

Welsh Government

M4 Corridor around Newport

Environmental Statement Volume 1

Chapter 9: Landscape and Visual
Effects

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9 Landscape and Visual Effects

9.1 Introduction

9.1.1 This chapter presents the findings of landscape and visual impact assessments (LVIA), which have been undertaken for the Scheme.

9.1.2 The Scheme is described in ES Chapter 2. Key issues, impacts and effects considered within this chapter include the following.

- Permanent and temporary, long term and short term (up to 12 months) physical changes to the landscape in terms of landform, land use (along the motorway corridor), fragmentation of landscape features or designated areas, vegetation changes and introduction of moving traffic.
- Indirect effects on the character and quality of the landscape in terms of encroachment or effects on the landscape setting of features and areas, and disturbance to sense of place and changes in the perception of the landscape through the introduction of features alien to the character of the landscape.
- Direct day and night time effects on the visual amenity of visual receptors, in terms of changes in views and their composition for residents and people visiting the area.
- Indirect effects on visual receptors in different places in terms of an altered visual perception leading to changes in public attitude, behaviour and how they value or use a place.

9.1.3 This chapter sets out the legislation and planning context and describes and evaluates the baseline landscape resource, together with views and visual amenity of visual receptors within a defined study area. The likely changes arising from the Scheme during construction and operation - day and night - and the significance of the identified effects have been assessed. The potential for likely significant effects relates to the change in land use, the loss of existing landscape features, and the visibility, scale and mass of the Scheme including fixed infrastructure and predicted traffic movement within existing views. A summary of effects is included at the end of this chapter.

9.1.4 The LVIA comprises a combination of desk study review and field work during 2015 and 2016. The work was undertaken by a core team of six landscape architects covering overlapping sections of the Scheme with the assessment of the significance of effects across the whole scheme moderated by two senior chartered Landscape Architects. The field work was undertaken predominantly when the vegetation was in leaf, during May and June 2015, to enable a greater extent of inter-visibility between the site and the study area. Further site visits were undertaken between July and November 2015 to review specific receptor impacts. Site visits were also undertaken in January 2016, when deciduous trees and plants had predominantly dropped their leaves, to take winter photographic records from key viewpoints.

9.1.5 Mitigation has been addressed as part of an iterative design and assessment process. The design approach is described in Section 9.5 of this chapter. The Environmental Masterplan is shown on Figure 2.6. This chapter should be read with Figures 9.1-9.21 in Volume 2 of this Environmental Statement (ES) and

Appendices 9.1-9.13 in Volume 3 of this ES, which provide additional assessment information, photo sheets and photomontages of the Scheme.

9.2 Legislation and Policy Context

9.2.1 A review of topic specific published landscape policies and guidance has been undertaken to inform the LVIA and mitigation strategy. The following section of this chapter summarises the relevant legislation and policy context, with further detail outlined in Volume 3, Appendix 9.1.

Relevant Legislation

9.2.2 The following legislation is relevant to the Scheme and has been considered.

- National Parks and Access to the Countryside Act 1949.
- The Countryside and Rights of Way (CRoW) Act 2000.
- Wildlife and Countryside Act 1981 (as amended).
- The Natural Environment and Rural Communities (NERC) Act 2006.
- Hedgerows Regulations 1997.

Planning Policy Context

Planning Policy Wales

9.2.3 Landscape policy considerations and guidance are contained in Planning Policy Wales (PPW) (Edition 8) (Welsh Government, 2016), supplementary relevant topic based Technical Advice Notes (TANs) and Ministerial Interim Planning Policy Statements (MIPPS).

9.2.4 PPW includes guidance on development in relation to Planning for Sustainability (Chapter 4), Conserving and Improving Natural Heritage and The Coast (Chapter 5), Conserving the Historic Environment (Chapter 6) and Minimising and Managing Environmental Risks and Pollution (Chapter 13).

9.2.5 Technical Advice Notes relevant to the LVIA, and the environmental design of the Scheme and mitigation strategy, include the following.

- Technical Advice Note 10 (TAN 10): Tree Preservation Orders, which provides advice on considering the scope of Tree Preservation Orders (TPOs), the work that can be carried out on protected trees, and consideration of need for TPOs (Welsh Assembly Government, 1997).
- Technical Advice Note 12 (TAN 12): Design – providing advice on good design (Welsh Government, 2014b).

Welsh Office Circulars and National Assembly for Wales Circulars

9.2.6 Procedural guidance relevant to the LVIA is given in Welsh Office/National Assembly for Wales/Welsh Government Circulars, including the following.

- Welsh Office Circular 64/78: Trees and Forestry (Department of the Environment, Welsh Office, 1978).
- Welsh Office Circular 5/93: Public Rights of Way (Department of the Environment, Welsh Office, 1993).

- Welsh Office Circular 60/96: Planning and the Historic Environment: Archaeology (Welsh Office, 1996).
- National Assembly for Wales (2002) Circular 31/01 Countryside and Rights of Way Act 2000.

Local Policy

Cardiff Council

Cardiff Local Development Plan

9.2.7 The Local Development Plan (adopted January 2016) (Cardiff City Council, 2016) includes the following relevant policies.

- KP16: Green Infrastructure, which aims to protect, enhance, create and manage a network of green infrastructure.
- EN1: Countryside Protection, which sets out a presumption against development in the countryside and states that development should be in harmony with, and not cause unacceptable harm to, the character and quality of the surrounding countryside and landscape.
- EN3: Landscape Protection, which states that development will not be permitted that would cause unacceptable harm to the character and quality of the landscape and setting of the city, with particular priority given to Special Landscape Areas.
- Policy EN6: Ecological Networks and Features of Importance for Biodiversity, which relates primarily to ecological features but also states that development should not cause unacceptable harm to networks of importance for landscape conversation.
- Policy EN9: Conservation of the Historic Environment, which relates to the historic environment, including the setting of heritage assets such as Registered Historic Landscapes, Parks and Gardens.

9.2.8 Other relevant reports and Supplementary Planning Guidance used to inform the assessment include the following.

- Public Rights of Way and Development Supplementary Planning Guidance (Cardiff City Council, 2006).
- Tall Buildings Supplementary Planning Guidance (Cardiff City Council, 2009).
- Trees and Development Supplementary Planning Guidance (Cardiff City Council, 2007).
- Open Space Supplementary Planning Guidance (Cardiff City Council, 2008).
- Biodiversity Part 1 Supplementary Planning Guidance (Cardiff City Council, 2011a).
- Biodiversity Part 2 Supplementary Planning Guidance (Cardiff City Council, 2011b).

Newport City Council

9.2.9 The Newport Local Development Plan (adopted January 2015) guides planning and development in Newport to 2026 (Newport City Council, 2015). An appraisal

of the Local Development Plan policies relevant to the Scheme, including the adopted Proposals Map, identified the following landscape planning considerations.

- Objective 6 - Conservation of the Natural Environment, states that the quality of the natural environment, including landscape, protected habitats and species of principal importance, are to be protected and enhanced.
- Strategy Policy SP1 – Sustainability, requires developments to make a positive contribution to sustainable development by conserving, enhancing and linking green infrastructure as well as the natural environment.
- Policy SP5 – Countryside, clarifies that development in the countryside would only be permitted where its use is appropriate, respects the landscape character and the biodiversity of the immediate and surrounding area, being appropriate in scale and design.
- Policy SP6 – Green Belt, requires that the Greenbelt be maintained and development should not prejudice the open nature of the land.
- Policy SP8 – Special Landscape Areas, seeks to designate certain areas in Newport, including the River Usk, Caldicot Levels and Wentlooge Levels, as Special Landscape Areas and therefore development proposals are required to positively contribute to the area through quality design and management so that the area’s special features are not impacted. This policy also states that within Special Landscape Areas, priority will be given to landscape conservation and enhancement. The designation of a Special Landscape Area does not preclude development but any proposals must demonstrate that they have been designed to respect the valued characteristics of the recognised landscape.
- Policy SP7 – Green Wedges (Newport and Cardiff), exist to prevent the coalescence between major settlements, and any development which would prejudice the open nature of the land would not be permitted.
- Policy SP14 – Transport Proposals, indicate that transport-related development would need to result in environmental improvements, including enhanced biodiversity.
- Policy GP5 – General Development Principles – Natural Environment, clarifies that developments are to manage and encourage biodiversity and ecological connectivity, including through the provision of landscaping to mitigate any effects. In addition, this policy specifies that proposals should not have any unacceptable impacts on the existing landscape quality and that a landscape scheme (including tree planting and tree retention) to enhance the site and wider context is to be provided.
- Policy CE1 - Routeways, Corridors and Gateways, requires that development proposals should protect and enhance the appearance and connectivity of future main routes, including the ‘M4 Relief Road’.
- EM2 – Newport Docks, seeks to protect industrial uses within the Newport Docks area. Development proposals must be complementary to employment uses and not hinder the operational use of the port.

Monmouthshire County Council

9.2.10 The Monmouthshire Council Local Development Plan 2011-2021 (Monmouthshire County Council, 2014) contains the following relevant landscape policies.

- Policy S13 – Landscape, Green Infrastructure and the Natural Environment, requires development proposals to maintain the character and quality of the landscape by identifying, protecting and, where appropriate, enhancing the distinctive landscape and historical, cultural, ecological and geological heritage, including natural and man-made elements associated with existing landscape character; protecting areas subject to international and national landscape designations; preserving local distinctiveness, sense of place and setting; respecting and conserving specific landscape features, such as hedges, trees and ponds; and protecting existing key landscape views and vistas.
- Policy LC6 - Green Wedges, seeks to prevent the coalescence of settlements to safeguard the character and identity of settlements in southern Monmouthshire, where development proposals within Green Wedges should not prejudice the open characteristics of the land.
- Policy DES2 - Areas of Amenity Importance, requires that there should be no unacceptable harm on visual and environmental amenity of the area, including important strategic gaps, vistas, frontages and open spaces; linkages with existing green infrastructure; and cultural amenity including features of historic and landscape importance.
- Policy LC3 - Brecon Beacons National Park, advises that development in the vicinity of the National Park will only be permitted where it would preserve or enhance the landscape setting as defined through the LANDMAP (Landscape Assessment and Decision Making Process) process; and have no serious adverse effect on significant views into and out of the National Park.
- Policy LC5 – Protection and Enhancement of Landscape Character, requires the preparation of a landscape assessment as defined by LANDMAP, to demonstrate how landscape character has influenced the design, scale, nature and site selection of the proposal and to assess its impact on the special character or quality of Monmouthshire’s landscape in terms of criteria which include visual intrusion, sensitive siting, and harmonising with landform and landscape.
- Policy NE1 – Nature Conservation and Development. This policy requires that any unavoidable harm caused by development proposals upon designated sites of biodiversity and/or geological importance, should be minimised by effective avoidance measures and mitigation, such as protecting and enhancing wildlife and landscape resources with appropriate landscaping techniques and native planting schemes, or by providing compensatory habitats and features where necessary.
- Policy EP3 – Lighting, requires that proposed lighting should minimise light spillage, respect the amenity of neighbouring land uses and not adversely impact the visual character of the built and natural environment, retaining dark skies where appropriate.

- Policy SD3 - Flood Risk, requires development proposals within a flood plain to demonstrate that the development is or can be protected by approved engineering works and/or other flood protection measures, including any remedial measures; and can be sympathetically assimilated into the environment in terms of siting, scale, design and landscaping.
- Scheduled Monuments, Areas of Special Archaeological Sensitivity and Historic Parks and Gardens – the Local Development Plan (paragraph 6.5.24) advises that PPW (Chapter 6) and Circular 60/96 should be referred to in the assessment of development proposals that may impact on heritage assets and their settings.

9.2.11 Other relevant reports and Supplementary Planning Guidance that were used to inform the assessment include the following.

- Monmouthshire's Landscape Sensitivity and Capacity Study (White Consultants, 2009).
- Monmouthshire's Landscape Sensitivity and Capacity Study for the Main Villages and H4 Settlements (White Consultants, 2010).
- Green Infrastructure Supplementary Planning Guidance (Monmouthshire County Council, 2015).

Magor with Undy Community Council

9.2.12 The Development Plan 2014-2019 establishes the main objectives for the Community Council. As it relates to this Scheme, Objective 4 states that the natural environment, bio-diversity and character of the village are to be protected and improved.

Marshfield, Goldcliff and Nash Community Councils

9.2.13 The separate villages of Marshfield, Goldcliff and Nash all lie within the Newport City Council boundaries. Therefore, the policies of the Newport Council Local Development Plan, adopted January 2015 apply.

Neighbouring Local Planning Authorities

9.2.14 The Scheme would be visible from locations outside of the main administrative areas identified above, with potential for far reaching views of the river crossing structure across the Severn Estuary (from the English side).

9.2.15 The relevant policies of the Local Development Plans of the following neighbouring Local Planning Authorities that were considered as part of the assessment can be found in Appendix 9.1.

Wales

- Vale of Glamorgan County Borough Council.
- Rhondda County Borough Council.
- Caerphilly County Borough Council.
- Torfaen County Borough Council.
- Brecon Beacons National Park Authority.

England

- South Gloucestershire Council.
- Bristol City Council.
- North Somerset Council.

9.3 Assessment Methodology

Relevant Guidance

9.3.1 The assessment of landscape and visual effects has been undertaken in accordance with the methodology described within the Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 5 (Highways Agency, 1993) and accompanying Interim Advice Note (IAN) 135/10 (W) Wales Only (Welsh Government, 2014c). The Wales only update of IAN 135/10 includes reference to the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) (Landscape Institute and the Institute of Environmental Management and Assessment, 2013).

9.3.2 Other relevant guidance documents include the following.

- LANDMAP, the formally adopted approach for landscape assessments, devised and maintained by Natural Resource Wales and available at <http://www.ccw.gov.uk/landmap> (Countryside Council for Wales, 2015).
- Photography and Photomontage in Landscape and Visual Impact Assessment, Landscape Institute Advice Note 01/11 (Landscape Institute, 2011).
- Design guides produced by the Welsh Government, e.g. 'Roads in Lowland Areas' (Welsh Office, 1993).
- Natural Resources Wales guidance notes on LANDMAP including Guidance Note 3 – 'Landscape and Visual Impact Assessment for onshore windfarms', (Natural Resources Wales, 2013a) and Guidance Note 4 – 'LANDMAP and the Cultural Landscape' (Natural Resources Wales, 2013b).

9.3.3 Paragraph 2.4 in IAN 135/10 (W) requires the LVIA to:

'address both effects on landscape as a resource in its own right as well as effects on views and visual amenity' acknowledging that these are 'related but very different considerations of an LVIA'.

9.3.4 This is set out on in GLVIA3 in paragraph 2.21 (page 21) as follows:

- *'Assessment of landscape effects: assessing effects on the landscape as a resource in its own right.*
- *Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people'.*

9.3.5 In addition to the proposed new section of motorway, Complementary Measures are included as part of the Scheme as described in Chapter 2 (Scheme Description). The assessment for the Complementary Measures broadly follows the methodology described and undertaken for the main landscape and visual impact assessment for the Scheme. However, the landscape and visual

assessment has been simplified as it is considered that the scale and nature of change resulting from the Complementary Measures would not alter the overall balance of features and elements that comprise the existing view, and form the essential characteristics of the surrounding landscape. The assessment for this aspect of the Scheme was therefore undertaken following the guidelines for a 'simple' assessment as recommended in Interim Advice Note 135/10 (W) paragraphs 3.2 to 3.5 (Welsh Government, 2014c).

Study Area

New Section of Motorway - Study Area

9.3.6 In accordance with Interim Advice Note 135/10 (W) paragraphs 2.2 and 2.3 (Welsh Government, 2014c), an initial study area was identified for the assessment of landscape and visual effects that included the whole area from which the new section of motorway with traffic (including the River Usk crossing) could potentially be visible. This initial study area, shown on Figure 9.1, extends to more than 28 km from the route of the new section of motorway and includes 103 views listed in Appendix 9.2. The list includes far reaching views of the proposed bridge across the River Usk and Newport Docks, the tallest feature of the Scheme, from the ridgelines to the north and north west, including the summit of Twmbarlwm, as well as views along the coastline and from across the Severn Estuary in England. This initial study area was based on a digital Zone of Theoretical Visibility (ZTV) using 'Arcmap 10.3' software and Ordnance Survey (OS) Land-form Panorama and Profile data based on a 50 metre resolution digital terrain model (DTM) that takes into account variations in the landform.

9.3.7 A site survey was undertaken to refine this initial study area to identify where potentially significant effects upon the existing landscape resource, and views and visual amenity are likely to occur as the result of the Scheme. Through this verification process a study area has been identified between 3 km and 15 km from the centreline of the new section of motorway as summarised in Table 9.1 and shown on Figures 9.2 - 9.8.

Table 9.1 Distance of Study Area from Centreline

New Section of Motorway	Distance of Study Area from Centreline
Junction 29 Castleton to South Wales to London Mainline (new Duffryn Railway Underbridge)	Up to 5 km from the centreline of the new section of motorway.
South Wales to London Mainline (new Duffryn Railway Underbridge) across Wentlooge Levels to south of Docks	Up to 3 km from centreline of the new section of motorway.
Docks Way Landfill site (new Docks Way Junction), south of Newport Docks across River Usk to east of Uskmouth Railway line	Up to 5 km from centreline of the bridge deck and up to 15 km centred on the height of the two bridge piers (visual only) and 5 km wide corridor centred on the proposed bridge deck.
East of Uskmouth Railway line across Caldicot Levels to the A4810, south of Bareland Street	Up to 3 km from centreline of the new section of motorway.
A4810, south of Bareland Street to Junction 23 Magor	Up to 5 km from centreline of the new section of motorway.

