	0.00%	0.25%	1.97%	0.64%	0.45%	0.98%	0.00%	0.00%	3.92%	0.58%	0.00%	100%
Road 54	54	-	50	29.4655	Y	0400-0500	9	52.75%	21.29%	0.09%	8.88%	3.19%	1.30%	2.56%	0.00%	0.30%	2.35%	0.77%	0.53%	1.17%	0.00%	0.00%	4.15%	0.67%	0.00%	100%
Road 54	54	-	50	29.22947	Y	0500-0600	13	52.75%	18.87%	0.10%	9.45%	3.39%	1.47%	2.89%	0.00%	0.35%	2.72%	0.89%	0.62%	1.36%	0.00%	0.00%	4.39%	0.76%	0.00%	100%
Road 54	54	-	50	27.78493	Y	0600-0700	38	52.80%	16.34%	0.10%	9.99%	3.59%	1.66%	3.25%	0.00%	0.40%	3.14%	1.02%	0.71%	1.55%	0.00%	0.00%	4.59%	0.85%	0.00%	100%
Road 54	54	-	50	25.90558	Y	0700-0800	69	52.81%	13.88%	0.11%	10.55%	3.79%	1.83%	3.59%	0.00%	0.45%	3.53%	1.15%	0.80%	1.75%	0.00%	0.00%	4.83%	0.94%	0.00%	100%
Road 54	54	-	50	25.766	Y	0800-0900	74	57.05%	17.44%	0.10%	9.18%	3.30%	1.41%	2.77%	0.00%	0.21%	1.62%	0.81%	0.56%	1.23%	0.00%	0.00%	3.58%	0.72%	0.00%	100%
Road 54	54	-	50	25.90803	Y	0900-1000	67	48.40%	15.68%	0.16%	15.03%	5.40%	2.74%	5.40%	0.00%	0.15%	1.14%	0.54%	0.37%	0.82%	0.00%	0.00%	2.77%	1.41%	0.00%	100%
Road 54	54	-	50	25.98409	Y	1000-1100	65	42.93%	19.56%	0.17%	16.72%	6.00%	3.21%	6.32%	0.00%	0.13%	1.03%	0.20%	0.14%	0.30%	0.00%	0.00%	1.63%	1.65%	0.00%	100%
Road 54	54	-	50	26.2669	Y	1100-1200	61	45.12%	18.91%	0.15%	14.81%	5.32%	3.29%	6.47%	0.00%	0.10%	0.81%	0.31%	0.22%	0.48%	0.00%	0.00%	2.32%	1.69%	0.00%	100%
Road 54	54	-	50	27.36286	Y	1200-1300	36	24.62%	8.54%	0.31%	30.13%	10.82%	6.47%	12.73%	0.00%	0.15%	1.21%	0.32%	0.22%	0.48%	0.00%	0.00%	0.66%	3.32%	0.00%	100%
Road 54	54	-	50	27.10145	Y	1300-1400	39	20.20%	8.35%	0.35%	33.78%	12.13%	6.13%	12.05%	0.00%	0.14%	1.12%	0.52%	0.36%	0.80%	0.00%	0.00%	0.91%	3.15%	0.00%	100%
Road 54	54	-	50	27.23604	Y	1400-1500	38	24.59%	7.62%	0.32%	30.17%	10.83%	6.67%	13.12%	0.00%	0.13%	1.00%	0.25%	0.17%	0.38%	0.00%	0.00%	1.33%	3.43%	0.00%	100%
Road 54	54	-	50	27.1597	Y	1500-1600	39	23.65%	8.50%	0.32%	30.44%	10.93%	6.92%	13.60%	0.00%	0.10%	0.76%	0.10%	0.07%	0.15%	0.00%	0.00%	0.92%	3.55%	0.00%	100%
Road 54	54	-	50	27.14136	Y	1600-1700	40	24.68%	8.53%	0.35%	33.46%	12.02%	5.10%	10.02%	0.00%	0.08%	0.61%	0.32%	0.22%	0.49%	0.00%	0.00%	1.51%	2.62%	0.00%	100%
Road 54	54	-	50	27.5795	Y	1700-1800	37	37.06%	7.97%	0.29%	27.51%	9.88%	3.30%	6.48%	0.00%	0.09%	0.67%	0.43%	0.30%	0.65%	0.00%	0.00%	3.68%	1.69%	0.00%	100%
Road 54	54	-	50	27.93335	Y	1800-1900	33	45.79%	10.12%	0.23%	22.41%	8.05%	2.72%	5.35%	0.00%	0.02%	0.12%	0.33%	0.23%	0.50%	0.00%	0.00%	2.71%	1.40%	0.00%	100%
Road 54	54	-	50	28.42679	Y	1900-2000	26	47.76%	15.10%	0.23%	22.01%	7.90%	0.97%	1.91%	0.00%	0.02%	0.17%	0.36%	0.25%	0.55%	0.00%	0.00%	2.26%	0.50%	0.00%	100%
Road 54	54	-	50	28.70709	Y	2000-2100	21	46.57%	17.01%	0.21%	19.71%	7.08%	1.80%	3.54%	0.00%	0.01%	0.06%	0.32%	0.22%	0.49%	0.00%	0.00%	2.06%	0.93%	0.00%	100%
Road 54	54	-	50	28.82232	Y	2100-2200	20	42.88%	23.13%	0.20%	19.59%	7.04%	1.30%	2.55%	0.00%	0.01%	0.06%	0.25%	0.18%	0.38%	0.00%	0.00%	1.76%	0.67%	0.00%	100%
Road 54	54	-	50	28.90738	Y	2200-2300	19	41.30%	27.69%	0.19%	18.41%	6.61%	1.02%	2.01%	0.00%	0.01%	0.06%	0.02%	0.02%	0.03%	0.00%	0.00%	2.09%	0.52%	0.00%	100%
Road 54	54	-	50	29.10044	Y	2300-0000	15	39.95%	25.05%	0.20%	19.53%	7.01%	1.52%	2.99%	0.00%	0.04%	0.35%	0.11%	0.08%	0.17%	0.00%	0.00%	2.21%	0.78%	0.00%	100%
Road 55	55	-	50	28.13882	Y	0000-0100	28	42.18%	24.63%	0.08%	7.46%	2.68%	0.72%	1.41%	0.00%	0.09%	0.67%	0.22%	0.15%	0.33%	0.24%	16.21%	2.55%	0.37%	0.00%	100%
Road 55	55	-	50	28.70443	Y	0100-0200	19	42.02%	22.67%	0.08%	8.05%	2.89%	0.90%	1.77%	0.00%	0.12%	0.97%	0.32%	0.22%	0.48%	0.24%	16.07%	2.73%	0.46%	0.00%	100%
Road 55	55	-	50	28.99179	Y	0200-0300	15	41.96%	20.71%	0.09%	8.65%	3.11%	1.09%	2.14%	0.00%	0.16%	1.27%	0.41%	0.29%	0.63%	0.23%	15.78%	2.91%	0.56%	0.00%	100%
Road 55	55	-	50	29.22736	Y	0300-0400	11	41.69%	18.74%	0.10%	9.23%	3.31%	1.26%	2.48%	0.00%	0.20%	1.55%	0.51%	0.35%	0.77%	0.24%	15.80%	3.10%	0.65%	0.00%	100%
Road 55	55	-	50	29.25729	Y	0400-0500	11	41.60%	16.79%	0.10%	9.83%	3.53%	1.44%	2.84%	0.00%	0.24%	1.85%	0.60%	0.42%	0.92%	0.24%	15.57%	3.28%	0.74%	0.00%	100%
Road 55	55	-	50	28.93125	Y	0500-0600	15	41.48%	14.84%	0.11%	10.43%	3.75%	1.62%	3.19%	0.00%	0.27%	2.14%	0.70%	0.49%	1.07%	0.23%	15.39%	3.46%	0.83%	0.00%	100%
Road 55	55	-	50	26.95909	Y	0600-0700	43	41.59%	12.87%	0.12%	11.05%	3.97%	1.83%	3.60%	0.00%	0.32%	2.47%	0.80%	0.56%	1.22%	0.21%	14.84%	3.62%	0.94%	0.00%	100%
Road 55	55	-	50	24.87984	Y	0700-0800	79	41.52%	10.91%	0.12%	11.64%	4.18%	2.02%	3.97%	0.00%	0.36%	2.78%	0.90%	0.63%	1.37%	0.20%	14.57%	3.79%	1.04%	0.00%	100%
Road 55	55	-	50	24.9069	Y	0800-0900	82	46.76%	14.30%	0.11%	10.56%	3.79%	1.62%	3.19%	0.00%	0.17%	1.33%	0.66%	0.46%	1.01%	0.29%	11.95%	2.94%	0.83%	0.00%	100%
Road 55	55	-	50	24.86841	Y	0900-1000	79	37.24%	12.07%	0.17%	16.24%	5.83%	2.96%	5.83%	0.00%	0.11%	0.88%	0.41%	0.29%	0.63%	0.30%	13.39%	2.13%	1.52%	0.00%	100%
Road 55	55	-	50	24.86596	Y	1000-1100	77	32.40%	14.76%	0.18%	17.71%	6.36%	3.41%	6.69%	0.00%	0.10%	0.78%	0.15%	0.10%	0.23%	0.62%	13.52%	1.23%	1.75%	0.00%	100%
Road 55	55	-	50	24.97965	Y	1100-1200	71	34.87%	14.62%	0.17%	16.06%	5.77%	3.57%	7.02%	0.00%	0.08%	0.62%	0.24%	0.17%	0.37%	0.16%	12.66%	1.79%	1.83%	0.00%	100%
Road 55	55	-	50	27.27594	Y	1200-1300	41	41.47%	14.38%	0.17%	16.43%	5.90%	3.53%	6.94%	0.00%	0.26%	2.03%	0.53%	0.37%	0.81%	0.18%	4.06%	1.12%	1.81%	0.00%	100%
Road 55	55	-	50	27.09948	Y	1300-1400	42	35.55%	14.69%	0.20%	19.24%	6.91%	3.49%	6.87%	0.00%	0.25%	1.97%	0.92%	0.64%	1.40%	0.21%	4.27%	1.59%	1.79%	0.00%	100%
Road 55	55	-	50	27.18068	Y	1400-1500	42	41.79%	12.95%	0.17%	16.60%	5.96%	3.67%	7.22%	0.00%	0.22%	1.70%	0.42%	0.29%	0.64%	0.11%	4.11%	2.26%	1.89%	0.00%	100%
Road 55	55	-	50	27.15189	Y	1500-1600	43	40.77%	14.66%	0.18%	16.99%	6.10%	3.86%	7.59%	0.00%	0.17%	1.31%	0.17%	0.12%	0.26%	0.09%	4.16%	1.58%	1.98%	0.00%	100%
Road 55	55	-	50	27.01016	Y	1600-1700	46	41.33%	14.28%	0.19%	18.14%	6.52%	2.76%	5.43%	0.00%	0.13%	1.03%	0.54%	0.37%	0.82%	0.12%	4.39%	2.52%	1.42%	0.00%	100%
Road 55	55	-	50	27.0305	Y	1700-1800	49	53.23%	11.45%	0.13%	12.79%	4.59%	1.53%	3.01%	0.00%	0.12%	0.96%	0.62%	0.43%	0.94%	0.06%	4.04%	5.29%	0.79%	0.00%	100%
Road 55	55	-	50	27.18182	Y	1800-1900	48	60.08%	13.28%	0.10%	9.52%	3.42%	1.16%	2.27%	0.00%	0.02%	0.16%	0.43%	0.30%	0.66%	0.02%	4.41%	3.56%	0.59%	0.00%	100%
Road 55	55	-	50	27.61112	Y	1900-2000	41	58.46%	18.49%	0.09%	8.72%	3.13%	0.38%	0.76%	0.00%	0.03%	0.21%	0.44%	0.31%	0.67%	0.21%	5.13%	2.77%	0.20%	0.00%	100%
Road 55	55	-	50	28.04244	Y	2000-2100	34	56.80%	20.75%	0.08%	7.79%	2.80%	0.71%	1.40%	0.00%	0.01%	0.07%	0.39%	0.27%	0.59%	0.10%	5.36%	2.51%	0.37%	0.00%	100%
Road 55	55	-	50	28.14496	Y	2100-2200	32	51.09%	27.56%	0.08%	7.56%	2.71%	0.50%	0.98%	0.00%	0.01%	0.07%	0.30%	0.21%	0.46%	0.08%	6.02%	2.10%	0.26%	0.00%	100%
Road 55	55	-	50	28.24522	Y	2200-2300	31	48.36%	32.42%	0.07%	6.98%	2.51%	0.39%	0.76%	0.00%	0.01%	0.07%	0.03%	0.02%	0.04%	0.08%	5.62%	2.45%	0.20%	0.00%	100%
Road 55	55	-	50	28.61139	Y	2300-0000	24	48.10%	30.16%	0.08%	7.61%	2.73%	0.59%	1.16%	0.00%	0.05%	0.42%	0.14%	0.10%	0.21%	0.08%	5.59%	2.66%	0.30%	0.00%	100%
Road 56	56	-	50	28.22691	Y	0000-0100	28	45.99%	26.86%	0.06%	5.68%	2.04%	0.55%	1.07%	0.00%	0.09%	0.73%	0.24%	0.17%	0.36%	0.19%	12.91%	2.78%	0.28%	0.00%	100%
Road 56	56	-	50	28.77102	Y	0100-0200	19	46.01%	24.82%	0.06%	6.15%	2.21%	0.69%	1.35%	0.00%	0.14%	1.06%	0.35%	0.24%	0.53%	0.19%	12.86%	2.99%	0.35%	0.00%	100%
Road 56	56	-	50	29.04715	Y	0200-0300	15	46.14%	22.77%	0.07%	6.64%	2.38%	0.83%	1.64%	0.00%	0.18%	1.40%	0.45%	0.32%	0.69%	0.19%	12.68%	3.20%	0.43%	0.00%	100%
Road 56	56	-	50	29.27318	Y	0300-0400	11	46.06%	20.70%	0.07%	7.12%	2.55%	0.97%	1.91%	0.00%	0.22%	1.72%	0.56%	0.39%	0.85%	0.20%	12.75%	3.42%	0.50%	0.00%	100%
Road 56	56	-	50	29.30398	Y	0400-0500	11	46.15%	18.62%	0.08%	7.61%	2.73%	1.12%	2.20%	0.00%	0.26%	2.05%	0.67%	0.47%	1.02%	0.19%	12.62%	3.63%	0.57%	0.00%	100%
Road 56	56	-	50	29.00232	Y	0500-0600	15	46.21%	16.53%	0.08%	8.11%	2.91%	1.26%	2.48%	0.00%	0.31%	2.38%	0.78%	0.54%	1.19%	0.19%	12.53%	3.85%	0.65%	0.00%	100%
Road 56	56	-	50	27.16896	Y	0600-0700	43	46.50%	14.39%	0.09%	8.62%	3.09%	1.43%	2.81%	0.00%	0.35%	2.77%	0.90%	0.62%	1.37%	0.17%	12.12%	4.05%	0.73%	0.00%	100%
Road 56	56	-	50	24.96085	Y	0700-0800	77	46.61%	12.25%	0.10%	9.12%	3.28%	1.58%	3.11%	0.00%	0.40%	3.12%	1.01%	0.70%	1.54%	0.16%	11.95%	4.26%	0.81%	0.00%	100%
Road 56	56	-	50	24.9671	Y	0800-0900	81	51.60%	15.78%	0.08%	8.13%	2.92%	1.25%	2.46%	0.00%	0.19%	1.47%	0.73%	0.51%	1.12%	0.24%	9.63%	3.24%	0.64%	0.00%	100%
Road 56	56	-	50	24.98254	Y	0900-1000	74	43.06%	13.95%	0.14%	13.10%	4.70%	2.39%	4.70%	0.00%	0.13%	1.02%	0.48%	0.33%	0.73%	0.25%	11.31%	2.46%	1.23%	0.00%	100%
Road 56	56	-	50	24.99477	Y	1000-1100	72	38.00%	17.31%	0.15%	14.49%	5.20%	2.79%	5.48%	0.00%	0.12%	0.91%	0.18%	0.12%	0.27%	0.53%	11.58%	1.44%	1.43%	0.00%	100%
Road 56	56	-	50	25.43542	Y	1100-1200	67	40.48%	16.97%	0.14%	13.01%	4.67%	2.89%	5.68%	0.00%	0.09%	0.72%	0.28%	0.20%	0.43%	0.14%	10.73%	2.08%	1.49%	0.00%	100%
Road 56	56	-	50	26.63242	Y	1200-1300	42	20.66%	7.16%	0.27%	26.01%	9.34%	5.59%	10.99%	0.00%	0.13%	1.01%	0.27%	0.18%	0.40%	0.62%	13.94%	0.56%	2.87%	0.00%	100%
Road 56	56	-	50	26.29562	Y	1300-1400	45	16.90%	6.98%	0.30%	29.08%	10.44%	5.28%	10.37%	0.00%	0.12%	0.94%	0.44%	0.30%	0.67%	0.70%	14.01%	0.76%	2.71%	0.00%	100%
Road 56	56	-	50	26.48331	Y	1400-1500	43	20.67%	6.41%	0.27%	26.09%	9.37%	5.77%	11.35%	0.00%	0.11%	0.84%	0.21%	0.15%	0.32%	0.36%	14.01%	1.12%	2.96%	0.00%	100%
Road 56	56	-	50	26.39299	Y	1500-1600	44	19.89%	7.15%	0.28%	26.34%	9.46%	5.99%	11.77%	0.00%	0.08%	0.64%	0.08%	0.06%	0.13%	0.31%	13.98%	0.77%	3.07%	0.00%	100%
Road 56	56	-	50	26.27303	Y	1600-1700	47	20.50%	7.08%	0.30%	28.60%	10.27%	4.36%	8.56%	0.00%	0.07%	0.51%	0.27%	0.19%	0.41%	0.40%	15.00%	1.25%	2.24%	0.00%	100%
Road 56	56	-	50	26.7385	Y	1700-1800	43	30.60%	6.58%	0.24%	23.37%	8.39%	2.80%	5.51%	0.00%	0.07%	0.55%	0.35%	0.25%	0.54%	0.25%	16.01%	3.04%	1.44%	0.00%	100%
Road 56	56	-	50	27.04119	Y	1800-1900	40	36.78%	8.13%	0.19%	18.53%	6.65%	2.25%	4.43%	0.00%	0.01%	0.10%	0.26%	0.18%	0.40%	0.09%	18.63%	2.18%	1.16%	0.00%	100%
Road 56	56	-	50	27.49653	Y	1900-2000	33	36.45%	11.53%	0.18%	17.28%	6.21%	0.76%	1.50%	0.00%	0.02%	0.13%	0.27%	0.19%	0.42%	0.91%	22.04%	1.72%	0.39%	0.00%	100%
Road 56	56	-	50	27.92983	Y	2000-2100	27	35.31%	12.90%	0.16%	15.38%	5.52%	1.41%	2.76%	0.00%	0.01%	0.04%	0.24%	0.17%	0.37%	0.44%	23.00%	1.56%	0.72%	0.00%	100%
Road 56	56	-	50	27.99629	Y	2100-2200	26	31.48%	16.98%	0.15%	14.80%	5.31%	0.98%	1.92%	0.00%	0.01%	0.05%	0.19%	0.13%	0.28%	0.35%	25.58%	1.29%	0.50%	0.00%	100%
Road 56	56	-	50	28.16396	Y	2200-2300	25	30.73%	20.61%	0.15%	14.10%	5.06%	0.78%	1.54%	0.00%	0.01%	0.05%	0.02%	0.01%	0.03%	0.35%	24.62%	1.56%	0.40%	0.00%	100%
Road 56	56	-	50	28.52361	Y	2300-0000	20	29.95%	18.78%	0.16%	15.06%	5.41%	1.17%	2.30%	0.00%	0.03%	0.26%	0.09%	0.06%	0.13%	0.35%	23.98%	1.66%	0.60%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 59	59	-	50	28.13882	Y	0000-0100	28	42.18%	24.63%	0.08%	7.46%	2.68%	0.72%	1.41%	0.00%	0.09%	0.67%	0.22%	0.15%	0.33%	0.24%	16.21%	2.55%	0.37%	0.00%	100%
Road 59	59	-	50	28.70443	Y	0100-0200	19	42.02%	22.67%	0.08%	8.05%	2.89%	0.90%	1.77%	0.00%	0.12%	0.97%	0.32%	0.22%	0.48%	0.24%	16.07%	2.73%	0.46%	0.00%	100%
Road 59	59	-	50	28.99179	Y	0200-0300	15	41.96%	20.71%	0.09%	8.65%	3.11%	1.09%	2.14%	0.00%	0.16%	1.27%	0.41%	0.29%	0.63%	0.23%	15.78%	2.91%	0.56%	0.00%	100%
Road 59	59	-	50	29.22736	Y	0300-0400	11	41.69%	18.74%	0.10%	9.23%	3.31%	1.26%	2.48%	0.00%	0.20%	1.55%	0.51%	0.35%	0.77%	0.24%	15.80%	3.10%	0.65%	0.00%	100%
Road 59	59	-	50	29.25729	Y	0400-0500	11	41.60%	16.79%	0.10%	9.83%	3.53%	1.44%	2.84%	0.00%	0.24%	1.85%	0.60%	0.42%	0.92%	0.24%	15.57%	3.28%	0.74%	0.00%	100%
Road 59	59	-	50	28.93125	Y	0500-0600	15	41.48%	14.84%	0.11%	10.43%	3.75%	1.62%	3.19%	0.00%	0.27%	2.14%	0.70%	0.49%	1.07%	0.23%	15.39%	3.46%	0.83%	0.00%	100%
Road 59	59	-	50	26.95909	Y	0600-0700	43	41.59%	12.87%	0.12%	11.05%	3.97%	1.83%	3.60%	0.00%	0.32%	2.47%	0.80%	0.56%	1.22%	0.21%	14.84%	3.62%	0.94%	0.00%	100%
Road 59	59	-	50	24.87984	Y	0700-0800	79	41.52%	10.91%	0.12%	11.64%	4.18%	2.02%	3.97%	0.00%	0.36%	2.78%	0.90%	0.63%	1.37%	0.20%	14.57%	3.79%	1.04%	0.00%	100%
Road 59	59	-	50	24.9069	Y	0800-0900	82	46.76%	14.30%	0.11%	10.56%	3.79%	1.62%	3.19%	0.00%	0.17%	1.33%	0.66%	0.46%	1.01%	0.29%	11.95%	2.94%	0.83%	0.00%	100%
Road 59	59	-	50	24.86841	Y	0900-1000	79	37.24%	12.07%	0.17%	16.24%	5.83%	2.96%	5.83%	0.00%	0.11%	0.88%	0.41%	0.29%	0.63%	0.30%	13.39%	2.13%	1.52%	0.00%	100%
Road 59	59	-	50	24.86596	Y	1000-1100	77	32.40%	14.76%	0.18%	17.71%	6.36%	3.41%	6.69%	0.00%	0.10%	0.78%	0.15%	0.10%	0.23%	0.62%	13.52%	1.23%	1.75%	0.00%	100%
Road 59	59	-	50	24.97965	Y	1100-1200	71	34.87%	14.62%	0.17%	16.06%	5.77%	3.57%	7.02%	0.00%	0.08%	0.62%	0.24%	0.17%	0.37%	0.16%	12.66%	1.79%	1.83%	0.00%	100%
Road 59	59	-	50	27.27563	Y	1200-1300	41	41.46%	14.38%	0.17%	16.44%	5.90%	3.53%	6.94%	0.00%	0.26%	2.03%	0.53%	0.37%	0.81%	0.18%	4.06%	1.12%	1.81%	0.00%	100%
Road 59	59	-	50	27.09908	Y	1300-1400	42	35.54%	14.68%	0.20%	19.25%	6.91%	3.49%	6.87%	0.00%	0.25%	1.97%	0.92%	0.64%	1.40%	0.21%	4.27%	1.59%	1.79%	0.00%	100%
Road 59	59	-	50	27.18034	Y	1400-1500	42	41.77%	12.95%	0.17%	16.61%	5.96%	3.67%	7.22%	0.00%	0.22%	1.70%	0.42%	0.29%	0.64%	0.11%	4.11%	2.26%	1.89%	0.00%	100%
Road 59	59	-	50	27.1515	Y	1500-1600	43	40.76%	14.66%	0.18%	17.00%	6.10%	3.86%	7.59%	0.00%	0.17%	1.31%	0.17%	0.12%	0.26%	0.09%	4.16%	1.58%	1.98%	0.00%	100%
Road 59	59	-	50	27.00984	Y	1600-1700	46	41.32%	14.28%	0.19%	18.15%	6.52%	2.76%	5.43%	0.00%	0.13%	1.03%	0.54%	0.37%	0.82%	0.12%	4.39%	2.52%	1.42%	0.00%	100%
Road 59	59	-	50	27.0305	Y	1700-1800	49	53.22%	11.45%	0.13%	12.80%	4.60%	1.53%	3.02%	0.00%	0.12%	0.96%	0.62%	0.43%	0.94%	0.06%	4.04%	5.29%	0.79%	0.00%	100%
Road 59	59	-	50	27.18198	Y	1800-1900	48	60.07%	13.28%	0.10%	9.53%	3.42%	1.16%	2.28%	0.00%	0.02%	0.16%	0.43%	0.30%	0.66%	0.02%	4.41%	3.56%	0.59%	0.00%	100%
Road 59	59	-	50	27.61135	Y	1900-2000	41	58.46%	18.49%	0.09%	8.73%	3.14%	0.38%	0.76%	0.00%	0.03%	0.21%	0.44%	0.31%	0.67%	0.21%	5.13%	2.77%	0.20%	0.00%	100%
Road 59	59	-	50	28.04263	Y	2000-2100	33	56.80%	20.74%	0.08%	7.79%	2.80%	0.71%	1.40%	0.00%	0.01%	0.07%	0.39%	0.27%	0.59%	0.10%	5.37%	2.51%	0.37%	0.00%	100%
Road 59	59	-	50	28.14515	Y	2100-2200	32	51.09%	27.56%	0.08%	7.56%	2.72%	0.50%	0.98%	0.00%	0.01%	0.07%	0.30%	0.21%	0.46%	0.08%	6.02%	2.10%	0.26%	0.00%	100%
Road 59	59	-	50	28.24543	Y	2200-2300	31	48.35%	32.42%	0.07%	6.99%	2.51%	0.39%	0.76%	0.00%	0.01%	0.07%	0.03%	0.02%	0.04%	0.08%	5.62%	2.45%	0.20%	0.00%	100%
Road 59	59	-	50	28.61153	Y	2300-0000	24	48.10%	30.16%	0.08%	7.62%	2.74%	0.59%	1.17%	0.00%	0.05%	0.42%	0.14%	0.10%	0.21%	0.08%	5.59%	2.66%	0.30%	0.00%	100%
Road 60	60	-	50	27.59334	Y	0000-0100	33	38.96%	22.76%	0.05%	4.81%	1.73%	0.46%	0.91%	0.00%	0.08%	0.62%	0.20%	0.14%	0.31%	0.39%	25.99%	2.35%	0.24%	0.00%	100%
Road 60	60	-	50	28.33803	Y	0100-0200	23	39.01%	21.04%	0.05%	5.22%	1.87%	0.58%	1.15%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.39%	25.89%	2.54%	0.30%	0.00%	100%
Road 60	60	-	50	28.71912	Y	0200-0300	17	39.20%	19.34%	0.06%	5.64%	2.03%	0.71%	1.39%	0.00%	0.15%	1.19%	0.39%	0.27%	0.59%	0.38%	25.58%	2.72%	0.36%	0.00%	100%
Road 60	60	-	50	29.02407	Y	0300-0400	13	39.09%	17.57%	0.06%	6.04%	2.17%	0.82%	1.62%	0.00%	0.19%	1.46%	0.48%	0.33%	0.72%	0.40%	25.71%	2.91%	0.42%	0.00%	100%
Road 60	60	-	50	29.07005	Y	0400-0500	12	39.23%	15.83%	0.07%	6.47%	2.32%	0.95%	1.87%	0.00%	0.22%	1.74%	0.57%	0.40%	0.87%	0.39%	25.49%	3.09%	0.49%	0.00%	100%
Road 60	60	-	50	28.67257	Y	0500-0600	18	39.33%	14.07%	0.07%	6.90%	2.48%	1.07%	2.11%	0.00%	0.26%	2.03%	0.66%	0.46%	1.01%	0.39%	25.33%	3.28%	0.55%	0.00%	100%
Road 60	60	-	50	26.27082	Y	0600-0700	50	39.78%	12.31%	0.08%	7.37%	2.65%	1.22%	2.40%	0.00%	0.30%	2.37%	0.77%	0.53%	1.17%	0.35%	24.62%	3.46%	0.63%	0.00%	100%
Road 60	60	-	50	24.63867	Y	0700-0800	90	39.95%	10.50%	0.08%	7.82%	2.81%	1.36%	2.66%	0.00%	0.34%	2.67%	0.87%	0.60%	1.32%	0.33%	24.33%	3.65%	0.70%	0.00%	100%
Road 60	60	-	50	24.6922	Y	0800-0900	92	45.44%	13.89%	0.07%	7.16%	2.57%	1.10%	2.16%	0.00%	0.17%	1.29%	0.65%	0.45%	0.98%	0.49%	20.15%	2.86%	0.57%	0.00%	100%
Road 60	60	-	50	24.68677	Y	0900-1000	86	37.15%	12.04%	0.12%	11.30%	4.06%	2.06%	4.06%	0.00%	0.11%	0.88%	0.41%	0.29%	0.63%	0.52%	23.18%	2.13%	1.06%	0.00%	100%
Road 60	60	-	50	24.69422	Y	1000-1100	84	32.57%	14.84%	0.13%	12.42%	4.46%	2.39%	4.70%	0.00%	0.10%	0.78%	0.15%	0.10%	0.23%	1.09%	23.57%	1.24%	1.23%	0.00%	100%
Road 60	60	-	50	24.83779	Y	1100-1200	77	35.21%	14.76%	0.12%	11.32%	4.06%	2.52%	4.95%	0.00%	0.08%	0.63%	0.25%	0.17%	0.37%	0.29%	22.18%	1.81%	1.29%	0.00%	100%
Road 60	60	-	50	25.3337	Y	1200-1300	52	16.53%	5.73%	0.22%	20.81%	7.47%	4.47%	8.79%	0.00%	0.10%	0.81%	0.21%	0.15%	0.32%	1.34%	30.29%	0.45%	2.30%	0.00%	100%
Road 60	60	-	50	24.97331	Y	1300-1400	57	13.50%	5.58%	0.24%	23.22%	8.34%	4.21%	8.28%	0.00%	0.10%	0.75%	0.35%	0.24%	0.53%	1.53%	30.36%	0.61%	2.16%	0.00%	100%
Road 60	60	-	50	25.14534	Y	1400-1500	54	16.58%	5.14%	0.22%	20.94%	7.52%	4.63%	9.10%	0.00%	0.09%	0.68%	0.17%	0.12%	0.26%	0.79%	30.51%	0.90%	2.38%	0.00%	100%
Road 60	60	-	50	25.03148	Y	1500-1600	55	15.97%	5.74%	0.22%	21.16%	7.60%	4.81%	9.45%	0.00%	0.07%	0.51%	0.07%	0.05%	0.10%	0.68%	30.48%	0.62%	2.47%	0.00%	100%
Road 60	60	-	50	24.94669	Y	1600-1700	59	16.22%	5.61%	0.24%	22.63%	8.13%	3.45%	6.77%	0.00%	0.05%	0.40%	0.21%	0.15%	0.32%	0.86%	32.21%	0.99%	1.77%	0.00%	100%
Road 60	60	-	50	25.2385	Y	1700-1800	55	23.93%	5.15%	0.19%	18.27%	6.56%	2.19%	4.31%	0.00%	0.06%	0.43%	0.28%	0.19%	0.42%	0.54%	33.98%	2.38%	1.13%	0.00%	100%
Road 60	60	-	50	25.45338	Y	1800-1900	52	27.85%	6.16%	0.15%	14.03%	5.04%	1.70%	3.35%	0.00%	0.01%	0.08%	0.20%	0.14%	0.31%	0.19%	38.28%	1.65%	0.88%	0.00%	100%
Road 60	60	-	50	25.85099	Y	1900-2000	47	26.16%	8.27%	0.13%	12.40%	4.45%	0.55%	1.07%	0.00%	0.01%	0.09%	0.20%	0.14%	0.30%	1.78%	42.92%	1.24%	0.28%	0.00%	100%
Road 60	60	-	50	26.55597	Y	2000-2100	38	25.19%	9.20%	0.11%	10.97%	3.94%	1.00%	1.97%	0.00%	0.00%	0.03%	0.17%	0.12%	0.26%	0.85%	44.53%	1.11%	0.52%	0.00%	100%
Road 60	60	-	50	26.5411	Y	2100-2200	38	21.79%	11.76%	0.11%	10.25%	3.68%	0.68%	1.33%	0.00%	0.00%	0.03%	0.13%	0.09%	0.20%	0.65%	48.06%	0.90%	0.35%	0.00%	100%
Road 60	60	-	50	26.85171	Y	2200-2300	35	21.52%	14.43%	0.10%	9.87%	3.55%	0.55%	1.08%	0.00%	0.00%	0.03%	0.01%	0.01%	0.02%	0.67%	46.79%	1.09%	0.28%	0.00%	100%
Road 60	60	-	50	27.50533	Y	2300-0000	28	21.13%	13.25%	0.11%	10.63%	3.82%	0.83%	1.63%	0.00%	0.02%	0.19%	0.06%	0.04%	0.09%	0.67%	45.94%	1.17%	0.42%	0.00%	100%
Road 61	61	-	50	28.69746	Y	0000-0100	11	1.58%	0.92%	0.01%	0.53%	0.19%	0.05%	0.10%	14.97%	0.00%	0.03%	0.01%	0.01%	0.01%	1.21%	80.28%	0.10%	0.03%	0.00%	100%
Road 61	61	-	50	29.10137	Y	0100-0200	8	1.56%	0.84%	0.01%	0.57%	0.20%	0.06%	0.12%	16.08%	0.00%	0.04%	0.01%	0.01%	0.02%	1.20%	79.14%	0.10%	0.03%	0.00%	100%
Road 61	61	-	50	29.31199	Y	0200-0300	6	1.56%	0.77%	0.01%	0.61%	0.22%	0.08%	0.15%	17.27%	0.01%	0.05%	0.02%	0.01%	0.02%	1.15%	77.93%	0.11%	0.04%	0.00%	100%
Road 61	61	-	50	29.473	Y	0300-0400	5	1.53%	0.69%	0.01%	0.64%	0.23%	0.09%	0.17%	18.26%	0.01%	0.06%	0.02%	0.01%	0.03%	1.19%	76.91%	0.11%	0.05%	0.00%	100%
Road 61	61	-	50	29.49994	Y	0400-0500	4	1.53%	0.62%	0.01%	0.68%	0.25%	0.10%	0.20%	19.41%	0.01%	0.07%	0.02%	0.02%	0.03%	1.16%	75.74%	0.12%	0.05%	0.00%	100%
Road 61	61	-	50	29.2878	Y	0500-0600	6	1.52%	0.54%	0.01%	0.72%	0.26%	0.11%	0.22%	20.51%	0.01%	0.08%	0.03%	0.02%	0.04%	1.14%	74.61%	0.13%	0.06%	0.00%	100%
Road 61	61	-	50	28.03331	Y	0600-0700	18	1.55%	0.48%	0.01%	0.78%	0.28%	0.13%	0.25%	21.90%	0.01%	0.09%	0.03%	0.02%	0.05%	1.03%	73.20%	0.13%	0.07%	0.00%	100%
Road 61	61	-	50	26.43131	Y	0700-0800	32	1.55%	0.41%	0.01%	0.82%	0.30%	0.14%	0.28%	23.08%	0.01%	0.10%	0.03%	0.02%	0.05%	0.99%	71.99%	0.14%	0.07%	0.00%	100%
Road 61	61	-	50	27.043	Y	0800-0900	26	2.19%	0.67%	0.01%	0.94%	0.34%	0.14%	0.28%	19.01%	0.01%	0.06%	0.03%	0.02%	0.05%	1.82%	74.21%	0.14%	0.07%	0.00%	100%
Road 61	61	-	50	26.79288	Y	0900-1000	29	1.55%	0.50%	0.01%	1.28%	0.46%	0.23%	0.46%	19.79%	0.00%	0.04%	0.02%	0.01%	0.03%	1.66%	73.75%	0.09%	0.12%	0.00%	100%
Road 61	61	-	50	26.905	Y	1000-1100	27	1.41%	0.64%	0.02%	1.46%	0.52%	0.28%	0.55%	13.21%	0.00%	0.03%	0.01%	0.00%	0.01%	3.60%	78.05%	0.05%	0.14%	0.00%	100%
Road 61	61	-	50	27.22208	Y	1100-1200	25	1.49%	0.62%	0.01%	1.30%	0.47%	0.29%	0.57%	22.53%	0.00%	0.03%	0.01%	0.01%	0.02%	0.93%	71.51%	0.08%	0.15%	0.00%	100%
Road 61	61	-	50	26.95784	Y	1200-1300	28	0.61%	0.21%	0.02%	1.94%	0.70%	0.42%	0.82%	30.89%	0.00%	0.03%	0.01%	0.01%	0.01%	2.72%	61.39%	0.02%	0.21%	0.00%	100%
Road 61	61	-	50	26.34434	Y	1300-1400	35	0.44%	0.18%	0.02%	1.89%	0.68%	0.34%	0.68%	38.85%	0.00%	0.02%	0.01%	0.01%	0.02%	2.71%	53.94%	0.02%	0.18%	0.00%	100%
Road 61	61	-	50	26.90003	Y	1400-1500	29	0.63%	0.19%	0.02%	2.00%	0.72%	0.44%	0.87%	29.68%	0.00%	0.03%	0.01%	0.00%	0.01%	1.64%	63.50%	0.03%	0.23%	0.00%	100%
Road 61	61	-	50	26.89576	Y	1500-1600	29	0.62%	0.22%	0.02%	2.08%	0.75%	0.47%	0.93%	27.93%	0.00%	0.02%	0.00%	0.00%	0.00%	1.45%	65.23%	0.02%	0.24%	0.00%	100%
Road 61	61	-	50	26.52307	Y	1600-1700	32	0.60%	0.21%	0.02%	2.12%	0.76%	0.32%	0.63%	27.61%	0.00%	0.02%	0.01%	0.01%	0.01%	1.76%	65.71%	0.04%	0.17%	0.00%	100%
Road 61	61	-	50	26.307	Y	1700-1800	35	0.75%	0.16%	0.02%	1.45%	0.52%	0.17%	0.34%	36.85%	0.00%	0.01%	0.01%	0.01%	0.01%	0.93%	58.60%	0.07%	0.09%	0.00%	100%
Road 61	61	-	50	26.11499	Y	1800-1900	37	0.79%	0.17%	0.01%	1.00%	0.36%	0.12%	0.24%	37.16%	0.00%	0.00%	0.01%	0.00%	0.01%	0.30%	59.70%	0.05%	0.06%	0.00%	100%
Road 61	61	-	50	26.15579	Y	1900-2000	36	0.68%	0.22%	0.01%	0.82%	0.29%	0.04%	0.07%	33.80%	0.00%	0.00%	0.01%	0.00%	0.01%	2.55%	61.46%	0.03%	0.02%	0.00%	100%
Road 61	61	-	50	26.97374	Y	2000-2100	28	0.71%	0.26%	0.01%	0.77%	0.28%	0.07%	0.14%	27.98%	0.00%	0.00%	0.00%	0.00%	0.01%	1.31%	68.40%	0.03%	0.04%	0.00%	100%
Road 61	61	-	50	26.75445	Y	2100-2200	30	0.56%	0.30%	0.01%	0.66%	0.24%	0.04%	0.09%	29.60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.92%	67.53%	0.02%	0.02%	0.00%	100%
Road 61	61	-	50	27.18854	Y	2200-2300	25	0.60%	0.40%	0.01%	0.69%	0.25%	0.04%	0.08%	25.31%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	71.55%	0.03%	0.02%	0.00%	100%
Road 61	61	-	50	27.77776	Y	2300-0000	20	0.58%	0.37%	0.01%	0.74%	0.27%	0.06%	0.11%	27.14%	0.00%	0.01%	0.00%	0.00%	0.00%	1.01%	69.64%	0.03%	0.03%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 62	62	-	50	28.68096	Y	0000-0100	18	38.79%	22.66%	0.04%	3.57%	1.28%	0.34%	0.67%	3.69%	0.08%	0.62%	0.20%	0.14%	0.31%	0.37%	24.72%	2.34%	0.18%	0.00%	100%
Road 62	62	-	50	29.08875	Y	0100-0200	13	38.81%	20.93%	0.04%	3.87%	1.39%	0.43%	0.85%	4.00%	0.11%	0.90%	0.29%	0.20%	0.44%	0.37%	24.61%	2.52%	0.22%	0.00%	100%
Road 62	62	-	50	29.29745	Y	0200-0300	10	38.97%	19.23%	0.04%	4.18%	1.50%	0.53%	1.03%	4.31%	0.15%	1.18%	0.38%	0.27%	0.58%	0.36%	24.30%	2.70%	0.27%	0.00%	100%
Road 62	62	-	50	29.46445	Y	0300-0400	7	38.83%	17.46%	0.05%	4.47%	1.61%	0.61%	1.20%	4.64%	0.19%	1.45%	0.47%	0.33%	0.72%	0.38%	24.40%	2.89%	0.31%	0.00%	100%
Road 62	62	-	50	29.48948	Y	0400-0500	7	38.94%	15.72%	0.05%	4.79%	1.72%	0.70%	1.38%	4.95%	0.22%	1.73%	0.57%	0.39%	0.86%	0.37%	24.17%	3.07%	0.36%	0.00%	100%
Road 62	62	-	50	29.27094	Y	0500-0600	10	39.01%	13.95%	0.05%	5.11%	1.83%	0.79%	1.56%	5.28%	0.26%	2.01%	0.66%	0.46%	1.00%	0.37%	24.00%	3.25%	0.41%	0.00%	100%
Road 62	62	-	50	27.95143	Y	0600-0700	28	39.43%	12.20%	0.06%	5.45%	1.96%	0.90%	1.78%	5.58%	0.30%	2.35%	0.76%	0.53%	1.16%	0.33%	23.32%	3.43%	0.46%	0.00%	100%
Road 62	62	-	50	26.25949	Y	0700-0800	50	39.58%	10.40%	0.06%	5.78%	2.07%	1.00%	1.97%	5.91%	0.34%	2.65%	0.86%	0.60%	1.31%	0.32%	23.03%	3.62%	0.51%	0.00%	100%
Road 62	62	-	50	26.452	Y	0800-0900	50	45.64%	13.96%	0.06%	5.37%	1.93%	0.82%	1.62%	3.96%	0.17%	1.30%	0.65%	0.45%	0.99%	0.47%	19.33%	2.87%	0.42%	0.00%	100%
Road 62	62	-	50	26.50618	Y	0900-1000	47	37.94%	12.29%	0.09%	8.61%	3.09%	1.57%	3.09%	4.86%	0.11%	0.90%	0.42%	0.29%	0.64%	0.51%	22.61%	2.17%	0.81%	0.00%	100%
Road 62	62	-	50	26.61302	Y	1000-1100	44	34.10%	15.54%	0.10%	9.70%	3.48%	1.87%	3.67%	3.19%	0.10%	0.82%	0.16%	0.11%	0.24%	1.09%	23.58%	1.29%	0.96%	0.00%	100%
Road 62	62	-	50	26.9047	Y	1100-1200	41	35.87%	15.03%	0.09%	8.60%	3.09%	1.91%	3.76%	5.44%	0.08%	0.64%	0.25%	0.17%	0.38%	0.28%	21.58%	1.84%	0.98%	0.00%	100%
Road 62	62	-	50	28.90795	Y	1200-1300	14	7.97%	2.76%	0.06%	5.47%	1.96%	1.18%	2.31%	64.04%	0.05%	0.39%	0.10%	0.07%	0.16%	0.54%	12.12%	0.21%	0.60%	0.00%	100%
Road 62	62	-	50	28.49652	Y	1300-1400	19	5.11%	2.11%	0.05%	4.79%	1.72%	0.87%	1.71%	72.18%	0.04%	0.28%	0.13%	0.09%	0.20%	0.48%	9.54%	0.23%	0.45%	0.00%	100%
Road 62	62	-	50	28.90929	Y	1400-1500	14	8.35%	2.59%	0.06%	5.75%	2.06%	1.27%	2.50%	62.57%	0.04%	0.34%	0.08%	0.06%	0.13%	0.33%	12.75%	0.45%	0.65%	0.00%	100%
Road 62	62	-	50	28.94236	Y	1500-1600	13	8.51%	3.06%	0.06%	6.15%	2.21%	1.40%	2.75%	60.61%	0.04%	0.27%	0.04%	0.03%	0.05%	0.30%	13.48%	0.33%	0.72%	0.00%	100%
Road 62	62	-	50	28.84462	Y	1600-1700	14	8.41%	2.91%	0.07%	6.40%	2.30%	0.97%	1.92%	61.18%	0.03%	0.21%	0.11%	0.08%	0.17%	0.37%	13.87%	0.51%	0.50%	0.00%	100%
Road 62	62	-	50	28.557	Y	1700-1800	19	9.01%	1.94%	0.04%	3.75%	1.35%	0.45%	0.88%	70.14%	0.02%	0.16%	0.10%	0.07%	0.16%	0.17%	10.62%	0.90%	0.23%	0.00%	100%
Road 62	62	-	50	28.50704	Y	1800-1900	19	9.61%	2.13%	0.03%	2.64%	0.95%	0.32%	0.63%	71.68%	0.00%	0.03%	0.07%	0.05%	0.11%	0.06%	10.97%	0.57%	0.16%	0.00%	100%
Road 62	62	-	50	28.65712	Y	1900-2000	17	9.03%	2.86%	0.02%	2.34%	0.84%	0.10%	0.20%	71.05%	0.00%	0.03%	0.07%	0.05%	0.10%	0.51%	12.30%	0.43%	0.05%	0.00%	100%
Road 62	62	-	50	29.06406	Y	2000-2100	12	10.39%	3.79%	0.03%	2.47%	0.89%	0.23%	0.44%	65.43%	0.00%	0.01%	0.07%	0.05%	0.11%	0.29%	15.23%	0.46%	0.12%	0.00%	100%
Road 62	62	-	50	28.97862	Y	2100-2200	13	8.14%	4.39%	0.02%	2.09%	0.75%	0.14%	0.27%	68.54%	0.00%	0.01%	0.05%	0.03%	0.07%	0.20%	14.89%	0.33%	0.07%	0.00%	100%
Road 62	62	-	50	29.18952	Y	2200-2300	10	9.39%	6.30%	0.02%	2.35%	0.84%	0.13%	0.26%	62.94%	0.00%	0.01%	0.01%	0.00%	0.01%	0.24%	16.95%	0.48%	0.07%	0.00%	100%
Road 62	62	-	50	29.32986	Y	2300-0000	8	8.80%	5.52%	0.03%	2.41%	0.87%	0.19%	0.37%	64.96%	0.01%	0.08%	0.03%	0.02%	0.04%	0.23%	15.88%	0.49%	0.10%	0.00%	100%
Road 63	63	-	50	23.62619	Y	0000-0100	230	56.85%	33.20%	0.03%	2.67%	0.96%	0.26%	0.50%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.00%	0.00%	3.43%	0.13%	0.00%	100%
Road 63	63	-	50	24.36787	Y	0100-0200	156	57.34%	30.93%	0.03%	2.91%	1.05%	0.33%	0.64%	0.00%	0.17%	1.32%	0.43%	0.30%	0.66%	0.00%	0.00%	3.73%	0.17%	0.00%	100%
Road 63	63	-	50	24.74105	Y	0200-0300	119	57.89%	28.57%	0.03%	3.17%	1.14%	0.40%	0.78%	0.00%	0.22%	1.76%	0.57%	0.40%	0.87%	0.00%	0.00%	4.01%	0.20%	0.00%	100%
Road 63	63	-	50	25.25161	Y	0300-0400	89	58.36%	26.24%	0.04%	3.43%	1.23%	0.47%	0.92%	0.00%	0.28%	2.18%	0.71%	0.49%	1.08%	0.00%	0.00%	4.34%	0.24%	0.00%	100%
Road 63	63	-	50	25.48111	Y	0400-0500	84	58.92%	23.78%	0.04%	3.69%	1.33%	0.54%	1.07%	0.00%	0.34%	2.62%	0.86%	0.59%	1.30%	0.00%	0.00%	4.64%	0.28%	0.00%	100%
Road 63	63	-	50	24.7138	Y	0500-0600	118	59.49%	21.28%	0.04%	3.97%	1.42%	0.62%	1.21%	0.00%	0.39%	3.07%	1.00%	0.70%	1.53%	0.00%	0.00%	4.96%	0.32%	0.00%	100%
Road 63	63	-	50	22.35016	Y	0600-0700	332	60.14%	18.61%	0.04%	4.24%	1.52%	0.70%	1.38%	0.00%	0.46%	3.58%	1.16%	0.81%	1.77%	0.00%	0.00%	5.23%	0.36%	0.00%	100%
Road 63	63	-	50	19.33826	Y	0700-0800	599	60.75%	15.96%	0.05%	4.52%	1.62%	0.78%	1.54%	0.00%	0.52%	4.07%	1.32%	0.91%	2.01%	0.00%	0.00%	5.55%	0.40%	0.00%	100%
Road 63	63	-	50	18.9	Y	0800-0900	659	64.08%	19.60%	0.04%	3.84%	1.38%	0.59%	1.16%	0.00%	0.23%	1.82%	0.91%	0.63%	1.39%	0.00%	0.00%	4.03%	0.30%	0.00%	100%
Road 63	63	-	50	19.95994	Y	0900-1000	542	59.69%	19.34%	0.07%	6.90%	2.48%	1.26%	2.48%	0.00%	0.18%	1.41%	0.66%	0.46%	1.01%	0.00%	0.00%	3.42%	0.65%	0.00%	100%
Road 63	63	-	50	20.31532	Y	1000-1100	507	54.62%	24.88%	0.08%	7.92%	2.84%	1.52%	2.99%	0.00%	0.17%	1.31%	0.25%	0.17%	0.38%	0.00%	0.00%	2.07%	0.78%	0.00%	100%
Road 63	63	-	50	20.60433	Y	1100-1200	484	56.34%	23.61%	0.07%	6.88%	2.47%	1.53%	3.01%	0.00%	0.13%	1.01%	0.39%	0.27%	0.60%	0.00%	0.00%	2.90%	0.79%	0.00%	100%
Road 63	63	-	50	23.3214	Y	1200-1300	235	57.83%	20.06%	0.07%	7.07%	2.54%	1.52%	2.99%	0.00%	0.36%	2.83%	0.74%	0.52%	1.13%	0.00%	0.00%	1.56%	0.78%	0.00%	100%
Road 63	63	-	50	23.25605	Y	1300-1400	234	51.60%	21.32%	0.09%	8.62%	3.10%	1.56%	3.08%	0.00%	0.37%	2.86%	1.33%	0.92%	2.03%	0.00%	0.00%	2.32%	0.80%	0.00%	100%
Road 63	63	-	50	23.26059	Y	1400-1500	242	58.66%	18.18%	0.08%	7.19%	2.58%	1.59%	3.13%	0.00%	0.31%	2.39%	0.59%	0.41%	0.90%	0.00%	0.00%	3.18%	0.82%	0.00%	100%
Road 63	63	-	50	23.28485	Y	1500-1600	241	57.93%	20.83%	0.08%	7.45%	2.68%	1.69%	3.33%	0.00%	0.24%	1.87%	0.25%	0.17%	0.37%	0.00%	0.00%	2.24%	0.87%	0.00%	100%
Road 63	63	-	50	23.0644	Y	1600-1700	262	57.67%	19.93%	0.08%	7.81%	2.81%	1.19%	2.34%	0.00%	0.18%	1.43%	0.75%	0.52%	1.15%	0.00%	0.00%	3.52%	0.61%	0.00%	100%
Road 63	63	-	50	22.65	Y	1700-1800	313	66.46%	14.30%	0.05%	4.93%	1.77%	0.59%	1.16%	0.00%	0.15%	1.20%	0.77%	0.53%	1.17%	0.00%	0.00%	6.60%	0.30%	0.00%	100%
Road 63	63	-	50	22.64566	Y	1800-1900	320	71.72%	15.86%	0.04%	3.51%	1.26%	0.43%	0.84%	0.00%	0.02%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.25%	0.22%	0.00%	100%
Road 63	63	-	50	23.08226	Y	1900-2000	281	68.40%	21.63%	0.03%	3.15%	1.13%	0.14%	0.27%	0.00%	0.03%	0.24%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 63	63	-	50	23.62192	Y	2000-2100	229	66.48%	24.28%	0.03%	2.81%	1.01%	0.26%	0.51%	0.00%	0.01%	0.08%	0.46%	0.32%	0.69%	0.00%	0.00%	2.94%	0.13%	0.00%	100%
Road 63	63	-	50	23.75283	Y	2100-2200	218	59.73%	32.22%	0.03%	2.73%	0.98%	0.18%	0.35%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.45%	0.09%	0.00%	100%
Road 63	63	-	50	23.82975	Y	2200-2300	213	55.74%	37.37%	0.03%	2.48%	0.89%	0.14%	0.27%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.82%	0.07%	0.00%	100%
Road 63	63	-	50	24.31083	Y	2300-0000	164	56.13%	35.20%	0.03%	2.74%	0.98%	0.21%	0.42%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.11%	0.00%	100%
Road 64	64	-	50	25.55736	Y	0000-0100	79	51.09%	29.84%	0.07%	6.29%	2.26%	0.60%	1.19%	0.00%	0.10%	0.81%	0.26%	0.18%	0.40%	0.05%	3.44%	3.09%	0.31%	0.00%	100%
Road 64	64	-	50	26.91018	Y	0100-0200	54	51.09%	27.56%	0.07%	6.81%	2.45%	0.76%	1.50%	0.00%	0.15%	1.18%	0.38%	0.27%	0.58%	0.05%	3.43%	3.32%	0.39%	0.00%	100%
Road 64	64	-	50	27.59125	Y	0200-0300	42	51.15%	25.24%	0.08%	7.34%	2.64%	0.92%	1.82%	0.00%	0.20%	1.55%	0.50%	0.35%	0.77%	0.05%	3.37%	3.54%	0.47%	0.00%	100%
Road 64	64	-	50	28.16082	Y	0300-0400	32	51.10%	22.97%	0.08%	7.88%	2.83%	1.08%	2.11%	0.00%	0.24%	1.91%	0.62%	0.43%	0.95%	0.05%	3.40%	3.80%	0.55%	0.00%	100%
Road 64	64	-	50	28.23082	Y	0400-0500	30	51.14%	20.64%	0.09%	8.41%	3.02%	1.24%	2.43%	0.00%	0.29%	2.27%	0.74%	0.52%	1.13%	0.05%	3.36%	4.03%	0.63%	0.00%	100%
Road 64	64	-	50	27.45459	Y	0500-0600	43	51.17%	18.31%	0.09%	8.96%	3.22%	1.39%	2.74%	0.00%	0.34%	2.64%	0.86%	0.60%	1.32%	0.05%	3.33%	4.26%	0.72%	0.00%	100%
Road 64	64	-	50	24.5425	Y	0600-0700	120	51.31%	15.88%	0.10%	9.48%	3.41%	1.57%	3.09%	0.00%	0.39%	3.05%	0.99%	0.69%	1.51%	0.05%	3.21%	4.46%	0.81%	0.00%	100%
Road 64	64	-	50	23.31224	Y	0700-0800	219	51.36%	13.50%	0.10%	10.03%	3.60%	1.74%	3.42%	0.00%	0.44%	3.44%	1.11%	0.77%	1.70%	0.04%	3.16%	4.69%	0.89%	0.00%	100%
Road 64	64	-	50	23.25	Y	0800-0900	234	55.81%	17.07%	0.09%	8.78%	3.15%	1.35%	2.65%	0.00%	0.20%	1.59%	0.79%	0.55%	1.21%	0.06%	2.50%	3.51%	0.69%	0.00%	100%
Road 64	64	-	50	23.33513	Y	0900-1000	212	47.25%	15.31%	0.15%	14.34%	5.15%	2.62%	5.15%	0.00%	0.14%	1.12%	0.52%	0.36%	0.80%	0.07%	2.98%	2.70%	1.34%	0.00%	100%
Road 64	64	-	50	23.3818	Y	1000-1100	205	41.88%	19.08%	0.17%	15.94%	5.72%	3.06%	6.02%	0.00%	0.13%	1.00%	0.19%	0.13%	0.29%	0.14%	3.06%	1.59%	1.57%	0.00%	100%
Road 64	64	-	50	23.58133	Y	1100-1200	191	44.16%	18.51%	0.15%	14.16%	5.08%	3.15%	6.19%	0.00%	0.10%	0.79%	0.31%	0.21%	0.47%	0.04%	2.81%	2.27%	1.62%	0.00%	100%
Road 64	64	-	50	24.29825	Y	1200-1300	136	49.82%	17.28%	0.11%	10.83%	3.89%	2.33%	4.57%	0.00%	0.31%	2.44%	0.64%	0.44%	0.98%	0.16%	3.65%	1.34%	1.19%	0.00%	100%
Road 64	64	-	50	24.22084	Y	1300-1400	139	43.62%	18.02%	0.14%	12.95%	4.65%	2.35%	4.62%	0.00%	0.31%	2.42%	1.13%	0.78%	1.72%	0.20%	3.93%	1.96%	1.21%	0.00%	100%
Road 64	64	-	50	24.2498	Y	1400-1500	141	50.40%	15.62%	0.11%	10.98%	3.94%	2.43%	4.77%	0.00%	0.26%	2.05%	0.51%	0.35%	0.78%	0.10%	3.71%	2.73%	1.25%	0.00%	100%
Road 64	64	-	50	24.24844	Y	1500-1600	141	49.50%	17.80%	0.12%	11.32%	4.06%	2.57%	5.06%	0.00%	0.20%	1.59%	0.21%	0.15%	0.32%	0.08%	3.78%	1.92%	1.32%	0.00%	100%
Road 64	64	-	50	24.12751	Y	1600-1700	152	49.61%	17.15%	0.12%	11.95%	4.29%	1.82%	3.58%	0.00%	0.16%	1.23%	0.65%	0.45%	0.99%	0.11%	3.94%	3.03%	0.93%	0.00%	100%
Road 64	64	-	50	24	Y	1700-1800	173	60.04%	12.92%	0.08%	7.91%	2.84%	0.95%	1.87%	0.00%	0.14%	1.09%	0.70%	0.48%	1.06%	0.05%	3.41%	5.97%	0.49%	0.00%	100%
Road 64	64	-	50	24.03596	Y	1800-1900	174	65.89%	14.57%	0.06%	5.73%	2.06%	0.70%	1.37%	0.00%	0.02%	0.18%	0.47%	0.33%	0.72%	0.02%	3.62%	3.91%	0.36%	0.00%	100%
Road 64	64	-	50	24.29479	Y	1900-2000	153	63.10%	19.95%	0.05%	5.16%	1.85%	0.23%	0.45%	0.00%	0.03%	0.23%	0.48%	0.33%	0.72%	0.17%	4.14%	2.98%	0.12%	0.00%	100%
Road 64	64	-	50	24.60551	Y	2000-2100	124	61.28%	22.38%	0.05%	4.61%	1.65%	0.42%	0.83%	0.00%	0.01%	0.08%	0.42%	0.29%	0.64%	0.08%	4.33%	2.71%	0.22%	0.00%	100%
Road 64	64	-	50	24.67239	Y	2100-2200	118	54.93%	29.63%	0.05%	4.46%	1.60%	0.29%	0.58%	0.00%	0.01%	0.08%	0.32%	0.22%	0.49%	0.07%	4.85%	2.26%	0.15%	0.00%	100%
Road 64	64	-	50	24.73306	Y	2200-2300	115	51.64%	34.62%	0.04%	4.09%	1.47%	0.23%	0.45%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.49%	2.61%	0.12%	0.00%	100%
Road 64	64	-	50	25.03861	Y	2300-0000	89	51.76%	32.45%	0.05%	4.49%	1.61%	0.35%	0.69%	0.00%	0.06%	0.45%	0.15%	0.10%	0.23%	0.07%	4.50%	2.87%	0.18%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 65	65	-	50	23.63671	Y	0000-0100	229	57.02%	33.30%	0.03%	2.51%	0.90%	0.24%	0.47%	0.00%	0.12%	0.91%	0.30%	0.20%	0.45%	0.00%	0.00%	3.44%	0.12%	0.00%	100%
Road 65	65	-	50	24.37601	Y	0100-0200	156	57.52%	31.03%	0.03%	2.74%	0.98%	0.31%	0.60%	0.00%	0.17%	1.33%	0.43%	0.30%	0.66%	0.00%	0.00%	3.74%	0.16%	0.00%	100%
Road 65	65	-	50	24.74804	Y	0200-0300	119	58.10%	28.67%	0.03%	2.98%	1.07%	0.37%	0.74%	0.00%	0.23%	1.76%	0.57%	0.40%	0.87%	0.00%	0.00%	4.02%	0.19%	0.00%	100%
Road 65	65	-	50	25.28063	Y	0300-0400	89	58.59%	26.34%	0.03%	3.23%	1.16%	0.44%	0.87%	0.00%	0.28%	2.18%	0.71%	0.49%	1.09%	0.00%	0.00%	4.36%	0.23%	0.00%	100%
Road 65	65	-	50	25.51129	Y	0400-0500	84	59.18%	23.88%	0.04%	3.48%	1.25%	0.51%	1.00%	0.00%	0.34%	2.63%	0.86%	0.60%	1.31%	0.00%	0.00%	4.66%	0.26%	0.00%	100%
Road 65	65	-	50	24.72312	Y	0500-0600	118	59.77%	21.38%	0.04%	3.74%	1.34%	0.58%	1.14%	0.00%	0.39%	3.08%	1.01%	0.70%	1.54%	0.00%	0.00%	4.98%	0.30%	0.00%	100%
Road 65	65	-	50	22.37872	Y	0600-0700	330	60.45%	18.71%	0.04%	3.99%	1.43%	0.66%	1.30%	0.00%	0.46%	3.60%	1.17%	0.81%	1.78%	0.00%	0.00%	5.26%	0.34%	0.00%	100%
Road 65	65	-	50	19.39418	Y	0700-0800	596	61.09%	16.05%	0.04%	4.26%	1.53%	0.74%	1.45%	0.00%	0.52%	4.09%	1.33%	0.92%	2.02%	0.00%	0.00%	5.58%	0.38%	0.00%	100%
Road 65	65	-	50	18.95	Y	0800-0900	656	64.38%	19.69%	0.04%	3.62%	1.30%	0.56%	1.09%	0.00%	0.23%	1.83%	0.91%	0.63%	1.39%	0.00%	0.00%	4.05%	0.29%	0.00%	100%
Road 65	65	-	50	20.03872	Y	0900-1000	537	60.21%	19.51%	0.07%	6.53%	2.34%	1.19%	2.34%	0.00%	0.18%	1.42%	0.67%	0.46%	1.02%	0.00%	0.00%	3.45%	0.61%	0.00%	100%
Road 65	65	-	50	20.40164	Y	1000-1100	502	55.17%	25.14%	0.08%	7.50%	2.69%	1.44%	2.83%	0.00%	0.17%	1.32%	0.25%	0.18%	0.39%	0.00%	0.00%	2.09%	0.74%	0.00%	100%
Road 65	65	-	50	20.68045	Y	1100-1200	479	56.87%	23.83%	0.07%	6.51%	2.34%	1.45%	2.85%	0.00%	0.13%	1.02%	0.40%	0.27%	0.60%	0.00%	0.00%	2.92%	0.74%	0.00%	100%
Road 65	65	-	50	23.35728	Y	1200-1300	231	57.68%	20.00%	0.07%	7.17%	2.58%	1.54%	3.03%	0.00%	0.36%	2.83%	0.74%	0.51%	1.13%	0.00%	0.00%	1.55%	0.79%	0.00%	100%
Road 65	65	-	50	23.29164	Y	1300-1400	231	51.45%	21.25%	0.09%	8.74%	3.14%	1.59%	3.12%	0.00%	0.37%	2.85%	1.33%	0.92%	2.02%	0.00%	0.00%	2.31%	0.82%	0.00%	100%
Road 65	65	-	50	23.29689	Y	1400-1500	238	58.50%	18.13%	0.08%	7.30%	2.62%	1.61%	3.17%	0.00%	0.31%	2.38%	0.59%	0.41%	0.90%	0.00%	0.00%	3.17%	0.83%	0.00%	100%
Road 65	65	-	50	23.32023	Y	1500-1600	237	57.77%	20.77%	0.08%	7.56%	2.71%	1.72%	3.38%	0.00%	0.24%	1.86%	0.24%	0.17%	0.37%	0.00%	0.00%	2.24%	0.88%	0.00%	100%
Road 65	65	-	50	23.1039	Y	1600-1700	258	57.52%	19.88%	0.08%	7.93%	2.85%	1.21%	2.37%	0.00%	0.18%	1.43%	0.75%	0.52%	1.14%	0.00%	0.00%	3.51%	0.62%	0.00%	100%
Road 65	65	-	50	22.7	Y	1700-1800	308	66.35%	14.28%	0.05%	5.01%	1.80%	0.60%	1.18%	0.00%	0.15%	1.20%	0.77%	0.53%	1.17%	0.00%	0.00%	6.59%	0.31%	0.00%	100%
Road 65	65	-	50	22.69782	Y	1800-1900	315	71.64%	15.84%	0.04%	3.57%	1.28%	0.43%	0.85%	0.00%	0.02%	0.19%	0.52%	0.36%	0.79%	0.00%	0.00%	4.25%	0.22%	0.00%	100%
Road 65	65	-	50	23.12894	Y	1900-2000	277	68.34%	21.61%	0.03%	3.20%	1.15%	0.14%	0.28%	0.00%	0.03%	0.24%	0.52%	0.36%	0.78%	0.00%	0.00%	3.23%	0.07%	0.00%	100%
Road 65	65	-	50	23.6599	Y	2000-2100	226	66.42%	24.26%	0.03%	2.86%	1.03%	0.26%	0.51%	0.00%	0.01%	0.08%	0.46%	0.32%	0.69%	0.00%	0.00%	2.94%	0.13%	0.00%	100%
Road 65	65	-	50	23.78898	Y	2100-2200	214	59.69%	32.20%	0.03%	2.77%	1.00%	0.18%	0.36%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.45%	0.09%	0.00%	100%
Road 65	65	-	50	23.86492	Y	2200-2300	210	55.70%	37.34%	0.03%	2.52%	0.91%	0.14%	0.28%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.82%	0.07%	0.00%	100%
Road 65	65	-	50	24.33792	Y	2300-0000	162	56.09%	35.17%	0.03%	2.79%	1.00%	0.22%	0.43%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.11%	0.00%	100%
Road 66	66	-	50	25.55736	Y	0000-0100	79	51.09%	29.84%	0.07%	6.29%	2.26%	0.60%	1.19%	0.00%	0.10%	0.81%	0.26%	0.18%	0.40%	0.05%	3.44%	3.09%	0.31%	0.00%	100%
Road 66	66	-	50	26.91018	Y	0100-0200	54	51.09%	27.56%	0.07%	6.81%	2.45%	0.76%	1.50%	0.00%	0.15%	1.18%	0.38%	0.27%	0.58%	0.05%	3.43%	3.32%	0.39%	0.00%	100%
Road 66	66	-	50	27.59125	Y	0200-0300	42	51.15%	25.24%	0.08%	7.34%	2.64%	0.92%	1.82%	0.00%	0.20%	1.55%	0.50%	0.35%	0.77%	0.05%	3.37%	3.54%	0.47%	0.00%	100%
Road 66	66	-	50	28.16082	Y	0300-0400	32	51.10%	22.97%	0.08%	7.88%	2.83%	1.08%	2.11%	0.00%	0.24%	1.91%	0.62%	0.43%	0.95%	0.05%	3.40%	3.80%	0.55%	0.00%	100%
Road 66	66	-	50	28.23082	Y	0400-0500	30	51.14%	20.64%	0.09%	8.41%	3.02%	1.24%	2.43%	0.00%	0.29%	2.27%	0.74%	0.52%	1.13%	0.05%	3.36%	4.03%	0.63%	0.00%	100%
Road 66	66	-	50	27.45459	Y	0500-0600	43	51.17%	18.31%	0.09%	8.96%	3.22%	1.39%	2.74%	0.00%	0.34%	2.64%	0.86%	0.60%	1.32%	0.05%	3.33%	4.26%	0.72%	0.00%	100%
Road 66	66	-	50	24.5425	Y	0600-0700	120	51.31%	15.88%	0.10%	9.48%	3.41%	1.57%	3.09%	0.00%	0.39%	3.05%	0.99%	0.69%	1.51%	0.05%	3.21%	4.46%	0.81%	0.00%	100%
Road 66	66	-	50	23.31224	Y	0700-0800	219	51.36%	13.50%	0.10%	10.03%	3.60%	1.74%	3.42%	0.00%	0.44%	3.44%	1.11%	0.77%	1.70%	0.04%	3.16%	4.69%	0.89%	0.00%	100%
Road 66	66	-	50	23.25	Y	0800-0900	234	55.81%	17.07%	0.09%	8.78%	3.15%	1.35%	2.65%	0.00%	0.20%	1.59%	0.79%	0.55%	1.21%	0.06%	2.50%	3.51%	0.69%	0.00%	100%
Road 66	66	-	50	23.33513	Y	0900-1000	212	47.25%	15.31%	0.15%	14.34%	5.15%	2.62%	5.15%	0.00%	0.14%	1.12%	0.52%	0.36%	0.80%	0.07%	2.98%	2.70%	1.34%	0.00%	100%
Road 66	66	-	50	23.3818	Y	1000-1100	205	41.88%	19.08%	0.17%	15.94%	5.72%	3.06%	6.02%	0.00%	0.13%	1.00%	0.19%	0.13%	0.29%	0.14%	3.06%	1.59%	1.57%	0.00%	100%
Road 66	66	-	50	23.58133	Y	1100-1200	191	44.16%	18.51%	0.15%	14.16%	5.08%	3.15%	6.19%	0.00%	0.10%	0.79%	0.31%	0.21%	0.47%	0.04%	2.81%	2.27%	1.62%	0.00%	100%
Road 66	66	-	50	24.29825	Y	1200-1300	136	49.82%	17.28%	0.11%	10.83%	3.89%	2.33%	4.57%	0.00%	0.31%	2.44%	0.64%	0.44%	0.98%	0.16%	3.65%	1.34%	1.19%	0.00%	100%
Road 66	66	-	50	24.22084	Y	1300-1400	139	43.62%	18.02%	0.14%	12.95%	4.65%	2.35%	4.62%	0.00%	0.31%	2.42%	1.13%	0.78%	1.72%	0.20%	3.93%	1.96%	1.21%	0.00%	100%
Road 66	66	-	50	24.2498	Y	1400-1500	141	50.40%	15.62%	0.11%	10.98%	3.94%	2.43%	4.77%	0.00%	0.26%	2.05%	0.51%	0.35%	0.78%	0.10%	3.71%	2.73%	1.25%	0.00%	100%
Road 66	66	-	50	24.24844	Y	1500-1600	141	49.50%	17.80%	0.12%	11.32%	4.06%	2.57%	5.06%	0.00%	0.20%	1.59%	0.21%	0.15%	0.32%	0.08%	3.78%	1.92%	1.32%	0.00%	100%
Road 66	66	-	50	24.12751	Y	1600-1700	152	49.61%	17.15%	0.12%	11.95%	4.29%	1.82%	3.58%	0.00%	0.16%	1.23%	0.65%	0.45%	0.99%	0.11%	3.94%	3.03%	0.93%	0.00%	100%
Road 66	66	-	50	24	Y	1700-1800	173	60.04%	12.92%	0.08%	7.91%	2.84%	0.95%	1.87%	0.00%	0.14%	1.09%	0.70%	0.48%	1.06%	0.05%	3.41%	5.97%	0.49%	0.00%	100%
Road 66	66	-	50	24.03596	Y	1800-1900	174	65.89%	14.57%	0.06%	5.73%	2.06%	0.70%	1.37%	0.00%	0.02%	0.18%	0.47%	0.33%	0.72%	0.02%	3.62%	3.91%	0.36%	0.00%	100%
Road 66	66	-	50	24.29479	Y	1900-2000	153	63.10%	19.95%	0.05%	5.16%	1.85%	0.23%	0.45%	0.00%	0.03%	0.23%	0.48%	0.33%	0.72%	0.17%	4.14%	2.98%	0.12%	0.00%	100%
Road 66	66	-	50	24.60551	Y	2000-2100	124	61.28%	22.38%	0.05%	4.61%	1.65%	0.42%	0.83%	0.00%	0.01%	0.08%	0.42%	0.29%	0.64%	0.08%	4.33%	2.71%	0.22%	0.00%	100%
Road 66	66	-	50	24.67239	Y	2100-2200	118	54.93%	29.63%	0.05%	4.46%	1.60%	0.29%	0.58%	0.00%	0.01%	0.08%	0.32%	0.22%	0.49%	0.07%	4.85%	2.26%	0.15%	0.00%	100%
Road 66	66	-	50	24.73306	Y	2200-2300	115	51.64%	34.62%	0.04%	4.09%	1.47%	0.23%	0.45%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.49%	2.61%	0.12%	0.00%	100%
Road 66	66	-	50	25.03861	Y	2300-0000	89	51.76%	32.45%	0.05%	4.49%	1.61%	0.35%	0.69%	0.00%	0.06%	0.45%	0.15%	0.10%	0.23%	0.07%	4.50%	2.87%	0.18%	0.00%	100%
Road 67	67	-	50	23.9134	Y	0000-0100	205	58.23%	34.01%	0.01%	1.31%	0.47%	0.13%	0.25%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 67	67	-	50	24.57227	Y	0100-0200	139	58.91%	31.78%	0.01%	1.43%	0.52%	0.16%	0.32%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.83%	0.08%	0.00%	100%
Road 67	67	-	50	24.90413	Y	0200-0300	106	59.66%	29.44%	0.02%	1.56%	0.56%	0.20%	0.39%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.13%	0.10%	0.00%	100%
Road 67	67	-	50	25.88678	Y	0300-0400	79	60.35%	27.13%	0.02%	1.70%	0.61%	0.23%	0.46%	0.00%	0.29%	2.25%	0.73%	0.51%	1.12%	0.00%	0.00%	4.49%	0.12%	0.00%	100%
Road 67	67	-	50	26.10506	Y	0400-0500	74	61.14%	24.67%	0.02%	1.84%	0.66%	0.27%	0.53%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.14%	0.00%	100%
Road 67	67	-	50	24.89694	Y	0500-0600	104	61.94%	22.15%	0.02%	1.98%	0.71%	0.31%	0.61%	0.00%	0.41%	3.19%	1.05%	0.73%	1.59%	0.00%	0.00%	5.16%	0.16%	0.00%	100%
Road 67	67	-	50	22.88589	Y	0600-0700	290	62.84%	19.44%	0.02%	2.12%	0.76%	0.35%	0.69%	0.00%	0.48%	3.74%	1.21%	0.84%	1.85%	0.00%	0.00%	5.47%	0.18%	0.00%	100%
Road 67	67	-	50	20.345	Y	0700-0800	522	63.70%	16.74%	0.02%	2.27%	0.82%	0.39%	0.77%	0.00%	0.55%	4.26%	1.38%	0.96%	2.11%	0.00%	0.00%	5.82%	0.20%	0.00%	100%
Road 67	67	-	50	19.9	Y	0800-0900	578	66.62%	20.37%	0.02%	1.91%	0.69%	0.29%	0.58%	0.00%	0.24%	1.89%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.15%	0.00%	100%
Road 67	67	-	50	21.0862	Y	0900-1000	459	64.32%	20.84%	0.04%	3.56%	1.28%	0.65%	1.28%	0.00%	0.19%	1.52%	0.71%	0.49%	1.09%	0.00%	0.00%	3.68%	0.33%	0.00%	100%
Road 67	67	-	50	21.46791	Y	1000-1100	424	59.63%	27.17%	0.04%	4.14%	1.49%	0.80%	1.57%	0.00%	0.18%	1.43%	0.28%	0.19%	0.42%	0.00%	0.00%	2.26%	0.41%	0.00%	100%
Road 67	67	-	50	21.65411	Y	1100-1200	408	61.03%	25.58%	0.04%	3.57%	1.28%	0.79%	1.56%	0.00%	0.14%	1.09%	0.42%	0.29%	0.65%	0.00%	0.00%	3.14%	0.41%	0.00%	100%
Road 67	67	-	50	26.33933	Y	1200-1300	60	50.41%	17.48%	0.13%	12.22%	4.39%	2.63%	5.16%	0.00%	0.32%	2.47%	0.65%	0.45%	0.99%	0.00%	0.00%	1.36%	1.35%	0.00%	100%
Road 67	67	-	50	26.17632	Y	1300-1400	61	44.12%	18.23%	0.15%	14.61%	5.25%	2.65%	5.21%	0.00%	0.31%	2.45%	1.14%	0.79%	1.74%	0.00%	0.00%	1.98%	1.36%	0.00%	100%
Road 67	67	-	50	26.23118	Y	1400-1500	62	50.96%	15.79%	0.13%	12.38%	4.45%	2.74%	5.38%	0.00%	0.27%	2.07%	0.52%	0.36%	0.79%	0.00%	0.00%	2.76%	1.41%	0.00%	100%
Road 67	67	-	50	26.22685	Y	1500-1600	63	50.02%	17.99%	0.13%	12.76%	4.58%	2.90%	5.70%	0.00%	0.21%	1.61%	0.21%	0.15%	0.32%	0.00%	0.00%	1.94%	1.49%	0.00%	100%
Road 67	67	-	50	25.99989	Y	1600-1700	67	50.33%	17.39%	0.14%	13.52%	4.85%	2.06%	4.05%	0.00%	0.16%	1.25%	0.66%	0.46%	1.00%	0.00%	0.00%	3.07%	1.06%	0.00%	100%
Road 67	67	-	50	25.75	Y	1700-1800	76	61.16%	13.16%	0.09%	8.99%	3.23%	1.08%	2.12%	0.00%	0.14%	1.11%	0.71%	0.49%	1.08%	0.00%	0.00%	6.08%	0.55%	0.00%	100%
Road 67	67	-	50	25.87801	Y	1800-1900	76	67.55%	14.93%	0.07%	6.55%	2.35%	0.80%	1.56%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.00%	0.00%	4.00%	0.41%	0.00%	100%
Road 67	67	-	50	26.49846	Y	1900-2000	66	65.32%	20.66%	0.06%	5.96%	2.14%	0.26%	0.52%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.09%	0.14%	0.00%	100%
Road 67	67	-	50	27.1421	Y	2000-2100	54	63.51%	23.20%	0.06%	5.33%	1.91%	0.49%	0.96%	0.00%	0.01%	0.08%	0.44%	0.30%	0.66%	0.00%	0.00%	2.81%	0.25%	0.00%	100%
Road 67	67	-	50	27.31591	Y	2100-2200	51	57.28%	30.90%	0.05%	5.18%	1.86%	0.34%	0.67%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.35%	0.18%	0.00%	100%
Road 67	67	-	50	27.42452	Y	2200-2300	50	53.69%	36.00%	0.05%	4.74%	1.70%	0.26%	0.52%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.72%	0.14%	0.00%	100%
Road 67	67	-	50	27.97705	Y	2300-0000	38	53.75%	33.71%	0.05%	5.21%	1.87%	0.40%	0.80%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.98%	0.21%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 68	68	-	50	28.21868	Y	0000-0100	30	48.79%	28.49%	0.05%	5.15%	1.85%	0.50%	0.97%	0.00%	0.10%	0.78%	0.25%	0.18%	0.38%	0.14%	9.16%	2.95%	0.25%	0.00%	100%
Road 68	68	-	50	28.76654	Y	0100-0200	20	48.89%	26.37%	0.06%	5.59%	2.01%	0.62%	1.23%	0.00%	0.14%	1.13%	0.37%	0.25%	0.56%	0.14%	9.14%	3.18%	0.32%	0.00%	100%
Road 68	68	-	50	29.04391	Y	0200-0300	16	49.08%	24.22%	0.06%	6.04%	2.17%	0.76%	1.49%	0.00%	0.19%	1.49%	0.48%	0.34%	0.74%	0.13%	9.02%	3.40%	0.39%	0.00%	100%
Road 68	68	-	50	29.272	Y	0300-0400	12	49.09%	22.07%	0.07%	6.49%	2.33%	0.89%	1.74%	0.00%	0.23%	1.83%	0.60%	0.41%	0.91%	0.14%	9.09%	3.65%	0.45%	0.00%	100%
Road 68	68	-	50	29.30321	Y	0400-0500	11	49.26%	19.88%	0.07%	6.95%	2.49%	1.02%	2.01%	0.00%	0.28%	2.19%	0.72%	0.50%	1.09%	0.14%	9.01%	3.88%	0.52%	0.00%	100%
Road 68	68	-	50	29.00199	Y	0500-0600	16	49.40%	17.67%	0.08%	7.41%	2.66%	1.15%	2.27%	0.00%	0.33%	2.55%	0.83%	0.58%	1.27%	0.14%	8.96%	4.12%	0.59%	0.00%	100%
Road 68	68	-	50	27.16503	Y	0600-0700	45	49.73%	15.39%	0.08%	7.88%	2.83%	1.31%	2.57%	0.00%	0.38%	2.96%	0.96%	0.67%	1.46%	0.12%	8.67%	4.33%	0.67%	0.00%	100%
Road 68	68	-	50	24.95976	Y	0700-0800	81	49.91%	13.12%	0.09%	8.35%	3.00%	1.45%	2.85%	0.00%	0.43%	3.34%	1.08%	0.75%	1.65%	0.12%	8.56%	4.56%	0.74%	0.00%	100%
Road 68	68	-	50	24.95	Y	0800-0900	86	54.61%	16.70%	0.08%	7.36%	2.64%	1.13%	2.22%	0.00%	0.20%	1.55%	0.78%	0.54%	1.18%	0.17%	6.82%	3.43%	0.58%	0.00%	100%
Road 68	68	-	50	24.99245	Y	0900-1000	77	46.62%	15.11%	0.13%	12.13%	4.36%	2.21%	4.35%	0.00%	0.14%	1.10%	0.52%	0.36%	0.79%	0.18%	8.19%	2.67%	1.14%	0.00%	100%
Road 68	68	-	50	25.06284	Y	1000-1100	74	41.43%	18.88%	0.14%	13.51%	4.85%	2.60%	5.11%	0.00%	0.13%	0.99%	0.19%	0.13%	0.29%	0.39%	8.44%	1.57%	1.33%	0.00%	100%
Road 68	68	-	50	25.47658	Y	1100-1200	69	43.83%	18.37%	0.13%	12.04%	4.33%	2.68%	5.26%	0.00%	0.10%	0.78%	0.31%	0.21%	0.46%	0.10%	7.77%	2.25%	1.37%	0.00%	100%
Road 68	68	-	50	24.98922	Y	1200-1300	82	54.04%	18.74%	0.07%	6.72%	2.41%	1.44%	2.84%	0.00%	0.34%	2.65%	0.70%	0.48%	1.06%	0.27%	6.04%	1.46%	0.74%	0.00%	100%
Road 68	68	-	50	24.95431	Y	1300-1400	83	47.89%	19.79%	0.09%	8.14%	2.92%	1.48%	2.90%	0.00%	0.34%	2.66%	1.24%	0.86%	1.88%	0.33%	6.58%	2.15%	0.76%	0.00%	100%
Road 68	68	-	50	24.96516	Y	1400-1500	85	54.81%	16.99%	0.07%	6.84%	2.45%	1.51%	2.97%	0.00%	0.29%	2.23%	0.55%	0.38%	0.84%	0.16%	6.16%	2.97%	0.78%	0.00%	100%
Road 68	68	-	50	24.97059	Y	1500-1600	85	54.05%	19.44%	0.07%	7.07%	2.54%	1.61%	3.16%	0.00%	0.22%	1.74%	0.23%	0.16%	0.35%	0.14%	6.30%	2.09%	0.83%	0.00%	100%
Road 68	68	-	50	24.88068	Y	1600-1700	92	53.67%	18.55%	0.08%	7.40%	2.66%	1.13%	2.21%	0.00%	0.17%	1.34%	0.70%	0.49%	1.07%	0.17%	6.51%	3.28%	0.58%	0.00%	100%
Road 68	68	-	50	24.75	Y	1700-1800	109	62.69%	13.49%	0.05%	4.73%	1.70%	0.57%	1.11%	0.00%	0.15%	1.13%	0.73%	0.50%	1.11%	0.09%	5.44%	6.23%	0.29%	0.00%	100%
Road 68	68	-	50	24.74049	Y	1800-1900	111	67.56%	14.94%	0.04%	3.36%	1.21%	0.41%	0.80%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.03%	5.67%	4.01%	0.21%	0.00%	100%
Road 68	68	-	50	24.87842	Y	1900-2000	99	63.79%	20.17%	0.03%	2.99%	1.07%	0.13%	0.26%	0.00%	0.03%	0.23%	0.48%	0.33%	0.73%	0.27%	6.39%	3.02%	0.07%	0.00%	100%
Road 68	68	-	50	25.41291	Y	2000-2100	81	61.90%	22.61%	0.03%	2.66%	0.96%	0.24%	0.48%	0.00%	0.01%	0.08%	0.42%	0.29%	0.65%	0.13%	6.68%	2.74%	0.13%	0.00%	100%
Road 68	68	-	50	25.58737	Y	2100-2200	77	55.19%	29.77%	0.03%	2.56%	0.92%	0.17%	0.33%	0.00%	0.01%	0.08%	0.33%	0.23%	0.50%	0.10%	7.43%	2.27%	0.09%	0.00%	100%
Road 68	68	-	50	25.78541	Y	2200-2300	75	51.81%	34.74%	0.02%	2.35%	0.84%	0.13%	0.26%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.10%	6.88%	2.62%	0.07%	0.00%	100%
Road 68	68	-	50	26.72073	Y	2300-0000	58	52.15%	32.70%	0.03%	2.59%	0.93%	0.20%	0.40%	0.00%	0.06%	0.46%	0.15%	0.10%	0.23%	0.10%	6.92%	2.89%	0.10%	0.00%	100%
Road 69	69	-	50	23.9134	Y	0000-0100	205	58.23%	34.01%	0.01%	1.31%	0.47%	0.13%	0.25%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 69	69	-	50	24.57227	Y	0100-0200	139	58.91%	31.78%	0.01%	1.43%	0.52%	0.16%	0.32%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.83%	0.08%	0.00%	100%
Road 69	69	-	50	24.90413	Y	0200-0300	106	59.66%	29.44%	0.02%	1.56%	0.56%	0.20%	0.39%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.13%	0.10%	0.00%	100%
Road 69	69	-	50	25.88678	Y	0300-0400	79	60.35%	27.13%	0.02%	1.70%	0.61%	0.23%	0.46%	0.00%	0.29%	2.25%	0.73%	0.51%	1.12%	0.00%	0.00%	4.49%	0.12%	0.00%	100%
Road 69	69	-	50	26.10506	Y	0400-0500	74	61.14%	24.67%	0.02%	1.84%	0.66%	0.27%	0.53%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.14%	0.00%	100%
Road 69	69	-	50	24.89694	Y	0500-0600	104	61.94%	22.15%	0.02%	1.98%	0.71%	0.31%	0.61%	0.00%	0.41%	3.19%	1.05%	0.73%	1.59%	0.00%	0.00%	5.16%	0.16%	0.00%	100%
Road 69	69	-	50	22.88589	Y	0600-0700	290	62.84%	19.44%	0.02%	2.12%	0.76%	0.35%	0.69%	0.00%	0.48%	3.74%	1.21%	0.84%	1.85%	0.00%	0.00%	5.47%	0.18%	0.00%	100%
Road 69	69	-	50	20.345	Y	0700-0800	522	63.70%	16.74%	0.02%	2.27%	0.82%	0.39%	0.77%	0.00%	0.55%	4.26%	1.38%	0.96%	2.11%	0.00%	0.00%	5.82%	0.20%	0.00%	100%
Road 69	69	-	50	19.9	Y	0800-0900	578	66.62%	20.37%	0.02%	1.91%	0.69%	0.29%	0.58%	0.00%	0.24%	1.89%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.15%	0.00%	100%
Road 69	69	-	50	21.0862	Y	0900-1000	459	64.32%	20.84%	0.04%	3.56%	1.28%	0.65%	1.28%	0.00%	0.19%	1.52%	0.71%	0.49%	1.09%	0.00%	0.00%	3.68%	0.33%	0.00%	100%
Road 69	69	-	50	21.46791	Y	1000-1100	424	59.63%	27.17%	0.04%	4.14%	1.49%	0.80%	1.57%	0.00%	0.18%	1.43%	0.28%	0.19%	0.42%	0.00%	0.00%	2.26%	0.41%	0.00%	100%
Road 69	69	-	50	21.65411	Y	1100-1200	408	61.03%	25.58%	0.04%	3.57%	1.28%	0.79%	1.56%	0.00%	0.14%	1.09%	0.42%	0.29%	0.65%	0.00%	0.00%	3.14%	0.41%	0.00%	100%
Road 69	69	-	50	26.33933	Y	1200-1300	60	50.41%	17.48%	0.13%	12.22%	4.39%	2.63%	5.16%	0.00%	0.32%	2.47%	0.65%	0.45%	0.99%	0.00%	0.00%	1.36%	1.35%	0.00%	100%
Road 69	69	-	50	26.17632	Y	1300-1400	61	44.12%	18.23%	0.15%	14.61%	5.25%	2.65%	5.21%	0.00%	0.31%	2.45%	1.14%	0.79%	1.74%	0.00%	0.00%	1.98%	1.36%	0.00%	100%
Road 69	69	-	50	26.23118	Y	1400-1500	62	50.96%	15.79%	0.13%	12.38%	4.45%	2.74%	5.38%	0.00%	0.27%	2.07%	0.52%	0.36%	0.79%	0.00%	0.00%	2.76%	1.41%	0.00%	100%
Road 69	69	-	50	26.22685	Y	1500-1600	63	50.02%	17.99%	0.13%	12.76%	4.58%	2.90%	5.70%	0.00%	0.21%	1.61%	0.21%	0.15%	0.32%	0.00%	0.00%	1.94%	1.49%	0.00%	100%
Road 69	69	-	50	25.99989	Y	1600-1700	67	50.33%	17.39%	0.14%	13.52%	4.85%	2.06%	4.05%	0.00%	0.16%	1.25%	0.66%	0.46%	1.00%	0.00%	0.00%	3.07%	1.06%	0.00%	100%
Road 69	69	-	50	25.75	Y	1700-1800	76	61.16%	13.16%	0.09%	8.99%	3.23%	1.08%	2.12%	0.00%	0.14%	1.11%	0.71%	0.49%	1.08%	0.00%	0.00%	6.08%	0.55%	0.00%	100%
Road 69	69	-	50	25.87801	Y	1800-1900	76	67.55%	14.93%	0.07%	6.55%	2.35%	0.80%	1.56%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.00%	0.00%	4.00%	0.41%	0.00%	100%
Road 69	69	-	50	26.49846	Y	1900-2000	66	65.32%	20.66%	0.06%	5.96%	2.14%	0.26%	0.52%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.09%	0.14%	0.00%	100%
Road 69	69	-	50	27.1421	Y	2000-2100	54	63.51%	23.20%	0.06%	5.33%	1.91%	0.49%	0.96%	0.00%	0.01%	0.08%	0.44%	0.30%	0.66%	0.00%	0.00%	2.81%	0.25%	0.00%	100%
Road 69	69	-	50	27.31591	Y	2100-2200	51	57.28%	30.90%	0.05%	5.18%	1.86%	0.34%	0.67%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.35%	0.18%	0.00%	100%
Road 69	69	-	50	27.42452	Y	2200-2300	50	53.69%	36.00%	0.05%	4.74%	1.70%	0.26%	0.52%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.72%	0.14%	0.00%	100%
Road 69	69	-	50	27.97705	Y	2300-0000	38	53.75%	33.71%	0.05%	5.21%	1.87%	0.40%	0.80%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.98%	0.21%	0.00%	100%
Road 70	70	-	50	28.21868	Y	0000-0100	30	48.79%	28.49%	0.05%	5.15%	1.85%	0.50%	0.97%	0.00%	0.10%	0.78%	0.25%	0.18%	0.38%	0.14%	9.16%	2.95%	0.25%	0.00%	100%
Road 70	70	-	50	28.76654	Y	0100-0200	20	48.89%	26.37%	0.06%	5.59%	2.01%	0.62%	1.23%	0.00%	0.14%	1.13%	0.37%	0.25%	0.56%	0.14%	9.14%	3.18%	0.32%	0.00%	100%
Road 70	70	-	50	29.04391	Y	0200-0300	16	49.08%	24.22%	0.06%	6.04%	2.17%	0.76%	1.49%	0.00%	0.19%	1.49%	0.48%	0.34%	0.74%	0.13%	9.02%	3.40%	0.39%	0.00%	100%
Road 70	70	-	50	29.272	Y	0300-0400	12	49.09%	22.07%	0.07%	6.49%	2.33%	0.89%	1.74%	0.00%	0.23%	1.83%	0.60%	0.41%	0.91%	0.14%	9.09%	3.65%	0.45%	0.00%	100%
Road 70	70	-	50	29.30321	Y	0400-0500	11	49.26%	19.88%	0.07%	6.95%	2.49%	1.02%	2.01%	0.00%	0.28%	2.19%	0.72%	0.50%	1.09%	0.14%	9.01%	3.88%	0.52%	0.00%	100%
Road 70	70	-	50	29.00199	Y	0500-0600	16	49.40%	17.67%	0.08%	7.41%	2.66%	1.15%	2.27%	0.00%	0.33%	2.55%	0.83%	0.58%	1.27%	0.14%	8.96%	4.12%	0.59%	0.00%	100%
Road 70	70	-	50	27.16503	Y	0600-0700	45	49.73%	15.39%	0.08%	7.88%	2.83%	1.31%	2.57%	0.00%	0.38%	2.96%	0.96%	0.67%	1.46%	0.12%	8.67%	4.33%	0.67%	0.00%	100%
Road 70	70	-	50	24.95976	Y	0700-0800	81	49.91%	13.12%	0.09%	8.35%	3.00%	1.45%	2.85%	0.00%	0.43%	3.34%	1.08%	0.75%	1.65%	0.12%	8.56%	4.56%	0.74%	0.00%	100%
Road 70	70	-	50	24.95	Y	0800-0900	86	54.61%	16.70%	0.08%	7.36%	2.64%	1.13%	2.22%	0.00%	0.20%	1.55%	0.78%	0.54%	1.18%	0.17%	6.82%	3.43%	0.58%	0.00%	100%
Road 70	70	-	50	24.99245	Y	0900-1000	77	46.62%	15.11%	0.13%	12.13%	4.36%	2.21%	4.35%	0.00%	0.14%	1.10%	0.52%	0.36%	0.79%	0.18%	8.19%	2.67%	1.14%	0.00%	100%
Road 70	70	-	50	25.06284	Y	1000-1100	74	41.43%	18.88%	0.14%	13.51%	4.85%	2.60%	5.11%	0.00%	0.13%	0.99%	0.19%	0.13%	0.29%	0.39%	8.44%	1.57%	1.33%	0.00%	100%
Road 70	70	-	50	25.47658	Y	1100-1200	69	43.83%	18.37%	0.13%	12.04%	4.33%	2.68%	5.26%	0.00%	0.10%	0.78%	0.31%	0.21%	0.46%	0.10%	7.77%	2.25%	1.37%	0.00%	100%
Road 70	70	-	50	24.98922	Y	1200-1300	82	54.04%	18.74%	0.07%	6.72%	2.41%	1.44%	2.84%	0.00%	0.34%	2.65%	0.70%	0.48%	1.06%	0.27%	6.04%	1.46%	0.74%	0.00%	100%
Road 70	70	-	50	24.95431	Y	1300-1400	83	47.89%	19.79%	0.09%	8.14%	2.92%	1.48%	2.90%	0.00%	0.34%	2.66%	1.24%	0.86%	1.88%	0.33%	6.58%	2.15%	0.76%	0.00%	100%
Road 70	70	-	50	24.96516	Y	1400-1500	85	54.81%	16.99%	0.07%	6.84%	2.45%	1.51%	2.97%	0.00%	0.29%	2.23%	0.55%	0.38%	0.84%	0.16%	6.16%	2.97%	0.78%	0.00%	100%
Road 70	70	-	50	24.97059	Y	1500-1600	85	54.05%	19.44%	0.07%	7.07%	2.54%	1.61%	3.16%	0.00%	0.22%	1.74%	0.23%	0.16%	0.35%	0.14%	6.30%	2.09%	0.83%	0.00%	100%
Road 70	70	-	50	24.88068	Y	1600-1700	92	53.67%	18.55%	0.08%	7.40%	2.66%	1.13%	2.21%	0.00%	0.17%	1.34%	0.70%	0.49%	1.07%	0.17%	6.51%	3.28%	0.58%	0.00%	100%
Road 70	70	-	50	24.75	Y	1700-1800	109	62.69%	13.49%	0.05%	4.73%	1.70%	0.57%	1.11%	0.00%	0.15%	1.13%	0.73%	0.50%	1.11%	0.09%	5.44%	6.23%	0.29%	0.00%	100%
Road 70	70	-	50	24.74049	Y	1800-1900	111	67.56%	14.94%	0.04%	3.36%	1.21%	0.41%	0.80%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.03%	5.67%	4.01%	0.21%	0.00%	100%
Road 70	70	-	50	24.87842	Y	1900-2000	99	63.79%	20.17%	0.03%	2.99%	1.07%	0.13%	0.26%	0.00%	0.03%	0.23%	0.48%	0.33%	0.73%	0.27%	6.39%	3.02%	0.07%	0.00%	100%
Road 70	70	-	50	25.41291	Y	2000-2100	81	61.90%	22.61%	0.03%	2.66%	0.96%	0.24%	0.48%	0.00%	0.01%	0.08%	0.42%	0.29%	0.65%	0.13%	6.68%	2.74%	0.13%	0.00%	100%
Road 70	70	-	50	25.58737	Y	2100-2200	77	55.19%	29.77%	0.03%	2.56%	0.92%	0.17%	0.33%	0.00%	0.01%	0.08%	0.33%	0.23%	0.50%	0.10%	7.43%	2.27%	0.09%	0.00%	100%
Road 70	70	-	50	25.78541	Y	2200-2300	75	51.81%	34.74%	0.02%	2.35%	0.84%	0.13%	0.26%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.10%	6.88%	2.62%	0.07%	0.00%	100%
Road 70	70	-	50	26.72073	Y	2300-0000	58	52.15%	32.70%	0.03%	2.59%	0.93%	0.20%	0.40%	0.00%	0.06%	0.46%	0.15%	0.10%	0.23%	0.10%	6.92%	2.89%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 71	71	-	50	23.9134	Y	0000-0100	205	58.23%	34.01%	0.01%	1.31%	0.47%	0.13%	0.25%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 71	71	-	50	24.57227	Y	0100-0200	139	58.91%	31.78%	0.01%	1.43%	0.52%	0.16%	0.32%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.83%	0.08%	0.00%	100%
Road 71	71	-	50	24.90413	Y	0200-0300	106	59.66%	29.44%	0.02%	1.56%	0.56%	0.20%	0.39%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.13%	0.10%	0.00%	100%
Road 71	71	-	50	25.88678	Y	0300-0400	79	60.35%	27.13%	0.02%	1.70%	0.61%	0.23%	0.46%	0.00%	0.29%	2.25%	0.73%	0.51%	1.12%	0.00%	0.00%	4.49%	0.12%	0.00%	100%
Road 71	71	-	50	26.10506	Y	0400-0500	74	61.14%	24.67%	0.02%	1.84%	0.66%	0.27%	0.53%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.14%	0.00%	100%
Road 71	71	-	50	24.89694	Y	0500-0600	104	61.94%	22.15%	0.02%	1.98%	0.71%	0.31%	0.61%	0.00%	0.41%	3.19%	1.05%	0.73%	1.59%	0.00%	0.00%	5.16%	0.16%	0.00%	100%
Road 71	71	-	50	22.88589	Y	0600-0700	290	62.84%	19.44%	0.02%	2.12%	0.76%	0.35%	0.69%	0.00%	0.48%	3.74%	1.21%	0.84%	1.85%	0.00%	0.00%	5.47%	0.18%	0.00%	100%
Road 71	71	-	50	20.345	Y	0700-0800	522	63.70%	16.74%	0.02%	2.27%	0.82%	0.39%	0.77%	0.00%	0.55%	4.26%	1.38%	0.96%	2.11%	0.00%	0.00%	5.82%	0.20%	0.00%	100%
Road 71	71	-	50	19.9	Y	0800-0900	578	66.62%	20.37%	0.02%	1.91%	0.69%	0.29%	0.58%	0.00%	0.24%	1.89%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.15%	0.00%	100%
Road 71	71	-	50	21.0862	Y	0900-1000	459	64.32%	20.84%	0.04%	3.56%	1.28%	0.65%	1.28%	0.00%	0.19%	1.52%	0.71%	0.49%	1.09%	0.00%	0.00%	3.68%	0.33%	0.00%	100%
Road 71	71	-	50	21.46791	Y	1000-1100	424	59.63%	27.17%	0.04%	4.14%	1.49%	0.80%	1.57%	0.00%	0.18%	1.43%	0.28%	0.19%	0.42%	0.00%	0.00%	2.26%	0.41%	0.00%	100%
Road 71	71	-	50	21.65411	Y	1100-1200	408	61.03%	25.58%	0.04%	3.57%	1.28%	0.79%	1.56%	0.00%	0.14%	1.09%	0.42%	0.29%	0.65%	0.00%	0.00%	3.14%	0.41%	0.00%	100%
Road 71	71	-	50	26.33933	Y	1200-1300	60	50.41%	17.48%	0.13%	12.22%	4.39%	2.63%	5.16%	0.00%	0.32%	2.47%	0.65%	0.45%	0.99%	0.00%	0.00%	1.36%	1.35%	0.00%	100%
Road 71	71	-	50	26.17632	Y	1300-1400	61	44.12%	18.23%	0.15%	14.61%	5.25%	2.65%	5.21%	0.00%	0.31%	2.45%	1.14%	0.79%	1.74%	0.00%	0.00%	1.98%	1.36%	0.00%	100%
Road 71	71	-	50	26.23118	Y	1400-1500	62	50.96%	15.79%	0.13%	12.38%	4.45%	2.74%	5.38%	0.00%	0.27%	2.07%	0.52%	0.36%	0.79%	0.00%	0.00%	2.76%	1.41%	0.00%	100%
Road 71	71	-	50	26.22685	Y	1500-1600	63	50.02%	17.99%	0.13%	12.76%	4.58%	2.90%	5.70%	0.00%	0.21%	1.61%	0.21%	0.15%	0.32%	0.00%	0.00%	1.94%	1.49%	0.00%	100%
Road 71	71	-	50	25.99989	Y	1600-1700	67	50.33%	17.39%	0.14%	13.52%	4.85%	2.06%	4.05%	0.00%	0.16%	1.25%	0.66%	0.46%	1.00%	0.00%	0.00%	3.07%	1.06%	0.00%	100%
Road 71	71	-	50	25.75	Y	1700-1800	76	61.16%	13.16%	0.09%	8.99%	3.23%	1.08%	2.12%	0.00%	0.14%	1.11%	0.71%	0.49%	1.08%	0.00%	0.00%	6.08%	0.55%	0.00%	100%
Road 71	71	-	50	25.87801	Y	1800-1900	76	67.55%	14.93%	0.07%	6.55%	2.35%	0.80%	1.56%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.00%	0.00%	4.00%	0.41%	0.00%	100%
Road 71	71	-	50	26.49846	Y	1900-2000	66	65.32%	20.66%	0.06%	5.96%	2.14%	0.26%	0.52%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.09%	0.14%	0.00%	100%
Road 71	71	-	50	27.1421	Y	2000-2100	54	63.51%	23.20%	0.06%	5.33%	1.91%	0.49%	0.96%	0.00%	0.01%	0.08%	0.44%	0.30%	0.66%	0.00%	0.00%	2.81%	0.25%	0.00%	100%
Road 71	71	-	50	27.31591	Y	2100-2200	51	57.28%	30.90%	0.05%	5.18%	1.86%	0.34%	0.67%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.35%	0.18%	0.00%	100%
Road 71	71	-	50	27.42452	Y	2200-2300	50	53.69%	36.00%	0.05%	4.74%	1.70%	0.26%	0.52%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.72%	0.14%	0.00%	100%
Road 71	71	-	50	27.97705	Y	2300-0000	38	53.75%	33.71%	0.05%	5.21%	1.87%	0.40%	0.80%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.98%	0.21%	0.00%	100%
Road 72	72	-	50	28.7438	Y	0000-0100	19	42.97%	25.09%	0.08%	7.94%	2.85%	0.76%	1.50%	0.00%	0.09%	0.68%	0.22%	0.15%	0.34%	0.21%	14.12%	2.59%	0.39%	0.00%	100%
Road 72	72	-	50	29.12412	Y	0100-0200	13	42.76%	23.07%	0.09%	8.55%	3.07%	0.96%	1.88%	0.00%	0.13%	0.99%	0.32%	0.22%	0.49%	0.21%	13.99%	2.78%	0.49%	0.00%	100%
Road 72	72	-	50	29.31701	Y	0200-0300	10	42.66%	21.05%	0.10%	9.18%	3.30%	1.16%	2.27%	0.00%	0.17%	1.29%	0.42%	0.29%	0.64%	0.20%	13.72%	2.96%	0.59%	0.00%	100%
Road 72	72	-	50	29.476	Y	0300-0400	8	42.36%	19.04%	0.10%	9.79%	3.52%	1.34%	2.63%	0.00%	0.20%	1.58%	0.52%	0.36%	0.79%	0.21%	13.73%	3.15%	0.69%	0.00%	100%
Road 72	72	-	50	29.49541	Y	0400-0500	7	42.22%	17.04%	0.11%	10.42%	3.74%	1.53%	3.01%	0.00%	0.24%	1.88%	0.61%	0.43%	0.93%	0.21%	13.52%	3.33%	0.79%	0.00%	100%
Road 72	72	-	50	29.27273	Y	0500-0600	11	42.06%	15.05%	0.12%	11.05%	3.97%	1.72%	3.38%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.20%	13.35%	3.50%	0.88%	0.00%	100%
Road 72	72	-	50	27.92527	Y	0600-0700	30	42.11%	13.03%	0.12%	11.68%	4.19%	1.94%	3.80%	0.00%	0.32%	2.51%	0.81%	0.56%	1.24%	0.18%	12.85%	3.66%	0.99%	0.00%	100%
Road 72	72	-	50	26.17191	Y	0700-0800	55	41.99%	11.03%	0.13%	12.30%	4.42%	2.13%	4.19%	0.00%	0.36%	2.81%	0.91%	0.63%	1.39%	0.17%	12.60%	3.84%	1.09%	0.00%	100%
Road 72	72	-	50	26.25	Y	0800-0900	57	47.18%	14.43%	0.12%	11.13%	4.00%	1.71%	3.36%	0.00%	0.17%	1.34%	0.67%	0.47%	1.02%	0.25%	10.31%	2.96%	0.88%	0.00%	100%
Road 72	72	-	50	26.10027	Y	0900-1000	55	37.44%	12.13%	0.18%	17.05%	6.12%	3.11%	6.12%	0.00%	0.11%	0.89%	0.42%	0.29%	0.63%	0.26%	11.51%	2.14%	1.60%	0.00%	100%
Road 72	72	-	50	26.0875	Y	1000-1100	54	32.55%	14.83%	0.19%	18.58%	6.67%	3.57%	7.02%	0.00%	0.10%	0.78%	0.15%	0.10%	0.23%	0.54%	11.61%	1.24%	1.83%	0.00%	100%
Road 72	72	-	50	26.47129	Y	1100-1200	49	34.99%	14.66%	0.18%	16.83%	6.04%	3.74%	7.35%	0.00%	0.08%	0.62%	0.24%	0.17%	0.37%	0.14%	10.86%	1.80%	1.92%	0.00%	100%
Road 72	72	-	50	25.48417	Y	1200-1300	72	52.03%	18.05%	0.08%	7.69%	2.76%	1.65%	3.25%	0.00%	0.33%	2.55%	0.67%	0.46%	1.02%	0.31%	6.91%	1.40%	0.85%	0.00%	100%
Road 72	72	-	50	25.30542	Y	1300-1400	73	45.90%	18.96%	0.10%	9.26%	3.33%	1.68%	3.30%	0.00%	0.33%	2.54%	1.19%	0.82%	1.81%	0.38%	7.49%	2.06%	0.86%	0.00%	100%
Road 72	72	-	50	25.37023	Y	1400-1500	74	52.74%	16.34%	0.08%	7.81%	2.80%	1.73%	3.40%	0.00%	0.27%	2.15%	0.53%	0.37%	0.81%	0.18%	7.03%	2.86%	0.89%	0.00%	100%
Road 72	72	-	50	25.38369	Y	1500-1600	74	51.94%	18.68%	0.08%	8.07%	2.90%	1.83%	3.61%	0.00%	0.21%	1.67%	0.22%	0.15%	0.34%	0.16%	7.19%	2.01%	0.94%	0.00%	100%
Road 72	72	-	50	24.99917	Y	1600-1700	81	51.67%	17.86%	0.09%	8.46%	3.04%	1.29%	2.53%	0.00%	0.16%	1.29%	0.67%	0.47%	1.03%	0.20%	7.44%	3.15%	0.66%	0.00%	100%
Road 72	72	-	50	24.9	Y	1700-1800	94	61.09%	13.14%	0.06%	5.47%	1.97%	0.66%	1.29%	0.00%	0.14%	1.11%	0.71%	0.49%	1.08%	0.10%	6.29%	6.07%	0.34%	0.00%	100%
Road 72	72	-	50	24.89696	Y	1800-1900	96	66.11%	14.62%	0.04%	3.91%	1.40%	0.47%	0.93%	0.00%	0.02%	0.18%	0.48%	0.33%	0.72%	0.03%	6.59%	3.92%	0.24%	0.00%	100%
Road 72	72	-	50	25.09232	Y	1900-2000	85	62.48%	19.76%	0.04%	3.48%	1.25%	0.15%	0.30%	0.00%	0.03%	0.22%	0.47%	0.33%	0.72%	0.31%	7.44%	2.96%	0.08%	0.00%	100%
Road 72	72	-	50	25.98266	Y	2000-2100	69	60.61%	22.14%	0.03%	3.10%	1.11%	0.28%	0.56%	0.00%	0.01%	0.08%	0.42%	0.29%	0.63%	0.15%	7.77%	2.68%	0.15%	0.00%	100%
Road 72	72	-	50	26.12963	Y	2100-2200	66	54.01%	29.14%	0.03%	2.98%	1.07%	0.20%	0.39%	0.00%	0.01%	0.08%	0.32%	0.22%	0.48%	0.12%	8.64%	2.22%	0.10%	0.00%	100%
Road 72	72	-	50	26.31304	Y	2200-2300	65	50.80%	34.06%	0.03%	2.73%	0.98%	0.15%	0.30%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	8.01%	2.57%	0.08%	0.00%	100%
Road 72	72	-	50	27.12709	Y	2300-0000	50	51.07%	32.02%	0.03%	3.01%	1.08%	0.23%	0.46%	0.00%	0.06%	0.45%	0.15%	0.10%	0.22%	0.12%	8.05%	2.83%	0.12%	0.00%	100%
Road 73	73	-	50	23.80837	Y	0000-0100	215	58.30%	34.04%	0.01%	1.25%	0.45%	0.12%	0.24%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 73	73	-	50	24.50075	Y	0100-0200	146	58.99%	31.82%	0.01%	1.37%	0.49%	0.15%	0.30%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.84%	0.08%	0.00%	100%
Road 73	73	-	50	24.84951	Y	0200-0300	111	59.75%	29.48%	0.02%	1.49%	0.53%	0.19%	0.37%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.14%	0.10%	0.00%	100%
Road 73	73	-	50	25.68277	Y	0300-0400	83	60.44%	27.17%	0.02%	1.62%	0.58%	0.22%	0.43%	0.00%	0.29%	2.25%	0.74%	0.51%	1.12%	0.00%	0.00%	4.49%	0.11%	0.00%	100%
Road 73	73	-	50	25.91287	Y	0400-0500	78	61.24%	24.71%	0.02%	1.75%	0.63%	0.26%	0.50%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.13%	0.00%	100%
Road 73	73	-	50	24.84279	Y	0500-0600	109	62.05%	22.20%	0.02%	1.89%	0.68%	0.29%	0.58%	0.00%	0.41%	3.20%	1.05%	0.73%	1.59%	0.00%	0.00%	5.17%	0.15%	0.00%	100%
Road 73	73	-	50	22.73384	Y	0600-0700	304	62.97%	19.48%	0.02%	2.02%	0.73%	0.33%	0.66%	0.00%	0.48%	3.75%	1.22%	0.84%	1.85%	0.00%	0.00%	5.48%	0.17%	0.00%	100%
Road 73	73	-	50	20.07038	Y	0700-0800	548	63.84%	16.78%	0.02%	2.16%	0.78%	0.37%	0.74%	0.00%	0.55%	4.27%	1.39%	0.96%	2.11%	0.00%	0.00%	5.83%	0.19%	0.00%	100%
Road 73	73	-	50	19.6	Y	0800-0900	607	66.74%	20.41%	0.02%	1.82%	0.65%	0.28%	0.55%	0.00%	0.24%	1.90%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.14%	0.00%	100%
Road 73	73	-	50	20.85859	Y	0900-1000	481	64.55%	20.92%	0.04%	3.40%	1.22%	0.62%	1.22%	0.00%	0.20%	1.53%	0.72%	0.50%	1.09%	0.00%	0.00%	3.69%	0.32%	0.00%	100%
Road 73	73	-	50	21.26298	Y	1000-1100	444	59.88%	27.28%	0.04%	3.95%	1.42%	0.76%	1.49%	0.00%	0.18%	1.44%	0.28%	0.19%	0.42%	0.00%	0.00%	2.27%	0.39%	0.00%	100%
Road 73	73	-	50	21.45517	Y	1100-1200	427	61.26%	25.68%	0.04%	3.41%	1.22%	0.76%	1.49%	0.00%	0.14%	1.09%	0.43%	0.30%	0.65%	0.00%	0.00%	3.15%	0.39%	0.00%	100%
Road 73	73	-	50	26.13353	Y	1200-1300	67	56.08%	19.45%	0.09%	8.28%	2.97%	1.78%	3.50%	0.00%	0.35%	2.75%	0.72%	0.50%	1.10%	0.00%	0.00%	1.51%	0.91%	0.00%	100%
Road 73	73	-	50	26.01996	Y	1300-1400	67	49.81%	20.58%	0.11%	10.05%	3.61%	1.82%	3.59%	0.00%	0.35%	2.76%	1.29%	0.89%	1.96%	0.00%	0.00%	2.23%	0.94%	0.00%	100%
Road 73	73	-	50	26.03921	Y	1400-1500	69	56.84%	17.62%	0.09%	8.42%	3.02%	1.86%	3.66%	0.00%	0.30%	2.31%	0.58%	0.40%	0.88%	0.00%	0.00%	3.08%	0.96%	0.00%	100%
Road 73	73	-	50	26.06444	Y	1500-1600	69	56.05%	20.16%	0.09%	8.71%	3.13%	1.98%	3.89%	0.00%	0.23%	1.81%	0.24%	0.16%	0.36%	0.00%	0.00%	2.17%	1.02%	0.00%	100%
Road 73	73	-	50	25.76562	Y	1600-1700	74	55.94%	19.33%	0.10%	9.16%	3.29%	1.39%	2.74%	0.00%	0.18%	1.39%	0.73%	0.51%	1.11%	0.00%	0.00%	3.41%	0.72%	0.00%	100%
Road 73	73	-	50	25.25	Y	1700-1800	88	65.26%	14.04%	0.06%	5.85%	2.10%	0.70%	1.38%	0.00%	0.15%	1.18%	0.76%	0.52%	1.15%	0.00%	0.00%	6.49%	0.36%	0.00%	100%
Road 73	73	-	50	25.27868	Y	1800-1900	90	70.80%	15.65%	0.04%	4.18%	1.50%	0.51%	1.00%	0.00%	0.02%	0.19%	0.51%	0.35%	0.78%	0.00%	0.00%	4.20%	0.26%	0.00%	100%
Road 73	73	-	50	25.9151	Y	1900-2000	78	67.72%	21.42%	0.04%	3.77%	1.35%	0.17%	0.33%	0.00%	0.03%	0.24%	0.51%	0.35%	0.78%	0.00%	0.00%	3.20%	0.09%	0.00%	100%
Road 73	73	-	50	26.66959	Y	2000-2100	64	65.83%	24.04%	0.04%	3.36%	1.21%	0.31%	0.60%	0.00%	0.01%	0.08%	0.45%	0.31%	0.69%	0.00%	0.00%	2.91%	0.16%	0.00%	100%
Road 73	73	-	50	26.85723	Y	2100-2200	61	59.19%	31.93%	0.03%	3.26%	1.17%	0.22%	0.42%	0.00%	0.01%	0.09%	0.35%	0.24%	0.53%	0.00%	0.00%	2.43%	0.11%	0.00%	100%
Road 73	73	-	50	26.96916	Y	2200-2300	59	55.29%	37.07%	0.03%	2.98%	1.07%	0.17%	0.32%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.80%	0.08%	0.00%	100%
Road 73	73	-	50	27.63622	Y	2300-0000	46	55.61%	34.87%	0.03%	3.28%	1.18%	0.26%	0.50%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.08%	0.13%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 74	74	-	50	28.7438	Y	0000-0100	19	42.97%	25.09%	0.08%	7.94%	2.85%	0.76%	1.50%	0.00%	0.09%	0.68%	0.22%	0.15%	0.34%	0.21%	14.12%	2.59%	0.39%	0.00%	100%
Road 74	74	-	50	29.12412	Y	0100-0200	13	42.76%	23.07%	0.09%	8.55%	3.07%	0.96%	1.88%	0.00%	0.13%	0.99%	0.32%	0.22%	0.49%	0.21%	13.99%	2.78%	0.49%	0.00%	100%
Road 74	74	-	50	29.31701	Y	0200-0300	10	42.66%	21.05%	0.10%	9.18%	3.30%	1.16%	2.27%	0.00%	0.17%	1.29%	0.42%	0.29%	0.64%	0.20%	13.72%	2.96%	0.59%	0.00%	100%
Road 74	74	-	50	29.476	Y	0300-0400	8	42.36%	19.04%	0.10%	9.79%	3.52%	1.34%	2.63%	0.00%	0.20%	1.58%	0.52%	0.36%	0.79%	0.21%	13.73%	3.15%	0.69%	0.00%	100%
Road 74	74	-	50	29.49541	Y	0400-0500	7	42.22%	17.04%	0.11%	10.42%	3.74%	1.53%	3.01%	0.00%	0.24%	1.88%	0.61%	0.43%	0.93%	0.21%	13.52%	3.33%	0.79%	0.00%	100%
Road 74	74	-	50	29.27273	Y	0500-0600	11	42.06%	15.05%	0.12%	11.05%	3.97%	1.72%	3.38%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.20%	13.35%	3.50%	0.88%	0.00%	100%
Road 74	74	-	50	27.92527	Y	0600-0700	30	42.11%	13.03%	0.12%	11.68%	4.19%	1.94%	3.80%	0.00%	0.32%	2.51%	0.81%	0.56%	1.24%	0.18%	12.85%	3.66%	0.99%	0.00%	100%
Road 74	74	-	50	26.17191	Y	0700-0800	55	41.99%	11.03%	0.13%	12.30%	4.42%	2.13%	4.19%	0.00%	0.36%	2.81%	0.91%	0.63%	1.39%	0.17%	12.60%	3.84%	1.09%	0.00%	100%
Road 74	74	-	50	26.25	Y	0800-0900	57	47.18%	14.43%	0.12%	11.13%	4.00%	1.71%	3.36%	0.00%	0.17%	1.34%	0.67%	0.47%	1.02%	0.25%	10.31%	2.96%	0.88%	0.00%	100%
Road 74	74	-	50	26.10027	Y	0900-1000	55	37.44%	12.13%	0.18%	17.05%	6.12%	3.11%	6.12%	0.00%	0.11%	0.89%	0.42%	0.29%	0.63%	0.26%	11.51%	2.14%	1.60%	0.00%	100%
Road 74	74	-	50	26.0875	Y	1000-1100	54	32.55%	14.83%	0.19%	18.58%	6.67%	3.57%	7.02%	0.00%	0.10%	0.78%	0.15%	0.10%	0.23%	0.54%	11.61%	1.24%	1.83%	0.00%	100%
Road 74	74	-	50	26.47129	Y	1100-1200	49	34.99%	14.66%	0.18%	16.83%	6.04%	3.74%	7.35%	0.00%	0.08%	0.62%	0.24%	0.17%	0.37%	0.14%	10.86%	1.80%	1.92%	0.00%	100%
Road 74	74	-	50	25.48417	Y	1200-1300	72	52.03%	18.05%	0.08%	7.69%	2.76%	1.65%	3.25%	0.00%	0.33%	2.55%	0.67%	0.46%	1.02%	0.31%	6.91%	1.40%	0.85%	0.00%	100%
Road 74	74	-	50	25.30542	Y	1300-1400	73	45.90%	18.96%	0.10%	9.26%	3.33%	1.68%	3.30%	0.00%	0.33%	2.54%	1.19%	0.82%	1.81%	0.38%	7.49%	2.06%	0.86%	0.00%	100%
Road 74	74	-	50	25.37023	Y	1400-1500	74	52.74%	16.34%	0.08%	7.81%	2.80%	1.73%	3.40%	0.00%	0.27%	2.15%	0.53%	0.37%	0.81%	0.18%	7.03%	2.86%	0.89%	0.00%	100%
Road 74	74	-	50	25.38369	Y	1500-1600	74	51.94%	18.68%	0.08%	8.07%	2.90%	1.83%	3.61%	0.00%	0.21%	1.67%	0.22%	0.15%	0.34%	0.16%	7.19%	2.01%	0.94%	0.00%	100%
Road 74	74	-	50	24.99917	Y	1600-1700	81	51.67%	17.86%	0.09%	8.46%	3.04%	1.29%	2.53%	0.00%	0.16%	1.29%	0.67%	0.47%	1.03%	0.20%	7.44%	3.15%	0.66%	0.00%	100%
Road 74	74	-	50	24.9	Y	1700-1800	94	61.09%	13.14%	0.06%	5.47%	1.97%	0.66%	1.29%	0.00%	0.14%	1.11%	0.71%	0.49%	1.08%	0.10%	6.29%	6.07%	0.34%	0.00%	100%
Road 74	74	-	50	24.89696	Y	1800-1900	96	66.11%	14.62%	0.04%	3.91%	1.40%	0.47%	0.93%	0.00%	0.02%	0.18%	0.48%	0.33%	0.72%	0.03%	6.59%	3.92%	0.24%	0.00%	100%
Road 74	74	-	50	25.09232	Y	1900-2000	85	62.48%	19.76%	0.04%	3.48%	1.25%	0.15%	0.30%	0.00%	0.03%	0.22%	0.47%	0.33%	0.72%	0.31%	7.44%	2.96%	0.08%	0.00%	100%
Road 74	74	-	50	25.98266	Y	2000-2100	69	60.61%	22.14%	0.03%	3.10%	1.11%	0.28%	0.56%	0.00%	0.01%	0.08%	0.42%	0.29%	0.63%	0.15%	7.77%	2.68%	0.15%	0.00%	100%
Road 74	74	-	50	26.12963	Y	2100-2200	66	54.01%	29.14%	0.03%	2.98%	1.07%	0.20%	0.39%	0.00%	0.01%	0.08%	0.32%	0.22%	0.48%	0.12%	8.64%	2.22%	0.10%	0.00%	100%
Road 74	74	-	50	26.31304	Y	2200-2300	65	50.80%	34.06%	0.03%	2.73%	0.98%	0.15%	0.30%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	8.01%	2.57%	0.08%	0.00%	100%
Road 74	74	-	50	27.12709	Y	2300-0000	50	51.07%	32.02%	0.03%	3.01%	1.08%	0.23%	0.46%	0.00%	0.06%	0.45%	0.15%	0.10%	0.22%	0.12%	8.05%	2.83%	0.12%	0.00%	100%
Road 75	75	-	50	24.32997	Y	0000-0100	162	57.41%	33.53%	0.02%	2.12%	0.76%	0.20%	0.40%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.00%	0.00%	3.47%	0.10%	0.00%	100%
Road 75	75	-	50	24.85397	Y	0100-0200	110	57.97%	31.27%	0.02%	2.32%	0.83%	0.26%	0.51%	0.00%	0.17%	1.34%	0.44%	0.30%	0.66%	0.00%	0.00%	3.77%	0.13%	0.00%	100%
Road 75	75	-	50	25.58866	Y	0200-0300	84	58.60%	28.92%	0.03%	2.52%	0.91%	0.32%	0.62%	0.00%	0.23%	1.78%	0.58%	0.40%	0.88%	0.00%	0.00%	4.06%	0.16%	0.00%	100%
Road 75	75	-	50	26.67876	Y	0300-0400	63	59.16%	26.59%	0.03%	2.74%	0.98%	0.37%	0.73%	0.00%	0.28%	2.21%	0.72%	0.50%	1.10%	0.00%	0.00%	4.40%	0.19%	0.00%	100%
Road 75	75	-	50	26.84551	Y	0400-0500	59	59.81%	24.14%	0.03%	2.95%	1.06%	0.43%	0.85%	0.00%	0.34%	2.66%	0.87%	0.60%	1.32%	0.00%	0.00%	4.71%	0.22%	0.00%	100%
Road 75	75	-	50	25.51958	Y	0500-0600	83	60.47%	21.63%	0.03%	3.18%	1.14%	0.49%	0.97%	0.00%	0.40%	3.12%	1.02%	0.71%	1.55%	0.00%	0.00%	5.04%	0.25%	0.00%	100%
Road 75	75	-	50	23.46232	Y	0600-0700	233	61.21%	18.94%	0.04%	3.39%	1.22%	0.56%	1.11%	0.00%	0.47%	3.64%	1.18%	0.82%	1.80%	0.00%	0.00%	5.33%	0.29%	0.00%	100%
Road 75	75	-	50	21.37741	Y	0700-0800	420	61.92%	16.27%	0.04%	3.63%	1.30%	0.63%	1.24%	0.00%	0.53%	4.14%	1.34%	0.93%	2.05%	0.00%	0.00%	5.66%	0.32%	0.00%	100%
Road 75	75	-	50	21.05	Y	0800-0900	463	65.09%	19.90%	0.03%	3.07%	1.10%	0.47%	0.93%	0.00%	0.24%	1.85%	0.93%	0.64%	1.41%	0.00%	0.00%	4.09%	0.24%	0.00%	100%
Road 75	75	-	50	21.87698	Y	0900-1000	376	61.50%	19.93%	0.06%	5.60%	2.01%	1.02%	2.01%	0.00%	0.19%	1.45%	0.68%	0.47%	1.04%	0.00%	0.00%	3.52%	0.53%	0.00%	100%
Road 75	75	-	50	22.14915	Y	1000-1100	350	56.56%	25.77%	0.07%	6.46%	2.32%	1.24%	2.44%	0.00%	0.17%	1.36%	0.26%	0.18%	0.40%	0.00%	0.00%	2.15%	0.64%	0.00%	100%
Road 75	75	-	50	22.33081	Y	1100-1200	335	58.17%	24.38%	0.06%	5.59%	2.01%	1.24%	2.44%	0.00%	0.13%	1.04%	0.41%	0.28%	0.62%	0.00%	0.00%	2.99%	0.64%	0.00%	100%
Road 75	75	-	50	25.28964	Y	1200-1300	78	50.99%	17.69%	0.12%	11.81%	4.24%	2.54%	4.99%	0.00%	0.32%	2.50%	0.66%	0.46%	1.00%	0.00%	0.00%	1.37%	1.30%	0.00%	100%
Road 75	75	-	50	25.08692	Y	1300-1400	79	44.70%	18.47%	0.15%	14.15%	5.08%	2.57%	5.05%	0.00%	0.32%	2.48%	1.15%	0.80%	1.76%	0.00%	0.00%	2.01%	1.32%	0.00%	100%
Road 75	75	-	50	25.15288	Y	1400-1500	81	51.56%	15.98%	0.13%	11.98%	4.30%	2.65%	5.21%	0.00%	0.27%	2.10%	0.52%	0.36%	0.79%	0.00%	0.00%	2.79%	1.36%	0.00%	100%
Road 75	75	-	50	25.15088	Y	1500-1600	81	50.64%	18.21%	0.13%	12.34%	4.43%	2.80%	5.51%	0.00%	0.21%	1.63%	0.21%	0.15%	0.33%	0.00%	0.00%	1.96%	1.44%	0.00%	100%
Road 75	75	-	50	24.97035	Y	1600-1700	87	50.91%	17.59%	0.14%	13.07%	4.69%	1.99%	3.91%	0.00%	0.16%	1.27%	0.67%	0.46%	1.01%	0.00%	0.00%	3.11%	1.02%	0.00%	100%
Road 75	75	-	50	24.9	Y	1700-1800	99	61.60%	13.26%	0.09%	8.66%	3.11%	1.04%	2.04%	0.00%	0.14%	1.11%	0.71%	0.50%	1.09%	0.00%	0.00%	6.12%	0.53%	0.00%	100%
Road 75	75	-	50	24.93039	Y	1800-1900	99	67.90%	15.01%	0.07%	6.29%	2.26%	0.76%	1.50%	0.00%	0.02%	0.18%	0.49%	0.34%	0.74%	0.00%	0.00%	4.03%	0.39%	0.00%	100%
Road 75	75	-	50	25.44803	Y	1900-2000	86	65.58%	20.74%	0.06%	5.72%	2.06%	0.25%	0.50%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.10%	0.13%	0.00%	100%
Road 75	75	-	50	26.28519	Y	2000-2100	70	63.77%	23.29%	0.05%	5.11%	1.84%	0.47%	0.92%	0.00%	0.01%	0.08%	0.44%	0.30%	0.67%	0.00%	0.00%	2.82%	0.24%	0.00%	100%
Road 75	75	-	50	26.50932	Y	2100-2200	66	57.49%	31.01%	0.05%	4.97%	1.79%	0.33%	0.65%	0.00%	0.01%	0.08%	0.34%	0.23%	0.52%	0.00%	0.00%	2.36%	0.17%	0.00%	100%
Road 75	75	-	50	26.64874	Y	2200-2300	65	53.87%	36.12%	0.05%	4.55%	1.63%	0.25%	0.50%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.73%	0.13%	0.00%	100%
Road 75	75	-	50	27.36973	Y	2300-0000	50	53.96%	33.83%	0.05%	4.99%	1.79%	0.39%	0.76%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.99%	0.20%	0.00%	100%
Road 76	76	-	50	26.8485	Y	0000-0100	59	52.94%	30.92%	0.07%	6.52%	2.34%	0.63%	1.23%	0.00%	0.11%	0.84%	0.27%	0.19%	0.42%	0.00%	0.00%	3.20%	0.32%	0.00%	100%
Road 76	76	-	50	27.80494	Y	0100-0200	40	52.93%	28.55%	0.07%	7.06%	2.53%	0.79%	1.55%	0.00%	0.16%	1.22%	0.40%	0.28%	0.61%	0.00%	0.00%	3.44%	0.41%	0.00%	100%
Road 76	76	-	50	28.28478	Y	0200-0300	31	52.96%	26.14%	0.08%	7.60%	2.73%	0.96%	1.88%	0.00%	0.21%	1.61%	0.52%	0.36%	0.79%	0.00%	0.00%	3.67%	0.49%	0.00%	100%
Road 76	76	-	50	28.6898	Y	0300-0400	23	52.93%	23.79%	0.09%	8.16%	2.93%	1.11%	2.19%	0.00%	0.25%	1.97%	0.64%	0.45%	0.98%	0.00%	0.00%	3.93%	0.57%	0.00%	100%
Road 76	76	-	50	28.73727	Y	0400-0500	22	52.95%	21.37%	0.09%	8.71%	3.13%	1.28%	2.51%	0.00%	0.30%	2.35%	0.77%	0.53%	1.17%	0.00%	0.00%	4.17%	0.66%	0.00%	100%
Road 76	76	-	50	28.18039	Y	0500-0600	32	52.97%	18.95%	0.10%	9.27%	3.33%	1.44%	2.84%	0.00%	0.35%	2.73%	0.89%	0.62%	1.36%	0.00%	0.00%	4.41%	0.74%	0.00%	100%
Road 76	76	-	50	24.95424	Y	0600-0700	90	53.04%	16.41%	0.10%	9.80%	3.52%	1.62%	3.19%	0.00%	0.40%	3.16%	1.02%	0.71%	1.56%	0.00%	0.00%	4.61%	0.83%	0.00%	100%
Road 76	76	-	50	24.06771	Y	0700-0800	163	53.06%	13.94%	0.11%	10.36%	3.72%	1.80%	3.53%	0.00%	0.45%	3.55%	1.15%	0.80%	1.75%	0.00%	0.00%	4.85%	0.92%	0.00%	100%
Road 76	76	-	50	24	Y	0800-0900	175	57.28%	17.51%	0.09%	9.01%	3.23%	1.38%	2.72%	0.00%	0.21%	1.63%	0.81%	0.56%	1.24%	0.00%	0.00%	3.60%	0.71%	0.00%	100%
Road 76	76	-	50	24.07423	Y	0900-1000	158	48.73%	15.79%	0.15%	14.79%	5.31%	2.70%	5.31%	0.00%	0.15%	1.15%	0.54%	0.37%	0.82%	0.00%	0.00%	2.79%	1.39%	0.00%	100%
Road 76	76	-	50	24.11214	Y	1000-1100	152	43.27%	19.71%	0.17%	16.46%	5.91%	3.17%	6.22%	0.00%	0.13%	1.04%	0.20%	0.14%	0.30%	0.00%	0.00%	1.64%	1.63%	0.00%	100%
Road 76	76	-	50	24.24412	Y	1100-1200	143	45.45%	19.05%	0.15%	14.57%	5.23%	3.24%	6.37%	0.00%	0.10%	0.81%	0.32%	0.22%	0.48%	0.00%	0.00%	2.34%	1.66%	0.00%	100%
Road 76	76	-	50	21.94244	Y	1200-1300	374	63.75%	22.11%	0.03%	2.95%	1.06%	0.63%	1.25%	0.00%	0.40%	3.12%	0.82%	0.57%	1.25%	0.00%	0.00%	1.72%	0.33%	0.00%	100%
Road 76	76	-	50	21.9165	Y	1300-1400	368	57.79%	23.88%	0.04%	3.66%	1.31%	0.66%	1.31%	0.00%	0.41%	3.20%	1.49%	1.04%	2.27%	0.00%	0.00%	2.59%	0.34%	0.00%	100%
Road 76	76	-	50	21.87513	Y	1400-1500	385	64.85%	20.10%	0.03%	3.01%	1.08%	0.67%	1.31%	0.00%	0.34%	2.64%	0.66%	0.46%	1.00%	0.00%	0.00%	3.51%	0.34%	0.00%	100%
Road 76	76	-	50	21.94903	Y	1500-1600	381	64.37%	23.15%	0.03%	3.14%	1.13%	0.71%	1.40%	0.00%	0.27%	2.07%	0.27%	0.19%	0.42%	0.00%	0.00%	2.49%	0.37%	0.00%	100%
Road 76	76	-	50	21.54143	Y	1600-1700	418	63.52%	21.95%	0.03%	3.26%	1.17%	0.50%	0.98%	0.00%	0.20%	1.58%	0.83%	0.58%	1.26%	0.00%	0.00%	3.88%	0.26%	0.00%	100%
Road 76	76	-	50	20.6	Y	1700-1800	520	70.30%	15.13%	0.02%	1.98%	0.71%	0.24%	0.47%	0.00%	0.16%	1.27%	0.82%	0.57%	1.24%	0.00%	0.00%	6.99%	0.12%	0.00%	100%
Road 76	76	-	50	20.46066	Y	1800-1900	541	74.64%	16.50%	0.01%	1.38%	0.50%	0.17%	0.33%	0.00%	0.03%	0.20%	0.54%	0.37%	0.82%	0.00%	0.00%	4.43%	0.09%	0.00%	100%
Road 76	76	-	50	21.09844	Y	1900-2000	480	70.50%	22.30%	0.01%	1.23%	0.44%	0.05%	0.11%	0.00%	0.03%	0.25%	0.53%	0.37%	0.81%	0.00%	0.00%	3.34%	0.03%	0.00%	100%
Road 76	76	-	50	22.00898	Y	2000-2100	392	68.49%	25.02%	0.01%	1.10%	0.39%	0.10%	0.20%	0.00%	0.01%	0.09%	0.47%	0.33%	0.71%	0.00%	0.00%	3.03%	0.05%	0.00%	100%
Road 76	76	-	50	22.21235	Y	2100-2200	373	61.39%	33.12%	0.01%	1.06%	0.38%	0.07%	0.14%	0.00%	0.01%	0.09%	0.36%	0.25%	0.55%	0.00%	0.00%	2.52%	0.04%	0.00%	100%
Road 76	76	-	50	22.3254	Y	2200-2300	366	57.11%	38.29%	0.01%	0.96%	0.35%	0.05%	0.11%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.89%	0.03%	0.00%	100%
Road 76	76	-	50	23.15818	Y	2300-0000	281	57.74%	36.21%	0.01%	1.07%	0.38%	0.08%	0.16%	0.00%	0.06%	0.51%	0.17%	0.11%	0.25%	0.00%	0.00%	3.20%	0.04%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 77	77	-	50	25.95601	Y	0000-0100	78	56.06%	32.74%	0.04%	3.45%	1.24%	0.33%	0.65%	0.00%	0.11%	0.89%	0.29%	0.20%	0.44%	0.00%	0.00%	3.39%	0.17%	0.00%	100%
Road 77	77	-	50	27.21192	Y	0100-0200	53	56.44%	30.44%	0.04%	3.76%	1.35%	0.42%	0.83%	0.00%	0.17%	1.30%	0.42%	0.29%	0.65%	0.00%	0.00%	3.67%	0.22%	0.00%	100%
Road 77	77	-	50	27.84347	Y	0200-0300	40	56.87%	28.06%	0.04%	4.08%	1.47%	0.51%	1.01%	0.00%	0.22%	1.73%	0.56%	0.39%	0.85%	0.00%	0.00%	3.94%	0.26%	0.00%	100%
Road 77	77	-	50	28.36884	Y	0300-0400	30	57.23%	25.73%	0.05%	4.41%	1.58%	0.60%	1.18%	0.00%	0.27%	2.13%	0.70%	0.48%	1.06%	0.00%	0.00%	4.25%	0.31%	0.00%	100%
Road 77	77	-	50	28.44341	Y	0400-0500	29	57.67%	23.27%	0.05%	4.74%	1.70%	0.70%	1.37%	0.00%	0.33%	2.56%	0.84%	0.58%	1.28%	0.00%	0.00%	4.54%	0.36%	0.00%	100%
Road 77	77	-	50	27.77868	Y	0500-0600	40	58.11%	20.79%	0.05%	5.09%	1.83%	0.79%	1.56%	0.00%	0.38%	3.00%	0.98%	0.68%	1.49%	0.00%	0.00%	4.84%	0.41%	0.00%	100%
Road 77	77	-	50	24.7358	Y	0600-0700	113	58.63%	18.14%	0.06%	5.42%	1.95%	0.90%	1.77%	0.00%	0.45%	3.49%	1.13%	0.79%	1.72%	0.00%	0.00%	5.10%	0.46%	0.00%	100%
Road 77	77	-	50	23.68622	Y	0700-0800	205	59.10%	15.53%	0.06%	5.77%	2.07%	1.00%	1.97%	0.00%	0.51%	3.96%	1.28%	0.89%	1.95%	0.00%	0.00%	5.40%	0.51%	0.00%	100%
Road 77	77	-	50	23.55	Y	0800-0900	225	62.65%	19.16%	0.05%	4.93%	1.77%	0.76%	1.49%	0.00%	0.23%	1.78%	0.89%	0.62%	1.36%	0.00%	0.00%	3.94%	0.39%	0.00%	100%
Road 77	77	-	50	23.85535	Y	0900-1000	188	57.21%	18.54%	0.09%	8.68%	3.12%	1.59%	3.12%	0.00%	0.17%	1.35%	0.63%	0.44%	0.97%	0.00%	0.00%	3.27%	0.81%	0.00%	100%
Road 77	77	-	50	23.96124	Y	1000-1100	177	51.99%	23.69%	0.10%	9.89%	3.55%	1.90%	3.74%	0.00%	0.16%	1.25%	0.24%	0.17%	0.37%	0.00%	0.00%	1.97%	0.98%	0.00%	100%
Road 77	77	-	50	24.07458	Y	1100-1200	169	53.86%	22.57%	0.09%	8.63%	3.10%	1.92%	3.77%	0.00%	0.12%	0.96%	0.38%	0.26%	0.57%	0.00%	0.00%	2.77%	0.99%	0.00%	100%
Road 77	77	-	50	25.62191	Y	1200-1300	74	53.68%	18.62%	0.10%	9.95%	3.57%	2.14%	4.20%	0.00%	0.34%	2.63%	0.69%	0.48%	1.05%	0.00%	0.00%	1.45%	1.10%	0.00%	100%
Road 77	77	-	50	25.46446	Y	1300-1400	75	47.38%	19.58%	0.13%	12.00%	4.31%	2.18%	4.28%	0.00%	0.34%	2.63%	1.22%	0.85%	1.86%	0.00%	0.00%	2.13%	1.12%	0.00%	100%
Road 77	77	-	50	25.50531	Y	1400-1500	76	54.34%	16.84%	0.11%	10.10%	3.63%	2.23%	4.39%	0.00%	0.28%	2.21%	0.55%	0.38%	0.84%	0.00%	0.00%	2.94%	1.15%	0.00%	100%
Road 77	77	-	50	25.51921	Y	1500-1600	76	53.49%	19.23%	0.11%	10.43%	3.75%	2.37%	4.66%	0.00%	0.22%	1.72%	0.23%	0.16%	0.35%	0.00%	0.00%	2.07%	1.22%	0.00%	100%
Road 77	77	-	50	25.20994	Y	1600-1700	83	53.57%	18.51%	0.11%	11.00%	3.95%	1.68%	3.29%	0.00%	0.17%	1.33%	0.70%	0.49%	1.07%	0.00%	0.00%	3.27%	0.86%	0.00%	100%
Road 77	77	-	50	24.95	Y	1700-1800	96	63.57%	13.68%	0.07%	7.15%	2.57%	0.86%	1.68%	0.00%	0.15%	1.15%	0.74%	0.51%	1.12%	0.00%	0.00%	6.32%	0.44%	0.00%	100%
Road 77	77	-	50	24.96698	Y	1800-1900	97	69.47%	15.36%	0.05%	5.15%	1.85%	0.63%	1.23%	0.00%	0.02%	0.19%	0.50%	0.35%	0.76%	0.00%	0.00%	4.12%	0.32%	0.00%	100%
Road 77	77	-	50	25.56486	Y	1900-2000	85	66.75%	21.11%	0.05%	4.66%	1.67%	0.21%	0.40%	0.00%	0.03%	0.24%	0.50%	0.35%	0.77%	0.00%	0.00%	3.16%	0.11%	0.00%	100%
Road 77	77	-	50	26.38243	Y	2000-2100	69	64.89%	23.70%	0.04%	4.16%	1.49%	0.38%	0.75%	0.00%	0.01%	0.08%	0.44%	0.31%	0.68%	0.00%	0.00%	2.87%	0.20%	0.00%	100%
Road 77	77	-	50	26.5929	Y	2100-2200	65	58.42%	31.51%	0.04%	4.04%	1.45%	0.27%	0.53%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.00%	2.40%	0.14%	0.00%	100%
Road 77	77	-	50	26.72101	Y	2200-2300	64	54.64%	36.64%	0.04%	3.69%	1.33%	0.20%	0.40%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.77%	0.11%	0.00%	100%
Road 77	77	-	50	27.43525	Y	2300-0000	49	54.86%	34.40%	0.04%	4.06%	1.46%	0.32%	0.62%	0.00%	0.06%	0.48%	0.16%	0.11%	0.24%	0.00%	0.00%	3.04%	0.16%	0.00%	100%
Road 78	78	-	50	28.00392	Y	0000-0100	37	51.05%	29.81%	0.09%	8.38%	3.01%	0.81%	1.58%	0.00%	0.10%	0.81%	0.26%	0.18%	0.40%	0.00%	0.00%	3.08%	0.41%	0.00%	100%
Road 78	78	-	50	28.60153	Y	0100-0200	25	50.83%	27.42%	0.09%	9.04%	3.25%	1.01%	1.99%	0.00%	0.15%	1.17%	0.38%	0.26%	0.58%	0.00%	0.00%	3.31%	0.52%	0.00%	100%
Road 78	78	-	50	28.90094	Y	0200-0300	19	50.65%	24.99%	0.10%	9.69%	3.48%	1.22%	2.40%	0.00%	0.20%	1.54%	0.50%	0.35%	0.76%	0.00%	0.00%	3.51%	0.63%	0.00%	100%
Road 78	78	-	50	29.15584	Y	0300-0400	15	50.40%	22.66%	0.11%	10.36%	3.72%	1.41%	2.78%	0.00%	0.24%	1.88%	0.61%	0.43%	0.93%	0.00%	0.00%	3.75%	0.73%	0.00%	100%
Road 78	78	-	50	29.18201	Y	0400-0500	14	50.21%	20.26%	0.12%	11.01%	3.95%	1.62%	3.18%	0.00%	0.29%	2.23%	0.73%	0.51%	1.11%	0.00%	0.00%	3.95%	0.83%	0.00%	100%
Road 78	78	-	50	28.81505	Y	0500-0600	20	50.01%	17.89%	0.12%	11.67%	4.19%	1.82%	3.57%	0.00%	0.33%	2.58%	0.84%	0.59%	1.29%	0.00%	0.00%	4.17%	0.93%	0.00%	100%
Road 78	78	-	50	26.57719	Y	0600-0700	57	49.87%	15.43%	0.13%	12.29%	4.41%	2.04%	4.00%	0.00%	0.38%	2.97%	0.96%	0.67%	1.47%	0.00%	0.00%	4.34%	1.05%	0.00%	100%
Road 78	78	-	50	24.72879	Y	0700-0800	105	49.68%	13.05%	0.14%	12.93%	4.64%	2.24%	4.41%	0.00%	0.43%	3.32%	1.08%	0.75%	1.64%	0.00%	0.00%	4.54%	1.15%	0.00%	100%
Road 78	78	-	50	24.7	Y	0800-0900	111	54.18%	16.57%	0.12%	11.36%	4.08%	1.75%	3.43%	0.00%	0.20%	1.54%	0.77%	0.53%	1.17%	0.00%	0.00%	3.40%	0.90%	0.00%	100%
Road 78	78	-	50	24.68698	Y	0900-1000	104	44.35%	14.37%	0.19%	17.95%	6.44%	3.28%	6.44%	0.00%	0.13%	1.05%	0.49%	0.34%	0.75%	0.00%	0.00%	2.54%	1.68%	0.00%	100%
Road 78	78	-	50	24.69464	Y	1000-1100	102	38.92%	17.73%	0.21%	19.74%	7.09%	3.80%	7.46%	0.00%	0.12%	0.93%	0.18%	0.12%	0.27%	0.00%	0.00%	1.48%	1.95%	0.00%	100%
Road 78	78	-	50	24.79423	Y	1100-1200	95	41.17%	17.25%	0.18%	17.60%	6.32%	3.91%	7.69%	0.00%	0.09%	0.73%	0.29%	0.20%	0.44%	0.00%	0.00%	2.12%	2.01%	0.00%	100%
Road 78	78	-	50	23.33612	Y	1200-1300	243	62.55%	21.69%	0.04%	3.79%	1.36%	0.81%	1.60%	0.00%	0.39%	3.07%	0.80%	0.56%	1.23%	0.00%	0.00%	1.69%	0.42%	0.00%	100%
Road 78	78	-	50	23.30893	Y	1300-1400	240	56.52%	23.35%	0.05%	4.68%	1.68%	0.85%	1.67%	0.00%	0.40%	3.13%	1.46%	1.01%	2.22%	0.00%	0.00%	2.54%	0.44%	0.00%	100%
Road 78	78	-	50	23.28848	Y	1400-1500	250	63.59%	19.71%	0.04%	3.86%	1.39%	0.85%	1.68%	0.00%	0.33%	2.59%	0.64%	0.45%	0.98%	0.00%	0.00%	3.44%	0.44%	0.00%	100%
Road 78	78	-	50	23.33183	Y	1500-1600	248	63.05%	22.67%	0.04%	4.02%	1.44%	0.91%	1.80%	0.00%	0.26%	2.03%	0.27%	0.19%	0.41%	0.00%	0.00%	2.44%	0.47%	0.00%	100%
Road 78	78	-	50	23.07447	Y	1600-1700	271	62.33%	21.54%	0.04%	4.19%	1.50%	0.64%	1.25%	0.00%	0.20%	1.55%	0.81%	0.56%	1.24%	0.00%	0.00%	3.80%	0.33%	0.00%	100%
Road 78	78	-	50	22.5	Y	1700-1800	335	69.54%	14.96%	0.03%	2.56%	0.92%	0.31%	0.60%	0.00%	0.16%	1.26%	0.81%	0.56%	1.23%	0.00%	0.00%	6.91%	0.16%	0.00%	100%
Road 78	78	-	50	22.42697	Y	1800-1900	348	74.07%	16.38%	0.02%	1.80%	0.64%	0.22%	0.43%	0.00%	0.03%	0.20%	0.53%	0.37%	0.81%	0.00%	0.00%	4.39%	0.11%	0.00%	100%
Road 78	78	-	50	22.84896	Y	1900-2000	308	70.10%	22.17%	0.02%	1.60%	0.57%	0.07%	0.14%	0.00%	0.03%	0.25%	0.53%	0.37%	0.81%	0.00%	0.00%	3.32%	0.04%	0.00%	100%
Road 78	78	-	50	23.43383	Y	2000-2100	251	68.11%	24.87%	0.01%	1.43%	0.51%	0.13%	0.26%	0.00%	0.01%	0.09%	0.47%	0.32%	0.71%	0.00%	0.00%	3.01%	0.07%	0.00%	100%
Road 78	78	-	50	23.56664	Y	2100-2200	239	61.07%	32.95%	0.01%	1.38%	0.50%	0.09%	0.18%	0.00%	0.01%	0.09%	0.36%	0.25%	0.55%	0.00%	0.00%	2.51%	0.05%	0.00%	100%
Road 78	78	-	50	23.64134	Y	2200-2300	235	56.85%	38.12%	0.01%	1.26%	0.45%	0.07%	0.14%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.88%	0.04%	0.00%	100%
Road 78	78	-	50	24.17362	Y	2300-0000	180	57.43%	36.01%	0.01%	1.39%	0.50%	0.11%	0.21%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.18%	0.06%	0.00%	100%
Road 79	79	-	50	26.06118	Y	0000-0100	76	57.02%	33.30%	0.03%	2.51%	0.90%	0.24%	0.47%	0.00%	0.12%	0.91%	0.30%	0.20%	0.45%	0.00%	0.00%	3.44%	0.12%	0.00%	100%
Road 79	79	-	50	27.29335	Y	0100-0200	52	57.52%	31.03%	0.03%	2.74%	0.98%	0.31%	0.60%	0.00%	0.17%	1.33%	0.43%	0.30%	0.66%	0.00%	0.00%	3.74%	0.16%	0.00%	100%
Road 79	79	-	50	27.9134	Y	0200-0300	40	58.10%	28.67%	0.03%	2.98%	1.07%	0.37%	0.74%	0.00%	0.23%	1.76%	0.57%	0.40%	0.87%	0.00%	0.00%	4.02%	0.19%	0.00%	100%
Road 79	79	-	50	28.42688	Y	0300-0400	30	58.59%	26.34%	0.03%	3.23%	1.16%	0.44%	0.87%	0.00%	0.28%	2.18%	0.71%	0.49%	1.09%	0.00%	0.00%	4.36%	0.23%	0.00%	100%
Road 79	79	-	50	28.50376	Y	0400-0500	28	59.18%	23.88%	0.04%	3.48%	1.25%	0.51%	1.00%	0.00%	0.34%	2.63%	0.86%	0.60%	1.31%	0.00%	0.00%	4.66%	0.26%	0.00%	100%
Road 79	79	-	50	27.87186	Y	0500-0600	39	59.77%	21.38%	0.04%	3.74%	1.34%	0.58%	1.14%	0.00%	0.39%	3.08%	1.01%	0.70%	1.54%	0.00%	0.00%	4.98%	0.30%	0.00%	100%
Road 79	79	-	50	24.79291	Y	0600-0700	110	60.45%	18.71%	0.04%	3.99%	1.43%	0.66%	1.30%	0.00%	0.46%	3.60%	1.17%	0.81%	1.78%	0.00%	0.00%	5.26%	0.34%	0.00%	100%
Road 79	79	-	50	23.79806	Y	0700-0800	199	61.09%	16.05%	0.04%	4.26%	1.53%	0.74%	1.45%	0.00%	0.52%	4.09%	1.33%	0.92%	2.02%	0.00%	0.00%	5.58%	0.38%	0.00%	100%
Road 79	79	-	50	23.65	Y	0800-0900	219	64.38%	19.69%	0.04%	3.62%	1.30%	0.56%	1.09%	0.00%	0.23%	1.83%	0.91%	0.63%	1.39%	0.00%	0.00%	4.05%	0.29%	0.00%	100%
Road 79	79	-	50	24.01291	Y	0900-1000	179	60.21%	19.51%	0.07%	6.53%	2.34%	1.19%	2.34%	0.00%	0.18%	1.42%	0.67%	0.46%	1.02%	0.00%	0.00%	3.45%	0.61%	0.00%	100%
Road 79	79	-	50	24.13388	Y	1000-1100	167	55.17%	25.14%	0.08%	7.50%	2.69%	1.44%	2.83%	0.00%	0.17%	1.32%	0.25%	0.18%	0.39%	0.00%	0.00%	2.09%	0.74%	0.00%	100%
Road 79	79	-	50	24.22682	Y	1100-1200	160	56.87%	23.83%	0.07%	6.51%	2.34%	1.45%	2.85%	0.00%	0.13%	1.02%	0.40%	0.27%	0.60%	0.00%	0.00%	2.92%	0.74%	0.00%	100%
Road 79	79	-	50	26.13353	Y	1200-1300	67	56.08%	19.45%	0.09%	8.28%	2.97%	1.78%	3.50%	0.00%	0.35%	2.75%	0.72%	0.50%	1.10%	0.00%	0.00%	1.51%	0.91%	0.00%	100%
Road 79	79	-	50	26.01996	Y	1300-1400	67	49.81%	20.58%	0.11%	10.05%	3.61%	1.82%	3.59%	0.00%	0.35%	2.76%	1.29%	0.89%	1.96%	0.00%	0.00%	2.23%	0.94%	0.00%	100%
Road 79	79	-	50	26.03921	Y	1400-1500	69	56.84%	17.62%	0.09%	8.42%	3.02%	1.86%	3.66%	0.00%	0.30%	2.31%	0.58%	0.40%	0.88%	0.00%	0.00%	3.08%	0.96%	0.00%	100%
Road 79	79	-	50	26.06444	Y	1500-1600	69	56.05%	20.16%	0.09%	8.71%	3.13%	1.98%	3.89%	0.00%	0.23%	1.81%	0.24%	0.16%	0.36%	0.00%	0.00%	2.17%	1.02%	0.00%	100%
Road 79	79	-	50	25.76562	Y	1600-1700	74	55.94%	19.33%	0.10%	9.16%	3.29%	1.39%	2.74%	0.00%	0.18%	1.39%	0.73%	0.51%	1.11%	0.00%	0.00%	3.41%	0.72%	0.00%	100%
Road 79	79	-	50	25.25	Y	1700-1800	88	65.26%	14.04%	0.06%	5.85%	2.10%	0.70%	1.38%	0.00%	0.15%	1.18%	0.76%	0.52%	1.15%	0.00%	0.00%	6.49%	0.36%	0.00%	100%
Road 79	79	-	50	25.27868	Y	1800-1900	90	70.80%	15.65%	0.04%	4.18%	1.50%	0.51%	1.00%	0.00%	0.02%	0.19%	0.51%	0.35%	0.78%	0.00%	0.00%	4.20%	0.26%	0.00%	100%
Road 79	79	-	50	25.9151	Y	1900-2000	78	67.72%	21.42%	0.04%	3.77%	1.35%	0.17%	0.33%	0.00%	0.03%	0.24%	0.51%	0.35%	0.78%	0.00%	0.00%	3.20%	0.09%	0.00%	100%
Road 79	79	-	50	26.66959	Y	2000-2100	64	65.83%	24.04%	0.04%	3.36%	1.21%	0.31%	0.60%	0.00%	0.01%	0.08%	0.45%	0.31%	0.69%	0.00%	0.00%	2.91%	0.16%	0.00%	100%
Road 79	79	-	50	26.85723	Y	2100-2200	61	59.19%	31.93%	0.03%	3.26%	1.17%	0.22%	0.42%	0.00%	0.01%	0.09%	0.35%	0.24%	0.53%	0.00%	0.00%	2.43%	0.11%	0.00%	100%
Road 79	79	-	50	26.96916	Y	2200-2300	59	55.29%	37.07%	0.03%	2.98%	1.07%	0.17%	0.32%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.80%	0.08%	0.00%	100%
Road 79	79	-	50	27.63622	Y	2300-0000	46	55.61%	34.87%	0.03%	3.28%	1.18%	0.26%	0.50%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.08%	0.13%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 80	80	-	50	24.83413	Y	0000-0100	114	57.51%	33.58%	0.02%	2.02%	0.73%	0.19%	0.38%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.00%	0.00%	3.47%	0.10%	0.00%	100%
Road 80	80	-	50	26.0011	Y	0100-0200	77	58.08%	31.33%	0.02%	2.21%	0.79%	0.25%	0.49%	0.00%	0.17%	1.34%	0.44%	0.30%	0.66%	0.00%	0.00%	3.78%	0.13%	0.00%	100%
Road 80	80	-	50	26.92255	Y	0200-0300	59	58.73%	28.98%	0.03%	2.41%	0.86%	0.30%	0.60%	0.00%	0.23%	1.78%	0.58%	0.40%	0.88%	0.00%	0.00%	4.07%	0.16%	0.00%	100%
Road 80	80	-	50	27.68384	Y	0300-0400	44	59.30%	26.66%	0.03%	2.61%	0.94%	0.36%	0.70%	0.00%	0.28%	2.21%	0.72%	0.50%	1.10%	0.00%	0.00%	4.41%	0.18%	0.00%	100%
Road 80	80	-	50	27.80091	Y	0400-0500	41	59.97%	24.20%	0.03%	2.82%	1.01%	0.41%	0.81%	0.00%	0.34%	2.67%	0.87%	0.60%	1.33%	0.00%	0.00%	4.72%	0.21%	0.00%	100%
Road 80	80	-	50	26.87768	Y	0500-0600	58	60.64%	21.69%	0.03%	3.03%	1.09%	0.47%	0.93%	0.00%	0.40%	3.13%	1.02%	0.71%	1.56%	0.00%	0.00%	5.05%	0.24%	0.00%	100%
Road 80	80	-	50	24.23219	Y	0600-0700	163	61.41%	19.00%	0.03%	3.24%	1.16%	0.54%	1.06%	0.00%	0.47%	3.65%	1.19%	0.82%	1.81%	0.00%	0.00%	5.34%	0.28%	0.00%	100%
Road 80	80	-	50	22.78097	Y	0700-0800	293	62.13%	16.33%	0.04%	3.47%	1.24%	0.60%	1.18%	0.00%	0.53%	4.16%	1.35%	0.94%	2.05%	0.00%	0.00%	5.68%	0.31%	0.00%	100%
Road 80	80	-	50	22.55	Y	0800-0900	323	65.28%	19.96%	0.03%	2.93%	1.05%	0.45%	0.89%	0.00%	0.24%	1.85%	0.93%	0.64%	1.41%	0.00%	0.00%	4.10%	0.23%	0.00%	100%
Road 80	80	-	50	23.13752	Y	0900-1000	261	61.83%	20.03%	0.06%	5.36%	1.93%	0.98%	1.92%	0.00%	0.19%	1.46%	0.69%	0.48%	1.04%	0.00%	0.00%	3.54%	0.50%	0.00%	100%
Road 80	80	-	50	23.3303	Y	1000-1100	243	56.91%	25.93%	0.06%	6.19%	2.22%	1.19%	2.34%	0.00%	0.17%	1.37%	0.26%	0.18%	0.40%	0.00%	0.00%	2.16%	0.61%	0.00%	100%
Road 80	80	-	50	23.4544	Y	1100-1200	233	58.50%	24.52%	0.06%	5.36%	1.92%	1.19%	2.34%	0.00%	0.13%	1.04%	0.41%	0.28%	0.62%	0.00%	0.00%	3.01%	0.61%	0.00%	100%
Road 80	80	-	50	24.76567	Y	1200-1300	109	58.22%	20.19%	0.07%	6.79%	2.44%	1.46%	2.87%	0.00%	0.37%	2.85%	0.75%	0.52%	1.14%	0.00%	0.00%	1.57%	0.75%	0.00%	100%
Road 80	80	-	50	24.73697	Y	1300-1400	108	52.01%	21.49%	0.09%	8.29%	2.98%	1.51%	2.96%	0.00%	0.37%	2.88%	1.34%	0.93%	2.05%	0.00%	0.00%	2.33%	0.77%	0.00%	100%
Road 80	80	-	50	24.73813	Y	1400-1500	112	59.07%	18.31%	0.07%	6.91%	2.48%	1.53%	3.01%	0.00%	0.31%	2.40%	0.60%	0.41%	0.91%	0.00%	0.00%	3.20%	0.79%	0.00%	100%
Road 80	80	-	50	24.75002	Y	1500-1600	111	58.36%	20.99%	0.07%	7.17%	2.57%	1.63%	3.20%	0.00%	0.24%	1.88%	0.25%	0.17%	0.38%	0.00%	0.00%	2.26%	0.84%	0.00%	100%
Road 80	80	-	50	24.64701	Y	1600-1700	121	58.06%	20.07%	0.08%	7.51%	2.70%	1.14%	2.25%	0.00%	0.19%	1.44%	0.76%	0.53%	1.16%	0.00%	0.00%	3.54%	0.59%	0.00%	100%
Road 80	80	-	50	24.45	Y	1700-1800	145	66.72%	14.36%	0.05%	4.72%	1.70%	0.57%	1.11%	0.00%	0.15%	1.21%	0.77%	0.54%	1.18%	0.00%	0.00%	6.63%	0.29%	0.00%	100%
Road 80	80	-	50	24.44544	Y	1800-1900	149	71.93%	15.90%	0.04%	3.36%	1.21%	0.41%	0.80%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.26%	0.21%	0.00%	100%
Road 80	80	-	50	24.64617	Y	1900-2000	131	68.55%	21.68%	0.03%	3.01%	1.08%	0.13%	0.26%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 80	80	-	50	24.89665	Y	2000-2100	107	66.62%	24.33%	0.03%	2.69%	0.97%	0.25%	0.48%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.13%	0.00%	100%
Road 80	80	-	50	24.95707	Y	2100-2200	101	59.85%	32.29%	0.03%	2.61%	0.94%	0.17%	0.34%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.46%	0.09%	0.00%	100%
Road 80	80	-	50	24.99245	Y	2200-2300	99	55.83%	37.44%	0.02%	2.37%	0.85%	0.13%	0.26%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.07%	0.00%	100%
Road 80	80	-	50	26.08075	Y	2300-0000	76	56.24%	35.27%	0.03%	2.62%	0.94%	0.20%	0.40%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.10%	0.00%	100%
Road 81	81	-	50	26.49879	Y	0000-0100	68	56.69%	33.11%	0.03%	2.83%	1.02%	0.27%	0.53%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.00%	0.00%	3.42%	0.14%	0.00%	100%
Road 81	81	-	50	27.59134	Y	0100-0200	46	57.15%	30.83%	0.03%	3.09%	1.11%	0.35%	0.68%	0.00%	0.17%	1.32%	0.43%	0.30%	0.65%	0.00%	0.00%	3.72%	0.18%	0.00%	100%
Road 81	81	-	50	28.14099	Y	0200-0300	35	57.68%	28.46%	0.04%	3.36%	1.21%	0.42%	0.83%	0.00%	0.22%	1.75%	0.57%	0.39%	0.87%	0.00%	0.00%	4.00%	0.22%	0.00%	100%
Road 81	81	-	50	28.59688	Y	0300-0400	26	58.13%	26.13%	0.04%	3.63%	1.30%	0.50%	0.97%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.00%	0.00%	4.32%	0.25%	0.00%	100%
Road 81	81	-	50	28.66392	Y	0400-0500	25	58.66%	23.67%	0.04%	3.91%	1.41%	0.57%	1.13%	0.00%	0.33%	2.61%	0.85%	0.59%	1.30%	0.00%	0.00%	4.62%	0.30%	0.00%	100%
Road 81	81	-	50	28.09748	Y	0500-0600	35	59.20%	21.18%	0.04%	4.20%	1.51%	0.65%	1.29%	0.00%	0.39%	3.05%	1.00%	0.69%	1.52%	0.00%	0.00%	4.93%	0.34%	0.00%	100%
Road 81	81	-	50	24.91961	Y	0600-0700	98	59.83%	18.51%	0.05%	4.48%	1.61%	0.74%	1.46%	0.00%	0.46%	3.56%	1.16%	0.80%	1.76%	0.00%	0.00%	5.20%	0.38%	0.00%	100%
Road 81	81	-	50	24.02691	Y	0700-0800	177	60.40%	15.87%	0.05%	4.78%	1.72%	0.83%	1.63%	0.00%	0.52%	4.04%	1.31%	0.91%	2.00%	0.00%	0.00%	5.52%	0.43%	0.00%	100%
Road 81	81	-	50	23.9	Y	0800-0900	194	63.78%	19.50%	0.04%	4.07%	1.46%	0.63%	1.23%	0.00%	0.23%	1.81%	0.91%	0.63%	1.38%	0.00%	0.00%	4.01%	0.32%	0.00%	100%
Road 81	81	-	50	24.20257	Y	0900-1000	160	59.16%	19.17%	0.08%	7.28%	2.61%	1.33%	2.61%	0.00%	0.18%	1.40%	0.66%	0.46%	1.00%	0.00%	0.00%	3.39%	0.68%	0.00%	100%
Road 81	81	-	50	24.30466	Y	1000-1100	150	54.06%	24.63%	0.09%	8.34%	2.99%	1.60%	3.15%	0.00%	0.17%	1.30%	0.25%	0.17%	0.38%	0.00%	0.00%	2.05%	0.82%	0.00%	100%
Road 81	81	-	50	24.3926	Y	1100-1200	143	55.81%	23.39%	0.08%	7.26%	2.61%	1.61%	3.17%	0.00%	0.13%	1.00%	0.39%	0.27%	0.59%	0.00%	0.00%	2.87%	0.83%	0.00%	100%
Road 81	81	-	50	26.85095	Y	1200-1300	53	52.98%	18.38%	0.11%	10.43%	3.75%	2.24%	4.41%	0.00%	0.33%	2.60%	0.68%	0.47%	1.04%	0.00%	0.00%	1.43%	1.15%	0.00%	100%
Road 81	81	-	50	26.73182	Y	1300-1400	54	46.68%	19.29%	0.13%	12.56%	4.51%	2.28%	4.48%	0.00%	0.33%	2.59%	1.21%	0.84%	1.84%	0.00%	0.00%	2.09%	1.17%	0.00%	100%
Road 81	81	-	50	26.76508	Y	1400-1500	55	53.62%	16.62%	0.11%	10.59%	3.80%	2.34%	4.60%	0.00%	0.28%	2.18%	0.54%	0.38%	0.83%	0.00%	0.00%	2.90%	1.20%	0.00%	100%
Road 81	81	-	50	26.77209	Y	1500-1600	55	52.75%	18.97%	0.11%	10.93%	3.92%	2.48%	4.88%	0.00%	0.22%	1.70%	0.22%	0.16%	0.34%	0.00%	0.00%	2.04%	1.28%	0.00%	100%
Road 81	81	-	50	26.55557	Y	1600-1700	59	52.87%	18.27%	0.12%	11.54%	4.14%	1.76%	3.45%	0.00%	0.17%	1.32%	0.69%	0.48%	1.05%	0.00%	0.00%	3.23%	0.90%	0.00%	100%
Road 81	81	-	50	26.25	Y	1700-1800	68	63.06%	13.57%	0.08%	7.53%	2.71%	0.90%	1.78%	0.00%	0.15%	1.14%	0.73%	0.51%	1.11%	0.00%	0.00%	6.27%	0.46%	0.00%	100%
Road 81	81	-	50	26.32177	Y	1800-1900	69	69.07%	15.27%	0.06%	5.44%	1.95%	0.66%	1.30%	0.00%	0.02%	0.19%	0.50%	0.34%	0.76%	0.00%	0.00%	4.10%	0.34%	0.00%	100%
Road 81	81	-	50	26.8487	Y	1900-2000	60	66.45%	21.02%	0.05%	4.93%	1.77%	0.22%	0.43%	0.00%	0.03%	0.24%	0.50%	0.35%	0.76%	0.00%	0.00%	3.14%	0.11%	0.00%	100%
Road 81	81	-	50	27.42926	Y	2000-2100	49	64.60%	23.59%	0.05%	4.40%	1.58%	0.40%	0.79%	0.00%	0.01%	0.08%	0.44%	0.31%	0.67%	0.00%	0.00%	2.86%	0.21%	0.00%	100%
Road 81	81	-	50	27.58024	Y	2100-2200	46	58.18%	31.39%	0.04%	4.28%	1.54%	0.28%	0.56%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.00%	2.39%	0.15%	0.00%	100%
Road 81	81	-	50	27.67267	Y	2200-2300	45	54.45%	36.50%	0.04%	3.91%	1.40%	0.22%	0.43%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.76%	0.11%	0.00%	100%
Road 81	81	-	50	28.17803	Y	2300-0000	35	54.63%	34.25%	0.04%	4.30%	1.54%	0.33%	0.66%	0.00%	0.06%	0.48%	0.16%	0.11%	0.24%	0.00%	0.00%	3.03%	0.17%	0.00%	100%
Road 82	82	-	50	24.83413	Y	0000-0100	114	57.51%	33.58%	0.02%	2.02%	0.73%	0.19%	0.38%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.00%	0.00%	3.47%	0.10%	0.00%	100%
Road 82	82	-	50	26.0011	Y	0100-0200	77	58.08%	31.33%	0.02%	2.21%	0.79%	0.25%	0.49%	0.00%	0.17%	1.34%	0.44%	0.30%	0.66%	0.00%	0.00%	3.78%	0.13%	0.00%	100%
Road 82	82	-	50	26.92255	Y	0200-0300	59	58.73%	28.98%	0.03%	2.41%	0.86%	0.30%	0.60%	0.00%	0.23%	1.78%	0.58%	0.40%	0.88%	0.00%	0.00%	4.07%	0.16%	0.00%	100%
Road 82	82	-	50	27.68384	Y	0300-0400	44	59.30%	26.66%	0.03%	2.61%	0.94%	0.36%	0.70%	0.00%	0.28%	2.21%	0.72%	0.50%	1.10%	0.00%	0.00%	4.41%	0.18%	0.00%	100%
Road 82	82	-	50	27.80091	Y	0400-0500	41	59.97%	24.20%	0.03%	2.82%	1.01%	0.41%	0.81%	0.00%	0.34%	2.67%	0.87%	0.60%	1.33%	0.00%	0.00%	4.72%	0.21%	0.00%	100%
Road 82	82	-	50	26.87768	Y	0500-0600	58	60.64%	21.69%	0.03%	3.03%	1.09%	0.47%	0.93%	0.00%	0.40%	3.13%	1.02%	0.71%	1.56%	0.00%	0.00%	5.05%	0.24%	0.00%	100%
Road 82	82	-	50	24.23219	Y	0600-0700	163	61.41%	19.00%	0.03%	3.24%	1.16%	0.54%	1.06%	0.00%	0.47%	3.65%	1.19%	0.82%	1.81%	0.00%	0.00%	5.34%	0.28%	0.00%	100%
Road 82	82	-	50	22.78097	Y	0700-0800	293	62.13%	16.33%	0.04%	3.47%	1.24%	0.60%	1.18%	0.00%	0.53%	4.16%	1.35%	0.94%	2.05%	0.00%	0.00%	5.68%	0.31%	0.00%	100%
Road 82	82	-	50	22.55	Y	0800-0900	323	65.28%	19.96%	0.03%	2.93%	1.05%	0.45%	0.89%	0.00%	0.24%	1.85%	0.93%	0.64%	1.41%	0.00%	0.00%	4.10%	0.23%	0.00%	100%
Road 82	82	-	50	23.13752	Y	0900-1000	261	61.83%	20.03%	0.06%	5.36%	1.93%	0.98%	1.92%	0.00%	0.19%	1.46%	0.69%	0.48%	1.04%	0.00%	0.00%	3.54%	0.50%	0.00%	100%
Road 82	82	-	50	23.3303	Y	1000-1100	243	56.91%	25.93%	0.06%	6.19%	2.22%	1.19%	2.34%	0.00%	0.17%	1.37%	0.26%	0.18%	0.40%	0.00%	0.00%	2.16%	0.61%	0.00%	100%
Road 82	82	-	50	23.4544	Y	1100-1200	233	58.50%	24.52%	0.06%	5.36%	1.92%	1.19%	2.34%	0.00%	0.13%	1.04%	0.41%	0.28%	0.62%	0.00%	0.00%	3.01%	0.61%	0.00%	100%
Road 82	82	-	50	24.76567	Y	1200-1300	109	58.22%	20.19%	0.07%	6.79%	2.44%	1.46%	2.87%	0.00%	0.37%	2.85%	0.75%	0.52%	1.14%	0.00%	0.00%	1.57%	0.75%	0.00%	100%
Road 82	82	-	50	24.73697	Y	1300-1400	108	52.01%	21.49%	0.09%	8.29%	2.98%	1.51%	2.96%	0.00%	0.37%	2.88%	1.34%	0.93%	2.05%	0.00%	0.00%	2.33%	0.77%	0.00%	100%
Road 82	82	-	50	24.73813	Y	1400-1500	112	59.07%	18.31%	0.07%	6.91%	2.48%	1.53%	3.01%	0.00%	0.31%	2.40%	0.60%	0.41%	0.91%	0.00%	0.00%	3.20%	0.79%	0.00%	100%
Road 82	82	-	50	24.75002	Y	1500-1600	111	58.36%	20.99%	0.07%	7.17%	2.57%	1.63%	3.20%	0.00%	0.24%	1.88%	0.25%	0.17%	0.38%	0.00%	0.00%	2.26%	0.84%	0.00%	100%
Road 82	82	-	50	24.64701	Y	1600-1700	121	58.06%	20.07%	0.08%	7.51%	2.70%	1.14%	2.25%	0.00%	0.19%	1.44%	0.76%	0.53%	1.16%	0.00%	0.00%	3.54%	0.59%	0.00%	100%
Road 82	82	-	50	24.45	Y	1700-1800	145	66.72%	14.36%	0.05%	4.72%	1.70%	0.57%	1.11%	0.00%	0.15%	1.21%	0.77%	0.54%	1.18%	0.00%	0.00%	6.63%	0.29%	0.00%	100%
Road 82	82	-	50	24.44544	Y	1800-1900	149	71.93%	15.90%	0.04%	3.36%	1.21%	0.41%	0.80%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.26%	0.21%	0.00%	100%
Road 82	82	-	50	24.64617	Y	1900-2000	131	68.55%	21.68%	0.03%	3.01%	1.08%	0.13%	0.26%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 82	82	-	50	24.89665	Y	2000-2100	107	66.62%	24.33%	0.03%	2.69%	0.97%	0.25%	0.48%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.13%	0.00%	100%
Road 82	82	-	50	24.95707	Y	2100-2200	101	59.85%	32.29%	0.03%	2.61%	0.94%	0.17%	0.34%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.46%	0.09%	0.00%	100%
Road 82	82	-	50	24.99245	Y	2200-2300	99	55.83%	37.44%	0.02%	2.37%	0.85%	0.13%	0.26%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.07%	0.00%	100%
Road 82	82	-	50	26.08075	Y	2300-0000	76	56.24%	35.27%	0.03%	2.62%	0.94%	0.20%	0.40%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 83	83	-	50	26.49879	Y	0000-0100	68	56.69%	33.11%	0.03%	2.83%	1.02%	0.27%	0.53%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.00%	0.00%	3.42%	0.14%	0.00%	100%
Road 83	83	-	50	27.59134	Y	0100-0200	46	57.15%	30.83%	0.03%	3.09%	1.11%	0.35%	0.68%	0.00%	0.17%	1.32%	0.43%	0.30%	0.65%	0.00%	0.00%	3.72%	0.18%	0.00%	100%
Road 83	83	-	50	28.14099	Y	0200-0300	35	57.68%	28.46%	0.04%	3.36%	1.21%	0.42%	0.83%	0.00%	0.22%	1.75%	0.57%	0.39%	0.87%	0.00%	0.00%	4.00%	0.22%	0.00%	100%
Road 83	83	-	50	28.59688	Y	0300-0400	26	58.13%	26.13%	0.04%	3.63%	1.30%	0.50%	0.97%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.00%	0.00%	4.32%	0.25%	0.00%	100%
Road 83	83	-	50	28.66392	Y	0400-0500	25	58.66%	23.67%	0.04%	3.91%	1.41%	0.57%	1.13%	0.00%	0.33%	2.61%	0.85%	0.59%	1.30%	0.00%	0.00%	4.62%	0.30%	0.00%	100%
Road 83	83	-	50	28.09748	Y	0500-0600	35	59.20%	21.18%	0.04%	4.20%	1.51%	0.65%	1.29%	0.00%	0.39%	3.05%	1.00%	0.69%	1.52%	0.00%	0.00%	4.93%	0.34%	0.00%	100%
Road 83	83	-	50	24.91961	Y	0600-0700	98	59.83%	18.51%	0.05%	4.48%	1.61%	0.74%	1.46%	0.00%	0.46%	3.56%	1.16%	0.80%	1.76%	0.00%	0.00%	5.20%	0.38%	0.00%	100%
Road 83	83	-	50	24.02691	Y	0700-0800	177	60.40%	15.87%	0.05%	4.78%	1.72%	0.83%	1.63%	0.00%	0.52%	4.04%	1.31%	0.91%	2.00%	0.00%	0.00%	5.52%	0.43%	0.00%	100%
Road 83	83	-	50	23.9	Y	0800-0900	194	63.78%	19.50%	0.04%	4.07%	1.46%	0.63%	1.23%	0.00%	0.23%	1.81%	0.91%	0.63%	1.38%	0.00%	0.00%	4.01%	0.32%	0.00%	100%
Road 83	83	-	50	24.20257	Y	0900-1000	160	59.16%	19.17%	0.08%	7.28%	2.61%	1.33%	2.61%	0.00%	0.18%	1.40%	0.66%	0.46%	1.00%	0.00%	0.00%	3.39%	0.68%	0.00%	100%
Road 83	83	-	50	24.30466	Y	1000-1100	150	54.06%	24.63%	0.09%	8.34%	2.99%	1.60%	3.15%	0.00%	0.17%	1.30%	0.25%	0.17%	0.38%	0.00%	0.00%	2.05%	0.82%	0.00%	100%
Road 83	83	-	50	24.3926	Y	1100-1200	143	55.81%	23.39%	0.08%	7.26%	2.61%	1.61%	3.17%	0.00%	0.13%	1.00%	0.39%	0.27%	0.59%	0.00%	0.00%	2.87%	0.83%	0.00%	100%
Road 83	83	-	50	26.85095	Y	1200-1300	53	52.98%	18.38%	0.11%	10.43%	3.75%	2.24%	4.41%	0.00%	0.33%	2.60%	0.68%	0.47%	1.04%	0.00%	0.00%	1.43%	1.15%	0.00%	100%
Road 83	83	-	50	26.73182	Y	1300-1400	54	46.68%	19.29%	0.13%	12.56%	4.51%	2.28%	4.48%	0.00%	0.33%	2.59%	1.21%	0.84%	1.84%	0.00%	0.00%	2.09%	1.17%	0.00%	100%
Road 83	83	-	50	26.76508	Y	1400-1500	55	53.62%	16.62%	0.11%	10.59%	3.80%	2.34%	4.60%	0.00%	0.28%	2.18%	0.54%	0.38%	0.83%	0.00%	0.00%	2.90%	1.20%	0.00%	100%
Road 83	83	-	50	26.77209	Y	1500-1600	55	52.75%	18.97%	0.11%	10.93%	3.92%	2.48%	4.88%	0.00%	0.22%	1.70%	0.22%	0.16%	0.34%	0.00%	0.00%	2.04%	1.28%	0.00%	100%
Road 83	83	-	50	26.55557	Y	1600-1700	59	52.87%	18.27%	0.12%	11.54%	4.14%	1.76%	3.45%	0.00%	0.17%	1.32%	0.69%	0.48%	1.05%	0.00%	0.00%	3.23%	0.90%	0.00%	100%
Road 83	83	-	50	26.25	Y	1700-1800	68	63.06%	13.57%	0.08%	7.53%	2.71%	0.90%	1.78%	0.00%	0.15%	1.14%	0.73%	0.51%	1.11%	0.00%	0.00%	6.27%	0.46%	0.00%	100%
Road 83	83	-	50	26.32177	Y	1800-1900	69	69.07%	15.27%	0.06%	5.44%	1.95%	0.66%	1.30%	0.00%	0.02%	0.19%	0.50%	0.34%	0.76%	0.00%	0.00%	4.10%	0.34%	0.00%	100%
Road 83	83	-	50	26.8487	Y	1900-2000	60	66.45%	21.02%	0.05%	4.93%	1.77%	0.22%	0.43%	0.00%	0.03%	0.24%	0.50%	0.35%	0.76%	0.00%	0.00%	3.14%	0.11%	0.00%	100%
Road 83	83	-	50	27.42926	Y	2000-2100	49	64.60%	23.59%	0.05%	4.40%	1.58%	0.40%	0.79%	0.00%	0.01%	0.08%	0.44%	0.31%	0.67%	0.00%	0.00%	2.86%	0.21%	0.00%	100%
Road 83	83	-	50	27.58024	Y	2100-2200	46	58.18%	31.39%	0.04%	4.28%	1.54%	0.28%	0.56%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.00%	2.39%	0.15%	0.00%	100%
Road 83	83	-	50	27.67267	Y	2200-2300	45	54.45%	36.50%	0.04%	3.91%	1.40%	0.22%	0.43%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.76%	0.11%	0.00%	100%
Road 83	83	-	50	28.17803	Y	2300-0000	35	54.63%	34.25%	0.04%	4.30%	1.54%	0.33%	0.66%	0.00%	0.06%	0.48%	0.16%	0.11%	0.24%	0.00%	0.00%	3.03%	0.17%	0.00%	100%
Road 84	84	-	50	24.74661	Y	0000-0100	122	57.65%	33.67%	0.02%	1.88%	0.67%	0.18%	0.36%	0.00%	0.12%	0.92%	0.30%	0.21%	0.45%	0.00%	0.00%	3.48%	0.09%	0.00%	100%
Road 84	84	-	50	25.70312	Y	0100-0200	83	58.25%	31.42%	0.02%	2.06%	0.74%	0.23%	0.45%	0.00%	0.17%	1.34%	0.44%	0.30%	0.67%	0.00%	0.00%	3.79%	0.12%	0.00%	100%
Road 84	84	-	50	26.69496	Y	0200-0300	63	58.92%	29.07%	0.02%	2.24%	0.80%	0.28%	0.55%	0.00%	0.23%	1.79%	0.58%	0.40%	0.88%	0.00%	0.00%	4.08%	0.14%	0.00%	100%
Road 84	84	-	50	27.51384	Y	0300-0400	47	59.51%	26.75%	0.03%	2.43%	0.87%	0.33%	0.65%	0.00%	0.28%	2.22%	0.72%	0.50%	1.10%	0.00%	0.00%	4.42%	0.17%	0.00%	100%
Road 84	84	-	50	27.64075	Y	0400-0500	44	60.20%	24.29%	0.03%	2.62%	0.94%	0.38%	0.76%	0.00%	0.34%	2.68%	0.87%	0.61%	1.33%	0.00%	0.00%	4.74%	0.20%	0.00%	100%
Road 84	84	-	50	26.65207	Y	0500-0600	62	60.90%	21.78%	0.03%	2.82%	1.01%	0.44%	0.86%	0.00%	0.40%	3.14%	1.03%	0.71%	1.56%	0.00%	0.00%	5.07%	0.23%	0.00%	100%
Road 84	84	-	50	24.10548	Y	0600-0700	175	61.69%	19.09%	0.03%	3.02%	1.08%	0.50%	0.98%	0.00%	0.47%	3.67%	1.19%	0.83%	1.81%	0.00%	0.00%	5.37%	0.26%	0.00%	100%
Road 84	84	-	50	22.55211	Y	0700-0800	315	62.44%	16.41%	0.03%	3.23%	1.16%	0.56%	1.10%	0.00%	0.54%	4.18%	1.36%	0.94%	2.06%	0.00%	0.00%	5.71%	0.29%	0.00%	100%
Road 84	84	-	50	22.3	Y	0800-0900	348	65.55%	20.04%	0.03%	2.73%	0.98%	0.42%	0.82%	0.00%	0.24%	1.86%	0.93%	0.65%	1.42%	0.00%	0.00%	4.12%	0.22%	0.00%	100%
Road 84	84	-	50	22.94785	Y	0900-1000	280	62.32%	20.19%	0.05%	5.01%	1.80%	0.91%	1.80%	0.00%	0.19%	1.47%	0.69%	0.48%	1.05%	0.00%	0.00%	3.57%	0.47%	0.00%	100%
Road 84	84	-	50	23.15952	Y	1000-1100	260	57.44%	26.17%	0.06%	5.79%	2.08%	1.11%	2.19%	0.00%	0.18%	1.38%	0.27%	0.18%	0.40%	0.00%	0.00%	2.18%	0.57%	0.00%	100%
Road 84	84	-	50	23.28861	Y	1100-1200	249	59.00%	24.73%	0.05%	5.01%	1.80%	1.11%	2.19%	0.00%	0.13%	1.05%	0.41%	0.29%	0.63%	0.00%	0.00%	3.03%	0.57%	0.00%	100%
Road 84	84	-	50	24.68864	Y	1200-1300	118	61.28%	21.25%	0.05%	4.67%	1.68%	1.00%	1.97%	0.00%	0.38%	3.00%	0.79%	0.55%	1.20%	0.00%	0.00%	1.65%	0.52%	0.00%	100%
Road 84	84	-	50	24.6701	Y	1300-1400	117	55.18%	22.80%	0.06%	5.75%	2.06%	1.04%	2.05%	0.00%	0.39%	3.06%	1.43%	0.99%	2.17%	0.00%	0.00%	2.48%	0.54%	0.00%	100%
Road 84	84	-	50	24.66344	Y	1400-1500	122	62.26%	19.30%	0.05%	4.76%	1.71%	1.05%	2.07%	0.00%	0.32%	2.53%	0.63%	0.44%	0.96%	0.00%	0.00%	3.37%	0.54%	0.00%	100%
Road 84	84	-	50	24.68216	Y	1500-1600	121	61.67%	22.18%	0.05%	4.95%	1.78%	1.12%	2.21%	0.00%	0.25%	1.99%	0.26%	0.18%	0.40%	0.00%	0.00%	2.39%	0.58%	0.00%	100%
Road 84	84	-	50	24.56066	Y	1600-1700	132	61.08%	21.11%	0.05%	5.16%	1.85%	0.79%	1.54%	0.00%	0.19%	1.52%	0.80%	0.55%	1.22%	0.00%	0.00%	3.73%	0.40%	0.00%	100%
Road 84	84	-	50	24.3	Y	1700-1800	162	68.73%	14.79%	0.03%	3.18%	1.14%	0.38%	0.75%	0.00%	0.16%	1.24%	0.80%	0.55%	1.21%	0.00%	0.00%	6.83%	0.20%	0.00%	100%
Road 84	84	-	50	24.27342	Y	1800-1900	167	73.46%	16.24%	0.02%	2.24%	0.80%	0.27%	0.54%	0.00%	0.03%	0.20%	0.53%	0.37%	0.80%	0.00%	0.00%	4.36%	0.14%	0.00%	100%
Road 84	84	-	50	24.48282	Y	1900-2000	148	69.66%	22.03%	0.02%	2.00%	0.72%	0.09%	0.17%	0.00%	0.03%	0.25%	0.53%	0.36%	0.80%	0.00%	0.00%	3.30%	0.05%	0.00%	100%
Road 84	84	-	50	24.76416	Y	2000-2100	120	67.68%	24.72%	0.02%	1.79%	0.64%	0.16%	0.32%	0.00%	0.01%	0.08%	0.46%	0.32%	0.71%	0.00%	0.00%	2.99%	0.08%	0.00%	100%
Road 84	84	-	50	24.82919	Y	2100-2200	115	60.73%	32.76%	0.02%	1.73%	0.62%	0.11%	0.22%	0.00%	0.01%	0.09%	0.36%	0.25%	0.54%	0.00%	0.00%	2.50%	0.06%	0.00%	100%
Road 84	84	-	50	24.86621	Y	2200-2300	112	56.56%	37.92%	0.02%	1.57%	0.56%	0.09%	0.17%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.86%	0.04%	0.00%	100%
Road 84	84	-	50	25.60447	Y	2300-0000	86	57.10%	35.80%	0.02%	1.74%	0.62%	0.14%	0.27%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.16%	0.07%	0.00%	100%
Road 85	85	-	50	24.49456	Y	0000-0100	148	58.24%	34.01%	0.01%	1.30%	0.47%	0.12%	0.24%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 85	85	-	50	24.96998	Y	0100-0200	100	58.93%	31.79%	0.01%	1.42%	0.51%	0.16%	0.31%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.83%	0.08%	0.00%	100%
Road 85	85	-	50	26.04716	Y	0200-0300	76	59.68%	29.45%	0.02%	1.55%	0.56%	0.19%	0.38%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.13%	0.10%	0.00%	100%
Road 85	85	-	50	27.03284	Y	0300-0400	57	60.37%	27.14%	0.02%	1.68%	0.60%	0.23%	0.45%	0.00%	0.29%	2.25%	0.73%	0.51%	1.12%	0.00%	0.00%	4.49%	0.12%	0.00%	100%
Road 85	85	-	50	27.19044	Y	0400-0500	53	61.16%	24.68%	0.02%	1.82%	0.65%	0.27%	0.52%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.14%	0.00%	100%
Road 85	85	-	50	26.02181	Y	0500-0600	75	61.96%	22.16%	0.02%	1.96%	0.70%	0.30%	0.60%	0.00%	0.41%	3.19%	1.05%	0.73%	1.59%	0.00%	0.00%	5.16%	0.16%	0.00%	100%
Road 85	85	-	50	23.75391	Y	0600-0700	209	62.87%	19.45%	0.02%	2.10%	0.75%	0.35%	0.68%	0.00%	0.48%	3.74%	1.21%	0.84%	1.85%	0.00%	0.00%	5.47%	0.18%	0.00%	100%
Road 85	85	-	50	21.92148	Y	0700-0800	376	63.73%	16.75%	0.02%	2.25%	0.81%	0.39%	0.77%	0.00%	0.55%	4.26%	1.38%	0.96%	2.11%	0.00%	0.00%	5.82%	0.20%	0.00%	100%
Road 85	85	-	50	21.6	Y	0800-0900	417	66.64%	20.38%	0.02%	1.89%	0.68%	0.29%	0.57%	0.00%	0.24%	1.89%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.15%	0.00%	100%
Road 85	85	-	50	22.45762	Y	0900-1000	331	64.37%	20.86%	0.04%	3.53%	1.27%	0.64%	1.27%	0.00%	0.20%	1.52%	0.71%	0.50%	1.09%	0.00%	0.00%	3.68%	0.33%	0.00%	100%
Road 85	85	-	50	22.73352	Y	1000-1100	306	59.68%	27.19%	0.04%	4.10%	1.47%	0.79%	1.55%	0.00%	0.18%	1.43%	0.28%	0.19%	0.42%	0.00%	0.00%	2.27%	0.41%	0.00%	100%
Road 85	85	-	50	22.86738	Y	1100-1200	294	61.08%	25.60%	0.04%	3.54%	1.27%	0.79%	1.55%	0.00%	0.14%	1.09%	0.43%	0.30%	0.65%	0.00%	0.00%	3.14%	0.40%	0.00%	100%
Road 85	85	-	50	27.56837	Y	1200-1300	39	47.71%	16.55%	0.15%	14.09%	5.06%	3.03%	5.95%	0.00%	0.30%	2.34%	0.61%	0.43%	0.94%	0.00%	0.00%	1.29%	1.56%	0.00%	100%
Road 85	85	-	50	27.44367	Y	1300-1400	40	41.47%	17.13%	0.17%	16.74%	6.01%	3.04%	5.97%	0.00%	0.29%	2.30%	1.07%	0.74%	1.63%	0.00%	0.00%	1.86%	1.56%	0.00%	100%
Road 85	85	-	50	27.49096	Y	1400-1500	41	48.17%	14.93%	0.15%	14.27%	5.12%	3.16%	6.20%	0.00%	0.25%	1.96%	0.49%	0.34%	0.74%	0.00%	0.00%	2.61%	1.62%	0.00%	100%
Road 85	85	-	50	27.47973	Y	1500-1600	41	47.18%	16.96%	0.15%	14.66%	5.27%	3.33%	6.55%	0.00%	0.19%	1.52%	0.20%	0.14%	0.30%	0.00%	0.00%	1.83%	1.71%	0.00%	100%
Road 85	85	-	50	27.34552	Y	1600-1700	44	47.65%	16.47%	0.16%	15.60%	5.60%	2.38%	4.67%	0.00%	0.15%	1.19%	0.62%	0.43%	0.95%	0.00%	0.00%	2.91%	1.22%	0.00%	100%
Road 85	85	-	50	27.25	Y	1700-1800	49	59.09%	12.71%	0.11%	10.59%	3.80%	1.27%	2.50%	0.00%	0.14%	1.07%	0.69%	0.48%	1.04%	0.00%	0.00%	5.87%	0.65%	0.00%	100%
Road 85	85	-	50	27.36486	Y	1800-1900	48	65.86%	14.56%	0.08%	7.78%	2.79%	0.95%	1.86%	0.00%	0.02%	0.18%	0.47%	0.33%	0.72%	0.00%	0.00%	3.90%	0.49%	0.00%	100%
Road 85	85	-	50	27.7823	Y	1900-2000	41	64.05%	20.26%	0.07%	7.13%	2.56%	0.31%	0.62%	0.00%	0.03%	0.23%	0.48%	0.34%	0.74%	0.00%	0.00%	3.03%	0.16%	0.00%	100%
Road 85	85	-	50	28.18894	Y	2000-2100	34	62.29%	22.75%	0.07%	6.37%	2.29%	0.58%	1.14%	0.00%	0.01%	0.08%	0.43%	0.30%	0.65%	0.00%	0.00%	2.76%	0.30%	0.00%	100%
Road 85	85	-	50	28.30325	Y	2100-2200	32	56.25%	30.35%	0.06%	6.21%	2.23%	0.41%	0.81%	0.00%	0.01%	0.08%	0.33%	0.23%	0.50%	0.00%	0.00%	2.31%	0.21%	0.00%	100%
Road 85	85	-	50	28.37617	Y	2200-2300	31	52.83%	35.42%	0.06%	5.69%	2.04%	0.32%	0.62%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.67%	0.16%	0.00%	100%
Road 85	85	-	50	28.71983	Y	2300-0000	24	52.77%	33.09%	0.07%	6.23%	2.24%	0.48%	0.95%	0.00%	0.06%	0.46%	0.15%	0.10%	0.23%	0.00%	0.00%	2.92%	0.25%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 86	86	-	50	29.38698	Y	0000-0100	10	40.55%	23.68%	0.20%	18.73%	6.72%	1.80%	3.54%	0.00%	0.08%	0.64%	0.21%	0.15%	0.32%	0.00%	0.00%	2.45%	0.92%	0.00%	100%
Road 86	86	-	50	29.55804	Y	0100-0200	7	39.46%	21.29%	0.21%	19.73%	7.09%	2.21%	4.34%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.00%	0.00%	2.57%	1.13%	0.00%	100%
Road 86	86	-	50	29.64309	Y	0200-0300	6	38.44%	18.97%	0.22%	20.69%	7.43%	2.60%	5.12%	0.00%	0.15%	1.17%	0.38%	0.26%	0.58%	0.00%	0.00%	2.66%	1.34%	0.00%	100%
Road 86	86	-	50	29.71891	Y	0300-0400	4	37.44%	16.83%	0.23%	21.64%	7.77%	2.95%	5.81%	0.00%	0.18%	1.40%	0.46%	0.32%	0.69%	0.00%	0.00%	2.78%	1.52%	0.00%	100%
Road 86	86	-	50	29.72099	Y	0400-0500	4	36.50%	14.73%	0.24%	22.52%	8.09%	3.31%	6.50%	0.00%	0.21%	1.62%	0.53%	0.37%	0.81%	0.00%	0.00%	2.88%	1.70%	0.00%	100%
Road 86	86	-	50	29.58655	Y	0500-0600	6	35.61%	12.74%	0.24%	23.38%	8.40%	3.64%	7.15%	0.00%	0.24%	1.84%	0.60%	0.42%	0.92%	0.00%	0.00%	2.97%	1.87%	0.00%	100%
Road 86	86	-	50	28.77936	Y	0600-0700	18	34.79%	10.76%	0.25%	24.11%	8.66%	4.00%	7.86%	0.00%	0.27%	2.07%	0.67%	0.47%	1.02%	0.00%	0.00%	3.03%	2.05%	0.00%	100%
Road 86	86	-	50	27.68663	Y	0700-0800	34	33.97%	8.93%	0.26%	24.87%	8.93%	4.31%	8.47%	0.00%	0.29%	2.27%	0.74%	0.51%	1.12%	0.00%	0.00%	3.10%	2.21%	0.00%	100%
Road 86	86	-	50	27.75	Y	0800-0900	34	38.92%	11.90%	0.24%	22.95%	8.24%	3.53%	6.94%	0.00%	0.14%	1.11%	0.55%	0.38%	0.84%	0.00%	0.00%	2.45%	1.81%	0.00%	100%
Road 86	86	-	50	27.27192	Y	0900-1000	38	26.84%	8.70%	0.32%	30.55%	10.97%	5.58%	10.97%	0.00%	0.08%	0.63%	0.30%	0.21%	0.45%	0.00%	0.00%	1.54%	2.86%	0.00%	100%
Road 86	86	-	50	27.15888	Y	1000-1100	39	22.50%	10.25%	0.34%	32.11%	11.53%	6.17%	12.13%	0.00%	0.07%	0.54%	0.10%	0.07%	0.16%	0.00%	0.00%	0.85%	3.17%	0.00%	100%
Road 86	86	-	50	27.43393	Y	1100-1200	35	24.45%	10.25%	0.31%	29.40%	10.56%	6.53%	12.85%	0.00%	0.06%	0.44%	0.17%	0.12%	0.26%	0.00%	0.00%	1.26%	3.36%	0.00%	100%
Road 86	86	-	50	24.22232	Y	1200-1300	163	63.12%	21.89%	0.04%	3.39%	1.22%	0.73%	1.43%	0.00%	0.40%	3.09%	0.81%	0.56%	1.24%	0.00%	0.00%	1.70%	0.37%	0.00%	100%
Road 86	86	-	50	24.2074	Y	1300-1400	161	57.13%	23.60%	0.04%	4.19%	1.51%	0.76%	1.50%	0.00%	0.41%	3.17%	1.48%	1.02%	2.25%	0.00%	0.00%	2.56%	0.39%	0.00%	100%
Road 86	86	-	50	24.19162	Y	1400-1500	168	64.20%	19.90%	0.04%	3.46%	1.24%	0.76%	1.50%	0.00%	0.33%	2.61%	0.65%	0.45%	0.99%	0.00%	0.00%	3.48%	0.39%	0.00%	100%
Road 86	86	-	50	24.22219	Y	1500-1600	166	63.68%	22.90%	0.04%	3.60%	1.29%	0.82%	1.61%	0.00%	0.26%	2.05%	0.27%	0.19%	0.41%	0.00%	0.00%	2.47%	0.42%	0.00%	100%
Road 86	86	-	50	24.0472	Y	1600-1700	182	62.90%	21.74%	0.04%	3.74%	1.34%	0.57%	1.12%	0.00%	0.20%	1.56%	0.82%	0.57%	1.25%	0.00%	0.00%	3.84%	0.29%	0.00%	100%
Road 86	86	-	50	23.65	Y	1700-1800	226	69.91%	15.04%	0.02%	2.28%	0.82%	0.27%	0.54%	0.00%	0.16%	1.26%	0.81%	0.56%	1.23%	0.00%	0.00%	6.95%	0.14%	0.00%	100%
Road 86	86	-	50	23.59541	Y	1800-1900	234	74.34%	16.44%	0.02%	1.60%	0.57%	0.19%	0.38%	0.00%	0.03%	0.20%	0.53%	0.37%	0.81%	0.00%	0.00%	4.41%	0.10%	0.00%	100%
Road 86	86	-	50	23.87598	Y	1900-2000	208	70.29%	22.23%	0.01%	1.42%	0.51%	0.06%	0.12%	0.00%	0.03%	0.25%	0.53%	0.37%	0.81%	0.00%	0.00%	3.33%	0.03%	0.00%	100%
Road 86	86	-	50	24.27038	Y	2000-2100	169	68.29%	24.94%	0.01%	1.27%	0.46%	0.12%	0.23%	0.00%	0.01%	0.09%	0.47%	0.32%	0.71%	0.00%	0.00%	3.02%	0.06%	0.00%	100%
Road 86	86	-	50	24.35923	Y	2100-2200	161	61.23%	33.03%	0.01%	1.23%	0.44%	0.08%	0.16%	0.00%	0.01%	0.09%	0.36%	0.25%	0.55%	0.00%	0.00%	2.52%	0.04%	0.00%	100%
Road 86	86	-	50	24.40893	Y	2200-2300	158	56.98%	38.20%	0.01%	1.11%	0.40%	0.06%	0.12%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.88%	0.03%	0.00%	100%
Road 86	86	-	50	24.76872	Y	2300-0000	122	57.58%	36.11%	0.01%	1.24%	0.44%	0.10%	0.19%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.19%	0.05%	0.00%	100%
Road 87	87	-	50	25.46619	Y	0000-0100	89	58.25%	34.02%	0.01%	1.29%	0.46%	0.12%	0.24%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.00%	3.52%	0.06%	0.00%	100%
Road 87	87	-	50	26.89801	Y	0100-0200	60	58.93%	31.79%	0.01%	1.41%	0.51%	0.16%	0.31%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.00%	3.83%	0.08%	0.00%	100%
Road 87	87	-	50	27.61919	Y	0200-0300	46	59.69%	29.45%	0.02%	1.54%	0.55%	0.19%	0.38%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.00%	4.13%	0.10%	0.00%	100%
Road 87	87	-	50	28.2129	Y	0300-0400	34	60.38%	27.14%	0.02%	1.67%	0.60%	0.23%	0.45%	0.00%	0.29%	2.25%	0.74%	0.51%	1.12%	0.00%	0.00%	4.49%	0.12%	0.00%	100%
Road 87	87	-	50	28.30786	Y	0400-0500	32	61.17%	24.68%	0.02%	1.81%	0.65%	0.27%	0.52%	0.00%	0.35%	2.72%	0.89%	0.62%	1.35%	0.00%	0.00%	4.82%	0.14%	0.00%	100%
Road 87	87	-	50	27.60406	Y	0500-0600	45	61.97%	22.17%	0.02%	1.95%	0.70%	0.30%	0.60%	0.00%	0.41%	3.20%	1.05%	0.73%	1.59%	0.00%	0.00%	5.16%	0.16%	0.00%	100%
Road 87	87	-	50	24.64728	Y	0600-0700	126	62.88%	19.46%	0.02%	2.09%	0.75%	0.35%	0.68%	0.00%	0.48%	3.74%	1.21%	0.84%	1.85%	0.00%	0.00%	5.47%	0.18%	0.00%	100%
Road 87	87	-	50	23.54373	Y	0700-0800	227	63.74%	16.75%	0.02%	2.24%	0.80%	0.39%	0.76%	0.00%	0.55%	4.27%	1.38%	0.96%	2.11%	0.00%	0.00%	5.83%	0.20%	0.00%	100%
Road 87	87	-	50	23.35	Y	0800-0900	251	66.65%	20.38%	0.02%	1.89%	0.68%	0.29%	0.57%	0.00%	0.24%	1.89%	0.95%	0.66%	1.44%	0.00%	0.00%	4.19%	0.15%	0.00%	100%
Road 87	87	-	50	23.86699	Y	0900-1000	199	64.39%	20.86%	0.04%	3.52%	1.26%	0.64%	1.26%	0.00%	0.20%	1.52%	0.71%	0.50%	1.09%	0.00%	0.00%	3.68%	0.33%	0.00%	100%
Road 87	87	-	50	24.03328	Y	1000-1100	184	59.70%	27.20%	0.04%	4.09%	1.47%	0.79%	1.55%	0.00%	0.18%	1.43%	0.28%	0.19%	0.42%	0.00%	0.00%	2.27%	0.40%	0.00%	100%
Road 87	87	-	50	24.11379	Y	1100-1200	177	61.10%	25.61%	0.04%	3.53%	1.27%	0.78%	1.54%	0.00%	0.14%	1.09%	0.43%	0.30%	0.65%	0.00%	0.00%	3.14%	0.40%	0.00%	100%
Road 87	87	-	50	28.07999	Y	1200-1300	32	51.36%	17.81%	0.12%	11.56%	4.15%	2.48%	4.88%	0.00%	0.32%	2.52%	0.66%	0.46%	1.01%	0.00%	0.00%	1.38%	1.28%	0.00%	100%
Road 87	87	-	50	27.99918	Y	1300-1400	32	45.06%	18.62%	0.14%	13.86%	4.98%	2.52%	4.94%	0.00%	0.32%	2.50%	1.16%	0.81%	1.77%	0.00%	0.00%	2.02%	1.29%	0.00%	100%
Road 87	87	-	50	28.02486	Y	1400-1500	33	51.94%	16.10%	0.12%	11.72%	4.21%	2.59%	5.10%	0.00%	0.27%	2.11%	0.53%	0.36%	0.80%	0.00%	0.00%	2.81%	1.33%	0.00%	100%
Road 87	87	-	50	28.02497	Y	1500-1600	33	51.02%	18.35%	0.13%	12.08%	4.34%	2.75%	5.40%	0.00%	0.21%	1.64%	0.22%	0.15%	0.33%	0.00%	0.00%	1.98%	1.41%	0.00%	100%
Road 87	87	-	50	27.9012	Y	1600-1700	36	51.27%	17.72%	0.13%	12.79%	4.59%	1.95%	3.83%	0.00%	0.16%	1.28%	0.67%	0.46%	1.02%	0.00%	0.00%	3.13%	1.00%	0.00%	100%
Road 87	87	-	50	27.75	Y	1700-1800	41	61.87%	13.31%	0.09%	8.45%	3.03%	1.01%	1.99%	0.00%	0.14%	1.12%	0.72%	0.50%	1.09%	0.00%	0.00%	6.15%	0.52%	0.00%	100%
Road 87	87	-	50	27.80862	Y	1800-1900	41	68.12%	15.06%	0.06%	6.13%	2.20%	0.75%	1.47%	0.00%	0.02%	0.19%	0.49%	0.34%	0.75%	0.00%	0.00%	4.04%	0.38%	0.00%	100%
Road 87	87	-	50	28.13253	Y	1900-2000	35	65.75%	20.79%	0.06%	5.57%	2.00%	0.25%	0.48%	0.00%	0.03%	0.24%	0.50%	0.34%	0.76%	0.00%	0.00%	3.11%	0.13%	0.00%	100%
Road 87	87	-	50	28.47609	Y	2000-2100	29	63.92%	23.35%	0.05%	4.98%	1.79%	0.46%	0.89%	0.00%	0.01%	0.08%	0.44%	0.30%	0.67%	0.00%	0.00%	2.83%	0.23%	0.00%	100%
Road 87	87	-	50	28.56758	Y	2100-2200	27	57.62%	31.08%	0.05%	4.84%	1.74%	0.32%	0.63%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.00%	2.37%	0.16%	0.00%	100%
Road 87	87	-	50	28.62432	Y	2200-2300	27	53.98%	36.19%	0.05%	4.43%	1.59%	0.25%	0.48%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.73%	0.13%	0.00%	100%
Road 87	87	-	50	28.9208	Y	2300-0000	21	54.08%	33.91%	0.05%	4.86%	1.75%	0.38%	0.74%	0.00%	0.06%	0.47%	0.15%	0.11%	0.24%	0.00%	0.00%	2.99%	0.19%	0.00%	100%
Road 88	88	-	50	29.49215	Y	0000-0100	9	46.49%	27.15%	0.13%	12.88%	4.63%	1.24%	2.43%	0.00%	0.09%	0.74%	0.24%	0.17%	0.37%	0.00%	0.00%	2.81%	0.64%	0.00%	100%
Road 88	88	-	50	29.63947	Y	0100-0200	6	45.82%	24.72%	0.14%	13.75%	4.94%	1.54%	3.02%	0.00%	0.14%	1.06%	0.34%	0.24%	0.52%	0.00%	0.00%	2.98%	0.79%	0.00%	100%
Road 88	88	-	50	29.71303	Y	0200-0300	5	45.20%	22.31%	0.15%	14.60%	5.24%	1.84%	3.61%	0.00%	0.18%	1.37%	0.45%	0.31%	0.68%	0.00%	0.00%	3.13%	0.94%	0.00%	100%
Road 88	88	-	50	29.77694	Y	0300-0400	4	44.55%	20.03%	0.16%	15.45%	5.55%	2.11%	4.15%	0.00%	0.21%	1.66%	0.54%	0.38%	0.83%	0.00%	0.00%	3.31%	1.08%	0.00%	100%
Road 88	88	-	50	29.78134	Y	0400-0500	4	43.95%	17.74%	0.17%	16.27%	5.84%	2.39%	4.70%	0.00%	0.25%	1.95%	0.64%	0.44%	0.97%	0.00%	0.00%	3.46%	1.23%	0.00%	100%
Road 88	88	-	50	29.67973	Y	0500-0600	5	43.36%	15.51%	0.18%	17.08%	6.13%	2.66%	5.22%	0.00%	0.29%	2.24%	0.73%	0.51%	1.11%	0.00%	0.00%	3.61%	1.36%	0.00%	100%
Road 88	88	-	50	29.06489	Y	0600-0700	15	42.82%	13.25%	0.19%	17.81%	6.40%	2.95%	5.80%	0.00%	0.33%	2.55%	0.83%	0.57%	1.26%	0.00%	0.00%	3.73%	1.52%	0.00%	100%
Road 88	88	-	50	28.24582	Y	0700-0800	27	42.27%	11.11%	0.19%	18.57%	6.67%	3.22%	6.33%	0.00%	0.36%	2.83%	0.92%	0.64%	1.40%	0.00%	0.00%	3.86%	1.65%	0.00%	100%
Road 88	88	-	50	28.25	Y	0800-0900	28	47.17%	14.42%	0.17%	16.69%	5.99%	2.57%	5.04%	0.00%	0.17%	1.34%	0.67%	0.47%	1.02%	0.00%	0.00%	2.96%	1.32%	0.00%	100%
Road 88	88	-	50	28.05968	Y	0900-1000	29	35.55%	11.52%	0.25%	24.28%	8.72%	4.43%	8.71%	0.00%	0.11%	0.84%	0.39%	0.27%	0.60%	0.00%	0.00%	2.03%	2.28%	0.00%	100%
Road 88	88	-	50	28.02209	Y	1000-1100	29	30.48%	13.89%	0.27%	26.10%	9.37%	5.02%	9.86%	0.00%	0.09%	0.73%	0.14%	0.10%	0.21%	0.00%	0.00%	1.16%	2.58%	0.00%	100%
Road 88	88	-	50	28.1951	Y	1100-1200	26	32.69%	13.70%	0.25%	23.58%	8.47%	5.24%	10.30%	0.00%	0.07%	0.58%	0.23%	0.16%	0.35%	0.00%	0.00%	1.68%	2.69%	0.00%	100%
Road 88	88	-	50	24.97032	Y	1200-1300	94	62.35%	21.62%	0.04%	3.93%	1.41%	0.84%	1.66%	0.00%	0.39%	3.06%	0.80%	0.56%	1.22%	0.00%	0.00%	1.68%	0.43%	0.00%	100%
Road 88	88	-	50	24.95917	Y	1300-1400	93	56.31%	23.26%	0.05%	4.85%	1.74%	0.88%	1.73%	0.00%	0.40%	3.12%	1.45%	1.01%	2.22%	0.00%	0.00%	2.53%	0.45%	0.00%	100%
Road 88	88	-	50	24.95169	Y	1400-1500	96	63.38%	19.64%	0.04%	4.01%	1.44%	0.89%	1.74%	0.00%	0.33%	2.58%	0.64%	0.44%	0.98%	0.00%	0.00%	3.43%	0.45%	0.00%	100%
Road 88	88	-	50	24.96812	Y	1500-1600	96	62.83%	22.59%	0.04%	4.17%	1.50%	0.95%	1.86%	0.00%	0.26%	2.02%	0.27%	0.18%	0.41%	0.00%	0.00%	2.43%	0.49%	0.00%	100%
Road 88	88	-	50	24.86929	Y	1600-1700	105	62.14%	21.47%	0.05%	4.34%	1.56%	0.66%	1.30%	0.00%	0.20%	1.55%	0.81%	0.56%	1.24%	0.00%	0.00%	3.79%	0.34%	0.00%	100%
Road 88	88	-	50	24.65	Y	1700-1800	129	69.42%	14.94%	0.03%	2.65%	0.95%	0.32%	0.63%	0.00%	0.16%	1.26%	0.80%	0.56%	1.23%	0.00%	0.00%	6.90%	0.16%	0.00%	100%
Road 88	88	-	50	24.62294	Y	1800-1900	134	73.98%	16.36%	0.02%	1.87%	0.67%	0.23%	0.45%	0.00%	0.03%	0.20%	0.53%	0.37%	0.81%	0.00%	0.00%	4.39%	0.12%	0.00%	100%
Road 88	88	-	50	24.78627	Y	1900-2000	119	70.03%	22.15%	0.02%	1.66%	0.60%	0.07%	0.14%	0.00%	0.03%	0.25%	0.53%	0.37%	0.80%	0.00%	0.00%	3.31%	0.04%	0.00%	100%
Road 88	88	-	50	25.05757	Y	2000-2100	97	68.04%	24.85%	0.02%	1.48%	0.53%	0.14%	0.27%	0.00%	0.01%	0.09%	0.47%	0.32%	0.71%	0.00%	0.00%	3.01%	0.07%	0.00%	100%
Road 88	88	-	50	25.31403	Y	2100-2200	92	61.02%	32.92%	0.01%	1.44%	0.52%	0.10%	0.19%	0.00%	0.01%	0.09%	0.36%	0.25%	0.55%	0.00%	0.00%	2.51%	0.05%	0.00%	100%
Road 88	88	-	50	25.45856	Y	2200-2300	90	56.80%	38.09%	0.01%	1.30%	0.47%	0.07%	0.14%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.87%	0.04%	0.00%	100%
Road 88	88	-	50	26.48269	Y	2300-0000	69	57.38%	35.98%	0.02%	1.44%	0.52%	0.11%	0.22%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.18%	0.06%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 89	89	-	50	27.96936	Y	0000-0100	40	57.60%	33.64%	0.02%	1.93%	0.69%	0.19%	0.37%	0.00%	0.12%	0.92%	0.30%	0.21%	0.45%	0.00%	0.00%	3.48%	0.10%	0.00%	100%
Road 89	89	-	50	28.60744	Y	0100-0200	27	58.19%	31.39%	0.02%	2.12%	0.76%	0.24%	0.47%	0.00%	0.17%	1.34%	0.44%	0.30%	0.67%	0.00%	0.00%	3.78%	0.12%	0.00%	100%
Road 89	89	-	50	28.92867	Y	0200-0300	21	58.84%	29.04%	0.02%	2.30%	0.83%	0.29%	0.57%	0.00%	0.23%	1.79%	0.58%	0.40%	0.88%	0.00%	0.00%	4.08%	0.15%	0.00%	100%
Road 89	89	-	50	29.19395	Y	0300-0400	15	59.43%	26.72%	0.03%	2.50%	0.90%	0.34%	0.67%	0.00%	0.28%	2.22%	0.72%	0.50%	1.10%	0.00%	0.00%	4.42%	0.18%	0.00%	100%
Road 89	89	-	50	29.23494	Y	0400-0500	14	60.11%	24.26%	0.03%	2.70%	0.97%	0.40%	0.78%	0.00%	0.34%	2.67%	0.87%	0.61%	1.33%	0.00%	0.00%	4.73%	0.20%	0.00%	100%
Road 89	89	-	50	28.9141	Y	0500-0600	20	60.80%	21.75%	0.03%	2.90%	1.04%	0.45%	0.89%	0.00%	0.40%	3.14%	1.03%	0.71%	1.56%	0.00%	0.00%	5.07%	0.23%	0.00%	100%
Road 89	89	-	50	26.92694	Y	0600-0700	57	61.58%	19.06%	0.03%	3.10%	1.11%	0.51%	1.01%	0.00%	0.47%	3.66%	1.19%	0.83%	1.81%	0.00%	0.00%	5.36%	0.26%	0.00%	100%
Road 89	89	-	50	24.88122	Y	0700-0800	102	62.32%	16.38%	0.03%	3.32%	1.19%	0.58%	1.13%	0.00%	0.53%	4.17%	1.35%	0.94%	2.06%	0.00%	0.00%	5.70%	0.30%	0.00%	100%
Road 89	89	-	50	24.8	Y	0800-0900	113	65.44%	20.01%	0.03%	2.81%	1.01%	0.43%	0.85%	0.00%	0.24%	1.86%	0.93%	0.65%	1.42%	0.00%	0.00%	4.11%	0.22%	0.00%	100%
Road 89	89	-	50	25.03954	Y	0900-1000	91	62.13%	20.13%	0.05%	5.14%	1.85%	0.94%	1.85%	0.00%	0.19%	1.47%	0.69%	0.48%	1.05%	0.00%	0.00%	3.55%	0.48%	0.00%	100%
Road 89	89	-	50	25.37972	Y	1000-1100	84	57.24%	26.08%	0.06%	5.94%	2.13%	1.14%	2.24%	0.00%	0.18%	1.37%	0.26%	0.18%	0.40%	0.00%	0.00%	2.17%	0.59%	0.00%	100%
Road 89	89	-	50	25.59155	Y	1100-1200	81	58.81%	24.65%	0.05%	5.14%	1.85%	1.14%	2.25%	0.00%	0.13%	1.05%	0.41%	0.28%	0.62%	0.00%	0.00%	3.02%	0.59%	0.00%	100%
Road 89	89	-	50	28.41225	Y	1200-1300	28	58.52%	20.30%	0.07%	6.59%	2.36%	1.42%	2.78%	0.00%	0.37%	2.87%	0.75%	0.52%	1.15%	0.00%	0.00%	1.58%	0.73%	0.00%	100%
Road 89	89	-	50	28.37672	Y	1300-1400	28	52.32%	21.61%	0.08%	8.05%	2.89%	1.46%	2.87%	0.00%	0.37%	2.90%	1.35%	0.94%	2.06%	0.00%	0.00%	2.35%	0.75%	0.00%	100%
Road 89	89	-	50	28.37729	Y	1400-1500	29	59.39%	18.40%	0.07%	6.70%	2.41%	1.48%	2.91%	0.00%	0.31%	2.42%	0.60%	0.42%	0.92%	0.00%	0.00%	3.22%	0.76%	0.00%	100%
Road 89	89	-	50	28.3933	Y	1500-1600	29	58.68%	21.10%	0.07%	6.95%	2.49%	1.58%	3.10%	0.00%	0.24%	1.89%	0.25%	0.17%	0.38%	0.00%	0.00%	2.27%	0.81%	0.00%	100%
Road 89	89	-	50	28.2594	Y	1600-1700	31	58.36%	20.17%	0.08%	7.28%	2.61%	1.11%	2.18%	0.00%	0.19%	1.45%	0.76%	0.53%	1.16%	0.00%	0.00%	3.56%	0.57%	0.00%	100%
Road 89	89	-	50	28	Y	1700-1800	37	66.92%	14.40%	0.05%	4.57%	1.64%	0.55%	1.08%	0.00%	0.16%	1.21%	0.78%	0.54%	1.18%	0.00%	0.00%	6.65%	0.28%	0.00%	100%
Road 89	89	-	50	27.99161	Y	1800-1900	38	72.08%	15.94%	0.03%	3.25%	1.17%	0.39%	0.78%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.27%	0.20%	0.00%	100%
Road 89	89	-	50	28.24937	Y	1900-2000	34	68.66%	21.71%	0.03%	2.91%	1.05%	0.13%	0.25%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.25%	0.07%	0.00%	100%
Road 89	89	-	50	28.57333	Y	2000-2100	28	66.73%	24.37%	0.03%	2.60%	0.93%	0.24%	0.47%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.12%	0.00%	100%
Road 89	89	-	50	28.65115	Y	2100-2200	26	59.94%	32.33%	0.03%	2.52%	0.90%	0.17%	0.33%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.46%	0.09%	0.00%	100%
Road 89	89	-	50	28.6966	Y	2200-2300	26	55.91%	37.49%	0.02%	2.29%	0.82%	0.13%	0.25%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.07%	0.00%	100%
Road 89	89	-	50	28.98632	Y	2300-0000	20	56.33%	35.32%	0.03%	2.53%	0.91%	0.20%	0.39%	0.00%	0.06%	0.49%	0.16%	0.11%	0.25%	0.00%	0.00%	3.12%	0.10%	0.00%	100%
Road 90	90	-	50	29.54474	Y	0000-0100	8	50.16%	29.29%	0.10%	9.26%	3.33%	0.89%	1.75%	0.00%	0.10%	0.80%	0.26%	0.18%	0.40%	0.00%	0.00%	3.03%	0.46%	0.00%	100%
Road 90	90	-	50	29.68018	Y	0100-0200	6	49.84%	26.89%	0.10%	9.97%	3.58%	1.11%	2.19%	0.00%	0.15%	1.15%	0.37%	0.26%	0.57%	0.00%	0.00%	3.24%	0.57%	0.00%	100%
Road 90	90	-	50	29.74799	Y	0200-0300	4	49.56%	24.46%	0.11%	10.67%	3.83%	1.34%	2.64%	0.00%	0.19%	1.50%	0.49%	0.34%	0.74%	0.00%	0.00%	3.43%	0.69%	0.00%	100%
Road 90	90	-	50	29.80596	Y	0300-0400	3	49.22%	22.13%	0.12%	11.38%	4.09%	1.55%	3.05%	0.00%	0.24%	1.84%	0.60%	0.42%	0.91%	0.00%	0.00%	3.66%	0.80%	0.00%	100%
Road 90	90	-	50	29.81152	Y	0400-0500	3	48.94%	19.75%	0.13%	12.08%	4.34%	1.77%	3.49%	0.00%	0.28%	2.18%	0.71%	0.49%	1.08%	0.00%	0.00%	3.85%	0.91%	0.00%	100%
Road 90	90	-	50	29.72632	Y	0500-0600	5	48.65%	17.40%	0.13%	12.78%	4.59%	1.99%	3.91%	0.00%	0.32%	2.51%	0.82%	0.57%	1.25%	0.00%	0.00%	4.05%	1.02%	0.00%	100%
Road 90	90	-	50	29.20765	Y	0600-0700	13	48.42%	14.98%	0.14%	13.43%	4.82%	2.22%	4.37%	0.00%	0.37%	2.88%	0.94%	0.65%	1.42%	0.00%	0.00%	4.21%	1.14%	0.00%	100%
Road 90	90	-	50	28.52541	Y	0700-0800	24	48.14%	12.65%	0.15%	14.10%	5.06%	2.44%	4.80%	0.00%	0.41%	3.22%	1.05%	0.73%	1.59%	0.00%	0.00%	4.40%	1.25%	0.00%	100%
Road 90	90	-	50	28.5	Y	0800-0900	25	52.75%	16.13%	0.13%	12.44%	4.47%	1.91%	3.76%	0.00%	0.19%	1.50%	0.75%	0.52%	1.14%	0.00%	0.00%	3.31%	0.98%	0.00%	100%
Road 90	90	-	50	28.45357	Y	0900-1000	24	42.44%	13.75%	0.20%	19.32%	6.94%	3.53%	6.94%	0.00%	0.13%	1.00%	0.47%	0.33%	0.72%	0.00%	0.00%	2.43%	1.81%	0.00%	100%
Road 90	90	-	50	28.45369	Y	1000-1100	24	37.05%	16.88%	0.22%	21.15%	7.59%	4.07%	7.99%	0.00%	0.11%	0.89%	0.17%	0.12%	0.26%	0.00%	0.00%	1.41%	2.09%	0.00%	100%
Road 90	90	-	50	28.57569	Y	1100-1200	22	39.31%	16.48%	0.20%	18.91%	6.79%	4.20%	8.26%	0.00%	0.09%	0.70%	0.27%	0.19%	0.42%	0.00%	0.00%	2.02%	2.16%	0.00%	100%
Road 90	90	-	50	27.87418	Y	1200-1300	38	61.08%	21.18%	0.05%	4.81%	1.73%	1.03%	2.03%	0.00%	0.38%	2.99%	0.79%	0.55%	1.20%	0.00%	0.00%	1.65%	0.53%	0.00%	100%
Road 90	90	-	50	27.84282	Y	1300-1400	38	54.97%	22.71%	0.06%	5.92%	2.12%	1.07%	2.11%	0.00%	0.39%	3.05%	1.42%	0.99%	2.16%	0.00%	0.00%	2.47%	0.55%	0.00%	100%
Road 90	90	-	50	27.83289	Y	1400-1500	39	62.05%	19.23%	0.05%	4.90%	1.76%	1.08%	2.13%	0.00%	0.32%	2.53%	0.63%	0.44%	0.96%	0.00%	0.00%	3.36%	0.56%	0.00%	100%
Road 90	90	-	50	27.86256	Y	1500-1600	39	61.45%	22.10%	0.05%	5.09%	1.83%	1.16%	2.27%	0.00%	0.25%	1.98%	0.26%	0.18%	0.40%	0.00%	0.00%	2.38%	0.59%	0.00%	100%
Road 90	90	-	50	27.66693	Y	1600-1700	43	60.88%	21.04%	0.06%	5.31%	1.91%	0.81%	1.59%	0.00%	0.19%	1.51%	0.80%	0.55%	1.21%	0.00%	0.00%	3.72%	0.42%	0.00%	100%
Road 90	90	-	50	27.25	Y	1700-1800	52	68.60%	14.76%	0.03%	3.28%	1.18%	0.39%	0.77%	0.00%	0.16%	1.24%	0.80%	0.55%	1.21%	0.00%	0.00%	6.82%	0.20%	0.00%	100%
Road 90	90	-	50	27.20929	Y	1800-1900	54	73.36%	16.22%	0.02%	2.31%	0.83%	0.28%	0.55%	0.00%	0.03%	0.20%	0.53%	0.37%	0.80%	0.00%	0.00%	4.35%	0.14%	0.00%	100%
Road 90	90	-	50	27.54916	Y	1900-2000	48	69.59%	22.01%	0.02%	2.06%	0.74%	0.09%	0.18%	0.00%	0.03%	0.25%	0.52%	0.36%	0.80%	0.00%	0.00%	3.29%	0.05%	0.00%	100%
Road 90	90	-	50	28.00358	Y	2000-2100	39	67.62%	24.70%	0.02%	1.84%	0.66%	0.17%	0.33%	0.00%	0.01%	0.08%	0.46%	0.32%	0.71%	0.00%	0.00%	2.99%	0.09%	0.00%	100%
Road 90	90	-	50	28.1089	Y	2100-2200	37	60.67%	32.73%	0.02%	1.78%	0.64%	0.12%	0.23%	0.00%	0.01%	0.09%	0.36%	0.25%	0.54%	0.00%	0.00%	2.49%	0.06%	0.00%	100%
Road 90	90	-	50	28.16897	Y	2200-2300	36	56.52%	37.89%	0.02%	1.62%	0.58%	0.09%	0.18%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.86%	0.05%	0.00%	100%
Road 90	90	-	50	28.57997	Y	2300-0000	28	57.04%	35.77%	0.02%	1.80%	0.64%	0.14%	0.27%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.16%	0.07%	0.00%	100%
Road 91	91	-	50	24.67898	Y	0000-0100	108	49.97%	29.18%	0.01%	1.42%	0.51%	0.14%	0.27%	0.00%	0.10%	0.79%	0.26%	0.18%	0.39%	0.20%	13.48%	3.02%	0.07%	0.00%	100%
Road 91	91	-	50	25.47814	Y	0100-0200	73	50.47%	27.23%	0.02%	1.55%	0.56%	0.17%	0.34%	0.00%	0.15%	1.16%	0.38%	0.26%	0.58%	0.21%	13.55%	3.28%	0.09%	0.00%	100%
Road 91	91	-	50	26.53867	Y	0200-0300	56	51.12%	25.22%	0.02%	1.69%	0.61%	0.21%	0.42%	0.00%	0.20%	1.55%	0.50%	0.35%	0.77%	0.20%	13.49%	3.54%	0.11%	0.00%	100%
Road 91	91	-	50	27.39099	Y	0300-0400	42	51.53%	23.16%	0.02%	1.83%	0.66%	0.25%	0.49%	0.00%	0.25%	1.92%	0.63%	0.44%	0.96%	0.21%	13.70%	3.83%	0.13%	0.00%	100%
Road 91	91	-	50	27.53293	Y	0400-0500	39	52.16%	21.05%	0.02%	1.98%	0.71%	0.29%	0.57%	0.00%	0.30%	2.32%	0.76%	0.53%	1.15%	0.21%	13.70%	4.11%	0.15%	0.00%	100%
Road 91	91	-	50	26.50767	Y	0500-0600	55	52.77%	18.88%	0.02%	2.13%	0.77%	0.33%	0.65%	0.00%	0.35%	2.72%	0.89%	0.62%	1.36%	0.21%	13.74%	4.40%	0.17%	0.00%	100%
Road 91	91	-	50	24.04534	Y	0600-0700	153	53.69%	16.61%	0.02%	2.29%	0.82%	0.38%	0.75%	0.00%	0.41%	3.19%	1.04%	0.72%	1.58%	0.19%	13.44%	4.67%	0.19%	0.00%	100%
Road 91	91	-	50	22.45877	Y	0700-0800	276	54.41%	14.30%	0.03%	2.45%	0.88%	0.42%	0.84%	0.00%	0.47%	3.64%	1.18%	0.82%	1.80%	0.18%	13.40%	4.97%	0.22%	0.00%	100%
Road 91	91	-	50	22.4	Y	0800-0900	296	58.85%	18.00%	0.02%	2.14%	0.77%	0.33%	0.65%	0.00%	0.21%	1.67%	0.84%	0.58%	1.27%	0.26%	10.55%	3.70%	0.17%	0.00%	100%
Road 91	91	-	50	22.8517	Y	0900-1000	246	54.29%	17.59%	0.04%	3.80%	1.37%	0.69%	1.36%	0.00%	0.16%	1.28%	0.60%	0.42%	0.92%	0.31%	13.70%	3.11%	0.36%	0.00%	100%
Road 91	91	-	50	23.00411	Y	1000-1100	231	49.49%	22.55%	0.05%	4.35%	1.56%	0.84%	1.64%	0.00%	0.15%	1.19%	0.23%	0.16%	0.35%	0.67%	14.48%	1.88%	0.43%	0.00%	100%
Road 91	91	-	50	23.24594	Y	1100-1200	217	51.82%	21.72%	0.04%	3.83%	1.38%	0.85%	1.68%	0.00%	0.12%	0.93%	0.36%	0.25%	0.55%	0.17%	13.20%	2.67%	0.44%	0.00%	100%
Road 91	91	-	50	27.28531	Y	1200-1300	36	38.74%	13.44%	0.11%	10.17%	3.65%	2.19%	4.30%	0.00%	0.24%	1.90%	0.50%	0.35%	0.76%	0.91%	20.59%	1.04%	1.12%	0.00%	100%
Road 91	91	-	50	27.10533	Y	1300-1400	38	33.26%	13.74%	0.12%	11.93%	4.28%	2.17%	4.26%	0.00%	0.24%	1.84%	0.86%	0.60%	1.31%	1.09%	21.70%	1.49%	1.11%	0.00%	100%
Road 91	91	-	50	27.20285	Y	1400-1500	37	39.17%	12.14%	0.11%	10.31%	3.70%	2.28%	4.48%	0.00%	0.20%	1.59%	0.40%	0.27%	0.60%	0.54%	20.90%	2.12%	1.17%	0.00%	100%
Road 91	91	-	50	27.18074	Y	1500-1600	38	38.30%	13.77%	0.11%	10.58%	3.80%	2.40%	4.73%	0.00%	0.16%	1.23%	0.16%	0.11%	0.25%	0.47%	21.20%	1.48%	1.23%	0.00%	100%
Road 91	91	-	50	26.94401	Y	1600-1700	41	38.15%	13.19%	0.12%	11.10%	3.99%	1.69%	3.32%	0.00%	0.12%	0.95%	0.50%	0.35%	0.76%	0.59%	21.98%	2.33%	0.87%	0.00%	100%
Road 91	91	-	50	26.875	Y	1700-1800	45	48.19%	10.37%	0.08%	7.67%	2.76%	0.92%	1.81%	0.00%	0.11%	0.87%	0.56%	0.39%	0.85%	0.31%	19.85%	4.79%	0.47%	0.00%	100%
Road 91	91	-	50	26.87853	Y	1800-1900	45	52.75%	11.66%	0.06%	5.54%	1.99%	0.67%	1.32%	0.00%	0.02%	0.14%	0.38%	0.26%	0.58%	0.11%	21.04%	3.13%	0.35%	0.00%	100%
Road 91	91	-	50	27.13177	Y	1900-2000	41	49.06%	15.52%	0.05%	4.85%	1.74%	0.21%	0.42%	0.00%	0.02%	0.18%	0.37%	0.26%	0.56%	0.97%	23.35%	2.32%	0.11%	0.00%	100%
Road 91	91	-	50	27.63562	Y	2000-2100	33	47.42%	17.32%	0.04%	4.31%	1.55%	0.39%	0.77%	0.00%	0.01%	0.06%	0.32%	0.23%	0.49%	0.47%	24.31%	2.10%	0.20%	0.00%	100%
Road 91	91	-	50	27.65694	Y	2100-2200	32	41.56%	22.42%	0.04%	4.07%	1.46%	0.27%	0.53%	0.00%	0.01%	0.06%	0.24%	0.17%	0.37%	0.36%	26.58%	1.71%	0.14%	0.00%	100%
Road 91	91	-	50	27.81601	Y	2200-2300	31	39.78%	26.67%	0.04%	3.81%	1.37%	0.21%	0.42%	0.00%	0.01%	0.06%	0.02%	0.01%	0.03%	0.36%	25.09%	2.01%	0.11%	0.00%	100%
Road 91	91	-	50	28.29254	Y	2300-0000	24	39.79%	24.95%	0.04%	4.17%	1.50%	0.32%	0.64%	0.00%	0.04%	0.35%	0.11%	0.08%	0.17%	0.37%	25.09%	2.20%	0.17%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 92	92	-	50	29.03345	Y	0000-0100	11	19.72%	11.52%	0.11%	10.93%	3.92%	1.05%	2.07%	0.00%	0.04%	0.31%	0.10%	0.07%	0.16%	0.72%	47.54%	1.19%	0.54%	0.00%	100%
Road 92	92	-	50	29.32555	Y	0100-0200	7	19.44%	10.48%	0.12%	11.66%	4.19%	1.30%	2.56%	0.00%	0.06%	0.45%	0.15%	0.10%	0.22%	0.71%	46.62%	1.26%	0.67%	0.00%	100%
Road 92	92	-	50	29.47595	Y	0200-0300	6	19.27%	9.51%	0.13%	12.45%	4.47%	1.57%	3.08%	0.00%	0.07%	0.58%	0.19%	0.13%	0.29%	0.67%	45.45%	1.33%	0.80%	0.00%	100%
Road 92	92	-	50	29.59576	Y	0300-0400	4	18.87%	8.48%	0.14%	13.09%	4.70%	1.79%	3.51%	0.00%	0.09%	0.70%	0.23%	0.16%	0.35%	0.69%	44.87%	1.40%	0.92%	0.00%	100%
Road 92	92	-	50	29.61142	Y	0400-0500	4	18.68%	7.54%	0.14%	13.83%	4.96%	2.03%	3.99%	0.00%	0.11%	0.83%	0.27%	0.19%	0.41%	0.67%	43.84%	1.47%	1.04%	0.00%	100%
Road 92	92	-	50	29.44013	Y	0500-0600	6	18.45%	6.60%	0.15%	14.53%	5.22%	2.26%	4.44%	0.00%	0.12%	0.95%	0.31%	0.22%	0.47%	0.65%	42.92%	1.54%	1.16%	0.00%	100%
Road 92	92	-	50	28.41991	Y	0600-0700	17	18.47%	5.72%	0.16%	15.37%	5.52%	2.55%	5.01%	0.00%	0.14%	1.10%	0.36%	0.25%	0.54%	0.58%	41.33%	1.61%	1.31%	0.00%	100%
Road 92	92	-	50	27.09219	Y	0700-0800	32	18.30%	4.81%	0.17%	16.08%	5.77%	2.79%	5.48%	0.00%	0.16%	1.22%	0.40%	0.28%	0.61%	0.55%	40.28%	1.67%	1.43%	0.00%	100%
Road 92	92	-	50	27.375	Y	0800-0900	30	22.54%	6.89%	0.17%	15.95%	5.73%	2.45%	4.82%	0.00%	0.08%	0.64%	0.32%	0.22%	0.49%	0.89%	36.12%	1.42%	1.26%	0.00%	100%
Road 92	92	-	50	26.95978	Y	0900-1000	33	15.41%	4.99%	0.22%	21.05%	7.56%	3.84%	7.56%	0.00%	0.05%	0.36%	0.17%	0.12%	0.26%	0.78%	34.76%	0.88%	1.97%	0.00%	100%
Road 92	92	-	50	26.86052	Y	1000-1100	34	12.88%	5.87%	0.23%	22.06%	7.92%	4.24%	8.34%	0.00%	0.04%	0.31%	0.06%	0.04%	0.09%	1.55%	33.70%	0.49%	2.18%	0.00%	100%
Road 92	92	-	50	27.27985	Y	1100-1200	30	14.47%	6.07%	0.22%	20.88%	7.50%	4.64%	9.12%	0.00%	0.03%	0.26%	0.10%	0.07%	0.15%	0.43%	32.94%	0.74%	2.38%	0.00%	100%
Road 92	92	-	50	24.50835	Y	1200-1300	110	50.92%	17.66%	0.03%	3.34%	1.20%	0.72%	1.41%	0.00%	0.32%	2.50%	0.66%	0.45%	1.00%	0.77%	17.29%	1.37%	0.37%	0.00%	100%
Road 92	92	-	50	24.44694	Y	1300-1400	111	45.02%	18.60%	0.04%	4.04%	1.45%	0.73%	1.44%	0.00%	0.32%	2.50%	1.16%	0.81%	1.77%	0.94%	18.77%	2.02%	0.38%	0.00%	100%
Road 92	92	-	50	24.47509	Y	1400-1500	113	51.73%	16.03%	0.04%	3.41%	1.22%	0.75%	1.48%	0.00%	0.27%	2.11%	0.52%	0.36%	0.80%	0.45%	17.63%	2.80%	0.39%	0.00%	100%
Road 92	92	-	50	24.48158	Y	1500-1600	113	51.05%	18.36%	0.04%	3.53%	1.27%	0.80%	1.57%	0.00%	0.21%	1.64%	0.22%	0.15%	0.33%	0.40%	18.05%	1.98%	0.41%	0.00%	100%
Road 92	92	-	50	24.31862	Y	1600-1700	124	50.18%	17.34%	0.04%	3.65%	1.31%	0.56%	1.09%	0.00%	0.16%	1.25%	0.66%	0.45%	1.00%	0.50%	18.47%	3.06%	0.29%	0.00%	100%
Road 92	92	-	50	24.125	Y	1700-1800	147	58.45%	12.58%	0.02%	2.33%	0.84%	0.28%	0.55%	0.00%	0.14%	1.06%	0.68%	0.47%	1.03%	0.24%	15.38%	5.81%	0.14%	0.00%	100%
Road 92	92	-	50	24.06644	Y	1800-1900	153	62.12%	13.74%	0.02%	1.63%	0.59%	0.20%	0.39%	0.00%	0.02%	0.17%	0.45%	0.31%	0.68%	0.08%	15.83%	3.68%	0.10%	0.00%	100%
Road 92	92	-	50	24.20215	Y	1900-2000	139	57.27%	18.11%	0.01%	1.42%	0.51%	0.06%	0.12%	0.00%	0.03%	0.20%	0.43%	0.30%	0.66%	0.72%	17.42%	2.71%	0.03%	0.00%	100%
Road 92	92	-	50	24.52285	Y	2000-2100	114	55.40%	20.23%	0.01%	1.26%	0.45%	0.12%	0.23%	0.00%	0.01%	0.07%	0.38%	0.26%	0.58%	0.35%	18.15%	2.45%	0.06%	0.00%	100%
Road 92	92	-	50	24.54113	Y	2100-2200	111	48.67%	26.26%	0.01%	1.19%	0.43%	0.08%	0.16%	0.00%	0.01%	0.07%	0.29%	0.20%	0.44%	0.27%	19.89%	2.00%	0.04%	0.00%	100%
Road 92	92	-	50	24.62386	Y	2200-2300	107	46.07%	30.89%	0.01%	1.10%	0.40%	0.06%	0.12%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.27%	18.56%	2.33%	0.03%	0.00%	100%
Road 92	92	-	50	24.93329	Y	2300-0000	82	46.44%	29.12%	0.01%	1.22%	0.44%	0.09%	0.19%	0.00%	0.05%	0.41%	0.13%	0.09%	0.20%	0.27%	18.71%	2.57%	0.05%	0.00%	100%
Road 93	93	-	50	26.56333	Y	0000-0100	46	38.60%	22.54%	0.02%	1.68%	0.60%	0.16%	0.32%	0.00%	0.08%	0.61%	0.20%	0.14%	0.30%	0.48%	31.85%	2.33%	0.08%	0.00%	100%
Road 93	93	-	50	27.64546	Y	0100-0200	31	38.90%	20.98%	0.02%	1.83%	0.66%	0.20%	0.40%	0.00%	0.11%	0.90%	0.29%	0.20%	0.44%	0.48%	31.94%	2.53%	0.11%	0.00%	100%
Road 93	93	-	50	28.20174	Y	0200-0300	24	39.38%	19.43%	0.02%	1.99%	0.72%	0.25%	0.49%	0.00%	0.15%	1.19%	0.39%	0.27%	0.59%	0.47%	31.79%	2.73%	0.13%	0.00%	100%
Road 93	93	-	50	28.63906	Y	0300-0400	18	39.50%	17.76%	0.02%	2.15%	0.77%	0.29%	0.58%	0.00%	0.19%	1.47%	0.48%	0.33%	0.73%	0.50%	32.14%	2.94%	0.15%	0.00%	100%
Road 93	93	-	50	28.71441	Y	0400-0500	17	39.93%	16.12%	0.02%	2.32%	0.83%	0.34%	0.67%	0.00%	0.23%	1.78%	0.58%	0.40%	0.88%	0.49%	32.08%	3.15%	0.17%	0.00%	100%
Road 93	93	-	50	28.18017	Y	0500-0600	24	40.32%	14.42%	0.03%	2.49%	0.89%	0.39%	0.76%	0.00%	0.27%	2.08%	0.68%	0.47%	1.04%	0.49%	32.11%	3.36%	0.20%	0.00%	100%
Road 93	93	-	50	24.98939	Y	0600-0700	65	41.17%	12.74%	0.03%	2.69%	0.96%	0.45%	0.88%	0.00%	0.31%	2.45%	0.80%	0.55%	1.21%	0.44%	31.52%	3.58%	0.23%	0.00%	100%
Road 93	93	-	50	24.17257	Y	0700-0800	118	41.68%	10.95%	0.03%	2.87%	1.03%	0.50%	0.98%	0.00%	0.36%	2.79%	0.90%	0.63%	1.38%	0.43%	31.40%	3.81%	0.26%	0.00%	100%
Road 93	93	-	50	24.25	Y	0800-0900	120	47.31%	14.47%	0.03%	2.63%	0.94%	0.40%	0.79%	0.00%	0.17%	1.34%	0.67%	0.47%	1.02%	0.64%	25.94%	2.97%	0.21%	0.00%	100%
Road 93	93	-	50	24.33693	Y	0900-1000	107	40.86%	13.24%	0.05%	4.38%	1.57%	0.80%	1.57%	0.00%	0.12%	0.97%	0.45%	0.31%	0.69%	0.71%	31.53%	2.34%	0.41%	0.00%	100%
Road 93	93	-	50	24.37218	Y	1000-1100	103	36.42%	16.59%	0.05%	4.89%	1.76%	0.94%	1.85%	0.00%	0.11%	0.87%	0.17%	0.12%	0.26%	1.50%	32.60%	1.38%	0.48%	0.00%	100%
Road 93	93	-	50	24.55867	Y	1100-1200	94	39.30%	16.47%	0.05%	4.45%	1.60%	0.99%	1.94%	0.00%	0.09%	0.70%	0.27%	0.19%	0.42%	0.40%	30.61%	2.02%	0.51%	0.00%	100%
Road 93	93	-	50	27.79692	Y	1200-1300	29	40.49%	14.04%	0.07%	6.38%	2.29%	1.37%	2.69%	0.00%	0.25%	1.98%	0.52%	0.36%	0.79%	1.14%	25.82%	1.09%	0.70%	0.00%	100%
Road 93	93	-	50	27.66083	Y	1300-1400	30	35.00%	14.46%	0.08%	7.54%	2.71%	1.37%	2.69%	0.00%	0.25%	1.94%	0.90%	0.63%	1.38%	1.38%	27.41%	1.57%	0.70%	0.00%	100%
Road 93	93	-	50	27.73675	Y	1400-1500	30	41.03%	12.72%	0.07%	6.48%	2.33%	1.43%	2.82%	0.00%	0.21%	1.67%	0.42%	0.29%	0.63%	0.68%	26.27%	2.22%	0.74%	0.00%	100%
Road 93	93	-	50	27.72598	Y	1500-1600	30	40.24%	14.47%	0.07%	6.67%	2.39%	1.52%	2.98%	0.00%	0.17%	1.30%	0.17%	0.12%	0.26%	0.59%	26.73%	1.56%	0.78%	0.00%	100%
Road 93	93	-	50	27.49969	Y	1600-1700	33	39.71%	13.72%	0.07%	6.93%	2.49%	1.06%	2.08%	0.00%	0.13%	0.99%	0.52%	0.36%	0.79%	0.74%	27.45%	2.42%	0.54%	0.00%	100%
Road 93	93	-	50	27.375	Y	1700-1800	37	48.90%	10.52%	0.05%	4.67%	1.68%	0.56%	1.10%	0.00%	0.11%	0.88%	0.57%	0.39%	0.86%	0.38%	24.17%	4.86%	0.29%	0.00%	100%
Road 93	93	-	50	27.32229	Y	1800-1900	38	52.62%	11.63%	0.03%	3.32%	1.19%	0.40%	0.79%	0.00%	0.02%	0.14%	0.38%	0.26%	0.58%	0.13%	25.18%	3.12%	0.21%	0.00%	100%
Road 93	93	-	50	27.48201	Y	1900-2000	34	48.14%	15.23%	0.03%	2.86%	1.03%	0.13%	0.25%	0.00%	0.02%	0.17%	0.36%	0.25%	0.55%	1.14%	27.50%	2.28%	0.06%	0.00%	100%
Road 93	93	-	50	27.92278	Y	2000-2100	28	46.47%	16.97%	0.03%	2.53%	0.91%	0.23%	0.46%	0.00%	0.01%	0.06%	0.32%	0.22%	0.48%	0.55%	28.59%	2.06%	0.12%	0.00%	100%
Road 93	93	-	50	27.92127	Y	2100-2200	28	40.43%	21.81%	0.02%	2.38%	0.85%	0.16%	0.31%	0.00%	0.01%	0.06%	0.24%	0.17%	0.36%	0.42%	31.03%	1.66%	0.08%	0.00%	100%
Road 93	93	-	50	28.06416	Y	2200-2300	26	38.73%	25.97%	0.02%	2.22%	0.80%	0.12%	0.24%	0.00%	0.01%	0.06%	0.02%	0.01%	0.03%	0.42%	29.31%	1.96%	0.06%	0.00%	100%
Road 93	93	-	50	28.49352	Y	2300-0000	20	38.87%	24.38%	0.03%	2.45%	0.88%	0.19%	0.37%	0.00%	0.04%	0.34%	0.11%	0.08%	0.17%	0.43%	29.41%	2.15%	0.10%	0.00%	100%
Road 94	94	-	50	29.13862	Y	0000-0100	9	22.52%	13.15%	0.04%	4.16%	1.49%	0.40%	0.79%	0.00%	0.05%	0.36%	0.12%	0.08%	0.18%	0.82%	54.28%	1.36%	0.21%	0.00%	100%
Road 94	94	-	50	29.40698	Y	0100-0200	6	22.51%	12.14%	0.05%	4.50%	1.62%	0.50%	0.99%	0.00%	0.07%	0.52%	0.17%	0.12%	0.26%	0.82%	54.01%	1.46%	0.26%	0.00%	100%
Road 94	94	-	50	29.54588	Y	0200-0300	5	22.67%	11.19%	0.05%	4.88%	1.75%	0.61%	1.21%	0.00%	0.09%	0.69%	0.22%	0.15%	0.34%	0.79%	53.47%	1.57%	0.32%	0.00%	100%
Road 94	94	-	50	29.6538	Y	0300-0400	4	22.50%	10.11%	0.05%	5.20%	1.87%	0.71%	1.40%	0.00%	0.11%	0.84%	0.27%	0.19%	0.42%	0.82%	53.47%	1.67%	0.36%	0.00%	100%
Road 94	94	-	50	29.67177	Y	0400-0500	3	22.59%	9.12%	0.06%	5.57%	2.00%	0.82%	1.61%	0.00%	0.13%	1.00%	0.33%	0.23%	0.50%	0.81%	53.03%	1.78%	0.42%	0.00%	100%
Road 94	94	-	50	29.53332	Y	0500-0600	5	22.64%	8.10%	0.06%	5.94%	2.13%	0.92%	1.82%	0.00%	0.15%	1.17%	0.38%	0.26%	0.58%	0.80%	52.67%	1.89%	0.47%	0.00%	100%
Road 94	94	-	50	28.70543	Y	0600-0700	14	23.07%	7.14%	0.07%	6.40%	2.30%	1.06%	2.08%	0.00%	0.18%	1.37%	0.45%	0.31%	0.68%	0.72%	51.62%	2.01%	0.54%	0.00%	100%
Road 94	94	-	50	27.65138	Y	0700-0800	25	23.21%	6.10%	0.07%	6.80%	2.44%	1.18%	2.32%	0.00%	0.20%	1.55%	0.50%	0.35%	0.77%	0.70%	51.09%	2.12%	0.60%	0.00%	100%
Road 94	94	-	50	27.875	Y	0800-0900	24	28.27%	8.64%	0.07%	6.67%	2.39%	1.03%	2.02%	0.00%	0.10%	0.80%	0.40%	0.28%	0.61%	1.11%	45.30%	1.78%	0.53%	0.00%	100%
Road 94	94	-	50	27.74754	Y	0900-1000	24	21.45%	6.95%	0.10%	9.76%	3.51%	1.78%	3.50%	0.00%	0.06%	0.51%	0.24%	0.17%	0.36%	1.09%	48.37%	1.23%	0.92%	0.00%	100%
Road 94	94	-	50	27.72373	Y	1000-1100	24	18.40%	8.38%	0.11%	10.50%	3.77%	2.02%	3.97%	0.00%	0.06%	0.44%	0.08%	0.06%	0.13%	2.22%	48.13%	0.70%	1.04%	0.00%	100%
Road 94	94	-	50	28.04102	Y	1100-1200	21	20.62%	8.64%	0.10%	9.92%	3.56%	2.20%	4.33%	0.00%	0.05%	0.37%	0.14%	0.10%	0.22%	0.61%	46.94%	1.06%	1.13%	0.00%	100%
Road 94	94	-	50	26.28176	Y	1200-1300	41	28.52%	9.89%	0.05%	4.49%	1.61%	0.97%	1.90%	0.00%	0.18%	1.40%	0.37%	0.25%	0.56%	2.06%	46.48%	0.77%	0.50%	0.00%	100%
Road 94	94	-	50	25.99357	Y	1300-1400	43	24.18%	9.99%	0.05%	5.21%	1.87%	0.94%	1.86%	0.00%	0.17%	1.34%	0.62%	0.43%	0.95%	2.43%	48.38%	1.08%	0.49%	0.00%	100%
Road 94	94	-	50	26.17578	Y	1400-1500	42	28.91%	8.96%	0.05%	4.57%	1.64%	1.01%	1.99%	0.00%	0.15%	1.18%	0.29%	0.20%	0.45%	1.22%	47.30%	1.57%	0.52%	0.00%	100%
Road 94	94	-	50	26.13755	Y	1500-1600	43	28.24%	10.15%	0.05%	4.68%	1.68%	1.06%	2.09%	0.00%	0.12%	0.91%	0.12%	0.08%	0.18%	1.06%	47.93%	1.09%	0.55%	0.00%	100%
Road 94	94	-	50	25.70353	Y	1600-1700	47	27.61%	9.54%	0.05%	4.82%	1.73%	0.73%	1.44%	0.00%	0.09%	0.69%	0.36%	0.25%	0.55%	1.31%	48.77%	1.68%	0.38%	0.00%	100%
Road 94	94	-	50	25.625	Y	1700-1800	51	35.38%	7.61%	0.04%	3.38%	1.21%	0.41%	0.80%	0.00%	0.08%	0.64%	0.41%	0.28%	0.62%	0.71%	44.70%	3.52%	0.21%	0.00%	100%
Road 94	94	-	50	25.46984	Y	1800-1900	52	37.75%	8.35%	0.02%	2.38%	0.85%	0.29%	0.57%	0.00%	0.01%	0.10%	0.27%	0.19%	0.41%	0.23%	46.17%	2.24%	0.15%	0.00%	100%
Road 94	94	-	50	25.5622	Y	1900-2000	50	33.31%	10.53%	0.02%	1.98%	0.71%	0.09%	0.17%	0.00%	0.02%	0.12%	0.25%	0.17%	0.38%	2.02%	48.62%	1.58%	0.04%	0.00%	100%
Road 94	94	-	50	26.31994	Y	2000-2100	41	31.98%	11.68%	0.02%	1.74%	0.63%	0.16%	0.31%	0.00%	0.01%	0.04%	0.22%	0.15%	0.33%	0.96%	50.28%	1.41%	0.08%	0.00%	100%
Road 94	94	-	50	26.22354	Y	2100-2200	41	27.15%	14.65%	0.02%	1.60%	0.57%	0.11%	0.21%	0.00%	0.01%	0.04%	0.16%	0.11%	0.24%	0.72%	53.25%	1.12%	0.05%	0.00%	100%
Road 94	94	-	50	26.5332	Y	2200-2300	39	26.48%	17.76%	0.02%	1.52%	0.55%	0.08%	0.17%	0.00%	0.01%	0.04%	0.01%	0.01%	0.02%	0.73%	51.22%	1.34%	0.04%	0.00%	100%
Road 94	94	-	50	27.30553	Y	2300-0000	30	26.55%	16.65%	0.02%	1.67%	0.60%	0.13%	0.26%	0.00%	0.03%	0.23%	0.08%	0.05%	0.12%	0.75%	51.34%	1.47%	0.07%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 95	95	-	50	25.19346	Y	0000-0100	84	51.58%	30.12%	0.04%	3.63%	1.30%	0.35%	0.69%	1.20%	0.11%	0.82%	0.27%	0.19%	0.41%	0.09%	5.92%	3.11%	0.18%	0.00%	100%
Road 95	95	-	50	26.68137	Y	0100-0200	58	51.82%	27.95%	0.04%	3.95%	1.42%	0.44%	0.87%	1.31%	0.15%	1.20%	0.39%	0.27%	0.59%	0.09%	5.92%	3.37%	0.23%	0.00%	100%
Road 95	95	-	50	27.4335	Y	0200-0300	44	52.14%	25.73%	0.04%	4.28%	1.54%	0.54%	1.06%	1.42%	0.20%	1.58%	0.51%	0.36%	0.78%	0.09%	5.86%	3.61%	0.28%	0.00%	100%
Road 95	95	-	50	28.0525	Y	0300-0400	33	52.31%	23.51%	0.05%	4.61%	1.65%	0.63%	1.24%	1.53%	0.25%	1.95%	0.64%	0.44%	0.97%	0.09%	5.92%	3.89%	0.32%	0.00%	100%
Road 95	95	-	50	28.1406	Y	0400-0500	31	52.61%	21.23%	0.05%	4.95%	1.78%	0.73%	1.43%	1.64%	0.30%	2.34%	0.76%	0.53%	1.16%	0.09%	5.88%	4.14%	0.37%	0.00%	100%
Road 95	95	-	50	27.34377	Y	0500-0600	44	52.90%	18.92%	0.06%	5.29%	1.90%	0.82%	1.62%	1.76%	0.35%	2.73%	0.89%	0.62%	1.36%	0.09%	5.86%	4.41%	0.42%	0.00%	100%
Road 95	95	-	50	24.49287	Y	0600-0700	125	53.36%	16.51%	0.06%	5.64%	2.02%	0.93%	1.84%	1.86%	0.41%	3.18%	1.03%	0.71%	1.57%	0.08%	5.68%	4.64%	0.48%	0.00%	100%
Road 95	95	-	50	23.24131	Y	0700-0800	226	53.69%	14.11%	0.06%	5.99%	2.15%	1.04%	2.04%	1.97%	0.46%	3.59%	1.17%	0.81%	1.78%	0.08%	5.63%	4.91%	0.53%	0.00%	100%
Road 95	95	-	50	23.18	Y	0800-0900	242	58.24%	17.81%	0.05%	5.23%	1.88%	0.80%	1.58%	1.24%	0.21%	1.65%	0.83%	0.57%	1.26%	0.11%	4.44%	3.66%	0.41%	0.00%	100%
Road 95	95	-	50	23.42991	Y	0900-1000	208	51.75%	16.77%	0.09%	8.97%	3.22%	1.64%	3.22%	1.63%	0.16%	1.22%	0.57%	0.40%	0.87%	0.13%	5.56%	2.96%	0.84%	0.00%	100%
Road 95	95	-	50	23.54245	Y	1000-1100	197	46.90%	21.37%	0.11%	10.20%	3.66%	1.96%	3.85%	1.08%	0.14%	1.13%	0.22%	0.15%	0.33%	0.27%	5.84%	1.78%	1.01%	0.00%	100%
Road 95	95	-	50	23.69833	Y	1100-1200	187	48.72%	20.42%	0.09%	8.93%	3.21%	1.98%	3.90%	1.81%	0.11%	0.87%	0.34%	0.24%	0.52%	0.07%	5.28%	2.51%	1.02%	0.00%	100%
Road 95	95	-	50	26.80248	Y	1200-1300	35	6.62%	2.30%	0.33%	31.31%	11.24%	6.73%	13.23%	1.91%	0.04%	0.32%	0.09%	0.06%	0.13%	0.94%	21.12%	0.18%	3.46%	0.00%	100%
Road 95	95	-	50	26.40583	Y	1300-1400	40	5.22%	2.16%	0.35%	33.73%	12.11%	6.12%	12.04%	2.64%	0.04%	0.29%	0.13%	0.09%	0.21%	1.03%	20.45%	0.23%	3.14%	0.00%	100%
Road 95	95	-	50	26.65122	Y	1400-1500	37	6.61%	2.05%	0.33%	31.32%	11.25%	6.93%	13.62%	1.77%	0.03%	0.27%	0.07%	0.05%	0.10%	0.55%	21.15%	0.36%	3.56%	0.00%	100%
Road 95	95	-	50	26.54593	Y	1500-1600	38	6.31%	2.27%	0.33%	31.39%	11.27%	7.13%	14.02%	1.61%	0.03%	0.20%	0.03%	0.02%	0.04%	0.46%	20.97%	0.24%	3.66%	0.00%	100%
Road 95	95	-	50	26.44779	Y	1600-1700	40	6.56%	2.27%	0.36%	34.38%	12.35%	5.24%	10.29%	1.71%	0.02%	0.16%	0.09%	0.06%	0.13%	0.61%	22.69%	0.40%	2.69%	0.00%	100%
Road 95	95	-	50	27.05	Y	1700-1800	33	10.77%	2.32%	0.32%	30.88%	11.09%	3.70%	7.28%	3.00%	0.02%	0.19%	0.12%	0.09%	0.19%	0.42%	26.62%	1.07%	1.90%	0.00%	100%
Road 95	95	-	50	27.37102	Y	1800-1900	29	13.57%	3.00%	0.27%	25.66%	9.22%	3.12%	6.13%	3.63%	0.00%	0.04%	0.10%	0.07%	0.15%	0.16%	32.47%	0.80%	1.60%	0.00%	100%
Road 95	95	-	50	27.76125	Y	1900-2000	24	13.59%	4.30%	0.25%	24.19%	8.69%	1.07%	2.10%	3.83%	0.01%	0.05%	0.10%	0.07%	0.16%	1.61%	38.81%	0.64%	0.55%	0.00%	100%
Road 95	95	-	50	28.15171	Y	2000-2100	20	13.24%	4.84%	0.23%	21.65%	7.77%	1.98%	3.89%	2.99%	0.00%	0.02%	0.09%	0.06%	0.14%	0.78%	40.73%	0.59%	1.02%	0.00%	100%
Road 95	95	-	50	28.17557	Y	2100-2200	19	11.61%	6.26%	0.21%	20.48%	7.36%	1.36%	2.66%	3.50%	0.00%	0.02%	0.07%	0.05%	0.10%	0.61%	44.54%	0.48%	0.70%	0.00%	100%
Road 95	95	-	50	28.36933	Y	2200-2300	17	11.77%	7.89%	0.21%	20.28%	7.28%	1.13%	2.21%	2.83%	0.00%	0.02%	0.01%	0.00%	0.01%	0.64%	44.55%	0.60%	0.58%	0.00%	100%
Road 95	95	-	50	28.67611	Y	2300-0000	14	11.23%	7.04%	0.22%	21.21%	7.62%	1.65%	3.24%	2.97%	0.01%	0.10%	0.03%	0.02%	0.05%	0.62%	42.50%	0.62%	0.85%	0.00%	100%
Road 96	96	-	50	29.13075	Y	0000-0100	10	9.92%	5.79%	0.38%	36.65%	13.16%	3.52%	6.93%	3.24%	0.02%	0.16%	0.05%	0.04%	0.08%	0.26%	17.39%	0.60%	1.81%	0.00%	100%
Road 96	96	-	50	29.35685	Y	0100-0200	8	9.25%	4.99%	0.39%	36.99%	13.28%	4.14%	8.13%	3.28%	0.03%	0.21%	0.07%	0.05%	0.11%	0.24%	16.13%	0.60%	2.12%	0.00%	100%
Road 96	96	-	50	29.46987	Y	0200-0300	6	8.67%	4.28%	0.39%	37.34%	13.41%	4.70%	9.23%	3.30%	0.03%	0.26%	0.09%	0.06%	0.13%	0.22%	14.88%	0.60%	2.41%	0.00%	100%
Road 96	96	-	50	29.5725	Y	0300-0400	5	8.13%	3.65%	0.39%	37.59%	13.50%	5.13%	10.09%	3.34%	0.04%	0.30%	0.10%	0.07%	0.15%	0.22%	14.06%	0.60%	2.64%	0.00%	100%
Road 96	96	-	50	29.56823	Y	0400-0500	5	7.67%	3.10%	0.40%	37.88%	13.60%	5.56%	10.93%	3.36%	0.04%	0.34%	0.11%	0.08%	0.17%	0.20%	13.10%	0.60%	2.86%	0.00%	100%
Road 96	96	-	50	29.34953	Y	0500-0600	8	7.26%	2.60%	0.40%	38.13%	13.69%	5.93%	11.66%	3.38%	0.05%	0.37%	0.12%	0.08%	0.19%	0.19%	12.29%	0.60%	3.05%	0.00%	100%
Road 96	96	-	50	28.06115	Y	0600-0700	23	6.92%	2.14%	0.40%	38.36%	13.78%	6.36%	12.50%	3.37%	0.05%	0.41%	0.13%	0.09%	0.20%	0.16%	11.26%	0.60%	3.27%	0.00%	100%
Road 96	96	-	50	26.27807	Y	0700-0800	44	6.58%	1.73%	0.40%	38.56%	13.85%	6.68%	13.14%	3.38%	0.06%	0.44%	0.14%	0.10%	0.22%	0.14%	10.54%	0.60%	3.43%	0.00%	100%
Road 96	96	-	50	26.675	Y	0800-0900	40	8.39%	2.56%	0.41%	39.57%	14.21%	6.08%	11.96%	2.50%	0.03%	0.24%	0.12%	0.08%	0.18%	0.24%	9.77%	0.53%	3.12%	0.00%	100%
Road 96	96	-	50	25.24891	Y	0900-1000	56	4.58%	1.49%	0.44%	41.74%	14.99%	7.62%	14.98%	2.02%	0.01%	0.11%	0.05%	0.04%	0.08%	0.17%	7.52%	0.26%	3.91%	0.00%	100%
Road 96	96	-	50	24.98271	Y	1000-1100	60	3.69%	1.68%	0.44%	42.10%	15.12%	8.09%	15.91%	1.19%	0.01%	0.09%	0.02%	0.01%	0.03%	0.32%	7.02%	0.14%	4.16%	0.00%	100%
Road 96	96	-	50	25.49035	Y	1100-1200	53	4.11%	1.72%	0.41%	39.55%	14.20%	8.79%	17.28%	2.14%	0.01%	0.07%	0.03%	0.02%	0.04%	0.09%	6.81%	0.21%	4.51%	0.00%	100%
Road 96	96	-	50	24.66416	Y	1200-1300	110	53.01%	18.39%	0.09%	8.35%	3.00%	1.79%	3.53%	1.22%	0.33%	2.60%	0.68%	0.47%	1.04%	0.13%	3.00%	1.43%	0.92%	0.00%	100%
Road 96	96	-	50	24.60571	Y	1300-1400	112	46.55%	19.23%	0.10%	10.02%	3.60%	1.82%	3.58%	1.89%	0.33%	2.58%	1.20%	0.83%	1.83%	0.16%	3.24%	2.09%	0.93%	0.00%	100%
Road 96	96	-	50	24.63133	Y	1400-1500	114	53.75%	16.66%	0.09%	8.49%	3.05%	1.88%	3.69%	1.15%	0.28%	2.19%	0.54%	0.38%	0.83%	0.08%	3.06%	2.91%	0.96%	0.00%	100%
Road 96	96	-	50	24.63793	Y	1500-1600	114	52.99%	19.06%	0.09%	8.78%	3.15%	2.00%	3.92%	1.08%	0.22%	1.71%	0.22%	0.16%	0.34%	0.07%	3.13%	2.05%	1.03%	0.00%	100%
Road 96	96	-	50	24.53138	Y	1600-1700	123	52.85%	18.26%	0.10%	9.23%	3.31%	1.40%	2.76%	1.10%	0.17%	1.31%	0.69%	0.48%	1.05%	0.09%	3.25%	3.23%	0.72%	0.00%	100%
Road 96	96	-	50	24.37	Y	1700-1800	144	62.11%	13.37%	0.06%	5.94%	2.13%	0.71%	1.40%	1.39%	0.14%	1.12%	0.72%	0.50%	1.10%	0.04%	2.73%	6.17%	0.37%	0.00%	100%
Road 96	96	-	50	24.37553	Y	1800-1900	147	67.40%	14.90%	0.04%	4.25%	1.53%	0.52%	1.01%	1.44%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	2.87%	4.00%	0.27%	0.00%	100%
Road 96	96	-	50	24.57839	Y	1900-2000	129	64.20%	20.30%	0.04%	3.81%	1.37%	0.17%	0.33%	1.45%	0.03%	0.23%	0.48%	0.34%	0.74%	0.14%	3.26%	3.04%	0.09%	0.00%	100%
Road 96	96	-	50	24.84376	Y	2000-2100	105	62.55%	22.84%	0.04%	3.41%	1.22%	0.31%	0.61%	1.13%	0.01%	0.08%	0.43%	0.30%	0.65%	0.07%	3.42%	2.77%	0.16%	0.00%	100%
Road 96	96	-	50	24.89532	Y	2100-2200	100	55.91%	30.16%	0.03%	3.29%	1.18%	0.22%	0.43%	1.35%	0.01%	0.08%	0.33%	0.23%	0.50%	0.05%	3.81%	2.30%	0.11%	0.00%	100%
Road 96	96	-	50	24.94608	Y	2200-2300	98	52.58%	35.26%	0.03%	3.02%	1.08%	0.17%	0.33%	1.01%	0.01%	0.08%	0.03%	0.02%	0.04%	0.05%	3.54%	2.66%	0.09%	0.00%	100%
Road 96	96	-	50	25.88351	Y	2300-0000	75	52.79%	33.10%	0.03%	3.32%	1.19%	0.26%	0.51%	1.12%	0.06%	0.46%	0.15%	0.10%	0.23%	0.05%	3.55%	2.92%	0.13%	0.00%	100%
Road 97	97	-	50	25.19346	Y	0000-0100	84	51.58%	30.12%	0.04%	3.63%	1.30%	0.35%	0.69%	1.20%	0.11%	0.82%	0.27%	0.19%	0.41%	0.09%	5.92%	3.11%	0.18%	0.00%	100%
Road 97	97	-	50	26.68137	Y	0100-0200	58	51.82%	27.95%	0.04%	3.95%	1.42%	0.44%	0.87%	1.31%	0.15%	1.20%	0.39%	0.27%	0.59%	0.09%	5.92%	3.37%	0.23%	0.00%	100%
Road 97	97	-	50	27.4335	Y	0200-0300	44	52.14%	25.73%	0.04%	4.28%	1.54%	0.54%	1.06%	1.42%	0.20%	1.58%	0.51%	0.36%	0.78%	0.09%	5.86%	3.61%	0.28%	0.00%	100%
Road 97	97	-	50	28.0525	Y	0300-0400	33	52.31%	23.51%	0.05%	4.61%	1.65%	0.63%	1.24%	1.53%	0.25%	1.95%	0.64%	0.44%	0.97%	0.09%	5.92%	3.89%	0.32%	0.00%	100%
Road 97	97	-	50	28.1406	Y	0400-0500	31	52.61%	21.23%	0.05%	4.95%	1.78%	0.73%	1.43%	1.64%	0.30%	2.34%	0.76%	0.53%	1.16%	0.09%	5.88%	4.14%	0.37%	0.00%	100%
Road 97	97	-	50	27.34377	Y	0500-0600	44	52.90%	18.92%	0.06%	5.29%	1.90%	0.82%	1.62%	1.76%	0.35%	2.73%	0.89%	0.62%	1.36%	0.09%	5.86%	4.41%	0.42%	0.00%	100%
Road 97	97	-	50	24.49287	Y	0600-0700	125	53.36%	16.51%	0.06%	5.64%	2.02%	0.93%	1.84%	1.86%	0.41%	3.18%	1.03%	0.71%	1.57%	0.08%	5.68%	4.64%	0.48%	0.00%	100%
Road 97	97	-	50	23.24131	Y	0700-0800	226	53.69%	14.11%	0.06%	5.99%	2.15%	1.04%	2.04%	1.97%	0.46%	3.59%	1.17%	0.81%	1.78%	0.08%	5.63%	4.91%	0.53%	0.00%	100%
Road 97	97	-	50	23.18	Y	0800-0900	242	58.24%	17.81%	0.05%	5.23%	1.88%	0.80%	1.58%	1.24%	0.21%	1.65%	0.83%	0.57%	1.26%	0.11%	4.44%	3.66%	0.41%	0.00%	100%
Road 97	97	-	50	23.42991	Y	0900-1000	208	51.75%	16.77%	0.09%	8.97%	3.22%	1.64%	3.22%	1.63%	0.16%	1.22%	0.57%	0.40%	0.87%	0.13%	5.56%	2.96%	0.84%	0.00%	100%
Road 97	97	-	50	23.54245	Y	1000-1100	197	46.90%	21.37%	0.11%	10.20%	3.66%	1.96%	3.85%	1.08%	0.14%	1.13%	0.22%	0.15%	0.33%	0.27%	5.84%	1.78%	1.01%	0.00%	100%
Road 97	97	-	50	23.69833	Y	1100-1200	187	48.72%	20.42%	0.09%	8.93%	3.21%	1.98%	3.90%	1.81%	0.11%	0.87%	0.34%	0.24%	0.52%	0.07%	5.28%	2.51%	1.02%	0.00%	100%
Road 97	97	-	50	26.80248	Y	1200-1300	35	6.62%	2.30%	0.33%	31.31%	11.24%	6.73%	13.23%	1.91%	0.04%	0.32%	0.09%	0.06%	0.13%	0.94%	21.12%	0.18%	3.46%	0.00%	100%
Road 97	97	-	50	26.40583	Y	1300-1400	40	5.22%	2.16%	0.35%	33.73%	12.11%	6.12%	12.04%	2.64%	0.04%	0.29%	0.13%	0.09%	0.21%	1.03%	20.45%	0.23%	3.14%	0.00%	100%
Road 97	97	-	50	26.65122	Y	1400-1500	37	6.61%	2.05%	0.33%	31.32%	11.25%	6.93%	13.62%	1.77%	0.03%	0.27%	0.07%	0.05%	0.10%	0.55%	21.15%	0.36%	3.56%	0.00%	100%
Road 97	97	-	50	26.54593	Y	1500-1600	38	6.31%	2.27%	0.33%	31.39%	11.27%	7.13%	14.02%	1.61%	0.03%	0.20%	0.03%	0.02%	0.04%	0.46%	20.97%	0.24%	3.66%	0.00%	100%
Road 97	97	-	50	26.44779	Y	1600-1700	40	6.56%	2.27%	0.36%	34.38%	12.35%	5.24%	10.29%	1.71%	0.02%	0.16%	0.09%	0.06%	0.13%	0.61%	22.69%	0.40%	2.69%	0.00%	100%
Road 97	97	-	50	27.05	Y	1700-1800	33	10.77%	2.32%	0.32%	30.88%	11.09%	3.70%	7.28%	3.00%	0.02%	0.19%	0.12%	0.09%	0.19%	0.42%	26.62%	1.07%	1.90%	0.00%	100%
Road 97	97	-	50	27.37102	Y	1800-1900	29	13.57%	3.00%	0.27%	25.66%	9.22%	3.12%	6.13%	3.63%	0.00%	0.04%	0.10%	0.07%	0.15%	0.16%	32.47%	0.80%	1.60%	0.00%	100%
Road 97	97	-	50	27.76125	Y	1900-2000	24	13.59%	4.30%	0.25%	24.19%	8.69%	1.07%	2.10%	3.83%	0.01%	0.05%	0.10%	0.07%	0.16%	1.61%	38.81%	0.64%	0.55%	0.00%	100%
Road 97	97	-	50	28.15171	Y	2000-2100	20	13.24%	4.84%	0.23%	21.65%	7.77%	1.98%	3.89%	2.99%	0.00%	0.02%	0.09%	0.06%	0.14%	0.78%	40.73%	0.59%	1.02%	0.00%	100%
Road 97	97	-	50	28.17557	Y	2100-2200	19	11.61%	6.26%	0.21%	20.48%	7.36%	1.36%	2.66%	3.50%	0.00%	0.02%	0.07%	0.05%	0.10%	0.61%	44.54%	0.48%	0.70%	0.00%	100%
Road 97	97	-	50	28.36933	Y	2200-2300	17	11.77%	7.89%	0.21%	20.28%	7.28%	1.13%	2.21%	2.83%	0.00%	0.02%	0.01%	0.00%	0.01%	0.64%	44.55%	0.60%	0.58%	0.00%	100%
Road 97	97	-	50	28.67611	Y	2300-0000	14	11.23%	7.04%	0.22%	21.21%	7.62%	1.65%	3.24%	2.97%	0.01%	0.10%	0.03%	0.02%	0.05%	0.62%	42.50%	0.62%	0.85%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 98	98	-	50	29.07816	Y	0000-0100	11	9.34%	5.45%	0.40%	37.94%	13.63%	3.65%	7.17%	3.05%	0.02%	0.15%	0.05%	0.03%	0.07%	0.25%	16.37%	0.56%	1.87%	0.00%	100%
Road 98	98	-	50	29.31613	Y	0100-0200	8	8.68%	4.68%	0.40%	38.20%	13.72%	4.27%	8.40%	3.08%	0.03%	0.20%	0.07%	0.05%	0.10%	0.23%	15.15%	0.56%	2.19%	0.00%	100%
Road 98	98	-	50	29.4349	Y	0200-0300	7	8.12%	4.01%	0.40%	38.48%	13.82%	4.84%	9.52%	3.09%	0.03%	0.25%	0.08%	0.06%	0.12%	0.21%	13.94%	0.56%	2.49%	0.00%	100%
Road 98	98	-	50	29.54348	Y	0300-0400	5	7.60%	3.42%	0.40%	38.67%	13.89%	5.28%	10.38%	3.12%	0.04%	0.28%	0.09%	0.06%	0.14%	0.20%	13.14%	0.57%	2.71%	0.00%	100%
Road 98	98	-	50	29.53805	Y	0400-0500	5	7.16%	2.89%	0.41%	38.89%	13.97%	5.71%	11.23%	3.13%	0.04%	0.32%	0.10%	0.07%	0.16%	0.19%	12.23%	0.56%	2.93%	0.00%	100%
Road 98	98	-	50	29.30294	Y	0500-0600	8	6.77%	2.42%	0.41%	39.10%	14.04%	6.08%	11.96%	3.15%	0.04%	0.35%	0.11%	0.08%	0.17%	0.17%	11.45%	0.56%	3.12%	0.00%	100%
Road 98	98	-	50	27.91839	Y	0600-0700	25	6.44%	1.99%	0.41%	39.27%	14.10%	6.51%	12.79%	3.13%	0.05%	0.38%	0.12%	0.09%	0.19%	0.15%	10.47%	0.56%	3.34%	0.00%	100%
Road 98	98	-	50	25.99848	Y	0700-0800	47	6.12%	1.61%	0.41%	39.42%	14.16%	6.83%	13.43%	3.14%	0.05%	0.41%	0.13%	0.09%	0.20%	0.13%	9.79%	0.56%	3.51%	0.00%	100%
Road 98	98	-	50	26.425	Y	0800-0900	43	7.80%	2.38%	0.42%	40.47%	14.53%	6.22%	12.23%	2.33%	0.03%	0.22%	0.11%	0.08%	0.17%	0.22%	9.09%	0.49%	3.20%	0.00%	100%
Road 98	98	-	50	24.97101	Y	0900-1000	61	4.23%	1.37%	0.44%	42.37%	15.21%	7.74%	15.21%	1.86%	0.01%	0.10%	0.05%	0.03%	0.07%	0.16%	6.94%	0.24%	3.97%	0.00%	100%
Road 98	98	-	50	24.89638	Y	1000-1100	65	3.40%	1.55%	0.45%	42.65%	15.31%	8.20%	16.12%	1.09%	0.01%	0.08%	0.02%	0.01%	0.02%	0.30%	6.46%	0.13%	4.21%	0.00%	100%
Road 98	98	-	50	25.10976	Y	1100-1200	57	3.79%	1.59%	0.42%	40.10%	14.40%	8.91%	17.52%	1.98%	0.01%	0.07%	0.03%	0.02%	0.04%	0.08%	6.27%	0.19%	4.58%	0.00%	100%
Road 98	98	-	50	24.59771	Y	1200-1300	114	51.20%	17.76%	0.10%	9.68%	3.48%	2.08%	4.09%	1.18%	0.32%	2.51%	0.66%	0.46%	1.00%	0.13%	2.90%	1.38%	1.07%	0.00%	100%
Road 98	98	-	50	24.5302	Y	1300-1400	116	44.76%	18.49%	0.12%	11.56%	4.15%	2.10%	4.13%	1.81%	0.32%	2.48%	1.16%	0.80%	1.76%	0.16%	3.12%	2.01%	1.08%	0.00%	100%
Road 98	98	-	50	24.56085	Y	1400-1500	118	51.87%	16.08%	0.10%	9.83%	3.53%	2.17%	4.28%	1.11%	0.27%	2.11%	0.52%	0.36%	0.80%	0.08%	2.95%	2.81%	1.12%	0.00%	100%
Road 98	98	-	50	24.56426	Y	1500-1600	118	51.05%	18.36%	0.11%	10.15%	3.65%	2.31%	4.54%	1.04%	0.21%	1.64%	0.22%	0.15%	0.33%	0.07%	3.01%	1.98%	1.19%	0.00%	100%
Road 98	98	-	50	24.45974	Y	1600-1700	127	51.06%	17.65%	0.11%	10.70%	3.84%	1.63%	3.20%	1.06%	0.16%	1.27%	0.67%	0.46%	1.02%	0.08%	3.14%	3.12%	0.84%	0.00%	100%
Road 98	98	-	50	24.32	Y	1700-1800	147	60.82%	13.09%	0.07%	6.97%	2.50%	0.84%	1.64%	1.36%	0.14%	1.10%	0.71%	0.49%	1.07%	0.04%	2.67%	6.04%	0.43%	0.00%	100%
Road 98	98	-	50	24.33893	Y	1800-1900	149	66.39%	14.68%	0.05%	5.02%	1.80%	0.61%	1.20%	1.42%	0.02%	0.18%	0.48%	0.33%	0.73%	0.01%	2.82%	3.94%	0.31%	0.00%	100%
Road 98	98	-	50	24.55502	Y	1900-2000	131	63.46%	20.07%	0.05%	4.52%	1.62%	0.20%	0.39%	1.43%	0.03%	0.23%	0.48%	0.33%	0.73%	0.13%	3.22%	3.00%	0.10%	0.00%	100%
Road 98	98	-	50	24.82432	Y	2000-2100	106	61.84%	22.58%	0.04%	4.04%	1.45%	0.37%	0.73%	1.12%	0.01%	0.08%	0.42%	0.29%	0.65%	0.06%	3.38%	2.74%	0.19%	0.00%	100%
Road 98	98	-	50	24.8786	Y	2100-2200	101	55.33%	29.85%	0.04%	3.91%	1.40%	0.26%	0.51%	1.34%	0.01%	0.08%	0.33%	0.23%	0.50%	0.05%	3.77%	2.27%	0.13%	0.00%	100%
Road 98	98	-	50	24.93162	Y	2200-2300	98	52.09%	34.93%	0.04%	3.59%	1.29%	0.20%	0.39%	1.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.05%	3.50%	2.64%	0.10%	0.00%	100%
Road 98	98	-	50	25.81799	Y	2300-0000	76	52.23%	32.75%	0.04%	3.94%	1.42%	0.31%	0.60%	1.11%	0.06%	0.46%	0.15%	0.10%	0.23%	0.05%	3.51%	2.89%	0.16%	0.00%	100%
Road 99	99	-	50	29.29004	Y	0000-0100	6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.70%	0.00%	0.00%	0.00%	0.00%	0.00%	1.24%	82.07%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.51016	Y	0100-0200	4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.92%	0.00%	0.00%	0.00%	0.00%	0.00%	1.23%	80.86%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.625	Y	0200-0300	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.24%	0.00%	0.00%	0.00%	0.00%	0.00%	1.18%	79.58%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.71268	Y	0300-0400	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	1.21%	78.47%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.72736	Y	0400-0500	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.59%	0.00%	0.00%	0.00%	0.00%	0.00%	1.18%	77.24%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.61168	Y	0500-0600	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.81%	0.00%	0.00%	0.00%	0.00%	0.00%	1.16%	76.03%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.9281	Y	0600-0700	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	24.35%	0.00%	0.00%	0.00%	0.00%	0.00%	1.05%	74.60%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.05506	Y	0700-0800	17	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.65%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	73.34%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.4	Y	0800-0900	14	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	1.88%	76.69%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.26665	Y	0900-1000	15	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.26%	0.00%	0.00%	0.00%	0.00%	0.00%	1.71%	76.03%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.33767	Y	1000-1100	14	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.74%	81.25%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.49933	Y	1100-1200	13	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.95%	73.71%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.97542	Y	1200-1300	8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.96%	0.00%	0.00%	0.00%	0.00%	0.00%	3.91%	88.13%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.84903	Y	1300-1400	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.96%	0.00%	0.00%	0.00%	0.00%	0.00%	4.26%	84.78%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.94729	Y	1400-1500	9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.56%	0.00%	0.00%	0.00%	0.00%	0.00%	2.32%	90.12%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.93281	Y	1500-1600	9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.99%	0.00%	0.00%	0.00%	0.00%	0.00%	2.02%	90.99%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.79445	Y	1600-1700	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.84%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	90.72%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.8	Y	1700-1800	10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.41%	88.59%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.72972	Y	1800-1900	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.45%	89.54%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.69565	Y	1900-2000	11	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.66%	0.00%	0.00%	0.00%	0.00%	0.00%	3.64%	87.70%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.92507	Y	2000-2100	9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.72%	0.00%	0.00%	0.00%	0.00%	0.00%	1.75%	91.53%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.85778	Y	2100-2200	9	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.20%	0.00%	0.00%	0.00%	0.00%	0.00%	1.25%	91.55%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	28.97885	Y	2200-2300	8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.89%	0.00%	0.00%	0.00%	0.00%	0.00%	1.33%	92.78%	0.00%	0.00%	0.00%	100%
Road 99	99	-	50	29.2047	Y	2300-0000	7	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.45%	0.00%	0.00%	0.00%	0.00%	0.00%	1.34%	92.21%	0.00%	0.00%	0.00%	100%
Road 100	100	-	50	29.60403	Y	0000-0100	5	22.65%	13.23%	0.09%	8.37%	3.00%	0.80%	1.58%	7.40%	0.05%	0.36%	0.12%	0.08%	0.18%	0.60%	39.71%	1.37%	0.41%	0.00%	100%
Road 100	100	-	50	29.72328	Y	0100-0200	3	22.30%	12.03%	0.09%	8.92%	3.20%	1.00%	1.96%	7.90%	0.07%	0.51%	0.17%	0.12%	0.25%	0.59%	38.91%	1.45%	0.51%	0.00%	100%
Road 100	100	-	50	29.78457	Y	0200-0300	2	22.09%	10.90%	0.10%	9.51%	3.41%	1.20%	2.35%	8.39%	0.09%	0.67%	0.22%	0.15%	0.33%	0.56%	37.89%	1.53%	0.61%	0.00%	100%
Road 100	100	-	50	29.83366	Y	0300-0400	2	21.63%	9.72%	0.10%	10.00%	3.59%	1.37%	2.68%	8.88%	0.10%	0.81%	0.26%	0.18%	0.40%	0.58%	37.39%	1.61%	0.70%	0.00%	100%
Road 100	100	-	50	29.83982	Y	0400-0500	2	21.38%	8.63%	0.11%	10.55%	3.79%	1.55%	3.05%	9.35%	0.12%	0.95%	0.31%	0.22%	0.47%	0.56%	36.50%	1.68%	0.80%	0.00%	100%
Road 100	100	-	50	29.76885	Y	0500-0600	3	21.09%	7.55%	0.12%	11.08%	3.98%	1.72%	3.39%	9.82%	0.14%	1.09%	0.36%	0.25%	0.54%	0.54%	35.70%	1.76%	0.89%	0.00%	100%
Road 100	100	-	50	29.34601	Y	0600-0700	8	21.09%	6.53%	0.12%	11.70%	4.20%	1.94%	3.81%	10.27%	0.16%	1.25%	0.41%	0.28%	0.62%	0.48%	34.31%	1.83%	1.00%	0.00%	100%
Road 100	100	-	50	28.79441	Y	0700-0800	14	20.87%	5.49%	0.13%	12.23%	4.39%	2.12%	4.17%	10.71%	0.18%	1.40%	0.45%	0.31%	0.69%	0.46%	33.41%	1.91%	1.09%	0.00%	100%
Road 100	100	-	50	28.925	Y	0800-0900	13	26.06%	7.97%	0.13%	12.29%	4.41%	1.89%	3.72%	7.78%	0.09%	0.74%	0.37%	0.26%	0.56%	0.75%	30.37%	1.64%	0.97%	0.00%	100%
Road 100	100	-	50	28.79384	Y	0900-1000	14	18.57%	6.02%	0.18%	16.90%	6.07%	3.09%	6.07%	8.17%	0.06%	0.44%	0.21%	0.14%	0.31%	0.69%	30.45%	1.06%	1.59%	0.00%	100%
Road 100	100	-	50	28.79796	Y	1000-1100	14	16.20%	7.38%	0.19%	18.49%	6.64%	3.55%	6.99%	5.22%	0.05%	0.39%	0.07%	0.05%	0.11%	1.42%	30.81%	0.61%	1.83%	0.00%	100%
Road 100	100	-	50	28.91562	Y	1100-1200	12	17.32%	7.26%	0.17%	16.66%	5.98%	3.70%	7.28%	9.03%	0.04%	0.31%	0.12%	0.08%	0.18%	0.37%	28.67%	0.89%	1.90%	0.00%	100%
Road 100	100	-	50	29.10729	Y	1200-1300	12	40.03%	13.88%	0.00%	0.00%	0.00%	0.00%	0.00%	11.53%	0.25%	1.96%	0.52%	0.36%	0.78%	1.26%	28.36%	1.08%	0.00%	0.00%	100%
Road 100	100	-	50	29.00939	Y	1300-1400	13	33.07%	13.66%	0.00%	0.00%	0.00%	0.00%	0.00%	16.74%	0.23%	1.83%	0.85%	0.59%	1.30%	1.45%	28.77%	1.48%	0.00%	0.00%	100%
Road 100	100	-	50	29.0926	Y	1400-1500	12	40.97%	12.70%	0.00%	0.00%	0.00%	0.00%	0.00%	11.00%	0.21%	1.67%	0.41%	0.29%	0.63%	0.75%	29.14%	2.22%	0.00%	0.00%	100%
Road 100	100	-	50	29.10023	Y	1500-1600	12	40.68%	14.63%	0.00%	0.00%	0.00%	0.00%	0.00%	10.38%	0.17%	1.31%	0.17%	0.12%	0.26%	0.67%	30.03%	1.58%	0.00%	0.00%	100%
Road 100	100	-	50	28.99009	Y	1600-1700	13	39.59%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	10.32%	0.13%	0.98%	0.52%	0.36%	0.79%	0.82%	30.41%	2.42%	0.00%	0.00%	100%
Road 100	100	-	50	28.85	Y	1700-1800	16	45.26%	9.74%	0.00%	0.00%	0.00%	0.00%	0.00%	12.63%	0.10%	0.82%	0.52%	0.36%	0.80%	0.39%	24.86%	4.50%	0.00%	0.00%	100%
Road 100	100	-	50	28.79034	Y	1800-1900	17	47.43%	10.49%	0.00%	0.00%	0.00%	0.00%	0.00%	12.68%	0.02%	0.13%	0.34%	0.24%	0.52%	0.13%	25.22%	2.81%	0.00%	0.00%	100%
Road 100	100	-	50	28.84431	Y	1900-2000	15	42.83%	13.55%	0.00%	0.00%	0.00%	0.00%	0.00%	12.08%	0.02%	0.15%	0.32%	0.22%	0.49%	1.13%	27.18%	2.03%	0.00%	0.00%	100%
Road 100	100	-	50	29.07314	Y	2000-2100	12	42.45%	15.51%	0.00%	0.00%	0.00%	0.00%	0.00%	9.59%	0.01%	0.05%	0.29%	0.20%	0.44%	0.56%	29.02%	1.88%	0.00%	0.00%	100%
Road 100	100	-	50	29.05179	Y	2100-2200	12	36.13%	19.49%	0.00%	0.00%	0.00%	0.00%	0.00%	10.91%	0.01%	0.05%	0.21%	0.15%	0.32%	0.42%	30.82%	1.48%	0.00%	0.00%	100%
Road 100	100	-	50	29.13691	Y	2200-2300	12	35.49%	23.80%	0.00%	0.00%	0.00%	0.00%	0.00%	8.52%	0.01%	0.05%	0.02%	0.01%	0.03%	0.43%	29.84%	1.80%	0.00%	0.00%	100%
Road 100	100	-	50	29.32649	Y	2300-0000	9	35.47%	22.24%	0.00%	0.00%	0.00%	0.00%	0.00%	9.39%	0.04%	0.31%	0.10%	0.07%	0.15%	0.43%	29.82%	1.96%	0.00%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 101	101	-	50	22.84909	Y	0000-0100	577	54.18%	31.64%	0.03%	3.18%	1.14%	0.31%	0.60%	0.18%	0.11%	0.86%	0.28%	0.19%	0.43%	0.05%	3.38%	3.27%	0.16%	0.00%	100%
Road 101	101	-	50	23.82976	Y	0100-0200	394	54.55%	29.43%	0.04%	3.47%	1.25%	0.39%	0.76%	0.19%	0.16%	1.26%	0.41%	0.28%	0.62%	0.05%	3.39%	3.55%	0.20%	0.00%	100%
Road 101	101	-	50	24.32456	Y	0200-0300	301	55.00%	27.14%	0.04%	3.76%	1.35%	0.47%	0.93%	0.21%	0.21%	1.67%	0.54%	0.38%	0.83%	0.05%	3.36%	3.81%	0.24%	0.00%	100%
Road 101	101	-	50	24.73267	Y	0300-0400	225	55.33%	24.87%	0.04%	4.07%	1.46%	0.56%	1.09%	0.23%	0.26%	2.06%	0.67%	0.47%	1.03%	0.05%	3.41%	4.11%	0.29%	0.00%	100%
Road 101	101	-	50	24.79245	Y	0400-0500	213	55.78%	22.51%	0.05%	4.38%	1.57%	0.64%	1.26%	0.24%	0.32%	2.48%	0.81%	0.56%	1.23%	0.05%	3.39%	4.39%	0.33%	0.00%	100%
Road 101	101	-	50	24.27885	Y	0500-0600	300	56.22%	20.11%	0.05%	4.69%	1.69%	0.73%	1.44%	0.26%	0.37%	2.90%	0.95%	0.66%	1.44%	0.05%	3.39%	4.68%	0.37%	0.00%	100%
Road 101	101	-	50	21.11967	Y	0600-0700	842	56.79%	17.57%	0.05%	5.01%	1.80%	0.83%	1.63%	0.27%	0.43%	3.38%	1.10%	0.76%	1.67%	0.05%	3.29%	4.94%	0.43%	0.00%	100%
Road 101	101	-	50	17.08341	Y	0700-0800	1523	57.27%	15.05%	0.06%	5.33%	1.91%	0.92%	1.82%	0.29%	0.49%	3.83%	1.24%	0.86%	1.89%	0.04%	3.26%	5.23%	0.47%	0.00%	100%
Road 101	101	-	50	16.69	Y	0800-0900	1654	61.18%	18.71%	0.05%	4.59%	1.65%	0.71%	1.39%	0.18%	0.22%	1.74%	0.87%	0.60%	1.32%	0.06%	2.54%	3.84%	0.36%	0.00%	100%
Road 101	101	-	50	17.77773	Y	0900-1000	1393	55.62%	18.02%	0.08%	8.05%	2.89%	1.47%	2.89%	0.24%	0.17%	1.32%	0.62%	0.43%	0.94%	0.07%	3.25%	3.18%	0.75%	0.00%	100%
Road 101	101	-	50	18.16737	Y	1000-1100	1313	50.52%	23.02%	0.10%	9.17%	3.29%	1.76%	3.46%	0.16%	0.16%	1.21%	0.23%	0.16%	0.36%	0.16%	3.42%	1.92%	0.91%	0.00%	100%
Road 101	101	-	50	18.65369	Y	1100-1200	1245	52.48%	21.99%	0.08%	8.02%	2.88%	1.78%	3.51%	0.27%	0.12%	0.94%	0.37%	0.25%	0.56%	0.04%	3.09%	2.70%	0.92%	0.00%	100%
Road 101	101	-	50	23.43967	Y	1200-1300	412	50.52%	17.52%	0.11%	10.28%	3.69%	2.21%	4.34%	0.16%	0.32%	2.48%	0.65%	0.45%	0.99%	0.16%	3.62%	1.36%	1.13%	0.00%	100%
Road 101	101	-	50	23.32551	Y	1300-1400	419	44.28%	18.29%	0.13%	12.32%	4.42%	2.24%	4.39%	0.25%	0.31%	2.45%	1.14%	0.79%	1.74%	0.20%	3.90%	1.99%	1.15%	0.00%	100%
Road 101	101	-	50	23.36872	Y	1400-1500	426	51.12%	15.84%	0.11%	10.44%	3.75%	2.31%	4.54%	0.15%	0.27%	2.08%	0.52%	0.36%	0.79%	0.09%	3.68%	2.77%	1.19%	0.00%	100%
Road 101	101	-	50	23.36951	Y	1500-1600	426	50.25%	18.07%	0.11%	10.76%	3.86%	2.45%	4.81%	0.14%	0.21%	1.62%	0.21%	0.15%	0.32%	0.08%	3.75%	1.95%	1.26%	0.00%	100%
Road 101	101	-	50	23.18249	Y	1600-1700	460	50.30%	17.39%	0.12%	11.35%	4.08%	1.73%	3.40%	0.15%	0.16%	1.25%	0.66%	0.46%	1.00%	0.10%	3.91%	3.07%	0.89%	0.00%	100%
Road 101	101	-	50	22.9675	Y	1700-1800	527	60.52%	13.02%	0.08%	7.47%	2.68%	0.90%	1.76%	0.19%	0.14%	1.09%	0.70%	0.49%	1.07%	0.05%	3.36%	6.01%	0.46%	0.00%	100%
Road 101	101	-	50	23.01214	Y	1800-1900	532	66.24%	14.65%	0.06%	5.40%	1.94%	0.66%	1.29%	0.20%	0.02%	0.18%	0.48%	0.33%	0.73%	0.02%	3.56%	3.93%	0.34%	0.00%	100%
Road 101	101	-	50	23.40017	Y	1900-2000	466	63.34%	20.03%	0.05%	4.86%	1.74%	0.21%	0.42%	0.20%	0.03%	0.23%	0.48%	0.33%	0.73%	0.17%	4.07%	3.00%	0.11%	0.00%	100%
Road 101	101	-	50	23.87554	Y	2000-2100	380	61.55%	22.48%	0.05%	4.33%	1.56%	0.40%	0.78%	0.16%	0.01%	0.08%	0.42%	0.29%	0.64%	0.08%	4.25%	2.72%	0.20%	0.00%	100%
Road 101	101	-	50	23.97571	Y	2100-2200	362	55.14%	29.75%	0.04%	4.19%	1.51%	0.28%	0.55%	0.19%	0.01%	0.08%	0.32%	0.23%	0.49%	0.06%	4.76%	2.27%	0.14%	0.00%	100%
Road 101	101	-	50	24.06794	Y	2200-2300	352	51.83%	34.75%	0.04%	3.84%	1.38%	0.21%	0.42%	0.14%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.41%	2.62%	0.11%	0.00%	100%
Road 101	101	-	50	24.48789	Y	2300-0000	273	51.97%	32.59%	0.04%	4.23%	1.52%	0.33%	0.65%	0.15%	0.06%	0.46%	0.15%	0.10%	0.23%	0.06%	4.42%	2.88%	0.17%	0.00%	100%
Road 102	102	-	50	25.17765	Y	0000-0100	166	47.56%	27.78%	0.10%	9.25%	3.32%	0.89%	1.75%	0.20%	0.10%	0.76%	0.25%	0.17%	0.38%	0.06%	4.11%	2.87%	0.46%	0.00%	100%
Road 102	102	-	50	26.61626	Y	0100-0200	114	47.24%	25.48%	0.10%	9.95%	3.57%	1.11%	2.19%	0.22%	0.14%	1.09%	0.35%	0.25%	0.54%	0.06%	4.07%	3.07%	0.57%	0.00%	100%
Road 102	102	-	50	27.33944	Y	0200-0300	89	46.97%	23.18%	0.11%	10.64%	3.82%	1.34%	2.63%	0.23%	0.18%	1.43%	0.46%	0.32%	0.70%	0.06%	3.98%	3.25%	0.69%	0.00%	100%
Road 102	102	-	50	27.95136	Y	0300-0400	67	46.60%	20.95%	0.12%	11.34%	4.07%	1.55%	3.04%	0.25%	0.22%	1.74%	0.57%	0.39%	0.86%	0.06%	3.97%	3.46%	0.80%	0.00%	100%
Road 102	102	-	50	28.01326	Y	0400-0500	64	46.32%	18.69%	0.13%	12.03%	4.32%	1.77%	3.47%	0.27%	0.26%	2.06%	0.67%	0.47%	1.02%	0.06%	3.90%	3.65%	0.91%	0.00%	100%
Road 102	102	-	50	27.11885	Y	0500-0600	92	46.03%	16.46%	0.13%	12.72%	4.57%	1.98%	3.89%	0.28%	0.30%	2.37%	0.78%	0.54%	1.18%	0.06%	3.84%	3.83%	1.02%	0.00%	100%
Road 102	102	-	50	24.33769	Y	0600-0700	263	45.84%	14.18%	0.14%	13.38%	4.80%	2.22%	4.36%	0.29%	0.35%	2.73%	0.89%	0.61%	1.35%	0.05%	3.68%	3.99%	1.14%	0.00%	100%
Road 102	102	-	50	22.91151	Y	0700-0800	482	45.57%	11.98%	0.15%	14.05%	5.04%	2.43%	4.79%	0.31%	0.39%	3.05%	0.99%	0.69%	1.51%	0.05%	3.60%	4.16%	1.25%	0.00%	100%
Road 102	102	-	50	22.905	Y	0800-0900	505	50.45%	15.43%	0.13%	12.53%	4.50%	1.93%	3.79%	0.20%	0.18%	1.43%	0.72%	0.50%	1.09%	0.07%	2.90%	3.17%	0.99%	0.00%	100%
Road 102	102	-	50	22.77281	Y	0900-1000	486	40.11%	13.00%	0.20%	19.22%	6.90%	3.51%	6.90%	0.23%	0.12%	0.95%	0.44%	0.31%	0.68%	0.07%	3.25%	2.30%	1.80%	0.00%	100%
Road 102	102	-	50	22.76541	Y	1000-1100	478	34.93%	15.92%	0.22%	20.99%	7.54%	4.03%	7.93%	0.15%	0.11%	0.84%	0.16%	0.11%	0.25%	0.15%	3.28%	1.33%	2.07%	0.00%	100%
Road 102	102	-	50	23.0392	Y	1100-1200	442	37.21%	15.60%	0.20%	18.84%	6.76%	4.19%	8.23%	0.26%	0.09%	0.66%	0.26%	0.18%	0.39%	0.04%	3.04%	1.91%	2.15%	0.00%	100%
Road 102	102	-	50	20.95972	Y	1200-1300	870	58.13%	20.16%	0.06%	5.51%	1.98%	1.18%	2.33%	0.16%	0.36%	2.85%	0.75%	0.52%	1.14%	0.11%	2.57%	1.57%	0.61%	0.00%	100%
Road 102	102	-	50	20.83701	Y	1300-1400	867	51.95%	21.46%	0.07%	6.73%	2.42%	1.22%	2.40%	0.24%	0.37%	2.88%	1.34%	0.93%	2.04%	0.14%	2.83%	2.33%	0.63%	0.00%	100%
Road 102	102	-	50	20.85308	Y	1400-1500	895	59.03%	18.29%	0.06%	5.61%	2.02%	1.24%	2.44%	0.15%	0.31%	2.40%	0.60%	0.41%	0.91%	0.07%	2.62%	3.20%	0.64%	0.00%	100%
Road 102	102	-	50	20.90552	Y	1500-1600	890	58.37%	20.99%	0.06%	5.82%	2.09%	1.32%	2.60%	0.14%	0.24%	1.88%	0.25%	0.17%	0.38%	0.06%	2.69%	2.26%	0.68%	0.00%	100%
Road 102	102	-	50	20.44639	Y	1600-1700	971	57.87%	20.00%	0.06%	6.08%	2.18%	0.93%	1.82%	0.14%	0.18%	1.44%	0.76%	0.52%	1.15%	0.07%	2.78%	3.53%	0.48%	0.00%	100%
Road 102	102	-	50	19.5975	Y	1700-1800	1171	66.12%	14.23%	0.04%	3.80%	1.37%	0.46%	0.90%	0.17%	0.15%	1.20%	0.77%	0.53%	1.17%	0.04%	2.27%	6.57%	0.23%	0.00%	100%
Road 102	102	-	50	19.51841	Y	1800-1900	1207	70.90%	15.68%	0.03%	2.69%	0.97%	0.33%	0.64%	0.18%	0.02%	0.19%	0.51%	0.35%	0.78%	0.01%	2.36%	4.20%	0.17%	0.00%	100%
Road 102	102	-	50	20.2705	Y	1900-2000	1068	67.11%	21.22%	0.03%	2.40%	0.86%	0.11%	0.21%	0.18%	0.03%	0.24%	0.51%	0.35%	0.77%	0.11%	2.66%	3.17%	0.05%	0.00%	100%
Road 102	102	-	50	21.32692	Y	2000-2100	871	65.19%	23.81%	0.02%	2.14%	0.77%	0.20%	0.38%	0.14%	0.01%	0.08%	0.45%	0.31%	0.68%	0.05%	2.79%	2.88%	0.10%	0.00%	100%
Road 102	102	-	50	21.54086	Y	2100-2200	831	58.32%	31.46%	0.02%	2.07%	0.74%	0.14%	0.27%	0.16%	0.01%	0.08%	0.34%	0.24%	0.52%	0.04%	3.11%	2.40%	0.07%	0.00%	100%
Road 102	102	-	50	21.71052	Y	2200-2300	813	54.52%	36.56%	0.02%	1.88%	0.68%	0.10%	0.21%	0.12%	0.01%	0.08%	0.03%	0.02%	0.04%	0.04%	2.87%	2.76%	0.05%	0.00%	100%
Road 102	102	-	50	22.66848	Y	2300-0000	626	54.96%	34.46%	0.02%	2.08%	0.75%	0.16%	0.32%	0.13%	0.06%	0.48%	0.16%	0.11%	0.24%	0.04%	2.89%	3.04%	0.08%	0.00%	100%
Road 103	103	-	50	22.75282	Y	0000-0100	597	54.35%	31.74%	0.03%	3.08%	1.11%	0.30%	0.58%	0.17%	0.11%	0.86%	0.28%	0.20%	0.43%	0.05%	3.27%	3.28%	0.15%	0.00%	100%
Road 103	103	-	50	23.7642	Y	0100-0200	407	54.74%	29.53%	0.04%	3.36%	1.21%	0.38%	0.74%	0.19%	0.16%	1.26%	0.41%	0.29%	0.63%	0.05%	3.28%	3.56%	0.19%	0.00%	100%
Road 103	103	-	50	24.27449	Y	0200-0300	311	55.20%	27.24%	0.04%	3.65%	1.31%	0.46%	0.90%	0.20%	0.21%	1.68%	0.54%	0.38%	0.83%	0.05%	3.25%	3.82%	0.24%	0.00%	100%
Road 103	103	-	50	24.69527	Y	0300-0400	233	55.55%	24.97%	0.04%	3.94%	1.41%	0.54%	1.06%	0.22%	0.27%	2.07%	0.68%	0.47%	1.03%	0.05%	3.30%	4.13%	0.28%	0.00%	100%
Road 103	103	-	50	24.75721	Y	0400-0500	219	56.01%	22.60%	0.04%	4.24%	1.52%	0.62%	1.22%	0.23%	0.32%	2.49%	0.81%	0.56%	1.24%	0.05%	3.28%	4.41%	0.32%	0.00%	100%
Road 103	103	-	50	24.22922	Y	0500-0600	310	56.47%	20.20%	0.05%	4.55%	1.63%	0.71%	1.39%	0.25%	0.37%	2.91%	0.95%	0.66%	1.45%	0.05%	3.28%	4.70%	0.36%	0.00%	100%
Road 103	103	-	50	20.98029	Y	0600-0700	869	57.06%	17.66%	0.05%	4.85%	1.74%	0.80%	1.58%	0.27%	0.43%	3.40%	1.10%	0.76%	1.68%	0.04%	3.19%	4.96%	0.41%	0.00%	100%
Road 103	103	-	50	16.83167	Y	0700-0800	1571	57.56%	15.13%	0.05%	5.17%	1.86%	0.90%	1.76%	0.28%	0.49%	3.85%	1.25%	0.87%	1.90%	0.04%	3.16%	5.26%	0.46%	0.00%	100%
Road 103	103	-	50	16.415	Y	0800-0900	1707	61.42%	18.78%	0.05%	4.44%	1.60%	0.68%	1.34%	0.18%	0.22%	1.74%	0.87%	0.61%	1.33%	0.06%	2.46%	3.86%	0.35%	0.00%	100%
Road 103	103	-	50	17.56909	Y	0900-1000	1434	56.01%	18.15%	0.08%	7.82%	2.81%	1.43%	2.81%	0.24%	0.17%	1.32%	0.62%	0.43%	0.95%	0.07%	3.16%	3.20%	0.73%	0.00%	100%
Road 103	103	-	50	17.97951	Y	1000-1100	1351	50.92%	23.20%	0.09%	8.91%	3.20%	1.71%	3.37%	0.16%	0.16%	1.22%	0.24%	0.16%	0.36%	0.15%	3.33%	1.93%	0.88%	0.00%	100%
Road 103	103	-	50	18.47132	Y	1100-1200	1281	52.86%	22.16%	0.08%	7.80%	2.80%	1.73%	3.41%	0.26%	0.12%	0.94%	0.37%	0.26%	0.56%	0.04%	3.01%	2.72%	0.89%	0.00%	100%
Road 103	103	-	50	24.01361	Y	1200-1300	302	44.14%	15.31%	0.15%	14.03%	5.04%	3.01%	5.93%	0.22%	0.28%	2.16%	0.57%	0.39%	0.87%	0.22%	4.94%	1.19%	1.55%	0.00%	100%
Road 103	103	-	50	23.89499	Y	1300-1400	312	38.08%	15.73%	0.17%	16.54%	5.94%	3.00%	5.90%	0.34%	0.27%	2.11%	0.98%	0.68%	1.50%	0.26%	5.23%	1.71%	1.54%	0.00%	100%
Road 103	103	-	50	23.94942	Y	1400-1500	313	44.56%	13.81%	0.15%	14.20%	5.10%	3.14%	6.17%	0.21%	0.23%	1.81%	0.45%	0.31%	0.69%	0.13%	5.00%	2.41%	1.61%	0.00%	100%
Road 103	103	-	50	23.93562	Y	1500-1600	315	43.59%	15.67%	0.15%	14.58%	5.23%	3.31%	6.51%	0.20%	0.18%	1.40%	0.18%	0.13%	0.28%	0.11%	5.08%	1.69%	1.70%	0.00%	100%
Road 103	103	-	50	23.81445	Y	1600-1700	337	43.96%	15.19%	0.16%	15.48%	5.56%	2.36%	4.64%	0.20%	0.14%	1.09%	0.57%	0.40%	0.87%	0.14%	5.33%	2.68%	1.21%	0.00%	100%
Road 103	103	-	50	23.7675	Y	1700-1800	370	55.26%	11.89%	0.11%	10.65%	3.83%	1.28%	2.51%	0.27%	0.13%	1.00%	0.64%	0.44%	0.98%	0.08%	4.79%	5.49%	0.66%	0.00%	100%
Road 103	103	-	50	23.84661	Y	1800-1900	367	61.59%	13.62%	0.08%	7.83%	2.81%	0.95%	1.87%	0.29%	0.02%	0.17%	0.44%	0.31%	0.67%	0.03%	5.17%	3.65%	0.49%	0.00%	100%
Road 103	103	-	50	24.14705	Y	1900-2000	319	59.40%	18.79%	0.07%	7.11%	2.55%	0.31%	0.62%	0.29%	0.03%	0.21%	0.45%	0.31%	0.68%	0.25%	5.95%	2.81%	0.16%	0.00%	100%
Road 103	103	-	50	24.48328	Y	2000-2100	260	57.72%	21.08%	0.07%	6.35%	2.28%	0.58%	1.14%	0.23%	0.01%	0.07%	0.40%	0.27%	0.60%	0.12%	6.23%	2.55%	0.30%	0.00%	100%
Road 103	103	-	50	24.55412	Y	2100-2200	247	51.74%	27.91%	0.06%	6.14%	2.21%	0.41%	0.80%	0.27%	0.01%	0.08%	0.30%	0.21%	0.46%	0.09%	6.97%	2.13%	0.21%	0.00%	100%
Road 103	103	-	50	24.63074	Y	2200-2300	239	48.91%	32.80%	0.06%	5.67%	2.03%	0.31%	0.62%	0.21%	0.01%	0.08%	0.03%	0.02%	0.04%	0.09%	6.49%	2.48%	0.16%	0.00%	100%
Road 103	103	-	50	24.92133	Y	2300-0000	186	48.80%	30.60%	0.06%	6.20%	2.23%	0.48%	0.95%	0.23%	0.05%	0.43%	0.14%	0.10%	0.21%	0.09%	6.48%	2.70%	0.25%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 104	104	-	50	25.20395	Y	0000-0100	165	47.75%	27.89%	0.09%	9.05%	3.25%	0.87%	1.71%	0.21%	0.10%	0.76%	0.25%	0.17%	0.38%	0.06%	4.13%	2.88%	0.45%	0.00%	100%
Road 104	104	-	50	26.63661	Y	0100-0200	114	47.44%	25.59%	0.10%	9.74%	3.50%	1.09%	2.14%	0.22%	0.14%	1.09%	0.36%	0.25%	0.54%	0.06%	4.08%	3.09%	0.56%	0.00%	100%
Road 104	104	-	50	27.35692	Y	0200-0300	88	47.19%	23.29%	0.11%	10.43%	3.74%	1.31%	2.58%	0.24%	0.18%	1.43%	0.47%	0.32%	0.71%	0.06%	3.99%	3.27%	0.67%	0.00%	100%
Road 104	104	-	50	27.96587	Y	0300-0400	67	46.84%	21.06%	0.12%	11.11%	3.99%	1.52%	2.98%	0.25%	0.22%	1.75%	0.57%	0.40%	0.87%	0.06%	4.00%	3.48%	0.78%	0.00%	100%
Road 104	104	-	50	28.02835	Y	0400-0500	64	46.58%	18.80%	0.12%	11.80%	4.24%	1.73%	3.41%	0.27%	0.27%	2.07%	0.68%	0.47%	1.03%	0.06%	3.92%	3.67%	0.89%	0.00%	100%
Road 104	104	-	50	27.14214	Y	0500-0600	92	46.31%	16.56%	0.13%	12.48%	4.48%	1.94%	3.82%	0.28%	0.31%	2.39%	0.78%	0.54%	1.19%	0.06%	3.87%	3.86%	1.00%	0.00%	100%
Road 104	104	-	50	24.35197	Y	0600-0700	261	46.14%	14.28%	0.14%	13.13%	4.71%	2.18%	4.28%	0.30%	0.35%	2.75%	0.89%	0.62%	1.36%	0.05%	3.70%	4.01%	1.12%	0.00%	100%
Road 104	104	-	50	22.93947	Y	0700-0800	478	45.89%	12.06%	0.14%	13.79%	4.95%	2.39%	4.70%	0.31%	0.39%	3.07%	1.00%	0.69%	1.52%	0.05%	3.62%	4.19%	1.23%	0.00%	100%
Road 104	104	-	50	22.93	Y	0800-0900	502	50.75%	15.52%	0.13%	12.29%	4.41%	1.89%	3.71%	0.20%	0.18%	1.44%	0.72%	0.50%	1.10%	0.07%	2.92%	3.19%	0.97%	0.00%	100%
Road 104	104	-	50	22.8122	Y	0900-1000	481	40.50%	13.12%	0.20%	18.92%	6.80%	3.46%	6.79%	0.23%	0.12%	0.96%	0.45%	0.31%	0.68%	0.07%	3.28%	2.32%	1.77%	0.00%	100%
Road 104	104	-	50	22.80857	Y	1000-1100	473	35.31%	16.09%	0.22%	20.68%	7.43%	3.98%	7.82%	0.15%	0.11%	0.85%	0.16%	0.11%	0.25%	0.15%	3.31%	1.34%	2.04%	0.00%	100%
Road 104	104	-	50	23.07726	Y	1100-1200	437	37.59%	15.75%	0.19%	18.55%	6.66%	4.12%	8.11%	0.26%	0.09%	0.67%	0.26%	0.18%	0.40%	0.04%	3.07%	1.93%	2.12%	0.00%	100%
Road 104	104	-	50	20.99295	Y	1200-1300	866	58.40%	20.25%	0.06%	5.32%	1.91%	1.14%	2.25%	0.16%	0.37%	2.86%	0.75%	0.52%	1.14%	0.11%	2.59%	1.57%	0.59%	0.00%	100%
Road 104	104	-	50	20.87476	Y	1300-1400	862	52.23%	21.58%	0.07%	6.51%	2.34%	1.18%	2.32%	0.24%	0.37%	2.90%	1.35%	0.94%	2.05%	0.14%	2.84%	2.34%	0.61%	0.00%	100%
Road 104	104	-	50	20.88832	Y	1400-1500	890	59.30%	18.38%	0.06%	5.42%	1.95%	1.20%	2.36%	0.15%	0.31%	2.41%	0.60%	0.42%	0.91%	0.07%	2.64%	3.21%	0.62%	0.00%	100%
Road 104	104	-	50	20.94236	Y	1500-1600	886	58.65%	21.09%	0.06%	5.63%	2.02%	1.28%	2.51%	0.14%	0.24%	1.89%	0.25%	0.17%	0.38%	0.06%	2.71%	2.27%	0.66%	0.00%	100%
Road 104	104	-	50	20.48221	Y	1600-1700	967	58.13%	20.09%	0.06%	5.87%	2.11%	0.89%	1.76%	0.14%	0.19%	1.45%	0.76%	0.53%	1.16%	0.07%	2.79%	3.55%	0.46%	0.00%	100%
Road 104	104	-	50	19.6225	Y	1700-1800	1168	66.29%	14.26%	0.04%	3.67%	1.32%	0.44%	0.86%	0.17%	0.15%	1.20%	0.77%	0.53%	1.17%	0.04%	2.28%	6.59%	0.23%	0.00%	100%
Road 104	104	-	50	19.53671	Y	1800-1900	1205	71.03%	15.70%	0.03%	2.59%	0.93%	0.31%	0.62%	0.18%	0.02%	0.19%	0.51%	0.35%	0.78%	0.01%	2.36%	4.21%	0.16%	0.00%	100%
Road 104	104	-	50	20.28219	Y	1900-2000	1067	67.20%	21.25%	0.02%	2.31%	0.83%	0.10%	0.20%	0.18%	0.03%	0.24%	0.51%	0.35%	0.77%	0.11%	2.67%	3.18%	0.05%	0.00%	100%
Road 104	104	-	50	21.33664	Y	2000-2100	870	65.28%	23.84%	0.02%	2.06%	0.74%	0.19%	0.37%	0.14%	0.01%	0.08%	0.45%	0.31%	0.68%	0.05%	2.79%	2.89%	0.10%	0.00%	100%
Road 104	104	-	50	21.54922	Y	2100-2200	830	58.40%	31.50%	0.02%	1.99%	0.71%	0.13%	0.26%	0.16%	0.01%	0.08%	0.34%	0.24%	0.52%	0.04%	3.11%	2.40%	0.07%	0.00%	100%
Road 104	104	-	50	21.71775	Y	2200-2300	812	54.59%	36.60%	0.02%	1.81%	0.65%	0.10%	0.20%	0.12%	0.01%	0.08%	0.03%	0.02%	0.04%	0.04%	2.87%	2.76%	0.05%	0.00%	100%
Road 104	104	-	50	22.67503	Y	2300-0000	625	55.04%	34.51%	0.02%	2.00%	0.72%	0.16%	0.31%	0.13%	0.06%	0.48%	0.16%	0.11%	0.24%	0.04%	2.89%	3.05%	0.08%	0.00%	100%
Road 105	105	-	50	23.59658	Y	0000-0100	432	53.19%	31.06%	0.04%	3.45%	1.24%	0.33%	0.65%	0.23%	0.11%	0.85%	0.28%	0.19%	0.42%	0.07%	4.52%	3.21%	0.17%	0.00%	100%
Road 105	105	-	50	24.34318	Y	0100-0200	295	53.51%	28.87%	0.04%	3.76%	1.35%	0.42%	0.83%	0.26%	0.16%	1.23%	0.40%	0.28%	0.61%	0.07%	4.52%	3.48%	0.22%	0.00%	100%
Road 105	105	-	50	24.72017	Y	0200-0300	226	53.91%	26.60%	0.04%	4.08%	1.46%	0.51%	1.01%	0.28%	0.21%	1.64%	0.53%	0.37%	0.81%	0.07%	4.48%	3.73%	0.26%	0.00%	100%
Road 105	105	-	50	25.15395	Y	0300-0400	169	54.19%	24.36%	0.05%	4.40%	1.58%	0.60%	1.18%	0.30%	0.26%	2.02%	0.66%	0.46%	1.00%	0.07%	4.54%	4.03%	0.31%	0.00%	100%
Road 105	105	-	50	25.37931	Y	0400-0500	160	54.58%	22.03%	0.05%	4.73%	1.70%	0.69%	1.37%	0.32%	0.31%	2.43%	0.79%	0.55%	1.21%	0.07%	4.51%	4.30%	0.36%	0.00%	100%
Road 105	105	-	50	24.68177	Y	0500-0600	226	54.97%	19.66%	0.05%	5.07%	1.82%	0.79%	1.55%	0.35%	0.36%	2.83%	0.93%	0.64%	1.41%	0.07%	4.50%	4.58%	0.41%	0.00%	100%
Road 105	105	-	50	22.26181	Y	0600-0700	634	55.50%	17.17%	0.06%	5.41%	1.94%	0.90%	1.76%	0.37%	0.42%	3.30%	1.07%	0.74%	1.63%	0.06%	4.37%	4.83%	0.46%	0.00%	100%
Road 105	105	-	50	19.16585	Y	0700-0800	1147	55.93%	14.70%	0.06%	5.75%	2.07%	1.00%	1.96%	0.39%	0.48%	3.74%	1.21%	0.84%	1.85%	0.06%	4.33%	5.11%	0.51%	0.00%	100%
Road 105	105	-	50	18.915	Y	0800-0900	1239	60.02%	18.35%	0.05%	4.97%	1.79%	0.76%	1.50%	0.24%	0.22%	1.70%	0.85%	0.59%	1.30%	0.08%	3.39%	3.77%	0.39%	0.00%	100%
Road 105	105	-	50	19.64957	Y	0900-1000	1055	54.01%	17.50%	0.09%	8.64%	3.10%	1.58%	3.10%	0.32%	0.16%	1.28%	0.60%	0.42%	0.91%	0.10%	4.29%	3.09%	0.81%	0.00%	100%
Road 105	105	-	50	19.92202	Y	1000-1100	998	48.90%	22.28%	0.10%	9.81%	3.52%	1.89%	3.71%	0.21%	0.15%	1.17%	0.23%	0.16%	0.34%	0.21%	4.50%	1.86%	0.97%	0.00%	100%
Road 105	105	-	50	20.3225	Y	1100-1200	943	50.93%	21.35%	0.09%	8.61%	3.09%	1.91%	3.76%	0.36%	0.12%	0.91%	0.35%	0.25%	0.54%	0.05%	4.08%	2.62%	0.98%	0.00%	100%
Road 105	105	-	50	24.53581	Y	1200-1300	217	42.09%	14.60%	0.15%	14.45%	5.19%	3.11%	6.11%	0.31%	0.26%	2.06%	0.54%	0.38%	0.83%	0.31%	6.88%	1.13%	1.59%	0.00%	100%
Road 105	105	-	50	24.44185	Y	1300-1400	225	36.15%	14.93%	0.18%	16.96%	6.09%	3.08%	6.05%	0.47%	0.26%	2.00%	0.93%	0.65%	1.42%	0.36%	7.26%	1.62%	1.58%	0.00%	100%
Road 105	105	-	50	24.48752	Y	1400-1500	224	42.48%	13.16%	0.15%	14.62%	5.25%	3.23%	6.36%	0.29%	0.22%	1.73%	0.43%	0.30%	0.65%	0.18%	6.97%	2.30%	1.66%	0.00%	100%
Road 105	105	-	50	24.47506	Y	1500-1600	226	41.51%	14.93%	0.16%	14.99%	5.38%	3.41%	6.70%	0.27%	0.17%	1.34%	0.18%	0.12%	0.27%	0.16%	7.07%	1.61%	1.75%	0.00%	100%
Road 105	105	-	50	24.38485	Y	1600-1700	242	41.87%	14.47%	0.17%	15.93%	5.72%	2.43%	4.77%	0.28%	0.13%	1.04%	0.55%	0.38%	0.83%	0.20%	7.42%	2.56%	1.25%	0.00%	100%
Road 105	105	-	50	24.3675	Y	1700-1800	263	53.18%	11.44%	0.12%	11.08%	3.98%	1.33%	2.61%	0.38%	0.12%	0.96%	0.62%	0.43%	0.94%	0.11%	6.74%	5.28%	0.68%	0.00%	100%
Road 105	105	-	50	24.4258	Y	1800-1900	260	59.42%	13.14%	0.09%	8.16%	2.93%	0.99%	1.95%	0.41%	0.02%	0.16%	0.43%	0.30%	0.65%	0.04%	7.29%	3.52%	0.51%	0.00%	100%
Road 105	105	-	50	24.63727	Y	1900-2000	226	57.19%	18.09%	0.08%	7.40%	2.66%	0.33%	0.64%	0.41%	0.03%	0.20%	0.43%	0.30%	0.66%	0.35%	8.38%	2.71%	0.17%	0.00%	100%
Road 105	105	-	50	24.88348	Y	2000-2100	185	55.56%	20.29%	0.07%	6.60%	2.37%	0.60%	1.19%	0.32%	0.01%	0.07%	0.38%	0.26%	0.58%	0.17%	8.76%	2.46%	0.31%	0.00%	100%
Road 105	105	-	50	24.92962	Y	2100-2200	176	49.66%	26.79%	0.07%	6.37%	2.29%	0.42%	0.83%	0.38%	0.01%	0.07%	0.29%	0.20%	0.45%	0.13%	9.77%	2.04%	0.22%	0.00%	100%
Road 105	105	-	50	24.99068	Y	2200-2300	170	47.10%	31.58%	0.06%	5.89%	2.12%	0.33%	0.64%	0.29%	0.01%	0.07%	0.03%	0.02%	0.04%	0.13%	9.14%	2.38%	0.17%	0.00%	100%
Road 105	105	-	50	26.02227	Y	2300-0000	132	46.95%	29.44%	0.07%	6.44%	2.31%	0.50%	0.99%	0.32%	0.05%	0.41%	0.13%	0.09%	0.20%	0.13%	9.11%	2.60%	0.26%	0.00%	100%
Road 106	106	-	50	26.70964	Y	0000-0100	109	44.85%	26.19%	0.11%	10.58%	3.80%	1.02%	2.00%	0.31%	0.09%	0.71%	0.23%	0.16%	0.35%	0.09%	6.27%	2.71%	0.52%	0.00%	100%
Road 106	106	-	50	27.68399	Y	0100-0200	75	44.39%	23.95%	0.12%	11.34%	4.07%	1.27%	2.49%	0.33%	0.13%	1.02%	0.33%	0.23%	0.51%	0.09%	6.18%	2.89%	0.65%	0.00%	100%
Road 106	106	-	50	28.17429	Y	0200-0300	59	44.01%	21.72%	0.13%	12.09%	4.34%	1.52%	2.99%	0.36%	0.17%	1.34%	0.43%	0.30%	0.66%	0.09%	6.02%	3.05%	0.78%	0.00%	100%
Road 106	106	-	50	28.58946	Y	0300-0400	45	43.51%	19.56%	0.13%	12.84%	4.61%	1.75%	3.45%	0.38%	0.21%	1.62%	0.53%	0.37%	0.81%	0.09%	6.00%	3.23%	0.90%	0.00%	100%
Road 106	106	-	50	28.62861	Y	0400-0500	43	43.12%	17.40%	0.14%	13.58%	4.88%	1.99%	3.92%	0.40%	0.25%	1.92%	0.63%	0.43%	0.95%	0.09%	5.87%	3.40%	1.02%	0.00%	100%
Road 106	106	-	50	28.00609	Y	0500-0600	61	42.72%	15.28%	0.15%	14.32%	5.14%	2.23%	4.38%	0.42%	0.28%	2.20%	0.72%	0.50%	1.10%	0.09%	5.77%	3.56%	1.14%	0.00%	100%
Road 106	106	-	50	24.8479	Y	0600-0700	175	42.43%	13.13%	0.16%	15.02%	5.39%	2.49%	4.89%	0.44%	0.32%	2.53%	0.82%	0.57%	1.25%	0.08%	5.51%	3.69%	1.28%	0.00%	100%
Road 106	106	-	50	23.85477	Y	0700-0800	323	42.06%	11.05%	0.16%	15.73%	5.65%	2.73%	5.36%	0.46%	0.36%	2.82%	0.91%	0.63%	1.39%	0.07%	5.37%	3.84%	1.40%	0.00%	100%
Road 106	106	-	50	23.88	Y	0800-0900	334	47.14%	14.41%	0.15%	14.19%	5.10%	2.18%	4.29%	0.30%	0.17%	1.34%	0.67%	0.46%	1.02%	0.11%	4.38%	2.96%	1.12%	0.00%	100%
Road 106	106	-	50	23.71673	Y	0900-1000	332	36.34%	11.77%	0.22%	21.12%	7.58%	3.86%	7.58%	0.34%	0.11%	0.86%	0.40%	0.28%	0.61%	0.11%	4.76%	2.08%	1.98%	0.00%	100%
Road 106	106	-	50	23.69226	Y	1000-1100	329	31.38%	14.30%	0.24%	22.87%	8.21%	4.40%	8.64%	0.22%	0.10%	0.75%	0.14%	0.10%	0.22%	0.22%	4.76%	1.19%	2.26%	0.00%	100%
Road 106	106	-	50	23.90057	Y	1100-1200	302	33.63%	14.09%	0.22%	20.65%	7.41%	4.59%	9.02%	0.37%	0.08%	0.60%	0.23%	0.16%	0.36%	0.06%	4.44%	1.73%	2.36%	0.00%	100%
Road 106	106	-	50	22.98586	Y	1200-1300	498	54.50%	18.90%	0.07%	7.03%	2.53%	1.51%	2.97%	0.27%	0.34%	2.67%	0.70%	0.49%	1.07%	0.20%	4.49%	1.47%	0.78%	0.00%	100%
Road 106	106	-	50	22.88092	Y	1300-1400	501	48.27%	19.94%	0.09%	8.51%	3.06%	1.54%	3.04%	0.42%	0.34%	2.68%	1.25%	0.87%	1.90%	0.25%	4.89%	2.17%	0.79%	0.00%	100%
Road 106	106	-	50	22.91446	Y	1400-1500	513	55.28%	17.13%	0.07%	7.15%	2.57%	1.58%	3.11%	0.26%	0.29%	2.25%	0.56%	0.39%	0.85%	0.12%	4.58%	2.99%	0.81%	0.00%	100%
Road 106	106	-	50	22.93246	Y	1500-1600	512	54.53%	19.61%	0.08%	7.40%	2.66%	1.68%	3.31%	0.24%	0.23%	1.76%	0.23%	0.16%	0.35%	0.10%	4.68%	2.11%	0.86%	0.00%	100%
Road 106	106	-	50	22.672	Y	1600-1700	557	54.21%	18.74%	0.08%	7.75%	2.78%	1.18%	2.32%	0.24%	0.17%	1.35%	0.71%	0.49%	1.08%	0.13%	4.85%	3.31%	0.61%	0.00%	100%
Road 106	106	-	50	22.2725	Y	1700-1800	658	63.22%	13.60%	0.05%	4.95%	1.78%	0.59%	1.17%	0.30%	0.15%	1.14%	0.73%	0.51%	1.12%	0.06%	4.04%	6.28%	0.30%	0.00%	100%
Road 106	106	-	50	22.25422	Y	1800-1900	674	68.22%	15.08%	0.04%	3.52%	1.26%	0.43%	0.84%	0.31%	0.02%	0.19%	0.49%	0.34%	0.75%	0.02%	4.22%	4.04%	0.22%	0.00%	100%
Road 106	106	-	50	22.68629	Y	1900-2000	596	64.61%	20.43%	0.03%	3.14%	1.13%	0.14%	0.27%	0.31%	0.03%	0.23%	0.49%	0.34%	0.74%	0.20%	4.77%	3.06%	0.07%	0.00%	100%
Road 106	106	-	50	23.29417	Y	2000-2100	486	62.77%	22.92%	0.03%	2.80%	1.01%	0.26%	0.50%	0.24%	0.01%	0.08%	0.43%	0.30%	0.65%	0.10%	4.99%	2.78%	0.13%	0.00%	100%
Road 106	106	-	50	23.40689	Y	2100-2200	464	56.05%	30.24%	0.03%	2.70%	0.97%	0.18%	0.35%	0.29%	0.01%	0.08%	0.33%	0.23%	0.50%	0.08%	5.56%	2.30%	0.09%	0.00%	100%
Road 106	106	-	50	23.51987	Y	2200-2300	453	52.59%	35.26%	0.03%	2.47%	0.89%	0.14%	0.27%	0.22%	0.01%	0.08%	0.03%	0.02%	0.04%	0.07%	5.15%	2.66%	0.07%	0.00%	100%
Road 106	106	-	50	24.06885	Y	2300-0000	349	52.91%	33.18%	0.03%	2.73%	0.98%	0.21%	0.42%	0.24%	0.06%	0.46%	0.15%	0.10%	0.23%	0.08%	5.18%	2.93%	0.11%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 107	107	-	50	24.3493	Y	0000-0100	285	50.57%	29.53%	0.05%	4.57%	1.64%	0.44%	0.86%	0.36%	0.10%	0.80%	0.26%	0.18%	0.40%	0.10%	6.86%	3.05%	0.23%	0.00%	100%
Road 107	107	-	50	24.85819	Y	0100-0200	195	50.73%	27.36%	0.05%	4.96%	1.78%	0.56%	1.09%	0.39%	0.15%	1.17%	0.38%	0.26%	0.58%	0.10%	6.84%	3.30%	0.29%	0.00%	100%
Road 107	107	-	50	25.57729	Y	0200-0300	150	50.97%	25.15%	0.06%	5.37%	1.93%	0.68%	1.33%	0.42%	0.20%	1.55%	0.50%	0.35%	0.76%	0.10%	6.76%	3.53%	0.35%	0.00%	100%
Road 107	107	-	50	26.63753	Y	0300-0400	112	51.06%	22.95%	0.06%	5.77%	2.07%	0.79%	1.55%	0.45%	0.24%	1.90%	0.62%	0.43%	0.95%	0.11%	6.83%	3.80%	0.41%	0.00%	100%
Road 107	107	-	50	26.78409	Y	0400-0500	106	51.29%	20.70%	0.06%	6.19%	2.22%	0.91%	1.79%	0.48%	0.29%	2.28%	0.75%	0.52%	1.13%	0.10%	6.77%	4.04%	0.47%	0.00%	100%
Road 107	107	-	50	25.39794	Y	0500-0600	151	51.50%	18.42%	0.07%	6.62%	2.38%	1.03%	2.02%	0.52%	0.34%	2.66%	0.87%	0.60%	1.32%	0.10%	6.74%	4.29%	0.53%	0.00%	100%
Road 107	107	-	50	23.38485	Y	0600-0700	424	51.87%	16.05%	0.07%	7.04%	2.53%	1.17%	2.29%	0.54%	0.40%	3.09%	1.00%	0.70%	1.53%	0.09%	6.53%	4.51%	0.60%	0.00%	100%
Road 107	107	-	50	21.20511	Y	0700-0800	770	52.12%	13.70%	0.08%	7.47%	2.68%	1.29%	2.54%	0.58%	0.45%	3.49%	1.13%	0.78%	1.72%	0.09%	6.45%	4.76%	0.66%	0.00%	100%
Road 107	107	-	50	21.115	Y	0800-0900	822	56.66%	17.33%	0.07%	6.54%	2.35%	1.01%	1.98%	0.37%	0.21%	1.61%	0.81%	0.56%	1.23%	0.13%	5.11%	3.56%	0.52%	0.00%	100%
Road 107	107	-	50	21.42076	Y	0900-1000	724	49.28%	15.97%	0.11%	10.97%	3.94%	2.00%	3.94%	0.47%	0.15%	1.17%	0.55%	0.38%	0.83%	0.14%	6.25%	2.82%	1.03%	0.00%	100%
Road 107	107	-	50	21.55526	Y	1000-1100	692	44.14%	20.11%	0.13%	12.32%	4.43%	2.37%	4.66%	0.31%	0.14%	1.06%	0.20%	0.14%	0.31%	0.30%	6.49%	1.68%	1.22%	0.00%	100%
Road 107	107	-	50	21.88881	Y	1100-1200	649	46.33%	19.42%	0.11%	10.90%	3.91%	2.42%	4.76%	0.52%	0.11%	0.83%	0.32%	0.22%	0.49%	0.08%	5.93%	2.38%	1.24%	0.00%	100%
Road 107	107	-	50	24.77897	Y	1200-1300	178	40.85%	14.17%	0.15%	14.53%	5.22%	3.12%	6.14%	0.38%	0.26%	2.00%	0.53%	0.36%	0.80%	0.37%	8.40%	1.10%	1.60%	0.00%	100%
Road 107	107	-	50	24.69748	Y	1300-1400	185	34.99%	14.46%	0.18%	17.01%	6.11%	3.09%	6.07%	0.57%	0.25%	1.94%	0.90%	0.63%	1.38%	0.44%	8.84%	1.57%	1.59%	0.00%	100%
Road 107	107	-	50	24.73842	Y	1400-1500	184	41.22%	12.77%	0.15%	14.70%	5.28%	3.25%	6.39%	0.36%	0.21%	1.68%	0.42%	0.29%	0.64%	0.22%	8.51%	2.23%	1.67%	0.00%	100%
Road 107	107	-	50	24.72708	Y	1500-1600	185	40.26%	14.48%	0.16%	15.07%	5.41%	3.42%	6.73%	0.33%	0.17%	1.30%	0.17%	0.12%	0.26%	0.19%	8.63%	1.56%	1.76%	0.00%	100%
Road 107	107	-	50	24.65029	Y	1600-1700	199	40.60%	14.03%	0.17%	16.01%	5.75%	2.44%	4.79%	0.34%	0.13%	1.01%	0.53%	0.37%	0.81%	0.24%	9.05%	2.48%	1.25%	0.00%	100%
Road 107	107	-	50	24.6425	Y	1700-1800	214	51.85%	11.16%	0.12%	11.19%	4.02%	1.34%	2.64%	0.47%	0.12%	0.94%	0.60%	0.42%	0.92%	0.13%	8.27%	5.15%	0.69%	0.00%	100%
Road 107	107	-	50	24.68931	Y	1800-1900	212	57.95%	12.81%	0.09%	8.25%	2.96%	1.00%	1.97%	0.50%	0.02%	0.16%	0.42%	0.29%	0.64%	0.05%	8.95%	3.44%	0.51%	0.00%	100%
Road 107	107	-	50	24.85904	Y	1900-2000	185	55.65%	17.60%	0.08%	7.46%	2.68%	0.33%	0.65%	0.51%	0.03%	0.20%	0.42%	0.29%	0.64%	0.43%	10.25%	2.63%	0.17%	0.00%	100%
Road 107	107	-	50	25.32293	Y	2000-2100	151	54.05%	19.74%	0.07%	6.65%	2.39%	0.61%	1.20%	0.39%	0.01%	0.07%	0.37%	0.26%	0.56%	0.21%	10.73%	2.39%	0.31%	0.00%	100%
Road 107	107	-	50	25.49649	Y	2100-2200	144	48.21%	26.01%	0.07%	6.40%	2.30%	0.42%	0.83%	0.47%	0.01%	0.07%	0.28%	0.20%	0.43%	0.16%	11.94%	1.98%	0.22%	0.00%	100%
Road 107	107	-	50	25.76534	Y	2200-2300	139	45.82%	30.72%	0.06%	5.94%	2.13%	0.33%	0.65%	0.36%	0.01%	0.07%	0.02%	0.02%	0.04%	0.16%	11.18%	2.32%	0.17%	0.00%	100%
Road 107	107	-	50	26.66235	Y	2300-0000	108	45.65%	28.62%	0.07%	6.49%	2.33%	0.50%	0.99%	0.39%	0.05%	0.40%	0.13%	0.09%	0.20%	0.16%	11.14%	2.53%	0.26%	0.00%	100%
Road 108	108	-	50	27.01615	Y	0000-0100	98	45.29%	26.45%	0.10%	9.73%	3.49%	0.94%	1.84%	0.34%	0.09%	0.72%	0.23%	0.16%	0.36%	0.10%	6.92%	2.74%	0.48%	0.00%	100%
Road 108	108	-	50	27.90497	Y	0100-0200	68	44.92%	24.23%	0.11%	10.45%	3.75%	1.17%	2.30%	0.37%	0.13%	1.04%	0.34%	0.23%	0.51%	0.10%	6.83%	2.92%	0.60%	0.00%	100%
Road 108	108	-	50	28.35274	Y	0200-0300	53	44.61%	22.01%	0.12%	11.17%	4.01%	1.40%	2.76%	0.39%	0.17%	1.35%	0.44%	0.30%	0.67%	0.10%	6.67%	3.09%	0.72%	0.00%	100%
Road 108	108	-	50	28.73001	Y	0300-0400	40	44.18%	19.86%	0.12%	11.88%	4.26%	1.62%	3.19%	0.42%	0.21%	1.65%	0.54%	0.37%	0.82%	0.10%	6.66%	3.28%	0.83%	0.00%	100%
Road 108	108	-	50	28.76812	Y	0400-0500	39	43.86%	17.70%	0.13%	12.58%	4.52%	1.85%	3.63%	0.45%	0.25%	1.95%	0.64%	0.44%	0.97%	0.10%	6.53%	3.45%	0.95%	0.00%	100%
Road 108	108	-	50	28.21282	Y	0500-0600	55	43.52%	15.57%	0.14%	13.29%	4.77%	2.07%	4.06%	0.47%	0.29%	2.24%	0.73%	0.51%	1.12%	0.10%	6.42%	3.63%	1.06%	0.00%	100%
Road 108	108	-	50	24.96997	Y	0600-0700	157	43.32%	13.41%	0.15%	13.97%	5.02%	2.31%	4.55%	0.49%	0.33%	2.58%	0.84%	0.58%	1.27%	0.09%	6.15%	3.77%	1.19%	0.00%	100%
Road 108	108	-	50	24.08611	Y	0700-0800	289	43.02%	11.30%	0.15%	14.65%	5.26%	2.54%	4.99%	0.51%	0.37%	2.88%	0.93%	0.65%	1.42%	0.08%	6.00%	3.93%	1.30%	0.00%	100%
Road 108	108	-	50	24.105	Y	0800-0900	300	48.08%	14.70%	0.14%	13.19%	4.74%	2.03%	3.99%	0.33%	0.17%	1.37%	0.68%	0.47%	1.04%	0.12%	4.89%	3.02%	1.04%	0.00%	100%
Road 108	108	-	50	23.98954	Y	0900-1000	294	37.57%	12.17%	0.21%	19.89%	7.14%	3.63%	7.14%	0.38%	0.11%	0.89%	0.42%	0.29%	0.63%	0.12%	5.37%	2.15%	1.87%	0.00%	100%
Road 108	108	-	50	23.97638	Y	1000-1100	290	32.58%	14.84%	0.23%	21.62%	7.76%	4.16%	8.17%	0.24%	0.10%	0.78%	0.15%	0.10%	0.23%	0.25%	5.41%	1.24%	2.13%	0.00%	100%
Road 108	108	-	50	24.15717	Y	1100-1200	267	34.85%	14.60%	0.20%	19.49%	7.00%	4.33%	8.51%	0.42%	0.08%	0.62%	0.24%	0.17%	0.37%	0.07%	5.03%	1.79%	2.22%	0.00%	100%
Road 108	108	-	50	23.8747	Y	1200-1300	335	50.31%	17.45%	0.09%	8.81%	3.16%	1.89%	3.72%	0.40%	0.32%	2.47%	0.65%	0.45%	0.99%	0.30%	6.68%	1.36%	0.97%	0.00%	100%
Road 108	108	-	50	23.77722	Y	1300-1400	340	44.10%	18.22%	0.11%	10.55%	3.79%	1.91%	3.76%	0.62%	0.31%	2.44%	1.14%	0.79%	1.74%	0.36%	7.19%	1.98%	0.98%	0.00%	100%
Road 108	108	-	50	23.81865	Y	1400-1500	345	50.96%	15.79%	0.09%	8.94%	3.21%	1.98%	3.89%	0.38%	0.27%	2.07%	0.52%	0.36%	0.79%	0.18%	6.80%	2.76%	1.02%	0.00%	100%
Road 108	108	-	50	23.82137	Y	1500-1600	346	50.13%	18.03%	0.10%	9.23%	3.32%	2.10%	4.12%	0.36%	0.21%	1.61%	0.21%	0.15%	0.32%	0.15%	6.94%	1.94%	1.08%	0.00%	100%
Road 108	108	-	50	23.6484	Y	1600-1700	375	49.99%	17.28%	0.10%	9.70%	3.48%	1.48%	2.90%	0.36%	0.16%	1.24%	0.65%	0.45%	0.99%	0.19%	7.20%	3.05%	0.76%	0.00%	100%
Road 108	108	-	50	23.4475	Y	1700-1800	432	59.72%	12.85%	0.07%	6.34%	2.28%	0.76%	1.49%	0.46%	0.14%	1.08%	0.69%	0.48%	1.05%	0.10%	6.15%	5.94%	0.39%	0.00%	100%
Road 108	108	-	50	23.45652	Y	1800-1900	439	64.95%	14.36%	0.05%	4.55%	1.63%	0.55%	1.09%	0.48%	0.02%	0.18%	0.47%	0.32%	0.71%	0.03%	6.47%	3.85%	0.28%	0.00%	100%
Road 108	108	-	50	23.7483	Y	1900-2000	388	61.57%	19.47%	0.04%	4.06%	1.46%	0.18%	0.35%	0.48%	0.03%	0.22%	0.46%	0.32%	0.71%	0.30%	7.33%	2.91%	0.09%	0.00%	100%
Road 108	108	-	50	24.15898	Y	2000-2100	317	59.81%	21.84%	0.04%	3.62%	1.30%	0.33%	0.65%	0.38%	0.01%	0.08%	0.41%	0.28%	0.62%	0.15%	7.67%	2.65%	0.17%	0.00%	100%
Road 108	108	-	50	24.22728	Y	2100-2200	303	53.30%	28.75%	0.04%	3.48%	1.25%	0.23%	0.45%	0.45%	0.01%	0.08%	0.31%	0.22%	0.48%	0.12%	8.52%	2.19%	0.12%	0.00%	100%
Road 108	108	-	50	24.31541	Y	2200-2300	294	50.23%	33.68%	0.03%	3.20%	1.15%	0.18%	0.35%	0.34%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	7.92%	2.54%	0.09%	0.00%	100%
Road 108	108	-	50	24.68449	Y	2300-0000	227	50.42%	31.61%	0.04%	3.53%	1.27%	0.27%	0.54%	0.37%	0.06%	0.44%	0.14%	0.10%	0.22%	0.12%	7.95%	2.79%	0.14%	0.00%	100%
Road 109	109	-	50	24.42811	Y	0000-0100	271	50.83%	29.68%	0.04%	4.09%	1.47%	0.39%	0.77%	0.37%	0.10%	0.81%	0.26%	0.18%	0.40%	0.11%	7.20%	3.07%	0.20%	0.00%	100%
Road 109	109	-	50	24.91431	Y	0100-0200	185	51.04%	27.53%	0.05%	4.45%	1.60%	0.50%	0.98%	0.41%	0.15%	1.18%	0.38%	0.27%	0.58%	0.11%	7.20%	3.32%	0.26%	0.00%	100%
Road 109	109	-	50	25.80126	Y	0200-0300	142	51.34%	25.34%	0.05%	4.82%	1.73%	0.61%	1.19%	0.44%	0.20%	1.56%	0.51%	0.35%	0.77%	0.11%	7.12%	3.56%	0.31%	0.00%	100%
Road 109	109	-	50	26.81208	Y	0300-0400	107	51.49%	23.15%	0.05%	5.19%	1.86%	0.71%	1.39%	0.48%	0.25%	1.92%	0.63%	0.43%	0.95%	0.11%	7.19%	3.83%	0.36%	0.00%	100%
Road 109	109	-	50	26.95563	Y	0400-0500	101	51.77%	20.89%	0.06%	5.57%	2.00%	0.82%	1.61%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.11%	7.14%	4.08%	0.42%	0.00%	100%
Road 109	109	-	50	25.64979	Y	0500-0600	143	52.04%	18.61%	0.06%	5.96%	2.14%	0.93%	1.82%	0.55%	0.34%	2.68%	0.88%	0.61%	1.34%	0.11%	7.12%	4.34%	0.48%	0.00%	100%
Road 109	109	-	50	23.53226	Y	0600-0700	401	52.48%	16.24%	0.07%	6.35%	2.28%	1.05%	2.07%	0.58%	0.40%	3.12%	1.01%	0.70%	1.54%	0.10%	6.90%	4.57%	0.54%	0.00%	100%
Road 109	109	-	50	21.48222	Y	0700-0800	728	52.79%	13.87%	0.07%	6.74%	2.42%	1.17%	2.30%	0.61%	0.45%	3.53%	1.15%	0.80%	1.75%	0.09%	6.83%	4.83%	0.60%	0.00%	100%
Road 109	109	-	50	21.39	Y	0800-0900	778	57.29%	17.52%	0.06%	5.89%	2.12%	0.91%	1.78%	0.39%	0.21%	1.63%	0.81%	0.56%	1.24%	0.13%	5.40%	3.60%	0.47%	0.00%	100%
Road 109	109	-	50	21.7315	Y	0900-1000	678	50.32%	16.31%	0.10%	9.99%	3.59%	1.82%	3.59%	0.50%	0.15%	1.19%	0.56%	0.39%	0.85%	0.15%	6.67%	2.88%	0.94%	0.00%	100%
Road 109	109	-	50	21.87353	Y	1000-1100	646	45.23%	20.61%	0.12%	11.26%	4.04%	2.16%	4.25%	0.33%	0.14%	1.09%	0.21%	0.14%	0.32%	0.32%	6.95%	1.72%	1.11%	0.00%	100%
Road 109	109	-	50	22.17858	Y	1100-1200	607	47.40%	19.87%	0.10%	9.94%	3.57%	2.21%	4.34%	0.56%	0.11%	0.85%	0.33%	0.23%	0.50%	0.08%	6.34%	2.44%	1.13%	0.00%	100%
Road 109	109	-	50	24.69458	Y	1200-1300	189	39.66%	13.76%	0.16%	15.62%	5.61%	3.36%	6.60%	0.36%	0.25%	1.94%	0.51%	0.35%	0.78%	0.35%	7.90%	1.07%	1.72%	0.00%	100%
Road 109	109	-	50	24.60418	Y	1300-1400	197	33.86%	13.99%	0.19%	18.22%	6.54%	3.31%	6.50%	0.54%	0.24%	1.88%	0.87%	0.61%	1.33%	0.42%	8.29%	1.52%	1.70%	0.00%	100%
Road 109	109	-	50	24.64979	Y	1400-1500	196	39.98%	12.39%	0.16%	15.79%	5.67%	3.49%	6.87%	0.34%	0.21%	1.63%	0.40%	0.28%	0.62%	0.21%	8.00%	2.17%	1.79%	0.00%	100%
Road 109	109	-	50	24.63573	Y	1500-1600	197	39.01%	14.03%	0.17%	16.16%	5.80%	3.67%	7.22%	0.31%	0.16%	1.26%	0.17%	0.11%	0.25%	0.18%	8.10%	1.51%	1.89%	0.00%	100%
Road 109	109	-	50	24.55891	Y	1600-1700	211	39.44%	13.63%	0.18%	17.21%	6.18%	2.62%	5.15%	0.32%	0.13%	0.98%	0.52%	0.36%	0.78%	0.23%	8.52%	2.41%	1.35%	0.00%	100%
Road 109	109	-	50	24.5675	Y	1700-1800	225	50.90%	10.95%	0.13%	12.16%	4.37%	1.46%	2.87%	0.44%	0.12%	0.92%	0.59%	0.41%	0.90%	0.12%	7.86%	5.06%	0.75%	0.00%	100%
Road 109	109	-	50	24.62663	Y	1800-1900	222	57.22%	12.65%	0.09%	9.02%	3.24%	1.10%	2.15%	0.48%	0.02%	0.16%	0.41%	0.29%	0.63%	0.04%	8.56%	3.39%	0.56%	0.00%	100%
Road 109	109	-	50	24.81233	Y	1900-2000	193	55.17%	17.45%	0.09%	8.19%	2.94%	0.36%	0.71%	0.49%	0.03%	0.20%	0.42%	0.29%	0.63%	0.41%	9.85%	2.61%	0.19%	0.00%	100%
Road 109	109	-	50	25.13073	Y	2000-2100	157	53.59%	19.57%	0.08%	7.30%	2.62%	0.67%	1.31%	0.38%	0.01%	0.07%	0.37%	0.25%	0.56%	0.20%	10.30%	2.37%	0.34%	0.00%	100%
Road 109	109	-	50	25.32254	Y	2100-2200	150	47.87%	25.82%	0.07%	7.04%	2.53%	0.47%	0.92%	0.45%	0.01%	0.07%	0.28%	0.20%	0.43%	0.16%	11.48%	1.97%	0.24%	0.00%	100%
Road 109	109	-	50	25.60513	Y	2200-2300	144	45.53%	30.53%	0.07%	6.53%	2.35%	0.36%	0.71%	0.34%	0.01%	0.07%	0.02%	0.02%	0.04%	0.15%	10.77%	2.30%	0.19%	0.00%	100%
Road 109	109	-	50	26.5291	Y	2300-0000	112	45.29%	28.40%	0.07%	7.13%	2.56%	0.55%	1.09%	0.37%	0.05%	0.40%	0.13%	0.09%	0.20%	0.16%	10.71%	2.51%	0.28%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 110	110	-	50	27.01615	Y	0000-0100	98	45.29%	26.45%	0.10%	9.73%	3.49%	0.94%	1.84%	0.34%	0.09%	0.72%	0.23%	0.16%	0.36%	0.10%	6.92%	2.74%	0.48%	0.00%	100%
Road 110	110	-	50	27.90497	Y	0100-0200	68	44.92%	24.23%	0.11%	10.45%	3.75%	1.17%	2.30%	0.37%	0.13%	1.04%	0.34%	0.23%	0.51%	0.10%	6.83%	2.92%	0.60%	0.00%	100%
Road 110	110	-	50	28.35274	Y	0200-0300	53	44.61%	22.01%	0.12%	11.17%	4.01%	1.40%	2.76%	0.39%	0.17%	1.35%	0.44%	0.30%	0.67%	0.10%	6.67%	3.09%	0.72%	0.00%	100%
Road 110	110	-	50	28.73001	Y	0300-0400	40	44.18%	19.86%	0.12%	11.88%	4.26%	1.62%	3.19%	0.42%	0.21%	1.65%	0.54%	0.37%	0.82%	0.10%	6.66%	3.28%	0.83%	0.00%	100%
Road 110	110	-	50	28.76812	Y	0400-0500	39	43.86%	17.70%	0.13%	12.58%	4.52%	1.85%	3.63%	0.45%	0.25%	1.95%	0.64%	0.44%	0.97%	0.10%	6.53%	3.45%	0.95%	0.00%	100%
Road 110	110	-	50	28.21282	Y	0500-0600	55	43.52%	15.57%	0.14%	13.29%	4.77%	2.07%	4.06%	0.47%	0.29%	2.24%	0.73%	0.51%	1.12%	0.10%	6.42%	3.63%	1.06%	0.00%	100%
Road 110	110	-	50	24.96997	Y	0600-0700	157	43.32%	13.41%	0.15%	13.97%	5.02%	2.31%	4.55%	0.49%	0.33%	2.58%	0.84%	0.58%	1.27%	0.09%	6.15%	3.77%	1.19%	0.00%	100%
Road 110	110	-	50	24.08611	Y	0700-0800	289	43.02%	11.30%	0.15%	14.65%	5.26%	2.54%	4.99%	0.51%	0.37%	2.88%	0.93%	0.65%	1.42%	0.08%	6.00%	3.93%	1.30%	0.00%	100%
Road 110	110	-	50	24.105	Y	0800-0900	300	48.08%	14.70%	0.14%	13.19%	4.74%	2.03%	3.99%	0.33%	0.17%	1.37%	0.68%	0.47%	1.04%	0.12%	4.89%	3.02%	1.04%	0.00%	100%
Road 110	110	-	50	23.98954	Y	0900-1000	294	37.57%	12.17%	0.21%	19.89%	7.14%	3.63%	7.14%	0.38%	0.11%	0.89%	0.42%	0.29%	0.63%	0.12%	5.37%	2.15%	1.87%	0.00%	100%
Road 110	110	-	50	23.97638	Y	1000-1100	290	32.58%	14.84%	0.23%	21.62%	7.76%	4.16%	8.17%	0.24%	0.10%	0.78%	0.15%	0.10%	0.23%	0.25%	5.41%	1.24%	2.13%	0.00%	100%
Road 110	110	-	50	24.15717	Y	1100-1200	267	34.85%	14.60%	0.20%	19.49%	7.00%	4.33%	8.51%	0.42%	0.08%	0.62%	0.24%	0.17%	0.37%	0.07%	5.03%	1.79%	2.22%	0.00%	100%
Road 110	110	-	50	23.8747	Y	1200-1300	335	50.31%	17.45%	0.09%	8.81%	3.16%	1.89%	3.72%	0.40%	0.32%	2.47%	0.65%	0.45%	0.99%	0.30%	6.68%	1.36%	0.97%	0.00%	100%
Road 110	110	-	50	23.77722	Y	1300-1400	340	44.10%	18.22%	0.11%	10.55%	3.79%	1.91%	3.76%	0.62%	0.31%	2.44%	1.14%	0.79%	1.74%	0.36%	7.19%	1.98%	0.98%	0.00%	100%
Road 110	110	-	50	23.81865	Y	1400-1500	345	50.96%	15.79%	0.09%	8.94%	3.21%	1.98%	3.89%	0.38%	0.27%	2.07%	0.52%	0.36%	0.79%	0.18%	6.80%	2.76%	1.02%	0.00%	100%
Road 110	110	-	50	23.82137	Y	1500-1600	346	50.13%	18.03%	0.10%	9.23%	3.32%	2.10%	4.12%	0.36%	0.21%	1.61%	0.21%	0.15%	0.32%	0.15%	6.94%	1.94%	1.08%	0.00%	100%
Road 110	110	-	50	23.6484	Y	1600-1700	375	49.99%	17.28%	0.10%	9.70%	3.48%	1.48%	2.90%	0.36%	0.16%	1.24%	0.65%	0.45%	0.99%	0.19%	7.20%	3.05%	0.76%	0.00%	100%
Road 110	110	-	50	23.4475	Y	1700-1800	432	59.72%	12.85%	0.07%	6.34%	2.28%	0.76%	1.49%	0.46%	0.14%	1.08%	0.69%	0.48%	1.05%	0.10%	6.15%	5.94%	0.39%	0.00%	100%
Road 110	110	-	50	23.45652	Y	1800-1900	439	64.95%	14.36%	0.05%	4.55%	1.63%	0.55%	1.09%	0.48%	0.02%	0.18%	0.47%	0.32%	0.71%	0.03%	6.47%	3.85%	0.28%	0.00%	100%
Road 110	110	-	50	23.7483	Y	1900-2000	388	61.57%	19.47%	0.04%	4.06%	1.46%	0.18%	0.35%	0.48%	0.03%	0.22%	0.46%	0.32%	0.71%	0.30%	7.33%	2.91%	0.09%	0.00%	100%
Road 110	110	-	50	24.15898	Y	2000-2100	317	59.81%	21.84%	0.04%	3.62%	1.30%	0.33%	0.65%	0.38%	0.01%	0.08%	0.41%	0.28%	0.62%	0.15%	7.67%	2.65%	0.17%	0.00%	100%
Road 110	110	-	50	24.22728	Y	2100-2200	303	53.30%	28.75%	0.04%	3.48%	1.25%	0.23%	0.45%	0.45%	0.01%	0.08%	0.31%	0.22%	0.48%	0.12%	8.52%	2.19%	0.12%	0.00%	100%
Road 110	110	-	50	24.31541	Y	2200-2300	294	50.23%	33.68%	0.03%	3.20%	1.15%	0.18%	0.35%	0.34%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	7.92%	2.54%	0.09%	0.00%	100%
Road 110	110	-	50	24.68449	Y	2300-0000	227	50.42%	31.61%	0.04%	3.53%	1.27%	0.27%	0.54%	0.37%	0.06%	0.44%	0.14%	0.10%	0.22%	0.12%	7.95%	2.79%	0.14%	0.00%	100%
Road 111	111	-	50	24.42811	Y	0000-0100	271	50.83%	29.68%	0.04%	4.09%	1.47%	0.39%	0.77%	0.37%	0.10%	0.81%	0.26%	0.18%	0.40%	0.11%	7.20%	3.07%	0.20%	0.00%	100%
Road 111	111	-	50	24.91431	Y	0100-0200	185	51.04%	27.53%	0.05%	4.45%	1.60%	0.50%	0.98%	0.41%	0.15%	1.18%	0.38%	0.27%	0.58%	0.11%	7.20%	3.32%	0.26%	0.00%	100%
Road 111	111	-	50	25.80126	Y	0200-0300	142	51.34%	25.34%	0.05%	4.82%	1.73%	0.61%	1.19%	0.44%	0.20%	1.56%	0.51%	0.35%	0.77%	0.11%	7.12%	3.56%	0.31%	0.00%	100%
Road 111	111	-	50	26.81208	Y	0300-0400	107	51.49%	23.15%	0.05%	5.19%	1.86%	0.71%	1.39%	0.48%	0.25%	1.92%	0.63%	0.43%	0.95%	0.11%	7.19%	3.83%	0.36%	0.00%	100%
Road 111	111	-	50	26.95563	Y	0400-0500	101	51.77%	20.89%	0.06%	5.57%	2.00%	0.82%	1.61%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.11%	7.14%	4.08%	0.42%	0.00%	100%
Road 111	111	-	50	25.64979	Y	0500-0600	143	52.04%	18.61%	0.06%	5.96%	2.14%	0.93%	1.82%	0.55%	0.34%	2.68%	0.88%	0.61%	1.34%	0.11%	7.12%	4.34%	0.48%	0.00%	100%
Road 111	111	-	50	23.53226	Y	0600-0700	401	52.48%	16.24%	0.07%	6.35%	2.28%	1.05%	2.07%	0.58%	0.40%	3.12%	1.01%	0.70%	1.54%	0.10%	6.90%	4.57%	0.54%	0.00%	100%
Road 111	111	-	50	21.48222	Y	0700-0800	728	52.79%	13.87%	0.07%	6.74%	2.42%	1.17%	2.30%	0.61%	0.45%	3.53%	1.15%	0.80%	1.75%	0.09%	6.83%	4.83%	0.60%	0.00%	100%
Road 111	111	-	50	21.39	Y	0800-0900	778	57.29%	17.52%	0.06%	5.89%	2.12%	0.91%	1.78%	0.39%	0.21%	1.63%	0.81%	0.56%	1.24%	0.13%	5.40%	3.60%	0.47%	0.00%	100%
Road 111	111	-	50	21.7315	Y	0900-1000	678	50.32%	16.31%	0.10%	9.99%	3.59%	1.82%	3.59%	0.50%	0.15%	1.19%	0.56%	0.39%	0.85%	0.15%	6.67%	2.88%	0.94%	0.00%	100%
Road 111	111	-	50	21.87353	Y	1000-1100	646	45.23%	20.61%	0.12%	11.26%	4.04%	2.16%	4.25%	0.33%	0.14%	1.09%	0.21%	0.14%	0.32%	0.32%	6.95%	1.72%	1.11%	0.00%	100%
Road 111	111	-	50	22.17858	Y	1100-1200	607	47.40%	19.87%	0.10%	9.94%	3.57%	2.21%	4.34%	0.56%	0.11%	0.85%	0.33%	0.23%	0.50%	0.08%	6.34%	2.44%	1.13%	0.00%	100%
Road 111	111	-	50	24.67664	Y	1200-1300	192	40.17%	13.93%	0.16%	15.34%	5.51%	3.30%	6.48%	0.35%	0.25%	1.97%	0.52%	0.36%	0.79%	0.34%	7.76%	1.08%	1.69%	0.00%	100%
Road 111	111	-	50	24.58638	Y	1300-1400	200	34.33%	14.18%	0.19%	17.92%	6.43%	3.25%	6.39%	0.53%	0.24%	1.90%	0.89%	0.62%	1.35%	0.41%	8.15%	1.54%	1.67%	0.00%	100%
Road 111	111	-	50	24.63164	Y	1400-1500	199	40.50%	12.55%	0.16%	15.51%	5.57%	3.43%	6.74%	0.33%	0.21%	1.65%	0.41%	0.28%	0.62%	0.20%	7.86%	2.19%	1.76%	0.00%	100%
Road 111	111	-	50	24.61804	Y	1500-1600	201	39.53%	14.21%	0.17%	15.88%	5.70%	3.61%	7.10%	0.31%	0.16%	1.27%	0.17%	0.12%	0.26%	0.18%	7.96%	1.53%	1.85%	0.00%	100%
Road 111	111	-	50	24.53916	Y	1600-1700	215	39.94%	13.80%	0.18%	16.91%	6.07%	2.57%	5.06%	0.32%	0.13%	0.99%	0.52%	0.36%	0.79%	0.22%	8.37%	2.44%	1.32%	0.00%	100%
Road 111	111	-	50	24.5425	Y	1700-1800	230	51.37%	11.05%	0.12%	11.90%	4.27%	1.43%	2.80%	0.43%	0.12%	0.93%	0.60%	0.41%	0.91%	0.12%	7.69%	5.10%	0.73%	0.00%	100%
Road 111	111	-	50	24.60056	Y	1800-1900	227	57.66%	12.75%	0.09%	8.81%	3.16%	1.07%	2.10%	0.47%	0.02%	0.16%	0.41%	0.29%	0.63%	0.04%	8.36%	3.42%	0.55%	0.00%	100%
Road 111	111	-	50	24.78899	Y	1900-2000	197	55.56%	17.57%	0.08%	7.99%	2.87%	0.35%	0.69%	0.47%	0.03%	0.20%	0.42%	0.29%	0.64%	0.40%	9.62%	2.63%	0.18%	0.00%	100%
Road 111	111	-	50	25.03577	Y	2000-2100	161	53.97%	19.71%	0.07%	7.13%	2.56%	0.65%	1.28%	0.37%	0.01%	0.07%	0.37%	0.26%	0.56%	0.19%	10.06%	2.39%	0.33%	0.00%	100%
Road 111	111	-	50	25.23216	Y	2100-2200	154	48.21%	26.01%	0.07%	6.88%	2.47%	0.45%	0.89%	0.44%	0.01%	0.07%	0.28%	0.20%	0.43%	0.15%	11.21%	1.98%	0.23%	0.00%	100%
Road 111	111	-	50	25.51719	Y	2200-2300	148	45.83%	30.73%	0.07%	6.38%	2.29%	0.35%	0.70%	0.33%	0.01%	0.07%	0.02%	0.02%	0.04%	0.15%	10.51%	2.32%	0.18%	0.00%	100%
Road 111	111	-	50	26.46138	Y	2300-0000	115	45.61%	28.60%	0.07%	6.96%	2.50%	0.54%	1.06%	0.37%	0.05%	0.40%	0.13%	0.09%	0.20%	0.15%	10.46%	2.53%	0.28%	0.00%	100%
Road 112	112	-	50	26.91098	Y	0000-0100	101	44.12%	25.77%	0.11%	10.99%	3.95%	1.06%	2.08%	0.34%	0.09%	0.70%	0.23%	0.16%	0.35%	0.10%	6.75%	2.66%	0.54%	0.00%	100%
Road 112	112	-	50	27.82354	Y	0100-0200	70	43.63%	23.54%	0.12%	11.77%	4.23%	1.32%	2.59%	0.36%	0.13%	1.01%	0.33%	0.23%	0.50%	0.10%	6.64%	2.84%	0.68%	0.00%	100%
Road 112	112	-	50	28.28281	Y	0200-0300	55	43.21%	21.32%	0.13%	12.55%	4.51%	1.58%	3.10%	0.38%	0.17%	1.31%	0.43%	0.30%	0.65%	0.10%	6.46%	2.99%	0.81%	0.00%	100%
Road 112	112	-	50	28.67197	Y	0300-0400	42	42.68%	19.19%	0.14%	13.31%	4.78%	1.82%	3.57%	0.41%	0.20%	1.59%	0.52%	0.36%	0.79%	0.10%	6.43%	3.17%	0.93%	0.00%	100%
Road 112	112	-	50	28.70777	Y	0400-0500	40	42.26%	17.05%	0.15%	14.07%	5.05%	2.07%	4.06%	0.43%	0.24%	1.88%	0.61%	0.43%	0.93%	0.10%	6.29%	3.33%	1.06%	0.00%	100%
Road 112	112	-	50	28.11963	Y	0500-0600	57	41.82%	14.96%	0.15%	14.82%	5.32%	2.30%	4.53%	0.45%	0.28%	2.16%	0.71%	0.49%	1.07%	0.09%	6.17%	3.48%	1.18%	0.00%	100%
Road 112	112	-	50	24.91286	Y	0600-0700	164	41.52%	12.85%	0.16%	15.53%	5.58%	2.57%	5.06%	0.47%	0.32%	2.47%	0.80%	0.56%	1.22%	0.08%	5.89%	3.61%	1.32%	0.00%	100%
Road 112	112	-	50	23.97427	Y	0700-0800	302	41.12%	10.80%	0.17%	16.24%	5.83%	2.81%	5.53%	0.49%	0.35%	2.75%	0.89%	0.62%	1.36%	0.08%	5.74%	3.76%	1.45%	0.00%	100%
Road 112	112	-	50	24.005	Y	0800-0900	312	46.22%	14.13%	0.15%	14.71%	5.28%	2.26%	4.44%	0.32%	0.17%	1.31%	0.66%	0.46%	1.00%	0.12%	4.70%	2.90%	1.16%	0.00%	100%
Road 112	112	-	50	23.83199	Y	0900-1000	312	35.32%	11.44%	0.23%	21.69%	7.79%	3.96%	7.79%	0.36%	0.11%	0.84%	0.39%	0.27%	0.60%	0.11%	5.05%	2.02%	2.03%	0.00%	100%
Road 112	112	-	50	23.80374	Y	1000-1100	310	30.43%	13.87%	0.24%	23.43%	8.41%	4.50%	8.86%	0.23%	0.09%	0.73%	0.14%	0.10%	0.21%	0.23%	5.05%	1.16%	2.31%	0.00%	100%
Road 112	112	-	50	24.00494	Y	1100-1200	285	32.66%	13.69%	0.22%	21.19%	7.61%	4.71%	9.26%	0.40%	0.07%	0.58%	0.23%	0.16%	0.35%	0.06%	4.72%	1.68%	2.42%	0.00%	100%
Road 112	112	-	50	23.88999	Y	1200-1300	334	51.08%	17.71%	0.09%	8.27%	2.97%	1.78%	3.49%	0.40%	0.32%	2.50%	0.66%	0.46%	1.00%	0.30%	6.69%	1.38%	0.91%	0.00%	100%
Road 112	112	-	50	23.79718	Y	1300-1400	339	44.86%	18.53%	0.10%	9.92%	3.56%	1.80%	3.54%	0.62%	0.32%	2.49%	1.16%	0.80%	1.77%	0.36%	7.22%	2.01%	0.92%	0.00%	100%
Road 112	112	-	50	23.83574	Y	1400-1500	345	51.76%	16.04%	0.09%	8.40%	3.02%	1.86%	3.65%	0.38%	0.27%	2.11%	0.52%	0.36%	0.80%	0.18%	6.81%	2.80%	0.95%	0.00%	100%
Road 112	112	-	50	23.84051	Y	1500-1600	345	50.95%	18.32%	0.09%	8.68%	3.12%	1.97%	3.88%	0.36%	0.21%	1.64%	0.22%	0.15%	0.33%	0.15%	6.95%	1.97%	1.01%	0.00%	100%
Road 112	112	-	50	23.66447	Y	1600-1700	374	50.75%	17.54%	0.10%	9.10%	3.27%	1.39%	2.73%	0.36%	0.16%	1.26%	0.66%	0.46%	1.01%	0.19%	7.21%	3.10%	0.71%	0.00%	100%
Road 112	112	-	50	23.4475	Y	1700-1800	434	60.29%	12.97%	0.06%	5.92%	2.13%	0.71%	1.40%	0.46%	0.14%	1.09%	0.70%	0.49%	1.06%	0.10%	6.12%	5.99%	0.36%	0.00%	100%
Road 112	112	-	50	23.44874	Y	1800-1900	442	65.41%	14.46%	0.04%	4.24%	1.52%	0.51%	1.01%	0.48%	0.02%	0.18%	0.47%	0.33%	0.72%	0.03%	6.43%	3.88%	0.26%	0.00%	100%
Road 112	112	-	50	23.73664	Y	1900-2000	391	61.93%	19.59%	0.04%	3.78%	1.36%	0.17%	0.33%	0.48%	0.03%	0.22%	0.47%	0.32%	0.71%	0.30%	7.27%	2.93%	0.09%	0.00%	100%
Road 112	112	-	50	24.14971	Y	2000-2100	319	60.15%	21.97%	0.04%	3.37%	1.21%	0.31%	0.61%	0.37%	0.01%	0.08%	0.41%	0.29%	0.63%	0.15%	7.60%	2.66%	0.16%	0.00%	100%
Road 112	112	-	50	24.21756	Y	2100-2200	306	53.59%	28.91%	0.03%	3.24%	1.16%	0.21%	0.42%	0.44%	0.01%	0.08%	0.32%	0.22%	0.48%	0.12%	8.45%	2.20%	0.11%	0.00%	100%
Road 112	112	-	50	24.30505	Y	2200-2300	297	50.48%	33.84%	0.03%	2.98%	1.07%	0.17%	0.32%	0.33%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	7.85%	2.55%	0.08%	0.00%	100%
Road 112	112	-	50	24.6775	Y	2300-0000	229	50.70%	31.79%	0.03%	3.28%	1.18%	0.26%	0.50%	0.37%	0.06%	0.44%	0.14%	0.10%	0.22%	0.11%	7.88%	2.81%	0.13%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 113	113	-	50	25.44308	Y	0000-0100	163	51.39%	30.01%	0.06%	5.86%	2.10%	0.56%	1.11%	0.62%	0.10%	0.82%	0.27%	0.18%	0.41%	0.05%	3.06%	3.10%	0.29%	0.00%	100%
Road 113	113	-	50	26.83246	Y	0100-0200	112	51.41%	27.73%	0.07%	6.35%	2.28%	0.71%	1.40%	0.67%	0.15%	1.19%	0.39%	0.27%	0.59%	0.05%	3.05%	3.34%	0.36%	0.00%	100%
Road 113	113	-	50	27.53192	Y	0200-0300	86	51.49%	25.41%	0.07%	6.84%	2.46%	0.86%	1.69%	0.72%	0.20%	1.56%	0.51%	0.35%	0.77%	0.04%	3.00%	3.57%	0.44%	0.00%	100%
Road 113	113	-	50	28.11658	Y	0300-0400	65	51.46%	23.13%	0.08%	7.34%	2.64%	1.00%	1.97%	0.78%	0.25%	1.92%	0.63%	0.43%	0.95%	0.05%	3.02%	3.83%	0.52%	0.00%	100%
Road 113	113	-	50	28.18917	Y	0400-0500	62	51.53%	20.79%	0.08%	7.85%	2.82%	1.15%	2.27%	0.83%	0.29%	2.29%	0.75%	0.52%	1.14%	0.05%	2.99%	4.06%	0.59%	0.00%	100%
Road 113	113	-	50	27.39596	Y	0500-0600	88	51.58%	18.45%	0.09%	8.36%	3.00%	1.30%	2.56%	0.89%	0.34%	2.66%	0.87%	0.60%	1.33%	0.05%	2.96%	4.30%	0.67%	0.00%	100%
Road 113	113	-	50	24.50958	Y	0600-0700	248	51.74%	16.01%	0.09%	8.86%	3.18%	1.47%	2.89%	0.93%	0.39%	3.08%	1.00%	0.69%	1.52%	0.04%	2.86%	4.50%	0.75%	0.00%	100%
Road 113	113	-	50	23.25283	Y	0700-0800	452	51.81%	13.61%	0.10%	9.37%	3.36%	1.62%	3.19%	0.98%	0.44%	3.47%	1.12%	0.78%	1.71%	0.04%	2.82%	4.74%	0.83%	0.00%	100%
Road 113	113	-	50	23.19	Y	0800-0900	482	56.33%	17.22%	0.09%	8.20%	2.95%	1.26%	2.48%	0.62%	0.20%	1.60%	0.80%	0.56%	1.22%	0.05%	2.23%	3.54%	0.65%	0.00%	100%
Road 113	113	-	50	23.30565	Y	0900-1000	432	48.07%	15.58%	0.14%	13.51%	4.85%	2.47%	4.85%	0.78%	0.15%	1.14%	0.53%	0.37%	0.81%	0.06%	2.68%	2.75%	1.27%	0.00%	100%
Road 113	113	-	50	23.37147	Y	1000-1100	415	42.86%	19.53%	0.16%	15.10%	5.42%	2.90%	5.71%	0.51%	0.13%	1.03%	0.20%	0.14%	0.30%	0.13%	2.77%	1.63%	1.49%	0.00%	100%
Road 113	113	-	50	23.55561	Y	1100-1200	390	44.93%	18.83%	0.14%	13.34%	4.79%	2.96%	5.83%	0.87%	0.10%	0.80%	0.31%	0.22%	0.48%	0.03%	2.53%	2.31%	1.52%	0.00%	100%
Road 113	113	-	50	24.94811	Y	1200-1300	156	40.50%	14.05%	0.17%	16.54%	5.94%	3.55%	6.99%	0.43%	0.25%	1.98%	0.52%	0.36%	0.79%	0.21%	4.78%	1.09%	1.83%	0.00%	100%
Road 113	113	-	50	24.87585	Y	1300-1400	163	34.58%	14.29%	0.20%	19.30%	6.93%	3.50%	6.89%	0.65%	0.25%	1.92%	0.89%	0.62%	1.36%	0.25%	5.01%	1.55%	1.80%	0.00%	100%
Road 113	113	-	50	24.91136	Y	1400-1500	162	40.81%	12.65%	0.17%	16.72%	6.00%	3.70%	7.27%	0.41%	0.21%	1.66%	0.41%	0.29%	0.63%	0.12%	4.84%	2.21%	1.90%	0.00%	100%
Road 113	113	-	50	24.89996	Y	1500-1600	163	39.81%	14.32%	0.18%	17.11%	6.14%	3.89%	7.64%	0.38%	0.16%	1.28%	0.17%	0.12%	0.26%	0.11%	4.90%	1.54%	2.00%	0.00%	100%
Road 113	113	-	50	24.84476	Y	1600-1700	174	40.36%	13.95%	0.19%	18.27%	6.56%	2.78%	5.47%	0.39%	0.13%	1.00%	0.53%	0.37%	0.80%	0.14%	5.17%	2.46%	1.43%	0.00%	100%
Road 113	113	-	50	24.855	Y	1700-1800	186	52.13%	11.22%	0.13%	12.92%	4.64%	1.55%	3.04%	0.54%	0.12%	0.94%	0.60%	0.42%	0.92%	0.08%	4.77%	5.18%	0.80%	0.00%	100%
Road 113	113	-	50	24.9127	Y	1800-1900	182	58.88%	13.02%	0.10%	9.62%	3.45%	1.17%	2.30%	0.58%	0.02%	0.16%	0.42%	0.29%	0.65%	0.03%	5.22%	3.49%	0.60%	0.00%	100%
Road 113	113	-	50	25.37908	Y	1900-2000	157	57.25%	18.10%	0.09%	8.81%	3.16%	0.39%	0.76%	0.60%	0.03%	0.20%	0.43%	0.30%	0.66%	0.25%	6.06%	2.71%	0.20%	0.00%	100%
Road 113	113	-	50	26.21796	Y	2000-2100	127	55.68%	20.34%	0.08%	7.87%	2.83%	0.72%	1.41%	0.47%	0.01%	0.07%	0.38%	0.26%	0.58%	0.12%	6.34%	2.46%	0.37%	0.00%	100%
Road 113	113	-	50	26.40369	Y	2100-2200	121	49.99%	26.97%	0.08%	7.62%	2.74%	0.50%	0.99%	0.56%	0.01%	0.07%	0.29%	0.20%	0.45%	0.10%	7.11%	2.05%	0.26%	0.00%	100%
Road 113	113	-	50	26.60918	Y	2200-2300	117	47.44%	31.80%	0.07%	7.06%	2.54%	0.39%	0.77%	0.42%	0.01%	0.07%	0.03%	0.02%	0.04%	0.10%	6.65%	2.40%	0.20%	0.00%	100%
Road 113	113	-	50	27.31511	Y	2300-0000	91	47.14%	29.56%	0.08%	7.69%	2.76%	0.60%	1.18%	0.46%	0.05%	0.41%	0.13%	0.09%	0.21%	0.10%	6.61%	2.61%	0.31%	0.00%	100%
Road 114	114	-	50	27.39426	Y	0000-0100	90	46.96%	27.42%	0.11%	11.00%	3.95%	1.06%	2.08%	0.37%	0.10%	0.75%	0.24%	0.17%	0.37%	0.03%	2.01%	2.84%	0.54%	0.00%	100%
Road 114	114	-	50	28.16076	Y	0100-0200	63	46.45%	25.06%	0.12%	11.79%	4.23%	1.32%	2.59%	0.40%	0.14%	1.07%	0.35%	0.24%	0.53%	0.03%	1.98%	3.02%	0.68%	0.00%	100%
Road 114	114	-	50	28.54483	Y	0200-0300	49	46.00%	22.70%	0.13%	12.56%	4.51%	1.58%	3.11%	0.43%	0.18%	1.40%	0.45%	0.31%	0.69%	0.03%	1.92%	3.19%	0.81%	0.00%	100%
Road 114	114	-	50	28.87409	Y	0300-0400	37	45.48%	20.44%	0.14%	13.33%	4.79%	1.82%	3.58%	0.46%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	1.92%	3.38%	0.94%	0.00%	100%
Road 114	114	-	50	28.90206	Y	0400-0500	36	45.03%	18.17%	0.15%	14.09%	5.06%	2.07%	4.07%	0.48%	0.26%	2.00%	0.65%	0.45%	1.00%	0.03%	1.88%	3.55%	1.06%	0.00%	100%
Road 114	114	-	50	28.39957	Y	0500-0600	51	44.58%	15.95%	0.16%	14.85%	5.33%	2.31%	4.54%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.03%	1.84%	3.71%	1.19%	0.00%	100%
Road 114	114	-	50	25.35435	Y	0600-0700	147	44.20%	13.68%	0.16%	15.55%	5.58%	2.58%	5.06%	0.52%	0.34%	2.63%	0.85%	0.59%	1.30%	0.02%	1.75%	3.85%	1.32%	0.00%	100%
Road 114	114	-	50	24.26505	Y	0700-0800	271	43.78%	11.50%	0.17%	16.26%	5.84%	2.82%	5.54%	0.55%	0.38%	2.93%	0.95%	0.66%	1.45%	0.02%	1.71%	4.00%	1.45%	0.00%	100%
Road 114	114	-	50	24.2675	Y	0800-0900	282	48.72%	14.90%	0.15%	14.58%	5.23%	2.24%	4.40%	0.35%	0.18%	1.38%	0.69%	0.48%	1.05%	0.03%	1.38%	3.06%	1.15%	0.00%	100%
Road 114	114	-	50	24.13601	Y	0900-1000	279	37.70%	12.21%	0.23%	21.76%	7.82%	3.97%	7.81%	0.40%	0.11%	0.89%	0.42%	0.29%	0.64%	0.03%	1.51%	2.16%	2.04%	0.00%	100%
Road 114	114	-	50	24.11768	Y	1000-1100	276	32.60%	14.85%	0.25%	23.60%	8.47%	4.54%	8.92%	0.26%	0.10%	0.78%	0.15%	0.10%	0.23%	0.07%	1.51%	1.24%	2.33%	0.00%	100%
Road 114	114	-	50	24.27696	Y	1100-1200	255	34.80%	14.58%	0.22%	21.23%	7.62%	4.72%	9.27%	0.44%	0.08%	0.62%	0.24%	0.17%	0.37%	0.02%	1.40%	1.79%	2.42%	0.00%	100%
Road 114	114	-	50	24.63582	Y	1200-1300	224	51.15%	17.74%	0.11%	10.69%	3.84%	2.30%	4.52%	0.60%	0.32%	2.51%	0.66%	0.46%	1.00%	0.07%	1.48%	1.38%	1.18%	0.00%	100%
Road 114	114	-	50	24.57371	Y	1300-1400	228	44.78%	18.50%	0.13%	12.79%	4.59%	2.32%	4.56%	0.93%	0.32%	2.48%	1.16%	0.80%	1.76%	0.08%	1.59%	2.01%	1.19%	0.00%	100%
Road 114	114	-	50	24.5982	Y	1400-1500	231	51.77%	16.04%	0.11%	10.85%	3.90%	2.40%	4.72%	0.57%	0.27%	2.11%	0.52%	0.36%	0.80%	0.04%	1.50%	2.80%	1.23%	0.00%	100%
Road 114	114	-	50	24.59972	Y	1500-1600	232	50.90%	18.31%	0.12%	11.19%	4.02%	2.54%	5.00%	0.53%	0.21%	1.64%	0.22%	0.15%	0.33%	0.03%	1.53%	1.97%	1.31%	0.00%	100%
Road 114	114	-	50	24.50517	Y	1600-1700	250	51.03%	17.64%	0.12%	11.82%	4.24%	1.80%	3.54%	0.54%	0.16%	1.27%	0.67%	0.46%	1.02%	0.04%	1.60%	3.11%	0.92%	0.00%	100%
Road 114	114	-	50	24.385	Y	1700-1800	287	61.24%	13.18%	0.08%	7.76%	2.79%	0.93%	1.83%	0.70%	0.14%	1.11%	0.71%	0.49%	1.08%	0.02%	1.37%	6.09%	0.48%	0.00%	100%
Road 114	114	-	50	24.41552	Y	1800-1900	289	67.15%	14.85%	0.06%	5.61%	2.02%	0.68%	1.34%	0.73%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	1.46%	3.98%	0.35%	0.00%	100%
Road 114	114	-	50	24.63557	Y	1900-2000	252	64.51%	20.40%	0.05%	5.08%	1.82%	0.22%	0.44%	0.74%	0.03%	0.23%	0.49%	0.34%	0.74%	0.07%	1.67%	3.05%	0.11%	0.00%	100%
Road 114	114	-	50	24.88829	Y	2000-2100	205	62.79%	22.93%	0.05%	4.54%	1.63%	0.42%	0.82%	0.58%	0.01%	0.08%	0.43%	0.30%	0.66%	0.03%	1.75%	2.78%	0.21%	0.00%	100%
Road 114	114	-	50	24.94699	Y	2100-2200	195	56.38%	30.42%	0.05%	4.40%	1.58%	0.29%	0.57%	0.69%	0.01%	0.08%	0.33%	0.23%	0.51%	0.03%	1.96%	2.32%	0.15%	0.00%	100%
Road 114	114	-	50	24.99312	Y	2200-2300	190	52.96%	35.51%	0.04%	4.03%	1.45%	0.22%	0.44%	0.52%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.82%	2.68%	0.11%	0.00%	100%
Road 114	114	-	50	26.05426	Y	2300-0000	147	53.08%	33.28%	0.05%	4.43%	1.59%	0.34%	0.68%	0.57%	0.06%	0.46%	0.15%	0.11%	0.23%	0.03%	1.82%	2.94%	0.18%	0.00%	100%
Road 115	115	-	50	25.44308	Y	0000-0100	163	51.39%	30.01%	0.06%	5.86%	2.10%	0.56%	1.11%	0.62%	0.10%	0.82%	0.27%	0.18%	0.41%	0.05%	3.06%	3.10%	0.29%	0.00%	100%
Road 115	115	-	50	26.83246	Y	0100-0200	112	51.41%	27.73%	0.07%	6.35%	2.28%	0.71%	1.40%	0.67%	0.15%	1.19%	0.39%	0.27%	0.59%	0.05%	3.05%	3.34%	0.36%	0.00%	100%
Road 115	115	-	50	27.53192	Y	0200-0300	86	51.49%	25.41%	0.07%	6.84%	2.46%	0.86%	1.69%	0.72%	0.20%	1.56%	0.51%	0.35%	0.77%	0.04%	3.00%	3.57%	0.44%	0.00%	100%
Road 115	115	-	50	28.11658	Y	0300-0400	65	51.46%	23.13%	0.08%	7.34%	2.64%	1.00%	1.97%	0.78%	0.25%	1.92%	0.63%	0.43%	0.95%	0.05%	3.02%	3.83%	0.52%	0.00%	100%
Road 115	115	-	50	28.18917	Y	0400-0500	62	51.53%	20.79%	0.08%	7.85%	2.82%	1.15%	2.27%	0.83%	0.29%	2.29%	0.75%	0.52%	1.14%	0.05%	2.99%	4.06%	0.59%	0.00%	100%
Road 115	115	-	50	27.39596	Y	0500-0600	88	51.58%	18.45%	0.09%	8.36%	3.00%	1.30%	2.56%	0.89%	0.34%	2.66%	0.87%	0.60%	1.33%	0.05%	2.96%	4.30%	0.67%	0.00%	100%
Road 115	115	-	50	24.50958	Y	0600-0700	248	51.74%	16.01%	0.09%	8.86%	3.18%	1.47%	2.89%	0.93%	0.39%	3.08%	1.00%	0.69%	1.52%	0.04%	2.86%	4.50%	0.75%	0.00%	100%
Road 115	115	-	50	23.25283	Y	0700-0800	452	51.81%	13.61%	0.10%	9.37%	3.36%	1.62%	3.19%	0.98%	0.44%	3.47%	1.12%	0.78%	1.71%	0.04%	2.82%	4.74%	0.83%	0.00%	100%
Road 115	115	-	50	23.19	Y	0800-0900	482	56.33%	17.22%	0.09%	8.20%	2.95%	1.26%	2.48%	0.62%	0.20%	1.60%	0.80%	0.56%	1.22%	0.05%	2.23%	3.54%	0.65%	0.00%	100%
Road 115	115	-	50	23.30565	Y	0900-1000	432	48.07%	15.58%	0.14%	13.51%	4.85%	2.47%	4.85%	0.78%	0.15%	1.14%	0.53%	0.37%	0.81%	0.06%	2.68%	2.75%	1.27%	0.00%	100%
Road 115	115	-	50	23.37147	Y	1000-1100	415	42.86%	19.53%	0.16%	15.10%	5.42%	2.90%	5.71%	0.51%	0.13%	1.03%	0.20%	0.14%	0.30%	0.13%	2.77%	1.63%	1.49%	0.00%	100%
Road 115	115	-	50	23.55561	Y	1100-1200	390	44.93%	18.83%	0.14%	13.34%	4.79%	2.96%	5.83%	0.87%	0.10%	0.80%	0.31%	0.22%	0.48%	0.03%	2.53%	2.31%	1.52%	0.00%	100%
Road 115	115	-	50	24.96605	Y	1200-1300	153	39.88%	13.83%	0.18%	16.92%	6.07%	3.63%	7.14%	0.44%	0.25%	1.95%	0.51%	0.36%	0.78%	0.22%	4.89%	1.08%	1.87%	0.00%	100%
Road 115	115	-	50	24.89364	Y	1300-1400	159	34.00%	14.05%	0.21%	19.71%	7.08%	3.58%	7.03%	0.66%	0.24%	1.89%	0.88%	0.61%	1.34%	0.26%	5.12%	1.53%	1.84%	0.00%	100%
Road 115	115	-	50	24.9295	Y	1400-1500	158	40.18%	12.45%	0.18%	17.09%	6.14%	3.78%	7.43%	0.41%	0.21%	1.64%	0.41%	0.28%	0.62%	0.13%	4.95%	2.18%	1.94%	0.00%	100%
Road 115	115	-	50	24.91765	Y	1500-1600	160	39.17%	14.09%	0.18%	17.48%	6.28%	3.97%	7.81%	0.38%	0.16%	1.26%	0.17%	0.12%	0.25%	0.11%	5.00%	1.52%	2.04%	0.00%	100%
Road 115	115	-	50	24.86451	Y	1600-1700	170	39.74%	13.74%	0.20%	18.68%	6.71%	2.84%	5.59%	0.40%	0.13%	0.99%	0.52%	0.36%	0.79%	0.14%	5.28%	2.43%	1.46%	0.00%	100%
Road 115	115	-	50	24.88	Y	1700-1800	181	51.57%	11.10%	0.14%	13.27%	4.76%	1.59%	3.13%	0.55%	0.12%	0.93%	0.60%	0.41%	0.91%	0.08%	4.90%	5.12%	0.82%	0.00%	100%
Road 115	115	-	50	24.93878	Y	1800-1900	177	58.36%	12.90%	0.10%	9.90%	3.56%	1.20%	2.37%	0.60%	0.02%	0.16%	0.42%	0.29%	0.64%	0.03%	5.37%	3.46%	0.62%	0.00%	100%
Road 115	115	-	50	25.49578	Y	1900-2000	152	56.80%	17.96%	0.09%	9.08%	3.26%	0.40%	0.79%	0.62%	0.03%	0.20%	0.43%	0.30%	0.65%	0.26%	6.24%	2.69%	0.21%	0.00%	100%
Road 115	115	-	50	26.31292	Y	2000-2100	124	55.25%	20.18%	0.08%	8.11%	2.91%	0.74%	1.46%	0.48%	0.01%	0.07%	0.38%	0.26%	0.58%	0.13%	6.54%	2.44%	0.38%	0.00%	100%
Road 115	115	-	50	26.49407	Y	2100-2200	118	49.61%	26.76%	0.08%	7.86%	2.82%	0.52%	1.02%	0.58%	0.01%	0.07%	0.29%	0.20%	0.45%	0.10%	7.32%	2.04%	0.27%	0.00%	100%
Road 115	115	-	50	26.69712	Y	2200-2300	113	47.11%	31.58%	0.08%	7.28%	2.61%	0.40%	0.79%	0.44%	0.01%	0.07%	0.03%	0.02%	0.04%	0.10%	6.85%	2.38%	0.21%	0.00%	100%
Road 115	115	-	50	27.38283	Y	2300-0000	88	46.79%	29.34%	0.08%	7.93%	2.85%	0.62%	1.21%	0.48%	0.05%	0.41%	0.13%	0.09%	0.20%	0.10%	6.81%	2.59%	0.32%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 116	116	-	50	27.39426	Y	0000-0100	90	46.96%	27.42%	0.11%	11.00%	3.95%	1.06%	2.08%	0.37%	0.10%	0.75%	0.24%	0.17%	0.37%	0.03%	2.01%	2.84%	0.54%	0.00%	100%
Road 116	116	-	50	28.16076	Y	0100-0200	63	46.45%	25.06%	0.12%	11.79%	4.23%	1.32%	2.59%	0.40%	0.14%	1.07%	0.35%	0.24%	0.53%	0.03%	1.98%	3.02%	0.68%	0.00%	100%
Road 116	116	-	50	28.54483	Y	0200-0300	49	46.00%	22.70%	0.13%	12.56%	4.51%	1.58%	3.11%	0.43%	0.18%	1.40%	0.45%	0.31%	0.69%	0.03%	1.92%	3.19%	0.81%	0.00%	100%
Road 116	116	-	50	28.87409	Y	0300-0400	37	45.48%	20.44%	0.14%	13.33%	4.79%	1.82%	3.58%	0.46%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	1.92%	3.38%	0.94%	0.00%	100%
Road 116	116	-	50	28.90206	Y	0400-0500	36	45.03%	18.17%	0.15%	14.09%	5.06%	2.07%	4.07%	0.48%	0.26%	2.00%	0.65%	0.45%	1.00%	0.03%	1.88%	3.55%	1.06%	0.00%	100%
Road 116	116	-	50	28.39957	Y	0500-0600	51	44.58%	15.95%	0.16%	14.85%	5.33%	2.31%	4.54%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.03%	1.84%	3.71%	1.19%	0.00%	100%
Road 116	116	-	50	25.35435	Y	0600-0700	147	44.20%	13.68%	0.16%	15.55%	5.58%	2.58%	5.06%	0.52%	0.34%	2.63%	0.85%	0.59%	1.30%	0.02%	1.75%	3.85%	1.32%	0.00%	100%
Road 116	116	-	50	24.26505	Y	0700-0800	271	43.78%	11.50%	0.17%	16.26%	5.84%	2.82%	5.54%	0.55%	0.38%	2.93%	0.95%	0.66%	1.45%	0.02%	1.71%	4.00%	1.45%	0.00%	100%
Road 116	116	-	50	24.2675	Y	0800-0900	282	48.72%	14.90%	0.15%	14.58%	5.23%	2.24%	4.40%	0.35%	0.18%	1.38%	0.69%	0.48%	1.05%	0.03%	1.38%	3.06%	1.15%	0.00%	100%
Road 116	116	-	50	24.13601	Y	0900-1000	279	37.70%	12.21%	0.23%	21.76%	7.82%	3.97%	7.81%	0.40%	0.11%	0.89%	0.42%	0.29%	0.64%	0.03%	1.51%	2.16%	2.04%	0.00%	100%
Road 116	116	-	50	24.11768	Y	1000-1100	276	32.60%	14.85%	0.25%	23.60%	8.47%	4.54%	8.92%	0.26%	0.10%	0.78%	0.15%	0.10%	0.23%	0.07%	1.51%	1.24%	2.33%	0.00%	100%
Road 116	116	-	50	24.27696	Y	1100-1200	255	34.80%	14.58%	0.22%	21.23%	7.62%	4.72%	9.27%	0.44%	0.08%	0.62%	0.24%	0.17%	0.37%	0.02%	1.40%	1.79%	2.42%	0.00%	100%
Road 116	116	-	50	24.63582	Y	1200-1300	224	51.15%	17.74%	0.11%	10.69%	3.84%	2.30%	4.52%	0.60%	0.32%	2.51%	0.66%	0.46%	1.00%	0.07%	1.48%	1.38%	1.18%	0.00%	100%
Road 116	116	-	50	24.57371	Y	1300-1400	228	44.78%	18.50%	0.13%	12.79%	4.59%	2.32%	4.56%	0.93%	0.32%	2.48%	1.16%	0.80%	1.76%	0.08%	1.59%	2.01%	1.19%	0.00%	100%
Road 116	116	-	50	24.5982	Y	1400-1500	231	51.77%	16.04%	0.11%	10.85%	3.90%	2.40%	4.72%	0.57%	0.27%	2.11%	0.52%	0.36%	0.80%	0.04%	1.50%	2.80%	1.23%	0.00%	100%
Road 116	116	-	50	24.59972	Y	1500-1600	232	50.90%	18.31%	0.12%	11.19%	4.02%	2.54%	5.00%	0.53%	0.21%	1.64%	0.22%	0.15%	0.33%	0.03%	1.53%	1.97%	1.31%	0.00%	100%
Road 116	116	-	50	24.50517	Y	1600-1700	250	51.03%	17.64%	0.12%	11.82%	4.24%	1.80%	3.54%	0.54%	0.16%	1.27%	0.67%	0.46%	1.02%	0.04%	1.60%	3.11%	0.92%	0.00%	100%
Road 116	116	-	50	24.385	Y	1700-1800	287	61.24%	13.18%	0.08%	7.76%	2.79%	0.93%	1.83%	0.70%	0.14%	1.11%	0.71%	0.49%	1.08%	0.02%	1.37%	6.09%	0.48%	0.00%	100%
Road 116	116	-	50	24.41552	Y	1800-1900	289	67.15%	14.85%	0.06%	5.61%	2.02%	0.68%	1.34%	0.73%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	1.46%	3.98%	0.35%	0.00%	100%
Road 116	116	-	50	24.63557	Y	1900-2000	252	64.51%	20.40%	0.05%	5.08%	1.82%	0.22%	0.44%	0.74%	0.03%	0.23%	0.49%	0.34%	0.74%	0.07%	1.67%	3.05%	0.11%	0.00%	100%
Road 116	116	-	50	24.88829	Y	2000-2100	205	62.79%	22.93%	0.05%	4.54%	1.63%	0.42%	0.82%	0.58%	0.01%	0.08%	0.43%	0.30%	0.66%	0.03%	1.75%	2.78%	0.21%	0.00%	100%
Road 116	116	-	50	24.94699	Y	2100-2200	195	56.38%	30.42%	0.05%	4.40%	1.58%	0.29%	0.57%	0.69%	0.01%	0.08%	0.33%	0.23%	0.51%	0.03%	1.96%	2.32%	0.15%	0.00%	100%
Road 116	116	-	50	24.99312	Y	2200-2300	190	52.96%	35.51%	0.04%	4.03%	1.45%	0.22%	0.44%	0.52%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.82%	2.68%	0.11%	0.00%	100%
Road 116	116	-	50	26.05426	Y	2300-0000	147	53.08%	33.28%	0.05%	4.43%	1.59%	0.34%	0.68%	0.57%	0.06%	0.46%	0.15%	0.11%	0.23%	0.03%	1.82%	2.94%	0.18%	0.00%	100%
Road 117	117	-	50	25.44308	Y	0000-0100	163	51.39%	30.01%	0.06%	5.86%	2.10%	0.56%	1.11%	0.62%	0.10%	0.82%	0.27%	0.18%	0.41%	0.05%	3.06%	3.10%	0.29%	0.00%	100%
Road 117	117	-	50	26.83246	Y	0100-0200	112	51.41%	27.73%	0.07%	6.35%	2.28%	0.71%	1.40%	0.67%	0.15%	1.19%	0.39%	0.27%	0.59%	0.05%	3.05%	3.34%	0.36%	0.00%	100%
Road 117	117	-	50	27.53192	Y	0200-0300	86	51.49%	25.41%	0.07%	6.84%	2.46%	0.86%	1.69%	0.72%	0.20%	1.56%	0.51%	0.35%	0.77%	0.04%	3.00%	3.57%	0.44%	0.00%	100%
Road 117	117	-	50	28.11658	Y	0300-0400	65	51.46%	23.13%	0.08%	7.34%	2.64%	1.00%	1.97%	0.78%	0.25%	1.92%	0.63%	0.43%	0.95%	0.05%	3.02%	3.83%	0.52%	0.00%	100%
Road 117	117	-	50	28.18917	Y	0400-0500	62	51.53%	20.79%	0.08%	7.85%	2.82%	1.15%	2.27%	0.83%	0.29%	2.29%	0.75%	0.52%	1.14%	0.05%	2.99%	4.06%	0.59%	0.00%	100%
Road 117	117	-	50	27.39596	Y	0500-0600	88	51.58%	18.45%	0.09%	8.36%	3.00%	1.30%	2.56%	0.89%	0.34%	2.66%	0.87%	0.60%	1.33%	0.05%	2.96%	4.30%	0.67%	0.00%	100%
Road 117	117	-	50	24.50958	Y	0600-0700	248	51.74%	16.01%	0.09%	8.86%	3.18%	1.47%	2.89%	0.93%	0.39%	3.08%	1.00%	0.69%	1.52%	0.04%	2.86%	4.50%	0.75%	0.00%	100%
Road 117	117	-	50	23.25283	Y	0700-0800	452	51.81%	13.61%	0.10%	9.37%	3.36%	1.62%	3.19%	0.98%	0.44%	3.47%	1.12%	0.78%	1.71%	0.04%	2.82%	4.74%	0.83%	0.00%	100%
Road 117	117	-	50	23.19	Y	0800-0900	482	56.33%	17.22%	0.09%	8.20%	2.95%	1.26%	2.48%	0.62%	0.20%	1.60%	0.80%	0.56%	1.22%	0.05%	2.23%	3.54%	0.65%	0.00%	100%
Road 117	117	-	50	23.30565	Y	0900-1000	432	48.07%	15.58%	0.14%	13.51%	4.85%	2.47%	4.85%	0.78%	0.15%	1.14%	0.53%	0.37%	0.81%	0.06%	2.68%	2.75%	1.27%	0.00%	100%
Road 117	117	-	50	23.37147	Y	1000-1100	415	42.86%	19.53%	0.16%	15.10%	5.42%	2.90%	5.71%	0.51%	0.13%	1.03%	0.20%	0.14%	0.30%	0.13%	2.77%	1.63%	1.49%	0.00%	100%
Road 117	117	-	50	23.55561	Y	1100-1200	390	44.93%	18.83%	0.14%	13.34%	4.79%	2.96%	5.83%	0.87%	0.10%	0.80%	0.31%	0.22%	0.48%	0.03%	2.53%	2.31%	1.52%	0.00%	100%
Road 117	117	-	50	24.96605	Y	1200-1300	153	39.88%	13.83%	0.18%	16.92%	6.07%	3.63%	7.14%	0.44%	0.25%	1.95%	0.51%	0.36%	0.78%	0.22%	4.89%	1.08%	1.87%	0.00%	100%
Road 117	117	-	50	24.89364	Y	1300-1400	159	34.00%	14.05%	0.21%	19.71%	7.08%	3.58%	7.03%	0.66%	0.24%	1.89%	0.88%	0.61%	1.34%	0.26%	5.12%	1.53%	1.84%	0.00%	100%
Road 117	117	-	50	24.9295	Y	1400-1500	158	40.18%	12.45%	0.18%	17.09%	6.14%	3.78%	7.43%	0.41%	0.21%	1.64%	0.41%	0.28%	0.62%	0.13%	4.95%	2.18%	1.94%	0.00%	100%
Road 117	117	-	50	24.91765	Y	1500-1600	160	39.17%	14.09%	0.18%	17.48%	6.28%	3.97%	7.81%	0.38%	0.16%	1.26%	0.17%	0.12%	0.25%	0.11%	5.00%	1.52%	2.04%	0.00%	100%
Road 117	117	-	50	24.86451	Y	1600-1700	170	39.74%	13.74%	0.20%	18.68%	6.71%	2.84%	5.59%	0.40%	0.13%	0.99%	0.52%	0.36%	0.79%	0.14%	5.28%	2.43%	1.46%	0.00%	100%
Road 117	117	-	50	24.88	Y	1700-1800	181	51.57%	11.10%	0.14%	13.27%	4.76%	1.59%	3.13%	0.55%	0.12%	0.93%	0.60%	0.41%	0.91%	0.08%	4.90%	5.12%	0.82%	0.00%	100%
Road 117	117	-	50	24.93878	Y	1800-1900	177	58.36%	12.90%	0.10%	9.90%	3.56%	1.20%	2.37%	0.60%	0.02%	0.16%	0.42%	0.29%	0.64%	0.03%	5.37%	3.46%	0.62%	0.00%	100%
Road 117	117	-	50	25.49578	Y	1900-2000	152	56.80%	17.96%	0.09%	9.08%	3.26%	0.40%	0.79%	0.62%	0.03%	0.20%	0.43%	0.30%	0.65%	0.26%	6.24%	2.69%	0.21%	0.00%	100%
Road 117	117	-	50	26.31292	Y	2000-2100	124	55.25%	20.18%	0.08%	8.11%	2.91%	0.74%	1.46%	0.48%	0.01%	0.07%	0.38%	0.26%	0.58%	0.13%	6.54%	2.44%	0.38%	0.00%	100%
Road 117	117	-	50	26.49407	Y	2100-2200	118	49.61%	26.76%	0.08%	7.86%	2.82%	0.52%	1.02%	0.58%	0.01%	0.07%	0.29%	0.20%	0.45%	0.10%	7.32%	2.04%	0.27%	0.00%	100%
Road 117	117	-	50	26.69712	Y	2200-2300	113	47.11%	31.58%	0.08%	7.28%	2.61%	0.40%	0.79%	0.44%	0.01%	0.07%	0.03%	0.02%	0.04%	0.10%	6.85%	2.38%	0.21%	0.00%	100%
Road 117	117	-	50	27.38283	Y	2300-0000	88	46.79%	29.34%	0.08%	7.93%	2.85%	0.62%	1.21%	0.48%	0.05%	0.41%	0.13%	0.09%	0.20%	0.10%	6.81%	2.59%	0.32%	0.00%	100%
Road 118	118	-	50	27.39426	Y	0000-0100	90	46.96%	27.42%	0.11%	11.00%	3.95%	1.06%	2.08%	0.37%	0.10%	0.75%	0.24%	0.17%	0.37%	0.03%	2.01%	2.84%	0.54%	0.00%	100%
Road 118	118	-	50	28.16076	Y	0100-0200	63	46.45%	25.06%	0.12%	11.79%	4.23%	1.32%	2.59%	0.40%	0.14%	1.07%	0.35%	0.24%	0.53%	0.03%	1.98%	3.02%	0.68%	0.00%	100%
Road 118	118	-	50	28.54483	Y	0200-0300	49	46.00%	22.70%	0.13%	12.56%	4.51%	1.58%	3.11%	0.43%	0.18%	1.40%	0.45%	0.31%	0.69%	0.03%	1.92%	3.19%	0.81%	0.00%	100%
Road 118	118	-	50	28.87409	Y	0300-0400	37	45.48%	20.44%	0.14%	13.33%	4.79%	1.82%	3.58%	0.46%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	1.92%	3.38%	0.94%	0.00%	100%
Road 118	118	-	50	28.90206	Y	0400-0500	36	45.03%	18.17%	0.15%	14.09%	5.06%	2.07%	4.07%	0.48%	0.26%	2.00%	0.65%	0.45%	1.00%	0.03%	1.88%	3.55%	1.06%	0.00%	100%
Road 118	118	-	50	28.39957	Y	0500-0600	51	44.58%	15.95%	0.16%	14.85%	5.33%	2.31%	4.54%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.03%	1.84%	3.71%	1.19%	0.00%	100%
Road 118	118	-	50	25.35435	Y	0600-0700	147	44.20%	13.68%	0.16%	15.55%	5.58%	2.58%	5.06%	0.52%	0.34%	2.63%	0.85%	0.59%	1.30%	0.02%	1.75%	3.85%	1.32%	0.00%	100%
Road 118	118	-	50	24.26505	Y	0700-0800	271	43.78%	11.50%	0.17%	16.26%	5.84%	2.82%	5.54%	0.55%	0.38%	2.93%	0.95%	0.66%	1.45%	0.02%	1.71%	4.00%	1.45%	0.00%	100%
Road 118	118	-	50	24.2675	Y	0800-0900	282	48.72%	14.90%	0.15%	14.58%	5.23%	2.24%	4.40%	0.35%	0.18%	1.38%	0.69%	0.48%	1.05%	0.03%	1.38%	3.06%	1.15%	0.00%	100%
Road 118	118	-	50	24.13601	Y	0900-1000	279	37.70%	12.21%	0.23%	21.76%	7.82%	3.97%	7.81%	0.40%	0.11%	0.89%	0.42%	0.29%	0.64%	0.03%	1.51%	2.16%	2.04%	0.00%	100%
Road 118	118	-	50	24.11768	Y	1000-1100	276	32.60%	14.85%	0.25%	23.60%	8.47%	4.54%	8.92%	0.26%	0.10%	0.78%	0.15%	0.10%	0.23%	0.07%	1.51%	1.24%	2.33%	0.00%	100%
Road 118	118	-	50	24.27696	Y	1100-1200	255	34.80%	14.58%	0.22%	21.23%	7.62%	4.72%	9.27%	0.44%	0.08%	0.62%	0.24%	0.17%	0.37%	0.02%	1.40%	1.79%	2.42%	0.00%	100%
Road 118	118	-	50	24.63582	Y	1200-1300	224	51.15%	17.74%	0.11%	10.69%	3.84%	2.30%	4.52%	0.60%	0.32%	2.51%	0.66%	0.46%	1.00%	0.07%	1.48%	1.38%	1.18%	0.00%	100%
Road 118	118	-	50	24.57371	Y	1300-1400	228	44.78%	18.50%	0.13%	12.79%	4.59%	2.32%	4.56%	0.93%	0.32%	2.48%	1.16%	0.80%	1.76%	0.08%	1.59%	2.01%	1.19%	0.00%	100%
Road 118	118	-	50	24.5982	Y	1400-1500	231	51.77%	16.04%	0.11%	10.85%	3.90%	2.40%	4.72%	0.57%	0.27%	2.11%	0.52%	0.36%	0.80%	0.04%	1.50%	2.80%	1.23%	0.00%	100%
Road 118	118	-	50	24.59972	Y	1500-1600	232	50.90%	18.31%	0.12%	11.19%	4.02%	2.54%	5.00%	0.53%	0.21%	1.64%	0.22%	0.15%	0.33%	0.03%	1.53%	1.97%	1.31%	0.00%	100%
Road 118	118	-	50	24.50517	Y	1600-1700	250	51.03%	17.64%	0.12%	11.82%	4.24%	1.80%	3.54%	0.54%	0.16%	1.27%	0.67%	0.46%	1.02%	0.04%	1.60%	3.11%	0.92%	0.00%	100%
Road 118	118	-	50	24.385	Y	1700-1800	287	61.24%	13.18%	0.08%	7.76%	2.79%	0.93%	1.83%	0.70%	0.14%	1.11%	0.71%	0.49%	1.08%	0.02%	1.37%	6.09%	0.48%	0.00%	100%
Road 118	118	-	50	24.41552	Y	1800-1900	289	67.15%	14.85%	0.06%	5.61%	2.02%	0.68%	1.34%	0.73%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	1.46%	3.98%	0.35%	0.00%	100%
Road 118	118	-	50	24.63557	Y	1900-2000	252	64.51%	20.40%	0.05%	5.08%	1.82%	0.22%	0.44%	0.74%	0.03%	0.23%	0.49%	0.34%	0.74%	0.07%	1.67%	3.05%	0.11%	0.00%	100%
Road 118	118	-	50	24.88829	Y	2000-2100	205	62.79%	22.93%	0.05%	4.54%	1.63%	0.42%	0.82%	0.58%	0.01%	0.08%	0.43%	0.30%	0.66%	0.03%	1.75%	2.78%	0.21%	0.00%	100%
Road 118	118	-	50	24.94699	Y	2100-2200	195	56.38%	30.42%	0.05%	4.40%	1.58%	0.29%	0.57%	0.69%	0.01%	0.08%	0.33%	0.23%	0.51%	0.03%	1.96%	2.32%	0.15%	0.00%	100%
Road 118	118	-	50	24.99312	Y	2200-2300	190	52.96%	35.51%	0.04%	4.03%	1.45%	0.22%	0.44%	0.52%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.82%	2.68%	0.11%	0.00%	100%
Road 118	118	-	50	26.05426	Y	2300-0000	147	53.08%	33.28%	0.05%	4.43%	1.59%	0.34%	0.68%	0.57%	0.06%	0.46%	0.15%	0.11%	0.23%	0.03%	1.82%	2.94%	0.18%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 119	119	-	50	25.39932	Y	0000-0100	165	51.48%	30.06%	0.06%	5.80%	2.08%	0.56%	1.10%	0.62%	0.10%	0.82%	0.27%	0.18%	0.41%	0.05%	3.03%	3.11%	0.29%	0.00%	100%
Road 119	119	-	50	26.80267	Y	0100-0200	113	51.51%	27.78%	0.07%	6.28%	2.26%	0.70%	1.38%	0.67%	0.15%	1.19%	0.39%	0.27%	0.59%	0.05%	3.01%	3.35%	0.36%	0.00%	100%
Road 119	119	-	50	27.50916	Y	0200-0300	87	51.59%	25.46%	0.07%	6.77%	2.43%	0.85%	1.67%	0.72%	0.20%	1.57%	0.51%	0.35%	0.77%	0.04%	2.97%	3.57%	0.44%	0.00%	100%
Road 119	119	-	50	28.09958	Y	0300-0400	66	51.57%	23.18%	0.08%	7.27%	2.61%	0.99%	1.95%	0.77%	0.25%	1.92%	0.63%	0.44%	0.96%	0.05%	2.99%	3.83%	0.51%	0.00%	100%
Road 119	119	-	50	28.17315	Y	0400-0500	62	51.64%	20.84%	0.08%	7.77%	2.79%	1.14%	2.24%	0.83%	0.29%	2.30%	0.75%	0.52%	1.14%	0.05%	2.96%	4.07%	0.59%	0.00%	100%
Road 119	119	-	50	27.37339	Y	0500-0600	89	51.70%	18.49%	0.09%	8.28%	2.97%	1.29%	2.53%	0.88%	0.34%	2.67%	0.87%	0.61%	1.33%	0.04%	2.93%	4.31%	0.66%	0.00%	100%
Road 119	119	-	50	24.49691	Y	0600-0700	250	51.87%	16.05%	0.09%	8.77%	3.15%	1.45%	2.86%	0.92%	0.40%	3.09%	1.00%	0.69%	1.53%	0.04%	2.83%	4.51%	0.75%	0.00%	100%
Road 119	119	-	50	23.22994	Y	0700-0800	456	51.95%	13.65%	0.10%	9.28%	3.33%	1.61%	3.16%	0.98%	0.45%	3.48%	1.13%	0.78%	1.72%	0.04%	2.79%	4.75%	0.83%	0.00%	100%
Road 119	119	-	50	23.165	Y	0800-0900	487	56.46%	17.26%	0.08%	8.12%	2.92%	1.25%	2.45%	0.62%	0.21%	1.60%	0.80%	0.56%	1.22%	0.05%	2.21%	3.55%	0.64%	0.00%	100%
Road 119	119	-	50	23.28668	Y	0900-1000	436	48.25%	15.63%	0.14%	13.39%	4.81%	2.45%	4.81%	0.78%	0.15%	1.14%	0.54%	0.37%	0.81%	0.06%	2.65%	2.76%	1.26%	0.00%	100%
Road 119	119	-	50	23.3544	Y	1000-1100	419	43.04%	19.61%	0.16%	14.98%	5.38%	2.88%	5.66%	0.51%	0.13%	1.03%	0.20%	0.14%	0.30%	0.13%	2.75%	1.63%	1.48%	0.00%	100%
Road 119	119	-	50	23.53903	Y	1100-1200	393	45.11%	18.91%	0.14%	13.23%	4.75%	2.94%	5.78%	0.86%	0.10%	0.81%	0.31%	0.22%	0.48%	0.03%	2.50%	2.32%	1.51%	0.00%	100%
Road 119	119	-	50	24.96605	Y	1200-1300	153	39.88%	13.83%	0.18%	16.92%	6.07%	3.63%	7.14%	0.44%	0.25%	1.95%	0.51%	0.36%	0.78%	0.22%	4.89%	1.08%	1.87%	0.00%	100%
Road 119	119	-	50	24.89364	Y	1300-1400	159	34.00%	14.05%	0.21%	19.71%	7.08%	3.58%	7.03%	0.66%	0.24%	1.89%	0.88%	0.61%	1.34%	0.26%	5.12%	1.53%	1.84%	0.00%	100%
Road 119	119	-	50	24.9295	Y	1400-1500	158	40.18%	12.45%	0.18%	17.09%	6.14%	3.78%	7.43%	0.41%	0.21%	1.64%	0.41%	0.28%	0.62%	0.13%	4.95%	2.18%	1.94%	0.00%	100%
Road 119	119	-	50	24.91765	Y	1500-1600	160	39.17%	14.09%	0.18%	17.48%	6.28%	3.97%	7.81%	0.38%	0.16%	1.26%	0.17%	0.12%	0.25%	0.11%	5.00%	1.52%	2.04%	0.00%	100%
Road 119	119	-	50	24.86451	Y	1600-1700	170	39.74%	13.74%	0.20%	18.68%	6.71%	2.84%	5.59%	0.40%	0.13%	0.99%	0.52%	0.36%	0.79%	0.14%	5.28%	2.43%	1.46%	0.00%	100%
Road 119	119	-	50	24.88	Y	1700-1800	181	51.57%	11.10%	0.14%	13.27%	4.76%	1.59%	3.13%	0.55%	0.12%	0.93%	0.60%	0.41%	0.91%	0.08%	4.90%	5.12%	0.82%	0.00%	100%
Road 119	119	-	50	24.93878	Y	1800-1900	177	58.36%	12.90%	0.10%	9.90%	3.56%	1.20%	2.37%	0.60%	0.02%	0.16%	0.42%	0.29%	0.64%	0.03%	5.37%	3.46%	0.62%	0.00%	100%
Road 119	119	-	50	25.49578	Y	1900-2000	152	56.80%	17.96%	0.09%	9.08%	3.26%	0.40%	0.79%	0.62%	0.03%	0.20%	0.43%	0.30%	0.65%	0.26%	6.24%	2.69%	0.21%	0.00%	100%
Road 119	119	-	50	26.31292	Y	2000-2100	124	55.25%	20.18%	0.08%	8.11%	2.91%	0.74%	1.46%	0.48%	0.01%	0.07%	0.38%	0.26%	0.58%	0.13%	6.54%	2.44%	0.38%	0.00%	100%
Road 119	119	-	50	26.49407	Y	2100-2200	118	49.61%	26.76%	0.08%	7.86%	2.82%	0.52%	1.02%	0.58%	0.01%	0.07%	0.29%	0.20%	0.45%	0.10%	7.32%	2.04%	0.27%	0.00%	100%
Road 119	119	-	50	26.69712	Y	2200-2300	113	47.11%	31.58%	0.08%	7.28%	2.61%	0.40%	0.79%	0.44%	0.01%	0.07%	0.03%	0.02%	0.04%	0.10%	6.85%	2.38%	0.21%	0.00%	100%
Road 119	119	-	50	27.38283	Y	2300-0000	88	46.79%	29.34%	0.08%	7.93%	2.85%	0.62%	1.21%	0.48%	0.05%	0.41%	0.13%	0.09%	0.20%	0.10%	6.81%	2.59%	0.32%	0.00%	100%
Road 120	120	-	50	27.39426	Y	0000-0100	90	46.96%	27.42%	0.11%	11.00%	3.95%	1.06%	2.08%	0.37%	0.10%	0.75%	0.24%	0.17%	0.37%	0.03%	2.01%	2.84%	0.54%	0.00%	100%
Road 120	120	-	50	28.16076	Y	0100-0200	63	46.45%	25.06%	0.12%	11.79%	4.23%	1.32%	2.59%	0.40%	0.14%	1.07%	0.35%	0.24%	0.53%	0.03%	1.98%	3.02%	0.68%	0.00%	100%
Road 120	120	-	50	28.54483	Y	0200-0300	49	46.00%	22.70%	0.13%	12.56%	4.51%	1.58%	3.11%	0.43%	0.18%	1.40%	0.45%	0.31%	0.69%	0.03%	1.92%	3.19%	0.81%	0.00%	100%
Road 120	120	-	50	28.87409	Y	0300-0400	37	45.48%	20.44%	0.14%	13.33%	4.79%	1.82%	3.58%	0.46%	0.22%	1.70%	0.55%	0.38%	0.84%	0.03%	1.92%	3.38%	0.94%	0.00%	100%
Road 120	120	-	50	28.90206	Y	0400-0500	36	45.03%	18.17%	0.15%	14.09%	5.06%	2.07%	4.07%	0.48%	0.26%	2.00%	0.65%	0.45%	1.00%	0.03%	1.88%	3.55%	1.06%	0.00%	100%
Road 120	120	-	50	28.39957	Y	0500-0600	51	44.58%	15.95%	0.16%	14.85%	5.33%	2.31%	4.54%	0.51%	0.29%	2.30%	0.75%	0.52%	1.15%	0.03%	1.84%	3.71%	1.19%	0.00%	100%
Road 120	120	-	50	25.35435	Y	0600-0700	147	44.20%	13.68%	0.16%	15.55%	5.58%	2.58%	5.06%	0.52%	0.34%	2.63%	0.85%	0.59%	1.30%	0.02%	1.75%	3.85%	1.32%	0.00%	100%
Road 120	120	-	50	24.26505	Y	0700-0800	271	43.78%	11.50%	0.17%	16.26%	5.84%	2.82%	5.54%	0.55%	0.38%	2.93%	0.95%	0.66%	1.45%	0.02%	1.71%	4.00%	1.45%	0.00%	100%
Road 120	120	-	50	24.2675	Y	0800-0900	282	48.72%	14.90%	0.15%	14.58%	5.23%	2.24%	4.40%	0.35%	0.18%	1.38%	0.69%	0.48%	1.05%	0.03%	1.38%	3.06%	1.15%	0.00%	100%
Road 120	120	-	50	24.13601	Y	0900-1000	279	37.70%	12.21%	0.23%	21.76%	7.82%	3.97%	7.81%	0.40%	0.11%	0.89%	0.42%	0.29%	0.64%	0.03%	1.51%	2.16%	2.04%	0.00%	100%
Road 120	120	-	50	24.11768	Y	1000-1100	276	32.60%	14.85%	0.25%	23.60%	8.47%	4.54%	8.92%	0.26%	0.10%	0.78%	0.15%	0.10%	0.23%	0.07%	1.51%	1.24%	2.33%	0.00%	100%
Road 120	120	-	50	24.27696	Y	1100-1200	255	34.80%	14.58%	0.22%	21.23%	7.62%	4.72%	9.27%	0.44%	0.08%	0.62%	0.24%	0.17%	0.37%	0.02%	1.40%	1.79%	2.42%	0.00%	100%
Road 120	120	-	50	24.63582	Y	1200-1300	224	51.15%	17.74%	0.11%	10.69%	3.84%	2.30%	4.52%	0.60%	0.32%	2.51%	0.66%	0.46%	1.00%	0.07%	1.48%	1.38%	1.18%	0.00%	100%
Road 120	120	-	50	24.57371	Y	1300-1400	228	44.78%	18.50%	0.13%	12.79%	4.59%	2.32%	4.56%	0.93%	0.32%	2.48%	1.16%	0.80%	1.76%	0.08%	1.59%	2.01%	1.19%	0.00%	100%
Road 120	120	-	50	24.5982	Y	1400-1500	231	51.77%	16.04%	0.11%	10.85%	3.90%	2.40%	4.72%	0.57%	0.27%	2.11%	0.52%	0.36%	0.80%	0.04%	1.50%	2.80%	1.23%	0.00%	100%
Road 120	120	-	50	24.59972	Y	1500-1600	232	50.90%	18.31%	0.12%	11.19%	4.02%	2.54%	5.00%	0.53%	0.21%	1.64%	0.22%	0.15%	0.33%	0.03%	1.53%	1.97%	1.31%	0.00%	100%
Road 120	120	-	50	24.50517	Y	1600-1700	250	51.03%	17.64%	0.12%	11.82%	4.24%	1.80%	3.54%	0.54%	0.16%	1.27%	0.67%	0.46%	1.02%	0.04%	1.60%	3.11%	0.92%	0.00%	100%
Road 120	120	-	50	24.385	Y	1700-1800	287	61.24%	13.18%	0.08%	7.76%	2.79%	0.93%	1.83%	0.70%	0.14%	1.11%	0.71%	0.49%	1.08%	0.02%	1.37%	6.09%	0.48%	0.00%	100%
Road 120	120	-	50	24.41552	Y	1800-1900	289	67.15%	14.85%	0.06%	5.61%	2.02%	0.68%	1.34%	0.73%	0.02%	0.18%	0.48%	0.34%	0.74%	0.01%	1.46%	3.98%	0.35%	0.00%	100%
Road 120	120	-	50	24.63557	Y	1900-2000	252	64.51%	20.40%	0.05%	5.08%	1.82%	0.22%	0.44%	0.74%	0.03%	0.23%	0.49%	0.34%	0.74%	0.07%	1.67%	3.05%	0.11%	0.00%	100%
Road 120	120	-	50	24.88829	Y	2000-2100	205	62.79%	22.93%	0.05%	4.54%	1.63%	0.42%	0.82%	0.58%	0.01%	0.08%	0.43%	0.30%	0.66%	0.03%	1.75%	2.78%	0.21%	0.00%	100%
Road 120	120	-	50	24.94699	Y	2100-2200	195	56.38%	30.42%	0.05%	4.40%	1.58%	0.29%	0.57%	0.69%	0.01%	0.08%	0.33%	0.23%	0.51%	0.03%	1.96%	2.32%	0.15%	0.00%	100%
Road 120	120	-	50	24.99312	Y	2200-2300	190	52.96%	35.51%	0.04%	4.03%	1.45%	0.22%	0.44%	0.52%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.82%	2.68%	0.11%	0.00%	100%
Road 120	120	-	50	26.05426	Y	2300-0000	147	53.08%	33.28%	0.05%	4.43%	1.59%	0.34%	0.68%	0.57%	0.06%	0.46%	0.15%	0.11%	0.23%	0.03%	1.82%	2.94%	0.18%	0.00%	100%
Road 121	121	-	50	27.84635	Y	0000-0100	79	51.19%	29.90%	0.09%	8.24%	2.96%	0.79%	1.56%	0.00%	0.10%	0.81%	0.27%	0.18%	0.40%	0.00%	0.00%	3.09%	0.41%	0.00%	100%
Road 121	121	-	50	28.49178	Y	0100-0200	54	50.99%	27.50%	0.09%	8.89%	3.19%	0.99%	1.95%	0.00%	0.15%	1.18%	0.38%	0.27%	0.58%	0.00%	0.00%	3.32%	0.51%	0.00%	100%
Road 121	121	-	50	28.81518	Y	0200-0300	42	50.82%	25.08%	0.10%	9.54%	3.42%	1.20%	2.36%	0.00%	0.20%	1.54%	0.50%	0.35%	0.76%	0.00%	0.00%	3.52%	0.62%	0.00%	100%
Road 121	121	-	50	29.09033	Y	0300-0400	32	50.58%	22.74%	0.11%	10.19%	3.66%	1.39%	2.74%	0.00%	0.24%	1.89%	0.62%	0.43%	0.94%	0.00%	0.00%	3.76%	0.71%	0.00%	100%
Road 121	121	-	50	29.11887	Y	0400-0500	30	50.41%	20.34%	0.11%	10.85%	3.89%	1.59%	3.13%	0.00%	0.29%	2.24%	0.73%	0.51%	1.12%	0.00%	0.00%	3.97%	0.82%	0.00%	100%
Road 121	121	-	50	28.72407	Y	0500-0600	43	50.23%	17.97%	0.12%	11.50%	4.13%	1.79%	3.52%	0.00%	0.33%	2.59%	0.85%	0.59%	1.29%	0.00%	0.00%	4.18%	0.92%	0.00%	100%
Road 121	121	-	50	26.31575	Y	0600-0700	123	50.10%	15.50%	0.13%	12.11%	4.35%	2.01%	3.95%	0.00%	0.38%	2.98%	0.97%	0.67%	1.47%	0.00%	0.00%	4.36%	1.03%	0.00%	100%
Road 121	121	-	50	24.63217	Y	0700-0800	226	49.92%	13.12%	0.13%	12.75%	4.58%	2.21%	4.34%	0.00%	0.43%	3.34%	1.08%	0.75%	1.65%	0.00%	0.00%	4.56%	1.13%	0.00%	100%
Road 121	121	-	50	24.6	Y	0800-0900	240	54.41%	16.64%	0.12%	11.19%	4.02%	1.72%	3.38%	0.00%	0.20%	1.55%	0.77%	0.54%	1.18%	0.00%	0.00%	3.42%	0.88%	0.00%	100%
Road 121	121	-	50	24.5907	Y	0900-1000	224	44.66%	14.47%	0.19%	17.72%	6.36%	3.24%	6.36%	0.00%	0.14%	1.06%	0.50%	0.34%	0.75%	0.00%	0.00%	2.56%	1.66%	0.00%	100%
Road 121	121	-	50	24.60025	Y	1000-1100	219	39.22%	17.87%	0.20%	19.51%	7.01%	3.75%	7.38%	0.00%	0.12%	0.94%	0.18%	0.13%	0.28%	0.00%	0.00%	1.49%	1.93%	0.00%	100%
Road 121	121	-	50	24.70644	Y	1100-1200	203	41.47%	17.38%	0.18%	17.39%	6.24%	3.86%	7.60%	0.00%	0.09%	0.74%	0.29%	0.20%	0.44%	0.00%	0.00%	2.13%	1.98%	0.00%	100%
Road 121	121	-	50	26.42901	Y	1200-1300	117	49.90%	17.31%	0.13%	12.58%	4.52%	2.70%	5.31%	0.00%	0.31%	2.45%	0.64%	0.45%	0.98%	0.00%	0.00%	1.35%	1.39%	0.00%	100%
Road 121	121	-	50	26.2653	Y	1300-1400	120	43.61%	18.02%	0.16%	15.02%	5.39%	2.73%	5.36%	0.00%	0.31%	2.42%	1.13%	0.78%	1.72%	0.00%	0.00%	1.96%	1.40%	0.00%	100%
Road 121	121	-	50	26.32192	Y	1400-1500	121	50.42%	15.63%	0.13%	12.74%	4.58%	2.82%	5.54%	0.00%	0.26%	2.05%	0.51%	0.35%	0.78%	0.00%	0.00%	2.73%	1.45%	0.00%	100%
Road 121	121	-	50	26.3153	Y	1500-1600	122	49.48%	17.79%	0.14%	13.12%	4.71%	2.98%	5.86%	0.00%	0.20%	1.59%	0.21%	0.15%	0.32%	0.00%	0.00%	1.92%	1.53%	0.00%	100%
Road 121	121	-	50	26.09863	Y	1600-1700	131	49.82%	17.22%	0.15%	13.92%	5.00%	2.12%	4.17%	0.00%	0.16%	1.24%	0.65%	0.45%	0.99%	0.00%	0.00%	3.04%	1.09%	0.00%	100%
Road 121	121	-	50	25.875	Y	1700-1800	147	60.77%	13.08%	0.10%	9.29%	3.34%	1.11%	2.19%	0.00%	0.14%	1.10%	0.70%	0.49%	1.07%	0.00%	0.00%	6.04%	0.57%	0.00%	100%
Road 121	121	-	50	26.0084	Y	1800-1900	147	67.23%	14.87%	0.07%	6.78%	2.43%	0.82%	1.62%	0.00%	0.02%	0.18%	0.48%	0.34%	0.74%	0.00%	0.00%	3.99%	0.42%	0.00%	100%
Road 121	121	-	50	26.61516	Y	1900-2000	128	65.08%	20.58%	0.06%	6.18%	2.22%	0.27%	0.54%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.08%	0.14%	0.00%	100%
Road 121	121	-	50	27.23706	Y	2000-2100	104	63.29%	23.11%	0.06%	5.52%	1.98%	0.50%	0.99%	0.00%	0.01%	0.08%	0.43%	0.30%	0.66%	0.00%	0.00%	2.80%	0.26%	0.00%	100%
Road 121	121	-	50	27.40628	Y	2100-2200	98	57.09%	30.80%	0.06%	5.37%	1.93%	0.36%	0.70%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.35%	0.18%	0.00%	100%
Road 121	121	-	50	27.51245	Y	2200-2300	96	53.53%	35.89%	0.05%	4.92%	1.77%	0.27%	0.54%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.71%	0.14%	0.00%	100%
Road 121	121	-	50	28.04478	Y	2300-0000	74	53.57%	33.59%	0.06%	5.40%	1.94%	0.42%	0.83%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.97%	0.22%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 122	122	-	50	27.87264	Y	0000-0100	78	51.62%	30.15%	0.08%	7.82%	2.81%	0.75%	1.48%	0.00%	0.11%	0.82%	0.27%	0.19%	0.41%	0.00%	0.00%	3.12%	0.39%	0.00%	100%
Road 122	122	-	50	28.51214	Y	0100-0200	54	51.46%	27.76%	0.09%	8.45%	3.03%	0.94%	1.86%	0.00%	0.15%	1.19%	0.39%	0.27%	0.59%	0.00%	0.00%	3.35%	0.49%	0.00%	100%
Road 122	122	-	50	28.83266	Y	0200-0300	42	51.34%	25.33%	0.09%	9.07%	3.26%	1.14%	2.24%	0.00%	0.20%	1.56%	0.51%	0.35%	0.77%	0.00%	0.00%	3.56%	0.59%	0.00%	100%
Road 122	122	-	50	29.10484	Y	0300-0400	31	51.15%	22.99%	0.10%	9.70%	3.48%	1.32%	2.60%	0.00%	0.24%	1.91%	0.62%	0.43%	0.95%	0.00%	0.00%	3.80%	0.68%	0.00%	100%
Road 122	122	-	50	29.13396	Y	0400-0500	30	51.02%	20.59%	0.11%	10.33%	3.71%	1.52%	2.98%	0.00%	0.29%	2.27%	0.74%	0.51%	1.13%	0.00%	0.00%	4.02%	0.78%	0.00%	100%
Road 122	122	-	50	28.74736	Y	0500-0600	43	50.88%	18.20%	0.11%	10.96%	3.94%	1.71%	3.35%	0.00%	0.34%	2.62%	0.86%	0.60%	1.31%	0.00%	0.00%	4.24%	0.88%	0.00%	100%
Road 122	122	-	50	26.38713	Y	0600-0700	122	50.80%	15.72%	0.12%	11.56%	4.15%	1.92%	3.77%	0.00%	0.39%	3.02%	0.98%	0.68%	1.49%	0.00%	0.00%	4.42%	0.98%	0.00%	100%
Road 122	122	-	50	24.66013	Y	0700-0800	222	50.67%	13.32%	0.13%	12.18%	4.37%	2.11%	4.15%	0.00%	0.43%	3.39%	1.10%	0.76%	1.68%	0.00%	0.00%	4.63%	1.08%	0.00%	100%
Road 122	122	-	50	24.625	Y	0800-0900	237	55.10%	16.85%	0.11%	10.66%	3.83%	1.64%	3.22%	0.00%	0.20%	1.56%	0.78%	0.54%	1.19%	0.00%	0.00%	3.46%	0.84%	0.00%	100%
Road 122	122	-	50	24.63008	Y	0900-1000	219	45.61%	14.78%	0.18%	17.04%	6.12%	3.11%	6.12%	0.00%	0.14%	1.08%	0.51%	0.35%	0.77%	0.00%	0.00%	2.61%	1.60%	0.00%	100%
Road 122	122	-	50	24.64341	Y	1000-1100	213	40.16%	18.30%	0.20%	18.81%	6.75%	3.62%	7.11%	0.00%	0.12%	0.96%	0.19%	0.13%	0.28%	0.00%	0.00%	1.52%	1.86%	0.00%	100%
Road 122	122	-	50	24.7445	Y	1100-1200	199	42.40%	17.77%	0.17%	16.73%	6.01%	3.72%	7.31%	0.00%	0.10%	0.76%	0.30%	0.20%	0.45%	0.00%	0.00%	2.18%	1.91%	0.00%	100%
Road 122	122	-	50	26.51868	Y	1200-1300	114	49.35%	17.12%	0.14%	12.96%	4.65%	2.78%	5.47%	0.00%	0.31%	2.42%	0.64%	0.44%	0.97%	0.00%	0.00%	1.33%	1.43%	0.00%	100%
Road 122	122	-	50	26.35428	Y	1300-1400	116	43.07%	17.80%	0.16%	15.45%	5.55%	2.80%	5.51%	0.00%	0.31%	2.39%	1.11%	0.77%	1.69%	0.00%	0.00%	1.93%	1.44%	0.00%	100%
Road 122	122	-	50	26.41265	Y	1400-1500	118	49.86%	15.45%	0.14%	13.13%	4.71%	2.90%	5.71%	0.00%	0.26%	2.03%	0.50%	0.35%	0.77%	0.00%	0.00%	2.70%	1.49%	0.00%	100%
Road 122	122	-	50	26.40376	Y	1500-1600	118	48.90%	17.58%	0.14%	13.51%	4.85%	3.07%	6.03%	0.00%	0.20%	1.58%	0.21%	0.14%	0.32%	0.00%	0.00%	1.89%	1.58%	0.00%	100%
Road 122	122	-	50	26.19737	Y	1600-1700	127	49.27%	17.03%	0.15%	14.34%	5.15%	2.18%	4.29%	0.00%	0.16%	1.23%	0.64%	0.45%	0.98%	0.00%	0.00%	3.01%	1.12%	0.00%	100%
Road 122	122	-	50	26	Y	1700-1800	143	60.36%	12.99%	0.10%	9.61%	3.45%	1.15%	2.27%	0.00%	0.14%	1.09%	0.70%	0.49%	1.07%	0.00%	0.00%	6.00%	0.59%	0.00%	100%
Road 122	122	-	50	26.13878	Y	1800-1900	142	66.89%	14.79%	0.07%	7.03%	2.52%	0.85%	1.68%	0.00%	0.02%	0.18%	0.48%	0.33%	0.73%	0.00%	0.00%	3.97%	0.44%	0.00%	100%
Road 122	122	-	50	26.73186	Y	1900-2000	123	64.83%	20.50%	0.07%	6.41%	2.30%	0.28%	0.56%	0.00%	0.03%	0.23%	0.49%	0.34%	0.74%	0.00%	0.00%	3.07%	0.15%	0.00%	100%
Road 122	122	-	50	27.33202	Y	2000-2100	100	63.04%	23.02%	0.06%	5.73%	2.06%	0.52%	1.03%	0.00%	0.01%	0.08%	0.43%	0.30%	0.66%	0.00%	0.00%	2.79%	0.27%	0.00%	100%
Road 122	122	-	50	27.49666	Y	2100-2200	95	56.88%	30.69%	0.06%	5.58%	2.00%	0.37%	0.73%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.34%	0.19%	0.00%	100%
Road 122	122	-	50	27.60039	Y	2200-2300	92	53.36%	35.78%	0.05%	5.11%	1.83%	0.28%	0.56%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.70%	0.15%	0.00%	100%
Road 122	122	-	50	28.1125	Y	2300-0000	72	53.37%	33.47%	0.06%	5.60%	2.01%	0.44%	0.86%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.96%	0.22%	0.00%	100%
Road 123	123	-	50	27.82888	Y	0000-0100	80	51.79%	30.25%	0.08%	7.65%	2.75%	0.74%	1.45%	0.00%	0.11%	0.82%	0.27%	0.19%	0.41%	0.00%	0.00%	3.13%	0.38%	0.00%	100%
Road 123	123	-	50	28.48234	Y	0100-0200	55	51.65%	27.86%	0.09%	8.27%	2.97%	0.92%	1.82%	0.00%	0.15%	1.19%	0.39%	0.27%	0.59%	0.00%	0.00%	3.36%	0.47%	0.00%	100%
Road 123	123	-	50	28.8099	Y	0200-0300	43	51.55%	25.44%	0.09%	8.88%	3.19%	1.12%	2.20%	0.00%	0.20%	1.56%	0.51%	0.35%	0.77%	0.00%	0.00%	3.57%	0.57%	0.00%	100%
Road 123	123	-	50	29.08784	Y	0300-0400	32	51.38%	23.10%	0.10%	9.50%	3.41%	1.30%	2.55%	0.00%	0.25%	1.92%	0.63%	0.43%	0.95%	0.00%	0.00%	3.82%	0.67%	0.00%	100%
Road 123	123	-	50	29.11794	Y	0400-0500	31	51.27%	20.69%	0.11%	10.12%	3.63%	1.49%	2.92%	0.00%	0.29%	2.28%	0.74%	0.52%	1.13%	0.00%	0.00%	4.04%	0.76%	0.00%	100%
Road 123	123	-	50	28.7248	Y	0500-0600	44	51.15%	18.30%	0.11%	10.75%	3.86%	1.67%	3.29%	0.00%	0.34%	2.64%	0.86%	0.60%	1.31%	0.00%	0.00%	4.26%	0.86%	0.00%	100%
Road 123	123	-	50	26.32378	Y	0600-0700	124	51.09%	15.81%	0.12%	11.33%	4.07%	1.88%	3.69%	0.00%	0.39%	3.04%	0.99%	0.68%	1.50%	0.00%	0.00%	4.44%	0.96%	0.00%	100%
Road 123	123	-	50	24.63725	Y	0700-0800	227	50.98%	13.40%	0.12%	11.94%	4.29%	2.07%	4.07%	0.00%	0.44%	3.41%	1.11%	0.77%	1.69%	0.00%	0.00%	4.66%	1.06%	0.00%	100%
Road 123	123	-	50	24.6	Y	0800-0900	242	55.38%	16.93%	0.11%	10.45%	3.75%	1.61%	3.16%	0.00%	0.20%	1.57%	0.79%	0.55%	1.20%	0.00%	0.00%	3.48%	0.83%	0.00%	100%
Road 123	123	-	50	24.61112	Y	0900-1000	223	46.00%	14.91%	0.17%	16.75%	6.02%	3.06%	6.01%	0.00%	0.14%	1.09%	0.51%	0.35%	0.78%	0.00%	0.00%	2.63%	1.57%	0.00%	100%
Road 123	123	-	50	24.62633	Y	1000-1100	217	40.55%	18.47%	0.19%	18.51%	6.65%	3.56%	7.00%	0.00%	0.12%	0.97%	0.19%	0.13%	0.28%	0.00%	0.00%	1.54%	1.83%	0.00%	100%
Road 123	123	-	50	24.72792	Y	1100-1200	202	42.78%	17.93%	0.17%	16.46%	5.91%	3.66%	7.19%	0.00%	0.10%	0.76%	0.30%	0.21%	0.45%	0.00%	0.00%	2.20%	1.88%	0.00%	100%
Road 123	123	-	50	26.42901	Y	1200-1300	117	49.90%	17.31%	0.13%	12.58%	4.52%	2.70%	5.31%	0.00%	0.31%	2.45%	0.64%	0.45%	0.98%	0.00%	0.00%	1.35%	1.39%	0.00%	100%
Road 123	123	-	50	26.2653	Y	1300-1400	120	43.61%	18.02%	0.16%	15.02%	5.39%	2.73%	5.36%	0.00%	0.31%	2.42%	1.13%	0.78%	1.72%	0.00%	0.00%	1.96%	1.40%	0.00%	100%
Road 123	123	-	50	26.32192	Y	1400-1500	121	50.42%	15.63%	0.13%	12.74%	4.58%	2.82%	5.54%	0.00%	0.26%	2.05%	0.51%	0.35%	0.78%	0.00%	0.00%	2.73%	1.45%	0.00%	100%
Road 123	123	-	50	26.3153	Y	1500-1600	122	49.48%	17.79%	0.14%	13.12%	4.71%	2.98%	5.86%	0.00%	0.20%	1.59%	0.21%	0.15%	0.32%	0.00%	0.00%	1.92%	1.53%	0.00%	100%
Road 123	123	-	50	26.09863	Y	1600-1700	131	49.82%	17.22%	0.15%	13.92%	5.00%	2.12%	4.17%	0.00%	0.16%	1.24%	0.65%	0.45%	0.99%	0.00%	0.00%	3.04%	1.09%	0.00%	100%
Road 123	123	-	50	25.875	Y	1700-1800	147	60.77%	13.08%	0.10%	9.29%	3.34%	1.11%	2.19%	0.00%	0.14%	1.10%	0.70%	0.49%	1.07%	0.00%	0.00%	6.04%	0.57%	0.00%	100%
Road 123	123	-	50	26.0084	Y	1800-1900	147	67.23%	14.87%	0.07%	6.78%	2.43%	0.82%	1.62%	0.00%	0.02%	0.18%	0.48%	0.34%	0.74%	0.00%	0.00%	3.99%	0.42%	0.00%	100%
Road 123	123	-	50	26.61516	Y	1900-2000	128	65.08%	20.58%	0.06%	6.18%	2.22%	0.27%	0.54%	0.00%	0.03%	0.23%	0.49%	0.34%	0.75%	0.00%	0.00%	3.08%	0.14%	0.00%	100%
Road 123	123	-	50	27.23706	Y	2000-2100	104	63.29%	23.11%	0.06%	5.52%	1.98%	0.50%	0.99%	0.00%	0.01%	0.08%	0.43%	0.30%	0.66%	0.00%	0.00%	2.80%	0.26%	0.00%	100%
Road 123	123	-	50	27.40628	Y	2100-2200	98	57.09%	30.80%	0.06%	5.37%	1.93%	0.36%	0.70%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.35%	0.18%	0.00%	100%
Road 123	123	-	50	27.51245	Y	2200-2300	96	53.53%	35.89%	0.05%	4.92%	1.77%	0.27%	0.54%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.71%	0.14%	0.00%	100%
Road 123	123	-	50	28.04478	Y	2300-0000	74	53.57%	33.59%	0.06%	5.40%	1.94%	0.42%	0.83%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.97%	0.22%	0.00%	100%
Road 124	124	-	50	27.84635	Y	0000-0100	79	51.19%	29.90%	0.09%	8.24%	2.96%	0.79%	1.56%	0.00%	0.10%	0.81%	0.27%	0.18%	0.40%	0.00%	0.00%	3.09%	0.41%	0.00%	100%
Road 124	124	-	50	28.49178	Y	0100-0200	54	50.99%	27.50%	0.09%	8.89%	3.19%	0.99%	1.95%	0.00%	0.15%	1.18%	0.38%	0.27%	0.58%	0.00%	0.00%	3.32%	0.51%	0.00%	100%
Road 124	124	-	50	28.81518	Y	0200-0300	42	50.82%	25.08%	0.10%	9.54%	3.42%	1.20%	2.36%	0.00%	0.20%	1.54%	0.50%	0.35%	0.76%	0.00%	0.00%	3.52%	0.62%	0.00%	100%
Road 124	124	-	50	29.09033	Y	0300-0400	32	50.58%	22.74%	0.11%	10.19%	3.66%	1.39%	2.74%	0.00%	0.24%	1.89%	0.62%	0.43%	0.94%	0.00%	0.00%	3.76%	0.71%	0.00%	100%
Road 124	124	-	50	29.11887	Y	0400-0500	30	50.41%	20.34%	0.11%	10.85%	3.89%	1.59%	3.13%	0.00%	0.29%	2.24%	0.73%	0.51%	1.12%	0.00%	0.00%	3.97%	0.82%	0.00%	100%
Road 124	124	-	50	28.72407	Y	0500-0600	43	50.23%	17.97%	0.12%	11.50%	4.13%	1.79%	3.52%	0.00%	0.33%	2.59%	0.85%	0.59%	1.29%	0.00%	0.00%	4.18%	0.92%	0.00%	100%
Road 124	124	-	50	26.31575	Y	0600-0700	123	50.10%	15.50%	0.13%	12.11%	4.35%	2.01%	3.95%	0.00%	0.38%	2.98%	0.97%	0.67%	1.47%	0.00%	0.00%	4.36%	1.03%	0.00%	100%
Road 124	124	-	50	24.63217	Y	0700-0800	226	49.92%	13.12%	0.13%	12.75%	4.58%	2.21%	4.34%	0.00%	0.43%	3.34%	1.08%	0.75%	1.65%	0.00%	0.00%	4.56%	1.13%	0.00%	100%
Road 124	124	-	50	24.6	Y	0800-0900	240	54.41%	16.64%	0.12%	11.19%	4.02%	1.72%	3.38%	0.00%	0.20%	1.55%	0.77%	0.54%	1.18%	0.00%	0.00%	3.42%	0.88%	0.00%	100%
Road 124	124	-	50	24.5907	Y	0900-1000	224	44.66%	14.47%	0.19%	17.72%	6.36%	3.24%	6.36%	0.00%	0.14%	1.06%	0.50%	0.34%	0.75%	0.00%	0.00%	2.56%	1.66%	0.00%	100%
Road 124	124	-	50	24.60025	Y	1000-1100	219	39.22%	17.87%	0.20%	19.51%	7.01%	3.75%	7.38%	0.00%	0.12%	0.94%	0.18%	0.13%	0.28%	0.00%	0.00%	1.49%	1.93%	0.00%	100%
Road 124	124	-	50	24.70644	Y	1100-1200	203	41.47%	17.38%	0.18%	17.39%	6.24%	3.86%	7.60%	0.00%	0.09%	0.74%	0.29%	0.20%	0.44%	0.00%	0.00%	2.13%	1.98%	0.00%	100%
Road 124	124	-	50	26.51868	Y	1200-1300	114	49.35%	17.12%	0.14%	12.96%	4.65%	2.78%	5.47%	0.00%	0.31%	2.42%	0.64%	0.44%	0.97%	0.00%	0.00%	1.33%	1.43%	0.00%	100%
Road 124	124	-	50	26.35428	Y	1300-1400	116	43.07%	17.80%	0.16%	15.45%	5.55%	2.80%	5.51%	0.00%	0.31%	2.39%	1.11%	0.77%	1.69%	0.00%	0.00%	1.93%	1.44%	0.00%	100%
Road 124	124	-	50	26.41265	Y	1400-1500	118	49.86%	15.45%	0.14%	13.13%	4.71%	2.90%	5.71%	0.00%	0.26%	2.03%	0.50%	0.35%	0.77%	0.00%	0.00%	2.70%	1.49%	0.00%	100%
Road 124	124	-	50	26.40376	Y	1500-1600	118	48.90%	17.58%	0.14%	13.51%	4.85%	3.07%	6.03%	0.00%	0.20%	1.58%	0.21%	0.14%	0.32%	0.00%	0.00%	1.89%	1.58%	0.00%	100%
Road 124	124	-	50	26.19737	Y	1600-1700	127	49.27%	17.03%	0.15%	14.34%	5.15%	2.18%	4.29%	0.00%	0.16%	1.23%	0.64%	0.45%	0.98%	0.00%	0.00%	3.01%	1.12%	0.00%	100%
Road 124	124	-	50	26	Y	1700-1800	143	60.36%	12.99%	0.10%	9.61%	3.45%	1.15%	2.27%	0.00%	0.14%	1.09%	0.70%	0.49%	1.07%	0.00%	0.00%	6.00%	0.59%	0.00%	100%
Road 124	124	-	50	26.13878	Y	1800-1900	142	66.89%	14.79%	0.07%	7.03%	2.52%	0.85%	1.68%	0.00%	0.02%	0.18%	0.48%	0.33%	0.73%	0.00%	0.00%	3.97%	0.44%	0.00%	100%
Road 124	124	-	50	26.73186	Y	1900-2000	123	64.83%	20.50%	0.07%	6.41%	2.30%	0.28%	0.56%	0.00%	0.03%	0.23%	0.49%	0.34%	0.74%	0.00%	0.00%	3.07%	0.15%	0.00%	100%
Road 124	124	-	50	27.33202	Y	2000-2100	100	63.04%	23.02%	0.06%	5.73%	2.06%	0.52%	1.03%	0.00%	0.01%	0.08%	0.43%	0.30%	0.66%	0.00%	0.00%	2.79%	0.27%	0.00%	100%
Road 124	124	-	50	27.49666	Y	2100-2200	95	56.88%	30.69%	0.06%	5.58%	2.00%	0.37%	0.73%	0.00%	0.01%	0.08%	0.34%	0.23%	0.51%	0.00%	0.00%	2.34%	0.19%	0.00%	100%
Road 124	124	-	50	27.60039	Y	2200-2300	92	53.36%	35.78%	0.05%	5.11%	1.83%	0.28%	0.56%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.70%	0.15%	0.00%	100%
Road 124	124	-	50	28.1125	Y	2300-0000	72	53.37%	33.47%	0.06%	5.60%	2.01%	0.44%	0.86%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.00%	2.96%	0.22%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 125	125	-	50	30	Y	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0700-0800	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0800-0900	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	0900-1000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1000-1100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1100-1200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1200-1300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1300-1400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1400-1500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1500-1600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1600-1700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1700-1800	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1800-1900	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	1900-2000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	2000-2100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 125	125	-	50	30	Y	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 126	126	-	50	29.47487	Y	0000-0100	10	59.56%	34.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.12%	0.95%	0.31%	0.21%	0.47%	0.00%	0.00%	3.60%	0.00%	0.00%	100%
Road 126	126	-	50	29.64242	Y	0100-0200	7	60.44%	32.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	1.39%	0.45%	0.31%	0.69%	0.00%	0.00%	3.93%	0.00%	0.00%	100%
Road 126	126	-	50	29.72689	Y	0200-0300	5	61.40%	30.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.24%	1.86%	0.61%	0.42%	0.92%	0.00%	0.00%	4.25%	0.00%	0.00%	100%
Road 126	126	-	50	29.796	Y	0300-0400	4	62.30%	28.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	2.32%	0.76%	0.53%	1.16%	0.00%	0.00%	4.63%	0.00%	0.00%	100%
Road 126	126	-	50	29.80781	Y	0400-0500	4	63.32%	25.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	2.82%	0.92%	0.64%	1.40%	0.00%	0.00%	4.99%	0.00%	0.00%	100%
Road 126	126	-	50	29.72926	Y	0500-0600	5	64.37%	23.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	3.32%	1.09%	0.75%	1.65%	0.00%	0.00%	5.36%	0.00%	0.00%	100%
Road 126	126	-	50	29.23976	Y	0600-0700	15	65.54%	20.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	3.90%	1.27%	0.88%	1.93%	0.00%	0.00%	5.70%	0.00%	0.00%	100%
Road 126	126	-	50	28.62689	Y	0700-0800	26	66.69%	17.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.57%	4.46%	1.45%	1.00%	2.20%	0.00%	0.00%	6.09%	0.00%	0.00%	100%
Road 126	126	-	50	28.5	Y	0800-0900	29	69.14%	21.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.25%	1.96%	0.98%	0.68%	1.50%	0.00%	0.00%	4.34%	0.00%	0.00%	100%
Road 126	126	-	50	28.86199	Y	0900-1000	22	69.27%	22.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.21%	1.64%	0.77%	0.53%	1.17%	0.00%	0.00%	3.96%	0.00%	0.00%	100%
Road 126	126	-	50	28.97534	Y	1000-1100	20	65.13%	29.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	1.56%	0.30%	0.21%	0.46%	0.00%	0.00%	2.47%	0.00%	0.00%	100%
Road 126	126	-	50	29.00529	Y	1100-1200	20	66.09%	27.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.15%	1.18%	0.46%	0.32%	0.70%	0.00%	0.00%	3.40%	0.00%	0.00%	100%
Road 126	126	-	50	29.46193	Y	1200-1300	10	68.00%	23.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	3.33%	0.88%	0.61%	1.33%	0.00%	0.00%	1.83%	0.00%	0.00%	100%
Road 126	126	-	50	29.46611	Y	1300-1400	10	62.36%	25.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.44%	3.46%	1.61%	1.12%	2.45%	0.00%	0.00%	2.80%	0.00%	0.00%	100%
Road 126	126	-	50	29.4556	Y	1400-1500	11	69.32%	21.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	2.82%	0.70%	0.49%	1.07%	0.00%	0.00%	3.75%	0.00%	0.00%	100%
Road 126	126	-	50	29.46927	Y	1500-1600	10	69.05%	24.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	2.22%	0.29%	0.20%	0.45%	0.00%	0.00%	2.67%	0.00%	0.00%	100%
Road 126	126	-	50	29.40754	Y	1600-1700	12	67.72%	23.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%	1.68%	0.88%	0.61%	1.35%	0.00%	0.00%	4.13%	0.00%	0.00%	100%
Road 126	126	-	50	29.25	Y	1700-1800	15	72.87%	15.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.17%	1.32%	0.84%	0.59%	1.29%	0.00%	0.00%	7.24%	0.00%	0.00%	100%
Road 126	126	-	50	29.21768	Y	1800-1900	16	76.53%	16.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.21%	0.55%	0.38%	0.84%	0.00%	0.00%	4.54%	0.00%	0.00%	100%
Road 126	126	-	50	29.2998	Y	1900-2000	14	71.85%	22.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.26%	0.54%	0.38%	0.83%	0.00%	0.00%	3.40%	0.00%	0.00%	100%
Road 126	126	-	50	29.43025	Y	2000-2100	11	69.79%	25.49%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.09%	0.48%	0.33%	0.73%	0.00%	0.00%	3.09%	0.00%	0.00%	100%
Road 126	126	-	50	29.45774	Y	2100-2200	11	62.45%	33.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.09%	0.37%	0.26%	0.56%	0.00%	0.00%	2.57%	0.00%	0.00%	100%
Road 126	126	-	50	29.47237	Y	2200-2300	11	57.99%	38.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.93%	0.00%	0.00%	100%
Road 126	126	-	50	29.59365	Y	2300-0000	8	58.77%	36.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.51%	0.17%	0.12%	0.26%	0.00%	0.00%	3.25%	0.00%	0.00%	100%
Road 127	127	-	50	24.89332	Y	0000-0100	210	56.82%	33.18%	0.01%	1.28%	0.46%	0.12%	0.24%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.04%	2.38%	3.43%	0.06%	0.00%	100%
Road 127	127	-	50	26.21412	Y	0100-0200	142	57.48%	31.01%	0.01%	1.40%	0.50%	0.16%	0.31%	0.00%	0.17%	1.33%	0.43%	0.30%	0.66%	0.04%	2.40%	3.74%	0.08%	0.00%	100%
Road 127	127	-	50	27.09626	Y	0200-0300	108	58.22%	28.73%	0.02%	1.53%	0.55%	0.19%	0.38%	0.00%	0.23%	1.77%	0.57%	0.40%	0.87%	0.04%	2.39%	4.03%	0.10%	0.00%	100%
Road 127	127	-	50	27.8188	Y	0300-0400	81	58.86%	26.46%	0.02%	1.66%	0.59%	0.23%	0.44%	0.00%	0.28%	2.19%	0.72%	0.50%	1.09%	0.04%	2.43%	4.38%	0.12%	0.00%	100%
Road 127	127	-	50	27.93554	Y	0400-0500	76	59.62%	24.06%	0.02%	1.79%	0.64%	0.26%	0.52%	0.00%	0.34%	2.65%	0.87%	0.60%	1.32%	0.04%	2.43%	4.70%	0.14%	0.00%	100%
Road 127	127	-	50	27.07742	Y	0500-0600	106	60.40%	21.60%	0.02%	1.93%	0.69%	0.30%	0.59%	0.00%	0.40%	3.11%	1.02%	0.71%	1.55%	0.04%	2.44%	5.03%	0.15%	0.00%	100%
Road 127	127	-	50	24.35311	Y	0600-0700	297	61.32%	18.97%	0.02%	2.07%	0.74%	0.34%	0.67%	0.00%	0.47%	3.65%	1.18%	0.82%	1.80%	0.03%	2.39%	5.33%	0.18%	0.00%	100%
Road 127	127	-	50	23.01137	Y	0700-0800	534	62.16%	16.34%	0.02%	2.22%	0.80%	0.38%	0.76%	0.00%	0.53%	4.16%	1.35%	0.94%	2.06%	0.03%	2.38%	5.68%	0.20%	0.00%	100%
Road 127	127	-	50	22.8125	Y	0800-0900	589	65.38%	19.99%	0.02%	1.88%	0.67%	0.29%	0.57%	0.00%	0.24%	1.86%	0.93%	0.64%	1.41%	0.04%	1.82%	4.11%	0.15%	0.00%	100%
Road 127	127	-	50	23.39517	Y	0900-1000	471	62.70%	20.32%	0.04%	3.48%	1.25%	0.63%	1.25%	0.00%	0.19%	1.48%	0.70%	0.48%	1.06%	0.06%	2.46%	3.59%	0.33%	0.00%	100%
Road 127	127	-	50	23.58364	Y	1000-1100	436	57.98%	26.42%	0.04%	4.03%	1.45%	0.77%	1.52%	0.00%	0.18%	1.39%	0.27%	0.19%	0.41%	0.12%	2.64%	2.20%	0.40%	0.00%	100%
Road 127	127	-	50	23.70238	Y	1100-1200	418	59.57%	24.97%	0.04%	3.49%	1.25%	0.78%	1.52%	0.00%	0.14%	1.06%	0.41%	0.29%	0.63%	0.03%	2.36%	3.06%	0.40%	0.00%	100%
Road 127	127	-	50	26.92506	Y	1200-1300	80	37.90%	13.15%	0.10%	9.19%	3.30%	1.97%	3.88%	0.00%	0.24%	1.86%	0.49%	0.34%	0.74%	1.05%	23.76%	1.02%	1.01%	0.00%	100%
Road 127	127	-	50	26.71862	Y	1300-1400	83	32.52%	13.44%	0.11%	10.77%	3.87%	1.96%	3.84%	0.00%	0.23%	1.80%	0.84%	0.58%	1.28%	1.26%	25.03%	1.46%	1.00%	0.00%	100%
Road 127	127	-	50	26.83337	Y	1400-1500	83	38.34%	11.88%	0.10%	9.32%	3.35%	2.06%	4.05%	0.00%	0.20%	1.56%	0.39%	0.27%	0.59%	0.62%	24.13%	2.08%	1.06%	0.00%	100%
Road 127	127	-	50	26.80864	Y	1500-1600	83	37.50%	13.49%	0.10%	9.56%	3.43%	2.17%	4.27%	0.00%	0.15%	1.21%	0.16%	0.11%	0.24%	0.54%	24.49%	1.45%	1.12%	0.00%	100%
Road 127	127	-	50	26.52452	Y	1600-1700	91	37.25%	12.87%	0.10%	10.01%	3.59%	1.52%	3.00%	0.00%	0.12%	0.93%	0.49%	0.34%	0.74%	0.68%	25.31%	2.27%	0.78%	0.00%	100%
Road 127	127	-	50	26.4375	Y	1700-1800	99	46.98%	10.11%	0.07%	6.91%	2.48%	0.83%	1.63%	0.00%	0.11%	0.85%	0.54%	0.38%	0.83%	0.36%	22.83%	4.67%	0.43%	0.00%	100%
Road 127	127	-	50	26.41735	Y	1800-1900	101	51.20%	11.32%	0.05%	4.96%	1.78%	0.60%	1.19%	0.00%	0.02%	0.14%	0.37%	0.26%	0.56%	0.12%	24.08%	3.04%	0.31%	0.00%	100%
Road 127	127	-	50	26.67225	Y	1900-2000	91	47.27%	14.95%	0.05%	4.32%	1.55%	0.19%	0.37%	0.00%	0.02%	0.17%	0.36%	0.25%	0.54%	1.10%	26.54%	2.24%	0.10%	0.00%	100%
Road 127	127	-	50	27.25444	Y	2000-2100	75	45.65%	16.67%	0.04%	3.83%	1.37%	0.35%	0.69%	0.00%	0.01%	0.06%	0.31%	0.22%	0.48%	0.53%	27.60%	2.02%	0.18%	0.00%	100%
Road 127	127	-	50	27.2634	Y	2100-2200	73	39.83%	21.49%	0.04%	3.61%	1.29%	0.24%	0.47%	0.00%	0.01%	0.06%	0.23%	0.16%	0.36%	0.41%	30.05%	1.64%	0.12%	0.00%	100%
Road 127	127	-	50	27.45469	Y	2200-2300	70	38.21%	25.62%	0.04%	3.37%	1.21%	0.19%	0.37%	0.00%	0.01%	0.06%	0.02%	0.01%	0.03%	0.41%	28.42%	1.93%	0.10%	0.00%	100%
Road 127	127	-	50	28.01268	Y	2300-0000	54	38.24%	23.98%	0.04%	3.70%	1.33%	0.29%	0.57%	0.00%	0.04%	0.33%	0.11%	0.08%	0.17%	0.41%	28.44%	2.12%	0.15%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 128	128	-	50	28.45008	Y	0000-0100	34	24.35%	14.22%	0.05%	4.50%	1.62%	0.43%	0.85%	0.00%	0.05%	0.39%	0.13%	0.09%	0.19%	0.76%	50.69%	1.47%	0.22%	0.00%	100%
Road 128	128	-	50	28.93208	Y	0100-0200	23	24.33%	13.13%	0.05%	4.87%	1.75%	0.54%	1.07%	0.00%	0.07%	0.56%	0.18%	0.13%	0.28%	0.76%	50.41%	1.58%	0.28%	0.00%	100%
Road 128	128	-	50	29.18125	Y	0200-0300	18	24.48%	12.08%	0.06%	5.27%	1.89%	0.66%	1.30%	0.00%	0.10%	0.74%	0.24%	0.17%	0.37%	0.74%	49.87%	1.70%	0.34%	0.00%	100%
Road 128	128	-	50	29.37556	Y	0300-0400	14	24.29%	10.92%	0.06%	5.62%	2.02%	0.77%	1.51%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.77%	49.87%	1.81%	0.39%	0.00%	100%
Road 128	128	-	50	29.40736	Y	0400-0500	13	24.38%	9.84%	0.06%	6.02%	2.16%	0.88%	1.74%	0.00%	0.14%	1.08%	0.35%	0.25%	0.54%	0.75%	49.43%	1.92%	0.45%	0.00%	100%
Road 128	128	-	50	29.15659	Y	0500-0600	18	24.42%	8.73%	0.07%	6.41%	2.30%	1.00%	1.96%	0.00%	0.16%	1.26%	0.41%	0.29%	0.63%	0.75%	49.07%	2.03%	0.51%	0.00%	100%
Road 128	128	-	50	27.65588	Y	0600-0700	51	24.85%	7.69%	0.07%	6.89%	2.47%	1.14%	2.24%	0.00%	0.19%	1.48%	0.48%	0.33%	0.73%	0.67%	48.01%	2.16%	0.59%	0.00%	100%
Road 128	128	-	50	25.7422	Y	0700-0800	93	24.98%	6.56%	0.08%	7.31%	2.63%	1.27%	2.49%	0.00%	0.21%	1.67%	0.54%	0.38%	0.83%	0.65%	47.47%	2.28%	0.65%	0.00%	100%
Road 128	128	-	50	26.125	Y	0800-0900	89	30.18%	9.23%	0.07%	7.12%	2.56%	1.09%	2.15%	0.00%	0.11%	0.86%	0.43%	0.30%	0.65%	1.03%	41.76%	1.90%	0.56%	0.00%	100%
Road 128	128	-	50	25.89851	Y	0900-1000	89	23.00%	7.45%	0.11%	10.47%	3.76%	1.91%	3.76%	0.00%	0.07%	0.54%	0.26%	0.18%	0.39%	1.01%	44.80%	1.32%	0.98%	0.00%	100%
Road 128	128	-	50	25.8574	Y	1000-1100	89	19.75%	9.00%	0.12%	11.27%	4.05%	2.17%	4.26%	0.00%	0.06%	0.47%	0.09%	0.06%	0.14%	2.06%	44.63%	0.75%	1.11%	0.00%	100%
Road 128	128	-	50	26.42209	Y	1100-1200	78	22.05%	9.24%	0.11%	10.61%	3.81%	2.36%	4.63%	0.00%	0.05%	0.39%	0.15%	0.11%	0.23%	0.56%	43.35%	1.13%	1.21%	0.00%	100%
Road 128	128	-	50	27.25507	Y	1200-1300	80	46.95%	16.28%	0.07%	6.93%	2.49%	1.49%	2.93%	0.00%	0.29%	2.30%	0.60%	0.42%	0.92%	0.69%	15.59%	1.27%	0.77%	0.00%	100%
Road 128	128	-	50	27.11681	Y	1300-1400	81	41.05%	16.96%	0.09%	8.29%	2.98%	1.50%	2.96%	0.00%	0.29%	2.28%	1.06%	0.74%	1.62%	0.84%	16.74%	1.84%	0.77%	0.00%	100%
Road 128	128	-	50	27.18337	Y	1400-1500	82	47.59%	14.75%	0.07%	7.05%	2.53%	1.56%	3.06%	0.00%	0.25%	1.94%	0.48%	0.33%	0.73%	0.41%	15.87%	2.58%	0.80%	0.00%	100%
Road 128	128	-	50	27.18128	Y	1500-1600	82	46.78%	16.82%	0.08%	7.27%	2.61%	1.65%	3.25%	0.00%	0.19%	1.51%	0.20%	0.14%	0.30%	0.36%	16.18%	1.81%	0.85%	0.00%	100%
Road 128	128	-	50	26.92058	Y	1600-1700	90	46.35%	16.02%	0.08%	7.59%	2.72%	1.16%	2.27%	0.00%	0.15%	1.15%	0.61%	0.42%	0.92%	0.45%	16.69%	2.83%	0.59%	0.00%	100%
Road 128	128	-	50	26.6875	Y	1700-1800	103	55.74%	12.00%	0.05%	4.99%	1.79%	0.60%	1.18%	0.00%	0.13%	1.01%	0.65%	0.45%	0.98%	0.23%	14.35%	5.54%	0.31%	0.00%	100%
Road 128	128	-	50	26.64696	Y	1800-1900	105	60.13%	13.30%	0.04%	3.55%	1.28%	0.43%	0.85%	0.00%	0.02%	0.16%	0.43%	0.30%	0.66%	0.08%	14.99%	3.57%	0.22%	0.00%	100%
Road 128	128	-	50	26.92908	Y	1900-2000	95	55.98%	17.70%	0.03%	3.11%	1.12%	0.14%	0.27%	0.00%	0.03%	0.20%	0.42%	0.29%	0.64%	0.69%	16.65%	2.65%	0.07%	0.00%	100%
Road 128	128	-	50	27.47614	Y	2000-2100	78	54.18%	19.79%	0.03%	2.77%	0.99%	0.25%	0.50%	0.00%	0.01%	0.07%	0.37%	0.26%	0.57%	0.33%	17.36%	2.40%	0.13%	0.00%	100%
Road 128	128	-	50	27.51912	Y	2100-2200	75	47.74%	25.76%	0.03%	2.63%	0.95%	0.17%	0.34%	0.00%	0.01%	0.07%	0.28%	0.20%	0.43%	0.26%	19.09%	1.96%	0.09%	0.00%	100%
Road 128	128	-	50	27.66443	Y	2200-2300	72	45.28%	30.36%	0.03%	2.44%	0.88%	0.14%	0.27%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.26%	17.85%	2.29%	0.07%	0.00%	100%
Road 128	128	-	50	28.18169	Y	2300-0000	56	45.49%	28.53%	0.03%	2.68%	0.96%	0.21%	0.41%	0.00%	0.05%	0.40%	0.13%	0.09%	0.20%	0.26%	17.93%	2.52%	0.11%	0.00%	100%
Road 129	129	-	50	25.42934	Y	0000-0100	171	56.21%	32.83%	0.02%	1.56%	0.56%	0.15%	0.30%	0.00%	0.11%	0.89%	0.29%	0.20%	0.44%	0.04%	2.91%	3.39%	0.08%	0.00%	100%
Road 129	129	-	50	26.86968	Y	0100-0200	116	56.82%	30.65%	0.02%	1.71%	0.61%	0.19%	0.38%	0.00%	0.17%	1.31%	0.43%	0.30%	0.65%	0.04%	2.93%	3.69%	0.10%	0.00%	100%
Road 129	129	-	50	27.59696	Y	0200-0300	89	57.51%	28.38%	0.02%	1.86%	0.67%	0.23%	0.46%	0.00%	0.22%	1.75%	0.57%	0.39%	0.86%	0.04%	2.92%	3.98%	0.12%	0.00%	100%
Road 129	129	-	50	28.19281	Y	0300-0400	66	58.10%	26.12%	0.02%	2.02%	0.73%	0.28%	0.54%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.05%	2.97%	4.32%	0.14%	0.00%	100%
Road 129	129	-	50	28.28789	Y	0400-0500	62	58.81%	23.73%	0.02%	2.18%	0.78%	0.32%	0.63%	0.00%	0.33%	2.62%	0.85%	0.59%	1.30%	0.05%	2.97%	4.63%	0.16%	0.00%	100%
Road 129	129	-	50	27.57377	Y	0500-0600	87	59.53%	21.29%	0.02%	2.35%	0.85%	0.37%	0.72%	0.00%	0.39%	3.07%	1.00%	0.70%	1.53%	0.05%	2.98%	4.96%	0.19%	0.00%	100%
Road 129	129	-	50	24.63186	Y	0600-0700	244	60.40%	18.69%	0.03%	2.52%	0.91%	0.42%	0.82%	0.00%	0.46%	3.59%	1.17%	0.81%	1.78%	0.04%	2.91%	5.25%	0.21%	0.00%	100%
Road 129	129	-	50	23.51484	Y	0700-0800	439	61.18%	16.08%	0.03%	2.70%	0.97%	0.47%	0.92%	0.00%	0.52%	4.09%	1.33%	0.92%	2.02%	0.04%	2.90%	5.59%	0.24%	0.00%	100%
Road 129	129	-	50	23.3625	Y	0800-0900	483	64.54%	19.74%	0.02%	2.29%	0.82%	0.35%	0.69%	0.00%	0.23%	1.83%	0.92%	0.64%	1.40%	0.05%	2.22%	4.06%	0.18%	0.00%	100%
Road 129	129	-	50	23.81244	Y	0900-1000	389	61.33%	19.87%	0.04%	4.20%	1.51%	0.77%	1.51%	0.00%	0.19%	1.45%	0.68%	0.47%	1.04%	0.07%	2.97%	3.51%	0.39%	0.00%	100%
Road 129	129	-	50	23.95935	Y	1000-1100	362	56.51%	25.75%	0.05%	4.86%	1.74%	0.93%	1.84%	0.00%	0.17%	1.36%	0.26%	0.18%	0.40%	0.15%	3.18%	2.15%	0.48%	0.00%	100%
Road 129	129	-	50	24.0671	Y	1100-1200	346	58.21%	24.40%	0.04%	4.21%	1.51%	0.94%	1.84%	0.00%	0.13%	1.04%	0.41%	0.28%	0.62%	0.04%	2.85%	2.99%	0.48%	0.00%	100%
Road 129	129	-	50	25.84893	Y	1200-1300	122	48.13%	16.69%	0.06%	6.07%	2.18%	1.30%	2.56%	0.00%	0.30%	2.36%	0.62%	0.43%	0.94%	0.70%	15.69%	1.30%	0.67%	0.00%	100%
Road 129	129	-	50	25.65084	Y	1300-1400	123	42.22%	17.44%	0.08%	7.27%	2.61%	1.32%	2.59%	0.00%	0.30%	2.34%	1.09%	0.76%	1.66%	0.85%	16.90%	1.89%	0.68%	0.00%	100%
Road 129	129	-	50	25.74456	Y	1400-1500	125	48.82%	15.13%	0.06%	6.17%	2.22%	1.36%	2.68%	0.00%	0.25%	1.99%	0.49%	0.34%	0.75%	0.41%	15.97%	2.64%	0.70%	0.00%	100%
Road 129	129	-	50	25.74718	Y	1500-1600	125	48.04%	17.27%	0.07%	6.37%	2.29%	1.45%	2.85%	0.00%	0.20%	1.55%	0.20%	0.14%	0.31%	0.36%	16.31%	1.86%	0.74%	0.00%	100%
Road 129	129	-	50	25.3396	Y	1600-1700	137	47.51%	16.42%	0.07%	6.64%	2.38%	1.01%	1.99%	0.00%	0.15%	1.18%	0.62%	0.43%	0.95%	0.45%	16.79%	2.90%	0.52%	0.00%	100%
Road 129	129	-	50	24.9875	Y	1700-1800	158	56.64%	12.19%	0.05%	4.33%	1.55%	0.52%	1.02%	0.00%	0.13%	1.02%	0.66%	0.46%	1.00%	0.23%	14.31%	5.63%	0.27%	0.00%	100%
Road 129	129	-	50	24.97054	Y	1800-1900	163	60.87%	13.46%	0.03%	3.07%	1.10%	0.37%	0.73%	0.00%	0.02%	0.17%	0.44%	0.30%	0.67%	0.08%	14.89%	3.61%	0.19%	0.00%	100%
Road 129	129	-	50	25.27185	Y	1900-2000	147	56.55%	17.89%	0.03%	2.69%	0.96%	0.12%	0.23%	0.00%	0.03%	0.20%	0.43%	0.30%	0.65%	0.69%	16.51%	2.68%	0.06%	0.00%	100%
Road 129	129	-	50	26.11493	Y	2000-2100	120	54.73%	19.99%	0.02%	2.39%	0.86%	0.22%	0.43%	0.00%	0.01%	0.07%	0.38%	0.26%	0.57%	0.33%	17.21%	2.42%	0.11%	0.00%	100%
Road 129	129	-	50	26.17888	Y	2100-2200	116	48.21%	26.01%	0.02%	2.27%	0.81%	0.15%	0.30%	0.00%	0.01%	0.07%	0.28%	0.20%	0.43%	0.26%	18.91%	1.98%	0.08%	0.00%	100%
Road 129	129	-	50	26.39943	Y	2200-2300	112	45.69%	30.63%	0.02%	2.10%	0.75%	0.12%	0.23%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.25%	17.67%	2.31%	0.06%	0.00%	100%
Road 129	129	-	50	27.19998	Y	2300-0000	87	45.95%	28.81%	0.02%	2.31%	0.83%	0.18%	0.35%	0.00%	0.05%	0.40%	0.13%	0.09%	0.20%	0.26%	17.77%	2.54%	0.09%	0.00%	100%
Road 130	130	-	50	28.45008	Y	0000-0100	34	24.35%	14.22%	0.05%	4.50%	1.62%	0.43%	0.85%	0.00%	0.05%	0.39%	0.13%	0.09%	0.19%	0.76%	50.69%	1.47%	0.22%	0.00%	100%
Road 130	130	-	50	28.93208	Y	0100-0200	23	24.33%	13.13%	0.05%	4.87%	1.75%	0.54%	1.07%	0.00%	0.07%	0.56%	0.18%	0.13%	0.28%	0.76%	50.41%	1.58%	0.28%	0.00%	100%
Road 130	130	-	50	29.18125	Y	0200-0300	18	24.48%	12.08%	0.06%	5.27%	1.89%	0.66%	1.30%	0.00%	0.10%	0.74%	0.24%	0.17%	0.37%	0.74%	49.87%	1.70%	0.34%	0.00%	100%
Road 130	130	-	50	29.37556	Y	0300-0400	14	24.29%	10.92%	0.06%	5.62%	2.02%	0.77%	1.51%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.77%	49.87%	1.81%	0.39%	0.00%	100%
Road 130	130	-	50	29.40736	Y	0400-0500	13	24.38%	9.84%	0.06%	6.02%	2.16%	0.88%	1.74%	0.00%	0.14%	1.08%	0.35%	0.25%	0.54%	0.75%	49.43%	1.92%	0.45%	0.00%	100%
Road 130	130	-	50	29.15659	Y	0500-0600	18	24.42%	8.73%	0.07%	6.41%	2.30%	1.00%	1.96%	0.00%	0.16%	1.26%	0.41%	0.29%	0.63%	0.75%	49.07%	2.03%	0.51%	0.00%	100%
Road 130	130	-	50	27.65588	Y	0600-0700	51	24.85%	7.69%	0.07%	6.89%	2.47%	1.14%	2.24%	0.00%	0.19%	1.48%	0.48%	0.33%	0.73%	0.67%	48.01%	2.16%	0.59%	0.00%	100%
Road 130	130	-	50	25.7422	Y	0700-0800	93	24.98%	6.56%	0.08%	7.31%	2.63%	1.27%	2.49%	0.00%	0.21%	1.67%	0.54%	0.38%	0.83%	0.65%	47.47%	2.28%	0.65%	0.00%	100%
Road 130	130	-	50	26.125	Y	0800-0900	89	30.18%	9.23%	0.07%	7.12%	2.56%	1.09%	2.15%	0.00%	0.11%	0.86%	0.43%	0.30%	0.65%	1.03%	41.76%	1.90%	0.56%	0.00%	100%
Road 130	130	-	50	25.89851	Y	0900-1000	89	23.00%	7.45%	0.11%	10.47%	3.76%	1.91%	3.76%	0.00%	0.07%	0.54%	0.26%	0.18%	0.39%	1.01%	44.80%	1.32%	0.98%	0.00%	100%
Road 130	130	-	50	25.8574	Y	1000-1100	89	19.75%	9.00%	0.12%	11.27%	4.05%	2.17%	4.26%	0.00%	0.06%	0.47%	0.09%	0.06%	0.14%	2.06%	44.63%	0.75%	1.11%	0.00%	100%
Road 130	130	-	50	26.42209	Y	1100-1200	78	22.05%	9.24%	0.11%	10.61%	3.81%	2.36%	4.63%	0.00%	0.05%	0.39%	0.15%	0.11%	0.23%	0.56%	43.35%	1.13%	1.21%	0.00%	100%
Road 130	130	-	50	27.25507	Y	1200-1300	80	46.95%	16.28%	0.07%	6.93%	2.49%	1.49%	2.93%	0.00%	0.29%	2.30%	0.60%	0.42%	0.92%	0.69%	15.59%	1.27%	0.77%	0.00%	100%
Road 130	130	-	50	27.11681	Y	1300-1400	81	41.05%	16.96%	0.09%	8.29%	2.98%	1.50%	2.96%	0.00%	0.29%	2.28%	1.06%	0.74%	1.62%	0.84%	16.74%	1.84%	0.77%	0.00%	100%
Road 130	130	-	50	27.18337	Y	1400-1500	82	47.59%	14.75%	0.07%	7.05%	2.53%	1.56%	3.06%	0.00%	0.25%	1.94%	0.48%	0.33%	0.73%	0.41%	15.87%	2.58%	0.80%	0.00%	100%
Road 130	130	-	50	27.18128	Y	1500-1600	82	46.78%	16.82%	0.08%	7.27%	2.61%	1.65%	3.25%	0.00%	0.19%	1.51%	0.20%	0.14%	0.30%	0.36%	16.18%	1.81%	0.85%	0.00%	100%
Road 130	130	-	50	26.92058	Y	1600-1700	90	46.35%	16.02%	0.08%	7.59%	2.72%	1.16%	2.27%	0.00%	0.15%	1.15%	0.61%	0.42%	0.92%	0.45%	16.69%	2.83%	0.59%	0.00%	100%
Road 130	130	-	50	26.6875	Y	1700-1800	103	55.74%	12.00%	0.05%	4.99%	1.79%	0.60%	1.18%	0.00%	0.13%	1.01%	0.65%	0.45%	0.98%	0.23%	14.35%	5.54%	0.31%	0.00%	100%
Road 130	130	-	50	26.64696	Y	1800-1900	105	60.13%	13.30%	0.04%	3.55%	1.28%	0.43%	0.85%	0.00%	0.02%	0.16%	0.43%	0.30%	0.66%	0.08%	14.99%	3.57%	0.22%	0.00%	100%
Road 130	130	-	50	26.92908	Y	1900-2000	95	55.98%	17.70%	0.03%	3.11%	1.12%	0.14%	0.27%	0.00%	0.03%	0.20%	0.42%	0.29%	0.64%	0.69%	16.65%	2.65%	0.07%	0.00%	100%
Road 130	130	-	50	27.47614	Y	2000-2100	78	54.18%	19.79%	0.03%	2.77%	0.99%	0.25%	0.50%	0.00%	0.01%	0.07%	0.37%	0.26%	0.57%	0.33%	17.36%	2.40%	0.13%	0.00%	100%
Road 130	130	-	50	27.51912	Y	2100-2200	75	47.74%	25.76%	0.03%	2.63%	0.95%	0.17%	0.34%	0.00%	0.01%	0.07%	0.28%	0.20%	0.43%	0.26%	19.09%	1.96%	0.09%	0.00%	100%
Road 130	130	-	50	27.66443	Y	2200-2300	72	45.28%	30.36%	0.03%	2.44%	0.88%	0.14%	0.27%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.26%	17.85%	2.29%	0.07%	0.00%	100%
Road 130	130	-	50	28.18169	Y	2300-0000	56	45.49%	28.53%	0.03%	2.68%	0.96%	0.21%	0.41%	0.00%	0.05%	0.40%	0.13%	0.09%	0.20%	0.26%	17.93%	2.52%	0.11%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 131	131	-	50	26.18191	Y	0000-0100	140	54.64%	31.91%	0.03%	2.73%	0.98%	0.26%	0.52%	0.00%	0.11%	0.87%	0.28%	0.20%	0.43%	0.05%	3.56%	3.30%	0.13%	0.00%	100%
Road 131	131	-	50	27.37478	Y	0100-0200	96	55.08%	29.71%	0.03%	2.98%	1.07%	0.33%	0.65%	0.00%	0.16%	1.27%	0.41%	0.29%	0.63%	0.05%	3.57%	3.58%	0.17%	0.00%	100%
Road 131	131	-	50	27.97693	Y	0200-0300	73	55.60%	27.44%	0.03%	3.24%	1.16%	0.41%	0.80%	0.00%	0.22%	1.69%	0.55%	0.38%	0.83%	0.05%	3.54%	3.85%	0.21%	0.00%	100%
Road 131	131	-	50	28.47229	Y	0300-0400	55	56.00%	25.18%	0.04%	3.50%	1.26%	0.48%	0.94%	0.00%	0.27%	2.09%	0.68%	0.47%	1.04%	0.06%	3.60%	4.16%	0.25%	0.00%	100%
Road 131	131	-	50	28.54693	Y	0400-0500	51	56.53%	22.81%	0.04%	3.77%	1.35%	0.55%	1.09%	0.00%	0.32%	2.51%	0.82%	0.57%	1.25%	0.05%	3.59%	4.45%	0.28%	0.00%	100%
Road 131	131	-	50	27.93256	Y	0500-0600	72	57.05%	20.41%	0.04%	4.05%	1.45%	0.63%	1.24%	0.00%	0.38%	2.94%	0.96%	0.67%	1.47%	0.05%	3.59%	4.75%	0.32%	0.00%	100%
Road 131	131	-	50	24.82977	Y	0600-0700	203	57.71%	17.86%	0.05%	4.32%	1.55%	0.72%	1.41%	0.00%	0.44%	3.43%	1.11%	0.77%	1.70%	0.05%	3.49%	5.02%	0.37%	0.00%	100%
Road 131	131	-	50	23.86578	Y	0700-0800	367	58.28%	15.31%	0.05%	4.61%	1.66%	0.80%	1.57%	0.00%	0.50%	3.90%	1.27%	0.88%	1.93%	0.05%	3.47%	5.33%	0.41%	0.00%	100%
Road 131	131	-	50	23.7625	Y	0800-0900	400	62.03%	18.97%	0.04%	3.95%	1.42%	0.61%	1.20%	0.00%	0.23%	1.76%	0.88%	0.61%	1.34%	0.07%	2.69%	3.90%	0.31%	0.00%	100%
Road 131	131	-	50	24.05465	Y	0900-1000	333	57.06%	18.49%	0.07%	7.02%	2.52%	1.28%	2.52%	0.00%	0.17%	1.35%	0.63%	0.44%	0.96%	0.08%	3.48%	3.26%	0.66%	0.00%	100%
Road 131	131	-	50	24.15434	Y	1000-1100	313	51.98%	23.68%	0.08%	8.02%	2.88%	1.54%	3.03%	0.00%	0.16%	1.25%	0.24%	0.17%	0.37%	0.17%	3.67%	1.97%	0.79%	0.00%	100%
Road 131	131	-	50	24.26792	Y	1100-1200	297	53.94%	22.61%	0.07%	7.01%	2.52%	1.56%	3.06%	0.00%	0.12%	0.96%	0.38%	0.26%	0.57%	0.04%	3.32%	2.77%	0.80%	0.00%	100%
Road 131	131	-	50	25.60635	Y	1200-1300	126	44.60%	15.47%	0.09%	8.78%	3.15%	1.89%	3.71%	0.00%	0.28%	2.19%	0.57%	0.40%	0.87%	0.67%	15.14%	1.20%	0.97%	0.00%	100%
Road 131	131	-	50	25.36228	Y	1300-1400	129	38.76%	16.01%	0.11%	10.43%	3.75%	1.89%	3.72%	0.00%	0.28%	2.15%	1.00%	0.69%	1.53%	0.81%	16.16%	1.74%	0.97%	0.00%	100%
Road 131	131	-	50	25.48286	Y	1400-1500	130	45.15%	13.99%	0.09%	8.92%	3.20%	1.97%	3.88%	0.00%	0.24%	1.84%	0.46%	0.32%	0.70%	0.40%	15.39%	2.45%	1.01%	0.00%	100%
Road 131	131	-	50	25.4673	Y	1500-1600	130	44.30%	15.93%	0.10%	9.18%	3.30%	2.09%	4.10%	0.00%	0.18%	1.43%	0.19%	0.13%	0.29%	0.35%	15.67%	1.72%	1.07%	0.00%	100%
Road 131	131	-	50	25.08015	Y	1600-1700	142	44.07%	15.23%	0.10%	9.62%	3.45%	1.46%	2.88%	0.00%	0.14%	1.10%	0.58%	0.40%	0.88%	0.44%	16.22%	2.69%	0.75%	0.00%	100%
Road 131	131	-	50	24.9625	Y	1700-1800	159	53.96%	11.61%	0.07%	6.45%	2.31%	0.77%	1.52%	0.00%	0.13%	0.98%	0.63%	0.43%	0.95%	0.23%	14.20%	5.36%	0.40%	0.00%	100%
Road 131	131	-	50	24.96002	Y	1800-1900	162	58.69%	12.98%	0.05%	4.62%	1.66%	0.56%	1.10%	0.00%	0.02%	0.16%	0.42%	0.29%	0.64%	0.08%	14.95%	3.48%	0.29%	0.00%	100%
Road 131	131	-	50	25.27171	Y	1900-2000	145	54.90%	17.36%	0.04%	4.07%	1.46%	0.18%	0.35%	0.00%	0.03%	0.20%	0.41%	0.29%	0.63%	0.69%	16.70%	2.60%	0.09%	0.00%	100%
Road 131	131	-	50	26.11265	Y	2000-2100	119	53.14%	19.41%	0.04%	3.62%	1.30%	0.33%	0.65%	0.00%	0.01%	0.07%	0.36%	0.25%	0.55%	0.33%	17.41%	2.35%	0.17%	0.00%	100%
Road 131	131	-	50	26.18568	Y	2100-2200	115	46.88%	25.29%	0.04%	3.45%	1.24%	0.23%	0.45%	0.00%	0.01%	0.07%	0.28%	0.19%	0.42%	0.26%	19.16%	1.93%	0.12%	0.00%	100%
Road 131	131	-	50	26.4151	Y	2200-2300	111	44.54%	29.86%	0.03%	3.20%	1.15%	0.18%	0.35%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.26%	17.94%	2.25%	0.09%	0.00%	100%
Road 131	131	-	50	27.20218	Y	2300-0000	86	44.66%	28.00%	0.04%	3.51%	1.26%	0.27%	0.54%	0.00%	0.05%	0.39%	0.13%	0.09%	0.19%	0.26%	17.99%	2.47%	0.14%	0.00%	100%
Road 132	132	-	50	28.03858	Y	0000-0100	49	31.83%	18.59%	0.07%	6.27%	2.25%	0.60%	1.19%	0.00%	0.06%	0.51%	0.16%	0.11%	0.25%	0.53%	35.34%	1.92%	0.31%	0.00%	100%
Road 132	132	-	50	28.64206	Y	0100-0200	34	31.73%	17.12%	0.07%	6.77%	2.43%	0.76%	1.49%	0.00%	0.09%	0.73%	0.24%	0.17%	0.36%	0.53%	35.06%	2.06%	0.39%	0.00%	100%
Road 132	132	-	50	28.952	Y	0200-0300	26	31.79%	15.68%	0.08%	7.30%	2.62%	0.92%	1.81%	0.00%	0.12%	0.96%	0.31%	0.22%	0.48%	0.51%	34.53%	2.20%	0.47%	0.00%	100%
Road 132	132	-	50	29.19852	Y	0300-0400	20	31.53%	14.17%	0.08%	7.77%	2.79%	1.06%	2.09%	0.00%	0.15%	1.18%	0.38%	0.27%	0.58%	0.53%	34.52%	2.34%	0.55%	0.00%	100%
Road 132	132	-	50	29.23489	Y	0400-0500	19	31.53%	12.72%	0.09%	8.30%	2.98%	1.22%	2.40%	0.00%	0.18%	1.40%	0.46%	0.32%	0.70%	0.52%	34.09%	2.48%	0.63%	0.00%	100%
Road 132	132	-	50	28.90548	Y	0500-0600	27	31.48%	11.26%	0.09%	8.82%	3.17%	1.37%	2.70%	0.00%	0.21%	1.62%	0.53%	0.37%	0.81%	0.51%	33.74%	2.62%	0.70%	0.00%	100%
Road 132	132	-	50	26.92688	Y	0600-0700	75	31.78%	9.84%	0.10%	9.40%	3.38%	1.56%	3.06%	0.00%	0.24%	1.89%	0.61%	0.43%	0.93%	0.46%	32.75%	2.77%	0.80%	0.00%	100%
Road 132	132	-	50	24.87641	Y	0700-0800	136	31.81%	8.36%	0.10%	9.94%	3.57%	1.72%	3.39%	0.00%	0.27%	2.13%	0.69%	0.48%	1.05%	0.44%	32.25%	2.91%	0.88%	0.00%	100%
Road 132	132	-	50	24.95	Y	0800-0900	135	37.29%	11.40%	0.10%	9.38%	3.37%	1.44%	2.84%	0.00%	0.14%	1.06%	0.53%	0.37%	0.81%	0.68%	27.52%	2.34%	0.74%	0.00%	100%
Road 132	132	-	50	24.88938	Y	0900-1000	134	28.74%	9.31%	0.15%	13.96%	5.01%	2.55%	5.01%	0.00%	0.09%	0.68%	0.32%	0.22%	0.49%	0.67%	29.85%	1.64%	1.31%	0.00%	100%
Road 132	132	-	50	24.87929	Y	1000-1100	133	24.77%	11.29%	0.16%	15.08%	5.42%	2.90%	5.70%	0.00%	0.08%	0.59%	0.11%	0.08%	0.17%	1.38%	29.85%	0.94%	1.49%	0.00%	100%
Road 132	132	-	50	25.08067	Y	1100-1200	119	27.22%	11.41%	0.15%	13.96%	5.01%	3.10%	6.10%	0.00%	0.06%	0.49%	0.19%	0.13%	0.29%	0.37%	28.53%	1.40%	1.59%	0.00%	100%
Road 132	132	-	50	25.50119	Y	1200-1300	140	50.28%	17.44%	0.08%	7.92%	2.84%	1.70%	3.35%	0.00%	0.32%	2.46%	0.65%	0.45%	0.99%	0.39%	8.91%	1.36%	0.87%	0.00%	100%
Road 132	132	-	50	25.30475	Y	1300-1400	142	44.19%	18.26%	0.10%	9.51%	3.42%	1.73%	3.39%	0.00%	0.31%	2.45%	1.14%	0.79%	1.74%	0.48%	9.61%	1.98%	0.89%	0.00%	100%
Road 132	132	-	50	25.38445	Y	1400-1500	144	50.95%	15.79%	0.08%	8.05%	2.89%	1.78%	3.50%	0.00%	0.27%	2.07%	0.52%	0.36%	0.79%	0.23%	9.06%	2.76%	0.91%	0.00%	100%
Road 132	132	-	50	25.39041	Y	1500-1600	144	50.13%	18.03%	0.09%	8.31%	2.98%	1.89%	3.71%	0.00%	0.21%	1.61%	0.21%	0.15%	0.32%	0.21%	9.25%	1.94%	0.97%	0.00%	100%
Road 132	132	-	50	25.00088	Y	1600-1700	157	49.86%	17.23%	0.09%	8.71%	3.13%	1.33%	2.61%	0.00%	0.16%	1.24%	0.65%	0.45%	0.99%	0.26%	9.57%	3.04%	0.68%	0.00%	100%
Road 132	132	-	50	24.9125	Y	1700-1800	181	59.44%	12.79%	0.06%	5.68%	2.04%	0.68%	1.34%	0.00%	0.14%	1.08%	0.69%	0.48%	1.05%	0.13%	8.16%	5.91%	0.35%	0.00%	100%
Road 132	132	-	50	24.90941	Y	1800-1900	185	64.38%	14.24%	0.04%	4.06%	1.46%	0.49%	0.97%	0.00%	0.02%	0.18%	0.46%	0.32%	0.71%	0.04%	8.56%	3.82%	0.25%	0.00%	100%
Road 132	132	-	50	25.12003	Y	1900-2000	164	60.70%	19.20%	0.04%	3.60%	1.29%	0.16%	0.31%	0.00%	0.03%	0.22%	0.46%	0.32%	0.70%	0.40%	9.63%	2.87%	0.08%	0.00%	100%
Road 132	132	-	50	26.00085	Y	2000-2100	134	58.86%	21.50%	0.03%	3.21%	1.15%	0.29%	0.58%	0.00%	0.01%	0.07%	0.40%	0.28%	0.61%	0.19%	10.06%	2.60%	0.15%	0.00%	100%
Road 132	132	-	50	26.12848	Y	2100-2200	129	52.32%	28.22%	0.03%	3.08%	1.11%	0.20%	0.40%	0.00%	0.01%	0.08%	0.31%	0.21%	0.47%	0.15%	11.15%	2.15%	0.10%	0.00%	100%
Road 132	132	-	50	26.32488	Y	2200-2300	125	49.32%	33.07%	0.03%	2.83%	1.02%	0.16%	0.31%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.15%	10.37%	2.50%	0.08%	0.00%	100%
Road 132	132	-	50	27.13525	Y	2300-0000	96	49.55%	31.07%	0.03%	3.12%	1.12%	0.24%	0.48%	0.00%	0.06%	0.43%	0.14%	0.10%	0.22%	0.15%	10.41%	2.74%	0.12%	0.00%	100%
Road 133	133	-	50	27.25846	Y	0000-0100	98	52.91%	30.90%	0.04%	3.52%	1.26%	0.34%	0.66%	0.00%	0.11%	0.84%	0.27%	0.19%	0.42%	0.08%	5.10%	3.19%	0.17%	0.00%	100%
Road 133	133	-	50	28.1103	Y	0100-0200	67	53.23%	28.71%	0.04%	3.83%	1.38%	0.43%	0.84%	0.00%	0.16%	1.23%	0.40%	0.28%	0.61%	0.08%	5.11%	3.46%	0.22%	0.00%	100%
Road 133	133	-	50	28.54064	Y	0200-0300	51	53.63%	26.47%	0.04%	4.16%	1.49%	0.52%	1.03%	0.00%	0.21%	1.63%	0.53%	0.37%	0.80%	0.07%	5.06%	3.72%	0.27%	0.00%	100%
Road 133	133	-	50	28.89481	Y	0300-0400	38	53.90%	24.23%	0.05%	4.49%	1.61%	0.61%	1.20%	0.00%	0.26%	2.01%	0.66%	0.46%	1.00%	0.08%	5.13%	4.01%	0.31%	0.00%	100%
Road 133	133	-	50	28.94641	Y	0400-0500	36	54.30%	21.91%	0.05%	4.82%	1.73%	0.71%	1.39%	0.00%	0.31%	2.41%	0.79%	0.55%	1.20%	0.08%	5.10%	4.28%	0.36%	0.00%	100%
Road 133	133	-	50	28.49733	Y	0500-0600	51	54.69%	19.56%	0.05%	5.17%	1.86%	0.80%	1.58%	0.00%	0.36%	2.82%	0.92%	0.64%	1.41%	0.08%	5.09%	4.56%	0.41%	0.00%	100%
Road 133	133	-	50	25.74072	Y	0600-0700	143	55.23%	17.09%	0.06%	5.51%	1.98%	0.91%	1.80%	0.00%	0.42%	3.29%	1.07%	0.74%	1.62%	0.07%	4.94%	4.80%	0.47%	0.00%	100%
Road 133	133	-	50	24.44298	Y	0700-0800	260	55.66%	14.63%	0.06%	5.87%	2.11%	1.02%	2.00%	0.00%	0.48%	3.72%	1.21%	0.84%	1.84%	0.07%	4.90%	5.09%	0.52%	0.00%	100%
Road 133	133	-	50	24.3875	Y	0800-0900	280	59.75%	18.27%	0.05%	5.07%	1.82%	0.78%	1.53%	0.00%	0.22%	1.70%	0.85%	0.59%	1.29%	0.09%	3.83%	3.75%	0.40%	0.00%	100%
Road 133	133	-	50	24.54924	Y	0900-1000	239	53.64%	17.38%	0.09%	8.79%	3.16%	1.61%	3.16%	0.00%	0.16%	1.27%	0.59%	0.41%	0.91%	0.11%	4.84%	3.07%	0.82%	0.00%	100%
Road 133	133	-	50	24.60737	Y	1000-1100	227	48.45%	22.08%	0.10%	9.96%	3.57%	1.91%	3.76%	0.00%	0.15%	1.16%	0.22%	0.16%	0.34%	0.23%	5.07%	1.84%	0.98%	0.00%	100%
Road 133	133	-	50	24.70386	Y	1100-1200	214	50.60%	21.21%	0.09%	8.76%	3.15%	1.95%	3.83%	0.00%	0.12%	0.90%	0.35%	0.24%	0.54%	0.06%	4.61%	2.60%	1.00%	0.00%	100%
Road 133	133	-	50	25.41377	Y	1200-1300	136	48.26%	16.74%	0.07%	6.79%	2.44%	1.46%	2.87%	0.00%	0.30%	2.36%	0.62%	0.43%	0.95%	0.62%	14.04%	1.30%	0.75%	0.00%	100%
Road 133	133	-	50	25.19513	Y	1300-1400	138	42.31%	17.48%	0.08%	8.13%	2.92%	1.48%	2.90%	0.00%	0.30%	2.35%	1.09%	0.76%	1.66%	0.76%	15.12%	1.90%	0.76%	0.00%	100%
Road 133	133	-	50	25.29614	Y	1400-1500	140	48.92%	15.16%	0.07%	6.90%	2.48%	1.53%	3.00%	0.00%	0.26%	1.99%	0.50%	0.34%	0.75%	0.37%	14.29%	2.65%	0.78%	0.00%	100%
Road 133	133	-	50	25.29765	Y	1500-1600	140	48.13%	17.31%	0.07%	7.12%	2.56%	1.62%	3.18%	0.00%	0.20%	1.55%	0.20%	0.14%	0.31%	0.32%	14.59%	1.86%	0.83%	0.00%	100%
Road 133	133	-	50	24.97285	Y	1600-1700	153	47.69%	16.48%	0.08%	7.43%	2.67%	1.13%	2.23%	0.00%	0.15%	1.19%	0.62%	0.43%	0.95%	0.40%	15.05%	2.91%	0.58%	0.00%	100%
Road 133	133	-	50	24.8875	Y	1700-1800	176	57.02%	12.27%	0.05%	4.86%	1.75%	0.58%	1.15%	0.00%	0.13%	1.03%	0.66%	0.46%	1.01%	0.20%	12.86%	5.67%	0.30%	0.00%	100%
Road 133	133	-	50	24.87401	Y	1800-1900	180	61.46%	13.59%	0.04%	3.46%	1.24%	0.42%	0.83%	0.00%	0.02%	0.17%	0.44%	0.31%	0.67%	0.07%	13.42%	3.64%	0.22%	0.00%	100%
Road 133	133	-	50	24.97267	Y	1900-2000	162	57.34%	18.13%	0.03%	3.04%	1.09%	0.13%	0.26%	0.00%	0.03%	0.21%	0.43%	0.30%	0.66%	0.62%	14.95%	2.71%	0.07%	0.00%	100%
Road 133	133	-	50	25.78143	Y	2000-2100	133	55.52%	20.28%	0.03%	2.70%	0.97%	0.25%	0.49%	0.00%	0.01%	0.07%	0.38%	0.26%	0.58%	0.30%	15.59%	2.46%	0.13%	0.00%	100%
Road 133	133	-	50	25.86596	Y	2100-2200	128	49.01%	26.44%	0.03%	2.57%	0.92%	0.17%	0.33%	0.00%	0.01%	0.07%	0.29%	0.20%	0.44%	0.23%	17.17%	2.01%	0.09%	0.00%	100%
Road 133	133	-	50	26.09948	Y	2200-2300	124	46.41%	31.11%	0.02%	2.38%	0.85%	0.13%	0.26%	0.00%	0.01%	0.07%	0.03%	0.02%	0.04%	0.23%	16.02%	2.35%	0.07%	0.00%	100%
Road 133	133	-	50	26.96404	Y	2300-0000	96	46.64%	29.25%	0.03%	2.62%	0.94%	0.20%	0.40%	0.00%	0.05%	0.41%	0.13%	0.09%	0.20%	0.23%	16.10%	2.58%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 134	134	-	50	28.08235	Y	0000-0100	47	30.81%	17.99%	0.07%	6.50%	2.34%	0.63%	1.23%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.55%	36.65%	1.86%	0.32%	0.00%	100%
Road 134	134	-	50	28.67186	Y	0100-0200	32	30.69%	16.55%	0.07%	7.02%	2.52%	0.78%	1.54%	0.00%	0.09%	0.71%	0.23%	0.16%	0.35%	0.55%	36.33%	2.00%	0.40%	0.00%	100%
Road 134	134	-	50	28.97476	Y	0200-0300	25	30.73%	15.16%	0.08%	7.56%	2.71%	0.95%	1.87%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.53%	35.76%	2.13%	0.49%	0.00%	100%
Road 134	134	-	50	29.21552	Y	0300-0400	19	30.45%	13.69%	0.08%	8.05%	2.89%	1.10%	2.16%	0.00%	0.15%	1.14%	0.37%	0.26%	0.56%	0.55%	35.73%	2.26%	0.56%	0.00%	100%
Road 134	134	-	50	29.25091	Y	0400-0500	18	30.43%	12.28%	0.09%	8.58%	3.08%	1.26%	2.48%	0.00%	0.17%	1.35%	0.44%	0.31%	0.67%	0.54%	35.26%	2.40%	0.65%	0.00%	100%
Road 134	134	-	50	28.92804	Y	0500-0600	26	30.37%	10.86%	0.10%	9.11%	3.27%	1.42%	2.79%	0.00%	0.20%	1.57%	0.51%	0.36%	0.78%	0.53%	34.88%	2.53%	0.73%	0.00%	100%
Road 134	134	-	50	26.99023	Y	0600-0700	72	30.66%	9.49%	0.10%	9.71%	3.49%	1.61%	3.17%	0.00%	0.23%	1.82%	0.59%	0.41%	0.90%	0.47%	33.85%	2.67%	0.83%	0.00%	100%
Road 134	134	-	50	24.89929	Y	0700-0800	132	30.67%	8.06%	0.11%	10.26%	3.69%	1.78%	3.50%	0.00%	0.26%	2.05%	0.67%	0.46%	1.01%	0.46%	33.31%	2.80%	0.91%	0.00%	100%
Road 134	134	-	50	24.975	Y	0800-0900	130	36.10%	11.04%	0.10%	9.73%	3.49%	1.50%	2.94%	0.00%	0.13%	1.03%	0.51%	0.36%	0.78%	0.70%	28.55%	2.27%	0.77%	0.00%	100%
Road 134	134	-	50	24.90835	Y	0900-1000	130	27.59%	8.94%	0.15%	14.35%	5.15%	2.62%	5.15%	0.00%	0.08%	0.65%	0.31%	0.21%	0.47%	0.69%	30.70%	1.58%	1.35%	0.00%	100%
Road 134	134	-	50	24.89637	Y	1000-1100	130	23.72%	10.81%	0.16%	15.47%	5.56%	2.97%	5.85%	0.00%	0.07%	0.57%	0.11%	0.08%	0.17%	1.41%	30.62%	0.90%	1.53%	0.00%	100%
Road 134	134	-	50	25.16356	Y	1100-1200	116	26.12%	10.95%	0.15%	14.36%	5.16%	3.19%	6.27%	0.00%	0.06%	0.47%	0.18%	0.13%	0.28%	0.38%	29.34%	1.34%	1.64%	0.00%	100%
Road 134	134	-	50	25.57764	Y	1200-1300	139	52.12%	18.08%	0.07%	6.62%	2.38%	1.42%	2.80%	0.00%	0.33%	2.55%	0.67%	0.47%	1.02%	0.40%	8.93%	1.41%	0.73%	0.00%	100%
Road 134	134	-	50	25.40454	Y	1300-1400	140	46.04%	19.02%	0.08%	7.99%	2.87%	1.45%	2.85%	0.00%	0.33%	2.55%	1.19%	0.83%	1.81%	0.49%	9.69%	2.07%	0.75%	0.00%	100%
Road 134	134	-	50	25.46993	Y	1400-1500	143	52.87%	16.38%	0.07%	6.73%	2.42%	1.49%	2.93%	0.00%	0.28%	2.15%	0.53%	0.37%	0.81%	0.23%	9.10%	2.86%	0.76%	0.00%	100%
Road 134	134	-	50	25.48612	Y	1500-1600	143	52.09%	18.73%	0.07%	6.96%	2.50%	1.58%	3.11%	0.00%	0.21%	1.68%	0.22%	0.15%	0.34%	0.21%	9.30%	2.02%	0.81%	0.00%	100%
Road 134	134	-	50	25.08123	Y	1600-1700	156	51.68%	17.86%	0.08%	7.28%	2.61%	1.11%	2.18%	0.00%	0.16%	1.29%	0.68%	0.47%	1.03%	0.26%	9.60%	3.15%	0.57%	0.00%	100%
Road 134	134	-	50	24.9125	Y	1700-1800	183	60.79%	13.08%	0.05%	4.69%	1.68%	0.56%	1.10%	0.00%	0.14%	1.10%	0.70%	0.49%	1.07%	0.13%	8.08%	6.04%	0.29%	0.00%	100%
Road 134	134	-	50	24.90164	Y	1800-1900	188	65.49%	14.48%	0.03%	3.33%	1.20%	0.40%	0.80%	0.00%	0.02%	0.18%	0.47%	0.33%	0.72%	0.04%	8.42%	3.88%	0.21%	0.00%	100%
Road 134	134	-	50	25.06175	Y	1900-2000	167	61.55%	19.47%	0.03%	2.95%	1.06%	0.13%	0.26%	0.00%	0.03%	0.22%	0.46%	0.32%	0.71%	0.39%	9.45%	2.91%	0.07%	0.00%	100%
Road 134	134	-	50	25.95451	Y	2000-2100	137	59.68%	21.80%	0.03%	2.62%	0.94%	0.24%	0.47%	0.00%	0.01%	0.07%	0.41%	0.28%	0.62%	0.19%	9.87%	2.64%	0.12%	0.00%	100%
Road 134	134	-	50	26.0799	Y	2100-2200	131	53.02%	28.60%	0.03%	2.52%	0.90%	0.17%	0.33%	0.00%	0.01%	0.08%	0.31%	0.22%	0.48%	0.15%	10.94%	2.18%	0.09%	0.00%	100%
Road 134	134	-	50	26.27308	Y	2200-2300	127	49.92%	33.47%	0.02%	2.31%	0.83%	0.13%	0.25%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.15%	10.15%	2.53%	0.07%	0.00%	100%
Road 134	134	-	50	27.10029	Y	2300-0000	98	50.22%	31.49%	0.03%	2.55%	0.92%	0.20%	0.39%	0.00%	0.06%	0.44%	0.14%	0.10%	0.22%	0.15%	10.21%	2.78%	0.10%	0.00%	100%
Road 135	135	-	50	26.21685	Y	0000-0100	138	54.00%	31.54%	0.03%	3.32%	1.19%	0.32%	0.63%	0.00%	0.11%	0.86%	0.28%	0.19%	0.43%	0.05%	3.62%	3.26%	0.16%	0.00%	100%
Road 135	135	-	50	27.39366	Y	0100-0200	94	54.36%	29.32%	0.04%	3.62%	1.30%	0.41%	0.80%	0.00%	0.16%	1.25%	0.41%	0.28%	0.62%	0.05%	3.62%	3.53%	0.21%	0.00%	100%
Road 135	135	-	50	27.98749	Y	0200-0300	72	54.80%	27.04%	0.04%	3.93%	1.41%	0.49%	0.97%	0.00%	0.21%	1.66%	0.54%	0.37%	0.82%	0.05%	3.59%	3.80%	0.25%	0.00%	100%
Road 135	135	-	50	28.47727	Y	0300-0400	54	55.12%	24.78%	0.04%	4.25%	1.53%	0.58%	1.14%	0.00%	0.26%	2.05%	0.67%	0.47%	1.02%	0.06%	3.64%	4.10%	0.30%	0.00%	100%
Road 135	135	-	50	28.54879	Y	0400-0500	51	55.55%	22.42%	0.05%	4.57%	1.64%	0.67%	1.32%	0.00%	0.32%	2.47%	0.81%	0.56%	1.23%	0.06%	3.62%	4.38%	0.34%	0.00%	100%
Road 135	135	-	50	27.93109	Y	0500-0600	72	55.98%	20.02%	0.05%	4.90%	1.76%	0.76%	1.50%	0.00%	0.37%	2.89%	0.94%	0.66%	1.44%	0.06%	3.62%	4.66%	0.39%	0.00%	100%
Road 135	135	-	50	24.82656	Y	0600-0700	202	56.54%	17.50%	0.05%	5.23%	1.88%	0.87%	1.70%	0.00%	0.43%	3.36%	1.09%	0.76%	1.66%	0.05%	3.51%	4.92%	0.44%	0.00%	100%
Road 135	135	-	50	23.85563	Y	0700-0800	365	57.01%	14.98%	0.06%	5.57%	2.00%	0.96%	1.90%	0.00%	0.49%	3.82%	1.24%	0.86%	1.88%	0.05%	3.49%	5.21%	0.50%	0.00%	100%
Road 135	135	-	50	23.7625	Y	0800-0900	396	60.91%	18.63%	0.05%	4.79%	1.72%	0.74%	1.45%	0.00%	0.22%	1.73%	0.87%	0.60%	1.32%	0.07%	2.71%	3.83%	0.38%	0.00%	100%
Road 135	135	-	50	24.01381	Y	0900-1000	335	55.19%	17.88%	0.09%	8.38%	3.01%	1.53%	3.01%	0.00%	0.17%	1.31%	0.61%	0.42%	0.93%	0.08%	3.46%	3.16%	0.79%	0.00%	100%
Road 135	135	-	50	24.10218	Y	1000-1100	316	50.02%	22.79%	0.10%	9.52%	3.42%	1.83%	3.60%	0.00%	0.15%	1.20%	0.23%	0.16%	0.35%	0.17%	3.63%	1.90%	0.94%	0.00%	100%
Road 135	135	-	50	24.22496	Y	1100-1200	299	52.07%	21.82%	0.09%	8.35%	3.00%	1.86%	3.65%	0.00%	0.12%	0.93%	0.36%	0.25%	0.55%	0.04%	3.29%	2.68%	0.95%	0.00%	100%
Road 135	135	-	50	24.89075	Y	1200-1300	168	48.85%	16.94%	0.08%	7.70%	2.76%	1.65%	3.25%	0.00%	0.31%	2.39%	0.63%	0.44%	0.96%	0.50%	11.37%	1.32%	0.85%	0.00%	100%
Road 135	135	-	50	24.83894	Y	1300-1400	170	42.83%	17.70%	0.10%	9.22%	3.31%	1.67%	3.29%	0.00%	0.30%	2.37%	1.11%	0.77%	1.69%	0.62%	12.24%	1.92%	0.86%	0.00%	100%
Road 135	135	-	50	24.86171	Y	1400-1500	173	49.50%	15.34%	0.08%	7.82%	2.81%	1.73%	3.40%	0.00%	0.26%	2.01%	0.50%	0.35%	0.76%	0.30%	11.57%	2.68%	0.89%	0.00%	100%
Road 135	135	-	50	24.86203	Y	1500-1600	173	48.68%	17.51%	0.08%	8.07%	2.90%	1.83%	3.60%	0.00%	0.20%	1.57%	0.21%	0.14%	0.31%	0.26%	11.81%	1.89%	0.94%	0.00%	100%
Road 135	135	-	50	24.76297	Y	1600-1700	188	48.37%	16.72%	0.09%	8.44%	3.03%	1.29%	2.53%	0.00%	0.15%	1.20%	0.63%	0.44%	0.96%	0.33%	12.21%	2.95%	0.66%	0.00%	100%
Road 135	135	-	50	24.6625	Y	1700-1800	217	57.93%	12.46%	0.06%	5.54%	1.99%	0.66%	1.30%	0.00%	0.13%	1.05%	0.67%	0.47%	1.02%	0.17%	10.45%	5.76%	0.34%	0.00%	100%
Road 135	135	-	50	24.65488	Y	1800-1900	221	62.69%	13.86%	0.04%	3.95%	1.42%	0.48%	0.94%	0.00%	0.02%	0.17%	0.45%	0.31%	0.69%	0.06%	10.95%	3.72%	0.25%	0.00%	100%
Road 135	135	-	50	24.78592	Y	1900-2000	197	58.84%	18.61%	0.04%	3.49%	1.25%	0.15%	0.30%	0.00%	0.03%	0.21%	0.44%	0.31%	0.68%	0.51%	12.27%	2.78%	0.08%	0.00%	100%
Road 135	135	-	50	25.01948	Y	2000-2100	161	57.02%	20.82%	0.03%	3.11%	1.12%	0.28%	0.56%	0.00%	0.01%	0.07%	0.39%	0.27%	0.59%	0.25%	12.81%	2.52%	0.15%	0.00%	100%
Road 135	135	-	50	25.14975	Y	2100-2200	155	50.52%	27.26%	0.03%	2.97%	1.07%	0.20%	0.39%	0.00%	0.01%	0.07%	0.30%	0.21%	0.45%	0.19%	14.16%	2.08%	0.10%	0.00%	100%
Road 135	135	-	50	25.41164	Y	2200-2300	150	47.74%	32.01%	0.03%	2.74%	0.98%	0.15%	0.30%	0.00%	0.01%	0.07%	0.03%	0.02%	0.04%	0.19%	13.19%	2.42%	0.08%	0.00%	100%
Road 135	135	-	50	26.42444	Y	2300-0000	116	47.96%	30.07%	0.03%	3.02%	1.08%	0.23%	0.46%	0.00%	0.05%	0.42%	0.14%	0.10%	0.21%	0.19%	13.25%	2.66%	0.12%	0.00%	100%
Road 136	136	-	50	27.81096	Y	0000-0100	57	34.48%	20.14%	0.07%	6.70%	2.41%	0.64%	1.27%	0.00%	0.07%	0.55%	0.18%	0.12%	0.27%	0.46%	30.22%	2.08%	0.33%	0.00%	100%
Road 136	136	-	50	28.48215	Y	0100-0200	39	34.36%	18.53%	0.08%	7.23%	2.60%	0.81%	1.59%	0.00%	0.10%	0.79%	0.26%	0.18%	0.39%	0.45%	29.97%	2.23%	0.42%	0.00%	100%
Road 136	136	-	50	28.826	Y	0200-0300	30	34.38%	16.97%	0.08%	7.79%	2.80%	0.98%	1.93%	0.00%	0.13%	1.04%	0.34%	0.24%	0.52%	0.44%	29.49%	2.38%	0.50%	0.00%	100%
Road 136	136	-	50	29.1015	Y	0300-0400	23	34.11%	15.33%	0.09%	8.30%	2.98%	1.13%	2.23%	0.00%	0.16%	1.27%	0.42%	0.29%	0.63%	0.45%	29.48%	2.54%	0.58%	0.00%	100%
Road 136	136	-	50	29.14065	Y	0400-0500	22	34.08%	13.75%	0.09%	8.85%	3.18%	1.30%	2.56%	0.00%	0.19%	1.52%	0.50%	0.34%	0.75%	0.44%	29.09%	2.68%	0.67%	0.00%	100%
Road 136	136	-	50	28.76864	Y	0500-0600	31	34.00%	12.16%	0.10%	9.40%	3.38%	1.46%	2.87%	0.00%	0.22%	1.75%	0.57%	0.40%	0.87%	0.44%	28.77%	2.83%	0.75%	0.00%	100%
Road 136	136	-	50	26.53071	Y	0600-0700	88	34.26%	10.60%	0.10%	10.00%	3.59%	1.66%	3.26%	0.00%	0.26%	2.04%	0.66%	0.46%	1.01%	0.39%	27.87%	2.98%	0.85%	0.00%	100%
Road 136	136	-	50	24.72895	Y	0700-0800	160	34.26%	9.00%	0.11%	10.56%	3.79%	1.83%	3.60%	0.00%	0.29%	2.29%	0.74%	0.52%	1.13%	0.38%	27.42%	3.13%	0.94%	0.00%	100%
Road 136	136	-	50	24.8	Y	0800-0900	160	39.74%	12.15%	0.10%	9.87%	3.54%	1.52%	2.98%	0.00%	0.14%	1.13%	0.56%	0.39%	0.86%	0.57%	23.16%	2.50%	0.78%	0.00%	100%
Road 136	136	-	50	24.73474	Y	0900-1000	158	30.84%	9.99%	0.15%	14.78%	5.31%	2.70%	5.30%	0.00%	0.09%	0.73%	0.34%	0.24%	0.52%	0.57%	25.29%	1.76%	1.39%	0.00%	100%
Road 136	136	-	50	24.72466	Y	1000-1100	157	26.63%	12.13%	0.17%	16.00%	5.74%	3.08%	6.05%	0.00%	0.08%	0.64%	0.12%	0.09%	0.19%	1.17%	25.33%	1.01%	1.58%	0.00%	100%
Road 136	136	-	50	24.8737	Y	1100-1200	141	29.10%	12.20%	0.15%	14.73%	5.29%	3.27%	6.44%	0.00%	0.07%	0.52%	0.20%	0.14%	0.31%	0.31%	24.08%	1.50%	1.68%	0.00%	100%
Road 136	136	-	50	24.88766	Y	1200-1300	178	52.60%	18.24%	0.08%	7.25%	2.60%	1.56%	3.06%	0.00%	0.33%	2.58%	0.68%	0.47%	1.03%	0.31%	6.99%	1.42%	0.80%	0.00%	100%
Road 136	136	-	50	24.84523	Y	1300-1400	179	46.47%	19.20%	0.09%	8.75%	3.14%	1.59%	3.12%	0.00%	0.33%	2.58%	1.20%	0.83%	1.83%	0.38%	7.58%	2.08%	0.82%	0.00%	100%
Road 136	136	-	50	24.86018	Y	1400-1500	183	53.33%	16.53%	0.08%	7.37%	2.65%	1.63%	3.21%	0.00%	0.28%	2.17%	0.54%	0.37%	0.82%	0.18%	7.11%	2.89%	0.84%	0.00%	100%
Road 136	136	-	50	24.86434	Y	1500-1600	183	52.55%	18.90%	0.08%	7.62%	2.74%	1.73%	3.40%	0.00%	0.22%	1.69%	0.22%	0.15%	0.34%	0.16%	7.27%	2.04%	0.89%	0.00%	100%
Road 136	136	-	50	24.76687	Y	1600-1700	199	52.22%	18.05%	0.08%	7.98%	2.86%	1.21%	2.39%	0.00%	0.17%	1.30%	0.68%	0.47%	1.04%	0.20%	7.52%	3.19%	0.62%	0.00%	100%
Road 136	136	-	50	24.6375	Y	1700-1800	233	61.49%	13.23%	0.05%	5.14%	1.85%	0.62%	1.21%	0.00%	0.14%	1.11%	0.71%	0.49%	1.09%	0.10%	6.33%	6.11%	0.32%	0.00%	100%
Road 136	136	-	50	24.63034	Y	1800-1900	239	66.42%	14.68%	0.04%	3.66%	1.32%	0.45%	0.88%	0.00%	0.02%	0.18%	0.48%	0.33%	0.73%	0.03%	6.62%	3.94%	0.23%	0.00%	100%
Road 136	136	-	50	24.77892	Y	1900-2000	212	62.70%	19.83%	0.03%	3.26%	1.17%	0.14%	0.28%	0.00%	0.03%	0.22%	0.47%	0.33%	0.72%	0.31%	7.46%	2.97%	0.07%	0.00%	100%
Road 136	136	-	50	25.00264	Y	2000-2100	173	60.83%	22.22%	0.03%	2.90%	1.04%	0.27%	0.52%	0.00%	0.01%	0.08%	0.42%	0.29%	0.63%	0.15%	7.80%	2.69%	0.14%	0.00%	100%
Road 136	136	-	50	25.18293	Y	2100-2200	166	54.18%	29.23%	0.03%	2.79%	1.00%	0.18%	0.36%	0.00%	0.01%	0.08%	0.32%	0.22%	0.49%	0.12%	8.66%	2.23%	0.09%	0.00%	100%
Road 136	136	-	50	25.40937	Y	2200-2300	161	50.94%	34.16%	0.03%	2.56%	0.92%	0.14%	0.28%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.11%	8.03%	2.58%	0.07%	0.00%	100%
Road 136	136	-	50	26.42524	Y	2300-0000	124	51.24%	32.13%	0.03%	2.82%	1.01%	0.22%	0.43%	0.00%	0.06%	0.45%	0.15%	0.10%	0.22%	0.12%	8.08%	2.84%	0.11%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 137	137	-	50	27.25298	Y	0000-0100	94	50.46%	29.47%	0.05%	4.46%	1.60%	0.43%	0.84%	0.36%	0.10%	0.80%	0.26%	0.18%	0.40%	0.11%	7.21%	3.05%	0.22%	0.00%	100%
Road 137	137	-	50	28.10058	Y	0100-0200	65	50.63%	27.31%	0.05%	4.84%	1.74%	0.54%	1.06%	0.39%	0.15%	1.17%	0.38%	0.26%	0.58%	0.11%	7.20%	3.29%	0.28%	0.00%	100%
Road 137	137	-	50	28.52923	Y	0200-0300	50	50.89%	25.11%	0.05%	5.24%	1.88%	0.66%	1.30%	0.42%	0.20%	1.54%	0.50%	0.35%	0.76%	0.11%	7.12%	3.53%	0.34%	0.00%	100%
Road 137	137	-	50	28.88213	Y	0300-0400	37	50.99%	22.92%	0.06%	5.64%	2.02%	0.77%	1.51%	0.46%	0.24%	1.90%	0.62%	0.43%	0.95%	0.11%	7.19%	3.79%	0.40%	0.00%	100%
Road 137	137	-	50	28.93131	Y	0400-0500	35	51.23%	20.67%	0.06%	6.05%	2.17%	0.89%	1.75%	0.49%	0.29%	2.28%	0.74%	0.52%	1.13%	0.11%	7.13%	4.04%	0.46%	0.00%	100%
Road 137	137	-	50	28.47127	Y	0500-0600	50	51.45%	18.40%	0.07%	6.46%	2.32%	1.01%	1.98%	0.52%	0.34%	2.65%	0.87%	0.60%	1.32%	0.11%	7.10%	4.29%	0.52%	0.00%	100%
Road 137	137	-	50	25.6591	Y	0600-0700	141	51.84%	16.04%	0.07%	6.88%	2.47%	1.14%	2.24%	0.55%	0.40%	3.08%	1.00%	0.69%	1.52%	0.10%	6.88%	4.51%	0.59%	0.00%	100%
Road 137	137	-	50	24.40889	Y	0700-0800	255	52.11%	13.69%	0.08%	7.30%	2.62%	1.26%	2.49%	0.58%	0.45%	3.49%	1.13%	0.78%	1.72%	0.09%	6.80%	4.76%	0.65%	0.00%	100%
Road 137	137	-	50	24.38	Y	0800-0900	272	56.66%	17.32%	0.07%	6.39%	2.30%	0.98%	1.93%	0.37%	0.21%	1.61%	0.81%	0.56%	1.23%	0.13%	5.38%	3.56%	0.50%	0.00%	100%
Road 137	137	-	50	24.48407	Y	0900-1000	239	49.35%	15.99%	0.11%	10.74%	3.86%	1.96%	3.86%	0.47%	0.15%	1.17%	0.55%	0.38%	0.83%	0.15%	6.60%	2.82%	1.01%	0.00%	100%
Road 137	137	-	50	24.52939	Y	1000-1100	229	44.23%	20.15%	0.13%	12.07%	4.33%	2.32%	4.56%	0.31%	0.14%	1.06%	0.20%	0.14%	0.31%	0.32%	6.86%	1.68%	1.19%	0.00%	100%
Road 137	137	-	50	24.64026	Y	1100-1200	214	46.43%	19.46%	0.11%	10.68%	3.83%	2.37%	4.67%	0.53%	0.11%	0.83%	0.32%	0.22%	0.49%	0.08%	6.26%	2.39%	1.22%	0.00%	100%
Road 137	137	-	50	24.76561	Y	1200-1300	186	49.00%	17.00%	0.07%	6.93%	2.49%	1.49%	2.93%	0.72%	0.31%	2.40%	0.63%	0.44%	0.96%	0.53%	12.02%	1.32%	0.76%	0.00%	100%
Road 137	137	-	50	24.70429	Y	1300-1400	190	42.87%	17.71%	0.09%	8.28%	2.97%	1.50%	2.96%	1.11%	0.30%	2.38%	1.11%	0.77%	1.69%	0.65%	12.91%	1.92%	0.77%	0.00%	100%
Road 137	137	-	50	24.73468	Y	1400-1500	192	49.70%	15.40%	0.07%	7.05%	2.53%	1.56%	3.06%	0.68%	0.26%	2.02%	0.50%	0.35%	0.77%	0.32%	12.24%	2.69%	0.80%	0.00%	100%
Road 137	137	-	50	24.73667	Y	1500-1600	192	48.93%	17.59%	0.08%	7.28%	2.61%	1.65%	3.25%	0.64%	0.20%	1.58%	0.21%	0.14%	0.32%	0.28%	12.50%	1.90%	0.85%	0.00%	100%
Road 137	137	-	50	24.62249	Y	1600-1700	209	48.53%	16.77%	0.08%	7.60%	2.73%	1.16%	2.28%	0.65%	0.15%	1.21%	0.63%	0.44%	0.97%	0.35%	12.90%	2.96%	0.59%	0.00%	100%
Road 137	137	-	50	24.4975	Y	1700-1800	242	57.70%	12.42%	0.05%	4.95%	1.78%	0.59%	1.17%	0.83%	0.13%	1.04%	0.67%	0.46%	1.02%	0.17%	10.97%	5.73%	0.30%	0.00%	100%
Road 137	137	-	50	24.48175	Y	1800-1900	248	62.24%	13.76%	0.04%	3.52%	1.26%	0.43%	0.84%	0.85%	0.02%	0.17%	0.45%	0.31%	0.68%	0.06%	11.46%	3.69%	0.22%	0.00%	100%
Road 137	137	-	50	24.62367	Y	1900-2000	222	58.27%	18.43%	0.03%	3.10%	1.11%	0.14%	0.27%	0.84%	0.03%	0.21%	0.44%	0.30%	0.67%	0.53%	12.80%	2.76%	0.07%	0.00%	100%
Road 137	137	-	50	24.87323	Y	2000-2100	181	56.55%	20.65%	0.03%	2.77%	0.99%	0.25%	0.50%	0.66%	0.01%	0.07%	0.39%	0.27%	0.59%	0.26%	13.38%	2.50%	0.13%	0.00%	100%
Road 137	137	-	50	24.89898	Y	2100-2200	175	49.99%	26.97%	0.03%	2.64%	0.95%	0.17%	0.34%	0.77%	0.01%	0.07%	0.29%	0.20%	0.45%	0.20%	14.76%	2.05%	0.09%	0.00%	100%
Road 137	137	-	50	24.96084	Y	2200-2300	169	47.34%	31.74%	0.03%	2.44%	0.88%	0.14%	0.27%	0.58%	0.01%	0.07%	0.03%	0.02%	0.04%	0.20%	13.78%	2.40%	0.07%	0.00%	100%
Road 137	137	-	50	25.95223	Y	2300-0000	131	47.55%	29.82%	0.03%	2.69%	0.96%	0.21%	0.41%	0.65%	0.05%	0.42%	0.14%	0.09%	0.21%	0.20%	13.84%	2.63%	0.11%	0.00%	100%
Road 138	138	-	50	27.62882	Y	0000-0100	60	32.59%	19.03%	0.07%	6.34%	2.28%	0.61%	1.20%	1.68%	0.07%	0.52%	0.17%	0.12%	0.26%	0.49%	32.32%	1.97%	0.31%	0.00%	100%
Road 138	138	-	50	28.35535	Y	0100-0200	42	32.44%	17.50%	0.07%	6.83%	2.45%	0.76%	1.50%	1.82%	0.10%	0.75%	0.24%	0.17%	0.37%	0.49%	32.02%	2.11%	0.39%	0.00%	100%
Road 138	138	-	50	28.72798	Y	0200-0300	32	32.43%	16.01%	0.08%	7.35%	2.64%	0.92%	1.82%	1.95%	0.13%	0.98%	0.32%	0.22%	0.49%	0.47%	31.48%	2.25%	0.47%	0.00%	100%
Road 138	138	-	50	29.0258	Y	0300-0400	24	32.13%	14.45%	0.08%	7.82%	2.81%	1.07%	2.10%	2.08%	0.15%	1.20%	0.39%	0.27%	0.60%	0.48%	31.43%	2.39%	0.55%	0.00%	100%
Road 138	138	-	50	29.06815	Y	0400-0500	23	32.08%	12.95%	0.09%	8.33%	2.99%	1.22%	2.41%	2.22%	0.18%	1.43%	0.47%	0.32%	0.71%	0.47%	30.99%	2.53%	0.63%	0.00%	100%
Road 138	138	-	50	28.66444	Y	0500-0600	33	31.98%	11.44%	0.09%	8.84%	3.17%	1.38%	2.70%	2.35%	0.21%	1.65%	0.54%	0.37%	0.82%	0.47%	30.62%	2.66%	0.71%	0.00%	100%
Road 138	138	-	50	26.23977	Y	0600-0700	93	32.22%	9.97%	0.10%	9.40%	3.38%	1.56%	3.06%	2.48%	0.25%	1.92%	0.62%	0.43%	0.95%	0.42%	29.66%	2.80%	0.80%	0.00%	100%
Road 138	138	-	50	24.62234	Y	0700-0800	171	32.19%	8.46%	0.10%	9.92%	3.56%	1.72%	3.38%	2.61%	0.28%	2.15%	0.70%	0.48%	1.06%	0.40%	29.15%	2.94%	0.88%	0.00%	100%
Road 138	138	-	50	24.715	Y	0800-0900	168	37.85%	11.57%	0.10%	9.40%	3.37%	1.44%	2.84%	1.78%	0.14%	1.08%	0.54%	0.37%	0.82%	0.61%	24.96%	2.38%	0.74%	0.00%	100%
Road 138	138	-	50	24.64209	Y	0900-1000	167	29.22%	9.47%	0.15%	14.00%	5.03%	2.56%	5.03%	2.03%	0.09%	0.69%	0.32%	0.22%	0.49%	0.61%	27.11%	1.67%	1.31%	0.00%	100%
Road 138	138	-	50	24.64042	Y	1000-1100	164	25.40%	11.57%	0.16%	15.26%	5.48%	2.93%	5.77%	1.29%	0.08%	0.61%	0.12%	0.08%	0.18%	1.26%	27.34%	0.96%	1.51%	0.00%	100%
Road 138	138	-	50	24.79164	Y	1100-1200	149	27.56%	11.55%	0.15%	13.95%	5.01%	3.10%	6.10%	2.27%	0.06%	0.49%	0.19%	0.13%	0.29%	0.33%	25.81%	1.42%	1.59%	0.00%	100%
Road 138	138	-	50	24.85013	Y	1200-1300	181	51.65%	17.91%	0.07%	7.12%	2.56%	1.53%	3.01%	0.37%	0.32%	2.53%	0.66%	0.46%	1.01%	0.37%	8.23%	1.39%	0.79%	0.00%	100%
Road 138	138	-	50	24.80159	Y	1300-1400	183	45.48%	18.79%	0.09%	8.57%	3.08%	1.55%	3.06%	0.58%	0.32%	2.52%	1.17%	0.82%	1.79%	0.45%	8.90%	2.04%	0.80%	0.00%	100%
Road 138	138	-	50	24.82181	Y	1400-1500	187	52.38%	16.23%	0.08%	7.24%	2.60%	1.60%	3.15%	0.35%	0.27%	2.13%	0.53%	0.37%	0.81%	0.22%	8.38%	2.84%	0.82%	0.00%	100%
Road 138	138	-	50	24.82569	Y	1500-1600	187	51.61%	18.56%	0.08%	7.48%	2.69%	1.70%	3.34%	0.33%	0.21%	1.66%	0.22%	0.15%	0.33%	0.19%	8.57%	2.00%	0.87%	0.00%	100%
Road 138	138	-	50	24.72329	Y	1600-1700	203	51.26%	17.72%	0.08%	7.83%	2.81%	1.19%	2.34%	0.33%	0.16%	1.28%	0.67%	0.46%	1.02%	0.24%	8.86%	3.13%	0.61%	0.00%	100%
Road 138	138	-	50	24.5925	Y	1700-1800	237	60.45%	13.01%	0.05%	5.05%	1.82%	0.61%	1.19%	0.42%	0.14%	1.09%	0.70%	0.49%	1.07%	0.12%	7.47%	6.01%	0.31%	0.00%	100%
Road 138	138	-	50	24.58271	Y	1800-1900	243	65.26%	14.43%	0.04%	3.60%	1.29%	0.44%	0.86%	0.44%	0.02%	0.18%	0.47%	0.33%	0.72%	0.04%	7.81%	3.87%	0.22%	0.00%	100%
Road 138	138	-	50	24.73077	Y	1900-2000	216	61.47%	19.44%	0.03%	3.19%	1.15%	0.14%	0.28%	0.43%	0.03%	0.22%	0.46%	0.32%	0.71%	0.36%	8.78%	2.91%	0.07%	0.00%	100%
Road 138	138	-	50	24.96173	Y	2000-2100	176	59.67%	21.79%	0.03%	2.85%	1.02%	0.26%	0.51%	0.34%	0.01%	0.07%	0.41%	0.28%	0.62%	0.18%	9.18%	2.64%	0.13%	0.00%	100%
Road 138	138	-	50	24.99512	Y	2100-2200	169	53.03%	28.61%	0.03%	2.73%	0.98%	0.18%	0.36%	0.40%	0.01%	0.08%	0.31%	0.22%	0.48%	0.14%	10.18%	2.18%	0.09%	0.00%	100%
Road 138	138	-	50	25.22686	Y	2200-2300	164	49.98%	33.51%	0.03%	2.51%	0.90%	0.14%	0.27%	0.30%	0.01%	0.08%	0.03%	0.02%	0.04%	0.14%	9.45%	2.53%	0.07%	0.00%	100%
Road 138	138	-	50	26.28216	Y	2300-0000	127	50.24%	31.50%	0.03%	2.77%	0.99%	0.22%	0.42%	0.33%	0.06%	0.44%	0.14%	0.10%	0.22%	0.14%	9.50%	2.78%	0.11%	0.00%	100%
Road 139	139	-	50	26.72958	Y	0000-0100	122	54.35%	31.74%	0.04%	4.08%	1.46%	0.39%	0.77%	0.28%	0.11%	0.86%	0.28%	0.20%	0.43%	0.02%	1.49%	3.28%	0.20%	0.00%	100%
Road 139	139	-	50	27.74005	Y	0100-0200	83	54.62%	29.46%	0.05%	4.44%	1.59%	0.50%	0.98%	0.30%	0.16%	1.26%	0.41%	0.28%	0.62%	0.02%	1.49%	3.55%	0.25%	0.00%	100%
Road 139	139	-	50	28.24866	Y	0200-0300	64	54.95%	27.12%	0.05%	4.81%	1.73%	0.60%	1.19%	0.33%	0.21%	1.67%	0.54%	0.38%	0.82%	0.02%	1.47%	3.81%	0.31%	0.00%	100%
Road 139	139	-	50	28.67169	Y	0300-0400	48	55.18%	24.81%	0.05%	5.18%	1.86%	0.71%	1.39%	0.35%	0.26%	2.06%	0.67%	0.47%	1.02%	0.02%	1.49%	4.10%	0.36%	0.00%	100%
Road 139	139	-	50	28.72984	Y	0400-0500	45	55.50%	22.40%	0.06%	5.56%	2.00%	0.82%	1.61%	0.38%	0.32%	2.47%	0.81%	0.56%	1.23%	0.02%	1.48%	4.37%	0.42%	0.00%	100%
Road 139	139	-	50	28.18349	Y	0500-0600	64	55.82%	19.97%	0.06%	5.96%	2.14%	0.93%	1.82%	0.41%	0.37%	2.88%	0.94%	0.65%	1.43%	0.02%	1.48%	4.65%	0.48%	0.00%	100%
Road 139	139	-	50	24.96504	Y	0600-0700	180	56.23%	17.40%	0.07%	6.33%	2.27%	1.05%	2.06%	0.43%	0.43%	3.35%	1.09%	0.75%	1.65%	0.02%	1.43%	4.89%	0.54%	0.00%	100%
Road 139	139	-	50	24.10217	Y	0700-0800	327	56.58%	14.87%	0.07%	6.73%	2.42%	1.17%	2.29%	0.45%	0.48%	3.79%	1.23%	0.85%	1.87%	0.02%	1.41%	5.17%	0.60%	0.00%	100%
Road 139	139	-	50	24.0175	Y	0800-0900	354	60.53%	18.51%	0.06%	5.80%	2.08%	0.89%	1.75%	0.28%	0.22%	1.72%	0.86%	0.60%	1.31%	0.03%	1.10%	3.80%	0.46%	0.00%	100%
Road 139	139	-	50	24.21182	Y	0900-1000	303	54.13%	17.54%	0.10%	10.01%	3.59%	1.83%	3.59%	0.37%	0.16%	1.28%	0.60%	0.42%	0.91%	0.03%	1.39%	3.10%	0.94%	0.00%	100%
Road 139	139	-	50	24.28598	Y	1000-1100	287	48.92%	22.29%	0.12%	11.34%	4.07%	2.18%	4.29%	0.25%	0.15%	1.17%	0.23%	0.16%	0.34%	0.07%	1.45%	1.86%	1.12%	0.00%	100%
Road 139	139	-	50	24.39041	Y	1100-1200	272	50.86%	21.32%	0.10%	9.94%	3.57%	2.21%	4.34%	0.41%	0.12%	0.91%	0.35%	0.25%	0.54%	0.02%	1.32%	2.62%	1.13%	0.00%	100%
Road 139	139	-	50	24.90956	Y	1200-1300	184	54.69%	18.97%	0.08%	8.01%	2.88%	1.72%	3.39%	0.73%	0.34%	2.68%	0.70%	0.49%	1.07%	0.08%	1.80%	1.47%	0.88%	0.00%	100%
Road 139	139	-	50	24.86926	Y	1300-1400	186	48.30%	19.95%	0.10%	9.67%	3.47%	1.76%	3.45%	1.14%	0.34%	2.68%	1.25%	0.87%	1.90%	0.10%	1.95%	2.17%	0.90%	0.00%	100%
Road 139	139	-	50	24.88329	Y	1400-1500	190	55.45%	17.19%	0.09%	8.15%	2.93%	1.80%	3.54%	0.69%	0.29%	2.26%	0.56%	0.39%	0.85%	0.05%	1.83%	3.00%	0.93%	0.00%	100%
Road 139	139	-	50	24.89003	Y	1500-1600	189	54.69%	19.67%	0.09%	8.43%	3.03%	1.92%	3.77%	0.65%	0.23%	1.76%	0.23%	0.16%	0.35%	0.04%	1.88%	2.12%	0.98%	0.00%	100%
Road 139	139	-	50	24.80276	Y	1600-1700	205	54.52%	18.84%	0.09%	8.86%	3.18%	1.35%	2.65%	0.66%	0.17%	1.36%	0.71%	0.49%	1.08%	0.05%	1.95%	3.33%	0.69%	0.00%	100%
Road 139	139	-	50	24.66	Y	1700-1800	242	63.69%	13.71%	0.06%	5.66%	2.03%	0.68%	1.33%	0.83%	0.15%	1.15%	0.74%	0.51%	1.12%	0.03%	1.63%	6.33%	0.35%	0.00%	100%
Road 139	139	-	50	24.66348	Y	1800-1900	247	69.01%	15.26%	0.04%	4.05%	1.45%	0.49%	0.97%	0.86%	0.02%	0.19%	0.50%	0.34%	0.76%	0.01%	1.71%	4.09%	0.25%	0.00%	100%
Road 139	139	-	50	24.83402	Y	1900-2000	217	65.80%	20.81%	0.04%	3.63%	1.30%	0.16%	0.31%	0.86%	0.03%	0.24%	0.50%	0.34%	0.76%	0.08%	1.94%	3.11%	0.08%	0.00%	100%
Road 139	139	-	50	25.25429	Y	2000-2100	177	64.04%	23.39%	0.03%	3.25%	1.17%	0.30%	0.58%	0.67%	0.01%	0.08%	0.44%	0.30%	0.67%	0.04%	2.04%	2.83%	0.15%	0.00%	100%
Road 139	139	-	50	25.48616	Y	2100-2200	168	57.37%	30.95%	0.03%	3.14%	1.13%	0.21%	0.41%	0.81%	0.01%	0.08%	0.34%	0.23%	0.51%	0.03%	2.28%	2.36%	0.11%	0.00%	100%
Road 139	139	-	50	25.67391	Y	2200-2300	164	53.80%	36.07%	0.03%	2.87%	1.03%	0.16%	0.31%	0.60%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	2.10%	2.72%	0.08%	0.00%	100%
Road 139	139	-	50	26.62442	Y	2300-0000	127	54.07%	33.90%	0.03%	3.17%	1.14%	0.25%	0.48%	0.67%	0.06%	0.47%	0.15%	0.11%	0.24%	0.03%	2.11%	2.99%	0.13%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 140	140	-	50	28.43682	Y	0000-0100	50	43.70%	25.52%	0.09%	8.46%	3.04%	0.81%	1.60%	2.04%	0.09%	0.69%	0.23%	0.16%	0.34%	0.15%	10.03%	2.64%	0.42%	0.00%	100%
Road 140	140	-	50	28.90538	Y	0100-0200	34	43.37%	23.40%	0.09%	9.09%	3.26%	1.02%	2.00%	2.20%	0.13%	1.00%	0.33%	0.23%	0.50%	0.15%	9.91%	2.82%	0.52%	0.00%	100%
Road 140	140	-	50	29.14224	Y	0200-0300	27	43.13%	21.28%	0.10%	9.73%	3.49%	1.22%	2.41%	2.34%	0.17%	1.31%	0.43%	0.29%	0.65%	0.14%	9.69%	2.99%	0.63%	0.00%	100%
Road 140	140	-	50	29.33973	Y	0300-0400	20	42.73%	19.21%	0.11%	10.35%	3.72%	1.41%	2.78%	2.51%	0.20%	1.59%	0.52%	0.36%	0.79%	0.15%	9.67%	3.18%	0.73%	0.00%	100%
Road 140	140	-	50	29.36137	Y	0400-0500	19	42.47%	17.14%	0.11%	10.98%	3.94%	1.61%	3.17%	2.65%	0.24%	1.89%	0.62%	0.43%	0.94%	0.14%	9.49%	3.34%	0.83%	0.00%	100%
Road 140	140	-	50	29.07579	Y	0500-0600	28	42.18%	15.09%	0.12%	11.61%	4.17%	1.81%	3.55%	2.80%	0.28%	2.18%	0.71%	0.49%	1.08%	0.14%	9.35%	3.51%	0.93%	0.00%	100%
Road 140	140	-	50	27.34844	Y	0600-0700	79	42.08%	13.02%	0.13%	12.22%	4.39%	2.03%	3.98%	2.93%	0.32%	2.50%	0.81%	0.56%	1.24%	0.13%	8.96%	3.66%	1.04%	0.00%	100%
Road 140	140	-	50	25.08683	Y	0700-0800	145	41.83%	10.99%	0.13%	12.83%	4.61%	2.22%	4.37%	3.07%	0.36%	2.80%	0.91%	0.63%	1.38%	0.12%	8.77%	3.82%	1.14%	0.00%	100%
Road 140	140	-	50	25.2	Y	0800-0900	149	47.26%	14.45%	0.12%	11.68%	4.19%	1.80%	3.53%	2.02%	0.17%	1.34%	0.67%	0.47%	1.02%	0.18%	7.21%	2.97%	0.92%	0.00%	100%
Road 140	140	-	50	24.99509	Y	0900-1000	145	37.28%	12.08%	0.19%	17.78%	6.38%	3.25%	6.38%	2.34%	0.11%	0.88%	0.41%	0.29%	0.63%	0.18%	8.01%	2.13%	1.67%	0.00%	100%
Road 140	140	-	50	25.00187	Y	1000-1100	141	32.67%	14.88%	0.20%	19.53%	7.01%	3.76%	7.38%	1.50%	0.10%	0.78%	0.15%	0.10%	0.23%	0.38%	8.14%	1.24%	1.93%	0.00%	100%
Road 140	140	-	50	25.41569	Y	1100-1200	131	34.64%	14.52%	0.18%	17.45%	6.27%	3.88%	7.63%	2.58%	0.08%	0.62%	0.24%	0.17%	0.37%	0.10%	7.51%	1.78%	1.99%	0.00%	100%
Road 140	140	-	50	24.82463	Y	1200-1300	195	54.13%	18.77%	0.08%	7.58%	2.72%	1.63%	3.20%	0.35%	0.34%	2.65%	0.70%	0.48%	1.06%	0.17%	3.84%	1.46%	0.84%	0.00%	100%
Road 140	140	-	50	24.78204	Y	1300-1400	196	47.86%	19.78%	0.10%	9.16%	3.29%	1.66%	3.27%	0.54%	0.34%	2.65%	1.24%	0.86%	1.88%	0.21%	4.16%	2.15%	0.85%	0.00%	100%
Road 140	140	-	50	24.79618	Y	1400-1500	200	54.89%	17.01%	0.08%	7.71%	2.77%	1.70%	3.35%	0.33%	0.29%	2.23%	0.56%	0.39%	0.85%	0.10%	3.90%	2.97%	0.88%	0.00%	100%
Road 140	140	-	50	24.80252	Y	1500-1600	200	54.12%	19.46%	0.08%	7.97%	2.86%	1.81%	3.56%	0.31%	0.22%	1.74%	0.23%	0.16%	0.35%	0.09%	3.99%	2.10%	0.93%	0.00%	100%
Road 140	140	-	50	24.7042	Y	1600-1700	217	53.87%	18.62%	0.09%	8.36%	3.00%	1.27%	2.50%	0.31%	0.17%	1.34%	0.70%	0.49%	1.07%	0.11%	4.14%	3.29%	0.65%	0.00%	100%
Road 140	140	-	50	24.555	Y	1700-1800	256	63.05%	13.57%	0.06%	5.36%	1.92%	0.64%	1.26%	0.39%	0.15%	1.14%	0.73%	0.51%	1.11%	0.05%	3.46%	6.27%	0.33%	0.00%	100%
Road 140	140	-	50	24.55311	Y	1800-1900	261	68.19%	15.08%	0.04%	3.82%	1.37%	0.46%	0.91%	0.41%	0.02%	0.19%	0.49%	0.34%	0.75%	0.02%	3.63%	4.04%	0.24%	0.00%	100%
Road 140	140	-	50	24.7258	Y	1900-2000	231	64.74%	20.48%	0.04%	3.42%	1.23%	0.15%	0.30%	0.41%	0.03%	0.23%	0.49%	0.34%	0.74%	0.17%	4.11%	3.06%	0.08%	0.00%	100%
Road 140	140	-	50	24.96008	Y	2000-2100	188	62.92%	22.98%	0.03%	3.05%	1.09%	0.28%	0.55%	0.32%	0.01%	0.08%	0.43%	0.30%	0.66%	0.08%	4.30%	2.78%	0.14%	0.00%	100%
Road 140	140	-	50	25.02765	Y	2100-2200	180	56.24%	30.34%	0.03%	2.94%	1.06%	0.19%	0.38%	0.38%	0.01%	0.08%	0.33%	0.23%	0.50%	0.07%	4.80%	2.31%	0.10%	0.00%	100%
Road 140	140	-	50	25.24312	Y	2200-2300	175	52.77%	35.38%	0.03%	2.69%	0.97%	0.15%	0.29%	0.28%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.44%	2.67%	0.08%	0.00%	100%
Road 140	140	-	50	26.29262	Y	2300-0000	135	53.07%	33.27%	0.03%	2.97%	1.07%	0.23%	0.45%	0.31%	0.06%	0.46%	0.15%	0.11%	0.23%	0.06%	4.46%	2.94%	0.12%	0.00%	100%
Road 141	141	-	50	27.58733	Y	0000-0100	88	52.81%	30.84%	0.05%	5.20%	1.87%	0.50%	0.98%	0.38%	0.11%	0.84%	0.27%	0.19%	0.42%	0.03%	2.06%	3.19%	0.26%	0.00%	100%
Road 141	141	-	50	28.32658	Y	0100-0200	60	52.92%	28.55%	0.06%	5.65%	2.03%	0.63%	1.24%	0.42%	0.16%	1.22%	0.40%	0.28%	0.61%	0.03%	2.05%	3.44%	0.32%	0.00%	100%
Road 141	141	-	50	28.69857	Y	0200-0300	46	53.10%	26.20%	0.06%	6.10%	2.19%	0.77%	1.51%	0.45%	0.21%	1.61%	0.52%	0.36%	0.80%	0.03%	2.02%	3.68%	0.39%	0.00%	100%
Road 141	141	-	50	29.00921	Y	0300-0400	35	53.17%	23.90%	0.07%	6.56%	2.35%	0.90%	1.76%	0.49%	0.25%	1.98%	0.65%	0.45%	0.99%	0.03%	2.04%	3.95%	0.46%	0.00%	100%
Road 141	141	-	50	29.04923	Y	0400-0500	33	53.33%	21.52%	0.07%	7.02%	2.52%	1.03%	2.03%	0.52%	0.30%	2.37%	0.77%	0.54%	1.18%	0.03%	2.02%	4.20%	0.53%	0.00%	100%
Road 141	141	-	50	28.63546	Y	0500-0600	47	53.49%	19.13%	0.08%	7.49%	2.69%	1.17%	2.29%	0.55%	0.35%	2.76%	0.90%	0.63%	1.37%	0.03%	2.01%	4.46%	0.60%	0.00%	100%
Road 141	141	-	50	26.10027	Y	0600-0700	133	53.74%	16.63%	0.08%	7.95%	2.85%	1.32%	2.59%	0.58%	0.41%	3.20%	1.04%	0.72%	1.58%	0.03%	1.94%	4.67%	0.68%	0.00%	100%
Road 141	141	-	50	24.56494	Y	0700-0800	241	53.91%	14.17%	0.09%	8.42%	3.02%	1.46%	2.87%	0.61%	0.46%	3.61%	1.17%	0.81%	1.78%	0.03%	1.92%	4.93%	0.75%	0.00%	100%
Road 141	141	-	50	24.5175	Y	0800-0900	259	58.17%	17.79%	0.08%	7.32%	2.63%	1.12%	2.21%	0.39%	0.21%	1.65%	0.83%	0.57%	1.26%	0.04%	1.51%	3.66%	0.58%	0.00%	100%
Road 141	141	-	50	24.61157	Y	0900-1000	228	50.57%	16.39%	0.13%	12.28%	4.41%	2.24%	4.41%	0.49%	0.15%	1.20%	0.56%	0.39%	0.85%	0.04%	1.84%	2.89%	1.15%	0.00%	100%
Road 141	141	-	50	24.65362	Y	1000-1100	218	45.30%	20.64%	0.14%	13.79%	4.95%	2.65%	5.21%	0.32%	0.14%	1.09%	0.21%	0.15%	0.32%	0.09%	1.92%	1.72%	1.36%	0.00%	100%
Road 141	141	-	50	24.74346	Y	1100-1200	206	47.36%	19.85%	0.13%	12.15%	4.36%	2.70%	5.31%	0.55%	0.11%	0.85%	0.33%	0.23%	0.50%	0.02%	1.74%	2.44%	1.39%	0.00%	100%
Road 141	141	-	50	24.85576	Y	1200-1300	194	55.39%	19.21%	0.08%	7.59%	2.73%	1.63%	3.21%	0.69%	0.35%	2.71%	0.71%	0.49%	1.09%	0.08%	1.71%	1.49%	0.84%	0.00%	100%
Road 141	141	-	50	24.81587	Y	1300-1400	196	49.02%	20.25%	0.10%	9.18%	3.30%	1.67%	3.27%	1.08%	0.35%	2.72%	1.27%	0.88%	1.93%	0.09%	1.85%	2.20%	0.86%	0.00%	100%
Road 141	141	-	50	24.82885	Y	1400-1500	200	56.19%	17.41%	0.08%	7.72%	2.77%	1.71%	3.36%	0.66%	0.29%	2.29%	0.57%	0.39%	0.87%	0.04%	1.74%	3.04%	0.88%	0.00%	100%
Road 141	141	-	50	24.83695	Y	1500-1600	200	55.45%	19.94%	0.08%	7.99%	2.87%	1.82%	3.57%	0.62%	0.23%	1.79%	0.24%	0.16%	0.36%	0.04%	1.78%	2.15%	0.93%	0.00%	100%
Road 141	141	-	50	24.74351	Y	1600-1700	217	55.23%	19.09%	0.09%	8.38%	3.01%	1.28%	2.51%	0.63%	0.18%	1.37%	0.72%	0.50%	1.10%	0.05%	1.84%	3.37%	0.66%	0.00%	100%
Road 141	141	-	50	24.585	Y	1700-1800	257	64.22%	13.82%	0.06%	5.34%	1.92%	0.64%	1.26%	0.78%	0.15%	1.16%	0.74%	0.52%	1.13%	0.02%	1.53%	6.38%	0.33%	0.00%	100%
Road 141	141	-	50	24.58525	Y	1800-1900	262	69.46%	15.36%	0.04%	3.81%	1.37%	0.46%	0.91%	0.81%	0.02%	0.19%	0.50%	0.35%	0.76%	0.01%	1.61%	4.12%	0.24%	0.00%	100%
Road 141	141	-	50	24.764	Y	1900-2000	231	66.16%	20.92%	0.04%	3.41%	1.23%	0.15%	0.30%	0.81%	0.03%	0.24%	0.50%	0.35%	0.76%	0.08%	1.83%	3.13%	0.08%	0.00%	100%
Road 141	141	-	50	24.99388	Y	2000-2100	188	64.39%	23.52%	0.03%	3.05%	1.10%	0.28%	0.55%	0.63%	0.01%	0.08%	0.44%	0.31%	0.67%	0.04%	1.91%	2.85%	0.14%	0.00%	100%
Road 141	141	-	50	25.21503	Y	2100-2200	179	57.68%	31.12%	0.03%	2.95%	1.06%	0.20%	0.38%	0.76%	0.01%	0.08%	0.34%	0.24%	0.52%	0.03%	2.14%	2.37%	0.10%	0.00%	100%
Road 141	141	-	50	25.41009	Y	2200-2300	175	54.05%	36.24%	0.03%	2.70%	0.97%	0.15%	0.29%	0.56%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.98%	2.74%	0.08%	0.00%	100%
Road 141	141	-	50	26.42124	Y	2300-0000	135	54.35%	34.08%	0.03%	2.97%	1.07%	0.23%	0.46%	0.63%	0.06%	0.48%	0.16%	0.11%	0.24%	0.03%	1.99%	3.01%	0.12%	0.00%	100%
Road 142	142	-	50	28.43682	Y	0000-0100	50	43.70%	25.52%	0.09%	8.46%	3.04%	0.81%	1.60%	2.04%	0.09%	0.69%	0.23%	0.16%	0.34%	0.15%	10.03%	2.64%	0.42%	0.00%	100%
Road 142	142	-	50	28.90538	Y	0100-0200	34	43.37%	23.40%	0.09%	9.09%	3.26%	1.02%	2.00%	2.20%	0.13%	1.00%	0.33%	0.23%	0.50%	0.15%	9.91%	2.82%	0.52%	0.00%	100%
Road 142	142	-	50	29.14224	Y	0200-0300	27	43.13%	21.28%	0.10%	9.73%	3.49%	1.22%	2.41%	2.34%	0.17%	1.31%	0.43%	0.29%	0.65%	0.14%	9.69%	2.99%	0.63%	0.00%	100%
Road 142	142	-	50	29.33973	Y	0300-0400	20	42.73%	19.21%	0.11%	10.35%	3.72%	1.41%	2.78%	2.51%	0.20%	1.59%	0.52%	0.36%	0.79%	0.15%	9.67%	3.18%	0.73%	0.00%	100%
Road 142	142	-	50	29.36137	Y	0400-0500	19	42.47%	17.14%	0.11%	10.98%	3.94%	1.61%	3.17%	2.65%	0.24%	1.89%	0.62%	0.43%	0.94%	0.14%	9.49%	3.34%	0.83%	0.00%	100%
Road 142	142	-	50	29.07579	Y	0500-0600	28	42.18%	15.09%	0.12%	11.61%	4.17%	1.81%	3.55%	2.80%	0.28%	2.18%	0.71%	0.49%	1.08%	0.14%	9.35%	3.51%	0.93%	0.00%	100%
Road 142	142	-	50	27.34844	Y	0600-0700	79	42.08%	13.02%	0.13%	12.22%	4.39%	2.03%	3.98%	2.93%	0.32%	2.50%	0.81%	0.56%	1.24%	0.13%	8.96%	3.66%	1.04%	0.00%	100%
Road 142	142	-	50	25.08683	Y	0700-0800	145	41.83%	10.99%	0.13%	12.83%	4.61%	2.22%	4.37%	3.07%	0.36%	2.80%	0.91%	0.63%	1.38%	0.12%	8.77%	3.82%	1.14%	0.00%	100%
Road 142	142	-	50	25.2	Y	0800-0900	149	47.26%	14.45%	0.12%	11.68%	4.19%	1.80%	3.53%	2.02%	0.17%	1.34%	0.67%	0.47%	1.02%	0.18%	7.21%	2.97%	0.92%	0.00%	100%
Road 142	142	-	50	24.99509	Y	0900-1000	145	37.28%	12.08%	0.19%	17.78%	6.38%	3.25%	6.38%	2.34%	0.11%	0.88%	0.41%	0.29%	0.63%	0.18%	8.01%	2.13%	1.67%	0.00%	100%
Road 142	142	-	50	25.00187	Y	1000-1100	141	32.67%	14.88%	0.20%	19.53%	7.01%	3.76%	7.38%	1.50%	0.10%	0.78%	0.15%	0.10%	0.23%	0.38%	8.14%	1.24%	1.93%	0.00%	100%
Road 142	142	-	50	25.41569	Y	1100-1200	131	34.64%	14.52%	0.18%	17.45%	6.27%	3.88%	7.63%	2.58%	0.08%	0.62%	0.24%	0.17%	0.37%	0.10%	7.51%	1.78%	1.99%	0.00%	100%
Road 142	142	-	50	24.85786	Y	1200-1300	191	55.24%	19.16%	0.07%	6.77%	2.43%	1.45%	2.86%	0.35%	0.35%	2.71%	0.71%	0.49%	1.08%	0.17%	3.91%	1.49%	0.75%	0.00%	100%
Road 142	142	-	50	24.81979	Y	1300-1400	192	48.99%	20.24%	0.09%	8.20%	2.95%	1.49%	2.93%	0.55%	0.35%	2.72%	1.27%	0.88%	1.93%	0.21%	4.26%	2.20%	0.76%	0.00%	100%
Road 142	142	-	50	24.83142	Y	1400-1500	196	56.04%	17.37%	0.07%	6.89%	2.47%	1.52%	2.99%	0.33%	0.29%	2.28%	0.57%	0.39%	0.86%	0.10%	3.99%	3.04%	0.78%	0.00%	100%
Road 142	142	-	50	24.83935	Y	1500-1600	196	55.31%	19.89%	0.07%	7.13%	2.56%	1.62%	3.19%	0.31%	0.23%	1.78%	0.23%	0.16%	0.36%	0.09%	4.08%	2.14%	0.83%	0.00%	100%
Road 142	142	-	50	24.74002	Y	1600-1700	213	54.97%	19.00%	0.08%	7.46%	2.68%	1.14%	2.23%	0.32%	0.18%	1.37%	0.72%	0.50%	1.09%	0.11%	4.22%	3.35%	0.58%	0.00%	100%
Road 142	142	-	50	24.58	Y	1700-1800	253	63.81%	13.73%	0.05%	4.74%	1.70%	0.57%	1.12%	0.40%	0.15%	1.15%	0.74%	0.51%	1.13%	0.06%	3.51%	6.34%	0.29%	0.00%	100%
Road 142	142	-	50	24.57141	Y	1800-1900	259	68.78%	15.21%	0.04%	3.37%	1.21%	0.41%	0.81%	0.41%	0.02%	0.19%	0.49%	0.34%	0.75%	0.02%	3.66%	4.08%	0.21%	0.00%	100%
Road 142	142	-	50	24.73748	Y	1900-2000	229	65.17%	20.61%	0.03%	3.01%	1.08%	0.13%	0.26%	0.41%	0.03%	0.23%	0.49%	0.34%	0.75%	0.17%	4.14%	3.08%	0.07%	0.00%	100%
Road 142	142	-	50	24.96981	Y	2000-2100	187	63.32%	23.13%	0.03%	2.68%	0.96%	0.25%	0.48%	0.32%	0.01%	0.08%	0.43%	0.30%	0.66%	0.08%	4.33%	2.80%	0.13%	0.00%	100%
Road 142	142	-	50	25.06944	Y	2100-2200	179	56.58%	30.52%	0.03%	2.59%	0.93%	0.17%	0.34%	0.38%	0.01%	0.08%	0.33%	0.23%	0.51%	0.07%	4.83%	2.32%	0.09%	0.00%	100%
Road 142	142	-	50	25.27926	Y	2200-2300	174	53.05%	35.57%	0.02%	2.37%	0.85%	0.13%	0.26%	0.28%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.46%	2.68%	0.07%	0.00%	100%
Road 142	142	-	50	26.32538	Y	2300-0000	134	53.39%	33.48%	0.03%	2.61%	0.94%	0.20%	0.40%	0.31%	0.06%	0.47%	0.15%	0.11%	0.23%	0.07%	4.49%	2.96%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 143	143	-	50	28.62011	Y	0000-0100	48	47.86%	27.95%	0.09%	8.84%	3.17%	0.85%	1.67%	0.71%	0.10%	0.76%	0.25%	0.17%	0.38%	0.06%	3.81%	2.89%	0.44%	0.00%	100%
Road 143	143	-	50	29.0323	Y	0100-0200	33	47.55%	25.65%	0.10%	9.51%	3.42%	1.06%	2.09%	0.77%	0.14%	1.10%	0.36%	0.25%	0.54%	0.06%	3.77%	3.09%	0.55%	0.00%	100%
Road 143	143	-	50	29.23951	Y	0200-0300	26	47.30%	23.34%	0.11%	10.18%	3.66%	1.28%	2.52%	0.82%	0.18%	1.44%	0.47%	0.32%	0.71%	0.05%	3.69%	3.28%	0.66%	0.00%	100%
Road 143	143	-	50	29.41473	Y	0300-0400	19	46.95%	21.11%	0.11%	10.85%	3.90%	1.48%	2.91%	0.88%	0.22%	1.75%	0.57%	0.40%	0.87%	0.06%	3.69%	3.49%	0.76%	0.00%	100%
Road 143	143	-	50	29.43269	Y	0400-0500	19	46.69%	18.84%	0.12%	11.52%	4.14%	1.69%	3.33%	0.93%	0.27%	2.08%	0.68%	0.47%	1.03%	0.06%	3.62%	3.68%	0.87%	0.00%	100%
Road 143	143	-	50	29.17767	Y	0500-0600	26	46.41%	16.60%	0.13%	12.19%	4.38%	1.90%	3.73%	0.98%	0.31%	2.39%	0.78%	0.54%	1.19%	0.05%	3.57%	3.87%	0.97%	0.00%	100%
Road 143	143	-	50	27.62878	Y	0600-0700	75	46.24%	14.31%	0.13%	12.82%	4.60%	2.13%	4.18%	1.02%	0.35%	2.75%	0.89%	0.62%	1.36%	0.05%	3.42%	4.02%	1.09%	0.00%	100%
Road 143	143	-	50	25.5963	Y	0700-0800	138	45.99%	12.09%	0.14%	13.47%	4.84%	2.33%	4.59%	1.07%	0.39%	3.08%	1.00%	0.69%	1.52%	0.05%	3.35%	4.20%	1.20%	0.00%	100%
Road 143	143	-	50	25.5875	Y	0800-0900	145	50.93%	15.57%	0.13%	12.01%	4.31%	1.85%	3.63%	0.69%	0.19%	1.45%	0.72%	0.50%	1.10%	0.07%	2.70%	3.20%	0.95%	0.00%	100%
Road 143	143	-	50	25.436	Y	0900-1000	138	40.77%	13.21%	0.19%	18.56%	6.67%	3.39%	6.66%	0.82%	0.12%	0.96%	0.45%	0.31%	0.69%	0.07%	3.04%	2.33%	1.74%	0.00%	100%
Road 143	143	-	50	25.44782	Y	1000-1100	136	35.66%	16.25%	0.21%	20.35%	7.31%	3.91%	7.69%	0.52%	0.11%	0.86%	0.16%	0.11%	0.25%	0.14%	3.08%	1.35%	2.01%	0.00%	100%
Road 143	143	-	50	25.81413	Y	1100-1200	126	37.83%	15.85%	0.19%	18.19%	6.53%	4.04%	7.95%	0.90%	0.09%	0.68%	0.26%	0.18%	0.40%	0.04%	2.85%	1.95%	2.08%	0.00%	100%
Road 143	143	-	50	24.81988	Y	1200-1300	201	55.83%	19.36%	0.08%	7.33%	2.63%	1.57%	3.10%	0.67%	0.35%	2.74%	0.72%	0.50%	1.09%	0.07%	1.65%	1.51%	0.81%	0.00%	100%
Road 143	143	-	50	24.78028	Y	1300-1400	202	49.46%	20.43%	0.09%	8.87%	3.19%	1.61%	3.17%	1.04%	0.35%	2.74%	1.28%	0.89%	1.95%	0.09%	1.79%	2.22%	0.83%	0.00%	100%
Road 143	143	-	50	24.79256	Y	1400-1500	207	56.63%	17.55%	0.08%	7.46%	2.68%	1.65%	3.24%	0.63%	0.30%	2.31%	0.57%	0.40%	0.87%	0.04%	1.68%	3.07%	0.85%	0.00%	100%
Road 143	143	-	50	24.80157	Y	1500-1600	207	55.90%	20.10%	0.08%	7.72%	2.77%	1.75%	3.45%	0.59%	0.23%	1.80%	0.24%	0.16%	0.36%	0.04%	1.72%	2.17%	0.90%	0.00%	100%
Road 143	143	-	50	24.70401	Y	1600-1700	224	55.65%	19.23%	0.08%	8.10%	2.91%	1.23%	2.42%	0.60%	0.18%	1.38%	0.73%	0.50%	1.11%	0.05%	1.78%	3.40%	0.63%	0.00%	100%
Road 143	143	-	50	24.535	Y	1700-1800	267	64.54%	13.89%	0.05%	5.14%	1.85%	0.62%	1.21%	0.75%	0.15%	1.17%	0.75%	0.52%	1.14%	0.02%	1.48%	6.41%	0.32%	0.00%	100%
Road 143	143	-	50	24.53309	Y	1800-1900	273	69.73%	15.42%	0.04%	3.66%	1.32%	0.45%	0.87%	0.78%	0.02%	0.19%	0.50%	0.35%	0.76%	0.01%	1.54%	4.13%	0.23%	0.00%	100%
Road 143	143	-	50	24.71732	Y	1900-2000	240	66.38%	20.99%	0.03%	3.28%	1.18%	0.14%	0.28%	0.78%	0.03%	0.24%	0.50%	0.35%	0.76%	0.07%	1.76%	3.14%	0.07%	0.00%	100%
Road 143	143	-	50	24.9559	Y	2000-2100	195	64.60%	23.59%	0.03%	2.93%	1.05%	0.27%	0.53%	0.61%	0.01%	0.08%	0.44%	0.31%	0.67%	0.04%	1.84%	2.86%	0.14%	0.00%	100%
Road 143	143	-	50	25.03427	Y	2100-2200	186	57.86%	31.22%	0.03%	2.84%	1.02%	0.19%	0.37%	0.73%	0.01%	0.08%	0.34%	0.24%	0.52%	0.03%	2.06%	2.38%	0.10%	0.00%	100%
Road 143	143	-	50	25.23422	Y	2200-2300	182	54.21%	36.34%	0.03%	2.59%	0.93%	0.14%	0.28%	0.54%	0.01%	0.08%	0.03%	0.02%	0.04%	0.03%	1.90%	2.74%	0.07%	0.00%	100%
Road 143	143	-	50	26.28579	Y	2300-0000	140	54.52%	34.19%	0.03%	2.86%	1.03%	0.22%	0.44%	0.60%	0.06%	0.48%	0.16%	0.11%	0.24%	0.03%	1.91%	3.02%	0.11%	0.00%	100%
Road 144	144	-	50	28.43682	Y	0000-0100	50	43.70%	25.52%	0.09%	8.46%	3.04%	0.81%	1.60%	2.04%	0.09%	0.69%	0.23%	0.16%	0.34%	0.15%	10.03%	2.64%	0.42%	0.00%	100%
Road 144	144	-	50	28.90538	Y	0100-0200	34	43.37%	23.40%	0.09%	9.09%	3.26%	1.02%	2.00%	2.20%	0.13%	1.00%	0.33%	0.23%	0.50%	0.15%	9.91%	2.82%	0.52%	0.00%	100%
Road 144	144	-	50	29.14224	Y	0200-0300	27	43.13%	21.28%	0.10%	9.73%	3.49%	1.22%	2.41%	2.34%	0.17%	1.31%	0.43%	0.29%	0.65%	0.14%	9.69%	2.99%	0.63%	0.00%	100%
Road 144	144	-	50	29.33973	Y	0300-0400	20	42.73%	19.21%	0.11%	10.35%	3.72%	1.41%	2.78%	2.51%	0.20%	1.59%	0.52%	0.36%	0.79%	0.15%	9.67%	3.18%	0.73%	0.00%	100%
Road 144	144	-	50	29.36137	Y	0400-0500	19	42.47%	17.14%	0.11%	10.98%	3.94%	1.61%	3.17%	2.65%	0.24%	1.89%	0.62%	0.43%	0.94%	0.14%	9.49%	3.34%	0.83%	0.00%	100%
Road 144	144	-	50	29.07579	Y	0500-0600	28	42.18%	15.09%	0.12%	11.61%	4.17%	1.81%	3.55%	2.80%	0.28%	2.18%	0.71%	0.49%	1.08%	0.14%	9.35%	3.51%	0.93%	0.00%	100%
Road 144	144	-	50	27.34844	Y	0600-0700	79	42.08%	13.02%	0.13%	12.22%	4.39%	2.03%	3.98%	2.93%	0.32%	2.50%	0.81%	0.56%	1.24%	0.13%	8.96%	3.66%	1.04%	0.00%	100%
Road 144	144	-	50	25.08683	Y	0700-0800	145	41.83%	10.99%	0.13%	12.83%	4.61%	2.22%	4.37%	3.07%	0.36%	2.80%	0.91%	0.63%	1.38%	0.12%	8.77%	3.82%	1.14%	0.00%	100%
Road 144	144	-	50	25.2	Y	0800-0900	149	47.26%	14.45%	0.12%	11.68%	4.19%	1.80%	3.53%	2.02%	0.17%	1.34%	0.67%	0.47%	1.02%	0.18%	7.21%	2.97%	0.92%	0.00%	100%
Road 144	144	-	50	24.99509	Y	0900-1000	145	37.28%	12.08%	0.19%	17.78%	6.38%	3.25%	6.38%	2.34%	0.11%	0.88%	0.41%	0.29%	0.63%	0.18%	8.01%	2.13%	1.67%	0.00%	100%
Road 144	144	-	50	25.00187	Y	1000-1100	141	32.67%	14.88%	0.20%	19.53%	7.01%	3.76%	7.38%	1.50%	0.10%	0.78%	0.15%	0.10%	0.23%	0.38%	8.14%	1.24%	1.93%	0.00%	100%
Road 144	144	-	50	25.41569	Y	1100-1200	131	34.64%	14.52%	0.18%	17.45%	6.27%	3.88%	7.63%	2.58%	0.08%	0.62%	0.24%	0.17%	0.37%	0.10%	7.51%	1.78%	1.99%	0.00%	100%
Road 144	144	-	50	24.85786	Y	1200-1300	191	55.24%	19.16%	0.07%	6.77%	2.43%	1.45%	2.86%	0.35%	0.35%	2.71%	0.71%	0.49%	1.08%	0.17%	3.91%	1.49%	0.75%	0.00%	100%
Road 144	144	-	50	24.81979	Y	1300-1400	192	48.99%	20.24%	0.09%	8.20%	2.95%	1.49%	2.93%	0.55%	0.35%	2.72%	1.27%	0.88%	1.93%	0.21%	4.26%	2.20%	0.76%	0.00%	100%
Road 144	144	-	50	24.83142	Y	1400-1500	196	56.04%	17.37%	0.07%	6.89%	2.47%	1.52%	2.99%	0.33%	0.29%	2.28%	0.57%	0.39%	0.86%	0.10%	3.99%	3.04%	0.78%	0.00%	100%
Road 144	144	-	50	24.83935	Y	1500-1600	196	55.31%	19.89%	0.07%	7.13%	2.56%	1.62%	3.19%	0.31%	0.23%	1.78%	0.23%	0.16%	0.36%	0.09%	4.08%	2.14%	0.83%	0.00%	100%
Road 144	144	-	50	24.74002	Y	1600-1700	213	54.97%	19.00%	0.08%	7.46%	2.68%	1.14%	2.23%	0.32%	0.18%	1.37%	0.72%	0.50%	1.09%	0.11%	4.22%	3.35%	0.58%	0.00%	100%
Road 144	144	-	50	24.58	Y	1700-1800	253	63.81%	13.73%	0.05%	4.74%	1.70%	0.57%	1.12%	0.40%	0.15%	1.15%	0.74%	0.51%	1.13%	0.06%	3.51%	6.34%	0.29%	0.00%	100%
Road 144	144	-	50	24.57141	Y	1800-1900	259	68.78%	15.21%	0.04%	3.37%	1.21%	0.41%	0.81%	0.41%	0.02%	0.19%	0.49%	0.34%	0.75%	0.02%	3.66%	4.08%	0.21%	0.00%	100%
Road 144	144	-	50	24.73748	Y	1900-2000	229	65.17%	20.61%	0.03%	3.01%	1.08%	0.13%	0.26%	0.41%	0.03%	0.23%	0.49%	0.34%	0.75%	0.17%	4.14%	3.08%	0.07%	0.00%	100%
Road 144	144	-	50	24.96981	Y	2000-2100	187	63.32%	23.13%	0.03%	2.68%	0.96%	0.25%	0.48%	0.32%	0.01%	0.08%	0.43%	0.30%	0.66%	0.08%	4.33%	2.80%	0.13%	0.00%	100%
Road 144	144	-	50	25.06944	Y	2100-2200	179	56.58%	30.52%	0.03%	2.59%	0.93%	0.17%	0.34%	0.38%	0.01%	0.08%	0.33%	0.23%	0.51%	0.07%	4.83%	2.32%	0.09%	0.00%	100%
Road 144	144	-	50	25.27926	Y	2200-2300	174	53.05%	35.57%	0.02%	2.37%	0.85%	0.13%	0.26%	0.28%	0.01%	0.08%	0.03%	0.02%	0.04%	0.06%	4.46%	2.68%	0.07%	0.00%	100%
Road 144	144	-	50	26.32538	Y	2300-0000	134	53.39%	33.48%	0.03%	2.61%	0.94%	0.20%	0.40%	0.31%	0.06%	0.47%	0.15%	0.11%	0.23%	0.07%	4.49%	2.96%	0.10%	0.00%	100%
Road 145	145	-	50	28.7918	Y	0000-0100	44	49.78%	29.07%	0.10%	9.63%	3.46%	0.93%	1.82%	0.00%	0.10%	0.79%	0.26%	0.18%	0.39%	0.00%	0.00%	3.01%	0.48%	0.00%	100%
Road 145	145	-	50	29.1503	Y	0100-0200	30	49.43%	26.66%	0.11%	10.36%	3.72%	1.16%	2.28%	0.00%	0.15%	1.14%	0.37%	0.26%	0.57%	0.00%	0.00%	3.21%	0.59%	0.00%	100%
Road 145	145	-	50	29.32974	Y	0200-0300	23	49.11%	24.23%	0.12%	11.08%	3.98%	1.39%	2.74%	0.00%	0.19%	1.49%	0.48%	0.34%	0.74%	0.00%	0.00%	3.40%	0.72%	0.00%	100%
Road 145	145	-	50	29.48339	Y	0300-0400	18	48.74%	21.91%	0.12%	11.80%	4.24%	1.61%	3.17%	0.00%	0.23%	1.82%	0.59%	0.41%	0.90%	0.00%	0.00%	3.62%	0.83%	0.00%	100%
Road 145	145	-	50	29.49769	Y	0400-0500	17	48.42%	19.54%	0.13%	12.52%	4.49%	1.84%	3.61%	0.00%	0.28%	2.15%	0.70%	0.49%	1.07%	0.00%	0.00%	3.81%	0.94%	0.00%	100%
Road 145	145	-	50	29.26995	Y	0500-0600	24	48.10%	17.20%	0.14%	13.23%	4.75%	2.06%	4.05%	0.00%	0.32%	2.48%	0.81%	0.56%	1.24%	0.00%	0.00%	4.01%	1.06%	0.00%	100%
Road 145	145	-	50	27.88439	Y	0600-0700	70	47.82%	14.80%	0.15%	13.89%	4.99%	2.30%	4.53%	0.00%	0.36%	2.85%	0.92%	0.64%	1.41%	0.00%	0.00%	4.16%	1.18%	0.00%	100%
Road 145	145	-	50	26.0593	Y	0700-0800	128	47.51%	12.49%	0.15%	14.58%	5.23%	2.53%	4.97%	0.00%	0.41%	3.18%	1.03%	0.72%	1.57%	0.00%	0.00%	4.34%	1.30%	0.00%	100%
Road 145	145	-	50	26	Y	0800-0900	135	52.17%	15.95%	0.13%	12.89%	4.63%	1.98%	3.90%	0.00%	0.19%	1.48%	0.74%	0.51%	1.13%	0.00%	0.00%	3.28%	1.02%	0.00%	100%
Road 145	145	-	50	25.84214	Y	0900-1000	129	41.67%	13.50%	0.21%	19.87%	7.14%	3.63%	7.13%	0.00%	0.13%	0.99%	0.46%	0.32%	0.70%	0.00%	0.00%	2.38%	1.86%	0.00%	100%
Road 145	145	-	50	25.83303	Y	1000-1100	127	36.31%	16.54%	0.23%	21.71%	7.80%	4.17%	8.20%	0.00%	0.11%	0.87%	0.17%	0.12%	0.26%	0.00%	0.00%	1.38%	2.14%	0.00%	100%
Road 145	145	-	50	26.16603	Y	1100-1200	118	38.57%	16.17%	0.20%	19.43%	6.98%	4.32%	8.49%	0.00%	0.09%	0.69%	0.27%	0.19%	0.41%	0.00%	0.00%	1.98%	2.22%	0.00%	100%
Road 145	145	-	50	24.96032	Y	1200-1300	182	57.81%	20.05%	0.07%	7.08%	2.54%	1.52%	2.99%	0.00%	0.36%	2.83%	0.74%	0.52%	1.13%	0.00%	0.00%	1.56%	0.78%	0.00%	100%
Road 145	145	-	50	24.93489	Y	1300-1400	182	51.58%	21.31%	0.09%	8.64%	3.10%	1.57%	3.08%	0.00%	0.37%	2.86%	1.33%	0.92%	2.03%	0.00%	0.00%	2.31%	0.81%	0.00%	100%
Road 145	145	-	50	24.93669	Y	1400-1500	188	58.64%	18.17%	0.08%	7.20%	2.59%	1.59%	3.13%	0.00%	0.31%	2.39%	0.59%	0.41%	0.90%	0.00%	0.00%	3.18%	0.82%	0.00%	100%
Road 145	145	-	50	24.94607	Y	1500-1600	187	57.91%	20.82%	0.08%	7.47%	2.68%	1.70%	3.34%	0.00%	0.24%	1.87%	0.25%	0.17%	0.37%	0.00%	0.00%	2.24%	0.87%	0.00%	100%
Road 145	145	-	50	24.86057	Y	1600-1700	203	57.65%	19.92%	0.08%	7.83%	2.81%	1.19%	2.34%	0.00%	0.18%	1.43%	0.75%	0.52%	1.15%	0.00%	0.00%	3.52%	0.61%	0.00%	100%
Road 145	145	-	50	24.7	Y	1700-1800	243	66.44%	14.30%	0.05%	4.94%	1.77%	0.59%	1.16%	0.00%	0.15%	1.20%	0.77%	0.53%	1.17%	0.00%	0.00%	6.60%	0.30%	0.00%	100%
Road 145	145	-	50	24.69843	Y	1800-1900	249	71.71%	15.86%	0.04%	3.52%	1.26%	0.43%	0.84%	0.00%	0.02%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.25%	0.22%	0.00%	100%
Road 145	145	-	50	24.86792	Y	1900-2000	218	68.39%	21.63%	0.03%	3.16%	1.13%	0.14%	0.27%	0.00%	0.03%	0.24%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 145	145	-	50	25.3865	Y	2000-2100	178	66.47%	24.28%	0.03%	2.82%	1.01%	0.26%	0.51%	0.00%	0.01%	0.08%	0.46%	0.32%	0.69%	0.00%	0.00%	2.94%	0.13%	0.00%	100%
Road 145	145	-	50	25.64054	Y	2100-2200	169	59.72%	32.22%	0.03%	2.73%	0.98%	0.18%	0.36%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.45%	0.09%	0.00%	100%
Road 145	145	-	50	25.78983	Y	2200-2300	166	55.73%	37.37%	0.03%	2.49%	0.89%	0.14%	0.27%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.82%	0.07%	0.00%	100%
Road 145	145	-	50	26.72303	Y	2300-0000	128	56.12%	35.19%	0.03%	2.75%	0.99%	0.21%	0.42%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.11%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 146	146	-	50	28.7918	Y	0000-0100	44	49.78%	29.07%	0.10%	9.63%	3.46%	0.93%	1.82%	0.00%	0.10%	0.79%	0.26%	0.18%	0.39%	0.00%	0.00%	3.01%	0.48%	0.00%	100%
Road 146	146	-	50	29.1503	Y	0100-0200	30	49.43%	26.66%	0.11%	10.36%	3.72%	1.16%	2.28%	0.00%	0.15%	1.14%	0.37%	0.26%	0.57%	0.00%	0.00%	3.21%	0.59%	0.00%	100%
Road 146	146	-	50	29.32974	Y	0200-0300	23	49.11%	24.23%	0.12%	11.08%	3.98%	1.39%	2.74%	0.00%	0.19%	1.49%	0.48%	0.34%	0.74%	0.00%	0.00%	3.40%	0.72%	0.00%	100%
Road 146	146	-	50	29.48339	Y	0300-0400	18	48.74%	21.91%	0.12%	11.80%	4.24%	1.61%	3.17%	0.00%	0.23%	1.82%	0.59%	0.41%	0.90%	0.00%	0.00%	3.62%	0.83%	0.00%	100%
Road 146	146	-	50	29.49769	Y	0400-0500	17	48.42%	19.54%	0.13%	12.52%	4.49%	1.84%	3.61%	0.00%	0.28%	2.15%	0.70%	0.49%	1.07%	0.00%	0.00%	3.81%	0.94%	0.00%	100%
Road 146	146	-	50	29.26995	Y	0500-0600	24	48.10%	17.20%	0.14%	13.23%	4.75%	2.06%	4.05%	0.00%	0.32%	2.48%	0.81%	0.56%	1.24%	0.00%	0.00%	4.01%	1.06%	0.00%	100%
Road 146	146	-	50	27.88439	Y	0600-0700	70	47.82%	14.80%	0.15%	13.89%	4.99%	2.30%	4.53%	0.00%	0.36%	2.85%	0.92%	0.64%	1.41%	0.00%	0.00%	4.16%	1.18%	0.00%	100%
Road 146	146	-	50	26.0593	Y	0700-0800	128	47.51%	12.49%	0.15%	14.58%	5.23%	2.53%	4.97%	0.00%	0.41%	3.18%	1.03%	0.72%	1.57%	0.00%	0.00%	4.34%	1.30%	0.00%	100%
Road 146	146	-	50	26	Y	0800-0900	135	52.17%	15.95%	0.13%	12.89%	4.63%	1.98%	3.90%	0.00%	0.19%	1.48%	0.74%	0.51%	1.13%	0.00%	0.00%	3.28%	1.02%	0.00%	100%
Road 146	146	-	50	25.84214	Y	0900-1000	129	41.67%	13.50%	0.21%	19.87%	7.14%	3.63%	7.13%	0.00%	0.13%	0.99%	0.46%	0.32%	0.70%	0.00%	0.00%	2.38%	1.86%	0.00%	100%
Road 146	146	-	50	25.83303	Y	1000-1100	127	36.31%	16.54%	0.23%	21.71%	7.80%	4.17%	8.20%	0.00%	0.11%	0.87%	0.17%	0.12%	0.26%	0.00%	0.00%	1.38%	2.14%	0.00%	100%
Road 146	146	-	50	26.16603	Y	1100-1200	118	38.57%	16.17%	0.20%	19.43%	6.98%	4.32%	8.49%	0.00%	0.09%	0.69%	0.27%	0.19%	0.41%	0.00%	0.00%	1.98%	2.22%	0.00%	100%
Road 146	146	-	50	24.96032	Y	1200-1300	182	57.81%	20.05%	0.07%	7.08%	2.54%	1.52%	2.99%	0.00%	0.36%	2.83%	0.74%	0.52%	1.13%	0.00%	0.00%	1.56%	0.78%	0.00%	100%
Road 146	146	-	50	24.93489	Y	1300-1400	182	51.58%	21.31%	0.09%	8.64%	3.10%	1.57%	3.08%	0.00%	0.37%	2.86%	1.33%	0.92%	2.03%	0.00%	0.00%	2.31%	0.81%	0.00%	100%
Road 146	146	-	50	24.93669	Y	1400-1500	188	58.64%	18.17%	0.08%	7.20%	2.59%	1.59%	3.13%	0.00%	0.31%	2.39%	0.59%	0.41%	0.90%	0.00%	0.00%	3.18%	0.82%	0.00%	100%
Road 146	146	-	50	24.94607	Y	1500-1600	187	57.91%	20.82%	0.08%	7.47%	2.68%	1.70%	3.34%	0.00%	0.24%	1.87%	0.25%	0.17%	0.37%	0.00%	0.00%	2.24%	0.87%	0.00%	100%
Road 146	146	-	50	24.86057	Y	1600-1700	203	57.65%	19.92%	0.08%	7.83%	2.81%	1.19%	2.34%	0.00%	0.18%	1.43%	0.75%	0.52%	1.15%	0.00%	0.00%	3.52%	0.61%	0.00%	100%
Road 146	146	-	50	24.7	Y	1700-1800	243	66.44%	14.30%	0.05%	4.94%	1.77%	0.59%	1.16%	0.00%	0.15%	1.20%	0.77%	0.53%	1.17%	0.00%	0.00%	6.60%	0.30%	0.00%	100%
Road 146	146	-	50	24.69843	Y	1800-1900	249	71.71%	15.86%	0.04%	3.52%	1.26%	0.43%	0.84%	0.00%	0.02%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.25%	0.22%	0.00%	100%
Road 146	146	-	50	24.86792	Y	1900-2000	218	68.39%	21.63%	0.03%	3.16%	1.13%	0.14%	0.27%	0.00%	0.03%	0.24%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 146	146	-	50	25.3865	Y	2000-2100	178	66.47%	24.28%	0.03%	2.82%	1.01%	0.26%	0.51%	0.00%	0.01%	0.08%	0.46%	0.32%	0.69%	0.00%	0.00%	2.94%	0.13%	0.00%	100%
Road 146	146	-	50	25.64054	Y	2100-2200	169	59.72%	32.22%	0.03%	2.73%	0.98%	0.18%	0.36%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.45%	0.09%	0.00%	100%
Road 146	146	-	50	25.78983	Y	2200-2300	166	55.73%	37.37%	0.03%	2.49%	0.89%	0.14%	0.27%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.82%	0.07%	0.00%	100%
Road 146	146	-	50	26.72303	Y	2300-0000	128	56.12%	35.19%	0.03%	2.75%	0.99%	0.21%	0.42%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.11%	0.11%	0.00%	100%
Road 205	205	-	50	27.95961	N	0000-0100	25	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 205	205	-	50	28.42026	N	0100-0200	19	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 205	205	-	50	28.64328	N	0200-0300	17	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 205	205	-	50	28.87411	N	0300-0400	14	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 205	205	-	50	28.82914	N	0400-0500	14	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 205	205	-	50	28.19225	N	0500-0600	22	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 205	205	-	50	24.89217	N	0600-0700	66	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 205	205	-	50	23.83035	N	0700-0800	129	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 205	205	-	50	24.06	N	0800-0900	117	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 205	205	-	50	22.94349	N	0900-1000	182	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 205	205	-	50	22.65076	N	1000-1100	198	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 205	205	-	50	23.04665	N	1100-1200	173	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 205	205	-	50	23.32861	N	1200-1300	157	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 205	205	-	50	22.96458	N	1300-1400	181	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 205	205	-	50	23.16643	N	1400-1500	166	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 205	205	-	50	23.03864	N	1500-1600	173	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 205	205	-	50	23.12011	N	1600-1700	173	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 205	205	-	50	23.99	N	1700-1800	123	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 205	205	-	50	24.52878	N	1800-1900	90	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 205	205	-	50	25.30325	N	1900-2000	60	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 205	205	-	50	26.09094	N	2000-2100	49	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 205	205	-	50	26.64021	N	2100-2200	42	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 205	205	-	50	27.09457	N	2200-2300	37	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 205	205	-	50	27.36597	N	2300-0000	33	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 206	206	-	50	27.37063	N	0000-0100	33	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 206	206	-	50	27.96425	N	0100-0200	25	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 206	206	-	50	28.25164	N	0200-0300	21	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 206	206	-	50	28.54911	N	0300-0400	18	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 206	206	-	50	28.49116	N	0400-0500	18	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 206	206	-	50	27.67043	N	0500-0600	28	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 206	206	-	50	24.57238	N	0600-0700	85	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 206	206	-	50	23.20406	N	0700-0800	167	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 206	206	-	50	23.5	N	0800-0900	150	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 206	206	-	50	22.06119	N	0900-1000	234	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 206	206	-	50	21.68396	N	1000-1100	256	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 206	206	-	50	22.19414	N	1100-1200	223	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 206	206	-	50	23.38177	N	1200-1300	154	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 206	206	-	50	23.02499	N	1300-1400	177	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 206	206	-	50	23.22282	N	1400-1500	163	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 206	206	-	50	23.09757	N	1500-1600	170	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 206	206	-	50	23.17742	N	1600-1700	170	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 206	206	-	50	24.03	N	1700-1800	121	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 206	206	-	50	24.55806	N	1800-1900	88	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 206	206	-	50	25.39672	N	1900-2000	59	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 206	206	-	50	26.16874	N	2000-2100	48	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 206	206	-	50	26.70708	N	2100-2200	42	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 206	206	-	50	27.15239	N	2200-2300	36	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 206	206	-	50	27.41839	N	2300-0000	32	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 207	207	-	50	26.24526	N	0000-0100	47	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 207	207	-	50	27.09295	N	0100-0200	36	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 207	207	-	50	27.50335	N	0200-0300	30	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 207	207	-	50	27.92812	N	0300-0400	25	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 207	207	-	50	27.84538	N	0400-0500	26	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 207	207	-	50	26.67337	N	0500-0600	40	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 207	207	-	50	23.96136	N	0600-0700	122	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 207	207	-	50	22.0074	N	0700-0800	238	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 207	207	-	50	22.43	N	0800-0900	215	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 207	207	-	50	20.37538	N	0900-1000	334	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 207	207	-	50	19.8367	N	1000-1100	365	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 207	207	-	50	20.56523	N	1100-1200	318	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 207	207	-	50	20.20533	N	1200-1300	340	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 207	207	-	50	19.41571	N	1300-1400	392	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 207	207	-	50	19.85355	N	1400-1500	360	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 207	207	-	50	19.57636	N	1500-1600	376	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 207	207	-	50	19.75307	N	1600-1700	376	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 207	207	-	50	21.64	N	1700-1800	267	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 207	207	-	50	22.80869	N	1800-1900	195	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 207	207	-	50	23.96241	N	1900-2000	131	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 207	207	-	50	24.30413	N	2000-2100	105	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 207	207	-	50	24.54242	N	2100-2200	92	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 207	207	-	50	24.73953	N	2200-2300	80	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 207	207	-	50	24.85728	N	2300-0000	72	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 208	208	-	50	25.31972	N	0000-0100	58	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 208	208	-	50	26.37636	N	0100-0200	45	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 208	208	-	50	26.88793	N	0200-0300	38	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 208	208	-	50	27.41741	N	0300-0400	31	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 208	208	-	50	27.31426	N	0400-0500	32	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 208	208	-	50	25.85336	N	0500-0600	50	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 208	208	-	50	23.45884	N	0600-0700	152	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 208	208	-	50	21.02324	N	0700-0800	297	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 208	208	-	50	21.55	N	0800-0900	268	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 208	208	-	50	18.98892	N	0900-1000	417	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 208	208	-	50	18.31745	N	1000-1100	455	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 208	208	-	50	19.22557	N	1100-1200	397	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 208	208	-	50	21.25528	N	1200-1300	279	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 208	208	-	50	20.60873	N	1300-1400	321	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 208	208	-	50	20.96724	N	1400-1500	295	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 208	208	-	50	20.74028	N	1500-1600	308	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 208	208	-	50	20.88497	N	1600-1700	308	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 208	208	-	50	22.43	N	1700-1800	218	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 208	208	-	50	23.38694	N	1800-1900	160	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 208	208	-	50	24.3316	N	1900-2000	107	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 208	208	-	50	24.61141	N	2000-2100	86	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 208	208	-	50	24.80652	N	2100-2200	75	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 208	208	-	50	24.96792	N	2200-2300	66	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 208	208	-	50	25.32164	N	2300-0000	59	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 209	209	-	50	29.5799	Y	0000-0100	8	59.56%	34.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.12%	0.95%	0.31%	0.21%	0.47%	0.00%	0.00%	3.60%	0.00%	0.00%	100%
Road 209	209	-	50	29.71393	Y	0100-0200	6	60.44%	32.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	1.39%	0.45%	0.31%	0.69%	0.00%	0.00%	3.93%	0.00%	0.00%	100%
Road 209	209	-	50	29.78151	Y	0200-0300	4	61.40%	30.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.24%	1.86%	0.61%	0.42%	0.92%	0.00%	0.00%	4.25%	0.00%	0.00%	100%
Road 209	209	-	50	29.8368	Y	0300-0400	3	62.30%	28.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	2.32%	0.76%	0.53%	1.16%	0.00%	0.00%	4.63%	0.00%	0.00%	100%
Road 209	209	-	50	29.84625	Y	0400-0500	3	63.32%	25.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	2.82%	0.92%	0.64%	1.40%	0.00%	0.00%	4.99%	0.00%	0.00%	100%
Road 209	209	-	50	29.78341	Y	0500-0600	4	64.37%	23.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	3.32%	1.09%	0.75%	1.65%	0.00%	0.00%	5.36%	0.00%	0.00%	100%
Road 209	209	-	50	29.39181	Y	0600-0700	12	65.54%	20.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	3.90%	1.27%	0.88%	1.93%	0.00%	0.00%	5.70%	0.00%	0.00%	100%
Road 209	209	-	50	28.90152	Y	0700-0800	21	66.69%	17.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.57%	4.46%	1.45%	1.00%	2.20%	0.00%	0.00%	6.09%	0.00%	0.00%	100%
Road 209	209	-	50	28.8	Y	0800-0900	23	69.14%	21.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.25%	1.96%	0.98%	0.68%	1.50%	0.00%	0.00%	4.34%	0.00%	0.00%	100%
Road 209	209	-	50	29.08959	Y	0900-1000	18	69.27%	22.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.21%	1.64%	0.77%	0.53%	1.17%	0.00%	0.00%	3.96%	0.00%	0.00%	100%
Road 209	209	-	50	29.18028	Y	1000-1100	16	65.13%	29.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	1.56%	0.30%	0.21%	0.46%	0.00%	0.00%	2.47%	0.00%	0.00%	100%
Road 209	209	-	50	29.20423	Y	1100-1200	16	66.09%	27.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.15%	1.18%	0.46%	0.32%	0.70%	0.00%	0.00%	3.40%	0.00%	0.00%	100%
Road 209	209	-	50	27.17792	Y	1200-1300	50	58.39%	20.25%	0.07%	6.68%	2.40%	1.43%	2.82%	0.00%	0.37%	2.86%	0.75%	0.52%	1.14%	0.00%	0.00%	1.57%	0.74%	0.00%	100%
Road 209	209	-	50	27.11368	Y	1300-1400	50	52.18%	21.56%	0.09%	8.15%	2.93%	1.48%	2.91%	0.00%	0.37%	2.89%	1.35%	0.94%	2.05%	0.00%	0.00%	2.34%	0.76%	0.00%	100%
Road 209	209	-	50	27.11542	Y	1400-1500	51	59.25%	18.36%	0.07%	6.79%	2.44%	1.50%	2.95%	0.00%	0.31%	2.41%	0.60%	0.42%	0.91%	0.00%	0.00%	3.21%	0.77%	0.00%	100%
Road 209	209	-	50	27.14332	Y	1500-1600	51	58.54%	21.05%	0.07%	7.04%	2.53%	1.60%	3.15%	0.00%	0.24%	1.89%	0.25%	0.17%	0.38%	0.00%	0.00%	2.27%	0.82%	0.00%	100%
Road 209	209	-	50	26.90641	Y	1600-1700	55	58.23%	20.12%	0.08%	7.38%	2.65%	1.12%	2.21%	0.00%	0.19%	1.45%	0.76%	0.53%	1.16%	0.00%	0.00%	3.55%	0.58%	0.00%	100%
Road 209	209	-	50	26.45	Y	1700-1800	67	66.84%	14.38%	0.05%	4.64%	1.66%	0.56%	1.09%	0.00%	0.15%	1.21%	0.78%	0.54%	1.18%	0.00%	0.00%	6.64%	0.29%	0.00%	100%
Road 209	209	-	50	26.43705	Y	1800-1900	68	72.01%	15.92%	0.03%	3.29%	1.18%	0.40%	0.79%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.27%	0.21%	0.00%	100%
Road 209	209	-	50	26.89554	Y	1900-2000	60	68.61%	21.70%	0.03%	2.96%	1.06%	0.13%	0.26%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.25%	0.07%	0.00%	100%
Road 209	209	-	50	27.46998	Y	2000-2100	49	66.68%	24.35%	0.03%	2.64%	0.95%	0.24%	0.47%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.12%	0.00%	100%
Road 209	209	-	50	27.60823	Y	2100-2200	46	59.90%	32.31%	0.03%	2.56%	0.92%	0.17%	0.33%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.46%	0.09%	0.00%	100%
Road 209	209	-	50	27.68905	Y	2200-2300	46	55.88%	37.46%	0.02%	2.33%	0.84%	0.13%	0.25%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.07%	0.00%	100%
Road 209	209	-	50	28.20247	Y	2300-0000	35	56.29%	35.30%	0.03%	2.57%	0.92%	0.20%	0.39%	0.00%	0.06%	0.49%	0.16%	0.11%	0.25%	0.00%	0.00%	3.12%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 210	210	-	50	27.89597	Y	0000-0100	42	59.19%	34.56%	0.00%	0.37%	0.13%	0.04%	0.07%	0.00%	0.12%	0.94%	0.31%	0.21%	0.47%	0.00%	0.00%	3.57%	0.02%	0.00%	100%
Road 210	210	-	50	28.56531	Y	0100-0200	28	60.01%	32.37%	0.00%	0.40%	0.14%	0.05%	0.09%	0.00%	0.18%	1.38%	0.45%	0.31%	0.69%	0.00%	0.00%	3.90%	0.02%	0.00%	100%
Road 210	210	-	50	28.90268	Y	0200-0300	21	60.91%	30.06%	0.00%	0.44%	0.16%	0.06%	0.11%	0.00%	0.24%	1.85%	0.60%	0.42%	0.91%	0.00%	0.00%	4.22%	0.03%	0.00%	100%
Road 210	210	-	50	29.17917	Y	0300-0400	16	61.75%	27.76%	0.01%	0.48%	0.17%	0.07%	0.13%	0.00%	0.29%	2.30%	0.75%	0.52%	1.14%	0.00%	0.00%	4.59%	0.03%	0.00%	100%
Road 210	210	-	50	29.22556	Y	0400-0500	15	62.70%	25.30%	0.01%	0.52%	0.19%	0.08%	0.15%	0.00%	0.36%	2.79%	0.91%	0.63%	1.39%	0.00%	0.00%	4.94%	0.04%	0.00%	100%
Road 210	210	-	50	28.90743	Y	0500-0600	21	63.68%	22.78%	0.01%	0.56%	0.20%	0.09%	0.17%	0.00%	0.42%	3.28%	1.07%	0.75%	1.64%	0.00%	0.00%	5.31%	0.04%	0.00%	100%
Road 210	210	-	50	26.92729	Y	0600-0700	58	64.77%	20.04%	0.01%	0.60%	0.22%	0.10%	0.20%	0.00%	0.49%	3.85%	1.25%	0.87%	1.91%	0.00%	0.00%	5.63%	0.05%	0.00%	100%
Road 210	210	-	50	24.8883	Y	0700-0800	104	65.84%	17.30%	0.01%	0.65%	0.23%	0.11%	0.22%	0.00%	0.56%	4.41%	1.43%	0.99%	2.18%	0.00%	0.00%	6.02%	0.06%	0.00%	100%
Road 210	210	-	50	24.79	Y	0800-0900	117	68.42%	20.92%	0.01%	0.54%	0.19%	0.08%	0.16%	0.00%	0.25%	1.94%	0.97%	0.67%	1.48%	0.00%	0.00%	4.30%	0.04%	0.00%	100%
Road 210	210	-	50	25.32834	Y	0900-1000	90	67.83%	21.98%	0.01%	1.04%	0.37%	0.19%	0.37%	0.00%	0.21%	1.60%	0.75%	0.52%	1.15%	0.00%	0.00%	3.88%	0.10%	0.00%	100%
Road 210	210	-	50	25.76289	Y	1000-1100	82	63.51%	28.94%	0.01%	1.22%	0.44%	0.23%	0.46%	0.00%	0.20%	1.52%	0.29%	0.20%	0.45%	0.00%	0.00%	2.41%	0.12%	0.00%	100%
Road 210	210	-	50	25.90207	Y	1100-1200	80	64.61%	27.08%	0.01%	1.04%	0.38%	0.23%	0.46%	0.00%	0.15%	1.15%	0.45%	0.31%	0.69%	0.00%	0.00%	3.32%	0.12%	0.00%	100%
Road 210	210	-	50	28.46399	Y	1200-1300	26	51.36%	17.81%	0.12%	11.56%	4.15%	2.48%	4.88%	0.00%	0.32%	2.52%	0.66%	0.46%	1.01%	0.00%	0.00%	1.38%	1.28%	0.00%	100%
Road 210	210	-	50	28.39934	Y	1300-1400	26	45.06%	18.62%	0.14%	13.86%	4.98%	2.52%	4.94%	0.00%	0.32%	2.50%	1.16%	0.81%	1.77%	0.00%	0.00%	2.02%	1.29%	0.00%	100%
Road 210	210	-	50	28.41989	Y	1400-1500	26	51.94%	16.10%	0.12%	11.72%	4.21%	2.59%	5.10%	0.00%	0.27%	2.11%	0.53%	0.36%	0.80%	0.00%	0.00%	2.81%	1.33%	0.00%	100%
Road 210	210	-	50	28.41998	Y	1500-1600	26	51.02%	18.35%	0.13%	12.08%	4.34%	2.75%	5.40%	0.00%	0.21%	1.64%	0.22%	0.15%	0.33%	0.00%	0.00%	1.98%	1.41%	0.00%	100%
Road 210	210	-	50	28.32096	Y	1600-1700	28	51.27%	17.72%	0.13%	12.79%	4.59%	1.95%	3.83%	0.00%	0.16%	1.28%	0.67%	0.46%	1.02%	0.00%	0.00%	3.13%	1.00%	0.00%	100%
Road 210	210	-	50	28.2	Y	1700-1800	32	61.87%	13.31%	0.09%	8.45%	3.03%	1.01%	1.99%	0.00%	0.14%	1.12%	0.72%	0.50%	1.09%	0.00%	0.00%	6.15%	0.52%	0.00%	100%
Road 210	210	-	50	28.2469	Y	1800-1900	33	68.12%	15.06%	0.06%	6.13%	2.20%	0.75%	1.47%	0.00%	0.02%	0.19%	0.49%	0.34%	0.75%	0.00%	0.00%	4.04%	0.38%	0.00%	100%
Road 210	210	-	50	28.50602	Y	1900-2000	28	65.75%	20.79%	0.06%	5.57%	2.00%	0.25%	0.48%	0.00%	0.03%	0.24%	0.50%	0.34%	0.76%	0.00%	0.00%	3.11%	0.13%	0.00%	100%
Road 210	210	-	50	28.78087	Y	2000-2100	23	63.92%	23.35%	0.05%	4.98%	1.79%	0.46%	0.89%	0.00%	0.01%	0.08%	0.44%	0.30%	0.67%	0.00%	0.00%	2.83%	0.23%	0.00%	100%
Road 210	210	-	50	28.85406	Y	2100-2200	22	57.62%	31.08%	0.05%	4.84%	1.74%	0.32%	0.63%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.00%	2.37%	0.16%	0.00%	100%
Road 210	210	-	50	28.89946	Y	2200-2300	21	53.98%	36.19%	0.05%	4.43%	1.59%	0.25%	0.48%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.73%	0.13%	0.00%	100%
Road 210	210	-	50	29.13664	Y	2300-0000	16	54.08%	33.91%	0.05%	4.86%	1.75%	0.38%	0.74%	0.00%	0.06%	0.47%	0.15%	0.11%	0.24%	0.00%	0.00%	2.99%	0.19%	0.00%	100%
Road 211	211	-	50	24.91249	N	0000-0100	67	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 211	211	-	50	25.79006	N	0100-0200	52	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 211	211	-	50	26.3844	N	0200-0300	44	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 211	211	-	50	26.99955	N	0300-0400	36	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 211	211	-	50	26.87972	N	0400-0500	38	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 211	211	-	50	25.18244	N	0500-0600	58	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 211	211	-	50	23.04768	N	0600-0700	177	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 211	211	-	50	20.21801	N	0700-0800	345	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 211	211	-	50	20.83	N	0800-0900	311	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 211	211	-	50	17.85455	N	0900-1000	484	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 211	211	-	50	17.07444	N	1000-1100	529	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 211	211	-	50	18.12948	N	1100-1200	461	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 211	211	-	50	17.97252	N	1200-1300	471	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 211	211	-	50	16.87864	N	1300-1400	543	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 211	211	-	50	17.4852	N	1400-1500	499	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 211	211	-	50	17.10119	N	1500-1600	520	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 211	211	-	50	17.346	N	1600-1700	521	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 211	211	-	50	19.96	N	1700-1800	370	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 211	211	-	50	21.57902	N	1800-1900	270	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 211	211	-	50	23.17728	N	1900-2000	181	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 211	211	-	50	23.65068	N	2000-2100	146	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 211	211	-	50	23.98079	N	2100-2200	128	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 211	211	-	50	24.25385	N	2200-2300	111	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 211	211	-	50	24.41696	N	2300-0000	99	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 212	212	-	50	24.72738	N	0000-0100	79	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 212	212	-	50	25.07348	N	0100-0200	61	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 212	212	-	50	25.76898	N	0200-0300	52	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 212	212	-	50	26.48884	N	0300-0400	43	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 212	212	-	50	26.34861	N	0400-0500	44	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 212	212	-	50	24.87249	N	0500-0600	68	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 212	212	-	50	22.54516	N	0600-0700	207	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 212	212	-	50	19.23384	N	0700-0800	404	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 212	212	-	50	19.95	N	0800-0900	364	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 212	212	-	50	16.46809	N	0900-1000	567	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 212	212	-	50	13.55355	N	1000-1100	619	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 212	212	-	50	16.78981	N	1100-1200	540	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 212	212	-	50	19.02248	N	1200-1300	410	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 212	212	-	50	18.07167	N	1300-1400	472	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 212	212	-	50	18.59889	N	1400-1500	434	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 212	212	-	50	18.26511	N	1500-1600	452	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 212	212	-	50	18.47789	N	1600-1700	453	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 212	212	-	50	20.75	N	1700-1800	321	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 212	212	-	50	22.15726	N	1800-1900	235	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 212	212	-	50	23.54647	N	1900-2000	158	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 212	212	-	50	23.95796	N	2000-2100	127	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 212	212	-	50	24.24489	N	2100-2200	111	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 212	212	-	50	24.48224	N	2200-2300	97	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 212	212	-	50	24.62401	N	2300-0000	86	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 213	213	-	50	24.90618	N	0000-0100	68	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 213	213	-	50	25.76564	N	0100-0200	52	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 213	213	-	50	26.36342	N	0200-0300	44	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 213	213	-	50	26.98214	N	0300-0400	37	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 213	213	-	50	26.86161	N	0400-0500	38	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 213	213	-	50	25.15449	N	0500-0600	58	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 213	213	-	50	23.03055	N	0600-0700	178	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 213	213	-	50	20.18445	N	0700-0800	347	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 213	213	-	50	20.8	N	0800-0900	313	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 213	213	-	50	17.80728	N	0900-1000	487	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 213	213	-	50	17.02264	N	1000-1100	532	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 213	213	-	50	18.08381	N	1100-1200	464	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 213	213	-	50	17.93265	N	1200-1300	474	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 213	213	-	50	16.83334	N	1300-1400	545	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 213	213	-	50	17.4429	N	1400-1500	501	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 213	213	-	50	17.05699	N	1500-1600	523	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 213	213	-	50	17.30301	N	1600-1700	524	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 213	213	-	50	19.93	N	1700-1800	371	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 213	213	-	50	21.55706	N	1800-1900	272	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 213	213	-	50	23.16326	N	1900-2000	182	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 213	213	-	50	23.63901	N	2000-2100	147	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 213	213	-	50	23.97076	N	2100-2200	128	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 213	213	-	50	24.24518	N	2200-2300	112	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 213	213	-	50	24.4091	N	2300-0000	100	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 214	214	-	50	24.72107	N	0000-0100	79	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 214	214	-	50	25.04905	N	0100-0200	61	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 214	214	-	50	25.748	N	0200-0300	52	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 214	214	-	50	26.47143	N	0300-0400	43	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 214	214	-	50	26.3305	N	0400-0500	44	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 214	214	-	50	24.86689	N	0500-0600	68	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 214	214	-	50	22.52803	N	0600-0700	208	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 214	214	-	50	19.20029	N	0700-0800	406	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 214	214	-	50	19.92	N	0800-0900	366	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 214	214	-	50	16.42082	N	0900-1000	570	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 214	214	-	50	13.26869	N	1000-1100	622	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 214	214	-	50	16.74414	N	1100-1200	542	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 214	214	-	50	18.9826	N	1200-1300	412	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 214	214	-	50	18.02636	N	1300-1400	474	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 214	214	-	50	18.5566	N	1400-1500	436	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 214	214	-	50	18.22091	N	1500-1600	455	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 214	214	-	50	18.43491	N	1600-1700	456	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 214	214	-	50	20.72	N	1700-1800	323	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 214	214	-	50	22.1353	N	1800-1900	236	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 214	214	-	50	23.53245	N	1900-2000	158	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 214	214	-	50	23.94629	N	2000-2100	128	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 214	214	-	50	24.23486	N	2100-2200	112	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 214	214	-	50	24.47356	N	2200-2300	97	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 214	214	-	50	24.61615	N	2300-0000	87	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 215	215	-	50	47.5319	N	0000-0100	234	46.74%	27.30%	0.13%	12.63%	4.54%	1.21%	2.39%	0.00%	0.10%	0.74%	0.24%	0.17%	0.37%	0.00%	0.00%	2.82%	0.62%	0.00%	100%
Road 215	215	-	50	48.24907	N	0100-0200	163	46.10%	24.87%	0.14%	13.49%	4.84%	1.51%	2.97%	0.00%	0.14%	1.06%	0.35%	0.24%	0.53%	0.00%	0.00%	3.00%	0.77%	0.00%	100%
Road 215	215	-	50	48.60724	N	0200-0300	127	45.50%	22.45%	0.15%	14.33%	5.15%	1.80%	3.54%	0.00%	0.18%	1.38%	0.45%	0.31%	0.68%	0.00%	0.00%	3.15%	0.93%	0.00%	100%
Road 215	215	-	50	48.91812	N	0300-0400	97	44.87%	20.17%	0.16%	15.17%	5.45%	2.07%	4.07%	0.00%	0.21%	1.67%	0.55%	0.38%	0.83%	0.00%	0.00%	3.34%	1.06%	0.00%	100%
Road 215	215	-	50	48.94008	N	0400-0500	94	44.29%	17.87%	0.17%	15.99%	5.74%	2.35%	4.61%	0.00%	0.25%	1.97%	0.64%	0.45%	0.98%	0.00%	0.00%	3.49%	1.21%	0.00%	100%
Road 215	215	-	50	48.44842	N	0500-0600	135	43.72%	15.64%	0.18%	16.79%	6.03%	2.61%	5.14%	0.00%	0.29%	2.25%	0.74%	0.51%	1.12%	0.00%	0.00%	3.64%	1.34%	0.00%	100%
Road 215	215	-	50	45.47217	N	0600-0700	388	43.20%	13.37%	0.18%	17.52%	6.29%	2.90%	5.71%	0.00%	0.33%	2.57%	0.83%	0.58%	1.27%	0.00%	0.00%	3.76%	1.49%	0.00%	100%
Road 215	215	-	50	41.5105	N	0700-0800	717	42.65%	11.21%	0.19%	18.27%	6.56%	3.17%	6.22%	0.00%	0.37%	2.85%	0.93%	0.64%	1.41%	0.00%	0.00%	3.90%	1.63%	0.00%	100%
Road 215	215	-	50	41.5202	N	0800-0900	746	47.54%	14.54%	0.17%	16.40%	5.89%	2.52%	4.96%	0.00%	0.17%	1.35%	0.68%	0.47%	1.03%	0.00%	0.00%	2.99%	1.30%	0.00%	100%
Road 215	215	-	50	40.64056	N	0900-1000	754	35.99%	11.66%	0.25%	23.97%	8.61%	4.38%	8.60%	0.00%	0.11%	0.85%	0.40%	0.28%	0.61%	0.00%	0.00%	2.06%	2.25%	0.00%	100%
Road 215	215	-	50	40.47017	N	1000-1100	753	30.89%	14.07%	0.27%	25.79%	9.26%	4.96%	9.75%	0.00%	0.09%	0.74%	0.14%	0.10%	0.22%	0.00%	0.00%	1.17%	2.55%	0.00%	100%
Road 215	215	-	50	41.29893	N	1100-1200	691	33.11%	13.88%	0.24%	23.29%	8.36%	5.18%	10.18%	0.00%	0.08%	0.59%	0.23%	0.16%	0.35%	0.00%	0.00%	1.70%	2.66%	0.00%	100%
Road 215	215	-	50	42.78382	N	1200-1300	616	45.12%	15.65%	0.17%	15.89%	5.71%	3.41%	6.71%	0.00%	0.28%	2.21%	0.58%	0.40%	0.88%	0.00%	0.00%	1.22%	1.75%	0.00%	100%
Road 215	215	-	50	42.36895	N	1300-1400	636	38.96%	16.10%	0.20%	18.75%	6.73%	3.40%	6.69%	0.00%	0.28%	2.16%	1.01%	0.70%	1.53%	0.00%	0.00%	1.75%	1.75%	0.00%	100%
Road 215	215	-	50	42.53886	N	1400-1500	639	45.50%	14.10%	0.17%	16.07%	5.77%	3.55%	6.99%	0.00%	0.24%	1.85%	0.46%	0.32%	0.70%	0.00%	0.00%	2.46%	1.83%	0.00%	100%
Road 215	215	-	50	42.48276	N	1500-1600	643	44.47%	15.99%	0.17%	16.48%	5.92%	3.74%	7.36%	0.00%	0.18%	1.43%	0.19%	0.13%	0.29%	0.00%	0.00%	1.72%	1.92%	0.00%	100%
Road 215	215	-	50	42.12965	N	1600-1700	686	45.08%	15.58%	0.18%	17.60%	6.32%	2.68%	5.27%	0.00%	0.14%	1.12%	0.59%	0.41%	0.90%	0.00%	0.00%	2.75%	1.38%	0.00%	100%
Road 215	215	-	50	42.03864	N	1700-1800	747	57.01%	12.27%	0.13%	12.18%	4.37%	1.46%	2.87%	0.00%	0.13%	1.03%	0.66%	0.46%	1.01%	0.00%	0.00%	5.67%	0.75%	0.00%	100%
Road 215	215	-	50	42.46095	N	1800-1900	734	64.14%	14.18%	0.09%	9.04%	3.25%	1.10%	2.16%	0.00%	0.02%	0.17%	0.46%	0.32%	0.70%	0.00%	0.00%	3.80%	0.56%	0.00%	100%
Road 215	215	-	50	43.71421	N	1900-2000	629	62.74%	19.84%	0.09%	8.32%	2.99%	0.37%	0.72%	0.00%	0.03%	0.22%	0.47%	0.33%	0.72%	0.00%	0.00%	2.97%	0.19%	0.00%	100%
Road 215	215	-	50	44.86387	N	2000-2100	512	61.03%	22.29%	0.08%	7.44%	2.67%	0.68%	1.34%	0.00%	0.01%	0.08%	0.42%	0.29%	0.64%	0.00%	0.00%	2.70%	0.35%	0.00%	100%
Road 215	215	-	50	45.20001	N	2100-2200	483	55.20%	29.78%	0.08%	7.26%	2.61%	0.48%	0.94%	0.00%	0.01%	0.08%	0.33%	0.23%	0.50%	0.00%	0.00%	2.27%	0.25%	0.00%	100%
Road 215	215	-	50	45.41854	N	2200-2300	469	51.95%	34.83%	0.07%	6.67%	2.39%	0.37%	0.73%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.63%	0.19%	0.00%	100%
Road 215	215	-	50	46.37457	N	2300-0000	366	51.75%	32.45%	0.08%	7.28%	2.62%	0.57%	1.11%	0.00%	0.06%	0.45%	0.15%	0.10%	0.23%	0.00%	0.00%	2.87%	0.29%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 216	216	-	50	48.9002	N	0000-0100	37	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 216	216	-	50	49.1485	N	0100-0200	28	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 216	216	-	50	49.26871	N	0200-0300	24	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 216	216	-	50	49.39313	N	0300-0400	20	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 216	216	-	50	49.36889	N	0400-0500	21	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 216	216	-	50	49.0256	N	0500-0600	32	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 216	216	-	50	47.01431	N	0600-0700	97	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 216	216	-	50	44.15265	N	0700-0800	188	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 216	216	-	50	44.77156	N	0800-0900	170	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 216	216	-	50	41.76248	N	0900-1000	264	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 216	216	-	50	40.97355	N	1000-1100	289	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 216	216	-	50	42.04052	N	1100-1200	252	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 216	216	-	50	45.15083	N	1200-1300	154	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 216	216	-	50	44.49005	N	1300-1400	177	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 216	216	-	50	44.85645	N	1400-1500	163	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 216	216	-	50	44.62449	N	1500-1600	170	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 216	216	-	50	44.77236	N	1600-1700	170	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 216	216	-	50	46.35141	N	1700-1800	121	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 216	216	-	50	47.32941	N	1800-1900	88	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 216	216	-	50	48.29487	N	1900-2000	59	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 216	216	-	50	48.58084	N	2000-2100	48	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 216	216	-	50	48.78025	N	2100-2200	42	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 216	216	-	50	48.9452	N	2200-2300	36	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 216	216	-	50	49.04373	N	2300-0000	32	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 217	217	-	50	49.07417	N	0000-0100	31	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 217	217	-	50	49.28319	N	0100-0200	24	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 217	217	-	50	49.38439	N	0200-0300	20	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 217	217	-	50	49.48912	N	0300-0400	17	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 217	217	-	50	49.46872	N	0400-0500	17	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 217	217	-	50	49.17973	N	0500-0600	27	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 217	217	-	50	47.4866	N	0600-0700	81	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 217	217	-	50	45.07761	N	0700-0800	159	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 217	217	-	50	45.59862	N	0800-0900	143	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 217	217	-	50	43.06552	N	0900-1000	223	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 217	217	-	50	42.40138	N	1000-1100	243	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 217	217	-	50	43.29958	N	1100-1200	212	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 217	217	-	50	39.90846	N	1200-1300	322	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 217	217	-	50	39.13676	N	1300-1400	371	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 217	217	-	50	39.56467	N	1400-1500	341	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 217	217	-	50	39.29376	N	1500-1600	356	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 217	217	-	50	39.46646	N	1600-1700	356	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 217	217	-	50	42.35207	N	1700-1800	253	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 217	217	-	50	44.40209	N	1800-1900	185	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 217	217	-	50	46.42583	N	1900-2000	124	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 217	217	-	50	47.02525	N	2000-2100	100	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 217	217	-	50	47.44324	N	2100-2200	87	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 217	217	-	50	47.789	N	2200-2300	76	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 217	217	-	50	47.99553	N	2300-0000	68	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 218	218	-	50	48.01235	N	0000-0100	67	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 218	218	-	50	48.46109	N	0100-0200	51	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 218	218	-	50	48.67835	N	0200-0300	44	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 218	218	-	50	48.90321	N	0300-0400	36	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 218	218	-	50	48.85941	N	0400-0500	37	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 218	218	-	50	48.23898	N	0500-0600	57	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 218	218	-	50	44.60402	N	0600-0700	174	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 218	218	-	50	39.68376	N	0700-0800	341	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 218	218	-	50	40.55074	N	0800-0900	307	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 218	218	-	50	37.27703	N	0900-1000	478	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 218	218	-	50	36.48264	N	1000-1100	522	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 218	218	-	50	37.55699	N	1100-1200	455	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 218	218	-	50	38.89028	N	1200-1300	380	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 218	218	-	50	37.97983	N	1300-1400	438	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 218	218	-	50	38.48467	N	1400-1500	403	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 218	218	-	50	38.16507	N	1500-1600	420	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 218	218	-	50	38.36882	N	1600-1700	421	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 218	218	-	50	40.97704	N	1700-1800	298	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 218	218	-	50	43.39564	N	1800-1900	218	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 218	218	-	50	45.78323	N	1900-2000	146	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 218	218	-	50	46.49042	N	2000-2100	118	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 218	218	-	50	46.98356	N	2100-2200	103	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 218	218	-	50	47.39148	N	2200-2300	90	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 218	218	-	50	47.63515	N	2300-0000	80	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 219	219	-	50	49.61143	N	0000-0100	13	0.00%	0.00%	0.61%	58.69%	21.07%	5.64%	11.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	100%
Road 219	219	-	50	49.69916	N	0100-0200	10	0.00%	0.00%	0.59%	56.86%	20.42%	6.36%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	0.00%	100%
Road 219	219	-	50	49.74163	N	0200-0300	9	0.00%	0.00%	0.58%	55.33%	19.87%	6.96%	13.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	100%
Road 219	219	-	50	49.78559	N	0300-0400	7	0.00%	0.00%	0.57%	54.21%	19.47%	7.40%	14.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.80%	0.00%	100%
Road 219	219	-	50	49.77702	N	0400-0500	7	0.00%	0.00%	0.56%	53.18%	19.10%	7.81%	15.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.01%	0.00%	100%
Road 219	219	-	50	49.65573	N	0500-0600	11	0.00%	0.00%	0.55%	52.33%	18.79%	8.14%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.18%	0.00%	100%
Road 219	219	-	50	48.94513	N	0600-0700	34	0.00%	0.00%	0.54%	51.38%	18.45%	8.52%	16.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%	0.00%	100%
Road 219	219	-	50	47.93407	N	0700-0800	67	0.00%	0.00%	0.53%	50.70%	18.20%	8.79%	17.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.51%	0.00%	100%
Road 219	219	-	50	48.15274	N	0800-0900	60	0.00%	0.00%	0.55%	52.51%	18.86%	8.07%	15.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%	100%
Road 219	219	-	50	47.0896	N	0900-1000	93	0.00%	0.00%	0.52%	49.88%	17.91%	9.11%	17.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.68%	0.00%	100%
Road 219	219	-	50	46.81086	N	1000-1100	102	0.00%	0.00%	0.51%	49.06%	17.62%	9.43%	18.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.84%	0.00%	100%
Road 219	219	-	50	47.18783	N	1100-1200	89	0.00%	0.00%	0.49%	46.67%	16.76%	10.37%	20.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.33%	0.00%	100%
Road 219	219	-	50	48.94732	N	1200-1300	33	0.00%	0.00%	0.49%	47.23%	16.96%	10.15%	19.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.21%	0.00%	100%
Road 219	219	-	50	48.80387	N	1300-1400	38	0.00%	0.00%	0.52%	49.97%	17.95%	9.07%	17.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%	0.00%	100%
Road 219	219	-	50	48.88341	N	1400-1500	35	0.00%	0.00%	0.49%	46.75%	16.79%	10.34%	20.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.31%	0.00%	100%
Road 219	219	-	50	48.83306	N	1500-1600	37	0.00%	0.00%	0.48%	46.29%	16.62%	10.52%	20.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.40%	0.00%	100%
Road 219	219	-	50	48.86516	N	1600-1700	37	0.00%	0.00%	0.55%	52.65%	18.91%	8.02%	15.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.12%	0.00%	100%
Road 219	219	-	50	49.20795	N	1700-1800	26	0.00%	0.00%	0.58%	55.97%	20.10%	6.71%	13.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	100%
Road 219	219	-	50	49.42026	N	1800-1900	19	0.00%	0.00%	0.58%	55.79%	20.03%	6.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.48%	0.00%	100%
Road 219	219	-	50	49.62984	N	1900-2000	13	0.00%	0.00%	0.69%	65.66%	23.58%	2.89%	5.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	100%
Road 219	219	-	50	49.69192	N	2000-2100	10	0.00%	0.00%	0.62%	59.25%	21.28%	5.42%	10.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	100%
Road 219	219	-	50	49.73521	N	2100-2200	9	0.00%	0.00%	0.65%	62.51%	22.45%	4.14%	8.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	0.00%	100%
Road 219	219	-	50	49.77102	N	2200-2300	8	0.00%	0.00%	0.67%	64.00%	22.98%	3.55%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.82%	0.00%	100%
Road 219	219	-	50	49.79241	N	2300-0000	7	0.00%	0.00%	0.64%	60.97%	21.89%	4.74%	9.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	100%
Road 220	220	-	50	48.01227	N	0000-0100	94	46.34%	27.06%	0.13%	12.74%	4.58%	1.22%	2.41%	0.00%	0.09%	0.74%	0.24%	0.17%	0.37%	0.01%	0.48%	2.80%	0.63%	0.00%	100%
Road 220	220	-	50	48.58972	N	0100-0200	65	45.69%	24.64%	0.14%	13.60%	4.88%	1.52%	2.99%	0.00%	0.13%	1.05%	0.34%	0.24%	0.52%	0.01%	0.48%	2.97%	0.78%	0.00%	100%
Road 220	220	-	50	48.87825	N	0200-0300	51	45.08%	22.25%	0.15%	14.45%	5.19%	1.82%	3.57%	0.00%	0.18%	1.37%	0.44%	0.31%	0.68%	0.01%	0.46%	3.12%	0.93%	0.00%	100%
Road 220	220	-	50	49.12845	N	0300-0400	39	44.44%	19.98%	0.16%	15.29%	5.49%	2.09%	4.11%	0.00%	0.21%	1.66%	0.54%	0.38%	0.82%	0.01%	0.46%	3.30%	1.07%	0.00%	100%
Road 220	220	-	50	49.14614	N	0400-0500	38	43.85%	17.70%	0.17%	16.11%	5.78%	2.37%	4.65%	0.00%	0.25%	1.95%	0.64%	0.44%	0.97%	0.01%	0.45%	3.45%	1.21%	0.00%	100%
Road 220	220	-	50	48.75	N	0500-0600	54	43.28%	15.48%	0.18%	16.92%	6.08%	2.63%	5.17%	0.00%	0.29%	2.23%	0.73%	0.51%	1.11%	0.01%	0.44%	3.61%	1.35%	0.00%	100%
Road 220	220	-	50	46.35305	N	0600-0700	155	42.76%	13.23%	0.18%	17.65%	6.34%	2.92%	5.75%	0.00%	0.33%	2.54%	0.83%	0.57%	1.26%	0.01%	0.41%	3.72%	1.50%	0.00%	100%
Road 220	220	-	50	43.16217	N	0700-0800	287	42.21%	11.09%	0.19%	18.40%	6.61%	3.19%	6.27%	0.00%	0.36%	2.82%	0.92%	0.64%	1.40%	0.01%	0.40%	3.86%	1.64%	0.00%	100%
Road 220	220	-	50	43.18375	N	0800-0900	298	47.12%	14.41%	0.17%	16.55%	5.94%	2.54%	5.00%	0.00%	0.17%	1.34%	0.67%	0.46%	1.02%	0.01%	0.33%	2.96%	1.31%	0.00%	100%
Road 220	220	-	50	42.45433	N	0900-1000	302	35.56%	11.52%	0.25%	24.10%	8.65%	4.40%	8.65%	0.00%	0.11%	0.84%	0.39%	0.27%	0.60%	0.01%	0.35%	2.03%	2.26%	0.00%	100%
Road 220	220	-	50	42.31094	N	1000-1100	302	30.49%	13.89%	0.27%	25.91%	9.30%	4.98%	9.79%	0.00%	0.09%	0.73%	0.14%	0.10%	0.21%	0.02%	0.35%	1.16%	2.56%	0.00%	100%
Road 220	220	-	50	42.98655	N	1100-1200	277	32.71%	13.71%	0.24%	23.42%	8.41%	5.20%	10.23%	0.00%	0.07%	0.58%	0.23%	0.16%	0.35%	0.00%	0.32%	1.68%	2.67%	0.00%	100%
Road 220	220	-	50	47.71659	N	1200-1300	92	37.65%	13.06%	0.22%	20.64%	7.41%	4.43%	8.72%	0.00%	0.24%	1.84%	0.48%	0.34%	0.74%	0.04%	0.90%	1.01%	2.28%	0.00%	100%
Road 220	220	-	50	47.54801	N	1300-1400	96	31.91%	13.18%	0.25%	23.91%	8.58%	4.34%	8.53%	0.00%	0.23%	1.77%	0.82%	0.57%	1.26%	0.05%	0.94%	1.43%	2.23%	0.00%	100%
Road 220	220	-	50	47.62714	N	1400-1500	95	37.83%	11.73%	0.22%	20.80%	7.47%	4.60%	9.04%	0.00%	0.20%	1.54%	0.38%	0.27%	0.58%	0.02%	0.91%	2.05%	2.36%	0.00%	100%
Road 220	220	-	50	47.59088	N	1500-1600	97	36.77%	13.22%	0.22%	21.21%	7.61%	4.82%	9.47%	0.00%	0.15%	1.18%	0.16%	0.11%	0.24%	0.02%	0.92%	1.42%	2.47%	0.00%	100%
Road 220	220	-	50	47.51148	N	1600-1700	102	37.63%	13.01%	0.24%	22.86%	8.21%	3.48%	6.84%	0.00%	0.12%	0.94%	0.49%	0.34%	0.75%	0.03%	0.98%	2.30%	1.79%	0.00%	100%
Road 220	220	-	50	47.63717	N	1700-1800	105	50.37%	10.84%	0.17%	16.75%	6.01%	2.01%	3.95%	0.00%	0.12%	0.91%	0.58%	0.41%	0.89%	0.01%	0.94%	5.01%	1.03%	0.00%	100%
Road 220	220	-	50	47.83041	N	1800-1900	100	58.21%	12.87%	0.13%	12.77%	4.58%	1.55%	3.05%	0.00%	0.02%	0.16%	0.42%	0.29%	0.64%	0.01%	1.05%	3.45%	0.80%	0.00%	100%
Road 220	220	-	50	48.22972	N	1900-2000	85	57.85%	18.29%	0.12%	11.95%	4.29%	0.53%	1.04%	0.00%	0.03%	0.21%	0.44%	0.30%	0.66%	0.05%	1.24%	2.74%	0.27%	0.00%	100%
Road 220	220	-	50	48.55018	N	2000-2100	69	56.29%	20.56%	0.11%	10.68%	3.83%	0.98%	1.92%	0.00%	0.01%	0.07%	0.39%	0.27%	0.59%	0.02%	1.30%	2.49%	0.50%	0.00%	100%
Road 220	220	-	50	48.6497	N	2100-2200	65	51.07%	27.55%	0.11%	10.46%	3.75%	0.69%	1.36%	0.00%	0.01%	0.07%	0.30%	0.21%	0.46%	0.02%	1.48%	2.10%	0.36%	0.00%	100%
Road 220	220	-	50	48.72374	N	2200-2300	63	48.41%	32.46%	0.10%	9.67%	3.47%	0.54%	1.05%	0.00%	0.01%	0.07%	0.03%	0.02%	0.04%	0.02%	1.38%	2.45%	0.28%	0.00%	100%
Road 220	220	-	50	48.97936	N	2300-0000	49	47.85%	30.01%	0.11%	10.48%	3.76%	0.82%	1.60%	0.00%	0.05%	0.42%	0.14%	0.09%	0.21%	0.02%	1.36%	2.65%	0.42%	0.00%	100%
Road 221	221	-	50	46.27646	N	0000-0100	367	50.80%	29.67%	0.09%	8.56%	3.07%	0.82%	1.62%	0.00%	0.10%	0.81%	0.26%	0.18%	0.40%	0.00%	0.12%	3.07%	0.42%	0.00%	100%
Road 221	221	-	50	47.38994	N	0100-0200	253	50.56%	27.27%	0.10%	9.22%	3.31%	1.03%	2.03%	0.00%	0.15%	1.17%	0.38%	0.26%	0.58%	0.00%	0.12%	3.29%	0.53%	0.00%	100%
Road 221	221	-	50	47.94779	N	0200-0300	196	50.35%	24.85%	0.10%	9.89%	3.55%	1.24%	2.45%	0.00%	0.20%	1.53%	0.50%	0.34%	0.76%	0.00%	0.12%	3.49%	0.64%	0.00%	100%
Road 221	221	-	50	48.42297	N	0300-0400	148	50.09%	22.52%	0.11%	10.56%	3.79%	1.44%	2.84%	0.00%	0.24%	1.87%	0.61%	0.42%	0.93%	0.00%	0.12%	3.72%	0.74%	0.00%	100%
Road 221	221	-	50	48.47118	N	0400-0500	142	49.88%	20.13%	0.12%	11.23%	4.03%	1.65%	3.24%	0.00%	0.28%	2.22%	0.72%	0.50%	1.10%	0.00%	0.12%	3.93%	0.85%	0.00%	100%
Road 221	221	-	50	47.78438	N	0500-0600	202	49.66%	17.76%	0.12%	11.90%	4.27%	1.85%	3.64%	0.00%	0.33%	2.56%	0.84%	0.58%	1.28%	0.00%	0.12%	4.14%	0.95%	0.00%	100%
Road 221	221	-	50	43.59778	N	0600-0700	575	49.50%	15.32%	0.13%	12.52%	4.50%	2.07%	4.08%	0.00%	0.38%	2.95%	0.96%	0.66%	1.46%	0.00%	0.11%	4.31%	1.07%	0.00%	100%
Road 221	221	-	50	38.9452	N	0700-0800	1054	49.29%	12.95%	0.14%	13.17%	4.73%	2.28%	4.49%	0.00%	0.42%	3.30%	1.07%	0.74%	1.63%	0.00%	0.11%	4.51%	1.17%	0.00%	100%
Road 221	221	-	50	38.80546	N	0800-0900	1119	53.83%	16.46%	0.12%	11.58%	4.16%	1.78%	3.50%	0.00%	0.20%	1.53%	0.76%	0.53%	1.17%	0.00%	0.09%	3.38%	0.91%	0.00%	100%
Road 221	221	-	50	38.70634	N	0900-1000	1051	43.89%	14.22%	0.19%	18.23%	6.54%	3.33%	6.54%	0.00%	0.13%	1.04%	0.49%	0.34%	0.74%	0.00%	0.10%	2.51%	1.71%	0.00%	100%
Road 221	221	-	50	38.73742	N	1000-1100	1027	38.47%	17.53%	0.21%	20.03%	7.19%	3.85%	7.57%	0.00%	0.12%	0.92%	0.18%	0.12%	0.27%	0.00%	0.10%	1.46%	1.98%	0.00%	100%
Road 221	221	-	50	39.26408	N	1100-1200	955	40.72%	17.07%	0.19%	17.87%	6.42%	3.97%	7.81%	0.00%	0.09%	0.73%	0.28%	0.20%	0.43%	0.00%	0.09%	2.09%	2.04%	0.00%	100%
Road 221	221	-	50	39.91358	N	1200-1300	890	48.48%	16.82%	0.14%	13.51%	4.85%	2.90%	5.71%	0.00%	0.30%	2.38%	0.62%	0.43%	0.95%	0.00%	0.09%	1.31%	1.49%	0.00%	100%
Road 221	221	-	50	39.63426	N	1300-1400	910	42.22%	17.45%	0.17%	16.08%	5.77%	2.92%	5.74%	0.00%	0.30%	2.34%	1.09%	0.76%	1.66%	0.01%	0.10%	1.89%	1.50%	0.00%	100%
Road 221	221	-	50	39.73733	N	1400-1500	920	48.96%	15.17%	0.14%	13.68%	4.91%	3.03%	5.95%	0.00%	0.26%	1.99%	0.50%	0.34%	0.75%	0.00%	0.09%	2.65%	1.55%	0.00%	100%
Road 221	221	-	50	39.71685	N	1500-1600	924	47.99%	17.26%	0.15%	14.07%	5.05%	3.20%	6.29%	0.00%	0.20%	1.55%	0.20%	0.14%	0.31%	0.00%	0.10%	1.86%	1.64%	0.00%	100%
Road 221	221	-	50	39.39217	N	1600-1700	991	48.41%	16.73%	0.16%	14.95%	5.37%	2.28%	4.48%	0.00%	0.15%	1.20%	0.63%	0.44%	0.96%	0.00%	0.10%	2.96%	1.17%	0.00%	100%
Road 221	221	-	50	39.12185	N	1700-1800	1107	59.67%	12.84%	0.11%	10.09%	3.62%	1.21%	2.38%	0.00%	0.14%	1.08%	0.69%	0.48%	1.05%	0.00%	0.09%	5.93%	0.62%	0.00%	100%
Road 221	221	-	50	39.36716	N	1800-1900	1101	66.32%	14.66%	0.08%	7.39%	2.66%	0.90%	1.77%	0.00%	0.02%	0.18%	0.48%	0.33%	0.73%	0.00%	0.10%	3.93%	0.46%	0.00%	100%
Road 221	221	-	50	40.59638	N	1900-2000	951	64.37%	20.36%	0.07%	6.76%	2.43%	0.30%	0.59%	0.00%	0.03%	0.23%	0.49%	0.34%	0.74%	0.00%	0.11%	3.05%	0.15%	0.00%	100%
Road 221	221	-	50	42.32149	N	2000-2100	774	62.60%	22.86%	0.06%	6.04%	2.17%	0.55%	1.08%	0.00%	0.01%	0.08%	0.43%	0.30%	0.65%	0.00%	0.12%	2.77%	0.28%	0.00%	100%
Road 221	221	-	50	42.79811	N	2100-2200	732	56.50%	30.48%	0.06%	5.88%	2.11%	0.39%	0.76%	0.00%	0.01%	0.08%	0.33%	0.23%	0.51%	0.00%	0.13%	2.32%	0.20%	0.00%	100%
Road 221	221	-	50	43.1033	N	2200-2300	713	53.03%	35.56%	0.06%	5.39%	1.93%	0.30%	0.59%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.12%	2.68%	0.15%	0.00%	100%
Road 221	221	-	50	44.5693	N	2300-0000	554	53.01%	33.24%	0.06%	5.90%	2.12%	0.46%	0.90%	0.00%	0.06%	0.46%	0.15%	0.11%	0.23%	0.00%	0.12%	2.94%	0.24%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 222	222	-	50	46.86325	N	0000-0100	312	51.93%	30.33%	0.08%	7.43%	2.67%	0.71%	1.40%	0.00%	0.11%	0.83%	0.27%	0.19%	0.41%	0.00%	0.15%	3.14%	0.37%	0.00%	100%
Road 222	222	-	50	47.80895	N	0100-0200	215	51.81%	27.95%	0.08%	8.03%	2.88%	0.90%	1.77%	0.00%	0.15%	1.19%	0.39%	0.27%	0.59%	0.00%	0.14%	3.37%	0.46%	0.00%	100%
Road 222	222	-	50	48.28316	N	0200-0300	166	51.74%	25.53%	0.09%	8.63%	3.10%	1.09%	2.13%	0.00%	0.20%	1.57%	0.51%	0.35%	0.78%	0.00%	0.14%	3.58%	0.56%	0.00%	100%
Road 222	222	-	50	48.68496	N	0300-0400	125	51.59%	23.19%	0.10%	9.24%	3.32%	1.26%	2.48%	0.00%	0.25%	1.92%	0.63%	0.44%	0.96%	0.00%	0.14%	3.84%	0.65%	0.00%	100%
Road 222	222	-	50	48.72925	N	0400-0500	119	51.51%	20.79%	0.10%	9.85%	3.54%	1.45%	2.84%	0.00%	0.29%	2.29%	0.75%	0.52%	1.14%	0.00%	0.14%	4.06%	0.74%	0.00%	100%
Road 222	222	-	50	48.16409	N	0500-0600	170	51.41%	18.39%	0.11%	10.46%	3.76%	1.63%	3.20%	0.00%	0.34%	2.65%	0.87%	0.60%	1.32%	0.00%	0.14%	4.28%	0.84%	0.00%	100%
Road 222	222	-	50	44.7113	N	0600-0700	482	51.38%	15.90%	0.12%	11.04%	3.96%	1.83%	3.60%	0.00%	0.39%	3.06%	0.99%	0.69%	1.51%	0.00%	0.13%	4.47%	0.94%	0.00%	100%
Road 222	222	-	50	40.20392	N	0700-0800	881	51.29%	13.48%	0.12%	11.64%	4.18%	2.02%	3.96%	0.00%	0.44%	3.43%	1.11%	0.77%	1.70%	0.00%	0.13%	4.69%	1.04%	0.00%	100%
Road 222	222	-	50	39.95961	N	0800-0900	942	55.67%	17.02%	0.11%	10.17%	3.65%	1.56%	3.07%	0.00%	0.20%	1.58%	0.79%	0.55%	1.20%	0.00%	0.10%	3.50%	0.80%	0.00%	100%
Road 222	222	-	50	40.05863	N	0900-1000	865	46.44%	15.05%	0.17%	16.38%	5.88%	2.99%	5.88%	0.00%	0.14%	1.10%	0.51%	0.36%	0.78%	0.00%	0.12%	2.66%	1.54%	0.00%	100%
Road 222	222	-	50	40.1822	N	1000-1100	839	40.98%	18.67%	0.19%	18.12%	6.51%	3.48%	6.85%	0.00%	0.13%	0.98%	0.19%	0.13%	0.29%	0.01%	0.12%	1.56%	1.79%	0.00%	100%
Road 222	222	-	50	40.90374	N	1100-1200	783	43.21%	18.11%	0.17%	16.10%	5.78%	3.58%	7.04%	0.00%	0.10%	0.77%	0.30%	0.21%	0.46%	0.00%	0.11%	2.22%	1.84%	0.00%	100%
Road 222	222	-	50	46.05439	N	1200-1300	359	53.23%	18.46%	0.11%	10.15%	3.64%	2.18%	4.29%	0.00%	0.33%	2.61%	0.69%	0.48%	1.04%	0.01%	0.23%	1.44%	1.12%	0.00%	100%
Road 222	222	-	50	45.90783	N	1300-1400	363	46.94%	19.39%	0.13%	12.23%	4.39%	2.22%	4.36%	0.00%	0.33%	2.60%	1.21%	0.84%	1.85%	0.01%	0.25%	2.11%	1.14%	0.00%	100%
Road 222	222	-	50	45.94809	N	1400-1500	370	53.88%	16.70%	0.11%	10.30%	3.70%	2.28%	4.48%	0.00%	0.28%	2.19%	0.55%	0.38%	0.83%	0.01%	0.23%	2.92%	1.17%	0.00%	100%
Road 222	222	-	50	45.95847	N	1500-1600	370	53.02%	19.07%	0.11%	10.63%	3.82%	2.42%	4.75%	0.00%	0.22%	1.71%	0.22%	0.16%	0.34%	0.01%	0.24%	2.05%	1.24%	0.00%	100%
Road 222	222	-	50	45.68183	N	1600-1700	400	53.11%	18.36%	0.12%	11.22%	4.03%	1.71%	3.36%	0.00%	0.17%	1.32%	0.69%	0.48%	1.06%	0.01%	0.25%	3.24%	0.88%	0.00%	100%
Road 222	222	-	50	45.28454	N	1700-1800	463	63.20%	13.60%	0.08%	7.31%	2.62%	0.88%	1.72%	0.00%	0.15%	1.14%	0.73%	0.51%	1.12%	0.00%	0.21%	6.28%	0.45%	0.00%	100%
Road 222	222	-	50	45.36546	N	1800-1900	468	69.13%	15.28%	0.06%	5.27%	1.89%	0.64%	1.26%	0.00%	0.02%	0.19%	0.50%	0.35%	0.76%	0.00%	0.23%	4.10%	0.33%	0.00%	100%
Road 222	222	-	50	46.02015	N	1900-2000	408	66.43%	21.01%	0.05%	4.77%	1.71%	0.21%	0.41%	0.00%	0.03%	0.24%	0.50%	0.35%	0.76%	0.01%	0.26%	3.14%	0.11%	0.00%	100%
Road 222	222	-	50	46.75311	N	2000-2100	332	64.58%	23.59%	0.04%	4.26%	1.53%	0.39%	0.77%	0.00%	0.01%	0.08%	0.44%	0.31%	0.67%	0.01%	0.27%	2.86%	0.20%	0.00%	100%
Road 222	222	-	50	46.94033	N	2100-2200	315	58.13%	31.36%	0.04%	4.14%	1.49%	0.27%	0.54%	0.00%	0.01%	0.08%	0.34%	0.24%	0.52%	0.00%	0.30%	2.39%	0.14%	0.00%	100%
Road 222	222	-	50	47.05757	N	2200-2300	308	54.40%	36.47%	0.04%	3.78%	1.36%	0.21%	0.41%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.28%	2.75%	0.11%	0.00%	100%
Road 222	222	-	50	47.69771	N	2300-0000	238	54.60%	34.23%	0.04%	4.16%	1.49%	0.32%	0.64%	0.00%	0.06%	0.48%	0.16%	0.11%	0.24%	0.00%	0.28%	3.02%	0.17%	0.00%	100%
Road 223	223	-	50	45.71423	N	0000-0100	218	54.33%	31.73%	0.05%	5.15%	1.85%	0.50%	0.97%	0.00%	0.11%	0.86%	0.28%	0.20%	0.43%	0.00%	0.00%	3.28%	0.25%	0.00%	100%
Road 223	223	-	50	47.02818	N	0100-0200	150	54.49%	29.39%	0.06%	5.60%	2.01%	0.63%	1.23%	0.00%	0.16%	1.26%	0.41%	0.28%	0.62%	0.00%	0.00%	3.54%	0.32%	0.00%	100%
Road 223	223	-	50	47.68806	N	0200-0300	115	54.69%	26.99%	0.06%	6.05%	2.17%	0.76%	1.50%	0.00%	0.21%	1.66%	0.54%	0.37%	0.82%	0.00%	0.00%	3.79%	0.39%	0.00%	100%
Road 223	223	-	50	48.24147	N	0300-0400	86	54.82%	24.64%	0.07%	6.51%	2.34%	0.89%	1.75%	0.00%	0.26%	2.04%	0.67%	0.46%	1.02%	0.00%	0.00%	4.08%	0.46%	0.00%	100%
Road 223	223	-	50	48.31236	N	0400-0500	82	55.02%	22.20%	0.07%	6.97%	2.50%	1.02%	2.01%	0.00%	0.31%	2.45%	0.80%	0.55%	1.22%	0.00%	0.00%	4.33%	0.53%	0.00%	100%
Road 223	223	-	50	47.57819	N	0500-0600	116	55.21%	19.75%	0.08%	7.45%	2.67%	1.16%	2.28%	0.00%	0.36%	2.85%	0.93%	0.65%	1.42%	0.00%	0.00%	4.60%	0.59%	0.00%	100%
Road 223	223	-	50	43.06955	N	0600-0700	327	55.47%	17.16%	0.08%	7.90%	2.84%	1.31%	2.57%	0.00%	0.42%	3.30%	1.07%	0.74%	1.63%	0.00%	0.00%	4.83%	0.67%	0.00%	100%
Road 223	223	-	50	38.46554	N	0700-0800	594	55.67%	14.63%	0.09%	8.37%	3.01%	1.45%	2.85%	0.00%	0.48%	3.73%	1.21%	0.84%	1.84%	0.00%	0.00%	5.09%	0.75%	0.00%	100%
Road 223	223	-	50	38.14528	N	0800-0900	644	59.63%	18.23%	0.08%	7.22%	2.59%	1.11%	2.18%	0.00%	0.22%	1.69%	0.85%	0.59%	1.29%	0.00%	0.00%	3.75%	0.57%	0.00%	100%
Road 223	223	-	50	38.69801	N	0900-1000	562	52.29%	16.94%	0.13%	12.23%	4.39%	2.23%	4.39%	0.00%	0.16%	1.24%	0.58%	0.40%	0.88%	0.00%	0.00%	2.99%	1.15%	0.00%	100%
Road 223	223	-	50	38.9156	N	1000-1100	537	46.88%	21.36%	0.14%	13.74%	4.93%	2.64%	5.19%	0.00%	0.14%	1.12%	0.22%	0.15%	0.33%	0.00%	0.00%	1.78%	1.36%	0.00%	100%
Road 223	223	-	50	39.3432	N	1100-1200	506	48.96%	20.52%	0.13%	12.09%	4.34%	2.69%	5.28%	0.00%	0.11%	0.87%	0.34%	0.24%	0.52%	0.00%	0.00%	2.52%	1.38%	0.00%	100%
Road 223	223	-	50	44.39219	N	1200-1300	267	58.58%	20.32%	0.07%	6.55%	2.35%	1.41%	2.76%	0.00%	0.37%	2.87%	0.75%	0.52%	1.15%	0.00%	0.00%	1.58%	0.72%	0.00%	100%
Road 223	223	-	50	44.26764	N	1300-1400	266	52.38%	21.64%	0.08%	8.00%	2.87%	1.45%	2.85%	0.00%	0.37%	2.90%	1.35%	0.94%	2.06%	0.00%	0.00%	2.35%	0.75%	0.00%	100%
Road 223	223	-	50	44.26905	N	1400-1500	275	59.45%	18.42%	0.07%	6.66%	2.39%	1.47%	2.90%	0.00%	0.31%	2.42%	0.60%	0.42%	0.92%	0.00%	0.00%	3.22%	0.76%	0.00%	100%
Road 223	223	-	50	44.32606	N	1500-1600	274	58.75%	21.13%	0.07%	6.91%	2.48%	1.57%	3.08%	0.00%	0.24%	1.89%	0.25%	0.17%	0.38%	0.00%	0.00%	2.28%	0.81%	0.00%	100%
Road 223	223	-	50	43.85217	N	1600-1700	298	58.41%	20.19%	0.08%	7.23%	2.60%	1.10%	2.17%	0.00%	0.19%	1.45%	0.76%	0.53%	1.16%	0.00%	0.00%	3.57%	0.57%	0.00%	100%
Road 223	223	-	50	42.9319	N	1700-1800	358	66.96%	14.41%	0.05%	4.54%	1.63%	0.54%	1.07%	0.00%	0.16%	1.21%	0.78%	0.54%	1.18%	0.00%	0.00%	6.65%	0.28%	0.00%	100%
Road 223	223	-	50	42.90051	N	1800-1900	367	72.11%	15.94%	0.03%	3.22%	1.16%	0.39%	0.77%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.28%	0.20%	0.00%	100%
Road 223	223	-	50	43.81059	N	1900-2000	323	68.68%	21.72%	0.03%	2.89%	1.04%	0.13%	0.25%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.25%	0.07%	0.00%	100%
Road 223	223	-	50	44.95604	N	2000-2100	263	66.75%	24.38%	0.03%	2.58%	0.93%	0.24%	0.46%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.12%	0.00%	100%
Road 223	223	-	50	45.23096	N	2100-2200	250	59.96%	32.34%	0.03%	2.50%	0.90%	0.17%	0.33%	0.00%	0.01%	0.09%	0.35%	0.25%	0.54%	0.00%	0.00%	2.46%	0.08%	0.00%	100%
Road 223	223	-	50	45.39141	N	2200-2300	245	55.92%	37.49%	0.02%	2.28%	0.82%	0.13%	0.25%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.06%	0.00%	100%
Road 223	223	-	50	46.41607	N	2300-0000	189	56.35%	35.33%	0.03%	2.52%	0.90%	0.20%	0.38%	0.00%	0.06%	0.49%	0.16%	0.11%	0.25%	0.00%	0.00%	3.12%	0.10%	0.00%	100%
Road 224	224	-	50	47.3942	N	0000-0100	249	47.58%	27.78%	0.12%	11.81%	4.24%	1.13%	2.23%	0.00%	0.10%	0.76%	0.25%	0.17%	0.38%	0.00%	0.00%	2.87%	0.58%	0.00%	100%
Road 224	224	-	50	48.15569	N	0100-0200	173	47.01%	25.36%	0.13%	12.63%	4.54%	1.41%	2.78%	0.00%	0.14%	1.08%	0.35%	0.24%	0.54%	0.00%	0.00%	3.06%	0.73%	0.00%	100%
Road 224	224	-	50	48.53622	N	0200-0300	135	46.48%	22.94%	0.14%	13.44%	4.83%	1.69%	3.32%	0.00%	0.18%	1.41%	0.46%	0.32%	0.70%	0.00%	0.00%	3.22%	0.87%	0.00%	100%
Road 224	224	-	50	48.8653	N	0300-0400	103	45.91%	20.64%	0.15%	14.26%	5.12%	1.95%	3.83%	0.00%	0.22%	1.71%	0.56%	0.39%	0.85%	0.00%	0.00%	3.41%	1.00%	0.00%	100%
Road 224	224	-	50	48.89054	N	0400-0500	99	45.40%	18.32%	0.16%	15.05%	5.41%	2.21%	4.35%	0.00%	0.26%	2.02%	0.66%	0.46%	1.00%	0.00%	0.00%	3.58%	1.14%	0.00%	100%
Road 224	224	-	50	48.37896	N	0500-0600	142	44.89%	16.06%	0.17%	15.84%	5.69%	2.46%	4.84%	0.00%	0.30%	2.31%	0.76%	0.53%	1.15%	0.00%	0.00%	3.74%	1.27%	0.00%	100%
Road 224	224	-	50	45.27807	N	0600-0700	408	44.43%	13.75%	0.17%	16.55%	5.94%	2.74%	5.39%	0.00%	0.34%	2.64%	0.86%	0.60%	1.31%	0.00%	0.00%	3.87%	1.41%	0.00%	100%
Road 224	224	-	50	41.16164	N	0700-0800	753	43.94%	11.55%	0.18%	17.29%	6.21%	3.00%	5.89%	0.00%	0.38%	2.94%	0.95%	0.66%	1.45%	0.00%	0.00%	4.02%	1.54%	0.00%	100%
Road 224	224	-	50	41.13473	N	0800-0900	787	48.78%	14.92%	0.16%	15.46%	5.55%	2.38%	4.67%	0.00%	0.18%	1.39%	0.69%	0.48%	1.06%	0.00%	0.00%	3.07%	1.22%	0.00%	100%
Road 224	224	-	50	40.36422	N	0900-1000	785	37.46%	12.14%	0.24%	22.91%	8.23%	4.18%	8.22%	0.00%	0.11%	0.89%	0.42%	0.29%	0.63%	0.00%	0.00%	2.14%	2.15%	0.00%	100%
Road 224	224	-	50	40.22743	N	1000-1100	780	32.27%	14.70%	0.26%	24.75%	8.89%	4.76%	9.35%	0.00%	0.10%	0.77%	0.15%	0.10%	0.23%	0.00%	0.00%	1.23%	2.44%	0.00%	100%
Road 224	224	-	50	41.06026	N	1100-1200	718	34.51%	14.46%	0.23%	22.30%	8.01%	4.96%	9.74%	0.00%	0.08%	0.62%	0.24%	0.17%	0.37%	0.00%	0.00%	1.77%	2.55%	0.00%	100%
Road 224	224	-	50	42.11385	N	1200-1300	589	26.54%	9.21%	0.30%	28.80%	10.34%	6.19%	12.16%	0.00%	0.17%	1.30%	0.34%	0.24%	0.52%	0.00%	0.00%	0.72%	3.18%	0.00%	100%
Road 224	224	-	50	41.35903	N	1300-1400	637	21.88%	9.04%	0.34%	32.44%	11.65%	5.89%	11.57%	0.00%	0.16%	1.21%	0.57%	0.39%	0.86%	0.00%	0.00%	0.98%	3.02%	0.00%	100%
Road 224	224	-	50	41.74374	N	1400-1500	616	26.53%	8.22%	0.30%	28.86%	10.36%	6.38%	12.55%	0.00%	0.14%	1.08%	0.27%	0.19%	0.41%	0.00%	0.00%	1.44%	3.28%	0.00%	100%
Road 224	224	-	50	41.52914	N	1500-1600	630	25.55%	9.19%	0.30%	29.16%	10.47%	6.63%	13.03%	0.00%	0.11%	0.82%	0.11%	0.08%	0.16%	0.00%	0.00%	0.99%	3.40%	0.00%	100%
Road 224	224	-	50	41.44717	N	1600-1700	654	26.59%	9.19%	0.33%	31.97%	11.48%	4.87%	9.57%	0.00%	0.08%	0.66%	0.35%	0.24%	0.53%	0.00%	0.00%	1.62%	2.50%	0.00%	100%
Road 224	224	-	50	42.64198	N	1700-1800	611	39.24%	8.44%	0.27%	25.83%	9.27%	3.10%	6.09%	0.00%	0.09%	0.71%	0.46%	0.32%	0.69%	0.00%	0.00%	3.90%	1.59%	0.00%	100%
Road 224	224	-	50	43.6513	N	1800-1900	552	47.97%	10.61%	0.22%	20.82%	7.48%	2.53%	4.97%	0.00%	0.02%	0.13%	0.35%	0.24%	0.53%	0.00%	0.00%	2.84%	1.30%	0.00%	100%
Road 224	224	-	50	45.11821	N	1900-2000	447	49.65%	15.70%	0.21%	20.29%	7.29%	0.89%	1.76%	0.00%	0.02%	0.18%	0.37%	0.26%	0.57%	0.00%	0.00%	2.35%	0.46%	0.00%	100%
Road 224	224	-	50	45.99065	N	2000-2100	363	48.39%	17.67%	0.19%	18.17%	6.52%	1.66%	3.26%	0.00%	0.01%	0.06%	0.33%	0.23%	0.50%	0.00%	0.00%	2.14%	0.85%	0.00%	100%
Road 224	224	-	50	46.3371	N	2100-2200	338	44.46%	23.98%	0.19%	18.01%	6.47%	1.19%	2.34%	0.00%	0.01%	0.06%	0.26%	0.18%	0.40%	0.00%	0.00%	1.83%	0.61%	0.00%	100%
Road 224	224	-	50	46.5902	N	2200-2300	321	42.69%	28.62%	0.18%	16.88%	6.06%	0.94%	1.84%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	2.16%	0.48%	0.00%	100%
Road 224	224	-	50	47.2058	N	2300-0000	257	41.45%	25.99%	0.19%	17.97%	6.45%	1.40%	2.75%	0.00%	0.05%	0.36%	0.12%	0.08%	0.18%	0.00%	0.00%	2.30%	0.72%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 225	225	-	50	45.17697	N	0000-0100	236	50.20%	29.31%	0.10%	9.23%	3.31%	0.89%	1.74%	0.00%	0.10%	0.80%	0.26%	0.18%	0.40%	0.00%	0.00%	3.03%	0.46%	0.00%	100%
Road 225	225	-	50	46.61222	N	0100-0200	163	49.88%	26.91%	0.10%	9.93%	3.57%	1.11%	2.18%	0.00%	0.15%	1.15%	0.37%	0.26%	0.57%	0.00%	0.00%	3.24%	0.57%	0.00%	100%
Road 225	225	-	50	47.33082	N	0200-0300	127	49.61%	24.48%	0.11%	10.63%	3.82%	1.34%	2.63%	0.00%	0.19%	1.51%	0.49%	0.34%	0.74%	0.00%	0.00%	3.44%	0.69%	0.00%	100%
Road 225	225	-	50	47.94501	N	0300-0400	96	49.27%	22.15%	0.12%	11.34%	4.07%	1.55%	3.04%	0.00%	0.24%	1.84%	0.60%	0.42%	0.91%	0.00%	0.00%	3.66%	0.80%	0.00%	100%
Road 225	225	-	50	48.00406	N	0400-0500	92	48.99%	19.77%	0.13%	12.03%	4.32%	1.77%	3.47%	0.00%	0.28%	2.18%	0.71%	0.49%	1.08%	0.00%	0.00%	3.86%	0.91%	0.00%	100%
Road 225	225	-	50	47.10218	N	0500-0600	131	48.71%	17.42%	0.13%	12.73%	4.57%	1.98%	3.89%	0.00%	0.32%	2.51%	0.82%	0.57%	1.25%	0.00%	0.00%	4.06%	1.02%	0.00%	100%
Road 225	225	-	50	41.61102	N	0600-0700	374	48.48%	15.00%	0.14%	13.38%	4.80%	2.22%	4.36%	0.00%	0.37%	2.88%	0.94%	0.65%	1.43%	0.00%	0.00%	4.22%	1.14%	0.00%	100%
Road 225	225	-	50	36.87406	N	0700-0800	686	48.21%	12.67%	0.15%	14.05%	5.04%	2.43%	4.79%	0.00%	0.41%	3.23%	1.05%	0.73%	1.59%	0.00%	0.00%	4.41%	1.25%	0.00%	100%
Road 225	225	-	50	36.72225	N	0800-0900	727	52.81%	16.15%	0.13%	12.40%	4.45%	1.91%	3.75%	0.00%	0.19%	1.50%	0.75%	0.52%	1.14%	0.00%	0.00%	3.32%	0.98%	0.00%	100%
Road 225	225	-	50	36.456	N	0900-1000	691	42.52%	13.78%	0.20%	19.26%	6.92%	3.52%	6.91%	0.00%	0.13%	1.01%	0.47%	0.33%	0.72%	0.00%	0.00%	2.43%	1.81%	0.00%	100%
Road 225	225	-	50	36.45887	N	1000-1100	678	37.13%	16.92%	0.22%	21.09%	7.57%	4.05%	7.97%	0.00%	0.11%	0.89%	0.17%	0.12%	0.26%	0.00%	0.00%	1.41%	2.08%	0.00%	100%
Road 225	225	-	50	37.17686	N	1100-1200	629	39.39%	16.51%	0.20%	18.85%	6.77%	4.19%	8.24%	0.00%	0.09%	0.70%	0.27%	0.19%	0.42%	0.00%	0.00%	2.03%	2.15%	0.00%	100%
Road 225	225	-	50	37.37058	N	1200-1300	556	28.14%	9.76%	0.29%	27.69%	9.94%	5.95%	11.70%	0.00%	0.18%	1.38%	0.36%	0.25%	0.55%	0.00%	0.00%	0.76%	3.06%	0.00%	100%
Road 225	225	-	50	36.6094	N	1300-1400	599	23.28%	9.62%	0.33%	31.31%	11.24%	5.68%	11.17%	0.00%	0.17%	1.29%	0.60%	0.42%	0.92%	0.00%	0.00%	1.04%	2.92%	0.00%	100%
Road 225	225	-	50	36.99377	N	1400-1500	581	28.14%	8.72%	0.29%	27.77%	9.97%	6.14%	12.07%	0.00%	0.15%	1.15%	0.28%	0.20%	0.43%	0.00%	0.00%	1.52%	3.15%	0.00%	100%
Road 225	225	-	50	36.7827	N	1500-1600	593	27.14%	9.76%	0.29%	28.10%	10.09%	6.38%	12.55%	0.00%	0.11%	0.87%	0.12%	0.08%	0.18%	0.00%	0.00%	1.05%	3.28%	0.00%	100%
Road 225	225	-	50	36.67348	N	1600-1700	617	28.18%	9.74%	0.32%	30.74%	11.04%	4.68%	9.20%	0.00%	0.09%	0.70%	0.37%	0.26%	0.56%	0.00%	0.00%	1.72%	2.40%	0.00%	100%
Road 225	225	-	50	37.81387	N	1700-1800	584	41.00%	8.82%	0.26%	24.48%	8.79%	2.93%	5.77%	0.00%	0.10%	0.74%	0.48%	0.33%	0.72%	0.00%	0.00%	4.07%	1.51%	0.00%	100%
Road 225	225	-	50	38.82026	N	1800-1900	533	49.69%	10.99%	0.20%	19.57%	7.03%	2.38%	4.67%	0.00%	0.02%	0.14%	0.36%	0.25%	0.54%	0.00%	0.00%	2.95%	1.22%	0.00%	100%
Road 225	225	-	50	40.60657	N	1900-2000	434	51.11%	16.16%	0.20%	18.95%	6.80%	0.84%	1.64%	0.00%	0.02%	0.18%	0.39%	0.27%	0.59%	0.00%	0.00%	2.42%	0.43%	0.00%	100%
Road 225	225	-	50	42.28937	N	2000-2100	353	49.81%	18.19%	0.18%	16.96%	6.09%	1.55%	3.05%	0.00%	0.01%	0.06%	0.34%	0.24%	0.52%	0.00%	0.00%	2.20%	0.80%	0.00%	100%
Road 225	225	-	50	42.93899	N	2100-2200	328	45.68%	24.64%	0.18%	16.79%	6.03%	1.11%	2.18%	0.00%	0.01%	0.07%	0.27%	0.19%	0.41%	0.00%	0.00%	1.88%	0.57%	0.00%	100%
Road 225	225	-	50	43.40939	N	2200-2300	313	43.77%	29.34%	0.16%	15.69%	5.64%	0.87%	1.71%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.00%	0.00%	2.21%	0.45%	0.00%	100%
Road 225	225	-	50	44.61919	N	2300-0000	250	42.62%	26.72%	0.18%	16.76%	6.02%	1.30%	2.56%	0.00%	0.05%	0.37%	0.12%	0.08%	0.19%	0.00%	0.00%	2.36%	0.67%	0.00%	100%
Road 226	226	-	80	80	N	0000-0100	930	58.26%	34.03%	0.01%	1.16%	0.42%	0.11%	0.22%	0.00%	0.12%	0.93%	0.30%	0.21%	0.46%	0.00%	0.20%	3.52%	0.06%	0.00%	100%
Road 226	226	-	80	80	N	0100-0200	631	58.96%	31.81%	0.01%	1.27%	0.46%	0.14%	0.28%	0.00%	0.17%	1.36%	0.44%	0.31%	0.67%	0.00%	0.20%	3.83%	0.07%	0.00%	100%
Road 226	226	-	80	80	N	0200-0300	480	59.74%	29.48%	0.01%	1.39%	0.50%	0.17%	0.34%	0.00%	0.23%	1.81%	0.59%	0.41%	0.90%	0.00%	0.20%	4.14%	0.09%	0.00%	100%
Road 226	226	-	80	80	N	0300-0400	357	60.44%	27.17%	0.02%	1.51%	0.54%	0.21%	0.40%	0.00%	0.29%	2.25%	0.74%	0.51%	1.12%	0.00%	0.20%	4.49%	0.11%	0.00%	100%
Road 226	226	-	80	80	N	0400-0500	335	61.25%	24.72%	0.02%	1.63%	0.59%	0.24%	0.47%	0.00%	0.35%	2.72%	0.89%	0.62%	1.36%	0.00%	0.20%	4.82%	0.12%	0.00%	100%
Road 226	226	-	80	80	N	0500-0600	470	62.08%	22.21%	0.02%	1.76%	0.63%	0.27%	0.54%	0.00%	0.41%	3.20%	1.05%	0.73%	1.60%	0.00%	0.20%	5.17%	0.14%	0.00%	100%
Road 226	226	-	80	80	N	0600-0700	1315	63.01%	19.50%	0.02%	1.88%	0.68%	0.31%	0.61%	0.00%	0.48%	3.75%	1.22%	0.84%	1.85%	0.00%	0.20%	5.48%	0.16%	0.00%	100%
Road 226	226	-	80	78.78012	N	0700-0800	2364	63.90%	16.79%	0.02%	2.02%	0.72%	0.35%	0.69%	0.00%	0.55%	4.28%	1.39%	0.96%	2.11%	0.00%	0.20%	5.84%	0.18%	0.00%	100%
Road 226	226	-	80	77.25943	N	0800-0900	2623	66.79%	20.42%	0.02%	1.70%	0.61%	0.26%	0.51%	0.00%	0.24%	1.90%	0.95%	0.66%	1.45%	0.00%	0.15%	4.20%	0.13%	0.00%	100%
Road 226	226	-	80	80	N	0900-1000	2073	64.71%	20.97%	0.03%	3.18%	1.14%	0.58%	1.14%	0.00%	0.20%	1.53%	0.72%	0.50%	1.09%	0.00%	0.20%	3.70%	0.30%	0.00%	100%
Road 226	226	-	80	80	N	1000-1100	1913	60.07%	27.37%	0.04%	3.70%	1.33%	0.71%	1.40%	0.00%	0.18%	1.44%	0.28%	0.19%	0.42%	0.01%	0.22%	2.28%	0.37%	0.00%	100%
Road 226	226	-	80	80	N	1100-1200	1841	61.45%	25.75%	0.03%	3.19%	1.14%	0.71%	1.39%	0.00%	0.14%	1.10%	0.43%	0.30%	0.65%	0.00%	0.19%	3.16%	0.36%	0.00%	100%
Road 226	226	-	80	80	N	1200-1300	785	58.32%	20.23%	0.07%	6.73%	2.42%	1.45%	2.84%	0.00%	0.37%	2.86%	0.75%	0.52%	1.14%	0.00%	0.00%	1.57%	0.74%	0.00%	100%
Road 226	226	-	80	80	N	1300-1400	783	52.11%	21.53%	0.09%	8.21%	2.95%	1.49%	2.93%	0.00%	0.37%	2.89%	1.35%	0.93%	2.05%	0.00%	0.00%	2.34%	0.77%	0.00%	100%
Road 226	226	-	80	80	N	1400-1500	808	59.17%	18.34%	0.07%	6.84%	2.46%	1.51%	2.98%	0.00%	0.31%	2.41%	0.60%	0.42%	0.91%	0.00%	0.00%	3.20%	0.78%	0.00%	100%
Road 226	226	-	80	80	N	1500-1600	805	58.46%	21.02%	0.07%	7.10%	2.55%	1.61%	3.17%	0.00%	0.24%	1.88%	0.25%	0.17%	0.38%	0.00%	0.00%	2.26%	0.83%	0.00%	100%
Road 226	226	-	80	80	N	1600-1700	875	58.15%	20.10%	0.08%	7.43%	2.67%	1.13%	2.23%	0.00%	0.19%	1.45%	0.76%	0.53%	1.16%	0.00%	0.00%	3.55%	0.58%	0.00%	100%
Road 226	226	-	80	80	N	1700-1800	1050	66.79%	14.37%	0.05%	4.67%	1.68%	0.56%	1.10%	0.00%	0.15%	1.21%	0.77%	0.54%	1.18%	0.00%	0.00%	6.64%	0.29%	0.00%	100%
Road 226	226	-	80	80	N	1800-1900	1076	71.98%	15.91%	0.03%	3.32%	1.19%	0.40%	0.79%	0.00%	0.03%	0.20%	0.52%	0.36%	0.79%	0.00%	0.00%	4.27%	0.21%	0.00%	100%
Road 226	226	-	80	80	N	1900-2000	946	68.58%	21.69%	0.03%	2.98%	1.07%	0.13%	0.26%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.00%	0.00%	3.24%	0.07%	0.00%	100%
Road 226	226	-	80	80	N	2000-2100	771	66.65%	24.34%	0.03%	2.66%	0.96%	0.24%	0.48%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.95%	0.12%	0.00%	100%
Road 226	226	-	80	80	N	2100-2200	733	59.88%	32.30%	0.03%	2.58%	0.93%	0.17%	0.34%	0.00%	0.01%	0.09%	0.35%	0.24%	0.54%	0.00%	0.00%	2.46%	0.09%	0.00%	100%
Road 226	226	-	80	80	N	2200-2300	718	55.86%	37.45%	0.02%	2.35%	0.84%	0.13%	0.26%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.83%	0.07%	0.00%	100%
Road 226	226	-	80	80	N	2300-0000	553	56.27%	35.28%	0.03%	2.59%	0.93%	0.20%	0.40%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.00%	3.12%	0.10%	0.00%	100%
Road 227	227	-	80	80	N	0000-0100	606	50.57%	29.53%	0.09%	8.86%	3.18%	0.85%	1.67%	0.00%	0.10%	0.80%	0.26%	0.18%	0.40%	0.00%	0.00%	3.05%	0.44%	0.00%	100%
Road 227	227	-	80	80	N	0100-0200	418	50.29%	27.13%	0.10%	9.54%	3.43%	1.07%	2.10%	0.00%	0.15%	1.16%	0.38%	0.26%	0.57%	0.00%	0.00%	3.27%	0.55%	0.00%	100%
Road 227	227	-	80	80	N	0200-0300	324	50.06%	24.70%	0.11%	10.22%	3.67%	1.29%	2.53%	0.00%	0.19%	1.52%	0.49%	0.34%	0.75%	0.00%	0.00%	3.47%	0.66%	0.00%	100%
Road 227	227	-	80	80	N	0300-0400	245	49.76%	22.37%	0.11%	10.91%	3.92%	1.49%	2.93%	0.00%	0.24%	1.86%	0.61%	0.42%	0.92%	0.00%	0.00%	3.70%	0.77%	0.00%	100%
Road 227	227	-	80	80	N	0400-0500	235	49.52%	19.98%	0.12%	11.59%	4.16%	1.70%	3.35%	0.00%	0.28%	2.20%	0.72%	0.50%	1.10%	0.00%	0.00%	3.90%	0.87%	0.00%	100%
Road 227	227	-	80	80	N	0500-0600	335	49.27%	17.62%	0.13%	12.28%	4.41%	1.91%	3.75%	0.00%	0.33%	2.54%	0.83%	0.58%	1.27%	0.00%	0.00%	4.11%	0.98%	0.00%	100%
Road 227	227	-	80	80	N	0600-0700	955	49.08%	15.19%	0.13%	12.91%	4.64%	2.14%	4.21%	0.00%	0.37%	2.92%	0.95%	0.66%	1.44%	0.00%	0.00%	4.27%	1.10%	0.00%	100%
Road 227	227	-	80	80	N	0700-0800	1750	48.84%	12.83%	0.14%	13.57%	4.87%	2.35%	4.62%	0.00%	0.42%	3.27%	1.06%	0.74%	1.61%	0.00%	0.00%	4.46%	1.21%	0.00%	100%
Road 227	227	-	80	80	N	0800-0900	1856	53.40%	16.33%	0.12%	11.95%	4.29%	1.84%	3.61%	0.00%	0.19%	1.52%	0.76%	0.53%	1.16%	0.00%	0.00%	3.36%	0.94%	0.00%	100%
Road 227	227	-	80	80	N	0900-1000	1753	43.30%	14.03%	0.20%	18.70%	6.71%	3.41%	6.71%	0.00%	0.13%	1.02%	0.48%	0.33%	0.73%	0.00%	0.00%	2.48%	1.75%	0.00%	100%
Road 227	227	-	80	80	N	1000-1100	1716	37.89%	17.26%	0.21%	20.51%	7.37%	3.94%	7.75%	0.00%	0.12%	0.91%	0.17%	0.12%	0.27%	0.00%	0.00%	1.44%	2.03%	0.00%	100%
Road 227	227	-	80	80	N	1100-1200	1594	40.15%	16.83%	0.19%	18.32%	6.58%	4.07%	8.00%	0.00%	0.09%	0.72%	0.28%	0.19%	0.43%	0.00%	0.00%	2.06%	2.09%	0.00%	100%
Road 227	227	-	80	78.53913	N	1200-1300	2117	49.24%	17.08%	0.14%	12.96%	4.65%	2.78%	5.47%	0.00%	0.31%	2.41%	0.63%	0.44%	0.97%	0.01%	0.16%	1.33%	1.43%	0.00%	100%
Road 227	227	-	80	77.6151	N	1300-1400	2161	42.97%	17.75%	0.16%	15.45%	5.55%	2.80%	5.51%	0.00%	0.31%	2.38%	1.11%	0.77%	1.69%	0.01%	0.17%	1.93%	1.44%	0.00%	100%
Road 227	227	-	80	77.94588	N	1400-1500	2189	49.74%	15.42%	0.14%	13.13%	4.71%	2.90%	5.71%	0.00%	0.26%	2.02%	0.50%	0.35%	0.77%	0.00%	0.16%	2.69%	1.49%	0.00%	100%
Road 227	227	-	80	77.89439	N	1500-1600	2197	48.78%	17.54%	0.14%	13.51%	4.85%	3.07%	6.03%	0.00%	0.20%	1.57%	0.21%	0.14%	0.31%	0.00%	0.16%	1.89%	1.58%	0.00%	100%
Road 227	227	-	80	76.73717	N	1600-1700	2358	49.16%	16.99%	0.15%	14.34%	5.15%	2.18%	4.29%	0.00%	0.16%	1.22%	0.64%	0.45%	0.98%	0.00%	0.17%	3.00%	1.12%	0.00%	100%
Road 227	227	-	80	75.6461	N	1700-1800	2650	60.24%	12.96%	0.10%	9.62%	3.45%	1.15%	2.27%	0.00%	0.14%	1.09%	0.70%	0.48%	1.06%	0.00%	0.15%	5.99%	0.59%	0.00%	100%
Road 227	227	-	80	76.41772	N	1800-1900	2642	66.77%	14.76%	0.07%	7.03%	2.52%	0.85%	1.68%	0.00%	0.02%	0.18%	0.48%	0.33%	0.73%	0.00%	0.16%	3.96%	0.44%	0.00%	100%
Road 227	227	-	80	79.71963	N	1900-2000	2285	64.69%	20.46%	0.07%	6.41%	2.30%	0.28%	0.56%	0.00%	0.03%	0.23%	0.49%	0.34%	0.74%	0.01%	0.18%	3.06%	0.15%	0.00%	100%
Road 227	227	-	80	80	N	2000-2100	1861	62.90%	22.97%	0.06%	5.73%	2.06%	0.52%	1.03%	0.00%	0.01%	0.08%	0.43%	0.30%	0.66%	0.00%	0.19%	2.78%	0.27%	0.00%	100%
Road 227	227	-	80	80	N	2100-2200	1761	56.75%	30.61%	0.06%	5.58%	2.00%	0.37%	0.73%	0.00%	0.01%	0.08%	0.33%	0.23%	0.51%	0.00%	0.22%	2.33%	0.19%	0.00%	100%
Road 227	227	-	80	80	N	2200-2300	1716	53.24%	35.70%	0.05%	5.11%	1.83%	0.28%	0.56%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.20%	2.69%	0.15%	0.00%	100%
Road 227	227	-	80	80	N	2300-0000	1331	53.25%	33.39%	0.06%	5.60%	2.01%	0.44%	0.86%	0.00%	0.06%	0.47%	0.15%	0.11%	0.23%	0.00%	0.20%	2.95%	0.22%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 228	228	-	80	80	N	0000-0100	1166	56.63%	33.07%	0.03%	2.80%	1.00%	0.27%	0.53%	0.00%	0.12%	0.90%	0.29%	0.20%	0.45%	0.00%	0.16%	3.42%	0.14%	0.00%	100%
Road 228	228	-	80	80	N	0100-0200	794	57.10%	30.80%	0.03%	3.05%	1.10%	0.34%	0.67%	0.00%	0.17%	1.32%	0.43%	0.30%	0.65%	0.00%	0.16%	3.71%	0.18%	0.00%	100%
Road 228	228	-	80	80	N	0200-0300	607	57.62%	28.44%	0.03%	3.32%	1.19%	0.42%	0.82%	0.00%	0.22%	1.75%	0.57%	0.39%	0.86%	0.00%	0.16%	3.99%	0.21%	0.00%	100%
Road 228	228	-	80	80	N	0300-0400	453	58.08%	26.11%	0.04%	3.59%	1.29%	0.49%	0.96%	0.00%	0.28%	2.17%	0.71%	0.49%	1.08%	0.00%	0.16%	4.32%	0.25%	0.00%	100%
Road 228	228	-	80	80	N	0400-0500	427	58.62%	23.66%	0.04%	3.87%	1.39%	0.57%	1.12%	0.00%	0.33%	2.61%	0.85%	0.59%	1.30%	0.00%	0.16%	4.62%	0.29%	0.00%	100%
Road 228	228	-	80	80	N	0500-0600	602	59.16%	21.16%	0.04%	4.15%	1.49%	0.65%	1.27%	0.00%	0.39%	3.05%	1.00%	0.69%	1.52%	0.00%	0.16%	4.93%	0.33%	0.00%	100%
Road 228	228	-	80	80	N	0600-0700	1689	59.79%	18.50%	0.05%	4.43%	1.59%	0.73%	1.44%	0.00%	0.46%	3.56%	1.15%	0.80%	1.76%	0.00%	0.15%	5.20%	0.38%	0.00%	100%
Road 228	228	-	80	72.45788	N	0700-0800	3050	60.37%	15.86%	0.05%	4.73%	1.70%	0.82%	1.61%	0.00%	0.52%	4.04%	1.31%	0.91%	2.00%	0.00%	0.15%	5.52%	0.42%	0.00%	100%
Road 228	228	-	80	70.82683	N	0800-0900	3349	63.76%	19.50%	0.04%	4.02%	1.44%	0.62%	1.21%	0.00%	0.23%	1.81%	0.91%	0.63%	1.38%	0.00%	0.12%	4.01%	0.32%	0.00%	100%
Road 228	228	-	80	74.75094	N	0900-1000	2765	59.16%	19.17%	0.08%	7.20%	2.59%	1.31%	2.58%	0.00%	0.18%	1.40%	0.66%	0.46%	1.00%	0.00%	0.15%	3.39%	0.68%	0.00%	100%
Road 228	228	-	80	76.07393	N	1000-1100	2591	54.07%	24.63%	0.09%	8.25%	2.96%	1.59%	3.12%	0.00%	0.17%	1.30%	0.25%	0.17%	0.38%	0.01%	0.16%	2.05%	0.81%	0.00%	100%
Road 228	228	-	80	77.21704	N	1100-1200	2470	55.83%	23.40%	0.07%	7.18%	2.58%	1.60%	3.14%	0.00%	0.13%	1.00%	0.39%	0.27%	0.59%	0.00%	0.14%	2.87%	0.82%	0.00%	100%
Road 228	228	-	80	80	N	1200-1300	1341	45.80%	15.89%	0.16%	15.42%	5.54%	3.31%	6.51%	0.00%	0.29%	2.24%	0.59%	0.41%	0.90%	0.00%	0.00%	1.23%	1.70%	0.00%	100%
Road 228	228	-	80	80	N	1300-1400	1381	39.61%	16.37%	0.19%	18.23%	6.55%	3.31%	6.50%	0.00%	0.28%	2.20%	1.02%	0.71%	1.56%	0.00%	0.00%	1.78%	1.70%	0.00%	100%
Road 228	228	-	80	80	N	1400-1500	1389	46.19%	14.32%	0.16%	15.60%	5.60%	3.45%	6.78%	0.00%	0.24%	1.88%	0.47%	0.32%	0.71%	0.00%	0.00%	2.50%	1.77%	0.00%	100%
Road 228	228	-	80	80	N	1500-1600	1398	45.18%	16.25%	0.17%	16.00%	5.75%	3.64%	7.15%	0.00%	0.19%	1.46%	0.19%	0.13%	0.29%	0.00%	0.00%	1.75%	1.87%	0.00%	100%
Road 228	228	-	80	80	N	1600-1700	1493	45.76%	15.81%	0.18%	17.07%	6.13%	2.60%	5.11%	0.00%	0.15%	1.14%	0.60%	0.41%	0.91%	0.00%	0.00%	2.79%	1.34%	0.00%	100%
Road 228	228	-	80	80	N	1700-1800	1634	57.56%	12.39%	0.12%	11.76%	4.22%	1.41%	2.77%	0.00%	0.13%	1.04%	0.67%	0.46%	1.02%	0.00%	0.00%	5.72%	0.72%	0.00%	100%
Road 228	228	-	80	80	N	1800-1900	1609	64.60%	14.28%	0.09%	8.70%	3.12%	1.06%	2.08%	0.00%	0.02%	0.18%	0.46%	0.32%	0.71%	0.00%	0.00%	3.83%	0.54%	0.00%	100%
Road 228	228	-	80	80	N	1900-2000	1381	63.09%	19.95%	0.08%	8.00%	2.87%	0.35%	0.69%	0.00%	0.03%	0.23%	0.48%	0.33%	0.72%	0.00%	0.00%	2.98%	0.18%	0.00%	100%
Road 228	228	-	80	80	N	2000-2100	1124	61.37%	22.41%	0.07%	7.15%	2.57%	0.65%	1.28%	0.00%	0.01%	0.08%	0.42%	0.29%	0.64%	0.00%	0.00%	2.71%	0.34%	0.00%	100%
Road 228	228	-	80	80	N	2100-2200	1061	55.48%	29.93%	0.07%	6.98%	2.51%	0.46%	0.91%	0.00%	0.01%	0.08%	0.33%	0.23%	0.50%	0.00%	0.00%	2.28%	0.24%	0.00%	100%
Road 228	228	-	80	80	N	2200-2300	1032	52.18%	34.99%	0.07%	6.40%	2.30%	0.36%	0.70%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.64%	0.18%	0.00%	100%
Road 228	228	-	80	80	N	2300-0000	803	52.02%	32.62%	0.07%	7.00%	2.51%	0.54%	1.07%	0.00%	0.06%	0.46%	0.15%	0.10%	0.23%	0.00%	0.00%	2.88%	0.28%	0.00%	100%
Road 229	229	-	50	43.06709	N	0000-0100	330	47.09%	27.50%	0.13%	12.29%	4.41%	1.18%	2.32%	0.00%	0.10%	0.75%	0.24%	0.17%	0.37%	0.00%	0.00%	2.84%	0.61%	0.00%	100%
Road 229	229	-	50	45.08631	N	0100-0200	230	46.47%	25.07%	0.14%	13.14%	4.72%	1.47%	2.89%	0.00%	0.14%	1.07%	0.35%	0.24%	0.53%	0.00%	0.00%	3.02%	0.75%	0.00%	100%
Road 229	229	-	50	46.09501	N	0200-0300	179	45.90%	22.65%	0.15%	13.97%	5.02%	1.76%	3.45%	0.00%	0.18%	1.39%	0.45%	0.31%	0.69%	0.00%	0.00%	3.18%	0.90%	0.00%	100%
Road 229	229	-	50	46.9692	N	0300-0400	137	45.29%	20.36%	0.15%	14.80%	5.31%	2.02%	3.97%	0.00%	0.22%	1.69%	0.55%	0.38%	0.84%	0.00%	0.00%	3.37%	1.04%	0.00%	100%
Road 229	229	-	50	47.03313	N	0400-0500	132	44.74%	18.06%	0.16%	15.60%	5.60%	2.29%	4.50%	0.00%	0.25%	1.99%	0.65%	0.45%	0.99%	0.00%	0.00%	3.52%	1.18%	0.00%	100%
Road 229	229	-	50	45.66023	N	0500-0600	190	44.20%	15.81%	0.17%	16.40%	5.89%	2.55%	5.02%	0.00%	0.29%	2.28%	0.75%	0.52%	1.14%	0.00%	0.00%	3.68%	1.31%	0.00%	100%
Road 229	229	-	50	38.5209	N	0600-0700	544	43.70%	13.52%	0.18%	17.12%	6.15%	2.84%	5.58%	0.00%	0.33%	2.60%	0.84%	0.59%	1.29%	0.00%	0.00%	3.80%	1.46%	0.00%	100%
Road 229	229	-	50	32.36096	N	0700-0800	1004	43.18%	11.35%	0.19%	17.87%	6.42%	3.10%	6.09%	0.00%	0.37%	2.89%	0.94%	0.65%	1.43%	0.00%	0.00%	3.95%	1.59%	0.00%	100%
Road 229	229	-	50	32.3536	N	0800-0900	1047	48.05%	14.69%	0.17%	16.02%	5.75%	2.46%	4.84%	0.00%	0.17%	1.36%	0.68%	0.47%	1.04%	0.00%	0.00%	3.02%	1.26%	0.00%	100%
Road 229	229	-	50	31.07295	N	0900-1000	1053	36.58%	11.85%	0.25%	23.54%	8.45%	4.30%	8.45%	0.00%	0.11%	0.87%	0.41%	0.28%	0.62%	0.00%	0.00%	2.09%	2.21%	0.00%	100%
Road 229	229	-	50	30.83244	N	1000-1100	1049	31.45%	14.33%	0.26%	25.37%	9.11%	4.88%	9.59%	0.00%	0.10%	0.75%	0.15%	0.10%	0.22%	0.00%	0.00%	1.19%	2.50%	0.00%	100%
Road 229	229	-	50	32.10389	N	1100-1200	964	33.68%	14.11%	0.24%	22.89%	8.22%	5.09%	10.00%	0.00%	0.08%	0.60%	0.23%	0.16%	0.36%	0.00%	0.00%	1.73%	2.61%	0.00%	100%
Road 229	229	-	50	30.99516	N	1200-1300	1066	38.91%	13.49%	0.21%	20.21%	7.26%	4.34%	8.54%	0.00%	0.24%	1.91%	0.50%	0.35%	0.76%	0.00%	0.00%	1.05%	2.23%	0.00%	100%
Road 229	229	-	50	29.95381	N	1300-1400	1118	33.07%	13.66%	0.25%	23.47%	8.43%	4.26%	8.38%	0.00%	0.23%	1.83%	0.85%	0.59%	1.30%	0.00%	0.00%	1.48%	2.19%	0.00%	100%
Road 229	229	-	50	30.43127	N	1400-1500	1108	39.11%	12.12%	0.21%	20.37%	7.32%	4.51%	8.86%	0.00%	0.20%	1.59%	0.40%	0.27%	0.60%	0.00%	0.00%	2.12%	2.31%	0.00%	100%
Road 229	229	-	50	30.21454	N	1500-1600	1121	38.04%	13.68%	0.22%	20.79%	7.47%	4.72%	9.29%	0.00%	0.16%	1.23%	0.16%	0.11%	0.25%	0.00%	0.00%	1.47%	2.43%	0.00%	100%
Road 229	229	-	50	29.70629	N	1600-1700	1186	38.91%	13.45%	0.23%	22.40%	8.04%	3.41%	6.71%	0.00%	0.12%	0.97%	0.51%	0.35%	0.77%	0.00%	0.00%	2.37%	1.75%	0.00%	100%
Road 229	229	-	50	30.39549	N	1700-1800	1230	51.67%	11.12%	0.17%	16.28%	5.85%	1.95%	3.84%	0.00%	0.12%	0.93%	0.60%	0.42%	0.91%	0.00%	0.00%	5.13%	1.00%	0.00%	100%
Road 229	229	-	50	31.61806	N	1800-1900	1179	59.55%	13.17%	0.13%	12.38%	4.44%	1.50%	2.96%	0.00%	0.02%	0.16%	0.43%	0.30%	0.65%	0.00%	0.00%	3.53%	0.77%	0.00%	100%
Road 229	229	-	50	34.21523	N	1900-2000	994	59.18%	18.71%	0.12%	11.58%	4.16%	0.51%	1.00%	0.00%	0.03%	0.21%	0.45%	0.31%	0.68%	0.00%	0.00%	2.80%	0.26%	0.00%	100%
Road 229	229	-	50	36.27851	N	2000-2100	809	57.60%	21.04%	0.11%	10.35%	3.72%	0.95%	1.86%	0.00%	0.01%	0.07%	0.39%	0.27%	0.60%	0.00%	0.00%	2.55%	0.49%	0.00%	100%
Road 229	229	-	50	36.9434	N	2100-2200	761	52.31%	28.22%	0.11%	10.15%	3.64%	0.67%	1.32%	0.00%	0.01%	0.08%	0.31%	0.21%	0.47%	0.00%	0.00%	2.15%	0.34%	0.00%	100%
Road 229	229	-	50	37.39446	N	2200-2300	735	49.50%	33.19%	0.10%	9.37%	3.36%	0.52%	1.02%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.50%	0.27%	0.00%	100%
Road 229	229	-	50	39.0361	N	2300-0000	576	48.97%	30.71%	0.11%	10.16%	3.65%	0.79%	1.55%	0.00%	0.05%	0.43%	0.14%	0.10%	0.21%	0.00%	0.00%	2.71%	0.41%	0.00%	100%
Road 230	230	-	80	80	N	0000-0100	276	54.74%	31.97%	0.05%	4.75%	1.71%	0.46%	0.90%	0.00%	0.11%	0.87%	0.28%	0.20%	0.43%	0.00%	0.00%	3.31%	0.23%	0.00%	100%
Road 230	230	-	80	80	N	0100-0200	189	54.95%	29.64%	0.05%	5.16%	1.85%	0.58%	1.14%	0.00%	0.16%	1.27%	0.41%	0.29%	0.63%	0.00%	0.00%	3.57%	0.30%	0.00%	100%
Road 230	230	-	80	80	N	0200-0300	145	55.20%	27.24%	0.06%	5.58%	2.01%	0.70%	1.38%	0.00%	0.21%	1.67%	0.54%	0.38%	0.83%	0.00%	0.00%	3.82%	0.36%	0.00%	100%
Road 230	230	-	80	80	N	0300-0400	109	55.39%	24.90%	0.06%	6.02%	2.16%	0.82%	1.62%	0.00%	0.26%	2.06%	0.67%	0.47%	1.03%	0.00%	0.00%	4.12%	0.42%	0.00%	100%
Road 230	230	-	80	80	N	0400-0500	103	55.64%	22.45%	0.07%	6.45%	2.32%	0.95%	1.86%	0.00%	0.32%	2.47%	0.81%	0.56%	1.23%	0.00%	0.00%	4.38%	0.49%	0.00%	100%
Road 230	230	-	80	80	N	0500-0600	146	55.89%	19.99%	0.07%	6.90%	2.48%	1.07%	2.11%	0.00%	0.37%	2.88%	0.94%	0.65%	1.44%	0.00%	0.00%	4.66%	0.55%	0.00%	100%
Road 230	230	-	80	80	N	0600-0700	411	56.20%	17.39%	0.08%	7.32%	2.63%	1.21%	2.39%	0.00%	0.43%	3.34%	1.09%	0.75%	1.65%	0.00%	0.00%	4.89%	0.62%	0.00%	100%
Road 230	230	-	80	80	N	0700-0800	745	56.47%	14.84%	0.08%	7.77%	2.79%	1.35%	2.65%	0.00%	0.48%	3.78%	1.23%	0.85%	1.87%	0.00%	0.00%	5.16%	0.69%	0.00%	100%
Road 230	230	-	80	80	N	0800-0900	809	60.33%	18.45%	0.07%	6.69%	2.40%	1.03%	2.02%	0.00%	0.22%	1.71%	0.86%	0.59%	1.31%	0.00%	0.00%	3.79%	0.53%	0.00%	100%
Road 230	230	-	80	80	N	0900-1000	700	53.41%	17.30%	0.12%	11.42%	4.10%	2.09%	4.10%	0.00%	0.16%	1.26%	0.59%	0.41%	0.90%	0.00%	0.00%	3.06%	1.07%	0.00%	100%
Road 230	230	-	80	80	N	1000-1100	667	48.03%	21.88%	0.13%	12.88%	4.62%	2.48%	4.87%	0.00%	0.15%	1.15%	0.22%	0.15%	0.34%	0.00%	0.00%	1.82%	1.27%	0.00%	100%
Road 230	230	-	80	80	N	1100-1200	629	50.07%	20.98%	0.12%	11.31%	4.06%	2.51%	4.94%	0.00%	0.11%	0.89%	0.35%	0.24%	0.53%	0.00%	0.00%	2.57%	1.29%	0.00%	100%
Road 230	230	-	80	80	N	1200-1300	1050	59.72%	20.71%	0.06%	5.60%	2.01%	1.20%	2.36%	0.00%	0.37%	2.93%	0.77%	0.53%	1.17%	0.01%	0.32%	1.61%	0.62%	0.00%	100%
Road 230	230	-	80	80	N	1300-1400	1043	53.57%	22.13%	0.07%	6.86%	2.46%	1.24%	2.45%	0.00%	0.38%	2.97%	1.38%	0.96%	2.11%	0.02%	0.35%	2.40%	0.64%	0.00%	100%
Road 230	230	-	80	80	N	1400-1500	1081	60.64%	18.79%	0.06%	5.70%	2.05%	1.26%	2.48%	0.00%	0.32%	2.47%	0.61%	0.43%	0.93%	0.01%	0.32%	3.28%	0.65%	0.00%	100%
Road 230	230	-	80	80	N	1500-1600	1075	59.99%	21.57%	0.06%	5.91%	2.12%	1.34%	2.64%	0.00%	0.25%	1.93%	0.25%	0.18%	0.39%	0.01%	0.33%	2.32%	0.69%	0.00%	100%
Road 230	230	-	80	80	N	1600-1700	1172	59.53%	20.57%	0.06%	6.18%	2.22%	0.94%	1.85%	0.00%	0.19%	1.48%	0.78%	0.54%	1.18%	0.01%	0.34%	3.63%	0.48%	0.00%	100%
Road 230	230	-	80	80	N	1700-1800	1420	67.66%	14.56%	0.04%	3.84%	1.38%	0.46%	0.91%	0.00%	0.16%	1.22%	0.78%	0.54%	1.19%	0.00%	0.28%	6.72%	0.24%	0.00%	100%
Road 230	230	-	80	80	N	1800-1900	1463	72.58%	16.05%	0.03%	2.72%	0.98%	0.33%	0.65%	0.00%	0.03%	0.20%	0.52%	0.36%	0.80%	0.00%	0.29%	4.30%	0.17%	0.00%	100%
Road 230	230	-	80	80	N	1900-2000	1291	68.94%	21.80%	0.03%	2.43%	0.87%	0.11%	0.21%	0.00%	0.03%	0.25%	0.52%	0.36%	0.79%	0.01%	0.33%	3.26%	0.06%	0.00%	100%
Road 230	230	-	80	80	N	2000-2100	1052	66.99%	24.47%	0.02%	2.17%	0.78%	0.20%	0.39%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.01%	0.34%	2.96%	0.10%	0.00%	100%
Road 230	230	-	80	80	N	2100-2200	1001	60.11%	32.43%	0.02%	2.10%	0.76%	0.14%	0.27%	0.00%	0.01%	0.09%	0.35%	0.25%	0.54%	0.01%	0.38%	2.47%	0.07%	0.00%	100%
Road 230	230	-	80	80	N	2200-2300	981	56.05%	37.58%	0.02%	1.91%	0.69%	0.11%	0.21%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.01%	0.35%	2.84%	0.05%	0.00%	100%
Road 230	230	-	80	80	N	2300-0000	755	56.52%	35.44%	0.02%	2.12%	0.76%	0.16%	0.32%	0.00%	0.06%	0.49%	0.16%	0.11%	0.25%	0.01%	0.35%	3.13%	0.08%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 231	231	-	50	26.80558	Y	0000-0100	58	52.17%	30.47%	0.06%	5.40%	1.94%	0.52%	1.02%	0.00%	0.11%	0.83%	0.27%	0.19%	0.41%	0.05%	3.16%	3.15%	0.27%	0.00%	100%
Road 231	231	-	50	27.78438	Y	0100-0200	39	52.28%	28.20%	0.06%	5.86%	2.10%	0.66%	1.29%	0.00%	0.15%	1.21%	0.39%	0.27%	0.60%	0.05%	3.15%	3.40%	0.34%	0.00%	100%
Road 231	231	-	50	28.27734	Y	0200-0300	30	52.45%	25.88%	0.07%	6.32%	2.27%	0.80%	1.56%	0.00%	0.20%	1.59%	0.52%	0.36%	0.79%	0.05%	3.10%	3.63%	0.41%	0.00%	100%
Road 231	231	-	50	28.68821	Y	0300-0400	23	52.51%	23.60%	0.07%	6.80%	2.44%	0.93%	1.83%	0.00%	0.25%	1.96%	0.64%	0.44%	0.97%	0.05%	3.13%	3.90%	0.48%	0.00%	100%
Road 231	231	-	50	28.74139	Y	0400-0500	22	52.66%	21.25%	0.08%	7.28%	2.61%	1.07%	2.10%	0.00%	0.30%	2.34%	0.76%	0.53%	1.16%	0.05%	3.10%	4.15%	0.55%	0.00%	100%
Road 231	231	-	50	28.19379	Y	0500-0600	31	52.80%	18.89%	0.08%	7.77%	2.79%	1.21%	2.38%	0.00%	0.35%	2.72%	0.89%	0.62%	1.36%	0.05%	3.08%	4.40%	0.62%	0.00%	100%
Road 231	231	-	50	24.96828	Y	0600-0700	87	53.05%	16.42%	0.09%	8.24%	2.96%	1.37%	2.68%	0.00%	0.40%	3.16%	1.02%	0.71%	1.56%	0.04%	2.98%	4.62%	0.70%	0.00%	100%
Road 231	231	-	50	24.10208	Y	0700-0800	157	53.22%	13.99%	0.09%	8.73%	3.13%	1.51%	2.97%	0.00%	0.46%	3.56%	1.16%	0.80%	1.76%	0.04%	2.94%	4.86%	0.78%	0.00%	100%
Road 231	231	-	50	24.0447	Y	0800-0900	169	57.50%	17.58%	0.08%	7.60%	2.73%	1.17%	2.30%	0.00%	0.21%	1.63%	0.82%	0.57%	1.24%	0.06%	2.31%	3.61%	0.60%	0.00%	100%
Road 231	231	-	50	24.15329	Y	0900-1000	150	49.69%	16.10%	0.13%	12.67%	4.55%	2.31%	4.55%	0.00%	0.15%	1.18%	0.55%	0.38%	0.84%	0.06%	2.81%	2.84%	1.19%	0.00%	100%
Road 231	231	-	50	24.19984	Y	1000-1100	144	44.33%	20.20%	0.15%	14.17%	5.09%	2.72%	5.36%	0.00%	0.14%	1.06%	0.20%	0.14%	0.31%	0.13%	2.91%	1.68%	1.40%	0.00%	100%
Road 231	231	-	50	24.33024	Y	1100-1200	135	46.55%	19.51%	0.13%	12.54%	4.50%	2.79%	5.48%	0.00%	0.11%	0.83%	0.32%	0.22%	0.49%	0.03%	2.66%	2.39%	1.43%	0.00%	100%
Road 231	231	-	50	24.97332	Y	1200-1300	87	53.80%	18.66%	0.10%	9.87%	3.54%	2.12%	4.17%	0.00%	0.34%	2.64%	0.69%	0.48%	1.05%	0.00%	0.00%	1.45%	1.09%	0.00%	100%
Road 231	231	-	50	24.93672	Y	1300-1400	88	47.50%	19.62%	0.12%	11.91%	4.28%	2.16%	4.25%	0.00%	0.34%	2.63%	1.23%	0.85%	1.87%	0.00%	0.00%	2.13%	1.11%	0.00%	100%
Road 231	231	-	50	24.94609	Y	1400-1500	90	54.47%	16.88%	0.10%	10.02%	3.60%	2.22%	4.36%	0.00%	0.28%	2.22%	0.55%	0.38%	0.84%	0.00%	0.00%	2.95%	1.14%	0.00%	100%
Road 231	231	-	50	24.94951	Y	1500-1600	90	53.61%	19.28%	0.11%	10.35%	3.72%	2.35%	4.62%	0.00%	0.22%	1.73%	0.23%	0.16%	0.35%	0.00%	0.00%	2.08%	1.21%	0.00%	100%
Road 231	231	-	50	24.87666	Y	1600-1700	97	53.68%	18.55%	0.11%	10.91%	3.92%	1.66%	3.27%	0.00%	0.17%	1.34%	0.70%	0.49%	1.07%	0.00%	0.00%	3.28%	0.85%	0.00%	100%
Road 231	231	-	50	24.7674	Y	1700-1800	113	63.65%	13.70%	0.07%	7.08%	2.54%	0.85%	1.67%	0.00%	0.15%	1.15%	0.74%	0.51%	1.12%	0.00%	0.00%	6.33%	0.44%	0.00%	100%
Road 231	231	-	50	24.78672	Y	1800-1900	114	69.53%	15.37%	0.05%	5.10%	1.83%	0.62%	1.22%	0.00%	0.02%	0.19%	0.50%	0.35%	0.76%	0.00%	0.00%	4.12%	0.32%	0.00%	100%
Road 231	231	-	50	24.95779	Y	1900-2000	99	66.80%	21.12%	0.05%	4.62%	1.66%	0.20%	0.40%	0.00%	0.03%	0.24%	0.50%	0.35%	0.77%	0.00%	0.00%	3.16%	0.10%	0.00%	100%
Road 231	231	-	50	25.74965	Y	2000-2100	81	64.93%	23.72%	0.04%	4.12%	1.48%	0.38%	0.74%	0.00%	0.01%	0.08%	0.44%	0.31%	0.68%	0.00%	0.00%	2.87%	0.19%	0.00%	100%
Road 231	231	-	50	25.99653	Y	2100-2200	77	58.45%	31.53%	0.04%	4.00%	1.44%	0.26%	0.52%	0.00%	0.01%	0.09%	0.34%	0.24%	0.52%	0.00%	0.00%	2.40%	0.14%	0.00%	100%
Road 231	231	-	50	26.14668	Y	2200-2300	75	54.68%	36.66%	0.04%	3.65%	1.31%	0.20%	0.40%	0.00%	0.01%	0.08%	0.03%	0.02%	0.04%	0.00%	0.00%	2.77%	0.10%	0.00%	100%
Road 231	231	-	50	26.98646	Y	2300-0000	58	54.89%	34.42%	0.04%	4.02%	1.44%	0.31%	0.62%	0.00%	0.06%	0.48%	0.16%	0.11%	0.24%	0.00%	0.00%	3.04%	0.16%	0.00%	100%
Road 232	232	-	50	45.05474	N	0000-0100	264	58.97%	34.44%	0.01%	0.59%	0.21%	0.06%	0.11%	0.00%	0.12%	0.94%	0.31%	0.21%	0.46%	0.00%	0.00%	3.56%	0.03%	0.00%	100%
Road 232	232	-	50	46.62522	N	0100-0200	179	59.75%	32.23%	0.01%	0.64%	0.23%	0.07%	0.14%	0.00%	0.18%	1.38%	0.45%	0.31%	0.68%	0.00%	0.00%	3.89%	0.04%	0.00%	100%
Road 232	232	-	50	47.41667	N	0200-0300	136	60.62%	29.91%	0.01%	0.70%	0.25%	0.09%	0.17%	0.00%	0.24%	1.84%	0.60%	0.41%	0.91%	0.00%	0.00%	4.20%	0.05%	0.00%	100%
Road 232	232	-	50	48.06599	N	0300-0400	101	61.42%	27.61%	0.01%	0.76%	0.27%	0.10%	0.20%	0.00%	0.29%	2.29%	0.75%	0.52%	1.14%	0.00%	0.00%	4.57%	0.05%	0.00%	100%
Road 232	232	-	50	48.17372	N	0400-0500	95	62.34%	25.16%	0.01%	0.83%	0.30%	0.12%	0.24%	0.00%	0.36%	2.77%	0.91%	0.63%	1.38%	0.00%	0.00%	4.91%	0.06%	0.00%	100%
Road 232	232	-	50	47.42125	N	0500-0600	133	63.27%	22.63%	0.01%	0.89%	0.32%	0.14%	0.27%	0.00%	0.42%	3.26%	1.07%	0.74%	1.63%	0.00%	0.00%	5.27%	0.07%	0.00%	100%
Road 232	232	-	50	42.74102	N	0600-0700	370	64.32%	19.90%	0.01%	0.96%	0.34%	0.16%	0.31%	0.00%	0.49%	3.83%	1.24%	0.86%	1.89%	0.00%	0.00%	5.60%	0.08%	0.00%	100%
Road 232	232	-	50	38.24881	N	0700-0800	664	65.34%	17.17%	0.01%	1.03%	0.37%	0.18%	0.35%	0.00%	0.56%	4.37%	1.42%	0.98%	2.16%	0.00%	0.00%	5.97%	0.09%	0.00%	100%
Road 232	232	-	50	37.61824	N	0800-0900	740	68.00%	20.79%	0.01%	0.86%	0.31%	0.13%	0.26%	0.00%	0.25%	1.93%	0.97%	0.67%	1.47%	0.00%	0.00%	4.27%	0.07%	0.00%	100%
Road 232	232	-	50	39.36752	N	0900-1000	575	66.99%	21.71%	0.02%	1.64%	0.59%	0.30%	0.59%	0.00%	0.20%	1.58%	0.74%	0.52%	1.13%	0.00%	0.00%	3.83%	0.15%	0.00%	100%
Road 232	232	-	50	39.92141	N	1000-1100	527	62.58%	28.51%	0.02%	1.92%	0.69%	0.37%	0.73%	0.00%	0.19%	1.50%	0.29%	0.20%	0.44%	0.00%	0.00%	2.38%	0.19%	0.00%	100%
Road 232	232	-	50	40.21249	N	1100-1200	509	63.75%	26.72%	0.02%	1.65%	0.59%	0.37%	0.72%	0.00%	0.15%	1.14%	0.44%	0.31%	0.68%	0.00%	0.00%	3.28%	0.19%	0.00%	100%
Road 232	232	-	50	37.67648	N	1200-1300	686	60.48%	20.97%	0.05%	5.23%	1.88%	1.12%	2.21%	0.00%	0.38%	2.96%	0.78%	0.54%	1.19%	0.00%	0.00%	1.63%	0.58%	0.00%	100%
Road 232	232	-	50	37.54557	N	1300-1400	680	54.34%	22.45%	0.07%	6.42%	2.31%	1.17%	2.29%	0.00%	0.39%	3.01%	1.40%	0.97%	2.14%	0.00%	0.00%	2.44%	0.60%	0.00%	100%
Road 232	232	-	50	37.5182	N	1400-1500	706	61.42%	19.04%	0.06%	5.33%	1.91%	1.18%	2.32%	0.00%	0.32%	2.50%	0.62%	0.43%	0.95%	0.00%	0.00%	3.33%	0.60%	0.00%	100%
Road 232	232	-	50	37.62108	N	1500-1600	702	60.80%	21.86%	0.06%	5.53%	1.99%	1.26%	2.47%	0.00%	0.25%	1.96%	0.26%	0.18%	0.39%	0.00%	0.00%	2.35%	0.65%	0.00%	100%
Road 232	232	-	50	36.90908	N	1600-1700	765	60.29%	20.84%	0.06%	5.78%	2.07%	0.88%	1.73%	0.00%	0.19%	1.50%	0.79%	0.55%	1.20%	0.00%	0.00%	3.68%	0.45%	0.00%	100%
Road 232	232	-	50	35.42262	N	1700-1800	931	68.21%	14.68%	0.04%	3.58%	1.28%	0.43%	0.84%	0.00%	0.16%	1.23%	0.79%	0.55%	1.20%	0.00%	0.00%	6.78%	0.22%	0.00%	100%
Road 232	232	-	50	35.29767	N	1800-1900	961	73.07%	16.15%	0.03%	2.53%	0.91%	0.31%	0.60%	0.00%	0.03%	0.20%	0.53%	0.36%	0.80%	0.00%	0.00%	4.33%	0.16%	0.00%	100%
Road 232	232	-	50	36.5646	N	1900-2000	848	69.37%	21.94%	0.02%	2.26%	0.81%	0.10%	0.20%	0.00%	0.03%	0.25%	0.52%	0.36%	0.80%	0.00%	0.00%	3.28%	0.05%	0.00%	100%
Road 232	232	-	50	38.23387	N	2000-2100	691	67.41%	24.62%	0.02%	2.02%	0.72%	0.18%	0.36%	0.00%	0.01%	0.08%	0.46%	0.32%	0.70%	0.00%	0.00%	2.98%	0.09%	0.00%	100%
Road 232	232	-	50	38.624	N	2100-2200	658	60.50%	32.64%	0.02%	1.95%	0.70%	0.13%	0.25%	0.00%	0.01%	0.09%	0.36%	0.25%	0.54%	0.00%	0.00%	2.49%	0.07%	0.00%	100%
Road 232	232	-	50	38.84779	N	2200-2300	645	56.38%	37.80%	0.02%	1.78%	0.64%	0.10%	0.19%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.00%	2.85%	0.05%	0.00%	100%
Road 232	232	-	50	40.63459	N	2300-0000	496	56.88%	35.66%	0.02%	1.97%	0.71%	0.15%	0.30%	0.00%	0.06%	0.50%	0.16%	0.11%	0.25%	0.00%	0.00%	3.15%	0.08%	0.00%	100%
Road 233	233	-	80	80	N	0000-0100	369	52.61%	30.72%	0.07%	6.78%	2.43%	0.65%	1.28%	0.00%	0.11%	0.84%	0.27%	0.19%	0.41%	0.00%	0.12%	3.18%	0.33%	0.00%	100%
Road 233	233	-	80	80	N	0100-0200	254	52.57%	28.36%	0.08%	7.33%	2.63%	0.82%	1.61%	0.00%	0.16%	1.21%	0.39%	0.27%	0.60%	0.00%	0.12%	3.42%	0.42%	0.00%	100%
Road 233	233	-	80	80	N	0200-0300	196	52.57%	25.94%	0.08%	7.89%	2.83%	0.99%	1.95%	0.00%	0.20%	1.59%	0.52%	0.36%	0.79%	0.00%	0.12%	3.64%	0.51%	0.00%	100%
Road 233	233	-	80	80	N	0300-0400	148	52.50%	23.60%	0.09%	8.46%	3.04%	1.16%	2.27%	0.00%	0.25%	1.96%	0.64%	0.44%	0.97%	0.00%	0.12%	3.90%	0.59%	0.00%	100%
Road 233	233	-	80	80	N	0400-0500	140	52.49%	21.18%	0.09%	9.03%	3.24%	1.33%	2.61%	0.00%	0.30%	2.33%	0.76%	0.53%	1.16%	0.00%	0.12%	4.13%	0.68%	0.00%	100%
Road 233	233	-	80	80	N	0500-0600	200	52.47%	18.77%	0.10%	9.61%	3.45%	1.50%	2.94%	0.00%	0.35%	2.71%	0.89%	0.61%	1.35%	0.00%	0.12%	4.37%	0.77%	0.00%	100%
Road 233	233	-	80	80	N	0600-0700	566	52.51%	16.25%	0.11%	10.16%	3.65%	1.68%	3.31%	0.00%	0.40%	3.12%	1.01%	0.70%	1.54%	0.00%	0.11%	4.57%	0.86%	0.00%	100%
Road 233	233	-	80	80	N	0700-0800	1032	52.51%	13.80%	0.11%	10.72%	3.85%	1.86%	3.65%	0.00%	0.45%	3.51%	1.14%	0.79%	1.74%	0.00%	0.11%	4.80%	0.95%	0.00%	100%
Road 233	233	-	80	80	N	0800-0900	1107	56.78%	17.36%	0.10%	9.34%	3.35%	1.44%	2.82%	0.00%	0.21%	1.61%	0.81%	0.56%	1.23%	0.00%	0.09%	3.57%	0.74%	0.00%	100%
Road 233	233	-	80	80	N	0900-1000	1002	48.02%	15.56%	0.16%	15.25%	5.48%	2.78%	5.47%	0.00%	0.15%	1.14%	0.53%	0.37%	0.81%	0.00%	0.10%	2.75%	1.43%	0.00%	100%
Road 233	233	-	80	80	N	1000-1100	969	42.56%	19.39%	0.18%	16.94%	6.08%	3.26%	6.40%	0.00%	0.13%	1.02%	0.20%	0.14%	0.30%	0.00%	0.11%	1.62%	1.67%	0.00%	100%
Road 233	233	-	80	80	N	1100-1200	907	44.76%	18.76%	0.16%	15.01%	5.39%	3.34%	6.56%	0.00%	0.10%	0.80%	0.31%	0.22%	0.47%	0.00%	0.10%	2.30%	1.71%	0.00%	100%
Road 233	233	-	80	80	N	1200-1300	1142	57.95%	20.10%	0.07%	6.80%	2.44%	1.46%	2.87%	0.00%	0.36%	2.84%	0.75%	0.52%	1.14%	0.02%	0.36%	1.56%	0.75%	0.00%	100%
Road 233	233	-	80	80	N	1300-1400	1140	51.74%	21.38%	0.09%	8.30%	2.98%	1.51%	2.96%	0.00%	0.37%	2.87%	1.34%	0.93%	2.04%	0.02%	0.40%	2.32%	0.77%	0.00%	100%
Road 233	233	-	80	80	N	1400-1500	1176	58.80%	18.22%	0.07%	6.92%	2.49%	1.53%	3.01%	0.00%	0.31%	2.39%	0.59%	0.41%	0.91%	0.01%	0.37%	3.18%	0.79%	0.00%	100%
Road 233	233	-	80	80	N	1500-1600	1172	58.08%	20.89%	0.07%	7.17%	2.58%	1.63%	3.20%	0.00%	0.24%	1.87%	0.25%	0.17%	0.37%	0.01%	0.38%	2.25%	0.84%	0.00%	100%
Road 233	233	-	80	80	N	1600-1700	1274	57.78%	19.97%	0.08%	7.52%	2.70%	1.14%	2.25%	0.00%	0.18%	1.44%	0.75%	0.52%	1.15%	0.01%	0.39%	3.53%	0.59%	0.00%	100%
Road 233	233	-	80	80	N	1700-1800	1525	66.47%	14.30%	0.05%	4.73%	1.70%	0.57%	1.12%	0.00%	0.15%	1.20%	0.77%	0.53%	1.17%	0.01%	0.32%	6.61%	0.29%	0.00%	100%
Road 233	233	-	80	80	N	1800-1900	1563	71.66%	15.84%	0.04%	3.37%	1.21%	0.41%	0.80%	0.00%	0.02%	0.19%	0.52%	0.36%	0.79%	0.00%	0.34%	4.25%	0.21%	0.00%	100%
Road 233	233	-	80	80	N	1900-2000	1375	68.26%	21.59%	0.03%	3.02%	1.08%	0.13%	0.26%	0.00%	0.03%	0.24%	0.51%	0.36%	0.78%	0.02%	0.38%	3.23%	0.07%	0.00%	100%
Road 233	233	-	80	80	N	2000-2100	1121	66.33%	24.23%	0.03%	2.69%	0.97%	0.25%	0.48%	0.00%	0.01%	0.08%	0.45%	0.32%	0.69%	0.01%	0.40%	2.93%	0.13%	0.00%	100%
Road 233	233	-	80	80	N	2100-2200	1066	59.56%	32.13%	0.03%	2.61%	0.94%	0.17%	0.34%	0.00%	0.01%	0.09%	0.35%	0.24%	0.53%	0.01%	0.45%	2.45%	0.09%	0.00%	100%
Road 233	233	-	80	80	N	2200-2300	1044	55.59%	37.27%	0.02%	2.38%	0.85%	0.13%	0.26%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.01%	0.41%	2.81%	0.07%	0.00%	100%
Road 233	233	-	80	80	N	2300-0000	804	55.99%	35.11%	0.03%	2.63%	0.94%	0.20%	0.40%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.01%	0.42%	3.10%	0.10%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 234	234	-	80	80	N	0000-0100	996	57.48%	33.57%	0.02%	1.91%	0.69%	0.18%	0.36%	0.00%	0.12%	0.91%	0.30%	0.21%	0.45%	0.00%	0.23%	3.47%	0.09%	0.00%	100%
Road 234	234	-	80	80	N	0100-0200	677	58.07%	31.33%	0.02%	2.09%	0.75%	0.23%	0.46%	0.00%	0.17%	1.34%	0.44%	0.30%	0.66%	0.00%	0.23%	3.78%	0.12%	0.00%	100%
Road 234	234	-	80	80	N	0200-0300	516	58.73%	28.98%	0.02%	2.27%	0.82%	0.29%	0.56%	0.00%	0.23%	1.78%	0.58%	0.40%	0.88%	0.00%	0.23%	4.07%	0.15%	0.00%	100%
Road 234	234	-	80	80	N	0300-0400	385	59.32%	26.67%	0.03%	2.47%	0.89%	0.34%	0.66%	0.00%	0.28%	2.21%	0.72%	0.50%	1.10%	0.00%	0.23%	4.41%	0.17%	0.00%	100%
Road 234	234	-	80	80	N	0400-0500	362	60.00%	24.21%	0.03%	2.66%	0.96%	0.39%	0.77%	0.00%	0.34%	2.67%	0.87%	0.60%	1.33%	0.00%	0.23%	4.73%	0.20%	0.00%	100%
Road 234	234	-	80	80	N	0500-0600	508	60.69%	21.71%	0.03%	2.87%	1.03%	0.45%	0.88%	0.00%	0.40%	3.13%	1.02%	0.71%	1.56%	0.00%	0.23%	5.06%	0.23%	0.00%	100%
Road 234	234	-	80	80	N	0600-0700	1424	61.48%	19.02%	0.03%	3.07%	1.10%	0.51%	1.00%	0.00%	0.47%	3.66%	1.19%	0.82%	1.81%	0.00%	0.23%	5.35%	0.26%	0.00%	100%
Road 234	234	-	80	76.83772	N	0700-0800	2566	62.22%	16.35%	0.03%	3.28%	1.18%	0.57%	1.12%	0.00%	0.53%	4.16%	1.35%	0.94%	2.06%	0.00%	0.23%	5.69%	0.29%	0.00%	100%
Road 234	234	-	80	75.32158	N	0800-0900	2832	65.36%	19.99%	0.03%	2.77%	1.00%	0.43%	0.84%	0.00%	0.24%	1.86%	0.93%	0.64%	1.41%	0.00%	0.17%	4.11%	0.22%	0.00%	100%
Road 234	234	-	80	79.24223	N	0900-1000	2285	62.05%	20.11%	0.05%	5.08%	1.82%	0.93%	1.82%	0.00%	0.19%	1.47%	0.69%	0.48%	1.05%	0.01%	0.23%	3.55%	0.48%	0.00%	100%
Road 234	234	-	80	80	N	1000-1100	2124	57.17%	26.05%	0.06%	5.87%	2.11%	1.13%	2.22%	0.00%	0.18%	1.37%	0.26%	0.18%	0.40%	0.01%	0.25%	2.17%	0.58%	0.00%	100%
Road 234	234	-	80	80	N	1100-1200	2035	58.74%	24.62%	0.05%	5.08%	1.83%	1.13%	2.22%	0.00%	0.13%	1.05%	0.41%	0.28%	0.62%	0.00%	0.22%	3.02%	0.58%	0.00%	100%
Road 234	234	-	80	80	N	1200-1300	835	56.81%	19.70%	0.08%	7.73%	2.78%	1.66%	3.26%	0.00%	0.36%	2.78%	0.73%	0.51%	1.11%	0.00%	0.10%	1.53%	0.85%	0.00%	100%
Road 234	234	-	80	80	N	1300-1400	836	50.56%	20.89%	0.10%	9.40%	3.38%	1.71%	3.35%	0.00%	0.36%	2.80%	1.31%	0.91%	1.99%	0.01%	0.11%	2.27%	0.88%	0.00%	100%
Road 234	234	-	80	80	N	1400-1500	860	57.60%	17.85%	0.08%	7.86%	2.82%	1.74%	3.42%	0.00%	0.30%	2.34%	0.58%	0.40%	0.89%	0.00%	0.10%	3.12%	0.89%	0.00%	100%
Road 234	234	-	80	80	N	1500-1600	858	56.84%	20.44%	0.08%	8.14%	2.92%	1.85%	3.63%	0.00%	0.23%	1.83%	0.24%	0.17%	0.37%	0.00%	0.10%	2.20%	0.95%	0.00%	100%
Road 234	234	-	80	80	N	1600-1700	931	56.65%	19.58%	0.09%	8.54%	3.07%	1.30%	2.56%	0.00%	0.18%	1.41%	0.74%	0.51%	1.13%	0.00%	0.11%	3.46%	0.67%	0.00%	100%
Road 234	234	-	80	80	N	1700-1800	1105	65.74%	14.15%	0.06%	5.43%	1.95%	0.65%	1.28%	0.00%	0.15%	1.19%	0.76%	0.53%	1.16%	0.00%	0.09%	6.53%	0.33%	0.00%	100%
Road 234	234	-	80	80	N	1800-1900	1128	71.15%	15.73%	0.04%	3.87%	1.39%	0.47%	0.93%	0.00%	0.02%	0.19%	0.51%	0.36%	0.78%	0.00%	0.09%	4.22%	0.24%	0.00%	100%
Road 234	234	-	80	80	N	1900-2000	990	67.96%	21.49%	0.04%	3.48%	1.25%	0.15%	0.30%	0.00%	0.03%	0.24%	0.51%	0.36%	0.78%	0.00%	0.11%	3.21%	0.08%	0.00%	100%
Road 234	234	-	80	80	N	2000-2100	807	66.05%	24.12%	0.03%	3.11%	1.12%	0.28%	0.56%	0.00%	0.01%	0.08%	0.45%	0.31%	0.69%	0.00%	0.11%	2.92%	0.15%	0.00%	100%
Road 234	234	-	80	80	N	2100-2200	766	59.36%	32.02%	0.03%	3.02%	1.08%	0.20%	0.39%	0.00%	0.01%	0.09%	0.35%	0.24%	0.53%	0.00%	0.12%	2.44%	0.10%	0.00%	100%
Road 234	234	-	80	80	N	2200-2300	750	55.43%	37.16%	0.03%	2.75%	0.99%	0.15%	0.30%	0.00%	0.01%	0.09%	0.03%	0.02%	0.05%	0.00%	0.12%	2.80%	0.08%	0.00%	100%
Road 234	234	-	80	80	N	2300-0000	578	55.78%	34.98%	0.03%	3.03%	1.09%	0.24%	0.46%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.00%	0.12%	3.09%	0.12%	0.00%	100%
Road 235	235	-	50	47.4905	Y	0000-0100	132	57.99%	33.87%	0.01%	1.34%	0.48%	0.13%	0.25%	0.00%	0.12%	0.92%	0.30%	0.21%	0.46%	0.01%	0.34%	3.50%	0.07%	0.00%	100%
Road 235	235	-	50	48.28269	Y	0100-0200	90	58.66%	31.64%	0.02%	1.47%	0.53%	0.16%	0.32%	0.00%	0.17%	1.35%	0.44%	0.31%	0.67%	0.01%	0.35%	3.81%	0.08%	0.00%	100%
Road 235	235	-	50	48.68182	Y	0200-0300	68	59.41%	29.32%	0.02%	1.60%	0.58%	0.20%	0.40%	0.00%	0.23%	1.80%	0.59%	0.41%	0.89%	0.01%	0.34%	4.12%	0.10%	0.00%	100%
Road 235	235	-	50	49.01024	Y	0300-0400	51	60.08%	27.01%	0.02%	1.74%	0.63%	0.24%	0.47%	0.00%	0.29%	2.24%	0.73%	0.51%	1.11%	0.01%	0.35%	4.47%	0.12%	0.00%	100%
Road 235	235	-	50	49.0627	Y	0400-0500	48	60.86%	24.56%	0.02%	1.88%	0.68%	0.28%	0.54%	0.00%	0.35%	2.71%	0.88%	0.61%	1.35%	0.01%	0.35%	4.79%	0.14%	0.00%	100%
Road 235	235	-	50	48.67262	Y	0500-0600	67	61.65%	22.05%	0.02%	2.03%	0.73%	0.32%	0.62%	0.00%	0.41%	3.18%	1.04%	0.72%	1.58%	0.01%	0.35%	5.14%	0.16%	0.00%	100%
Road 235	235	-	50	46.25317	Y	0600-0700	187	62.54%	19.35%	0.02%	2.17%	0.78%	0.36%	0.71%	0.00%	0.48%	3.72%	1.21%	0.84%	1.84%	0.00%	0.34%	5.44%	0.19%	0.00%	100%
Road 235	235	-	50	43.1957	Y	0700-0800	337	63.40%	16.66%	0.02%	2.33%	0.84%	0.40%	0.79%	0.00%	0.54%	4.24%	1.38%	0.95%	2.10%	0.00%	0.34%	5.79%	0.21%	0.00%	100%
Road 235	235	-	50	42.67504	Y	0800-0900	373	66.37%	20.29%	0.02%	1.96%	0.70%	0.30%	0.59%	0.00%	0.24%	1.88%	0.94%	0.65%	1.44%	0.01%	0.26%	4.17%	0.15%	0.00%	100%
Road 235	235	-	50	44.07742	Y	0900-1000	297	63.95%	20.72%	0.04%	3.65%	1.31%	0.67%	1.31%	0.00%	0.19%	1.51%	0.71%	0.49%	1.08%	0.01%	0.35%	3.66%	0.34%	0.00%	100%
Road 235	235	-	50	44.52945	Y	1000-1100	274	59.24%	26.99%	0.04%	4.24%	1.52%	0.81%	1.60%	0.00%	0.18%	1.42%	0.27%	0.19%	0.42%	0.02%	0.38%	2.25%	0.42%	0.00%	100%
Road 235	235	-	50	44.7624	Y	1100-1200	264	60.68%	25.43%	0.04%	3.66%	1.31%	0.81%	1.60%	0.00%	0.14%	1.08%	0.42%	0.29%	0.64%	0.00%	0.34%	3.12%	0.42%	0.00%	100%
Road 235	235	-	50	44.12173	Y	1200-1300	273	56.06%	19.44%	0.09%	8.15%	2.93%	1.75%	3.44%	0.00%	0.35%	2.75%	0.72%	0.50%	1.10%	0.01%	0.30%	1.51%	0.90%	0.00%	100%
Road 235	235	-	50	43.94879	Y	1300-1400	274	49.80%	20.57%	0.10%	9.89%	3.55%	1.80%	3.53%	0.00%	0.35%	2.76%	1.29%	0.89%	1.96%	0.02%	0.33%	2.23%	0.92%	0.00%	100%
Road 235	235	-	50	43.97898	Y	1400-1500	282	56.82%	17.61%	0.09%	8.28%	2.97%	1.83%	3.60%	0.00%	0.30%	2.31%	0.58%	0.40%	0.88%	0.01%	0.31%	3.08%	0.94%	0.00%	100%
Road 235	235	-	50	44.01765	Y	1500-1600	281	56.04%	20.15%	0.09%	8.57%	3.08%	1.95%	3.83%	0.00%	0.23%	1.81%	0.24%	0.16%	0.36%	0.01%	0.32%	2.17%	1.00%	0.00%	100%
Road 235	235	-	50	43.55837	Y	1600-1700	305	55.91%	19.32%	0.09%	9.01%	3.23%	1.37%	2.70%	0.00%	0.18%	1.39%	0.73%	0.51%	1.11%	0.01%	0.33%	3.41%	0.70%	0.00%	100%
Road 235	235	-	50	42.77004	Y	1700-1800	360	65.19%	14.03%	0.06%	5.75%	2.06%	0.69%	1.35%	0.00%	0.15%	1.18%	0.76%	0.52%	1.15%	0.00%	0.27%	6.48%	0.35%	0.00%	100%
Road 235	235	-	50	42.80599	Y	1800-1900	367	70.68%	15.63%	0.04%	4.11%	1.48%	0.50%	0.98%	0.00%	0.02%	0.19%	0.51%	0.35%	0.77%	0.00%	0.29%	4.19%	0.26%	0.00%	100%
Road 235	235	-	50	43.76433	Y	1900-2000	322	67.55%	21.36%	0.04%	3.70%	1.33%	0.16%	0.32%	0.00%	0.03%	0.24%	0.51%	0.35%	0.78%	0.01%	0.33%	3.20%	0.08%	0.00%	100%
Road 235	235	-	50	44.91523	Y	2000-2100	262	65.65%	23.98%	0.03%	3.30%	1.19%	0.30%	0.59%	0.00%	0.01%	0.08%	0.45%	0.31%	0.69%	0.01%	0.34%	2.90%	0.16%	0.00%	100%
Road 235	235	-	50	45.19622	Y	2100-2200	249	59.01%	31.83%	0.03%	3.20%	1.15%	0.21%	0.42%	0.00%	0.01%	0.09%	0.35%	0.24%	0.53%	0.01%	0.38%	2.42%	0.11%	0.00%	100%
Road 235	235	-	50	45.36953	Y	2200-2300	244	55.13%	36.96%	0.03%	2.92%	1.05%	0.16%	0.32%	0.00%	0.01%	0.08%	0.03%	0.02%	0.05%	0.01%	0.35%	2.79%	0.08%	0.00%	100%
Road 235	235	-	50	46.38947	Y	2300-0000	188	55.45%	34.77%	0.03%	3.22%	1.16%	0.25%	0.49%	0.00%	0.06%	0.49%	0.16%	0.11%	0.24%	0.01%	0.36%	3.07%	0.13%	0.00%	100%
Road 236	236	-	50	48.59798	N	0000-0100	66	46.51%	27.16%	0.13%	12.45%	4.47%	1.20%	2.35%	0.00%	0.09%	0.74%	0.24%	0.17%	0.37%	0.01%	0.69%	2.81%	0.61%	0.00%	100%
Road 236	236	-	50	49.00618	N	0100-0200	46	45.88%	24.75%	0.14%	13.30%	4.78%	1.49%	2.92%	0.00%	0.14%	1.06%	0.34%	0.24%	0.52%	0.01%	0.67%	2.98%	0.76%	0.00%	100%
Road 236	236	-	50	49.21022	N	0200-0300	36	45.30%	22.36%	0.15%	14.14%	5.08%	1.78%	3.50%	0.00%	0.18%	1.37%	0.45%	0.31%	0.68%	0.01%	0.65%	3.14%	0.91%	0.00%	100%
Road 236	236	-	50	49.38683	N	0300-0400	27	44.68%	20.09%	0.16%	14.97%	5.38%	2.04%	4.02%	0.00%	0.21%	1.67%	0.54%	0.38%	0.83%	0.01%	0.65%	3.32%	1.05%	0.00%	100%
Road 236	236	-	50	49.39975	N	0400-0500	26	44.12%	17.81%	0.16%	15.78%	5.67%	2.32%	4.56%	0.00%	0.25%	1.96%	0.64%	0.44%	0.98%	0.01%	0.63%	3.48%	1.19%	0.00%	100%
Road 236	236	-	50	49.12191	N	0500-0600	38	43.57%	15.58%	0.17%	16.58%	5.96%	2.58%	5.07%	0.00%	0.29%	2.25%	0.74%	0.51%	1.12%	0.01%	0.62%	3.63%	1.32%	0.00%	100%
Road 236	236	-	50	47.44022	N	0600-0700	109	43.07%	13.33%	0.18%	17.31%	6.22%	2.87%	5.64%	0.00%	0.33%	2.56%	0.83%	0.58%	1.27%	0.01%	0.59%	3.75%	1.47%	0.00%	100%
Road 236	236	-	50	45.20386	N	0700-0800	201	42.55%	11.18%	0.19%	18.06%	6.48%	3.13%	6.15%	0.00%	0.36%	2.85%	0.92%	0.64%	1.41%	0.01%	0.57%	3.89%	1.61%	0.00%	100%
Road 236	236	-	50	45.21509	N	0800-0900	210	47.45%	14.51%	0.17%	16.22%	5.83%	2.49%	4.90%	0.00%	0.17%	1.35%	0.67%	0.47%	1.03%	0.01%	0.47%	2.98%	1.28%	0.00%	100%
Road 236	236	-	50	44.72866	N	0900-1000	212	35.96%	11.65%	0.25%	23.73%	8.52%	4.33%	8.52%	0.00%	0.11%	0.85%	0.40%	0.28%	0.61%	0.01%	0.50%	2.06%	2.23%	0.00%	100%
Road 236	236	-	50	44.63504	N	1000-1100	211	30.88%	14.07%	0.27%	25.54%	9.17%	4.91%	9.65%	0.00%	0.09%	0.74%	0.14%	0.10%	0.22%	0.02%	0.49%	1.17%	2.52%	0.00%	100%
Road 236	236	-	50	45.10484	N	1100-1200	194	33.10%	13.87%	0.24%	23.07%	8.29%	5.13%	10.08%	0.00%	0.08%	0.59%	0.23%	0.16%	0.35%	0.01%	0.46%	1.70%	2.63%	0.00%	100%
Road 236	236	-	50	48.70912	N	1200-1300	50	33.07%	11.47%	0.24%	23.45%	8.42%	5.04%	9.90%	0.00%	0.21%	1.62%	0.43%	0.30%	0.65%	0.07%	1.66%	0.89%	2.59%	0.00%	100%
Road 236	236	-	50	48.60218	N	1300-1400	53	27.72%	11.45%	0.28%	26.86%	9.65%	4.88%	9.58%	0.00%	0.20%	1.54%	0.72%	0.50%	1.09%	0.09%	1.71%	1.24%	2.50%	0.00%	100%
Road 236	236	-	50	48.65491	N	1400-1500	52	33.16%	10.28%	0.25%	23.58%	8.47%	5.22%	10.25%	0.00%	0.17%	1.35%	0.34%	0.23%	0.51%	0.04%	1.67%	1.80%	2.68%	0.00%	100%
Road 236	236	-	50	48.62869	N	1500-1600	53	32.12%	11.55%	0.25%	23.96%	8.61%	5.45%	10.70%	0.00%	0.13%	1.03%	0.14%	0.09%	0.21%	0.04%	1.68%	1.24%	2.80%	0.00%	100%
Road 236	236	-	50	48.59326	N	1600-1700	56	33.05%	11.42%	0.27%	25.98%	9.33%	3.96%	7.78%	0.00%	0.11%	0.82%	0.43%	0.30%	0.66%	0.05%	1.80%	2.02%	2.03%	0.00%	100%
Road 236	236	-	50	48.71183	N	1700-1800	55	45.86%	9.87%	0.21%	19.73%	7.08%	2.37%	4.65%	0.00%	0.11%	0.83%	0.53%	0.37%	0.81%	0.03%	1.78%	4.56%	1.21%	0.00%	100%
Road 236	236	-	50	48.83866	N	1800-1900	52	53.97%	11.93%	0.16%	15.31%	5.50%	1.86%	3.66%	0.00%	0.02%	0.15%	0.39%	0.27%	0.59%	0.01%	2.03%	3.20%	0.96%	0.00%	100%
Road 236	236	-	50	49.06412	N	1900-2000	43	54.19%	17.14%	0.15%	14.48%	5.20%	0.64%	1.25%	0.00%	0.02%	0.19%	0.41%	0.28%	0.62%	0.10%	2.44%	2.56%	0.33%	0.00%	100%
Road 236	236	-	50	49.23228	N	2000-2100	35	52.73%	19.26%	0.14%	12.94%	4.65%	1.18%	2.33%	0.00%	0.01%	0.07%	0.36%	0.25%	0.55%	0.05%	2.55%	2.33%	0.61%	0.00%	100%
Road 236	236	-	50	49.28589	N	2100-2200	33	47.94%	25.86%	0.13%	12.70%	4.56%	0.84%	1.65%	0.00%	0.01%	0.07%	0.28%	0.20%	0.43%	0.04%	2.90%	1.97%	0.43%	0.00%	100%
Road 236	236	-	50	49.32965	N	2200-2300	32	45.69%	30.63%	0.12%	11.81%	4.24%	0.66%	1.29%	0.00%	0.01%	0.07%	0.02%	0.02%	0.04%	0.04%	2.72%	2.31%	0.34%	0.00%	100%
Road 236	236	-	50	49.46029	N	2300-0000	25	44.91%	28.16%	0.13%	12.72%	4.57%	0.99%	1.95%	0.00%	0.05%	0.39%	0.13%	0.09%	0.20%	0.04%	2.67%	2.49%	0.51%	0.00%	100%

Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
1	1001	846249.74	815425.56	846245.35	815432.78	0.00	11.50	6.75						
1	1002	846245.35	815432.78	846245.10	815525.02	0.00	7.90	6.75						
1	1003	846245.10	815525.02	846245.01	815559.11	0.00	8.00							
1	1004	846245.01	815559.11	846245.01	815575.50	0.00	7.80							
1	1005	846245.01	815575.50	846245.45	815592.33	0.00	8.20							
1	1006	846245.45	815592.33	846247.00	815609.06	0.00	8.40							
1	1007	846247.00	815609.06	846249.44	815629.44	0.00	8.60							
1	1008	846249.44	815629.44	846252.98	815650.14	0.00	8.60							
1	1009	846252.98	815650.14	846257.76	815669.20	0.00	8.40							
1	1010	846257.76	815669.20	846264.73	815691.11	0.00	8.30							
1	1011	846264.73	815691.11	846274.02	815718.14	0.00	8.50							
1	1012	846274.02	815718.14	846311.10	815811.18	0.00	7.90							
1	1013	846311.10	815811.18	846318.48	815828.42	0.00	10.00							
2	1014	846329.61	815824.40	846323.67	815806.46	0.00	9.20							
2	1015	846323.67	815806.46	846296.68	815743.54	0.00	7.60							
2	1016	846296.68	815743.54	846286.23	815716.17	0.00	10.20							
2	1017	846286.23	815716.17	846277.14	815692.73	0.00	10.50							
2	1018	846277.14	815692.73	846268.78	815668.75	0.00	8.90							
2	1019	846268.78	815668.75	846263.69	815647.49	0.00	7.30							
2	1020	846263.69	815647.49	846259.51	815625.87	0.00	7.20							
2	1021	846259.51	815625.87	846256.79	815605.70	0.00	7.20							
2	1022	846256.79	815605.70	846255.70	815589.16	0.00	7.20							
2	1023	846255.70	815589.16	846254.97	815572.63	0.00	7.30							
2	1024	846254.97	815572.63	846254.79	815555.36	0.00	7.20							
2	1025	846254.79	815555.36	846254.79	815522.29	0.00	7.40							
2	1026	846254.79	815522.29	846254.92	815432.50	0.00	7.50	6.75						
2	1027	846254.92	815432.50	846249.74	815425.56	0.00	8.50	6.75						
3	1028	846318.48	815828.42	846343.10	815886.03	0.00	13.80							
3	1029	846343.10	815886.03	846374.51	815958.97	0.00	10.80							
3	1030	846374.51	815958.97	846399.01	816016.39	0.00	7.40							
3	1031	846399.01	816016.39	846411.42	816047.59	0.00	7.70							
3	1032	846411.42	816047.59	846419.55	816073.01	0.00	8.40							
3	1033	846419.55	816073.01	846422.76	816089.54	0.00	9.20							
3	1034	846422.76	816089.54	846425.74	816105.88	0.00	9.50							
3	1035	846425.74	816105.88	846427.50	816123.01	0.00	9.70							
3	1036	846427.50	816123.01	846428.91	816146.82	0.00	10.30							
3	1037	846428.91	816146.82	846427.87	816189.95	0.00	10.20							
4	1038	846444.11	816145.31	846443.37	816126.48	0.00	10.50							
4	1039	846443.37	816126.48	846440.40	816108.39	0.00	10.10							
4	1040	846440.40	816108.39	846437.15	816090.73	0.00	9.50							
4	1041	846437.15	816090.73	846432.91	816075.05	0.00	8.60							
4	1042	846432.91	816075.05	846429.01	816059.47	0.00	8.60							
4	1043	846429.01	816059.47	846422.46	816041.57	0.00	8.90							
4	1044	846422.46	816041.57	846413.28	816017.27	0.00	8.40							
4	1045	846413.28	816017.27	846388.41	815959.20	0.00	7.40							
4	1046	846388.41	815959.20	846356.10	815886.12	0.00	7.40							
4	1047	846356.10	815886.12	846329.61	815824.40	0.00	10.80							
31	1048	846189.79	815881.75	846195.78	815884.09	0.00	7.50							
31	1049	846195.78	815884.09	846303.98	815841.95	0.00	10.00							
31	1050	846303.98	815841.95	846319.32	815835.42	0.00	10.00							
32	1051	846315.16	815821.21	846298.37	815828.43	0.00	11.30							
32	1052	846298.37	815828.43	846191.62	815874.66	0.00	8.30							
32	1053	846191.62	815874.66	846189.79	815881.75	0.00	7.50							
33	1054	845841.38	816028.31	845848.80	816029.11	0.00	7.50							
33	1055	845848.80	816029.11	845890.00	816011.31	0.00	7.60							
33	1056	845890.00	816011.31	845918.18	815999.81	0.00	7.60							
34	1057	845916.33	815991.80	845904.48	815996.97	0.00	7.00							
34	1058	845904.48	815996.97	845845.69	816021.86	0.00	7.60							
34	1059	845845.69	816021.86	845841.38	816028.31	0.00	7.60							
35	1060	845833.14	816031.20	845796.48	815943.67	0.00	11.20							
35	1061	845796.48	815943.67	845795.14	815934.83	0.00	11.20							
35	1062	845795.14	815934.83	845794.72	815928.75	0.00	11.60							
35	1063	845794.72	815928.75	845795.04	815922.77	0.00	11.70							
35	1064	845795.04	815922.77	845796.40	815915.96	0.00	11.70							
35	1065	845796.40	815915.96	845797.87	815911.13	0.00	11.70							
35	1066	845797.87	815911.13	845800.28	815904.94	0.00	11.40							
35	1067	845800.28	815904.94	845803.64	815899.80	0.00	10.90							
35	1068	845803.64	815899.80	845881.40	815799.77	0.00	10.40							
35	1069	845881.40	815799.77	845924.67	815742.80	0.00	10.40							
35	1070	845924.67	815742.80	845954.77	815705.57	0.00	10.40							
35	1071	845954.77	815705.57	845961.79	815699.49	0.00	11.90							
35	1072	845961.79	815699.49	845967.98	815694.98	0.00	13.70							
36	1073	845833.14	816031.20	845796.48	815943.67	0.00	11.20							
36	1074	845796.48	815943.67	845795.14	815934.83	0.00	11.20							
36	1075	845795.14	815934.83	845794.72	815928.75	0.00	11.60							
36	1076	845794.72	815928.75	845795.04	815922.77	0.00	11.70							
36	1077	845795.04	815922.77	845796.40	815915.96	0.00	11.70							
36	1078	845796.40	815915.96	845797.87	815911.13	0.00	11.70							
36	1079	845797.87	815911.13	845800.28	815904.94	0.00	11.40							
36	1080	845800.28	815904.94	845803.64	815899.80	0.00	10.90							
36	1081	845803.64	815899.80	845881.40	815799.77	0.00	10.40							
36	1082	845881.40	815799.77	845924.67	815742.80	0.00	10.40							
36	1083	845924.67	815742.80	845954.77	815705.57	0.00	10.40							
36	1084	845954.77	815705.57	845961.79	815699.49	0.00	11.90							
36	1085	845961.79	815699.49	845967.98	815694.98	0.00	13.70							
37	1086	845967.98	815694.98	845975.01	815691.62	0.00	7.50							
37	1087	845975.01	815691.62	845984.28	815687.81	0.00	14.20							
37	1088	845984.28	815687.81	846069.93	815662.48	0.00	10.50							
37	1089	846069.93	815662.48	846075.20	815661.92	0.00	12.00							
37	1090	846130.23	815769.01	846123.90	815754.05	0.00	10.80							
37	1091	846123.90	815754.05	846114.01	815729.47	0.00	10.40							

Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
37	1092	846114.01	815729.47	846104.40	815699.07	0.00	10.30							
37	1093	846104.40	815699.07	846098.87	815679.77	0.00	10.70							
37	1094	846098.87	815679.77	846094.45	815671.05	0.00	11.90							
37	1095	846094.45	815671.05	846091.74	815668.39	0.00	12.70							
37	1096	846091.74	815668.39	846087.12	815665.25	0.00	12.90							
37	1097	846087.12	815665.25	846082.04	815662.94	0.00	13.00							
37	1098	846082.04	815662.94	846075.20	815661.92	0.00	12.70							
38	1099	845967.98	815694.98	845975.01	815691.62	0.00	7.50							
38	1100	845975.01	815691.62	845984.28	815687.81	0.00	14.20							
38	1101	845984.28	815687.81	846069.93	815662.48	0.00	10.50							
38	1102	846069.93	815662.48	846075.20	815661.92	0.00	12.00							
38	1103	846130.23	815769.01	846123.90	815754.05	0.00	10.80							
38	1104	846123.90	815754.05	846114.01	815729.47	0.00	10.40							
38	1105	846114.01	815729.47	846104.40	815699.07	0.00	10.30							
38	1106	846104.40	815699.07	846098.87	815679.77	0.00	10.70							
38	1107	846098.87	815679.77	846094.45	815671.05	0.00	11.90							
38	1108	846094.45	815671.05	846091.74	815668.39	0.00	12.70							
38	1109	846091.74	815668.39	846087.12	815665.25	0.00	12.90							
38	1110	846087.12	815665.25	846082.04	815662.94	0.00	13.00							
38	1111	846082.04	815662.94	846075.20	815661.92	0.00	12.70							
39	1112	846180.01	815885.67	846154.30	815825.94	0.00	13.80							
39	1113	846154.30	815825.94	846130.23	815769.01	0.00	13.10							
40	1114	846180.01	815885.67	846154.30	815825.94	0.00	13.80							
40	1115	846154.30	815825.94	846130.23	815769.01	0.00	13.10							
41	1116	846020.74	815957.36	846034.19	815951.71	0.00	7.60							
41	1117	846034.19	815951.71	846166.58	815895.82	0.00	7.60							
41	1118	846166.58	815895.82	846168.66	815889.78	0.00	7.50							
42	1119	846168.66	815889.78	846162.60	815886.12	0.00	7.50							
42	1120	846162.60	815886.12	846016.98	815948.11	0.00	8.30							
43	1121	846290.60	816148.81	846209.37	815957.44	0.00	11.00							
43	1122	846209.37	815957.44	846195.01	815920.99	0.00	12.00							
43	1123	846195.01	815920.99	846180.01	815885.67	0.00	12.00							
44	1124	846290.60	816148.81	846209.37	815957.44	0.00	11.00							
44	1125	846209.37	815957.44	846195.01	815920.99	0.00	12.00							
44	1126	846195.01	815920.99	846180.01	815885.67	0.00	7.50							
49	1127	846037.73	815996.57	846132.80	816215.51	0.00	14.40							
49	1128	846020.74	815957.36	846037.73	815996.57	0.00	14.90							
50	1129	846037.73	815996.57	846132.80	816215.51	0.00	14.40							
50	1130	846020.74	815957.36	846037.73	815996.57	0.00	14.90							
53	1131	845610.29	816126.90	845841.38	816028.31	0.00	13.70							
54	1132	845610.29	816126.90	845841.38	816028.31	0.00	13.70							
55	1133	845833.14	816031.20	845859.89	816096.18	0.00	14.20							
56	1134	845833.14	816031.20	845859.89	816096.18	0.00	14.20							
59	1135	845859.89	816096.18	845879.25	816139.53	0.00	13.60							
59	1136	845879.25	816139.53	845941.97	816287.30	0.00	13.60							
59	1137	845941.97	816287.30	846073.42	816600.38	0.00	13.60							
60	1138	845859.89	816096.18	845879.25	816139.53	0.00	13.60							
60	1139	845879.25	816139.53	845941.97	816287.30	0.00	13.60							
60	1140	845941.97	816287.30	846073.42	816600.38	0.00	13.60							
61	1141	845918.18	815999.81	845925.42	815996.71	0.00	7.60							
61	1142	845925.42	815996.71	845932.50	815993.88	0.00	7.60							
61	1143	845932.50	815993.88	845991.88	815969.31	0.00	7.60							
61	1144	845991.88	815969.31	846020.74	815957.36	0.00	10.40							
62	1145	846016.98	815948.11	845999.41	815955.33	0.00	7.60							
62	1146	845999.41	815955.33	845987.46	815960.69	0.00	6.90							
62	1147	845987.46	815960.69	845928.00	815986.72	0.00	7.60							
62	1148	845928.00	815986.72	845916.33	815991.80	0.00	7.60							
63	1149	846149.29	815399.00	846231.03	815404.99	0.00	7.50	6.75						
64	1150	846149.88	815391.31	846231.59	815397.71	0.00	7.50	6.75						
65	1151	846056.67	815393.03	846149.29	815399.00	0.00	7.50	6.75						
66	1152	846149.88	815391.31	846057.42	815385.11	0.00	7.50	6.75						
67	1153	846056.67	815393.03	846009.80	815381.14	0.00	7.50	6.75						
67	1154	846009.80	815381.14	845976.17	815357.49	0.00	7.50	6.75						
68	1155	846057.42	815385.11	846015.22	815370.92	0.00	7.50	6.75						
68	1156	846015.22	815370.92	845983.00	815348.92	0.00	7.50	6.75						
69	1157	845976.17	815357.49	845953.17	815329.72	0.00	7.50	6.75						
69	1158	845953.17	815329.72	845915.20	815232.94	0.00	7.50	6.75						
69	1159	845915.20	815232.94	845898.92	815202.78	0.00	7.50	6.75						
69	1160	845898.92	815202.78	845879.18	815181.73	0.00	7.50	6.75						
69	1161	845879.18	815181.73	845852.71	815163.07	0.00	7.50	6.75						
70	1162	845983.00	815348.92	845962.92	815324.50	0.00	7.50	6.75						
70	1163	845962.92	815324.50	845925.58	815231.04	0.00	7.50	6.75						
70	1164	845925.58	815231.04	845908.93	815199.22	0.00	7.50	6.75						
70	1165	845908.93	815199.22	845884.80	815174.30	0.00	7.50	6.75						
70	1166	845884.80	815174.30	845857.17	815155.69	0.00	7.50	6.75						
71	1167	845852.71	815163.07	845812.35	815145.93	0.00	7.50	6.75						
72	1168	845857.17	815155.69	845816.90	815137.68	0.00	7.50	6.75						
73	1169	845812.35	815145.93	845723.44	815108.23	0.00	7.50	6.75						
74	1170	845816.90	815137.68	845728.34	815098.71	0.00	7.50	6.75						
75	1171	846153.68	815027.50	846227.08	815038.13	0.00	7.50	6.75						
76	1172	846157.28	815020.92	846227.70	815028.96	0.00	7.50	6.75						
77	1173	846040.48	814974.47	846153.68	815027.50	0.00	7.50	6.75						
78	1174	846042.98	814968.22	846157.28	815020.92	0.00	7.50	6.75						
79	1175	845955.35	814936.14	846040.48	814974.47	0.00	7.50	6.75						
80	1176	845957.59	814930.86	846042.98	814968.22	0.00	7.50	6.75						
81	1177	845901.61	814911.00	845955.35	814936.14	0.00	7.50	6.75						
82	1178	845904.36	814906.31	845957.59	814930.86	0.00	7.50	6.75						
83	1179	845867.76	814897.86	845901.61	814911.00	0.00	7.50	6.75						
84	1180	845871.09	814890.58	845904.36	814906.31	0.00	7.50	6.75						
85	1181	846172.94	814720.59	846248.34	814757.37	0.00	7.50	6.75						
86	1182	846174.98	814716.78	846251.82	814749.73	0.00	7.50	6.75						

Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
87	1183	846054.45	814665.83	846172.94	814720.59	0.00	7.50	6.75						
88	1184	846056.62	814662.16	846174.98	814716.78	0.00	7.50	6.75						
89	1185	845993.68	814640.82	846054.45	814665.83	0.00	7.50	6.75						
90	1186	845997.30	814632.91	846056.62	814662.16	0.00	7.50	6.75						
91	1187	846244.29	814374.89	846362.29	814431.61	0.00	7.50	6.75						
92	1188	846246.05	814372.04	846365.43	814424.75	0.00	7.50	6.75						
93	1189	846144.78	814332.26	846244.29	814374.89	0.00	7.50	6.75						
94	1190	846148.65	814323.80	846246.05	814372.04	0.00	7.50	6.75						
95	1191	846471.75	814072.85	846518.70	814095.34	0.00	7.50	6.75						
96	1192	846474.79	814066.21	846522.78	814087.62	0.00	7.50	6.75						
97	1193	846381.81	814030.00	846471.75	814072.85	0.00	7.50	6.75						
98	1194	846384.02	814024.73	846474.79	814066.21	0.00	7.50	6.75						
99	1195	846308.51	813997.85	846381.81	814030.00	0.00	7.50	6.75						
100	1196	846311.87	813990.49	846384.02	814024.73	0.00	7.50	6.75						
101	1197	846242.52	815420.06	846242.65	815350.45	0.00	7.50	6.75						
102	1198	846254.78	815422.67	846252.69	815351.12	0.00	7.50	6.75						
103	1199	846242.65	815350.45	846235.63	815036.30	0.00	7.50	6.75						
104	1200	846252.69	815351.12	846251.49	815034.34	0.00	7.50	6.75						
105	1201	846235.63	815036.30	846239.75	814936.93	0.00	7.50	6.75						
105	1202	846239.75	814936.93	846263.49	814756.53	0.00	7.50	6.75						
106	1203	846251.49	815034.34	846253.02	814921.11	0.00	7.50	6.75						
106	1204	846253.02	814921.11	846274.27	814758.07	0.00	7.50	6.75						
107	1205	846263.49	814756.53	846292.39	814643.68	0.00	7.50	6.75						
108	1206	846274.27	814758.07	846301.83	814647.04	0.00	7.50	6.75						
109	1207	846292.39	814643.68	846331.91	814520.48	0.00	7.50	6.75						
110	1208	846301.83	814647.04	846345.05	814524.41	0.00	7.50	6.75						
111	1209	846331.91	814520.48	846373.98	814431.87	0.00	7.50	6.75						
112	1210	846345.05	814524.41	846385.14	814435.78	0.00	7.50	6.75						
113	1211	846373.98	814431.87	846404.63	814369.42	0.00	7.50	6.75						
114	1212	846385.14	814435.78	846413.63	814373.78	0.00	7.50	6.75						
115	1213	846404.63	814369.42	846439.46	814294.53	0.00	7.50	6.75						
116	1214	846413.63	814373.78	846448.51	814298.78	0.00	7.50	6.75						
117	1215	846439.46	814294.53	846485.56	814195.41	0.00	7.50	6.75						
118	1216	846448.51	814298.78	846494.67	814199.53	0.00	7.50	6.75						
119	1217	846485.56	814195.41	846531.12	814094.70	0.00	7.50	6.75						
120	1218	846494.67	814199.53	846542.32	814099.15	0.00	7.50	6.75						
121	1219	846531.12	814094.70	846564.57	814025.35	0.00	7.50	6.75						
122	1220	846542.32	814099.15	846574.32	814028.88	0.00	7.50	6.75						
123	1221	846564.57	814025.35	846599.63	813952.65	0.00	7.50	6.75						
124	1222	846574.32	814028.88	846605.96	813959.39	0.00	7.50	6.75						
125	1223	845852.45	815151.20	845951.24	814937.53	0.00	7.50	6.75						
126	1224	845861.59	815156.08	845958.13	814940.68	0.00	7.50	6.75						
127	1225	845748.75	815095.23	845789.55	815010.21	0.00	7.50	6.75						
128	1226	845757.71	815099.61	845799.09	815013.45	0.00	7.50	6.75						
129	1227	845789.55	815010.21	845850.73	814886.87	0.00	7.50	6.75						
130	1228	845799.09	815013.45	845859.52	814891.06	0.00	7.50	6.75						
131	1229	845850.73	814886.87	845907.39	814761.26	0.00	7.50	6.75						
132	1230	845859.52	814891.06	845916.67	814765.05	0.00	7.50	6.75						
133	1231	845907.39	814761.26	845976.25	814628.53	0.00	7.50	6.75						
134	1232	845916.67	814765.05	845986.61	814633.02	0.00	7.50	6.75						
135	1233	845976.25	814628.53	846063.42	814442.64	0.00	7.50	6.75						
136	1234	845986.61	814633.02	846075.76	814448.49	0.00	7.50	6.75						
137	1235	846063.42	814442.64	846127.90	814320.77	0.00	7.50	6.75						
138	1236	846075.76	814448.49	846138.07	814324.60	0.00	7.50	6.75						
139	1237	846127.90	814320.77	846188.64	814195.23	0.00	7.50	6.75						
140	1238	846138.07	814324.60	846198.04	814198.77	0.00	7.50	6.75						
141	1239	846188.64	814195.23	846263.10	814043.18	0.00	7.50	6.75						
142	1240	846198.04	814198.77	846272.04	814047.66	0.00	7.50	6.75						
143	1241	846263.10	814043.18	846290.62	813986.88	0.00	7.50	6.75						
144	1242	846272.04	814047.66	846301.33	813991.71	0.00	7.50	6.75						
145	1243	846290.62	813986.88	846332.92	813903.89	0.00	7.50	6.75						
146	1244	846301.33	813991.71	846342.23	813907.39	0.00	7.50	6.75						
205	1245	843604.88	816826.38	843592.31	816823.19	0.00	7.50							
205	1246	843592.31	816823.19	843580.63	816826.50	0.00	7.50							
205	1247	843580.63	816826.50	843572.31	816835.38	0.00	7.50							
205	1248	843572.31	816835.38	843569.81	816847.38	0.00	7.50							
205	1249	843569.81	816847.38	843572.88	816865.38	0.00	7.50							
205	1250	843572.88	816865.38	843570.88	816885.19	0.00	7.50							
205	1251	843570.88	816885.19	843572.19	816900.81	0.00	7.50							
205	1252	843572.19	816900.81	843577.69	816915.13	0.00	7.50							
205	1253	843577.69	816915.13	843585.38	816927.19	0.00	7.50							
205	1254	843585.38	816927.19	843594.38	816937.63	0.00	7.50							
205	1255	843594.38	816937.63	843615.81	816960.13	0.00	7.50							
206	1256	843619.31	816956.38	843598.81	816935.13	0.00	7.50							
206	1257	843598.81	816935.13	843590.00	816923.81	0.00	7.50							
206	1258	843590.00	816923.81	843582.31	816911.31	0.00	7.50							
206	1259	843582.31	816911.31	843576.69	816890.63	0.00	7.50							
206	1260	843576.69	816890.63	843582.63	816871.63	0.00	7.50							
206	1261	843582.63	816871.63	843594.81	816867.88	0.00	7.50							
206	1262	843594.81	816867.88	843611.19	816857.81	0.00	7.50							
206	1263	843611.19	816857.81	843613.31	816839.19	0.00	7.50							
206	1264	843613.31	816839.19	843604.63	816826.63	0.00	7.50							
207	1265	843615.81	816960.19	843679.38	817026.63	0.00	7.50							
208	1266	843682.88	817022.88	843619.31	816956.31	0.00	7.50							
209	1267	844334.05	817896.42	844332.40	817887.57	0.00	8.00							
209	1268	844332.40	817887.57	844329.10	817876.33	0.00	8.00							
209	1269	844329.10	817876.33	844320.76	817862.17	0.00	7.90							
209	1270	844320.76	817862.17	844310.97	817850.80	0.00	8.00							
209	1271	844310.97	817850.80	844295.49	817837.30	0.00	7.90							
209	1272	844295.49	817837.30	844278.96	817823.68	0.00	8.00							
209	1273	844278.96	817823.68	844270.23	817814.81	0.00	8.00							

Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
209	1274	844270.23	817814.81	844263.21	817806.08	0.00	8.00							
209	1275	844263.21	817806.08	844256.86	817795.50	0.00	7.90							
209	1276	844256.86	817795.50	844252.37	817783.33	0.00	8.00							
209	1277	844252.37	817783.33	844249.46	817771.82	0.00	8.00							
209	1278	844249.46	817771.82	844247.74	817761.23	0.00	8.00							
209	1279	844247.74	817761.23	844243.24	817728.82	0.00	8.00							
209	1280	844243.24	817728.82	844241.92	817722.21	0.00	8.00							
209	1281	844241.92	817722.21	844239.40	817711.49	0.00	8.00							
209	1282	844239.40	817711.49	844234.11	817700.12	0.00	8.00							
209	1283	844234.11	817700.12	844229.08	817691.52	0.00	8.00							
209	1284	844229.08	817691.52	844219.16	817681.86	0.00	7.90							
209	1285	844219.16	817681.86	844206.73	817675.11	0.00	8.00							
209	1286	844206.73	817675.11	844197.47	817672.33	0.00	7.90							
209	1287	844197.47	817672.33	844185.56	817671.54	0.00	8.00							
209	1288	844185.56	817671.54	844177.36	817672.47	0.00	7.90							
209	1289	844177.36	817672.47	844170.21	817674.32	0.00	8.00							
209	1290	844170.21	817674.32	844160.82	817678.82	0.00	8.00							
209	1291	844160.82	817678.82	844151.03	817685.56	0.00	8.00							
209	1292	844151.03	817685.56	844142.70	817694.56	0.00	8.00							
209	1293	844142.70	817694.56	844136.48	817703.95	0.00	8.00							
209	1294	844136.48	817703.95	844131.85	817714.27	0.00	8.00							
209	1295	844131.85	817714.27	844128.67	817725.65	0.00	8.00							
209	1296	844128.67	817725.65	844127.22	817734.91	0.00	8.00							
209	1297	844127.22	817734.91	844126.82	817747.48	0.00	8.00							
209	1298	844126.82	817747.48	844127.48	817756.47	0.00	8.00							
209	1299	844127.48	817756.47	844128.94	817767.06	0.00	8.00							
209	1300	844128.94	817767.06	844131.05	817778.04	0.00	8.00							
209	1301	844131.05	817778.04	844135.68	817793.38	0.00	8.00							
209	1302	844135.68	817793.38	844143.62	817813.89	0.00	8.00							
209	1303	844143.62	817813.89	844155.93	817841.40	0.00	7.90							
209	1304	844155.93	817841.40	844161.88	817856.09	0.00	7.90							
209	1305	844161.88	817856.09	844164.00	817863.10	0.00	7.90							
209	1306	844164.00	817863.10	844165.98	817871.96	0.00	7.90							
209	1307	844165.98	817871.96	844167.43	817883.87	0.00	8.00							
209	1308	844167.43	817883.87	844166.77	817898.69	0.00	8.00							
209	1309	844166.77	817898.69	844164.66	817911.52	0.00	7.90							
209	1310	844164.66	817911.52	844160.69	817924.09	0.00	8.00							
209	1311	844160.69	817924.09	844154.87	817936.79	0.00	7.90							
209	1312	844154.87	817936.79	844149.18	817945.65	0.00	7.90							
209	1313	844149.18	817945.65	844143.36	817953.06	0.00	7.90							
209	1314	844143.36	817953.06	844136.21	817960.60	0.00	7.90							
209	1315	844136.21	817960.60	844126.69	817968.67	0.00	8.00							
209	1316	844126.69	817968.67	844116.11	817975.28	0.00	7.90							
209	1317	844116.11	817975.28	844103.80	817980.84	0.00	7.90							
209	1318	844103.80	817980.84	844096.92	817983.35	0.00	8.00							
209	1319	844096.92	817983.35	844085.28	817985.73	0.00	8.00							
209	1320	844085.28	817985.73	844074.83	817986.92	0.00	8.00							
209	1321	844074.83	817986.92	844054.06	817987.06	0.00	8.00							
209	1322	844054.06	817987.06	844007.10	817986.66	0.00	8.00							
209	1323	844007.10	817986.66	843998.89	817987.32	0.00	8.00							
209	1324	843998.89	817987.32	843987.78	817989.44	0.00	8.00							
209	1325	843987.78	817989.44	843974.82	817993.67	0.00	8.00							
209	1326	843974.82	817993.67	843965.69	817998.17	0.00	8.00							
209	1327	843965.69	817998.17	843956.83	818003.33	0.00	8.00							
209	1328	843956.83	818003.33	843949.15	818009.41	0.00	8.00							
209	1329	843949.15	818009.41	843943.73	818014.18	0.00	8.00							
209	1330	843943.73	818014.18	843938.31	818019.07	0.00	8.00							
209	1331	843938.31	818019.07	843933.15	818024.89	0.00	8.00							
209	1332	843933.15	818024.89	843924.15	818036.14	0.00	10.70							
209	1333	843924.15	818036.14	843915.55	818046.72	0.00	10.90							
209	1334	843915.55	818046.72	843910.13	818052.67	0.00	10.40							
209	1335	843910.13	818052.67	843902.45	818060.74	0.00	8.00							
209	1336	843902.45	818060.74	843895.05	818066.83	0.00	8.00							
209	1337	843895.05	818066.83	843887.64	818072.12	0.00	8.00							
209	1338	843887.64	818072.12	843880.49	818075.82	0.00	8.00							
209	1339	843880.49	818075.82	843871.63	818079.53	0.00	8.00							
209	1340	843871.63	818079.53	843860.12	818083.23	0.00	8.00							
209	1341	843860.12	818083.23	843849.40	818085.22	0.00	8.00							
209	1342	843849.40	818085.22	843836.97	818086.14	0.00	8.00							
209	1343	843836.97	818086.14	843733.91	818089.58	0.00	7.90							
209	1344	843733.91	818089.58	843723.86	818090.51	0.00	8.00							
209	1345	843723.86	818090.51	843715.39	818091.96	0.00	8.00							
209	1346	843715.39	818091.96	843706.27	818094.74	0.00	8.00							
209	1347	843706.27	818094.74	843697.27	818098.18	0.00	7.90							
209	1348	843697.27	818098.18	843688.67	818102.42	0.00	8.00							
209	1349	843688.67	818102.42	843679.01	818108.63	0.00	8.00							
209	1350	843679.01	818108.63	843669.09	818116.44	0.00	8.00							
209	1351	843669.09	818116.44	843653.88	818129.80	0.00	11.00							
209	1352	843653.88	818129.80	843642.63	818139.72	0.00	10.20							
209	1353	843642.63	818139.72	843637.47	818143.43	0.00	8.00							
209	1354	843637.47	818143.43	843632.45	818146.73	0.00	8.70							
209	1355	843632.45	818146.73	843627.17	818149.71	0.00	7.50							
210	1356	844334.05	817896.42	844332.40	817887.57	0.00	8.00							
210	1357	844332.40	817887.57	844329.10	817876.33	0.00	8.00							
210	1358	844329.10	817876.33	844320.76	817862.17	0.00	7.90							
210	1359	844320.76	817862.17	844310.97	817850.80	0.00	8.00							
210	1360	844310.97	817850.80	844295.49	817837.30	0.00	7.90							
210	1361	844295.49	817837.30	844278.96	817823.68	0.00	8.00							
210	1362	844278.96	817823.68	844270.23	817814.81	0.00	8.00							
210	1363	844270.23	817814.81	844263.21	817806.08	0.00	8.00							
210	1364	844263.21	817806.08	844256.86	817795.50	0.00	7.90							

