

# **High Speed Rail (Crewe – Manchester)**

## **Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement**

### **Volume 5: Appendix WR-001-OR003**

#### **Water resources and flood risk**

Water Framework Directive preliminary  
compliance assessment addendum  
Off-route works: Annandale depot

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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.

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# 1 Introduction

## 1.1 Background

- 1.1.1 This report is an appendix which forms part of Volume 5 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES). It reports on the interaction of the AP2 revised scheme with the objectives of the Water Framework Directive (WFD). In Scotland, the legislation which covers the requirement for the Water Framework Directive is set out in the Water Environment and Water Services (Scotland) Act 2003<sup>1</sup>.
- 1.1.2 This addendum covers the off-route works at Annandale depot and should be read in conjunction with SES2 and AP2 ES Volume 4, Off-route effects.
- 1.1.3 This addendum provides an update to the Off-route works: Annandale depot Water Framework Directive preliminary compliance assessment presented in the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Environmental Statement (ES) published in 2022<sup>2</sup> (the main ES) and the Background Information and Data (BID)<sup>3</sup> reports which accompanied it (the main BID reports). This update should be read in conjunction with the Off-route works: Annandale depot WFD preliminary compliance assessment as set out in Volume 5, Appendix: WR-001-OR003<sup>4</sup> in the main ES and the Water Framework Directive baseline information database set out in the main BID report, see BID WR-002-OR003<sup>5</sup>.
- 1.1.4 An assessment was undertaken to determine if the AP2 revised scheme as described in the SES2 and AP2 ES Volume 4, Off-route effects would materially alter the conclusions on WFD compliance reported in the WFD assessment set out in the main ES<sup>4</sup>.
- 1.1.5 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:

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<sup>1</sup> Water Environment and Water Services (Scotland) Act 2003. Available online at: <https://www.legislation.gov.uk/asp/2003/3/contents>.

<sup>2</sup> 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>.

<sup>3</sup> 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>.

<sup>4</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Water Framework Directive preliminary compliance assessment*, Volume 5, Appendix: WR-001-OR003. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

<sup>5</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data, Water Framework Directive preliminary compliance assessment baseline data*, BID WR-002-OR003. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

- ‘the original scheme’ – the Bill scheme submitted to Parliament in 2022, which was assessed in the main ES;
- ‘the SES1 scheme’ – the original scheme with any changes described in SES1 that are within the existing powers of the Bill;
- ‘the AP1 revised scheme’ – the original scheme as amended by SES1 changes and AP1 amendments;
- ‘the SES2 scheme’ – the original scheme with any changes described in SES1 (submitted in July 2022) and the SES2; and
- ‘the AP2 revised scheme’ – the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments.

## 1.2 Purpose of this addendum

- 1.2.1 The AP2 revised scheme has the potential to affect surface water and groundwater bodies within the Gretna Coastal catchment of the Solway-Tweed River Basin District (RBD). An assessment of the original scheme's compliance against the objectives of the WFD was undertaken as part of the water resources and flood risk assessment set out in the main ES<sup>4</sup>, hereafter referred to as ‘the original WFD assessment’.
- 1.2.2 The purpose of this addendum is to report any changes or updates to environmental information and scheme design or assumptions that have occurred, since the main ES, which will result in a change in effects and/or the introduction of new effects on WFD status and status objectives from those reported in the original WFD assessment.
- 1.2.3 The original preliminary WFD assessment identified potential compliance risks for the WFD Kirtle Water (d/s<sup>6</sup> Waterbeck) (Water body ID: 10666) water body due to the wastewater treatment plant (WWTP) discharge outfall.

## 1.3 Assessment methodology

- 1.3.1 The assessment method for deriving effects on WFD status and status objectives is outlined in the:
- Environmental Impact Assessment (EIA) Scope and Methodology Report (SMR)<sup>7</sup> set out in the main ES;
  - Water Framework Directive (WFD) compliance assessment process Technical note which is in Part 3 of the SMR; and
  - the original WFD assessment.

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<sup>6</sup> d/s = downstream.

