

APPENDIX 7.4

RESULTS OF AIR QUALITY DISPERSION MODELLING

Appendix 7.4 – Results of Dispersion Modelling

Figure 7.4.1: Baseline Model Results

Receptor	2019 Base			2026 Do Minimum		
	NO ₂	PM ₁₀	PM _{2.5}	NO ₂	PM ₁₀	PM _{2.5}
Existing Receptors						
R1	18.2	15.9	9.7	17.5	16.2	9.9
R2	16.5	15.6	9.5	16.9	15.9	9.7
R3	18.6	16.0	9.8	18.0	16.4	10.0
R4	22.7	15.9	10.3	20.0	16.2	10.4
R5	28.4	16.4	10.6	21.9	16.4	10.5
R6	32.6	17.0	11.0	24.5	17.1	10.9
R7	28.1	16.4	10.6	22.3	16.5	10.6
R8	28.4	16.4	10.6	24.8	17.2	11.0
R9	22.2	15.8	10.2	20.9	16.6	10.6
R10	20.1	15.5	10.0	19.1	16.0	10.3
R11	17.1	14.9	9.7	16.6	15.1	9.8
R12	20.0	15.5	10.0	18.8	15.9	10.2
R13	22.7	16.0	10.3	20.8	16.7	10.7
R14	21.4	15.6	10.1	19.3	16.0	10.3
R15	29.1	16.5	10.7	23.0	16.7	10.7
R16	25.0	16.3	10.5	20.8	16.5	10.6
R17	27.8	16.8	10.8	22.5	17.1	10.9
R18	28.9	16.5	10.6	22.9	16.7	10.7
R19	27.5	16.4	10.3	22.2	16.6	10.4
R20	23.8	15.9	10.0	19.8	15.9	10.0
R21	29.8	17.0	10.7	23.3	17.2	10.7
R22	27.8	17.0	10.6	22.6	17.3	10.7
R23	24.4	16.5	10.3	21.0	16.9	10.5
R24	26.4	17.0	10.6	22.4	17.5	10.9
R25	25.9	16.7	10.5	22.0	17.1	10.7
R26	19.8	15.5	9.7	18.2	15.7	9.8
R27	19.1	15.4	9.7	17.8	15.6	9.8

Receptor	2019 Base			2026 Do Minimum		
	NO ₂	PM ₁₀	PM _{2.5}	NO ₂	PM ₁₀	PM _{2.5}
R28	25.6	16.3	10.3	21.8	16.7	10.4
R29	22.4	15.9	10.0	19.9	16.2	10.2
R30	27.0	16.8	10.5	22.7	17.3	10.7
R31	21.3	15.7	9.9	19.0	16.0	10.0
R32	21.6	15.9	10.0	18.9	16.0	10.0
R33	21.4	15.7	9.9	18.7	15.8	9.9
R34	32.1	17.0	10.9	24.8	17.2	11.0
R35	23.6	15.8	10.2	20.1	16.0	10.3
R36	21.8	15.7	10.2	19.1	15.9	10.2
R37	25.5	16.1	10.4	21.3	16.3	10.5
R38	21.9	15.8	10.0	19.1	15.9	10.0
R39	29.4	16.7	10.5	23.3	16.8	10.5
R40	28.2	16.5	10.4	22.4	16.6	10.4
R41	24.5	16.0	10.1	20.3	16.0	10.1
R42	39.8	18.3	11.5	29.0	18.4	11.4
R43	29.7	16.8	10.6	22.8	16.8	10.5
R44	24.7	16.7	10.4	20.1	16.6	10.3
R45	21.7	16.1	10.1	18.5	16.1	10.0
R46	25.7	16.5	10.3	21.1	16.6	10.3
R47	24.9	16.3	10.3	20.3	16.4	10.2
R48	20.9	16.1	10.0	18.4	16.2	10.1
R49	20.5	16.0	10.0	18.1	16.1	10.0
R50	26.5	16.7	10.4	21.7	16.9	10.5
R51	18.7	15.6	9.7	17.4	15.7	9.8
R52	20.2	15.8	9.9	18.3	16.0	10.0
R53	20.8	16.1	10.2	18.8	16.4	10.3
R54	24.8	16.9	10.6	21.5	17.4	10.8
R55	19.6	15.9	10.0	18.1	16.1	10.1
R56	19.9	16.0	10.1	18.2	16.2	10.2
R57	21.7	16.5	10.3	19.4	16.8	10.5

