



MetroWest+

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

6.25, Environmental Statement, Volume 4, Appendix Series 1 Introduction

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)

Regulations 2009, regulation 5(2)(a)

Planning Act 2008

Author: CH2M

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Applicant	North Somerset District Council
Lead Author	CFF at CH2M

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Applicant: North Somerset District Council

6.25, Environmental Statement, Volume 4, Appendix 1.1 The EIA Team

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)

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Planning Act 2008

Author: CH2M

Date: ~~November 2019~~



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List of Abbreviations

ACIEEM	Associate of the Chartered Institute of Ecology and Environmental Management
ACIfA	Associate of the Chartered Institute for Archaeologists
AMILP	Associate Member of the Institution of Lighting Professionals
AssocMCIWM	Associate Member of the Chartered Institute of Waste Management
BA	Batchelor of Arts
BSc	Batchelor of Science
CEnv	Chartered Environmentalist
C.Geol	Chartered Geologist
CMLI	Chartered Member of the Landscape Institute
CSci	Chartered Scientist
C.WEM	Chartered Member of the Chartered Institute of Water and Environmental Management
DIC	Diploma from Imperial College
EIA	Environmental impact assessment
ILP	Institution of Lighting Professionals
MCIEEM	Member of the Chartered Institute of Ecology and Environmental Management
MCIHT	Member of the Chartered Institution of Highways and Transportation
MCIWEM	Member of the Chartered Institute of Water and Environmental Management
MIAQM	Member Institute of Air Quality Management
MIEMA	Member of the Institute of Environmental Management and Assessment
MIEnvSc	Member of the Institute of Environmental Sciences
MIOA	Member of the Institute of Acoustics
MoLQCEPUK	Member of Land Quality Committee, Environmental Protection UK
MoECEPUK	Member of Executive Committee, Environmental Protection UK
MPhil	Master of Philosophy
MSc	Masters
MTCP	Masters Town and Country Planning
MRTPI	Member of the Royal Town Planning Institute
PGDip	Post Graduate Diploma
PIEMA	Practitioner Institute of Environmental Management and Assessment

QP128	CL:AIRE Definition of Waste: Industry Code of Practice, Qualified Person
RTPI	Royal Town Planning Institute
TPP	Transport Planning Professional

SECTION 1

The EIA Team

- 1.1.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“the EIA Regulations”) Regulation 14 (4)(a) requires the Environmental Statement to be prepared by competent experts.
- 1.1.2 This appendix presents the authors and their qualifications of the Portishead Branch Line (MetroWest Phase 1) Development Consent Order Scheme Environmental Statement, the project promotor’s team at North Somerset Council, the legal advisors to the project, the Network Rail Project management team and the railway designers at Arup.

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
<i>EIA co-ordination, Introductory chapters</i>		
Carolyn Francis, CH2M EIA Co-ordinator, Reviewer and Lead Author	BA (Hons) Geography, MIEMA, MIEEnvSc, CEnv	Non-Technical Summary Chapter 1 Introduction Chapter 2 Description of the Study Area Chapter 3 Scheme Development and Alternatives Considered Chapter 4 Description of the Proposed Works Chapter 5 Approach to the Environmental Statement Chapter 15 Soils, Agriculture, Land Use and Assets Appendix 1.1 EIA Team Appendix 1.2 Compliance with the EIA Regulations 2017 Schedule 4 Appendix 1.3 Summary of Works Appendix 4.1 Code of Construction Practice Appendix 4.2 Master Construction Environmental Management Plan Appendix 4.3 Schedule of Mitigation Appendix 4.4 Summary of Works in the Avon Gorge Woodlands SAC Appendix 4.5 Major Hazards Appendix 5.1 Scoping Opinion Additional Matters

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
		Appendix 5.2 Changes in Scheme Design Since the Scoping Opinion
<i>Planning</i>		
Ashley Stratford, Jacobs, Lead Author	BSc (Hons) Town Planning Dipl. Town Planning Chartered Member RTPI	Chapter 6 Planning Framework Planning Statement
Ben Hampton, Jacobs	BA (Hons) Geography MSc Town Planning Chartered Member RTPI	As above
Paul Carr, CH2M	MTCP (Hons), MRTPI	As above
<i>Air Quality Assessment</i>		
Piercarlo Smith, CH2M Lead author	MSc Applied Environmental Sciences and Technologies, CEnv, MIEEnvSc, MIAQM	Chapter 7 Air Quality and Greenhouse Gases Appendix 7.1 Construction Dust Assessment Appendix 7.2 Air Quality Modelling Methodology Appendix 7.3 Air Quality Model Verification Appendix 7.4 Air Quality Modelling Results
Andrea Davidson, CH2M	BA (Hons) Geography and Environmental Management, CEnv, MIEEnvSc, MIAQM	Appendix 7.5 Climate
Michael Bentham, CH2M	BSc Geography with International Study, MSc Sustainability and Consultancy, PIEMA	Appendices
<i>Cultural Heritage</i>		
Nathan Thomas, CH2M Lead author	BSc Archaeology, MSc Archaeological Prospection, ACIfA	Chapter 8 Cultural Heritage Appendix 8.1 Cultural heritage Gazetteer Appendix 8.2 Level 1 Historic Building Record for Station House, 7 Station Road, Pill