9.3.8 Verified ZTVs have been prepared for each area identified in Table 9.1 using 'Arcmap 10.3' software and Ordnance Survey (OS) Land-form Panorama and

Profile data. Compared with the initial study area and ZTV referred to in paragraph 9.3.6, the verified ZTVs are based on a higher resolution 2 metre digital surface model (DSM) that takes into account the average height of Heavy Goods Vehicles (at 4.35 metres) and the screening effects of vegetation and built form, as well as landform.

9.3.9 Representative viewpoints listed in Appendix 9.3 and identified on Figure 9.9 were agreed through consultation (as indicated in Table 9.2). Some additional representative viewpoints have also been included during the assessment. Photo sheets from these representative viewpoints are shown on Figure 9.10. All viewpoints were captured using a fixed 35 mm focal length digital SLR camera, which is equivalent to an analogue 50 mm film as recommended in paragraph 4.2 in the Landscape Institute Advice Note 01/11 (Landscape Institute, 2011).

9.3.10 As shown on the photo sheets on Figure 9.10, open long distance views are characteristic of this coastal location. At distances of more than 15 km, the Severn Crossing is prominent in the open estuarial setting. In the majority of views from the English side, existing buildings near or adjacent to the new section of motorway including the Newport Steelworks, are barely discernible, whilst existing structures including the Transporter Bridge across the River Usk are not discernible, merging with rising ground to the north. From the rising ground to the north in Wales, views overlook the Gwent Levels to the expansive seascape of the Severn Estuary with the industrial development on the Avon Levels discernible against the hills to the south in England.

Complementary Measures - Study Area

9.3.11 A 1 km offset from the existing M4 between Junctions 29 and 23 has been used as the study area for the consideration of Complementary Measures as shown in Figure 9.20.

Approach to Identification of Baseline Conditions

Landscape Baseline Studies

9.3.12 Paragraph 2.1 in IAN 135/10 (W) (Welsh Government, 2014c) refers to the European Landscape Convention (ELC) definition of 'landscape', being '*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*'. This definition recognises landscape not just in terms of appearance and visual amenity but as providing a spatial framework for understanding the interaction between the natural, cultural and perceptual elements, embedding landscape or 'place' into policy whilst managing and protecting the landscape as a resource in its own right and promoting sustainable development.

9.3.13 A review of the landscape resource and topography (see Figure 9.12) within the study area was undertaken as part of the desk study with reference to the following relevant published sources to establish the national and regional landscape character.

- Landscape Character Map for Wales produced by Natural Resources Wales (see Figure 9.14).

- Wales National Seascape Character Assessment produced by the former Countryside Council for Wales, now Natural Resources Wales (see Figure 9.14).
- LANDMAP landscape information system published by Natural Resources Wales (2015), comprising five aspects: geological landscape; landscape habitats; visual and sensory; historic landscape; and cultural landscape evaluated at a community, local, national and international level (see Figure 9.15).
- National and local planning policy as outlined in Section 9.2 of this chapter (see Figure 9.13).
- 1:50,000 and 1:25,000 scale digital Ordnance Survey maps.
- Aerial photography.

9.3.14 The identification of local landscape character areas within the study area included the following.

- Sorting the landscape into parcels of land (or character areas) each with a distinct, consistent and recognisable character.
- Describing the character in terms of key characteristics - landcover; pattern and texture; scale and appearance; tranquillity; cultural and human interaction with reference to positive and negative features and elements in the natural, built, historic, managed landscape; aesthetic and experiential characteristics such as wildness, intimacy, sense of place, scenic quality, seasonal and night time changes.
- Assessing their condition/quality using criteria in Table 9.4.
- Considering their importance or value using criteria in Table 9.5 e.g. local or national designations, ecological importance (e.g. Gwent Levels) and historical/cultural assets of significance, as well as assets of local significance without designation that may be valued by local communities for their contribution to local distinctiveness and their sense of identity.
- Considering their susceptibility i.e. the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape policies and strategies.

9.3.15 A site based assessment was undertaken in summer 2015 that validated the findings of the desk study.

Visual Baseline Studies

9.3.16 The visual baseline assessment describes and analyses 'visual receptors' that may have specific or general views of the study area and that the Scheme may affect. This is with reference to representative viewpoints listed in Appendix 9.3 and existing receptors that may experience a deterioration in views and visual amenity.

9.3.17 A desk study was undertaken, with reference to the following technical sources.

- 1:50 000 and 1:25 000 scale digital Ordnance Survey maps.
- Aerial photography.

- Phase 1 Habitat Survey carried out as part of the Environmental Impact Assessment process for the Scheme (see Chapter 10 of this ES).

9.3.18 As part of this process the following features were identified.

- Potential screening features, including vegetation (tree lines, woodland blocks etc. as shown on Figure 9.21), individual buildings, and urban areas.
- Potential visual receptors such as residential properties, Public Rights of Way, cycleways, open space - recreation and amenity areas.

9.3.19 A site survey was undertaken in summer 2015 that identified the number and type of visual receptors looking towards the Scheme, the nature of views and the sensitivity of receptors. A photographic record of representative viewpoints was produced in summer 2015 and winter 2015/2016. The locations of these representative viewpoints are identified on Figure 9.9 and photo sheets are included in Figure 9.10.

9.3.20 Photomontages have been prepared for a selection of the representative viewpoints and are included in Figure 9.11. The location of these viewpoints is identified on Figure 9.9. The methodology for the preparation of these non-verified views is summarised in Appendix 9.12.

Consultation

9.3.21 During the LVIA process, consultation has taken place with a number of stakeholders. Consultation has included the agreement of LVIA methodology, identification of visual receptors, photomontage locations, requirements for mitigation and agreeing the assessment study area. The consultation responses relevant to the LVIA for the new section of motorway and Complementary Measures are summarised in Tables 9.2 and 9.3 below.

Table 9.2: Consultation Responses Relevant to LVIA: New Section of Motorway

Consultee	Issue Raised	Outcome/ How/Where Addressed
Draft Plan Consultation Response (Welsh Government, 2014h)		
Public response	Effects on the landscape of Newport, south Wales and the Gwent Levels. Concerns about visual impacts on locations such as Gwent levels, Castleton and Magor and the impact of elevated sections on the landscape.	Effects on landscape and on visual receptors are assessed within this chapter. Effects on the Gwent Levels. Impact on historic landscape assessed in Chapter 8 of this ES.
Natural Resources Wales (NRW)	Gwent Levels Landscape of Outstanding Historic Interest would be negatively impacted.	
Newport City Council	Importance of carefully designing approach and access to Newport, maximising its visual appeal.	Environmental Masterplans (EMP) Figure 2.6 developed to reflect change in landscape character along the route and to create gateway approaches to Newport
Landscape Meeting 1 June 2015		
Monmouthshire	Scheme to be considered as a whole	Reflected in LVIA and

Consultee	Issue Raised	Outcome/ How/Where Addressed
County Council (MCC)	and consideration given to Green Infrastructure Policy.	EMP Figure 2.6
	Magor area very sensitive – noted Vinegar Hill and Llanfihangel Conservation Area.	Reflected in LVIA and EMP Figure 2.6
	Viewpoint locations and landscape approach/opportunities identified with working group of MCC/Newport City Council/Cardiff Council/NRW and Cadw landscape/heritage officers.	Reflected in LVIA. Individual meetings with consultees
	Monmouth Landscape Character Assessment being updated (TACP due July 2015).	Referenced in LVIA
	Monmouth delivery protocol for LVIA available.	LVIA accords with DMRB IAN 135/10 (W)
	MCC contact SW Wales Local Authority Landscape Group (13 local authorities plus National Park).	No update received. To be followed up during consultation period
Landscape Meeting 17 June 2015		
NRW	Opportunities for enhancement should be sought e.g. interpretative material associated with viewpoints	Reflected in LVIA. Individual meetings with consultees
	Consult with Natural England (NE) on visual extent though NE happy NRW primary contact	No further comments received.
	Maintenance of lagoons and landscape	Covered in NRW discussions
	Bunds protecting lagoons and land no longer for agriculture should be returned to 'wetted' areas	Reviewed through detailed design development with NRW (Drainage Board)
	Joint meeting with Cadw, NRW and M4 Joint Venture landscape and heritage consultants to discuss heritage/Gwent Levels Landscape of Outstanding Historic Interest	Heritage Landscape Meeting held 25 January 2016
	Joint meeting with LPA landscape officers	This has not proved possible to arrange. Further correspondence February 2016
	NRW to review viewpoint locations and provide feedback	Received and covered in LVIA and EMP Figure 2.6
	NRW to provide recommendations and guidance on landscape proposals/mitigation.	
Email received from NRW 3 July 2015		
NRW	Site visit undertaken confirmed good range of viewpoints, advised some views omitted/added, single frame photos (40 degree angle) needed to represent field view), guidance offered on mitigation - noted Levels well treed - new planting must not overshadow reens, design of bridge structures sensitive. Lighting should be limited,	These responded to in LVIA/ES and EMP Figure 2.6. Interpretative material, art etc. to be considered prior to construction.

Consultee	Issue Raised	Outcome/ How/Where Addressed
	historic and ecological implications of new reens plus implications of banking up lagoons and wetlands, clarification on borrow pits and lagoons, cycleway on Usk crossing, opportunities for viewing points, sculptures and gateways e.g. Transporter Bridge Visitor Centre.	
Landscape Meeting 23 July 2015		
Newport City Council	Impact on designations and ecological aspects - how would impacts be mitigated. NCC seeking reassurance that proposed route and design measures are sensitive to the local context.	Reflected in developed LVIA and EMP Figure 2.6.
	NCC seeking reassurance that proposed route and design measures are sensitive to the local context - particular reference made to noise fence and effect of structures	Reflected in developed LVIA and EMP Figure 2.6.
	NCC to identify viewpoints for photomontage	No response to request to date. Assumed NCC content with proposed locations.
Scoping response 22 September 2015		
NRW	Guidance on Marine Character Areas, due to be published imminently by NRW.	Reflected in developed LVIA and EMP Figure 2.6.
	Wind Turbines (individual) should also be considered as intrusions – this is relevant to both the Wentlooge and Caldicot Levels	Reflected in developed LVIA and EMP Figure 2.6.
	Disruption to field patterns, impacts of the water treatment areas & borrow pits and effects of land raising & embankments to be considered in assessment.	Reflected in developed LVIA and EMP Figure 2.6.
Landscape and Heritage Meeting 18 September 2015 at Tredegar House		
National Trust	No concerns regarding visual aspects in relation to the new section of motorway.	N/A

Table 9.3: Consultation Responses Relevant to LVIA: Complementary Measures

Consultee	Issue Raised	Outcome/ How/Where Addressed
Landscape and Heritage Meeting 18 September 2015 at Tredegar House		
National Trust	View highlighted north from the house along the main tree-lined avenue – the current M4 cuts right across this avenue and at the moment there are current issues of screening etc.	Comments noted – Scheme may provide opportunities to enhance setting but this would be done by an offsite agreement with National Trust

Assessment Criteria and Assignment of Significance

Receptor Sensitivity: Landscape

Overview

- 9.3.22** The sensitivity of a landscape is an important consideration informing the assessment of the significance of an effect and is based on the capacity of a landscape to accommodate change of the type proposed without harm to its character. For example, a less sensitive, more robust landscape would be able to accommodate changes of the type proposed whilst essentially retaining the same set of key characteristics. Conversely, a landscape with a very high sensitivity to changes of the type proposed could have these key characteristics and elements changed to such an extent that the landscape ceases to be what it once was. The emphasis of these judgements must be focused on change *'of the type proposed'* as a landscape may be able to accommodate certain types of development without changing its essential character or affecting its key components, whereas other types of development could not be accommodated in this way.
- 9.3.23** As required in paragraph 3.9 of IAN 135/10 (W) (Welsh Government, 2014c), *'The outputs from the landscape character assessment (i.e. landscape characteristics, their condition and value) should be considered to assess their sensitivity to changes arising from the project'. 'Landscape receptors need to be assessed firstly in terms of their sensitivity, combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape'* (GLVIA para 5.39). *Susceptibility to change means 'the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and / or the achievement of landscape policies and strategies'* (GLVIA para 5.40). The 'value' of the landscape receptor is therefore identified using the above criteria and susceptibility to change.

Determining Quality/Condition and Value of the Baseline Landscape

- 9.3.24** Table 9.4 below sets out the criteria used to assess the quality/condition of the elements that make up the baseline landscape to identify local landscape character areas within the study area for the Scheme. *'The condition (i.e. quality) of the elements which make up the landscape should also be assessed'* as required in paragraph 3.18, page 12 of 54 of IAN 135/10 (W) (Welsh Government, 2014c).
- 9.3.25** Landscape Quality/Condition *'is based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place'* as defined in Welsh Government (2014c) Interim Advice Note 135/10 Landscape and Visual Effects Assessment, Wales Only.

Table 9.4: Landscape Quality/Condition Criteria and Descriptors

Quality/Condition	Description
Exceptional	Includes areas that exhibit a strong positive character with valued and distinct features in a balanced combination of built development, landform and land cover, contributing to unity, richness and harmony and creating a strong sense of place. These are landscapes that are considered to be of particular importance to conserve on a national or international level. Includes nationally recognised areas such as Areas of Outstanding Natural Beauty (AONBs).
Good	Includes areas that exhibit a positive character and sense of place but which may have evidence of the degradation or erosion of some features, resulting in areas of more mixed character and occasional detracting features. There is a reasonable distribution of trees and shrub cover and the overall view of the area is pleasant. It is potentially sensitive to change. In general, change may be detrimental if inappropriately dealt with but may require special or particular attention to detail. Landscape designations of cultural and historical value may be present.
Ordinary	Includes areas with a distinguishable landscape structure often dominated by land use, such as primarily functional development and some detracting features. Few distinctive features worthy of conservation on a local scale with scope for positive enhancement. Land may have a local landscape designation.
Poor	Includes areas generally negative in character with few if any valued features. Mixed land use dominates and the lack of management or intervention has resulted in degradation. There are extensive or frequent detracting features, although there is scope for positive enhancement. No landscape designations apply.

Source: Various

9.3.26 Using criteria in Table 9.5 below the assessment of landscape quality/condition is then used to inform the landscape value of the local landscape character areas within the study area for the Scheme as described in paragraph 2.8, page 26 of 54 of IAN 135/10 (Wales only), *'The end result in terms of providing the landscape baseline for the project is to divide the study area into specific landscape character areas, with an assessment as to their quality/condition, together with a judgement as to the value of the landscape both as a whole and of the individual character areas, features and elements that make up the landscape and define its sense of place.'*

9.3.27 Landscape value is defined as *'The relative value or importance attached to a landscape (often as a basis for designation or recognition), which expresses national or local consensus, because of its quality, special qualities including perceptual aspects such as scenic beauty, tranquillity or wildness, cultural associations or other conservation issues'* as defined in Welsh Government (2014c) Interim Advice Note 135/10 Landscape and Visual Effects Assessment, Wales Only.

Table 9.5: Criteria and Definitions of Landscape Value

Value	Descriptors
High	High importance and rarity, national and international scale, and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.

Source: based on HA 205/08 (Highways Agency *et al.*, 2008)

9.3.28 The relevant LANDMAP aspect areas, across each of the five aspect types have been identified in Appendix 9.4 for each local landscape character area. The value of the relevant LANDMAP aspect areas has been included in Appendix 9.4 and used to inform the judgement of the value of the local landscape character areas. There are multiple LANDMAP aspect areas across each of the five aspect types within any particular local landscape character area and it is not therefore possible to directly attribute a value to each LCA based on an overall LANDMAP value. Therefore a judgement has been made to evaluate the LCAs to reflect the approach outlined in paragraph 3.1.9, page 12 of 54 of IAN 135/10 (W) (Welsh Government, 2014c) that states in relation to value, *‘These judgements are guided by known facts, such as local or national designations, historic and cultural aspects, local opinion, importance to the local community etc. (e.g. Gwent Levels for ecological value or Tintern/Wye Valley for links with cultural poets). Historical and cultural assets of significance, as well as those of local significance (which are not currently designated) should also be considered as part of the landscape character evaluation process. Assets of local significance may for example be valued by local communities for their contribution to local distinctiveness and their sense of identity.’*

Determining Landscape Sensitivity

9.3.29 Taking into account the above factors, the criteria to assess the overall landscape sensitivity have been used to inform the assessment of construction and operation effects (Refer to Sections 9.6 and 9.7) in a response to the nature of change caused by the Scheme. These were derived from the methodology and examples contained in Annex 1, Table 2 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c) as presented in Table 9.6 below.

9.3.30 Landscape Sensitivity is defined as *‘the extent to which a landscape can accept change of a particular type and scale without unacceptable adverse effects on its character.’* as defined in Welsh Government (2014c) IAN 135/10 Landscape and Visual Effects Assessment, Wales Only.