Receptor	2019 Base			2026 Do Minimum		
	NO ₂	PM ₁₀	PM _{2.5}	NO ₂	PM ₁₀	PM _{2.5}
R58	20.5	16.1	10.1	18.6	16.3	10.2
R59	21.9	16.3	10.3	19.5	16.6	10.4
R60	24.1	15.9	10.3	20.5	16.2	10.4
R61	26.9	16.7	10.7	22.3	17.1	10.9
R62	25.1	16.3	10.5	21.1	16.6	10.6
R63	26.0	16.5	10.6	20.6	16.4	10.5
R64	21.6	15.6	10.1	18.5	15.6	10.1
R65	30.0	16.6	10.7	22.8	16.6	10.7
R66	15.7	14.6	9.4	16.7	15.1	9.7
R67	15.9	14.7	9.5	17.0	15.2	9.8
R68	15.8	15.2	9.6	17.4	16.0	10.0
R69	15.9	15.3	9.7	16.9	15.8	9.9
Proposed Receptors						
P1	16.5	15.6	9.5	16.5	15.8	9.7
P2	18.4	16.0	9.8	17.6	16.3	9.9
P3	18.6	16.0	9.8	17.8	16.3	9.9
P4	16.0	15.5	9.5	15.8	15.6	9.5
P5	18.1	15.9	9.7	17.4	16.2	9.8
P6	15.9	15.5	9.5	15.7	15.5	9.5
Numbers in BOLD represent an exceedance of the objective						

Figure 7.4.2: Predicted Effects on Existing Receptors (NO₂)

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R1	17.5	17.5	0	Negligible
R2	16.9	17.1	1	Negligible
R3	18.0	18.3	1	Negligible
R4	20.0	20.2	0	Negligible
R5	21.9	22.1	1	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R6	24.5	24.7	1	Negligible
R7	22.3	22.5	1	Negligible
R8	24.8	25.3	1	Negligible
R9	20.9	21.2	1	Negligible
R10	19.1	19.3	0	Negligible
R11	16.6	16.6	0	Negligible
R12	18.8	19.0	0	Negligible
R13	20.8	21.0	1	Negligible
R14	19.3	19.5	0	Negligible
R15	23.0	23.3	1	Negligible
R16	20.8	21.0	1	Negligible
R17	22.5	22.7	1	Negligible
R18	22.9	23.2	1	Negligible
R19	22.2	22.4	1	Negligible
R20	19.8	19.9	0	Negligible
R21	23.3	23.6	1	Negligible
R22	22.6	23.0	1	Negligible
R23	21.0	21.2	0	Negligible
R24	22.4	22.6	1	Negligible
R25	22.0	22.3	1	Negligible
R26	18.2	18.3	0	Negligible
R27	17.8	17.9	0	Negligible
R28	21.8	22.0	0	Negligible
R29	19.9	20.0	0	Negligible
R30	22.7	23.0	1	Negligible
R31	19.0	19.2	0	Negligible
R32	18.9	19.1	0	Negligible
R33	18.7	18.9	0	Negligible
R34	24.8	25.1	1	Negligible
R35	20.1	20.2	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R36	19.1	19.2	0	Negligible
R37	21.3	21.4	0	Negligible
R38	19.1	19.2	0	Negligible
R39	23.3	23.4	0	Negligible
R40	22.4	22.5	0	Negligible
R41	20.3	20.4	0	Negligible
R42	29.0	29.2	0	Negligible
R43	22.8	22.8	0	Negligible
R44	20.1	20.1	0	Negligible
R45	18.5	18.6	0	Negligible
R46	21.1	21.2	0	Negligible
R47	20.3	20.4	0	Negligible
R48	18.4	18.4	0	Negligible
R49	18.1	18.2	0	Negligible
R50	21.7	21.9	1	Negligible
R51	17.4	17.5	0	Negligible
R52	18.3	18.4	0	Negligible
R53	18.8	18.9	0	Negligible
R54	21.5	21.7	0	Negligible
R55	18.1	18.1	0	Negligible
R56	18.2	18.3	0	Negligible
R57	19.4	19.5	0	Negligible
R58	18.6	18.7	0	Negligible
R59	19.5	19.5	0	Negligible
R60	20.5	20.5	0	Negligible
R61	22.3	22.3	0	Negligible
R62	21.1	21.1	0	Negligible
R63	20.6	20.6	0	Negligible
R64	18.5	18.5	0	Negligible
R65	22.8	22.9	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R66	16.7	16.8	0	Negligible
R67	17.0	17.1	0	Negligible
R68	17.4	17.5	0	Negligible
R69	16.9	17.1	0	Negligible