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
<i>Biodiversity</i>		
Clare Williams, CH2M Lead author	BSc (Hons) Pure and Applied Ecology, MSc Ecology and Management of the Natural Environment, MCIWEM, C.WEM	Chapter 9 Ecology and Biodiversity Appendix 9.1 Extended Phase 1 Habitat Survey Appendix 9.8 Otter Survey Report Appendix 9.9 Water Vole Survey Report Appendix 9.11 Avon Gorge Woodlands Vegetation Management Plan Appendix 9.13 Reptile Mitigation Strategy Appendix 9.16 Portbury Hundred Tree Planting
Anton Kattan, Pure Ecology	BSc Geography and Mathematics MSc Behavioural Ecology MCIEEM	Appendix 9.2 Bat Technical Appendix
Ben Benatt, CH2M	BA (Hons) Biology and European Studies CEnv, MCIEEM	Appendix 9.3a Ornithology of Portbury Wharf Nature Reserve Appendix 9.3b Wintering bird surveys Appendix 9.3c Ornithology Survey Report - WCA Schedule 1 CONFIDENTIAL
Gemma Harding, CH2M	BSc (Hons) Wildlife Conservation, MSc Biodiversity Management, MCIEEM	Appendix 9.4 Great Crested Newt Survey Report Appendix 9.5 Reptile Survey Report
Debbie MacKenzie, CH2M	BSc (Hons) Environmental Science, MCIEEM	Appendix 9.6 Badger CONFIDENTIAL Appendix 9.7 Dormice Survey Report
Dr Tim Rich, WYG	BSc (Hons) Ecology, PhD Plant Physiology, MCIEEM	Appendix 9.10 Avon Gorge Woodlands SAC / Avon Woods SSSI

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
	National botanical expert including rare whitebeam species	
Elizabeth Houston, Independent	MA English Language and Literature National expert in rare whitebeams and flora in the Avon Gorge	Appendix 9.10 Avon Gorge Woodlands SAC / Avon Woods SSSI
Liz Allchin, CH2M	BSc (Hons) Environmental Biology, MSc Ecology, PhD Habitat Management and Restoration, MCIEEM	Appendix 9.12 Habitats Regulations Assessment
Richard Thompson, CH2M	BSc (Hons) Zoology, PGDip Environmental, Protection MCIEEM	Appendix 9.14 Lodway Farm Hedgerow Survey
Network Rail		Appendix 9.15 Network Rail Site Management Statement, Vegetation Management Plan and Habitats Regulations Assessment for the Avon Gorge
Stuart Morton, CH2M	ILP Lighting Diploma AMILP	Appendix 9.17 Lighting Survey Report Appendix 9.18 Lighting Design
Craig Carney, CH2M	BSc (Hons) Conservation Biology & Ecology, ACIEEM.	Field surveyor
<i>Ground Conditions and Contaminated Land</i>		
Robin Lancefield, CH2M Lead author	BSc (Hons) Geology and Environmental Pollution Science, CGeol, QP128, MoLQCEPUK, MoECEPUK	Chapter 10 Geology, Hydrogeology, Ground Conditions, and Contaminated Land Appendix 10.1 Risk Classifications Appendix 10.2 Contaminated Land Summary Report

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
<i>Landscape and Visual Impact</i>		
Andrew Linfoot, CH2M Lead author	BA (Hons) Landscape Architecture, MPhil Landscape Architecture, PGDip Urban Design, CMLI	Chapter 11 Landscape and visual Impact Assessment Appendix 11.1 General Views Appendix 11.2 General Summer and Winter Views Appendix 11.3 Visual Impact Assessment Appendix 11.4 Photomontages Technical Report
Kayleigh Watkins, CH2M	BA (Hons) Town Planning and Landscape Architecture, PGDIP, CMLI	Contributing author.
<i>Materials and Waste</i>		
Dan Lean, CH2M Lead author	BSc (Hons) Environmental Science, MIEnvSc, AssocMCIWM	Chapter 12 Materials and Waste
<i>Noise and Vibration</i>		
Richard Stait, CH2M Lead author	BSc Mathematics with Statistics, PgDip Acoustics and Noise Control, MIOA	Chapter 13 Noise and Vibration Appendix 13.1 Introduction to Noise Appendix 13.2 Approach to Significance Appendix 13.3 Assumptions and Noise Model / Input Data Appendix 13.4 Model Conversions Appendix 13.5 Noise Survey Results Appendix 13.6 Vibration Measurement Results Appendix 13.7 Construction Plant List Appendix 13.8 Noise Assessment Results Appendix 13.9 Rail Noise Management

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
Ian Stanworth, CH2M	Diploma in Acoustics & Noise Control, BA (Hons) Town & Country Planning, MIOA	Inputs on Construction Noise
Sara Ripoll, CH2M	BEng. Telecommunications Engineering, Image and Sound. MEng. Acoustic Engineering. AMIOA	Noise surveys
<i>Socio-economics, human health, equality</i>		
Gary Wilson, CH2M Lead author	BA (Hons) Geography MSc Development Economics	Chapter 14 Socio-Economics and Economic Regeneration
Kripa Dwarakanath, CH2M	BA Architecture, MSc Environmental Policy, Planning and Regulation, MIES, CEnv	Appendix 14.1 Equality Impact Assessment Appendix 14.2 Health Impact Assessment
<i>Traffic and Transport</i>		
Helen Osborne, CH2M Lead author	BEng (Hons) Civil Engineering with Management, MSc Transport, DIC, MCIHT, TPP	Chapter 16 Transport, Access and Non-Motorised Users Appendix 16.1 Transport Assessment
<i>Water Resources</i>		
Caroline Frost, CH2M Lead author	BSc (Hons) Environmental Geoscience, MSc Environmental Water Management	Chapter 17 Water Resources, Drainage and Flood Risk Appendix 17.3 Water Receptors Appendix 17.4 Discharge Consents Maps (from the Environment Agency website)
Rob Bird, CH2M	BSc (Hons) Physics, MSc Physics, MSc Hydrology, MCIWEM, C.WEM	Appendix 17.1 Flood Risk Assessment

