



MetroWest+

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

6.18, Environmental Statement, Volume 2, Chapter 15 Soils, Agriculture, Land Use and Assets

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)

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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 Environmental Statement ("ES");
- 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 and operation 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 ES; and
- provides a summary of the residual effects for the mitigated DCO Scheme.

15.1.2 This chapter considers the impacts of the construction and operation of the DCO Scheme on: land use; farm structures, soils and agricultural land quality; community assets; development land; green belt and utilities.

Land Use along the Route

15.1.3 In Portishead, the existing railway corridor lies between areas of recently developed commercial and residential properties. The railway then passes through agricultural and ecological amenity land, and in this area some historic accommodation and occupation crossings will be extinguished. Some land will be taken permanently for maintenance compound use and additional land used temporarily for construction purposes.

15.1.4 The railway then passes south of the extensive hard standing forming part of the Royal Portbury Dock. In this area some historic accommodation and occupation crossings will be extinguished. Some land will be used temporarily for construction purposes.

15.1.5 After passing under the M5 the railway passes through the residential area of Pill Village. Areas of amenity land are at Jenny's Meadow, Victoria Park

- (beneath Pill Viaduct) and Watchhouse Hill, before Pill Tunnel is reached. Permanent or temporary new rights will be taken over the amenity areas but there will be no permanent acquisition of land in those areas.
- 15.1.6 On the Eastern side of Pill Tunnel the railway is bounded by agricultural land, used mainly for grazing, before the Avon Gorge Woodlands Special Area of Conservation is reached. A new permanent compound will be established to the south west of Ham Green Lakes, on what is currently pasture land.
- 15.1.7 The railway runs mainly on embankment through the extensive woodlands, parallel to and in close proximity to the River Avon.
- 15.1.8 After passing under the Clifton Suspension Bridge the railway heads south with a public open space at Rownham Ferry on the east side of the railway and a private amenity area, used for private sports events, car boot sales and car parking on the west. A permanent compound is proposed on part of this private amenity area.
- 15.1.9 The railway then passes under the A379 Brunel Way before running parallel to Winterstoke Road, with the Ashton Vale Road Industrial Estate and the Alderman Moore's Allotments development site to the west, before finally passing through the residential area of Ashton and reaching Parson Street Junction.
- 15.1.10 Drainage will largely remain as currently provided, with new drainage provided for the highway and car park works at Portishead. Drainage from Pill Station will be transferred in to the existing highway drainage network. Drainage from Pill Tunnel will continue to discharge to the fishing lakes at Pill.

Farms, Soils and Agricultural Land Quality

- 15.1.11 The construction and reopening of the DCO Scheme will affect several agricultural holdings due to temporary possession for construction compounds and haulage roads, and permanent acquisition for access and maintenance compounds, the loss of informal crossings, the effects of construction activities such as dust, noise, and lighting, and operational noise.

Community Land

- 15.1.12 Land taken permanently out of open space will be used for new public rights of way while land used temporarily will revert to its former use and condition. Community assets adjoining the scheme may be affected by disturbance during construction and operation.

Development Land

- 15.1.13 Development land and material planning applications along the DCO Scheme are located in Portishead, in the vicinity of the Royal Portbury Dock and Pill, and in Bristol. There has been substantial development of Portishead in the vicinity of the proposed Portishead station and most recently development proposals have been put forward for Old Mill Road. The Bristol Port Company has recently extended its hard standing area by developing south of the Railway at Court House Farm, Marsh Lane, Easton-in-Gordano.

- 15.1.14 A request for a Scoping Opinion on the need for an environmental impact assessment for a mixed development in Easton-in-Gordano to include up to 1000 dwellings was submitted to North Somerset District Council ("NSDC"). The Council responded in late 2018 that an Environmental Impact Assessment ("EIA") would be required. This land is not identified for development in the NSDC local plan and is in the Green Belt.
- 15.1.15 Recent planning applications in Bristol include a planning application for the construction for 133 houses on the former Alderman Moore's allotments which was approved and is now under construction.

Green Belt

- 15.1.16 Much of the countryside between Portishead, Pill and Bristol lies in the Green Belt, within which there are restrictions on inappropriate development.

Utilities

- 15.1.17 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.
- 15.1.18 This chapter should be read in conjunction with Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7), Chapter 6 Planning Framework (DCO Document Reference 6.9), Chapter 11 Landscape and Visual Impacts Assessment (DCO Document Reference 6.14) and Chapter 18 In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21).

15.2 Legislation and Policy Framework

National Policy

National Policy Statement for National Networks

- 15.2.1 The Planning Act 2008, section 104(3) requires the Secretary of State to determine the application for the DCO Scheme in accordance with the National Policy Statement for National Networks ("NPSNN"), unless specified factors provide otherwise. The NPSNN advises on soils, agriculture, land use and assets in the context of Nationally Significant Infrastructure Projects ("NSIP") on road and rail networks. Table 15.1 identifies NPSNN advice to applicants on the undertaking of assessments of the soils, agriculture, land use and assets aspects of a NSIP and explains how this advice has been applied in this Chapter of the ES.

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 ES
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.	A description of existing open space, sports and recreational buildings and land within 250 m of the DCO Scheme is provided in Section 15.4 and an assessment of impacts is provided in Section 15.6.
Paragraph 5.167 advises consultation with the Local Planning Authority ("LPA") on potential impacts on land use.	A review of consultations is provided in Table 15.4.
Paragraph 5.168 advises that applicants should take into account the economic and other benefits of the best and most versatile agricultural land (Agricultural Land Classification ("ALC") grades 1, 2 and 3a), should use poorer quality land, minimise impacts on soil, and use previously developed (brownfield sites) where possible.	A discussion of the impact on agricultural land is presented in Section 15.6.
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 (DCO Document Reference 6.13).
Paragraph 5.170 states that there is a general presumption against inappropriate development in the Green Belt, and such development should not be approved except in very special circumstances.	A description of the location of Green Belt in relation to the DCO Scheme is provided in Section 15.4 baseline and an assessment of compliance with Green Belt policy is provided in Section 15.6.
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 Table 15.2 Policy DM22 and Figure 6.1 in the Book of Figures, DCO Document Reference 6.24). A description of the location of Green Belt in relation to the DCO Scheme is provided in Section 15.4 baseline.

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 ES
	A discussion of the impact of the DCO Scheme in the Green Belt is provided in Section 15.6. The Green Belt is shown on Figure 6.1 in the ES Volume 3 Book of Figures (DCO Document Reference 6.24).
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 ALC grades in the study area are discussed in Section 15.4 baseline and the impacts on agricultural land are discussed in Section 15.6.
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, including the layout of the project and the protection of soils during construction.	Measures to protect agricultural land are described in Section 15.5 and incorporated into the Master Construction Environmental Management Plan ("CEMP") which is presented in the ES Appendix 4.2 (DCO Document Reference 8.14).

National Planning Policy Framework

- 15.2.2 National Planning Policy Framework ("NPPF") 2019 paragraph 5 notes that applications for NSIPs are to be determined in accordance with the decision-making framework set out in the Planning Act 2008 and relevant National Policy Statements "as well as any other matters that are considered both important and relevant (which may include the National Planning Policy Framework)."
- 15.2.3 Under Section 6 *Building a strong, competitive economy*, the NPPF advises in paragraph 83(d) that planning decisions should retain and develop accessible local services and community facilities including sports venues, public buildings and places of worship.
- 15.2.4 Section 8 *Promoting healthy and safe communities* paragraph 91 recommends planning decisions that support a healthy lifestyle, for example through the provision of safe and accessible green infrastructure, sports facilities and layouts that encourage walking and cycling.
- 15.2.5 Paragraph 92 goes on to state the need to plan positively for the provision and use of shared spaces, community facilities, and other local services and guard against the unnecessary loss of value facilities and services.
- 15.2.6 Paragraphs 96 to 101 go on to underline the importance of open space and recreational facilities for the health and well-being of communities. Existing open space, sports and recreational buildings and land should not be built on unless it can be demonstrated that *inter alia* such facilities are surplus to

requirements and the facilities would be replaced by equivalent or better provision. Planning decisions should protect and enhance public rights of way and access, including opportunities to provide better facilities for users. Local communities can designate land as Local Green Space through local and neighbourhood plans.

- 15.2.7 Section 13 *Protecting Green Belt land* confirms the government's support for the designation and protection of Green Belt to prevent urban sprawl by keeping land permanently open. The Green Belt serves five purposes (paragraph 134):
- a) *"To check the unrestricted sprawl of large built-up areas;*
 - b) *To prevent neighbouring towns merging into one another;*
 - c) *To assist in safeguarding the countryside from encroachment;*
 - d) *To preserve the setting and special character of historic towns; and*
 - e) *To assist in urban regeneration, by encouraging the recycling of derelict and other urban land."*
- 15.2.8 Paragraph 143 states that inappropriate development is by definition harmful to the Green Belt and should not be approved except in very special circumstances. Paragraph 144 goes on to confirm that local planning authorities should ensure that substantial weight is given to any harm to the Green Belt and that very special circumstances to allow development likely to cause harm to the Green Belt should clearly show that harm is outweighed by other considerations.
- 15.2.9 Paragraph 146 states that certain types of development are appropriate in the Green Belt. This includes local transport infrastructure which can demonstrate a requirement for a Green Belt location.
- 15.2.10 Under Section 15 *Conserving and enhancing the natural environment*, paragraph 170 states that planning decisions should protect and enhance soils and recognise the character of the countryside, including wider benefits such as the economic and other benefits of the best and most versatile agricultural land, defined as Grades 1, 2 and 3a in the ALC.

Regional Policy

- 15.2.11 The four West of England Councils - NSDC, Bath and North East Somerset Council ("B&NES"), Bristol City Council ("BCC") and South Gloucestershire Council ("SGC") - have prepared the West of England Joint Spatial Plan ("the JSP"). This emerging plan will be a statutory development plan document once adopted, providing the strategic overarching development framework for the West of England to 2036. *"In tandem with the JSP, a Joint Transport Study ("JTS") was undertaken to recommend how to address both current transport challenges, including carbon reduction, and forecast growth. The JTS, developed in partnership with Highways England, identified potential future strategic transport proposals for delivery up to 2036, that address current challenges and inform future development proposals in the JSP. The JTS set out the following approach for transport: "Transport in the West of England will be transformed over the next 20 years through a programme of complementary measures designed to address underlying challenges and to enable the sustainable delivery of new housing and employment growth.""* (Quote from TravelWest 2019, page 6-7).

