Cultural Heritage
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8</strong></td>
<td>Cultural Heritage</td>
</tr>
<tr>
<td>8.1</td>
<td>Introduction</td>
</tr>
<tr>
<td>8.2</td>
<td>Legal and Policy Framework</td>
</tr>
<tr>
<td>8.3</td>
<td>Methodology</td>
</tr>
<tr>
<td>8.4</td>
<td>Baseline, Future Conditions and Value of Resource</td>
</tr>
<tr>
<td>8.5</td>
<td>Measures Adopted as Part of the DCO Scheme</td>
</tr>
<tr>
<td>8.6</td>
<td>Assessment of Effects</td>
</tr>
<tr>
<td>8.7</td>
<td>Mitigation and Residual Effects</td>
</tr>
<tr>
<td>8.8</td>
<td>Cumulative Effects</td>
</tr>
<tr>
<td>8.9</td>
<td>Limitations Encountered in Compiling the PEI Report</td>
</tr>
<tr>
<td>8.10</td>
<td>Summary</td>
</tr>
<tr>
<td>8.11</td>
<td>References</td>
</tr>
<tr>
<td>8.12</td>
<td>Abbreviations</td>
</tr>
</tbody>
</table>

## Tables

- Table 8-1: Summary of relevant NPSNN advice on the historic environment
- Table 8-2: Summary of Local Policy
- Table 8-3: Summary of consultation responses
- Table 8-4: Assessing the value of cultural heritage receptors
- Table 8-5: Definition of assessment criteria for the magnitude of impact
- Table 8-6: Determination of the significance of effect
- Table 8-7: Potential Impacts, Mitigation and Residual Impacts for the DCO Scheme on Cultural Heritage Assets

## Figures

- See Volume 3 Book of Figures

**Figure 8-1:** Cultural heritage

## Appendices

- See Volume 4 Appendices

**Appendix 8.1:** Cultural Heritage Gazetteer

**Appendix 8.2:** Scheme inter-visibility
CHAPTER 8

Cultural Heritage

8.1 Introduction

8.1.1 The Portishead Branch Line (MetroWest Phase 1) DCO Scheme (“the DCO Scheme”) has the potential to give rise to likely significant effects on cultural heritage. 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 cultural heritage effects in the Preliminary Environmental Information Report (“PEI Report”);
- describes the cultural heritage baseline having regard to existing information and information presented in Appendix 8.1 in the PEI Report Volume 4 Appendices;
- describes the measures that have been adopted as part of the DCO Scheme;
- identifies and assesses the likely significant effects that could result from the DCO Scheme during the construction, operation and decommissioning phases;
- considers mitigation of likely significant effects and assesses those residual effects that will result;
- considers the cumulative effects of other developments in combination with the DCO Scheme on cultural heritage assets;
- identifies the limitations encountered in compiling the PEI Report; and
- provides a summary of the residual effects for the mitigated DCO Scheme.

8.1.2 The cultural heritage resource comprises built heritage (including extant railway architecture of all types), designated areas (including Conservation Areas “CA”, Scheduled Monuments “SM”, and Registered Parks and Gardens “RP&G”), extant and buried archaeology, and Historic Landscape Characters (“HLC”).

8.1.3 This report considers the direct and indirect impacts of the DCO Scheme on statutory and non-statutory designations in addition to non-designated cultural heritage assets during construction and the operation phases.

8.1.4 This chapter should be read in conjunction with Chapter 4 Description of the Proposed Works and Chapter 12 Landscape and Visual Impacts which also discusses the landscape setting and views from heritage features. Supporting information on specific heritage features is provided in the gazetteer in Appendix 8.1 and photographs showing the setting of heritage features are provided in Appendix 8.2. Figure 8-1 Sheets 1 to 5 in the PEI Report Volume 3 Book of Figures show the location of heritage features.

8.2 Legal and Policy Framework

EU and National Legislation

8.2.1 The main legal framework governing the conservation of cultural heritage assets is provided by the Ancient Monuments and Archaeological Areas Act 1979 (as amended) and the Planning (Listed Buildings and Conservation Areas) Act 1990.
8.2.2 The Ancient Monuments and Archaeological Areas Act 1979 provides for the protection of scheduled monuments.

8.2.3 The Infrastructure Planning (Decisions) Regulations 2010 states that:

“(1) When deciding an application which affects a listed building or its setting, the [Secretary of State] must have regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses.

(2) When deciding an application relating to a conservation area, the [Secretary of State] must have regard to the desirability of preserving or enhancing the character or appearance of that area.

(3) When deciding an application for development consent which affects or is likely to affect a scheduled monument or its setting, the [Secretary of State] must have regard to the desirability of preserving the scheduled monument or its setting.”

8.2.4 The Planning (Listed Building and Conservation Areas) Act 1990 requires local authorities to designate areas of special architectural or historic interest as Conservation Areas with the aim of preserving and enhancing their character and appearance. Historic England (formerly English Heritage) may need to be consulted with regard to proposed works within a Conservation Area and section 72(1) requires Local Authorities to pay particular attention to Conservation Areas in the planning process. This Act states that when deciding a planning application the decision maker must have special regard to preserving the character of a Conservation Area and listed buildings and their settings.

National Policy

8.2.5 The National Policy Statement for National Networks ("NPSNN") advises on the assessment of effects of nationally significant infrastructure projects ("NSIP") on the historic environment at paragraphs 5.120 - 5.142. This includes an introduction to heritage issues, the requirements on the applicant, decision-making by the Secretary of State and recording. Table 8-1 below identifies those policies of direct relevance to this assessment and the location where they are considered in this PEI Report.

<table>
<thead>
<tr>
<th>Summary of NPS provision</th>
<th>Consideration within the PEI Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paragraph 5.126 states that for development subject to environmental impact assessment (EIA) the Applicant should undertake an assessment of likely significant heritage impacts.</td>
<td>This chapter presents the findings to date.</td>
</tr>
<tr>
<td>Paragraph 5.127 requires the Applicant to describe the significance of heritage assets affected, including their setting. The relevant Historic Environment Record (&quot;HER&quot;) should be consulted. Where the site has potential to include heritage assets, the applicant should undertake a desk-based assessment and where appropriate field evaluation.</td>
<td>The HER for NSDC and BCC were consulted and are summarised in Section 8.4 and listed in the gazetteer in Appendix 8.1 in the PEI Report Volume 4 Appendices. The location of sites is shown on Figure 8-1 Sheets 1 to 5 in the PEI Report Volume 3 Book of Figures. Photographs showing the setting of these assets are provided in Appendix 8.2 in the PEI Report Volume 4 Appendices. This chapter presents the results of a desk-based assessment supported by field walkover surveys.</td>
</tr>
</tbody>
</table>

8.2.6 The National Planning Policy Framework ("NPPF") Section 12 on Conserving and Enhancing the Historic Environment describes the approach to be used by local planning authorities to determine planning applications in relation to cultural heritage and listed building consent applications. This guidance applies both to designated heritage assets, such as Listed Buildings and Conservation Areas and also to undesignated, but potentially significant, heritage assets such as buried archaeological remains and other historic.
structures, including those that make a positive contribution to the character of a Conservation Area. Whilst the NPPF only applies to planning applications and not applications for development consent, it may be an important and relevant consideration as part of the DCO application.

Local Policy

8.2.7 The local planning framework comprises a number of key adopted documents which form the statutory development plan for each authority, against which proposals seeking planning permission are assessed. These policy documents comprise saved policies from extant Local Plans as well as new emerging policy documents.

8.2.8 The DCO Scheme crosses two local planning authorities, North Somerset District Council (“NSDC”) and Bristol City Council (“BCC”). The relevant planning policies relating to cultural heritage are summarised in Table 8-2 below. Further information is provided in Chapter 6 Planning Framework.

Table 8-2: Summary of local policy

<table>
<thead>
<tr>
<th>Policy No.</th>
<th>Title</th>
<th>Policy Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS5</td>
<td>Landscape and historic environment</td>
<td>Emphasis on protecting the character, distinctiveness, diversity and quality of North Somerset's landscape and townscape while also conserving the historic environment.</td>
</tr>
<tr>
<td>DM3</td>
<td>Conservation Areas</td>
<td>This policy aims to conserve and enhance conservation areas in North Somerset.</td>
</tr>
<tr>
<td>DM4</td>
<td>Listed Buildings</td>
<td>Seeks to protect listed buildings and their setting from inappropriate development.</td>
</tr>
<tr>
<td>DM5</td>
<td>Historic Parks and Gardens</td>
<td>Includes provisions to ensure that development proposals will not adversely affect designated landscape character within the district including both nationally registered and unregistered Historic Parks and Gardens.</td>
</tr>
<tr>
<td>DM6</td>
<td>Archaeology</td>
<td>Seeks to ensure that new development will not significantly impact on archaeological remains or their setting.</td>
</tr>
<tr>
<td>DM7</td>
<td>Non-designated heritage assets</td>
<td>Seeks to protect non-designated heritage assets and their setting from inappropriate development.</td>
</tr>
<tr>
<td>BCS22</td>
<td>Conservation and the Historic Environment</td>
<td>Seeks to protect heritage assets and their character and setting from inappropriate development, giving specific regard to: scheduled ancient monuments; historic buildings; historic parks and gardens; conservation areas; and archaeological remains.</td>
</tr>
<tr>
<td>DM31</td>
<td>Heritage Assets</td>
<td>Identifies that development that has an impact upon a heritage asset will be expected to conserve and, where appropriate, enhance the asset or its setting.</td>
</tr>
</tbody>
</table>

This document provides further guidance on the City’s approach to archaeology and development when considering planning applications.
8.3 Methodology

Guidance and Best Practice

8.3.1 There is no specific guidance on the approach to undertaking an environmental assessment for railways. The assessment methodology follows the Department for Transport's Design Manual for Roads and Bridges ("DMRB"), Volume 11, Section 3, Part 2, HA 208/07 including Annexes 5 (Archaeological Remains), 6 (Historic Buildings) and 7 (Historic Landscape). Although DMRB was developed for highways, the Department for Transport considers it is suitable for other linear schemes including railways (Department for Transport, 2015).

8.3.2 The settings of cultural heritage assets are included in the assessment and follow the Historic England guidance on The Setting of Heritage Assets (Historic England 2011). This guidance recommends a staged approach for assessing the implications of development proposals:

- to identify those heritage assets whose settings might be affected by a given development;
- to assess whether, how and to what degree the setting makes a positive contribution to the value of the heritage asset(s), i.e. what matters and why;
- to assess the effect of the proposed works on the value of the asset through the consideration of the key attributes of the proposed works; and
- to examine the way in which the proposed development enhances or detracts from the setting of a heritage asset.

8.3.3 Descriptions of the setting of those assets with a visual or historic relationship with the DCO Scheme have been prepared. The assessment of setting has generally been reserved for the cultural heritage designations e.g. scheduled monuments and listed buildings. For non-designated buildings, where setting does not add to the heritage value/ significance, these have not been included as part of the assessment.

Consultations

8.3.4 A summary of consultations undertaken to date is presented in Table 8-3 below. Further information on the consultation process is presented in Chapter 5 Approach to the Environmental Statement. The Consultation Report on the informal stakeholder consultations undertaken in 2015 is available on the MetroWest project website at the following address http://travelwest.info/project/metrowest-phase-1.
Table 8-3: Summary of consultation responses

<table>
<thead>
<tr>
<th>Organisation and date</th>
<th>Summary of response</th>
<th>Consideration within PEI Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scoping Opinion (August 2015)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning Inspectorate</td>
<td>Para. 3.29. The SoS considers that insufficient information was presented in the Scoping Report to scope out the cumulative effects of the Project on the Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling and Bathampton Turnback.</td>
<td>Some further information on the other works for MetroWest Phase 1 and the associated cumulative effects are presented in Section 8.8 and in Appendices 18.1 and 18.2 in the PEI Report Volume 4 Appendices regarding the cumulative effects.</td>
</tr>
<tr>
<td></td>
<td>Para. 3.40. The impact of the Project on Leigh Court RP&amp;G and other historic assets and their settings should be assessed.</td>
<td>The impact of the DCO Scheme on Leigh Court during construction and operation is assessed in Section 8.6 and the gazetteer in Appendix 8.1 in the PEI Report Volume 4 Appendices.</td>
</tr>
<tr>
<td></td>
<td>Para. 3.42. The applicant should liaise with the heritage officers at Historic England, North Somerset and Bristol local authorities and other relevant consultees.</td>
<td>To date consultation have been held with the relevant officers at North Somerset District Council and Bristol City Council. See Table 8-3 below.</td>
</tr>
<tr>
<td></td>
<td>Para. 3.43. Copies of draft management plans to be implemented post consent should be appended to the ES.</td>
<td>Draft management plans have not been prepared for the PEI Report as no significant impacts have been identified.</td>
</tr>
<tr>
<td></td>
<td>Para. 3.44. The cultural heritage assessment should cross-refer to the Chapter on Landscape and Visual Impact Assessment.</td>
<td>Both this chapter and Chapter 11 Landscape and Visual Impact assess the impact of the DCO Scheme on the setting of heritage features. This chapter should be read in conjunction with Chapter 11 and its supporting appendices.</td>
</tr>
<tr>
<td>Historic England</td>
<td>Historic England is concerned that there may be impacts on the historic environment and considers that an EIA is required</td>
<td>An EIA is being undertaken and the results to date provided in this PEI Report.</td>
</tr>
</tbody>
</table>
Table 8-3: Summary of consultation responses

