

Welsh Government

M4 Corridor around Newport

Environmental Statement: Volume 1

Chapter 8: Cultural Heritage

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8 Cultural Heritage

8.1 Introduction

8.1.1 This chapter considers the direct and indirect impact of the Scheme on cultural heritage, including buried archaeological sites, historic buildings and historic landscapes. It identifies the likely impacts on these 'heritage assets' in terms of the potential for direct physical disturbance and changes within the settings of the assets and assesses the overall significance of effect.

8.1.2 The following stages of the Scheme are likely to affect the historic environment.

- Construction (including land take) - this is the phase where direct, physical impacts on built heritage assets and buried archaeological remains are most likely to occur. In addition, in some cases construction activity may result in an effect on setting.
- Operation - this is the phase during which nearby heritage assets may experience impacts due to visual and acoustic changes within their settings, and there would also be changes to the character of the historic landscape.

8.2 Legislation and Policy Context

Relevant Legislation

8.2.1 The current primary legislation applicable to this chapter comprises the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990.

8.2.2 However, the Historic Environment (Wales) Bill was passed by the National Assembly for Wales on the 9th February 2016 and it is anticipated that the Bill will receive Royal Assent in March 2016. In response to this additional primary legislation, there will also be a review of planning policy and a suite of updated guidance.

Planning Policy Context

National Planning Policy

8.2.3 The principal national planning policy relevant to this assessment is Planning Policy Wales (Welsh Government, 2016). Chapter 6 of Planning Policy Wales (Conserving the Historic Environment) establishes the Welsh Government objectives with regard to the protection of the historic environment. It further explains that local planning authorities have an important role in this protection, whilst ensuring that the historic environment can accommodate and respond to the current needs of society.

8.2.4 The Welsh Government's objectives with regard to the historic environment are defined thus in Section 6.1 of Planning Policy Wales (paragraph 6.1.1).

- *'to preserve or enhance the historic environment, recognising its contribution to economic vitality and culture, civic pride and the quality of life, and its importance as a resource for future generations; and specifically to:*

- *protect archaeological remains, which are a finite and non-renewable resources, part of the historical and cultural identity of Wales, and valuable for their own sake and for their role in education, leisure and the economy, particularly tourism;*
- *ensure that the character of historic buildings is safeguarded from alterations, extensions or demolition that would compromise a building's special architectural and historic interest; and to*
- *ensure that conservation areas are protected or enhanced, while at the same time remaining alive and prosperous, avoiding unnecessarily detailed controls over businesses and householders.'*

8.2.5 Planning Policy Wales identifies that Cadw is the historic environment division of Welsh Government and *'has responsibility for protecting, conserving and promoting an appreciation of the historic environment of Wales'* (paragraph 6.2.1). It then lays out the duties of Welsh Government with regard to the compilation of lists of buildings of special architectural or historic interest (i.e. listed buildings) and the scheduling of ancient monuments that are considered to be of national importance (i.e. scheduled monuments).

8.2.6 The roles of the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) and the four Welsh Archaeological Trusts are also defined. Planning Policy Wales goes on to provide advice with regard to the management of designated and undesignated heritage assets.

8.2.7 With regard to archaeological remains, Section 6.5 of Planning Policy Wales states that *'The desirability of preserving an ancient monument and its setting is a material consideration in determining a planning application, whether that monument is scheduled or unscheduled. Where nationally important archaeological remains, whether scheduled or not, and their settings are likely to be affected by proposed development, there should be a presumption in favour of their physical preservation in situ. In cases involving lesser archaeological remains, local planning authorities will need to weigh the relative importance of archaeology against other factors, including the need for the proposed development'* (paragraph 6.5.1).

8.2.8 The policy regarding listed buildings is presented in Section 6.5 of Planning Policy Wales: *'There should be a general presumption in favour of the preservation of listed buildings....Where a development proposal affects a listed building or its setting, the primary material consideration is the statutory requirement to have special regard to the desirability of preserving the building, or its setting, or any features of special architectural or historic interest which it possesses'* (paragraph 6.5.9). The latter statement refers to the requirements under Section 66(1) of the Planning (Listed Buildings and Conservation Areas Act) 1990.

8.2.9 Regarding Conservation Areas, Planning Policy Wales states that *'Should any proposed development conflict with the objective of preserving or enhancing the character or appearance of a conservation area, or its setting, there will be a strong presumption against the grant of planning permission. In exceptional cases the presumption may be overridden in favour of development deemed desirable on the grounds of some other public interest'* (paragraph 6.5.17).

8.2.10 Planning Policy Wales also includes policies regarding historic landscapes, parks and gardens: *'Local planning authorities should protect parks and gardens and their settings included in the first part of the 'Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales'. Cadw should be consulted on planning applications affecting grade I and II* sites and the Garden History Society should be consulted on all parks and gardens on the Register. Information on the historic landscapes in the second part of the Register should be taken into account by local planning authorities in considering the implications of developments which are of such a scale that they would have a more than local impact on an area on the Register. The effect of proposed development on a park or garden contained in the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, or on the setting of such a park or garden, may be a material consideration in the determination of a planning application'* (paragraph 6.5.25).

8.2.11 The aspirations and vision of the Welsh Government with regard to the historic environment are additionally expressed in the following documents.

- People, Places, Future: The Wales Spatial Plan (Welsh Assembly Government, 2008a).
- Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Welsh Assembly Government, 2011).
- Historic Environment Strategy for Wales (Welsh Government, 2013).

8.2.12 The Wales Transport Strategy identifies a number of key environmental challenges with regard to the impact of transport on the environment. One of these relates to the loss of landscape and heritage quality and distinctiveness. The Strategy aims to *'Reduce the negative impacts of transport on our heritage – landscape, townscape, historical environment and Wales' distinctiveness'* (Welsh Assembly Government, 2008b, Table 4).

8.2.13 This Strategy document puts forward several aims with proposed outcomes and indicators. One of the outcomes is to *'Improve the effect of transport on our heritage'*. This is to be achieved through *'The choice and design of transport measures to have a neutral impact, or where appropriate, enhance Wales' natural and built heritage'* (Welsh Assembly Government, 2008b, Outcome 16, page 42).

8.2.14 Welsh Government advice regarding the importance of good design as a means of promoting sustainability (with regard to buildings and landscapes) is presented in Technical Advice Note 12: Design (Welsh Government, 2014b).

Local Planning Policy

8.2.15 The assessment has had regard to the following local policy documents. It should be noted that whilst these documents provide context, they are not determinative.

8.2.16 The Newport Local Development Plan 2011-2026 was adopted in January 2015 (Newport City Council, 2015a). Policy SP9 identifies that all planning proposals should consider recognised historic environment sites. Policy CE4 addresses the protection of sites included in the non-statutory Register of Landscapes, Parks and Gardens of Special Historic Interest and also deals with identified Historic Battlefields, whilst Policy CE5 seeks to protect buildings and sites of local

significance. Policy CE6 describes the requirement for archaeological work in connection with development in defined Archaeologically Sensitive Areas and other areas with known archaeological interest. Policy CE7 deals with Conservation Areas and refers to the need to avoid impacts on significant views in and out of such areas.

- 8.2.17** A Supplementary Planning Guidance document prepared by Newport City Council (2015b) provides details of the requirements for developments proposed within defined Archaeologically Sensitive Areas (ASAs).
- 8.2.18** The Monmouthshire Local Development Plan 2011-2021 was adopted in February 2014 (Monmouthshire County Council, 2014). Policy S17 addresses Place Making and Design and advises that development proposals should promote design that protects both distinctiveness and the historic environment. Policy DES1 deals with the same issue, whilst Policy HE1 outlines the requirements for development proposals with regard to Conservation Areas.
- 8.2.19** The Monmouthshire Local Development Plan 2011-2021 explains that Areas of Special Archaeological Sensitivity (ASASs) have been identified within Monmouthshire. It goes on to advise that prospective developers within an ASAS should contact the Glamorgan Gwent Archaeological Trust (GGAT) for an opinion regarding archaeological potential and for advice on whether an assessment or evaluation is necessary (Monmouthshire County Council, 2014, paragraph 6.5.13).
- 8.2.20** The Cardiff Local Development Plan LDP was adopted in January 2016. Key Policy KP17 deals with the protection of built heritage, whilst Policy EN9 addresses the conservation of the historic environment.
- 8.2.21** A Supplementary Planning Guidance (SPG) document regarding Archaeologically Sensitive Areas was approved by the City of Cardiff Council in July 2006 (Cardiff City Council, 2006). It provides detailed guidance on the protection of defined ASAs within the planning process.
- 8.2.22** Further details of national and local planning policies can be found in Appendix 8.1 of this ES.

8.3 Assessment Methodology

Relevant Guidance

- 8.3.1** Detailed guidance on planning and the historic environment is provided by Circulars 60/96 (Welsh Office, 1996a) and 61/96 (Welsh Office, 1996b).
- 8.3.2** The Welsh Office published its Circular 60/96 Planning and the Historic Environment: Archaeology in December 1996 (Welsh Office, 1996a). This sets out Welsh Government's policy on archaeological remains on land and provides recommendations, many of which have been integrated into local development plans. The key points in Welsh Office Circular 60/96 can be summarised as follows.
- Archaeological remains should be seen as a finite and non-renewable resource, and in many cases highly fragile and vulnerable to damage and destruction. Appropriate management is therefore essential to ensure that they survive in good condition. In particular, care must be taken to ensure

that archaeological remains are not needlessly or thoughtlessly destroyed. They are part of our sense of our cultural heritage not least in terms of the information they provide about the past, valuable both for their own sake and for their role in education, leisure and tourism.

- Around 3,000 nationally important sites in Wales have been scheduled. This is designed to ensure that the case for preservation is fully considered given any proposals for development or any other work that might damage the monument.
- In the case of non-scheduled remains, the planning system provides a context within which the desirability of preserving archaeological remains and other options can be considered by local planning authorities. Much can be achieved when developers are prepared to enter into discussions with archaeologists and consider fully the needs of archaeology as early as possible in the development process.
- Development plans should reconcile the need for development with the interests of conservation, including archaeology. They should include policies for the protection, enhancement and preservation of sites of archaeological interest, and their settings. These policies will provide an important part of the framework for the consideration of individual proposals for development that affects archaeological remains and will help guide developers in preparing planning applications.
- The desirability of preserving an ancient monument and its setting is a material consideration in determining a planning application whether that monument is scheduled or unscheduled.
- Archaeological investigations, such as excavation and recording, should be carried out before development commences, working to a project brief prepared by the local planning authority. Investigation can be achieved through agreements reached between the developer, the archaeologist and the local planning authority. Such agreements should secure and implement an appropriate scheme of archaeological investigation, to an agreed timetable, and provide for the subsequent publication of its results.
- Local planning authorities should seek to ensure that potential conflicts are resolved and agreements with developers concluded before planning permission is granted.

8.3.3 The Welsh Office Circular 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas (Welsh Office, 1996b) was published in December 1996. It sets out legislation and procedures relating to historic buildings and Conservation Areas. As with Circular 60/96, it emphasises that development plans should integrate conservation and other aspects of local planning policy. It also emphasises the need for early consultation on developments likely to affect historic sites and structures.

8.3.4 With respect to planning control, it states that:

'Authorities are required by Section 66(1) of the Act (throughout this Circular 'the Act' refers to the Planning (Listed Buildings and Conservation Areas) Act 1990) in considering whether to grant permission for development which affects a listed building or its setting, to have special regard to the desirability of preserving the

building or its setting or any features of architectural or historic interest that it possesses.’ (para.8)

and

‘Some historic buildings are scheduled ancient monuments and many which are not scheduled are either of intrinsic archaeological interest or stand on ground which contains archaeological remains. It is important in such cases that there should be appropriate assessment of the archaeological implications of development proposals before applications are determined and that, where permission is to be granted, authorities consider whether adequate arrangements have been made for recording remains that could be lost in the course of works to which permission will relate.’ (para.10)

- 8.3.5** Welsh Office Circular 1/98 was published in February 1998 (Welsh Office, 1998). This provides updated guidance with regard to the protection of listed buildings and Conservation Areas in the light of judgements that deal with such issues.
- 8.3.6** The Welsh Government has also published the Historic Environment Strategy for Wales (Welsh Government, 2013). This describes forthcoming measures that will further protect the heritage of Wales and will encourage public access to, and enjoyment of, the historic environment. These measures include the Heritage Bill along with supporting policy, but also focus on heritage interpretation and heritage-based tourism.
- 8.3.7** The overall assessment of impacts and effects presented in this chapter is in line with the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 2, Part 5 (HA205/08) (Highways Agency *et al.*, 2008). This provides guidance on the assessment and management of environmental effects, including advice on determining the magnitude of impacts and the significance of effects.
- 8.3.8** DMRB guidance specific to the historic environment is provided in the DMRB Volume 11, Section 3, Part 2 Cultural Heritage (HA208/07) (Highways Agency *et al.*, 2007). This splits the cultural heritage resource into three separate but related sub-topics: Archaeological Remains; Historic Buildings and Historic Landscape.
- 8.3.9** Annex 8 of HA208/07 provides guidance on how the processes described within this section of the DMRB may need to be adapted within the devolved administrations. With regard to Wales, Annex 8 (paragraph 8.6) advises that for schemes that affect areas on the Register of Historic Landscapes in Wales, there is a Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (Cadw *et al.*, 2007). This paragraph goes on to advise that the process of historic landscape characterisation and assessment for the registered areas can be applied elsewhere in Wales. Part of the Scheme lies within a Registered Historic Landscape (see Section 8.4 of this chapter), therefore an Assessment of the Significance of the Impact of Development on Historic Landscape (ASIDOHL2) report has been prepared (Appendix 8.3). In Annex 7 of HA208/07 (which deals with the historic landscape sub-topic), paragraph 7.1.14 refers to the LANDMAP process for use on developments in Wales.
- 8.3.10** Also with specific regard to the historic landscape, supplementary guidance on assessment is provided in the document Assessing the Effect of Road Schemes on Historic Landscape Character (Highways Agency, 2007). Whilst not adopted

in Wales, this provides additional information on data collection, evaluation of the historic landscape, assessment of impact magnitude and identification of the significance of effects.

8.3.11 Additional guidance on how to identify and appraise the values associated with heritage assets is presented in the document Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Welsh Assembly Government, 2011).

8.3.12 In addition to the above, the following Chartered Institute for Archaeologists' Standard and Guidance documents have been utilised within the programme of baseline data gathering.

- Standard and guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists, 2014a).
- Standard and guidance for archaeological geophysical survey (Chartered Institute for Archaeologists, 2014b).
- Standard and guidance for archaeological field evaluation (Chartered Institute for Archaeologists, 2014c).
- Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (Chartered Institute for Archaeologists, 2014d).
- Standard and guidance for the collection, documentation, conservation and research of archaeological materials (Chartered Institute for Archaeologists, 2014e).

8.3.13 In addition to the guidance provided by the Chartered Institute for Archaeologists, the desk-based assessment for the proposed new section of motorway has been compiled in line with the guidance provided in the document Notes for Archaeologists undertaking Desk-Based Studies in South-East Wales (GGAT, 2007).

Study Area

8.3.14 Section 5.4 of HA208/07 (Highways Agency *et al.*, 2007) provides advice on appropriate areas for baseline studies. Where a route option has been identified for a proposed road scheme, the recommended study area for archaeological remains '*would usually comprise the scheme options and any new land-take, plus an area extending at least 200m either side of them*'.

8.3.15 The study area for cultural heritage data collection has comprised a corridor extending 200 metres beyond the land take boundary for the proposed new section of motorway (including temporary land take) (see Figure 8.1). Where linear or historic landscape features extend beyond the 200 metre area, the study area has been extended in order to provide sufficient context for the understanding of such features.

8.3.16 For designated heritage assets that could be affected as a result of significant change within their settings (e.g. scheduled monuments, listed buildings), the study area has included all such assets regardless of distance. The identification of such assets was principally based on the Zone of Theoretical Visibility established as part of the landscape and visual assessment.

Approach to Identification of Baseline Conditions

- 8.3.17** Full coverage of the regional Historic Environment Record (HER) for the main study area was acquired from the Glamorgan-Gwent Archaeological Trust (GGAT), together with details of defined Historic Landscape Character Areas. Information regarding scheduled monuments, listed buildings and Registered Parks, Gardens and Landscapes of Special Historic Interest was obtained from Cadw and from published sources.
- 8.3.18** Details of Conservation Areas, Archaeologically Sensitive Areas (or similar) and 'locally-listed' buildings were obtained from Newport City Council and Monmouthshire County Council.
- 8.3.19** Further information regarding the historic landscape of the Gwent Levels and on specific archaeological periods and sites within or close to the study area was acquired from relevant specialist publications.
- 8.3.20** An Academic Advisory Panel has been established by the Scheme design team. This panel has provided information regarding sources of baseline information and also methodologies for appropriate surveys aimed at recovering additional baseline information.
- 8.3.21** Some archaeological fieldwork and remote sensing surveys had been carried out previously with regard to the development of route options for a new section of motorway to the south of Newport. Additional work has been undertaken in connection with the preparation of the draft Orders for the Scheme; this additional work has built on and supplemented the previous work. The results of this additional work are summarised in Appendix 8.2 of this ES.
- 8.3.22** Geophysical survey in the form of fluxgate gradiometer (magnetometer) survey has been undertaken at a number of locations on the higher ground at the eastern and western end of the proposed new section of motorway. The areas were selected for survey on the basis of: scheme design and consequent impact; suitability for survey (land use); and overall archaeological potential determined through desk-based assessment and previous fieldwork. A report on the results of this programme of magnetometer survey is presented as Appendix 8.4 of this ES.
- 8.3.23** That part of the new section of motorway within the Gwent Levels has been subject to examination of archaeological potential by way of several complementary methodologies.
- 8.3.24** A geoarchaeological deposit model was established through examination of all available data sets produced by the geotechnical work undertaken with regard to the development of the Scheme. This was aimed at characterising and mapping the deposit sequences within the Gwent Levels, with the objective of being able to identify areas of higher archaeological potential. A report on the results of this work is presented as Appendix 8.8 of this ES.
- 8.3.25** An electrical resistivity tomography (ERT) survey was undertaken, which covered a considerable portion of that part of the route that crosses the Gwent Levels. This survey investigated the electrical properties of the subsurface deposits in a series of cross-sections or pseudo-sections. It was supplemented by conductivity data acquired through electro-magnetic (EM) survey along the same parts of the route. Overall, the ERT and EM surveys provided additional data regarding the

underlying deposits that were then used to enhance the geoarchaeological deposit model. A report on the results of this programme of ERT and EM survey is presented as Appendix 8.6 of this ES.

- 8.3.26** Additional aerial reconnaissance for archaeological purposes was undertaken using a small plane equipped with a number of specialist cameras. The output included full Red-Green-Blue (RGB) and Near Infra-Red (NIR) aerial imagery. This work was undertaken in mid-September 2015 as this is when the differentials in moisture levels within the ground are most likely to reveal the presence of potential archaeological features.
- 8.3.27** The aerial imagery also enabled the production of a detailed Digital Surface Model (DSM) showing the topography along this part of the new section of motorway as high resolution images (better than 0.5 m cell size). The DSM was manipulated with slope/illumination tools in order to maximise the identification of surface features.
- 8.3.28** A LiDAR dataset specific to the proposed new section of motorway was provided to the archaeology team. This was analysed and compared against the DSMs obtained from aerial survey.
- 8.3.29** Available satellite imagery covering this part of the route was acquired from commercial suppliers and analysed by specialist archaeologists, with orthorectification and atmospheric correction applied where necessary. This imagery included multi-spectral data as well as NIR data.
- 8.3.30** Based on the combined output from the aerial and LiDAR surveys and the analysis of the satellite imagery, potential features of archaeological interest, including palaeochannels, were identified. These were then fully digitised and the information was added to the historic environment dataset. A report on the results of this programme of aerial and LiDAR survey and satellite image analysis is presented as Appendix 8.7 of this ES.

Consultation

- 8.3.31** Table 8.1 provides details of consultation undertaken to date in relation to cultural heritage.

Table 8.1: Consultation Responses Relevant to this Chapter

| Date | Consultee and Issue Raised | How/Where Addressed |
|---|---|---|
| 2014 (Draft Plan consultation response) | <p>Public Response Gwent Levels and the reens are important assets. Other assets include the vicarage at Magor and Newport Docks.</p> <p>Cadw Scheduled monument required to be lost and a Grade II building demolished.</p> <p>Natural Resources Wales Gwent Levels Landscape of Outstanding Historic Interest would be negatively impacted.</p> | Effects on Gwent Levels, scheduled monuments and listed buildings assessed within this chapter. |
| 2014 Environmental Liaison Group meetings | Cadw Risk of unknown archaeology should be considered. Consider biggest risk to be at river crossings as locations may be difficult to access and high value archaeology may be present. Preference would be reinstating old reens before creation of new reens. | Unknown archaeology has been considered through a programme of investigations for the Scheme. |
| 17/06/2015 | Cadw - general introduction to scheme and discussion about major issues. Cadw confirmed requirement for full ASIDOHL report. | Full ASIDOHL report produced as Appendix 8.3 of this ES. |
| 01/09/2015 | Glamorgan-Gwent Archaeological Trust (GGAT) - general introduction to scheme and discussion of major issues. GGAT advised that full ASIDOHL report is required. | Full ASIDOHL report produced as Appendix 8.3 of this ES. |
| 09/09/2015 | Conservation Officer Newport City Council - general introduction to scheme and discussion of major issues. Officer advised potential for assessment of certain designated heritage assets including the Transporter Bridge. | Effects on Newport Transporter Bridge provided within this chapter. |
| 18/09/2015 | <p>Response to Scoping Report - Natural Resource Wales. <i>'With reference to the Historic Environment (Wales) Bill, we note that if this is passed during the production of the ES, you will be required to take it into account.'</i></p> <p>Regarding the desk-based assessment, <i>'we also</i></p> | <p>Noted - this issue is addressed in Section 8.2 of this ES.</p> <p>Noted - this document has been examined and is referenced in the</p> |

| Date | Consultee and Issue Raised | How/Where Addressed |
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| | <p><i>recommend that the Gwent Levels Historic Landscape Study (Stephon Rippon for Cadw, 1996) is also referred to'.</i></p> <p>Regarding the proposed academic advisory panel <i>'We recommend that they are asked to consider whether there are additional data sources which should form part of the desk-based assessment outlined in section 7.6.1'.</i> <i>'We would welcome being part of the consultee group for the baseline study on historic landscape'.</i></p> <p><i>'In addition to the proposed mitigation measures set out here, we recommend that consideration be given also to interpretation and access to the historic environment including landscape'.</i></p> | <p>Desk-Based Assessment (Appendix 8.2 of this ES). NB correct date for this report is 1995.</p> <p>Noted - the members of the panel have provided information regarding all available data sources.</p> <p>There is no specific consultee group for the baseline study on historic landscape - the approach to this topic was outlined in the Scoping Report and the results are presented within Appendices 8.3 and 8.9 of this ES.</p> <p>Interpretation of the historic environment will be through the measures proposed in the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES). Access to the historic environment has been maintained through the measures used to ensure that access across the area for all users to its current level is ensured and in some places enhanced.</p> |
| 25/09/2015 | <p>National Trust - Tredegar House- general introduction to scheme and discussion of major issues.</p> <p>NT concerned about possible reduction in visitor numbers due to reduced traffic flow along current M4 (access via Junction 28).</p> <p>Also concerns about views to the north of the house along the tree-lined avenue - current view of M4 etc.</p> | <p>Effects on Tredegar House - reduction in visitor numbers needs to be addressed via appropriate signage - this is assessed within this chapter.</p> <p>The issue of views towards the current M4 is addressed within this chapter.</p> |
| 01/10/2015 | <p>Response to Scoping Report, Cadw.</p> <p><i>'This scoping report focuses on the scoping of the 'Black' route'. In scoping this route, we consider that there is a need to explain why the alternative 'Red' and 'Purple' routes were scoped out on historic environment grounds. The ES will need to explain why the 'Black' route is considered to be the least damaging route from an historic environment perspective'.</i></p> <p><i>'While the scoping report has identified the</i></p> | <p>This ES relates to the Scheme, which is the subject of the draft Orders. Alternative route options are set out within Chapter 4 of this ES.</p> <p>These objectives are now stated in Section 8.2 of this ES chapter.</p> |

| Date | Consultee and Issue Raised | How/Where Addressed |
|------|---|---|
| | <p><i>importance of Chapter 6 of Planning Policy Wales, it would be helpful to state WG's objectives with regard to conserving the historic environment, which are expressed in Section 6.1'.</i></p> <p><i>'While the scoping report identified 'the desirability of preserving and ancient monument at its setting.....whether the monument is scheduled or unscheduled' in Section 6.5 of Planning Policy Wales, it should also include the next sentence' (of PPW).</i></p> <p><i>'The Conservation Principles for the Sustainable Management of the Historic Environment (2011) underpins the approach that has been taken with the Historic Environment (Wales) Bill and should be included in the list of key documents that express the Welsh Government's aspirations and vision with regard to the historic environment'.</i></p> <p><i>'The Welsh Government's Technical Advice Note 12: Design (2014) also contains guidance concerning the approach that should be taken to mitigate negative impacts on the historic environment'.</i></p> <p><i>'The Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures (Chartered Institute for Archaeologists 2014) and the Guide to the Conservation of Historic Buildings (British Standards Institute BS 7913:2013) should be added to the list of relevant guidance referenced during the EIA process'.</i></p> <p><i>'We note that archaeological investigative fieldwork will only take place at those locations where suitable access can be agreed. We would therefore like clarification about how the areas where access cannot be agreed will be assessed. Similarly,</i></p> | <p>Extract from PPW now included in Section 8.2 of this ES chapter.</p> <p>The Conservation Principles document is referenced in Section 8.3 of this ES chapter and the guidance provided in that document has been followed in the assessment presented within this chapter.</p> <p>TAN12 has been referenced in Section 8.2 of this ES chapter.</p> <p>The ClfA Standard and Guidance is referenced in the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES). BS 7913:2013 is referenced in Section 8.3 of this ES chapter.</p> <p>Assessment of the archaeological potential of areas where access has not been possible has been through examination of available desk-based sources and through airborne remote sensing. No areas of land have been identified where consent to undertake fieldwork has been denied by the landowner. However several</p> |

| Date | Consultee and Issue Raised | How/Where Addressed |
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| | <p><i>clarification as to the extent of inaccessible land, and the anticipated cumulative impact on the overall assessment would be appreciated'.</i></p> <p><i>'The baseline data for the overall assessment of the effects of the proposed scheme on the historic landscape should include Glamorgan-Gwent Archaeological Trust's published historic landscape area reports'.</i></p> <p><i>'The scope of the baseline studies should include reference to sites, monuments, structures, buildings and landscapes identified within the Research Framework for the Archaeology of Wales'.</i></p> <p><i>'We note that a member of the proposed academic advisory panel is also to undertake archaeological fieldwork as part of this project. Although we have not seen the terms of reference for the academic advisory panel, your archaeological advisor will need to ensure that there is no professional conflict of interest not any perception of a conflict of interest'.</i></p> <p><i>'With respect to the study area are you satisfied - given that the area is of recognised international value - that the proposed area extending 200m beyond the public highway boundary is appropriate. Your archaeological advisers will need to be able to justify this selection. The recognised international value of the area would seem to point to the requirement for a larger study area. It should, in any case, include all water treatment, extraction and mitigation areas'.</i></p> <p><i>It is stated that 'the study area will encompass all such [historic environment] assets whose settings</i></p> | <p>locations were identified where geophysical survey was requested but where the land was not suitable for this type of survey due to present land-use or to the presence of livestock. The cumulative impact on the overall assessment is not considered to be significant.</p> <p>The published GGAT HLCA descriptions are used within the ASIDOHL2 Assessment (Appendix 8.3 of this ES).</p> <p>The Research Framework for the Archaeology of Wales has been consulted as part of the desk-based historic environment assessment (Appendix 8.2 of this ES). Further reference to the Research Framework for the Archaeology of Wales is provided within the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES).</p> <p>This issue has been discussed with the members of the academic advisory panel and all are aware of the requirement to identify any real or perceived conflicts of interest.</p> <p>The study area used within the desk-based historic environment assessment (Appendix 8.2 of this ES) is a zone extending 200 m from the edge of the land take (permanent and temporary) required for the Scheme. Where relevant, archaeological findspots and features outside this defined study area are described and discussed in the overall background section of Appendix 8.2 and/or in the summary baseline presented in Section 8.4 of this ES chapter.</p> <p>It is agreed that visibility is not the sole criterion to be used when assessing effects on the settings of heritage assets, hence the use</p> |

| Date | Consultee and Issue Raised | How/Where Addressed |
|------|--|---|
| | <p><i>may change as a result of the Scheme construction and operation', and that 'the identification of such assets will principally be based on the Zone of Theoretical Visibility established as part of the landscape and visual assessment'. Conservation Principles for the Sustainable Management of the Historic Environment defines setting as 'the surroundings in which an historic asset is experienced, its local context, embracing present and past relationships to the adjacent landscape'. Our advice is that while setting is often primarily visual, setting may include other considerations such as noise, tranquility or remoteness. Its extent is not fixed and may change as the asset and its surroundings evolve'.</i></p> <p><i>With regard to the assessment of potential effects, the DMRB methodology would value the Grade II listed building proposed for demolition as 'medium' in terms of its value. This would appear to contradict national circular guidance which states that the emphasis within the criteria for listing is on national significance. Therefore, all listed buildings, of any grade, are nationally significant buildings and this is the value against which any proposals will need to be justified'.</i></p> | <p>of the work 'principally' when referring to the ZTV in the Scoping Report. Examination of noise change has also been utilised within the assessments presented in this chapter of the ES.</p> <p>The DMRB methodology does not use the term 'national significance' with regard to historic buildings. Instead it establishes levels of value. A 'high' value is ascribed to Grade I and II* listed buildings and can also be ascribed to other listed buildings (i.e. Grade II) if they have sufficient merit. A 'medium' value is generally ascribed to Grade II listed buildings. This does not mean that Grade II listed buildings are not nationally significant, rather it provides a mechanism for valuing more highly those historic buildings that are exceptional (i.e. Grade I and II* listed buildings but also potentially some of the Grade II listed buildings). The Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process (published by Cadw/CCW in 2007) includes a section on significance (page 17). It refers to 'Category A Sites and Monuments of National Importance' and states that these include 'Grade I and II* (and some Grade II) listed buildings. It then goes on to refer to 'Category B Sites and Monuments of Regional Importance' and states that these include sites that would fulfil the criteria for listing at Grade II. Thus Cadw's own published guidance regards most Grade II listed buildings as being of Regional Importance whilst Grade I and II* listed buildings are of National</p> |

| Date | Consultee and Issue Raised | How/Where Addressed |
|------------|--|---|
| | <p><i>'An important additional mitigation measure should include a written commitment to fund and allow adequate time for the appropriate and detailed identification, recording, analysis, conservation of finds, archiving and publication of the findings of all aspects of the archaeological investigative work. This accords with professional archaeological best practice'.</i></p> <p><i>Given the remarkable and complex character of the buried archaeology in the Gwent Levels area and the associated wetland environment, we recommend that a key mitigation proposal should be the inclusion of a financial contingency for additional and unexpected archaeological work in order to professionally investigate and record any previously unknown finds of national or international value (for example of the magnitude of the Newport ship or the Barland's Farm Romano-British boat'.</i></p> | <p>importance.</p> <p>This is addressed within the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES).</p> <p>Financial allowance has been made for dealing with previously unknown significant archaeological remains within the Scheme footprint.</p> |
| 15/10/2015 | Conservation Officer Monmouthshire County Council - general introduction to scheme and discussion of major issues. | Not applicable. |
| 25/01/2016 | NRW, Cadw, Monmouthshire County Council, Newport City Council – meeting to discuss general issues relating to the historic environment, particularly historic landscapes, and to review the approach taken by the ECI design team on these issues. | Not applicable. |

Assessment Criteria and Assignment of Significance

- 8.3.32** The assessment of impacts and effects on cultural heritage receptors has been undertaken in accordance with the methodology described in DMRB Volume 11, Section 3, Part 2 (HA208/07) (Highways Agency *et al.*, 2007). This is a Detailed Assessment as described in paragraph 3.9 of HA208/07, which is the level required when there is the potential for significant effects on cultural heritage resources.
- 8.3.33** The overall approach to the assessment of the significance of effects is in line with DMRB Volume 11, Section 2, Part 5 (HA205/08) (Highways Agency *et al.*, 2008). This provides guidance on the assessment and management of environmental effects, including advice on determining the magnitude of impacts and the significance of effects.
- 8.3.34** HA208/07 splits the cultural heritage resource into three separate but related sub-topics: Archaeological Remains; Historic Buildings and Historic Landscape. For each sub-topic, guidance is provided with regard to the assessment of value (of the resource) and also impact types and impact magnitude. An overall significance of effect on each identified receptor is reached by combining value and impact magnitude within a single matrix. The results for each sub-topic are then brought together to provide an overview of the significance of the effect of the Scheme on the combined cultural heritage resource.

