HIGH SPEED TWO

PHASE 2a INFORMATION PAPER

E15: WATER RESOURCES, FLOOD RISK AND AUTHORISATION OF RELATED WORKS

This paper outlines the approach to assess and mitigate the impact on water resources and flood risk of the Proposed Scheme, and the consenting of these works.

It will be of particular interest to those potentially affected by the Government's proposals for high speed rail.

This paper was prepared in relation to the promotion of the High Speed Rail (West Midlands-Crewe) Bill which is now enacted. It was finalised at Royal Assent and no further changes will be made.

If you have any queries about this paper or about how it might apply to you, please contact the HS2 Helpdesk in the first instance.

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E15: WATER RESOURCES, FLOOD RISK AND AUTHORISATION OF RELATED WORKS

Introduction

1.1. High Speed Two (HS2) is the Government's proposal for a new, high speed north-south railway. The proposal is being taken forward in phases: Phase One will connect London with Birmingham and the West Midlands. Phase 2a will extend the route to Crewe. Phase 2b will extend the route to Manchester, Leeds and beyond. The construction and operation of Phase One of HS2 is authorised by the High Speed Rail (London – West Midlands) Act 2017.

1.2. HS2 Ltd is the non-departmental public body responsible for developing and promoting these proposals. The company works to a Development Agreement made with the Secretary of State for Transport.

1.3. In July 2017, the Government introduced a hybrid Bill[1] to Parliament to seek powers for the construction and operation of Phase 2a of HS2 (the Proposed Scheme). The Proposed Scheme is a railway starting at Fradley at its southern end. At the northern end it connects with the West Coast Main Line (WCML) south of Crewe to allow HS2 services to join the WCML and call at Crewe Station. North of this junction with the WCML, the Proposed Scheme continues to a tunnel portal south of Crewe.

1.4. The work to produce the Bill includes an Environmental Impact Assessment (EIA), the results of which are reported in an Environmental Statement (ES) submitted alongside the Bill. The Secretary of State has also published draft Environmental Minimum Requirements (EMRs)[2], which set out the environmental and sustainability commitments that will be observed in the construction of the Proposed Scheme.

1.5. The Secretary of State for Transport is the Promoter of the Bill through Parliament. The Promoter will also appoint a body responsible for delivering the Proposed Scheme under the powers granted by the Bill. This body is known as the 'nominated undertaker'. The nominated undertaker will be bound by the obligations contained in the Bill and the policies established in the EMRs. There may be more than one nominated undertaker.

1.6. These information papers have been produced to explain the commitments made in the Bill and the EMRs and how they will be applied to the design and construction of the Proposed Scheme. They also provide information about the

1 The High Speed Rail (West Midlands – Crewe) Bill, hereafter 'the Bill'.
2 For more information on the EMRs, please see Information Paper E1: Control of Environmental Impacts.

Proposed Scheme itself, the powers contained in the Bill and how particular decisions about the Proposed Scheme have been reached.

2. Overview

2.1. This information paper outlines the approach taken to assess and mitigate the impact on water resources and flood risk of the Proposed Scheme. This includes impacts and mitigations on surface and groundwater resources and flood risk; the general approach to monitoring, the Water Framework Directive, engagement with statutory bodies and legislative provisions.

2.2. This paper also sets out the approach for approval (or consenting) of such works before they can take place.

3. Surface water

3.1. HS2 Ltd has designed the project to avoid or reduce adverse impacts on rivers, streams, ponds, canals and groundwater. Structures along the route have been designed to ensure the quality of watercourses is not adversely affected. The route crosses rivers and streams either by viaduct, clear span bridges or, where necessary, culverts. River diversions have been designed to be sympathetic to their surroundings and take account of ecological requirements. Structures that include significant below ground works, such as cuttings for example, have been designed to take into account the potential impact on springs, ponds, watercourses and ecological sites.

3.2. The design of the Proposed Scheme includes sustainable drainage systems ("SuDS") to control the rate, volume and quality of run-off from the rail corridor and other infrastructure, including an additional allowance for climate change. These systems will help to avoid an increase in flood risk and will help to maintain natural flow regimes by encouraging storm-water to soak into the ground or, where that is not reasonably practicable, will discharge it into watercourses or surface water/combined sewers at a controlled rate. SuDS features will include, where reasonabily practicable, balancing ponds, swales, infiltration trenches and other forms. Where possible, these drainage systems will also help to avoid having an adverse effect on the quality of the water which the run-off flows into by allowing sediments to settle out.