Table 9.6: Landscape Sensitivity

Sensitivity	Description
High	Landscapes which by nature of their character would be unable to accommodate change of the type proposed. Typically these would be: <ul style="list-style-type: none"> • Of high quality with distinctive elements and features making a positive contribution to character and sense of place. • Likely to be designated, but the aspects that underpin such value may also be present outside designated areas, especially at the local scale. • Areas of special recognised value through use, perception or historic and cultural associations. • Likely to contain features and elements that are rare and could not be replaced.
Moderate	Landscapes which by nature of their character would be able to partly accommodate change of the type proposed. Typically these would be: <ul style="list-style-type: none"> • Comprised of common place elements and features creating generally unremarkable character but with some sense of place. • Locally designated, or their value may be expressed through non-statutory local publications. • Containing some features of value through use, perception or historic and cultural associations. • Likely to contain some features and elements that could not be replaced.
Low	Landscapes which by nature of their character would be able to accommodate change of the type proposed. Typically these would be: <ul style="list-style-type: none"> • Comprised of some features and elements that are discordant, derelict or in decline, resulting in indistinct character with little sense of place. • Not designated. • Contain few, if any, features of value through use, perception or historic and cultural associations. • Contain few, if any, features and elements that could not be replaced.

Source: Annex 1, Table 2 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

Receptor Sensitivity: Visual

Overview

9.3.31 As required in IAN 135/10 (W) (Welsh Government, 2014c paragraph 3.11), the visual sensitivity has been assessed in terms of *‘the susceptibility of the receptor to the type of change arising from the specific proposal in terms of views and visual amenity; and also the value attached to the particular views by the receptor’* (Landscape Institute and the Institute of Environmental Management and Assessment, 2013 paragraph 3.26).

Determining Sensitivity of Visual Receptors

9.3.32 A range of visual amenity receptors was identified during the desk study and verified during the field survey work. The extent and nature of their views have been described and the sensitivity of the receptors has been defined. In addition to the consideration of the quality of view i.e. the better the view the more sensitive the receptor - the sensitivity of visual receptors is also dependent on the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest may therefore be focused on the

view. For example, occupiers of residential properties are likely to have a high sensitivity due to the importance of a home's surroundings in affecting the enjoyment of that home and the long term nature of the experience of these surroundings. By contrast, people in their place of work are likely to have a low sensitivity as their attention would generally be focused on their work or activity and the setting does not have a direct bearing on the quality of working life. In addition, the existing baseline visual amenity has a bearing on a receptors likely sensitivity to the identified impacts. If, for example, the identified receptors are walkers using an area that is already dominated by residential development then their sensitivity to this type of development would be less than if the baseline was of open countryside.

9.3.33 The criteria used to assess the visual sensitivity have been derived from the methodology and examples contained in Annex 2, Table 1 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c), are presented in Table 9.7.

Table 9.7: Visual Receptor Sensitivity

Sensitivity	Typical Criteria
High	Residents and communities where views contribute to the landscape setting enjoyed by residents. People engaged in outdoor recreation whose interest is likely to be focused on the landscape including: notable viewpoints, users of open space and land with open access, Public Rights of Way, National Cycle Routes or other recreational trails. Visitors to heritage assets - Scheduled Monuments, Historic Parks, Gardens and Historic Landscapes including National Trust Properties.
Moderate	Outdoor workers. Users of scenic roads, railways or waterways or users of designated tourist routes – where travel involves regular scenic awareness of views. Schools and other institutional buildings and their outdoor areas.
Low	Workers at business parks and industrial areas - whose focus is not normally on the setting or surroundings. Users of main roads (e.g. trunk roads) or passengers in public transport on main arterial routes. Users of recreational facilities where the purpose of that recreation is not related to the view (e.g. sports facilities).

Source: Based on Annex 2, Table 1 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

Magnitude of Impact

9.3.34 For the purpose of both landscape and visual impact assessment, impacts have been graded according to their scale or magnitude. The magnitude of impact has been determined by consideration of the following aspects.

- The size or scale of the impact: The extent of landscape elements/view that would be lost or affected and the proportion that this represents within the study area, alongside a consideration of the contribution that each element makes to the character of the study area. The degree to which aesthetic or perceptual aspects of the landscape or view would be altered by the removal of existing elements or the addition of new ones and whether the impact changes the key characteristics of the landscape or view.
- Geographical extent: The geographical area over which the impact will be felt.

- Duration and reversibility of impacts: Whether the impact is short or long term and whether the impact can be completely reversed or is permanent.

9.3.35 In accordance with DMRB IAN 135/10 (W) (Welsh Government, 2014c), impacts have been rated according to a 5 point scale: major; moderate; minor; negligible and no change using criteria included in Tables 9.8 and 9.9.

9.3.36 The terms used to describe the magnitude of landscape impacts are set out in Table 9.8 below, based on Table 1 of Annex 1 of IAN 135/10 (W).

Table 9.8: Magnitude and Nature of Landscape Impact

Magnitude of Impact	Description
Major Adverse	Total loss or large scale damage to existing character or distinctive features and elements, and/or the addition of new and uncharacteristic conspicuous feature and elements.
Moderate Adverse	Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new and uncharacteristic features and elements.
Minor Adverse	Slight loss or damage to existing character or features and elements, and/or the addition of new and uncharacteristic features and elements.
Negligible Adverse	Barely noticeable loss or damage to existing character or features and elements, and/or the addition of new and uncharacteristic features and elements.
No change	No noticeable loss, damage or alteration to character or features or elements.
Negligible Beneficial	Barely noticeable improvement in character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Minor Beneficial	Slight improvement of character by the restoration of existing features and elements and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic features.
Moderate Beneficial	Partial or noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic and noticeable features and elements, or by the addition of new characteristic features.
Major Beneficial	Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous elements, or by the addition of new distinctive features.

Source: Based on Annex 1, Table 1 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

9.3.37 The terms used to describe the magnitude of visual impacts are set out in Table 9.9 below, based on Table 2 of Annex 2 of IAN 135/10 (W). The inference from the guidance is that the 5 point scale of criteria applies to both negative (adverse) or positive (beneficial) due to the nature of change according to their scale or magnitude as described in paragraph 9.3.35. In applying this we have assessed negative impacts on the basis that *'The project, or a part of it, would become a detracting feature or focal point of the view'* and assessed as positive where *'The project or part of would result in an improvement in the view resulting from the restoration and/or screening or removal of existing features and*

elements, or by the addition of new characteristic elements forming a focal point and/or feature of visual interest’.

Table 9.9: Magnitude and Nature of Visual Impact

Magnitude of Impact	Description
Major	The project, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The project, or a part of it, would form a noticeable feature or element of the view, which is readily apparent to the receptor.
Minor	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the project would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view.
No change	No part of the project, or work or activity associated with it is discernible.

Significance of Effect

9.3.38 The magnitude of impact has been combined with the sensitivity of the landscape/visual receptors to establish a resultant category of significance of effect, expressed as a scale ranging from neutral to very large, which can be positive (beneficial) or negative (adverse). This has been undertaken in accordance with Annex 1 Table 3 and Annex 2 Table 3 of IAN 135/10 (W) (Welsh Government, 2014c), as set out in Table 9.10 below. Effects falling within the categories of moderate to very large are considered to be significant for the purpose of this assessment.

9.3.39 For some representative viewpoint locations, the magnitude of a visual impact and therefore nature of change in visual amenity as defined in Table 9.9 would be so small that, whilst negligible, the significance of effect would be judged neutral, even though the matrix in Table 9.10 suggests a slight significance of effect. This allows for the differentiation between negligible change that is considered to represent either a limited deterioration or improvement in visual amenity against a negligible change that would occur but that would be so trifling that it would not be judged to represent a distinguishable significance of effect on visual amenity. The former would therefore be rated as being of slight significance with the latter rated as neutral.

Table 9.10: Significance of Effect Categories

Landscape /Visual Sensitivity	Magnitude of Impact				
	No Change	Negligible	Minor	Moderate	Major
High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/ Very Large
Moderate	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
Low	Neutral	Neutral/ Slight	Neutral/Slight	Slight	Slight/ Moderate

Source: Based on Annex 1 and 2, Table 3 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

9.3.40 The terms used to describe the significance of effect categories are set out in Tables 9.11 and 9.12 below, based on Table 4 of Annex 1 and Table 4 of Annex 2 of IAN 135/10 (W).

Table 9.11: Landscape - Significance of Effect Categories

Significance	Description
Very large Beneficial (Positive) Effect	The project would: <ul style="list-style-type: none"> • Greatly enhance the character (including quality and value) of the landscape • Create an iconic high quality feature and/or series of elements. • Enable a sense of place to be created or greatly enhanced.
Large Beneficial (Positive) Effect	The project would: <ul style="list-style-type: none"> • Enhance the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development. • Enable a sense of place to be enhanced.
Moderate Beneficial (Positive) Effect	The project would: <ul style="list-style-type: none"> • Improve the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development. • Enable a sense of place to be restored.
Slight Beneficial (Positive) Effect	The project would: <ul style="list-style-type: none"> • Complement the character (including quality and value) of the landscape. • Maintain or enhance characteristic features and elements. • Enable some sense of place to be restored.
Neutral	The project would: <ul style="list-style-type: none"> • Maintain the character (including quality and value) of the landscape. • Blend in with characteristic features and elements. • Enable a sense of place to be retained.
Slight Adverse (Negative) Effect	The project would: <ul style="list-style-type: none"> • Not quite fit the character (including quality and value) of the landscape. • Be at variance with characteristic features and elements • Detract from a sense of place.
Moderate Adverse (Negative) Effect	The project would: <ul style="list-style-type: none"> • Conflict with the character (including quality and value) of the landscape. • Have an adverse impact on characteristic features or elements. • Diminish a sense of place
Large Adverse (Negative) Effect	The project would: <ul style="list-style-type: none"> • Be at considerable variance with the character (including quality and value) of the landscape. • Degrade or diminish the integrity of a range of characteristic features and elements. • Damage a sense of place.
Very Large Adverse (Negative) Effect	The project would: <ul style="list-style-type: none"> • Be at complete variance with the character (including quality and value) of the landscape. • Cause the integrity of characteristic features & elements to be lost. • Cause a sense of place to be lost.

Source: Based on Annex 1, Table 4 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

Table 9.12: Visual - Significance of Effect Categories

Significance	Description
Very large Beneficial (Positive) Effect	The project would create an iconic new feature that would greatly enhance the view.
Large Beneficial (Positive) Effect	The project would lead to a major improvement in a view from a highly sensitive receptor.
Moderate Beneficial (Positive) Effect	The project would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor.
Slight Beneficial (Positive) Effect	The project would cause limited improvement to a view from a receptor of medium sensitivity, or would cause greater improvement to a view from a receptor of low sensitivity.
Neutral	No perceptible change in view.
Slight Adverse (Negative) Effect	The project would cause limited deterioration to a view from a receptor of medium sensitivity, or would cause greater deterioration to a view from a receptor of low sensitivity.
Moderate Adverse (Negative) Effect	The project would cause obvious deterioration to a view from a moderately sensitive receptor, or perceptible damage to a view from a more sensitive receptor.
Large Adverse (Negative) Effect	The project would lead to a major deterioration in a view from a highly sensitive receptor and would constitute a major discordant feature in the view.
Very Large Adverse (Negative) Effect	The project would cause the loss of views from a highly sensitive receptor, and would constitute a dominant discordant feature in the view.

Source: Based on Annex 2, Table 4 of the Interim Advice Note 135/10 (W) (Welsh Government, 2014c)

9.3.41 Landscape planting shown on the Environmental Masterplan in Figure 2.6 is included as an inherent 'committed' part of the design of the Scheme and, as such, has been taken into account in the initial assessment of the potential effects. As stated in IAN 135/10 (W) (Welsh Government, 2014c) para 4.8 (page 52) '*These measures are an integral part of the project*'. Measures included as part of the Scheme design are described in Section 9.5, including the extent and type of proposed landscape planting.

Assessment Approach for the Complementary Measures

9.3.42 The assessment approach for this part of the Scheme broadly follows the methodology described above, but with the process simplified to reflect the limited nature of the proposed physical works in accordance with guidelines for a 'simple assessment' as outlined in IAN 135/10 (W). The baseline conditions and predicted effects have been described using narrative only, with no supporting tables. The relevant LANDMAP aspect areas identified in Appendix 9.5 have been used to inform the baseline, sensitivity evaluation (including value) and assessment.

9.3.43 The Complementary Measures do not affect the physical elements of the landscape apart from highway infrastructure elements such as signs, kerbs and retaining walls between carriageways – there would be no changes to vegetation, topography or boundaries. Assessment of landscape resource effects has therefore been limited to effects on landscape character.

- 9.3.44** The Complementary Measures would involve minor works within the existing highway corridor during a short term construction period resulting in a similar effect to regular highway maintenance works with no significant effects predicted. The effect of the construction phase on the landscape character, views and visual amenity has not therefore been assessed further.
- 9.3.45** For the assessment of the visual effects, only receptors considered to be sensitive to changes of the type proposed have been included due to the nature of the proposed Complementary Measures. Current LVIA/EIA guidance at all levels emphasises the need to keep assessment proportional and to focus on effects that may have a significant impact. The Complementary Measures would involve minor changes to the infrastructure of the existing M4. The road itself, boundary features (including roadside vegetation), safety barriers, lighting and gantries would all remain unaltered. The key changes would be to signage and detailed layouts of slip roads along with predicted changes to traffic flows. Preliminary desktop assessment revealed that the magnitude of impact of these changes would be at the very most minor. It was therefore not considered appropriate to assess the impact on receptors with low or moderate sensitivity as the significance of any resulting effects would be likely to be neutral or slight.
- 9.3.46** The effect of the Complementary Measures in daylight hours has been assessed. They include some changes to signage within the verges but lighting and other highway infrastructure would be retained. This would mean that in the hours of darkness the effect from street lighting would stay the same but the impact of headlights would reduce, reflecting the predicted reduction in traffic flows of between 30 and 45%.

Assessment Approach for the River Usk Crossing

- 9.3.47** The new River Usk Crossing would be a major intervention in the existing landscape, potentially impacting on Cultural Heritage, Ecology and other environmental aspects as well as on the landscape character and visual integrity of the area. The new bridge would be a major feature in the landscape with views ranging from receptors in close proximity to the bridge to distant views from both Wales and from England on the other side of the Severn Estuary.
- 9.3.48** Whilst the actual structure of the bridge has a limited direct impact on the existing landscape, the potential visual impact is considerable. Whether this visual impact is positive or negative is inherently debatable and different people would take different views on this.
- 9.3.49** The Scheme and the design for the River Usk Crossing have been through considerable design review and development, including review by the Design Commission for Wales (DCfW). In respect of the LVIA assessment of the Scheme, they have made a number of observations that are pertinent to our methodology and approach to the evaluation of the River Usk Crossing.
- 9.3.50** As stated in the Design Review Report M4 Corridor around Newport (Ref: Meeting of 22nd October 2015):

'Approaching the project from a cultural viewpoint offers one approach to resolving these tensions. If the Scheme is thought of as a new 'linear park' and the Usk Bridge as a new 'cathedral', it is easier to imagine the more positive impacts that could be made.'

‘The concept design for the Usk Bridge so far is elegant and well-considered. The design Commission is happy with the progress made on it since the previous review, including the proposed lighting strategy.’

‘The scale of the new bridge, and its location, means users will, for the first time, properly understand Newport’s setting. Nowhere else will such an expansive view of the city, the river estuary and sea be available.’

9.3.51 Based on this, and on review and moderation by the landscape team, it is considered that visually the new bridge would in general be beneficial, particularly in medium to distant views where the scale, form, design and location within the landscape can be more fully understood; but that in some closer views and for some receptors consideration of factors such as proximity and scale would suggest a negative impact assessment. This baseline consideration is reflected in the more specific LVIA assessment.

Aspects of the New Section of Motorway Considered Relevant to the Assessment of Landscape and Visual Effects

9.3.52 The following aspects of the new section of motorway are considered to be relevant to the LVIA during construction.

- General construction vehicle movement including large-scale earth movements and general disturbance including construction of cuttings and embankments and visual impact of highway material haulage.
- Disruption to the existing network of woodland, hedgerow and other soft landscape features, including loss of vegetation and disruption to the reen network.
- Tall equipment associated with larger structures such as the River Usk Crossing and the rail overbridges.
- Construction compounds, borrow pit areas (at Castleton and Magor), haul routes, material laydown, storage, and temporary lighting.
- Low level and directional security lighting in compounds and working areas avoiding high masts during hours of darkness.
- Construction elements away from the main carriageway such as the construction of the attenuation ponds.

9.3.53 The following aspects of the new section of motorway are considered to be relevant to the LVIA during operation.

- Approximately 23 km long three lane motorway across part of the Caldicot and Wentlooge Levels (The Gwent Levels).
- Earthworks and structures associated with four terminal and grade separated junctions.
- The River Usk Crossing over the River Usk and the Newport Docks. The minimum navigation clearance between the mean high water springs level and the underside of the soffit of the bridge across the River Usk would be 32 metres. A minimum clearance of 25.5 metres above the docks water level of approximately 7.56 metres AOD would be provided.

- Two crossings between 5 of the South Wales to London Mainline and other Network Rail Freight Lines.
- Earthworks and structures associated with side road overbridges and a bridge over the River Ebbw.