<table>
<thead>
<tr>
<th>Organisation and date</th>
<th>Summary of response</th>
<th>Consideration within PEI Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic England</td>
<td>Listed Buildings: Church of St George, Clifton Suspension Bridge and two toll houses, 1-14 Paragon, 15 The Paragon, Promenade House, Taylor Maxwell House, Swing Bridge over north entrance lock, Brunel's South Entrance Lock, Swing Bridge over Brunel’s south entrance lock, The Colonnade, Engineers House, Trafalgar House, Alva House, Freeland Court, Clifton Observatory, 2-9 Albemarle Row, and Church of St Mary. Registered Park and Garden: Berkley Castle, Ashton Court Scheduled Monuments: Clifton Down Camp, Stokeleigh Camp, Part of the Roman settlement in Abonae.</td>
<td>These assets have been assessed in Section 8.6 and in the gazetteer, the listing of heritage features, in Appendix 8.1 in the PEI Report Volume 4 Appendices. Berkley Castle has not been assessed further as it lies near Stroud, Gloucestershire. Due to the distance and intervening topography it will not be affected by the DCO Scheme. Section 8.6 and Appendix 8.1 in the PEI Report Volume 4 Appendices consider the impacts on designated and non-designated assets. The Historic England guidance has been employed for the assessment of the impacts to designated assets (Section 8.6 and Appendix 8.1 in the PEI Report Volume 4 Appendices). The assessment needs to consider the potential impact on all heritage assets including designated heritage assets and their settings and non-designated features of interest. The assessment methodology should follow Historic England Guidance The Setting of Heritage Assets Advice Note 3 and be undertaken by a recognised heritage professional. The assessment needs to consider: the impact on landscape, direct impacts on historic sites and areas; indirect impacts on setting and long views; use of photomontages; potential for buried archaeology; effects on landscape amenity; and cumulative effects. Direct and indirect impacts on the heritage assets, historic landscape and the impact on the historic setting of heritage assets are presented in Section 8.6 and Appendix 8.1 in the PEI Report Volume 4 Appendices. The assessment on landscape, setting and views for historical assets also forms part of the landscape and visual impact assessment in Chapter 11. While photographs of the DCO Scheme and its surrounds are provided in the appendices to this chapter and Chapter 11, photomontages have not been prepared. The details of the DCO Scheme are being developed and there are few locations which afford views of heritage features and their setting in the context of the railway.</td>
</tr>
</tbody>
</table>
Table 8-3: Summary of consultation responses

<table>
<thead>
<tr>
<th>Organisation and date</th>
<th>Summary of response</th>
<th>Consideration within PEI Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Somerset Council</strong></td>
<td>The historic environment advisory service provided general background to the archaeological resource within the relevant part of North Somerset, from the prehistoric through to the post-medieval periods. North Somerset also advised that “given...exceptions...most of the sites within the search area should be minimally affected by the proposals, although access roads and construction camps will need to be sited carefully, and possibly archaeologically evaluated prior to construction”. North Somerset also provided a series of locations from where there are views to the Portishead to Pill disused section and the Portbury Freight Line from local vantage points.</td>
<td>Baseline information is presented in Section 8.4 and the assessment in Section 8.6.</td>
</tr>
<tr>
<td><strong>Bristol City Council</strong></td>
<td>The city’s conservation officer indicated that changes to the setting of designated assets was the primary consideration of the project. The council provided locations where views across to the project would be useful in establishing the extent of potential change. They highlighted that the significant viewpoints/receptors were going to be those related to historic locations or those with high recreational value, which included the Clifton Suspension Bridge and Sea Walls viewing area (The Downs). The Council stated that the applicant’s assessment of changes from the DCO Scheme on additional areas and historic structures would be welcomed.</td>
<td>The setting of assets is covered in Sections 8.6 and in Chapter 11. The assessment of the DCO Scheme on the Clifton Suspension Bridge itself and views from Sea Walls are discussed in paragraphs 8.6.29 for construction and 8.6.90 to 94 for the operation phase.</td>
</tr>
</tbody>
</table>

The local authorities’ conservation and archaeology advisors should be closely involved throughout the preparation of the Environmental Statement.

The local authorities’ archaeological and conservation advisors have been consulted by email on 16 September 2015 and on 15 December 2016. They will be fully informed of the PEI and will be kept regularly updated on the process of the DCO Scheme application.
Definition of the Study Area

8.3.5 The study area has been divided into two sub-areas, a wider corridor 500 m either side of the centreline of the DCO Scheme to assess the impacts of the DCO Scheme on the setting of designated cultural heritage assets, and a narrower corridor 50 m either side of the centreline of the DCO Scheme to assess the direct impacts of the DCO Scheme on the potential physical damage to all heritage assets and the setting of non-designated assets. A corridor 500 m either side of a potential new highway alignment is recommended by DMRB for a new highway alignment and was adopted here as a starting point to collate information. DMRB also recognises that features beyond 500 m can be affected by major projects, and this has been taken into consideration in the development of the baseline and the impact assessment. Consequently, consideration was given to assessing heritage features beyond 500 metres whose setting could be affected by the proposed development based on professional judgment. The choice of a 50 m corridor was also chosen to give due regard to heritage features close to the DCO Scheme and is based on professional judgement.

Key Receptors

8.3.6 The key receptors for the Cultural Heritage assessment are as follows:

- Designated features:
  - Scheduled monuments
  - Conservation Areas
  - Listed buildings and structures
  - Registered parks and gardens
- Non-designated features:
  - Archaeological find spots
  - A wide range of heritage assets
- Historic landscapes: the railway passes through a number of Historic Landscape Character areas, which vary from the medieval to the present-day and provide context for the setting of the existing railway which was itself constructed over a century ago in the 1860s.

Defining the Baseline

8.3.7 A desk top study was undertaken to collate secondary information on cultural heritage assets potentially affected by the DCO Scheme from the following sources.

- the Historic Environment Record (“HER”) data held by NSDC for archaeological sites and monuments data, derived from a GIS dataset obtained from NSDC;
- listed buildings, scheduled monuments, registered battlefields and historic parks and gardens information from the National Monuments Records (“NMR”);
- cross-checking of designation data from Historic England through the website www.magic.gov.uk;
- historic mapping (Ordnance Survey (“OS”) and pre-OS) from the Somerset Heritage Centre (“SHC”) in Taunton;
- the National Heritage List for England (www.english-heritage.org.uk) to cross-check designation information;
• the North Somerset Council’s Historic Environment Records website (http://map.n-somerset.gov.uk/HER) for cross-checking designated and non-designated assets in addition to HLC data and for the location of the county’s Conservation Areas; and

• Bristol City Council’s website (http://maps.bristol.gov.uk/knowyourplace) for cross-checking designated and non-designated assets.

8.3.8 Data on designated heritage assets were gathered for the DCO Scheme for a 500 m buffer area either side of the railway centreline between Portishead and Parson Street Junction. Where topography results in inter-visibility with the DCO Scheme, designated features beyond the 500 m buffer area have been included. Data for non-designated built heritage and archaeology were gathered for the railway corridor and a 50 m buffer area from the centreline of the railway.

8.3.9 The cultural heritage assets described in this chapter are reproduced from the NSDC’s HER and the NMR designation datasets available from Historic England. They are an accurate record of the known designations within the vicinity of the DCO Scheme.

8.3.10 The NSDC dataset is not a definitive record of the non-designated cultural heritage within the study area, but rather a record of the known cultural heritage resource from previous studies (including but not exclusive to historic map studies, documentary searches, aerial photographic studies and old photographs, and previous archaeological interventions).

8.3.11 Three site walkovers were conducted by the Scheme Archaeologist and Heritage consultant:

• the disused section of the DCO Scheme between Portishead and Pill was walked on 19 March 2014 to observe heritage features in the field;

• the Portbury Freight Line between Pill and Ashton Gate was walked on 14 October 2015 to observe heritage features along the railway corridor and to ascertain views to heritage features from the railway; and

• visits to designated heritage assets within the study area were made to assess the views across to the Portishead Branch Line on 20 October 2015.

Assessment of Construction Impacts

8.3.11.1 The construction impacts for the DCO Scheme were determined in terms of their likely scale and nature e.g. noise, visibility, vibration, the removal of soil horizons, the removal of standing structures and extant archaeological remains. These impacts were evaluated in terms of the likelihood of physical damage, their proximity, inter-visibility, and change in the setting of each relevant asset in relation to the DCO Scheme.

8.3.12 Potential impacts include, but are not exclusive of, the removal of the remaining historic railway architecture still present on the disused line (old tracks, sleepers, signals, station remains, etc.), potential impacts to the buried archaeological environment relating to the construction of Portishead Station and new overbridges, impacts from construction compounds and associated haul roads adjacent to the DCO Scheme and the impacts on the setting of designated sites within 500 m of the DCO Scheme from construction plant and traffic and the removal of vegetation.

8.3.13 The designated cultural heritage assets have been assessed in terms of their significance as historic assets. Their value has been assessed not just to their level of physical survival but also their historic and visual setting. To this end, the Landscape and Visual Impact study (Chapter 12) has been utilised for its visual impact assessment, aside from the results of the Project walkover surveys.
Assessment of Operational Impacts

8.3.14 The main impact during the operational phase is the effect of the DCO Scheme on the setting of designated and non-designated heritage assets. Some of these impacts have been addressed through embedded mitigation. This involved re-configuration of the railway line to accommodate frequent passenger trains, the removal of some vegetation in the railway corridor and the opening of operational stations along the route and associated impacts such as road traffic flows around the stations.

8.3.15 The operational impacts of the project on the setting of cultural heritage features were assessed in light of the way in which the completed design will affect the setting of heritage assets, both in terms of visual changes and the effects of noise from the operating trains. Where relevant the change to historic setting has been given.

8.3.16 As above, the designated cultural heritage assets have been assessed in terms of both physical survival and their historic and visual setting. The Landscape and Visual Impact study (Chapter 12) has therefore been used for its visual impact assessment as well as the results of the walkover surveys. The operational scheme will result in regular train services and result in additional sources of noise. The Noise and Vibration chapter (Chapter 13) has been referenced to determine the likely impacts of the noise from the operational service on the historic environment.

8.3.17 It should be noted that on occasion the LVIA assessment will return a different significance of effect to cultural heritage. This is usually as a result of High value assets, such as Scheduled Monuments and Grade 2* Listed Buildings returning a greater adverse effect than LVIA, due to the effect on setting, when there is a limited change or impact.

Assessment of Decommissioning Impacts

8.3.18 No specific plans have been formulated for the decommissioning phase of the Portishead Branch Line. It is expected that the services will continue for as long as there is a business case for doing so. Closure of railways is a regulated process, overseen by the Office of Rail and Road. Disposal of railway assets is also regulated by the Office of Rail and Road under the terms of Network Rail’s licence.

8.3.19 Railways are not designed to be decommissioned, although in accordance with paragraph 5.85 of the NPSNN, development plan policies [and Network Rail’s Sustainable Development Strategy], consideration will be given to the sustainability of materials used in construction, including their embodied carbon content, where choice is available and some information on this is provided in Chapter 12 Materials and Waste. For the NSIP, in the event that the train operating company decides to cease services on the Portishead Branch Line, it is likely that the railway assets will remain in place, as occurred after traffic ceased in the 1980s. Previous practice following railway closures suggests that the railway formation will remain available either for re-development over time or finding an alternative transport use such as a guided busway or a cycle path. Such proposals would be subject to their own assessment including consideration of environmental effects. As such proposals are not reasonably foreseeable, the likely impacts cannot be assessed.

8.3.20 For any abandoned part of the railway track bed, vegetation would gradually encroach upon the railway line, with herbaceous plants, shrubs and trees gradually recolonising the railway corridor. The assets comprising the trackbed would gradually fall into disrepair due to the action of erosion and corrosion from rain, plants and animals. As the railway to be authorised by the DCO is largely laid at surface level between Portishead and Pill it is not anticipated that there would be significant need for ongoing maintenance work for embankments or cuttings. Ongoing maintenance of the cuttings and embankments would still be required along the operational railway from the Port to the main line. Network Rail
would probably recover (and ideally re-use) items of values such as wiring, signalling equipment and principal supply points ("PSP").

8.3.21 Remaining assets such as fencing would continue to be maintained. The bridges carrying highways over the DCO scheme and public rights of way would continue to be maintained to standards appropriate for the public use, as a result of the obligations of North Somerset District Council as local highway authority.

8.3.22 It is anticipated the line between Royal Portbury Dock and Parson Street would remain open for services to the Port. The currently operational railway would remain open for freight traffic even if passenger services ceased and any decision regarding the cessation of freight services would be one for the Freight Operating Companies and Bristol Port Company, so decommissioning the operational railway is not considered relevant or foreseeable for assessing the DCO Scheme. Were any decommissioning of all or part of the operational railway to be proposed in the future, a separate project would be developed, which would be accompanied by a specific assessment of the implications for the Avon Gorge Woodlands Special Area of Conservation.

8.3.23 It is not anticipated that the associated development comprising highway works or car parks at Portishead would be altered as a result of the cessation of rail passenger services between Portishead and Bristol. Similarly it is anticipated the car parks at Pill would remain as car parks albeit for all of the car parks development proposals might come forward over time and would be assessed for their planning impacts and any environmental effects at such time as such schemes came forward for the local planning authority to consider. Changes to the UK’s use of fuel for transport mean that the nature of emissions from vehicles undertaking any removal of items could only be a matter of speculation.

Assessment of Cumulative Effects

8.3.24 The assessment of cumulative effects considers the impact of committed developments within the vicinity of the DCO Scheme with (a) other projects within approximately 500 m of the DCO Scheme which have a high probability of being implemented and are likely to have significant environmental effects, (b) other works associated with MetroWest Phase 1 comprising the modifications to Parson Street Junction (including Liberty Lane Sidings) and Station, the Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling and Bathampton Turnback, and (c) other projects being undertaken by Network Rail under their permitted development rights.

8.3.25 The approach to the selection of the other projects considered for the cumulative impact assessment is described in Chapter 18 In-Combination and Cumulative Effects Assessment and a list of the projects short listed for the cumulative impact assessment is provided in Appendices 18.1 and 18.2.

8.3.26 The assessment of cumulative effects covers the construction and operational phases of other reasonably foreseeable projects with the DCO Scheme.

Use of Significance Criteria

Introduction

8.3.27 A three-stage approach has been adopted to assess the significance of the DCO Scheme on heritage assets:

- Establishing the scale of the asset values, which are set as very high, high, medium, low and negligible using the definitions described in DMRB;
• Determining the likely magnitude of impacts upon the cultural heritage assets, based on an understanding of the DCO Scheme and professional judgement, and summarised on the scale major, moderate, minor adverse, negligible and no change; and

• Determining the significance of effect by comparing the value of the asset and the magnitude of impact on the following scale: very large, large, moderate, slight and neutral.

