

Appendix 6.3: Background Pollutant Concentrations

The assessment needs to take into account background concentrations upon which the local, traffic derived pollution is superimposed. The data may be derived through long term ambient measurements at background sites, remote from immediate sources of air pollution, or alternatively from the default concentration maps which have been provided for use by Defra with the revised LAQM.TG(16) guidance.

In the absence of representative background pollutant monitoring data being available for the local area, background concentrations have been obtained from the 2018-based default concentration maps provided by Defra on their LAQM webpages. The appropriate backgrounds for each receptor have been used based on the grid squares in which they are located.

As discussed in the report, the EFT used in the assessment (Version 10.1) includes predictions of future vehicle composition and pollutant concentrations up to 2030. As the Opening/Future year scenario considered in the assessment is 2036, the emission factors and backgrounds for 2030 have been applied to the 2036 scenarios. This is considered an overly robust approach as future emissions beyond 2030 are likely to continue to improve as cleaner, less polluting vehicles enter the fleet and replace older, more polluting vehicles.

The background pollutant concentrations used in this assessment are detailed in Table 6.1.

Table 6.1: Background Pollutant Concentrations Used in the Air Quality Assessment				
Pollutant	Annual Mean Concentrations ($\mu\text{g}/\text{m}^3$)			
	NO _x	NO ₂	PM ₁₀	PM _{2.5}
2017 Base Year				
ESR 1 & 17-18 (472500, 102500)	16.82	12.16	14.04	9.36
ESR 2 (472500, 100500)	16.80	12.14	13.59	9.38
ESR 3 - 6 (472500, 099500)	17.00	12.27	13.25	9.29
ESR 7-10 & 19-20 (471500, 099500)	17.46	12.56	13.28	9.37
ESR 11 (471500, 103500)	19.52	13.90	13.37	9.41
ESR 12 (471500, 104500)	20.96	14.80	13.56	9.56
ESR 13 - 16 (471500, 105500)	32.51	21.42	15.25	10.58



Table 6.1: Background Pollutant Concentrations Used in the Air Quality Assessment				
Pollutant	Annual Mean Concentrations (µg/m³)			
	NO_x	NO₂	PM₁₀	PM_{2.5}
2036 Opening/Future Year*				
ESR 1 & 17-18 (472500, 102500)	10.20	7.89	12.66	8.23
ESR 2 (472500, 100500)	10.34	7.99	12.25	8.29
ESR 3 - 6 (472500, 099500)	10.49	8.09	11.99	8.27
ESR 7-10 & 19-20 (471500, 099500)	10.94	8.41	12.11	8.43
ESR 11 (471500, 103500)	11.20	8.60	11.85	8.18
ESR 12 (471500, 104500)	12.39	9.43	12.05	8.35
ESR 13 - 16 (471500, 105500)	20.31	14.66	14.46	9.82
* 2030 background pollutant concentrations				