

PORTISHEAD BRANCH LINE PRELIMINARY
ENVIRONMENTAL INFORMATION REPORT
VOLUME 2

CHAPTER 15

Soils, Agriculture, Land Use and Assets



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CHAPTER 15

Soils, Agriculture, Land Use and Assets

15.1 Introduction

- 15.1.1 The Portishead Branch Line (MetroWest Phase 1) DCO Scheme (“the DCO Scheme”) has the potential to give rise to likely significant effects on soils, agriculture, land use and assets. This Chapter:
- describes the relevant legal and policy framework which informs the undertaking of the assessment;
 - describes the methodology used for the identification and assessment of likely significant effects on soils, agriculture, land use and assets in the Preliminary Environmental Information Report (“PEI Report”);
 - describes the baseline for soils, agriculture, land use and assets having regard to existing information;
 - describes the measures that have been adopted as part of the DCO Scheme;
 - identifies and assesses the likely significant effects that could result from the DCO Scheme during the construction, operation and decommissioning phases;
 - considers mitigation of likely significant effects and assesses those residual effects that will result
 - considers the cumulative effects of other developments in combination with the DCO Scheme on soils, agriculture, land use and assets;
 - identifies the limitations encountered in compiling the PEI Report; and
 - provides a summary of the residual effects for the mitigated DCO Scheme.
- 15.1.2 The construction and reopening of the DCO Scheme will affect several agricultural holdings due to temporary land-take for construction compounds and haulage roads, permanent land-take for access and maintenance compounds, the loss of informal crossings, the effects of construction activities such as dust, noise, and lighting, and operational noise. Drainage from Pill Tunnel will continue to discharge to the fishing lakes at Pill. The agricultural resources considered are agricultural land use and farm structures, soils, agricultural land quality and the severance of farmland.
- 15.1.3 There is potential for temporary and permanent land-take to affect open space and recreational / amenity land in Portishead and Pill. Consideration has been given to the need to identify exchange land, although this is not likely to be required for the emerging design. Bristol Port Company obtained planning permission in December 2016 to build temporary storage for cargo and the development is under construction. Under Bristol City Council’s Site Allocations and Development Management Policies, there is a site allocation for housing on the former Alderman Moore’s allotments in Ashton Gate in Bristol, but no proposals have been brought forward to date. There are a large number of utilities close to and crossing the DCO Scheme. Consultations have been undertaken with the utility companies to map the locations of these services and any special needs for the design and construction activities are being developed as part of the engineering design.
- 15.1.4 This chapter should be read in conjunction with Chapter 4 Description of the Proposed Works and Chapter 6 Planning Framework.

15.2 Legislation and Policy Framework

National Policy

National Policy Statement for National Networks

15.2.1 Table 15-1 summarises the provisions in the NPSNN on soils, agriculture, land use and assets and identifies where these issues have been considered in the PEI Report.

Table 15-1: Summary of relevant NPSNN Advice to the Applicant regarding open space, green infrastructure and green belt (including Soil, agriculture, land use and assets)

Summary of NPSNN Provisions	Consideration within the PEI Report
Paragraph 5.165 advises the identification of existing and proposed land uses near the project, and potential effects on other development continuing.	Existing and future land uses along the route are described in Section 15.4. Discussion of the impact of the DCO Scheme on future land use is provided in Section 15.6.
Paragraph 5.166 advises against the development of existing open space, sports and recreational buildings and land.	The DCO Scheme does not require permanent land-take from sports and recreational buildings and land. Open space is included in the land to be acquired or used but the land will remain available as open space. Open space land is only included to allow for works to lay out public paths or for relocation of fauna.
Paragraph 5.167 advises consultation with the local authority on potential impacts on land use.	A review of consultations is provided in Table 15-2.
Paragraph 5.168 advises that applicants should take into account the economic and other benefits of the best and most versatile agricultural land (ALC grades 1, 2 and 3a), should use poorer quality land, minimise impacts on soil, and use previously developed (brownfield sites) where possible.	The temporary and permanent land-take and the land uses thereof are summarised in Chapter 4 Description of the Proposed Works, shown on Figure 4-2 Sheets 1-20 in the PEI Report Volume 3 Book of Figures and identified in Section 15.4.
Paragraph 5.169 advises applicants to safeguard any mineral resources.	No mineral resources likely to be worked in the foreseeable future have been identified. See Chapter 10 Geology, Hydrogeology, Ground Conditions and Contaminated Land.
Paragraph 5.170 states that there is a general presumption against development in the Green Belt, and development should not be approved except in very special circumstances.	The DCO Scheme passes through Green Belt and the route is safeguarded in the North Somerset District Council Local Policy. See Chapter 6 Planning Framework.
Paragraph 5.171 acknowledges that linear development will often go through Green Belt	The Scheme passes through Green Belt. The route is safeguarded in local policy. See Chapter 6 Planning Framework.
Paragraph 5.176 states that the decision maker should give little weight to the loss of agricultural land in grades 3b, 4 and 5, except in areas where particular agricultural practices may themselves contribute to the quality and character of the environment of the local economy.	The permanent loss of agricultural land is very small and will be confirmed in the Environmental Statement ("ES"). Land acquired temporarily during the construction phase will be restored to farming in a condition equivalent to its original.
Paragraph 5.179 advises that applicants can minimise direct effects of a project on the existing use of the proposed site, or proposed uses near the site by the application of good design principles,	Agricultural soils on land required temporarily during the construction process will be stripped, stockpiled and restored according to Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. These requirements will be

Table 15-1: Summary of relevant NPSNN Advice to the Applicant regarding open space, green infrastructure and green belt (including Soil, agriculture, land use and assets)

Summary of NPSNN Provisions	Consideration within the PEI Report
including the layout of the project and the protection of soils during construction.	incorporated into the Code of Construction Practice ("CoCP") which is being developed.

National Planning Policy Framework

- 15.2.2 Under Section 11 *Conserving and enhancing the natural environment* of the National Planning Policy Framework (NPPF 2012) the planning system should contribute to and enhance the natural and local environment, including the protection of soils, and planning authorities should take account of the benefits of the best and most versatile land, defined as agricultural land grades 1, 2 and 3a, in considering development.
- 15.2.3 Under Section 8, *Promoting Healthy Communities*, the NPPF advises against building on existing open space, sports and recreational buildings and land, unless it can be demonstrated that, amongst other things, such facilities are surplus to requirements and the facilities would be replaced by equivalent or better provision. Local communities can designate land as Local Green Space to rule out development except in very special circumstances.

Local Policy

- 15.2.4 The local policy framework for North Somerset District Council and Bristol City Council is discussed in detail in Chapter 6 Planning Framework. The following subsections identify local policies relevant to land use and development.

North Somerset Council

- 15.2.5 The statutory development plan for North Somerset includes:
- North Somerset Council Core Strategy (Adopted January 2017),
 - Saved policies from the Replacement Local Plan (March 2007),
 - Sites and Policies Plan Part 1 Development Management Policies (Adopted July 2016), and
 - Sites and Policies Plan Part 2 Site Allocations Plan 2006-2026 (Publication version, October 2016).
- 15.2.6 A summary of policies relevant for this chapter are summarised in Table 15-2 below.

Table 15-2: Summary of adopted policies from the NSDC Core Strategy

Policy No.	Title	Policy Summary
<i>North Somerset Council Core Strategy (Adopted January 2017)</i>		
CS1	Addressing climate change and carbon reduction	An overarching policy to encourage implementation of measures to reduce CO ₂ , through design, use of walking, public transport and reuse of land. Includes a provision to encourage local food production, including support for agricultural activity, in the context of reducing food miles and hence greenhouse gas emissions.
CS9	Green infrastructure	Has the objective of protecting and expanding the provision of green infrastructure throughout North Somerset. Priority is to be given to, among other things, protecting formal parks and gardens, protecting and planting trees in

Table 15-2: Summary of adopted policies from the NSDC Core Strategy

Policy No.	Title	Policy Summary
		woodland and urban areas, protection of biodiversity, improving connectivity of semi-nature and ancient woodland, and management public rights of way.
CS24	Royal Portbury Dock	Maintain and enhance the role of Royal Portbury Dock. Includes ongoing safeguarding of land at Court House Farm for port uses.
<i>Sites and Policies Plan Part 1 Development Management Policies (Adopted July 2016)</i>		
DM12	Development within the Green Belt	Provides detailed guidance in relation to the types of new development which are considered to be not inappropriate development and therefore acceptable in the Green Belt, along with provisions relating to redevelopment of sites on previously developed land.
DM49	Royal Portbury Dock	Safeguards land for port related uses associated with the Royal Portbury Dock at Court House Farm subject to proposals meeting the criteria set out in the policy.
DM68	Protection of sporting, recreation and community facilities	Protection of existing land and sites and development only allowed where certain conditions apply. Designated community assets shall be retained in community use.
<i>Extant planning policy from the Replacement Local Plan</i>		
ECH/1	Amenity areas and gateways to settlements	Aims to protect amenity areas of public value from unacceptable harm or loss. This policy will be superseded by the Sites Allocation Plan by emerging policy SA7 Local Green Space.
E/5	Safeguarded Employment Areas	This policy identifies land that has been safeguarded for future employment development. This policy will be superseded by the Sites Allocation Plan by emerging policy SA5 Safeguarded Employment Sites.

15.2.7 The statutory development plans for North Somerset do not specifically include policies on the protection of best and most versatile land or protection of the soil resource.

Bristol City Council

15.2.8 The statutory development plan for Bristol City includes the Bristol Core Strategy Adopted June 2011 and the Site Allocations and Development Management Policies Local Plan April 2014. A summary of policies relating to this chapter are summarised in Table 15-3 below.

