



High Speed Rail (West Midlands - Crewe)

Environmental Statement

Volume 5: Technical appendices

Ecology and biodiversity

Habitats Regulations Assessment screening report for Pasturefields
Salt Marsh Special Area of Conservation addendum (EC-017-004)



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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

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1 Introduction

- 1.1.1 This document forms an Addendum to the Habitats Regulations Assessment (HRA) screening report for the Pasturefields Salt Marsh Special Area of Conservation (SAC)¹ undertaken for the HS2 Phase 2 Appraisal of Sustainability (2013)².
- 1.1.2 This Addendum considers the potential for the construction of the Proposed Scheme to have significant effects on the SAC due to the use of the A51 Lichfield Road as a construction route.
- 1.1.3 At its closest point the A51 Lichfield Road is approximately 60m from the SAC. This Addendum considers the potential for air quality effects on the SAC.
- 1.1.4 Figure 1 shows the location of the SAC (the light blue area) and the A51 Lichfield Road (the blue line).

Figure 1: Location of Pasturefields Salt Marsh SAC and the A51 Lichfield Road



¹ Habitats Regulations Assessment screening report for Pasturefields Salt Marsh Special Area of Conservation, Volume 5: Appendix EC-017-003
² High Speed 2 Ltd, (2013), High Speed Rail: Consultation on the route from the West Midlands to Manchester, Leeds and beyond, Sustainability Statement, Volume 1: Appendix E4 Biodiversity

2 Context

- 2.1.1 Pasturefields Salt Marsh SAC is located approximately 7km to the east of Stafford, close to the Grand Trunk Canal in the West Midlands. It is the only significant remaining example in the UK of a natural salt spring with inland saltmarsh vegetation. The primary reason for the designation of the SAC is the presence of inland salt meadows, a priority habitat which is listed on Annex I of the Habitats Directive³.
- 2.1.2 The HRA undertaken for the HS2 Phase 2 Appraisal of Sustainability considered the potential construction effects from the Proposed Scheme on the SAC due to hydrological effects. It concluded that the chosen route option would have no likely significant effect, and this conclusion has been agreed with Natural England. The route of the Proposed Scheme would not intersect with the surface water catchment or groundwater of the SAC and thus an appropriate assessment was not required.
- 2.1.3 The route alignment has not subsequently changed and hence there would be no significant effects on surface water or groundwater. However, there is a need to use the A51 Lichfield Road for the Proposed Scheme construction traffic (including heavy goods vehicles (HGVs)) and therefore there is a need to consider the potential for air quality effects on the internationally important interest features of the site alone, and in combination with other plans and projects.
- 2.1.4 The original HRA screening report has been reviewed and all other conclusions in the original HRA screening report are still relevant.
- 2.1.5 It should be noted that air quality is not identified in the conservation objectives⁴ of the SAC as a parameter to which the interest features of the SAC are sensitive.

³ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Strasbourg, European Parliament and European Council, http://jncc.defra.gov.uk/Publications/JNCC312/UK_habitat_list.asp

⁴ Natural England (2014), *European Site Conservation Objectives for Pasturefields Salt Marsh SAC*, (UK0012789), <http://publications.naturalengland.org.uk/publication/6292877810335744>

3 Findings

- 3.1.1 An air quality assessment for road related emissions has been undertaken following the approach described in the Scope and Methodology Report (SMR)⁵ and the SMR Addendum⁶. Construction traffic data used in this assessment is detailed in Background Information and Data (BID)⁷, (see BID-AQ-002-000: Traffic data used for the air quality assessment).
- 3.1.2 The air quality assessment has used traffic data for the year 2022 as a conservative case, due to the large number of movements during this year compared to the rest of the construction period. However, construction vehicle emissions and background concentrations have been taken for 2020, as the first year in the construction period. The air quality assessment has also incorporated HS2 Ltd's policies on vehicle emissions, which include the use of Euro VI HGVs during construction of the Proposed Scheme.
- 3.1.3 Future background pollutant concentrations⁸ at the SAC are anticipated to be 15.5µg/m³ for NO_x and 11.2µg/m³ for NO₂. The average total nitrogen (N) deposition⁹ is also anticipated to be 20.3kg N/ha/yr.
- 3.1.4 Annual average daily traffic (AADT) flows along the A51 Lichfield Road are anticipated to be 11,191 vehicles without the Proposed Scheme, increasing to 12,135 with construction of the Proposed Scheme. HGVs are anticipated to be 978 AADT without the Proposed Scheme, increasing to 1,453 with construction of the Proposed Scheme. Therefore, construction of the Proposed Scheme is anticipated to add 944 AADT and 476 AADT HGVs on the A51 Lichfield Road as a worst case during the construction period. The increase in traffic has triggered the need for an air quality assessment in line with the guidance in the Design Manual for Roads and Bridges (DMRB)¹⁰.
- 3.1.5 Concentrations of nitrogen oxides (NO_x) have been predicted within the SAC at different distances from the A51 Lichfield Road, namely at 70.5m; 100m; 150m; and 200m.
- 3.1.6 For the assessment of ecological sites, there is considered to be an insignificant effect if:
- the total predicted NO_x concentrations are below the air quality standard of 30µg/m³; or
 - the predicted change in NO_x concentrations is less than 0.4µg/m³ when the concentrations are predicted to exceed the air quality standard.