Table 1. The EIA Team

Author and Company	Qualifications	Environmental Statement
Judith Cudden CH2M	BSc (Hons) Physical Geography, MSc Environmental Management, PhD Fluvial Geomorphology, MCIWEM, C.WEM, CSci	Appendix 17.2 Water Framework Directive Compliance Screening Assessment
Cumulative Effects		
Lucy Stephenson, CH2M	BSc, Physical Geography MSc, Environmental Assessment and Management PIEMA	Chapter 18 In combination and Cumulative Effects Appendix 18.1 Matrix 1 Appendix 18.2 Matrix 2

Table 2. North Somerset Council's Project Management Team

Name	Qualifications	Role
James Willcock	Hons Transport Planning	Project Manager
Steven Penaluna	MSc Transport Planning	Project Support
Richard Matthews	MSc Transport Planning	Project Support
Jennifer Devereux	BA Hons Geography	EIA Project Support Lead

Table 3. Womble Bond Dickinson, Legal

Name	Qualifications	Role
Richard Guyatt	Partner	DCO
Sarah Holmes	Legal Director	Environment

Table 4. Network Rail Project Team

Name	Qualifications	Role
Niall Spencer	BA (Hons) Primary Education	Sponsor
Victoria Smale	MSC Programme and Project Management	Scheme Project Manager
Christine Lazarus	MSc Project Management	Programme Manager
Jonathan Tearle	MEng Hons, Civil Engineering	Designated Project Engineer
Emma Evans	BEng Hons, Metallurgy and Materials	Project Manager
Daniel Brutto	BSc (Hons) Biology, MSc Environmental Biology, MBA	Consents

Table 5. Arup, GRIP 3 / 4 Design Consultant, Railway Design

Name	Qualifications	Role
Rob Snell	MEng (Hons), CEng MICE	Contractors Engineering Manager



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Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

6.25, Environmental Statement, Volume 4, Appendix 1.2 Compliance with the EIA Regulations, Schedule 4

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

Planning Act 2008

Author: CH2M

~~Date: November 2019~~



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SECTION 1

Compliance with the EIA Regulations, Schedule 4

1.1.1 Table 1 summarises the information to be included in the Environmental Statement (“ES”) as set out in Schedule 4 to The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 as amended (“the EIA Regulations 2017”) and where this information is presented in the ES for the Portishead Branch Line (MetroWest Phase 1) Development Consent Order Scheme (“the DCO Scheme”).

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
Description of the development, including in particular	ES Volume 2, Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7).
(a) a description of the location of the development;	<p>Volume 2: Main Report Chapter 4 Description of the Proposed Works Section 4.3 Portishead Branch Line (MetroWest Phase 1) DCO Scheme (DCO Document Reference 6.7)</p> <p>Volume 3: Book of Figures (DCO Document Reference 6.24). General Arrangement Plans (DCO Document Reference 2.4).</p>
(b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;	<p>Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7), including:</p> <p>Section 4.3 regarding land required for the DCO Scheme during construction and operation, and</p> <p>Section 4.5 regarding demolition works related to No. 7 Station Road, a section of garden boundary wall on Marine Parade, a section of boundary wall on Heywood Road and Pill Memorial Club, and 12 garages, all in Pill.</p>
(c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;	<p>Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7). Section 4.8 Operational Phase Section 4.9 Institutional Arrangements Production process: The DCO Scheme is a new railway, not an industrial</p>

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
	<p>project, so there are no production processes during operation.</p> <p>Energy demand and energy used. The DCO Scheme is a new railway, not an energy project. Details of energy demand and energy used have not been provided. Energy demand will include:</p> <ul style="list-style-type: none"> • Lighting at Portishead and Pill stations and car parks. • Diesel for the trains. <p>Use of materials and natural resources.</p> <ul style="list-style-type: none"> • Water. Small volumes of water consumption at Portishead and Pill station. • Land and Soils. Following construction, there will be no further use of land and soils during construction. • Biodiversity. The Avon Gorge Vegetation Management Plan will be implemented during construction and the first five years of operation for positive management activities and ten years for the monitoring of transplanted <i>Whitebeam Sorbus</i>. This document is provided in the ES, Volume 3, Appendix 12.11 (DCO Document Reference 8.12). Network Rail will manage biodiversity along the route in accordance with their procedures and the Site Management Plan ("SMS") agreed with Natural England for the section of route through the Avon Gorge Special Area of Conservation. The SMS is presented in the ES Appendix 9.15 (DCO Document Reference 6.25).
<p>(d) an estimate, by type and quantity, of expected residues and emission (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.</p>	<p>Residues and emissions during construction and operation</p> <ul style="list-style-type: none"> • Water. Estimates of drainage water during construction and operation are provided in the Surface Water Drainage Strategy (DCO Document Reference 6.26). Estimates of

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
	<p>wastewaters from the station toilets and facilities on the trains have not been estimated.</p> <ul style="list-style-type: none"> • Air Pollution. See ES Chapter 7 Air Quality and Greenhouse Gases (DCO Document Reference 6.10). • Soil / subsoil. An estimate of the ballast to be removed along the disused railway line is provided in Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7) and in the Construction Strategy (DCO Document Reference 5.4). • Noise and Vibration. See ES Chapter 13 Noise and Vibration (DCO Document Reference 6.16). • Light. Lighting arrangements for the new stations and car parks are discussed in Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7). The lighting design for Pill Station is provided in the ES Appendix 9.18 (DCO Document Reference 6.25). See also, Portishead Station Platform Lighting and Lighting Control Layout (DCO Document Reference 2.14), Lighting Scheme for Trinity Primary School Bridge Plan as shown on drawing S051 Trinity Footbridge Proposed Electrical Layout General Arrangement (DCO Document Reference 2.17), S050 Pill Station Lighting Proposed: Electrical Layout Plan (DCO Document Reference 2.20), Portishead Station Car Park Layout, Landscaping and New Boulevard and Access Plan (DCO Document Reference 2.38), Pill Station Car Park, and PSP Layout, Landscaping, Lighting and Access Plan (DCO Document Reference 2.42). Changes in light levels have not been estimated. • Heat. The DCO Scheme does not generate heat as a primary