Receptor Value

- 8.3.35** In order to reach an understanding of the level of any effect that a scheme may have on a heritage asset, it is necessary to understand the importance of that asset. For example, is it important at a national level or at a local level?
- 8.3.36** HA208/7 (Highways Agency *et al.*, 2007) provides the following tables for assessing the value (significance) of heritage assets.

Table 8.2: Factors for Assessing the Value of Archaeological Assets

| Value (sensitivity) | Factors |
|---------------------|--|
| Very High | World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives. |
| High | Scheduled Ancient Monuments (including proposed sites). Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives. |
| Medium | Designated or undesignated assets that contribute to regional research objectives. |
| 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. |
| Negligible | Assets with very little or no surviving archaeological interest. |
| Unknown | The importance of the resource has not been ascertained. |

Table 8.3: Criteria for Establishing Value of Historic Buildings

| Value (sensitivity) | Criteria |
|----------------------------|---|
| Very High | Structures inscribed as of universal importance as World Heritage Sites. Other buildings of recognised international importance. |
| High | Scheduled Ancient Monuments with standing remains. Grade I and II* Listed Buildings. Other listed buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade. Conservation Areas containing very important buildings. Undesignated structures of clear national importance. |
| Medium | 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 historic integrity in their buildings, or built settings (e.g. including street furniture and other structures). |
| Low | '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 (e.g. including street furniture and other structures). |
| Negligible | Buildings of no architectural or historic note; buildings of an intrusive character. |
| Unknown | Buildings with some hidden (i.e. inaccessible) potential for historic significance. |

Table 8.4: Evaluating Historic Landscape Character Units

| Value (sensitivity) | Historic landscape character units |
|----------------------------|---|
| Very High | World Heritage Sites inscribed for their historic landscape qualities. Historic landscapes of international value, whether designated or not. Extremely well-preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s). |
| High | Designated historic landscapes of outstanding interest. Undesignated landscapes of outstanding interest. Undesignated landscapes of high quality and importance, and of demonstrable national value. Well-preserved historic landscapes exhibiting exceptional coherence, time-depth, or other critical factor(s). |
| Medium | 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). |
| Low | 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. |
| Negligible | Landscape with little or no significant historical interest. |

8.3.37 Additional advice on understanding the significance of cultural heritage sites (heritage assets) is provided in the document Conservation Principles for the Sustainable Management of the historic environment in Wales (Cadw, 2011). In that document, ‘*significance [within the historic environment]*’ is defined as: ‘*The sum of the cultural heritage values, often set out in a Statement of Significance*’.

8.3.38 The Conservation Principles document further identifies these cultural heritage values, which fall into four inter-related groups.

- Evidential value – the potential of a place to yield evidence about past human activity.
- Historical value - this derives from the ways in which past people, events and aspects of life can be connected through a place to the present. This value tends to be illustrative (providing insights into past communities and their activities) or associative (association with a notable family, person, event or movement).
- Aesthetic value – this derives from the ways in which people draw sensory and intellectual stimulation from a place.
- Communal value – this derives from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory.

8.3.39 Further guidance on the assessment of significance specific to historic buildings is presented in the document entitled Guide to the Conservation of Historic Buildings (British Standard BS 7913:2013; BSI, 2013). This includes guidance on the cultural, social, economic and environmental values that contribute towards the significance of historic buildings. BS 7913:2013 provides a list of 25 individual heritage values but advises that this list is not exhaustive (BSI, 2013, paragraph 4.2).

Magnitude of Impact

8.3.40 The magnitude of an impact is assessed without regard to the value of the heritage asset. In terms of the judgement of the magnitude of impact, this is based on the principle that preservation of the asset is preferred, and that total physical loss of the asset is least preferred.

8.3.41 With regard to buried archaeological remains, it is not always possible to assess the physical impact in terms of percentage loss, and therefore it can be important in such cases to try to assess the capacity of the heritage asset to retain its character and significance following any impact. Impacts resulting from changes within the settings of buried archaeological remains may also be more difficult to assess as they do not involve physical loss of the resource – further information regarding the methodology for assessment of impacts and effects resulting from change within the settings of heritage assets is provided below.

8.3.42 For impacts on buried archaeological remains, HA208/07 (Highways Agency *et al.*, 2007) gives the following table of factors to be used in the assessment of magnitude of impact.

Table 8.5: Factors in the Assessment of Magnitude of Impact – Archaeological Remains

| Impact magnitude | Factors |
|------------------|--|
| 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. |

8.3.43 For impacts on historic buildings, HA208/07 (Highways Agency *et al.*, 2007) gives the following table of factors to be used in the assessment of magnitude of impacts.

Table 8.6: Factors in the Assessment of the Magnitude of Impact – Historic Buildings

| Impact magnitude | Factors |
|------------------|--|
| Major | Change to key historic building elements, such that the resource is totally altered. Comprehensive changes to setting. |
| Moderate | Changes to many key historic building elements, such that the resource is significantly modified. Changes to the setting of an historic building, such that it is significantly modified. |
| Minor | Change to key historic building elements, such that the asset is slightly different. Change to setting of an historic building, such that it is noticeably changed. |
| Negligible | Slight changes to historic building elements or setting that hardly affect it. |
| No change | No change to fabric or setting. |

8.3.44 HA208/07 (Annex 7, para. 7.12.1) (Highways Agency *et al.*, 2007) explains that historic landscapes cannot be destroyed, but that impacts on them can change their character. Impacts should be assessed using evaluated historic landscape character units, not the elements/parcels/components that contribute towards that character. There may be impacts resulting from changes within the settings of identified units, especially with regard to designated historic landscapes. Factors to be used in the assessment of magnitude of change are identified in Table 8.7.

Table 8.7: Factors in the Assessment of Magnitude of Impact – Historic Landscape

| Impact magnitude | Factors |
|------------------|--|
| Major | Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit. |
| Moderate | Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character. |
| Minor | Changes to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character. |
| Negligible | Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. |
| No change | No change to elements, parcels or components; no visual or audible changes; no changes arising from amenity or community factors. |

Significance of Effect

- 8.3.45** The level or significance of an effect is a combination of the importance or value of the heritage asset and the magnitude of impact on that asset. Effects can be adverse or beneficial. Beneficial effects are those that mitigate existing impacts and help to restore or enhance heritage assets, therefore allowing for greater understanding and appreciation.
- 8.3.46** HA208/07 (Highways Agency et al., 2007) provides the following matrix (Table 8.8) for use within all three sub-topics. As explained within HA208/07 (paragraph 5.38, see also Annex 5, paragraph 5.13.3), the matrix is not intended to ‘mechanise’ the process of assessment of the significance of the effect but rather to act as a check that can ensure judgements of importance (value), impact magnitude and significance of effect are balanced. Where the matrix produces a level of effect significance that is clearly unreasonable, the judgements of importance (value) and impact magnitude should be reassessed to ensure that they can be justified.
- 8.3.47** Where more than one significance level is provided within the matrix (Table 8.8), professional judgement has been used to determine the significance of effect.
- 8.3.48** Within this chapter of the ES, effects of moderate or greater significance are considered to be ‘significant’.

Table 8.8: Significance of Effects Matrix

| Value/ Sensitivity | Magnitude of Impact | | | | |
|-----------------------|---------------------|-------------------|--------------------|---------------------|---------------------|
| | No Change | Negligible | Minor | Moderate | Major |
| Negligible | Neutral | Neutral | Neutral or Slight | Neutral or Slight | Slight |
| Low | Neutral | Neutral or Slight | Neutral or Slight | Slight | Slight or Moderate |
| Medium | Neutral | Neutral or Slight | Slight | Moderate | Moderate or Large |
| High | Neutral | Slight | Slight or Moderate | Moderate or Large | Large or Very Large |
| Very high | Neutral | Slight | Moderate or Large | Large or Very Large | Very Large |

8.3.49 Although HA208/07 (Highways Agency *et al.*, 2007) does not provide definitions of the significance of effects specific to the Cultural Heritage topic, the guidance set out in Table 2.3 of HA205/08 (Highways Agency *et al.*, 2008) has been taken into account. For ease of reference this is set out below in Table 8.9.

Table 8.9: DMRB Descriptors of Significance of Effect Categories

| Significance category | Typical Descriptors of Effect |
|-----------------------|---|
| Very large | Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category. |
| Large | These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. |
| Moderate | These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor. |
| Slight | These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project. |
| Neutral | No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error. |

Settings

8.3.50 As described above, HA208/07(Highways Agency *et al.*, 2007) refers to effects on the settings of heritage assets and explains (paragraph 4.19) that setting is a material consideration in government policy relating to the historic environment. The guidance provides the following definitions of setting and context.

- *'The setting of an asset is, broadly speaking, the surroundings in which a place is experienced, while embracing an understanding of perceptible evidence of the past in the present landscape.*
- *Context is a part of setting, like topography and views. Context embraces any relationship between a place and other places. It can be, for example,*

temporal, functional, intellectual or political, as well as visual, so any one place can have a multi-layered context. The range of contextual relationships of a place will normally emerge from an understanding of its origins and evolution. Understanding context is particularly relevant to assessing whether a place has greater value for being part of a larger entity or group'.

8.3.51 This section of HA208/07 goes on to explain (paragraph 4.27) that *'Methodologies used to assess impacts on settings should be transparent, clearly described and supported by professional standards where available.'* It then provides a number of principles that assessors should be aware of, as set out below.

- An asset's setting is its relevant surroundings.
- Settings have physical factors which can be changed by a scheme, but it is the effect these changes have on the character and value of the asset that is assessed.
- Context is an aspect of setting where a relevant aspect of knowledge, belief or relationships may not be visible (or audible) at the site.
- Professional judgement is required, using criteria measured against government policy and, where relevant, the scheme's Cultural Heritage Design Objectives.

8.3.52 As described in HA208/07 (paragraph 4.19), the issues surrounding the identification of the settings of heritage assets, and the nature and magnitude of impacts and consequently effects on such settings, have been subject to much debate within the historic environment sector.

8.3.53 Guidance on this issue has been issued for England (Historic England, 2015) and for Scotland (Historic Scotland, 2010) but nothing comparable has yet been produced for Wales. However, a definition of setting has been published in the document Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw, 2011):

'The surroundings in which an historic asset is experienced, its local context, embracing present and past relationships to the adjacent landscape.'

8.3.54 A draft Technical Advice Note 24: Historic Environment (Welsh Government, 2015) has been published by Welsh Government as a complementary document for consideration alongside the Historic Environment (Wales) Bill. This Technical Advice Note will be subject to full public consultation following any changes that may occur as a result of the scrutiny of the Bill by the National Assembly.

8.3.55 The draft Technical Advice Note (paragraph 1.21) confirms that:

'The Welsh Ministers take the definition of the setting of a historic asset to be the surroundings in which it is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral'.

8.3.56 The document goes on to advise that setting is primarily concerned with visual amenity and that consideration should be given to views towards and from a historic asset and also views in which the asset and the proposed development

are both seen. The proposed situation needs to be compared to the existing position and not a past scenario.

8.3.57 Examination of the specific guidance documents produced for England and Scotland has identified the following points for consideration.

- All heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not.
- The setting of a heritage asset can enhance its significance whether or not it was designed to do so.
- The contribution that setting makes to the significance does not depend on there being public rights or an ability to access or experience that setting. This will vary over time and according to circumstance. Nevertheless, proper evaluation of the effect of change within the setting of a heritage asset will usually need to consider the implications, if any, for public appreciation of its significance.
- For the purposes of spatial planning, any development or change capable of affecting the significance of a heritage asset or people's experience of it can be considered as falling within its setting.
- A proper assessment of the impact on setting will take into account, and be proportionate to, the significance of the asset and the ability to appreciate it.

8.3.58 The methodology described below for the assessment of effects resulting from changes within the setting of a heritage asset responds to the recent policy and guidance documents set out above. Consequently, the assessment of the likely impacts and effects of the Scheme on the significance of a heritage asset as a result of changes within the setting of that asset addresses the following questions.

- Will the proposed development form part of the surroundings of a heritage asset (i.e. will it form part of the setting of the heritage asset)?
- If so, what contribution does the setting make to the significance of the heritage asset?
- What level of impact will the proposed development have on the significance of the heritage asset, or the ability to appreciate that significance?
- Will the impact be positive, negative or neutral?

8.3.59 Although assessments of changes within the settings of heritage assets can involve non-visual issues such as noise, it is usually the visual aspects of a development that form the major part of the assessment. With regard to the current assessment, consideration of noise is actually quite important as the new section of motorway would represent the introduction of traffic noise into locations where this has previously not been present or where levels have been much lower than would be the case if the new section of motorway was built and operational. This consideration also includes construction noise. For developments such as this, the increase in noise may represent a greater level of impact than visual change.

8.3.60 The existence of direct lines of sight between the heritage asset and a scheme is an important factor in judging the visual impact of the development. However, it is possible for changes within the setting to occur even when such a relationship

does not exist. For example, views towards a listed building from a frequently visited location, such as a park or a public footpath, may be affected by the presence of a larger development, even if the development is not directly visible from the building itself.

8.3.61 The assessment of visual impacts on heritage assets and their settings has taken into account a wide variety of factors including the location of the asset within the physical landscape, its relationship with contemporary and non-contemporary features within that landscape and the location, size and character of the Scheme in relation to these factors. The assessment has examined the impact with regard to these various considerations on the basis of informed professional judgment.

8.3.62 Consideration has also been given to the sensitivity to change of the setting of a heritage asset. This is done through examination of the current setting with regard to identifying elements that contribute to the significance of the asset, elements that make a neutral contribution to the significance of the asset and elements that make a negative contribution (i.e. detract from) the significance of the asset.

8.3.63 Once the impact on the significance of the heritage asset has been examined, this has then been related to the magnitude of impact scales defined below. These are closely linked to the magnitude of impact scales used in HA208/07 (Highways Agency *et al.*, 2007).

- Major: Substantial change within the setting leading to considerable loss or enhancement of significance of the asset.
- Moderate: Change within the setting leading to some loss or enhancement of significance of the asset.
- Minor: Slight change within the setting leading to a slight loss or enhancement of significance of the asset.
- Negligible: Very minor changes within the setting that hardly affect the significance of the asset.
- No change: No substantive change within the setting.

8.3.64 The magnitude of impact has been considered with the value/sensitivity of the asset within the overall matrix for identifying significance of effects (see Table 8.8 above).

Limitations of the Assessment

8.3.65 All readily available data required for the assessment have been acquired and examined. A key limitation is with regard to the presence/absence of buried archaeological remains within the Scheme boundary. A number of remote sensing methodologies have been utilised in order to gain as much information as possible at this stage regarding such remains, and some intrusive investigation has been undertaken previously in association with earlier iterations of the Scheme. All of this has been appraised within the summary of baseline environment presented below.

8.3.66 However, there are some areas of land where ground-based remote sensing was proposed but not undertaken due to issues such as land use, topography or failure to agree access. There are also some areas of land which were brought

into the Scheme at a stage when it was not possible to carry out ground-based remote sensing.

8.3.67 In addition, there has not been any purposive intrusive archaeological investigation of any location within the Scheme boundary specific to the Scheme itself. Consequently, the knowledge of buried archaeological remains, along with those areas within the Scheme boundary considered to be of higher potential for the presence of archaeological remains, is based on the output from the remote sensing (ground and aerial-based) along with the results of previous archaeological investigations and geotechnical surveys.

8.3.68 The information gathered to date is considered to provide sufficient information to form the basis of the assessment for EIA purposes.

8.4 Baseline Environment

8.4.1 A detailed account of the known archaeological and historical baseline within the defined study area and also for the wider area is provided in the Cultural Heritage Desk-based Assessment (Appendix 8.2 of this ES). References in the text using the prefixes ARCH, LB, HB, SM etc. correspond with entries in the Gazetteer presented as Annex A of Appendix 8.2.

8.4.2 The new section of motorway would cross the Gwent Levels, much of which has been placed on the non-statutory Register of Landscapes of Outstanding Historic Interest in Wales, part of the wider-ranging Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales.

8.4.3 The summary description in the Register for the Gwent Levels Landscape of Outstanding Historic Interest (LOHI) states that:

'Three discrete and extensive areas of alluvial wetlands and intertidal mudflats situated on the north side of the Severn estuary represent the largest and most significant example in Wales of a 'hand-crafted' landscape. They are entirely the work of man, having been recurrently inundated and reclaimed from the sea from the Roman period onwards. The areas have distinctive patterns of settlement, enclosure, and drainage systems belonging to successive periods of use, and a proven and possibly quite vast potential for extensive, well-preserved, buried, waterlogged, archaeological and palaeoenvironmental deposits surviving from earlier landscapes'.

8.4.4 The proposed new section of motorway around Newport would pass through elements of the western and central areas referred to in the summary description quoted above. This is indicated on Figures 8.1a and 8.1b. The western area is known as the Wentlooge Levels, whilst the central and eastern areas are collectively referred to as the Caldicot Levels.

8.4.5 A total of 21 Historic Landscape Character Areas (HLCAs) have been identified and described with regard to the Gwent Levels LOHI. Some of these extend beyond the boundary of the designated historic landscape as the actual boundary is based on other considerations and not just on the character of a particular HLCA. The proposed new section of motorway would pass through parts of seven of the 21 defined HLCAs although there would be a very small area of temporary land take within an eighth HLCA (Figures 8.2a and 8.2b).

- 8.4.6** As described in the above quotation from the Register, the Gwent Levels landscape is one that demonstrates the successive reclamation of land from the former tidal mudflats and saltmarshes and the subsequent utilisation of that land. This process started in the Roman period and continued through to the 19th century, although there were periods when reclaimed land was lost to inundation and the process had to be restarted.
- 8.4.7** The reclaimed land is slightly higher in the coastal areas and along the major estuaries of the Rivers Usk and Ebbw and it is here that the Roman and medieval settlements are predominantly located. The lower-lying land further back from the coast is known as the back-fens and these areas were the last ones to be drained and utilised. The proposed new section of motorway would predominantly run through these back-fens.
- 8.4.8** Although there has been considerable research into the history and archaeology of the Gwent Levels, much of this has been focused on the higher ground at the coastal edge. This is partly because most Roman and post-Roman settlement is located here and is more accessible here. It is also because this land has been where most development has taken place within the most recent years in which archaeological investigation has been an integral part of the planning process. There has also been a large amount of academic research within the present intertidal zone (i.e. seaward of the reclaimed land) - this is because the post-Roman alluvium that covers earlier deposits and material within the Gwent Levels proper has been stripped away by the sea and these earlier deposits are therefore visible and more accessible.
- 8.4.9** However, the prehistoric and Roman remains that are recorded at surface level in the intertidal zone are also present across the rest of the Gwent Levels, sealed within and beneath layers of alluvium and also peat. In places these deposits extend up to 10 metres in depth. Archaeological investigations in the back-fens have been limited but have found buried landscapes, sites, features and objects of great significance with regard to the understanding of how this area has been utilised since the last ice age. Although poorly drained, the back-fens provided a range of valued resources to communities in the area.
- 8.4.10** The interface between the back-fens and the higher ground to the north is also important, as before any drainage took place in the Gwent Levels this interface would have marked the transition from dry land to intertidal mudflats and/or saltmarsh. The actual edge of that transition may not be the present edge - the sequence of post-Roman alluviation and peat formation (associated with sea-level change) is such that the earlier transition zones may lie beneath or within this material and therefore within land that is currently back-fen.
- 8.4.11** The potential for the presence of archaeological remains within the Gwent Levels is recognised in the designation by Newport City Council of two Archaeologically Sensitive Areas (ASAs), one covering the Wentlooge Levels (west of the River Ebbw) and one covering the Caldicot Levels east of the River Usk (Figures 8.3a and 8.3b). These ASAs are similar in coverage to the nationally designated Gwent Levels Landscape of Outstanding Historic Interest but in places extend beyond that designation and also beyond the identified Historic Landscape Character Areas.

- 8.4.12** As described above (Section 8.2), Policy CE6 of the Newport Local Development Plan 2011-2026 identifies the requirement for archaeological work in connection with development in the defined Archaeologically Sensitive Areas.
- 8.4.13** Areas of Special Archaeological Sensitivity (ASASs) have been identified within Monmouthshire and the new section of motorway would pass through one such ASAS just to the west of Magor (Figure 8.3b). The Monmouthshire Adopted Local Development Plan 2011-2021 advises that prospective developers within an ASAS should contact the Glamorgan Gwent Archaeological Trust (GGAT) for an opinion regarding archaeological potential and for advice on whether an assessment or evaluation is necessary (Monmouthshire County Council, 2014 paragraph 6.5.13).
- 8.4.14** Although material of Palaeolithic date (c. 900,000 - 8,500 BC) has been recovered from the Gwent Levels, the earliest material found within the defined study area for the Scheme is of Mesolithic date (c. 8,500 - 4,000 BC). This was a period generally characterised by rising sea levels following the most recent glacial maximum. During this time, a considerable amount of material was deposited across what is now the Gwent Levels through processes of alluviation and peat formation, with reed swamps along the fen edge. The deposition rate was not constant and there would have been periods of erosion but the overall environment was a depositional one. The deposits of this period are collectively referred to as the Lower Wentlooge Formation.
- 8.4.15** A flint arrowhead of Mesolithic date has been found just outside the defined study area - this was recovered from a location at the very western end of the proposed new section of motorway, on the higher ground west of Castleton. It is typical of the type of material that would be expected here and may indicate the presence of seasonal or possibly more settled communities who would have exploited the resources on this drier land as well as on the wetlands at the base of the slope.
- 8.4.16** At Llandeenny towards the eastern end of the proposed new section of motorway, archaeological investigations have identified a stratified occupation site of late Mesolithic to early Neolithic date at the very edge of the dry land (Figure 8.4e, ARCH038). A lower occupation deposit contained worked flint of likely late Mesolithic date, whilst a second upper layer of occupation material produced a radiocarbon date suggesting activity in the early Neolithic period. The lack of any clear hiatus between the two deposits indicates that occupation here may have been continuous. The occupation deposits were sealed beneath approximately 1 metre of peat demonstrating the post-occupation encroachment of the wetland into this area of transition.
- 8.4.17** Further evidence of Mesolithic activity within the Levels has been found outside the defined study area. This includes human footprints in the intertidal mudflats at Uskmouth that were within laminated silts that are overlain by peat deposits radiocarbon dated to 6,350 +/- 80 Before Present (BP)¹. Similar footprints of a slightly later date have also been found in the intertidal zone at Magor. At Goldcliff, a late Mesolithic site appears to have occupied a small wooded island surrounded by saltmarsh.
- 8.4.18** At the end of the Mesolithic period the rise in sea level slowed, although it was still probably about 8 metres lower than present mean sea level. A series of peat

¹ BP: In radiocarbon dating, BP means 'Before Present', where the 'present' is determined to be 1950.

deposits formed across the Levels as land plants colonised the mudflats and saltmarshes. Initially, these plants would have been predominantly wet alder woodland, followed by open reed beds and raised bogs. The material laid down during the period from the beginning of the Neolithic period (c. 4,000 BC) to the end of the Bronze Age (c. 700 BC) is known as the Middle Wentlooge Formation. The dry land was also quite heavily wooded during the Mesolithic period.

- 8.4.19** Other than the later Mesolithic/early Neolithic occupation identified at Llandeenny and discussed above, no material of definite Neolithic date has been found within the defined study area. A single flake of worked flint found near to New Park Farm (just to the north of Junction 29 of the existing M4 - Figure 8.4a, ARCH005) may be of this date but could be Bronze Age. The same applies to a small pit containing worked flint identified at Rogiet at the eastern end of the proposed new section of motorway, close to where the existing M4 crosses the railway line (Figure 8.5f, ARCH059). This latter feature is located on the edge of the Gwent Levels whereas the flint flake found near to New Park Farm was on the higher ground above the fen edge.
- 8.4.20** Indeed very little material of definite Neolithic date has been found in the Gwent Levels. This may indicate that activity here may have been very limited during that period. However, it could also mean that the evidence of Neolithic events remains buried beneath later material.
- 8.4.21** In contrast, a considerable amount of information has been collated over recent years with regard to activity in the Gwent Levels during the Bronze Age (c. 2,200 - 700 BC). Much of this has been the result of programmes of investigation focused on the intertidal zone, where structures and associated material of Bronze Age date are exposed at low tide in certain locations. This work has demonstrated possible seasonal activity within and adjacent to palaeochannels at Peterstone along with more extensive activity (including settlement) at Rumney Great Wharf. The peats exposed in the intertidal zone have preserved the bases of wooden posts and stakes allowing for the reconstruction of structures. In places the remains of whole trees are also preserved in such peats and are often referred to as 'submerged forests'.
- 8.4.22** On the dry land adjacent to the fen edge, evidence of Bronze Age activity includes finds of metalwork (mostly axes and spearheads) and scatters of worked flint and monuments, such as standing stones and burial mounds (round barrows). It is clear that activity during the Bronze Age was extensive across the whole of the area, including the Gwent Levels.
- 8.4.23** Within the defined study area, the principal known site/findspot of likely Bronze Age date is a standing stone located between Undy and Llanfihangel, near to current Junction 23 of the existing M4 (Figure 8.5g, SM002). It is very close to the toe of the motorway embankment but examination of historic maps demonstrates that it remains in its location as first mapped by the Ordnance Survey towards the end of the 19th century. The standing stone is a Scheduled Monument and is approximately 2.4 metres high (from current ground level). No archaeological investigation of this monument has taken place. However, a Bronze Age date is inferred through comparison with similar monuments investigated elsewhere in the region. Locally the standing stone is known as The Devil's Quoit.

- 8.4.24** Geophysical survey undertaken in connection with the Scheme shows a potential ring-ditch (indicating the former presence of a Bronze Age burial mound) approximately 125 metres to the south of the standing stone. Further to the west the same survey suggests the presence of the remains of enclosures that could also be contemporary with the standing stone (Appendix 8.4). In the western part of the proposed new section of motorway, close to Coedkernew, an upright wooden post of Bronze Age date was found during archaeological investigation of a site that was predominantly of Roman date (Figure 8.4b, ARCH020; see below).
- 8.4.25** Some of the recorded Bronze Age activity within the Gwent Levels continued on into the early part of the Iron Age (c. 700 BC - AD 43), including settlement in what is now the intertidal zone west of Goldcliff Point. However, this period is more generally characterised by a substantial marine transgression in which much of the Levels were reflooded and alluvial clays known as the Upper Wentlooge Formation were deposited. The landscape would have returned to one dominated by tidal mudflats and saltmarshes, although some areas of reed swamp were present and peats continued to form in some locations.
- 8.4.26** On the higher dry land to the north, evidence of Iron Age activity is dominated by the larger hillforts such as those at Wilcrick Hill and Tredegar. Smaller settlements, both enclosed and unenclosed, are likely to have been present within the land between the hillforts.
- 8.4.27** Within the defined study area, Iron Age activity has been identified at Coedkernew (Figure 8.4b, ARCH018). Geophysical survey detected the presence of a small enclosure whilst subsequent trial trenching found evidence for settlement during the Iron Age and into the Roman period. This site is located on the dry land at the edge of the back-fen. Similar enclosures have also been identified just to the west of Magor - again, these appear to represent settlement of Iron Age and Roman date and the location is on the dry land close to the back-fen (Figure 8.4e, ARCH045). Just to the north of the study area, excavations on the Gwent Europark site found three wooden structures of Iron Age date (Figure 8.4d, ARCH035); this is out in the back-fen proper and demonstrates the potential for the remains of activity of this period to be present in this part of the Levels.
- 8.4.28** The initial efforts to drain parts of the Levels were made during the Roman period (AD 43 - 410). The full extent of this drainage remains unknown and most of the reclaimed land was subsequently flooded. However, some of the major drainage elements and axial alignments within the present landscape could have been first established during this time. Any sea wall constructed at this time is likely to have been seaward of the present one and no evidence has survived for a Roman sea wall. However, there is extensive evidence for Roman activity (including settlement) across the Levels and extending within the intertidal zone beyond the present sea wall. The establishment of such settlements with associated land use may have required the construction of banks as well as ditches in order to control water flow.
- 8.4.29** Palaeoenvironmental evidence indicates that the landscape across the Levels was open and predominantly pastoral, although some agriculture may well have been possible. Livestock would have included cattle and sheep, although horses were also present in reasonably high numbers. Known Roman settlements are mainly located on the slightly higher ground at the coastal and estuary edges.