Value of Heritage Assets

8.3.28 The DMRB guidance describes how the value of cultural heritage assets can be arrived at:

“Assessments of value should consider how far the asset(s) contribute to an understanding of the past, through their individual or group qualities, either directly or potentially. This will require a consideration of whether the asset belongs to a group or a subject of study that is of acknowledged importance, and how far it retains the characteristics that can contribute to an understanding of that group or subject, or whether it offers the potential for such understanding. The community that values the asset is a factor to be taken into account. For instance, is it internationally known, or locally valued? Is the asset appreciated by specialists or by a wider public? Is the subject area to which it contributes of major concern or is it a minority matter? These factors need to be balanced, and a reasoned assessment reached in each case.” (DMRB Volume 11, Section 3, Part 2, HA 208/07, paragraph 5.27).

8.3.30 The value of the known cultural heritage receptors are estimated using the criteria for designated and non-designated cultural heritage assets presented in Table 8-4 below.

Table 8-4: Assessing the value of cultural heritage receptors

<table>
<thead>
<tr>
<th>Resource value</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| Very High      | • World Heritage Sites (including buildings and those inscribed for their historic landscape qualities)  
• Assets of acknowledged international importance  
• Assets that can contribute significantly to acknowledged international research objectives  
• Historic landscapes of international value, whether designated or not  
• Extremely well preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s)  
• Structures inscribed as of universal importance as World Heritage Sites  
• Other buildings of recognised international importance |
| High           | • Scheduled Monuments (including standing remains)  
• Undesignated assets of schedulable quality and importance  
• Grade I and II* listed structures  
• Assets that can contribute significantly to national research objectives  
• Undesignated structures of clear national importance  
• Grade I and II* designated historic landscapes of outstanding interest  
• Undesignated landscapes of outstanding interest  
• Undesignated landscapes of high quality and importance, and of demonstrable national value  
• Registered parks and gardens  
• Well preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factor(s) |
### Table 8.4: Assessing the value of cultural heritage receptors

<table>
<thead>
<tr>
<th>Resource value</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| **Medium**     | • Designated or undesignated archaeological assets that contribute to regional research objectives  
• Designated special historic landscapes  
• Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value  
• Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factor(s)  
• Grade II Listed Buildings  
• Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical associations  
• Conservation Areas containing buildings that contribute significantly to its historic character  
• Historic Townscape or built-up areas with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures)  
• Historic Townscape or built-up areas with important historic integrity in their buildings, settings or built settings |
| **Low**        | • Designated and undesignated assets of local importance  
• Assets compromised by poor preservation and/or poor survival of contextual associations  
• Assets of limited value, but with potential to contribute to local research objectives  
• Robust undesignated historic landscapes  
• Historic landscapes with importance to local interest groups  
• Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations  
• Assets compromised by poor preservation and/or poor survival of contextual associations  
• Assets of limited value, but with potential to contribute to local research objectives  
• 'Locally Listed' buildings  
• Historic (unlisted) buildings of modest quality in their fabric or historical association  
• Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings |
| **Negligible** | • Assets with very little or no surviving archaeological interest  
• Buildings of no archaeological or historical note, or buildings of an intrusive character  
• Landscapes with little or no significant historical interest |
| **Unknown**    | • The importance of the resource has not been ascertained, or buildings with some (hidden) potential for historical significance |

*Source: DMRB, Volume 11*

8.3.31 Despite the differentiation in terms of some of the values given above, all statutorily-listed buildings warrant a national level of importance.

**Magnitude of the Impact**

8.3.32 In DMRB, the impacts of a given scheme are described below, but comprise the impacts of the design on the cultural heritage resource when factoring in mitigation, which avoids, reduces or negates impacts through various measures:

8.3.33 “Impacts are changes that arise from the mitigated scheme. The baseline from which they are assessed should be the situation that would exist if the scheme were not pursued... Negative impacts can arise from new effects, or an increase in the rate of existing deterioration over what would otherwise be the case....Positive impacts may arise from the cessation of erosion, intrusion or damage that would continue if the scheme were not built...Direct impacts are those that arise as straightforward consequences of the scheme. For archaeological remains and historic structures, this can mean physical damage to, or physical improvement of, the fabric of the asset, but it can also mean impacts on the
setting of cultural heritage assets. For an historic building, for instance, an increase in noise and pollution as a result of the scheme would constitute a direct impact. An indirect or secondary impact is an impact arising from the scheme via a complex route, where the connection between the scheme and the impact is complicated, unpredictable or remote. For instance, an impact on historic landscape character could arise from a scheme that severs an agricultural holding, leading to changes in farming viability and thence to changes in historic land-use patterns in areas away from the scheme.” (DMRB Volume 11, Section 3, Part 2, HA 208/07).

8.3.34 The criteria for judging the impacts of each option upon the cultural heritage resource have been assessed using DMRB criteria shown in Table 8-5 below.

<table>
<thead>
<tr>
<th>Impact magnitude</th>
<th>Criteria (positive and negative)</th>
</tr>
</thead>
</table>
| Major            | • Change to most or all key archaeological materials, such that the resource is totally altered  
                  • Comprehensive changes to setting |
| Moderate         | • Changes to many key archaeological materials, such that the resource is clearly modified  
                  • Considerable changes to setting that affect the character of the asset |
| Minor            | • Changes to key archaeological materials, such that the asset is slightly altered  
                  • Slight changes to setting |
| Negligible       | • Very minor changes to archaeological materials, or setting |
| No change        | • No change |

Source: DMRB, Volume 11

Significance of Effect

8.3.35 The significance of effects is determined through the combination of the value (or significance) of the asset and the magnitude of the impact as illustrated in Table 8-6.

<table>
<thead>
<tr>
<th>Value</th>
<th>Impact magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major</td>
</tr>
<tr>
<td>Very high</td>
<td>Very Large</td>
</tr>
<tr>
<td>High</td>
<td>Large or Very Large</td>
</tr>
<tr>
<td>Medium</td>
<td>Moderate or Large</td>
</tr>
<tr>
<td>Low</td>
<td>Slight or Moderate</td>
</tr>
<tr>
<td>Negligible</td>
<td>Slight</td>
</tr>
<tr>
<td></td>
<td>Neutral or Slight</td>
</tr>
<tr>
<td>No change</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

Source: DMRB, Volume 11

8.3.36 The impacts to the cultural heritage resource from this DCO Scheme are liable to be both short and long-term, both with the temporary impacts of the construction phases, and the
long-term change through the completion of the DCO Scheme, due to permanent changes to the historic and visual setting.

8.3.37 Impacts to the non-designated buried archaeological sites and monuments within the DCO Scheme have been restricted to direct physical impacts, rather than consideration of setting, as explained above. The changes to setting of non-designated historic structures has been assessed, where appropriate.

8.3.38 Unless stated otherwise, the physical impacts to the non-designated archaeological sites and monuments may be permanent and irreversible.

8.3.39 The effects are considered to be significant in terms of the EIA Regulations if they are evaluated at moderate, large and very large adverse.

8.4 Baseline, Future Conditions and Value of Resource

Portishead to Pill

Statutory and Non-Statutory Designations

Scheduled Monuments

8.4.1 There are noScheduled Monuments (“SM”) within 500 m of the centreline of the disused railway between Portishead and Pill.

8.4.2 The Conygar Hill SM (Figure 8-1 Sheets 1 and 2) lies just outside the study area; 550 m south of the DCO Scheme. Conygar is an univallate hillfort dating to the prehistoric period (likely to be Late Bronze Age and / or Early Iron Age) which has been included in this study because of its position on a visually prominent hill in the middle of an area of levels. The site is located on private land and was not visited during the site walkover, so the level of inter-visibility between the SM and the DCO Scheme is uncertain. Further attempts will be made to try and access the land prior to the finalising of the ES. However, the degree of vegetation on the monument and the presence of the M5 embankment with its vegetation screen suggest that inter-visibility is likely to be very limited at best.

Conservation Areas

8.4.3 There are no Conservation Areas along this section of the DCO Scheme. There are four such designations in Portishead but each of them lies more than 500 m from the DCO Scheme.

Listed Buildings

8.4.4 There are no Listed Buildings within the Red Line Boundary between Portishead and Pill.

8.4.5 There are 12 Listed Buildings within 500 m of the Red Line Boundary between Portishead and Pill. A summary of these buildings is provided below. Their locations are shown on Figure 8-1 Sheets 1 and 2 in Volume 3 of the PEI Report, and further information on them is provided in the gazetteer in Appendix 8.1.

- The White Lion Public House (HER 2522) at the junction of Portishead High Street and Wyndham Street. The Grade II designation includes part of the former sea wall. The building lies at the western edge of the study area.

- Moor Farmhouse (HER 9833) on the north side of Sheepway on Portbury Common. This Grade II listed property dates to 1837.

- No. 38 Station Road, Sheepway “The Thatched Cottage” (HER 9275). This is a Grade II rubble-built cottage from the early 17th century.
Elm Tree Farmhouse (HER 9036) dates to c. 1830-40 and lies on the east side of Station Road. This has a Grade II listing.

Portbury Priors (HER 9034) is a Grade II listed mid-17th century farmhouse with major 19th century amendments.

The Priory (HER 9035) is a Grade II listed property on Station Road in Portbury.

Portbury Priory and its boundary wall (HER 451 and 452) is a Grade II listed designation. Originally a medieval priory, the structure was substantially remodelled in the 19th century. It lies on the southern edge of Portbury.

St Mary's Church (HER 731 /HER 33560) on Church Lane, Portbury is a Grade I listed building, originally comprising a 12th century Norman Church which was extensively modified throughout the medieval and post-medieval periods. The churchyard is included in the designation and comprises two separate listed structures: both 18th century chest tomb monuments to the Ballard (HER 33562) and Davids/Maynard (HER 33561) families. The church is adjacent to Junction 10 of the M5.

The Church of St. George (HER 736) is a Grade II* listed building on the south side of Church Lane, Portbury. This is a medieval building which was heavily restored in the 19th century.

Court House Farmhouse (HER 2560) on Marsh Lane is a Grade II listed farmhouse dating to 1630, which was remodelled in the 19th century, lying to the south of Church Lane in Portbury (See the photographs in Set 1, Appendix 8.2). This site has been purchased by the Bristol Port Company and is being redeveloped.

The Grade I and II* listed buildings above have a high heritage value, whilst the Grade II properties have a medium value, as shown in Table 8-3.

Non-Designated Assets

On NSDC’s HER, there are 14 non-designated cultural heritage assets which lie along, intersect or abut the Order Limits, that being the Portishead Branch Line located between Portishead and Pill. boundary of the railway is taken as the historic one i.e. within the DCO Scheme red line boundary. The recorded assets are:

- HER 40141 - The site of the Portishead Gasworks, a mid-19th century construction, Figure 8-1 Sheet 1;
- HER 40653 - Boundary to west side of Portbury Rhyne, Figure 8-1 Sheet 1;
- HER 40652 – The former site of a boundary stone on the east side of Portbury Rhyne in Portishead, Figure 8-1 Sheet 1;
- HER 41450 - Site of WWII rail sidings and branch line to Marsh Lane camp, Figure 8-1 Sheet 2;
- HER 45888 - Defence of Britain (“DoB”) site comprising a Light Machine Gun post - Anti-Aircraft Artillery (AAA), Figure 8-1 Sheet 1;
- HER 41852 - WWII DoB unloading area for munitions, Figure 8-1 Sheet 1;
- HER 5027 - The remains of Portbury Railway Station and World War I and II (“WWI” and “WWII”) DoB sites at the station, Figure 8-1 Sheet 1;
- HER 40662 - Site of a 19th century signal box at Portbury Station, Figure 8-1 Sheet 1;
- HER 41842 - Remains of Portbury Shipyard Signal Box, with WWI and WWII sidings (HER 41450), Figure 8-1 Sheet 1;
• HER 40203 - Portishead branch line from the 1860s, Figure 8-1 Sheet 1;
• HER 41853 – The former site of a former WWII anti-aircraft emplacement at Pill Station (Figure 8-1 Sheet 2);
• HER 5039 - The former site of WWI and WWII Portbury Shipyard Railway Station, Figure 8-1 Sheet 1;
• HER 43590 - Lodway Farm, Easton-in-Gordano. Historic core settlement identifiable on late 18th or early 19th century maps. Medieval or even earlier outlines and building fabric may survive, Figure 8-1 Sheet 2, and
• HER 5040 - Pill Station, Figure 8-1 Sheet 2;

8.4.8 These assets have a low heritage value, with the exception of the remains of Portbury Railway Station, which is assigned a medium heritage value, given its superior state of preservation, and which has been converted into a private residence.

8.4.9 The following 18 known cultural heritage assets lie within the 50 m of the centreline of the scheme.

• HER 43584 - Sheepway Gate, Portbury, Figure 8-1 Sheet 1 in the PEI Report Volume 3 Book of Figures;
• HER 6993 - Group of small undated enclosures, Sheepway, Figure 8-1 Sheet 1 in the PEI Report Volume 3 Book of Figures;
• HER 42839 - Esso Petroleum Company pipeline, 1960, Figure 8-1 Sheet 1 in the PEI Report Volume 3 Book of Figures;
• HER 7001 - Site of a medieval fishpond at Court Farm, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 40669 - 18th century Station Hotel, Monmouth Road, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 195 - Non-registered historic park and garden, Ham Green, Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures and the photographs in Appendix 8.2 Set 2 in the PEI Report Volume 4 Appendices;
• HER 40011 - Union Church, Pill, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 40671 - Site of a former 19th century church, Chapel Row, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 40357 - Site of a 19th century coal yard, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 40014 - Starr Inn, Bank Place, Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 45987 - Former site of the 'Friendly Home', Figure 8-1 Sheet 2 in the PEI Report Volume 3 Book of Figures;
• HER 40327 - Site of the former 19th century dry dock, Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures;
• HER 40502 - The site of a medieval and later harbour, Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures;
The find spots recorded within the study area, which are listed in the gazetteer in Appendix 8.1 in the PEI Report Volume 4 Appendices, represent artefacts that have since been removed from their original context. These have no remaining value as an asset. The remaining assets have a low heritage value, based on their local historical significance. Pill Station is assigned a medium heritage value, given the extent of the standing remains and its potentially regional historical significance.

The site walkover survey identified a range of railway architecture not on the NSDC HER, including:
- Railway track;
- Signal posts;
- Signal / Junction boxes;
- Three historic railway bridges: two carrying the Sheepway across the former railway line and one taking Church Road over the railway line.