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
	<p>purpose. Heat emissions have not been estimated.</p> <ul style="list-style-type: none"> • Radiation. The DCO Scheme does not generate radiation. <p>The quantities and types of waste. See the ES Chapter 12 Materials and Waste (DCO Document Reference 6.15).</p>
<p>A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.</p>	<p>Chapter 3 Scheme Development and Alternatives Considered (DCO Document Reference 6.6).</p>
<p>A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development so far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.</p>	<p>Chapter 2 Description of the Study Area (DCO Document Reference 6.5) provides an overview of key features. Further details of the current statement of the environment and future baseline (without the DCO Scheme) are provided in the topic specific Chapters 7 to 17 (DCO Document References 6.10 to 6.20).</p> <p>Supporting baseline material is provided in the appendices in the ES Volume 4 (DCO Document Reference 6.25).</p>
<p>A description of the factors likely to be significantly affected by development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gases emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.</p>	<p>Factors likely to be significantly affected</p> <ul style="list-style-type: none"> • Population, see Chapter 14 Socio-economics and Regeneration (DCO Document Reference 6.17) and Appendix 14.1 Equality Impact Assessment (DCO Document Reference 6.25). • Human health, see Appendix 14.2 Health Impact Assessment (DCO Document Reference 6.25); • Biodiversity, see Chapter 9 (DCO Document Reference 6.12) and associated appendices (DCO Document Reference 6.25). • Land, see Chapter 15 Soils, Agriculture, Land Development and

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
	<p>Assets (DCO Document Reference 6.18).</p> <ul style="list-style-type: none"> • Water, see Chapter 17 Water Resource, Drainage and Flood Risk (DCO Document Reference 6.20), Appendix 17.1 Flood Risk Assessment (DCO Document Reference 5.6), Appendix 17.2 Water Framework Directive Assessment (DCO Document Reference 6.25); and the Surface Water Drainage Strategy (DCO Document Reference 6.26). • Air, see Chapter 7 Air Quality and Greenhouse Gases (DCO Document Reference 6.10) and Appendix 7.5 Climate (DCO Document Reference 6.25). • Material assets, see Chapter 15 Soils, Agriculture, Land Development and Assets (DCO Document Reference 6.18). • Cultural heritage, see Chapter 8 Cultural Heritage (DCO Document Reference 6.11) and accompanying appendices (DCO Document Reference 6.25). • Landscape, See Chapter 11 Landscape and Visual Impacts (DCO Document Reference 6.14).
<p>A description of the likely significant effects of the development on the environment resulting from, inter alia –</p> <p>(a) the construction and existence of the development, including, where relevant, demolition works;</p> <p>(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;</p> <p>(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;</p>	<p>See:</p> <ul style="list-style-type: none"> • The topic assessment ES Volume 2, Chapters 7 to 17 (DCO Document References 6.10 to 6.20). • Flood Plans, ES Volume 4, Appendix 16.1 Flood Risk Assessment annexes (DCO Document Reference 5.6). • Accidents and Disaster report ES Volume 4, Appendix 4.5 (DCO Document Reference 6.25). • ES Volume 2, Chapter 18 In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21) and Appendices 18.1 Matrix 1

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
<p>(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);</p> <p>(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;</p> <p>(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;</p> <p>(g) the technologies and the substances used.</p> <p>The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.</p>	<p>Identification of ‘other projects’ and 18.2 Matrix 2: Assessment Matrix (DCO Document Reference 6.25).</p> <ul style="list-style-type: none"> ES Volume 4 Appendix 7.5. Climate (DCO Document Reference 6.25)
<p>A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</p> <p>A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which</p>	<p><u>Forecasting methods and difficulties</u></p> <p>A description of forecasting methods and an assessment of the likely significant effects are provided in the topic specific Chapters 7 to 17 (DCO Document References 6.10 to 6.20) and in Chapter 18 In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21), and where relevant in the associated appendices.</p> <p>Commentary of difficulties encountered during the EIA are discussed in the topic specific Chapters 7 to 18 (DCO Document References 6.10 to 6.21).</p> <p><u>Mitigation</u></p> <ul style="list-style-type: none"> ES Volume 2, Chapter 4 Description of the Proposed Works

Table 1: Compliance of the ES with the requirements of the EIA Regulations

Part 1 Schedule 4	ES
<p>significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.</p> <p>A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council (1) or Council Directive 2009/71/Euratom (2) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.</p>	<p>(DCO Document Reference 6.7) provides an overview of measures incorporated into the DCO Scheme.</p> <ul style="list-style-type: none"> • ES Volume 4, Appendix 4.1 Code of Construction Practice (DCO Document Reference 8.15), Appendix 4.2 Master Construction Environmental Plan (DCO Document Reference 8.14) and Appendix 16.1 Transport Assessment, Annex K Construction Traffic Management Plan (DCO Document Reference 8.13) of the ES set out the over-arching framework to control and mitigate adverse impacts arising during construction. • ES Volume 4, Appendix 4.3 Schedule of Mitigation (DCO Document Reference 6.31). • ES Volume 2, Chapters 7 to 18 (DCO Document References 6.10 to 6.21) provide a summary of measures incorporated into the DCO Scheme and additional environmental mitigation measures. <p><u>Major accidents / hazards</u></p> <ul style="list-style-type: none"> • ES Volume 4 Appendix 17.1 Flood Risk Assessment ("FRA") (DCO Document Reference 5.6). • Flood Plan, annex to the FRA. • Accidents and Disaster report ES Volume 4 Appendix 4.5 (DCO Document Reference 6.25).
<p>A non-technical summary of the information provided under paragraphs 1 to 8.</p>	<p>A non-technical summary is provided as Volume 1 to the ES (DCO Document Reference 6.2).</p>
<p>A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.</p>	<p>A list of references is provided at the end of each chapter and appendix of the ES as appropriate.</p>



