

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

Volume 5 | Technical appendices

Addendum 2 to the EIA Scope and Methodology Report
(CT-001-000/3)

July 2015

SES and AP2 ES 3.5.22



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Additional Provision 2 Environmental Statement

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Department
for Transport

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1 Introduction

1.1 Purpose of Scope and Methodology Report Addendum 2

- 7.1.1 The HS2 Scope and Methodology Report (SMR) (refer to the main ES, Volume 5: Appendix CT-001-000/1) was published in autumn 2012 and set out the proposed scope and methodology for the environmental impact assessment (EIA) for Phase One (London-West Midlands) of High Speed Two (HS2).
- 7.1.2 An SMR Addendum (refer to the main ES, Volume 5: Appendix CT-001-000/2) was published in November 2013, which outlined where the methodology presented within the SMR had been amended or advanced as a result of:
- legislation or industry best practice guidance changing;
 - the methodology undergoing refinement as a result of its application within the EIA; and
 - further feedback on the outlined methodology received from stakeholders including statutory bodies following the ongoing application of that methodology.
- 1.1.1 This SMR Addendum 2 has been produced specifically to amend and advance the SMR required for the EIA in support of the Additional Provision 2 (AP2) of the hybrid Bill for High Speed Rail between London and the West Midlands. It only covers air quality and focuses on updates and refinements to:
- the establishment of the baseline and definition of the survey;
 - the scope of the assessment; and
 - the assessment methodology.
- 1.1.2 There has been no material change to Part A of the SMR, including the report's introduction, the high level methodology presented within the 'EIA Methodology' section, and the reporting of scheme alternatives. The scope and methodology contained within this SMR Addendum 2 is generally presented in the future tense to emulate the SMR (which, being a consultation document in advance of the EIA, was provided in the future tense).
- 1.1.3 This SMR Addendum 2 is arranged by environmental topic in the same order as they were presented within the SMR. It should be noted that for ease of cross reference, the section numbering of the remainder of this document reflects the numbering used within the SMR document. Thus, only Section 5 (Air quality) of this SMR Addendum 2 document is used. Each section commences with a list of changes to the SMR for the particular environmental topic.

2 (not used)

3 (not used)

4 (not used)

5 Air quality

Table 1 List of changes to the SMR for air quality

SMR paragraph reference	Note
5.2.5	Background maps now available based on 2011 data
5.5.2	Revised Institute of Air Quality Management (IAQM) guidance is now available – text amended to reflect this
5.5.4	Text amended to reflect different assessment scenarios
5.5.5	Text amended to reflect different assessment scenarios
5.6.1	Text amended to reflect new National Planning Practice Guidance (NPPG)
5.6.2	Text amended to reflect new Greater London Authority (GLA) Supplementary Planning Guidance (SPG)
5.6.16	Text amended to allow for an approach that uses detailed dispersion modelling with the ADMS-Roads software without an intermediate step of Design Manual for Roads and Bridges (DMRB) screening

Table 2 List of changes to technical note – Air quality assessment for construction issues (refer to SMR Addendum, Annex A)

Technical note paragraph reference	Note
1.1.1	Reference to IAQM guidance updated
2.1.4	Text amended to reflect new IAQM guidance
2.1.5	Text amended to reflect new GLA SPG and text added to reflect the guidance's approach to mitigation measures
2.1.6	References to IAQM guidance sections updated

Table 3 List of changes to technical note – Guidance on assessment methodology (refer to SMR Addendum, Annex A)

Technical note paragraph reference	Note
1.1.2	Text amended to reflect different years of assessment
1.1.3	Text amended to reflect different years of assessment
1.1.4	Text amended to reflect different years of assessment
1.1.5	Text amended to reflect different years of assessment
1.5.1	Reference to ADMS-Roads User Guide updated
1.6.1	Text updated
1.7.1	Text amended to reflect base year of assessment
3.1.2	Text added to allow for an approach that uses detailed dispersion modelling with ADMS-Roads without an intermediate step of DRMB screening
3.3.6	Text amended to reflect new assessment tools
3.5.2	Text amended to reflect different years of assessment
3.8.1	Text amended to reflect different years of assessment
3.9.1	Text amended to reflect different years of assessment

4.1.1	Text and reference amended to reflect new IAQM guidance
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5.1 Establishment of baseline and definition of survey

- 5.1.1 *(replaces paragraph 5.2.5 of the SMR and paragraph 5.1.1 of the SMR Addendum)* Background air pollutant concentration data is available on the Department for Food and Rural Affairs (Defra) Air Information Resource website.¹ These data comprise estimated background air pollution for 2011 and projections for future years for a one square kilometre (km²) grid for every local authority in the UK.