Table 15-3: Summary of adopted policy from the Bristol Core Strategy

Policy No.	Title	Policy Summary
<i>Bristol Core Strategy (June 2011)</i>		
BCS6	Green Belt	This policy indicates the broad extent of the Green Belt within Bristol and the approach to development within it, following the principles set out in national planning policy. This policy is concerned with maintaining the current extent of the green belt to safeguard the

Table 15-3: Summary of adopted policy from the Bristol Core Strategy

Policy No.	Title	Policy Summary
		countryside and other open land around Bristol and protecting the green belt from inappropriate development.
BCS8	Delivering a thriving economy	Sets out the quantum and distribution of employment land that will be supported across the City, with a focus for future economic development in the city centre and to the south of Bristol, including within major regeneration areas in South Bristol.
BCS9	Green Infrastructure	The City Council aims to increase the connectivity of the strategic green infrastructure network, retain and prevent its loss. This policy deals with the protection of green spaces such as commons, stating that individual green assets should be retained wherever possible and integrated into new development.
Site Allocations and Development Management Policies Local Plan (April 2014)		
DM13	Development proposals on Principal Industrial and Warehousing Areas	The policy identifies that sites are to be retained for industrial and warehousing uses and seeks to protect these sites from inappropriate alternative uses.
DM17	Development Involving Existing Green Infrastructure	The Core Strategy seeks to conserve existing green infrastructure assets. This policy sets out the detailed approach to this where further detail to support the Core Strategy is required.

15.2.9 The Core Strategy recognises that there are areas of open space throughout the city and surrounds, and one of the environmental issues of the strategic planning is to ensure that the best use is made of open space to meet the needs of residents and employees in the city. Given that the Bristol City Council covers a predominantly urban environment, unsurprisingly there are no policies on soils or agricultural land.

15.3 Methodology

Guidance and Best Practice

15.3.1 There is no specific guidance on the approach to undertaking an environmental assessment for railways. The assessment on land use and agricultural land follows the Department of Transport's Design Manual for Roads and Bridges ("DMRB"), Volume 11, Section 3, Part 6 land use (Department for Transport, 2007). Although DMRB was developed for highways, the Department for Transport considers it is suitable for other linear schemes (Department for Transport, 2015).

15.3.2 This topic covers:

- demolition of private property;
- loss of land used by the community;
- effects on development land; and
- effects on agricultural land, including the effects on agricultural land from land-take, the type of husbandry, severance and major accommodation works for access, water supply, and drainage.

15.3.3 The following technical notes and guidances were used in considering potential impacts and identifying mitigation:

- Natural England's Technical Information Note 049 (TIN049), Agricultural Land Classification: on protecting the best and most versatile agricultural land.
- Defra's First Soil Action Plan for England 2001-2006 and draft Soil Strategy for England (March 2008).
- Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009).

Consultations

15.3.4 A summary of consultations undertaken to date is provided in Table 15-4 below.

Table 15-4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the PEI Report
Scoping Opinion Responses (August 2015)		
Planning Inspectorate, PINS	<p>Para. 3.29. The Secretary of State does not agree that the following issues are scoped out:</p> <p>1) Impact on new severance on farm operations</p> <p>2) Operational impacts on farmland and the viability of farm units</p>	<p>Meetings with landowners have identified severance, temporary land-take and construction impacts for farm operations. These topics are addressed in Section 15.6.</p>
	<p>Para. 3.86. The ES should include a description of the amount of land that would be lost as a result of the proposed development. The assessment should consider the potential for significant effects to occur as a result of loss of this land, potential contamination of surrounding land, disturbance (e.g. from noise / vibration during construction / operation) and from other potential impacts (e.g. severance) which could make agricultural land unviable. The potential impacts arising from construction activities should be included as part of the assessment.</p>	<p>A description of the temporary and permanent land-take is provided in Section 4 and shown on Figure 4-2 Sheets 1 to 20 in the PEI Report Volume 3 Book of Figures.</p> <p>There are small areas of permanent land-take from agricultural land for maintenance access to the alignment.</p> <p>Elsewhere agricultural land-take will be temporary and restricted to the construction phase, after which it will be restored to farming in a condition equivalent to its original.</p> <p>The effects of agricultural land-take are considered in Section 15.6.</p>
	<p>Para. 3.87. The applicant should consult with all potentially affected farm owners to determine the characteristics of potential effects on their activities and the adequacy of any measures proposed to mitigate any potential adverse effects.</p>	<p>NSDC and their land agents have consulted with all potentially affected farm owners. A summary of consultations with affected farm owners is presented in this table.</p>
	<p>Para. 3.88. The definition of "community assets" has not been clearly defined. The study area should include all land, assets and uses that could be affected by the proposed development. The study area should also be justified in terms of the likely magnitude and extent of the potential impacts.</p>	<p>Section 15.4 Baseline provides a definition of community assets. A summary of land, assets, and uses affected by the project is provided in Section 15.6.</p>

Table 15-4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the PEI Report
	<p>Para. 3.89. The ES should describe the utilities and other infrastructure assets within the site or which could be affected by the proposed development. This should include infrastructure that needs to be removed or diverted, upgraded or replaced. The applicant should consult with the relevant statutory undertakers and other stakeholders regarding the works necessary to address potential adverse effects and to ensure these are considered as part of the assessment. Attention is drawn to the consultation response from the Health and Safety Executive regarding the presence of two Major Accident Hazard Pipelines with traverse the proposed development near Lodway.</p>	<p>A description of utilities near the DCO Scheme and the need for removal and diversion is discussed in Chapter 4 Description of the Proposed Works. Consultations with utility companies is on-going to inform the highways and railway designs.</p>
	<p>Para. 3.90. The Scoping Report explains that a former goods yard adjacent to the disused station in Pill is proposed to be used as a car park for the new station. The existing use of this land has not been established within the Scoping Report. The ES should assess the impacts arising from the change in use of this land and any other land uses that could be affected by the proposed development.</p>	<p>The current use of the former goods yard is described in Section 15.4 and the impacts arising from the change of use are described in Section 15.6.</p>
<p>Natural England Annex A. Item 5. Soil and Agricultural Land.</p>	<p>Consider the degree to which soils are going to be disturbed / harmed as part of this development and whether 'best and most versatile' agricultural land is involved.</p>	<p>The Agricultural Land Classification is presented in Section 15.3. Soil disturbance during construction is considered in Section 15.6. The DCO Scheme does not affect the best and most versatile agricultural land.</p>
	<p>If required, an agricultural land classification and soil survey of the land should be undertaken.</p>	<p>Most of the agricultural land-take will be temporary and restricted to the construction phase, after which it will be restored to farming in a condition equivalent to its original state. The applicant considers that an agricultural land classification/soil survey is not required as the amount of permanent land-take from agricultural land is small.</p>
	<p>Proposals for handling different types of topsoil and subsoil and the storage of soils and their management whilst in store.</p>	<p>Proposals for the management of topsoil and subsoil at temporary construction sites are described in the mitigation section, 15.5.</p>

Table 15-4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the PEI Report
	The method of assessing whether soils are in a suitably dry condition to be handled (i.e. dry and friable), and the avoidance of soil handling, trafficking and cultivation during the wetter winter period.	Conditions on the handling of soils will be set out in the Code of Construction Practice ("CoCP") which is being developed and will be presented in the DCO Application. Work will be carried out according to Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) which provides guidance on safe working periods.
	A description of the proposed depths and soil types of the restored soil profiles; normally to an overall depth of 1.2 m over an evenly graded overburden layer.	Conditions on the handling of soils will be set out in the CoCP. Work will be carried out according to Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) which provides guidance on the restoration of soil profiles.
	The effects on land drainage, agricultural access and water supplies, including other agricultural land in the vicinity.	Disruption to drainage, access and water supplies will be rectified. These issues will be addressed in the CoCP.
	The impacts of the development on farm structure and viability, and on other established rural land use and interests, both during the site working period and following its reclamation.	Impacts will be temporary and kept to a minimum. These issues are addressed in Section 15.6.
	A detailed Restoration Plan illustrating the restored landform and the proposed after uses, together with details of surface features, water bodies and the availability of outfalls to accommodate future drainage requirements.	The fields required for construction compounds are level, so re-profiling during restoration is not required. Drains and ditches are confined to low lying, wet alluvial soils which would not provide a firm working base and so are unsuitable for compounds. Therefore, there will be no impacts on agricultural land drainage.
	The Environmental Statement should provide details of how any adverse impacts on soils can be minimised.	Measures to mitigate adverse impacts on soils will be provided in the CoCP which will draw upon Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
Other consultation		
Farms	Consultations are on-going with affected land owners and farmers.	Impact assessment and appropriate mitigation are detailed in Sections 15.5 and 15.6.

Definition of the Study Area

- 15.3.5 The study area for the agricultural assessment comprises agricultural holdings close to the disused railway line between Portishead and Pill and along the operational railway between Pill and Ham Green that would be affected by severance, disturbance to farm infrastructure or temporary land-take for construction. The rest of the DCO Scheme from Ham Green to the eastern end of the DCO Scheme at Ashton Junction is not included in the study area for agricultural assessment, as most of the land through the Avon Gorge and in Bristol is non-agricultural, as shown on the Agricultural Land Classification Maps available on MAGIC.
- 15.3.6 With regards to the impacts on land use, community assets, and development land, the study area extends to 250 m either side of the DCO Scheme between Portishead and Ashton Junction.

Key Receptors

- 15.3.7 The key receptors are:
- Land use adjoining the DCO Scheme,
 - On agricultural land, the soils, items of farm infrastructure (access tracks, water supplies, etc.), and livestock affected by the DCO Scheme,
 - Utilities,
 - Community assets, comprising,
 - Community buildings such as schools and colleges, places of worship, medical centres, and local authority buildings like town halls,
 - Playing fields, allotments and open space in the vicinity of Trinity School Portishead and at Pill on either side of Pill Viaduct, and at Watchhouse Hill, and
 - Visitor attractions, such as property and gardens open to the public, and sites of interest such as the Clifton Suspension Bridge.
 - Development land as designated on the local planning authorities' local plans.

Defining the Baseline

- 15.3.8 Information to define the baseline was obtained through the following sources:
- Soils and agricultural land quality classification maps.
 - Interviews with affected farmers.
 - Observations from site visits.
 - Internet searches on sites of interest.
 - The local authority local plans and planning portals.

Assessment of Construction Impacts

- 15.3.9 Reconnaissance of the rail corridor identified two farms on Sheepway as being potentially affected by severance resulting from the closure of existing informal permissive crossings of the disused railway line. Discussions were held with the affected landowners to confirm this. Alternative means of access were identified as well as the relocation of certain items of farm infrastructure. The assumption is that mitigation will be in place before the land is severed.

- 15.3.10 At Sheepway two accommodation crossings will be extinguished at Sheepway Gate Farm. The farmer will instead be required to use the nearby bridge carrying the highway of Sheepway over the Portishead Branch Line, and access the field south of the railway from an existing gated access on to Sheepway from that field. To the West of Station Road Portbury the large field north of the Portbury Hundred and south of the Portishead Branch line Railway is accessed by an accommodation crossing leading north east to the highway of Sheepway, opposite the entrance to Elm Tree Park. This crossing will be closed and replaced by a new access to the field from Portbury Hundred, which will also form the vehicular access for the temporary construction compound that will be located on this field. Elsewhere on the DCO Scheme it is intended all historic accommodation and occupation level crossings will be closed. It is believed that none of the other crossings is now used.
- 15.3.11 One field east of Marsh Lane will be severed due to the infilling of the Cattle Creep underbridge. Alternative access will be provided off Marsh Lane.
- 15.3.12 The assessment includes the temporary use of farmland for construction compounds. Creation of these will be managed according to the CoCP which will include requirements based on Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. The assumption is that at the end of the construction period the compounds will be restored to farming in a condition equivalent to the original, unless otherwise agreed with the landowner.
- 15.3.13 The assessment of construction impacts on adjoining land and assets is based on the area of permanent and temporary land-take, the percentage of land-take in relation to the whole plot, the impact on the use and enjoyment of the remaining land, and the scope for arriving at negotiated agreements.

Assessment of Operational Impacts

- 15.3.14 The approach to assessment covers any potential impacts on farming when the railway is operational. It is hoped that impacts of severance will be mitigated during the construction phase in such a way as to mitigate the effects during both construction and operational stages of the DCO Scheme. Accordingly, the assumption for the PEI Report is that no assessment of the operational effects on agriculture, soils and livestock is needed. Unless this is not the position, it is proposed to scope out from the Environmental Statement ("ES") the assessment of operational impacts of the DCO Scheme on agriculture.
- 15.3.15 The main operational effect of the DCO Scheme on land use, community assets, and development land concerns the potential impact of the DCO Scheme on the future enjoyment of that land and future development potential due primarily to operational noise and views. These effects are discussed qualitatively, based on the results of the landscape and visual and noise and vibration assessments presented in Chapters 11 and 13 respectively.

Assessment of Decommissioning Impacts

- 15.3.16 No specific plans have been formulated for the decommissioning phase of the Portishead Branch Line. It is expected that the services will continue for as long as there is a business case for doing so. Closure of railways is a regulated process, overseen by the Office of Rail and Road. Disposal of railway assets is also regulated by the Office of Rail and Road under the terms of Network Rail's licence.
- 15.3.17 Railways are not designed to be decommissioned, although in accordance with paragraph 5.85 of the NPSNN, development plan policies [and Network Rail's Sustainable

Development Strategy], consideration will be given to the sustainability of materials used in construction, including their embodied carbon content, where choice is available and some information on this is provided in Chapter 12 Materials and Waste. For the NSIP, in the event that the train operating company decides to cease services on the Portishead Branch Line, it is likely that the railway assets will remain in place, as occurred after traffic ceased in the 1980s. Previous practice following railway closures suggests that the railway formation will remain available either for re-development over time or finding an alternative transport use such as a guided busway or a cycle path. Such proposals would be subject to their own assessment including consideration of environmental effects. As such proposals are not reasonably foreseeable, the likely impacts cannot be assessed.

- 15.3.18 For any abandoned part of the railway track bed, vegetation would gradually encroach upon the railway line, with herbaceous plants, shrubs and trees gradually recolonising the railway corridor. The assets comprising the trackbed would gradually fall into disrepair due to the action of erosion and corrosion from rain, plants and animals. As the railway to be authorised by the DCO is largely laid at surface level between Portishead and Pill it is not anticipated that there would be significant need for ongoing maintenance work for embankments or cuttings. Ongoing maintenance of the cuttings and embankments would still be required along the operational railway from the Port to the main line. Network Rail would probably recover (and ideally re-use) items of value such as wiring, signalling equipment and principal supply points ("PSP").
- 15.3.19 Remaining assets such as fencing would continue to be maintained. The bridges carrying highways over the DCO scheme and public rights of way would continue to be maintained to standards appropriate for the public use, as a result of the obligations of North Somerset District Council as local highway authority.
- 15.3.20 It is anticipated the line between Royal Portbury Dock and Parson Street would remain open for services to the Port. The currently operational railway would remain open for freight traffic even if passenger services ceased and any decision regarding the cessation of freight services would be one for the Freight Operating Companies and Bristol Port Company, so decommissioning the operational railway is not considered relevant or foreseeable for assessing the DCO Scheme. Were any decommissioning of all or part of the operational railway to be proposed in the future, a separate project would be developed, which would be accompanied by a specific assessment of the implications for the SAC.
- 15.3.21 It is not anticipated that the associated development comprising highway works or car parks at Portishead would be altered as a result of the cessation of rail passenger services between Portishead and Bristol. Similarly it is anticipated the car parks at Pill would remain as car parks albeit for all of the car parks development proposals might come forward over time and would be assessed for their planning impacts and any environmental effects at such time as such schemes came forward for the local planning authority to consider. Changes to the UK's use of fuel for transport mean that the nature of emissions from vehicles undertaking any removal of items could only be a matter of speculation.

Assessment of Cumulative Effects

- 15.3.22 The assessment of cumulative effects will assess the impact of the DCO Scheme in combination with other projects. These will include other DCO projects within approximately 5 km and other development projects within approximately 0.5 km of the Portishead Branch Line, as discussed with the local planning authorities North Somerset Council and Bristol City Council.
- 15.3.23 In addition, the assessment of cumulative effects will also consider other works being undertaken by Network Rail under their permitted development rights. This includes other

works required for MetroWest Phase 1, namely, the Parson Street Junction, Parson Street Station, Liberty Lane Freight Depot, the Bedminster Down Relief Line, Avonmouth/Severn Beach signalling, and Bathampton Turnback. Further environmental assessments of these works will be undertaken by Network Rail under their own project management procedures.

Use of Significance Criteria

Agricultural Land and Farming

- 15.3.24 A nationally recognised set of standard assessment criteria for effects on agricultural land and farm and rural businesses does not exist. In order to assess the impacts of the DCO Scheme on agricultural resources, significance criteria have been adopted relating to the effects on agricultural land and soils, on farming and other farm-based enterprises.
- 15.3.25 A bespoke set of criteria has therefore been used for this assessment, which has been developed in the light of relevant national and local policies and guidance (Tables 15-5 and 15-6). These criteria address both magnitude of impact and sensitivity of the resource and have been derived from consideration of the characteristics of the impact and the receptor.

Table 15-5: Significance of effect on agricultural land

Effect	Criteria
Major	Loss of 20 ha or more of the best and most versatile agricultural land, meaning ALC Grades 1, 2, or 3a.
Moderate	Loss of 10-19 ha of best and most versatile agricultural land ALC Grades 1, 2 or 3a. Loss of 50 ha or more of lower quality agricultural and ALC grades 3b, 4 and 5.
Minor	Loss of 5-9 ha of best and most versatile agricultural land ALC Grades 1, 2 or 3a Loss of 10-49 ha of lower quality agricultural land, ALC Grades 3b, 4 and 5.
Negligible	Loss of less than 4 ha of best and most versatile agricultural land, ALC Grades 1, 2 or 3a Loss of less than 10 ha of lower quality agricultural land, ALC Grades 3b, 4 and 5.

Table 15-6. Significance of effect on local farm businesses

Effect	Criteria
Major Adverse	Renders a full-time farm business, including any diversification enterprises, unworkable in its current form, such that it could not continue unchanged; the business would have to change the activities undertaken on the remainder of the holding as well as seeking some form of alternative income. For farms let through short term farm business tenancies, serious loss of rental value (>20%).
Moderate Adverse	Changes the workability of a full-time farm business, including any diversification enterprises, but without preventing the business continuing largely as before; there would be reductions in farm income and changes in day-to-day management, such as longer journeys to access severed land parcels. For farms let through short term farm business tenancies, significant loss of rental value (10-20%)
Minor Adverse	Slight impact on the workability of a full-time farm business, including any diversification enterprises, but the business would continue largely as before. There would be a small decline (5-10%) in farm income.

	For farms let through short term farm business tenancies, small loss of rental value (5-10%).
Very minor adverse	Very slight impact on farm business that can often be easily compensated for by modifications to management system. For farms let through short term farm business tenancies, very small loss of rental value (<5%).
Neutral	Affects the farm but does not affect the farm business, including any diversification enterprises. For farms let through short term farm business tenancies, no loss of rental value.

15.3.26 A significant effect under the meaning of the EIA Regulations is assessed to be moderate or major adverse.

Community Facilities and Private Property

15.3.27 The value or sensitivity of community facilities, private property and development land is summarised in Table 15-7, based on professional judgement and having regard to the approach taken in other applications for linear infrastructure provision under the Planning Act 2008.