However, this may be a distribution based on opportunity for observation rather than a genuine distribution pattern.

- 8.4.30** Within the defined study area, settlement enclosures with confirmed Iron Age and Roman activity are known at Coedkernew and at Magor. Another site of Roman date has been identified to the east of Coedkernew - this was found during the construction of the road around the western side of Imperial Park and is actually located at the (unused) roundabout that forms the terminal point of that road (Figure 8.4b, ARCH020). Here, a Roman building was excavated which has a series of cobbled floors. An earlier underlying phase of Roman activity was characterised by the presence of a series of ditches. An upright wooden post of Bronze Age date was also found at this site, which is at the northern edge of the back-fen (see 8.4.24 above).
- 8.4.31** At Llandeenny in the eastern part of the defined study area, geophysical survey of land to the east of Sycamore Farm and Green Meadow Farm identified a complex of ditches including small enclosures (Figure 8.4e, ARCH037). Examination by way of trial trenches here found evidence of Roman activity, including at least one building. This is on the higher ground on a small promontory facing out into the wetlands.
- 8.4.32** Evidence of further enclosed settlement of Roman date has been identified just to the west of Magor (Figure 8.4e, ARCH045). Just to the east of here, a projected alignment of the Whitewall (a road across the Levels) through Magor and on northwards has been proposed as a Roman road (Figure 8.4e, ARCH043). There is no definitive evidence to support this suggestion. However, the examination of remote sensing information undertaken with regard to the Scheme has identified a linear earthwork at this location and on the same alignment as the putative road (Appendix 8.7 of this ES).
- 8.4.33** Similarly, on the higher ground at the western end of the defined study area, the section of Pen-y-lan Road to the north of New Park Farm has previously been suggested to be the line of a Roman road linking Caerleon to a fort at Cardiff (Figure 8.4a, ARCH004). However, there is very little physical evidence to confirm this date. At a location near to Fairwater Farm (to the north of the existing M4 and just to the west of the overbridge that carries Druidstone Road across the motorway), cropmarks seen on aerial photographs appear to show the presence of the remains of a rectangular building and this has been proposed as a potential Roman villa. Again, there is no direct physical evidence to support this suggestion.
- 8.4.34** One Roman site that is just outside the defined study area but which has considerable relevance due to its location within the back-fen is within the Gwent Europark development, between Bareland Street and the A4810. Here, archaeological investigations undertaken in connection with the construction of a distribution warehouse found a well-preserved Roman boat (known as the Barlands Farm boat). This was located on the edge of a tidal channel and was adjacent to a timber bridge also of Roman date that provided access from the higher dry land area into the wetlands. The boat appears to have been built and used for a few decades around AD 300 - 330 and was certainly capable of use throughout the Severn Estuary and possibly beyond that area in good weather. It demonstrates that navigable channels through the back-fen were used and possibly maintained during the Roman period.

- 8.4.35** It appears that most, if not all, of the land reclaimed and used during the Roman period was subsequently inundated, with the deposition of alluvium (up to 700 mm thick) across the former ground surface, which in places is preserved as a buried soil. This is likely to have been an episodic process in which different parts of the landscape were subject to various stages of deposition and stabilisation.
- 8.4.36** Most of the evidence for activity within the Gwent Levels during the early medieval period (c. AD 410 - 1066) comes from documentary sources, predominantly descriptions of estate boundaries but also references to possible landing places. It is likely that there was some limited recolonisation, with small embanked 'infield' enclosures and potentially canalisation of natural channels.
- 8.4.37** There are also accounts of Viking raids on South Wales during the late 9th and early 10th centuries AD. Part of a boat thought to be of Scandinavian type construction was found during the construction of the Alexandra Dock at Newport in 1878 and a timber from this vessel was subsequently dated to approximately 950 AD (Figure 8.4b, ARCH025).
- 8.4.38** Occupation and use of the higher dry land would have continued on as an extension of Roman activity, with the authority imposed via the legions taken up through the establishment of local elites in key locations. There would also have been the commencement of monastic communities. Just beyond the defined study area at the very western end of the proposed new section of motorway, construction of the existing M4 motorway located a complex of features related to metal-working and processing. Although this could not be positively dated, the material and the nature of the features indicated a date within the early medieval period.
- 8.4.39** The current landscape of the Gwent Levels is predominantly a result of the process of drainage and recolonization, which commenced during the medieval period (c. AD 1066 - 1500). This was linked to the post-Conquest settlement of South Wales and the influx of English settlers with associated socio-economic elements that affected land ownership and land use. Some of the drainage may be associated with monastic ownership and the establishment of grange farms both on the Levels and also on the dry land.
- 8.4.40** Small settlements were established on the dry land at the fen edge (e.g. Llandevenny, Bishton, Llanwern, Coedkernew, Magor, Undy) and exploited areas of the back-fen. Other settlements were established on the Levels proper; these were mostly dispersed but with some distinct foci (e.g. Redwick, Goldcliff, St Brides, Peterstone) and these were able to utilise the remaining open saltmarshes as well as the back-fens. A settlement was clearly present at Newport itself at this time, probably centred on the early church at Stow Hill, which subsequently developed into the cathedral church of St Woolos (Figure 8.1a, LB021). The castle further to the north and on the west bank of the River Usk dates to around the 14th century (Figure 8.1a, SM011). Evidence for the growing importance of Newport can be seen with the Newport Ship - a large vessel of 15th century date found on the west bank of the River Usk here. This was a merchant ship which traded along the Atlantic coast and was probably built on the Iberian Peninsula.
- 8.4.41** At the eastern end of the defined study area is the small settlement of Llanfihangel, near Rogiet. The Church of St Michael here is a Grade II* listed

building with a main doorway of probable Norman date and other elements of 13th and 14th century date (Figure 8.5g, LB002). A stone cross in the churchyard is also medieval and is a Scheduled Monument and also a Grade II listed building (Figure 8.5g, SM003). Adjacent to the church is Old Court Farmhouse - this is a Grade II listed building of mostly 15th or 16th century date (Figure 8.5g, LB012). The stables and a further range of farm buildings were added in the 19th century and these are also Grade II listed buildings. Just to the north of this farm is a second historic farm - Green Farm - where the 18th century farmhouse (Figure 8.5g, LB015) and two groups of farm buildings are all listed at Grade II. A Conservation Area has been designated here (by Monmouthshire County Council), which encompasses the historic buildings and also the adjacent land including that to the north and west as far as the existing M4 and M48 motorways (Figure 8.5g, CA001).

8.4.42 The field patterns on the Gwent Levels have been studied in order to understand the history and sequence of this reclamation and the establishment of the drainage network. This includes not only the numerous reens (major and minor) that drain the wetlands but also the embanked watercourses that channel the run off from the uplands to the north across the Levels to the coast. The process of reclamation and settlement was not constant and certainly there was a time at the end of the 14th century when population decline and climate change led to the (temporary) abandonment of some areas of land.

8.4.43 The dispersed settlements across the Levels include individual farmsteads and properties, often within a moated enclosure for drainage purposes. A small moated site of probable medieval date is present within the defined study area, just to the west of Lighthouse Road (Figure 8.4b, ARCH022). A second moated site is located on the eastern side of the same road (Figure 8.4b, ARCH023). To the north east of here and just to the west of the River Ebbw a complex of earthworks adjacent to Pont-y-cwcw Reen includes at least two moated platforms (Figure 8.4b, ARCH024). Other moated sites of probable medieval date have been identified to the east of Pye Corner (Figure 8.4c, ARCH028; ARCH029), to the north and east of Tatton Farm (Figure 8.4c, ARCH031) and adjacent to Moor Barn south of the Llanwern steelworks (Figure 8.4c, ARCH032). A moated site on the eastern edge of the modern settlement at Undy is now a Scheduled Monument (Figure 8.5g, SM001).

8.4.44 A small settlement enclosure located adjacent to New Park Farm at the western end of the proposed new section of motorway has been examined through trial trenching and found to be of medieval date (Figure 8.4a, ARCH007). This is likely to have been a small farmstead that was a precursor to the present farm here on the higher ground overlooking the Levels. The presence of a medieval manor house or court house has been postulated at the site of the later Great Pencarn Farm, now disused land in the southern part of the Imperial Park industrial estate, although this may refer to a manorial estate rather than just a manor house.

8.4.45 The process of reclamation and enclosure of common land continued on throughout the post-medieval period (c. AD 1500 - 1800) with the back-fens being the areas that were predominantly the last to be enclosed and drained - in some cases that did not happen until the 19th century. There appears to have been an increased emphasis on pastoralism and a decrease in arable farming and this has continued until the present day. Settlements expanded and there was an increase in the number of dispersed farmsteads and roadside cottages. Many of

the historic buildings within the Defined Study Area date to this period including Tatton Farm, Pye Corner Farm and Fair Orchard Farm, all of which are Grade II listed buildings. There was also considerable development at Newport where a thriving port was established.

8.4.46 Tredegar House was completed in 1672, although elements of an earlier (medieval) structure are incorporated within one wing of the house. The house is now a Grade I listed building that sits within a Grade II* Registered Park and Garden of Special Historic Interest (Figure 8.5b, LB020; PK001).

8.4.47 The 19th century saw major changes within parts of the defined study area. Most notably this included the establishment and expansion of the docks at Newport into one of the leading coal ports in Wales. At the same time the settlement here developed into one of the largest towns in Wales.

8.4.48 The Town Dock was opened in 1842 to address the needs of the coal and iron exporters and was expanded in 1858. The Alexandra Dock was initiated in the 1860s and the North Dock and associated lock opened in 1875. A South Dock opened in 1893 but was soon extended and an enlarged dock was opened in 1907 with a new South Lock opening in 1914. There are a number of buildings of 19th and early 20th century date within the docks that are also within the defined study area. They include a group of former railway engine running sheds later used for maintenance and repair sheds (Figure 8.5d, LB049, LB055, also see Appendix 8.5 of this ES) as well as transit sheds (where goods were stored).

8.4.49 Just to the north of the docks, the River Usk is spanned by the Newport Transporter Bridge (Figure 8.5d, LB001). This was constructed to link the town with industrial development on the east side of the river and was opened in 1906. A gondola or moving platform is suspended from a high level beam and carries vehicles and passengers across the river. The bridge is almost 74 metres high and spans more than 195 metres - it is now a Grade I listed building. There are only two other transporter bridges in the United Kingdom (at Middlesbrough and Warrington) and five more in the rest of the world. There is ongoing discussion regarding a potential application to UNESCO for World Heritage Site status for all of the world's surviving transporter bridges but no submission has yet been made.

8.4.50 Other buildings of 19th and 20th century date include several adjacent or close to the existing A48 road in the Castleton area such as Myrtle Cottage (Figure 8.5a, HB007), Berryhill Farm (Figure 8.5a, HB010) and the Grade II listed Coach & Horses public house (Figure 8.5a, LB004). At the eastern end of the defined study area is the Grade II listed Magor vicarage (Figure 8.5f, LB010), built in 1861 in a Tudor/Jacobean Revival style to the design of John Norton (the architect who restored the church of St Mary in Magor).

8.4.51 The South Wales to London Mainline railway cuts across the northern part of the Gwent Levels. It was constructed in the mid-19th century (this section opened in 1850) as the South Wales Railway and was engineered by Isambard Kingdom Brunel, enabling his Great Western Railway to extend the link from London into south Wales. The proposed new section of motorway would cross over the railway at two places.

8.4.52 Modern development within the Levels includes the huge steelworks complex at Llanwern, the Uskmouth power station, chemical and aluminium plants and also

the industrial estates and business parks such as the Gwent Europark and Imperial Park.

8.4.53 Most of the designated heritage assets within the defined study area are mentioned in the summary baseline description above. A full list of such assets is provided in Table 8.10 below. This does not include the designated Gwent Levels Landscape of Outstanding Historic Interest (Figure 8.1), the Archaeologically Sensitive Areas established by Newport City Council (Figures 8.3a and 8.3b) or the Area of Special Archaeological Sensitivity established by Monmouthshire County Council (Figure 8.3b).

Table 8.10: Designated Heritage Assets within the Defined Study Area for the Scheme

| Scheme ID | Name | Description | OS Grid Reference |
|-----------------------------------|--|---|-------------------|
| Scheduled Monuments | | | |
| SM001 | Moated site, Undy | Medieval moated site 400m north of church at Undy. | 343969 187357 |
| SM002 | Devil's Quoit | Bronze Age standing stone south of Bencroft Lane. | 344516 187764 |
| SM003 | Churchyard cross, Llanfihangel | Medieval stone cross in churchyard of Church of St Michael, Llanfihangel (also Grade II listed building). | 345129 187855 |
| SM010 | Wentlooge Castle | Earthen motte c. 5m tall and 12m in diameter at the upper surface. | 325137 183471 |
| Grade I Listed Buildings | | | |
| LB001 | Newport Transporter Bridge | Bridge spanning the River Usk immediately north of the docks. Opened 1906 with a moving platform (gondola) suspended from a high level beam. | 331700 186250 |
| Grade II* Listed Buildings | | | |
| LB002 | Church of St Michael, Llanfihangel | Main door probably of Norman date with other elements of 13 th and 14 th century date. | 345119 187861 |
| Grade II Listed Buildings | | | |
| LB003 | Castleton Baptist Church | Erected 1859 – architect was RG Thomas. Early example of an Italianate-style chapel façade. | 325269 183405 |
| LB004 | Coach & Horses public house, Castleton | On north side of A48, 18 th century coaching inn with modern alterations. | 325338 183610 |
| LB005 | Waterloo Hotel, Newport | Substantial public house situated on the corner of Alexandra Road and Watch House Parade. Opened in 1904 and replaced an earlier public house on the same site. | 331555 186240 |
| LB006 | Pye Corner Farm, Nash | Probably 17 th century origin with rebuild in 18 th century and modernisation in 19 th century. Recently restored. | 334534 185164 |
| LB007 | Fair Orchard, Nash | House of early 19 th century date. | 334557 184848 |
| LB008 | Fair Orchard | 18 th century barn adjacent to Fair | 334551 184830 |

| Scheme ID | Name | Description | OS Grid Reference |
|--|--|---|-------------------|
| | Barn, Nash | Orchard Farm, listing includes attached 19 th century agricultural buildings. | |
| LB009 | Tatton Farm, Nash | Listed as early 19 th century farmhouse but may be of earlier date with 19 th century modernisation. | 335214 185796 |
| LB010 | The Vicarage, Magor | Vicarage built 1861 to design of John Norton - Tudor/Jacobean Revival style. | 342042 187635 |
| LB011 | Great House Farmhouse, Undy | Farmhouse probably of original late 17 th century date, extended and altered early 19 th century. | 344343 187271 |
| LB012 | Old Court Farmhouse, Llanfihangel | House of mainly 16 th century date but may have earlier features. Separate wing added in 19 th century. | 345103 187809 |
| LB013 | Stables at Old Court Farm, Llanfihangel | 19 th century stable block of two storeys and four bays. | 345085 187845 |
| LB014 | Farm range at Old Court Farm, Llanfihangel | Range of 19 th century farm buildings. | 345112 187845 |
| LB015 | Green Farmhouse, Llanfihangel | Farmhouse of 18 th century date, formerly known as New House Farm. | 345181 187900 |
| LB016 | Barn to east of Green Farmhouse, Llanfihangel | Early 19 th century barn at north-eastern edge of farmyard. | 345210 187864 |
| LB017 | Cowhouse east of Green Farmhouse, Llanfihangel | 19 th century cowhouse, forms the boundary of the farmyard. | 345220 187881 |
| LB019 | Old windmill, Rogiet | Windmill tower probably c. AD 1500. | 345520 188260 |
| Conservation Areas (Monmouthshire County Council) | | | |
| CA001 | Llanfihangel near Rogiet | Centred on church and historic farmhouses. | 345120 187860 |
| CA002 | Waterloo, Newport | Based on Waterloo Hotel and surrounding area. | 331547 186287 |
| Locally Listed Buildings (Newport City Council) | | | |
| HB014 | Church Farm, Coedkernew | Historic farmhouse, much altered in late 20 th century. | 327650 183590 |
| HB114 | Barn west of Church Farm, Coedkernew | Now converted to residential use. | 327620 183570 |
| HB115 | Pool Cottage, Llandeveyney | Also known as Pool House | 341140 186885 |

8.4.54

In addition to those assets listed in Table 8.10 above, the construction and operation of the new section of motorway has the potential to affect the setting of other designated heritage assets beyond the defined study area. Table 8.11 identifies those designated heritage assets whose settings could be affected.

**Table 8.11: Designated Heritage Assets Outside the Defined Study Area
(whose settings may be affected by the Scheme)**

| Scheme ID | Name | Description | OS Grid Reference |
|-----------------------------------|---|---|-------------------|
| Scheduled Monuments | | | |
| SM004 | The Mount, Pen-y-Lan | Earthwork enclosure on top of low hill, possibly a small Iron Age hillfort. | 325850 184870 |
| SM005 | Coed y Defaid Camp | Also known as Graig-y-Saeson Small bivallate Iron Age hillfort. | 327330 186200 |
| SM006 | Tredegar hillfort | Multivallate hillfort of Iron Age date with widely spaced ramparts. | 328950 186840 |
| SM007 | Goldcliff moated site | Main part is a rectangular platform c. 1m high, with a second slightly mounded area to the north-west. | 336170 183590 |
| SM008 | Grangefield moated site | Early property of the Cistercian monks of Tintern Abbey. | 338900 184900 |
| SM009 | Wilcrick Hill Camp | Multivallate hillfort, oval in plan form. Likely to be of Iron Age date. | 341110 187800 |
| SM011 | Newport Castle | Built on west bank of River Usk c. 1327-1368, replacing an earlier motte-and-bailey castle. Also Grade II* listed building. | 331162 188449 |
| Grade I Listed Buildings | | | |
| LB020 | Tredegar House | House predominantly of late 17 th century date but incorporates the hall of an early 16 th century precursor. | 328830 185230 |
| LB021 | St Woolos' Cathedral, Newport | A church was founded here possibly as early as AD 500. Present structure retains some pre-Conquest material also a Norman nave and additional material of 13 th and 15 th century date. | 330907 187603 |
| LB022 | Church of St Mary the Virgin, Nash | Probably 12 th or 13 th century in origin, substantially rebuilt in the early 16th century. | 334306 183661 |
| Grade II* Listed Buildings | | | |
| LB023 | Church of St Mary, Marshfield | Probably 13 th or 14 th century in origin, with material of 15 th /16 th century date and restoration in the Victorian period. | 326160 182570 |
| LB024 | Church of St Bridget, St Brides Wentlooge | Probably 12 th or 13 th century in origin, substantially rebuilt in the 15 th century. | 329236 182298 |
| LB025 | George Street Bridge, Newport | Opened 1964 this was Britain's first cable-stayed cantilever bridge. | 331916 187734 |
| LB026 | Whitson Court | Country house built late 18 th century with some possible involvement from John Nash. | 337114 184709 |
| LB027 | Parish church Whitson | Probably 12 th or 13 th century in origin, with 15 th century additions and 19 th century restoration. | 338073 183439 |

| Scheme ID | Name | Description | OS Grid Reference |
|---|-------------------------|---|-------------------|
| Grade II* Parks and Gardens of Special Historic Interest | | | |
| PK001 | Tredegar Park | Late 18 th century landscape park with later planting, also formal walled gardens. This extends beyond the A48 and the M4 motorway. The southern part of the Registered Park and Garden, adjacent to the house, is also a Conservation Area. | 329000 185300 |
| Grade II Parks and Gardens of Special Historic Interest | | | |
| PK002 | Llanwern Park | Small landscape park of late 18 th to early 19 th century date. | 337600 188000 |
| PK003 | Beechwood Park, Newport | Public park encompassing the grounds of the mid-Victorian Beechwood House. This is also a Conservation Area. | 333300 188700 |
| PK004 | Belle Vue Park, Newport | Public park established on land given to the town in 1891 by Lord Tredegar. This is also a Conservation Area | 330700 187200 |
| Conservation Areas (all Newport City Council) | | | |
| CA003 | St Woolos | Centred on the cathedral and its walled grounds. | 330900 187600 |
| CA004 | Redwick | Centred on the main north-east/south-west aligned Church Row, with the church at the south-west end and Redwick House at the north-east end. | 341300 184300 |

Future Baseline Conditions

- 8.4.55** Changes to the baseline conditions in the future could include amendments to the list of designated assets, e.g. additional designations of scheduled monuments, listed buildings (including locally listed buildings), Registered Parks and Gardens, Conservation Areas, or amendments to the extent and description of any of these asset types.
- 8.4.56** Additional changes could occur as a result of archaeological investigations undertaken with regard to other developments within the study area or as part of more extensive programmes of research in the area.
- 8.4.57** No changes to the guidance provided in the DMRB are anticipated within the period identified for the assessment of the Scheme. Further guidance issued by Cadw with regard to the Heritage Bill for Wales could potentially affect the future baseline conditions.
- 8.4.58** Work has been undertaken to consider the likely effects of climate change on the historic environment (Powell *et al.*, 2012). This identified historic assets lying below the 1 metre contour as at risk from rising sea levels and more frequent storm surges. Low lying elements within the study area include the Gwent Levels.

8.5 Mitigation Measures Forming Part of the Scheme Design

8.5.1 A number of measures have been incorporated within the design of the Scheme, i.e. the stated effects in the initial assessment of effects presented in Sections 8.6 to 8.8 below are those that would occur with the designed-in mitigation in place. The design mitigation measures include the following.

- Materials and finishes.
- Landscape planting.
- Noise attenuation in the form of a thin surfacing system.

8.5.2 There has also been designed-in mitigation in the form of the vertical and horizontal alignment of the proposed new section of motorway. The vertical alignment has been designed to minimise visual intrusion within the low-lying Gwent Levels in that the embankment has been kept as low as possible within this landscape. The horizontal alignment has been adjusted in order to retain the Devil's Quoit standing stone near Undy *in situ*, whereas previous design iterations would have resulted in this Scheduled Monument having to be moved to an alternative location. At Llandeenny the location of a water treatment area has been moved in order to avoid a potentially very significant archaeological site (ARCH038, Figure 8.4e).

8.5.3 With respect to construction, normal good practice measures have been assumed to be in place. Further details are provided in the noise assessment set out in Chapter 13 of this ES.

8.6 Assessment of Potential Land Take Effects

8.6.1 The likely impacts and consequent effects on heritage assets as a result of land take for the Scheme are described below, with asset types (e.g. Scheduled Monuments, listed buildings) grouped together. These effects are those that would occur as a result of the land take associated with the Scheme (e.g. loss of land and associated resources). Effects associated with construction activities (e.g. effects associated with construction traffic) are set out in Section 8.7 below.

8.6.2 In each case the assessment takes account of mitigation that has been incorporated within the Scheme design, i.e. the stated effects are those that will occur with the designed-in mitigation in place. The design mitigation measures include the following.

- Materials and finishes.
- Landscape planting.
- Noise attenuation in the form of a thin surfacing system.

8.6.3 Proposed mitigation measures that do not form part of the Scheme design are set out in Section 8.9.

8.6.4 All effects identified and described below should be considered to be adverse, permanent and irreversible unless stated otherwise.

8.6.5 The Scheme includes the provision of land required as essential for ecological mitigation purposes, mostly for the replacement of habitat that would be

permanently lost as a result of the construction of the new section of motorway. The location of this ecological mitigation land is indicated on Figures 8.7a-c). This land would be managed in line with a strategy agreed with NRW which would include conversion of arable land to wet pasture and also the reinstatement of historic ditches and grips (see Appendix 10.35 of this ES for more details on the management strategy for the ecological mitigation land).

- 8.6.6** It is considered that the implementation of the proposed management strategy on these identified areas of ecological mitigation land would not result in any significant impacts and effects on any aspect of the historic environment. At some locations there may be beneficial effects in that the use of the land as permanent mitigation for the Scheme would provide an additional level of protection with regard to the settings of designated heritage assets – this is addressed below (Section 8.8) with regard to operational effects on specific designated assets. There is also an opportunity for the reinstatement within these mitigation areas of historic landscape features that have been lost in recent decades. This process of reinstatement would be addressed through the proposed programme of cultural heritage mitigation (see Appendix 8.10) but no significant adverse effects are anticipated.

Proposed New Section of Motorway

Archaeological Remains

- 8.6.7** A number of locations have been identified where the presence of archaeological remains is definite or very likely. These are identified below from west to east along the new section of motorway.

ARCH007/008 – East of New Park Farm

- 8.6.8** This is a small enclosure identified initially as a cropmark. Trial trenching suggests that it represents the location of a small medieval settlement, possibly a farmstead. This is a heritage asset of low value (Table 8.2).

- 8.6.9** Part of the land at this location would initially be required for topsoil storage during construction and the whole of the archaeological site would subsequently be subject to woodland planting as part of the ecological mitigation for the Scheme. The magnitude of impact has been assessed as major (Table 8.5), with the consequent significance of effect assessed as slight.

ARCH010 – South of Penylan Farm

- 8.6.10** This is an enclosure identified through geophysical survey. Trial trenching indicates the presence of a small farmstead of post-medieval date. This is a heritage asset of low value (Table 8.2).

- 8.6.11** Part of the land at this location would be required for the borrowing of stone during construction and the whole of the archaeological site would subsequently be subject to woodland planting as part of the ecological mitigation for the Scheme. The magnitude of impact has been assessed as major (Table 8.5), with the consequent significance of effect assessed as slight.

HB016/017 – Great Pencarn Farm

- 8.6.12** At the southern edge of the Imperial Park industrial estate is the location of the former Great Pencarn Farm. This farmstead (farmhouse and associated buildings) is marked on historic maps from the mid-19th century onwards (as Great Pen-carn or Great Pencarn) and was demolished at some time between 2007 and 2009. The manor of Pen-carn or Great Pencarn is known from documentary sources dating from the 12th century but there is no information as to the location of any buildings – it is possible that a manor house or similar principal building subsequently developed to become Great Pencarn Farm. The foundations of Great Pencarn Farm should be regarded as a Low value asset (Table 8.2).
- 8.6.13** This land here is required for a main construction compound. Evaluation will be undertaken to establish the nature and extent of any archaeological remains that may be affected by the proposed works here. If any significant remains are identified it would be possible to design a methodology for their protection during the construction of the proposed new section of motorway. The magnitude of impact has been assessed as negligible (Table 8.5), with the subsequent significance of effect assessed as slight.

HB020 – Pont-estyll

- 8.6.14** Located to the north of the South Wales to London Mainline railway is the site of a former farmstead initially named on historic mapping as Pont-estyll and later as Pont-estyll Farm. The name refers to a small bridge over Percoed Reen. This was demolished in the second half of the 20th century. The foundations of the buildings here may still be present and should be regarded as a low value heritage asset (Table 8.2).
- 8.6.15** The land here is partially required for construction – the full extent of the archaeological site within the boundary for the proposed new section of motorway would need to be determined when detailed design is undertaken. For the purpose of the current assessment, the magnitude of impact has been assessed as major (Table 8.5), with the consequent significance of effect assessed as slight.

HB024 – Pheasant

- 8.6.16** Located on the western side of Lighthouse Road is the site of a former building named on historic mapping as ‘Pheasant’. This was demolished in the second half of the 20th century. The foundations of the buildings here may still be present and should be regarded as a low value heritage asset (Table 8.2).

The land here is partially required for construction – the full extent of the archaeological site within the boundary for the proposed new section of motorway would need to be determined when detailed design is undertaken. For the purpose of the current assessment, the magnitude of impact has been assessed as major (Table 8.5), with the consequent significance of effect being assessed as slight.

ARCH024 – Pont-y-Cwch Reen

- 8.6.17** The embankment for the northern part of the New Dairy Farm Overbridge passes through part of a complex of earthworks on either side of the Pont-y-Cwch Reen. This may represent a medieval landscape feature, possibly a farmstead with external fields, and should be regarded as a medium value heritage asset (Table 8.2).
- 8.6.18** The land here is partially required for construction – the full extent of the archaeological site within the boundary for the proposed new section of motorway would need to be determined when detailed design is undertaken. For the purpose of the current assessment, the magnitude of impact has been assessed as moderate (Table 8.5), with the consequent significance of effect being slight.

ARCH034 – Rush Wall/North Row

- 8.6.19** Located immediately south west of the junction of Rush Wall and North Row is a small rectangular moated platform enclosed within a single ditch. This land was amongst the final part of the Levels to be enclosed and drained so this may represent an isolated farmstead of post-medieval or possibly medieval date. It should be regarded as a medium value heritage asset (Table 8.2).
- 8.6.20** The land here is partially required for construction – the full extent of the archaeological site within the boundary for the proposed new section of motorway would need to be determined when detailed design is undertaken. For the purpose of the current assessment, the magnitude of impact has been assessed as major (Table 8.5), with the consequent significance of effect assessed as moderate.

ARCH044/045 – West of Magor

- 8.6.21** On the west side of Magor and immediately east of the A4180, geophysical survey has identified a series of enclosures. Trial trenches here have confirmed the presence of features of Late Iron Age through to Early Roman date. This is regarded as a heritage asset of medium value (Table 8.2).
- 8.6.22** A considerable part of this archaeological site is within the permanent landtake required for the proposed new section of motorway, with some of the remaining area required for the borrowing of stone and other land also required for mitigation planting. The magnitude of impact has been assessed as major (Table 8.5), with the subsequent significance of effect assessed as moderate.

ARCH043 – North of Magor

- 8.6.23** Just to the north of Magor is the route of a putative Roman road (ARCH043). Although no physical evidence has been found that would confirm this suggestion, the detailed examination of aerial survey data undertaken in connection with the Scheme has identified a linear earthwork whose location and alignment matches that of the proposed road. This is regarded as a medium value heritage asset (Table 8.2).
- 8.6.24** The land here is required for Reed Bed 11b, a component of Water Treatment Area 11b. Evaluation will be undertaken in order to determine the nature and extent of any remains present at this location. If the presence of a Roman road is confirmed, further detailed examination may be required. The remains of the

archaeological activity within the boundary of the proposed new section of motorway would be destroyed, but no other part of the route of this putative road would be affected. The magnitude of impact has been assessed as minor (Table 8.5), with the consequent significance of effect being slight.

ARCH064 – Llanfihangel

8.6.25 The hamlet of Llanfihangel was formerly much larger than its present form suggests. The remains here have the potential to provide information with regard to a number of key research aims. This shrunken medieval settlement is regarded as a high value asset (Table 8.2).