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
210	1365	844256.86	817795.50	844252.37	817783.33	0.00	8.00							
210	1366	844252.37	817783.33	844249.46	817771.82	0.00	8.00							
210	1367	844249.46	817771.82	844247.74	817761.23	0.00	8.00							
210	1368	844247.74	817761.23	844243.24	817728.82	0.00	8.00							
210	1369	844243.24	817728.82	844241.92	817722.21	0.00	8.00							
210	1370	844241.92	817722.21	844239.40	817711.49	0.00	8.00							
210	1371	844239.40	817711.49	844234.11	817700.12	0.00	8.00							
210	1372	844234.11	817700.12	844229.08	817691.52	0.00	8.00							
210	1373	844229.08	817691.52	844219.16	817681.86	0.00	7.90							
210	1374	844219.16	817681.86	844206.73	817675.11	0.00	8.00							
210	1375	844206.73	817675.11	844197.47	817672.33	0.00	7.90							
210	1376	844197.47	817672.33	844185.56	817671.54	0.00	8.00							
210	1377	844185.56	817671.54	844177.36	817672.47	0.00	7.90							
210	1378	844177.36	817672.47	844170.21	817674.32	0.00	8.00							
210	1379	844170.21	817674.32	844160.82	817678.82	0.00	8.00							
210	1380	844160.82	817678.82	844151.03	817685.56	0.00	8.00							
210	1381	844151.03	817685.56	844142.70	817694.56	0.00	8.00							
210	1382	844142.70	817694.56	844136.48	817703.95	0.00	8.00							
210	1383	844136.48	817703.95	844131.85	817714.27	0.00	8.00							
210	1384	844131.85	817714.27	844128.67	817725.65	0.00	8.00							
210	1385	844128.67	817725.65	844127.22	817734.91	0.00	8.00							
210	1386	844127.22	817734.91	844126.82	817747.48	0.00	8.00							
210	1387	844126.82	817747.48	844127.48	817756.47	0.00	8.00							
210	1388	844127.48	817756.47	844128.94	817767.06	0.00	8.00							
210	1389	844128.94	817767.06	844131.05	817778.04	0.00	8.00							
210	1390	844131.05	817778.04	844135.68	817793.38	0.00	8.00							
210	1391	844135.68	817793.38	844143.62	817813.89	0.00	8.00							
210	1392	844143.62	817813.89	844155.93	817841.40	0.00	7.90							
210	1393	844155.93	817841.40	844161.88	817856.09	0.00	7.90							
210	1394	844161.88	817856.09	844164.00	817863.10	0.00	7.90							
210	1395	844164.00	817863.10	844165.98	817871.96	0.00	7.90							
210	1396	844165.98	817871.96	844167.43	817883.87	0.00	8.00							
210	1397	844167.43	817883.87	844166.77	817898.69	0.00	8.00							
210	1398	844166.77	817898.69	844164.66	817911.52	0.00	7.90							
210	1399	844164.66	817911.52	844160.69	817924.09	0.00	8.00							
210	1400	844160.69	817924.09	844154.87	817936.79	0.00	7.90							
210	1401	844154.87	817936.79	844149.18	817945.65	0.00	7.90							
210	1402	844149.18	817945.65	844143.36	817953.06	0.00	7.90							
210	1403	844143.36	817953.06	844136.21	817960.60	0.00	7.90							
210	1404	844136.21	817960.60	844126.69	817968.67	0.00	8.00							
210	1405	844126.69	817968.67	844116.11	817975.28	0.00	7.90							
210	1406	844116.11	817975.28	844103.80	817980.84	0.00	7.90							
210	1407	844103.80	817980.84	844096.92	817983.35	0.00	8.00							
210	1408	844096.92	817983.35	844085.28	817985.73	0.00	8.00							
210	1409	844085.28	817985.73	844074.83	817986.92	0.00	8.00							
210	1410	844074.83	817986.92	844054.06	817987.06	0.00	8.00							
210	1411	844054.06	817987.06	844007.10	817986.66	0.00	8.00							
210	1412	844007.10	817986.66	843998.89	817987.32	0.00	8.00							
210	1413	843998.89	817987.32	843987.78	817989.44	0.00	8.00							
210	1414	843987.78	817989.44	843974.82	817993.67	0.00	8.00							
210	1415	843974.82	817993.67	843965.69	817998.17	0.00	8.00							
210	1416	843965.69	817998.17	843956.83	818003.33	0.00	8.00							
210	1417	843956.83	818003.33	843949.15	818009.41	0.00	8.00							
210	1418	843949.15	818009.41	843943.73	818014.18	0.00	8.00							
210	1419	843943.73	818014.18	843938.31	818019.07	0.00	8.00							
210	1420	843938.31	818019.07	843933.15	818024.89	0.00	8.00							
210	1421	843933.15	818024.89	843924.15	818036.14	0.00	10.70							
210	1422	843924.15	818036.14	843915.55	818046.72	0.00	10.90							
210	1423	843915.55	818046.72	843910.13	818052.67	0.00	10.40							
210	1424	843910.13	818052.67	843902.45	818060.74	0.00	8.00							
210	1425	843902.45	818060.74	843895.05	818066.83	0.00	8.00							
210	1426	843895.05	818066.83	843887.64	818072.12	0.00	8.00							
210	1427	843887.64	818072.12	843880.49	818075.82	0.00	8.00							
210	1428	843880.49	818075.82	843871.63	818079.53	0.00	8.00							
210	1429	843871.63	818079.53	843860.12	818083.23	0.00	8.00							
210	1430	843860.12	818083.23	843849.40	818085.22	0.00	8.00							
210	1431	843849.40	818085.22	843836.97	818086.14	0.00	8.00							
210	1432	843836.97	818086.14	843733.91	818089.58	0.00	7.90							
210	1433	843733.91	818089.58	843723.86	818090.51	0.00	8.00							
210	1434	843723.86	818090.51	843715.39	818091.96	0.00	8.00							
210	1435	843715.39	818091.96	843706.27	818094.74	0.00	8.00							
210	1436	843706.27	818094.74	843697.27	818098.18	0.00	7.90							
210	1437	843697.27	818098.18	843688.67	818102.42	0.00	8.00							
210	1438	843688.67	818102.42	843679.01	818108.63	0.00	8.00							
210	1439	843679.01	818108.63	843669.09	818116.44	0.00	8.00							
210	1440	843669.09	818116.44	843653.88	818129.80	0.00	11.00							
210	1441	843653.88	818129.80	843642.63	818139.72	0.00	10.20							
210	1442	843642.63	818139.72	843637.47	818143.43	0.00	8.00							
210	1443	843637.47	818143.43	843632.45	818146.73	0.00	8.70							
210	1444	843632.45	818146.73	843627.17	818149.71	0.00	7.50							
211	1445	843679.38	817026.63	843806.38	817158.88	4.00	7.50							
212	1446	843810.13	817155.13	843682.81	817023.13	4.00	7.50							
213	1447	843806.63	817158.81	843842.63	817196.63	6.00	7.50							
213	1448	843842.63	817196.63	843878.69	817234.38	8.00	7.50							
213	1449	843878.69	817234.38	843893.38	817249.88	9.00	7.50							
213	1450	843893.38	817249.88	843908.13	817265.38	10.00	7.50							
213	1451	843908.13	817265.38	843927.50	817289.50	10.00	7.50							
213	1452	843927.50	817289.50	843945.63	817314.81	11.00	7.50							
213	1453	843945.63	817314.81	843961.19	817336.88	12.00	7.50							
213	1454	843961.19	817336.88	843977.63	817358.38	12.00	7.50							
213	1455	843977.63	817358.38	844040.38	817438.63	14.00	7.50							

Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
213	1456	844040.38	817438.63	844055.00	817457.31	19.00	7.50							
213	1457	844055.00	817457.31	844069.63	817475.88	20.00	7.50							
213	1458	844069.63	817475.88	844084.88	817493.88	22.00	7.50							
213	1459	844084.88	817493.88	844100.88	817511.00	23.00	7.50							
213	1460	844100.88	817511.00	844127.69	817535.63	24.00	7.50							
213	1461	844127.69	817535.63	844155.13	817558.31	23.00	7.50							
214	1462	844049.81	817433.50	844006.88	817378.88	19.00	7.50							
214	1463	844006.88	817378.88	843979.31	817344.88	16.00	7.50							
214	1464	843979.31	817344.88	843951.63	817311.00	13.00	7.50							
214	1465	843951.63	817311.00	843918.31	817269.88	11.00	7.50							
214	1466	843918.31	817269.88	843901.13	817249.63	10.00	7.50							
214	1467	843901.13	817249.63	843882.81	817230.81	9.00	7.50							
214	1468	843882.81	817230.81	843846.50	817192.88	9.00	7.50							
214	1469	843846.50	817192.88	843810.13	817155.00	7.00	7.50							
215	1470	844385.58	818194.95	844384.43	818350.91	0.00	15.00							
215	1471	844384.43	818350.91	844384.64	818507.17	0.00	15.00							
215	1472	844384.64	818507.17	844390.77	818514.39	0.00	7.50							
215	1473	844385.91	818151.10	844385.58	818194.95	0.00	15.00							
216	1474	844154.31	817559.63	844185.63	817586.13	20.00	7.50							
216	1475	844185.63	817586.13	844217.31	817611.13	20.00	7.50							
216	1476	844217.31	817611.13	844237.13	817624.31	19.00	7.50							
216	1477	844237.13	817624.31	844257.63	817636.13	17.00	7.50							
216	1478	844257.63	817636.13	844288.91	817649.03	16.00	7.50							
216	1479	844288.91	817649.03	844323.18	817662.07	12.00	7.50							
216	1480	844323.18	817662.07	844346.37	817676.88	9.00	7.50							
216	1481	844346.37	817676.88	844359.02	817689.08	7.00	7.50							
216	1482	844359.02	817689.08	844365.42	817698.10	6.00	7.50							
216	1483	844365.42	817698.10	844374.22	817714.83	6.00	7.50							
216	1484	844374.22	817714.83	844379.88	817745.31	5.00	7.50							
216	1485	844379.88	817745.31	844381.53	817776.30	5.00	7.50							
217	1486	844156.81	817556.31	844190.13	817580.88	20.00	7.50							
217	1487	844190.13	817580.88	844200.00	817588.13	20.00	7.50							
217	1488	844200.00	817588.13	844209.88	817595.31	20.00	7.50							
217	1489	844209.88	817595.31	844229.63	817609.69	20.00	7.50							
217	1490	844229.63	817609.69	844251.00	817622.13	20.00	7.50							
217	1491	844251.00	817622.13	844272.31	817633.19	20.00	7.50							
217	1492	844272.31	817633.19	844316.19	817655.13	19.00	7.50							
217	1493	844316.19	817655.13	844329.81	817659.19	20.00	7.50							
217	1494	844329.81	817659.19	844343.81	817661.19	20.00	7.50							
217	1495	844343.81	817661.19	844356.63	817659.81	20.00	7.50							
217	1496	844356.63	817659.81	844368.31	817655.88	20.00	7.50							
217	1497	844368.31	817655.88	844379.00	817648.88	21.00	7.50							
217	1498	844379.00	817648.88	844387.81	817639.88	20.00	7.50							
217	1499	844387.81	817639.88	844398.88	817618.63	19.00	7.50							
217	1500	844398.88	817618.63	844411.31	817571.69	18.00	7.50							
217	1501	844411.31	817571.69	844419.00	817548.38	14.00	7.50							
217	1502	844419.00	817548.38	844428.81	817526.63	13.00	7.50							
217	1503	844428.81	817526.63	844453.38	817483.50	11.00	7.50							
217	1504	844453.38	817483.50	844481.13	817442.88	9.00	7.50							
218	1505	844316.31	817502.31	844328.88	817526.38	12.00	7.50							
218	1506	844328.88	817526.38	844332.69	817538.31	12.00	7.50							
218	1507	844332.69	817538.31	844334.13	817550.38	13.00	7.50							
218	1508	844334.13	817550.38	844332.63	817564.19	13.00	7.50							
218	1509	844332.63	817564.19	844327.88	817577.88	13.00	7.50							
218	1510	844327.88	817577.88	844320.31	817590.31	13.00	7.50							
218	1511	844320.31	817590.31	844310.13	817600.19	13.00	7.50							
218	1512	844310.13	817600.19	844299.69	817606.81	14.00	7.50							
218	1513	844299.69	817606.81	844287.38	817611.19	14.00	7.50							
218	1514	844287.38	817611.19	844274.81	817613.13	15.00	7.50							
218	1515	844274.81	817613.13	844262.13	817612.81	16.00	7.50							
218	1516	844262.13	817612.81	844250.13	817609.38	17.00	7.50							
218	1517	844250.13	817609.38	844238.63	817604.50	17.00	7.50							
218	1518	844238.63	817604.50	844217.63	817590.63	19.00	7.50							
218	1519	844217.63	817590.63	844176.13	817560.81	20.00	7.50							
218	1520	844176.13	817560.81	844135.88	817529.63	22.00	7.50							
218	1521	844135.88	817529.63	844117.00	817512.81	24.00	7.50							
218	1522	844117.00	817512.81	844098.63	817495.19	24.00	7.50							
218	1523	844098.63	817495.19	844087.13	817482.38	23.00	7.50							
218	1524	844087.13	817482.38	844077.50	817471.63	22.00	7.50							
218	1525	844077.50	817471.63	844064.38	817455.63	22.00	7.50							
218	1526	844064.38	817455.63	844048.19	817434.69	20.00	7.50							
219	1527	844421.50	817353.13	844408.19	817358.13	11.00	7.50							
219	1528	844408.19	817358.13	844394.69	817364.63	11.00	7.50							
219	1529	844394.69	817364.63	844367.88	817377.38	11.00	7.50							
219	1530	844367.88	817377.38	844323.38	817398.88	12.00	7.50							
219	1531	844323.38	817398.88	844279.88	817422.31	14.00	7.50							
219	1532	844279.88	817422.31	844195.38	817472.50	16.00	7.50							
219	1533	844195.38	817472.50	844173.88	817482.63	21.00	7.50							
219	1534	844173.88	817482.63	844161.81	817486.31	22.00	7.50							
219	1535	844161.81	817486.31	844148.81	817488.38	22.00	7.50							
219	1536	844148.81	817488.38	844135.81	817488.19	22.00	7.50							
219	1537	844135.81	817488.19	844122.69	817486.63	22.00	7.50							
219	1538	844122.69	817486.63	844110.50	817482.88	22.00	7.50							
219	1539	844110.50	817482.88	844093.50	817474.81	22.00	7.50							
219	1540	844093.50	817474.81	844082.81	817466.69	22.00	7.50							
219	1541	844082.81	817466.69	844066.38	817450.38	22.00	7.50							
219	1542	844066.38	817450.38	844051.13	817432.38	20.00	7.50							
220	1543	844397.38	817709.97	844404.97	817642.59	0.00	7.50							
220	1544	844404.97	817642.59	844460.53	817492.83	0.00	7.50							
220	1545	844460.53	817492.83	844517.68	817395.20	18.20	7.50							
220	1546	844517.68	817395.20	844557.90	817351.02	18.20	7.50							