Figure 7.4.3: Predicted Effects on Existing Receptors (PM₁₀)

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R1	16.2	16.2	0	Negligible
R2	15.9	16.0	0	Negligible
R3	16.4	16.5	0	Negligible
R4	16.2	16.3	0	Negligible
R5	16.4	16.5	0	Negligible
R6	17.1	17.2	0	Negligible
R7	16.5	16.6	0	Negligible
R8	17.2	17.4	0	Negligible
R9	16.6	16.7	0	Negligible
R10	16.0	16.1	0	Negligible
R11	15.1	15.1	0	Negligible
R12	15.9	16.0	0	Negligible
R13	16.7	16.8	0	Negligible
R14	16.0	16.0	0	Negligible
R15	16.7	16.8	0	Negligible
R16	16.5	16.6	0	Negligible
R17	17.1	17.2	0	Negligible
R18	16.7	16.8	0	Negligible
R19	16.6	16.6	0	Negligible
R20	15.9	15.9	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R21	17.2	17.3	0	Negligible
R22	17.3	17.4	0	Negligible
R23	16.9	17.0	0	Negligible
R24	17.5	17.6	0	Negligible
R25	17.1	17.2	0	Negligible
R26	15.7	15.7	0	Negligible
R27	15.6	15.6	0	Negligible
R28	16.7	16.7	0	Negligible
R29	16.2	16.3	0	Negligible
R30	17.3	17.4	0	Negligible
R31	16.0	16.0	0	Negligible
R32	16.0	16.1	0	Negligible
R33	15.8	15.9	0	Negligible
R34	17.2	17.3	0	Negligible
R35	16.0	16.0	0	Negligible
R36	15.9	15.9	0	Negligible
R37	16.3	16.3	0	Negligible
R38	15.9	16.0	0	Negligible
R39	16.8	16.9	0	Negligible
R40	16.6	16.6	0	Negligible
R41	16.0	16.0	0	Negligible
R42	18.4	18.5	0	Negligible
R43	16.8	16.8	0	Negligible
R44	16.6	16.6	0	Negligible
R45	16.1	16.1	0	Negligible
R46	16.6	16.6	0	Negligible
R47	16.4	16.4	0	Negligible
R48	16.2	16.2	0	Negligible
R49	16.1	16.1	0	Negligible
R50	16.9	17.0	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R51	15.7	15.7	0	Negligible
R52	16.0	16.0	0	Negligible
R53	16.4	16.4	0	Negligible
R54	17.4	17.4	0	Negligible
R55	16.1	16.2	0	Negligible
R56	16.2	16.2	0	Negligible
R57	16.8	16.8	0	Negligible
R58	16.3	16.3	0	Negligible
R59	16.6	16.7	0	Negligible
R60	16.2	16.2	0	Negligible
R61	17.1	17.1	0	Negligible
R62	16.6	16.6	0	Negligible
R63	16.4	16.5	0	Negligible
R64	15.6	15.6	0	Negligible
R65	16.6	16.7	0	Negligible
R66	15.1	15.2	0	Negligible
R67	15.2	15.3	0	Negligible
R68	16.0	16.0	0	Negligible
R69	15.8	15.9	0	Negligible