Table 15-7: Sensitivity criteria

Sensitivity	Description
High	<ul style="list-style-type: none"> Residential or commercial buildings. Buildings used by the community, e.g. schools, community halls. Community land that attracts users nationally, e.g. national parks. Religious sites and cemeteries.
Medium	<ul style="list-style-type: none"> Residential or commercial land, e.g. gardens. Other buildings, such as outbuildings and garages. Land used by the community on a regional scale, e.g. country parks, forests, and other attractions with a regional catchment.
Low	<ul style="list-style-type: none"> Derelict or unoccupied buildings. Locally used community land, e.g. local parks and playing fields.

Source: A14 Improvement Scheme

15.3.28 The categorisation of magnitude of impact is based on the criteria set out in Table 15-8.

Table 15-8: Magnitude of impact

Magnitude	Description
Major	<ul style="list-style-type: none"> Demolition of buildings. >50% loss of land and / or complete severance of access.
Moderate	<ul style="list-style-type: none"> Between 15% and 50% loss of land. Major severance of access resulting in long diversions. Temporary loss of access to a facility during construction.
Minor	<ul style="list-style-type: none"> <15% land loss. Partial severance of access resulting in short diversions.
Negligible	<ul style="list-style-type: none"> Very small change from the baseline conditions.

Table 15-8: Magnitude of impact

Magnitude	Description
No change	• No change from the baseline conditions.

Source: A14 Improvement Scheme

15.3.29 The significance of the effect of the impact on the resource or receptor is based on a combination of value and magnitude, as shown in Table 15-9.

Table 15-9. Significance of effects

Magnitude of Change / Impact	Value / Sensitivity of Receptor		
	High	Medium	Low
Major	Large / Very Large	Moderate / Large	Moderate
Moderate	Moderate / Large	Moderate	Slight
Minor	Moderate	Slight	Neutral
Negligible	Slight	Neutral	Neutral
No Change	Neutral	Neutral	Neutral

15.3.30 A significant effect under the meaning of the EIA Regulations is assessed to be moderate or major adverse.

Development Land

15.3.31 The DMRB does not contain guidance on the assessment criteria to be used in assessing the impact of the scheme on development land. The criteria presented in Table 5-10 was developed for the A14 Improvement Scheme by the Highways Agency, and has been adopted for the DCO Scheme.

Table 15-10: Criteria to assess the impact of the DCO Scheme on development land

Assessment Criteria	Viability	Amenity
Beneficial	The land would still be available for the proposed use and the development of the proposed scheme would improve the viability of the site for the proposed development, generally through improved access.	Impacts on the amenity of the site would not interfere with its proposed use or the impact on the amenity would be beneficial, in that the proposed scheme would improve the site's appropriateness for its proposed use.
Neutral	The land would still be available for the proposed use and there would be no discernible impact on the viability of the site for the proposed development.	There would be no impact on the amenity of the site that would interfere with its proposed use.
Adverse	Some or the entire site would no longer be available for the proposed use, therefore reducing the viability of the development.	There would be a reduction in amenity such as to interfere with the proposed use of the site.
Mixed	Potential impacts include some adverse and some beneficial factors.	Potential impacts include some adverse and some beneficial factors.

Source: A14 Improvement Scheme

15.4 Baseline, Future Conditions and Value of Resource

Land Use

- 15.4.1 The DCO Scheme passes through the urban areas of Portishead, Pill and south west Bristol, separated by areas of open countryside.
- 15.4.2 The proposed new Portishead station and car park are located in an area of mixed commercial and residential development, much of which has been built in recent years. This includes:
- a commercial area between Harbour Road, Wyndham Way and Serbert Way with several supermarkets, restaurants, an hotel, and a petrol fuel station;
 - an industrial area between Harbour Road and Phoenix Way;
 - an NHS Health Care and Pharmacy, St Peter's Hospice and Haven Lodge Care Centre on Harbour Road and Phoenix Way; and
 - several development plots, which are or will be developed for housing including Marina Gardens (for the over-60s) and Harbour Edge between Harbour Crescent, the Marina and Newfoundland Road, and the conversion of existing offices off Quay's Avenue to residential use. These developments are considered further in Chapter 18 In Combination and Cumulative Effects Assessment.
- 15.4.3 Between the proposed new station and the outskirts of Portishead, the railway corridor passes modern residential housing to the north (off Phoenix Way, Fennel Way and Tansy Lane) and south (in The Vale Park). The Trinity Primary School is located on the north side of the railway corridor.
- 15.4.4 The main rural land uses adjoining the railway corridor between Portishead and Pill are summarised below.
- Portishead to Sheepway: Pasture to the south of the railway line. To the north lies the Portbury Wharf Nature Reserve, where footpaths pass through ungrazed wet grassland.
 - Sheepway to Station Road: Agricultural land on either side of the line and a fishing lake to the north.
 - Station Road to Portbury Dock Road: Two fields of pasture to the south of the line and an area of scrub and woodland bordering the remainder and to the north residential housing at Elm Tree Park and Royal Portbury Dock separated by vegetation from the railway line.
 - Portbury Dock Road to the M5: Farmland south of the railway line and dockland to the north. The fields west of Court House Farm and south of the railway are being developed as part of the port expansion.
 - M5 to Pill: Farmland to the south of the railway line and scrub and wetland to the north.
- 15.4.5 Royal Portbury Dock lies to the north of the railway corridor, approximately between Sheepway and the M5. Much of the Dock comprises hard standing for the storage of imported goods, mostly cars but also coal stock yards, and areas of warehousing and offices.
- 15.4.6 The land uses through Pill are primarily residential housing, with properties or gardens adjoining the operational railway boundary. The original station in Pill still exists in a cutting and yards associated with the railway are located nearby off Monmouth Road.

These yards are currently in the ownership of two landowners and used for storing plant and equipment. Part of the railway lies underground in Pill Tunnel (also known as Ham Green Tunnel), with open space, including recreational land and housing overhead. A commercial area lies to the north of the tunnel alignment and Chapel Pill Lane.

- 15.4.7 From the eastern portal of Pill Tunnel, the railway corridor passes through rural countryside, to the outskirts of Bristol. The land uses include:
- Ham Green to Leigh Court: Agricultural land under pasture.
 - Leigh Court to Leigh Woods: Woodland on the western flank of the Avon gorge, with steeply wooded slopes, with the railway along the eastern fringe of the woodland at the foot of the cliffs, and the tow path and tidal Avon on the eastern side of the railway.
 - Bower Ashton: Open space including allotments and the Bedminster cricket ground.
- 15.4.8 The railway corridor passes under the A370 and alongside the A3029 and through a mix of industrial, commercial and residential land uses on the outskirts of Bristol. On the western side of the railway line are the Ashton Vale Industrial Estate, Cala Industrial Estate, Alderman Moors Allotments and housing between Ashton Gate and South Liberty Lane.
- 15.4.9 The Long Ashton Park and Ride (“P&R”) is located west of the industrial estates off the A370. The Ashton Vale to Temple Meads MetroBus (“AVTM MetroBus”) bus rapid transit leaves the P&R and loops around an area of undeveloped land, passing housing off Silbury Road, and continues along Colliter’s Brook, over the railway on an elevated structure, and then along the railway corridor towards Bristol city centre.
- 15.4.10 On the eastern side of the railway are a mix of supermarkets, offices, warehousing and housing. The Bristol City Football Club lies to the east of the A3029 and between Ashton Road to the north and Raynes Road to the south.
- 15.4.11 The Ashton Vale Industrial Estate, Cala Trading Estate, and Liberty Industrial Park are designated as Principal Industrial and Warehousing Areas (Policy BCS8 Delivering a Thriving Economy and DM13 Principle Industrial and Warehousing Use) in the Bristol Core Strategy June 2011 and Bristol Site Allocations and Development Management Policies, Adopted 2014.
- 15.4.12 The Alderman Moore’s Allotments are designated as Important Open Space and the northern part (Site Allocation BSA1001) has been designated for housing development.

Farm Structures

- 15.4.13 Three agricultural holdings are affected by the DCO Scheme (Figure 15-1 in the PEI Report Volume 3 Book of Figures) between Portishead and Sheepway.
- Holding 1 is Sheepway Gate Farm which is under grass and comprises 46 ha of owned land at Sheepway, supplemented by additional land rented in the neighbourhood. Two at-grade tracks cross the disused line from the farmyard. Additional access is gained from a gateway on Sheepway to the west of the railway bridge.
 - Holding 2 comprises three fields between the disused line and The Portbury Hundred and these are accessed from an at-grade crossing via a shared track from Sheepway. The fields are let by the owner on annual tenancies to local farmers. This holding is a proposed site for a construction compound.
 - Holding 3 is a grass field north of Sheepway that is let on a short term tenancy to Sheepway Gate Farm. It is accessed from a gateway on Sheepway. The southern part of this field is a proposed site for a construction compound.

- 15.4.14 Court House Farm is located off Marsh Lane and between the disused railway and the M4. Part of the land on both sides of Marsh Lane has been sold to the Bristol Port Company who has obtained planning permission to develop hardstanding for storing cargo. The site is now under construction. This is discussed below under Development Land.
- 15.4.15 There is a single field in private ownership lying between land off the east side of Marsh Lane, the south side of the disused railway and the north side of the M4. Access to this land holding is currently off the north side of Marsh Lane and national cycle network 26 and via an accommodation bridge under the disused railway. This field is also designated as a North Somerset Wildlife Site (see Figure 9-3 Sheet 2 in the PEI Report Volume 3 Book of Figures). The existing access to this field via Cattle Creep underbridge will be infilled as part of the DCO Scheme.
- 15.4.16 Lodway Farm owns several fields on the western side of Pill village and to the south of the disused railway and the M4 motorway. Much of the land is under pasture with a small apple orchard close to the railway. A proposed construction compound has been identified on land adjoining the railway and west of Pill.
- 15.4.17 Another farm holding on the north and south side of the railway between Pill Tunnel eastern portal and Pill Lakes is currently under pasture. This area has been identified for a temporary construction access and permanent compound.
- 15.4.18 Pill Lakes are stocked with fish for sport. In the past, drainage from Pill Tunnel has affected water quality in the fishing lakes. Network Rail has installed and recently upgraded the settlement and pollution control "Siltbuster" to reduce the discharge of fines to the lake from drainage water. This water quality issue is discussed separately in Chapter 17 Water Resources, Drainage and Flood Risk.
- 15.4.19 Chapel Pill Farm lies to the south of the railway and is accessed via Chapel Pill Lane which crosses the railway on a bridge. Temporary access will be required via Chapel Pill Farm and farm track for works to Miles Underbridge.

