

Appendix 11.5 Emissions Mitigation Calculation

- 1.1 The Air quality and emissions mitigation guidance for Sussex (2021) requires developments to estimate the associated health damage cost.

Emissions Calculation for Development Traffic

- 1.2 The method follows the example provided on pages 8 and 9 of *Air quality and emissions mitigation guidance for Sussex (2021)*. The emissions assessment and corresponding mitigation calculation follows this process:

1. Identify the trips/annum generated by the proposed development (this information will be available in the Transport Assessment, Transport Statement or TRICS database);
2. Assume an average distance travelled of 10km/trip;
3. Calculate the emissions of NO_x and PM_{2.5} (tonnes/annum) using the Emissions Factor Toolkit, and an assumption of an average speed of 50 Km/h ^[2];
4. Look-up the latest HM Treasury and Defra IGCB damage costs and multiple the outputs from step 3 above to provide a value of the emissions health damage, for each pollutant. This can be found here: <https://www.gov.uk/guidance/air-quality-economicanalysis#damage-costs-approach>;
5. Multiply the calculated emissions health damage values by 5, to quantify emissions over a five-year period; and
6. Sum the NO_x and PM_{2.5} costs to provide a total health damage value.

- 1.3 The guidance states that this is the minimum sum of money that must be spent on practical mitigation measures.

Results of Emissions Calculation for Development Traffic

- 1.4 The number of light and heavy good vehicles trips generated by the development is estimated using the traffic data for road link 8 (Downview Road) in Table 11.2. A total of 2577 trips per day has been used with no HDVs. The average speed for the entire trip is assumed to be 50 km/hr. The emissions for the year of the completion of the site have been calculated using the DEFRA Emissions Factor Toolkit and presented in Table 11.5.1.

Table 11.5.1 2026 Emissions

Pollutant	Emissions (tonnes per annum)
	2031
NO _x	0.91
PM _{2.5}	0.16

- 1.5 In line with steps 4-6 of the *Air quality and emissions mitigation guidance for Sussex (2021)* the

² <http://laqm.defra.gov.uk/review-and-assessment/tools/tools.html>

latest HM Treasury and Defra IGCB damage costs [3] for rural road transport NO_x and PM_{2.5} have been presented. The emissions presented in Table 11.5.2 have been multiplied by the Central Damage Cost and then multiplied by 5 to account for a five-year period.

- 1.6 The 2031 emissions presented in Table 11.5.1 are multiplied by the latest HM Treasury and Defra IGCB damage costs presented in Table 11.5.2.

Table 11.5.2 Steps 4-6 of Air quality and emissions mitigation guidance for Sussex (2021 Methodology)

Pollutant	Central Damage Cost (£/t)	Central Damage Cost x Emissions (£)	Total Cost for Five-year Period (£)	Total Health Damage Value (£)
NO _x	8,907	8,139	40,695	104,730
PM _{2.5}	79,474	12,807	64,035	

³ <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance>