

High Speed Rail (Crewe – Manchester)

**Background information and data
accompanying SES1 and AP1 ES**

Water resources and flood risk

BID WR-004-0MA02 SES1 and AP1 ES

Water resources assessment baseline data

MA02: Wimboldsley to Lostock Gralam

High Speed Rail (Crewe – Manchester)

**Background information and data
accompanying SES1 and AP1 ES**

Water resources and flood risk

BID WR-004-0MA02 SES1 and AP1 ES

Water resources assessment baseline data

MA02: Wimboldsley to Lostock Gralam



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.hs2.org.uk

A report prepared for High Speed Two (HS2) Limited:

ARUP+ ERM | FOSTER + PARTNERS | JACOBS
RAMBOLL | TYPISA | COSTAIN

MWJV

Mott MacDonald | WSP

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.

© High Speed Two (HS2) Limited, 2022, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v3.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3 **OGL** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



Printed in Great Britain on paper containing 100% recycled fibre.

**Background Information and Data accompanying Supplementary Environmental Statement 1 and
Additional Provision 1 Environmental Statement**

Water resources and flood risk
BID WR-004-OMA02 SES1 and AP1 ES
MA02
Water resources assessment baseline data

Contents

1	Introduction	2
1.1	Structure of this report	2
	Part 1: Supplementary Environmental Statement 1	3
2	New environmental baseline information relevant to water resources	3
2.1	Changes to design or construction assumptions which do not require changes to the Bill relevant to water resources	3
2.2	Environmental baseline	3
	Part 2: Additional Provision 1 Environmental Statement	6
3	Environmental baseline information relevant to water resources	6
3.1	Changes to design or construction assumptions which require changes to the Bill relevant to water resources	6
4	References	7
	Tables	
	Table 1: Water quality sampling results	4

Background Information and Data accompanying Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement

Water resources and flood risk
BID WR-004-OMA02 SES1 and AP1 ES
MA02
Water resources assessment baseline data

1 Introduction

1.1 Structure of this report

- 1.1.1 This report presents baseline data relating to the water resources assessment and forms part of the Background Information and Data (BID) that accompanies the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES)¹ for the Wimboldsley to Lostock Gralam area (MA02).
- 1.1.2 This report provides details of changes to the water resources assessment baseline since the production of the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Environmental Statement (ES)² (the main ES), and the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Background Information and Data (BID)³ (the main BID reports) which accompanied the main ES published in 2022.
- 1.1.3 This report should be read in conjunction with the BID WR-004 reports which accompanied the main ES for each of the community areas.
- 1.1.4 This report is structured into two parts: Part 1 – data used in the SES1, and Part 2 – data used in the AP1 ES, and should be read in conjunction with the SES1 and AP1 ES Water resources assessment for MA02 (see SES1 and AP1 ES Volume 5, Appendix: WR-003-OMA02).
- 1.1.5 In order to differentiate between the original scheme and subsequent changes, the following terms are used:
- ‘the original scheme’ – the Bill scheme submitted to Parliament in January 2022, which was assessed in the main ES;
 - ‘the SES1 scheme’ – the original scheme with any changes described in the SES1 that are within the existing powers of the Bill; and
 - ‘the AP1 revised scheme’ – the original scheme as amended by the SES1 changes and AP1 amendments.

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

³ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

Part 1: Supplementary Environmental Statement 1

2 New environmental baseline information relevant to water resources

2.1 Changes to design or construction assumptions which do not require changes to the Bill relevant to water resources

2.1.1 There are no changes to design or construction assumptions which will lead to changes in the water resources baseline.

2.2 Environmental baseline

Surface water

2.2.1 No changes to baseline data for surface water are relevant to these SES1 design changes.

Water quality

2.2.2 No water quality data was available for the Highways England Water Risk Assessment Tool (HEWRAT)⁴ assessments carried out for the main ES. Therefore, precautionary significant effects on water quality in four watercourses were reported in the main ES relating to changes in traffic flows due to construction and operation of the original scheme. Since the main ES water quality data has been collected for three watercourses within this area, to better understand the implications of highways drainage discharges on water quality. These are:

- Puddinglake Brook;
- Gad Brook; and
- Wade Brook.