Soils and Agricultural Land Quality

- 15.4.20 The British Geological Survey's Geology of Britain Viewer shows the low ground to consist of marine alluvial deposits of clay and silt. The higher ground of Sheepway and between the M5 and Pill is composed of Mercia Mudstone overlain by drift deposits of loamy Head and terrace gravels.
- 15.4.21 The only soil map of the area is the 1:250,000 scale *Soil Map of South West England* published by the Soil Survey of England and Wales in 1983. This is accompanied by the Regional Bulletin, *Soils and their use in South West England*. The marine alluvium is shown as the Newchurch association of waterlogged calcareous clayey and silty soils. The higher ground has the Whimple 1 association of moderately well drained loamy over clayey soils. This soils information is overlain on the farm boundaries affected by the DCO Scheme in the vicinity of Sheepway in Figure 15-1 in the PEI Report Volume 3 Book of Figures. The soils of farmland potentially affected by the DCO Scheme between Marsh Lane and Pill Tunnel eastern portal are Whimple 1 association.
- 15.4.22 The provisional Agricultural Land Classification map (produced in the early 1970s) and available on Defra's MAGIC website shows the alluvial soils to be Grade 4 (poor quality agricultural land) and the higher ground to be Grade 2 (very good quality agricultural land).
- 15.4.23 However, this ALC grading should be reassessed according to MAFF's 1988 Revised Guidelines for Grading the Quality of Agricultural Land. At Sheepway four factors affect the grading. Wetness Class (on an ascending scale of I to V) is an expression of the

duration of waterlogging and Newchurch soils are in Class IV and Whimble soils are in Class II-III. Newchurch soils have silty clay topsoils and those of Whimble soils are medium clay loams. The significant climatic factor is the number of Field Capacity Days (“FCD”), when the soil is fully charged with water and so the soil moisture deficit is zero. At Portishead the average FCD is around 185. Taking these factors into account Newchurch soils are in Grade 4 (poor quality land) and Whimble soils are in Grade 3a (good quality land).

Utilities

- 15.4.24 There are a large number of utilities in the vicinity of the proposed location for Portishead station, including along Quays Avenue and Harbour Road and along the southern and northern sides of the railway corridor in eastern Portishead. There is a Wessex Water pumping station on the north side of the railway, accessed off Phoenix Way, and between Quays Avenue and Tansy Lane.
- 15.4.25 Buried utilities in Harbour Road, Phoenix Road and Quays Avenue include an 11 kv electricity cable, Bristol Water pipeline for drinking water supply, Wessex Water foul sewer, BT cables, GTC gas pipeline and a stormwater drain. All these services will need to be diverted along the revised highway layout and within the red line boundary. There are no environmental designations in this area. Reptiles and other wildlife inhabit the scrub on the proposed site for car park B. Human receptors comprise vehicle users, pedestrians, nearby residents and visitors to community health centre and shops.
- 15.4.26 The Wessex Water foul sewer along Quays Avenue connects into the existing Wessex Water pumping station off Phoenix Way and continues along the north side of the railway corridor.
- 15.4.27 There is a disused Ministry of Defence oil pipeline under the proposed site for car park B. The location will be confirmed through survey and trenching. Further consultation will be undertaken to establish whether there is a Purge Certificate for the pipeline and if not it will be treated as a live pipeline during construction with appropriate mitigation measures taken to avoid a pollution incident.
- 15.4.28 There are four Western Power high voltage electricity cables along south side of railway corridor into the centre of Portishead. The exact location and depth of these services will be confirmed through survey and trenching, and taken into consideration in the detailed design of the Trinity Primary School footbridge, acoustic fence, highway works and car park.
- 15.4.29 The proposed Trinity Primary School footbridge is located close to the high voltage electricity cables and a drainage ditch on the south side of the railway corridor and a Wessex Water foul sewer and 11 kv voltage electricity cable along the north side of the railway corridor. The drainage ditch is culverted across the high voltage cables and under the railway corridor and continues westwards along the north side of the railway corridor. At this location, residential areas lie to the north and the south of the railway corridor and the proposed footbridge will replace a permissive at grade crossing over the railway which is heavily used by adults and schoolchildren. The footbridge will connect with open space and footpaths on either side of the crossing used for informal recreation. The precise location of the utilities will be determined during detailed design and the bridge designed and constructed to minimise impacting these utilities and avoid health and safety issues for the workforce and the local community.
- 15.4.30 A major oil pipeline serving Royal Portbury Dock crosses the disused railway section south of Sheepway. There is an 8 m wide exclusion zone along the pipeline. Railway works in the

- vicinity of the oil pipeline may require consent under Section 16 of the Land Powers (Defence) Act 1958.
- 15.4.31 A wastewater pumping station operated by Wessex Water is located near to the disused railway on the south side of the railway corridor. There is an existing flood problem in this area, and in recent winters, Wessex Water has pumped the flood waters over the disused railway to the drainage ditch on the north side of the railway.
- 15.4.32 A high pressure gas main and water main cross the DCO Scheme through Cattle Creep Underbridge between Marsh Lane and the M5. As the bridge is not structurally sound, it is proposed to infill the underpass rather than replace the bridge. The wash-out valve on the water main will need to be relocated or protected in such a way that it is accessible. Alternative access will be provided to the field severed by the underpass. The field south of the underbridge is a local wildlife site designated for its marshy habitat. There is also a CLH oil pipeline beneath the proposed construction site under the M5 Avon bridge.
- 15.4.33 A high and low voltage cable, water main and foul sewer pass under Avon Road underbridge, with the railway passing overhead. The bridge has to be widened to accommodate the new track from Portishead. The works will be designed and constructed to minimise impacts on the utilities, as well as disruption to nearby residents.
- 15.4.34 Various services cross and lie close to the railway corridor through Pill and Ham Green. At the Pill station car park site, the utilities in Monmouth Road consist of a drinking water supply pipeline, a gas pipeline, and BT cable. There is also an above ground low voltage cable. The works to modify the yard into a car park should not affect the utilities in Monmouth Road. On Station Road fronting the proposed new forecourt and entrance to Pill Station there are a gas pipeline, low and high voltage electricity cables and a BT cable. The precise location and depth of the buried utilities need to be ascertained, as they may have to be lowered to accommodate changes in land levels to build the forecourt area. There are no environmental constraints in this area, but the works need to take account of pedestrians, cyclists, vehicle users and nearby residents.
- 15.4.35 There are few services close to the railway in the rural section between Pill and the outskirts of Bristol. Two foul sewers cross the railway south of Quarry Underbridge No. 2 and a telecommunications cable follows the railway alignment in the southern part of Leigh Wood and Rownham Hill. These locations lie within the Avon Gorge Woodlands SAC and Avon Woods SSSI, denoting their high value for nature conservation.
- 15.4.36 Between A369 Rownham Hill and the A370 Brunel Way various utilities cross and or follow the railway line, including telecommunications cables, water mains, rising main, foul sewer, and electricity cables. The environmental constraints in this area are the Bower Ashton Conservation Area whose eastern boundary extends to the railway boundary, a small number of listed buildings, and the non statutory wildlife sites on the playing fields and allotments on both sides of the railway between approximately Clifton Overbridge and Brunel Way.
- 15.4.37 There are numerous utilities in the Ashton Gate area on the outskirts of Bristol, along Winterstoke Road and Ashton Vale Road into the Industrial Estate. The underground services include 11 kv and 33 kv high voltage electricity cables, low voltage electric cables, street lighting electric cables, BT cables, low and medium pressure gas pipelines, foul water, storm water, and drinking water.
- 15.4.38 The modifications required to alter Winterstoke Road to provide adequate queuing while the Ashton Vale level crossing is closed will be designed taking account of the location and depth of the underground utilities. There are no environmental constraints in this area likely to be affected by the works. The main issues are to minimise disruption to other road users during the works.

15.4.39 A Wessex Water foul sewer, BT cable and drainage ditch are located on railway land in the location of the proposed pedestrian ramp from Ashton Vale Road to Ashton Road. There are also several mature trees and a stand of dead stems of the invasive weed Japanese knotweed which has been treated. The utilities may need to be diverted and vegetation cleared, including appropriate handling and disposal of the Japanese knotweed. A gas main along Ashton Vale Road may also need to be diverted, where the main environmental issue is to minimise impact on access to the industrial units and health and safety during works.

Community Assets

15.4.40 In the vicinity of the new station and railway in Portishead, the community assets within 250m of the DCO Scheme are:

- the NHS health care and pharmacy, St Peter's Hospice and Haven Lodge Care Centre off Harbour Road and Phoenix Way, Value: **High**.
- Trinity Primary School off Marjoram Way, Value: **High**
- Portbury Wharf Nature Reserve, which is open to the public and attracts local residents. Value: **Low**
- Open space, The Vale Park in the housing estate in the vicinity of Galingale Way. These outdoor areas are primarily used by local residents. This land was designated as Amenity (Policy ECH/1) and Existing Outdoor Playing Space (CF/4) in the Replacement Local Plan Adopted 2007, which are replaced by SA7 Local Green Space in the Sites Allocation Plan and DM68 Protection of Sporting, Cultural and Community Facilities in the Sites and Policies Plan Part 1 Development Management Policies. Value: **Low**.