<sup>7</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), Environmental Statement, *Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix: CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

# Part 1: Supplementary Environmental Statement 2

## 2 New environmental baseline information relevant to the WFD

- 2.1.1 The baseline WFD status and status objectives of the water bodies are summarised within the WFD baseline data report (BID WR-002-OR003<sup>5</sup>) that accompanied the main ES.
- 2.1.2 New baseline information from the latest River Basin Management Plan (RBMP) for the Solway Tweed River Basin District<sup>8</sup> was published in December 2021. The latest RBMP for the Solway Tweed supports the RBMP for Scotland 2021 – 2027 (RBMP3) and is an update of the RBMP published in 2015.
- 2.1.3 Table 1 presents the updated baseline information for the WFD surface water bodies in the study area. The table presents whether the surface water bodies have been screened in for WFD preliminary compliance assessment based on their potential to be affected by the AP2 revised scheme.
- 2.1.4 Table 2 presents the updated baseline information for the WFD groundwater body within the study area. The table indicates whether it has been screened in for WFD preliminary assessment based on its potential to be affected by the AP2 revised scheme.
- 2.1.5 Location of the WFD surface water bodies and groundwater body and their updated status is shown in the main ES Water resources and flood risk Map Book: Map Series WR-03 – Water Framework Directive, map WR-03-803.

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<sup>8</sup> Environment Agency and Scottish Environment Protection Agency (2021) *The River Basin Management Plan for the Solway Tweed River Basin District 2021 update*. Available online at: <https://www.sepa.org.uk/media/594087/211221-final-rbmp3-solway-tweed.pdf>.

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**Table 1: Summary of WFD surface water bodies within the study area, Cycle 3 (2021 – 2027) status**

WFD water body	WFD water body ID	River Basin District/ Management Plan	Catchment	Water body type (hydro-morphological designation)	Heavily modified or artificial water body	2021-2027 Cycle 3 (based on 2020 data)			Screened in for WFD assessment?
						Overall status	Overall ecology	Overall chemistry	
Kirtle Water (d/s Waterbeck)	10666	Solway Tweed	Gretna Coastal	River	Not heavily modified or artificial	Poor	Poor	N/A	Yes
Logan Burn/ Back Sark	10671	Solway Tweed	Gretna Coastal	River	Not heavily modified or artificial	Poor	Poor	N/A	No – not affected
River Sark	10669	Solway Tweed	Gretna Coastal	River	Not heavily modified or artificial	Moderate	Moderate	Pass	No – not affected by the route of the AP2 revised scheme

*River Basin Management Plans are produced every six years by the Scottish Environment Protection Agency (SEPA) and the Environment Agency and present the WFD status of all assessed water bodies<sup>9</sup>.*

**Table 2: Summary of the WFD groundwater body within the study area and Cycle 3 (2021 – 2027) status**

WFD water body	WFD water body ID	River Basin District / Management Plan	Catchment size (km <sup>2</sup> )	2021-2027 Cycle 3			Screened in for WFD preliminary assessment?
				Overall status	Quantitative status	Chemical status	
Annan	150623	Solway Tweed	168.4	Good	Good	Good	Yes

<sup>9</sup> Scottish Environment Protection Agency (2021), *Water Environment Hub*. Available online at: <https://informatics.sepa.org.uk/RBMP3/>.



## Part 2: Additional Provision 2 Environmental Statement

### 3 Summary of changes to scheme design and construction assumptions relevant to the WFD

- 3.1.1 One AP2 amendment has been identified as being relevant to WFD; AP2-ORW-001: Additional land permanently required for modifications to wastewater drainage at Annandale depot. The SES2 and AP2 Volume 4, Off-route effects report provides more information on this amendment. The amendment removes the WWTP discharge outfall scheme component (previous WFD ID 10666-T-02-WT-01), which was located on the 'Tributary of Ewes Burn 1' watercourse within the Kirtle Water (d/s Waterbeck) (10666) surface water body catchment. This WWTP discharge will be pumped to the nearest Scottish Water wastewater treatment works, situated 40m to the south of the Gretna motorway services.

### 3.2 Additional Provision amendments relevant to WFD

- 3.2.1 The AP2 amendment AP2-ORW-001: Additional land permanently required for modifications to wastewater drainage at Annandale depot has been scoped in as having the potential to remove significant effects on WFD reported in the main ES. The design change involves the removal of the WWTP discharge outfall scheme component (10666-T-02-WT-01) from the design and therefore removes the effects attributed to this scheme component set out in the original WFD assessment.
- 3.2.2 Table 3 summarises the scheme component removed under the AP2 revised scheme which has the potential to change effects on WFD status and status objectives reported in the main ES.