9.3.54 The assessment of effects at Year 1 includes the following.

- Limited vegetation cover on embankments, cutting and verges locally adjoining the route.
- Raising the level of the carriageway of the new section of motorway in comparison to the existing ground level averaging 2 m AOD across the Levels.
- Castleton and Magor Interchanges - the depth of cuttings through and the changes in scale of earthworks footprint from existing to new.
- Vertical alignment effects of road and rail crossings and the proposed River Usk Crossing which vary between approximately 5.5 – 40.7 m AOD.
- Signage including safety barriers, gantries and free standing signs.
- 4.35 m height of moving traffic to allow for freight lorries.
- 7 m high gantries on embankments and in cuttings with signage and lighting on top.
- Night-time effects of vehicle headlights and any new lighting and signage forming part of the project.

9.3.55 The assessment of effects at Year 1 includes the following.

- Effects of the new section of motorway once the design intention of landscape mitigation has become effective.
- Potential ongoing views of signage, gantries and free standing signs.
- Ongoing views of moving traffic.
- Ongoing views of the River Usk Crossing.
- Residual lighting impacts.
- Offline construction elements such as the construction of the attenuation ponds.

Limitations of the Assessment

9.3.56 The visual assessment has been undertaken from publicly accessible viewpoints with no direct access to residential properties or business premises. To ensure a robust assessment the following measures have been undertaken.

- Use of a digital surface model for the ZTV that takes into account landform and landcover including built development and vegetation (Refer to Figures 9.2 - 9.8).
- Use of OS base maps and aerial photography to determine where a straight line of sight may be available to the Scheme, taking into account topography and large intervening features such as woodland and buildings.
- Site surveys to verify the ZTV and to assess the views available from footpaths, local roads, open space and land with public access.

- Use of inter-visibility studies that consider views to and from the Scheme from residential properties or business premises.
- Assessing seasonal and night time variations.

9.3.57 The Scheme has been assessed in relation to existing structures. The height of these structures has been established during the assessment e.g. for the River Usk crossing, the Transporter Bridge towers are 73.6 metres high and 50 metres to the main deck.

9.4 Baseline Environment

Landscape and Visual Baseline

Designations

9.4.1 The landscape and visual study area encompasses and includes a number of protected designations which reflect, in particular, the national importance of the Gwent Levels and its importance as a historic landscape, its ecological value, environmental history and associated archaeology (see Figure 9.13).

The Gwent Levels Historic Landscape

9.4.2 The Gwent Levels holds a cultural and historic importance on a national scale and is included in the 'Register of Landscapes of Outstanding Historic Interest in Wales' published by Cadw in January 1998. This is considered in Chapter 8 (Cultural Heritage) of this ES.

Nature Conservation Designations

9.4.3 The Gwent Levels and Severn Estuary are noted for the variety of the terrestrial and aquatic ecological resources from local to international significance, and are considered in Chapter 10 (Ecology) of this ES.

Special Landscape Area Designations

9.4.4 A number of Special Landscape Areas (SLAs) designated by Newport City Council and Monmouthshire County Council are present within the study area.

9.4.5 Newport City Council SLAs include:

- SLA3 - Wentlooge Levels;
- SLA4 - River Usk; and
- SLA5 - Caldicot Levels.

9.4.6 Monmouthshire County Council SLAs include:

- SLA3 - Gwent Levels;
- SLA4 - Usk Valley; and
- SLA5 - Ifton.

Landscape Character and Context

Regional Landscape Character

The Landscape Character Map

9.4.7 Wales is divided into 48 regional scale landscape character areas that are presented on The Landscape Character Map for Wales. The Scheme is located within Landscape Character Area 34: Gwent Levels, which describes at a regional level its ‘*geological, habitats, historic, cultural and perceptual characteristics*’ (see Figure 9.14).

Welsh Seascapes

9.4.8 Although the Scheme is not an offshore development it is important to assess the potential impact particular elements of the Scheme could have on the Welsh seascapes. The study area includes two Welsh Seascapes as shown on Figure 9.14. A summary of the key characteristics is provided below.

SU49 Lavernock Point to Goldcliff

- Lias cliffs to the west with some wave-cut platforms and shingle beaches ending abruptly at Penarth Head.
- Relatively linear reclaimed coastline to the east, with grass bund sea defences and extensive sand and mud exposed at low tide.
- Incised plateau landscape to the west and extensive flat levels hinterland to the east, with pastoral and arable fields to the coastal edge.
- The low lying cities of Cardiff and Newport are generally set back from the coast with port, power station and commercial areas adjacent. Penarth lies in an elevated position overlooking the estuary.
- The Severn Estuary has a strong lateral flow, a very high tidal range and is opaque with suspended solids.
- East of Penarth Head, the Severn is estuarine in character, reinforced by the extensive levels and mud flats, whereas west of here, the Bristol Channel is sufficiently wide and exposed to form a wide sea inlet.
- Key views from Penarth include parks, Cardiff Bay barrage and the coastal path. Long open views from the south and east facing coast along the estuary and to the English coast.
- Key cultural characteristics: Cardiff historic city and port, capital city of Wales and centre of Welsh government and Millennium Centre, centred around the old port area, with a barrage to stimulate regeneration. Newport is Wales’s newest city. Gwent Levels reclaimed landscape dates back to the Pleistocene period.

RSU50 Goldcliff to Chepstow

- A relatively linear, reclaimed coastline with grass bund sea defences and extensive sand and mud exposed at low tide.
- An extensive, flat hinterland (Gwent Levels), with pastoral and arable fields up to the coastal edge.

- The M4 and M48 on the two Severn bridges visually dominate the area and power lines are also another major feature.
- Settlement is generally set back from the coast including Chepstow and Caldicot with very few houses directly adjacent, except at Sudbrook.
- The Severn Estuary has a strong lateral flow, a very high tidal range, is opaque with suspended solids and is a treacherous stretch of water. The estuary is a designated Site of Special Scientific Interest (SSSI), with extensive inland tracts of considerable ecological variety.
- Views from the coastal path on bund, country park at Black Rock and the M4 and M48 roads are all important. Road views are important as the gateway views to Wales. All views include the English coast as a backdrop.
- Key cultural associations: Gwent Levels reclaimed landscape, extensive historic landscape and SSSIs, Severn Bridges and road and rail communications corridor.

New Section of Motorway - Local Landscape Character

9.4.9 Local Landscape Character Areas (LCAs), each with a distinct, consistent and recognisable character, have been identified within the study area (see Figure 9.13). Each LCA is described in Appendix 9.4 in relation to the LANDMAP landscape information system published by Natural Resources Wales (2015), as shown on Figure 9.15, comprising five aspects: geological landscape; landscape habitats; visual and sensory; historic landscape; and cultural landscape evaluated at a community, local, national and international level. For each LCA, the relevant LANDMAP aspect areas are identified, key summary characteristics are described, and their condition/quality and sensitivity assessed below.

Local Landscape Character Area 1: Michaelston-y-Fedw

9.4.10 This LCA is located between the urban edges of Newport to the north east and Cardiff to the south west. It extends south east to the A48, St Mellons Golf Club and The Parc Golf Club. To the north west it extends into Bassaleg and the River Rhymney.

9.4.11 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: NWPRTVS 002, 003, 004, 012, 038, 051 and 058.
- Cultural landscape: NWPRTCL 001, 010 and 026.
- Landscape habitat: NWPRTLH 040, 041, 042, 046 and 056.
- Historic landscape: NWPRTLH 001, 002, 024, 027, 038 and 040.
- Geological landscape: NWPRTGL 038, 040, 041, 042 and 043.

9.4.12 Landcover, pattern and texture: The area contains lowland rolling farmland which is predominantly arable with some pasture, which creates a rural wedge between Newport and Cardiff. The field pattern is medium scale and sinuous in form with some more open rectangular fields. There are a number of scattered farmhouses and woodland blocks including some ancient woodland and linear woodland alongside watercourses and the motorway corridor. The former LG site and Cleppa Park contains large-scale buildings with the surrounding landscape including bunds, mass woodland planting and lakes.

- 9.4.13** Scale and appearance: The field sizes are predominantly large and the landscape rises to the north. The landform is gently undulating with an open character allowing long views to the Severn Estuary, enclosure is provided by maintained hedges of varying heights. An arched pedestrian bridge acts as a gateway to the area from the west. Detractors include transport corridors of the M4, A48(M) and A48, pylons, masts and unmaintained farm buildings. During the hours of darkness the LCA is generally dark. Light sources are primarily from Castleton, Marshfield, the M4 and A48 corridor and scattered dwellings. There is indirect light glow to the background of the area, which originates from both Cardiff to the west and Newport to the east.
- 9.4.14** Tranquillity: Tranquillity is limited by the existing M4 corridor but the landscape becomes surprisingly tranquil on the north and west facing slopes away from the M4 due to the presence of intervening landform and vegetation. The landscape is generally quite open and crossed by other smaller roads with some glimpsed views between topographic features and vegetation towards the Levels, motorway corridor and out to the west.
- 9.4.15** Cultural: The LCA forms part of the “Newport Hinterland” (LANDMAP) around the River Rhymney valley and consists of scattered farmsteads with field enclosures that have remained largely unchanged since the 18th and 19th centuries. The area provides a transition zone to the flat levels landscape further south with some areas of a suburban nature around Marshfield, Castleton, the former LG site and Cleppa Park.
- 9.4.16** Human interaction: The LCA is served by east-west transport routes, primarily the existing M4, A48(M) and the South Wales to London Mainline railway. The LCA contains the St Mellons Golf Club and The Parc Golf Club. Moving into and through the area the transition between main roads and the more rural lanes is very quick. Alongside farming activity there are a few residential areas (including Castleton and Marshfield) and a number of scattered farmhouses and dwellings, a cricket ground, nurseries, a garden centre and areas of horsiculture.
- 9.4.17** On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of good quality/condition and to be of medium landscape value.

Local Landscape Character Area 2: Wentlooge Levels

- 9.4.18** This LCA is located between the urban edges of Newport to the north east and Cardiff to the south west. It extends south east to the Bristol Channel from the A48, St Mellons Golf Club and The Parc Golf Club.
- 9.4.19** The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.
- Visual-sensory: NWPRTVS 001, 006, 009, 022 and 058.
 - Cultural landscape: NWPRTCL 002, 004, 021 and 026.
 - Landscape habitat: NWPRTLH 049, 053, 055 and 057.
 - Historic landscape: NWPRTHL 020, 021 and 038.
 - Geological landscape: NWPRTGL 034, 035, 036, 037 and 052.

- 9.4.20** Landcover, pattern and texture: The LCA is primarily in agricultural use, with a reen and drainage ditch landscape (some large reens are present alongside road corridors). This is part of the Gwent Levels which are one of the most extensive areas of reclaimed wet pasture in the UK. There is an irregular layout of fields but a large proportion are rectangular in nature, particularly to the west. Settlement pattern tends to be focused on a few minor roads.
- 9.4.21** Scale and appearance: The fields are small to medium scale with more pastoral than arable land use and some areas of wet pasture. Some small villages and clusters of houses are located around road junctions and have a strong sense of place with churches that act as landmarks. Reens and ditches form the most distinctive feature and create a “patchwork” appearance. There are a number of lines of willows and other vegetation located alongside and within the reens and ditches. The area contains some small rural businesses e.g. a plant nursery. Views towards the Severn estuary are generally not possible because of the flood embankment. During the hours of darkness the LCA is generally dark with a lit background to the north, east and west from the M4 and A48 corridors, Newport and Cardiff. Lighting within the LCA originates mainly from isolated properties.
- 9.4.22** Tranquillity: There is a high level of tranquillity throughout the LCA, particularly away from the South Wales to London Mainline railway. A notable feature is the exposure to the elements and the open skies created by the flat landscape.
- 9.4.23** Cultural: The levels are a rare distinctive landscape of broadly rectangular fields with reens, hedges and field boundary trees. It is part of the Gwent Levels, dating from the medieval period. It is also the largest and most significant example of a “hand-crafted” landscape in Wales and designated as an Outstanding Historic Landscape. There are a number of isolated farmsteads and historic villages throughout the LCA and the traditional reen landscape is evident throughout resulting in a strong sense of place.
- 9.4.24** Human interaction: The Wales Coast Path is present along the boundary of this LCA with the Bristol Channel and there is a limited network of public rights of way through the LCA. Golf courses provide a leisure attraction but are a more modern and alien feature within the levels landscape.
- 9.4.25** On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of exceptional landscape quality, in good condition and of high landscape value.

Local Landscape Character Area 3: Newport Docks and Uskmouth

- 9.4.26** This LCA covers the south of Newport, from the A48 and covers either side of the River Usk. Its western boundary is defined by the River Ebbw whilst the eastern boundary is defined by Nash Road and the former steelworks site.
- 9.4.27** The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.
- Visual-sensory: NWPRTVS 010, 022, 040 and 041.
 - Cultural landscape: NWPRTCL 002, 004, 005, 007, 014, 015, 017 and 026.
 - Landscape habitat: NWPRTLH 014, 032, 034, 036, 037, 047 and 049.
 - Historic landscape: NWPRTLH 022, 032 and 048.

- Geological landscape: NWPRTGL 002, 003, 004 and 052.

9.4.28 Landcover, pattern and texture: The land cover is primarily urban and consists of docks, industrial buildings and offices. The River Usk is a natural linear feature through the centre of the LCA and has a modified course with intertidal beaches. The LCA has a rough texture with some green wedges present alongside the edge of the River Usk, including Coronation Park. The other notable land cover feature is the landfill site to the west. It is difficult to discern a logical pattern to development other than the area immediately adjacent to the docks.

9.4.29 Scale and appearance: The buildings within the LCA are large scale and are accompanied by tall pylons, power stations and remnant steelworks industry. The raised mound of the waste disposal site is a notable feature. Banks of the river have walls and hard edges in places and the Newport Transporter Bridge provides a distinctive feature and landmark. Few or no natural features remain outside of the River Usk corridor. With the exception of the Newport Transporter Bridge and the River Usk, the LCA has little rarity and is of local scale. During the hours of darkness the LCA is widely illuminated as a result of lighting associated with roads, buildings, turbines and feature lighting on the Newport Transporter Bridge and the A48 bridge.

9.4.30 Tranquillity: The tranquillity of the LCA is limited by its use as a busy and active industrial area and by the elevated visual clutter of buildings and pylons. There are, however, some more relatively tranquil pockets along the River Usk and within open spaces.

9.4.31 Cultural: The area was developed, originally to the east of the Usk, in the late 19th and early 20th centuries through the establishment of brickworks, sawmills, chemical works and iron/steelworks. Medieval wharves are known to have existed on the west bank of the River Usk and a 15th century Newport Medieval Ship was discovered in the dry-dock in 2002. The LCA contains the Newport Transporter Bridge which is the lowest river crossing on the Usk. This heritage asset, of significance and distinctive feature and landmark in a primarily urban and industrial setting, was opened in 1906 and is a Grade I listed structure. There are only seven bridges of this design in the world. The bridge closes in the winter months.

9.4.32 Human interaction: Interaction within the LCA is primarily by those working in the landscape at local industries and those undertaking recreational activities such as walking the coastal path or water based sports including sailing. There are a number of derelict and empty sites within the area.

9.4.33 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of poor quality/condition and to be of low landscape value overall (there are, however, some pockets of medium landscape value around the River Usk and the Newport Transporter Bridge).

Local Landscape Character Area 4: Newport

9.4.34 This LCA covers the urban extent of Newport, north of the A48.

9.4.35 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: NWPRTVS 010, 012, 018, 019, 022, 023, 039, 042, 043, 055, 056 and 057.
- Cultural landscape: NWPRTCL 001, 002, 007, 008, 010, 011, 014, 018, 022, 025 and 026.
- Landscape habitat: NWPRTLH 008, 014, 037, 038, 039, 043, 046, 049 and 052.
- Historic landscape: NWPRTHL 003, 005, 022, 023, 024, 025, 028, 032, 042, 045, 048 and 049.
- Geological landscape: NWPRTGL 001, 002, 003, 004, 005, 007, 008, 009, 010, 026, 034, 039, 045, 047 and 052.

9.4.36 Landcover, pattern and texture: The LCA is primarily urban and residential with the River Usk running through the centre. The pattern of built form is a mixture of Victorian terraces, council estates, detached and semi-detached houses. Tredegar Park is located to the west and contains a formal park and garden with a large grassed area, lake and car park. The area has been intensively developed and few or no natural features remain.

9.4.37 Scale and appearance: The scale of built form is mainly two storey residential with some larger scale buildings in the town centre and around the industrial/retail areas. The River Usk has a variable character through the area and has four bridge crossings, the M4 crossing being the northernmost one. Tredegar Park contains some notable vistas and consistent character. To the east of Newport the main focal points are the approach to the main town bridge and the war memorial and the junction between the M4 and A449 with the distinctive industrial building to the east. During the hours of darkness the LCA is widely illuminated by street lighting and buildings resulting in a glow in the night sky.

9.4.38 Tranquillity: There are some tranquil areas located alongside the River Usk corridor and within residential areas and open spaces away from main roads. The M4 and A449 are large scale roads which reduce the tranquillity of the environment around them.