15.4.41 "Jenny's Meadow" is a community wildlife site owned by Pill and Easton-in-Gordano Parish Council and managed by volunteers. It is located off Avon Road on the west side of Pill, and lies between the disused railway and the Severn Estuary Special Area of Conservation ("SAC"), Special Protection Area ("SPA"), Ramsar site and Site of Special Scientific Interest ("SSSI") (Figure 9-3 Sheet 2 in the PEI Report Volume 3 Book of Figures). Value: **Low**.

15.4.42 In Pill village, open space known as Victoria Park and Waterloo Wharf are designated as a village green lies along the valley floor leading to an inlet of the River Avon. The village green is crossed by the railway over Pill Viaduct. The areas are used by the local communities in Pill, Ham Green and Easton-in-Gordano. Value: **Low**.

15.4.43 Between Pill and Ham Green, open space includes a cricket ground. There is a road called The Green, but no village green is shown on North Somerset Council's interactive map. Much of the land from the River Avon south towards Ham Green and The Green and a triangular area of land between Macrae Road, The Green and Perrett Way is designated as Local Green Space in the Site Allocation Plan, March 2016, Adopted July 2016. This area is known locally as Watchouse Hill. It lies in Green Belt and the alignment of Pill tunnel passes under this open space. Value: **Low**.

15.4.44 Leigh Court, a Grade II* Palladian mansion, is currently a privately owned events venue, available for corporate and private hire. The house is accessed via the A369. The registered park and gardens cover some 128 ha and has previously been split up into several ownerships. The park and gardens are generally not open to the public. Value: **Medium**.

15.4.45 The Clifton Suspension Bridge, a Grade I listed structure, connects the Clifton Conservation Area on the east side of the Avon with the Leigh Woods Conservation Area on the west side of the Avon. The Clifton Suspension Bridge is owned and managed by a Trust. There is

a Visitors Centre in Leigh Woods open every day from 10.00am to 5.00pm and guided tours are offered at weekends and Bank Holidays between Easter and October. In addition to visiting the bridge, tourists may also visit Observatory Hill, the camera obscura and cave, and walk along the Avon tow path under the bridge on the western shore of the Avon and alongside the DCO Scheme, and along the eastern shore. The Clifton Suspension Bridge is the iconic landmark in Bristol attracting tourists from the rest of the country and overseas. Value: **High**.

- 15.4.46 The Avon and Somerset Police used to have offices and a depot between the A369 and the operating railway, just south of the access road onto the River Avon Tow Path. This site has been sold and the current owners sought planning permission for a caravan site which did not obtain planning permission. This is discussed further in Development Land below.
- 15.4.47 Bedminster cricket club and grounds are located between the A369 and the operational railway. The grounds are regularly used for fixtures after 5.00pm during the week and at the weekend, see <http://bedminstercc.co.uk/calender/>. Value: **Medium**.
- 15.4.48 The Ashton Court Estate comprises a Grade I mansion set in 830 ha of parkland south west of Bristol. The estate is located in North Somerset but is owned and managed by Bristol City Council. The estate is open to the public all year around. Access is mostly free, but charges are made for specific attractions and car parking. There are various attractions, including cafes, a woodland garden, natural play areas, deer parks, and a golf course, and the Estate holds numerous events around the year. The Estate is an important visitor attraction in Bristol and for the region. Value: **High**.
- 15.4.49 There are a number of allotment gardens adjoining the operating railway in the vicinity of Bower Ashton, between Brunel Way and the A369, the Alderman Moore's Allotments on the west side of the railway in Ashton Gate, and the Bedminster Down Allotments to the south of the south-west main line at Parson Street Junction. Allotments are highly valued by local people for growing their own vegetables, fruit and flowers and for relaxation, providing a local community facility. Value: **Medium**.

Development Land

- 15.4.50 Land at Court House Farm is safeguarded for Port use under Policy CS24 in North Somerset Council's Core Strategy Adopted January 2017. The Bristol Port Company purchased land at Court House Farm and was granted planning permission by North Somerset Council on 21 December 2016 to develop the site for port uses. The works include creating a new temporary storage area for imported cargo in the fields lying between the disused railway, Court House Farm and the M4, and building a new access road off Marsh Lane and over the disused railway into the site. Construction at this site has started.
- 15.4.51 Planning permission for the change of use from the former Avon and Somerset Police Dog and Horse Training Centre off Clanage Road in Bristol to a touring caravan site was refused in November 2016. The reasons given were: (a) inappropriate development in the green belt, (b) failure to preserve or enhance heritage assets namely Bower Ashton Conversation Area and the Ashton Court Estate, (c) failure to demonstrate that the proposed development would be safe from flooding or not adversely increase flood risk elsewhere, and (d) restricted visibility for the access off Clanage Road.
- 15.4.52 The Alderman Moore's Allotments are designated as Important Open Space. The northern part of the Allotments has been designated for development in the Bristol Site Allocations and Development Management Policies, Adopted 2014. This Site Allocation (BSA1001) comprises 4.1 ha of land to the east of the railway line and south of Longmoor Brook on part of the former Alderman Moore's Allotments for an estimated 137 homes. The

developers have to allow for the safeguarded route for the Ashton Vale to Temple Meads MetroBus route and address noise and pollution from nearby industrial estates.

15.5 Measures Adopted as Part of the DCO Scheme

- 15.5.1 A number of measures have been included as part of the project design in order to minimise certain environmental effects. This includes:
- careful designing of the project to ensure key receptors are avoided where possible;
 - construction adopting best practices techniques, which will be set out in the Code of Construction Practice (“CoCP”) - this document is still being finalised and will be submitted with the DCO application; and.
 - compliance with regulatory and legislative regimes as required by law.
- 15.5.2 The final ES will fully set out and detail those embedded mitigation measures within the description of the proposed development and each of the topic chapters.

15.6 Assessment of Effects

Construction Phase

Land-take and Demolition of Private Property (excluding farmland)

- 15.6.1 One private property on Station Road comprising one residential unit and two commercial units will be demolished to make way for a new station forecourt and entrance. The property is not listed. Given that residential property is designated a high value and demolition of property is a major magnitude impact, the significance of effect of the DCO Scheme on this receptor would be large to very large. However, NSDC has purchased the property, so the impact of the DCO Scheme on the demolition of this property is considered to be a **neutral** significance of effect.
- 15.6.2 Depending on the methodology chosen to reconstruct Avon Road Bridge, it may be necessary to demolish a small section of garden wall at a property on Marine Parade and a row of 12 garages in Pill to provide sufficient space to facilitate access of a crane to Avon Road Bridge for the construction works. The garden wall would be rebuilt. The garden wall is assumed to have a low value and the demolition of part of it would be a low adverse impact, so the impact of the DCO Scheme on the demolition of the wall is considered to be a **neutral** significance of effect. The loss of the use of the garages by local residents for part of the construction period would be a temporary nuisance for the occupiers, who would have to make alternative arrangements. If the construction methodology leads to these impacts then, in the absence of any alternative arrangements, the value of these garages is assumed to be medium and the magnitude of the effect is considered to be up to moderate adverse, resulting in up to a **moderate adverse** significance of the effect for the owner and up to 12 households. This could be a significant effect with respect to the EIA Regulations.
- 15.6.3 In order to access the embankment on the west and south side of Avon Road Bridge from Lodway construction compound, it will be necessary to create a temporary access through the rear of several gardens off Lodway Close. This would result in the loss of planting and any structures along the proposed route. Assuming that private gardens are high value and the temporary use as a haulage route would be a temporary major adverse impact, the significance of the effect is assessed to be **large adverse**. This would be a temporary significant effect with regards to the EIA Regulations. NSDC is consulting with the affected householders and the final assessment to be set out in the ES will record any agreement

- reached and the significance of the effect of the temporary use of private gardens for construction access.
- 15.6.4 The works to widen and strengthen the railway embankment on the east and south side of Pill Viaduct will involve the use of heavy equipment in close proximity to the rear of gardens off Mount Pleasant. For health and safety reasons, it is proposed to impose a short term temporary restriction on access to the rear of the gardens by householders as a precautionary measure, in case some equipment rolls down the embankment into one or more of the gardens. Given a high value for private property and a negligible impact on affected householders (assuming there are no incidents), the significance of the effect is assumed to be **slight adverse**.
- 15.6.5 Permanent land-take of the yards off Monmouth Road will be required to construct the station car park in Pill. These yards were originally created for the railway and were subsequently sold into private ownership. The value of these sites is taken to be low and the magnitude of impact resulting from 100% loss of land if no compensation was provided would be major, resulting in a moderate significance of effect. The ES will report on the assessment of the final description of the proposed development and on negotiations with landowners.

Loss of Land Used by the Community

- 15.6.6 Land-take may be required from land that is being used by the local communities at the following locations.
- 15.6.7 Permanent and temporary land-take will be required on the north and south side of Trinity Primary School footbridge to construct the access ramps and connecting footpaths, and protect the pond on the south side of the railway from construction activities. Residents and pedestrians may use this space for walking through the residential area or informal recreation. These footpaths were safeguarded for strategic and structural open space under North Somerset Council's Replacement Local Plan 2008 Policy CF/4. On the south side temporary and permanent land-take will include land previously designated for Amenity (Policy ECH/1) and Existing Outdoor Playing Space (CF/4) in the Council's Replacement Local Plan 2008. The Replacement Local Plan has been superseded, with Policy ECH/1 replaced with the emerging Policy SA7 on Local Green Space and Policy CF/4 superseded by DM68 on the protection of sporting, cultural and community facilities. While the sites identified above may not formally be part of the development plan, emerging policies and proposals may be relevant in consideration of development proposals. As a local resource, this land is given a low value and the temporary and permanent land-take is very small with a negligible magnitude of impact, resulting in a **neutral** significance of effect.
- 15.6.8 Temporary and permanent land-take is being considered for a construction and maintenance compound off Clanage Road (A369) in Bristol. The existing land use is sports and recreational, with occasional car boot sales and Teddies Bristol Day Nursery and Day School located in part of the grounds. The land is designated as green belt in the Bristol Site Allocations and Development Management Policies, 2014. The temporary land-take will comprise about a third of the site and permanent land-take about a quarter of the site. A moderate impact on a low value site is assessed to have a **slight adverse** significance of effect.
- 15.6.9 Bristol City Council has designated the railway corridor as Important Open Space (Policies BCS9 and DM17) in the Site Allocations and Development Management Policies, Policies Map adopted 2014. This designation relates to the value of this land as a wildlife corridor and public access is prohibited from the railway corridor for safety reasons. The impact of

the DCO Scheme on flora and fauna along the railway corridor is considered in Chapter 9 Ecology and Biodiversity.

