

Appendix 12.3: Air Quality Assessment Results

Air pollutant concentrations have been modelled at the existing and proposed sensitive receptor locations, for the 2019 Verification and Base Year, 2026 Opening Year and 2033 Future Year as detailed in Tables 20 and 21 below.

Table 20: Annual Mean NO _x , NO ₂ *, PM ₁₀ and PM _{2.5} : Scenarios 1 – 5 (µg/m ³)																				
Receptor	Scenario 1: 2019 Base Year				Scenario 2: 2026 Opening Year No Development				Scenario 3: 2026 Opening Year Residential Phase 1				Scenario 4: 2026 Opening Year Employment Phase 1				Scenario 5: 2026 Opening Year Residential + Employment (No Link Road)			
	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}
ESR 1	32.95	21.15	11.85	7.38	22.75	15.09	11.12	6.80	25.25	16.43	11.35	6.93	25.83	16.73	11.42	6.97	26.04	16.84	11.44	6.98
ESR 2	32.37	20.84	11.79	7.35	22.43	14.93	11.06	6.77	23.29	15.39	11.16	6.82	23.61	15.55	11.22	6.85	23.74	15.62	11.23	6.86
ESR 3	45.38	27.51	12.10	7.65	29.09	18.43	11.38	7.05	29.21	18.50	11.40	7.06	30.22	19.02	11.50	7.11	30.33	19.08	11.51	7.12
ESR 4	41.80	25.71	11.90	7.53	27.19	17.45	11.17	6.93	27.40	17.56	11.20	6.95	29.19	18.49	11.38	7.05	29.39	18.59	11.40	7.06
ESR 5	47.38	28.50	13.80	8.47	29.62	18.71	13.03	7.81	29.67	18.74	13.03	7.81	30.25	19.03	13.10	7.85	30.30	19.06	13.11	7.86
ESR 6	58.15	33.70	14.21	8.74	34.81	21.37	13.40	8.05	34.79	21.36	13.42	8.05	35.30	21.62	13.50	8.10	35.36	21.64	13.51	8.10
ESR 7	37.39	23.46	13.57	8.28	24.92	16.25	12.83	7.67	25.02	16.30	12.89	7.70	25.70	16.66	13.07	7.79	25.81	16.72	13.08	7.80
ESR 8	46.53	28.08	14.20	8.71	29.37	18.58	13.43	8.06	28.99	18.38	13.75	8.20	29.34	18.57	13.80	8.23	29.37	18.58	13.80	8.23
ESR 9	39.55	24.57	11.47	7.40	26.12	16.89	10.73	6.79	25.98	16.81	10.82	6.83	26.21	16.93	10.85	6.85	26.23	16.94	10.86	6.85
ESR 10	50.04	29.81	14.46	8.85	31.29	19.57	13.70	8.21	31.02	19.43	13.94	8.32	31.53	19.70	14.01	8.35	31.56	19.71	14.01	8.35
ESR 11	113.85	<u>57.27</u>	15.56	9.53	63.67	35.04	14.82	8.85	62.75	34.63	15.22	9.03	63.92	35.15	15.29	9.07	63.96	35.17	15.29	9.07
ESR 12	102.55	<u>52.86</u>	15.27	9.35	57.96	32.48	14.52	8.68	57.15	32.11	14.88	8.84	58.18	32.58	14.94	8.88	58.21	32.59	14.95	8.88
ESR 13	36.47	22.98	11.43	7.45	24.76	16.16	10.70	6.86	24.92	16.25	10.72	6.87	25.27	16.43	10.76	6.89	25.35	16.48	10.78	6.90
ESR 14	35.06	22.25	13.27	8.12	23.58	15.54	12.51	7.50	23.86	15.69	12.57	7.53	24.16	15.85	12.61	7.56	24.19	15.86	12.62	7.56

Table 20: Annual Mean NO _x , NO ₂ *, PM ₁₀ and PM _{2.5} : Scenarios 1 – 5 (µg/m ³)																				
Receptor	Scenario 1: 2019 Base Year				Scenario 2: 2026 Opening Year No Development				Scenario 3: 2026 Opening Year Residential Phase 1				Scenario 4: 2026 Opening Year Employment Phase 1				Scenario 5: 2026 Opening Year Residential + Employment (No Link Road)			
	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}
ESR 15	64.87	36.82	12.71	8.11	39.28	23.61	11.98	7.51	40.55	24.23	12.05	7.54	41.15	24.53	12.08	7.56	41.17	24.54	12.09	7.56
ESR 16	78.83	<u>43.04</u>	13.14	8.37	46.38	27.07	12.42	7.76	49.01	28.32	12.52	7.81	49.90	28.74	12.57	7.83	49.91	28.75	12.57	7.83
ESR 17	72.26	<u>40.16</u>	12.94	8.25	44.53	26.18	12.30	7.68	44.26	26.05	12.28	7.67	44.81	26.31	12.32	7.69	44.84	26.33	12.32	7.69
PSR 1									21.73	14.55	10.92	6.69	21.86	14.62	10.94	6.70	21.97	14.68	10.95	6.71
PSR 2									21.23	14.28	10.86	6.66	21.21	14.27	10.86	6.66	21.38	14.36	10.88	6.67
PSR 3									21.03	14.17	10.80	6.63	20.90	14.10	10.79	6.62	21.09	14.21	10.81	6.63
PSR 4									20.75	14.03	10.78	6.61	20.70	14.00	10.77	6.61	20.81	14.06	10.79	6.62
PSR 5									22.41	14.91	12.44	7.46	22.54	14.98	12.46	7.47	22.55	14.99	12.46	7.47
PSR 6									22.30	14.85	12.43	7.45	22.45	14.93	12.46	7.46	22.46	14.94	12.46	7.47