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Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

**6.25, Environmental Statement, Volume 4, Appendix 1.3 Summary of Works
Required for the DCO Scheme**

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

Planning Act 2008

Author: CH2M

Date: November 2019



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Table 1 A summary of works required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
<i>The Nationally Significant Infrastructure Project (“NSIP”)</i>				
1, 1A, 1B and 1C	<p>The works comprise the construction of a new permanent railway approximately 5,558 metres long between Portishead and Pill and the realignment of the Parson Street to Royal Portbury Dock railway of approximately 1,003 metres. The works include:</p> <ul style="list-style-type: none"> • permanent way (rail tracks), • realignment (rail tracks), • signals, cables, cable ducts, radio signalling and communication equipment, • telecommunications equipment • works to protect and divert existing utilities and communications equipment, • retaining structures, • embankment strengthening; • fencing, acoustic barriers, paths, • works to repair bridge parapets, • works to clear and repair drains and culverts, • railway switch and crossing track (“S&C”). 	Permanent	Inside the disused railway/operational railway boundary	Disused railway line between Portishead and Portbury Junction.
1	Comprises a new permanent railway of approximately 2,264 metres commencing at a point 96 metres north of the junction of Quays Avenue and Galingale Way, Portishead and terminating at a point 57 metres to the east of the bridge	Permanent	Inside the disused railway/operational railway boundary	Disused railway line between Portishead and Portbury Junction.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
	carrying Station Road, Portbury over the disused Portishead branch line railway.			
1A	Comprises a new permanent railway of approximately 2,498 metres commencing at a junction with the termination of Work No.1 at a point 57 metres to the east of the bridge carrying Station Road (Portbury), over the disused Portishead Branch Line railway, using the track bed of the disused Portishead Branch Line railway and terminating at a point 49 metres west of the bridge carrying the Parson Street to Royal Portbury Dock railway over public footpath LA8/5/40 between Avon Road and Lodway Close Pill.	Permanent	Inside the disused railway boundary	Disused railway corridor
1B	Comprises a new permanent railway of approximately 796 metres commencing at a junction with the termination of Work No. 1A, at a point 49 metres west of the bridge carrying the Parson Street to Royal Portbury Dock railway over public footpath LA8/5/40 between Avon Road and Lodway close, Pill, and terminating at junction with Work No. 1C, at a pint 86 metres to the north of the junction of Ham Green and Westward Drive highways	Permanent	Inside the operational railway boundary.	Operational railway land
1C	Comprises a realignment of the Parson Street to Royal Portbury Dock railway of approximately 1003 metres commencing at a point 262 metres north west of the bridge carrying the railway over public footpath LA8/5/40 between Avon Road and Lodway Close, Pill, then terminating at a new junction with the Parson Street to Royal Portbury Dock	Permanent	Inside the operational railway boundary.	Operational railway land

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
	railway, at a point 86 metres to the north of the junction of the highways of Ham Green and Westward Drive, Pill			
<i>Associated Development</i>				
2	Diversion of Quays Avenue, Portishead and associated highway works and utility diversions from the junction of Quays Avenue and Galingale Way to a point west of the existing junction of Quays Avenue, Harbour Road and Phoenix Way, Portishead, together with connections to existing highways, widening of the southern footway of Harbour Road, landscaping, new bus waiting facilities, signage, lighting, pedestrian crossing facilities, pipes, drains, cables, ducts, troughs, telecommunications apparatus, conduits, and apparatus for utilities and footways and a connection to the pedestrian and cycle track forming part of Work No. 4.	Permanent	Outside and inside the disused railway boundary	Highway land (Phoenix Way, Harbour Road and Quays Avenue) and undeveloped land.
2A	A new surface water drain north from Phoenix Way, Portishead into the watercourse known as The Cut.	Permanent	Outside the disused railway boundary	Scrubland to concrete drainage ditch
3	A foot and cycle track from a junction with Work No. 4, east of the Portbury Ditch, to a point west of Portbury Ditch, together with associated landscaping, signage, fencing, lighting, cables, ducts, troughs, telecommunication apparatus, conduits and apparatus for utilities.	Permanent	Inside the disused railway boundary	Disused railway corridor