Effects on Development Land

- 15.6.10 The DCO Scheme does not require temporary or permanent land-take from development land identified in the NSDC and BCC local plans.

Agricultural Land and Farm Units

- 15.6.11 Construction work will largely be within the boundary of the railway. Any disturbance to agricultural land will be of small extent and temporary in nature.
- 15.6.12 Although Livestock may be at risk of straying onto the railway line in the absence of livestock fencing, this would be installed where required to stop livestock entering the construction site without affecting the farm holding. The significance of effect on the farm holdings is assessed to be **neutral**. Further assessment of this topic is scoped out of the ES.
- 15.6.13 Three at-grade farm crossings between Sheepway and The Portbury Hundred will be closed permanently when construction work begins. At Sheepway, livestock will have to be moved from one side of the farm to the other via the highway Sheepway and the bridge over the railway and not by the two informal at grade crossings over the railway. The existing gate to the field on the south and east side of Sheepway will be widened to facilitate vehicular access so that livestock can be moved by trailer if needed. The significance of effect is assessed to be **neutral**. It will be necessary to provide access off the Portbury Hundred into the proposed construction compound, currently comprising farmland. The landowner will benefit from retaining this new access once the site is handed back to the landowner. The significance of effect is assessed to be **neutral**.
- 15.6.14 There may be some indirect impact on the land and crops due to dust deposition during construction. Dust deposition can reduce photosynthesis and coat crops in a fine film, which may cause a nuisance for crops that do not need to be cooked before eating, such as fruit and salad crops. A requirement for dust control procedures (such as spraying bare ground with water) will be implemented. A preliminary assessment of construction dust will be undertaken once the GRIP 3 design and construction strategy have been completed and will be presented in the ES. The proposed approach to the control of dust will be included in the CoCP, which the contractors will be required to implement. With mitigation, the significance of effect is assessed to be **neutral**.
- 15.6.15 Construction noise may disturb livestock and farm workers. Along the disused section of the railway, construction activities will generally be undertaken during the daytime, although there may be construction activities at night along the railway alignment and at the construction compounds. Liaison with the farmers will enable them to move livestock to quieter parts of the farm where possible. It may be necessary for occasional night-time work, for example in the demolition and construction of Avon Road Bridge in Pill. Procedures for the control of construction noise will be provided in the CoCP.
- 15.6.16 Several possible sites for construction compounds have been identified. These will be for temporary storage of plant and materials, stockpiling of materials and waste, tracking materials and waste to and from the construction railway corridor, and other activities. The main construction compounds will be active during weekdays, and possibly at night and at weekends to support specific construction activities. Further details about the likely use of construction compounds are being developed as part of the construction strategy. The CoCP will include requirements for the management of construction compounds to minimise adverse impacts on neighbours, such as site noise, night-time lighting, and traffic

movements to and from the compound. The ES will detail the proposed measures and assess the impacts of the temporary use of agricultural land for construction compounds.

- 15.6.17 Risks to farmland from the construction compounds are soil compaction, accidental spillages of hydrocarbons, pollution from contaminated ballast on agricultural land quality and dust deposition due to the handling of aggregate and waste ballast. These risks can be reduced by good industry practice. Any residual contamination or compaction will be rectified and the land returned to farming in a condition no worse than when it was acquired. Thus, there should be no residual adverse effects on surrounding farmland at the end of the construction phase.

Utilities

- 15.6.18 During construction, utilities will be diverted where required or left *in situ*. With good construction practices in place, there should be no risk to the workforce, local communities or the environment. On that basis the significance of effect of the DCO Scheme on utilities is **neutral**.

Operation Phase

Development Land

- 15.6.19 In Portishead, a number of areas of development land have been identified around the station area. The proposed location for the Portishead station and railway have been safeguarded in the local plan for some years and developments within this time are expected to have included appropriate noise insulation and landscaping.
- 15.6.20 The improved public access to Bristol afforded by the DCO Scheme will improve journey times to Bristol, a major employment and service centre in the region. The train journey time of about 23 minutes compares favourably with the travel time by car of between about 30 minutes off peak and an hour during peak travel times. This will increase the attractiveness of the new areas of residential development being developed in the vicinity of the marina and close to the proposed station.
- 15.6.21 Overall, the impact of the DCO Scheme on the viability and amenity of development land in Portishead is considered to be **beneficial**.
- 15.6.22 In Bristol, the DCO Scheme will not require land-take from Site Allocation BSE1001 on part of the former Alderman Moore's Allotments. The Site Allocation already includes the safeguarded route for the Ashton Vale to Temple Meads MetroBus ("AVTM MetroBus"), which is already under construction, and has provision for a future bus stop to improve public transit and accessibility to the centre of Bristol. The DCO Scheme would not change transport or accessibility for future residents at this site, as there is no nearby station. The Site Allocations Information requires developers to address noise from nearby industrial uses. It is expected that this requirement would encompass sufficient noise mitigation to address noise from the AVTM MetroBus and the railway. Overall, it is considered that the DCO Scheme would have a **neutral** effect on the viability and amenity of development land at Alderman Moores.

Agricultural Land and Farm Units

- 15.6.23 It is hoped that the impacts of severance will be mitigated during the construction phase in such a way as to mitigate the effects during both construction and operational stages of the DCO Scheme. Accordingly, the assumption for the PEI Report is that no assessment of the operational effects on agriculture, soils and livestock is needed. Unless this is not the position, it is proposed to scope operational impacts out of the ES.

Decommissioning Phase

- 15.6.24 For the reasons set out at 15.3.15 – 15.3.20 it is not possible to identify realistic options for decommissioning for assessment and no basis on which to consider that there would be reasonably foreseeable significant environmental impacts on soils, agriculture, land use and assets resulting from decommissioning.

15.7 Mitigation and Residual Effects

- 15.7.1 The assessment has identified several adverse effects of the DCO Scheme that, subject to further design work, may be significant for the purposes of the EIA Regulations in the absence of mitigation.
- 15.7.2 NSDC is currently in discussions with landowners and householders regarding temporary and permanent land acquisition. The ES will report on the proposals and reach a conclusion on the significance of effects.
- 15.7.3 Mitigation for construction works on agricultural land is under development and will follow Defra's Code of practice for the sustainable use of soils on construction sites (Defra, 2009).
- 15.7.4 At present, it is not certain whether the garages in Pill need to be demolished, as it will depend on the proposed construction methodology and availability of construction machinery to demolition and rebuild Avon Road Underbridge. If it is necessary to demolish these garages consideration will be given to opportunities for mitigation.
- 15.7.5 Other mitigation measures will be considered as appropriate where adverse (but not significant effects with regards to the EIA Regulations) are identified. The project team is currently finalising the design of the project and appropriate measures will be described and documented in the ES. The ES will also report further on discussions with key stakeholders prior to submission of the DCO application.

15.8 Cumulative Effects

Other Projects along the Portishead Branch Line

- 15.8.1 The cumulative effects associated with other committed development along the disused section of the railway between Portishead and Pill has been assessed based on a review of planning applications on the NSDC planning portal and their likely in combination effects with the DCO Scheme.
- 15.8.2 During 2016, the Royal Portbury Dock submitted a planning application to the North Somerset District Council to build a facility for the temporary storage of cargo (vehicles) and a new access off Marsh Lane and over the disused railway to access the site. Planning permission was granted in December 2016. Land at Court House Farm has been designated in the North Somerset Council Local Plan for the expansion of Royal Portbury Dock for some years, so the proposed development complies with development proposals for this site. The Agricultural Land Classification for this area is Grade 3 or Grade 4 according to the Defra MAGIC site. The development will result in the loss of some 8.8 ha of grass which is cut for hay. The loss of 8.8 ha of lower quality agricultural land on its own would be a slight adverse effect on the agricultural resource base. The in-combination effect of the permanent loss of a further poor grade agricultural land for the DCO Scheme would still be considered to be a **slight adverse** significance of effect.
- 15.8.3 There is potential for cumulative impacts, should the construction of residential property at Site Allocation BSA1001 at Alderman Moore's allotments co-incide with the construction of the DCO Scheme. The cumulative impacts would likely include

construction noise; construction dust; and construction traffic on the local road network for the delivering of materials, disposal of wastes, and construction workers. As the construction footprint along the railway would be relatively small compared with the works on the Development Land, and the duration of works for the DCO Scheme in this location would similarly be short compared to the Development Land, the cumulative effect due to the DCO Scheme is considered to be **slight adverse**.

