Technical Appendix 5.1 – Baseline Model Results

The baseline dispersion model results at sensitive receptors are presented in Table A1.

Table A1 – Baseline model results

ID	X(m)	Y(m)	Annual mean nitrogen dioxide (µg/m^3)
			2014 Baseline
R_01	22445.5	8258.43	4.46
R_02	22650.14	7750.96	10.88
R_03	21814.91	7501.39	4.88
R_04	21868.15	7792.56	4.12
R_05	21228.67	7301.09	5.87
R_06	21521.11	7195.53	6.82
R_07	21555.71	7117.67	4.02
R_08	21431.13	6044.81	4.18
R_09	21195.79	6210.93	6.1
R_10	20475.94	5954.83	5.15
R_11	20756.27	6278.42	4.1
R_12	20370.38	5010.02	4.06
R_13	20820.29	5567.22	4.03
R_14	20148.89	4542.81	4.01
R_15	19872.03	4016.77	3.99
R_16	20065.5	6376.28	4.59
R_17	20052.91	5539.73	4.14
R_18	19527.09	5083.14	4.7
R_19	19349.66	4421.38	4.62
R_20	19394.13	4017.26	7.69
R_21	19243.73	4054.32	4.18
R_22	19452.98	3751.34	4.16
R_23	19555.43	3906.1	3.86
R_24	20239.86	3167.17	3.95
R_25	19514.01	2687.64	5.39
R_26	18962.54	3293.6	9.81
R_27	18705.34	3027.67	8.58
R_28	18589.81	2944.84	4.35
R_29	18432.88	3219.49	6.65
R_30	18707.52	3090.88	4.96
R_31	18430.7	2685.46	4.34
R_32	18768.55	2763.93	4.07
R_33	18936.39	2301.83	4.08
R_34	18842.66	1870.25	4.43
R_35	18012.19	1804.85	7.97
R_36	17951.16	2308.37	4.88
R_37	17377.9	1804.85	6.59
R_38	17347.38	1386.35	5.34
R_39	17619.84	1693.69	7.51
R_40	17229.68	1275.19	5.25
R_41	16200.85	867.58	7.13

R_42	16331.64	677.95	7.34
R_43	15607.97	939.51	6.31
R_44	15647.21	368.43	8.24

Technical Appendix 5.2 – Modelled Pollutant Concentrations

Modelled pollutant concentrations for each option at each modelled receptor are presented in Table B1. Pollutant concentrations calculated as a sensitivity test, wherein vehicle emission rates and background pollutant concentrations are held at their values for previous years in order to address uncertainty in forecasting, are presented in Table B2.

Table B1 – Modelled pollutant concentrations for future years with and without scheme.