8.6.26 The proposed new section of motorway includes construction of various elements within land that is likely to contain evidence for medieval settlement. The magnitude of impact has been assessed as moderate (Table 8.5), with the consequent significance of effect assessed as moderate.

Unknown Archaeological Remains

8.6.27 A considerable amount of the land required for the new section of motorway is farmland (principally permanent pasture) that has not been subject to known previous disturbance through any form of activity. Although the archaeological potential of this land has been examined through the use of various available methods (as reported in Appendices 8.2; 8.4; 8.6; 8.7 and 8.8 of this ES), this has been an examination of potential as much as an investigation of the nature and significance of any archaeological remains which may be present.

8.6.28 The detailed gradiometer survey (Appendix 8.4) and also the aerial survey along with the analysis of LiDAR data and satellite images (Appendix 8.7) have provided additional information regarding definite and likely heritage features present at or just below current ground surface. The Electrical Resistivity Tomography and Electromagnetic surveys (Appendix 8.6) and the Archaeological Deposit Model (Appendix 8.8) allow a greater understanding of the likely location and depth of archaeological sites deeper within the Gwent Levels.

8.6.29 Thus previously undisturbed land within the boundary of the proposed new section of motorway has the potential to contain buried archaeological remains of unknown date and nature, and therefore of unknown value. Within the Gwent Levels in particular, currently unknown buried archaeological remains could be present that are of high or even very high value. Impacts on such remains could be as high as major (leading to effects of large or very large significance); this would depend on the extent of the remains within the footprint of the new section of motorway.

8.6.30 A programme of further archaeological investigation is described in the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES). However, it should be noted that the implementation of the programme of further archaeological work would not result in the avoidance or reduction of the potential impacts and effects on these buried archaeological remains but rather should be seen as a ‘remedy’.

Gwent Levels Landscape of Outstanding Historic Interest

8.6.31 A considerable part of the new section of motorway lies within or adjacent to this registered Landscape of Outstanding Historic Interest. A full Assessment of the Significance of the Impact of Development on Historic Landscape Areas

(ASIDOHL2) report has been prepared (Appendix 8.3 of this ES), which identifies the magnitude of direct physical and indirect (physical and non-physical (visual)) impacts on each of the Historic Landscape Character Areas (HLCAs) affected by the new section of motorway using the prescribed methodology for ASIDOHL2. The report then describes the relative importance of each of the HLCAs, leading to an assessment of the overall significance of the effect of the new section of motorway on each HLCA.

- 8.6.32** The proposed new section of motorway cuts through the northern edge of two parts of the registered Landscape of Outstanding Historic Interest: in the Wentlooge Levels west of the River Ebbw and in the Caldicot Levels east of the River Usk (Figures 8.1a and 8.1b). In some areas the new section of motorway is just outside the designated historic landscape but is still within one or more of the HLCAs that make up the designated historic landscape as the boundaries of the HLCAs extend beyond the designated area (Figures 8.2a and 8.2b).
- 8.6.33** Where the historic landscape is directly physically impacted by the proposed new section of motorway it is mostly within what is known as the back-fen - the part closest to the fen edge, which is the point at which the ground rises onto drier land overlying bedrock. The back-fen is the lowest-lying and wettest part of the Gwent Levels and was amongst the last parts to be enclosed and drained.
- 8.6.34** The back-fen has experienced development pressure during the 19th and 20th centuries, with the expansion of industrial activity including the former Llanwern steelworks as well as several more recent business parks and industrial estates. Consequently a considerable amount of the back-fen has been lost, making what remains of greater value.
- 8.6.35** The proposed new section of motorway would cut across the back-fen, leading to further loss of this part of the Gwent Levels. Additionally, other parts of the remaining back-fen would be severed from the rest of the Levels and thus their link to the designated historic landscape would be substantially affected. Development pressure on the severed parts of the HLCAs could increase, although in places the establishment of ecological mitigation land required as part of the new section of motorway would enable such land to be protected against development.
- 8.6.36** The changes within the registered historic landscape resulting from the new section of motorway are described in detail within the ASIDOHL2 report (Appendix 8.3 of this ES). Direct physical impacts would be experienced within seven of the twenty one HLCAs that are identified within the registered historic landscape (Appendix 8.3, Table 1). The magnitude of impact would be considerable with regard to one HLCA (008 - Northern Redwick), moderate with regard to five HLCAs (001 – Nash/Goldcliff coastal zone; 002 – Christchurch/Nash/Whitson Back-Fen; 009 – Green Moor; 015 – Eastern St Brides; 021 – Maerdy) and slight with regard to one HLCA (020 – Marshfield/Coedkernew).
- 8.6.37** The terminology used in ASIDOHL2 with regard to levels of impact magnitude (very slight, slight etc.) and significance of effect (very slight, slight etc.) does not equate directly with the terminology used in DMRB. That part of DMRB which provides guidance on the assessment of impacts and effects on the historic landscape (Highways Agency *et al.*, 2007) references ASIDOHL (and also

LANDMAP) but does not provide any advice on how to incorporate the results of an ASIDOHL2 assessment into the DMRB methodology.

- 8.6.38** In order to assess the magnitude of impact in DMRB terms it is therefore necessary to look at the definitions provided in that document (see Table 8.7 above). Based on this, it is considered that the proposed new section of motorway would have a moderate magnitude of impact on the registered historic landscape. This is a high value heritage asset and the consequent significance of effect has therefore been assessed as large.

Non-designated Historic Landscape Character Areas

- 8.6.39** Outside of the registered Gwent Levels Landscape of Outstanding Historic Interest, the proposed new section of motorway would cross land that also has historic landscape character that could potentially be affected by the new section of motorway.
- 8.6.40** A series of additional HLCAs have been identified and described in order to undertake the necessary assessment of potential impacts and effects (Figure 8.6). These are presented in detail in Appendix 8.9 of this ES. A total of 31 such HLCAs are described within that document, numbered HLCA100 - HLCA130.
- 8.6.41** These HLCAs have been identified and described using guidance provided in DMRB (Highways Agency *et al.*, 2007) and in supplementary guidance (Highways Agency, 2007), and also with information taken from the relevant Aspect Areas defined within LANDMAP (a GIS based resource regarding landscape character in Wales).
- 8.6.42** Of the 31 additional HLCAs identified in and described in Appendix 8.9 of this ES, 12 would experience direct physical impacts as a result of the implementation of the new section of motorway. The impacts and effects on these 12 HLCAs are assessed below. For the remaining 19 additional HLCAs, the potential impacts are predominantly indirect (non-physical) visual ones. These impacts and the consequent effects are described in Section 8.8 of this chapter, which addresses potential operational effects.

M4CaN HLCA102 Castleton Town and Fields

- 8.6.43** This is a former nucleated settlement with the remains of a medieval castle (an earthen motte). The settlement has experienced some linear expansion in the 20th and 21st centuries. Beyond the settlement the wider landscape is characterised by regular-sized subrectangular fields with sinuous hedged boundaries. This field pattern is derived from the enclosure of former medieval landholdings and the field boundaries appear to be co-aligned with Druidstone Road, which runs along a ridge and forms the north western boundary of the HLCA. The existing M4 and the A48 pass through the centre of the HLCA. A low value has been ascribed to this HLCA as it is a robust undesigned historic landscape (Table 8.4).
- 8.6.44** The direct physical impacts of the new section of motorway would be within the eastern part of the HLCA. This includes a section of the new motorway on an embankment between Berryhill Farm and Ty'n-y-brwyn, along with considerable land take in this area for construction and for landscape planting. There would also be permanent land take between the A48 and the existing M4 to allow for highway connections, while to the south of the A48 an area of land is required for

a water treatment area. Two historic buildings on the north side of the A48 (not listed) would need to be demolished along with Berryhill Farm. Loss of historic field boundaries would occur in the area around Berryhill Farm.

- 8.6.45** The remaining part of the HLCA would not experience direct physical impacts but there may be visual changes that would have a limited effect on the character of this remaining part. There would also be an increase in traffic noise (generally between 3 to 6 decibels).
- 8.6.46** The magnitude of impact has been assessed as moderate (Table 8.7), with the consequent significance of effect being slight.

M4CaN HLCA104 Duffryn/Pencarn

- 8.6.47** Much of this HLCA comprises industrial and business parks including Cleppa Park on the north side of the A48 and Celtic Park/Celtic Lakes on the south side of this road. There are also modern hotels within the business parks and late 20th century residential development in the south eastern and north western corners. The former hamlet of Duffryn was located in the western edge of this HLCA; it is now within the industrial estate known as Celtic Park and no trace of the original hamlet has survived. A second small hamlet at Coedkernew is still present in the south west corner of the HLCA. To the east of here is Great Pencarn, once the seat of a manorial holding but now disused land within which the remaining farm buildings have been recently demolished. This is separated from Coedkernew by a new road which is currently not in use. Overall this HLCA is ascribed a negligible value; the only part retaining any historic character is around Coedkernew.
- 8.6.48** The footprint of the new section of motorway passes through the western part of the HLCA, east of Coedkernew. Here the route follows the line of the disused road around the perimeter of the Celtic Park estate although it would be slightly closer to the historic hamlet at Coedkernew. Church Lane, which forms the boundary of the HLCA here, would be diverted slightly and raised to provide the new Church Lane Overbridge. The land at Great Pencarn would be used as a compound during construction. There would be a negligible increase in traffic noise in the southern part of the HLCA (generally between 0.5 and 3 decibels but higher close to the new road embankment), and a reduced level in the northern part (generally between 3 to 6 decibels).
- 8.6.49** The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA106 Croes-Carn-Einion

- 8.6.50** This is a large HLCA taking in land to the north of the existing M4, west of Junction 28. The land rises up from the motorway to a ridge of higher ground and then falls away to the north. There is a Neolithic chambered tomb (Gwern-y-Cleppa) in the lower lying area in the south eastern part of the HLCA and two earthwork enclosures of probable later prehistoric date (maybe small hillforts) on the ridge in the western part. Across much the HLCA the field boundaries are straight, indicating an 18th/19th century reorganisation of an earlier field system from which few sinuous boundaries have survived. There has been a considerable amount of boundary loss in the modern period, particularly in the fields close to the existing M4. A low value has been ascribed to this HLCA.

8.6.51 The new section of motorway would require a limited amount of land take along the northern edge of the existing M4 within this HLCA. No historic buildings would be lost and there would be very little loss of field boundaries. The motorway, including the revised Junction 29, would be visible from the higher ground along the ridge in the western part of the HLCA but this would be in the context of the redevelopment of an existing motorway network. There would be a slightly increased level of traffic noise in the western part of the HLCA (generally between 3 to 6 decibels but higher close to the cutting for the new junction layout) and a slightly reduced level in the eastern part (generally between 3 to 6 decibels).

8.6.52 The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be slight.

M4CaN HLCA107 Cefn Llogell

8.6.53 This HLCA has a similar character to that of M4CaN HLCA106, which surrounds it to the north. However, it has an increased amount of woodland and less boundary loss in the modern period. The field boundaries are often sinuous indicating little in the way of 18th or 19th century reorganisation. The historic farmstead at Cefn Llogell is surrounded by substantial modern farm buildings whereas there has been far less development at Gwaunshonbrown Farm, which is at the western edge of the HLCA. Overall this HLCA has been ascribed a low value.

8.6.54 As with M4CaN HLCA106, the new section of motorway would require a limited amount of land take along the northern edge of the existing M4 within this HLCA. No historic buildings would be lost and there would be very little loss of field boundaries. The revised motorway would be visible from the higher ground within the HLCA but this would be in the context of the redevelopment of an existing motorway network. There would be a reduction in traffic noise throughout this HLCA (generally between 3 to 6 decibels).

8.6.55 The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be slight.

M4CaN HLCA111 Newport Docks

8.6.56 This HLCA comprises all of the area of Newport Docks to the west of the River Usk. The land formerly comprised the Mendelgief Levels between the Rivers Usk and Ebbw, along with the very sinuous course of the River Ebbw in its final phase before reaching the estuary. The Ebbw was placed in its current straight channel along the western edge of this HLCA as part of the early 20th century redevelopment and expansion of the docks.

8.6.57 The historic character of this HLCA is predominantly that of the docks and the dockyard buildings, which include several that are associated with the initial construction of the North Dock in 1868-75. However, there are also many modern buildings present as the docks have been constantly redeveloped to deal with the changing requirements here. The north western part of the HLCA comprises an area of former landfill which has now been capped off. Overall a low value has been ascribed to this HLCA.

8.6.58 The new section of motorway would pass through the centre of this HLCA; crossing the River Usk on a substantial cable-stayed bridge. The motorway

would then descend along a viaduct structure before crossing over the River Ebbw. To the east of the River Ebbw would be a junction providing a link northwards through the HLCA to the A48 Southern Distributor Road. This would pass along the eastern side of the capped landfill site. Several of the more historic buildings within the docks would be demolished in order to establish the worksite for the construction of the bridge over the River Usk. The new bridge would overshadow and dominate the existing character when viewed from locations within or towards the docks. There would also be an increase in traffic noise throughout most of this HLCA (generally between 9 and 12 decibels but higher close to the new road bridge).

- 8.6.59** The magnitude of impact has been assessed as moderate, with the consequent significance of effect being slight.

M4CaN HLCA115 Uskmouth Industrial Development

- 8.6.60** This HLCA is now largely industrialised but was formerly land along the eastern side of the River Usk and the eastern part of the mouth of the river, which was reclaimed from the medieval period onwards having formerly been saltmarsh and tidal mudflats. Almost all of the visible character associated with that reclamation and use of the land for grazing has now been replaced by a frontage including a power station and several major industrial facilities. There is also an area of wetland nature reserve but this is also former industrial land that has been reused. A negligible value has been ascribed to this HLCA.

- 8.6.61** The new section of motorway would cross the central part of this HLCA, rising to the west on a viaduct before crossing the River Usk via a substantial cable-stayed bridge. Almost all of the land required for the new section of motorway is currently in industrial use or has been until very recently. There would also be an increase in traffic noise throughout most of this HLCA.

- 8.6.62** The magnitude of impact has been assessed as negligible, with the consequent significance of effect being neutral.

M4CaN HLCA117 Pye Corner

- 8.6.63** This is a small HLCA that takes in land to the north and north east of Pye Corner. It is similar to the adjacent HLCA01 within the Gwent Levels Landscape of Outstanding Historic Interest in that the fields are small and irregular with the lanes being very sinuous. The western boundary is formed by Lakes Reen and the eastern one by Julian's Reen, both of which could be relatively early drainage features within the reclaimed land. There may be some association of the land here with Goldcliff Priory.

- 8.6.64** The Grade II listed Pye Corner Farm is located within the south western corner of the HLCA and to the north there is some later 20th century development, including a now-disused and largely cleared post-war barracks and a medium-sized industrial unit. A low value has been ascribed to this HLCA.

- 8.6.65** The new section of motorway would cross through the southern part of the HLCA, between Pye Corner Farm and the industrial unit. It would also cross through the north western part of the former barracks. Nash Road and Meadows Road would be diverted east and rise to cross over the motorway on a new overbridge. A water treatment area would be located to the north of the motorway, immediately to the west of Julian's Reen. The new section of motorway would be the

dominant element of the landscape from any location within the HLCA. There would also be an increase in traffic noise throughout most of this HLCA.

- 8.6.66** The magnitude of impact has been assessed as moderate, with the consequent significance of effect being slight.

M4CaN HLCA118 Llanwern Steelworks

- 8.6.67** This large HLCA comprises land formerly used for the substantial steelworks complex of Llanwern. Prior to this industrial usage, the historic landscape here was one of medieval and post-medieval enclosure of the former back-fens. Although this landscape was lost to the steelworks, some of the historic drainage features have survived, particularly in the southern part of the HLCA.

- 8.6.68** The steelworks themselves should also be regarded as a part of the historic character of this area, although there has been considerable recent clearance and replacement with residential or other industrial development. A negligible value has been ascribed to this HLCA.

- 8.6.69** The new section of motorway would pass through the southern part of the HLCA, mostly within reed-beds and former lagoons associated with the steelworks. A new junction would provide a link to the A4810 and just to the east of the junction the new motorway would cross Monk's Ditch. This embanked channel is likely to have been a very early element of the drainage network in the Gwent Levels. There would also be an increase in traffic noise throughout most of this HLCA (generally 0.5 to 3 decibels but greater than this closer to the new section of motorway).

- 8.6.70** The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA119 Wilcrick

- 8.6.71** This HLCA covers land to the north of the South Wales to London Mainline railway, rising up from here to the higher ground of Wilcrick Hill and then falling away to the north. A field pattern of sinuous boundaries radiates outwards from the substantial Iron Age hillfort on Wilcrick Hill. The field pattern also includes individually enclosed former strip-fields and former common land, which may well have been used by villagers from Magor as well as Wilcrick and Llandeveyney.

- 8.6.72** The HLCA is bisected by the existing M4 and there has also been some substantial modern development immediately south of the motorway (north of the brewery) as well as the service area on the north side at Junction 23A. Overall, a low value has been ascribed to this HLCA.

- 8.6.73** The new section of motorway would pass through the eastern part of the HLCA, between the brewery and the built development at Magor. This part of the HLCA does not contribute greatly towards the overall historic character although it does contain some historic boundaries which would be greatly reduced. One historic element that would be wholly removed is the Grade II listed Magor Vicarage, just to the north of the B4245. Although this is a significant loss (and is assessed separately below), the building does not actually make a particularly strong contribution to the overall historic character of the HLCA. There would also be a negligible reduction in traffic noise throughout most of this HLCA (generally

between 0.5 to 6 decibels), although there will be an increase in traffic noise in the southern part of the HLCA (generally between 0.5 to 6 decibels).

- 8.6.74** The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA122 St Brides Valley

- 8.6.75** This HLCA takes in the small nucleated hamlet of Upper Grange along with the surrounding higher ground on the eastern side of St Bride's Brook. The settlement originated as a grange farm attached to Tintern Abbey and includes the earthwork remains of the former Merthyrgeryn Church. The land around the settlement includes common land and upland grazing; the fields are large and irregular with limited boundary loss in the modern period.

- 8.6.76** The existing M4 passes through the southern part of the HLCA and has severed the historic field pattern in this area. Overall a low value has been ascribed to this HLCA.

- 8.6.77** The new section of motorway would require additional land take on either side of the existing M4, in addition to land to the north of the M4 for a water treatment area. The new section of motorway would be visible from much of the HLCA as the land rises up towards Upper Grange, but this would be in the context of the redevelopment of an existing motorway network. There would be no discernable change in traffic noise throughout most of this HLCA.

- 8.6.78** The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA123 Knollbury Fields

- 8.6.79** This HLCA is an area of sinuous, irregular-shaped fields along with isolated farmsteads and the small hamlet of Knollbury. The field pattern includes some surviving remnant strip-fields, which indicate the enclosure of former common fields. There are also small pockets of woodland present here that are shown on detailed mapping of the late 19th century. There has been very little boundary loss in the modern period.

- 8.6.80** The existing M4 motorway passes through the southern part of this HLCA and has severed the field pattern in this area. Overall a low value has been ascribed to this HLCA.

- 8.6.81** The new section of motorway would include permanent land take on either side of the existing M4 within this HLCA. The late 19th/early 20th century Undy House would be demolished, as would a disused limekiln, which is likely to be of similar date. There would be no discernable change in traffic noise throughout most of this HLCA.

- 8.6.82** The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA124 Rockfield Farm

- 8.6.83** This is a large HLCA with fields demonstrating a mixture of sinuous and straight boundaries. The overall pattern suggests a re-organisation of the landscape during the late post-medieval or modern period. There is a single isolated

farmstead (Rockfield Farm), which is wholly modern and a Grade II listed former windmill is located in the eastern area. The woodland in the north eastern part of the HLCA was shown in its present form on detailed mapping of the late 19th century and is virtually unchanged.

8.6.84 Both the existing M4 and the M48 motorways pass through the southern part of this HLCA and these have severed the field pattern in this area. Overall a low value has been ascribed to this HLCA.

8.6.85 The new section of motorway would require limited permanent land take to the north of the existing M4 and M48 motorways, although there would also be a borrow pit and a temporary haul road passing to the west and north of the windmill. The land used for the borrowing of stone during construction, along with that used for storage of topsoil and subsoil during construction, would subsequently be restored to its current land use and appearance. However, there would be a considerable amount of permanent land take to the south of the motorways and the south west corner of the HLCA would be severed to a greater extent than at present.

8.6.86 Views towards the Scheme would not be greatly altered from locations in the northern part of the HLCA, but those from locations in the south western part there would be a greater level of change in the view towards the new motorway junction. There would also be an increase in traffic noise at locations close to the new motorway junction, but no discernable change in traffic noise throughout the remaining parts of this HLCA.

8.6.87 The magnitude of impact has been assessed as moderate, with the consequent significance of effect being slight.

M4CaN HLCA125 Moorgate

8.6.88 This HLCA includes the historic settlement of Llanfihangel which represents the surviving element of a former village that was much larger until the late 17th century. There are also two historic farmsteads: Moorgate Farm and the Grade II listed Great House Farm, both to the south of the South Wales to London Mainline railway. The southern boundary is formed by Vurlong Reen and this marks the edge of the fen here, with the land inside the HLCA being slightly higher and therefore not enclosed and drained as part of Caldicot Moor which is located immediately to the south. The fields in this HLCA are sub-rectangular in shape with mostly sinuous boundaries. A low value has been ascribed to this HLCA.

8.6.89 The Scheme would require some minor adjustments to the existing M4 motorway which bisects the HLCA, along with works associated with the Caldicot Road roundabout at Llanfihangel. There would also be a borrow pit between the South Wales to London Mainline railway and the B4245 which would subsequently be restored to its current land use and appearance. Land to the east of the borrow pit would be used for storage of topsoil and subsoil during construction and would subsequently be restored to its current land use and appearance.

8.6.90 Views towards the new motorway junction would be possible from most parts of the HLCA north of the South Wales to London Mainline railway although this should be seen in the context of the existing M4 and M48 motorways. There would be a slight increase in traffic noise around Llanfihangel and also land north of the B4245 west of the new junction, with a negligible reduction in traffic noise

(generally 0.5 to 3 decibels) in that part of the HLCA south of the South Wales to London Mainline railway. Overall, the magnitude of impact has been assessed as moderate, with the consequent significance of effect being slight.

Important Hedgerows

8.6.91 The Hedgerow Regulations 1997 provide statutory protection for hedgerows that have been identified as 'Important' in terms of a range of defined criteria. Permission to remove such hedgerows must be obtained in advance from the local planning authority.

8.6.92 The defined criteria used to identify 'Important Hedgerows' include several relating to the potential historical significance of the hedgerow. In order to be classified as 'important' in terms of the Regulations, a hedgerow must have (a) existed for 30 years or more, and (b) satisfy at least one of the following criteria.

- The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township; and for this purpose 'historic' means existing before 1850.
- The hedgerow incorporates an archaeological features which is (a) included in the schedule of monuments compiled by the Secretary of State under section 1 (schedule of monuments) of the Ancient Monuments and Archaeological Areas Act 1979; or (b) recorded at the relevant date in a Sites and Monuments Record.
- The hedgerow (a) is situated wholly or partly within an archaeological site included or recorded as mentioned in paragraph 2 or on land adjacent to and associated with such a site; and (b) is associated with any monument or feature on that site.
- The hedgerow (a) marks the boundary of a pre-1600 AD estate or manor recorded at the relevant date in a Sites and Monuments record or in a document held at that date at a Record Office; or (b) is visibly related to any building or other feature of such an estate or manor.
- The hedgerow (a) is recorded in a document held at the relevant date in a Record Office as an integral part of the field system pre-dating the Inclosure Acts [see the Short Titles Act 1896 (c. 14)]; or (b) is part of , or visibly related to, any building or other feature associated with such a system, and that system (i) is substantially complete; or (ii) is of a pattern which is recorded in a document prepared before the relevant date by a local planning authority, within the meaning of the 1990 Act [see section 1 of the Town and Country Planning Act 1990, as amended by the Local Government (Wales) Act 1994 (c. 19)], for the purposes of development control within the authority's area, as a key landscape characteristic.

8.6.93 These criteria have been applied to hedgerows within the defined study area and the resulting 'Important Hedgerows' are identified in the Cultural Heritage Desk-based Assessment (Appendix 8.2 of this ES).

8.6.94 A total length of approximately 26,957 metres of boundaries that can be defined as 'Important Hedgerows' (using the criteria defined in the Regulations and relating to the historical significance of the boundary) would be removed as part of the new section of motorway. This includes boundaries within areas of temporary land take, but not the boundaries that enclose such areas.

Approximately 10,737 metres of the overall loss would be within the Wentlooge Levels and approximately 16,220 metres would be within the Caldicot Levels.

- 8.6.95** This loss is not separately assessed here as boundary loss is considered within the overall assessment of impacts and effects on the historic landscape. The effects on historic landscape are set out above, with further details provided in the ASIDOHL2 report (Appendix 8.3 of this ES) and in Appendix 8.9.

Conservation Areas

Rogiet Llanfihangel (CA001)

- 8.6.96** This is the only Conservation Area that would experience direct physical impacts as a result of the implementation of the new section of motorway. The Conservation Area is centred on the surviving core of historic buildings at Llanfihangel, which includes the Grade II* listed Church of St Michael and All Angels (LB002) and the two historic farmsteads of Old Court Farm (LB008, LB009 and LB010) and Green Farm (LB015, LB016 and LB017).
- 8.6.97** However, as late as the mid-17th century Llanfihangel was a much larger settlement with 19 farmsteads and seven cottages along with an alehouse, bakehouse, parsonage and forge. This was all centred on a substantial village green located in the vicinity of the present farmyard of Green Farm. Court Cottages and Green Farm Cottages, located just to the north of the B4245 road, occupy land that was formerly part of the settlement but are almost certainly of a later date rather than being surviving elements.
- 8.6.98** The Conservation Area actually takes in all of the land formerly occupied by this now much-reduced settlement as well as additional land that provides a 'buffer' to the current buildings here (Figure 8.5g, CA001). It extends west to the existing M4 and north to the westbound slip road from the existing M48 to the M4. The southern boundary is along the edge of the former railway sidings whilst the eastern boundary is such that it provides a buffer zone of one field between the Conservation Area and the built development at Rogiet.
- 8.6.99** The significance of the Conservation Area is based on the surviving historic core of Llanfihangel and its setting, taking in the area of former settlement which is likely to have been medieval in origin. The two existing motorways are visible from many locations within the Conservation Area and in views across it. Traffic noise from the motorways is clearly audible at many locations within the Conservation Area, whilst the B4245 is also very busy and contributes towards the overall traffic noise as it passes through the middle of the Conservation Area. Both of the existing motorways are lit as they approach the existing Junction 23 of the M4, and the B4245 is also lit as it passes through the Conservation Area. Overall, a medium value has been ascribed to this Conservation Area as it contains buildings that contribute significantly to its historic character (Table 8.3).
- 8.6.100** The permanent land take for the new section of motorway would include a considerable amount of the north western part of the Conservation Area, including land for new junctions and also for woodland planting as part of the environmental mitigation required for the Scheme. The consequence of this permanent land take is that all of the Conservation Area to the north of the B4245 and west of Court Cottages would be directly affected and in any subsequent revision of the Conservation Area boundary this land would be excluded. There

would also be impacts to the south of the B4245; the land west of the slip road between the existing M48 and the eastbound M4 would additionally be excluded from the Conservation Area in any future boundary revision. Some of the land that would be physically impacted may well contain buried remains associated with the former larger historic settlement and therefore this loss would also affect the significance of the Conservation Area.

- 8.6.101** Along with the physical impact there would also be impacts on the remaining parts of the Conservation Area in the form of visual change (including lighting at the junctions and on the slip roads leading to and from these junctions). This would affect the historic core of the Conservation Area to a greater extent than the land to the east of this core. There would also be a slight increase in traffic noise at locations close to the boundary of the proposed new section of motorway (generally between 0.5 – 6 decibels) but with no discernable change in traffic noise elsewhere within the Conservation Area.
- 8.6.102** The magnitude of impact on the Conservation Area at Llanfihangel has been assessed as moderate, as the resource would be significantly modified. The consequent significance of effect would be moderate.

Listed Buildings

Magor Vicarage (LB010)

- 8.6.103** This is the only listed building for which demolition is required in order to implement the new section of motorway (Figure 8.5f, LB010). It was built in 1861 and is in Tudor/Jacobean Revival style. The vicarage was designed by John Norton, who was also involved in the restoration of the Grade I listed Church of St Mary in Magor in 1868. The interior of the vicarage retains much of the original Tudor Revival material including the stone fireplaces and decoratively moulded panelled doors. To the rear of the vicarage are contemporary stables and a coach-house, which must be regarded as being 'curtilage buildings'. The vicarage was listed as a good example of a largely unaltered mid-19th century architect-designed vicarage with mostly contemporary fittings.
- 8.6.104** The value of Grade II listed buildings within the DMRB methodology is generally taken to be medium, although a higher level of value can be ascribed if it is considered that the building has exceptional qualities in terms of their fabric or historical associations which are not reflected in their listing grade (see Table 8.3 above). No exceptional qualities have been identified with regard to the vicarage.
- 8.6.105** As the vicarage (and the curtilage buildings) would be fully demolished in order to implement the new section of motorway, the magnitude of impact would be major (Table 8.6 above) and the consequent significance of effect has been assessed as large.

Non-designated Historic Buildings (Figures 8.5a – 8.5f)

White Cottage (HB116)

- 8.6.106** The Ordnance Survey 6" map of 1887 shows a building at this location, which is named as Gwin-lewydd and which appears to be a small house or cottage. The current building is much altered but may well be based around the core of an early 19th century structure.

8.6.107 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Myrtle House (HB007)

8.6.108 This is a late 19th century double pile plan cottage located on the north side of the A48, at the junction with Pound Hill. The rendered exterior and replacement windows mean that additional historical details remain unknown.

8.6.109 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Berryhill Farm (HB010)

8.6.110 A farmstead has been here since at least 1844 and initially comprised a farmhouse along with a pair of stone-built cottages. Additional farm buildings have been added subsequently to establish a more typical linear farmyard.

8.6.111 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Pont-y-Cwaw Reen Footbridge (HB027)

8.6.112 A small footbridge providing access over the Pont-y-Cwaw Reen, this is a brick-built structure with cement capping along each edge. This is difficult to date but some parts of the structure may go back as far as the 18th century or perhaps even earlier.

8.6.113 This is a low value heritage asset and the magnitude of impact would be major as full demolition is likely to be required. The consequent significance of effect has been assessed as slight.