9.4.39 Cultural: Tredegar House is located to the west of the area and is a 17th century Grade I listed building within a parkland setting. Over time the parkland, which is classed as Grade II* on the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, has been eroded through the presence of the M4 and other developments. With the exception of the castle, cathedral and an early 17th century merchants house, the historic centre of Newport consists of late 19th century development. Other cultural aspects of the LCA include historic buildings and shopping centres.

9.4.40 Human interaction: The majority of the LCA contains forms of human interaction through roads, footpaths, open spaces and residential/commercial areas. Tredegar Park is a visitor attraction owned by the National Trust and the centre of Newport acts as a main draw for a range of activities. There are some good views from the LCA from elevated positions towards the Bristol Channel.

9.4.41 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of ordinary quality/condition and to be of low landscape value.

Local Landscape Character Area 5: Chepstow Woods Southwest

- 9.4.42** This LCA area extends across the predominantly rural landscape to the east of Newport. It contains the area to the north of the former steelworks, Magor and the M48. To the north it extends as far as Llanbeder, Parc Seymour and Caerwent.
- 9.4.43** The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.
- Visual-sensory: NWPRTVS 012, 033, 034, 035, 036, 052 and 053, MNMTHVS 039, 040, 041, 053, 061, 067, 080, 082, 086 and 098.
 - Cultural Landscape: NWPRTCL 001, 002, 013, 019, 021, 022 and 026, MNMTHCL 002, 003, 004, 006 and 007.
 - Landscape habitat: NWPRTLH 019, 026, 028, 029, 030, 031, 032 and 033, MNMTHLH 049, 050, 052, 053, 054, 094 and 105.
 - Historic landscape: NWPRTHL 006, 011, 012, 013, 014, 029, 030 and 031, MNMTHHL 004, 005, 010, 011, 012 and 024.
 - Geological landscape: NWPRTGL 009, 011, 012, 013, 014, 015, 016, 017, 019 and 020, MNMTHGL 081, 082, 084, 086, 088, 089 and 090.
- 9.4.44** Landcover, pattern and texture: The landcover is primarily rural with gently rolling large fields, which are used mainly for pasture. The area is varied and diverse in character due to the mix of farming types, more intensive cultivation is creating a neat and clean texture. There are some large blocks of mixed woodland and some linear planting along valleys, with field boundaries contained by hedgerows and hedgerow trees. There are no large settlements within the LCA, the largest being Rogiet, between the M4 and M48. Quarries form a feature of the landscape and include Ifton Quarry and the disused Caerwent Brook Quarry.
- 9.4.45** Scale and appearance: The landform is rising and undulating with an open landscape character away from woodland blocks. Westbound views are particularly open past Knollbury and there are long views from the motorway towards the Severn Estuary. Wilcrick Hill is a distinctive rounded hill rising from the levels from 10 m AOD to over 50 m AOD. It has a strong sense of place as a small scale but distinct outlier of the undulating landscape to the north and west. Llanfihangel Rogiet is a remnant of historical rural character comprising traditional stone cottages, a large prominent farmstead and the church forming the focal point. The motorway is a detractor within the landscape although it has some fairly established vegetation along the corridor in places which helps to integrate it into the landscape. During the hours of darkness the LCA is relatively dark with light deriving from scattered dwellings and small stretches of road lighting. There is a lit backdrop of lighting from the existing M4 corridor and the glow of Newport and Magor.
- 9.4.46** Tranquillity: Alongside the M4 and M48 corridors the tranquillity of the LCA is limited. However, due to the undulating ground and woodland blocks the tranquillity increases fairly quickly away from those transport corridors. Llanfihangel Rogiet is not a tranquil landscape as a result of surrounding motorway corridors and the South Wales to London Mainline railway.

9.4.47 Cultural: The area contains Llanwern Golf Club in the west and Dewstow Golf Club in the east, both of which have changed the fieldscape which preceded them. Llanwern Golf Club has retained a block of ancient, semi-natural woodland at Dockwell Wood. The area to the north of the M4 is a post-medieval landscape of dispersed settlement, influenced historically by the presence of extensive areas of woodland, which survives essentially unchanged. Around Wilcrick the fieldscape pattern has survived unchanged from pasture. To the north of the area Pencoed Castle has an intact manorial grouping of medieval / early post-medieval date, a large 16th century mansion and a series of formal garden enclosures.

9.4.48 Human interaction: Interaction within the landscape is primarily through public rights of way and road corridors. Farming activities cover a large proportion of the area with a mix of arable and pastoral. Small settlements and isolated properties exist throughout the area. Leisure activities include the use of open spaces within settlements and playing golf at one of the courses within the area.

9.4.49 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of good quality/condition and to be of medium landscape value.

Local Landscape Character Area 6: Llanwern Steelworks

9.4.50 The extent of this LCA is defined to the north by the South Wales to London Mainline railway and to the east, south and west by the industrial, commercial and brownfield land on the site of the former steelworks.

9.4.51 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: NWPRTVS 044.
- Cultural landscape: NWPRTCL 014 and 023.
- Landscape habitat: NWPRTLH 033 and 034.
- Historic landscape: NWPRTHL 022.
- Geological landscape: NWPRTGL 004 and 013.

9.4.52 Landcover, pattern and texture: This LCA is a low lying, formal coastal flat, once heavily developed with industry. About half of the LCA is now brownfield land following dismantling of the steel plant, or land undergoing redevelopment. The other half consists of industrial and office buildings, which includes the Tata steelworks, with large areas of tarmac car parking. The landscape pattern is linear in nature, due largely to the layout of the steelworks and the A4810. Structures are partly screened by existing, over-mature willow and poplar tree belts, some of which are not in good condition. Field patterns are a mix of square or long and narrow, bounded by hedgerows or drained by reens, and consisting of a mix of arable and pasture.

9.4.53 Scale and appearance: This is a large scale landscape due to the flat nature of the coastal flats and the footprint and height of the buildings and other structures, including pylons and industrial chimneys. New development is also large scale, including warehouses and distribution centres, which are prominent in the landscape. There is an extensive residential development, including associated infrastructure, under construction which would extend the urban area of Newport

significantly. During the hours of darkness the A4810 provides a lit corridor through the LCA. Further lighting is provided by industrial and commercial buildings throughout the area. To the west, sky glow is visible over Newport.

9.4.54 Tranquillity: The tranquillity of the LCA is limited by industrial activity and traffic movements along the A4810.

9.4.55 Cultural: The character of the LCA was completely changed after construction of the steelworks in the 1960s, and it is now undergoing further regeneration in the west which would again affect the cultural value of the area. The LCA has long been predominantly industrial, although the nature of this has altered over time, with roads and rail lines also a feature in this landscape, providing links with the rest of Wales and England.

9.4.56 Human interaction: Interaction with this LCA is limited. There are currently few dwellings, and people are either passing through the landscape using the A4810, or going to a place of work within the area.

9.4.57 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of poor quality/condition and to be of low landscape value. The cultural value is seen as moderate due to the area serving the local employment, and as part of the LCA is currently undergoing regeneration it may be that a future baseline scenario could improve to ordinary quality/condition.

Local Landscape Character Area 7: Caldicot Levels

9.4.58 This LCA comprises the flat landscape south of the former steelworks, east of Nash Road across to the north-south track between Magor and Summerleaze. To the south the LCA concludes at the coastline with the Bristol Channel.

9.4.59 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: NWPRTVS 005, 006, 037 and 044, MNMTHVS 053.
- Cultural landscape: NWPRTCL 004, 006, 014 and 026, MNMTHCL 001 and 003.
- Landscape habitat: NWPRTLH 033, 034, 035, 036, 053 and 054, MNMTHLH 048 and 138.
- Historic landscape: NWPRTHL 017, 018, 019 and 022, MNMTHHL 001 and 002.
- Geological landscape: NWPRTGL 004, 031 and 032, MNMTHGL 083 and 086.

9.4.60 Landcover, pattern and texture: This is an open, low lying, flat and exposed landscape, with a varied pattern of regular and irregular fields of reclaimed pasture and drainage channels. The field patterns tend to be regular towards the east with more irregular fields to the west towards the Docks, beyond Wainbridge Reen. There are predominantly areas of wet pasture and pastoral land with areas of improved grassland. Reens and ditches follow the road and field boundaries, and are lined with pollarded willows, poplar and linear belts of willow scrub and cut or overgrown hedgerows. There are some small woodland blocks within the LCA alongside the small scale fields. The LCA is considered to have a unique character with valuable habitats that support a variety of plant species,

including nationally rare plant species and invertebrates. The Newport Wetlands National Nature Reserve (NNR) is located to the south west of this LCA, and supports a number of protected species as well as internationally important numbers of wildfowl, and is designated as a SSSI and RSPB Reserve. Much of the Levels is also designated as SSSI, and borders the Ramsar site and Special Protection Area (SPA), of the adjacent Severn Estuary.

- 9.4.61** Scale and appearance: This is an open exposed, large scale landscape with open skies and long distant views across the Severn Estuary to the south. The pattern of rectilinear fields and hedgerows to the east, gives a neat appearance, whereas the more irregular fields to the west of Whitson Common around Goldcliff present a more informal sinuous character. Towards the south and the Severn Estuary, the Levels are protected by a five metre high flood embankments formed by grassed bunds, the top of which are accessible for walkers. Pylons are visible throughout the LCA, but are physically located within the northern half of the LCA and concentrated around the substation just south of the steelworks site, leaving a more naturalistic and therefore rarer landscape to the south of the area. Towards the north of this LCA, the boundary with LCA 6 has become less distinct due to the loss of the steelworks, however the new developments, both those planned and those currently under construction, are likely to re-create the distinction between the rural Levels landscape and the built environment. During the hours of darkness the industrial areas to the west, Newport and the A4810 provide a lit backdrop to the LCA. Within the LCA itself the main light sources are from isolated properties, resulting in a generally dark landscape.
- 9.4.62** Tranquillity: The motorways, other major highways and the railways are distinct features in the wider landscape, but away from the busy A4810, the existing M4 corridor and the South Wales to London Mainline railway, the landscape quickly becomes more rural and peaceful. Although the landscape is generally open in appearance despite the presence of vegetation, views towards built form and lower-height features to the north and west are limited. The large open sky is a noticeable feature of the LCA, adding to the sense of tranquillity which increases further south as the distance between the rural landscape and the industrial features and main road and rail links increases.
- 9.4.63** Cultural: This is a landscape which has been created by human activity over hundreds of years, with the construction of sea walls and drainage ditches being carried out in the Roman period. The Gwent Levels are designated an Outstanding Historic Landscape (HLW(Gt)2) and represent the largest and most significant example in Wales of this type of landscape. The narrow area between the southern edge of Magor and Caldicot Levels is within the Gwent Levels Historic Landscape Area of Green Moor (HLCA09), and as such is considered to be a cultural resource of exceptional importance. Settlement patterns vary slightly between the Aspect Areas forming this LCA. Generally there are scattered farms and dwellings and a few larger settlements, and individual properties have gradually colonised the local roads forming short linear developments along some of the more major lanes. The medieval village of Redwick is the largest nucleated village on the Levels, focussed on a nodal point in the local road network. To the west and north, this LCA is bordered by the East Usk and Llanwern industrial areas.
- 9.4.64** Human interaction: The LCA is not easily accessible on foot, however the Wales Coast Path follows the sea wall embankments and National Cycle Route 4

follows a number of the roads crossing the LCA in an east-west direction. There are also a number of other public rights of way which cross the LCA. The South Wales to London Mainline railway is located to the north of this LCA and is an important economic and social element, providing fast and efficient links with England and the rest of Wales, and is considered to be of outstanding value to the area. Other human interaction is through the presence of small settlements and rural lanes.

9.4.65 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of good quality/condition and to be of high landscape value.

Local Landscape Character Area 8: Caldicot Moor

9.4.66 This LCA includes the land to the east of the north-south track between Magor and Summerleaze. It is bound to the north by the urban edges of Magor, Rogiet and Caldicot and to the south by the coastline with the Bristol Channel until just east of the Second Severn Crossing.

9.4.67 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: MNMTHVS 053, 055, 057, 067 and 081.
- Cultural landscape: MNMTHCL 001, 002 and 003.
- Landscape habitat: MNMTHLH 014, 015, 047, 048 and 088.
- Historic landscape: MNMTHHL 001, 003, 004 and 005.
- Geological landscape: MNMTHGL 086, 089, 090 and 092.

9.4.68 Landcover, pattern and texture: This is a unique historic landscape, flat, open and exposed with a variety of irregular and regular field patterns with reclaimed pasture and improved grassland. Field boundaries are formed by the reen and ditch network, with reens also following the roads, and hedgerows and tree lines, including pollarded willows, following the reens and ditches. To the south of Undy, between Whitewall Reen / Pill Street and Seawall Reen / Collister Pill Reen, the field pattern is irregular and small scale with a variety of wet pasture, semi-improved and improved grassland, and a mix of intensively maintained or overgrown hedgerows. To the east the fields are rectilinear and medium size, with mainly improved grassland, giving a more ordered, neat appearance. Towards the north-northeast of this LCA, the landscape is overlooked by the M4 Second Severn Crossing, and on the rising ground to the north, by the settlements of Magor and Undy. Settlement in this LCA is limited to a linear pattern along the few roads, which cross the Levels, with a mix of styles and horse paddocks. There are two sewage works within the LCA, one to the north-east and one to the south-west. There are a number of nationally and internationally designated areas within this LCA, including the Gwent Levels – Redwick & Llandeenny, Gwent Levels – Magor & Undy and Magor Marsh SSSIs, and a small part of the Severn Estuary SSSI / SPA / Ramsar site.

9.4.69 Scale and appearance: The landscape is expansive, with wide open skies and long views towards the Severn Estuary, with intrusive lines of pylons crossing the landscape in an east-west direction. The northern boundary of this LCA is defined by the South Wales to London Mainline railway and the Severn Tunnel

junction. These features are intrusive elements within the landscape, particularly as the toll booths and the M4 have high level of lighting and are on embankment crossing the levels. These detracting features are a more consistent feature within the LCA than the adjacent Caldicot Levels LCA (where detractors are contained predominantly in the northern half of the LCA) reducing the overall rarity and value of the area to some degree. During the hours of darkness the toll booths and existing M4 corridor provide a noticeable lit feature within the LCA with Magor, Llanfihangel Rogiet and Caldicot providing a lit backdrop to the north. Within the western side of the area lighting is mainly provided from isolated properties

9.4.70 Tranquillity: This LCA has a more limited degree of tranquillity compared with the adjacent Caldicot Levels. The proximity of the South Wales to London Mainline railway, the existing M4 corridor and Second Severn Crossing, along with the suburban edge of Magor and Undy, all contribute to noise and light pollution and therefore have a negative impact on tranquillity within the LCA. Towards the south of the LCA, these impacts are reduced due to the distance, although the lighting of the M4 corridor is still evident over a wide area.

9.4.71 Cultural: This is a landscape which has been created over time by sediment deposited on the banks of the Severn and then intensively exploited by human activity over several hundred years, particularly since the Roman period when sea walls and the drainage network were built and transformed the character of the Levels. It is considered to be a cultural resource of exceptional importance. The northern part of this LCA includes the urban/suburban edges of Magor, Undy Rogiet and Caldicot along with the South Wales to London Mainline railway and the existing M4 corridor, all of which have the effect of reducing the feeling of 'remoteness' in the overall character of the LCA. Settlement within the LCA is limited to linear development along the roads radiating out from the settlements, and occasional farmsteads and isolated dwellings, with few dwellings in the east of the LCA.

9.4.72 Human interaction: The LCA is not easily accessible on foot, however the Wales Coastal Path follows the sea wall embankments and National Cycle Route 4 follows a number of the roads crossing the area in an east-west direction. There are few other public rights of way (PRoW) crossing the LCA. The South Wales to London Mainline railway forms the boundary of this LCA to the north. This is an important economic and social element, providing fast and efficient links with England and the rest of Wales, and is considered to be of outstanding value to the area. Other human interaction is through the presence of small settlements along the rural lanes.

9.4.73 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of good quality/condition and to be of medium landscape value.

Local Landscape Character Area 9: Magor and Undy

9.4.74 The extent of this LCA is predominantly defined by the extent of the residential extent of Magor. To the west it includes the brewery, hotel and motorway services.

9.4.75 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: MNMTHVS 040, 060, 066 and 067.
- Cultural landscape: MNMTHCL 002, 003, 005 and 006.
- Landscape habitat: MNMTHLH 047 and 054.
- Historic landscape: MNMTHHL 002 and 003.
- Geological landscape: MNMTH 083, 086 and 090.

9.4.76 Landcover, pattern and texture: This LCA is made up of the suburban residential settlements of Magor and Undy, and is contained between the existing M4 corridor to the north, the South Wales to London Mainline railway to the south, by the Magor Services and Magor Brewery to the west and the suburban edge to the east. There are green wedges of farmland between the suburban edge to the north and west of the settlement and the M4 and A4810 road corridors. These consist of gently undulating lowland pasture, with smaller green areas of open rough land breaking up the built development within the housing areas. The land cover within the settlement is limited mainly to housing and the associated gardens, but there are also small areas at the edges where the adjacent Gwent Levels SSSI overlaps with the urban edge to provide more ecologically valuable habitats.