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
4	A new car park, foot and cycle track and a new vehicular access to the highway of Harbour Road, Portishead to the south of Harbour Road, Portishead and east of the Portbury Ditch watercourse, together with landscaping, lighting, signage, fencing, drainage into the adjacent Portbury Ditch to the west of Quays Avenue, Portishead.	Permanent	Both inside and outside the disused railway boundary	Disused railway corridor and undeveloped land.
5	A new railway station at Portishead to the south of Phoenix Way comprising platform, shelter, office, waiting area, storage and refuse area, seating, ticket vending machine, closed circuit television equipment, passenger help point, toilets, utilities connections, telecommunications equipment, public address system, information boards and displays, signage, lighting columns, fencing, acoustic barrier, landscaping, railway communications mast and surface water drain into the adjacent watercourse known as The Cut.	Permanent	Inside and outside the disused railway boundary	Highway land (Quays Avenue) and undeveloped land.
6	A car park to the south of Phoenix Way, Portishead. Work No. 6 includes: mobility impaired spaces, drainage, lighting, fencing, landscaping, signage, cycle parking facilities, utilities apparatus and access from the highway of Phoenix Way.	Permanent	Inside and outside the disused railway boundary	Highway land.
7	A public foot and cycle track bridge over the railway to the south west of Trinity Primary School, Portishead.	Permanent	Inside and outside the disused railway boundary	Disused railway land, highway land and open space.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
	Work No. 7 includes: connections to cycle tracks, lighting, drainage, signage, fencing and hardstandings.			
7A	A public foot and cycle path from Phoenix Way, Portishead to connect with the new foot and cycle bridge (Work No. 7 and Work No. 7C) south of Tansy Lane, Portishead and north of Work No. 1. Work No. 7A includes: signage, drainage, lighting, fencing and landscaping.	Permanent	Inside and outside the disused railway boundary	Highway land
7B	A public foot and cycle track from the new Quays Avenue, Portishead, to connect with the new foot and cycle bridge (Work No. 7) to the north of Galingale Way and to the south of Work No. 1. Work No. 7B includes: signage, drainage, lighting, fencing and landscaping.	Permanent	Outside the disused railway boundary	Shrubs and trees and crossing of existing Quays Avenue
7C	A public foot and cycle track from the new foot and cycle bridge (Work No. 7) north to Tansy Lane, Portishead. Work No. 7C includes: signage, drainage, lighting, fencing and landscaping.	Permanent	Outside the disused railway boundary	Permissive footpath and open space – amenity grass with occasional shrubs and trees.
7D	A temporary construction compound to the south of Tansy Lane, Portishead and to the north of Work No. 1.	Temporary	Outside the disused railway boundary	Public open space comprising

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
				amenity grassland.
7E	Underground electrical supply cables connecting from Work No. 7 to Tansy Lane, Portishead.	Permanent	Crosses over the disused railway	Disused railway.
8	A temporary construction haul road to the south of, and parallel to, Work No. 1, from a point south of Fennel Road Portishead, to the highway known as Sheepway, Portbury.	Temporary	Outside the disused railway boundary	Agricultural land.
9	A permanent vehicular compound, road/rail vehicle access point and access road from the highway of Sheepway, to the north-west of the bridge carrying the highway of Sheepway over Work No. 1, a permanent diversion of the existing permissive cycle path and works to the existing car parking area to the north-west of Sheepway, and fencing, drainage, communications apparatus, ducts, troughs, utilities apparatus, hardstanding and means of access to the highway of Sheepway.	Permanent	Outside the disused railway boundary	Pasture and path.
10	A temporary diversion of the existing permissive cycle path on the north west side of the highway of Sheepway, opposite Shipway Gate Farm, Portbury.	Temporary	Outside the railway boundary	Agricultural land and Portbury Wharf Nature Reserve.
10A	A temporary construction compound to the northwest of the highway of Sheepway opposite Shipway Gate Farm, Portbury.	Temporary	Outside the railway boundary	Agricultural land

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
10B	A temporary construction haul road to the north of the highway of Sheepway opposite Shipway Gate Farm, Portbury. This work is required to provide access for the Hinkley Point C Connection NSIP authorised by the National Grid Hinkley Point C Connection Project Order 2016.	Temporary	Outside the railway boundary.	Portbury Wharf Nature Reserve Improved grassland.
10C	A pond within the Portbury Wharf Ecology Park, Portbury. Removed from the DCO Scheme	Permanent	Outside the railway boundary.	Portbury Wharf Nature Reserve. Marshy grassland.
11	Improvements to the existing agricultural access from Shipway Gate Farm, Portbury to the highway of Sheepway, south of the disused Portishead Branch Line railway, including hardstanding, gate and visibility splays.	Permanent	Outside the dis-used railway boundary	Agricultural land. Semi-improved grassland.
11A	A temporary construction haul road, east from the highway of Sheepway, to south of and parallel to the disused Portishead Branch Line railway to Work No. 12A together with temporary field access and hardstandings.	Temporary	Outside the disused railway boundary	Agricultural land. Semi-improved grassland.
11B	A temporary construction haul road to the south of the highway of Sheepway at Shipway Gate Farm, Portbury. [This work is required to provide access for the Hinkley Point C Connection NSIP authorised by the National Grid (Hinkley Point C Connection Project Order 2016.)]	Temporary	Outside the dis-used railway boundary.	Agricultural land. Semi-improved grassland.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
12	A permanent new access to the A369 classified road known as the Portbury Hundred, including hardstanding, gate and visibility splays.	Permanent	Outside the disused railway boundary	Highway and agricultural land.
12A	A temporary construction compound to the north of the A369 classified road known as the Portbury Hundred and to the south of the disused Portishead Branch Line Railway.	Temporary	Outside the dis-used railway boundary	Agricultural land. Arable.
12B	Removed from the DCO Scheme A pond and associated ecological works to the north of Work No. 1 and south of the highway of Sheepway, Portbury.	Permanent	Outside the dis-used railway boundary	Agricultural land.
13	Improvement of the existing access and parking area at The Drove, Portbury, to the north of the A369 classified road known as the Portbury Hundred, including hardstanding and gates.	Permanent	Outside the dis-used railway boundary.	Historic landfill site.
13A	Temporary vehicle turning space south of the disused Portishead Branch Line Railway, Portbury.	Temporary	Outside the dis-used railway boundary	Historic landfill site.
14	Improvement to bridleway LA15/21/20 at its junction with the highway of Royal Portbury Dock Road, Portbury.	Permanent	Outside the dis-used railway boundary	Bridleway and highway
14A	Improvement to bridleway LA8/66/10 at its junction with the highway of Royal Portbury Dock Road, Portbury.	Permanent	Outside the disused railway boundary	Bridleway and highway
14B	Realignment of the existing permissive cycling route under Royal Portbury Dock Road, Portbury.	Permanent	Inside the disused railway boundary	Railway corridor and cyclepath