Former Ammunition Store or Air Raid Shelter, Newport Docks (HB035)

8.6.114 Located just to the west of the channel between the North and South Docks, this building is very similar in construction and appearance to another structure within the docks that is known to be an air raid shelter of Second World War date. This is considered to be a more likely use for the building than an ammunition store (Appendix 8.5, Component 27).

8.6.115 This is a low value heritage asset and the magnitude of impact would be major as full demolition is likely to be required. The consequent significance of effect has been assessed as slight.

Former Mess or Welfare Building, Newport Docks (HB037)

8.6.116 This building is first shown on a map of 1921 date. The function is not recorded but the form suggests that it may have been a mess or welfare building for dockyard personnel (Appendix 8.5, Component 08).

8.6.117 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Former Air Raid Shelter, Newport Docks (HB038)

8.6.118 The form of this building suggests that it was an air raid shelter of Second World War date, one of at least four within this part of the docks (Appendix 8.5, Component 09).

8.6.119 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Swing Bridge Operation Building, Newport Docks (HB039)

8.6.120 This appears to have been constructed in the period 1907-1912. It comprises a single room with lobby and a simple fireplace. Windows provide a clear view to both east and west. This is probably the office for the operator of the former swing bridge that provided the connection for rail traffic (and possibly pedestrians) across the channel between the North and South Docks (Appendix 8.5, Component 07).

8.6.121 This building has a clear connection with the former swing bridge and therefore with the railway maintenance sheds to the east (HB049 etc). It retains original internal features including a fireplace and is in a reasonable state of repair. However, it cannot be demonstrated to have exceptional historical associations or qualities in terms of fabric and thus is considered to be a low value heritage asset. The magnitude of impact would be major as full demolition is required and the consequent significance of effect has been assessed as moderate.

Building of Unknown Function, Newport Docks (HB042)

8.6.122 This is a single storey building in red brick with flat concrete roof. The construction methodology indicates a date in the early 20th century. A building is shown in this location on maps of that period but is longer than the present structure. No clear function can be ascribed to this building (Appendix 8.5, Component 06).

8.6.123 This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Shed of Unknown Function, Newport Docks (HB043)

8.6.124 This is a building of concrete modular construction with a pitched roof. This construction type is likely to be mid-20th century in date. No clear function can be ascribed to this structure (Appendix 8.5, Component 05).

8.6.125 This is a negligible value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect is slight.

Former Graving Dock, Newport Docks (HB044)

8.6.126 Built in the late 19th century this is first shown on the OS map of 1883, later identified as a graving dock and in 1912 as a dry dock. It is now mainly infilled, although there is water in the western end and the lock gates survive. Some elements associated with the dock are still present surrounding the infilled

section, including concrete plinths with iron capstans on the upper surface (Appendix 8.5, Component 10).

8.6.127 This is one of the surviving features from the original construction of the Alexandra Docks during the period 1868-1875 and as such this contributes greatly towards its significance, notwithstanding the fact that much of the graving dock has been infilled. The presence of ship repair buildings just to the north, along with what was possibly the original engine house for the pump engine to the south (see below), also contributes to the significance of the former graving dock. A medium value has therefore been ascribed to this heritage asset.

8.6.128 In order to implement the new section of motorway here, the silt within the infilled part of the former graving dock would need to be consolidated and the elements associated with the dock that project above current ground level here, such as the concrete plinths with iron capstans, would also be removed. However, the dock gates would remain in place as would that part of the former dock that still holds water. The magnitude of impact has been assessed as minor and the consequent significance of effect would be slight.

Group of Locomotive Running Sheds and Engineering Workshops, Newport Docks (HB049)

8.6.129 This is a group of interconnected buildings located to the south of the former graving dock, all of which are associated with the maintenance of the dock railway engines and rolling stock (Appendix 8.5, Component 04a-04I). Much of the material coming through Newport Docks was transported by rail and this was also the prevalent method of transport within the docks.

8.6.130 The earliest detailed map of the original Alexandra Dock dates to 1887 and this shows a network of rail lines connecting to the wharves on the western side of the dock, with a single line also extending around the southern end of the dock that then branches out to reach two separate buildings. The western building is indicated as an 'Engine House' with adjacent 'Boilers' and 'Tanks', whilst the eastern building is not ascribed any particular function. The rail line splits into two parts just to the west of the building but both lines then run directly into the building and do not emerge from the other side (Appendix 8.5, Figure 4). This is likely to have been a running shed (i.e. for the night-time storage of small tank locomotives) and it therefore appears that the locomotive sheds were established at this location as part of the initial establishment of the Alexandra Dock.

8.6.131 Following the construction of the South Dock (commenced in 1882), a narrow cut was established between the two docks. Access for rail traffic over the cut was by way of a swing bridge and therefore the locomotive sheds could be retained in their established location. The layout is shown on a map of *circa* 1900 which indicates that the buildings here had been extended (Appendix 8.5, Figure 5). Later mapping describes the buildings here as 'Workshops'.

8.6.132 The earliest elements of the surviving structures within this group are likely to date to the initial establishment of the locomotive sheds in around 1883. One early element is a long rectangular building in pale white bricks and this was probably the building initially used as a running shed. It was recorded (as Component 04a) in the 2008 study (Appendix 8.5) but the roof has subsequently been replaced using modern materials.

- 8.6.133** To the north west is a second set of buildings that also appear to date to the initial establishment of the group in around 1883 (Appendix 8.5, Components 04h; 04i; 04j). These are in coursed sandstone and may represent the structure shown as an 'Engine House' on the 1887 map. As such these buildings probably housed a steam engine used to pump water out of the graving dock to the north.
- 8.6.134** The earlier running shed was subsequently extended at various times with additions to the west and east and also to the north. This all appears to have happened by 1901 and may have been associated with the construction of the south dock. The complex may well have developed a greater focus on maintenance at around this time. Most of the roofs here have been replaced since the 2008 study (Appendix 8.5).
- 8.6.135** The former 'Engine House' has also been extended since 1900 with various additions and amendments. At some point all of the buildings in this group (HB049) were converted to become workshops for the maintenance of locomotives and presumably any other equipment used within the docks. This use has continued until the present day. Some of the roofs here have been replaced since the 2008 study (Appendix 8.5).
- 8.6.136** This group of buildings therefore includes surviving elements from the initial construction and use of the Alexandra Dock. The buildings are in good condition and their continued use for the maintenance of dockyard equipment means that there has been no loss of significance due to change of use. There are associations with the adjacent former graving dock and also with HB055 (see below).
- 8.6.137** A medium value has been ascribed to HB049 on the basis of the historic nature of the fabric and the associations with the original Alexandra Dock. The magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as moderate.

Building of Unknown Function, Newport Docks (HB053)

- 8.6.138** This is a single storey rectangular building in pale orange brick with a pitched slate roof (Appendix 8.5, Component 11). The construction methodology indicates a date in the early 20th century but its function remains unknown - there is a line shaft attached internally to the north wall but no indication as to what this might have been attached to. At some point there was certainly an engine placed within the building but its original use may not have been as an engine shed.
- 8.6.139** This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Former Locomotive Engine Shed, Newport Docks (HB055)

- 8.6.140** This building is based around a series of iron columns with 'I' beam plates attached, which support a lightweight pitched roof which has recently been recovered using modern materials. The gaps between the columns have been infilled with red bricks (Appendix 8.5, Component 12).
- 8.6.141** A building is first indicated in this location on an OS map published in 1922 that shows a single rail line running through the building and another one passing just

to the south. This was probably a running shed that was later incorporated into the maintenance works, which are located immediately to the north west. The construction type is such that this could have been moved here from another location within the docks or even from an external site.

8.6.142 This likely initial use of the building as a locomotive running shed and its connection with the other running sheds and maintenance buildings to the north west (HB049) contribute towards the significance of HB055, and there has been no loss of significance due to change of use.

8.6.143 A medium value has been ascribed to this building on the basis of the historic nature of the fabric and the associations with HB049. The magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as moderate.

Building of Unknown Function, Newport Docks (HB057)

8.6.144 This is a single storey building of two distinct elements, both in similar style with red/brown bricks and a pitched roof recently replaced with modern materials, but with the northern part raised to be slightly higher than the southern part (Appendix 8.5, Component 13). The wide door opening in the northern end of the more elevated part of the building suggests a requirement for vehicle access and this may be linked to the nearby maintenance sheds (HB049, HB055).

8.6.145 This building is likely to be of mid-20th century date and a low value has been ascribed to it. The magnitude of impact would be major as full demolition is required and the consequent significance of effect has been assessed as slight.

Building of Unknown Function, Newport Docks (HB058)

8.6.146 This building comprises a curtain wall of concrete blocks with a shallow pitched roof covered in corrugated iron sheeting (Appendix 8.5, Component 14). It had previously been identified as a possible air raid shelter but the flimsy nature of the roof does not support this suggestion and it may have been an external latrine.

8.6.147 A negligible value has been ascribed to this building. The magnitude of impact would be major as full demolition is required and the consequent significance of effect would be slight.

Pye Corner Barrage Balloon Tethers (HB087)

8.6.148 The field immediately to the north of the former Baptist Chapel at Pye Corner contains a number of concrete blocks with iron rings set into the upper surface. These are considered to be tether points for barrage balloons used for the defence of Newport during the Second World War. There are also two potential hut bases at the eastern edge of this field, adjacent to Nash Road, which may be associated with the tether points.

8.6.149 This is a low value heritage asset and the magnitude of impact would be moderate - the land is required for landscape planting and this can be carried out in such a way that the historic structures remain intact but their setting would be considerably altered. The consequent significance of effect would be slight.

Barecroft House (HB104/105)

- 8.6.150** A stone-built two storey cottage of unknown date, rendered and also heavily buttressed on the south side. The form of the building appears to match with what is shown here on the tithe and early Ordnance Survey mapping. Some later structures have been built just to the east but these would be retained outside the footprint of new section of motorway.
- 8.6.151** This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Dunline, aka The Cedars (HB109)

- 8.6.152** A house of late 19th/early 20th century date, stone-built with red brick dressings. The building has replacement windows and a cement tile roof.
- 8.6.153** This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Undy House (HB110)

- 8.6.154** This is a property of late 19th/early 20th century date including a house and three outbuildings, all in stone with red brick dressings. The house has been considerably altered as has the former cart shed/stables building, but there is some group value here.
- 8.6.155** This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Limekiln North of M4 at Undy (HB117)

- 8.6.156** The remains of a former limekiln are present within woodland just to the north of the existing M4, near to Undy. This is indicated on the 1st edition Ordnance Survey 6" map of 1887 and is likely to be of 19th century date. It is located on the northern edge of a small quarry.
- 8.6.157** This is a low value heritage asset and the magnitude of impact would be major as full demolition is required. The consequent significance of effect has been assessed as slight.

Complementary Measures

- 8.6.158** The Complementary Measures would have no discernible effect on any aspect of the cultural heritage of the area as the works are proposed to be undertaken within the existing developed footprint.

8.7 Assessment of Potential Construction Effects

Proposed New Section of Motorway

- 8.7.1** The potential direct physical land take impacts on heritage assets that would occur at the start of the construction phase, along with the consequent effects, are described in Section 8.6 above.
- 8.7.2** The potential direct non-physical impacts of the new section of motorway on heritage assets during construction (i.e. impacts on the settings of such assets), along with the consequent effects, are generally considered to be analogous with those described in Section 8.8 below which addresses potential operational effects.
- 8.7.3** Where instances have been identified in which the potential direct non-physical impacts on heritage assets during construction would be significantly different to the operational effects, details are provided below.

Scheduled Monuments

Medieval Moated Site North of Church at Undy (SM001)

- 8.7.4** This is a well-preserved moated site located on the eastern edge of the modern development at Undy (Figure 8.5g). Recent residential development extends right up to the north western edge of the Scheduled area and partially along the south western side. There has been no archaeological investigation within the monument but by analogy it should represent a medieval site, possibly an isolated farmstead that was subsequently abandoned. Work associated with the installation of a water pumping station just to the west of the Scheduled site found a small building of medieval date, possibly a latrine, along with some Roman pottery.
- 8.7.5** The Scheduled area is L-shaped, with the northern end of the site bounded by the B4245 and the eastern side bounded by thick hedges with some mature trees. The only open aspect is to the south where there is a small field of permanent pasture with a water storage lagoon beyond this. The Scheduled area is also used as permanent pasture.
- 8.7.6** The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site leading to a better understanding of the processes of enclosure and drainage of this part of the Gwent Levels. There are some aesthetic values, although these are limited as a result of the adjacent modern development.
- 8.7.7** The new section of motorway would include temporary works within the field immediately to the south east of the Scheduled Monument and also to the north east, across the B4245. In both locations these works would comprise the borrowing/excavation of stone that is required for construction purposes. Topsoil would be removed and stored in defined locations nearby prior to the removal of the stone. The methodology for winning the stone has yet to be determined but may involve blasting. The stone would then be processed on site before being transported for use along the route.

8.7.8 The land to the south east of the Scheduled Monument is reasonably well-screened from the borrow area so visual impacts would be very limited. The land to the north east, across the B4245, is not very well-screened and some of the work here would be very visible from the northern edge of the Scheduled area.

8.7.9 The magnitude of impact has been assessed as moderate, i.e. there would be some loss of significance of the asset. This is a high value asset and the consequent significance of this temporary effect has been assessed as moderate.

Devil's Quoit - Standing Stone South of Bencroft Lane (SM002)

8.7.10 This standing stone is located very close to the toe of the embankment that carries the existing M4 at the approach to Junction 23; it is within 5 metres of the highway boundary fence (Figure 8.5g). Examination of historic mapping and available records indicate that the stone has not been moved from its location as originally surveyed in the late 19th century.

8.7.11 There has been no detailed archaeological investigation of this monument but by analogy it is considered likely to be of Bronze Age date. Individual standing stones that are not clearly associated with other stones (in rows or circles) can be difficult to date but some excavated examples have been found to mark burials of Middle or Late Bronze Age date. Other suggested purposes for standing stones include markers to commemorate specific events or boundaries, or foci for gatherings to observe notable occasions. The latter may include astronomical phenomena such as sunrise or sunset at special times of the year during which the standing stone can line up with specific points on the horizon to identify the correct date for the event.

8.7.12 It is possible that the Devil's Quoit standing stone marks a prehistoric burial but this could only ever be established through a programme of archaeological investigation that includes the removal of the stone (either on a temporary or permanent basis). Any other potential purpose for the standing stone, such as a boundary marker or an astronomical marker, would require a close link with its setting.

8.7.13 Nothing is currently known within the setting that can clearly be associated with the stone, although geophysical survey within the field containing the stone and the land immediately to the west has identified probable and possible archaeological features, including a ring-ditch and a small enclosure. The presence of the embankment of the existing M4 so close to the standing stone setting means that any association within the setting to the north and east of the monument is now lost, whilst the setting to the west takes in the built development of Undy and Magor and that to the south includes the B4245 and the South Wales to London Mainline railway.

8.7.14 The construction of the new section of motorway would include works very close to this Scheduled Monument. The embankment of the off-slip from the westbound M4 connecting with the B4245 would extend further south than the present embankment. The standing stone would be retained *in situ*, but the line of the toe of the new embankment would extend approximately 10 metres beyond the stone. Ultimately there would be a retaining wall around three sides of the stone. The highway ditch at the base of the embankment would extend fully across this embankment but would be placed within a culvert.

- 8.7.15** In addition to the construction of the embankment and the establishment of the highway drainage ditch, all of the land between the B4245, the embankment and the unclassified road known as The Elms (with the exception of the current allotments) would be subject to the borrowing/excavation of stone required for construction purposes. This would extend to the edge of the existing motorway embankment and therefore very close to the standing stone. Topsoil would be removed and stored in defined locations nearby prior to the removal of the underlying stone. The methodology for winning the stone has yet to be determined but may involve blasting. The stone would then be processed on site before being transported for use along the route. Some of the land subject to borrowing for stone would be reinstated and planted with woodland. However, the land closest to the standing stone (between the B4245 and the embankment) would be the location of a water treatment area (including a reed bed) that would be part of the design of new section of motorway.
- 8.7.16** Thus construction works in the immediate vicinity of the standing stone would include: the construction of a new embankment extending around three sides of the monument and to approximately 5 metres from the monument; the excavation of a highway drainage ditch along the toe of the new embankment at a distance of approximately 10 metres from the monument; the borrowing of stone from land very close to the monument with associated on-site processing of the material; and the establishment of a water treatment area and reed bed.
- 8.7.17** The magnitude of impact has been assessed as major, i.e. there would be considerable loss of significance of the asset. This is a high value asset and the consequent significance of effect has been assessed as large.

Great House Farmhouse, Undy (LB011)

- 8.7.18** This farmhouse is located to the east of Undy, just to the south of the South Wales to London Mainline railway (Figure 8.5g). It was formerly known as Undy Farm and may have originated in the late 17th century but has been subsequently extended and the roof pitch altered. It has two storeys and appears to be rubble-built with red-brick dressings. The attached stone-built range of outbuildings is one storey with a former cheese-loft above. It is now a Grade II listed building.
- 8.7.19** The significance of the building is principally derived from the evidential values that arise from its architectural history and what information this could provide with regard to the date of the structure and its historical development. There may be some historic value if associated documentary material survives and certainly some aesthetic value with regard to the visual nature of the farmhouse. Communal value may also be present, associated with past and current residents and also other local people who have known the building over time.
- 8.7.20** The setting of the farmhouse makes some contribution to its significance as there are fields adjacent to the building that form part of the landholding associated with the farm. However, the railway is very close to the farmhouse and has clearly severed some of the former landholding. There are also a number of farm buildings adjacent to the farmhouse which have some historic merit along with some more modern ones.
- 8.7.21** During construction of the new section of motorway there would be work in the fields to the south of the B4245 including the winning of rock (possibly through blasting), but this land is separated from the farmhouse by the railway and by an

area of former sidings along the north side of the railway which were part of a substantial marshalling yard.

- 8.7.22** The impact on this Grade II listed building (of medium value) has been assessed as minor, resulting in an effect of slight significance.

Old Windmill, Rogiet (LB019)

- 8.7.23** This is situated on higher ground to the north of the village, immediately north of the existing M4 (Figure 8.5g). The windmill tower was probably built around AD 1500 and is referenced in a lease dated 1526. There is no evidence as to when it went out of use although it may have operated as a watch-tower in the 18th century. The earliest detailed mapping of the area dates from 1746 and shows a round building here; on the 1830 Ordnance Survey map it is shown as 'Old Mill'. It is now a Grade II listed building.

- 8.7.24** The significance of the windmill tower is primarily derived from its evidential value, i.e. the potential to provide information about its date and the history of its use. There are limited historical, aesthetic and communal values. Its setting makes some contribution towards that significance with regard to the hilltop location (to exploit the wind resources).

- 8.7.25** During construction of the new section of motorway, a temporary haul road would be constructed which passes to the west and north of the former windmill. This would be used by vehicles moving stone that has been quarried away from the route (e.g. at Ifton quarry) into the construction areas. That part of the haul road which passes to the north of the former windmill crosses land currently in agricultural use and would be clearly visible from the structure, some increase in noise from construction traffic is also likely.

- 8.7.26** The impact on this Grade II listed building (of medium value) has been assessed as minor, resulting in an effect of slight significance.

Complementary Measures

- 8.7.27** Construction works associated with Complementary Measures are not anticipated to have any discernible effect on any aspect of the cultural heritage of the area. All of the work would be within current highway boundaries therefore the potential for impacting on significant buried archaeological remains is very low. Construction activity within the settings of any designated heritage assets is unlikely to have any significant effect on the ability to understand and appreciate such assets.

8.8 Assessment of Potential Operational Effects

- 8.8.1** The likely impacts and consequent effects on heritage assets as a result of the operation of the Scheme are described below, with asset types (e.g. Scheduled Monuments, listed buildings) grouped together.

- 8.8.2** In each case the assessment takes account of mitigation that has been incorporated within the design of the Scheme, as set out in Section 8.5 above.

- 8.8.3** All effects identified and described below should be considered to be adverse, and permanent unless stated otherwise.

Proposed New Section of Motorway

Gwent Levels Landscape of Outstanding Historic Interest

- 8.8.4** Operational effects on the Gwent Levels Landscape of Outstanding Historic Interest are described above in Section 8.6 of this chapter with regard to land take effects. The assessment has been undertaken through the ASIDOHL2 methodology, in which direct physical impacts and indirect (physical and non-physical (visual)) impacts are examined together in order to reach an overall magnitude of impact with regard to each Historic Landscape Character Area (HLCA).
- 8.8.5** The assessment identified indirect impacts of severe magnitude on four of the HLCAs within the registered historic landscape, an impact of considerable magnitude on one HLCA, impacts of moderate magnitude on four HLCAs and an impact of slight magnitude on five HLCA (Appendix 8.3, Table 2).
- 8.8.6** However it should be noted that the assessment of direct non-physical impacts undertaken through the ASIDOHL2 process is mainly focused on visual changes. For the purposes of the current assessment it is also necessary to consider impacts relating to traffic noise, as the operation of the new section of motorway would result in an increase in traffic noise across much of the registered historic landscape. In some places this would represent the introduction of traffic noise into locations where there is currently a low level of such noise.
- 8.8.7** Information regarding the likely changes to traffic noise in the vicinity of the new section of motorway is provided in Chapter 13 of this ES. This shows that in the opening year there would be an increase in noise greater than 15 decibels at locations adjacent to the new section of motorway, and as much as 3-6 decibels in some parts of the registered historic landscape which are 1.5 km or more from the new road (see Figure 13.14).
- 8.8.8** There is no specific guidance or approved methodology for the assessment of the impact of noise on historic landscapes, although some work has been undertaken with regard to aircraft noise (Temple Group, 2014). However it must be assumed that anything more than a negligible increase in traffic noise (in areas where this is currently low) would have some appreciable impact on a person's ability to appreciate the historic landscape.
- 8.8.9** As described above in Section 8.6, the terminology used in ASIDOHL2 with regard to levels of impact magnitude (very slight, slight etc.) and significance of effect (very slight, slight etc.) does not equate directly with the terminology used in the DMRB. That part of the DMRB which provides guidance on the assessment of impacts and effects on the historic landscape (Highways Agency *et al.*, 2007) references ASIDOHL (and also LANDMAP) but does not provide any advice on how to incorporate the results of an ASIDOHL2 assessment into the DMRB methodology.
- 8.8.10** In order to assess the magnitude of impact in DMRB terms it is therefore necessary to look at the definitions provided in that document (see Table 8.7 above). This table does include mention of the impact resulting from changes to the noise environment. A gross change in noise resulting in a total change to the historic landscape character unit represents an impact of major magnitude, whilst a noticeable difference in noise resulting in moderate changes to historic

landscape character represents an impact of moderate magnitude. In the current assessment, the overall impact of increased noise on any HLCA is considered to be no greater than moderate.

- 8.8.11** Based on the above consideration of both visual and noise impacts, the operation of the proposed new section of motorway would have a moderate magnitude of impact on the registered historic landscape. This is a high value heritage asset and the consequent significance of effect has therefore been assessed as large.

Non-designated Historic Landscape Character Areas

- 8.8.12** Outside of the registered Gwent Levels Landscape of Outstanding Historic Interest, the new section of motorway would cross land that also has historic landscape character that could potentially be affected by the construction and operation.

- 8.8.13** A series of additional HLCAs have been identified and described in order to undertake the necessary assessment of potential impacts and effects (Figure 8.6). These are presented in detail in Appendix 8.9 of this ES. A total of 31 such HLCAs are described within that document, numbered HLCA100 - HLCA130.

- 8.8.14** These HLCAs have been identified and described using guidance provided in DMRB (Highways Agency *et al.*, 2007) and in supplementary guidance (Highways Agency, 2007) and also with information taken from the relevant Aspect Areas defined within LANDMAP (a GIS based resource regarding landscape character in Wales).

- 8.8.15** Of the 31 additional HLCAs identified in and described in Appendix 8.9 of this ES, 12 would experience direct physical impacts as a result of the implementation of the new section of motorway. The impacts and effects on these 12 HLCAs are assessed in Section 8.6 of this chapter, which addresses potential land take effects. For the remaining 19 additional HLCAs, the potential impacts are predominantly indirect (non-physical) visual ones. These impacts and the consequent effects are described below.

M4CaN HLCA100 - Rhymney Valley Nurseries

- 8.8.16** This HLCA represents the later industrialisation of a former medieval landholding now used for horticulture. The 1st edition OS map (c. 1887) shows a large house (Began House) with an orchard and this is recorded as the site of a medieval manor house. The large house has subsequently been replaced with three modern cottages (Began Farm) and much of the landholding to the north of the farm is now the site of a series of glasshouses. A negligible value has been ascribed to this HLCA.

- 8.8.17** The new section of motorway would terminate more than 1.5 km to the east of this HLCA and the magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA101 Maes-y-crochan

- 8.8.18** This is predominantly an agricultural landscape with dispersed farmsteads and historic woodland plantations of which there has been some loss since the initial detailed mapping in the late 19th century. Field boundaries are mostly sinuous, resulting in sub-angular fields. The existing M4 cuts through the centre of this

HLCA and there has been some boundary loss in land on either side of the motorway. A low value has been ascribed to this HLCA.

- 8.8.19** The new section of motorway would terminate immediately to the east of the boundary of this HLCA and the changes at this very western end of the route are very minor, comprising the tie-in to the existing M4. The magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA103 Marshfield Medieval Settlement

- 8.8.20** This HLCA is named after the former nucleated settlement of Marshfield, which includes the Grade II* listed Church of St Mary and the nearby Church Farm. This settlement is likely to have been medieval in date, whilst the more recent expansion of Marshfield has been to the south west and has incorporated the former settlement known as Blacktown. This was a fen edge settlement whereas Marshfield proper is on slightly higher ground. The main element of the pre-modern historic landscape intact within this HLCA comprises the land around Church Farm, which has sub-rectangular fields with slightly sinuous boundaries. A low value has been ascribed to this HLCA.

- 8.8.21** The new section of motorway would be located to the north of the HCLA, with the nearest physical component being a water treatment area on the south side of the A48 road, approximately 400 metres from the edge of the HLCA. There would be a negligible increase in traffic noise within this HLCA (generally 0.5 to 3 decibels). The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be neutral.

M4CaN HLCA105 Michaelstone

- 8.8.22** This HLCA is characterised by the presence of several small nucleated settlements likely to be of medieval origin. The surrounding field pattern is also likely to be of medieval date; the fields are sub-rectangular and have sinuous boundaries. There has been very little recent boundary loss and belts of historic woodland remain present. A medium value has been ascribed to this HLCA.

- 8.8.23** Due to the topography of the area, there would be no views of the new section of motorway from any location within this HLCA, nor would there be any discernible change in traffic noise. The magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA108 Bassaleg/Ebbw Vale

- 8.8.24** This HLCA includes land either side of the existing M4 to the north of Junction 28. West of the M4 this is unenclosed low-lying land now largely used as a golf course and including the course of the River Ebbw. East of the existing M4 the land rises up to the western end of a low ridge on which is located the Iron Age hillfort known as Tredegar Fort, which has modern residential development immediately to the east. There is considerable traffic noise within most of this HLCA. All of the HLCA was formerly part of the Deer Park associated with Tredegar House. A low value has been ascribed to this HLCA.

- 8.8.25** There would be no views of the new section of motorway from the western part of this HLCA. Clear views of some elements of the new section of motorway would be possible from the higher ground around Tredegar Fort as this vantage point enables extensive views in all directions except to the east. However, the route

would not be dominant or discordant in any of the views from within the HLCA - the views already take in the existing motorway network and the considerable modern development including business and industrial parks. Looking south east the new River Usk Crossing would be clearly visible but this would be in the context of the docks and associated industrial development as well as vertical elements such as wind turbines and electricity pylons. There would be no discernible change in traffic noise within this HLCA. The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be slight.

M4CaN HLCA109 Tredegar Park

8.8.26 This HLCA takes in the Tredegar House Country Park as well as the modern housing development at Duffryn and associated development such as schools along with substantial offices. The only part of the HLCA with any historic integrity is the remaining parkland around the Grade I listed Tredegar House - this is part of a Grade II registered Park and Garden of Special Historic Interest and is assessed as such below. Overall a negligible value has been ascribed to this HLCA.

8.8.27 The new section of motorway would be located to the south of the HLCA and almost wholly separated from it by the South Wales to London Mainline railway. There would be an increase in traffic noise in the southern part of this HLCA (generally 0.5 to 6 decibels) and no discernible change in traffic noise in the northern part. The magnitude of impact has been assessed as negligible, resulting in a neutral significance of effect.

M4CaN HLCA110 Marsh/Saltmarsh

8.8.28 This HLCA comprises a small area of largely undeveloped saltmarsh to the east of the Duffryn housing development and west of the River Ebbw. The eastern boundary was established when the river was realigned into its current channel here as part of the early 20th century expansion of Newport Docks. It is bisected by the South Wales to London Mainline railway and a sports facility has recently been established in the northern part of the HLCA but it still retains a reasonable amount of its historic character. A low value has been ascribed to this HLCA.

8.8.29 The new section of motorway would pass approximately 400 metres to the south of this HLCA. The viaduct carrying the western part of the River Usk Crossing would be very visible, although this should be considered in the context of the existing built development within the docks along with other vertical elements such as wind turbines and electricity pylons. The link road from the new motorway junction connecting the new section of motorway to the A48 road would be less visible as it is separated from the HLCA by an area of raised landfill. There would be a negligible increase in traffic noise within all of this HLCA (generally 0.5 to 3 decibels). The magnitude of impact has been assessed as minor, with the consequent significance of effect considered to be slight.

M4CaN HLCA112 Newport West

8.8.30 This HLCA comprises the mostly modern urban development of Newport to the west of the River Usk. The initial focus of settlement was around the location of the current cathedral (St Woolos) and subsequently shifted further north around the location of the stone castle, which was established in the 13th century. Any

areas of pre-modern settlement have been surrounded by later developments, leaving pockets that have a higher level of historic character and which are individually designated as Conservation Areas where appropriate. A low value has been ascribed to this HLCA.

- 8.8.31** The new section of motorway would be located to the south of this HLCA, and the link road from the new junction connecting the new section of motorway to the A48 would impinge very slightly as the A48 represents the southern boundary of the HLCA. The River Usk Crossing would be visible from locations within the HLCA although this should be considered in the context of the existing built development within the docks along with other vertical elements such as wind turbines and electricity pylons. There would be a slight increase in traffic noise in limited parts of this HLCA but a slight reduction in most of it. The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be neutral.