The historic bridges have a medium heritage value. The surviving infrastructure along the railway line itself has a local value and can also be assigned a low heritage value.

The exact locations of the signal posts and signal/junction boxes were not recorded but occur at regular intervals along the disused section of the railway line.

There are a further three archaeological monuments and historic structures located along the Portishead Branch Line in and around Pill.
- HER 43592 - Easton in Gordano/Pill - core settlement
- HER 40325 - Pill Railway Viaduct built in the 1860s
- HER 41846 - Ham Green Tunnel, which was used in WWII as a shelter for trains.

North Somerset Council has identified a non-designated park and garden at Ham Green associated with the old hospital (Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures) which continues around the Avon in the vicinity of Watchhouse Hill, an important area of recreational land and open space between Pill and Ham Green.

Historic Landscape Character

The Portishead Branch Line forms part of, passes through, or abuts several Historic Landscape Character (“HLC”) Areas between Portishead and Pill. The locations of these areas are shown on the NSDC planning portals (http://map.n-somerset.gov.uk/HER.html). Some of these character areas have been assigned a reference number, owing to the specific type of HLC which recurs across the country, while other unique landscapes are referred to by name only. The HLC areas are not cultural heritage assets or receptors as
such, and cannot be assigned a heritage value. They represent historic landscape usage and are used for establishing the ‘time-depth’ when combined with other historic environmental information.

8.4.17 The historic railway corridor has its own assigned landscape character unit: HLC Area 28, which is defined as a ‘Large Scale Utility Landscape’. This refers generally to areas of transport infrastructure dating from the post-medieval and modern periods related primarily to the industrial expansion of the country in the same periods.

8.4.18 The historic railway runs through or alongside the following HLC units. These are, from west to east:

- Two areas of HLC Area 28: a ‘large scale utility landscape’ currently Portishead Business Park and Trading Estate / former Portishead-Bristol Railway and Portbury Docks;
- HLC Area 6: formerly a 15th to 17th century area of enclosure in an ancient area of reclamation, currently residential development on the east side of Portishead. These features also occur at Portbury;
- HLC Area 20: An area of 18th and 19th century parliamentary enclosures currently farmland around Moor Farm on the outskirts of Portishead;
- HLC Area 1: Enclosed open fields from the late medieval period around Sheepway and Pill, which were created by local arrangement and exchange;
- 19th century infill at Core Acre, Portbury;
- ‘Pill (West)’ 20th century suburban expansion;
- ‘Pill (North) core settlements’: representing the historic core of the town; and
- Two areas of HLC Area 26: comprises post-medieval designed ornamental landscapes

**Portbury Freight Line**

**Statutory and Non-Statutory Designations**

**Scheduled Monuments**

8.4.19 Three SMs lie within 500 m of the Portbury Freight Line.

- **Sea Mills SM.** This site forms part of the Roman Settlement of Abonae. It is located approximately 180 m east of the Portbury Freight Line, on the east side of the River Avon near its confluence with the River Trym. This major Romano-British settlement probably served the nearby spa town of Aquae Sulis (Bath) as its river port. The SM represents an area of buried archaeology.

- **Clifton Down Camp SM.** This is an Iron Age hill fort on the eastern side of the Avon Gorge, just over 200 m east of the Portbury Freight Line and just to the north of the present-day Clifton Suspension Bridge. The fort is roughly circular, with double ditches and banks and earthen ramparts now covered in dense tree growth. The camp is part of the Clifton Downs parkland.

- **Stokeleigh Camp SM.** This site is a promontory fort in Leigh Woods located on the west bank of the River Avon and about 120 m west of the Portbury Freight Line at its closest point. The monument includes an Iron Age fort and an associated linear earthwork situated on a carboniferous limestone promontory in Leigh Woods, overlooking the Avon Gorge to the east and the Nightingale Valley to the south.
8.4.20 SMs are designated by Historic England and are accorded a **high** cultural heritage asset value as shown in Table 8-3.

**Conservation Areas**

8.4.21 There are eight Conservation Areas within 500 m of the Portbury Freight Line in BCC. These are, from north to south:

- Shirehampton;
- Sea Mills;
- Sneyd Park;
- The Downs;
- Hotwells and Clifton;
- City Docks;
- Leigh Woods; and
- Bower Ashton.

8.4.22 Shirehampton Conservation Area (Figure 8-1 Sheets 2 and 3 in the PEI Report Volume 3 Book of Figures) is located on the north side of the River Avon and opposite Pill. A small part of the Conservation Area is located around a cluster of listed buildings on the north shore of the Avon associated with Wellington House and stables.

8.4.23 Sea Mills Conservation Area (Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures) extends across the River Avon and abuts the railway corridor.

8.4.24 Sneyd Park Conservation Area (Figure 8-1 Sheets 3 and 4 in the PEI Report Volume 3 Book of Figures) comprises modern early housing estates and riverside green public open spaces separated from each other by the A4 Portway corridor. Part of the boundary of the Conservation Area extends across the River Avon and abuts or lies close to the Portbury Freight Line boundary.

8.4.25 The Downs Conservation Area (Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures), like Sneyd Park, extends from Clifton and across the River Avon to abut the Portbury Freight Line in the Avon Gorge (see the photographs in Appendix 8.2 Set 4).

8.4.26 The Clifton and Hotwells Conservation Area (Figure 8-1 Sheets 4 and 5 in the PEI Report Volume 3 Book of Figures) adjoins The Downs and extends across the River Avon to the west bank (see the photographs in Appendix 8.2 Set 5 Sion Hill and Set 6 Hotwell Road).

8.4.27 Leigh Woods and Bower Ashton Conservation Areas lie to the west of the DCO Scheme. Leigh Woods lies within the authority of NSDC and Bower Ashton in Bristol City.

8.4.28 The Leigh Woods Conservation Area (Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures) is centred on a residential suburb of Bristol surrounded by woodland. The Conservation Area lies just to the west of the Clifton Suspension Bridge and the Avon Gorge. It is situated at an elevated position above the Avon Gorge. Although the boundary of the Conservation Area lies approximately 80m horizontal distance from the DCO Scheme, the elevated location and surrounding woodland insulates the Conservation Area from the DCO Scheme.

8.4.29 Bower Ashton Conservation Area (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures) is centred on the village of the same name and forms part of the setting to Ashton Court. The eastern boundary of the conservation area abuts the railway corridor in the vicinity of the sports grounds (including Bedminster Cricket Club).

8.4.30 Conservation Areas are accorded a cultural heritage asset value of medium with the exception of Hotwells and Clifton, which is accorded a high value due to the concentration of Georgian architecture (see Table 8-3).
8.4.31 The Conservation Areas contain many listed buildings, which are described in the following subsection.

**Listed Buildings**

8.4.32 The following listed buildings are located within 500 m of the Portbury Freight Line in and around Pill (Figure 8-1 Sheets 2 and 3).

- **Lodway Croft (HER 8905)**, Pill, a Grade II listed mid-17th century farmhouse.
- **Mulberry House and Mulberry Cottage (HER 8910)**, Pill, Grade II listed mid to late 17th century properties.
- **The Watch House (HER 4000190)**, a Grade II former Customs House dating to 1850, and now a private house, with retaining walls to the River Avon and former boathouse which is now a garage.
- **A cluster of four listed buildings in and adjacent to Ham Green Hospital. These are a mid-18th century Grade II water gate adjacent to the River Avon (HER 4857), a Grade II gazebo 25 yards north east of the main administrative block of the hospital (HER 430569) and two flats under one listing (HER 33456) in the administrative block itself.**

8.4.33 The buildings bulleted above have a **medium** value, all being Grade II listed.

8.4.34 The following listed buildings are located within 500 m of the Portbury Freight Line between Ham Green and Parson Street Junction on the west side of the Avon Gorge.

- **The Clifton Suspension Bridge and its associated toll houses and flanking walls, all Grade I listed (HER 1030) (see Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures and the photographs in Appendix 8.2 Set 7 in the PEI Report Volume 4 Appendices). Opened in 1864, the bridge was designed and construction started by Isambard Kingdom Brunel. The structures are also on the List of Buildings of Special Architectural and Historic Interest for the City of Bristol. The Portbury Freight Line passes directly underneath the bridge, partly in Clifton Tunnel No. 1.**
- **A Grade II listed house (HER 42467) called Alpenfels dating to around 1872 and built for Francis F. Fox, Chief Engineer of the Bristol and Exeter Railway (Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures). The house lies approximately 25-30 m north of the western abutment to the Clifton Suspension Bridge.**
- **A Grade II listed property 'Burwalls' (HER 33608) (Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures), abutting Bridge Road. Now Burwall's College for Continuing Education, the house was built in 1873.**

8.4.35 The Clifton Suspension Bridge and its associated toll houses have a **high** heritage value, given their Grade I listing. The other properties described have a **medium** value in line with their Grade II designation.

8.4.36 On the east side of Avon Gorge, many listed properties and other structures, mainly in the Clifton area of Bristol, lie within 500 m of the Portbury Freight Line. The following list identifies individual and clusters of listed buildings of greatest interest:

- **The Harbour Walls of Sea Mills Dock (Grade II; Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures).**
- **Nos. 4, 6 and 8 Cook's Folly Road, Sneyd Park (Grade II; Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures).**
- **'The Downs' on Towerhirst Sea Wall Road (Grade II; Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures).**
• A limestone, marble and granite drinking fountain (Grade II; Figure 8-1 Sheet 4) on Clifton Down.

• Eight semi-detached residential properties covered by four Grade II listings on Clifton Down. The listing covers the garden walls, gates and gate piers (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures). These properties have some inter-visibility with the Portbury Freight Line.

• Two Grade II arc lamp posts on Clifton Down (road above).

• Six Grade II* (including Dorset House and Alva House) and five Grade II houses on Clifton Down South (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures). Like their neighbours mentioned above these have inter-visibility with the Portbury Freight Line.

• A concentration of listed buildings within the Clifton and Hotwells Conservation Area (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures), situated mostly on Sion Hill (see Appendix 8.2 Set 5), Westfield Place, West Mall, Caledonia Place, Royal York Crescent, Cornwallis Crescent, Hotwell Road, Windsor Terrace, Windsor Place, Freeland Place and Albemarle Row. These are mostly an assortment of listings, with the greater majority being Grade II. Few of these buildings have inter-visibility with the Portbury Freight Line owing to topography, other buildings and mature vegetation. Only those buildings fronting on to Hotwell Road have limited inter-visibility with the Portbury Freight Line, given that there is mature vegetation between the banks of the River Avon and the railway line, which is terraced into the west side of the Avon Gorge (see photographs in Appendix 8.2 Set 6 and Set 8 in the PEI Report Volume 4 Appendices). Most of these properties are Grade II listed, but there are several Grade II* listed properties among them.

• The City Docks Conservation Area contains a number of listed structures reflecting the historic activity in and around Bristol Docks from the 19th century onwards (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures and the photographs in Appendix 8.2 Set 9 in the PEI Report Volume 4 Appendices). The Floating Harbour Quay Swing bridge (Grade II*), its walls and bollards (Grade II) along with the west side of the harbour (Grade II*) known as 'Brunel’s entrance' are listed. Between the New Cut and Cumberland Basin lie the A and B-Bond warehouses (Grade II) (see photograph in Appendix 8.2 Set 10 in the PEI Report Volume 4 Appendices), in between which the Ashton Swing Bridge (Grade II) spans the New Cut. South of the New Cut is the C-Bond Tobacco warehouse (Grade II).

• There are six listed buildings at Bower Ashton within 500 m of the centreline of the Portbury Freight Line (Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures). These comprise No. 4 Clanage Road (Grade II) a semi-detached property; Kennel Lodge (with walls) on Kennel Lodge Road (Grade II); 'Oakleigh' (Grade II), Nos. 1 and 2 Park Farm (Grade II) and Lower Lodge on Ashton Road (Grade II*). The view from Bower Ashton towards the DCO Scheme is shown in Appendix 8.2 Set 11 in the PEI Report Volume 4 Appendices.

8.4.37 The cultural heritage asset value of Grade II listed buildings and structures is medium, and the value of Grade II* and Grade I listed buildings is high.

Registered Parks and Gardens

8.4.38 The Portbury Freight Line passes through the north eastern edge of Leigh Court; a Grade II listed Registered Park and Garden ("RP&G") (see the photographs in Appendix 8.2 Set 3 in the PEI Report Volume 4 Appendices). The designation comprises the remnants of early 19th century parkland, which replaced an earlier landscape. The designation covers 233
hectares ("ha") and abuts the River Avon. The route passes along the existing Portbury Freight Line chiefly within a cutting which abuts and is contained by substantial mature vegetation. The railway forms part of the historic landscape in this area and there is little or no inter-visibility to and from the railway line to the vast majority of the designated area (Appendix 8.2 in the PEI Report Volume 4 Appendices).

8.4.39 Ashton Court, a Grade II* listed RP&G abuts the Portbury Freight Line further to the south, though the existing freight line does not run through the designation. The site has been developed as formal parkland since 1802 and replaced an earlier formal landscape. The part of the designation that abuts the railway corridor is currently a sports ground (Bedminster Cricket Club).

8.4.40 RP&Gs are designed by Historic England and are accorded a high cultural heritage asset value (see Table 8-3).

Non-designated Assets

8.4.41 There are 16 non-designated archaeological monuments and historic structures located along the Portbury Freight Line.