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
15	Temporary path to connect bridleway LA8/66/10 with the highway of Marsh Lane on the western side of Marsh Lane, Easton in Gordano, and north of the disused Portishead Branch Line Railway.	Temporary	Outside the disused railway boundary	Bridleway, scrub, and highway
16	Realignment of the existing permissive cycling route, parallel to the disused Portishead Branch Line railway passing under the highway of Marsh Lane, Easton in Gordano, and connecting with bridleway LA8/67/10.	Permanent	Outside the disused railway boundary	Bridleway and scrub.
16A	A temporary construction compound beneath the Avonmouth Bridge of the M5 Special Road, Easton in Gordano.	Permanent	Outside and inside the disused railway boundary	Bridleway, scrub and disused railway.
16B	Removed from the DCO Scheme A pond and associated ecological works to the south of the disused Portishead Branch Line Railway and west of the M5 Special Road, Easton in Gordano.	Temporary	Outside the disused railway boundary	Wasteland under the M5 bridge.
16C	A road rail access point west of the Avonmouth Bridge of the M5 Special Road, Easton-in-Gordano.	Permanent	Outside the disused railway boundary	Royal Portbury Dock railway spur
16D	A flood mitigation area to the south of the disused Portishead Branch Line railway and west of the M5 Special Road, Easton in Gordano.	Permanent	Outside the disused railway boundary	Marshy grassland and Wildlife Site.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
17	Temporary construction compound at Lodway Farm, Pill together with access to the highway of The Breaches, Easton in Gordano.	Temporary	Outside the disused railway boundary.	Agricultural land
17A	Temporary construction haul road between Work No. 17 and footpath LA8/5/40, Pill;	Temporary	Outside the disused railway boundary	Agricultural land
18	A bridleway commencing at a point to the west of the M5 Special Road and passing under the Avonmouth Bridge of the M5 to join National Cycleway Network ("NCN") Route 41 between the Avonmouth Bridge of the M5 Special Road and Pill.	Permanent	Outside the operational railway boundary	Cycle path, scrub, woodland. Wildlife Site.
19	Installation of new and alteration of existing railway signalling equipment, troughs and cables on the Bristol Port Company's railway from Portbury Junction and a new railway signal at the Bristol Port Company's Royal Portbury Dock.	Permanent	Outside the disused railway boundary	Railway spur and scrub.
20	Temporary diversion of NCN Route 41 north from its existing alignment on the street north of the Parson Street to Royal Portbury Dock Railway, west of Avon Road, Pill to connect with the western turning head of Avon Road, Pill.	Temporary	Outside the operational railway boundary	Semi-improved grassland. Jenny's Meadow.
20A	Demolition of existing bridge carrying the Parson Street to Royal Portbury Dock railway over footpath LA8/5/40 and construction of new bridge and abutments south of Avon Road, Pill and north of Lodway Close, Pill.	Permanent	Inside and outside the operational railway boundary	Bridge and railway

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
20B	Demolition of existing garages and temporary construction compound at Avon Road, Pill.	Permanent	Outside the operational railway boundary	Highway and garages.
21	A car park, to the south of Severn Road and Monmouth Road, Pill, including landscaping, accesses to highway, signage, lighting, fencing, drainage, and attenuation tanks, ducts, troughs, communications apparatus and utilities apparatus.	Permanent	Outside the operational railway	Former goods yard currently used to store vehicles or abandoned.
21A	A road rail access point, permanent railway maintenance compound and principal supply point building south of Severn Road, Pill, including landscaping, lighting, fencing, drainage, ducts, troughs, communications apparatus, utilities apparatus and associated access.	Permanent	Outside the operational railway	Former goods yard currently used to store vehicles.
22	A new railway station comprising platform, ramp, signage, seating, ticket vending machine, closed circuit television equipment, demolition of No. 7 Station Road, passenger help point, information boards and displays, passenger refuge area, car park drop off point (including mobility impaired spaces) and cycle parking facilities, lighting, fencing, landscaping, ground strengthening and stability works, communications apparatus, drainage and utilities apparatus, to the north west of Station Road, Pill.	Permanent	Inside and outside the operational railway boundary	Disused Pill station southern platform and Station House at No. 7 Station Road now owned by NSDC.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
22A	An improved bus waiting facility on the highways of Lodway and Heywood Road, Pill, north of the Pill Memorial Club, Pill together with retaining wall, lighting, drainage and utilities apparatus.	Permanent	Outside the operational railway boundary	Highway, pavement and part of the Pill Memorial Club car park
22B	A temporary construction compound within the car park of Pill Memorial Club, Lodway, Pill.	Temporary	Outside the operational railway boundary	Part of the Pill Memorial Club car park.
23	A temporary construction compound beneath and to the north of Pill Viaduct, Underbanks, Pill.	Temporary	Outside the operational railway boundary	Informal off street car park
24	A new permanent vehicular compound south of Ham Green Lake, together with a road/rail vehicle access point, permanent access south from the highway of Chapel Pill Lane to the compound and new fencing, lighting, landscaping, utilities connections, laying of electricity, water, drainage and communications conduits and apparatus, together with a new access to Ham Green Lake and improvements to Chapel Pill Lane.	Permanent	Outside the operational railway boundary	Agricultural land. Improved grassland. Part of non-designated Ham Green historic park and garden.
24A	A temporary construction compound accessed from the highway of Chapel Pill Lane, Ham Green, Pill.	Temporary	Outside the operational railway boundary	Agricultural land. Improved grassland.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
25	Reconstruction of accommodation bridge known as Quarry Bridge No. 2, a temporary construction compound and temporary ramp for construction access to the Parson Street to Royal Portbury Dock railway.	Permanent	Inside the operational railway boundary.	Railway land, broadleaved woodland, and scree slopes. Avon Gorge SAC.
26	A permanent vehicular access, ramp, flood mitigation works and railway maintenance compound east of the highway of the A369 classified road known as Clanage Road, Ashton, north of the Bedminster Cricket Club.	Permanent	Outside the operational railway boundary	Private sports field. Amenity grassland.
26A	A temporary construction compound east of the highway of the A369 classified road known as Clanage Road, Ashton, from the land to the north of the Bedminster Cricket Club.	Temporary	Outside the operational railway boundary	Private sports field. Amenity grassland.
26B	A permanent vehicular access to the highway of the A369 classified road known as Clanage Road, Ashton from the land to the north of the Bedminster Cricket Club.	Permanent	Outside the operational railway boundary	Private sports field. Amenity grassland.
27	Removed from the DCO Scheme A foot and cycle track and ramp from the A370 classified road known as Ashton Road to Ashton Vale Road, Ashton, to the west of the Parson Street to Royal Portbury Dock railway, together with alterations to utilities apparatus, drainage, fencing, lighting and landscaping.	Permanent	Inside the operational railway boundary	Operational railway land.
28	Improvement of the highway of Winterstoke Road at its junction with Ashton Vale Road, Ashton, including extension of an existing left turn lane into Ashton Vale Road, retaining	Permanent	Outside the operational railway boundary	Highway.