M4CaN HLCA113 Newport East

- 8.8.32** This HLCA comprises the mostly modern urban development on the east side of the River Usk, which now forms part of the city of Newport. The historic settlement core here was around Barnardtown, Maindee and Summerhill but has expanded considerably in the late 19th and 20th centuries. Any areas of pre-modern settlement have been surrounded by later developments, leaving pockets that have a higher level of historic character and which are individually designated as Conservation Areas where appropriate. A negligible value has been ascribed to this HLCA.

- 8.8.33** The new section of motorway would be located some distance to the south of this HLCA. The River Usk Crossing would be visible from locations within the HLCA although this should be considered in the context of the existing built development within the docks along with other vertical elements such as wind turbines and electricity pylons. There would be a slight increase in traffic noise in limited parts of this HLCA but a slight reduction within most of it. The magnitude of impact has been assessed as negligible, resulting in a neutral significance of effect.

M4CaN HLCA114 Ridgeway

- 8.8.34** This HLCA comprises an area of open ground with blocks of historic woodland. The fields are sub-rectangular in shape with sinuous boundaries. The land here is quite steep and falls away to the north west, with the existing M4 and also the Monmouthshire and Brecon Canal at the base of the slope. A low value has been ascribed to this HLCA.

- 8.8.35** The new section of motorway would not be visible from any part of this HLCA due to the topography and the reclassification to be implemented on the existing M4 motorway would not affect the historic character of this area. There would be a negligible reduction in traffic noise throughout this HLCA (generally 0.5 to 3 decibels). The magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA116 Liswerry

8.8.36 This HLCA mostly comprises modern built development on what was formerly back-fen within the Gwent Levels. The only remaining historic element comprises the route of the former Longlands Lane, which is preserved along the eastern edge of the Newport Retail Park. A negligible value has been ascribed to this HLCA.

8.8.37 The new section of motorway would pass to the south of this HLCA, with some elements (principally the northern part of the realigned Meadows Road) coming quite close. However, the route of the former Longlands Lane would not be affected in any way. There would be a negligible increase in traffic noise in the southern part of this HLCA (generally 0.5 to 3 decibels) and no discernible change in traffic noise in the northern part. The magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA120 Wilcrick Brewery

8.8.38 This HLCA mostly comprises former agricultural land now occupied by a brewery. There are no surviving elements of historic interest and a negligible value has been ascribed to the HLCA.

8.8.39 The new section of motorway would include some works within the HLCA but these are minor adjustments to tie into the local road network. There would be a slight increase in traffic noise within most of this HLCA (generally 0.5 to 6 decibels). The magnitude of impact has been assessed as no change, resulting in a neutral significance of effect.

M4CaN HLCA121 Magor and Undy

8.8.40 This HLCA comprises the current built development representing the modern expansion of the historic former fen edge settlements of Magor and Undy. Both of these have an early core of at least medieval date, with Magor being more substantial than Undy. The historic core of Undy is to the south of the South Wales to London Mainline railway, around the Church of St Mary, whereas most of the modern development is north of the railway and covers land formerly occupied by isolated farmsteads. The larger historic core at Magor is to the north of the railway and there has been no development south of the railway here. All of the historic elements of Magor are enclosed within later development, whereas those at Undy are slightly less enclosed. A low value has been ascribed to this HLCA.

8.8.41 The new section of motorway would pass to the west and north of the HLCA and would include some very minor works within the north western edge of the HLCA. These are mainly tie-ins to the existing local road network. That part of the new section of motorway to the north of the HLCA should be seen in the context of the existing M4 motorway here. There would be a slight reduction in traffic noise within most of this HLCA. Overall, the magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be neutral.

M4CaN HLCA126 Rogiet

8.8.42 This HLCA comprises the urban development centred around the core of the historic fen edge settlement of Rogiet. The historic settlement is likely to have

been of medieval date and is based around the Grade II* listed Church of St Mary and a series of adjacent historic buildings including the former manor house and rectory. There is now modern residential development immediately north and east of the historic core, whilst the South Wales to London Mainline railway is located just to the south. A low value has been ascribed to this HLCA.

- 8.8.43** The new section of motorway would extend to within approximately 175 metres of the eastern boundary of the HLCA but the work here mostly comprises tie-ins with the existing M48 motorway. With regard to the historic core of Rogiet, there may be some visibility from here towards the M48 junction and other associated elements of the new junction here, but this would be seen behind the nearby historic settlement at Llanfihangel. There would be a slight increase in traffic noise within this HLCA. The magnitude of impact has been assessed as negligible, with the consequent significance of effect considered to be slight.

M4CaN HLCA127 Ifton Manor

- 8.8.44** This HLCA comprises land that provides a clear separation between the residential areas of Rogiet and Caldicot. Ifton Manor is located immediately east of Rogiet and was formerly a small fen edge hamlet with its own church. The existing M48 motorway passes through the northern part of the HLCA. Field boundaries within the HLCA are mostly straight and suggest 18th or 19th century reorganisation of the landscape. A low value has been ascribed to this HLCA.

- 8.8.45** The new section of motorway would be located a considerable distance to the west of the HLCA (approximately 1 km) and the magnitude of impact is considered to be no change, resulting in a neutral significance of effect.

M4CaN HLCA128 Ifton Quarries

- 8.8.46** This HLCA comprises an area of former limestone quarries and woodland. The quarries were established in the late 19th century and early 20th centuries and during the work here human remains were found that have since been dated to the Neolithic period. The woodland has been established here since at least the mid-19th century but is likely to be much older. A low value has been ascribed to this HLCA.

- 8.8.47** The new section of motorway would be located some distance to the west of this HLCA (approximately 0.8 km) and the magnitude of impact is considered to be no change, resulting in a neutral significance of effect.

M4CaN HLCA129 Dewstow Park and Golf Course

- 8.8.48** Dewstow House represents the site of a medieval manorial settlement, although the current house is much later. Much of the wider historic parkland has been redeveloped as a golf course, but with minimal boundary loss. The gardens of Dewstow House represent the best-preserved Pulhamite landscape in Wales (Pulhamite is a type of artificial rock used for the creation of garden features such as grottoes and sunken rock gardens) and now comprise a registered Park and Garden of Special Historic Interest. Overall, a low value has been ascribed to this HLCA.

- 8.8.49** The new section of motorway would be located some distance from this HLCA (approximately 1.2 km) and the magnitude of impact is considered to be no change, resulting in a neutral significance of effect.

M4CaN HLCA130 Caldicot Urban

- 8.8.50** This HLCA comprises the modern built development of Caldicot, based around the earlier fen edge centred on a ruined medieval castle and the Church of St Mary. The settlement here expanded greatly from the mid-19th century onwards following the construction of the railway and the castle is now just beyond the eastern edge of the town. A low value has been ascribed to this HLCA.
- 8.8.51** The new section of motorway would be located some distance from this HLCA (approximately 1.7 km) and the magnitude of impact is considered to be no change, resulting in a neutral significance of effect.

Scheduled Monuments

Medieval Moated Site North of Church at Undy (SM001)

- 8.8.52** This is a well-preserved moated site located on the eastern edge of the modern development at Undy (Figure 8.5g). Recent residential development extends right up to the north western edge of the Scheduled area and partially along the south western side. There has been no archaeological investigation within the monument but by analogy it should represent a medieval site, possibly an isolated farmstead that was subsequently abandoned. Work associated with the installation of a water pumping station just to the west of the Scheduled site found a small building of medieval date, possibly a latrine, along with some Roman pottery.
- 8.8.53** The Scheduled area is L-shaped, with the northern end of the site bounded by the B4245 and the eastern side bounded by thick hedges with some mature trees. The only open aspect is to the south where there is a small field of permanent pasture with a water storage lagoon beyond this. The Scheduled area is also used as permanent pasture.
- 8.8.54** The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site leading to a better understanding of the processes of enclosure and drainage of this part of the Gwent Levels. There are some aesthetic values, although these are limited as a result of the adjacent modern development.
- 8.8.55** The new section of motorway would include temporary works within the fields immediately to the south east of the Scheduled Monument and also to the north, across the B4245. These works comprise the borrowing of rock and the storage of topsoil. The impact of these temporary works is assessed in Section 8.7 above, which addresses construction effects.
- 8.8.56** Following the temporary work during construction, the land affected would be reinstated and planted with woodland as part of the environmental mitigation required for the Scheme. Elements of the operational motorway may be visible from locations within and adjacent to the Scheduled Monument but this would be in the context of the existing motorway and local road network. There would be a negligible decrease in traffic noise, modelled to be in the region of around 1.5 decibels.

8.8.57 The long term impact of the new section of motorway on this Scheduled Monument has been assessed as negligible. This is a high value heritage asset and the consequent significance of effect is slight.

Devil's Quoit - Standing Stone South of Bencroft Lane (SM002)

8.8.58 This standing stone is located very close to the toe of the embankment that carries the existing M4 at the approach to Junction 23 (Figure 8.5g); it is within 5 metres of the highway boundary fence. Examination of historic mapping and available records indicate that the stone has not been moved from its location as originally surveyed in the late 19th century.

8.8.59 There has been no detailed archaeological investigation of this monument but by analogy it is considered likely to be of Bronze Age date. Individual standing stones that are not clearly associated with other stones (in rows or circles) can be difficult to date but some excavated examples have been found to mark burials of Middle or Late Bronze Age date. Other suggested purposes for standing stones include markers to commemorate specific events or boundaries, or foci for gatherings to observe notable occasions. The latter may include astronomical phenomena such as sunrise or sunset at special times of the year during which the standing stone can line up with specific points on the horizon to identify the correct date for the event.

8.8.60 It is possible that the Devil's Quoit standing stone marks a prehistoric burial but this could only ever be established through a programme of archaeological investigation that includes the removal of the stone (either on a temporary or permanent basis). Any other potential purpose for the standing stone, such as a boundary marker or an astronomical marker, would require a close link with its setting.

8.8.61 Nothing is currently known within the setting that can clearly be associated with the stone, although geophysical survey within the field containing the stone and the land immediately to the west has identified probable and possible archaeological features, including a ring-ditch and a small enclosure. The presence of the embankment of the existing M4 so close to the standing stone setting means that any association within the setting to the north and east of the monument is now lost, whilst the setting to the west takes in the built development of Undy and Magor and that to the south includes the B4245 and the South Wales to London Mainline railway.

8.8.62 Following completion of the construction phase, the Scheduled Monument would be located within an engineered embayment in the new embankment. The toe of the embankment would extend to approximately 5 metres from the standing stone on its north side, 10 metres on its west side and 12 metres on its east side. The revetments on each wide would be 1:2 engineered slopes (i.e. 60 degree faces) in reinforced soil. The highway drainage ditch along the toe of the embankment would extend across the embayment and would be placed within a culvert.

8.8.63 Much of the land subject to borrowing for stone would be reinstated and planted with woodland as part of the environmental mitigation required for the Scheme. However, the land closest to the standing stone would be the location of a water treatment area (including a reed bed). This would comprise a low earth bund just

a few metres beyond the highway drainage ditch with the water treatment area, reed bed and pollution control lagoon all contained within the bunded area.

8.8.64 Thus the setting of the standing stone following construction would include: engineered revetments walls with 1:2 slopes extending around three sides of the monument and to approximately 5 metres from the monument; a culverted highway drainage ditch along the toe of the new embankment at a distance of approximately 10 metres from the monument; and a low earth bund just the other side of the highway drainage ditch which then surrounds a water treatment area and reed bed. Beyond the water treatment area and reed bed would be the continuation of the embankment.

8.8.65 The noise modelling undertaken for the assessment of Scheme effects indicates a substantial reduction in traffic noise at this location but this is considered by the noise assessment team to be an anomalous prediction resulting from the complex situation here.

8.8.66 A new footpath link would be provided from the B4245 to the standing stone along with signage indicating the location of the monument. At the standing stone an information board would be provided that explains the likely nature and date of the monument.

8.8.67 The magnitude of impact has been assessed as major, i.e. there would be considerable loss of significance of the asset. This is a high value asset and the consequent significance of effect has been assessed as large.

Cross Base in Churchyard of Church of St Michael and All Angels, Llanfihangel, (SM003)

8.8.68 This is the base part of a medieval stone cross and is located in the churchyard of the Church of St Michael and All Angels at Llanfihangel (Figure 8.5g). There are three weathered steps in poor condition with a total height of approximately 1.3 metres. It is also a Grade II listed building.

8.8.69 The principal setting of this monument comprises the churchyard along with the other historic elements within the churchyard, i.e. the Grade II* listed church (potentially with elements of pre-Conquest date) and the historic gravestones. The historic farm buildings that are directly adjacent to the cemetery wall are also part of this principal setting.

8.8.70 The cross base is located quite close to the southern side of the church and there would be no views of any element of the new section of motorway from the cross base or in views towards the cross base. There may be some increase in traffic noise during operation but this location already experiences traffic noise from the M48 and M4 motorways as well as the B4245.

8.8.71 The magnitude of impact on has been assessed as negligible. This is a high value asset and the consequent significance of effect is slight.

Pen-y-Lan Camp, Michaelstone (SM004)

8.8.72 This is a small circular earthwork enclosure surrounding the summit of a low hill on a ridge overlooking Newport and the levels to the south (Figure 8.5a). It is approximately 73 metres in diameter with a single ditch and bank that have been much reduced by ploughing that is still ongoing. There are possible defences to

the north, which have a bivallate or annexed aspect. This has not been investigated and is assumed to be of late prehistoric date, possibly a small univallate hillfort.

8.8.73 The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site. However, its setting also makes a reasonable contribution to the understanding of that significance. These later prehistoric hillforts were usually placed in elevated locations that provided a very good level of visibility for their occupants. To some extent that was probably linked to control of transport routes and of resources and the visibility of the monument when seen from the outside may also have been part of this element of control.

8.8.74 This monument has an extensive setting, with wide-ranging views in all directions. Intervisibility between contemporary sites is often seen as an important part of setting and from Pen-y-Lan Camp there are views east along the ridge to Coed-y-Defaid Camp and to Tredegar Fort, both of which are likely to be a similar date. To the south and south east the view takes in the existing M4 motorway and the built development of western Newport including the substantial industrial and business parks as well as the docks. The Wentlooge Levels can be clearly seen as a distinct landscape, with the Severn Estuary beyond. In the long view in this direction the English coast is very visible in good weather, rising up to the higher ground of the Mendip Hills.

8.8.75 The western part of the new section of motorway would be visible from this monument, including the embankment carrying the motorway up from the Gwent Levels to the junction with the existing motorway at Castleton. However, this would be seen in the context of the existing road network as well as the substantial industrial developments such as Imperial Park. The longer views across the Wentlooge Levels and across the channel to the English coast would not be affected. The new bridge over the River Usk would also be visible, but again should be seen in the context of the existing industrial development within the docks and also the more modern vertical elements such as wind turbines and electricity pylons. There would also be a negligible increase in traffic noise, modelled as being in the region of 0.7 decibels at opening year.

8.8.76 The magnitude of impact has been assessed as negligible. This is a high value asset and the consequent significance of effect would be slight.

Coed y Defaid Camp, also known as Graig-y-Saeson (SM005)

8.8.77 This is a small bivallate enclosure, possibly a small hillfort of late prehistoric date. This is located on a hilltop just to the west of Newport, south of Pentre-poeth (Figure 8.5b). The interior is mainly flat but with an overall gentle slope to the south. A single entrance is apparent on the east side of the monument, although there may be others that are not so clear. The monument is heavily wooded and sits within a block of woodland and scrub.

8.8.78 The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site. However, its setting can also make a reasonable contribution to the understanding of that significance. These later prehistoric hillforts were usually placed in elevated locations that provided a very good level of visibility for their occupants. To some extent that was probably linked to

control of transport routes and of resources and the visibility of the monument when seen from the outside may also have been part of this element of control.

8.8.79 This monument currently has a fairly limited setting as a result of the woodland and scrub that cover most of the site. This prevents long-range views out in any direction other than to the north, across the built development of Pentre-poeth. If the woodland and scrub were to be cleared, it is likely that there would be extensive views in all directions. To the south and south east this view would take in the existing M4 and the built development of western Newport including the substantial industrial and business parks as well as the docks. The Severn Estuary would be visible and beyond this would be the English coast, rising up to the higher ground of the Mendip Hills.

8.8.80 As a result of the woodland and scrub at this monument, no element of the new section of motorway would be visible and there would be a negligible reduction in traffic noise, modelled as being in the region of 0.7 decibels. The magnitude of impact on this high sensitivity receptor has been assessed as no change, resulting in a neutral significance of effect.

Tredegar Fort (SM006)

8.8.81 This is a large multivallate hillfort situated in a commanding position on a hilltop on the western edge of Newport (Figure 8.5b). There are widely spaced ramparts and at least two phases of construction. It was formerly part of a golf course but is now used for recreation.

8.8.82 The significance of this Scheduled Monument is derived principally from its archaeological values, i.e. its potential to provide information regarding the date and nature of the site. However, its setting also makes a reasonable contribution to the understanding of that significance. These later prehistoric hillforts were usually placed in elevated locations that provided a very good level of visibility for their occupants. To some extent that was probably linked to control of transport routes and of resources and the visibility of the monument when seen from the outside may also have been part of this element of control.

8.8.83 This monument has an extensive setting, with wide-ranging views in all directions except to the east, where the view is constrained by the existing residential development which is located directly adjacent to the hillfort boundary. Intervisibility between contemporary sites is often seen as an important part of setting and from Tredegar Fort there are views west along the ridge to Coed-y-Defaid Camp and Pen-y-Lan Camp, both of which are likely to be a similar date. If the residential development to the east of the monument were not there it is likely that there would be a clear view in that direction to Wilcrick Fort, another major hillfort located approximately 13 km away. To the south and south east the view takes in the built development of western Newport, including the substantial industrial and business parks as well as the docks. The Wentlooge Levels can be clearly seen as a distinct landscape, with the Severn Estuary beyond. In the long view in this direction the English coast is very visible in good weather, rising up to the higher ground of the Mendip Hills.

8.8.84 The western part of the new section of motorway would be visible from this monument, including the embankment carrying the route up from the Gwent Levels to the junction with the existing motorway at Castleton. However, it would be seen in the context of the existing road network as well as the substantial

industrial developments such as Imperial Park. The longer views across the Wentlooge Levels and across the channel to the English coast would not be affected. The new bridge over the River Usk would also be visible, but again should be seen in the context of the existing industrial development within the docks and also the more modern vertical elements such as wind turbines and electricity pylons. There would be a negligible reduction in traffic noise, modelled as being around 1.8 decibels in the opening year.

- 8.8.85** The magnitude of impact has been assessed as negligible. This is a high value asset and the consequent significance of effect would be slight.

Goldcliff Moated House Site (SM007)

- 8.8.86** This is a rectangular platform measuring approximately 36 x 16 metres enclosed by a shallow flat-based moat (Figure 8.5c). Once thought to be the site of a former chapel, this is more likely to represent the remains of a small farmstead or possibly a house, almost certainly of medieval date. It is located to the north west of the village of Goldcliff and is approximately 2 km to the south of the new section of motorway.

- 8.8.87** These small moated sites represent the locations of isolated settlement elements that may be contemporary with the enclosure and drainage of the former saltmarsh during the medieval period. The moat was not defensive, rather it is part of the drainage required to ensure a dry(ish) platform on which a small farmstead or house could be established. Following abandonment, these platforms and their surrounding moats became incorporated into the predominantly pastoral landscape.

- 8.8.88** The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site, leading to a better understanding of the processes of enclosure and drainage of this part of the levels. Its setting can also make a reasonable contribution to the understanding of that significance in terms of location within a wider historic landscape character area that may relate to a single episode of enclosure and drainage. This can be understood through examination of aerial images and historic maps. The setting also includes the surrounding fields with their historic boundaries and internal drainage patterns and the lanes which represent historic routes within this landscape.

- 8.8.89** This moated site lies wholly within a square field that has thick hedges along each boundary. There are no views into the site from outside, or outside the site from within. Between the monument and the new section of motorway there are numerous other hedged boundaries and a number of buildings, including farms and houses. Whilst elements of the new section of motorway, in particular the River Usk Crossing, may occasionally be glimpsed from locations adjacent to the monument and there would be an increase in traffic noise (modelled as being around 6.4 decibels in the opening year, reducing to 4.9 decibels by 2037), its significance would not be greatly affected.

- 8.8.90** The magnitude of impact on this high sensitivity receptor has been assessed as negligible, resulting in a slight significance of effect.

Moated Site East of Grangefield Farm (SM008)

- 8.8.91** This moated site is a double enclosure just to the east of the present Grangefield Farm (Figure 8.5e). The inner enclosure measures approximately 25 x 20 metres and is surrounded by a shallow flat-based ditch. All of this is within a larger rectangular enclosure with active reens on three sides. This represents the site of a medieval grange farm which was an early property owned by the Cistercian abbey of Tintern. It is located approximately 650 metres south of the new section of motorway.
- 8.8.92** The significance of this Scheduled Monument is derived principally from its archaeological values, i.e. its potential to provide information regarding the date and nature of the site, leading to a better understanding of the processes of enclosure and drainage of this part of the Levels. However, there are also historic values resulting from its monastic associations. Its setting can also make a reasonable contribution to the understanding of that significance in terms of location within a wider historic landscape character area that may relate to a single episode of enclosure and drainage. This can be understood through examination of aerial images and historic maps. The setting also includes the surrounding fields with their historic boundaries and internal drainage patterns and also the lanes which represent historic routes within this landscape.
- 8.8.93** This moated site lies wholly within a field that has hedged boundaries on three sides. On the western side is Grangefield Farm, which mostly comprises modern farm buildings. There is an overhead electrical cable just on the southern side of the monument with a pylon adjacent to the farm buildings. To the north is a single field of permanent pasture and beyond that is the unclassified road known as Rush Wall. This is the boundary to the steelworks land and the northern side of the road here is planted with a very thick hedge. Elements of the new section of motorway, in particular the River Usk Crossing, may occasionally be glimpsed from locations adjacent to the monument and there would be an increase in traffic noise (modelled as being around 9.8 decibels in the openin year reducing to 9.6 decibels in 2037).
- 8.8.94** The magnitude of impact on this high sensitivity receptor has been assessed as minor, with the consequent significance of effect assessed as slight.

Wilcrick Hill Camp (SM009)

- 8.8.95** This is a large multivallate hillfort situated on a natural hill to the west of Magor (Figure 8.5f). It is oval in plan with at least four banks on the south side and possibly less on the other sides. Although it has not been excavated, this is almost certainly of late prehistoric date. It is currently heavily wooded.
- 8.8.96** The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site. However, its setting also makes a reasonable contribution to the understanding of that significance. These later prehistoric hillforts were usually placed in elevated locations that provided a very good level of visibility for their occupants. To some extent that was probably linked to control of transport routes and of resources and the visibility of the monument when seen from the outside may also have been part of this element of control.

- 8.8.97** This monument has an extensive setting, with wide-ranging views in most directions from the edge of the monument, outside the woodland. There are no outward views from within any part of the monument due to the dense nature of the woodland. The view from the southern and eastern edges of the monument takes in the nearby existing M4 and the recently-built hotel and other structures on the south side of the motorway at Junction 23A, as well as the substantial InBev brewery which is just to the east of the hillfort. There are interrupted views over the top of the brewery in which parts of the Severn Estuary can be glimpsed, with the English coastline just beyond. South of the brewery the view opens up a bit more and parts of the Caldicot Levels are visible but then the built development of the Gwent Europark and the steelworks appear in the middle ground and preclude any views beyond these structures.
- 8.8.98** There may be glimpsed views of the eastern part of the new section of motorway from the edge of this monument, possibly of the elevated section as the route rises on embankment to pass over the South Wales to London Mainline railway. However, the topography and the existing built development in the area means that most of the new section of motorway would remain fully screened from view. Noise levels within most of the monument would be slightly reduced, although there would be a negligible increase along the southern edge (modelled as being around 0.4 decibels in the opening year).
- 8.8.99** The magnitude of impact on this high sensitivity receptor has been assessed as no change, resulting in a neutral significance of effect.

Wentlooge Castle (SM010)

- 8.8.100** This is an earthen mound at Castleton, which represents the remains of a motte that would have been surmounted by a wooden or possibly stone keep (Figure 8.5a). This example is approximately 5 metres tall and 25 metres in diameter at the base; the flat upper surface has a diameter of approximately 12 metres. Very little is known about this monument although its medieval origin is not in doubt. It may have been the principal castle in the lordship of Gwynllwg in the immediate post-Conquest period, superseded by the castle at Newport. Archaeological trial trenching just to the west of the monument in 1997 did not find any features of interest (Barber, 1997). The motte is heavily overgrown and has residential development on three sides, with the only open aspect being to the west.
- 8.8.101** The significance of this Scheduled Monument is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site. Its setting does not make much of a contribution to the understanding of that significance, mainly because of the residential development that has been allowed to encroach on the monument resulting in its being enclosed on two sides and only very slightly open on a third side. There is no public access to the monument and the only available view is from within the residential development to the east where it appears as a very overgrown mound with a high fence placed tightly around the base.
- 8.8.102** The new section of motorway in this area would comprise tie-in work to connect the A48M to the new junction. Works in the vicinity of New Park Farm would not be visible from this monument, nor would the new water treatment area south of the A48 road at Castleton. There would be a slight increase in traffic noise, modelled as being around 3.3 decibels in the opening year.

- 8.8.103** The magnitude of impact on this high sensitivity receptor has been assessed as negligible, resulting in a slight significance of effect.

Newport Castle (SM011)

- 8.8.104** The castle was built between 1327 and 1368 on the west bank of the River Usk, replacing an earlier motte-and-bailey castle on Stow Hill, near to the cathedral church of St Woolos. The castle by the river may never have been finished on the town side and from the 16th century onwards it went into decline. Only the eastern part survives, hemmed in between the railway, modern roads and the river. The castle is also a Grade II* listed building.

- 8.8.105** The significance of the castle is derived principally from its archaeological value, i.e. its potential to provide information regarding the date and nature of the site. There are some limited aesthetic values but visually the site is currently poor, with all former public access now sealed off. Its setting does not make much of a contribution to the understanding of that significance - the B4591 Clarence Road bridge provides a view of the eastern façade but the inner ring road is located immediately to the west and the surrounding buildings do nothing to help with the appreciation of the castle.

- 8.8.106** The new section of motorway would be located more than 3 km to the south of the castle and no element of the route would be visible from this Scheduled Monument. The magnitude of impact on this high sensitivity receptor has been assessed as no change, resulting in a neutral significance of effect.

Listed Buildings

Transporter Bridge, Newport (LB001)

- 8.8.107** Just to the north of the docks the River Usk is spanned by the Newport Transporter Bridge (Figure 8.5c). This was constructed to link the town with industrial development on the east side of the river and was opened in 1906. A gondola or moving platform is suspended from a high level beam and carries vehicles and passengers across the river. The bridge spans more than 195 metres and is almost 74 metres high, this was required in order to allow tall-masted ships to reach the wharves upstream from the bridge. The engineers were RH Haynes, Borough Engineer of Newport and Ferdinand Arnodin who was famous as the inventor and engineer for transporter bridges worldwide. It is now a Grade I listed building.

- 8.8.108** Transporter bridges were used for crossings where the river banks are very low at the point of need, as they do not require approach ramps in order to achieve a high level crossing under which tall-masted ships could pass. This is the oldest and the largest of the three remaining transporter bridges in Britain (the others are located at Middlesbrough and Warrington); it is also the largest of eight such bridges that remain intact worldwide. There is ongoing discussion regarding a potential application to UNESCO for World Heritage Site status for all of the world's surviving transporter bridges but no submission has yet been made.

- 8.8.109** The original need for the bridge was to provide access for workers residing on the west side of the River Usk to reach the industrial sites that were setting up along the east bank. The 1st edition OS 6" mapping (c. 1887) shows virtually no industrial use of the east bank, although a branch line from the Great Western

Railway (now the South Wales to London Mainline railway) had been constructed to provide a link with a new wharf (Great Western Wharf) on the east bank, just to the north of Spytty Pill. By the time of the 2nd edition of this map (1902) a second branch line started at Somerton and extended much further to the south and development along the east bank of the river included the Orb Iron Works and the Union Dry Docks. The Transporter Bridge was built just downstream from the Orb Iron Works, which expanded considerably in the early part of the 20th century and formed the focus for other industrial development in this area.

8.8.110 Although the Transporter Bridge is no longer required for its original purpose of providing access for workers to reach the east bank of the river, it remains in use and is part of the local road network as well as being the place at which both the Wales Coastal Path and Route 4 of the National Cycle Network cross the river. It is widely recognised as a symbol of Newport and is promoted as a visitor attraction - there is a visitor centre on the west bank of the bridge and it is possible for visitors to cross the river in the gondola and also to climb the towers and cross by walking along the upper deck.

8.8.111 The significance of the Transporter Bridge is derived from a combination of historical values (as it provides evidence for a particular aspect of the past that now has reduced meaning), aesthetic values (in that the structure and its setting can be readily appreciated) and, possibly most importantly, communal values. These latter values accrue from the meanings that the bridge has for local people, both with regard to its initial and subsequent use but also to its position as an iconic symbol of the city. The setting of the bridge is very important in that it still provides a crossing point and, although there has been considerable change in the surrounding area, there are still some retained aspects which are contemporary with the bridge. These include the docks as well as some of the residential development on the west side of the river, within the Waterloo Conservation Area and the industrial sites on the east bank including the vast former Orb Iron Works (now Orb Electrical Steels).

8.8.112 The new River Usk Crossing that forms part of the Scheme would cross the river approximately 800 metres downstream from the Transporter Bridge, which would no longer be the lowest crossing on the river as it has been since it was constructed. Overall, the new crossing would be a 2.1 km long elevated structure with a central cable-stayed bridge and approach viaducts to the west and east.

8.8.113 This new crossing and particularly the two pylons for the cable-stayed bridge would be visible in many views towards the Transporter Bridge and in views from the land adjacent to the Transporter Bridge or indeed from the Transporter Bridge itself. The permeable nature of the viaduct structure and the cable-stayed bridge means that views towards the Transporter Bridge in which the new crossing would be in the foreground would not be blocked, similarly for views towards the mouth of the river and beyond from the Transporter Bridge.

8.8.114 Newport is a city renowned for innovative bridges over the River Usk. In addition to the Transporter Bridge, other more recent crossings (progressively moving upstream) include the following.

- The City Bridge (a bow-string arch bridge opened in 2004 as part of the A48 Southern Distributor Road and recognised by a Structural Steel Design Award in 2005).