5.2 Scope of assessment

Technical scope

- 5.2.1 *(reference paragraph 5.5.2 of the SMR and paragraph 5.1.2 of the SMR Addendum)* Replace reference 34 with "IAQM, 2014, Guidance on the assessment of dust from demolition and construction, London: www.iaqm.co.uk/guidance/".

- 5.2.2 *(replaces paragraph 5.5.4 of the SMR)* The assessment of air quality effects of construction traffic will be undertaken for the following scenarios:

- future baseline traffic emissions for key years of construction without the scheme construction traffic emissions; and
- future baseline traffic emissions for key years of construction with the scheme construction traffic emissions.

- 5.2.3 *(replaces paragraph 5.5.5 of the SMR)* The assessment of air quality effects due to changes in traffic during operation will be undertaken for the following scenarios:

- future baseline traffic emissions during key years of operation without the scheme; and
- future baseline traffic emissions during the year of operation with the scheme.

5.3 Assessment methodology

Legislation

- 5.3.1 *(replaces final bullet point of paragraph 5.6.1 of the SMR)*
- National Planning Policy Framework (NPPF) 2012² and National Planning Practice Guidance (NPPG) 2014.³

Guidance

- 5.3.2 *(replaces final bullet point of paragraph 5.6.2 of the SMR and paragraphs 5.3.1 and 5.3.2 of the SMR Addendum)* The Control of Dust and Emissions during Construction and Demolition, Supplementary Planning Guidance, July 2014.⁴

¹ Department for Environment, Food and Rural Affairs (Defra); *Air Information Resource*; <http://uk-air.defra.gov.uk>.

² Department for Communities and Local Government, (2012), National Planning Policy Framework.

³ Department for Communities and Local Government, (2014), National Planning Practice Guidance - Air Quality.

⁴ Greater London Authority (GLA), 2014, *The Control of Dust and Emissions during Construction and Demolition, Supplementary Planning Guidance*, GLA.

Construction effects

- 5.3.3 *(replaces paragraph 5.6.16 of the SMR and paragraph 5.3.3 of the SMR Addendum)* With regard to assessment of the effects of emissions arising from changes in traffic flows during construction of the scheme, traffic data will be screened using the DMRB criteria outlined in paragraph 5.5.1 of the SMR Following this screening exercise, roads meeting any of these criteria would be subject to detailed air quality modelling using ADMS-Roads or ADMS-Urban to investigate the effects of changes in traffic flows. Dispersion modelling would use the latest vehicle emission data from Defra and take into account information in the National Emissions Inventory and London Atmospheric Emissions Inventory, as appropriate. Comparison of the results with and without the construction traffic and local diversion in the future years would allow the effect to be determined. In some cases, it may be more efficient to only use detailed modelling, for instance, where road layouts are complex or there is a large study area.

5.4 Changes to technical note – Air quality assessment for construction issues (refer to SMR Addendum, Annex A)

- 5.4.1 *(reference paragraph 1.1.1, replace reference 2)* "IAQM, 2014, Guidance on the assessment of dust from demolition and construction, London: www.iaqm.co.uk/guidance/".
- 5.4.2 *(replace paragraph 2.1.4)* The IAQM guidance suggests that an assessment is required where there are sensitive receptors within 350m of the boundary of the construction site (or 50m for ecological receptors), within 50m of the route used by construction vehicles on the public highway and up to 500m from the construction site entrance. It is acknowledged in the guidance that these values are conservative and hence there is scope for specific criteria to be applied for this assessment.
- 5.4.3 *(replace paragraph 2.1.5)* The assessment assumes that the 'desirable' measures for 'low risk' sites in the IAQM guidance are in place. These minimum mitigation measures are detailed in Table 1 and are based on the requirements for low risks sites in the GLA SPG (reference 4: Greater London Authority, 2014, The control of dust and emissions during construction and demolition, Supplementary Planning Guidance, London: Greater London Authority). With these measures in place and by examining the intensity of construction activities in some instance, the distances described in paragraph 2.1.4 can be reduced without risk of underestimating the air quality impacts. The guidance also notes that with the application of sufficient mitigation measures, no significant effects would be anticipated from construction activities.
- 5.4.4 *(replace bullet 1 of paragraph 2.1.6)*
- where the construction activities fall into a high risk category for either demolition, earthworks, construction or trackout (defined in sections 7.28.3 - 8.7 of the IAQM guidance), the distances in Section 7 of the IAQM guidance will apply.

