Norwich Western Link

Environmental Statement

Chapter 7: Noise and Vibration

Appendix 7.3: Operational road traffic noise assessment assumptions and source information

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Contents

1 Operational road traffic noise assessment assumptions and source information 3

Tables

Table 1.1 – Noise model assumptions and settings 3

1 Operational road traffic noise assessment assumptions and source information

1.1.1 The operational road traffic noise modelling assumptions, and key settings are detailed in Table 1.1 below.

Table 1.1 – Noise model assumptions and settings

Noise model component	Comment/description
Noise modelling software	CadnaA Version 2023 (64 bit).
Base mapping	Ordnance Survey (OS) base mapping and mastermap data have been used in the creation of the noise model.
Terrain data	For the Proposed Scheme alignment, topographic data have been extracted from the 3D engineering drawings, as supplied by Ferrovial. Immediately surrounding the Proposed Scheme, a topographical survey was undertaken by the project team and this was used to generate associated ground contours. For the remainder of the detailed calculation area, Lidar data have been downloaded from the .gov website, with 1m height contours being generated. The A47 alignment (A47 North Tuddenham to Easton DCO) and topographic data was extracted from drawings for the proposed A47 design provided by SWECO (drawing ref HE55489-GTY-HML-000-M3-CH-50001 P03).

Noise model component	Comment/description
Road traffic source	All roads that are unaltered by the Proposed Scheme have been spatially aligned using the OS base maps/mastermap. All new and altered roads comprising the Proposed Scheme have been spatially aligned using the engineering drawings provided by the Principal Contractor. The A47 has been spatially aligned using the engineering drawings provided by SWECO. The traffic data (flow, speed and proportion of heavy vehicles) have been provided for all relevant scenarios: • Do-minimum year of opening (2029); • Do-something year of opening (2029); • Do-minimum design year (2044); and • Do-something design year (2044). Additional traffic data were provided for the do-something scenarios including the traffic mitigation schemes, although these were not included within the noise model.

Noise model component	Comment/description
Buildings	Building outlines have been incorporated from the OS mastermap layer. A universal height of 6m has been applied within the model and all residential receptors have been assumed to be two storeys unless they are clearly bungalows as identified by satellite and streetview imagery. In one case, at Old Hall Farm, the building has been drawn based on online satellite imagery as the property has been re-developed since the OS mastermap layer was updated. Where Address Base receptor points were identified with no anticipated building, these have been manually incorporated. All buildings have been set to be reflective (absorption coefficient of 0).
Ground cover	A default ground absorption coefficient of 1 has been adopted (i.e. acoustically absorbent ground cover). However, roads and buildings have been set to be acoustically reflecting.