- The George Street Bridge (opened 1964, this was the first cable-stayed bridge in the UK and thus the precursor to the new crossing, now a Grade II* listed building).
- The Newport Millennium or City footbridge (opened 2006, the innovative mast structure has attracted several awards).

8.8.115 The new crossing would thus represent the latest and largest bridge across the Usk at Newport. Overall, the magnitude of impact on the Transporter Bridge has been assessed as minor. This is an asset of very high value and the consequent significance of effect is considered to be moderate.

Church of St Michael and All Angels, Llanfihangel (LB002)

8.8.116 This medieval church is situated between Green Farm and Old Court Farm at Llanfihangel, south of the B4245 Caldicot Road (Figure 8.5g). It is mostly of 13th century date (although a church here is mentioned in Domesday). The chancel was extended in the 14th century and the church was heavily restored in 1904. There is a tower of reasonable height at the west and a possible Norman arch around the main south door. The church is now redundant (it closed in 1973); it is in the care of the Friends of Friendless Churches and is managed by the Caldicot and District Local History Society. It is also a Grade II* listed building.

8.8.117 The significance of the church is derived from a combination of evidential, historical, aesthetic and communal values. Its location within a group of historic farmhouses and farm buildings provides a visual link to the former settlement here, now much reduced. The church is aesthetically pleasing and the architecture provides evidence of the building's history; there is also good associated documentary material. Communal values accrue from the former congregation as well as the current occasional visitors.

8.8.118 The setting of the church makes a reasonable contribution to its significance. The primary setting includes the churchyard and the adjacent farm buildings, but a wider setting takes in the nearby fields and the settlement at Rogiet. The setting also includes the existing M4 and M48 and the B4245, all of which are sources of traffic noise and are lit at night.

8.8.119 Following construction the change within this setting resulting from the new section of motorway would include the Magor Interchange, associated slip roads and water treatment area and reed bed 12b. Much of this would be visible from the churchyard and, although the two motorways are already visible from here, the new Caldicot Road Roundabout at the Magor Interchange would be less than 100 metres from the north western edge of the churchyard. The visual impact would therefore be increased. Over time this impact may decrease as a result of the woodland planting in this area that is required as part of the environmental mitigation for the Scheme. There would be an increase in traffic noise, modelled as being around 3.2 decibels in the opening year and rising to 4.6 decibels by 2037.

8.8.120 The magnitude of impact on this Grade II* listed church has been assessed as minor. This is a high value asset and the significance of effect is considered to be slight.

Castleton Baptist Church (LB003)

- 8.8.121** This Grade II listed building is situated on the corner of the A48 and Marshfield Road (Figure 8.5a). It was built in 1859 to the design of RG Thomas and is an early example of the Italianate-style façade chapel that later became popular in parts of South Wales. The chapel is built in limestone and red sandstone and has a bell-tower and spire.
- 8.8.122** The significance of the chapel is derived from a combination of evidential, historical, aesthetic and communal values. The building has considerable church aesthetic qualities and the style is important in terms of architectural history in the region. Communal values accrue from the former congregation as well as the current occasional visitors.
- 8.8.123** The setting of the chapel makes little real contribution towards its significance. The A48 here is a busy dual-carriageway and there is a steel footbridge over the road very close to the chapel. Modern built development is present on both sides of the A48 and also along Marshfield Road, although some of the buildings here are contemporary with (or potentially older than) the chapel.
- 8.8.124** In this area the new section of motorway would comprise the tie-in to the existing A48(M) and also the establishment of a water treatment area south of the A48, east of Castleton. No element of the new section of motorway would be visible from the chapel.
- 8.8.125** The magnitude of impact on this Grade II listed chapel (of medium value) has been assessed as no change, resulting in a neutral significance of effect.

Coach & Horses Public House, Castleton (LB004)

- 8.8.126** Located on the north side of the A48 on the eastern side of Castleton (Figure 8.5a), this is a roadside coaching inn of 18th century date with modern alterations, which is now a Grade II listed building. It has two storeys with rendered elevations and a steeply pitched slated roof. The gable end chimneys have been rebuilt in brick. A lower two storey extension on the east side is probably of 19th century date.
- 8.8.127** The significance of this public house is principally derived from its evidential and historical values with regard to its architectural history and associated documentary records. There may also be some communal value and limited aesthetic value. The key element within its setting is the A48, now a busy dual carriageway. Formerly located adjacent to a large house (Bryn Ivor Hall) with a formal garden and lodge facing onto the A48, all of this has subsequently been removed and a new residential unit has been built to the rear of the public house.
- 8.8.128** The new section of motorway would require the establishment of a water treatment area to the south of the A48, opposite the Coach & Horses. A screen of shrubs would be planted along the northern edge of the water treatment area and this would partially screen any view of the new section of motorway from the listed building. There would be an increase in traffic noise, modelled as being around 7.3 decibels in the opening year and reducing to 5.9 decibels by 2037.
- 8.8.129** The magnitude of impact on this Grade II listed building (of medium value) has been assessed as negligible and the consequent significance of effect is considered to be neutral.

Waterloo Hotel Public House, Pillgwenlly, Newport (LB005)

- 8.8.130** This substantial public house is situated on the corner of Alexandra Road and Watch House Parade, just to the north of the access to Newport Docks (Figure 8.5b). It opened in 1904 and replaced an earlier public house on the same site. A fine contemporary interior has survived including a long L-shaped faience bar and etched glass screens between booths. It is three storeys in red brick elevations with terracotta detailing. At the corner is a tall hexagonal clock tower with an ogee roof covered in fish-scale clay tiles. It is now a Grade II listed building.
- 8.8.131** The significance of this public house is principally derived from evidential and historical values associated with the architecture and documented use of the building. However, there are also aesthetic values associated with the design and materials and communal values associated with present and former customers. The setting of the listed building makes a reasonable contribution to its significance as this building forms a key part of a planned redevelopment of this area following the expansion of Newport Docks at the end of the 19th century. Other important elements within the setting include the Transporter Bridge, which is located just to the east and the entrance to Newport docks which is directly across the A48 from the public house.
- 8.8.132** The new River Usk Crossing would be located approximately 900 metres to the south east of the Waterloo Hotel and would be very visible in views from or towards this building. However, this would not affect the relationship of the public house with the other buildings in this early 20th century redevelopment or with the Transporter Bridge and the entrance to the docks.
- 8.8.133** The magnitude of impact on this Grade II listed building (of medium value) has been assessed as minor, resulting in a slight significance of effect.

Pye Corner Farm, Nash (LB006)

- 8.8.134** This former farmhouse is located in the north east part of the road junction at Pye Corner (Figure 8.5c). It may well have been initially constructed in the 17th century although it was substantially rebuilt in the late 18th or early 19th century and was modernised in the later 19th century. It is stone-built in two storeys with render and has a slate roof and brick end chimneys. It has recently been restored following a period of deterioration and is a Grade II listed building.
- 8.8.135** The significance of the building is principally derived from the evidential values that arise from its architectural history and what information this could provide with regard to the date of the structure and its historical development. There may be some historic value if associated documentary material survives and certainly some aesthetic value with regard to the visual nature of the former farmhouse. Communal value may also be present, associated with past and current residents and also other local people who have known the building over time.
- 8.8.136** The setting of the former farmhouse makes some contribution to its significance as there are still fields adjacent to the building that may have been part of the former landholding associated with the farm. A row of cottages that used to be present immediately to the east of the farmhouse have been demolished and there has been some modern development including the building to the south which is now occupied by Natural Resources Wales. Some of the land

historically associated with the farm and therefore representing an important element of its setting would be lost to the permanent land take and a small area to the north of the new section of motorway would be separated from the former farmhouse.

8.8.137 The new section motorway would pass approximately 125 metres to the north of the farmhouse and would comprise a low embankment carrying the road. A linear belt of trees and shrubs would be planted at the base of the embankment to provide screening of the road and the traffic here. To the east, the realigned Nash Road would cross Broad Street Common approximately 100 metres to the east of the farmhouse, and there would be virtually no traffic passing west of the building as the existing Nash Road alignment would be stopped up and would provide access only to the former chapel. Traffic along this part of Broad Street Common (west of the new junction with Nash Road) would also be much reduced. However there would be an overall increase in traffic noise, modelled as 12 decibels in the opening year reducing to 10.4 decibels by 2037.

8.8.138 On balance the magnitude of impact on this Grade II listed building (of medium value) has been assessed as minor, resulting in a slight significance of effect.

[Fair Orchard, Nash \(LB007\), Fair Orchard Barn and Attached Agricultural Buildings \(LB008\)](#)

8.8.139 Fair Orchard is located approximately 400 metres south of Pye Corner, on the western side of Nash Road (Figure 8.5c). It is a former farmhouse of early 19th century date. In two storeys with a hipped slate roof and cement-rendered walls, this has partially been listed due to its group value with the adjacent barn. The barn is just to the south of Fair Orchard and is an 18th century structure with 19th century additions to the rear. It is stone-built with a slate roof and has a large threshing doorway. Fair Orchard and the adjacent barn represent two separately listed buildings, both at Grade II.

8.8.140 The significance of this group of buildings is principally derived from the evidential values that arise from their architectural histories and what information this could provide with regard to the dates of the structures and their historical development. There may be some historic value if associated documentary material survives and certainly some aesthetic value with regard to the visual nature of the former farmhouse and adjacent structures. Communal value may also be present, associated with past and current residents and other local people who have known the buildings over time.

8.8.141 The setting of the buildings at Fair Orchard makes some contribution to their significance but the key relationships are with the other buildings in the group. There are mature woodland blocks to the north, west and south meaning that any open views are to the east and north east.

8.8.142 The works in this area would include the start of the realignment of Nash Road and the establishment of a small water treatment area on the eastern side of this realignment. These are very minor works and very little would be visible from Fair Orchard; the water treatment area would be screened on all sides with shrubs planted as part of the landscape strategy. There would be an increase in traffic noise, modelled as 13.6 decibels in the opening year and reducing to 12.5 decibels in 2037.

8.8.143 The magnitude of impact on these Grade II listed buildings (of medium value) has been assessed as minor and the consequent significance of effect in each case is slight.

Tatton Farm, Nash (LB009)

8.8.144 Located approximately 1 km north east of Pye Corner (Figure 8.5c), this is a three storey asymmetrical farmhouse of early 19th century appearance but potentially with earlier origins. It is rubble-built with a slate roof and three red-brick chimneys. Currently uninhabited, this Grade II listed farmhouse is in a poor state of repair.

8.8.145 The significance of the building is principally derived from the evidential values that arise from its architectural history and the information this could provide with regard to the date of the structure and its historical development. There may be some historic value if associated documentary material survives and certainly some aesthetic value with regard to the visual nature of the former farmhouse although this may not be readily apparent due to the current poor state of the structure. Communal value may also be present, associated with former residents and other local people who have known the building over time.

8.8.146 The setting of the former farmhouse makes a reasonable contribution to its significance as it is currently located within a landscape of small fields that probably represent the arrangement of the land immediately after enclosure and drainage. The sinuous green lane adjacent to Julian's Reen is the former access route to the farmhouse and again is likely to be a long-standing feature in this landscape, possibly following the line of a pre-drainage watercourse. However, modern development in the form of large industrial warehousing is encroaching from the west and is separated from the farmhouse by just one field and the green lane.

8.8.147 Some of the land historically associated with the farm and therefore representing an important element of its setting would be separated from it. Land to the north which is also part of the setting of the farm would be designated as ecological mitigation land required as part of the Scheme and this would provide a further level of protection against development here.

8.8.148 The new section of motorway would pass approximately 150 metres south of the farmhouse on a low embankment. No screen planting is proposed for the embankment here, although it may be possible to undertake specific planting closer to the building in order to mitigate the visual impact. There would also be a substantial increase in traffic noise, modelled as 20.5 decibels in the opening year and reducing to 18.6 decibels by 2037. A new access would be established from the west as the green lane adjacent to Julian's Reen would be severed.

8.8.149 The magnitude of impact on this Grade II listed building (of medium value) has been assessed as major, with the consequent significance of effect considered to be large. If some screen planting were to be undertaken closer to the building than this may reduce the magnitude of impact, but this cannot be assessed as part of the current design.

Great House Farmhouse, Undy (LB011)

8.8.150 This farmhouse is located to the east of Undy, just to the south of the South Wales to London Mainline railway (Figure 8.5g). It was formerly known as Undy

Farm and may have originated in the late 17th century but has been subsequently extended and the roof pitch altered. It has two storeys and appears to be rubble-built with red-brick dressings. The attached stone-built range of outbuildings is one storey with a former cheese-loft above. It is now a Grade II listed building.

- 8.8.151** The significance of the building is principally derived from the evidential values that arise from its architectural history and the information this could provide with regard to the date of the structure and its historical development. There may be some historic value if associated documentary material survives and certainly some aesthetic value with regard to the visual nature of the farmhouse. Communal value may also be present, associated with past and current residents and other local people who have known the building over time.
- 8.8.152** The setting of the farmhouse makes some contribution to its significance as there are fields adjacent to the building which are part of the landholding associated with the farm. However, the railway is very close to the farmhouse and has clearly severed some of the former landholding. There are also a number of farm buildings adjacent to the farmhouse that have some historic merit along with some more modern ones.
- 8.8.153** The new section of motorway in this area comprises elements to the north of the B4245, including the off-slip from the westbound M4 connecting to the B4245. None of this would affect the relationship of the farmhouse with its landholding or associated farm buildings. There would be a negligible decrease in traffic noise (modelled as 1.9 decibels in the opening year).
- 8.8.154** The magnitude of impact on this Grade II listed building (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Old Court Farmhouse, Llanfihangel (including attached cross wing known as Llanfihangel Court (LB012), also stables (LB013) and farm range (LB014))

- 8.8.155** The farmhouse is located to the west of the Church of St Michael and All Angels and has a separate associated farmyard and farm buildings to the north (Figure 8.5g). The house is mostly 16th century in date but the south porch and wall may be surviving elements of an earlier building, possibly a fortified house. A separate cross wing was added to the west of the farmhouse in the 19th century and a single storey former brewhouse is adjoining to the east. The farmhouse has two storeys and is rubble-built, part whitewashed, with a slate roof.
- 8.8.156** The small stable block is of 19th century date. It has two storeys and four bays and is rubble-built with a slate half-hipped roof. There are steep external stone steps leading to a hayloft with pitching doors at either end. Situated directly adjacent to the churchyard wall, the farm range mainly post-dates the 1830 Ordnance Survey map and overall is likely to be of mid-19th century date. Rubble-built with Welsh slate roofs, the southern part of the range is two storeys and five bays with external stone steps leading to a granary or hayloft. The attached single storey cowshed has plank doors. The farmhouse, stables and farm range are each separately listed at Grade II.
- 8.8.157** The significance of the farmhouse and farm buildings is derived from a combination of evidential, historical, aesthetic and communal values. Their location within a group of other historic farm buildings and a redundant church

provides a visual link to the former settlement here, now much reduced. The buildings are aesthetically pleasing and the architecture provides evidence of the buildings' history. Communal values accrue from former and present occupants as well as local people who have known the buildings over time.

8.8.158 The setting of the farmhouse and farm buildings makes a reasonable contribution to their significance. The primary setting includes the farmyard and the adjacent farm buildings, along with the church and churchyard, but a wider setting takes in the nearby fields. The setting also includes the existing M4 and M48 and the B4245, all of which are sources of traffic noise and are lit at night.

8.8.159 Following construction the change within this setting resulting from the new section of motorway would include elements of the Magor Interchange, including the slips roads and water treatment area and reed bed 12b. Much of this would be visible from the farmhouse and farm buildings and although the two motorways are already visible from here, the new Caldicot Road Roundabout would be approximately 150 metres from the farmhouse. The visual impact would therefore be increased and there would be a negligible increase in traffic noise, modelled as 0.1 decibels in the opening year and 1.2 decibels by 2037.

8.8.160 The magnitude of impact on these Grade II listed buildings has been assessed as minor. These are medium value assets and the significance of effect in each case is considered to be slight.

Green Farmhouse, Llanfihangel, including attached walls and railings to front (LB015), also barn (LB016) and cowhouse range (LB017)

8.8.161 The farmhouse is located to the east of the Church of St Michael and All Saints and has a separate associated farmyard and farm buildings to the south and west (Figure 8.5g). The farmhouse is of 18th century date and was formerly known as New House Farm. It has two storeys and an attic and is rubble-built (now painted) with an artificial slate roof and brick end stacks. There are decorative iron railings which enclose the front garden and extend from a wall adjoining the farmhouse.

8.8.162 This barn is of early 19th century date and is built in coursed rubble with a slate roof. It has six bays and a high gabled porch to the west. The cowshed forms the northern boundary of the farmyard and is of 19th century date. It is a long single storey building in rubble with a pantile roof and plank doors all facing south. The farmhouse, barn and cowhouse range are each separately listed at Grade II.

8.8.163 The significance of the farmhouse and farm buildings is derived from a combination of evidential, historical, aesthetic and communal values. Their location within a group of other historic farm buildings and a redundant church provides a visual link to the former settlement here, now much reduced. The buildings are aesthetically pleasing and the architecture provides evidence of the buildings' history. Communal values accrue from former and present occupants as well as local people who have known the buildings over time.

8.8.164 The setting of the farmhouse and farm buildings makes a reasonable contribution to their significance. The primary setting includes the farmyard and the adjacent farm buildings, along with the church and churchyard, but a wider setting takes in

the nearby fields. The setting also includes the existing M4 and M48 and the B4245, all of which are sources of traffic noise and are lit at night.

8.8.165 Following construction the change within this setting resulting from the new section of motorway would include the Magor Interchange, associated slip roads and water treatment area and reed bed 12b. Much of this would be visible from the farmhouse and farm buildings and although the two motorways are already visible from here, the new Caldicot Road Roundabout would be less than 150 metres from the farmhouse. The visual impact would therefore be increased and there would be a slight increase in traffic noise, modelled as 2.4 decibels in the opening year and 3.4 decibels by 2037.

8.8.166 The magnitude of impact on these Grade II listed buildings has been assessed as minor. These are medium value assets and the significance of effect in each case is considered to be slight.

Old Windmill, Rogiet (LB019)

8.8.167 This is situated on higher ground to the north of the village, immediately north of the existing M4 (Figure 8.5g). The windmill tower was probably built around AD 1500 and is referenced in a lease dated 1526. There is no evidence as to when it went out of use although it may have operated as a watch-tower in the 18th century. The earliest detailed mapping of the area dates from 1746 and shows a round building here; on the 1830 Ordnance Survey map it is shown as 'Old Mill'. It is now a Grade II listed building.

8.8.168 The significance of the windmill tower is primarily derived from its evidential values, i.e. the potential to provide information about its date and the history of its use. There are limited historical, aesthetic and communal values. Its setting makes some contribution towards that significance with regard to the hilltop location (to exploit the wind resources).

8.8.169 The operation of the new section of motorway following the construction would not affect this building. Any views west towards the revised junction at the end of the M48 should be seen in the current context of the existing motorway network. There would be a negligible increase in traffic noise, modelled as 1.8 decibels in the opening year and 2.2 decibels by 2037.

8.8.170 The magnitude of impact on this Grade II listed building (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Tredegar House, Newport (LB020)

8.8.171 This is a large country house, formerly the seat of the Morgan family, set within a landscaped park (Figure 8.5b). The present house was built *circa* 1664-72 but incorporates part of an earlier (medieval) house within the south west wing. It is now a Grade I listed building and is owned by the National Trust. There are other listed buildings adjacent to the house and within the designed park and the formal gardens.

8.8.172 The significance of Tredegar House is derived from a range of heritage values. There is considerable evidential value with regard to the fabric of the building and the associated documentary material, along with historic values linked to the association with a notable family. There are also clear aesthetic values and

communal values related to the numerous visitors as well as the current and former staff and also local residents.

- 8.8.173** The setting of the house makes a considerable contribution to that significance, especially the formal gardens and the designed park to the south of the A48. The wider setting is not so good; modern residential development has been allowed to encroach very close to the house and there is additional development nearby in the form of offices and business parks. The A48 and the existing M4 motorway have severed parts of the historic park and these are now isolated from the house - this includes the severance of a tree-lined avenue which extends north west from the house.
- 8.8.174** The new section of motorway would pass approximately 1.7 km to the south east and 1.85 km to the south west of the house. No part of this would be visible from the house (even from the upper floors) due to the other modern development in the area and there would be a negligible decrease in traffic noise (modelled as 1.2 decibels in the opening year and 1.8 decibels by 2037). The long term visual and aural impacts would therefore be non-existent.
- 8.8.175** However, it is important that measures are taken to ensure that the new section of motorway does not lead to any reduction in visitor numbers, as this would lead to loss of revenue and could potentially result in a reduced maintenance budget that may adversely impact on the fabric of the building.
- 8.8.176** Currently, many visitors access the house via the existing Junction 28 of the M4; the house is clearly signed on the approach to this junction and from the junction itself. With the new section of motorway in place it will be important that signage is put in place that continues to direct visitors (both eastbound and westbound) along the reclassified M4 rather than along the new section of motorway south of Newport. Although it would be possible to access Tredegar House from the new motorway by coming off at the Docks Junction, the route from here is more convoluted and likely to be seen as less attractive than the present access route and thus less likely to be used. Hence the replacement signage needs to be well considered and in place before the new section of motorway becomes operational.
- 8.8.177** On the basis that adequate signage has been designed and installed, the magnitude of impact on the Grade I listed Tredegar House (of high value) has been assessed as no change, resulting in a neutral significance of effect.

St Woolos Cathedral, Newport (LB021)

- 8.8.178** A place of worship was traditionally founded here *circa* AD 500 by Gwyllyw, Lord of Gwynllwg (Figure 8.1a). This early church was probably located at the place of the present St Mary's Chapel and there is some pre-Norman masonry here. A nave was added in around 1080 and the chapel was raised again at around AD 1200. The church was further expanded in the 15th century and restored in the early 19th century. Full cathedral status was achieved in 1949 and this is now a Grade I listed building.
- 8.8.179** The significance of the cathedral is derived from a combination of evidential, historical, aesthetic and communal values. The building is aesthetically pleasing and the architecture provides evidence of the building's history; there is also good associated documentary material. Communal values accrue from the current and former congregation as well as visitors.

- 8.8.180** The setting makes a reasonable contribution to the significance of the cathedral; its elevated location makes it a clear focal point and it is surrounded by a church yard with a raised walkway around the southern and eastern sides. However, the presence of large mature trees on three sides along with the built development in the surrounding area means that views towards and from the cathedral grounds are actually quite limited. A car park adjacent to the north side of the building is also a negative element within the immediate setting.
- 8.8.181** The new section of motorway would pass approximately 2.8 km to the south of the cathedral. It may be possible to gain glimpsed views of the new River Usk Crossing from locations close to the cathedral but this should be seen in the current context of the docks with their associated industrial buildings and also the existing taller elements in that view such as wind turbines and electricity pylons.
- 8.8.182** The magnitude of impact on this Grade I listed building (of high value) has been assessed as no change, resulting in a neutral significance of effect.

Church of St Mary the Virgin, Nash (LB022)

- 8.8.183** This is located on the west side of the village of Nash (Figure 8.5c). The church has a large medieval tower with a fine spire, whereas most of the medieval churches on the Gwent Levels have towers without spires. The church is probably 12th or 13th century but was substantially rebuilt in the 16th century and also has elements of 18th and 19th century date; it is now a Grade I listed building.
- 8.8.184** The significance of the church is derived from a combination of evidential, historical, aesthetic and communal values. The building is aesthetically pleasing and the architecture provides evidence of the building's history; there is also decent associated documentary material (the church formerly belonged to Goldcliff Priory). Communal values accrue from the current and former congregation as well as visitors.
- 8.8.185** The immediate setting of the church comprises the churchyard within which it is located. The perimeter of the churchyard is planted with mature trees and there are very limited views out from here in any direction. There is, however, a much wider setting in which the church spire is visible from a considerable distance within this flat landscape and this wider setting makes some contribution towards the significance of the church as a long-standing landmark.
- 8.8.186** The new section of motorway would pass approximately 1.5 km to the north of the church and here the route would not be visible in any view from or towards the church. The new River Usk Crossing would be approximately 2.7 km to the north west of the church. This element of the new section of motorway, particularly the two towers supporting the cable-stayed bridge, would be visible in views from the south east of the church in which the spire would also be seen. However, any such views already include substantial industrial buildings on the east bank of the river and taller vertical elements such as wind turbines and electricity pylons. There would be an increase in traffic noise, modelled as 7.7 decibels in the opening year and 6 decibels in 2037.
- 8.8.187** The magnitude of impact on this Grade I listed building (of high value) has been assessed as negligible, resulting in a slight significance of effect.

Church of St Mary, Marshfield (LB023)

- 8.8.188** This Grade II* listed parish church is located to the east of the modern settlement of Marshfield (Figure 8.5a) and represents the surviving part of the medieval settlement focus here along with Church Farm. It is likely to be 13th or 14th century date, with additional material of 15th and 16th century date and full restoration in the Victorian period. The church was said to have been built in AD 1135 by the Countess Mabel, in memory of her father Robert Fitzhamon, the Norman lord of Glamorgan and Wentlooge.
- 8.8.189** The significance of the church is derived from a combination of evidential, historical, aesthetic and communal values. The architecture provides evidence of the building's history and has good aesthetic values. There is some associated documentary material whilst communal values accrue from the current and former congregation as well as visitors.
- 8.8.190** The immediate setting of the church comprises the churchyard within which it is located. The perimeter of the churchyard is planted with mature trees and there are very limited views out from here in any direction except to the south which provide a view of Church Farm. The absence of a spire and limited height of the tower means that this church does not represent a distinct landmark within the wider landscape.
- 8.8.191** The new section of motorway would pass approximately 1.8 km to the north east of this church. No element of the new section of motorway would be visible from the churchyard or in any longer views in which the church is a key element in that view. There would be a negligible increase in traffic noise, modelled as 2.2 decibels in the opening year and 2.1 decibels in 2037.
- 8.8.192** The magnitude of impact on this Grade II* listed building (of high value) has been assessed as no change, resulting in a neutral significance of effect.

Church of St Bridget, St Brides Wentlooge (LB024)

- 8.8.193** This small two-cell church is located on the northern side of the village (Figure 8.1a). It is probably 12th or 13th century in origin and was substantially rebuilt in the 15th century in Perpendicular Style, including the addition of a three-stage tower as well as the two bay north chapel. There is rare surviving pre-Reformation statuary on the tower, possibly showing the Apostles. It is now a Grade II* listed building.
- 8.8.194** The significance of the church is derived from a combination of evidential, historical, aesthetic and communal values. The architecture provides evidence of the building's history and has good aesthetic values. There is some associated documentary material whilst communal values accrue from the current and former congregation as well as visitors.
- 8.8.195** The immediate setting of the church comprises the churchyard within which it is located. The perimeter of the churchyard is planted with mature trees and there are very limited views out from here in any direction. There is built development (mostly modern farm buildings) on three sides of the churchyard, leaving only the land to the north undeveloped. The absence of a spire and limited height of the tower means that this church does not represent a distinct landmark within the wider landscape.

8.8.196 The new section of motorway would pass approximately 1.2 km to the north of this church. No element of the new section of motorway would be visible from the churchyard or in any longer views in which the church is a key element in that view. There would be an increase in traffic noise, modelled as 4.6 decibels in both the opening year and in 2037.

8.8.197 The magnitude of impact on this Grade II* listed building (of high value) has been assessed as no change, resulting in a neutral significance of effect.

George St Bridge, Newport (LB025)

8.8.198 This bridge provides a crossing of the River Usk just to the south of the centre of Newport (Figure 8.1a). Opened in 1964, it was the first cable-stayed cantilever bridge in Britain. Designed by Mott, Hay & Anderson and the Borough Engineer D P Cartwright, there are two pairs of concrete masts each with three sets of four cable stays with the approaches supported on cylindrical concrete pillars. Despite its relatively recent date, this is now a Grade II* listed building.

8.8.199 The significance of the bridge is principally derived from its evidential value as a form of pioneering construction and design, which includes the available documents associated with these aspects. There are also aesthetic and communal values associated with users of the bridge and local residents.

8.8.200 The setting of the bridge comprises the river and the built development on either bank. The river is the most crucial element of the setting; the built development is far less important. Other elements within the setting include the other bridges over the river that are visible from this one, such as the Newport Millennium or City Footbridge upstream and the City Bridge downstream. Both of these post-date the George Street Bridge and serve to emphasise the importance of Newport as a crossing place. There are also views in which the George Street Bridge is visible along with the City Bridge and the Transporter Bridge.

8.8.201 The new River Usk Crossing would be located approximately 2.2 km to the south of the George Street Bridge. There may be glimpses of this from the George Street Bridge, particularly of the two towers supporting the central cable-stayed cantilever bridge. However, this should be seen as a beneficial impact in that the design of the new cable-stayed cantilever bridge represents the evolution of an engineering concept first examined in the form of the George Street Bridge.

8.8.202 The magnitude of impact on this Grade II* listed building (of high value) has been assessed as minor, with the consequent significance of effect considered to be slight beneficial.

Whitson Court including attached pavilions and garden walls (LB026)

8.8.203 This Grade II* listed country house is located towards the northern end of the planned linear settlement of Whitson in the Caldicot Levels (Figure 8.5e). It was built for William Philips (1752-1836) and the architect John Nash may have played some role in its design. The house has three storeys over a vaulted basement and is in brick with Bath Stone dressings and slate roofs. The main house is linked via brick walls to north and south service pavilions.

8.8.204 The significance of the house is derived from a combination of evidential, historical, aesthetic and communal values. The architecture provides strong evidence of the building's history and has excellent aesthetic values. There is

some associated documentary material whilst communal values accrue from former and present occupants as well as local people who have known the buildings over time.

- 8.8.205** Key elements within the setting of the house include the landscaped grounds, which are well-planted and include perimeter screen planting on all sides. The road to the west along with the adjacent watercourse on its eastern side and the raised channel of Monk's Ditch on the west are also part of the setting, along with the wider views available from the upper floors.
- 8.8.206** The new section of motorway would pass approximately 1.2 km to the north of the house and this area would include the Glan Llyn junction, which would be fully lit at night. There may be views from the upper floors of the house towards the new section of motorway but these views already include the large caravan storage yard at Arch Farm, the substantial electricity substation and the remaining developed part of the steelworks. However there would be an increase in traffic noise, modelled as 9.3 decibels in the opening year and 8.1 decibels in 2037.
- 8.8.207** The magnitude of impact on this Grade II* listed building (of high value) has been assessed as moderate and the consequent significance of effect is considered to be moderate.

