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THE NETWORK RAIL (EAST WEST RAIL WESTERN SECTION PHASE 2) ORDER

DRAFT ENVIRONMENTAL STATEMENT

CHAPTER 16: SUMMARY OF MITIGATION

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CONTENTS

16. INTRODUCTION	1
16.1 General	1
16.2 Securing Mitigation	1
16.3 Summary of Mitigation Measures	2

LIST OF TABLES

Table 16.1 Summary of Mitigation Measures by Topic.....	3
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DRAFT

16. INTRODUCTION

16.1 General

16.1.1 This chapter of the Draft ES summarises the proposed mitigation measures as a result of the draft environmental assessment. Embedded measures or those integral to the Project itself are set out in the Scheme Drawings, the Mitigation Figures, or the Code of Construction Practice (CoCP). For more detailed information on proposed mitigation measures, please refer to the technical chapters (6 to 16).

16.2 Securing Mitigation

Scheme Drawings

16.2.1 In some locations, physical infrastructure will be required to provide environmental mitigation. Such infrastructure is considered to be part of the EWR2 Project design and subject to environmental assessment itself. Further information on these aspects of the design can be found in Chapter 2 (Project Description). These aspects of the proposed mitigation are also shown on the Draft Scheme Drawings submitted for consultation.

Code of Construction Practice

16.2.2 The CoCP will be the mechanism by which the mitigation measures relating to construction set out in this Draft ES will be secured. A draft version of the CoCP will be submitted with the TWAO Application, and an initial version is presented as part of this round of Consultation (Appendix 1.4, Volume 3). Prior to construction, the CoCP will be revised to take account of the latest mitigation measures and planning conditions agreed, thereby securing their implementation.

16.2.3 It is proposed that construction activities will be managed through the framework of the CoCP. As required by NR Standard Contract Requirements (NR/L2/ENV/015), a Construction Environmental Management Plan (CEMP) will be produced in advance and implemented during construction by the EWR Alliance. The CEMP will comply with the requirements of NR/L2/ENV/015 and the CoCP. The CEMP will be

continually updated and will form the basis for the management of construction activities, particularly in relation to the environment. It is expected that the CEMP will include a number of sub-plans, examples of these are as follows (not restricted to):

- Landscape and Ecology Management Plan (including tree protection/vegetation retention);
- Pollution Prevention and Incident Control Plan;
- Flood Emergency Response Plan;
- Nuisance Management Plan;
- Traffic Management Plan;
- Travel Plan;
- Site Waste Management plan;
- Soil Management Plan;
- Materials Management Plan;
- Archaeological Management Plan (Written Scheme of Investigation); and
- Carbon and Energy Management Plan.

Mitigation Figures

16.2.4 For the purposes of this draft assessment, a set of mitigation figures, comprising environmental mitigation required for noise, ecology, landscape, water and cultural heritage has been prepared. These figures show the land area required for this environmental mitigation and the broad habitat types and/or land use proposed. These are contained within Volume 4.

16.3 Summary of Mitigation Measures

16.3.1 Table 16.1 summarises the proposed mitigation measures, identified through the draft assessment, by topic chapter.

Table 16.1 Summary of Mitigation Measures by Topic

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Chapter 6: Agriculture and Land Use			
Construction			
Temporary land take	<ul style="list-style-type: none"> • On-going optimisation of land required for construction • On-going consultation in relation to ensuring disturbance is kept to a minimum during construction at Buckinghamshire Railway Centre and Selbourne Avenue cemetery • On-going liaison with affected landowners, tenants and agents • Compensation of landowners/occupiers in accordance with statutory compensation code • Ensure access is maintained to residential and commercial properties and community facilities, as well as agricultural land and services required to operate farm businesses • Provision of alternative parking where car parking is temporarily affected by construction • Restoration of agricultural land, property and land boundaries and gardens to pre-construction condition • Fencing of construction areas to ensure no access or encroachment onto adjacent land • Adherence to control measures in relation to spread of dust, contamination, invasive species, weeds and soil-borne, crop and animal diseases 	<ul style="list-style-type: none"> • Detailed design • Pre-construction • Construction • Post-construction 	<ul style="list-style-type: none"> • Scheme Drawings • Draft Code of Construction Practice