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**Table 3: Summary of scheme components proposed or removed under the AP2 revised scheme with the potential to change effects on WFD water body status and status objectives reported in the original WFD assessment**

WFD Water body (ID)	Watercourses potentially affected	Scheme component type	Scheme component name	Unique ID	Original scheme component details	Off-route effects CT-05 or CT-06 maps	Scheme component new, modified or removed from original scheme?	Comments
Kirtle Water (d/s Waterbeck) (10666)	<ul style="list-style-type: none"> <li>• Tributary of Ewes Burn 1</li> <li>• Ewes Burn</li> <li>• Stand Burn</li> <li>• Kirtle Water</li> </ul>	Wastewater treatment plant	WWTP discharge outfall	10666-T-02-WT-01	New WWTP required to manage wastewater from the stabling facility site, with effluent discharging into Tributary of Ewes Burn 1.	CT-06-805 and CT-06-806	Removed	The new WWTP is no longer required. Wastewater from the stabling facility site will be pumped to the nearby sewage treatment works.

*Scheme components remaining unchanged from the original scheme have not been listed in this table.*

## 4 Assessment of effects on WFD water bodies

### 4.1 Existing baseline

- 4.1.1 The interim Cycle 2 (2018) WFD status and status objectives of the Kirtle Water (d/s Waterbeck) water body are provided in the WFD compliance assessment (Volume 5, Appendix: WR-001-OR003<sup>4</sup>) of the main ES, and within the WFD baseline data report (BID WR-002-OR003<sup>5</sup>) that accompanied the main ES. However, the latest Cycle 3 (2020) water status data is outlined in Section 2 of this report.
- 4.1.2 No additional baseline information has been collected.

#### Kirtle Water (d/s Waterbeck) (10666)

- 4.1.3 The Kirtle Water d/s Waterbeck (10666) water body is currently assessed as having poor overall status, and poor overall ecological status. Overall chemistry was last assessed as a 'pass' in 2011. The water body currently has an objective to achieve an overall status of good by 2027. The WFD baseline data report (BID WR-002-OR003) that accompanied the main ES provides details of the water body extent and other relevant watercourses located within this water body that are affected by the scheme.
- 4.1.4 Within the Kirtle Water the following watercourses are no longer potentially affected by the WWTP discharge outfall as the scheme component and its potential downstream effects has been removed:
- Ewes Burn;
  - Tributary of Ewes Burn 1;
  - Stand Burn; and
  - Kirtle Water.

### 4.2 Effects on current status and status objectives

- 4.2.1 The WWTP discharge outfall (10666-T-02-WT-01) scheme component reported in the original WFD assessment has been removed. Therefore, the scheme component will no longer have an adverse effect on the current or potential surface water quality of the Kirtle Water (d/s Waterbeck) (10666) and the following watercourses:
- Ewes Burn;
  - Tributary of Ewes Burn 1;
  - Stand Burn; and
  - Kirtle Water.
- 4.2.2 The AP2 revised scheme is not expected to introduce any new effects on the current status and status objectives of the water body.

## **5 WFD Compliance**

### **5.1 No deterioration of current status**

5.1.1 As the AP2 revised scheme reduces or removes effects on WFD water bodies, the following potential water body scale deterioration risk identified in the main ES has been removed:

- Kirtle Water (d/s Waterbeck) (10666): adverse impact on surface water quality through a wastewater treatment works discharge effluent to Tributary of Ewes Burn 1.

5.1.2 The remaining effects identified in the original WFD assessment are minor, localised effects that do not present a risk of deterioration.

### **5.2 No prevention of future status objectives**

5.2.1 No new potential WFD future status risks have been identified.

## **6 Conclusion**

- 6.1.1 This WFD assessment addendum provides an indication of the likely compliance of the AP2 revised scheme at the time the assessment was prepared.
- 6.1.2 The assessment has concluded that the AP2 revised scheme will not cause any new risks of deterioration of the current status of any surface or groundwater water body, or prevent any water body from achieving its status objectives.
- 6.1.3 As the AP2 revised scheme reduces effects on WFD water bodies, the potential risk identified for the Kirtle Water (d/s Waterbeck) (10666) WFD water body in the original WFD assessment has been removed. The risk no longer relevant is:
- the potential water quality effects of the effluent from the wastewater treatment works discharge on Ewes Burn and downstream watercourses.

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