ID	X(m)	Y(m)	Annual mean nitrogen dioxide (µg/m^3)						
			2014 Baseline	2025 DM	2025 Orange Route	2025 Blue Route	2040 DM	2040 Orange Route	2040 Blue Route
R_01	22445.5	8258.43	4.46	8.18	8.26	8.26	7.61	8.18	7.61
R_02	22650.14	7750.96	10.88	4.46	4.49	4.49	4.42	4.48	4.42
R_03	21814.91	7501.39	4.88	10.88	12.67	12.76	10.04	12.53	10.04
R_04	21868.15	7792.56	4.12	4.88	5.26	5.21	4.72	5.23	4.72
R_05	21228.67	7301.09	5.87	4.12	4.2	4.19	4.06	4.18	4.06
R_06	21521.11	7195.53	6.82	5.87	6.35	6.29	5.62	6.31	5.62
R_07	21555.71	7117.67	4.02	6.82	7.15	7.3	6.45	7.1	6.45
R_08	21431.13	6044.81	4.18	4.02	4.08	4.08	3.97	4.06	3.97
R_09	21195.79	6210.93	6.1	4.18	4.33	4.31	4.12	4.31	4.12
R_10	20475.94	5954.83	5.15	6.1	4.9	4.8	5.81	4.87	5.81
R_11	20756.27	6278.42	4.1	5.15	4.8	4.84	4.97	4.78	4.97
R_12	20370.38	5010.02	4.06	4.1	4.52	4.52	4.04	4.5	4.04
R_13	20820.29	5567.22	4.03	4.06	4.21	4.21	4.01	4.19	4.01
R_14	20148.89	4542.81	4.01	4.03	5.1	4.55	3.98	5.07	3.98
R_15	19872.03	4016.77	3.99	4.01	5.37	4.28	3.96	5.34	3.96
R_16	20065.5	6376.28	4.59	3.99	4	3.99	3.95	3.98	3.95
R_17	20052.91	5539.73	4.14	4.59	4.3	4.27	4.47	4.29	4.47
R_18	19527.09	5083.14	4.7	4.14	4.02	4.05	4.08	4.01	4.08
R_19	19349.66	4421.38	4.62	4.7	4.07	4.2	4.57	4.05	4.57
R_20	19394.13	4017.26	7.69	4.62	4.14	5.01	4.5	4.13	4.5
R_21	19243.73	4054.32	4.18	7.69	4.45	4.73	7.22	4.43	7.22
R_22	19452.98	3751.34	4.16	4.18	4.19	5.08	4.12	4.18	4.12
R_23	19555.43	3906.1	3.86	4.16	4.23	5.05	4.1	4.21	4.1
R_24	20239.86	3167.17	3.95	3.86	4	3.9	3.83	3.99	3.83
R_25	19514.01	2687.64	5.39	3.95	4.77	4.03	3.92	4.75	3.92
R_26	18962.54	3293.6	9.81	5.39	4.24	4.65	5.2	4.22	5.2
R_27	18705.34	3027.67	8.58	9.81	4.79	5.32	9.15	4.76	9.15
R_28	18589.81	2944.84	4.35	8.58	4.65	5.46	8.05	4.62	8.05
R_29	18432.88	3219.49	6.65	4.35	4.11	4.29	4.28	4.09	4.28
R_30	18707.52	3090.88	4.96	6.65	4.39	4.79	6.33	4.37	6.33
R_31	18430.7	2685.46	4.34	4.96	4.28	5.45	4.82	4.26	4.82
R_32	18768.55	2763.93	4.07	4.34	4.22	5.17	4.27	4.2	4.27
R_33	18936.39	2301.83	4.08	4.07	5.04	4.14	4.03	5.01	4.03
R_34	18842.66	1870.25	4.43	4.08	4.49	4.11	4.04	4.47	4.04
R_35	18012.19	1804.85	7.97	4.43	4.83	4.44	4.37	4.8	4.37
R_36	17951.16	2308.37	4.88	7.97	4.87	8.57	7.5	4.84	7.5
R_37	17377.9	1804.85	6.59	4.88	4.89	4.61	4.78	4.87	4.78

R_38	17347.38	1386.35	5.34	6.59	5.85	5.19	6.31	5.81	6.31
R_39	17619.84	1693.69	7.51	5.34	5.55	4.76	5.18	5.51	5.18
R_40	17229.68	1275.19	5.25	7.51	7.41	7.25	7.13	7.34	7.13
R_41	16200.85	867.58	7.13	5.25	5.25	5.24	5.15	5.23	5.15
R_42	16331.64	677.95	7.34	7.13	7.17	7.16	6.95	7.1	6.95
R_43	15607.97	939.51	6.31	7.34	7.3	7.29	6.96	7.25	6.96
R_44	15647.21	368.43	8.24	6.31	6.34	6.33	6.17	6.28	6.17

Table B2 – Modelled pollutant concentrations under sensitivity testing of background concentrations and vehicle emission rates with and without scheme.