- HER 2981 - the former site of lime kilns erased by the construction of the railway in the 19th century (Figure 8-3)
- HER 40018 - the Portbury Freight Line cuts through what was once Ham Green Farm (Figure 8-3 in the PEI Report Volume 3 Book of Figures)
- HER 5041 - Ham Green Halt – the site of the former railway station at Ham Green (Figure 8-3 in the PEI Report Volume 3 Book of Figures)
- HER 5042 - the former site of Site of Ham Green station (Figure 8-3 in the PEI Report Volume 3 Book of Figures)
- HER 41846 - Ham Green Tunnel (also known as Pill Tunnel)
- HER 41310 - Site of a 19th century signal box on railway line at Leigh Woods (1885 OS)
- HER 5052 - Site of Nightingale Valley Halt
- HER 42500 - Site of the 'Cupioloe' at Nightingale Valley, 1684
- HER 42501 - Site of cottage in Nightingale Valley, 1626
- HER 42502 - Site of a lime kiln, 1626
- HER 41843 - Clifton Bridge Rail Tunnel, which was used as air raid shelter in WWII
- HER 2022M - Clifton Bridge Railway Station
- HER 2023M - Ashton Gate Halt
- HER 2225M - 1930s + garage
- HER 2064M - Frayne's Colliery
- HER 2028M - Parson Street Station

8.4.42 These assets have a low heritage value.

8.4.43 There are a further 19 non-designated assets recorded on the HER within 50 m of the Portbury Freight Line:

- HER 44796 - Railway spoil heap south of Ham Green, 1860s, Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures;
• HER 44801 - Sea Mill railway spoil heap, 1860s, Figure 8-1 Sheet 3 in the PEI Report Volume 3 Book of Figures;
• HER 40363 - Site of a wharf at a former quarry (Walcombe Slade), Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 40037 - Old (19th century) quarry 300m west of old Zig-Zag pumping station, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 40359 - Old (19th century) quarry North of Stokeleigh Camp, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 40038 - Old quarry 200m South West of Zig-Zag pumping station, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 42497 - Old quarry east of Stokeleigh hillfort, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 42499 - 17th century quarry at the bottom of Nightingale Valley, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 2206 - 17th century Stockley Vale Copper Works, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 4903 - Iron Age coin findspot, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 5808 - Ruins of a 19th century cotton mill at Burwalls and Rowham, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 165 - Leigh Woods non-registered historic park and garden, Figure 8-1 Sheet 4 in the PEI Report Volume 3 Book of Figures;
• HER 2783M - Miner's Arms, Bedminster Down, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures;
• HER 2957M - Pound at Bedminster Down Road, Figure 8-1 Sheet 5;
• HER 2212M - West End Brick and Tile Works, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures;
• HER 2784M - St. Aldhelm's Church, Bedminster Down Road, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures;
• HER 2959M - Plough Inn, Bedminster Down Road, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures;
• HER 2958M - Bedminster Gate Toll House, Bedminster Down Road, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures; and
• HER 2786M - Hart's Farm, Bedminster, Figure 8-1 Sheet 5 in the PEI Report Volume 3 Book of Figures.

8.4.44 The former quarries are now historic landscape features abutting the sides of the railway corridor.

8.4.45 These non-designated assets are all considered to have a low heritage asset value.

Historic Landscape Character

8.4.46 The Portbury Freight Line passes through or abuts:

• 'Ham Green (West)' 19th century infill, Easton-in-Gordano;
• Two sections through HLC Area 26: post-medieval designed ornamental landscape (the remaining manor estate landscape to the west of Ham Green Hospital);
• HLC Area 20: 18th and 19th century enclosure by local and Parliamentary Acts;
• Ham Green Hospital, an area of 20th century development;
• HLC Area 20: a sliver of 18th and 19th century parliamentary enclosure to the east of Ham Green Hospital;
• HLC Area 11: Post-medieval (18th and 19th century) parliamentary enclosures;
• HLC Area 5: an area of medieval (or earlier) enclosure of rich, wet grassland in between the Portbury Freight Line and the River Avon;
• HLC Area 26: comprises post-medieval designed ornamental landscapes;
• HCL Area 21: Pre-1800 ancient woodland (the Leigh Woods estate);
• HLC Area 28: a Large Scale Utility landscape (post-medieval quarry area on Avon Gorge);
• HLC Area 5: Medieval (or earlier) enclosure of wet grassland (at Rownham Hill).

8.4.47 The locations of these areas are shown on the NSDC planning portals (http://map.n-somerset.gov.uk/HER.html).

8.4.48 The HLC areas are not receptors as such, and cannot be assigned a heritage value. They are used for establishing the ‘time-depth’ of various areas when combined with other historic environment information.

8.5 Measures Adopted as Part of the DCO Scheme

8.5.1 A number of measures have been included as part of the project design in order to minimise certain environmental effects. This includes:
• careful designing of the project to ensure key receptors are avoided where possible;
• construction adopting best practices techniques, which will be set out in Code of Construction Practice (“CoCP”) - this document is still being finalised and will be submitted with the DCO application, and
• compliance with regulatory and legislative regimes as required by law.

8.5.2 The final ES will fully set out and detail those embedded mitigation measures within each of the topic chapters.

8.6 Assessment of Effects

Construction Phase

8.6.1 Construction activities will result in the removal and loss of the existing historic railway infrastructure (old signals, junction boxes, sleepers and rails, etc.). The major adverse impact on these assets of low value would result in a slight adverse significance of effect.

8.6.2 The removal of much of the historic railway architecture at Pill station (HER 5040) would constitute a moderate adverse impact on an asset of medium value. This would result in a moderate adverse significance of effect.
There are a number of retaining walls along the Portbury Freight Line that may have to be repaired to bring them up to the required standard. The work is assumed to have a medium adverse impact (as a worst case scenario) on assets of a low value, resulting in a slight adverse effect. However, many of the repairs are likely to be minor and have the benefit of extending their life.

Quarry Underbridge No. 2 may have to be modified or rebuilt. The work is assumed to have a medium adverse impact on a low value asset, resulting in a slight adverse effect.

Engineering Works

The engineering works would not affect the majority of the recorded archaeological assets along the NSIP and the Portbury Freight Line as these represent mostly dismantled DoB sites and areas where pre-railway archaeology was erased by the construction of the line in the 19th century.

Setting of Heritage Assets

The Scheme can affect the setting of heritage assets which lie within the Zone of Visual Influence (“ZVI”) and/or where there is some degree of inter-visibility between the DCO Scheme and the asset in question, or where the DCO Scheme alters the ambience of the heritage features, such as through a change in the noise climate. The impacts are temporary when occurring during the construction period.

The listed buildings in the study area mostly lie at some distance from the DCO Scheme, and whilst there might be low level background noise from construction traffic, together with some visibility of the construction process, the impact on these designated structures will be negligible to no change, resulting in a neutral significance of effect.

One exception is Court House Farm, which is located about 140 m from the DCO Scheme. The view from and to the farmhouse are limited by the surrounding farm buildings and hedgerow planting around nearby fields. The view towards the DCO Scheme is partly screened by a row of poplar trees on farm land alongside the railway. Other things being equal, the impact of construction of the DCO Scheme on the setting of the farmhouse would be assessed as slight adverse significance of effect. However, the setting of this farmhouse is changing as the Bristol Port Company has purchased this site and is building a new access and cargo area to the west of the farmhouse and south of the railway line. Consequently, the setting of the farmhouse will change materially before the DCO Scheme is built. The cumulative effects of the DCO Scheme in combination with ongoing development of this property is discussed below under cumulative effects.

The non-designated sites within 50 m of the DCO Scheme are of low value and are evaluated to have no change or minor adverse impact during construction, resulting in a neutral significance of effect.

The White Lion Public House (HER2522) has no inter-visibility with the scheme and will not suffer from construction-related impacts such as noise and vibration. This asset has a medium value. Consequently there will be no change on this asset, and a neutral effect.

Moor Farmhouse (HER 9833) on Portbury Common lies some distance from the construction zones and access points and should not be affected by construction traffic or noise. This asset has a medium value. There will be no change on this asset, and a neutral effect.

The two listed buildings at Sheepway, the Thatched Cottage (HER 9275) and Elm Tree Farmhouse (HER 9036), are in closer proximity to the DCO Scheme than the listed buildings above. However, they are outside the construction zone and have little or no
inter-visibility. These assets have a medium value. There will most likely be no change on these properties, with a **neutral** effect.

**8.6.13** Portbury Priors (HER 9034) has no inter-visibility with the DCO Scheme and will be well outside the construction zone. This asset has a medium value. There will be no change on this asset and a **neutral** effect. The same level of impact and effect will be relevant to the listed Portbury Priory and its boundary wall (HER 452) and The Priory Hotel (HER 9035).

**8.6.14** Conygar Hill scheduled monument is a wooded feature. This asset has a high value. The inter-visibility with the DCO Scheme is uncertain but is probably limited at best, owing to the M5 embankment, wooded slopes, and lack of access. There will most likely be no change on the monument, with a **neutral** effect.

**8.6.15** The Church of St Mary (HER 471) at the east end of Portbury village, along with the listed funerary architecture within the churchyard (HER 33561 and 33562) have no inter-visibility with the DCO Scheme and are screened by the intervening vegetation and the M5. These assets have no relationship to the proposed construction zone. There will be no change on these assets and a **neutral** effect.

**8.6.16** The Church of St George (HER 736) in Church Road, Easton-in-Gordano has a high asset value and has no inter-visibility with the DCO Scheme, as the views are blocked by the M5 corridor like the other heritage assets in Portbury. The Church also lies well outside the proposed construction zone. There will be no change on these assets and a **neutral** effect.

**8.6.17** Lodway Croft (HER 8905) has a medium asset value and has no inter-visibility with the DCO Scheme. Although there is bound to be some construction traffic on the road on which the property lies there will be no change on these assets and a **neutral** effect.

**8.6.18** Watch House (HER 40190) and Mulberry House and Cottage (HER 8910) are located at the northern end of Watch House Road. While there are views along the road towards Pill Viaduct, the views from the properties are screened by intervening houses and gardens. During construction, the maintenance works to Pill Viaduct will have no change on the setting of these assets and a **neutral** effect.

**8.6.19** On the north side of the River Avon the Shirehampton Conservation Area and its listed buildings within it have a medium asset value but has no inter-visibility with the DCO Scheme. The construction-related activity would mean no change on these given distance and topography. This will result in a **neutral** effect.

**8.6.20** The Sea Mills Conservation Area is a heritage asset of medium value and has some limited inter-visibility with the DCO Scheme. The vegetation clearance related to this phase of the DCO Scheme will be the only discernible impact that would be likely to change the setting of the Conservation Area. This would relate to a small change in the views from the north bank of the River Avon and the A4 corridor. However, this would be a small change and would have limited impact on the designation as a whole. The impact magnitude can be classed as a negligible negative one, with a resulting **neutral** effect.

**8.6.21** The DCO Scheme runs through the Leigh Court Registered Park and Garden, which has been assigned a medium asset value. The DCO Scheme will comprise the reconfiguration of the existing Portbury Freight Line and some vegetation removal. This will amount to no more than a very minor change within an existing rail corridor. The magnitude is no more than a negligible negative impact, resulting in a **neutral** effect.

**8.6.22** The high value scheduled monument of *Abonae* on the east side of the River Avon has inter-visibility with the DCO Scheme, where there are gaps in the existing vegetation. Construction impacts will amount to no change given the nature of the designation (buried archaeology). This would result in a **neutral** effect on the setting of the monument.
8.6.23 The Sneyd Park Conservation Area abuts the DCO Scheme. The inter-visibility with the DCO Scheme is limited; chiefly from the A4 and probably a small number of properties right at the lip of the Avon Gorge. The change wrought by the DCO Scheme will be minimal in terms of vegetation removal and therefore loss of some of the existing visual screening. The designation has a medium asset value. With a negligible negative impact, the resulting effect would be neutral.

8.6.24 The Downs Conservation Area has a medium asset value and has inter-visibility with the DCO Scheme. Currently the vegetation along the line of the Portbury Freight Line screens the main viewing points in the Conservation Area from Clifton Down and Black Rocks (also known as Sea Walls) from the railway. Removal of much of this screen would make the railway more visible from the opposite side of the Avon Gorge (both top and bottom). However, this would affect only a small portion of the Conservation Area designation and would only amount to a negligible negative impact, resulting in a neutral effect.

8.6.25 The listed drinking fountain adjacent to the A4 on Hotwells Road, along with Towerhirst which lies at the top of the Gorge near Black Rocks, have inter-visibility with the DCO Scheme. With their medium asset values, there would amount a negligible negative impact on both assets, resulting in a neutral effect.

8.6.26 Stokeleigh Camp (71) lies within the Leigh Woods Registered Park and Garden and is hidden from the DCO Scheme within the woodland at the top of Avon Gorge. This asset has a high value but there will be no change to the asset resulting from the DCO Scheme. This would result in a neutral effect.

8.6.27 Directly to the east of Stokeleigh Camp lies Clifton Down Camp scheduled monument which contains the Clifton Observatory. Given their relationship, these assets both have a high asset value. They have inter-visibility with the DCO Scheme and as a result the removal of vegetation will amount to a negligible negative impact. This would result in a slight adverse effect on the two designations, given the increased views from the top of the Avon Gorge down onto the railway line.

8.6.28 The Leigh Woods Conservation Area has a medium asset value. There is no inter-visibility with the DCO Scheme. The changes to the Portbury Freight Line would have no change on the designation, resulting in a neutral effect.

8.6.29 The Clifton Suspension Bridge has inter-visibility with the DCO Scheme. This high asset value landmark feature lies directly overhead of the Portbury Freight Line. There are points to the north and south of the bridge where the inter-visibility extends, including the viewing point at Sea Walls in The Downs Conservation Area (see Appendix 8.2, photographs in Set 4 in the PEI Report Volume 4 Appendices). The construction phase would affect the views from the bridge down to the railway. As the railway alignment for the DCO Scheme will be built along the footprint of the existing single line railway it is currently assumed that there would be limited vegetation removal to accommodate the railway, although vegetation removal will be required to install the new paladin fencing (see Chapter 4 Description of the Proposed Works for an illustration of the type of fencing). Much of the construction will be from the railway itself due to the access constraints imposed by the Avon Gorge. The small welfare compounds to be provided to staff are unlikely to be noticeable within the panorama of the gorge. The main construction compound at Clanage Road to the south of Clifton Suspension Bridge is likely to be visible from the Bridge itself, but would not affect the setting of the Bridge as viewed from the north. The proposed Scheme-related changes to the Portbury Freight Line would amount to only a small difference to the current relationship between the railway and the bridge. These impacts would amount to a negligible negative one, resulting in a slight adverse effect.
The Clifton and Hotwells Conservation Area encompasses the chiefly Georgian developments that give Clifton its historic character. The Conservation Area has inter-visibility with the DCO Scheme (the western edge of it lies approximately 120 m from the railway). Given its unique status, it has a high value removal of the vegetation presently screening much of the Portbury Freight Line from the designation would change the inter-visibility with that part of the designation occupying the eastern side of Avon Gorge. There are areas within the Conservation Area from where there are views of the DCO Scheme from street level. These construction impacts would amount to a negligible negative one, resulting in a slight adverse effect.

