Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 2: Appendices

Appendix 18.8: Embedded Mitigation Measures to Improve Resilience

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Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

[redacted]

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

Appendix 18.8 ◆

EMBEDDED MITIGATION MEASURES TO IMPROVE RESILIENCE

Table 18.8.1: Embedded mitigation measures

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
Substructure/Built Structures. Landscaping / Habitats. Roads, Pedestrian and Cycleways. Rail. Ancillary Equipment. Employees and Users/Operators.	Extreme rainfall events: • Damage to carriageway structures due to increased runoff - Blockages of drainage assets; • Damage due to increased runoff - Water accumulation causing disruption to construction and operation; • Stopping of services due to asset failure;	Structures: • Flood risk during construction has been considered under Chapter 14 – Surface Water and Flood Risk (Document Reference 6.1.14); • Close liaison with flood team during preliminary design to ensure culvert spans are compatible with predicted flow rates during period of high rainfall (during operation), particularly for extreme rainfall events with regard to surrounding topography and other watercourses; and • Piled foundations (to manage structural stability and robustness) would be used for the substructure where required. Drainage: • A Sustainable Drainage System (SUDS) led surface water drainage system is to be constructed as part of whole project. The system will provide attenuation up to the 1 in 100-year storm event and includes an additional 20% allowance for

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
	• Scour of embankments leading to increased maintenance; • Traffic disruption and congestion; • Excessive vegetation growth; • Reduced opportunities for maintenance; • Difficult working conditions; and • Movement of debris causing slip, trip and fall hazards Health and safety risks to road users (e.g. skidding).	the potential effects of climate change. Surface water will be conveyed from the whole project area to the existing watercourses, at limited flow rates, as per the existing 'natural' regime. The design for the HNRFI site will use a network of swales, rather than a conventional piped system for this purpose; • Proposed layout to make provision for proposed surface water attenuation ponds and swales; • There are a number of drainage ditches on the site, these run a tributary of Thurlaston Brook . The drainage design includes Sustainable drainage system (SuDS) to limit the effect of the new works by attenuating the runoff during operation; and Flood Risk: • The CEMP (document reference 17.1)will outline controls on works within areas identified to be at risk of flooding and works in or near watercourses in accordance with relevant guidance documents; • Retention of existing watercourse network function within the whole project area, through considered proposed layout design to retain watercourses where possible, or realignment / bridging / culverting of channels where necessary; • Provision of 'Watercourse and Environmental Zone' / corridor including the retention / diversion of the unnamed stream flowing north-eastward through the southern portion of the HNRFI site, and ponds and planting for habitat creation;

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
		• Provision of appropriate easements from watercourses to proposed buildings and structures; • Proposed layout to take account of potential flood risks, either through avoidance of proposed buildings and structures from flood risk areas, or the specification of proposed building, infrastructure and ground levels to ensure flood resistance whilst ensuring no demonstrable loss of floodplain storage / increase in flood risk elsewhere within the whole project area or off-site; • The design of the Proposed Development incorporates both new culverts and use of existing culverts; • The culverts have been modelled and designed for the 1 in 100 years plus 25 % climate change allowance; and • The culvert design includes for 300-600 mm freeboard allowance. Buildability: • Where landscape planting is included on embankments this would improve stability during operation; • Landscaped embankments are to be around the Site for visual and ecological enhancement. Embankment slopes would be constructed from sub soil rather than topsoil with appropriate planting; • Drainage would be designed such that maintenance (during operation) is more accessible and easier to undertake;

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
		• Drainage would be designed for minimal maintenance during operation; and • Self-cleansing drainage systems would be provided to remove silting. Climate Change-specific Measures: The following climate change allowances have been adopted, in accordance with the EA's guidance: • Assessment of fluvial flood risk: + 30% ('Higher Central' climate change allowance) and + 50% ('Upper End' climate change allowance), applied to the 1 in 100-year flood event; • Assessment of surface water flood risk: + 20% ('Central' climate change allowance) and + 40% ('Upper End' climate change allowance), applied to the 1 in 100-year storm event; and • Design of surface water drainage system: + 20% ('Central' climate change allowance), applied to the 1 in 100-year storm event.
	Drought: • Loss of vegetation leading to greater erosion risk; • Damage and disruption (fires); and	Structures: • Modelling for temperature effects have been undertaken in accordance with modern standards and incorporated into the design. Buildability:

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
	• More dust and particulates.	• Selection of native woodland and hedgerow species - Complete of regular inspections of landscape elements to ensure they meet their environmental functions, with replacement planting where necessary; and • Dust suppression measures.
Substructure/Built Structures. Landscaping / Habitats. Roads, Pedestrian and Cycleways. Rail. Ancillary Equipment. Employees and Users/Operators.	Extreme temperature events: • Cracking and expansion particularly impacting structures; • Overheating of equipment, including during construction and operation (e.g., electronic signage); • Damage and disruption (e.g., fires); • Reduced working periods and delays due to extreme weather; • Reduced opportunities for maintenance;	Structures: • Ensure appropriate storage of inflammable materials during construction and operation; • Risk during construction of reduced working periods and delays from extreme temperature events is deemed to be very low, with no legal maximum temperature in the UK. However, HSE offers no specific guidance of when it's too hot to work; and • Where relevant, structures will be designed for temperature effects to current standards. Buildability: • Commitment to providing protection to all UV resistant materials during construction; • Provide appropriate curing methods for concrete during construction; • Consider materials for surface course that would withstand higher temperatures before skid resistance is affected during design; and

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
	• Operational disruption; • Difficult working conditions; • Increased fire risk; • Hot surfaces may cause injury; • Failure of temperature controls; and • More dust.	• Manage site working hours to avoid working in hotter times of day during construction.
Substructure/Built Structures. Landscaping / Habitats. Roads, Pedestrian and Cycleways. Rail. Ancillary Equipment.	Gales and extreme storm events: • Risk of damage to structures and foundations, including flood scour and/or runoff; • Damage to signage and site structures; • Increased rate of deterioration of materials, potentially leading to early replacement;	Structures: • Structures will be designed to current standards for wind loading where applicable - Schedule of general inspections and principal inspections of each structure to determine condition of the structure and identify any potential maintenance requirements. Buildability: • Manage construction works to avoid working at heights during gales and storm events; • Use of adequate safety equipment.

Receptor	Potential Climatological Effect	Embedded Mitigation Measure(s)
Employees and Users/Operators.	• Difficult working conditions; • Health and safety risks to road users (e.g., from falling trees and vegetation); and • High crosswinds causing train instability.	
Substructure/Built Structures. Ancillary Equipment. Rail. Employees and Users/Operators.	Humidity: • Uncomfortable working conditions. • Damage to steel surfaces. • Thermal Expansion and contraction of rail line.	Structures: • Relative humidity can lead to excessive condensation and water accumulation, particularly on steel surfaces. This would be managed during operation with suitable drip details and water collection/drainage. Buildability: • Carry out site testing of materials during construction to optimise moisture content and therefore ensure stability of any structures / embankments.