15.2.12 The West of England Joint Local Transport Plan 3, last refreshed in 2013, will be superseded by the emerging Joint Transport Local Transport Plan 4 2019 – 2036 (“JLTP4”), which has been developed to progress the JTS. The JLTP4 identifies road congestion and other transport issues as key constraints on economic growth. At the same time, the policy documents explicitly emphasise the prominent role that rail investment can play in driving economic development. In accordance with national planning policy, local policy emphasises transport infrastructure investment as an enabler of economic development. The MetroWest Phases, which are identified as early investment schemes to ensure a programme of works can be delivered in the short, medium and longer term of the JLP4 period, are identified as schemes to significantly improve local and suburban rail travel and services across the area.

Local Policy

15.2.13 The local policy framework for NSDC and BCC is discussed in detail in Chapter 6 Planning Framework (DCO Document Reference 6.9). The following subsections identify local policies relevant to land use and development.

North Somerset District Council

15.2.14 The statutory development plan for North Somerset includes:

- NSDC Core Strategy (Adopted January 2017),
- Sites and Policies Plan Part 1 Development Management Policies (“SPP Pt 1”, adopted July 2016), and
- Sites and Policies Plan Part 2 Site Allocations Plan 2006-2026 (“SPP Pt 2”, adopted, April 2018).

15.2.15 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>NSDC Core Strategy (Adopted January 2017)</i>		
CS1	Addressing climate change and carbon reduction	This overarching policy aims 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	The objective of this policy is to protect and expand 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 woodland and urban areas, protection of biodiversity, improving

Table 15.2: Summary of adopted policies from the NSDC Core Strategy

Policy No.	Title	Policy Summary
		connectivity of semi-nature and ancient woodland, and management public rights of way.
CS24	Royal Portbury Dock	This policy focuses on maintaining and enhancing the role of Royal Portbury Dock. It includes ongoing safeguarding of land at Court House Farm for port uses.
CS31	Clevedon, Nailsea and Portishead	CS31 identifies the quantum of development to be delivered in these towns, with particular regard to the delivery of housing and employment land. The policy seeks to prioritise previously developed land and provides support to sustainable transport proposals, emphasising that the re-opening of a rail/rapid transit link from Portishead to Bristol is a particular priority.

Sites and Policies Plan Part 1 Development Management Policies (Adopted July 2016)

DM12	Development within the Green Belt	This 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.
DM19	Green Infrastructure	This policy requires development proposals to contribute to the quality of the environment, through the creation of high quality well designed and accessible green infrastructure, which should be provided in line with the phasing of development and include provisions for maintenance.
DM22	Existing and proposed railway lines	This establishes that existing and proposed railway lines will safeguard land for the proposed route.
DM49	Royal Portbury Dock	DM49 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.
DM60	Town centres	The aim of this policy is to identify an area in the heart of each town where a range of town centres will be supported and directed to. The Portishead town centre lies close to the proposed Portishead station and car park.

Table 15.2: Summary of adopted policies from the NSDC Core Strategy

Policy No.	Title	Policy Summary
DM68	Protection of sporting, recreation and community facilities	This policy aims to protect existing land and sites, and establishes that development will only be allowed where certain conditions apply. Designated community assets shall be retained in community use.
<i>Sites and Policies Plan Part 2 Site Allocations Plan 2006-2026 (Adopted April 2018)</i>		
SA5	Local Green Space	This designation aims to protect small areas of undeveloped land of importance to local communities. Planning permission will not be granted for developments that adversely affect designated Local Green Space except in very special circumstances.

15.2.16 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

15.2.17 The statutory development plan for Bristol City includes the Bristol Development Framework Core Strategy ("the BCC Core Strategy", adopted June 2011) and the Site Allocations and Development Management Policies Local Plan ("SADMPLP", adopted 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>BCC Core Strategy (Adopted 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 countryside and other open land around Bristol and protecting the green belt from inappropriate development.
BCS8	Delivering a Thriving Economy	This 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

Table 15.3: Summary of adopted policy from the Bristol Core Strategy

Policy No.	Title	Policy Summary
		of green spaces such as commons, stating that individual green assets should be retained wherever possible and integrated into new development.
<i>Site Allocations and Development Management Policies Local Plan (Adopted April 2014)</i>		
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.
DM15	Green Infrastructure Provision	This policy states that the provision of additional and / or improved management of existing trees will be expected as part of the landscape treatment of new development.
DM17	Development Involving Existing Green Infrastructure	This identifies that the BCC Core Strategy seeks to conserve existing green infrastructure assets. The policy sets out the detailed approach to this where further detail to support the BCC Core Strategy is required.
SA1	Site Allocations	Policy SA1 states that site allocations will be developed for the uses identified, including BAS1001 Alderman Moore's former allotments in Ashton Vale, Greater Bedminster (residential use), adjacent to the DCO Scheme.

15.2.18 The BCC 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 BCC 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:

- land use
- effects on agricultural land, including the effects on agricultural land from acquisition, the type of husbandry, severance and major accommodation works for access, water supply, and drainage
- demolition of private property;
- loss of land used by the community;
- construction and operation effects on development land;
- operation effects on Green Belt: and
- construction effects on utilities.

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

- Natural England Technical Information Note 049 ("TIN049"), Agricultural Land Classification: protecting the best and most versatile agricultural land (2012);
- Department for the Environment and Rural Affairs ("Defra") First Soil Action Plan for England 2004-2006 (March 2004);
- Defra Safeguarding our Soils: A Strategy for England (September 2009); and
- Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) ("CCP").

Consultations

15.3.4 A summary of consultations undertaken to date is presented in Table 15.4. Further information on the consultation process is presented in Chapter 5 - Approach to the Environmental Statement (DCO Document Reference 6.8). Responses to consultation exercises undertaken in 2015 and 2017 are available on the MetroWest project website at the following address <http://travelwest.info/project/metrowest-phase-1> and in the Consultation Report and its appendices (DCO Document Reference 5.1).

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
<i>Scoping Opinion Responses (August 2015) (DCO Document Reference 6.1)</i>		
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>In both cases, significance of effect will depend on the effectiveness of mitigation and this has not yet been agreed with affected farmers.</p>	<p>Meetings with landowners have identified severance, temporary possession and construction impacts for farm operations. These topics are addressed in Section 15.6.</p> <p>Agreements with affected persons are not considered within the ES.</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 summary of the temporary land occupation during construction and permanent acquisition is provided in Chapter 4 - Description of the Proposed Works (DCO Document Reference 6.7) and shown on the Land Plan (DCO Document Reference 2.2).</p> <p>There are small areas of permanent acquisition from agricultural land for maintenance access to the alignment.</p> <p>Elsewhere use of agricultural land 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 freehold acquisition are considered in Section 15.6.</p>

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
	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.	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 and in the Consultation Report and appendices at DCO Document Reference 5.1.
	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.	Section 15.4 Baseline describes the community assets. A summary of land, assets, and uses affected by the project is provided in Section 15.6.
	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, 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.	A summary of utilities is provided in Section 15.4 and commentary on impacts is provided in 15.6. Consultations with utility companies is on-going to inform the highways and railway designs. As the ES will now be submitted under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“the EIA Regulations 2017”) , a statement on Major Accidents and Disasters has been prepared and is provided in the ES Appendix 4.5 (DCO Document Reference 6.25).

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
	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.	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.
	Para. 3.91 Appropriate cross reference should be made to other relevant chapters when considering magnitude and significance of effects.	This chapter references other topic chapters where relevant.
Natural England Annex A. Item 5. Soil and Agricultural Land.	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.	The Agricultural Land Classification is presented in Section 15.4. Soil disturbance during construction is considered in Section 15.6. The DCO Scheme does not affect the best and most versatile agricultural land.
	If required, an agricultural land classification and soil survey of the land should be undertaken.	Most of the use of agricultural land 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 acquisition from agricultural land is small.
	Proposals for handling different types of topsoil and subsoil and the storage of soils and their management whilst in store.	Proposals for the management of topsoil and subsoil at temporary construction sites are described in Section 15.5.

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
	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 are summarised in Section 15.6 and set out in the Master CEMP which is presented in the ES Appendix 4.2 (DCO Document Reference 8.14). Work will be carried out according to Defra's CCP 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 are set out in the Master CEMP in Appendix 4.2 to the ES (DCO Document Reference 8.14). Work will be carried out according to Defra's CCP 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.	The Master CEMP (DCO Document Reference 8.14) requires disruption to drainage, access and water supplies to be rectified. These issues will be addressed in the contractor's CEMP.
	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.	These issues are identified and assessed in Section 15.6.

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
	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 contractor will be required to prepare a Restoration Plan for the Portbury Hundred and Lodway construction compounds. 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 ES should provide details of how any adverse impacts on soils can be minimised.	Measures to mitigate adverse impacts on soils are provided in the Master CEMP at Appendix 4.2 to the ES (DCO Document Reference 8.14) which will draw upon Defra's CCP.
Information micro-consultation on DCO Scheme boundary (22 June to 3 August 2015)		
Bristol Port Company	Concern regarding potential conflicts with existing freight line, port infrastructure, access arrangements during construction period and potential damage to port vehicles from dust and debris.	Measures agreed with the Port to reduce impacts on their operations would be presented in the final version of the contractor's CEMP.
Formal Stage 1 Consultation (22 June to 3 August 2015)		
Farmer	Expressed concern about the closure of historic crossings on the disused railway.	Three historic crossings on farmland are discussed in Section 15.4, measures incorporated into the design proposals to reduce the effects of severance are presented in Section 15.5, and the effects of severance of the historic crossings are discussed in Section 15.6.

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
Members of the public	Queried the measures to be taken to protect utilities, for example in Monmouth Road where services are close to the surface, and the potential interference with services such as street lighting.	The location of utilities is discussed in Section 15.4 Baseline and the approach to agreeing appropriate construction methods with the utility companies is explained in paragraph 15.5.26.
Public	Expressed concern regarding how vibrations will impact upon their property. Particular concern about structural damage to property given the year in which it was constructed and the vibrations that are likely caused by the passing trains.	The effect of vibration during construction and operation of the DCO Scheme is addressed in Chapter 13 - Noise and Vibration (DCO Document Reference 6.16).
<i>Informal Consultation (ongoing)</i>		
Farms	Consultations with affected land owners and farmers.	Environmental impact assessment and appropriate mitigation are detailed in Sections 15.5 and 15.6.
<i>Stage 2 Formal Consultation (23 October to 4 December 2017)</i>		
Members of the Public (farmers)	Expressed concern over closure of the informal farm crossings over the disused railway, which may cause farm severance and affect the movement of animals / management of livestock grazing. Concerned also about the risk of land contamination at the proposed construction compounds and the impact on the quality of grassland following reinstatement.	It is proposed to return land used temporarily for construction as close as possible to its original state. Measures to reduce adverse impacts are described in Section 15.5 and the Master CEMP in Appendix 4.2 of the ES (DCO Document Reference 8.14).
Members of the Public	Expressed concern over the potential impacts of Lodway construction compound on neighbours.	The impact of Lodway Construction Compound on neighbours is discussed in Section 15.6.