The six houses (Promenade House, Engineers House, Taylor Maxwell House, Trafalgar House, Chatford and Merchant Hall), two lampposts and a drinking fountain that lie along Clifton Down Road (north) have medium asset values. These are located at the western edge of the Clifton and Hotwells Conservation Area but have no inter-visibility with the DCO Scheme. There will therefore be no change to these buildings in terms of setting, resulting in a neutral effect.

There are eleven listed houses along Clifton Down Road (south) comprising five Grade II* listed and six Grade II listed buildings. Taken together as a group, they are given a high asset value. There is no inter-visibility with the DCO Scheme, due to the topography and intervening mature vegetation. Consequently, the construction of the DCO Scheme would result in no change in terms of impact with a neutral effect.

Sion Hill mostly faces on to Avon Gorge, and therefore has some inter-visibility with the DCO Scheme, particularly from the upper storeys of the 37 listed buildings which line the street. In assessment terms, these buildings can be formed into a group as the potential impacts will be the same for the individual buildings. They have a high asset group value. The removal of some vegetation and construction activity will probably have a minor negative impact on the visual sight-lines from the west side of the buildings on Sion Hill down to the Portbury Freight Line. This would result in a slight adverse effect.

Nos. 1-10 Windsor Place have a medium asset value as a group. There will probably be some inter-visibility with the DCO Scheme from the upper storeys of the buildings, though none from ground level. The impact of vegetation clearance and construction activity would be negligible negative on the inter-visibility, leading to a neutral effect.

Windsor and Victoria Terraces are another grouping of listed buildings on the west side of the Clifton and Hotwells Conservation Area. As a group they have a medium asset value. Most of the properties on Victoria Terrace and Windsor Place have no inter-visibility with the DCO Scheme. There will be no change from the construction on these assets, and a neutral effect.

Nos. 16-19 and 20 and 21 Freeland Place consist of a terrace of 1820s houses with inter-visibility with the DCO Scheme. These properties have a group asset value of medium. The construction phase will have a minor negative impact on the settings of the buildings given the relatively close proximity to the railway line. This would result in a slight adverse effect.

Nos. 308 and 309 Hotwell Road, Freeland Court, (Grade II* listed) have views across Hotwell Road and the River Avon, although the railway is largely obscured by mature vegetation along the railway boundary. As a worse case, removal of some of the vegetation along the railway would result in a minor negative impact on setting of this high value resource, resulting in a slight adverse effect.

Nos. 302 and 304 Hotwell Road, along with Nos. 3 and 5 Granby Hill are assessed as part of a group, given their proximity to one another at and around the junction between Granby Hill and Hotwell Road. The group asset value is medium, and the inter-visibility with the
DCO Scheme is very limited for the most part. There is substantial existing visual severance because of the A4 Hotwell Road and the concrete footbridge across it. The construction phase will result in a negligible negative impact, resulting in a neutral effect.

8.6.39 The Paragon Nos. 1 to 14 and 15 are all Grade II* listed buildings. The Paragon No. 15 is a prominent feature in views of Clifton from the south across the River Avon, and has views out towards the railway. Views from the lower floors of The Paragon Nos. 1 to 14 towards the River Avon may be obscured by trees along the road and in neighbouring gardens, but there may be views at higher levels. As a worse case, the removal of some of the vegetation along the railway during construction may open up views of the railway, which would result in a negligible negative impact on a high value asset, resulting in a slight adverse effect.

8.6.40 Along Hotwell Road there are listed buildings that have inter-visibility with the DCO Scheme. These include Vincent Parade and Rock House (both Grade II listed) and The Colonnade (Grade II* listed). Vincent Parade and Rock House have a medium value and The Colonnade has a high value. The construction period will change the sight-lines from the buildings to the other side of the Gorge, and this will amount to a minor negative impact, resulting in a slight adverse effect.

8.6.41 To the west of the DCO Scheme lies the Ashton Court Registered Park and Garden. Its designation warrants a high asset value. There is some limited inter-visibility from the eastern fringe of the designation and the DCO Scheme. The DCO Scheme will have a negligible negative impact on the designation, resulting in a neutral effect.

8.6.42 The DCO Scheme runs along the existing railway forming the eastern edge of the Bower Ashton Conservation Area separated by Clangate Road. The Conservation Area has a medium asset value. The scheme construction would mean little change to the existing environment, and amounts to a negligible negative impact. This would mean a neutral effect on the designation.

8.6.43 The seven listed buildings within the village of Bower Ashton, and which lie within the Conservation Area, have a group value of medium. The six properties to the west of the A639 have no inter-visibility with the DCO Scheme. The construction phase would have no change to their settings, resulting in a neutral effect. The sole property lying east of the same road (the Grade II listed Bower Cottage Double House) has some inter-visibility with the DCO Scheme from its rear. The construction would comprise a negligible negative impact, resulting in a neutral effect.

8.6.44 Views from the swing bridge on Brunel’s north and south lock towards the railway are obscured by vegetation along the railway boundary. During construction, the removal of vegetation could open up views of the railway. As a worst case scenario, the loss of some of the vegetation along the railway may result in a negligible change on the setting of this high value resource, resulting in a slight adverse effect.

Temporary works at construction sites

8.6.45 At each of the greenfield construction sites (listed below) the contractor will be required to comply with Defra’s Code of Construction Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009). The top soil will be removed and possibly a hard core set down to support the placement of storage, plant and welfare and office facilities. This process has the potential to remove or truncate buried archaeology, but more likely to damage it through compression. The imported hard core or aggregate will potentially lie directly on top of the natural geological strata, in to which archaeological features would still survive. The likelihood of compression of buried archaeology is therefore the most
likely construction-related impact. The potential archaeological issues per compound are listed below.

8.6.46 The proposed construction compound in Portishead is located in an area where there are no archaeological records on the NSDC HER. However, the site is a greenfield site within Portishead. Historic maps indicate land has not been developed but lies within a wider area which has seen intensive development. There is a moderate potential for unknown archaeology. As a worst case scenario, a medium asset value can be assigned to this resource. A pre-mitigation moderate negative impact is assumed, leading to a moderate adverse effect.

8.6.47 Like the compound in Portishead above, there is no known archaeological resource within Sheepway Construction Compound. The site lies at the edge of the historic settlement of Sheepway. There is therefore a moderate archaeological potential, for instance for the remains of outlying field systems surrounding the village. Construction enabling works would result in a moderate negative impact, resulting in a moderate adverse effect, assuming the archaeology has a medium value.

8.6.48 The Portbury Hundred Construction Compound has no archaeological assets within it, as recorded on the NSDC HER. The site is located within an area of low-lying ground south of Sheepway village. The nearby M5 and Portbury Hundred run on embankments to the south east. The potential for direct human settlement is likely to be lower here, though the remains of ancient historic landscapes might lie buried at depth below the present ground level. The construction-related topsoil-stripping is likely to result in little more than a minor negative impact on potential assets of a medium value, resulting in a slight adverse significance of effect.

8.6.49 The haul route off Marsh Lane to Lodway Construction Compound passes close to HER 5039 the Portbury Shipyard Station. The haul road could have a negligible impact on the archaeology site, resulting in a neutral significance of effect.

8.6.50 Lodway construction compound occupies an area with a series of embankments (HER 47401) across it, which are presumably related to the land management at Lodway Farm. These have a low asset value. The construction phase could potentially damage these features without mitigation. This would amount to a major negative impact, resulting in a slight adverse effect. Given the potential for unknown archaeology in addition to the linear features, a medium asset value is assumed. This would result in a moderate adverse significance of effect.

8.6.51 The Avon Road construction compound lies in an area of hard-standing or disturbed land within the Portishead Branch Line. The archaeological potential is likely to be low. The impacts of enabling works are likely to be negligible negative, resulting in a slight effect.

8.6.52 The Pill station construction compound is an area of hardstanding. There are items of historic railway architecture within the site, the potential impacts to them are assumed to be no change. There are no archaeological records within the site other than the former location of some WWII Anti-Aircraft Artillery post (HER 44831), which has not left above ground archaeological remains. The enabling works are assumed to have no change to the existing railway architecture and the AAA battery site. There will therefore be a neutral effect from the work.

8.6.53 The Ham Green construction compound is located adjacent to the eastern portal of Pill Tunnel. The compound sites occupy an area within a non-designated park and garden, which itself lies around the historic Ham Green Hospital complex. Historic garden features are possibly still an extant feature of the garden, which has a low asset value. The portion of the garden that will be affected by the compound is large, which would equate to a moderate negative impact, resulting in a slight adverse effect.
8.6.54 Micro-compound 1 in the vicinity of Miles Underbridge may require some very limited topsoil stripping, as it extends into the field adjacent to the Portbury Freight Line. There are no known archaeological assets within the compound site, but nevertheless there may be archaeological potential. A minor negative impact is predicted, given the small scale of the compound, resulting in a slight adverse effect.

8.6.55 Micro-compound 2 and lies within the hard-standing of the Portbury Freight Line near Mile Dock Underbridge. There are no known assets within the compound area and the enabling works and construction would amount to no change and a neutral effect.

8.6.56 Micro-compound 3 lies within a former post-medieval quarry site (either HER 40360 or 40361) near Quarry Underbridge No. 4. The quarry will have erased any earlier archaeology within its historic limits. The impact of the compound placement will amount to no change to the asset, resulting in a neutral effect.

8.6.57 Micro-compound 4 near Quarry Underbridge No. 1 lies within the Portbury Freight Line boundary and in an area of no known archaeological assets. There would be no change and a neutral effect.

8.6.58 Micro-compound 5 lies a short distance to the north of the Clifton Suspension Bridge on the Portbury Freight Line. The compound lies within an area which was occupied by the Stockley Vale lead smelting works (HER 2206) with features like a 17th century lime kiln (HER 42502). These assets were fully dismantled and most probably erased when the Portbury Freight Line was cut through them in the 1860s. They have a low asset value. The placement of the compound would have no change on the archaeology, resulting in a neutral effect.

8.6.59 Micro-compound 6 is located abutting the Portbury Freight Line by Clifton Overbridge, the main access off Clanage Road to the River Avon Tow Path. The area is previously disturbed and forms part of the riverside path. There are no archaeological assets at the compound location, and construction effects would amount to no change and a neutral effect.

8.6.60 The Clanage Road construction compound is located within the Bedminster Sports Ground and there are no archaeological assets within the proposed compound limits. As a greenfield site, the land has some potential for unknown archaeological remains. Giving these a medium asset value, a compound would potentially affect buried archaeology to a moderate negative extent. This could result in a moderate adverse effect.

Non-designated Assets along the DCO Scheme

8.6.61 HER 40203 – The extant remains of the Portishead Branch of the Bristol to Exeter Railway. This historic railway line was closed in the 1960s, although sections were re-laid in the 1980s as part of the Great Western 150 celebrations in 1985 for steam excursions and the track between Parson Street Junction and Portbury Junction was re-laid in the early 2000s prior to reopening the line for freight to and from Royal Portbury Dock. Even so, the railway corridors still retain elements from the original railway built in the 1860s, including the track, sleepers, and ballast along the disused section, and signals and junction boxes. The remains of several stations with extant platforms also feature along the route. The construction phase would erase all traces of the historic railway with the exception of the original rock cut tunnels, the remains of Portbury Station and the course of the railway itself. Ballast, tracks, sleepers and all other extant features will be removed and replaced. This would amount to a major negative impact, resulting in a slight adverse significance of effect.

8.6.62 HER 43584 - the historic core of Sheepway abuts the DCO Scheme. The DCO Scheme will not result in any removal of remains associated with this asset, meaning no change and a neutral effect.
8.6.63 HER 5027 - Portbury Railway Station and the remains of World War I and II (“WWI” and “WWII”) DoB sites at the station, Figure 8-1 in the PEI Report Volume 3 Book of Figures. Portbury Station has been converted to a private residence and will be left intact during construction. The DoB assets are no longer extant structures, being temporary wartime emplacements. The DCO Scheme would amount to no change on this asset and a neutral effect.

8.6.64 HER 41842 - Remains of Portbury Shipyard Signal Box, with WWI and WWII sidings (HER 41450), Figure 8-1 Sheet 2. The DCO Scheme will have no change on this asset and the result will be a neutral effect.

8.6.65 HER 5039 - The former site of Portbury Shipyard Station, Figure 8-1 Sheet 2 will not be affected by construction, meaning no change to the asset and a neutral effect.

8.6.66 HER 43592 - The historic core settlement of Pill will be unaffected by construction, as the DCO Scheme will be confined to the existing railway corridor which is part of the historic settlement. There will be no change to this asset and a neutral effect.

8.6.67 HER 41843 - Clifton Bridge Rail Tunnel, which was used as air raid shelter in WWII. The DCO Scheme will not change the tunnel in any way that will materially affect its structure or appearance. There will be no change to this scheme and a neutral effect.

8.6.68 HER 2023M - Ashton Gate Halt has standing remains. One of the platforms will be partially removed to permit the double tracking. There will be minor negative change to this low value asset resulting in a sight adverse effect.

8.6.69 HER 6432 - Ashton Junction Signal Box is still a standing feature but will not be affected by construction. The DCO Scheme will have no change to the asset and a neutral effect.

Operation Phase

8.6.70 The operational phase provides an hourly plus service with the passage of two trains every forty five minutes along the DCO Scheme during peak hours and the passage of two trains per hour during the off-peak periods. This compares with the current freight usage of the Portbury Freight Line, where the Port is permitted to run 20 freight trains in each direction every day, although in recent years the number of train passes has been much lower.

8.6.71 At night, the trains would be lit, but the only other lighting would be at the stations which are not located near heritage assets, apart from the railway heritage features. The new signals would normally be permanently lit, but as they face along the track, these are not expected to be a source of impact on heritage assets outside the railway corridor.

8.6.72 From the early phase of construction vegetation removal along the route would have reduced vegetation screening alongside the railway, with the attendant visual intrusion to heritage assets. Along the DCO Scheme between Portishead and Pill, there is no inter-visibility between the listed buildings and the railway and there are no conservation areas. Consequently, the effect of the DCO Scheme on heritage assets along that section is neutral.