4. Groundwater

4.1. Impacts of the Proposed Scheme on groundwater flows, levels and quality, have been analysed. Where the assessment predicts that a likely significant adverse effect may occur, a strategy to manage the risk will be agreed with the Environment Agency. Potential significant adverse effects on groundwater due to construction (such as excavations to form cuttings or tunnels) will be mitigated locally wherever reasonably practicable. The tunnels will be designed so that the ingress of groundwater is not significant. The assessment has demonstrated that the passage of groundwater past the tunnels is not significantly reduced as part of the Proposed Scheme. The drainage within the

Proposed Scheme will be designed, where reasonably practicable, to encourage the recharge of groundwater bodies.

4.2. Potential adverse effects on groundwater quality will be mitigated through the implementation of measures set out in the draft Code of Construction Practice (CoCP). Impacts to groundwater from existing land contamination are presented in the ES Volume 2, Community Area reports.

5. Flood risk

5.1. Where the railway and associated works have the potential to increase flood risk, the design reflects the approach required by the National Planning Policy Framework (NPPF) and the supporting Technical Guidance (such as the incorporation of flood risk mitigation measures). The design aim of the Proposed Scheme is for no increase in the risk of flooding for vulnerable receptors including residential property (defined as more/highly vulnerable and essential infrastructure in Table 2 of the NPPF) during the lifetime of the Proposed Scheme , including an additional allowance for climate change. If required, the design will mitigate loss of floodplain by creating replacement storage areas with the capacity for a 1 in 100 year event (1% probability, including an allowance for climate change).

5.2. Where it can be substantiated that, as a result of the works undertaken, the adjacent or nearby land is subject to an increase in flood risk which results in a reduction in land value, compensation may be claimed in accordance with the Compulsory Purchase Act 1965 and Land Compensation Act 1961.

5.3. A high level climate change risk and resilience assessment has been undertaken to identify the potential risks of climate change on the Proposed Scheme, and to assess the Proposed Scheme's resilience and capacity to cope with these potential risks. In addition a comprehensive flood risk assessment has been carried out for each community area in consultation with the Environment Agency; see Volume 5, Water resources assessment (WR-003-001 to WR-003-005). A route-wide flood risk assessment has also been carried out.

6. Monitoring

6.1. Water resources and flood risk monitoring will be undertaken in consultation with the Environment Agency and other key stakeholders such as water companies prior to and during construction, and if required post construction, to establish baseline conditions for surface water and groundwater and to confirm the effectiveness of temporary and permanent mitigation measures together with any remedial works deemed necessary.

7. Water Framework Directive

7.1. HS2 Ltd has also reported on the compliance of the Proposed Scheme with the objectives of the Water Framework Directive. Please see ES Volume 5, Appendix WR-001-000 and the Water Framework Directive compliance assessment review

for further details. The scope and the assessment methodology was agreed with the Environment Agency.

8. Engagement

8.1. Engagement has been, and will continue to be, undertaken with the Environment Agency, Natural England, Lead Local Flood Authorities, the Canal & River Trust and water companies, to ensure that likely residual significant adverse effects are managed and mitigated appropriately.

9. Authorisation of works affecting water bodies

9.1. The Proposed Scheme will cross a number of waterbodies along its route. As a consequence, numerous construction activities and works will be required either within, or near to, waterbodies. These temporary and permanent works have the potential to alter flood risk associated with affected waterbodies.

9.2. The remainder of this Information Paper:

- sets out the statutory consenting requirements for the Proposed Scheme for works affecting flood risk associated with waterbodies (both before and after Royal Assent); and
- clarifies the responsibilities of the relevant authorities in issuing consents (or approvals) and explains how this would be different once the Bill becomes law.

10. Consenting regimes

10.1. Under the current statutory regime, giving consent for works that affect waterbodies in relation to flood risk management is the responsibility of one of three types of risk management authority[3].

10.2. The responsible authority is dependent on the type of waterbody affected as follows[4]:

- works affecting main rivers[5] require consent from the Environment Agency as set out in the EPR 2016[6];
- water abstraction activities affecting a waterbody require consent from the Environment Agency, as set out in the Water Resource Act, 1991; and

3 Risk management authorities are defined by the Flood and Water Management Act (FWMA) 2010.
4 Byelaws made under the Water Resource Act 1991 and the Land Drainage Act 1991 do not apply to railway undertakings.
5 Main rivers are watercourses marked on the main rivers map, as set out in the WRA 1991, as amended by the Water Act 2014.
6 Under Regulation 12(1)(a) of the EPR 2010, this includes works over, under or in a main river.

