M54 to M6 Link Road

TR010054

Volume 6

6.3 Environmental Statement Appendices

Appendix 11.4 Noise Modelling Details

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Development Consent Order 202[ ]

6.3 Environmental Statement Appendices

Appendix 11.4 Noise Modelling Details

Regulation Number	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010054
Application Document Reference	6.3
Author	M54 to M6 Link Road Project Team and Highways England

Version	Date	Status of Version
P01	January 2020	DCO Application

1. Data Used

1.1 The following data was utilised to inform the noise model:

- OS Mastermap: downloaded from Highways England GeoStore 17/01/2019.
- Existing areas of soft and hard ground: based on OS Mastermap Topographic layer 17/01/2019. Areas of less than 10 m2 or 1 m width removed.
- Additional areas of soft and hard ground: as modified by the Scheme design, including new ponds, provided by project design team 06/09/19 and 07/11/19.
- OS Address Base Plus: downloaded from Highways England GeoStore 17/01/2019.
- OS Building Height Attribute (BHA) dataset: downloaded from Highways England GeoStore 17/01/2019.
- Existing topographic data provided by project design team 08/05/2019.
- 3D Scheme design: data provided by project design team 06/09/2019 and 23/10/2019.
- Road surfacing existing: HAPMS database of locations of thin surfacing 30/11/2018 and follow on discussions with the maintenance contractor.
- Road surfacing proposed: locations of proposed thin surfacing on Scheme agreed with project design team 17/10/2019.
- Existing Noise Barriers: HAPMS database 30/11/2018: M54 Junction 2 (estimated 1.8 m height), M54 Junction 1 (advised 1.8 m height by project design team 07/07/2017), and M6 Northbound south of Junction 10a (height varies between 2.5 and 3.0 m, estimated based on site visit observations).
- Round 3 Noise Important Areas: downloaded from data.gov.uk website 08/07/019.
- Traffic data:
  - operational traffic data provided 03/07/2019 and 06/08/2019.
  - construction traffic data provided 14/10/2019.

2. Modelling Assumptions

2.1 The following assumptions were used in the noise model:

- Ground absorption: 1.0 for soft ground (vegetated), 0.0 for hard ground including water and road surfaces.
- Building heights for residential buildings generally standardized to 4.0 m: one storey 6.0 m: two storey, 9.0 m: three storey etc. based on initial information from OS Mastermap BHA. Non-residential buildings used height direct from OS Mastermap. Some adjustments required to estimate missing heights or obvious inaccuracies.
- Road surfacing corrections:
  - Standard hot rolled asphalt / high friction surfacing:
    - speed <75 km/hr: -1.0 dB;
    - speed ≥75 km/hr: -0.5 dB;
  - Thin surfacing (low noise surfacing):
    - speed <75 km/hr: -1.0 dB;
    - speed ≥75 km/hr: -3.5 dB;
  - Concrete:
    - speed <75 km/hr: -1.0 dB;
    - speed ≥75 km/hr: +2.0 dB;
- 10 m x 10 m grid used to produce noise change contour plots at height of 4.0 m above ground.