Figure 7.4.4: Predicted Effects on Existing Receptors (PM_{2.5})

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R1	9.9	9.9	0	Negligible
R2	9.7	9.8	0	Negligible
R3	10.0	10.0	0	Negligible
R4	10.4	10.4	0	Negligible
R5	10.5	10.6	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R6	10.9	11.0	0	Negligible
R7	10.6	10.6	0	Negligible
R8	11.0	11.1	0	Negligible
R9	10.6	10.7	0	Negligible
R10	10.3	10.3	0	Negligible
R11	9.8	9.8	0	Negligible
R12	10.2	10.3	0	Negligible
R13	10.7	10.7	0	Negligible
R14	10.3	10.3	0	Negligible
R15	10.7	10.8	0	Negligible
R16	10.6	10.6	0	Negligible
R17	10.9	11.0	0	Negligible
R18	10.7	10.7	0	Negligible
R19	10.4	100.4	0	Negligible
R20	10.0	10.0	0	Negligible
R21	10.7	10.8	0	Negligible
R22	10.7	10.8	0	Negligible
R23	10.5	10.6	0	Negligible
R24	10.9	10.9	0	Negligible
R25	10.7	10.7	0	Negligible
R26	9.8	9.9	0	Negligible
R27	9.8	9.8	0	Negligible
R28	10.4	10.5	0	Negligible
R29	10.2	10.2	0	Negligible
R30	10.7	10.8	0	Negligible
R31	10.0	10.0	0	Negligible
R32	10.0	10.1	0	Negligible
R33	9.9	10.0	0	Negligible
R34	11.0	11.0	0	Negligible
R35	10.3	10.3	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R36	10.2	10.2	0	Negligible
R37	10.5	10.5	0	Negligible
R38	10.0	10.0	0	Negligible
R39	10.5	10.5	0	Negligible
R40	10.4	10.4	0	Negligible
R41	10.1	10.1	0	Negligible
R42	11.4	11.5	0	Negligible
R43	10.5	10.5	0	Negligible
R44	10.3	10.3	0	Negligible
R45	10.0	10.0	0	Negligible
R46	10.3	10.3	0	Negligible
R47	10.2	10.3	0	Negligible
R48	10.1	10.1	0	Negligible
R49	10.0	10.0	0	Negligible
R50	10.5	10.5	0	Negligible
R51	9.8	9.8	0	Negligible
R52	10.0	10.0	0	Negligible
R53	10.3	10.3	0	Negligible
R54	10.8	10.9	0	Negligible
R55	10.1	10.1	0	Negligible
R56	10.2	10.2	0	Negligible
R57	10.5	10.5	0	Negligible
R58	10.2	10.2	0	Negligible
R59	10.4	140.4	0	Negligible
R60	10.4	10.4	0	Negligible
R61	10.9	10.9	0	Negligible
R62	10.6	10.6	0	Negligible
R63	10.5	10.5	0	Negligible
R64	10.1	10.1	0	Negligible
R65	10.7	10.7	0	Negligible

Receptor	Do Minimum	Do Something	Change due to Scheme (as % of AQAL)	Significance of Effects
R66	9.7	9.7	0	Negligible
R67	9.8	9.9	0	Negligible
R68	10.0	10.1	0	Negligible
R69	9.9	10.0	0	Negligible