- works affecting all ordinary watercourses require consent from the relevant Lead Local Flood Authority[7] (LLFA), as set out in the Land Drainage Act 1991[Error! Bookmark not defined.].

10.3. Some activities associated with the construction of the Proposed Scheme will be required before Royal Assent, such as ground investigations and archaeological investigations, and hence will be subject to the current consenting regime.

Changes after Royal Assent

10.4. Once the Bill is enacted, the legislative framework outlined above would not apply[8]. Instead the Bill would have put in place a bespoke regime controlled by protective provisions.

10.5. The protective provisions on land drainage and flood risk have been developed to ensure that the duties of relevant authorities to manage flood risk from watercourses are not unduly affected by the construction and operation of the Proposed Scheme. The Environment Agency and LLFAs would be able to:

- approve (or refuse approval of) detailed plans for works affecting waterbodies;
- impose reasonable conditions or to safeguard flood risk management infrastructure against damage;
- enforce the conditions that they impose; and
- take corrective action to any completed works in order to keep them in good repair at the expense of the nominated undertaker.

11. Consenting responsibilities after Royal Assent

11.1. The protective provisions set out conditions whereby specific works would require approval by the Environment Agency or by an LLFA under the regime after Royal Assent.

11.2. The type of works requiring approvals related to waterbodies and the associated responsibilities of each of the relevant flood risk management authorities are detailed below.

11.3. Consideration of the compliance of works with the Water Framework Directive remains the responsibility of the Environment Agency and the relevant LLFA.

7 Lead Local Flood Authorities were established by the FWMA 2010, and in England are either the Unitary Authority or County Council where no Unitary Authority exists.
8 Regulation 12(1)(a) of the EPR 2010 would be disapplied and Section 23 of the LDA 1991 does not apply to any works carried out under Acts of Parliament.

Works affecting a main river

11.4. After Royal Assent, plans for works that are likely to affect a main river[9] and/or its flow, or level, would require approval from the Environment Agency before they could be built or operated.

Works affecting ordinary watercourses

11.5. After Royal Assent, plans for the following types of works would require approval from the relevant LLFA:

- erection of a new (or alteration of an existing) structure[10] which obstructs flow in an ordinary watercourse;
- erection of a new (or alteration of an existing) culvert structure in an ordinary watercourse; and
- alteration, removal or replacement of a designated feature[11].

Works affecting quality or quantity of water bodies

11.6. After Royal Assent, plans for works that are likely to affect the quantity or quality of a groundwater body, water extraction or involve water discharges, would require approval from the Environment Agency before they could be built or operated.

11.7. The protective provisions give the Environment Agency a strategic overview role in the approval process for ordinary watercourses. This reflects the Environment Agency's current strategic overview role in delivering the Government's national Flood and Coastal Erosion Risk Management Strategy, and the supervisory role that the Environment Agency has undertaken in the development of LLFAs since the introduction of the Flood Risk Regulations in 2009 and the Flood and Water Management Act (FWMA) in 2010.

11.8. This process will minimise the administrative impact on LLFAs, and foster a consistent approach to the approval of relevant works.

11.9. The Environment Agency will work with LLFAs (as well as other parties) to develop standard practices and model conditions for consents to be issued for structures and works that may affect ordinary watercourses along the route.

11.10. LLFAs can impose reasonable conditions or requirements on works it approves. However, as part of its strategic overview role, the Environment Agency must be consulted before setting such conditions and the model conditions issued by the Environment Agency should be considered.

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9 Including any of the following associated with a main river – its bank, wall, embankment or other structure, appliance, flood defence, monitoring equipment or land used to provide flood storage capacity.
10 Mill dam, weir or other 'like obstruction'.
11 Schedule 1 of the FWMA 2010 allows flood risk management authorities to designate (and afford a degree of protection to) certain natural features or man-made structures which it deems as providing a flood defence function where that feature's primary function is not one of flood defence (e.g. a private property wall running alongside a watercourse).

12. More information

12.1. Full details of the proposed protective provisions are detailed in Schedule 32, Part 4 of the Bill.

12.2. Further detail on the disapplication of current legislation is provided in Information Paper B4: Disapplication of Legislation.

12.3. The Bill and related documents can be found at: www.gov.uk/hs2