Table 15.4: Summary of consultation responses

Organisation and Date	Summary of Response	Consideration within the ES
Members of the Public	Expressed concern that the formation of emergency access off Chapel Pill Lane will affect access to houses / land further along Chapel Pill Lane.	The new maintenance and emergency access off Chapel Pill Lane to Pill Tunnel Eastern Portal will not affect access to the Penny Brohn centre opposite or other property further along Chapel Pill Lane as the entrance and route to the railway have been designed to allow egress of maintenance and emergency vehicles.
National Trust ("NT")	NT is concerned about the preservation of headroom under Quarry Underbridge No. 2 that allows them to access their land by vehicle.	The design for Quarry Bridge No. 2 maintains the existing headroom. This is discussed in Chapter 4 - Description of the Proposed Works (DCO Document Reference 6.7).

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 Chapel Pill that would be affected by temporary or permanent acquisition for construction, severance, and disturbance to farm infrastructure. The rest of the DCO Scheme from Chapel Pill 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 MAGIC¹.
- 15.3.6 With regards to the impacts on land use, community assets, and development land, the study area extends to 500 m either side of the DCO Scheme between Portishead and Ashton Junction. This area is sufficiently large to take into account the direct effects on land use, agricultural, land development and utilities within the DCO Scheme footprint, and the potential effects arising from the construction and operation of the DCO Scheme on adjoining land uses.

¹<http://www.magic.gov.uk>

Key Receptors

15.3.7 The key receptors are:

- land use adjoining the DCO Scheme;
- on agricultural land, the soils, farm infrastructure, and livestock affected by the DCO Scheme;
- 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;
- Green Belt, and
- utilities.

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; and
- 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, and these will be in place prior to the closure of the informal crossings over the disused railway.

15.3.10 At Sheepway, two accommodation crossings will be extinguished at Shipway Gate Farm. The farmer will in future have 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 which will be improved (see Sheepway Bridge Southern Interim Access Arrangements Plan - DCO Document Reference 2.51).

- 15.3.11 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 (see Portbury Hundred Construction Compound and Permanent Access Plan - DCO Document Reference 2.40). Given traffic speeds on the A369 Portbury Hundred, the new access will be restricted to left turns on and off the highway only.
- 15.3.12 Elsewhere on the DCO Scheme it is intended all historic accommodation and occupation level crossings will be closed. It is believed that none of these other crossings are now used.
- 15.3.13 The assessment includes the temporary use of farmland for construction compounds. Creation of these will be managed according to the CEMP which will include requirements based on Defra's CCP. At the end of the construction period it is proposed that the compounds will be restored to farming in a condition equivalent to the original.
- 15.3.14 The assessment of construction impacts on adjoining land and assets is based on the area of permanent and temporary acquisition, the percentage of land required in relation to the relevant landholding, the impact on the use and enjoyment of the remaining land, and the scope for arriving at negotiated agreements.
- 15.3.15 The assessment of the DCO Scheme on Green Belt is not assessed separately for the construction phase. As this is a planning designation to protect the countryside from urban sprawl, the assessment is undertaken for the operation phase, incorporating the effects of construction where appropriate. This approach focusses on the permanent character of the DCO Scheme on the Green Belt designation.

Assessment of Operational Impacts

- 15.3.16 The only potential impact of the DCO Scheme on farmland and the viability of farm units during operation is the severance of the three historic crossings over the disused railway, which will require two farm units to move livestock via alternative routes. An existing farm access off Sheepway and to the south of the railway will be improved to facilitate the movement of livestock by vehicle. A new access will be provided off the A369 Portbury Hundred into what would be the temporary Portbury Hundred construction compound, which will be retained by the landowner. The impact of severance will occur early in the construction phase and continue into the operation phase as a permanent effect. For the purposes of this ES, the effect of severance is covered once in the assessment of construction impacts. The risk of livestock straying onto the railway line will be avoided by fencing the railway so this impact has been scoped out as agreed by the Secretary of State in the Scoping Opinion. Accordingly, further assessment of impacts on severance and the viability of farm units during operation has not been undertaken.
- 15.3.17 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 Chapter 11 Landscape and Visual Impacts Assessment ("LVIA") and Chapter 13 Noise and Vibration (DCO Document References 6.14 and 6.16, respectively).

- 15.3.18 The assessment of the DCO Scheme on Green Belt has been undertaken for the operational phase against the five purposes of the Green Belt. The assessment draws upon the findings of Chapter 8 Cultural Heritage (DCO Document Reference 6.11) and the Chapter 11 Landscape and Visual Impact Assessment (DCO Document Reference 6.14). As the assessment considers compliance with the purposes of Green Belt policy, the significance criteria used to assess the effect of the DCO Scheme on the environment have not been adopted.

Assessment of Decommissioning Impacts

- 15.3.19 Chapter 4 Description of the Proposed Works (DCO Document Reference 6.7) explains that consideration has been given to likely significant effects arising during the decommissioning phase. However, owing to the nature and life span of the proposed development, the regulated process of any closure in the future, which would be overseen by the Office of Rail and Road, and there being no reasonably foreseeable decommissioning proposals such that likely impacts could be identified and assessed, these effects are not considered further in this chapter.

Assessment of Cumulative Effects

- 15.3.20 The assessment of cumulative effects assesses the impact of the DCO Scheme in combination with other projects. These include other DCO projects within approximately 10 km and other development projects within approximately 0.5 km of the Portishead Branch Line, as discussed with the local planning authorities NSDC and BCC.
- 15.3.21 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 (including Liberty Lane Sidings), Parson Street Station, 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.
- 15.3.22 The Severn Beach / Avonmouth Signalling works have been implemented by Network Rail under their permitted development rights as part of the works for Filton Four Track project.

Use of Significance Criteria

Agricultural Land and Farming

- 15.3.23 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.
- 15.3.24 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. These criteria address magnitude of impact and sensitivity of the resource and have been derived from consideration of the characteristics of the impact and the receptor. The significance of the effect of developments on agricultural land and farm businesses combines are summarised in Tables 15.5 and 15.6.
- 15.3.25 A significant effect for the purposes of the EIA Regulations 2017 is assessed to be of moderate or major significance, whether positive or negative.

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.
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.
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 could be a small decline in farm income.
Very minor adverse	Very slight impact on farm business that can often be easily compensated for by modifications to management system.
Neutral	Affects the farm but does not affect the farm business, including any diversification enterprises.

Community Facilities and Private Property

15.3.26 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. • Utilities • Lakes and watercourses used for recreational activities
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 and boundary treatments. • Derelict land. • Locally used community land, e.g. local parks and playing fields.

Source: Based on the A14 Improvement Scheme

15.3.27 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 dwellings. • >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. • Disturbance due to nearby construction activities resulting in the loss of the use or enjoyment of land and property nearby.
Minor	<ul style="list-style-type: none"> • Demolition of ancillary buildings eg outbuildings, garages, and sheds. • <15% land loss. • Partial severance of access resulting in short diversions. • Disturbance due to nearby construction activities resulting in the reduction in the enjoyment of land and property nearby.
Negligible	<ul style="list-style-type: none"> • Very small change from the baseline conditions.
No change	<ul style="list-style-type: none"> • No change from the baseline conditions.

Source: Based on the A14 Improvement Scheme

15.3.28 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

15.3.29 A significant effect for the purposes of the EIA Regulations 2017 is assessed to be of moderate or major significance, whether positive or negative.

Development Land

15.3.30 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

15.3.31 An adverse effect which leads to the non-viability of the development site is taken to result in a likely significant effect in relation to the EIA Regulations 2017.

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 (DCO Document Reference 6.21).
- 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 have been developed for car storage as part of the port.
 - 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 Royal Portbury 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 (one being the Council) and used for storing plant and equipment. Beyond Pill 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 River Avon 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 MetroBus m2 route 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, along the railway corridor and then branching off along a disused railway siding 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 (according to BCC Policies BCS8 Delivering a Thriving Economy, and DM13 Principle Industrial and Warehousing Use) in the BCC Core Strategy and the SADMPLP. Bristol Site Allocations and Development Management Policies. The Alderman Moore's Allotments are designated as Important Open Space and the northern part (Site Allocation BSA1001) has been designated for housing development. A proposal for housing at this location has been approved and the development is under construction. This development is discussed further in Chapter 18 - In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21).

Farm Structures

- 15.4.12 Three agricultural holdings are affected by the DCO Scheme between Portishead and Sheepway.
- Holding 1 is Shipway 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 accommodation crossings pass over 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 A369 Portbury Hundred and these are accessed from an at-grade accommodation 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 Shipway Gate Farm. It is accessed from a gateway on Sheepway. The southern part of this field is a proposed site for a construction compound.

- 15.4.13 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 developed and in use as car storage. This is discussed below under Development Land.
- 15.4.14 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 M5. Access to this land holding is currently off the north side of Marsh Lane and National Cycle Network Route 26 ("NCN26") 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 ES Volume 3 Book of Figures, DCO Document Reference 6.24).
- 15.4.15 Lodway Farm owns several fields on the western side of Pill village and to the south of the disused railway and the M5 motorway. Much of the land is under pasture with a small, young orchard close to the railway. A construction compound is proposed on land adjoining the railway and west of Pill.
- 15.4.16 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.
- 15.4.17 Ham Green Lakes at Pill 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 (DCO Document Reference 6.20).
- 15.4.18 Chapel Pill Farm lies to the south of the railway and is accessed via Chapel Pill Lane which crosses the railway on Cages Overbridge. Temporary access will be required via Chapel Pill Farm and farm track for works to an Underbridge.

Soils and Agricultural Land Quality

- 15.4.19 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.
- 15.4.20 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. The soils of farmland potentially affected by the DCO Scheme between Marsh Lane and Pill Tunnel eastern portal are Whimple 1 association.

- 15.4.21 The provisional ALC 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).
- 15.4.22 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 Whimple soils are in Class II-III. Newchurch soils have silty clay topsoils and those of Whimple 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 Whimple soils are in Grade 3a (good quality land). The Newchurch soils are found around Sheepway and Portbury, while the Whimple soils are found around Pill, Ham Green and Chapel Pill.