5.5 Changes to technical note – Guidance on assessment methodology (refer to SMR Addendum, Annex A)

- 5.5.1 *(replace paragraph 1.1.2)* Construction without the scheme - selected years within the construction period for the assessment of the effects of construction.

- 5.5.2 *(replace paragraph 1.1.3)* Construction with the scheme – selected years within the construction period for the assessment of the effects of construction. The years of assessment will be selected based on the construction programme and when significant effects are expected.
- 5.5.3 *(replaces paragraph 1.1.4)* An operational scenario will also be assessed for the first full operational year after construction of the scheme is completed.
- 5.5.4 *(replaces paragraph 1.1.5)* For each assessment year, the scenario without the scheme in place and the scenario with the scheme in place will both be assessed.
- 5.5.5 *(reference paragraph 1.5.1 replace reference 2)* “Cambridge Environmental Research Consultants, ADMS-Roads User Guide v3.2, October 2013”.⁵
- 5.5.6 *(replace paragraph 1.6.1)* When undertaking an ADMS-Roads assessment, the model will be verified at selected suitable continuous and diffusion tube nitrogen dioxide (NO₂) monitoring sites in accordance with LAQM.TG(09)⁶. Kerbside sites will not be included in the model verification exercise. Adjustment to the model using the procedure detailed in LAQM.TG(09) will be made if the average difference between modelled and monitored NO₂ concentrations exceeds 25% of monitored concentrations. DMRB screening method results will not be subject to verification, as this method will not be used in areas where a significant air quality impact is likely.
- 5.5.7 *(replace paragraph 1.7.1)* When dispersion modelling is undertaken, a sensitivity analysis will be performed using five years of hourly sequential meteorological data from a station as indicated below (depending on location). The results for the full assessment will then be presented based on 2012 meteorological data unless the sensitivity analysis justifies another year is likely to lead to results that would materially affect the conclusions of the assessment. Choice of any year other than 2012 will be justified.
- 5.5.8 *(additional paragraph inserted after paragraph 3.1.2)* In some cases it may be more efficient to only use detailed modelling, for instance, where road layouts are complex or there is a large study area.
- 5.5.9 *(replace paragraph 3.3.6)* The most recent versions of ADMS-Roads and ADMS will be used for any dispersion modelling assessment. Emissions suitable for use in the ADMS-Roads model will be generated using the most recent Emission Factors Toolkit (EFT) available at the start of the assessment.
- 5.5.10 *(replace paragraph 3.5.2)* If local monitoring data is not available for the base year of 2012, it will be adjusted using the same factors for the area as those used in the Defra background maps. Local background monitoring data will also be adjusted, if used, for the required assessment years.
- 5.5.11 *(replace paragraph 3.8.1)* The construction impact assessment will be carried out for selected years within the construction period on a case by case basis.
- 5.5.12 *(replace paragraph 3.9.1)* Where construction overlaps with operation, operational traffic will be assessed for local air quality for selected years during the construction period. Operational traffic will also be assessed for the full opening year after

⁵ Cambridge Environmental Research Consultants, 2013, ADMS-Roads User Guide v3.2.

⁶ Department for Food and Rural Affairs, 2009, Local Air Quality Management, Technical Guidance LAQM.TG(09).

construction. A Do-Minimum scenario, without the scheme, and a Do-Something scenario, with the scheme, will be assessed and compared. A baseline scenario will be assessed for information purposes.

- 5.5.13 *(replace paragraph 4.1.1)* In addition to a construction traffic assessment, the construction assessment will follow the latest IAQM Dust Guidance methodology.⁷

⁷ IAQM, 2014, Guidance on the Assessment of Dust from Demolition and Construction, London: www.iaqm.co.uk/guidance/

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