Whitson Church (LB027)

- 8.8.208** This Grade II* listed medieval church is actually located a short distance to the south of the planned linear settlement of Whitson (Figure 8.1b). It has 12th century origins; the western tower was added in the later medieval period and there is also a 19th century porch and much restoration at the same time.
- 8.8.209** The significance of the church is derived from a combination of evidential, historical, aesthetic and communal values. The architecture provides evidence of the building's history and has good aesthetic values. There is some associated documentary material whilst communal values accrue from the current and former congregation as well as visitors.
- 8.8.210** The immediate setting of the church comprises the churchyard within which it is located. The perimeter of the churchyard is planted with mature trees and there are no views out from here in any direction except to the west. There is built development (including modern farm buildings) to the north and south. The absence of a spire and limited height of the tower means that this church does not represent a distinct landmark within the wider landscape.
- 8.8.211** The new section of motorway would pass approximately 2.3 km to the north of this church. No element of the new section of motorway would be visible from the churchyard or in any longer views in which the church is a key element in that view.
- 8.8.212** The magnitude of impact on this Grade II* listed building (of high value) has been assessed as no change, resulting in a neutral significance of effect.

Parks and Gardens of Special Historic Interest

Tredegar Park, Newport (PK001)

- 8.8.213** This Grade II* registered historic park and garden includes the formal and informal grounds of Tredegar House (Figure 8.5b). The house was constructed as a large private residence on the western fringe of Newport, which was the principal home of the Morgan family. The present mansion was built in around 1664-72 and incorporates part of a preceding manor house of late 15th or early 16th century.
- 8.8.214** The park encompasses formal walled gardens of 17th century date and parts of the late 18th century landscape park extending onto higher ground to the north and north west of the house. These more elevated parts of the park are severed from the formal landscaping around the house by the existing M4 and the M48. An avenue of trees extends north west from the house and across the A48 and the M4 into what was known as the 'New Park', possibly part of a medieval park called Cleppa Park. A second avenue leading up towards Tredegar Fort was partially removed as part of the reorganisation of the landscape in the 1790s and little evidence for this now survives on the ground.
- 8.8.215** A sinuous lake was established to the north of the house in the 1790s and much of the current formal landscape adjacent to the house was laid out at this time. There has been considerable modern encroachment on the park – not just the roads as described above but also housing, offices and a school that was built on the site of the walled garden.
- 8.8.216** The southern part of the Registered Park and Garden of Special Historic Interest, south of the A48, is also a Conservation Area.
- 8.8.217** The significance of Tredegar Park is derived from a combination of evidential, historical, aesthetic and communal values. The designed elements within the park provide evidence of its history and development and its relationship with the house. The formal landscape closer to the house has good aesthetic values; these are somewhat more limited with regard to other parts of the park. There is a good level of associated documentary material whilst communal values accrue from the visitors along with staff and local residents - again this is more with regard to the formal landscape adjacent to the house than with other areas of the registered park.
- 8.8.218** The 'Essential Setting' of Tredegar Park is defined on the Register as the land to the north and west of the 'New Park', i.e. west of the existing M4. There is a much wider setting in that some parts of the Registered Park and Garden can be seen from a considerable distance, but this mainly applies to the elevated area east of the M4 and north of the A48, rising up to Tredegar Fort.
- 8.8.219** The new section of motorway would pass approximately 1.7 km to the south east and 1.85 km to the south west of Tredegar Park. No element of the new section of motorway would be visible from the area of formal landscape adjacent to the house, nor would the route impact on any part of the defined 'Essential Setting'. There would be views of the new section of motorway from the elevated part of the registered park in the vicinity of Tredegar Fort, including the new River Usk Crossing and also the new motorway embankment in the Berryhill Farm area. However, any such view would already take in the existing built development of

Newport (including the docks) and also the large industrial parks west of Tredegar House such as Imperial Park.

8.8.220 The new section of motorway would not be visible in the identified significant view that leads north west from the house along the avenue of trees. This view currently includes the existing M4 motorway at Junction 28; the reclassification of the existing M4 would not lead to any change in this view. There may be a slight reduction in the traffic using the existing M4 motorway but this would not lead to any significant change to the current impact on the identified significant view. There would be a slight reduction in traffic noise within most of the Registered Park and Garden.

8.8.221 The magnitude of impact on this Grade II* registered Park and Garden of Special Historic Interest (of high value) has been assessed as no change, resulting in a neutral significance of effect.

Llanwern Park (PK002)

8.8.222 This comprises a landscape park to the east of the village of Llanwern (Figure 8.1b). It surrounded the former Llanwern House, a large classical red-brick house built *circa* 1760 and now demolished. The estate was purchased by the Van family in about 1630 and it may have included a moated manor. The small landscape park is of late 18th to 19th century date; now mostly pasture with some clumps of trees. The western side of the park is formed by the Monk's Ditch – here it is a natural stream but it continues across the Caldicot Levels as a raised channel to keep this water out of the enclosed and drained land.

8.8.223 The significance of Llanwern Park is derived from a combination of evidential, historical, aesthetic and communal values. The designed elements within the park provide evidence of its history and development and its relationship with the former house. There are some aesthetic values associated with the parkland planting and limited communal values that accrue from local residents and occasional visitors accessing the park via public footpaths.

8.8.224 The 'Essential Setting' of Llanwern Park is defined on the Register as the land to the west, north, east and south east of the Grade II registered historic park. There is a wider setting in that there are views from, and to, the registered park in most directions. This helps to place the historic park within its landscape context.

8.8.225 The new section of motorway would pass approximately 1.7 km to the south of the registered park and this would include the new Glan Llyn junction, which would be fully lit at night. However, from the historic park the new section of motorway would be seen in glimpsed views through the buildings at the steelworks - views that already include not just the steelworks but also the South Wales to London Mainline railway, the substantial electricity substation south of the steelworks and vertical elements such as wind turbines and electricity pylons. One of these views would be the identified significant view to the south east from the site of the former Llanwern House, a view which extends beyond the registered park but which includes the mainline railway and the steelworks behind which the new section of motorway would be situated. There would a slight reduction in traffic noise within most of the Registered Park and Garden.

8.8.226 The magnitude of impact on this Grade II registered Park and Garden of Special Historic Interest (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Beechwood Park, Newport (PK003)

- 8.8.227** This is a 12 hectare park on the south-facing side of a ridge in the eastern part of Newport (Figure 8.1a). It was formerly the grounds of a large stone house (Beechwood House) that was built in 1880 in the neo-classical style for a local tobacco manufacturer and former Mayor of Newport.
- 8.8.228** The house and grounds were purchased by Newport Borough Council in the late 19th century and the park opened to the public as a municipal amenity in 1900. The park is elongated north-south and is much narrower at the southern end. It is laid out informally with open grassland and isolated ornamental trees, although there is a reasonable amount of mature vegetation throughout. There are two terraces below the house and beyond that there are various recreational facilities. This may have been the work of Thomas Mawson, a garden designer who worked for a number of tobacco manufacturers around this time. The park is extremely well maintained.
- 8.8.229** The Grade II registered historic park is also a Conservation Area.
- 8.8.230** The significance of Beechwood Park is derived from a combination of evidential, historical, aesthetic and communal values. The designed elements within the park provide evidence of its history and development and its relationship with the house. There are clear aesthetic values associated with the parkland planting and strong communal values which accrue from local residents and occasional visitors using the park.
- 8.8.231** No 'Essential Setting' is defined on the Register for Beechwood Park. The mature trees within the park mean that views out (and in) are quite restricted. However, there are some locations within the park from which it is possible to look out towards the south and see the built development of Newport, including the docks. Many of the substantial houses that were built on this elevated land were located here specifically for the wealthy industrialists to have this view of the docks and factories.
- 8.8.232** The new section of motorway, and specifically the River Usk Crossing, would be approximately 2.8 km to the south of the registered park. There would definitely be views from the park in which the new viaduct and bridge would be visible, but these would not affect the significance of this heritage asset. In the identified significant view, the new section of motorway would not be visible as a result of vegetation within the registered park and also the intervening built development.
- 8.8.233** The magnitude of impact on this Grade II registered Park and Garden of Special Historic Interest (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Belle Vue Park, Newport (PK004)

- 8.8.234** This is a 14 hectare municipal park in the centre of Newport (Figure 8.1a), on a south-facing slope. The land was donated to the city in 1891 by Lord Tredegar for the purposes of establishing a public park. A competition to design the park was won by Thomas Mawson and the park was completed by 1894. It was laid out informally and includes a two-storey tea pavilion flanked by conservatories. There are sweeping walks, ornamental trees and cascades. The park is extremely well-maintained.

- 8.8.235** The Grade II registered historic park is also a Conservation Area.
- 8.8.236** The significance of Belle Vue Park is derived from a combination of evidential, historical, aesthetic and communal values. The designed elements within the park provide evidence of its history and development. There are clear aesthetic values associated with the parkland planting and the buildings along with strong communal values that accrue from local residents and visitors using the park.
- 8.8.237** No ‘Essential Setting’ is defined on the Register for Belle Vue Park. The mature trees within the park mean that views out (and in) are quite restricted. However, there are some locations within the park from which it is possible to look out towards the south east and see the built development of Newport, including the docks. Such views also include the substantial modern buildings adjacent to the eastern edge of the park.
- 8.8.238** The new section of motorway, and specifically the River Usk Crossing, would be approximately 2.1 km to the south east of the registered park. There would be views from the park in which the new bridge would be visible, including the identified significant view from the terrace adjacent to the tea pavilion. In such views the new bridge, including the pylons, would appear directly behind the Transporter Bridge, but these views already contain substantial tall vertical elements including wind turbines, electricity pylons and the stacks on the power station at Uskmouth. Overall it is considered that the changes within these views would not affect the significance of this heritage asset.
- 8.8.239** The magnitude of impact on this Grade II registered Park and Garden of Special Historic Interest (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Conservation Areas

Waterloo, Newport (CA002)

- 8.8.240** This Conservation Area is within the Pillgwenlly area of Newport, close to the Alexandra Docks and the Grade I listed Transporter Bridge (Figure 8.1a). The Conservation Area contains buildings largely of very early 20th century date, although the street layout dates from the first half of the 19th century and the later buildings represent a redevelopment following the opening of the Alexandra Docks. This is also reflected in the naming of Alexandra Road, formerly Inkerman Street (after the Crimean War battle). The Waterloo Hotel probably took its name from the nearby Waterloo wharf.
- 8.8.241** The significance of the Conservation Area derives from its identity as a reasonably intact Edwardian redevelopment of this part of the city. There are some key elements such as the Waterloo Hotel but also there is survival of the historic street pattern. The setting of the Conservation Area is important, principally the Transporter Bridge and the entrance to Newport Docks on the opposite side of the A48. The cable anchor block for the western tower of the transporter bridge is located within the Conservation Area.
- 8.8.242** The new section of motorway, and specifically the River Usk Crossing, would be approximately 1.3 km to the south east of the Conservation Area. There would definitely be views from the southern edge of the Conservation Area in which the new bridge would be visible, but these would not affect the significance of this heritage asset.

8.8.243 The magnitude of impact on this Conservation Area (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

St Woolos, Newport (CA003)

8.8.244 This Conservation Area was designated in 1985 and is centred on the Grade I listed cathedral, south of the city centre (Figure 8.1a). The cathedral and its walled grounds occupy an elevated position in the south western part of the Conservation Area. This land is several metres higher than the adjacent roads and the perimeter of the cathedral grounds includes a raised perimeter pavement.

8.8.245 The south eastern part of the Conservation Area is largely occupied by the wooded grounds surrounding the former Bishop's Palace – a Grade II listed early 19th century villa now known as Kingshill but previously called Bishopstow. To the north are the early town houses (*circa* 1840) along Victoria Road, Victoria Place, Park Square and Hill Street along with the former United Reform Church.

8.8.246 The significance of this Conservation Area is based on the presence of the cathedral along with the quality of the surrounding built development, which demonstrates the increasing wealth of the city in the 19th century. The setting of the Conservation Area makes little contribution towards that significance.

8.8.247 The new section of motorway, and specifically the River Usk Crossing, would be approximately 2.15 km to the south east of the Conservation Area. There would definitely be views from within the Conservation Area in which the new viaduct and bridge would be visible, but these would not affect the significance of this heritage asset.

8.8.248 The magnitude of impact on this Conservation Area (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Redwick, Newport (CA004)

8.8.249 This Conservation Area was initially designated in 1985 and reappraised in 2002. It is located on the Gwent Levels, approximately 11 km south east of the centre of Newport (Figure 8.1b). This is the largest nucleated village on the Levels, although much of the current building stock is of post-war date and the historic settlement here was more diffuse with a loose grouping of farmsteads centred on the Church of St Thomas.

8.8.250 The village is laid out along the axial north east/south west aligned Green Street/Bryn Road and the partially co-aligned Church Row. The church is located at the southern edge of the village and Redwick House is at the northern edge.

8.8.251 A detailed Conservation Area Appraisal was adopted in 2002 and this provides considerable detail regarding the architectural merits of the buildings and the overall setting and form of the village.

8.8.252 The significance of the Conservation Area is based around the historic buildings and open spaces within it, which demonstrate (along with historic maps and documents) how this settlement has developed from the medieval period onwards.

8.8.253 The setting of the Conservation Area makes a reasonable contribution towards its significance; its presence as a nucleated settlement within the enclosed and drained landscape of the levels is important in understanding the history of this landscape.

8.8.254 The new section of motorway would be approximately 1.7 km to the north of the Conservation Area and it is possible that there could be glimpsed views from within the Conservation Area in which the route would be visible. However, these views already take in the substantial built development of the steelworks, the Gwent Europark and the InBev brewery at Wilcrick, as well as a number of taller vertical elements such as wind turbines and electricity pylons.

8.8.255 The magnitude of impact on this Conservation Area (of medium value) has been assessed as negligible, with the consequent significance of effect considered to be neutral.

Complementary Measures

8.8.256 The operational phase of the Complementary Measures would have no discernible effect on any aspect of the cultural heritage of the area.

8.9 Additional Mitigation and Monitoring

8.9.1 As described above in Section 8.6 specifically with regard to buried archaeological remains, a programme of further archaeological investigation is described in the Cultural Heritage Mitigation Plan (Appendix 8.10 of this ES). Advice on appropriate mitigation has been provided by the Academic Advisory Panel established by the Scheme design team. This plan also includes proposals for the archaeological recording of historic buildings which would be demolished as part of the Scheme, along with further examination of documentary material to provide information regarding the historical development of the landscape which will be affected by the Scheme.

8.9.2 However, it should be noted that the implementation of the programme of further archaeological work would not result in the avoidance or reduction of the potential impacts and effects described above, rather it would serve to 'offset' the adverse nature of the effects through the provision of information which can be disseminated through appropriate media to the widest possible audience.

8.9.3 Detailed archaeological investigation is proposed at a total of seven locations within the permanent and temporary land take required for the construction of the Scheme. These include the sites of former buildings identified on historic maps as well as archaeological sites identified through remote sensing and (at some locations) from purposive intrusive evaluation by way of trial trenches. At a further eight locations, archaeological sites are known to be present and additional archaeological evaluation is proposed in order to establish the extent of the detailed investigation that will be required.

8.9.4 Archaeological evaluation is also proposed at another 36 locations within the permanent and temporary land take required for the construction of the Scheme. The selection of these locations is based on an understanding of the likely impact of the Scheme along with a consideration of the archaeological potential on a Scheme-wide basis. Following consideration of the results of the evaluation

work, detailed archaeological investigation may then be required at some (or even all) of these locations.

8.9.5 An archaeological watching brief would be undertaken on a targeted basis, focusing on specific impact types and locations. This may lead to a requirement for further archaeological investigation of any buried archaeological remains that are identified during the watching brief.

8.9.6 Detailed historic building recording is proposed for 11 buildings or groups of buildings which would be demolished in order to construct the Scheme. These include one Grade II listed buildings; the remaining buildings are not listed but have some level of significance based on their heritage values.

8.9.7 A more basic level of historic building recording would be undertaken with regard to a further ten buildings or groups of buildings which would also be demolished in order to construct the Scheme. These are buildings which are considered to have a lower level of significance than those proposed for detailed historic building recording.

8.9.8 A programme of historic landscape study would be undertaken which would examine the development and use over time of the back-fen areas of the Gwent Levels that would be traversed by the new section of motorway. This would also tie in to the programme of archaeological investigation as the two strands of work are likely to be complementary.

8.9.9 No monitoring is proposed with regard to effects on heritage assets.

8.10 Assessment of Effects Following Mitigation

8.10.1 As set out above, the proposed mitigation would not result in the avoidance or reduction of the potential impacts and effects described above. Therefore, the magnitude of impacts and significance of effects described above in Sections 8.6 to 8.8 would not change. The assessment of land take, construction and operational effects would therefore remain as reported in these sections.

8.11 Assessment of Cumulative Effects

8.11.1 Examination has been undertaken with regard to other potential development schemes that could result in significant cumulative effects on any aspect of cultural heritage. A number of potential development schemes have been identified that could lead to significant cumulative effects on the registered Gwent Levels historic landscape. Further information on these and other potential cumulative effects are described in Chapter 17 of the ES.

8.12 Inter-relationships

8.12.1 The topic of Cultural Heritage has inter-relationships with other topics considered within the Environmental Statement. In particular these include Landscape and Visual Effects (Chapter 9) and Noise and Vibration Effects (Chapter 13). These topics have been considered as part of the assessment of Cultural Heritage effects presented in this chapter. Further information with regard to inter-related effects is provided in Chapter 17 or this ES.

8.13 Summary of Effects

- 8.13.1** This assessment has identified that the implementation of the Scheme would result in a long term large adverse effect on the Gwent Levels Landscape of Outstanding Historic Interest. This results from loss of land within the registered historic landscape and the consequent severance of several identified historic landscape character areas, along with visual and aural impacts on parts of the registered historic landscape that are not physically affected.
- 8.13.2** There would also be a permanent large adverse effect resulting from the demolition of the Grade II listed Magor Vicarage and a long term large adverse effect on one Scheduled Monument (a standing stone east of Undy) and on a Grade II listed farmhouse (Tatton Farm) due to the changes within their settings.
- 8.13.3** There would be permanent moderate adverse effects resulting from the demolition of three historic buildings or groups of historic buildings within Newport Docks, also from works within the Conservation Area at Llanfihangel. There would be a long term moderate adverse effect on the Grade I listed Newport Transporter Bridge and on the Grade II* listed Whitson Court as a result of change within their settings. There would be a short to medium term moderate adverse effect during construction on a second Scheduled Monument (a medieval moated site at Undy) as a result of changes within its setting, although this would reduce to a slight adverse effect during operation.
- 8.13.4** With regard to buried archaeological remains, there would be a long term moderate effect on a site just to the west of Magor comprising settlement enclosures of later Iron Age and Roman date. There would also be a long term moderate effect on the shrunken medieval settlement at Llanfihangel, on a small moated site of post-medieval or medieval date at the junction of Rush Wall and North Row, and on a complex of earthworks adjacent to Pont-y-Cwch Reen.
- 8.13.5** There is the potential for long term effects of moderate, large or even very large significance on archaeological sites within the Gwent Levels. The level of effect would depend on the nature of the remains (i.e. the value of the archaeological site), their extent within the Scheme boundary and beyond, and the type and scope of any impact resulting from the construction of the Scheme.
- 8.13.6** In addition to the significant adverse effects described above, the assessment has identified a number of slight adverse effects. These are in relation to the demolition of a small number of (non-listed) historic buildings, along with impacts on historic landscape character areas within and also outside the Gwent Levels Landscape of Outstanding Historic Interest, and changes within the settings of designated heritage assets including Scheduled Monuments and listed buildings. Slight adverse effects have also been identified with regard to impacts on a small number of known archaeological sites, whilst further effects of this level of significance can be anticipated following the implementation of the programme of archaeological investigation described in the Cultural Heritage Mitigation Plan (Appendix 8.10).
- 8.13.7** A slight beneficial effect has been identified with regard to changes within the setting of the Grade II* listed George Street Bridge in Newport.

Table 8.12: Summary of Likely Environmental Effects on Cultural Heritage

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|------------------|--------------------------------|---------------------------------|-----------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| Land take | | | | | | | | | |
| ARCH007/008 | East of New Park Farm | Low | Direct physical | Long term | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| ARCH010 | South of Penylan Farm | Low | Direct physical | Long term | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB016/017 | Great Pencarn Farm | Low | Direct physical | Long term | Negligible | Slight Adverse | Negligible | Slight adverse | Not significant |
| HB020 | Pont-estyll | Low | Direct physical | Long term | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB024 | Pheasant | Low | Direct physical | Long term | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| ARCH024 | Adjacent to Pont-y-Cwch Reen | Medium | Direct physical | Long term | Moderate | Moderate Adverse | Moderate | Moderate Adverse | Significant |
| ARCH034 | Rush Wall/North Row | Medium | Direct physical | Long term | Major | Moderate Adverse | Major | Moderate Adverse | Significant |
| ARCH044/045 | West of Magor | Medium | Direct physical | Long term | Major | Moderate Adverse | Major | Moderate Adverse | Significant |
| ARCH043 | North of Magor | Medium | Direct physical | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| ARCH064 | Llanfihangel | High | Direct physical | Long term | Moderate | Moderate Adverse | Moderate | Moderate Adverse | Significant |
| | Unknown archaeological remains | High (possibly very high) | Direct physical | Long term | Major | Large or very large | Major | Large or very large | Significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------|---|---------------------------------|---|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| | Gwent Levels Landscape of Outstanding Historic Interest | High | Direct physical, indirect physical and indirect non-physical (visual and aural) | Long term | Moderate | Large Adverse | Moderate | Large Adverse | Significant |
| M4CaN HLCA102 | Castleton town and fields | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |
| M4CaN HLCA104 | Duffryn/Pencarn | Negligible | Direct physical and indirect non-physical (visual and aural) | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| M4CaN HLCA106 | Croes-Carn-Einion | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------|---------------------------------|---------------------------------|--|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| M4CaN HLCA107 | Cefn Llogell | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| M4CaN HLCA111 | Newport Docks | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |
| M4CaN HLCA115 | Uskmouth industrial development | Negligible | Direct physical and indirect non-physical (visual and aural) | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA117 | Pye Corner | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |
| M4CaN HLCA118 | Llanwern Steelworks | Negligible | Direct physical and indirect non-physical (visual and aural) | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------|------------------|---------------------------------|--|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| M4CaN HLCA119 | Wilcrick | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| M4CaN HLCA122 | St Brides Valley | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| M4CaN HLCA123 | Knollbury Fields | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| M4CaN HLCA124 | Rockfield Farm | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |
| M4CaN HLCA125 | Moorgate | Low | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|-------------|--|---------------------------------|--|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| CA001 | Llanfihangel | Medium | Direct physical and indirect non-physical (visual and aural) | Long term | Moderate | Moderate Adverse | Moderate | Moderate Adverse | Significant |
| LB010 | Magor Vicarage | Medium | Complete demolition | Permanent | Major | Large Adverse | Major | Large Adverse | Significant |
| HB116 | White Cottage | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB007 | Myrtle House | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB010 | Berryhill Farm | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB027 | Pont-y-Cwccw Reen footbridge | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB035 | Former air raid shelter, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB037 | Former mess or welfare building, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB038 | Former air raid shelter, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB039 | Former swing bridge operator's office, Newport Docks | Low | Complete demolition | Permanent | Major | Moderate Adverse | Major | Moderate Adverse | Significant |
| HB042 | Building of unknown function, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|-------------|--|---------------------------------|---|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| HB043 | Shed of unknown function, Newport Docks | Negligible | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB044 | Former graving dock, Newport Docks | Medium | Infilling, removal of dock gates and surrounding dock furniture | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| HB049 | Group of locomotive running sheds and engineering workshops, Newport Docks | Medium | Complete demolition | Permanent | Major | Moderate Adverse | Major | Moderate Adverse | Significant |
| HB053 | Building of unknown function, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB055 | Locomotive running shed and engineering workshop, Newport Docks | Medium | Complete demolition | Permanent | Major | Moderate Adverse | Major | Moderate Adverse | Significant |
| HB057 | Building of unknown function, Newport Docks | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB058 | Building of unknown function, Newport Docks | Negligible | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------------------|--|---------------------------------|---|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| HB087 | Pye Corner barrage balloon tethers | Low | Effect on setting due to landscape planting | Long term | Moderate | Slight Adverse | Moderate | Slight Adverse | Not significant |
| HB104/105 | Barecroft House | Low | Complete demolition | Permanent | Major | Slight Adverse | Minor | Slight Adverse | Not significant |
| HB109 | Dunline, aka The Cedars | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB110 | Undy House | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| HB117 | Disused limekiln north of M4 at Undy | Low | Complete demolition | Permanent | Major | Slight Adverse | Major | Slight Adverse | Not significant |
| Construction phase | | | | | | | | | |
| SM001 | Medieval moated site 400m north of church at Undy | High | Visual and aural effects | Short-medium term | Moderate | Moderate Adverse | Moderate | Moderate Adverse | Significant |
| SM002 | Devil's Quoit - standing stone 252m south of Bencroft Lane | High | Visual and aural effects | Short-medium term | Major | Large Adverse | Major | Large Adverse | Significant |
| LB011 | Great Farm House, Undy | Medium | Visual and aural effects | Short-medium term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB019 | Old Windmill, Rogiet | Medium | Visual and aural effects | Short-medium term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| Operational phase | | | | | | | | | |
| | Gwent Levels Landscape of Outstanding Historic Interest | High | Indirect non-physical (visual and | Long term | Moderate | Large Adverse | Moderate | Large Adverse | Significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------|--------------------------------|---------------------------------|--------------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| | | | aural) | | | | | | |
| M4CaN HLCA100 | Rhymney Valley Nurseries | Negligible | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA101 | Maes-y-crochan | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA103 | Marshfield medieval settlement | Low | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA105 | Michaelstone | Medium | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA108 | Bassaleg/Ebbw Vale | Low | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| M4CaN HLCA109 | Tredegar Park | Negligible | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA110 | Marsh/saltmarsh | Low | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| M4CaN HLCA112 | Newport West | Low | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA113 | Newport East | Negligible | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA114 | Ridgeway | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA116 | Liswerry | Negligible | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA120 | Wilcrick Brewery | Negligible | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA121 | Magor and Undy | Low | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| M4CaN HLCA126 | Rogiet | Low | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| M4CaN HLCA127 | Ifton Manor | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA128 | Ifton Quarries | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|---------------|--|---------------------------------|--------------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| M4CaN HLCA129 | Dewstow Park and golf course | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| M4CaN HLCA130 | Caldicot urban | Low | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| SM001 | Medieval moated site 400m north of church at Undy | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| SM002 | Devil's Quoit - standing stone 252m south of Bencroft Lane | High | Visual and aural effects | Long term | Major | Large Adverse | Major | Large Adverse | Significant |
| SM003 | Cross in churchyard of Church of St Michael's and All Angels, Llanfihangel | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| SM004 | Pen-y-Lan Camp, Michaelstone | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| SM005 | Coed y Defaid Camp | High | Visual and aural effects | Long term | No Change | Neutral | No Change | Neutral | Not significant |
| SM006 | Tredegar Fort | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| SM007 | Goldcliff moated site | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| SM008 | Moated site east of Grangefield Farm | High | Visual and aural effects | Long term | Minor | Slight | Minor | Slight | Not significant |
| SM009 | Wilcrick Hill Camp | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| SM010 | Wentlooge Castle | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|-------------|---|---------------------------------|--------------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| SM011 | Newport Castle | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| LB001 | Transporter Bridge, Newport | Very High | Visual and aural effects | Long term | Minor | Moderate Adverse | Minor | Moderate Adverse | Significant |
| LB002 | Church of St Michael and All Angels, Llanfihangel | High | Visual and aural effects | Long term | Minor | Slight | Minor | Slight | Not significant |
| LB003 | Castleton Baptist Church | Medium | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| LB004 | Coach & Horses Public House, Castleton | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| LB005 | Waterloo Public House, Pillgwenlly, Newport | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB006 | Pye Corner Farm, Nash | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB007 | Fair Orchard, Nash | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB008 | Fair Orchard barn and attached buildings, Nash | Medium | Visual and aural effects | Long term | Minor | Slight adverse | Minor | Slight Adverse | Not significant |
| LB009 | Tatton Farm, Nash | Medium | Visual and aural effects | Long term | Major | Large Adverse | Major | Large Adverse | Significant |
| LB011 | Great Farm House, Undy | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| LB012 | Old Court Farmhouse, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|-------------|--|---------------------------------|------------------------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| LB013 | Stables at Old Court Farm, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB014 | Farm range at Old Court Farm, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB015 | Green Farmhouse, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB016 | Barn to east of Green Farmhouse, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB017 | Cowhouse range east of Green Farmhouse, Llanfihangel | Medium | Visual and aural effects | Long term | Minor | Slight Adverse | Minor | Slight Adverse | Not significant |
| LB019 | Old Windmill, Rogiet | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| LB020 | Tredegar House, Newport | High | Visual, aural and economic effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| LB021 | St Woolos Cathedral, Newport | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| LB022 | Church of St Mary the Virgin, Nash | High | Visual and aural effects | Long term | Negligible | Slight Adverse | Negligible | Slight Adverse | Not significant |
| LB023 | Church of St Mary, Marshfield | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |

| Receptor ID | Receptor name | Sensitivity / value of receptor | Description of impact | Short / medium / long term | Magnitude of impact (without mitigation) | Significance of effect (without mitigation) | Magnitude of impact (with mitigation) | Significance of effect (with mitigation) | Significant / Not significant |
|-------------|---|---------------------------------|--------------------------|----------------------------|--|---|---------------------------------------|--|-------------------------------|
| LB024 | Church of St Bridget, St Brides Wentlooge | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| LB025 | George Street Bridge, Newport | High | Visual and aural effects | Long term | Minor | Slight Beneficial | Minor | Slight Beneficial | Not significant |
| LB026 | Whitson Court, Whitson | High | Visual and aural effects | Long term | Moderate | Moderate Adverse | Moderate | Moderate Adverse | Significant |
| LB027 | Whitson Church | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| PK001 | Tredegar Park | High | Visual and aural effects | Long term | No change | Neutral | No change | Neutral | Not significant |
| PK002 | Llanwern Park | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| PK003 | Beechwood Park, Newport | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| PK004 | Belle Vue Park, Newport | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| CA002 | Waterloo, Newport | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| CA003 | St Woolos, Newport | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |
| CA004 | Redwick, Newport | Medium | Visual and aural effects | Long term | Negligible | Neutral | Negligible | Neutral | Not significant |