Community Assets

- 15.4.23 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 is designated as Local Green Space in the Sites Allocation Plan. Value: **Low**.
- 15.4.24 "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 ES Volume 3 Book of Figures, DCO Document Reference 6.24). Value: **Low**.
- 15.4.25 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**.
- 15.4.26 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 NSDC SPP Pt 1. This area is known locally as Watchhouse Hill. It lies in Green Belt and the alignment of Pill Tunnel passes under this open space. Value: **Low**.

- 15.4.27 Leigh Court, a Grade II* listed 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**.
- 15.4.28 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 Visitor 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 River 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**.
- 15.4.29 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/calendar/>. Value: **Medium**.
- 15.4.30 The Ashton Court Estate ("the Estate") comprises a Grade I listed mansion set in 830 hectares ("ha") of parkland south west of Bristol. The Estate is located in North Somerset but is owned and managed by BCC. 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**.
- 15.4.31 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

- 15.4.32 NSDC's SPP Pt 2 identifies land for housing and employment in Portishead Town Centre. Planning policies are shown on Figure 6.1 and current planning applications are presented in the ES Appendix 18.1 (DCO Document Reference 6.25) and shown on Figure 18.1 (DCO Document

Reference 6.24). Policy DM60 in the NSDC SPP Pt 1 covers Portishead city centre close to the proposed location of the Portishead station and car parks. Within this area are sites identified for retail and residential development in the NSDC SPP Pt 2. A number of residential and commercial sites have been built or are under construction. An outline planning application has been submitted for mixed commercial, retail, and residential development (with up to 350 residential units) along Old Mill Road in Portishead (planning reference 18/P/3591/OUT). The existing tenants of the industrial estate have been offered three year leases.

- 15.4.33 NSDC policy DM49 Royal Portbury Dock identifies land at Court House Farm, bordered by the disused railway, the M5 and Junction 19, and Royal Portbury Dock Road for employment. This land has been purchased by the Bristol Port Company and developed for cargo storage. At present there is an at grade crossing over the disused railway, but the Port will have to build a bridge into the site prior to the development of the DCO Scheme.
- 15.4.34 The Alderman Moore's Allotments are designated as Important Open Space. The northern part of the Allotments has been designated for development in the SADMPLP. 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 m2 MetroBus route and address noise and pollution from nearby industrial estates. A planning application for the development of 133 houses with access for this site has been approved and is under construction.

Green Belt

- 15.4.35 Much of the countryside between Portishead, Pill and Bristol lies within the Green Belt (see Figure 6.1 in the ES Volume 3 Book of Figures, DCO Document Reference 6.24). The DCO Scheme lies outside, or passes through, or along the Green Belt boundary, in the following locations:
- Portishead lies outside the Green Belt, including the proposed locations for Portishead station, car parks, and the railway corridor through residential areas on the east side of the town;
 - Green Belt lies on both sides of the DCO Scheme between the edge of Portishead and just east of Station Road;
 - the DCO Scheme then follows the Green Belt boundary between Station Road and the Royal Portbury Dock Road, with Green Belt lying to the south and Royal Portbury Dock to the north;
 - between Royal Portbury Dock Road and the M5, the DCO Scheme lies outside the Green Belt which follows the M5;
 - the DCO Scheme crosses a short section of Green Belt between the M5 and Pill village;
 - the section through Pill village lies outside the Green Belt;
 - between Pill Viaduct and Pill Tunnel Western Portal, the Green Belt boundary follows the railway, with Green Belt lying to the north towards Watchhouse Hill and the banks of the River Avon while the village of Pill to the south lies outside the Green Belt;

- the route from Pill Tunnel Western Portal to Clifton Bridge lies within the Green Belt and close to the boundary of the Green Belt which is demarcated by the River Avon;
- from Clifton Bridge to Brunel Way, Green Belt lies to the west of the DCO Scheme; and
- the remainder of the route from Brunel Way to Ashton Junction through the suburbs of Bristol lies outside the Green Belt.

Utilities

- 15.4.36 Utilities comprise over and underground cables and pipelines for high and low voltage electricity, gas, oil, telecommunications, drinking water supply, and foul sewage. In addition, highway drainage conveys road drainage to suitable outfalls to surface waters. A schedule of known utilities has been developed for the DCO Scheme, based on information provided by the utility companies. Further discussion of highway drainage is provided in Chapter 17 Water Resources, Drainage and Flood Risk (DCO Document Reference 6.20).
- 15.4.37 This section provides a brief overview of the types of utilities affected by the DCO Scheme and locations where the presence of utilities has influenced the scheme or where their location or need for diversions has environmental implications. This section does not provide a full list of all the utilities affected by the DCO Scheme.
- 15.4.38 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.
- 15.4.39 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, Openreach 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 to the south of Harbour Road and west of Quays Avenue. Human receptors comprise vehicle users, pedestrians, nearby residents and visitors to community health centre and shops.
- 15.4.40 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. The location of the Portishead station platform will lie over the alignment of the sewer, which will need to be afforded suitable protection to avoid damage during piling and platform construction, which is an integral consideration to the design.
- 15.4.41 There is a disused Ministry of Defence oil pipeline under the proposed site for car park B. The location will be confirmed prior to construction 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.
- 15.4.42 There are four Western Power high voltage electricity cables along the south side of railway corridor into the centre of Portishead. The locations of the cables have been confirmed on site with Western Power Distribution ("WPD") and should not be affected by the location of the Trinity Primary School Bridge. Consideration of utilities should still be taken during detailed design of the Trinity Primary School Bridge, acoustic fence, highway works and car park.
- 15.4.43 The proposed Trinity Primary School Bridge 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 bridge will replace a permissive at grade crossing over the railway which is heavily used by adults and schoolchildren. The bridge will connect with open space and footpaths on either side of the crossing used for informal recreation. Site investigations and site meetings with Wessex Water and WPD have been carried out to establish the location and depth of these services. The information collected will be reviewed during detailed design to minimise impacting these utilities and to avoid health and safety issues for the workforce and the local community.
- 15.4.44 A major oil pipeline serving Royal Portbury Dock crosses the disused railway section south of Sheepway. Supervised trial trenches have been carried out to establish the depth and assess the present condition of the concrete protection. Mitigation measures need to be agreed with CLH and their land agents prior to any works within a 3 m radii from the pipeline.
- 15.4.45 A wastewater pumping station operated by Wessex Water is located near 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.
- 15.4.46 A high pressure gas main and water main cross the DCO Scheme through Cattle Creep Underbridge between Marsh Lane and the M5. The Cattle Creep Underbridge deck will be replaced as part of the scheme. Openreach cables also run along the southern side of the railway. 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 Avonmouth Bridge.
- 15.4.47 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.
- 15.4.48 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 Openreach

cable. There is also an overhead 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 an Openreach cable. Trial trenches have been carried out to establish the exact location and depth of these utilities. This information will be incorporated into the access design for the station forecourt. There are no environmental constraints in this area, but the works need to take account of pedestrians, cyclists, vehicle users and nearby residents.

- 15.4.49 There are few services close to the railway in the rural section between Pill and the outskirts of Bristol. High voltage overhead cables cross the railway in the vicinity of Chapel Pill Lane. 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.
- 15.4.50 Between A369 Rownham Hill and the A370 Brunel Way various utilities cross and or follow the railway line, including telecommunications cables, water mains, 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.
- 15.4.51 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 cables, Openreach and Virgin Media cables, low and medium pressure gas pipelines, foul water, storm water, and drinking water.
- 15.4.52 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.
- 15.4.53 A Wessex Water foul sewer, Openreach cable and surface water drainage ditch are located on railway land alongside the Ashton Vale Industrial Estate. There are also several mature trees and a stand of dead stems of the invasive weed Japanese knotweed which has been treated.

Future Baseline

- 15.4.54 The JSP is a strategic development plan document that provides the overarching development framework to guide housing, employment and infrastructure requirements to 2036. As such, the JSP provides an insight into potential changes in land use over the next two decades. The JSP stated that 102,200 new homes are required by 2036 in the West of England, of which 61,500 were already identified in the adopted local plans of the four local authorities. To allow for some flexibility in the delivery of

housing, an overall supply of 105,500 homes was identified. The remaining 44,000 housing requirements would be built within strategic development locations. The Strategic Development Locations include Backwell, Banwell, Churchill and Nailsea within North Somerset and Brislington, in Bristol. Outside the Strategic Development Locations, further urbanisation is also expected in Bristol and Weston-super-Mare. This housing need points to longer term urbanisation in some of the smaller settlements in North Somerset and close to Bristol, but not in the immediate surrounds of the DCO Scheme.

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 minimise effects on key receptors where possible;
 - construction adopting best practices techniques, which are introduced in the Code of Construction Practice ("CoCP"- DCO Document Reference 8.15) and presented in more detail in the Master CEMP (DCO Document Reference 8.14) where these techniques are known to be effective and have not been identified in order to mitigate likely significant environmental effects; and
 - compliance with regulatory and legislative regimes as required by law.
- 15.5.2 The CoCP (DCO Document Reference 8.15) provides the over-arching principles for the management of environmental aspects of the construction of the DCO Scheme. The CoCP is developed in more detail in the Master CEMP (DCO Document Reference 8.14), which describes the approach to be taken by the contractor(s) to manage the adverse effects during the construction phase.
- 15.5.3 The successful contractor(s) will be required to adopt, revise and update the Master CEMP (DCO Document Reference 8.14) to prepare and implement their own detailed CEMP setting out how they will comply with the CoCP (DCO Document Reference 8.15) and the Master CEMP (DCO Document Reference 8.14). Compliance with the CoCP (DCO Document Reference 8.15) and the contractor's CEMP will be supervised by the relevant planning authority and Network Rail for the railway works.
- 15.5.4 The CoCP and the Master CEMP (presented in the ES Appendices 4.1 and 4.2, DCO Document References 8.15 and 8.14 respectively) are based on the current understanding of the scheme design and the proposed construction strategy.
- 15.5.5 An indicative Construction Strategy has been developed for the DCO Scheme, which is presented at DCO Document Reference 5.4. The construction strategy will be developed in detail once the contractor has been appointed.
- 15.5.6 NSDC is in discussions with landowners and householders regarding temporary and permanent land acquisition. The DCO Scheme costs include consideration of compulsory land purchase and temporary rights over / under the land. Land agreements and associated financial matters do not

form part of the ES. No permanent relocation of commercial or residential interests in land are anticipated.