9.4.77 Scale and appearance: The landscape is gently undulating lowland, with the existing M4 corridor at a higher level than the main settlement area, although this is generally screened by the undulating landform. There are some properties however which, being on the edge of the settlements in more recent developments, are visible from the motorway. There are open views towards the remnant Levels adjacent to the B4245 across rough grazing pasture, which provide historical links and a “sense of place”. Topographically it forms a transition zone between the flat levels to the south and the wider and more elevated undulating landscape to the north. Larger scale features are located away from Magor itself and include the Brewery located to the west of the A4810. The LCA is highly illuminated during the hours of darkness as a result of street and property lighting. The Brewery, existing M4 corridor and A4810 are also a noticeable lit features with darker skies beyond.

9.4.78 Tranquillity: There is limited tranquillity due to the presence of the M4, M4810 and the South Wales to London Mainline railway corridor but there are some areas of relatively high tranquillity away from the north and western edges and the B4245.

9.4.79 Cultural: This LCA lies within the eastern part of the Gwent Levels Historic Landscape Character Area of Green Moor (HLCA09), representing a rare survival of a once common field pattern. A small band of fields now survive due to the impact of the 20th Century housing and industrial developments. The construction of the M4 led to significant development which eventually saw the settlements of Magor and Undy merge, and the construction of the Magor Brewery on the western edge of the area, which is a notable modern feature.

9.4.80 Human interaction: The M4, M48 and the South Wales to London Mainline railway are part of the national communications network, providing fast and efficient transport links with England and the rest of South Wales. These therefore have a major cultural influence on industry, commerce and society as well as a direct physical impact on the landscape itself. The services at Magor now also provide facilities for rest, relaxation, retail, meetings and overnight accommodation not previously present. In addition to the communications

corridors, within the residential areas, the most significant interaction is through local residents and the social and recreational activities undertaken within the LCA. There are several public rights of way within the suburban area, some which follow the green “wedges” thereby allowing interaction with the more rural landscape.

9.4.81 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of ordinary quality/condition and to be of low landscape value.

Local Landscape Character Area 10: Caldicot

9.4.82 The location of this LCA is predominantly defined by the residential extent of Caldicot, bound to the north by the M48 and to the south by the line of the South Wales to London Mainline railway Severn Tunnel.

9.4.83 The area contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: MNMTHVS 062 and 067.
- Cultural landscape: NMNTHCL 002, 003 and 004.
- Landscape habitat: MNMTHLH 125.
- Historic landscape: MNMTHHL 001, 005 and 006.
- Geological landscape: MNMTHGL 084, 085, 086, 089 and 090.

9.4.84 Landcover, pattern and texture: This is a primarily residential and suburban area, located between the existing M48/M4 corridors and the South Wales to London Mainline railway. The landscape is formed by a terrace feature to the south of the rising ground of the low limestone massif to the north. Landcover is limited to housing and associated gardens with a low biodiversity value.

9.4.85 Scale and appearance: The LCA is located slightly above the level of the adjacent floodplain to the south, with restricted views within the town, generally limited to local views from the east and western approaches. The town centre is a modern pedestrianised zone surrounded by modern housing estates. Open spaces including recreational areas provide the only breaks in the dense housing. Due to the intensive recent developments, Caldicot has now merged with the adjacent village of Portskewett via the Severn Bridge Industrial Estate. The LCA is of medium scale with a fairly consistent appearance throughout. The LCA is highly illuminated during the hours of darkness as a result of street and property lighting with the existing M4 corridor to the south and M48 corridor to the north providing illuminated corridors.

9.4.86 Tranquillity: Due to the dense suburban developments and the presence of multiple transport corridors surrounding the urban area the tranquillity is limited.

9.4.87 Cultural: Features of importance within this LCA include Caldicot Castle and Caldicot Castle Country Park, which are surrounded by more recent developments. LANDMAP describes the area as a dormitory settlement with its original essence reduced by residential developments. To the east of the LCA is a narrow wedge of the Caldicot Levels Historic Aspect Area. This is a landscape which has been created over time by sediment deposited on the banks of the Severn and then intensively exploited by human activity over several hundred

years, particularly since the Roman period when sea walls and the drainage network were built and transformed the character of the Levels. It is considered to be a cultural resource of exceptional importance.

9.4.88 Human interaction: The M4 and M48 and the South Wales to London Mainline railway are part of the national communications network, providing fast and efficient transport links with England and the rest of South Wales. These therefore have a major cultural influence on industry, commerce and society as well as a direct physical impact on the landscape itself. In addition to the communications corridors, within the residential areas, the most significant interaction is through local residents and the social and recreational activities undertaken within the LCA. There are several public rights of way within the suburban area, some which extend out of the built area, thereby allowing interaction with the more rural landscape. Other interaction within the LCA occurs through visitors to the Castle and Country Park.

9.4.89 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of ordinary quality/condition and to be of medium landscape value.

Local Landscape Character Area 11: Severn Estuary

9.4.90 Within the study area the extent of this LCA is defined as the Bristol Channel between the Welsh and English Coastline, as far west as Newton and as far east as the Second Severn Crossing.

9.4.91 The LCA contains part or all of the following LANDMAP aspect areas which are described in Appendix 9.4.

- Visual-sensory: NWPRTVS 007 and 008, MNMTHVS 052, 067 and 095.
- Cultural landscape: NWPRTCL 026, MNMTHCL 002.
- Landscape habitat: NWPRTLH 053, MNMTHLH 043 and 086.
- Historic landscape: NWPRTLH 047.
- Geological landscape: NWPRTGL 033, 037 and 052, MNMTHGL 093.

9.4.92 Landcover, pattern and texture: This tidal estuary seascape/landscape is classed as “outstanding” due to the extensive areas of intertidal mudflats and sandbanks. The area has been designated a SSSI, SAC, SPA and Ramsar site for the habitats present and the internationally important populations of wildfowl and marine invertebrates they support. The Caldicot Levels retain the open coastal character of the landscape where the open flat farmland merges with the estuarine edge.

9.4.93 Scale and appearance: This is a large scale, open, exposed and windy landscape with long open views along the Severn Estuary. It is described as ‘A wild seascape with a strong sense of place with the second highest tidal range in the world and superb views’. This strong tidal action has resulted in a varied seascape including mudflats, sandbanks and rock outcrops which become exposed at low tide. The fast flowing estuarine waters at high tide are also a feature of the Severn Estuary. The views are extensive with the impressive bridge of the Second Severn Crossing containing the view to the north east, and the English coastline visible to the east. To the south the English coastline fades and the view becomes that of a wide seascape and to the west, the Welsh coast

is evident along with the intrusive industrial developments at Uskmouth and Newport. The industrial developments at Severnside and Avonmouth on the English coastline are also visible. During the hours of darkness the LCA is generally unlit although a noticeable lit backdrop is provided by the Severn Crossing, Newport, Cardiff and other urban areas on both sides of the estuary.

9.4.94 Tranquillity: The area, although remote and less influenced by built development, has views of visually intrusive industrial elements on both the English and Welsh coasts. The moving traffic on the M4 Second Severn Crossing, is also visible. The exposure of the area, the noise of the wind and water, tend to mask noise from these sources except during the very stillest of weather. This LCA therefore, does provide a level of tranquillity due to distance from noise sources and the masking of the noise, although the openness and exposure to the elements limits the extent of tranquillity achieved.

9.4.95 Cultural: This is a multi-period landscape of international importance. The conditions for the preservation of buried remains are exceptional and the foreshore is rich in intertidal archaeological features from all periods. Relict structures exist in some places, possibly remnants of former fishing use, and there are remnants of Roman reens exposed at low tide, on the foreshores at Rumney Great Wharf, Peterstone Great Wharf, Goldcliff and Redwick. More recently, industrial developments have sprung up at Uskmouth, Newport and towards Sudbrook, next to the M4 Second Severn Crossing. The motorway corridor also affects this LCA in the form of the M4 Severn Bridge, which is an important cultural feature, striking in appearance and a dominant feature of the area.

9.4.96 Human interaction: This LCA is largely inaccessible due to the dangerous water currents within the Estuary, and the treacherous nature of the mudflats and sandbanks. The Wales Coast Path, which follows the line of the bunded sea defences, is a significant attraction for walkers, with superb extensive views across the Severn Estuary. The M4 Severn Bridge, carrying the important transport link of the M4, also allows motorists glimpsed views of this dramatic coastline and ever changing seascape.

9.4.97 On the basis of the above description and the information contained in Appendix 9.4, this LCA is judged to be of good quality/condition and to be of high landscape value.

New Section of Motorway - Local Landscape Context

9.4.98 The landscape context for the new section of motorway as shown on Figure 9.13 to the south of Newport running west to east is summarised below.

Junction 29 Castleton to South Wales to London Mainline (new Duffryn Railway Underbridge)

9.4.99 The landscape context along the edge of the Wentlooge Levels, encompassing the settlements of Castleton and Marshfield and other small developments associated with the major roads, the A48(M), the existing M4 and the A48, extends to farmland north of the existing A48/M4 motorway. The ground slopes fairly steeply from the flat landscape of the Wentlooge Levels, from approximately 10 metres to 120 metres above ordnance datum (AOD), south to north. The majority of the area is covered by boulder clay with sandstone outcrops.

- 9.4.100** Castleton and Marshfield have developed in a linear manner and housing is of mixed styles. The area is typified by the small field pattern enhanced by well-maintained low hedgerows and mature tree belts with small woodland copses. The woodland encloses views to the east, particularly the east of Castleton. Mature trees belts and other vegetation are associated with the roads and housing and help to screen the major roads. This gives an element of enclosure to this area from the main settlements.
- 9.4.101** Two major roads, the A48(M)/M4 motorway and the A48 run through the character area. Ribbon development occurs along the A48, with small clusters of settlement on minor roads approaching the Levels. Several footpaths run through the area, their routes frequently severed by roads.
- 9.4.102** To the north of the existing A48/M4 motorway the farmland is characterised by strong hedgerow features that border the medium to large sized arable and pastoral fields. A number of dispersed settlements, in the form of isolated farms and small groups of dwellings, are linked by hedge lined narrow lanes.
- 9.4.103** Visually, the majority of the area is open, rural and relatively peaceful. The existing road corridors detract from the visual and other sensory qualities of the area. From elevated ground, there are long views across the Gwent Levels and Severn Estuary to the south.

South Wales to London Mainline (new Duffryn Railway Underbridge) across Wentlooge Levels to South of Docks

- 9.4.104** The landscape context comprises extensively reclaimed wetlands that form the edge of the Severn Estuary in this part of south east Wales. It is a landscape of significant nature conservation, cultural and historic landscape value and falls within the Gwent Levels Historic Landscape, Special Landscape Area and St. Brides SSSI. The land is very flat, relatively open and low lying, less than 10 metres AOD. It is characterised by a distinctive drainage system of reens and ditches that are bounded by a variety of hedgerows or lines of willow and reed defining field boundaries. It is primarily an agricultural landscape, with pastures, marshy grassland and limited arable uses that include a number of remnant orchards.
- 9.4.105** A ribbon of settlement follows Lighthouse Road, with a few other dispersed houses and farm buildings across the area. Roads reflect the field pattern and are very straight or winding, depending on the regularity or otherwise of the fields. More mature vegetation is associated with settlement and views from Lighthouse Road across the Levels are restricted in places.
- 9.4.106** The area has been affected by a number of developments that have impinged upon its intrinsic character. These include large scale developments located in the south west of Newport: the housing at Duffryn, Celtic Lakes Business Park and the former LG site at Coedkernew. Light coloured industrial buildings are particularly intrusive when viewed from areas to the south. The associated infrastructure combined with the Newport Southern Distributor Road (SDR) reflects the scale of the development and the road system, with roundabouts and lighting being characteristically urban. Planting associated with individual developments may, in time, add a sense of enclosure and help to integrate them into the adjacent landscape.

9.4.107 Other intrusions on the Wentlooge Levels are overhead power lines, together with more localised developments such as the golf course and modern agricultural buildings and features.

Docks Way Landfill Site (new Docks Way Junction), south of Newport Docks across River Usk to east of Uskmouth Railway line

9.4.108 The landscape context comprises large scale industry, including the Docks and the PCB cell operated by Solutia UK. The flat nature of the surrounding landscape means that industrial and dockside plant dominates the skyline. The mix of building age and style gives rise to a generally discordant character. The area includes large scale industrial features such as the historic Transporter Bridge and docks. Some vacant and derelict land is evident, which downgrades the visual and landscape quality of the area.

East of Uskmouth Railway line across Caldicot Levels to A4810, south of Bareland Street

9.4.109 The landscape context is very flat and low lying, at less than 10 metres AOD. The fields, some of which contain orchards, are small in size and varied in shape with some areas of very regular fields, including linear and rectangular fields at Whitson. Generally, the pattern is one of fields bordered by hedgerows and reens, with the different management regimes giving variation to the overall character, some being enclosed by high hedgerows and others more open with low, maintained hedgerows.

9.4.110 Development includes the creation of a wetland reserve in the Goldcliff area in association with the Cardiff Bay Barrage scheme. This amounts to some 420 hectares being managed primarily for the benefit of bird species, rather than primarily for agriculture or other uses, resulting in a significant change to the landscape character in this area.

9.4.111 The presence of the Whitson substation and Uskmouth power station has resulted in a concentration of major overhead power lines, with a consequent detraction in the visual quality of the area. The steelworks occupy an extensive area of land of about 500 hectares, to the east of Newport. The associated structures and buildings dominate views from much of the surrounding landscape of the Caldicot Levels, and from higher ground to the north of the existing M4. Mature tree belts have been introduced that now partially screen and integrate the works into the landscape.

9.4.112 The principal difference between the Caldicot Levels and Wentlooge Levels character areas is that the pattern of hedgerows on the Caldicot Levels is significantly more extensive than that on the Wentlooge Levels. This area has not suffered from the same degree/type of agricultural improvement and the majority of hedgerows remain intact, contributing to its rural and tranquil character. The landscape has a more enclosed feel, although there are some long views across the Levels, partially screened by hedgerows.

9.4.113 Settlements are linear, following the numerous fairly straight roads that run through the area, with the exception of Redwick, a medieval nucleated village.

9.4.114 The landscape context includes features of significant nature conservation, cultural and historic landscape value. A large proportion is designated a SSSI in

part due to the importance of the ree and ditch system and its associated vegetation.

A4810, South of Bareland Street to Junction 23 Magor and Rogiet

- 9.4.115** The landscape context encompasses the settlements of Llandevenny, Magor, Undy and Rogiet, bordered to the south by the South Wales to London Mainline railway and extending north beyond the existing M4 motorway to an area of gently undulating farmland.
- 9.4.116** The Magor and Undy settlements comprise housing of mixed age and type, with an attractive square of well-maintained historic buildings in the centre of Magor. The Gwent Levels to the south provide an attractive setting that is reflected in the Special Landscape Area designation. This is enhanced by vegetation associated with Magor Marsh, also a SSSI, and the gardens adjacent to the railway. The existing M4 is a detracting element, although it is generally screened in cutting.
- 9.4.117** The area north of the existing M4 motorway is rural in character with isolated farms and small hamlets. The roads are generally narrow and numerous footpaths cross the area. Small woodlands create enclosure and add topographical variety.
- 9.4.118** The Rogiet settlement is separated from Undy by low-lying farmland, through the centre of which runs the existing M4. Part of this area lies within a Conservation Area. The outer edge of Rogiet consists of a mixture of old farmsteads and new housing estates. The existing M4 is a detracting element through the farmland that divides Rogiet from Undy.
- 9.4.119** The Llandevenny settlement is an area of the Caldicot Levels lying to the north of the A4810. It is a flat area with small fields bordered with reens and hedgerows, although these hedgerows are fairly sparse in places. In spite of the proximity of the Llanwern Steelworks, industry does not dominate this area.

Complementary Measures - Local Landscape Character and Context

- 9.4.120** For the purposes of this assessment the existing M4 motorway that is subject to Complementary Measures has been divided as follows and described in Appendix 9.5 and shown on Figure 9.20 reflecting the changing character of the landscape from west to east:
- Cleppa Park to Junction 28;
 - Junction 28 to Junction 27;
 - Junction 27 to Junction 26;
 - Junction 26 to Junction 24; and
 - Junction 24 to Junction 23a.
- 9.4.121** Appendix 9.5 describes the local landscape character in relation to the LANDMAP landscape information system published by Natural Resources Wales (2015), comprising five aspects: geological landscape; landscape habitats; visual and sensory; historic landscape; and cultural landscape evaluated at a community, local, national and international level. The relevant LANDMAP aspect areas are identified, key summary characteristics are described, and their condition/quality and sensitivity assessed below.