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
220	1547	844557.90	817351.02	844616.37	817315.83	21.40	7.50							
220	1548	844616.37	817315.83	844659.24	817291.75	21.40	7.50							
220	1549	844659.24	817291.75	844678.82	817280.90	21.40	15.00							
221	1550	844386.48	817710.15	844384.31	817775.50	0.00	15.00							
221	1551	844382.30	817776.35	844381.00	817910.31	0.00	15.00							
222	1552	844398.14	818390.29	844395.21	818350.53	0.00	15.00							
222	1553	844395.21	818350.53	844396.69	818194.95	0.00	15.00							
222	1554	844396.69	818194.95	844397.87	818151.33	0.00	15.00							
222	1555	844400.38	817910.88	844397.33	817814.59	0.00	15.00							
222	1556	844397.33	817814.59	844397.38	817709.97	0.00	15.00							
223	1557	844397.38	817709.97	844395.74	817682.51	0.00	15.00							
223	1558	844394.31	817726.81	844394.19	817657.50	3.00	7.50							
223	1559	844394.19	817657.50	844394.63	817623.31	6.00	7.50							
223	1560	844394.63	817623.31	844396.63	817606.31	8.00	7.50							
223	1561	844396.63	817606.31	844399.31	817589.31	8.00	7.50							
223	1562	844399.31	817589.31	844404.38	817568.81	9.00	7.50							
223	1563	844404.38	817568.81	844410.69	817548.31	9.00	7.50							
223	1564	844410.69	817548.31	844419.13	817528.38	9.00	7.50							
223	1565	844419.13	817528.38	844428.81	817508.88	9.00	7.50							
223	1566	844428.81	817508.88	844438.13	817493.63	9.00	7.50							
223	1567	844438.13	817493.63	844448.38	817479.19	9.00	7.50							
223	1568	844448.38	817479.19	844479.38	817440.88	9.00	7.50							
224	1569	844480.38	817442.38	844488.50	817428.38	8.00	7.50							
224	1570	844488.50	817428.38	844494.63	817413.88	9.00	7.50							
224	1571	844494.63	817413.88	844495.13	817392.69	9.00	7.50							
224	1572	844495.13	817392.69	844488.13	817373.38	9.00	7.50							
224	1573	844488.13	817373.38	844473.88	817359.88	9.00	7.50							
224	1574	844473.88	817359.88	844456.88	817352.38	10.00	7.50							
224	1575	844456.88	817352.38	844439.13	817351.13	10.00	7.50							
224	1576	844439.13	817351.13	844421.88	817354.88	11.00	7.50							
225	1577	844422.88	817356.50	844402.63	817365.81	11.00	7.50							
225	1578	844402.63	817365.81	844382.88	817378.31	11.00	7.50							
225	1579	844382.88	817378.31	844355.88	817398.31	12.00	7.50							
225	1580	844355.88	817398.31	844341.81	817406.88	12.00	7.50							
225	1581	844341.81	817406.88	844327.13	817414.88	12.00	7.50							
225	1582	844327.13	817414.88	844267.50	817443.81	12.00	7.50							
226	1583	844650.63	817278.71	844631.51	817288.40	21.90	15.00							
226	1584	844631.51	817288.40	844559.07	817322.31	21.90	8.00							
226	1585	844559.07	817322.31	844479.38	817361.47	20.70	15.00							
226	1586	844479.38	817361.47	844410.06	817392.53	12.80	15.00							
226	1587	844410.06	817392.53	844367.46	817409.46	12.80	15.00							
226	1588	844367.46	817409.46	844312.43	817431.43	12.80	7.50							
226	1589	844312.43	817431.43	844280.81	817445.05	12.10	7.50							
226	1590	844280.81	817445.05	844265.86	817450.67	12.10	7.50							
227	1591	844151.50	817553.19	844179.69	817528.83	4.41	12.10							
227	1592	844082.88	817621.50	844123.81	817579.50	4.41	12.10							
227	1593	844123.81	817579.50	844151.50	817553.19	4.41	12.10							
228	1594	844265.86	817450.67	844201.73	817487.37	12.10	11.80							
228	1595	844201.73	817487.37	844168.28	817510.44	12.50	10.30							
228	1596	844168.28	817510.44	844128.07	817541.98	0.00	7.50							
228	1597	844128.07	817541.98	844107.38	817558.88	4.41	12.10							
228	1598	844107.38	817558.88	844062.63	817601.31	4.41	12.10							
229	1599	844180.31	817528.81	844243.50	817493.88	11.00	7.50							
229	1600	844243.50	817493.88	844261.38	817487.63	11.00	7.50							
229	1601	844261.38	817487.63	844280.31	817486.31	11.00	7.50							
229	1602	844280.31	817486.31	844301.63	817492.38	11.00	7.50							
229	1603	844301.63	817492.38	844316.38	817502.63	11.00	7.50							
230	1604	844275.75	817465.01	844327.83	817437.96	11.50	7.50							
230	1605	844327.83	817437.96	844358.94	817423.99	12.80	7.50							
230	1606	844358.94	817423.99	844393.07	817410.66	12.80	15.00							
230	1607	844393.07	817410.66	844453.88	817384.46	12.80	15.00							
230	1608	844453.88	817384.46	844513.41	817356.36	19.80	15.00							
230	1609	844513.41	817356.36	844556.75	817334.77	19.80	15.00							
230	1610	844556.75	817334.77	844608.66	817310.49	21.40	15.00							
230	1611	844608.66	817310.49	844645.80	817293.66	21.90	15.00							
230	1612	844645.80	817293.66	844678.82	817280.90	21.90	15.00							
230	1613	844179.69	817528.83	844205.33	817507.69	11.80	11.90							
230	1614	844205.33	817507.69	844239.77	817485.97	11.50	7.50							
230	1615	844239.77	817485.97	844275.75	817465.01	11.50	7.50							
231	1616	844518.19	818282.05	844505.71	818280.67	0.00	7.50							
231	1617	844505.71	818280.67	844492.99	818276.52	0.00	7.50							
231	1618	844492.99	818276.52	844482.34	818270.94	0.00	7.50							
231	1619	844482.34	818270.94	844473.25	818264.31	0.00	7.50							
231	1620	844473.25	818264.31	844462.17	818251.96	0.00	7.50							
231	1621	844462.17	818251.96	844454.58	818236.32	0.00	7.50							
231	1622	844454.58	818236.32	844448.05	818200.63	0.00	7.50							
231	1623	844448.05	818200.63	844442.28	818170.56	0.00	7.50							
231	1624	844442.28	818170.56	844441.93	818170.01	0.00	7.50							
231	1625	844441.93	818170.01	844436.16	818158.23	0.00	7.50							
231	1626	844436.16	818158.23	844428.37	818150.26	0.00	7.50							
231	1627	844428.37	818150.26	844419.36	818144.89	0.00	7.50							
231	1628	844419.36	818144.89	844410.01	818141.60	0.00	7.50							
231	1629	844410.01	818141.60	844399.28	818140.39	0.00	7.50							
231	1630	844372.12	818149.45	844364.48	818154.07	0.00	7.50							
231	1631	844364.48	818154.07	844355.82	818162.03	0.00	7.50							
231	1632	844355.82	818162.03	844348.72	818170.86	0.00	7.50							
231	1633	844348.72	818170.86	844323.62	818206.88	0.00	7.50							
231	1634	844323.62	818206.88	844303.58	818237.35	0.00	7.50							
231	1635	844303.58	818237.35	844283.58	818262.80	0.00	7.50							
231	1636	844283.58	818262.80	844271.64	818274.61	0.00	7.50							
231	1637	844271.64	818274.61	844257.35	818287.60	0.00	7.50							

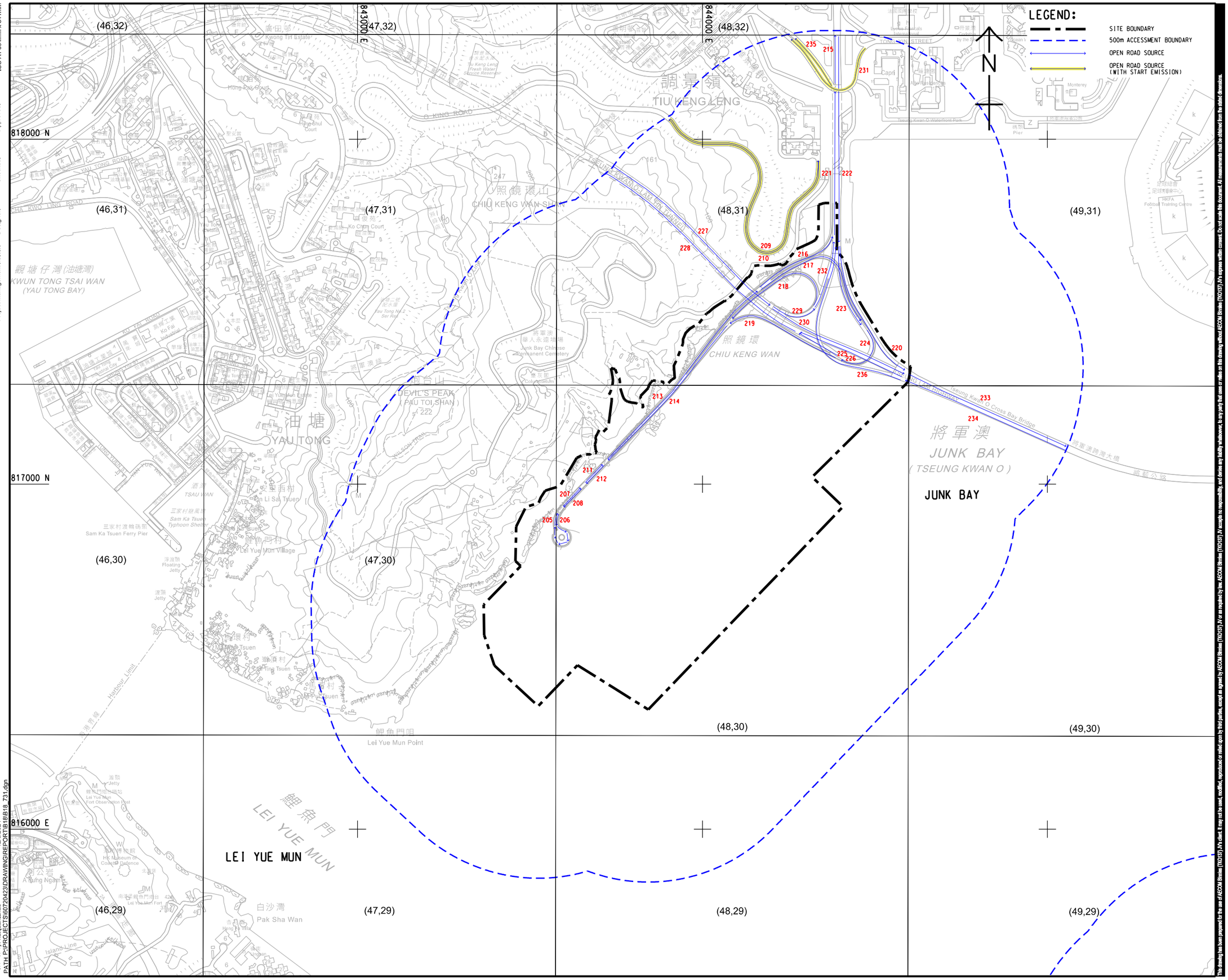
Appendix 3.1 Calculation of Vehicular Emissions

Traffic Data and Road Segments (Year 2041)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
231	1638	844257.35	818287.60	844211.65	818324.48	0.00	7.50							
231	1639	844211.65	818324.48	844197.36	818335.77	0.00	7.50							
231	1640	844197.36	818335.77	844183.01	818348.62	0.00	7.50							
231	1641	844707.79	818416.42	844712.21	818407.11	0.00	7.50							
231	1642	844712.21	818407.11	844712.35	818372.48	0.00	7.50							
231	1643	844712.35	818372.48	844711.94	818337.03	0.00	7.50							
231	1644	844711.94	818337.03	844709.76	818324.67	0.00	7.50							
231	1645	844709.76	818324.67	844704.20	818310.95	0.00	7.50							
231	1646	844704.20	818310.95	844696.32	818300.63	0.00	7.50							
231	1647	844696.32	818300.63	844686.27	818291.93	0.00	7.50							
231	1648	844686.27	818291.93	844670.65	818285.41	0.00	7.50							
231	1649	844670.65	818285.41	844654.21	818283.78	0.00	7.50							
231	1650	844654.21	818283.78	844601.11	818284.60	0.00	7.50							
231	1651	844601.11	818284.60	844556.11	818284.73	0.00	7.50							
231	1652	844556.11	818284.73	844533.88	818283.54	0.00	7.50							
231	1653	844533.88	818283.54	844518.19	818282.05	0.00	7.50							
231	1654	844385.91	818142.88	844372.12	818149.45	0.00	7.50							
231	1655	844482.34	818270.94	844458.06	818274.31	0.00	8.60							
231	1656	844458.06	818274.31	844450.03	818284.70	0.00	8.60							
231	1657	844450.03	818284.70	844449.81	818296.69	0.00	8.60							
231	1658	844449.81	818296.69	844463.50	818309.04	0.00	8.60							
231	1659	844399.28	818140.39	844385.91	818142.88	0.00	7.50							
232	1660	844333.72	817521.40	844344.94	817545.53	11.80	7.50							
232	1661	844344.94	817545.53	844373.50	817635.21	0.00	7.50							
232	1662	844373.50	817635.21	844386.48	817710.15	0.00	7.50							
233	1663	844678.82	817280.90	844747.00	817248.64	23.00	15.00							
233	1664	844747.00	817248.64	844816.98	817217.26	24.70	15.00							
233	1665	844816.98	817217.26	845061.47	817107.93	27.00	15.00							
233	1666	845061.47	817107.93	845107.45	817087.76	25.30	15.00							
233	1667	845107.45	817087.76	845224.52	817048.40	23.90	15.00							
233	1668	845224.52	817048.40	845337.30	817026.24	20.90	15.00							
233	1669	845337.30	817026.24	845445.12	817018.30	17.10	15.00							
233	1670	845445.12	817018.30	845577.89	817018.32	0.00	15.00		15.00	6.00	0.00			
233	1671	845577.89	817018.32	845753.28	817020.03	0.00	15.00		15.00	6.00	0.00			
233	1672	845753.28	817020.03	845765.24	817017.89	0.00	15.00		15.00	6.00	0.00			
234	1673	845765.24	817017.89	845751.80	817008.47	0.00	15.00							
234	1674	845751.80	817008.47	845738.78	817006.72	0.00	15.00							
234	1675	845738.78	817006.72	845684.33	817007.35	0.00	15.00							
234	1676	845684.33	817007.35	845579.23	817007.83	0.00	15.00							
234	1677	845579.23	817007.83	845461.92	817008.11	0.00	15.00							
234	1678	845461.92	817008.11	845315.39	817018.74	14.30	15.00							
234	1679	845315.39	817018.74	845177.12	817051.44	22.70	15.00							
234	1680	845177.12	817051.44	845063.61	817096.05	25.30	15.00							
234	1681	845063.61	817096.05	844812.02	817207.93	27.50	15.00							
234	1682	844812.02	817207.93	844650.63	817278.71	24.70	15.00							
235	1683	844350.98	818193.33	844267.80	818293.34	0.00	7.50							
235	1684	844267.80	818293.34	844225.46	818323.61	0.00	7.50							
235	1685	844225.46	818323.61	844183.01	818348.62	0.00	7.50							
235	1686	844374.04	818153.80	844350.98	818193.33	0.00	7.50							
236	1687	844333.06	817468.26	844343.91	817517.74	21.30	7.50							
236	1688	844343.91	817517.74	844378.31	817620.66	0.00	7.50							
236	1689	844378.31	817620.66	844386.48	817710.15	0.00	7.50							
236	1690	844650.63	817278.71	844623.49	817285.19	21.90	7.50							
236	1691	844623.49	817285.19	844548.83	817314.01	20.30	7.50							
236	1692	844548.83	817314.01	844508.61	817328.12	20.30	7.50							
236	1693	844508.61	817328.12	844471.90	817336.53	20.30	7.50							
236	1694	844471.90	817336.53	844430.69	817345.82	20.30	7.50							
236	1695	844430.69	817345.82	844402.87	817353.87	23.70	7.50							
236	1696	844402.87	817353.87	844349.20	817392.59	23.70	7.50							
236	1697	844349.20	817392.59	844333.06	817468.26	21.30	7.50							

Appendix 3.1 Calculation of Vehicular Emissions
Traffic Data and Road Segments (Year 2041)

Start Profile	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles <=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles >3.5t	06 - Medium Goods Vehicles <=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles >24t	18 - Non-franchised Bus >24t
	PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9
Y	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0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500m ACCESSMENT BOUNDARY
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OPEN ROAD SOURCE (WITH START EMISSION)
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(49,29)
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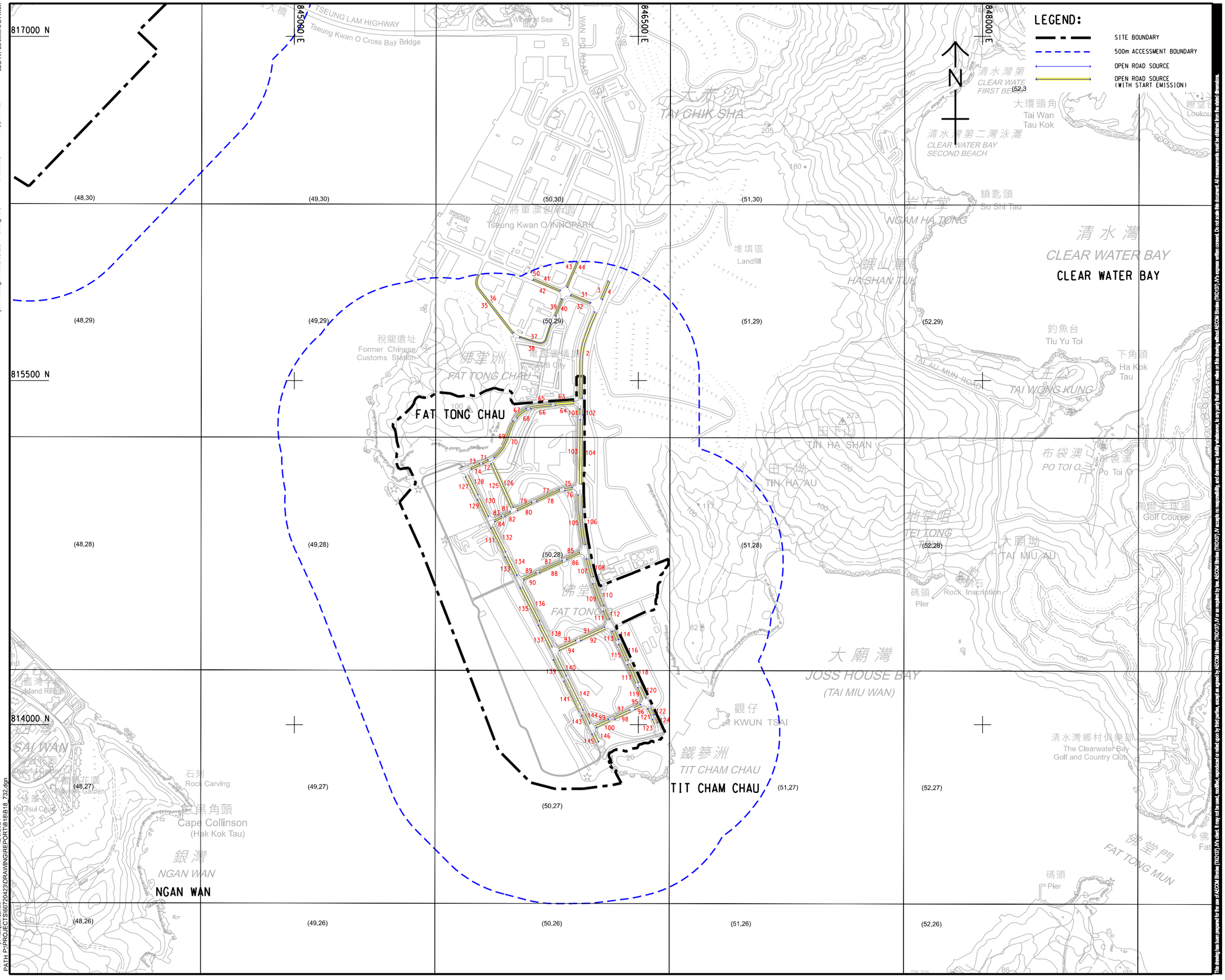
844000 E
818000 N
817000 N
816000 E
調景嶺
TIU KENG LENG
照鏡環山
CHIU KENG WAN SHAN
照鏡環
CHIU KENG WAN
觀塘仔灣(油塘灣)
KWUN TONG TSAI WAN
(YAU TONG BAY)
油塘
YAU TONG
將軍澳
JUNK BAY
(TSEUNG KWAN O)
JUNK BAY
鯉魚門
LEI YUE MUN
LEI YUE MUN
白沙灣
Pak Sha Wan
DEVIL'S PEAK
(PAU TOI SHAN)
Tseung Kwan O Cross Bay Bridge
將軍澳跨灣大橋
Tseung Kwan O Lam Tin Tunnel
Tseung Kwan O Waterfront Park
Lei Yue Mun Village
Lei Yue Mun Point
Sam Ka Tsuen Ferry Pier
Sam Ka Tsuen Typhoon Shelter
Hong Pak Court
Ko Chiu Court
Ko Chiu Road
Ko Fai Road
Ko Fai Industrial
Yau Tong Estate
Yau Tong Centre
Yau Tong Bypass
Yau Tong Road
Cha Kwo Ling Road
Kwong Tin Estate
Tiu Keng Leng Fresh Water Service Reservoir
Tiu Keng Leng Estate
Tiu Keng Leng Station
Tiu Keng Leng Interchange
Tiu Keng Leng Road
Tseung Kwan O Road
Tong Yin Street
Junk Bay Chinese Permanent Cemetery
Hong Kong Sanatorium & Hospital
Hong Kong Football Club Training Centre
Lei Yue Mun Fort Observation Post
HK Museum of Coastal Defence
Lei Yue Mun Fort
Harbour Limit
Island Line
Ngau Chi Wan Village
Ngau Tau Kok Estate
Kowloon Bay Industrial Area
Kowloon Bay Cargo Handling Area
Kowloon Bay Ferry Pier
Kowloon Bay Typhoon Shelter
Kowloon Bay Cargo Handling Area Ferry Pier
Kowloon Bay Cargo Handling Area Typhoon Shelter
Kowloon Bay Cargo Handling Area Floating Jetty
Kowloon Bay Cargo Handling Area Jetty



ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

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1/26/2024
Plot File by: haiquan.zhao
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AECOM Binnies

PROJECT 項目

DEVELOPMENT OF TSEUNG KWAN O AREA 137 AND ASSOCIATED RECLAMATION SITES – INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT 業主

土木工程拓展署
Civil Engineering and Development Department

CONSULTANT 工程顧問公司

AECOM Binnies (TKO137) JV

SUB-CONSULTANTS 分判工程顧問公司

ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 查核

STATUS 階段

SCALE 比例: A3 1 : 15000

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號: 60720423

CONTRACT NO. 合約編號: CE 40/2023(CE)

SHEET TITLE 圖紙名稱

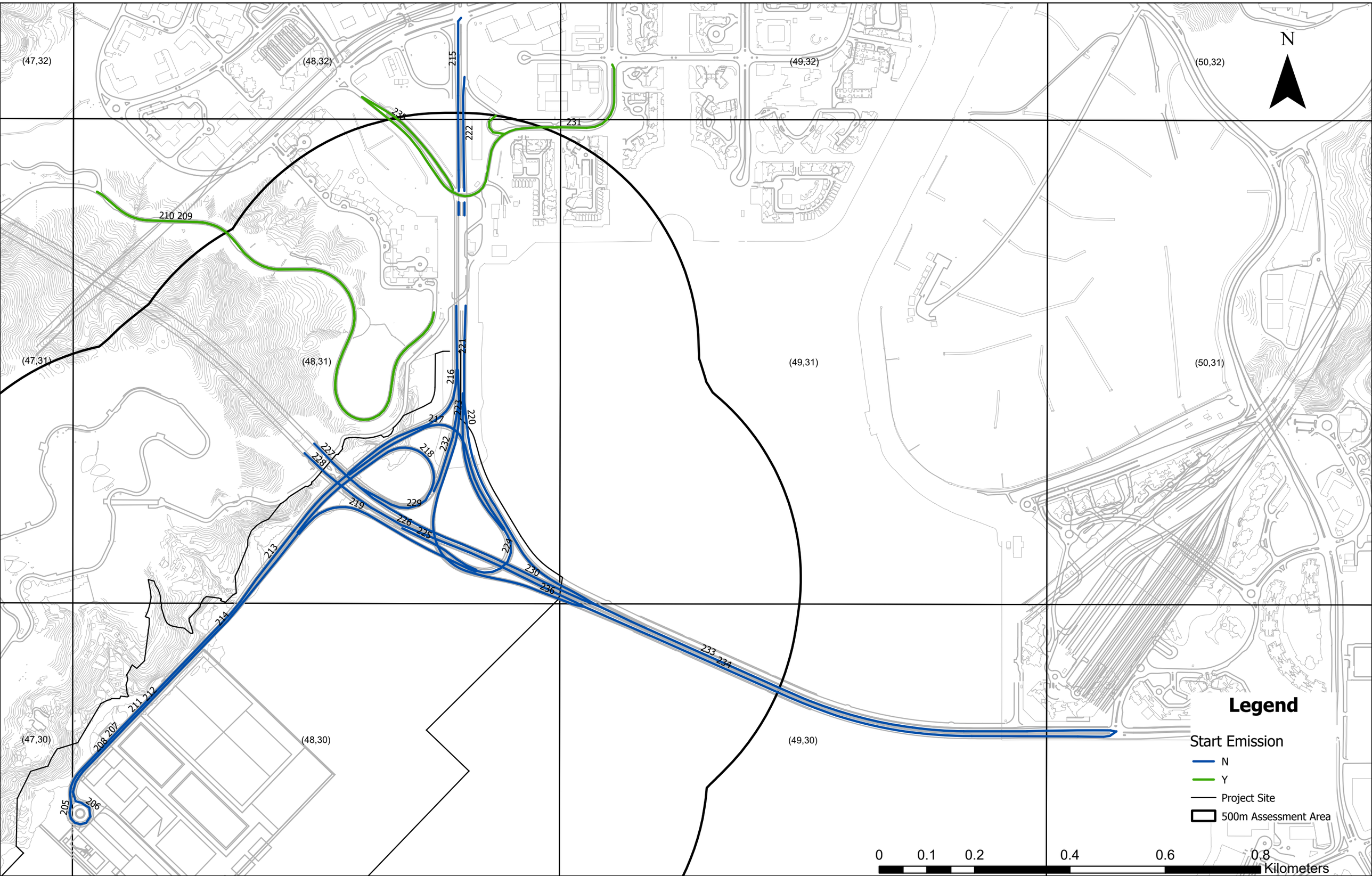
ROAD INDEX PLAN OF AIR QUALITY IMPACT ASSESSMENT (AQIA) FOR YEAR 2030, 2031, 2033, 2035, 2038 AND 2041 ON TKO AREA 137

SHEET NUMBER 圖紙編號

60720423/B18/7FIGURE 3.2

Location of Open Road Emission Sources

Location of Open Road Emission Sources



By Fax
[redacted]

運輸署
Transport Department

本署檔案 Our Ref. : [redacted]
來函檔號 Your Ref. : [redacted]
電　話 Tel. : [redacted]
圖文傳真 Fax : [redacted]
電　郵 Email : [redacted]

25 July 2024

[redacted]

Dear Sir,

Agreement No. CE 40/2023 (CE)
Development of Tseung Kwan O Area 137 and Associated Reclamation Sites - Investigation, Design and Construction

Technical Note on Traffic Forecast for Environmental Impact Assessment (Issue 2)

I refer to the above-quoted letter dated 5 July 2024 regarding the captioned deliverable.

Given that our previous comments had been addressed, we have no further comments from the traffic engineering viewpoint.

Yours faithfully,

[redacted]

(Ms [redacted])

[redacted]

c.c.
EDO, CEDD (Attn: [redacted]) Fax: [redacted]

Internal
[redacted]

新界分區辦事處
NT Regional Office
九龍聯運街三十號旺角政府合署七樓
7th Floor, Mong Kok Government Offices, 30 Luen Wan Street, Kowloon.
圖文傳真 Fax No.: 2381 3799 (新界區) (NTRO)
網址 Web Site: http://www.td.gov.hk