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Operation			
Permanent land take of sensitive land uses	<ul style="list-style-type: none"> On-going optimisation of land required from high and medium sensitivity land uses and agricultural land Provision of replacement land for allotment gardens at Charbridge Lane, should these be permanently lost, so that no net reduction, or even an increase, of allotment space occurs as a result of the Project 	<ul style="list-style-type: none"> Pre-construction Construction 	<ul style="list-style-type: none"> Scheme Drawings
Chapter 7: Cultural Heritage			
Construction			
Impacts on the heritage assets and/or their setting arising from construction activities	<p>Implementation of recording, screening, vegetation retention, planting, walkover and/or intrusive survey or construction traffic management at specific heritage assets in accordance with the measures set out in the CoCP</p> <p>Pre-start survey of Ridge and Furrow profiles affected</p> <p>Preparation and implementation of a Written Scheme of Investigation (WSI)</p>	<ul style="list-style-type: none"> Pre-construction Construction 	<ul style="list-style-type: none"> Draft CoCP Mitigation Figures
Operation			
	No mitigation proposed	N/A	N/A
Chapter 8: Air Quality			
Construction			
Dust deposition at sensitive receptors (e.g. residential properties) arising from construction in close proximity	<ul style="list-style-type: none"> Regular monitoring of construction site; Use of hard surfaced haul routes to minimise risk of trackout; Damp down surfaces when needed and employ road sweepers as required; and Provide hoarding between properties and the construction site where appropriate based on a risk assessment approach, and seed long-term soil stockpiles. 	<ul style="list-style-type: none"> Construction 	<ul style="list-style-type: none"> Draft CoCP

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Operation			
	No mitigation proposed	N/A	N/A
Chapter 9: Ecology			
Construction			
Ecological impacts	<p>Preparation and implementation of an Ecological Management Plan as part of the implementation of the CoCP, incorporating the mitigation principles set out in Appendix 9.17 (Principles of ecological mitigation) and the following measures in relation to specific ecological assets:</p> <ul style="list-style-type: none"> • Habitat restoration; • Habitat creation; • Implementation of construction method statements in relation to noise, vibration, pollution management, ground compaction, soil management, sedimentation/siltation of water courses, personnel movements, lighting and timing of construction activities • Survey and translocation of notable species/turves • Continuation of existing drainage regimes • Implementation of habitat management regimes • Implementation of monitoring regimes • Habitat retention including root protection zones • Provision of nest and bat boxes and/or structures • Exposure of calcareous soils • Protected species mitigation measures 	<ul style="list-style-type: none"> • Pre-construction • Construction • Post-construction 	<ul style="list-style-type: none"> • Draft CoCP • Mitigation Figures • Scheme Drawings

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Operation			
Bats – collision risk	(Subject to further assessment) extension of the HS2 Sheepphouse Wood mitigation structure along the western edge of Sheepphouse Wood.	<ul style="list-style-type: none"> • Construction • Post-construction 	<ul style="list-style-type: none"> • Mitigation Figures • Scheme drawings
Birds – collision risk	Provision of barn owl nesting boxes	<ul style="list-style-type: none"> • Construction • Post-construction 	<ul style="list-style-type: none"> • Mitigation Figures
Chapter 10: Noise and Vibration			
Construction			
Noise and vibration impacts arising from construction activities	Adherence to the measures set out in the CoCP Construction activities to be managed under section 61 consents On-going development of construction phasing schedule Provision of temporary acoustic screening in relation to specific high noise construction activities Monitoring at any sensitive vibration receptors with actions thresholds set up to alert construction team	<ul style="list-style-type: none"> • Pre-construction • Construction 	<ul style="list-style-type: none"> • Draft CoCP
Operation			
Noise impacts arising from operation of the rail services	Implementation of a programme of track maintenance Localised provision of noise mitigation Provision of secondary glazing where properties are eligible	<ul style="list-style-type: none"> • Pre-construction • Post construction 	<ul style="list-style-type: none"> • Scheme Drawings • Mitigation figures
Vibration impacts arising from operation of the rail services	Requirement for vibration mitigation to be confirmed	<ul style="list-style-type: none"> • Pre-construction 	<ul style="list-style-type: none"> • Scheme Drawings

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Chapter 11: Geology, Soil and Land Contamination			
Construction			
	<p>Adherence to the measures set out in the CoCP, specifically:</p> <ul style="list-style-type: none"> • Areas of contamination will be identified and remediated by specialist contractors prior to general construction access; • Construction workers will be provided with appropriate Personal Protective Equipment (PPE) and informed by risk assessment to limit their exposure to contamination; • Hand washing facilities will be made available to site operatives, site rules will be created insisting on hand washing prior to breaks and at the end of the working day, and eating and drinking will be limited to site welfare facilities during agreed break periods; • Provision of specific dust mitigation measures will be implemented; • The work area will be well delineated and kept secure to prevent trespass; • Silt mitigation measures will be implemented to limit runoff of exposed soil into watercourses. Bunds, cut-off ditches, settlement ponds and drainage covers will be utilised to limit runoff from entering watercourses; • Spill kits and plant nappies will be provided for all static plant and equipment; • Environmental awareness training will be provided and documented to all staff working on the Project, including daily site briefings (Toolbox Talks); • Re-fuelling will be via a mobile double-bunded bowser equipped with a full spill kit and bunding. No refuelling will take place within 10 m of a water course or receptor; • A procedure will be included within the CoCP to manage previously-unidentified contaminated material that is encountered during the works; • Storage areas for materials will be identified, and surplus soil arisings from levelling or excavation works that demonstrate visual or olfactory evidence of contamination will be stored in covered skips, or on a sheeted stockpile placed on hardstanding or sheeting pending its removal or treatment; and 	<ul style="list-style-type: none"> • Construction 	<ul style="list-style-type: none"> • Draft CoCP