Cleppa Park to Junction 28

- 9.4.122** Landscape and visual baseline conditions associated with the new section of motorway (Junction 29 and approximately 1 km to the east) are considered above. The consideration of Complementary Measures therefore starts in the vicinity of the Cleppa Park industrial area.
- 9.4.123** The area to the south of the existing M4 from this point to Junction 29 is largely developed. The Cleppa Park industrial area dominates, which comprises a mix of office and light industrial areas, some of which are immediately adjacent to the existing M4. There is also an area of modern housing near the M4 immediately to the west of Cleppa Park.
- 9.4.124** Further east, near to Junction 28, lies Tredegar House and parkland. Tredegar House is a late seventeenth Century mansion now in the care of the National Trust. The National Trust website describes this property as *'one of the architectural wonders of Wales and one of the most significant late 17th-century houses in the whole of the British Isles.'* Parts of the original parkland associated with the house serves as a country park with car parking, play areas and informal grass areas and a caravan and camping site adjacent. The house itself is set approximately 700 metres from the main carriageway and LANDMAP describes how the house and its parkland is *'open to the M4 and associated noise.....'*
- 9.4.125** To the north of the existing M4 lies lowland rolling farmland in mixed arable and pastoral use with scattered farms and dwellings and frequent small woodlands and copses. The road is bordered by cuttings for significant lengths on the northern side as it runs around the lower slopes of the land rising from the levels area. These cuttings are frequently wooded resulting in the road being visually detached from the surrounding landscape to the north for much of this length.
- 9.4.126** The road corridor is more open to the south, frequently on embankment, allowing occasional clear views outwards to the surroundings and inwards to the road and its traffic through and between intervening vegetation. Parts of the road in the vicinity of Cleppa Park are particularly open and some of the commercial units lie in close proximity to the road. In the vicinity of Tredegar Park the existing M4 corridor is generally well wooded on both sides and therefore largely screened from the house and its parkland, but the elevated section of road as it crosses the A457 and then the River Ebbw valley is more open to the Tredegar House area.

Junction 28 to Junction 27

- 9.4.127** Beyond Junction 28 the existing M4 crosses the narrow River Ebbw valley and is raised up on embankments across the flood plain area. The valley floor area to the south of the road here was historically part of the Tredegar Estate but is now known as Tredegar Park Sports Ground and is laid out with playing fields, playground areas and hard surfaced courts. To the north of the road the valley floor area is at the early stages of development, with a mix of housing and public open space proposed.
- 9.4.128** Beyond the river valley, the road runs to the west of a prominent hill topped by a prehistoric fort on the western edge of the Newport district of Gaer. The hill and fort area is managed as informal public open space and is crossed by numerous tracks and paths and affords panoramic wide ranging views to the south and west. One of these tracks forms part of the Sirhowy Valley Ridgeway Walk,

which is a long distance route from Newport to a point near the southern boundary of the Brecon Beacons National Park. As it travels north the road then runs through an urban area, with the residential suburbs of west Newport to the east and High Cross to the west. Despite these urban surroundings, however, the road runs in cutting with wide wooded slopes for the most part and is therefore visually separated from its surroundings.

Junction 27 to Junction 26

- 9.4.129** The existing M4 runs through a more rural landscape, which lies between the Newport suburbs of High Cross and Rogerstone to the south west and Brynglas, Malpas and Bettws to the north east.
- 9.4.130** To the north west of the road lies a gently undulating landscape mainly in pastoral use, with low hedges and fences and frequent woodlands and copses. In close proximity to the road this landscape also contains Tredegar Park Golf Club, whose fairways come within 100 m of the carriageway, and the Fourteen Locks complex, which is a historic flight of locks on the Monmouthshire and Brecon Canal with an associated visitor centre.
- 9.4.131** To the south east of the road is a steep scarp slope covered in a mosaic of small pasture fields and woodland, which climbs steeply to the suburb of Ridgeway. A disused section of the Monmouthshire and Brecon Canal runs around the base of this slope parallel to and elevated above the road at approximately 60 m distance. Although the canal is disused it serves as a popular recreational route and forms part of the Celtic Trail long distance path and National Cycle Route 47. Another long distance path, the Sirhowy Valley Ridgeway Walk, also crosses this area, running down the hill from Ridgeway before joining the route of the canal as it crosses under the road.
- 9.4.132** The road itself has intermittent blocks of trees and scrub along its verges, and is either at grade or on low embankments, allowing frequent views out of and into the road corridor.

Junction 26 to Junction 24

- 9.4.133** This section of the existing M4 runs through and alongside urban residential areas for the next 6.2 km. It passes under the district of Brynglas through the Brynglas tunnels just to the east of Junction 26 before emerging to cross the River Usk valley on an elevated section before cutting through the northern edge of the district of St Julians. Once past St Julians, the road runs to the north of the districts of Lawrence Hill and Coldra, with the more open, undeveloped south eastern slopes of the River Usk falling away from the road to the north.
- 9.4.134** Significant sections of this stretch of the road are screened by vegetation and/or cutting sides and have very little influence on the surrounding landscape character. There are, however, significant exceptions to this. Some elevated sections form a dominating and detracting feature in the area with concrete retaining walls and barriers above. In some areas, especially around Junction 26, Junction 25 and in the vicinity of Lawrence Hill, these elevated sections are in close proximity to residential receptors whose visual amenity is entirely dominated by the road and its traffic.

Junction 24 to Junction 23A

- 9.4.135** Heading east from Junction 24 the existing M4 runs back into a more rural area, although the suburb of Langstone borders the road on its northern side for a short stretch. The surroundings comprise gently undulating, primarily pastoral farmland, with occasional and prominent woodlands on some of the steeper slopes and numerous distinctive hedgerow trees. There are scattered villages and farms, several within 1 km of the road, and the small residential development of Underwood lies immediately adjacent to the road part way between Junctions 24 and 23a.
- 9.4.136** Although stretches of the road have tree lined verges and are occasionally in cutting there are numerous more open sections where the road has a noticeable influence on the character of the surroundings.

Visual Receptors

Proposed New Section of Motorway - Visual Receptors

- 9.4.137** Refer to Appendix 9.3 and 9.7, and Figure 9.9 for Representative Viewpoint Locations and detailed baseline description.

Receptors to the north of Castleton Junction and the A48(M)

- 9.4.138** Receptors north of the A48(M) and the Castleton Junction area include isolated farms and small groups of dwellings at approximately 60-139 m AOD. Narrow lanes and public rights of way link the properties, with many following the ridgelines and local high points. The visual amenity from these areas is strongly influenced by the elevated nature of the receptors, which frequently allows wide and expansive views south across the much lower lying Gwent Levels to the Severn Estuary beyond (see Representative Viewpoints 1, 2, 3, 4C, 5 and 6 on Figure 9.10). Despite their proximity, the existing M4 and A48 have a limited bearing on the visual amenity of many receptors in this area due to the extensive mature woodland belts that surround these roads, particularly in the vicinity of the Castleton Junction. Due to the extent and density of this woodland it provides an effective visual barrier even in the winter months. Although views from these areas are predominantly rural in nature, the more far reaching views available to the south comprise a diverse range of elements and landscape character types. In the distance numerous large industrial buildings associated with the Newport Docks area are visible and frequent vertical structures such as pylons, chimneys and wind turbines are clearly discernible. Other urban areas such as Imperial Park and the housing areas of Duffryn beyond are also key features of the views whilst the Severn Estuary forms an expansive back drop.
- 9.4.139** During the hours of darkness these expansive views include numerous illuminated areas where the patterns of lighting are visible as bright, highlighted areas, as well as the resulting glow in the night sky. As the landscape travels north, away from the existing M4, topography visually separates receptors from the new section of motorway.

Receptors Alongside the A48 in the Vicinity of the Castleton Ridge

- 9.4.140** Receptors immediately south of the A48(M) and the Castleton Junction area comprise scattered houses and commercial premises along the A48, houses and

businesses in the northernmost parts of Castleton village and users of public rights of way that lead from and to the A48 (see Representative Viewpoints 7 and 8A on Figure 9.10). Mature broadleaved woodland borders Junction 29 of the existing M4 and the A48(M), screening views of the motorway and associated infrastructure and lighting from the majority of receptors in this area, even throughout the winter months. Views north are curtailed by this woodland and the rising topography whilst much longer range and expansive views are frequently available south across the farmland of the nearby Wentlooge Levels, albeit often filtered by intervening trees and copses.

- 9.4.141** During the hours of darkness the linear pattern of street lighting along the A48 and existing M4 above and beyond this is clearly visible from many parts of this area, along with lights associated with scattered dwellings and the houses within Castleton.

Receptors within and between Castleton/Marshfield, the A48, Imperial Park and the South Wales to London Railway Mainline

- 9.4.142** Receptors within and around the villages of Castleton and Marshfield and the industrial area of Imperial Park, and the area of farmland in between, are in a transition zone between the low lying Levels area to the south and the rising Castleton Ridge to the north. Receptors comprise residential dwellings within the villages, scattered dwellings and commercial operations around the edges of these settlements, employees of the businesses on Imperial Park, users of numerous public rights of way that crisscross in between and visitors to Parc Golf Club. Mature woodland on the edges of the areas of urban development, copses and hedgerows and hedgerow trees frequently screen views outwards from these receptors that lie at low elevations of between 0 and 10 m AOD (see Representative Viewpoint 14 on Figure 9.10). This results in a more contained outlook across the immediate farmland and village areas with few long range views except for intermittent views north towards the well wooded rising ground of the Castleton Ridge rising above intervening elements. The frequent, overlapping nature of this intervening vegetation means that it continues to provide an effective screen in the winter months. Traffic on the existing A48 is visible in some views cutting along the bottom of this ridge (see Representative Viewpoint 11 on Figure 9.10).

- 9.4.143** During the hours of darkness the linear pattern of street lighting along the A48 and the existing M4 above and beyond this is clearly visible beyond the dark foreground of the farmland areas from the more isolated dwellings and footpaths in this area. The prominence of this lighting is reduced when viewed from the more developed village and industrial areas due to frequent foreground lighting associated with streets, houses and commercial properties.

Receptors within Llanrumney and St Mellons

- 9.4.144** There are many and varied visual receptors within and around the Cardiff districts of St Mellons and Llanrumney. This area is mainly residential, with associated schools, leisure and retail facilities, limited public rights of way and stretches of public open space. There are also areas of commercial receptors, mainly on the southern and eastern edges of the district. Visual amenity is dominated by typical suburban elements and infrastructure with very few middle or long range views outwards due to the enclosed, densely developed nature of the

surroundings. There are, however, limited higher and more open areas in the district of Llanrumney and a small number of receptors in this area have more open and expansive views north east towards the rolling hills to the north of Newport.

9.4.145 This area is widely illuminated during the hours of darkness.

Receptors within the Wentlooge Levels

9.4.146 The Wentlooge Levels lie between the Severn Estuary and the transition area described above. Visual receptors across the Wentlooge Levels comprise users of public rights of way (including the Wales Coast Path) and the ribbon of intermittent residential properties along the B4239, along with occasional dispersed houses and farm buildings. Visual receptors in this area overlook flat, low lying farmland defined by reed filled reens and hedgerows which frequently provide local screening in the fore and mid ground (see Representative Viewpoint 22 on Figure 9.10). The visual amenity for receptors in the east of this area is also influenced by the urban and industrial areas of Newport. Glimpses of a number of industrial units across the Imperial Park industrial area, the Celtic Lakes Business Park and the former LG site at Coedkernew, and the raised landform of a landfill site and the South Docks area on the edge of Newport are visible intermittently between and above intervening vegetation from residential properties and public rights of way in this area (see Representative Viewpoints 16, 17 and 23 on Figure 9.10). The visual amenity of walkers on the Wales Coast Path is dominated by the adjacent open and expansive estuary to the south, although as the route approaches and runs along the River Ebbw nearby industrial elements such as pylons, chimneys and wind turbines become dominant and detracting features of this part of the Levels landscape (see Representative Viewpoint 24 on Figure 9.10)

9.4.147 During the hours of darkness lighting associated with these industrial areas and the resultant glow in the sky is highly noticeable. In addition, the linear pattern of street lighting along the A48 and the existing M4 above and beyond this is clearly visible beyond the dark foreground of the farmland areas from dwellings and paths that lie in a direct line south from the Castleton Junction.

Receptors within Duffryn

9.4.148 Visual receptors within the Newport district of Duffryn are mainly residential, with some users of routes with public access around the southern edges of this district. Residential development is frequently high density, particularly the more modern estates around the southern edges nearest to the new section of motorway, which restricts visual amenity to views of the immediate surroundings for the majority of receptors. However, there are two and three storey high residential properties on the edge of Pen-carn and Duffryn that overlook the Wentlooge Levels and which have more open and far reaching views. Dense mature hedgerows with intermittent trees frame and interrupt these views during both summer and winter months. Several pylons are in close proximity and appear as detracting features from some upper storeys and some routes with public access, appearing prominent in the view (see Representative Viewpoint 21 on Figure 9.10). Woodland planting and shelter belts on the edges of development in the south east of Duffryn are a common feature providing local screening and further limiting views outwards across the surrounding landscape.

9.4.149 This area is widely illuminated during the hours of darkness, although the views across the Levels are relatively dark. Receptors with views across the Levels experience a largely unlit rural area with just occasional pin pricks of light from scattered dwellings and vehicles moving along the lanes and a faint glow in the night sky from the industrial areas over to the east.

Receptors within the Elevated Districts to the West of Newport City Centre

9.4.150 Visual receptors on the south and south east facing slopes of Gaer, Stow Hill, St Woolos and Baneswell have glimpsed views along streets and between the houses towards the docks and industrial areas. Receptors are primarily residential, with associated schools, leisure and retail facilities and limited areas of public open space. The views of the docks areas include Reeveland Industrial Estate, the wind turbines at the Solutia Site and long horizontal lines of the buildings of the Orb Industrial Estate. The River Usk and the Alphasteel buildings on the east bank are just visible above the level of the rooftops. The University of South Wales between Liverpool Wharf and Ebbw Vale Wharf is visible above the Kingsway Centre and Newport Centre developments. These views are generally framed or interrupted by other buildings, with few locations having open, panoramic views (see Representative Viewpoints 95 and 96 on Figure 9.10). The exception to this is the public open space associated with Gaer Hill Fort and adjacent residential areas, from which expansive open views are available across the lower reaches of Newport to the Severn Estuary beyond.

9.4.151 The built up parts of this area are widely illuminated during the hours of darkness and the bright lights and glow in the night sky from the industrial areas are highly noticeable.

Receptors within Industrial Areas to the West of the River Usk

9.4.152 Receptors within the Alexandra Docks and other industrial areas alongside the western bank of the River Usk are primarily commercial, with limited pockets of residential receptors within the broader industrial area. The route of the Wales Coast Path also passes through this area from west to east. Views from areas alongside the River Usk towards the Severn Estuary are dominated by large industrial buildings and vertical elements including chimneys, cranes, wind turbines and pylons. The Uskmouth Power Station is prominent on the skyline contrasting with the more open farmland of the Levels. Bridge crossings of varying age feature in many available views, including the Newport City Footbridge, the A48 City Bridge and the Transporter Bridge, the most distinct historic feature in the landscape. The South Docks is a large scale and expansive area with dockside development, cranes and equipment that often enclose the view, with occasional glimpses to the town of Newport visible in the middle distance on rising ground to the north (see Representative Viewpoint 94 on Figure 9.10). Walkers and cyclists using the Wales Coast Path and national Cycle Route 4 are the most sensitive receptors in this area, with their visual amenity being dominated by the surrounding industrial areas and busy roads. Views outwards are frequently limited to the immediate landscape by these surrounding buildings. However, where the route follows the A48 between the Transporter Bridge and the A48 City Bridge, more open views are available across and along the river with the river channel, tidal mudflats and associated bridges and riverside structures forming a distinctive and unique panorama (see Representative Viewpoint 25 on Figure 9.10).

9.4.153 This area is widely illuminated during the hours of darkness, with bright lights associated with roads and buildings and a resultant glow in the night sky being highly noticeable. Feature lighting associated with the bridges across the Usk means these elements are especially prominent during the hours of darkness.

Receptors within the Districts of Newport to the East of the River Usk

9.4.154 Areas within Newport to the east of the River Usk comprise a mix of residential, commercial, industrial, leisure and retail developments punctuated with frequent green open spaces. The majority of receptors are residential, with many of these residential districts occupying the more elevated land to the north and east of the centre of Newport, from which expansive and long range views are frequently available between intervening buildings and from upper storeys across the lower slopes of Newport to the Gwent Levels beyond. From many and various vantage points across this area it is possible to clearly see the Usk Power Station chimney stack, various large industrial and retail buildings, Newport Docks and many vertical elements such as pylons, chimneys and wind turbines. There are frequently middle distance views of the historic Newport Transporter Bridge. The view also incorporates the River Usk and the landscape beyond, which includes the Severn Estuary and the distant hills on the English side of the estuary. Though the many components of the view are of varying quality, the overall view has an interest and value as it captures both the activity of Newport and its landscape setting.

9.4.155 Industrial and commercial receptors are more frequently to be found on the lower lying land alongside the River Usk and south of the A48, although modern residential development is starting to replace redundant industrial sites alongside the Usk in many areas. Views are far more contained within these areas due to the topography and frequency of intervening buildings although receptors alongside the River Usk, which includes walkers on the Wales Coast Path, benefit from open views across and along the river with the river channel, tidal mudflats and associated bridges and riverside structures forming a distinctive and unique panorama.

9.4.156 The built up parts of this area are widely illuminated during the hours of darkness and the bright lights and glow in the night sky from the industrial areas are highly noticeable.

Receptors within and around Nash and Areas to the West between Nash and the River Usk

9.4.157 Frequent mature hedgerows and tree belts along field edges and roads in this area mean that views available from the scattered residential properties and public rights of way in this area are frequently contained and well filtered. However, there are numerous areas where the landscape is more open and longer range views are available across the surrounding fields. When looking in the direction of the River Usk these views include numerous large industrial buildings, storage tanks, chimneys and pylons associated with the Uskmouth industrial areas clearly visible above and beyond intervening fields and vegetation.