Table 1: A Summary of Works Required for the Portishead Branch Line (MetroWest Phase 1) DCO Scheme

Works No.	Description of the DCO Scheme Work No.	Permanent or Temporary	Inside or Outside Operational / Disused Railway Boundary	Current Land Use
	wall, works to divert and install utility apparatus, and installation of a new traffic signal control system.			
29	Temporary compound within the rail freight facility at Liberty Lane, Bristol.	Permanent	Outside the operational railway boundary	Private rail sidings.

And in connection with such works further associated development within the Order limits consisting of:

- (a) permanent way (rail tracks) electrical equipment, power supply cubicles, cables, telecommunications apparatus, railway mobile communications masts and apparatus and signalling;
- (b) ramps, means of access (including temporary haul roads) and construction compounds;
- (c) embankments, aprons, abutments, shafts, foundations, retaining walls and structures, drainage, wing walls, fences, acoustic fences, catch fences, paths, access steps and culverts;
- (d) works to alter, divert, maintain, replace and repair the apparatus (including statutory undertakers' apparatus), including mains, sewers, pipes, drains and cables or for their protection;
- (e) works to clear, maintain and interfere with water courses other than a navigable water course;
- (f) landscaping and other works (including the creation of ponds) to mitigate any adverse effects of the construction, maintenance or operation of the authorised development as described in the environmental statement;
- (g) works for the benefit or protection of land affected by the authorised development;
- (h) works required for the strengthening, improvement, maintenance or reconstruction of any streets;
- (i) works to level crossings;
- (j) works for the temporary diversion of public footpaths shown in the permanent and temporary stopping up and diversion plan;

- (k) trenching and cabling associated with the new signalling and communications masts;
- (l) strengthening earthworks and reconstructing retaining walls;
- (m) vegetation clearance, rock bolting and rock dowels and safeguarding of unstable slopes or rock faces by stone-picking and removal of loose rocks;
- (n) replacement or renewal of fencing;
- (o) repairs to existing underbridges and overbridges, adding barriers to bridge parapets and raising of bridge parapets;
- (p) alteration of the layout of any street permanently or temporarily, including but not limited to increasing or reducing the width of the carriageway of the street by increasing or reducing the width of any kerb, footway, cycle track or verge within the street, extending any footway or removing replacing, altering or providing splitter islands in streets;
- (q) works to place alter remove or maintain road furniture;
- (r) works to place, alter, divert, relocate, protect, remove or maintain the position of apparatus (including statutory undertakers' apparatus), services, plant and other equipment in, under or above a street, or in other land, including mains, sewers, drains, pipes, lights, cables, cofferdams, fencing and other boundary treatments and to provide connections to adjoining land and buildings;
- (s) landscaping, re-grading, re-profiling, contouring, noise barriers, works associated with the provision of ecological and archaeological mitigation and other works to mitigate any adverse effects of the construction, maintenance or operation of the authorised development:
- (t) site preparation works, site clearance (including fencing and other boundary treatments, vegetation removal, demolition of existing structures and the creation of alternative highways or footpaths); earthworks (including soil stripping and storage and site levelling);
- (u) establishment of site construction compounds and working sites, temporary structures, storage areas (including storage of excavated material and other materials), temporary vehicle parking, construction fencing, perimeter enclosure, security fencing, construction related buildings, welfare facilities, office facilities, other ancillary accommodation, construction lighting, haulage roads and other buildings, machinery, apparatus, drainage systems, temporary bridges over watercourses, processing plant, works and conveniences;
- (v) pavement, kerbing and paved areas;
- (w) signing, signals, street lighting, road markings, traffic management measures including temporary roads and such other works as are associated with the construction of the authorised development; and

- (x) such other works, including working sites and works compounds, as may be necessary or expedient for the purposes of or in connection with the construction of the authorised development and which do not give rise to any materially new or materially worse adverse environmental effects to those assessed in the environmental statement.

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