⁴ Standards for Highways (2020), *Design Manual for Roads and Bridges (DMRB), LA 113 Road Drainage and the Water Environment Revision 1*. Available online at: <https://www.standardsforhighways.co.uk/prod/attachments/d6388f5f-2694-4986-ac46-b17b62c21727?inline=true>.

Background Information and Data accompanying Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement

Water resources and flood risk
 BID WR-004-OMA02 SES1 and AP1 ES
 MA02
 Water resources assessment baseline data

2.2.3 Laboratory analysis of this single water quality sampling round carried out on 10th August 2021 is shown in Table 1.

Table 1: Water quality sampling results

Determinand (unit)	Limit of detection (LoD)	Puddinglake Brook (WR-01-303 – F5) ⁵	Gad Brook (WR-01-303 – G5)	Wade Brook (WR-01-304a – B7)	Environmental Quality Standards (EQS)
Alkalinity (Bicarbonate) (mg CaCO ₃ /l)	10	210	240	160	–
Chloride (mg/l)	1.0	64	67	390	250*
Sulphate (mg/l)	1.0	55	51	64	250*
Calcium (mg/l)	2.00	79	79	78	250*
Potassium (mg/l)	0.50	24	21	20	12*
Magnesium (mg/l)	0.20	18	20	27	50*
Sodium (mg/l)	1.50	38	55	330	200*
Total Hardness as CaCO ₃ (mg/l)	15	270	280	300	–
Copper (dissolved) (µg/l)	0.50	6.1	2.7	5.5	1.0
Zinc (dissolved) (µg/l)	2.5	below LoD	below LoD	below LoD	10.9

*Drinking Water Standard (DWS) taken from Schedule 2 of The Water Supply (Water Quality) Regulations 2000 as EQS value unavailable⁷.

Groundwater

2.2.4 Since the main ES, the Environment Agency has issued updated datasets for groundwater source protection zones (SPZ), discharge consents and licensed water abstractions. However, these updated datasets do not introduce any new receptors or change existing receptors for water resources and flood risk topic in this area. For the SES1 scheme, the additional data does not result in any new or different significant effects compared to the main ES.

⁵ The feature locations are indicated by the grid coordinates on Map Series WR-01 in the main ES Volume 5, Water resources and flood risk Map Book. Available online at <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

⁶ Water Framework Directive (Standards and Classification) Directive (England and Wales) 2015. Available online at: https://www.legislation.gov.uk/ukxi/2015/1623/pdfs/ukxi0d_20151623_en_auto.pdf.

⁷ The Water Supply (Water Quality) Regulations 2000. Available online at: <https://www.legislation.gov.uk/ukxi/2000/3184/schedule/2/made>.

**Background Information and Data accompanying Supplementary Environmental Statement 1 and
Additional Provision 1 Environmental Statement**

Water resources and flood risk
BID WR-004-OMA02 SES1 and AP1 ES
MA02
Water resources assessment baseline data

Groundwater – surface water interactions

2.2.5 No changes to baseline data for groundwater – surface water interactions are relevant to the SES1 and AP1 ES.

Water dependent habitats

2.2.6 No changes to baseline data for water dependent habitats are relevant to these SES1 design changes.

Part 2: Additional Provision 1 Environmental Statement

3 Environmental baseline information relevant to water resources

3.1 Changes to design or construction assumptions which require changes to the Bill relevant to water resources

- 3.1.1 There are no changes to design or construction assumptions which will lead to changes in the water resources baseline.

Background Information and Data accompanying Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement

Water resources and flood risk
BID WR-004-OMA02 SES1 and AP1 ES
MA02
Water resources assessment baseline data

4 References

High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

The Water Supply (Water Quality) Regulations 2000. Available online at: <https://www.legislation.gov.uk/uksi/2000/3184/schedule/2/made>.

Water Framework Directive (Standards and Classification) Directive (England and Wales) 2015. Available online at: https://www.legislation.gov.uk/uksi/2015/1623/pdfs/uksiod_20151623_en_auto.pdf.

High Speed Two (HS2) Limited

Two Snowhill

Snow Hill Queensway

Birmingham B4 6GA

Freephone: 08081 434 434

Minicom: 08081 456 472

Email: HS2enquiries@hs2.org.uk