8.6.73 The DCO Scheme between Pill and Ashton Junction passes numerous heritage assets, mostly located on the eastern side of the River Avon, with long distances views towards the railway. Views towards the railway would have been opened up from the early phase of construction, due to the removal of existing screening vegetation, and the absence of post-construction planting due to the limited opportunities for planting in the railway corridor.
There would be increases in ambient noise levels as a consequence of the new services. However, as explained in Chapter 13 Noise and Vibration after mitigation, the effect of the DCO Scheme on ambient noise levels is slight adverse.

The magnitude of the impact during the operation of the DCO Scheme is similar to those described for the construction phase. As such, the reader is referred to the assessment for the construction phase above and to Appendix 8.1 the gazetteer. A summary of the main results of the assessment of the effects during operation is provided below.

Scheduled Monuments

The inter-visibility between Conygar Hill and the DCO Scheme is uncertain but is probably limited at best, owing to the distance of 550 m, the M5 embankment and the vegetation on top of the hill itself. There will most likely be no change on the monument, with a neutral effect.

Although the scheduled monument of Abonae on the east side of the River Avon has some inter-visibility with the DCO Scheme, the operational impacts will amount to no change given the site comprises buried archaeology, resulting in a neutral effect on the setting of the monument.

Stokeleigh Camp lies within the Leigh Woods Registered Park and Garden and is hidden from the DCO Scheme within the woodland at the top of Avon Gorge. The operation of the railway is assessed to result in no change in setting and a neutral significance of effect.

Clifton Down Camp scheduled monument and Clifton Observatory have inter-visibility with the DCO Scheme as a result of the absence of some vegetation along the railway. This would result in a negligible negative impact and a neutral significance of effect on the Clifton Down Camp scheduled monument, which chiefly comprises buried archaeology and would not suffer adversely from such a low level of visual change. The effect on the Observatory could amount to (at the very worst) a slight adverse one, given the increased views from the structure top of the Avon Gorge down onto the operational railway line.

Conservation Areas

The operational phase of the DCO Scheme is expected to result in no change or a negligible adverse impact on the conservation areas as a whole, despite the loss of screening vegetation and new features such as the security fencing, signals and masts. This largely reflects the fact that the proposed changes are within the context of an existing railway and that the affected views from the conservation areas are peripheral and over medium to long distances.

Lying on the north side of the River Avon the Shirehampton Conservation Area and the listed buildings within it have no inter-visibility with the DCO Scheme. The operational railway would mean no change in visual and noise environments, given the distance and topography resulting in a neutral effect.

The vegetation clearance along the DCO Scheme will be the only discernible impact that would be likely to change the setting of the Sea Mills Conservation Area. This would relate to a small change in the views from the north bank of the River Avon and the A4 corridor. However, this would be a small change and would have limited impact on the designation as a whole. The noise from the operational railway would at most increase ambient noise levels by 0.5 dB(A) for the nearest property on the east side of the Gorge in Shirehampton, which is a slight adverse effect (see Chapter 13 Noise and Vibration). Overall, the magnitude is classed as a negligible negative impact, with a resulting neutral effect.

The Sneyd Park Conservation Area abuts the DCO Scheme and there is limited inter-visibility, chiefly from the A4 and probably a small number of properties right at the top of
the Avon Gorge. Consequently, with a negligible negative impact on this medium value asset, the resulting effect would be **neutral**.

8.6.84 The western boundary of The Downs Conservation Area has inter-visibility with the DCO Scheme. Currently the vegetation along the Portbury Freight Line screens the main viewing points from Clifton Down and Sea Walls or Black Rocks area in The Downs Conservation Area of the railway. During the operational phase of the DCO Scheme, the absence of much of this screening would result in the railway being more visible from the opposite side of the Gorge (both top and bottom) and perhaps increase noise in the Gorge. However, it is doubtful if the additional noise would significantly exceed the traffic noise level already present in the Avon Gorge from the A4 Portway. The highest increase predicted noise level increase on the east side of the Avon Gorge in the short term is 0.5 dB(A) at the dwellings closest to the River Avon in Shirehampton and would be a negligible magnitude and a **slight adverse** significance of effect (see Chapter 13 Noise and Vibration). Additionally, this would affect only a small portion of the Conservation Area designation and would only amount to a negligible negative impact, resulting in a **neutral** effect.

8.6.85 The western edge of the Clifton and Hotwells Conservation Area, and historic buildings within it, lie in relatively close proximity (approximately 120 m) to the Portbury Freight Line. The reduction of the vegetation screening along much of the railway from the designation and the increased noise levels from the operational railway would still amount to no change, because only the very western edge of the designation might be affected. The great majority of the designation would suffer no negative impacts from the DCO Scheme whatsoever. This would result in a **neutral** effect.

8.6.86 The DCO Scheme passes the western end of the City Docks Conservation Area separated by the River Avon. While the DCO Scheme may affect the setting and views from the western end of the conservation area, the magnitude of impact is negligible negative, which results in a **neutral** significance of effect.

8.6.87 The Leigh Woods Conservation Area has no inter-visibility with the DCO Scheme, lying at a higher elevation and surrounded by woodland. The additional noise from the operational scheme would result in no change in ambient noise levels. Consequently, the DCO Scheme would have no change on the designation, resulting in a **neutral** effect.

8.6.88 The DCO Scheme runs along the eastern edge of the Bower Ashton Conservation Area. Part of the Clanage Road construction compound would be converted to a small permanent maintenance access to the railway. It is proposed to landscape the boundaries of this compound to reduce the impact on landscape and views. Despite being located within the Bower Ashton Conversation Area, the final appearance of the compound and its planting would not detract from the quality of the conservation area as a whole. Given the existing operational railway, the DCO Scheme would mean little change to the existing environment, given the significant green ‘buffer’ in between the railway and the historic village core. The Scheme would amount to no change during operation. This would mean a **neutral** effect on the designation.

**Listed Buildings**

8.6.89 The operational phase of the DCO Scheme is forecast to result in no change and a neutral significance of effect for most of the listed buildings within 500 m of the DCO Scheme due to the lack of inter-visibility and no significant increase in ambient noise levels. An overview of the operational impacts for all listed buildings identified in this study is provided in the gazetteer in Appendix 8.1. Those that could experience an adverse effect have been set out below.
8.6.90 The Clifton Suspension Bridge crosses over the DCO Scheme and offers views along the railway to the north and south of the bridge. There are also important viewing points of the Clifton Suspension Bridge, such as from Sea Walls in The Downs Conservation Area, and from property, including listed buildings from the edge of Bristol. To the north, during the operation phase the views would be changed slightly, with minor modifications to the railway alignment and the loss of some vegetation principally along the line of new fencing on both sides of the railway. The fencing is required for security reasons to avoid trespass across the railway between the woods and the River Avon Tow Path. It is assumed for the purposes of this assessment that the colour of the fencing will be selected to tone in with the backdrop of the woods and the gorge. The view of the fencing will soften over time due to natural revegetation, but there it is currently assumed that there is insufficient space along the railway corridor to plant vegetation to screen the fencing and the railway.

8.6.91 There will also be a new communications mast to the south side of Clifton Tunnel No. 2 about 500 m north of the bridge. An illustrative photograph is provided in Chapter 4. Description of the Proposed Works. While the mast may be visible from the middle to the eastern part of the Clifton Suspension Bridge, this slender and unobtrusive structure would not materially detract from the view from the bridge. New signals are also required in the Avon Gorge. These are also relatively small and unobtrusive structures in the context of an existing railway along the foot of a wooded gorge.

8.6.92 To the south of the Clifton Suspension Bridge, the view along the railway would be much as at present, with some loss of vegetation to accommodate the new fences and possibly views of the new permanent maintenance yard off Clanage Road which will be screened with new planting.

8.6.93 During operations, there will be views of passenger trains passing along this section of the railway.

8.6.94 At ground level, the DCO Scheme would not affect the setting of the Clifton Suspension Bridge. All of the above changes to the setting of and views from the Clifton Suspension Bridge are within the context of small scale changes to an existing railway within the panoramic views of the bridge and the Avon Gorge. The magnitude of the impact is assessed to be negligible change from existing conditions on this high value asset. Overall, the impact of the DCO Scheme during the operations phase is considered to have a neutral significance of effect based on the information currently available for the assessment.

8.6.95 There are also a number of listed structures in Bristol with views across the River Avon which may be adversely affected by the operation of the DCO Scheme.

8.6.96 The removal of vegetation and the increased train passes during the operational phase may, in the worst case scenario, have a minor negative magnitude impact on views from the west side of some of the 37 listed buildings along Sion Hill in Clifton and The Paragon. This would result in a slight adverse significance of effect.

8.6.97 Nos. 16-19 and 20 and 21 Freeland Place have inter-visibility with the DCO Scheme. The operational phase will have a minor negative impact on the settings of the buildings given the relatively close proximity to the railway line and the visual change. This would result in a slight adverse effect.

8.6.98 The listed buildings along Hotwell Road have inter-visibility with the DCO Scheme, including Vincent Parade, Rock House, The Colonnade and Freeland Court. The operational period will change the views from the buildings to the other side of the Avon Gorge, with the additional movement of trains. The combined impacts could amount to a minor negative impact, resulting in a slight adverse effect.
8.6.99 The one of the seven listed buildings in Bower Ashton off the A369 Clanage Road, the Grade II listed Bower Cottage Double House, has some inter-visibility with the DCO Scheme at its rear. The DCO Scheme may have a negligible negative impact on this medium value asset resulting in a neutral to a possible slight adverse effect.

Registered Parks and Gardens

8.6.100 Although the DCO Scheme runs through eastern fringe of the Leigh Court Registered Park and Garden, the DCO Scheme will not change the setting of the designation in landscape terms, given the existence of the operating railway and the restriction on views due to the enclosing woodland. Photographs of the views from the railway into Leigh Court are provided in Appendix 8.2 in the PEI Report Volume 4 Appendices. The impact of the DCO Scheme will amount to no more than a very minor change within the existing rail corridor in an historic landscape which had previously accommodated an active passenger railway. The impact is no more than a negligible negative one, resulting in a neutral effect.

8.6.101 There is some limited inter-visibility from the eastern fringe of Ashton Court Registered Park and Garden and the DCO Scheme. As described above for the construction phase, a short section of the eastern boundary of the Registered Park and Garden runs along the western side of Clanage Road. Within the eastern part of the Registered Park and Garden, views towards the railway are constrained by hedgerow planting, mature trees and the stone walls along both sides of Clanage Road. Furthermore, as the form or setting of the designation will not be altered, there will be a negligible negative impact on the designation during the operational phase, resulting in a neutral effect.

Decommissioning Phase

8.6.102 For the reasons set out at 8.3.18 – 8.3.23 it is not possible to identify realistic options for decommissioning for assessment and no basis on which to consider that there would be reasonably foreseeable significant environmental impacts on air quality and greenhouse gases resulting from decommissioning.

8.7 Mitigation and Residual Effects

Construction Phase

Removal of existing railway infrastructure

8.7.1 The direct impacts of the DCO Scheme on the existing historic railway infrastructure will be mitigated through Network Rail’s procedures for the disposal of redundant railway assets. The recovery of redundant assets is a core planning activity. Site walkouts are undertaken to assess the assets and materials to be recovered. The assessment includes a record of the volume, type, quality, current location, and collection location for the assets. The assets may be re-used on other schemes, made available for sale, or otherwise disposed of. If Network Rail considers that the asset has historical value, it may be sold or gifted for example to charity. Heritage railway operators have shown an interest in historical assets along the railway and it is possible that some of these assets may be made available to them.

8.7.2 Assuming that Network Rail undertakes their procedures for redundant assets along the existing railway, the slight adverse significance of effect resulting from the removal of the existing historical railway infrastructure will be reduced to neutral.
Temporary works at construction sites

8.7.3 During construction mobilisation, the top soil at green field construction compound sites will be stripped and stockpiled nearby, and a hard core laid to form the construction base. An archaeological watching brief will be undertaken during the top soil stripping at The Portbury Hundred and Lodway Farm construction compounds by appropriately qualified archaeological contractors working to a Scheme Design approved by NSDC. This is a standard method to mitigate impacts to archaeological remains, with the objective being preservation by record. Implemented to a detailed project design approved in advance of implementation, the watching brief would fulfil mitigation objectives.

8.7.4 During consultation with NSDC’s Archaeologist and Conservation Officer in December 2015/January 2016, they recommended a watching brief during initial soil stripping of green field construction sites plus an option for further mitigation, to be agreed should any archaeological finds be made.

8.7.5 The contractor will be required to prepare and implement a procedure to be followed in the event of the discovery of buried archaeological remains. The scope of this procedure is likely to cover the need to halt the works, report the find to the relevant authorities, and the record and archive the artefact.

8.7.6 It is difficult to assess the potential impact on unknown buried archaeological remains. Assuming such remains are present and require mitigation in the areas directly affected, a worst-case scenario assumes a low value of the potential resource, with the construction impacts being slight adverse, resulting in a pre-mitigation slight adverse significance of effect. Once an archaeological watching brief has been applied, the adverse effect score above would be reduced to neutral, assuming either the absence of archaeological features or the preservation-by-record of those found.

8.7.7 There is a very low risk of any Scheme ‘show-stoppers’ emerging from the archaeological resource. It is considered that much of the archaeology and heritage features that pre-dates the original railway would have been destroyed during the construction of the railway in the 1860s. While the search of the heritage records has identified a number of designated and non-designated features within 50 m of the railway, these are of low value, and many within the railway corridor itself are associated with the railway infrastructure.

8.7.8 The NSDC Conservation Officer recommended landscaping where the railway passes near conservation areas during consultations in December 2015/January 2016. The railway does cross any conservation areas, but pass several through the Avon Gorge. However, along this section the railway corridor is relatively narrow. Furthermore, Network Rail has procedures that define permitted planting related to distance from the track and acceptable species. As a result it is currently assumed that there will not be sufficient width within the red line boundary to provide planting sufficient for screening purposes between the railway and the eastern (river side) boundary of the railway corridor to screen views from the conservation areas. This will be re-consideration as the emerging design and details of the construction methodologies develop.