Other Works for MetroWest Phase 1

- 15.8.4 Other elements of MetroWest Phase 1, namely the modifications to Parson Street Junction (including the Liberty Sidings), Parson Street Station, Liberty Lane Freight Depot, Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling and Bathampton Turnback comprise small scale works, confined within the existing railway land. These works are to be undertaken by Network Rail under their permitted development rights and do not form part of the DCO Application.
- 15.8.5 Network Rail is undertaking an environmental appraisal, environmental risk register and environmental action plan of the works required for these Schemes as part of the reporting for Network Rail's Governance for Railway Investment Projects ("GRIP") process. This process will identify the potential impacts and capture the need for mitigation during design and construction. The results will be carried forward from the present GRIP 3 / 4 phase, into the detailed design phase (GRIP 4 and 5) and construction (GRIP 6).
- 15.8.6 Parson Street Junction (MetroWest Phase 1). Part of the existing junction (switches and crossovers) needs to be renewed which entails replacement of the track across the junction, replacement of signalling equipment and associated works. These works are within Network Rail's operational boundary and will be implemented using their General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.
- 15.8.7 Liberty Lane Freight Depot (MetroWest Phase 1). A buffer stop and trap points are required at the Liberty Lane depot entrance, within the sidings to enable the continuation of the existing freight train shunting movements from the depot across Parson Street Junction onto the Up Relief Line. These works are within Network Rail's operational boundary and will be implemented using their General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.
- 15.8.8 The south west main line is a heavily trafficked strategic railway, which poses constraints on the construction programme. Consequently the works for Parson Street Junction and Liberty Lane Freight Depot will need to be planned carefully by Network Rail to minimise disruption to services on the main line. The cumulative effect of the DCO Scheme with the works at Parson Street Junction and Liberty Lane Sidings is considered to be **neutral** and not significant.
- 15.8.9 At Parson Street Station minor platform works are required to use platform 3, including adjustment to the platform copers, works to improve track drainage and associated works. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating. The cumulative effect of the DCO Scheme with the works at Parson Street Station is considered to be **neutral** and not significant.
- 15.8.10 Bedminster Down Relief Line (MetroWest Phase 1). The Down Carriage Line running from Bristol Temple Meads will be extended past Bedminster station to a new turnout on to the Down Main between Bedminster Station and Parson Street Station. The new turnout is

- required to enable freight trains returning to Royal Portbury Dock to be held in the southbound direction, allowing passenger trains to pass. The works will include the construction of a new crossover (turnout), renewal of approximately 1 km of track on the Down Carriage Line and associated signalling. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.
- 15.8.11 The Bedminster Down Relief Line is located within an urban area close to Parson Street Junction. The works will not impact on agricultural land and soils, given the urban location. The railway line is identified as Important Open Space on the Bristol City Council Proposals Map, as it acts as a potential wildlife corridor and is protected by Policies BCS9 on Green Infrastructure and DM17 on Development Involving Existing Green Infrastructure in the Bristol Core Strategy, June 2011. The works for the Bedminster scheme will result in the temporary loss of this wildlife corridor, but once the works are completed, it will revert to providing habitat connectivity for wildlife. The land use around Bedminster station is designated as Principle Industrial and Warehousing Use (Policies BCS8 and DM13). There is also a small 0.2ha area of development land (BSA1008) for the construction of nine residential units is located to the north of Bedminster railway station. The works for the Bedminster Down Relief Line will not affect the adjoining land uses, the land use designations or the viability and amenity value of the development land. The cumulative effect of the DCO Scheme with the Bedminster Down Relief Line is considered to be **neutral** and not significant.
- 15.8.12 Severn Beach Signalling (MetroWest Phase 1). Minor signalling works are required to enable a longer layover period for passenger trains at Avonmouth station and Severn Beach station. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works are not required for the operation of the Portishead Branch Line DCO Scheme.
- 15.8.13 The Severn Beach Line passes through or alongside urban and industrial land over its entire length. Between the railway and the Severn and Avon land use is mainly estuarine marsh, woodland and scrub, but with a small amount of grazing for cattle and horses. The grazed areas are reached through underpasses and so access will be unaffected by the DCO Scheme. These works will not affect adjoining agricultural land. The works for the Severn Beach Line will be located at least 2 km from the nearest point on the DCO Scheme in the vicinity of Pill. The signalling modifications near Avonmouth are unlikely to result in significant adverse effects and it is considered that the cumulative effect with the DCO Scheme will be **neutral** and not significant.
- 15.8.14 Bathampton Turnback (MetroWest Phase 1). The Bathampton Turnback will comprise a new crossover between the existing Up line to London and the Down line to Bristol. A short walkway (unsurfaced path) will be provided on the existing Up loop for train drivers to walk from one end of a train to the other end. After stopping at Bath, the local train from Bristol would continue into the Up loop at Bathampton from the Up line. The driver would then descend onto the walkway, walk to the other end of the train and mount the train, before moving forward and exiting the loop via a new signal and through the crossover to the Down line back to Bristol. All the works will be confined to Network Rail's existing land holding and will be undertaken by Network Rail under its General Permitted Development rights. These works are not required for the operation of the Portishead Branch Line DCO Scheme.
- 15.8.15 The Bathampton Turnback is located over 20 km from the DCO Scheme. The works at Bathampton will not directly impact on adjoining agricultural land, open space and community facilities, including use of the canal and nearby footpaths. The cumulative

effect of construction and operation of the DCO Scheme with Bathampton Turnback on agricultural land, soils, the use of community facilities or development land is considered to be **neutral** and not significant.

15.9 Limitations Encountered in Compiling the PEI Report

- 15.9.1 Landowners were willing to participate in consultation and there is adequate published information available on soils and land quality and planning policy. Thus, no limitations were encountered in compiling this PEI Report.
- 15.9.2 A number of mitigation measures are still being considered as part of the iterative environmental impact assessment. As the PEI Report only demonstrates those environmental effects at a certain point in time pre-application, these will be further refined as the ES to be submitted with the DCO application is finalised.

15.10 Summary

- 15.10.1 A summary of the potential impacts of the DCO Scheme, the proposed mitigation and the residual effects on soils, agriculture, land use, and community assets is presented in Table 15-11 below.

Table 15-11: Impacts, mitigation and residual impacts of the DCO Scheme on soils, agriculture, land use and assets

Aspect	Impact	Receptors	Mitigation	Residual Impact
Construction activities				
Land-take and Demolition from Private Property				
Construction of a new access to Pill station	Demolition of property	No, 7 Station Road, Pill	The property has been purchased by NSDC.	Magnitude: N/A Significance of Effect: Neutral Significance for EIA legislation: No
Possible need to bring a large crane through Pill to site of Avon Road underbridge	Demolition of property	One property Value: Low	Replacement of garden wall	Magnitude: Low adverse Significance of Effect: Neutral Significance for EIA legislation: No
	Demolition of property	12 garages in Pill Value: Medium	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Access to Avon Road embankment from Lodway Farm Construction Compound	Temporary reuse of part of rear garden and associated damages	Property off Lodway Close Value: High	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Strengthening of embankment east and south of Pill Viaduct	Short term, temporary restrictions on access to gardens by householders	Property off Mount Pleasant Value: High	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Permanent land-take for maintenance compounds	Permanent change in use	Yards off Monmouth Road Value: Medium	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Loss of Land Used by the Community				

Table 15-11: Impacts, mitigation and residual impacts of the DCO Scheme on soils, agriculture, land use and assets

Aspect	Impact	Receptors	Mitigation	Residual Impact
Temporary and permanent land-take to Trinity Primary School Footbridge	Change in land use	Amenity grassland and shrubs Value: Low	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
<i>Agricultural Land and Farm Units</i>				
Temporary use of adjoining land for access, compounds, plant and equipment, etc.	Disturbance to agricultural land	Soil and grassland Value: High	Mitigation under development based on Defra guidance.	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Closure of farm crossings	Severance of farm activities	Severed fields / livestock / livelihood Value: High	Improved access to farmer's field off Sheepway and farmer's field off The Portbury Hundred.	Magnitude: Low. Significance of Effect: Neutral Significance for EIA legislation: No
Fencing off the construction site	Risk of livestock straying onto line	Farm livestock Value: High	Mitigation under development for construction phase. Permanent security fencing.	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Dust and Noise	Dust deposition on crops Disturbance to livestock	Crops Farm livestock Value: High	Mitigation under development	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
<i>Utilities</i>				
Accidental risks to assets on adjoining land	Damage to the asset and result loss of power, telecoms, or oil spillage	Utility infrastructure including the oil pipeline Value: High	Mitigation under development.	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined

Table 15-11: Impacts, mitigation and residual impacts of the DCO Scheme on soils, agriculture, land use and assets

Aspect	Impact	Receptors	Mitigation	Residual Impact
Permanent land-take for the Pill Tunnel emergency access	Change in land use	Land required for access and adjoining neighbours Value: High	Mitigation under development.	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Operation activities				
Permanent closure of at grade crossings for operations and H&S	Closure of farm crossings	Severed fields Value: High	No replacement of farm crossings across the railway. Mitigation under development.	Magnitude: To be determined Significance of Effect: To be determined Significance for EIA legislation: To be determined
Pollution of drainage from the tunnels	Quality of receiving waters	Receiving waters including fishing ponds by Pill Value: High	Network Rail has installed three siltbusters in advance of the scheme on outfall to Ham Green lakes. No further pollution control planned for this outfall.	Magnitude: Low Significance of Effect: Neutral Significance for EIA legislation: No
Train service	Risk of livestock straying onto line	Farm livestock Value: High	Permanent security fencing along the railway.	Magnitude: Low Significance of Effect: Neutral Significant for EIA legislation: No
Cumulative Effects				
Development of land at Court House Farm	Loss of Grade 3 or 4 agricultural land	Agricultural land	No mitigation proposed.	Magnitude: Low Significance of Effect: Slight adverse Significant for EIA legislation: No

15.11 References

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15.12 Abbreviations

ALC	Agricultural land classification
CoCP	Code of Construction Practice
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
FCD	Field Capacity Days
GRIP	Governance for Railway Investment Projects
H&S	Health and safety
NPPF	National Planning Policy Framework
NPSNN	National Policy Statement for National Networks
NSDC	North Somerset District Council
NSIP	Nationally significant infrastructure projects
P&R	Park and ride
PEI Report	Preliminary Environmental Information Report
POD	Portishead branch line

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