ID	X(m)	Y(m)	Sensitivity test - annual mean nitrogen dioxide (µg/m^3)						
			2014 Base	2025 as 2014 DM	2025 as 2014 Orange Route	2025 as 2014 Blue Route	2040 as 2025 DM	2040 as 2025 Orange Route	2040 as 2025 Blue Route
R_01	22445.5	8258.43	16.11	17.63	17.79	17.8	8.31	8.97	8.97
R_02	22650.14	7750.96	6.45	7.4	7.48	7.48	4.56	4.63	4.63
R_03	21814.91	7501.39	26.74	25.14	29.02	29.25	11.18	14.1	14.21
R_04	21868.15	7792.56	8.24	8.58	9.64	9.49	4.92	5.52	5.46
R_05	21228.67	7301.09	6.33	6.22	6.37	6.37	4.14	4.28	4.27
R_06	21521.11	7195.53	12.29	11.42	12.44	12.28	5.98	6.79	6.72
R_07	21555.71	7117.67	15.4	14.33	14.9	15.24	6.96	7.73	7.9
R_08	21431.13	6044.81	5.92	5.87	6.02	6	4.03	4.14	4.13
R_09	21195.79	6210.93	6.53	6.4	6.75	6.68	4.2	4.43	4.4
R_10	20475.94	5954.83	12.91	12.05	8.4	8.11	6.2	5.1	4.98
R_11	20756.27	6278.42	9.87	9.39	8.16	8.27	5.21	4.99	5.03
R_12	20370.38	5010.02	6.22	6.16	7.33	7.33	4.11	4.65	4.65
R_13	20820.29	5567.22	6.1	6.04	6.39	6.41	4.08	4.29	4.3
R_14	20148.89	4542.81	6.01	6	9.06	7.44	4.04	5.34	4.69
R_15	19872.03	4016.77	5.88	5.93	9.81	6.66	4.02	5.66	4.38
R_16	20065.5	6376.28	5.82	5.79	5.78	5.76	4	4.04	4.04
R_17	20052.91	5539.73	7.98	7.69	6.67	6.58	4.62	4.4	4.36
R_18	19527.09	5083.14	6.35	6.31	5.87	5.96	4.16	4.07	4.11
R_19	19349.66	4421.38	8.24	8.11	6.05	6.44	4.74	4.13	4.29
R_20	19394.13	4017.26	7.62	7.87	6.25	8.77	4.66	4.21	5.23
R_21	19243.73	4054.32	16.05	16.59	7.12	7.94	7.86	4.58	4.9
R_22	19452.98	3751.34	6.14	6.45	6.38	8.95	4.2	4.27	5.31
R_23	19555.43	3906.1	6.24	6.41	6.5	8.88	4.19	4.31	5.27
R_24	20239.86	3167.17	5.38	5.45	5.85	5.55	3.86	4.05	3.93
R_25	19514.01	2687.64	5.49	5.67	8.02	5.86	3.96	4.95	4.08
R_26	18962.54	3293.6	8.02	10.26	6.43	7.64	5.48	4.31	4.8
R_27	18705.34	3027.67	15.3	22.67	7.96	9.5	10.11	4.95	5.58
R_28	18589.81	2944.84	13.28	19.27	7.54	9.88	8.82	4.79	5.74
R_29	18432.88	3219.49	6.23	6.85	6.02	6.53	4.38	4.16	4.37
R_30	18707.52	3090.88	10.07	13.77	6.84	8	6.8	4.49	4.96
R_31	18430.7	2685.46	7.25	8.71	6.45	9.84	5.02	4.36	5.73
R_32	18768.55	2763.93	6.14	6.81	6.31	9.06	4.37	4.29	5.4
R_33	18936.39	2301.83	5.65	5.9	8.68	6.05	4.08	5.25	4.19
R_34	18842.66	1870.25	5.64	5.84	7.01	5.88	4.09	4.6	4.14
R_35	18012.19	1804.85	6.21	6.71	7.78	6.65	4.46	4.97	4.51
R_36	17951.16	2308.37	12.51	17.22	8.03	18.33	8.17	5.03	9.35

R_37	17377.9	1804.85	6.97	8.04	7.9	7.07	4.93	5.03	4.7
R_38	17347.38	1386.35	9.85	13.12	10.75	8.83	6.73	6.14	5.36
R_39	17619.84	1693.69	7.79	9.42	9.76	7.49	5.41	5.8	4.88
R_40	17229.68	1275.19	11.08	16.06	15.33	14.89	7.7	7.94	7.75
R_41	16200.85	867.58	7.31	8.59	8.49	8.45	5.31	5.4	5.38
R_42	16331.64	677.95	10.47	13.64	13.67	13.62	7.42	7.58	7.56
R_43	15607.97	939.51	10.69	15.12	14.55	14.53	7.47	7.82	7.81
R_44	15647.21	368.43	9.11	11.51	11.52	11.5	6.52	6.64	6.63