- 15.5.7 At the time of writing consultations with affected parties with an interest in the land (landowners, tenants, and householders) are on-going. Financial compensation for temporary and permanent acquisition will be agreed either privately in advance of the DCO submission or through the DCO process. Temporary and permanent loss of land is considered to be a lands (legal) issue which will be compensated for financially in accordance with the well-established principles of compensation law and practice known as the Compensation Code. The topic is therefore a legal rather than an environmental impact requiring further environmental mitigation. However, this chapter does consider the loss of the use of the land. Other impacts such as construction noise, dust, landscape and visual impacts and traffic impacts on land and property are considered in other chapters in the ES.

Design Features

- 15.5.8 The DCO Scheme has been designed to minimise the impact of land acquisition or occupation on adjoining land-ownership and property. A relatively small amount of permanent land acquisition is required, primarily to facilitate access, for example maintenance and emergency access to Pill Tunnel eastern portal and the approaches to Trinity Primary School Bridge and the new car parks. More extensive areas of temporary land occupation are required during the construction phase, for access and construction compounds for offices, storage of materials and spoil, and plant.
- 15.5.9 The closure of three informal crossings over the disused railway affecting the operation of two farm units will be addressed by providing improved access off Sheepway (for the two crossings serving Shipway Gate Farm) and a new access off the A369 Portbury Hundred. Plans showing the improved/ new permanent field accesses are provided in the Plans Sheepway Bridge Southern Interim Access Arrangements (DCO Document Reference 2.40) and Sheepway Bridge Southern Interim Access Arrangements (DCO Document Reference 2.51).
- 15.5.10 The DCO Scheme includes replacement of fencing along the railway corridor, which will be sufficient to restrict livestock access.
- 15.5.11 The DCO Scheme includes proposals to maintain some areas of existing planting and to provide replacement planting with screening, landscaping and ecological objectives.

Construction Phase

Protection of Land used for Temporary Construction Sites

- 15.5.12 A number of potential construction compounds have been identified and are shown on Compounds, Haul Roads and Access to Works Plan (DCO Document Reference 2.29). The main compounds are located along the disused section of the railway between Portishead and Pill, where there are a number of suitable locations, mostly on level agricultural land. There are few proposed construction sites along the operational railway, particularly in the Avon Gorge, due to both the limited works to be undertaken in the Gorge and the lack of suitable level areas.

15.5.13 Construction compounds are proposed on agricultural land at the following locations:

- a small compound to the north of the disused railway and accessed off Sheepway, part of which will become a permanent maintenance and access compound;
- a large compound between the disused railway and The Portbury Hundred;
- a large compound at Lodway Farm between the M5, the disused railway and the west of Pill; and
- a small compound near the Pill Tunnel eastern portal, part of which will become a permanent maintenance and access compound.

15.5.14 The proposed car park sites at Portishead and Pill and the proposed forecourt area at Pill station will be used as construction sites during the works and reconfigured as car parks towards the end of the construction period.

15.5.15 The proposed lay down area off Tansy Lane in an area of amenity grassland will be reinstated after construction. Similarly, the proposed compound at Clanage Road on grassland will be partially reinstated on completion of the works, while part will form a permanent maintenance and access compound.

15.5.16 Several micro-compounds through the Avon Gorge comprise mobile units which will be taken off site on the completion of works.

15.5.17 Information on the proposed arrangements for the construction compounds is provided in the Construction Strategy in DCO Document Reference 5.4. Construction activities on agricultural land will be undertaken in accordance with Defra's CCP.

15.5.18 On the temporary construction compounds on agricultural land, topsoil will most likely be stripped and stockpiled temporarily nearby. Hard core will be laid for a working platform and removed at the end of the construction period, followed by reinstatement of the top soil. Alternatively a "Geobind" technology may be used to transform the site temporarily into a load bearing surface. During reinstatement the surface is broken up and sodium bicarbonate added into the soil to return the land back to its original state.

15.5.19 According to Defra (2009), stockpile heights of 3-4 m are commonly used for topsoil that can be stripped and stockpiled in a dry state, but heights may need to be greater where storage space is limited. Earthworks and stockpiling will involve not handling soil when it is wet and plastic at all stages from stripping, stockpiling through to reinstatement.

15.5.20 Where soil storage mounds are not covered with grass they should be sprayed with water to minimise the generation of dust. If the topsoil is to be stockpiled for more than six months, the surface of the stockpiles shall be seeded with a low-maintenance grass mix to minimise soil erosion and to help reduce infestation by nuisance weeds that might spread seed onto adjacent land.

- 15.5.21 Where there are nearby sensitive receptors such as housing, stockpiles will be located on the perimeter of construction compounds to provide the additional benefit of noise attenuation and visual screening.
- 15.5.22 After topsoil has been reinstated the surface shall be inspected and all obstacles, such as wire rope, wood, metal, plastic and concrete debris shall be removed from site before the soils are reinstated.
- 15.5.23 Temporary haul roads will be underlain by Terram membrane and aggregate to provide a suitable running surface. Temporary drainage will be provided along the haul roads and at construction compounds.
- 15.5.24 Private gardens and Clanage Road and other temporary compounds will be reinstated upon cessation of the works for which occupation is required.

Control of Pollution

- 15.5.25 The Master CEMP (DCO Document Reference 8.14) includes a number of measures to control pollution from construction compounds, including implementation of:

- temporary stormwater drainage;
- where required, licensing temporary storage of ballast through the Environment Agency;
- a Site Waste Management Plan ("SWMP") for each construction site to manage the disposal of solid wastes; and
- wastewater collection and disposal off site.

Control of Construction Dust

- 15.5.26 The Master CEMP (DCO Document Reference 8.14) includes proposals for the control of air emissions from construction traffic and machinery, construction dust and the tracking of dust and mud on to the local highway network. Measures include planning the site layout to locate machinery and dust-raising activities away from sensitive receptors such as houses; measures to reduce emissions from plant, vehicle and equipment; measures to limit air pollution and odour due to transportation, storage and handling of materials including ballast; control of dust pollution during excavations and earthworks; and control of dust generation during conveying, crushing, cutting and grinding activities.

Control of Noise and Vibration

- 15.5.27 The Master CEMP (DCO Document Reference 8.14) includes proposals for the control of noise and vibration, to mitigate the effects on a range of sensitive receptors, including residents, users of facilities, and ecological sites. This includes proposals to control noise at source, attenuate noise through screening and site layout, and manage site operations to avoid sensitive times of the day.

Landscape and Views

- 15.5.28 The Master CEMP (DCO Document Reference 8.14) includes measures to keep the construction sites tidy and mitigate the impact of the site on views and landscape character. This includes measures such as retaining

vegetation where possible, erecting hoardings around the construction site, and the management of materials and waste on site.

Transport

- 15.5.29 Measures will be taken to minimise the impact of construction traffic on the local highway network, such as agreeing haulage routes to and from the construction access points with the local transport authority, adopting a one-way circulation of construction traffic through the construction site and off-line haulage routes, and moving materials and waste by train where possible. Further details on the management of construction traffic are provided in Chapter 16 Transport, Access and Non-Motorised Users (DCO Document Reference 6.19) and in the Construction Traffic Management Plan in Appendix 16.1 (DCO Document Reference 8.13).

Utilities

- 15.5.30 Information on the location of utilities has been obtained from the utility companies and C3 outline design has been undertaken. The precise location and depth of utilities in the construction areas will be surveyed to determine their precise location. Based on that information, specific measures for the C4 detailed design will be undertaken to protect utilities during construction activities, where necessary divert utilities to accommodate the DCO Scheme, and install health and safety measures to protect the workforce and members of the community from accidents.

15.6 Assessment of Effects

Construction Phase

Land required from Agricultural Uses and Effects on Farm Units

- 15.6.1 Construction work will largely be within the boundary of the railway. Most of the disturbance to agricultural land will be of small extent and temporary in nature.
- 15.6.2 Some 22.47 ha of agricultural land will be required for temporary occupation during construction (for construction compounds, haul roads and accesses) and a further 12.20 ha will be acquired permanently (for the permanent access and maintenance sites) between Sheepway and Chapel Pill Farm. Agricultural land occupied temporarily during construction will be returned to agricultural use at the end of the construction programme. Based on the 1:250,000 soils map of South West England, 9.31 ha of permanent loss belongs to the Whimple soil association (which is assumed to be Grade 3a ALC) and 2.89 ha belong to the Newchurch 2 soil association (which is assumed to be Grade 4 ALC). The significance of the effect of the permanent loss of 5-9 ha of Grade 3a land on the soil resource is assessed to be **minor**, while the loss of less than 10 ha of Grade 4 land is assessed to be **negligible** (see Table 15.5). These losses are not considered to be significant in relation to the EIA Regulations 2017.
- 15.6.3 Although livestock may be at risk of straying onto the railway line in the absence of livestock fencing, such fencing would be installed where required to stop livestock entering the construction site without affecting the farm holding. This would result in a negligible impact on a high value

- resource. The significance of effect on the livestock is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.
- 15.6.4 Three at-grade farm crossings between Sheepway and The Portbury Hundred will be closed permanently when construction work begins.
- 15.6.5 At Shipway Gate Farm, livestock will 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 movement of livestock by road would be longer, with the added risk of encountering highway traffic during livestock movements, compared with current movements of the disused 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 DCO Scheme will therefore result in minor changes to the management of the farm (see Table 15.6). The significance of effect of severance following closure of the informal crossing over the disused railway and replacement with an improved access off Sheepway on the local farm business is assessed to be **minor adverse** and not significant in relation to the EIA Regulations 2017.
- 15.6.6 It will be necessary to provide access off the A369 Portbury Hundred into the proposed Portbury Hundred Construction Compound, currently comprising farmland. The new access is a permanent new access to the highway and the current owner will be able to access the A369 Portbury Hundred from his field once the site is handed back to him. The significance of effect of severance following closure of the informal crossing over the disused railway on the local farm business is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.
- 15.6.7 Shipway Gate Farm also graze sheep on land on the west side of Sheepway and to the north of the disused railway corridor, within the Portbury Wharf Nature Reserve. Part of this site will be used as a temporary construction compound, referred to as Sheepway Construction Compound, and a smaller area within it will become a permanent maintenance compound. During construction, accessing this site may take longer due to the construction traffic on Sheepway and construction activities. The main contractor will be required to liaise with the farm and provide reasonable access for livestock between the farm and the Nature Reserve. The significance of effect of severance due to construction activity on the local farm business is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.
- 15.6.8 Risks to farmland from the construction compounds and haul roads 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 site management as described in the Master CEMP (DCO Document Reference 8.14). 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 and the significance of effect on the local farm business is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.