⁵ Environmental Impact Assessment Scope and Methodology Report, Volume 5: Appendix CT-001-001

⁶ Environmental Impact Assessment Scope and Methodology Report Addendum, Volume 5: Appendix CT-001-002

⁷ HS2 Ltd (2017), High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, www.gov.uk/hs2

⁸ Department for Environment, Food and Rural Affairs (Defra) (2013), Defra Background Pollutant Concentration Maps; <https://uk-air.defra.gov.uk/data/laqm-background-maps>

⁹ Air Pollution Information System, <http://www.apis.ac.uk/>

¹⁰ Highway England (2007), Design Manual for Roads and Bridges Volume 11, Section 3: Environmental Assessment Techniques, Part 1 HA207/7, Chapter 3, Section 3.12, <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol11/section3/ha20707.pdf>

- 3.1.7 If these conditions are not met, then an assessment of N deposition is required. If the change in N deposition is predicted to be less than 1% of the lower critical load, there is considered to be an insignificant effect. Should the N deposition change by more than 1%, then an assessment of significance is undertaken by an ecologist.
- 3.1.8 The predicted increases in annual mean NO_x concentrations at the SAC are predicted to be 0.1µg/m³ and the highest predicted concentration is 17.6µg/m³, which is well below the air quality standard of 30µg/m³. Air quality impacts at the SAC are therefore considered to be imperceptible and no significant effects would be anticipated (see Table 1). Consequently, no further assessment has been undertaken for N deposition.

Table 1: Predicted annual mean NO_x concentrations at the Pasturefields Salt Marsh SAC

Distance to road (m)	NO _x concentrations (µg/m ³)		Change in NO _x concentrations (µg/m ³)	Comparison against air quality standard (30µg/m ³)	Magnitude of change	Significance
	2020 without the Proposed Scheme	2020 with the Proposed Scheme				
70.5	17.5	17.6	0.1	Below standard	Imperceptible	Not significant
100	17.1	17.2	0.1	Below standard	Imperceptible	Not significant
150	16.8	16.9	0.1	Below standard	Imperceptible	Not significant
200	16.7	16.7	0.0	Below standard	Imperceptible	Not significant

4 In-combination effects

- 4.1.1 An in-combination assessment has been undertaken. Any changes within the waste transfer station and the three existing industrial estates that were considered to have potential effects on water supply to the SAC at the time of the HRA undertaken for the HS2 Phase 2 Appraisal of Sustainability would be subject to regulatory scrutiny under both the Conservation of Habitats and Species Regulations¹¹ and the Water Framework Directive¹² and it is unlikely these would result in any in-combination effects on the Pasturefields Salt Marsh SAC.

¹¹ Conservation of Habitats and Species Regulations 2010 (as amended)

¹² Directive 2000/60/ec of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy

5 Conclusions

- 5.1.1 This Addendum to the HRA screening report undertaken for the HS2 Phase 2 Appraisal of Sustainability considers the potential for the use of the A51 Lichfield Road for the Proposed Scheme's construction traffic to have significant air quality effects on the Pasturefields Salt Marsh SAC.
- 5.1.2 It had been established that there would be no likely significant air quality effects on the SAC's inland salt meadows during construction of the Proposed Scheme, alone or in combination with other planned projects.

6 References

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Strasbourg, European Parliament and European Council (the Habitats Directive). Available online at: http://jncc.defra.gov.uk/Publications/JNCC312/UK_habitat_list.asp.

Natural England (2014), *European Site Conservation Objectives for Pasturefields Salt Marsh SAC*, (UK0012789).

High Speed 2 Ltd (2013), *High Speed Rail: Consultation on the route from the West Midlands to Manchester, Leeds and beyond. Sustainability Statement. Volume 1 Appendix E4 Biodiversity*.

HS2 Ltd (2017), *High Speed Two Phase 2a: West Midlands to Crewe, Background Information and Data, Traffic data used for the air quality assessment*, (BID-AQ-002-000). Available online at: www.gov.uk/hs2.

High Speed Two (HS2) Limited
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

08081 434 434
HS2Enquiries@hs2.org.uk