8.7.9 Other mitigation measures are being considered where adverse (but not significant effects in terms of the EIA Regulations) are identified. These proposals are currently being finalised to assess whether they are feasible to include as part of the project. This will be fully documented as part of the Environmental Statement and there will be ongoing discussions with key stakeholders to consider this further between now and the submission of the DCO application.
8.8  Cumulative Effects

Other Projects along the Portishead Branch Line

8.8.1 A number of developments are proposed within about 500 m of the DCO Scheme, which are listed in Appendix 18.1 in the PEI Report Volume 4 Appendices and shown on Figure 6.2 Sheets 1 to 5 in the PEI Report Volume 3 Book of Figures.

8.8.2 Only one other development is associated with an important heritage asset, namely Court House Farm (HER 2560), which lies approximately 140 m from the DCO Scheme. Existing views to and from the farmhouse are restricted to some extent by the other farm buildings and existing planting. The property is partly surrounded by mature hedgerows and open fields, and there is a line of poplar trees running along the south side of the Portishead to Pill Branch Line which screen views from the farmhouse towards the railway between Royal Portbury Dock Road and Marsh Lane.

8.8.3 The setting of the listed building is changing in the coming year, as the Bristol Port Company (the owners of Royal Portbury Dock) has obtained planning permission to install a cargo (vehicle) storage area in the fields to the west of Court House Farm with lighting and a new access off Marsh Lane and bridge over the disused railway line. The proposed development includes proposals for strengthening the existing vegetation belt around the farmhouse for visual screening and planting along the railway for ecological reasons. The proposals are currently under construction.

8.8.4 Given the limited inter-visibility between the farmhouse, the DCO Scheme and the additional planting proposed by the Bristol Port Company, and the change in landscape from a rural to an industrial setting, the operation of an hourly service with the DCO Scheme will not materially change the setting of Court House Farm further. Consequently, the construction and operation of the DCO Scheme is not expected to result in a cumulative effect on this heritage asset, resulting in a neutral effect.

8.8.5 Where relevant, the planning applications for developments within 50 m of the railway corridor have had archaeological conditions attached to them including archaeological interventions and historic building recording. These have been required for a minority of the approved planning applications within the study area, indicating perhaps the lack of archaeological potential in certain areas in addition to the lack of impacts identified on cultural heritage by the local planning advisors.

8.8.6 Assuming that planning applications for other projects will be required to mitigate adverse impacts to archaeology and built heritage, the implementation of the DCO Scheme when considered with the other projects will have a neutral cumulative effect, once the mitigation on the DCO Scheme has been applied.

Other Works for MetroWest Phase 1

8.8.7 Other elements of MetroWest Phase 1, namely the modifications to Parson Street Junction (including the Liberty Sidings), Parson Street Station, Liberty Lane Freight Depot, Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling and Bathampton Turnback comprise smaller scale, 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.

8.8.8 Network Rail is undertaking an environmental appraisal, environmental risk register and environmental action plan of the works required for these Schemes as part of the reporting for Network Rail’s Governance for Railway investment Projects (“GRIP”) process. This process will identify the potential impacts and capture the need for mitigation during
design and construction. The results will be carried forward from the present GRIP 3 / 4 phase, into the detailed design phase (GRIP 5) and construction (GRIP 6).

8.8.9 Parson Street Junction (MetroWest Phase 1). Part of the existing junction (switches and crossovers) needs to be renewed which entails replacement of the track across the junction, replacement of signalling equipment and associated works. These works are within Network Rail's operational boundary and will be implemented using their General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.

8.8.10 Liberty Lane Freight Depot (MetroWest Phase 1). A buffer stop and trap points are required at the Liberty Lane depot entrance, within the sidings to enable the continuation of the existing freight train shunting movements from the depot across Parson Street Junction onto the Up Relief Line. These works are within Network Rail's operational boundary and will be implemented using their General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.

8.8.11 As these works will be undertaken within an existing operational railway corridor, the archaeological potential is expected to be low given historic construction activities in this location. The cumulative effects of the DCO Scheme with the remodelling of Parson Street Junction and Liberty Lane Freight Depot is assessed to be neutral.

8.8.12 At Parson Street Station minor platform works are required to use platform 3, including adjustment to the platform copers, works to improve track drainage and associated works. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.

8.8.13 As these works will be undertaken within an existing operational railway corridor, the archaeological potential is expected to be low given historic construction activities in this location. The cumulative effect of the DCO Scheme with the works at Parson Street Station is considered to be neutral and not significant.

8.8.14 Bedminster Down Relief Line (MetroWest Phase 1). The Down Carriage Line running from Bristol Temple Meads will be extended past Bedminster station to a new 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 Down Carriage Line and associated signalling. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works must be completed before the Portishead Branch Line DCO Scheme starts operating.

8.8.15 As an existing railway corridor, any archaeological and heritage features would have been disturbed in the original construction of the railway. Network Rail will implement their own procedures on the reuse and disposal of heritage railway assets. The cumulative effects of the DCO Scheme with the works to upgrade the railway for the Bedminster Down Relief Line is assessed to be neutral.

8.8.16 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. These works are within Network Rail's operational boundary and will be implemented using its General Permitted Development rights. These works are not required for the operation of the Portishead Branch Line DCO Scheme. Network Rail will implement their own procedures on the reuse and disposal of heritage railway assets. The
cumulative effect of the DCO Scheme with the Avonmouth / Severn Beach line is assessed as **neutral**.

### 8.8.17 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 Portishead Branch Line DCO Scheme.

### 8.8.18 Cultural Heritage Features

There are numerous cultural heritage features in the vicinity of the Bathampton Turnback facility, but none on Network Rail land (see CH2M, 2015 Baseline Report available on the Planning Inspector’s portal). The proposed construction works at Bathampton Turnback are small scale and within the existing operational railway, which would have been disturbed due to previous construction of the railway. Any upstanding features associated with the works may impact on the setting of nearby features. The nearest listed buildings are bridges associated with the railway and canal. Network Rail will implement their own procedures on the reuse and disposal of heritage railway assets. The cumulative effect of the DCO Scheme with the Bathampton Turnback is assessed as **neutral**.

### 8.8.19 Increased Services

The increased services proposed between Bristol, Bath and Severn Beach are assessed to have a **neutral** effect on the setting of cultural heritage features, given that no significant new land-take will occur and that no new structures will be erected that will have a visual impact on cultural heritage assets. The level of noise created from the increased services will not exceed the level of noise already present from road traffic in proximity to the cultural heritage assets.

### 8.8.20 Construction Impacts

The construction impacts for the Bedminster Down Relief Line, Severn Beach / Avonmouth Signalling, and Bathampton Turnback and the potential operational impact of additional services on the setting of nearby cultural heritage resources for other services under MetroWest Phase 1 are scoped out of further cumulative impacts assessment of the DCO Scheme, as these are not considered to have a significant effect on the setting of any cultural heritage features along these sections of railway. The impact of these works on the cultural heritage resource will be considered by Network Rail under their GRIP process.

### 8.9 Limitations Encountered in Compiling the PEI Report

#### 8.9.1 Archaeological Resource

The archaeological resource at the proposed green field construction compounds is unknown, and therefore a worst-case scenario has been assumed whereby archaeological remains exist at these locations and may be disturbed and displaced during topsoil stripping.

#### 8.9.2 HER Data

The HER data for both NSDC and BCC are not an absolute record of the known archaeological and historic building resource within the local authority areas. It is merely a database created from past research and archaeological interventions. It provides a baseline of material to inform current and future study. Many of the assets exist on the HER solely as an archive of known archaeology which has been erased by later human activity or historic activity which has not left any physical remains. The latter is true of many of the WW2 DoB features which were dismantled and removed after the end of the war.
8.9.3 A number of mitigation measures are still being considered as part of the environmental impact assessment. As the PEI Report only demonstrates those environmental effects at a certain point in time pre-application, these will be further refined as the Environmental Impact Assessment in the DCO application is finalised.

8.10 Summary

8.10.1 The DCO Scheme is assessed to have a direct slight adverse effect on non-designated cultural heritage assets during the enabling works and construction through the removal of known and hitherto unknown archaeological remains along the railway corridor. The adverse effects arising from these direct impacts on this resource can be adequately mitigated through preservation by record and the significance of effect of the residual impact is assessed to be neutral and not significant in regards to the EIA Regulations.

8.10.2 The effect of the DCO Scheme on the setting of the designated cultural heritage assets along the route during construction and operation is generally neutral and not significant in regards to the EIA Regulations. This results largely from the lack of inter-visibility between the DCO Scheme and heritage assets.

8.10.3 During construction, the significance of effect of the DCO Scheme on designated heritage assets was assessed as slight adverse for Clifton Suspension Bridge; The Observatory in Clifton Down Camp; Sion Hill; The Paragon 1-14 and 15; Nos. 16-19 and 20 and 21 Freeland Place; and Vincent Parade, Rock House and The Colonnade on Hotwell Road. However, these adverse effects are considered to be not significant in relation to the EIA Regulations.

8.10.4 During operation, the significance of effect of the DCO Scheme on designated heritage assets was assessed as slight adverse for The Observatory in Clifton Down Camp; Sion Hill; the Paragon 1-14 and 15; Nos. 16-19, 20 and 21 Freeland Place; Vincent Parade, Rock House and The Colonnade on Hotwell Road; and possibly one listed buildings in Bower Ashton. This is due to the proximity of some of these assets to the DCO Scheme, and the potential for impacts on setting. However, these adverse effects are considered to be not significant in regards to the EIA Regulations.

8.10.5 The construction activities at the greenfield construction compounds could have a significant impact on unknown buried assets. The significance of these impacts is difficult to assess as the value of the resource is unknown. A worst case scenario suggests that given the types of archaeological finds in the area, the value of the resource in greenfield sites may reach medium and the magnitude of impacts during construction would be moderate adverse, resulting in a moderate adverse effect, which would be significant under the EIA Regulations. However, given that the soil stripping works will be done under a watching brief the significance of effect could be reduced to neutral assuming either the absence of archaeological features or preservation by record of any discovered artefacts.

8.10.6 The cumulative effects of the DCO Scheme with other projects is generally assessed to be neutral and not significant in relation to the EIA Regulations.

8.10.7 A summary of the effects of the DCO Scheme on heritage assets is presented in Table 8-7.
<table>
<thead>
<tr>
<th>Aspect of the DCO Scheme</th>
<th>Impact</th>
<th>Receptors</th>
<th>Mitigation</th>
<th>Residual Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction activities</strong></td>
<td><strong>Removal of railway features associated with the original 1867 railway eg sleepers, minor modifications to vertical / horizontal alignment.</strong></td>
<td><strong>Loss or alteration to features associated with the original railway infrastructure.</strong> Value: Low</td>
<td>Preservation by record and possibly re-used by local heritage railway operators.</td>
<td>Negligible effect if the railway features have been adequately recorded.</td>
</tr>
<tr>
<td></td>
<td><strong>Potential loss of buried archaeology within the railway corridor, although presume pre-existing features were lost during the original construction of the railway.</strong></td>
<td><strong>Remaining non-designated archaeological resource along the railway corridor.</strong> Value: Low</td>
<td>Minimise the construction footprint. CoCP to include a protocol on the procedures for dealing with archaeological finds.</td>
<td>Potential for loss or damage to archaeological features along the railway corridor.</td>
</tr>
<tr>
<td></td>
<td><strong>Damage to and displacement of archaeological material during top soil stripping.</strong> Value: Medium</td>
<td><strong>Buried archaeological remains.</strong> Value: Medium</td>
<td>Minimise the construction compound footprint Watching brief during top soil stripping. CoCP to include a protocol on the procedures for dealing with archaeological finds.</td>
<td>Potential for loss or damage to archaeological features for works in previously undisturbed greenfield sites.</td>
</tr>
</tbody>
</table>

**Table 8-7: Potential impacts, mitigation and residual impacts for the DCO Scheme on cultural heritage assets**
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<table>
<thead>
<tr>
<th>Aspect of the DCO Scheme</th>
<th>Impact</th>
<th>Receptors</th>
<th>Mitigation</th>
<th>Residual Effects</th>
</tr>
</thead>
</table>
| Construction activities | Detracting from the setting of built heritage (listed buildings and CAs), especially through the removal of vegetation, and sight of plant, compounds, machinery, etc. | Temporary deterioration of the setting of heritage assets. | Good housekeeping to avoid temporary impacts on the setting of nearby features. | Potential impact on the setting of nearby cultural heritage features. 
Magnitude: Moderate adverse 
Significance of Effect: Slight adverse to neutral 
Significance for EIA legislation: Not significant |

**Operation activities**

| New service between Portishead and Pill. | Change setting of cultural heritage features near the alignment due to increased number of trains. | Heritage features along the railway corridor within the visual envelope. | Maintain existing planting where possible and provide new planting to screen views. | Some change in setting of nearby heritage features due to passing trains. 
Magnitude: Moderate adverse to no change 
Significance of Effect: Slight adverse to neutral 
Significance for EIA legislation: Not significant |

| The restoration of the railway corridor to its original function. | Maintain some historic features associated with the original railway. | Non-designated heritage features along the railway eg the four tunnels. | Restoration during construction and on-going maintenance. | Potentially prolong the value of some historic features associated with the railway. 
Magnitude: Minor beneficial 
Significance of Effect: Slight beneficial 
Significance for EIA legislation: Not significant |
8.11 References

8.12 Abbreviations
B&NES  Bath and North Somerset Council
BCC  Bristol City Council
CA  Conservation Area
DCO  Development Consent Order
DMRB  Design Manual for Roads and Bridges
DoB  Defence of Britain
EIA  Environmental Impact Assessment
GRIP  Governance for Railway Investment Schemes
HER  Historic Environment Record
HLC  Historic Landscape Characters
NMR  National Monuments Record
NPPF  National Planning Policy Framework
NPSNN  National Policy Statement for National Networks
NSDC  North Somerset Council
NSIP  Nationally Significant Infrastructure Scheme
OS  Ordnance Survey
PEI Report  Preliminary Environmental Information Report
PSP  Principal supply point (for signalling equipment)
RP&G  Registered Park and Garden
SHC  Somerset Heritage Centre
SM  Scheduled Monument
SoS  Secretary of State
WWI  World War I
WWII  World War II
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