- 15.6.9 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. Most of the agricultural land in the scheme area is currently under pasture. An assessment of construction dust is presented in Appendix 7.1 in the ES (DCO Document Reference 6.25). The proposed approach to the control of dust is presented in the Master CEMP (DCO Document Reference 8.14), which the contractors will be required to implement, which may include dust control procedures (such as spraying bare ground with water). There is a small, immature orchard at Lodway Farm within the proposed construction compound which would probably have to be removed and replanted on completion of the construction works. The significance of effect on local crops due to dust deposition and vegetation clearance is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.
- 15.6.10 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 are provided in the Master CEMP (DCO Document Reference 8.14). The significance of effect of construction noise on livestock and farm workers is assessed to be **neutral** and not significant in relation to the EIA Regulations 2017.

Land Acquisition, Demolition and Other Effects on Private Property (excluding farmland)

- 15.6.11 No. 7 Station Road, Pill, a private property comprising one (unoccupied) residential unit and two commercial units, will be demolished to make way for a new station forecourt and entrance. Station House is the original station for Pill. The property is not listed and has no heritage value. Further information on the heritage value of this property is provided in Chapter 8 - Cultural Heritage (DCO Document Reference 6.11) and Appendix 8.2 Level 1 Historic Building Record for Station House, 7 Station Road, Pill (DCO Document Reference 6.25). With regards to the assessment of demolition of private property, given that commercial 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 and the lease back to the previous owner permits commercial use only, so the impact of the DCO Scheme on the demolition of this property is considered to be a **neutral** significance of effect and not significant in relation to the EIA Regulations 2017.
- 15.6.12 In Pill 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 bring in a large crane to a small construction site to lift in pre-cast sections of the new Avon Road Bridge. 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. These effects are not considered to be significant in relation to the EIA Regulations 2017

- 15.6.13 The compulsory purchase of the freehold of the garages will result in the loss of the use of the garages by local residents. The compulsory acquisition process will compensate freeholders resulting in a **neutral** significance of effect. The loss of the use of the garages by a small number of tenants is assessed to be a minor impact on a medium value resource resulting in a **slight adverse** significance of effect. These effects are not considered to be significant in relation to the EIA Regulations 2017.
- 15.6.14 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. The effects of construction on householders are considered in Chapter 11 LVIA (DCO Document Reference 6.14), Appendix 11.3 Visual Effects (DCO Document Reference 6.25), and Chapter 13 Noise and Vibration (DCO Document Reference 6.16). The compulsory acquisition process will compensate householders for the temporary change of use of their gardens which will be restored on the completion of the works. Overall, the effect of the construction of the DCO Scheme on the temporary change of land use of these gardens is assessed to be a minor impact on a medium value resource resulting in a **slight adverse** significance of effect which is not significant in relation to the EIA Regulations 2017.
- 15.6.15 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 short term temporary restrictions on access to the rear of the gardens by householders as a precautionary measure. The effects of construction on householders are considered in Chapter 11 LVIA (DCO Document Reference 6.14), Appendix 11.3 Visual Effects (DCO Document Reference 6.25), and Chapter 13 Noise and Vibration (DCO Document Reference 6.16). The short term restrictions on the use of the gardens during construction is assessed to be a negligible impact on a medium value resource resulting in a **neutral** significance of effect which is not significant in relation to the EIA Regulations 2017.
- 15.6.16 Permanent acquisition of the yard off Monmouth Road will be required to construct the station car park in Pill. This yard was originally created for the railway and was subsequently sold into private ownership. Part of the site has been purchased by NSDC and the remaining part of the site will be dealt with during the compulsory acquisition process within the DCO process. The change of use of these small yards to Pill station car park is assessed to be a negligible change of use for a low value resource, resulting in a **neutral** significance of effect.

Loss of Land Used by the Community

- 15.6.17 Land acquisition or occupation may be required from land that is being used by the local communities at the following locations.

- 15.6.18 Permanent and temporary land acquisition or occupation will be required on the north and south side of Trinity Primary School Bridge 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. Land known as The Vale on the south side of the disused railway is designated as Local Green Space. Some of the land will become public rights of way, so will change in status but remain available to the public. As a local resource, the land in this area is given a low value and the temporary and permanent land acquisition is very small with a negligible magnitude of impact, resulting in a **neutral** significance of effect.
- 15.6.19 Temporary and permanent land acquisition or occupation is being considered for a construction and maintenance compound off Clanage Road (A369) in Bristol. This land is privately owned and is used for recreational uses, with informal parking and occasional car boot sales. Bedminster Cricket Club and a Day Nursery are located to the south of the site. The land is designated as green belt in the Bristol Site Allocations and Development Management Policies, 2014 and lies in the Bower Ashton Conservation Area. The impacts of the DCO Scheme at Clanage Road on landscape and visual impacts and noise is presented in the ES Chapters 11 and 13 (DCO Document References 6.14 and 6.16). Land used by the community is given a low value and the change in land use for this small site would be negligible, resulting in a **neutral** significance of effect.
- 15.6.20 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 railway corridors are also included in the Bristol Wildlife Network Sites. The impact of the DCO Scheme on flora and flora along the railway corridor is considered in Chapter 9 Ecology and Biodiversity (DCO Document Reference 6.12).

Effects on Development Land

- 15.6.21 The DCO Scheme does not require temporary or permanent land acquisition or occupation from development land identified in the NSDC and BCC local plans. Furthermore, as the railway corridor has been protected in the local plans for many years, the developer for any land close to the railway would be aware of the scheme and should take that into consideration in developing their proposals. Consequently the significance of the effect of the DCO Scheme on development land is **neutral** and not significant in relation to the EIA Regulations 2017.

Utilities

- 15.6.22 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, given the high value of utilities and the negligible risk of an accident leading to an environmental impact, the significance of effect of the DCO Scheme is **neutral** and not significant in relation to the EIA Regulations 2017.

Operation Phase

Agricultural Land and Farm Units

- 15.6.23 In the Scoping Opinion the Secretary of State agreed that the risk of livestock getting onto the operational railway line can be scoped out of the assessment, provided the measures proposed to mitigate any adverse impacts are described and secured. The existing fences along the railway will be replaced as part of the DCO Scheme.
- 15.6.24 Following construction, there will be no new impacts on severance or farm operations.
- 15.6.25 Ham Green Lakes at Pill support recreational fishing. In the past, drainage from Pill Tunnel resulted in suspended sediment in the lakes. Network Rail has installed and expanded the pollution control on drainage from Pill Tunnel to resolve the problem. The introduction of the passenger train service is not predicted to change the quality of water draining from Pill Tunnel. Consequently, the impact of the scheme is predicted to be no change on a high value resource resulting in a **neutral** significance of effects, which is not significant in relation to the DCO Scheme.

Development Land

- 15.6.26 In Portishead, a number of areas of development land have been identified around the station area (see the ES Volume 3 Book of Figures, Figure 6.1 and 18.1, DCO Document Reference 6.24). The proposed locations for the Portishead station and the 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.
- 15.6.27 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 residential developments in the vicinity of Portishead marina and close to the proposed station.
- 15.6.28 Overall, the impact of the DCO Scheme on the viability and amenity of development land in Portishead is considered to be **beneficial**.
- 15.6.29 In Bristol, the DCO Scheme will not require land from Site Allocation BSE1001 on part of the former Alderman Moore's Allotments. The Site Allocation already includes the safeguarded route for the MetroBus m2, which is now operational, 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. A planning application for the construction of 133 house has been approved and the development is under construction (see Appendix 18.1 and 18.2 on cumulative impacts assessment, DCO Document Reference 6.25). 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 MetroBus m2 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.

Green Belt

15.6.30 The assessment of the DCO Scheme on Green Belt has been undertaken for the operational phase against the five purposes of the Green Belt, as set out in the NPPF.

To check the unrestricted sprawl of large built up areas

15.6.31 The DCO Scheme involves the reinstatement of the former railway line, along with new stations and other associated works. While the works represent a major linear development, the nature and scale of the DCO Scheme does not result in, or set the precedent for urban sprawl.

15.6.32 The permanent development, where it is located within the Green Belt, is very largely confined within the existing physical boundary of the former railway corridor which was originally established in the 1860s and has been in existence for over 150 years. Where new permanent features are required within the Green Belt it is to provide railway infrastructure within the existing railway corridor owned by Network Rail, environmental mitigation, and for small access and maintenance compounds along the route:

- new physical railway features along the railway include signals, Global System for Mobile Communications – Railway ("GSM-R") masts and antennae to facilitate communication with train drivers, LOC Cabinets, and replacement fencing, each of which are essential for safe railway operation;
- Sheepway maintenance compound and emergency access – hardstanding and fencing;
- Wessex Water pumping station – additional hardstanding providing more formalised parking for a small number of vehicles;
- one floodplain compensation area where the ground levels will be lowered by about 10 cms at the Clanage Road permanent construction compound;
- Ham Green maintenance and emergency access - hardstanding and fencing;
- new pedestrian accesses along the Avon Gorge to the railway; and
- Clanage Road maintenance and emergency access – hard standing and fencing, together with an earth ramp to access the railway from the compound.

15.6.33 As the railway corridor already exists, there is no new severance and no potential for secondary development on severed land parcels.

15.6.34 The use of land for temporary construction compounds and haul roads will be for a temporary period only in support of the main construction works, and any compound areas used will be returned to their former state on completion of the DCO Scheme, except where part of the site is to become a permanent maintenance and emergency access compound.

To prevent neighbouring towns merging into one another

- 15.6.35 Although the DCO Scheme adjoins and passes through a number of urban settlements along its route, and creates two new stations at Portishead and Pill which provide new connectivity and a linkage between the settlements, it does not facilitate a perceivable merger of the settlements.

To assist in safeguarding the countryside from encroachment

- 15.6.36 The footprint of the former railway line largely defines the extent of the DCO Scheme within the Green Belt. The outward expansion of development mainly consists of works outside the Green Belt, comprising:
- the highway modifications, new station and car parks in Portishead;
 - Trinity Primary School Bridge and links to local paths;
 - the restoration of the southern platform for Pill station, new station entrance, and new car park and associated maintenance compound; and
 - highway modifications to improve traffic queuing on Winterstoke Road across the Ashton Vale Level Crossing and into the Ashton Vale Industrial Estate.
- 15.6.37 The new permanent works in the Green Belt comprise relaying the railway on the existing trackbed, the maintenance and emergency compounds at Sheepway, Ham Green and Clanage Road, together with new lineside fencing, signals and communication masts, all of which are essential for the safe and efficient operation of the railway, as described above in paragraph 15.6.32.
- 15.6.38 Based on the re-use by the DCO Scheme of the former rail corridor, the DCO Scheme does not represent unacceptable encroachment into the countryside.