Underlined concentrations represent an exceedance of the relevant Air Quality Objective or Target Level.
 * Adjusted NO₂ concentrations only

Table 21: Annual Mean NO_x, NO₂*, PM₁₀ and PM_{2.5}: Scenarios 6 – 9 (µg/m³)																
Receptor	Scenario 6: 2026 Opening Year Residential + Employment (With Link Road)				Scenario 7: 2033 Future Year No Development				Scenario 8: 2033 Future Year Full Residential Development (With Link Road)				Scenario 9: 2033 Future Year Full Residential + Employment Development (With Link Road)			
	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}
ESR 1	28.75	18.26	11.77	7.17	19.83	13.31	11.12	6.78	23.86	15.44	11.76	7.15	24.44	15.74	11.86	7.20
ESR 2	23.98	15.75	11.25	6.87	19.61	13.20	11.05	6.75	20.70	13.77	11.25	6.86	20.78	13.82	11.27	6.87
ESR 3	29.82	18.82	11.46	7.09	24.33	15.68	11.40	7.04	24.54	15.79	11.44	7.07	25.05	16.06	11.51	7.11
ESR 4	27.53	17.62	11.21	6.95	23.01	14.99	11.19	6.93	22.83	14.90	11.17	6.91	23.47	15.23	11.26	6.96
ESR 5	29.80	18.81	13.05	7.82	24.97	16.02	13.10	7.84	25.02	16.04	13.10	7.85	25.35	16.21	13.16	7.88
ESR 6	35.23	21.58	13.49	8.09	28.77	17.97	13.52	8.11	28.99	18.08	13.59	8.14	29.35	18.27	13.67	8.19
ESR 7	25.68	16.65	13.07	7.80	21.36	14.12	12.84	7.66	21.94	14.43	13.02	7.76	22.43	14.69	13.21	7.86
ESR 8	29.37	18.58	13.80	8.23	24.77	15.91	13.49	8.08	24.61	15.83	13.90	8.27	24.89	15.97	13.95	8.30
ESR 9	26.08	16.86	10.84	6.84	22.28	14.61	10.74	6.79	22.16	14.54	10.86	6.84	22.33	14.64	10.89	6.85
ESR 10	31.59	19.73	14.01	8.36	26.09	16.59	13.76	8.23	26.10	16.60	14.10	8.39	26.50	16.80	14.17	8.42
ESR 11	63.54	34.98	15.27	9.06	49.46	28.01	14.96	8.91	49.00	27.79	15.47	9.15	49.83	28.18	15.54	9.19
ESR 12	57.85	32.43	14.93	8.87	45.35	26.09	14.65	8.73	44.96	25.91	15.10	8.94	45.67	26.25	15.16	8.98
ESR 13	26.23	16.94	10.88	6.96	21.24	14.06	10.70	6.84	22.16	14.55	10.87	6.94	22.48	14.71	10.92	6.97

Table 21: Annual Mean NO _x , NO ₂ *, PM ₁₀ and PM _{2.5} : Scenarios 6 – 9 (µg/m ³)																
Receptor	Scenario 6: 2026 Opening Year Residential + Employment (With Link Road)				Scenario 7: 2033 Future Year No Development				Scenario 8: 2033 Future Year Full Residential Development (With Link Road)				Scenario 9: 2033 Future Year Full Residential + Employment Development (With Link Road)			
	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}	NO _x	NO ₂	PM ₁₀	PM _{2.5}
ESR 14	24.90	16.24	12.73	7.62	20.55	13.69	12.52	7.50	21.48	14.19	12.74	7.62	21.73	14.32	12.80	7.65
ESR 15	40.96	24.44	12.07	7.56	31.66	19.43	12.01	7.51	32.68	19.95	12.11	7.56	33.17	20.19	12.15	7.58
ESR 16	49.62	28.61	12.55	7.82	36.68	21.93	12.48	7.77	38.74	22.93	12.61	7.84	39.46	23.28	12.66	7.87
ESR 17	44.53	26.18	12.30	7.68	35.26	21.23	12.34	7.69	35.14	21.17	12.34	7.69	35.58	21.38	12.37	7.71
PSR 1	22.97	15.22	11.08	6.78					19.95	13.37	11.06	6.75	20.13	13.47	11.09	6.77
PSR 2	23.28	15.38	11.14	6.81					20.13	13.47	11.11	6.78	20.41	13.62	11.16	6.81
PSR 3	23.61	15.56	11.13	6.81					20.48	13.66	11.12	6.79	20.83	13.85	11.19	6.83
PSR 4	22.13	14.77	10.97	6.72					19.41	13.09	10.95	6.70	19.59	13.18	10.99	6.72
PSR 5	23.57	15.53	12.63	7.56					20.55	13.70	12.64	7.56	20.72	13.79	12.68	7.58
PSR 6	23.38	15.43	12.61	7.55					20.40	13.62	12.62	7.54	20.58	13.71	12.66	7.57

Underlined concentrations represent an exceedance of the relevant Air Quality Objective or Target Level.
 * Adjusted NO₂ concentrations only