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

	<ul style="list-style-type: none"> The intrusive investigation to characterise ground conditions will incorporate an assessment of the ground aggressivity which will inform the design of the Project. Further specific intrusive investigation will likely be required prior to the commencement of construction. 		
Operation			
	No mitigation proposed.	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

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Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Chapter 12: Landscape and Visual Impacts			
Construction			
Landscape and visual impacts arising from construction activities	Landscape and visual impacts arising from construction activities	<ul style="list-style-type: none"> Landscape and visual impacts arising from construction activities 	<ul style="list-style-type: none"> Landscape and visual impacts arising from construction activities
Operation			
Landscape and visual impacts arising from introduction of Project infrastructure and services	Landscape and visual impacts arising from introduction of Project infrastructure and services	Landscape and visual impacts arising from introduction of Project infrastructure and services	Landscape and visual impacts arising from introduction of Project infrastructure and services

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Chapter 13: Water Quality and Flood Risk			
Construction			
<p>Risk to water quality from, and flood risk to or from, construction activities</p>	<p>Construction activities to be undertaken in accordance with best practice guidance such as CIRIA C532 ‘Control of Water Pollution from Construction Sites’</p> <p>Controls for on-site staff and ways of working in relation to good site practice, adverse weather conditions, environmental incidents and complaints</p> <p>Monitoring and reporting of effectiveness of control measures, including inspections and audits</p> <p>Preparation and implementation of Pollution Prevention and Incident Control Plan and instructions as follows:</p> <ul style="list-style-type: none"> • Management of water that collects on site or within excavations; • Management of polluting substances used during repair works proposed to the existing bridges over watercourses; • Management of polluting substances during works in close proximity to watercourses; • Procedures in case of accidental leakages or spillages of hydrocarbons and oils, or accidental release of hazardous substances during construction works; and • Management of polluting substances that are being brought on site and used as part of the construction process. <p>Preparation and implementation of a Flood Emergency Response Plan</p>	<ul style="list-style-type: none"> • Pre-construction • Construction 	<ul style="list-style-type: none"> • Draft CoCP
Operation			
<p>Surface and groundwater flood risk to rail infrastructure in cuttings across the Project Area</p>	<p>Surface water drainage design</p>	<ul style="list-style-type: none"> • Pre-construction • Construction 	<ul style="list-style-type: none"> • Scheme drawings

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

Potential Impact	Mitigation Measures	Phase of Implementation	Delivery Mechanism
Surface water flooding in the Project Area	Surface water drainage design	<ul style="list-style-type: none"> Pre-construction Construction 	<ul style="list-style-type: none"> Scheme drawings
Change to flood risk as a result of the Project	Locate infrastructure and construction compounds/activities away from flood risk zones, where practicable Retention of existing capacity at existing culverts and bridge crossings New culverts designed to have appropriate capacity Diversion or culverting of watercourses to be undertaken only where unavoidable, and in accordance with EA and LLFA requirements Surface water drainage design	<ul style="list-style-type: none"> Pre-construction Construction 	<ul style="list-style-type: none"> Scheme drawings
Loss of functional flood plan	Provision of compensation storage, as per volumes set out in Appendix 13.1, Volume 3 (Flood Risk Assessment)	<ul style="list-style-type: none"> Construction Post-construction 	<ul style="list-style-type: none"> Scheme drawings Mitigation Figures
Chapter 14: Traffic and Transport			
Construction			
Impacts arising from construction traffic and activities and staff movements	Preparation and implementation of construction traffic management plans and procedures in relation to construction activities Preparation and implementation of travel management plans in relation to construction staff movements Provision of Disruption Access Planning between the Alliance and Train Operating Companies (TOCs)	<ul style="list-style-type: none"> Pre-construction Construction 	<ul style="list-style-type: none"> Draft CoCP

The Network Rail (East West Rail Western Section Phase 2) Order

Draft Environmental Statement

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Operation			
Changes in train operating patterns in relation to safe and timely crossing of the railway	Provision of alternative crossing solutions at certain foot and highway level crossings	<ul style="list-style-type: none"> Construction 	<ul style="list-style-type: none"> Scheme Drawings
Chapter 15: Cumulative Effects			
Construction			
	No mitigation currently proposed	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Operation			
	No mitigation currently proposed	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A