To preserve the setting and special character of historic towns

- 15.6.39 Most of the main works required for the DCO Scheme on the operational railway are located in Portishead and Pill and outside the Green Belt.
- 15.6.40 These works will not materially affect the setting of the towns or of Bristol and the principal features of the railway already exist and have been extant for over 150 years.
- 15.6.41 The DCO Scheme would not significantly affect the historic setting of Bristol and views out from Bristol across the River Avon towards the DCO Scheme, because the railway already exists and has been an element of the landscape, views and setting for over 150 years.
- 15.6.42 Chapter 11 LVIA (DCO Document Reference 6.14) does acknowledge that the DCO Scheme will alter the landscape character and views due to the removal existing vegetation, particularly for the installation of the security fencing and the geotechnical works, resulting in a less wooded appearance to the western side of the Avon Gorge in the short to medium term. Other factors will also change the appearance of these slopes, in particular the spread of Ash die-back which is already affecting trees in the gorge.
- 15.6.43 The assessments undertaken along the route of the railway have not identified any significant effects as a consequence of the DCO Scheme in relation to the setting and special character of any historic towns.

To assist in urban regeneration, by encouraging the recycling of derelict and other urban land

- 15.6.44 The DCO Scheme seeks the construction of a new station on vacant urban land and highway land within Portishead, along with the re-opening and re-use of the vacant station at Pill and the former railway yards for the car park.
- 15.6.45 The construction of the new station and car parking will be complementary to the recent and ongoing redevelopment of this part of Portishead and provide access to public transport to Bristol and beyond.
- 15.6.46 In Pill, there is little scope for redevelopment within the core village. However, the proposals for Pill station would re-use existing land in Network Rail's ownership. The former railway yards would also be acquired under the DCO to create the proposed car park.
- 15.6.47 The DCO Scheme will improve the physical environment and accessibility in both Portishead and Pill, contribute towards enhancing the local economy and encourage future investment.

Appropriateness of local transport infrastructure in the Green Belt

- 15.6.48 The DCO Scheme is appropriate development in the Green Belt for local transport infrastructure which can demonstrate a requirement for a Green Belt location. The railway pre-dates the designation of the countryside as Green Belt and in the last two decades the railway corridor has been protected in the local plans for a rail scheme.
- 15.6.49 For compelling geographic, topographical, technological, social, environmental and economic reasons, there is no viable alternative railway alignment between Portishead and Bristol that can be identified as a credible alternative solution to the DCO Scheme (see the ES Chapter 3 Scheme Development and Alternatives Considered for further information, DCO Document Reference 6.6). The existing railway corridor for the DCO Scheme is the only feasible option because:
- NSDC and Network Rail between them own the land forming the former railway corridor and the permanent land-take required from third parties is relatively small;
 - all the principal structures required for the railway are already in place;
 - the railway is on a relatively straight alignment between Portishead and the connection to the existing rail network at Portbury Dock Junction, thereby reducing the land potentially affected by the DCO Scheme;
 - since the 1860s the physical presence of the railway corridor has influenced the pattern of development in Portishead and Pill, and
 - the corridor has been reserved for transport proposals in the relevant planning policy documents.

- 15.6.50 It is considered that potential harm to the Green Belt from the construction and operation of the DCO Scheme will be minimal and is clearly outweighed by the other important and relevant considerations in relation to the need for the DCO Scheme.

15.7 Mitigation and Residual Effects

- 15.7.1 The assessment has not identified any significant adverse effects and no further mitigation is proposed.
- 15.7.2 The residual environmental effects of the DCO Scheme on soils, agriculture, land use and assets remain as described in Section 15.6.

15.8 Cumulative Effects

- 15.8.1 The methodology for assessing cumulative effects is set out in Chapter 18 In-combination and Cumulative Effects (DCO Document Reference 6.21). For the purposes of this chapter, the value, magnitude and sensitivities are as described in Section 15.3.

In-combination Effects of the DCO Scheme

- 15.8.2 In-combination effects occur between different environmental topics within the same proposal as a result of that development's direct effects. In this chapter in-combination effects have been identified in relation to the various activities likely to be carried out at the temporary construction sites and their effects on nearby neighbours.
- 15.8.3 The temporary construction sites are likely to cause disturbance for residents in neighbouring properties through:
- activities within the construction compound;
 - day-time working, occasional night-time working and periods of 24 hour working, depending on the schedule of construction works;
 - construction activities along the adjoining section of the railway; and
 - disruption due to construction traffic accessing the compound from haul roads and the local highway network. The impact of construction traffic is assessed in Chapter 16 Transport, Access and Non-Motorised Users (DCO Document Reference 6.19).
- 15.8.4 The Portbury Hundred construction compound is located in open countryside to the south of the disused railway line. Two properties lie to the immediate south east of the site, Cole Acres and The Meadows and the old Portbury Station is located on the east side of Sheepway. Shipway Gate Farm house lies to the north of the proposed Portbury Hundred Compound and the railway and is accessed off Sheepway. Residents at these properties may be disturbed by the use of adjoining land as a construction compound resulting in construction noise during the day and occasional night-time working, night-time lighting, dust and loss of visual amenity due to views towards the construction compound, higher construction traffic on access roads to property and traffic management on roads resulting in longer journey times or short diversions. The impact of the use of nearby land as a construction site on nearby private property would be moderate adverse on property which are classed as high value resources. The

contractor's CEMP will include measures to liaise with affected communities and to implement mitigation measures to reduce adverse effects. The in-combination effect of various construction activities is assessed to be **temporary moderate adverse** significance of effect for a small number of properties. This is discussed further in Chapter 18 In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21).

- 15.8.5 The Lodway construction compound is located to the south of the M5 and operational railway land on the west side of Pill. The occupants of property with direct views of the proposed Lodway Construction Compound, including property around Lodway Close, The Breaches, Beechwood Road and off Marsh Lane, may be disturbed by activities at the compound. Given the proximity of the M5, day-time ambient noise levels may not be affected due to the dominating influence of traffic noise. At night, given the lower traffic flows on the M5 and depending on what activities take place, there is potential for significant adverse noise effects. Other effects may include temporary night-time lighting, construction dust from stockpiling and other activities, the visual intrusion from the compound buildings, stockpiles, and machinery on site, and the tracking of mud on to the local roads. The contractor's CEMP will include measures to liaise with affected communities and to implement mitigation measures to reduce adverse effects. The in-combination effects on affected property are described in Chapter 18 In-combination and Cumulative Effects Assessment (DCO Document Reference 6.21). In summary the in-combination effects of the use of the Lodway construction compound are predicted to have minor to major impacts on a large number of residential properties which are classed as a high value resource. This is assessed to be **temporary very large adverse effect** for property in Lodway Close, **temporary large adverse** for property on The Breaches, and **temporary slight to moderate adverse** for property on Beechwood Road and off Marsh Lane. The temporary moderate to very large adverse effects would be significant under the EIA Regulations 2017.

Cumulative Effects with Other Projects

Other Projects along the Portishead Branch Line

- 15.8.6 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.
- 15.8.7 There is potential for cumulative effects to arise from the interaction of the DCO Scheme with a residential development at Alderman Moore's allotments (planning reference 17/06559/FB). This development is currently under construction. The construction period is unlikely to overlap with that of the DCO Scheme, but if it did, in addition to the loss of farmland, 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 transport of construction workers. Given the small area of the development site and its allocation in the Bristol City local plans for redevelopment, the permanent loss of this land from cultivation is assessed to be negligible resulting in a **neutral** significance of effect. The other cumulative effects of noise, dust, and traffic are considered

separately and reported in the ES Appendix 18.2 (DCO Document Reference 6.25).

Other Works for MetroWest Phase 1

- 15.8.8 Other elements of MetroWest Phase 1, namely the modifications to Parson Street Junction (including the Liberty Sidings), Parson Street Station, 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.
- 15.8.9 The management and control process used by Network Rail for delivering projects that enhance or renew the operational railway is called Governance for Railway Investment Projects ("GRIP"). The GRIP process provides assurance that a project can successfully progress to the next stage and requires the preparation of reports for each GRIP stage. Environmental studies are undertaken as part of the GRIP process to identify potential issues and capture the need for mitigation during design and construction. The environmental reports are carried forward from options and feasibility design (GRIP 3 and 4), into the detailed design phase (GRIP 5) and construction (GRIP 6). In this way, environmental issues and mitigation measures are identified at an early stage and addressed through the design and construction phases. Consequently, while permitted development works do not require statutory environmental impact assessment, the GRIP process provides an internal, non-statutory environmental impact assessment process.
- 15.8.10 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 DCO Scheme starts operating.
- 15.8.11 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 DCO Scheme starts operating.
- 15.8.12 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 will need to be planned carefully by Network Rail to minimise disruption to services on the main line. The adjoining land uses comprise housing and allotments, with industrial and commercial land uses nearby. The works are relatively small scale, temporary and within a highly trafficked railway corridor. They would result in no change to the adjoining land uses. The cumulative effect of the DCO Scheme with the works at Parson Street Junction on soils, agriculture, land use and assets is considered to be **neutral** and not significant.

- 15.8.13 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 DCO Scheme starts operating. The adjoining land uses comprise residential and highways. The proposed works are relatively small scale and temporary. They would result in no change to the adjoining land uses. The cumulative effect of the DCO Scheme with the works at Parson Street Station on soils, agriculture, land use and assets is considered to be **neutral** and not significant.
- 15.8.14 Bedminster Down Relief Line (MetroWest Phase 1). The Bedminster Down Relief Line running from Bristol Temple Meads will be extended past Bedminster station to a new turn out 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 Bedminster Down Relief 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 DCO Scheme starts operating.
- 15.8.15 The Bedminster Down Relief Line is located within an urban area close to Parson Street Junction. Adjoining land uses include residential, industrial, commercial and open space at Windmill Hill. 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 0.2 ha 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 on soils, agriculture, land use and assets is considered to be **neutral** and not significant.
- 15.8.16 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. Works to facilitate improve train timetable have now been implemented as part of the Filton Four Track project by Network Rail using its General Permitted Development rights. These works are not required for the operation of the DCO Scheme. The

potential for cumulative effects on soils, agriculture, land use and assets has been scoped out of the assessment.

- 15.8.17 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 DCO Scheme.
- 15.8.18 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 soils, agriculture, land use and assets is considered to be **neutral** and not significant.

15.9 Limitations Encountered in Compiling the ES

- 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 ES.

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: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
<i>Construction activities</i>				
<i>Land acquisition, demolition and other effects on Private Property</i>				
Construction of a new access to Pill station. The property has been purchased by NSDC.	No, 7 Station Road, Pill Value/Sensitivity: High	Demolition of property Magnitude: Major	N/A	Magnitude: Major Significance of Effect: Large to very large, reduced to Neutral following purchase of the site by NSDC Significance for EIA legislation: Not significant
Tracking of a crane through Pill, demolition of part of a garden wall and 12 garages, and creation of a crane pad by Avon Road Bridge. Replacement of garden wall. Compulsory purchase of garages	Property on Marine Parade 12 garages Value: Low (garden wall) to Medium (Garages)	Demolition of property Loss of the use of garages by owners / tenants Magnitude: Minor	N/A	Magnitude: Minor Significance of Effect: Neutral to slight adverse Significance for EIA legislation: Not significant
Temporary construction access route through properties off Lodway Close. Restoration of gardens on completion of the works	Gardens of six properties on Lodway Close Value: Medium	Temporary change in use of gardens and associated loss of garden features Magnitude: Minor	N/A	Magnitude: Minor Significance of Effect: Slight adverse Significance for EIA legislation: Not significant
Works to widen and strengthen the railway embankment east of Pill Viaduct. Implement the CoCP (DCO Document Reference 8.15) and contractor's CEMP.	Gardens of properties along Mount Pleasant. Value: Medium	Short term restrictions on access to gardens for health and safety reasons.	N/A	Magnitude: Minor Significance of Effects: Neutral Significance for EIA legislation: Not significant

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
		Magnitude: Negligible		
Temporary use of the yards off Monmouth Road as a construction compound and permanent conversion to Pill station car park and permanent maintenance compound. Part of the site already purchased by NSDC. Implement the CoCP (DCO Document Reference 8.15) and contractor's CEMP.	Two plots Value: Low	Change in land use from derelict land and a breaker's yard to a construction site and car park Magnitude: Negligible	N/A	Magnitude: Negligible Significant of Effect: Neutral Significance for EIA legislation: Not significant
<i>Loss of Land Used by the Community</i>				
Temporary and permanent land-take to Trinity Primary School Bridge. Replacement of the informal crossing with a new pedestrian and cyclist bridge, realignment of paths, and landscaping.	Amenity grassland and shrubs Value: Low	Temporary diversion of crossing. Magnitude: Negligible	N/A	Magnitude: Negligible Significance of Effect: Neutral. Significance for EIA legislation: Not significant.
Temporary construction compound off Clanage Road and permanent maintenance compound.	Land between the ex - Police Dog and Horse training centre and Bedminster Cricket Club	Temporary and permanent change of use from private use for events to a construction compound and permanent	N/A	Magnitude: Negligible Significance of Effect: Neutral Significance for EIA legislation: Not significant

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
Implement the CoCP (DCO Document Reference 8.15) and contractor's CEMP. Construction of a new permanent access off Clanage Road and a ramp from the compound to the railway. Permanent landscaping around the site.	Value: Low	maintenance compound and RRAP. Magnitude: Negligible		
<i>Agricultural Land and Farm Units</i>				
Permanent loss of 9.31 ha of Grade 3a agricultural land and 2.89 ha of Grade 4 agricultural land to create permanent accesses and maintenance compounds.	Best and most versatile agricultural land (Grades 1, 2 and 3a). Poorer agricultural land (Grades 3b, 4 and 5).	Permanent loss of agricultural land	N/A	Significance of Effect: Negligible to Minor Significant for EIA legislation: Not significant
Fencing off the construction site (and permanent railway). Construction sites and compounds to be secured prior to start of works. Permanent security fencing.	Farm livestock	Risk of livestock straying onto line	N/A	Significance of Effect: Neutral Significance for EIA legislation: Not significant
Closure of farm crossings. Improved access to farmer's field off Sheepway and farmer's field off the A369 Portbury Hundred.	Severed fields / livestock / livelihood	Severance of farm activities	N/A	Significance of Effect: Neutral to minor adverse Significance for EIA legislation: Not significant

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
Temporary use of agricultural land for access, compounds, plant and equipment, etc. Contractors to implement a CEMP to include measures to protect working on agricultural land based on Defra guidance and control construction-related adverse effects such as pollution and waste.	Soil and grassland	Disturbance to agricultural land	N/A	Significance of Effect: Neutral. Significance for EIA legislation: Not significant
Dust and Noise. Contractors to implement a construction dust management plan as part of their CEMP.	Crops Farm livestock	Dust deposition on crops Disturbance to livestock	N/A	Significance of Effect: Neutral Significance for EIA legislation: Not significant
<i>Development Land</i>				
No direct use of development land	None	None	N/A	No significant effects
<i>Utilities</i>				
Accidental risks to assets on adjoining land. Ongoing liaison with the utilities. On site surveys to identify specific locations of utilities. Contractor to develop and implement protocols for safe working near utilities and diversions in	Utility infrastructure including the oil pipeline and nearby land and watercourses. Value: High	Risk of an accident or hazard leading to damage to the asset and result loss of power, telecoms, or oil spillage Magnitude (Risk of an accident): Negligible	N/A	Magnitude: Negligible Significance of Effect: Neutral Significance for EIA legislation: Not significant.

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
consultation with the utility companies.				
<i>Operation activities</i>				
<i>Agricultural Land and Farm Units</i>				
Pollution of drainage from Pill Tunnels. Network Rail has installed pollution control measures on the outfall to Ham Green lakes. No further pollution control is planned for this outfall.	Ham Green Lakes, Pill. Value: High	Quality of receiving waters Magnitude: No change		Magnitude: No change Significance of Effect: Neutral Significance for EIA legislation: Not significant
<i>Development Land</i>				
Operation of a new passenger service to Portishead	Development land in the centre of Portishead	Improve the viability and amenity of development land in Portishead.	N/A	Significance of Effect: Beneficial
Operation of a new passenger service. Developers of Alderman Moores to take potential environmental effects of the railway into account.	Alderman Moore's housing development.	Risk of affecting the viability and amenity of development land at Alderman Moores, but unlikely as both developments have been identified in the local plans and both schemes are going ahead.	N/A	Significance of Effects: Neutral

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
<p>New passenger services between Portishead, Pill and Bristol.</p> <p>Implement the CoCP (DCO Document Reference 8.15) and contractor's CEMP during construction. Design of urban realm and station layouts in Portishead and Pill.</p> <p>Planting along the disused section of the railway.</p> <p>One area of floodplain compensation comprising small-scale lowering of the ground levels.</p> <p>Landscaping around permanent compounds in the Green Belt.</p>	Green Belt	Potentially affect the five objectives of the Green Belt.	N/A	The DCO Scheme meets the condition of appropriate development in the Green Belt for local transport infrastructure which can demonstrate a requirement for a Green Belt location.

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
<i>Cumulative Effects</i>				
<i>In-combination effects of the DCO Scheme</i>				
Construction activities at construction compounds, haul roads, and accesses resulting in multiple effects on nearby residential land uses from noise, lighting, traffic, dust, etc. Implementation of the CoCP (DCO Document Reference 8.15) and contractor's CEMP.	A small number of houses and farm units near the Portbury Hundred Construction Site Value: High	Loss of amenity value of a small number of nearby properties due to the use of Portbury Hundred farm as a construction compound. Magnitude: Temporary moderate adverse	Contractor to develop their construction site plans to reduce the impact of the compound on neighbours.	Magnitude: Temporary moderate adverse Significance of Effect: Temporary moderate adverse Significance for EIA legislation: Significant
	Property near the Lodway Construction Compound including: The Breaches, Beechwood Road and Marsh Lane. Value: High	Loss of amenity value of a large number of nearby properties due to the use of Lodway farm as a construction compound. Magnitude: Temporary minor to major adverse depending on distance from the compound.	Contractor to develop their construction site plans to reduce the impact of the compound on neighbours.	Magnitude: Temporary minor to major adverse Significance of Effect: Temporary slight, moderate, large, to very large adverse Significance for EIA legislation: Moderate and larger effects area significant

Table 15.11: Summary of the assessment of the DCO Scheme on soils, agriculture, land use and assets

Aspect and control measures embedded in the DCO Scheme	Receptors	Impact	Environmental Mitigation	Residual Impact
<i>Other projects along the Portishead Branch Line</i>				
Cumulative effects of the construction of the Alderman Moore's allotments for housing with the DCO Scheme.	Agricultural land at the Alderman Moore's allotments. Value: Low	Loss of agricultural land and soil resource in combination with the DCO Scheme. Magnitude: Negligible	N/A	Magnitude: Negligible Significance of Effects: Neutral Significance for EIA legislation: Not significant
<i>Other works for MetroWest Phase 1</i>				
Construction of the DCO Scheme with: Parson Street Junction, Parson Street Station, Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling, and Bathampton Turnback. Implementation of Network Rail's environmental management procedures during construction.	Land uses adjoining the railway network, including: housing, industrial, commercial, recreational and grazing land in combination with land uses along the DCO Scheme. Value: Low to high	Cumulative effect of construction-related impacts on lineside land uses. Magnitude: No change to negligible	N/A	Magnitude: No change to negligible Significance of Effect: Neutral Significance for EIA legislation: Not significant

15.11 References

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15.12 Abbreviations

ALC	Agricultural land classification
BCC	Bristol City Council
B&NES	Bath and North East Council
CCP	Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
CoCP	Code of Construction Practice
CEMP	Construction Environmental Management Plan
Defra	Department for the Environment and Rural Affairs
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
GSM-R	Global System for Mobile Communications – Railway
JLTP4	West of England Joint Transport Local Transport Plan 4 2019 – 2036
JSP	West of England Joint Spatial Plan
JTS	West of England Joint Transport Study
LVIA	Landscape and Visual Impacts Assessment
NPPF	National Planning Policy Framework
NPSNN	National Policy Statement for National Networks
NSDC	North Somerset District Council
NSIP	Nationally significant infrastructure projects
NT	National Trust
P&R	Park and ride
PSP	Principal supply point (for electricity supply for signalling)
SAC	Special Area of Conservation
SADMPLP	Site Allocations and Development Management Policies Local Plan
SGC	South Gloucestershire Council
SPA	Special Protection Area
SPP	Sites and Policies Plan
SSSI	Site of Special Scientific Interest
SWMP	Site Waste Management Plan
WPD	Western Power Distribution