9.4.158 Receptors within this area include walkers on the Wales Coast Path, a section of which passes by the Newport Wetlands Nature Reserve. Views from this estuary side location are frequently open and expansive both toward the Severn Estuary

to the south and west, and towards Newport to the north. The views towards Newport include the wetlands of the adjacent Nature Reserve in the foreground with Uskmouth Power Station and other industrial buildings and elements dominating the skyline beyond (see Representative Viewpoint 26 on Figure 9.10). As receptors approach the more urban areas in the vicinity of the Uskmouth Power Station views outwards are screened by existing mature vegetation (see Representative Viewpoint 30 on Figure 9.10).

- 9.4.159** The industrial areas visible in the views available to many receptors in this area are extensively illuminated during the hours of darkness. Bright lights on buildings, turbines and chimneys are clearly visible and the night sky glows beyond the darker, silhouetted more rural foreground.

Receptors within the Caldicot Levels between Nash and Elver Pill Reen

- 9.4.160** Residential receptors within this area comprise ribbons of intermittent residential properties along the various narrow lanes, along with occasional scattered houses and farm buildings. Additionally there are frequent public rights of way criss-crossing the area and the Wales Coast Path runs alongside the estuary. The nature of views available is variable; views are frequently open due to the intermittent nature of hedgerows and tree belts in some areas allowing views across farmland with low, well maintained hedgerows following the lines of the reens and ditches (see Representative Viewpoints 35, 37, 44 and 45 on Figure 9.10). By contrast, other areas are more enclosed by mature tree belts and overgrown hedges (see Representative Viewpoints 38, 39, 43 and 48 on Figure 9.10). Although views available are predominantly rural, there are frequent glimpses of numerous industrial elements. Uskmouth Power Station, Whitson substation, the Llanwern Steelworks and nearby industrial units, wind turbines, pylons and overhead power lines are frequently visible beyond and above intervening fields and vegetation and these elements detract from the otherwise rural nature of the views (see Representative Viewpoints 35, 37, 44, 45 and 48 on Figure 9.10).

- 9.4.161** The industrial elements visible in the views available to many receptors in this area are extensively illuminated during the hours of darkness. Bright lights on buildings, turbines and chimneys are clearly visible and the night sky glows beyond the darker, silhouetted more rural foreground.

Receptors within the Caldicot Levels between Elver Pill Reen and Magor

- 9.4.162** This section of the Caldicot Levels is less populated than the Levels area further west described above. There are only occasional intermittent residential properties along local roads and one small hamlet (Redwick). There are also very few public rights of way, although the Wales Coast Path continues alongside the Severn Estuary in this area and National Cycle Route 4 (The Celtic Way) follows lanes and tracks through this area. Receptors overlook mixed farmland and grazing land delineated by reens and ditches, which are predominantly rural in character although frequent pylons and power lines add a detracting, urban element (see Representative Viewpoints 53 and 64 on Figure 9.10). Managed hedgerows along roadsides are common with maturing shrubs and intermittent trees around fields. There are some longer distance views across the Levels between intervening vegetation and in the north of this area these frequently include glimpses of the Llanwern Steelworks and industrial warehouses at

Greenmoor Arch against the backdrop of the wooded hills beyond (see Representative Viewpoints 52, 54, 55 and 63 on Figure 9.10).

- 9.4.163** During the hours of darkness much of this area remains relatively dark with just occasional lights from farms and houses. However, bright lights associated with the Greenmoor Arch industrial area, the A4810 in front and brewery beyond are clearly visible from many areas. In addition, a glow in the night sky is visible to the west above the Newport Docks area and the lighting associated with the Severn Bridge is visible from some locations in the east of the area.

Receptors between Newport, the existing M4 and the A48

- 9.4.164** Much of this area is visually separated from the new section of motorway by intervening industrial buildings and topography. Residential receptors comprise residential dwellings in the settlements of Llanwern, Underwood, Bishton and Wilcrick along with scattered dwellings and farms. There are frequent public rights of way crisscrossing the landscape. Other receptors comprise commercial and industrial areas around Junction 23A of the existing M4 and visitors to Llanwern Golf Club. Views across the landscape are generally of low lying but gently undulating farmland bounded by hedgerows and linear tree belts. Significant blocks of woodland associated with the steeper ground on the sides of Llanwern Hill and on top of Wilcrick Hill are noticeable features in the landscape. The undulating land allows numerous long range views across the landscape. For receptors looking south these longer range views frequently include structures associated with the nearby Llanwern Steelworks, Greenmoor Arch Industrial area and pylons approaching the Whitson Common Substation visible above intervening vegetation (see Representative Viewpoints 68, 69 and 75 on Figure 9.10).

- 9.4.165** During the hours of darkness much of this area remains relatively dark with just occasional lights from farms and houses. The faint glow in the sky is discernible from the industrial and docks areas of Newport.

Receptors within and around Magor and Undy

- 9.4.166** This area is principally residential, comprising mainly late twentieth century housing estates, with associated schools, leisure and retail facilities, limited public rights of way and stretches of public open space. There are some commercial receptors, mainly across the areas around Junction 23a of the existing M4. The density of development coupled with generally flat topography restricts visual amenity for the majority of receptors within the towns to views of the immediate surroundings, with only occasional glimpsed views towards higher surrounding wooded hills to the north. However, receptors across higher, more open land to the north east of Undy have far reaching views across the surrounding landscape to the Severn Estuary in the distance (see Representative Viewpoint 80 on Figure 9.10). Receptors on the edges of the towns have views of a typical varied urban edge landscape of small, irregular shaped fields bounded by hedgerows and tree belts, surrounding local roads and scattered farms and dwellings (see Representative Viewpoints 62 and 67 on Figure 9.10). Visual amenity for many receptors along the southern edges of Magor and Undy is influenced by the South Wales to London Mainline railway which runs along the edge of the towns, whilst receptors along northern edges of the settlements have frequent views of the existing M4 motorway and associated traffic and

infrastructure. However, frequent intervening vegetation reduces the dominance of these elements for many receptors.

9.4.167 Magor and Undy are highly illuminated during the hours of darkness, contrasting with the unlit Caldicot Levels area beyond to the south and the open rolling farmland to the north. To the north of the towns the linear street lighting sweeping west to east along the M4 motorway is highly noticeable and a glow in the night sky is visible over the InBev Brewery when looking across the area to the west of Magor.

Receptors North of the Existing M4

9.4.168 There are limited receptors within this area with the potential to be affected by the Scheme due to intervening topography. This is a predominantly a rural area, with relatively few residential or commercial receptors. There are however numerous public rights of way criss-crossing the landscape. Views across the landscape are generally of low lying but gently undulating farmland bounded by hedgerows and linear tree belts. Significant blocks of woodland associated with the steeper ground on the sides of hills are noticeable features in the landscape. The undulating land allows numerous long range views across the landscape, some of which encompass the Severn Estuary and distant hills in England (see Viewpoints 73, 76, 77, 78 and 79 and on Figure 9.10). Generally, the existing M4 corridor is screened by linear belts of mature vegetation except for glimpses of lighting, signage and gantries (see Representative Viewpoint 81 on Figure 9.10).

9.4.169 Receptors in the more elevated position at Coed y Caerau at 130 m AOD overlook Llanwern, Llanbeder, Llanmartin and Llandevaud. The landscape falls away quite steeply in the foreground to undulating farmland with woodland blocks and the Levels. There are far reaching views of up to 28 km, including the Severn Estuary and distant hills in England (see Representative Viewpoints 68, 70 and 71 on Figure 9.10).

9.4.170 During the hours of darkness the majority of this area itself is relatively dark, with pinpricks of light from scattered dwellings and short stretches of road lighting. However, the long distance views from more elevated locations include numerous sources of light. Street lights associated with the A48 and existing M4 motorway are clearly discernible linear features running across the views available. Lighting from the InBev Brewery at Magor, Magor itself and Undy appear as extensive zones of light that extend up into the night sky. Further afield lighting associated with Newport, the Llanwern Steelworks and Newport docks appears as swathes of lights with frequent points of noticeable brightness and a clearly discernible glow in the night sky. From the highest vantage points, lights on the English side of the estuary are also visible.

Complementary Measures - Visual Receptors

Cleppa Park to Junction 28

9.4.171 Sensitive receptors in this area are residents to the west of Cleppa Park along Blacksmiths Way, visitors to Tredegar House and its associated amenities and users of footpaths in the area.

9.4.172 Residents along Blacksmiths Way are located in close proximity to the existing motorway and the views from the rear of these properties are towards the road.

However, there is a substantial belt of mature trees between most of the houses and the carriageway. Views from the properties are therefore mainly of the tree belt with glimpsed views through the trees to the moving traffic, particularly in the winter months (see Representative Viewpoint 1 on Figure 9.20).

- 9.4.173** Visitors to Tredegar House and the surrounding parkland experience a well wooded aspect when looking north-west towards the existing M4, with belts of trees along the adjoining roads and the River Ebbw and parkland trees and avenues within the parkland itself. Views to the highway infrastructure are limited, with only the tops of gantries and lighting columns occasionally visible (see Representative Viewpoint 2 on Figure 9.20). The traffic is evident but only glimpsed views are available through and around intervening vegetation. However, the constant vehicle noise increases awareness of the traffic with the result that this detracting element plays a greater part in the area's visual amenity than the actual visibility suggests.
- 9.4.174** Footpaths in this area are limited to those running alongside and away from the motorway to the north of the road in the vicinity of Cleppa Park. Due to its proximity, the road and its traffic form a dominant element of the visual amenity for users of these paths, although intervening vegetation means that views of the road and its traffic and infrastructure are intermittent and filtered.

Junction 28 to Junction 27

- 9.4.175** Sensitive receptors in this area are users of Tredegar Park Sports Ground, walkers and visitors to Gaer Hill, walkers on the Sirhowy Valley Ridgeway Walk and residents of west Newport and High Cross.
- 9.4.176** Users of the sports grounds and associated play areas and footpaths experience a well wooded and semi-rural aspect. The boundaries of the sports ground are tree lined with occasional mature parkland trees scattered across the area between pitches. Views to the north-west towards the existing M4 are dominated by tree belts and the well wooded rising ground beyond the motorway forms the background. The motorway is not visually intrusive even though it is raised above the adjacent junction complex and only intermittent glimpses of traffic are available through gaps in the trees (see Representative Viewpoint 3 on Figure 9.20). However, the constant noise of the traffic draws attention to this aspect of the view and makes it appear more dominant.
- 9.4.177** Walkers on tracks across Gaer Hill and using the Sirhowy Valley Ridgeway Walk in this area have elevated views down towards the motorway. However, the foreground is well vegetated with mature scrub and trees widely, and in places densely, scattered across the hill resulting in views to the motorway being intermittent despite the elevated vantage point. Beyond the foreground of the hill the views available to the west and south west are panoramic and far reaching towards the rolling hills beyond the motorway. The road and its traffic are not therefore a dominant aspect of the view and at this distance noise from the road does not distort its prominence (see Representative Viewpoint 4 on Figure 9.20).
- 9.4.178** The visual amenity of residents of west Newport and High Cross is not generally affected by the motorway itself. In this location, the road is in cutting and bordered by wide wooded embankments. However, a limited number of properties on both sides of the road in the vicinity of the Bassaleg Road overbridge have clear views of the motorway from windows above ground floor

level and the visual amenity from these specific road facing windows is dominated by the road and its traffic (see Representative Viewpoint 5 on Figure 9.20).

Junction 27 to Junction 26

- 9.4.179** Sensitive receptors in this area are users of the routes along the disused Monmouthshire and Brecon Canal, users of the Sirhowy Valley Ridgeway Walk and other footpaths in the area, visitors to the Fourteen Locks Complex and users of Tredegar Park Golf Club. There are scattered residential receptors on both sides of the road (see Representative Viewpoints 6 and 8 on Figure 9.20).
- 9.4.180** Walkers and cyclists using the route along the canal in this vicinity have expansive views northwards over the rolling hills beyond the motorway, which encompass a mix of woodland, farmland and settlements. However, the motorway is in close proximity and due to the elevated nature of the route above the road it forms a dominant element of the views available, accentuated by the constant traffic noise.
- 9.4.181** Users of the Sirhowy Valley Ridgeway Walk, other paths in the area and users of the golf club frequently have views of the motorway and its traffic. On occasions, intervening vegetation blocks and filters the views to the road but, overall, the road and especially the traffic are dominant elements, which are at times in close proximity to the receptors and detract from the otherwise semi-rural nature of the surroundings.
- 9.4.182** The Fourteen Locks Complex is a local visitor attraction with an associated visitor centre and waymarked circular route along and around the flight of locks. However, the area is in a well wooded setting with limited views out from the woodland. The road and its traffic are not visible from the main parts of the walking route or visitor centre (see Representative Viewpoint 8 on Figure 9.20).
- 9.4.183** The visual amenity of scattered residential receptors in the area is influenced by the motorway and its traffic to varying degrees. The well wooded nature of the surrounding means that often views of the road are screened and/or filtered but the dwellings are frequently elevated above the road due to rising ground on both sides, occasionally limiting the screening effect of this intervening vegetation.

Junction 26 to Junction 24

- 9.4.184** Sensitive receptors along this stretch of the road are residents of Brynglas, St Julians, Lawrence Hill and Coldra who are close to the road, users of Glebelands Park adjacent to the River Usk, visitors to the Celtic Manor Hotel, visitors to the upper sections of St Julians Park and users of the allotments on the southern edge of St Julians Park (see Representative Viewpoints 9, 10, 11, 12 and 13 on Figure 9.20).
- 9.4.185** The residential receptors in this area lie within a number of densely developed residential suburbs of Newport. Although many are in very close proximity to the road, visibility of the road and its traffic is limited for many by screening vegetation, cuttings and noise fencing. Those whose visual amenity is influenced by the road, however, often have clear and direct views. In particular, residents closest to the road to the south of Junction 26 at Brynglas, around Junction 26 at St Julians and along the northern side of Christchurch Road in Lawrence Hill have their views dominated by the road, traffic and infrastructure.

- 9.4.186** Glebelands Park lies in a bend of the River Usk between Brynglas and St Julians. It incorporates sports pitches, playgrounds and footpaths and a primary school lies on its southern edge. The park itself is well wooded and enclosed, presenting a green, secluded outlook that is visually separate from the surrounding suburbs. Although the road cuts through the park on an elevated section, which is the continuation of the Usk crossing, well wooded embankments limit the influence of the motorway on this area, although traffic noise draws attention to the views of traffic that do exist.
- 9.4.187** St Julians Park is a large area of public open space which lies immediately to the north of the existing M4 and drops away to the River Usk beyond. It is managed primarily for informal recreation and nature conservation and is wild and unmanaged in appearance with extensive scattered woodland and scrub. An area of allotments and a large cemetery lie on its southern and eastern edge. As the land drops away so steeply from the motorway, the road and its traffic only influences those receptors using St Julians Park in the areas closest to the road. This does include the allotment users and visitors to the cemetery.
- 9.4.188** The well known landmark of the Celtic Manor Hotel lies above the motorway in the vicinity of Junction 24. Views down and along the road are available from numerous windows of this multi-storey building.

Junction 24 to Junction 23a

- 9.4.189** There are numerous residential receptors that have views of parts of this section of the road. Those with the closest and/or most open views include: residents on the southern edge of Langstone; residents on the north eastern edge of Underwood; residents of Langstone Court and Penstone (whose properties lie just to the south of the road on Langstone Court Lane); and residents of the village of Llanmartin. Other sensitive receptors are users of the allotments at Underwood and users of footpaths in the area, several of which cross under the road (see Representative Viewpoints 14, 15, 16, and 17 on Figure 9.20).
- 9.4.190** Although many residential receptors have views of the road they are generally from upper storey windows only due to intervening vegetation and noise fences. The exceptions to this are a number of scattered dwellings along the B4245 in Llanmartin who have more direct, albeit filtered, views of the road as it travels through the otherwise rural and agricultural area.
- 9.4.191** The allotment users at Underwood are immediately next to the road on slightly elevated land. Although the wider outlook for these receptors when looking north is over gently rolling farmland with scattered farms and dwellings, the foreground is dominated by the road and its traffic and the overbridge carrying Waltwood Road.
- 9.4.192** There are numerous footpaths in this area and many cross under the road. As the surrounding area is gently undulating, with frequent copses and hedges, the influence of the road and its traffic on users of footpaths varies and views of the road are intermittent and often filtered. Where paths travel very close to the road and cross under it then the influence of the road obviously increases and the moving traffic and road infrastructure becomes a more dominant aspect.

9.5 Mitigation Measures Forming Part of the Scheme Design

Summary of Requirements

9.5.1 Mitigation has been addressed as part of an iterative design and assessment process. The design and layout has been amended throughout the process to avoid and reduce impacts of the landscape and visual effects. This design aims to futureproof the Scheme for projected issues and to fulfil Welsh Government objectives.

9.5.2 Mitigation measures have considered and implemented key objectives found in the EU, UK and Welsh legislative, policy and best practice guidance documents on landscape assessment, design and mitigation to inform the design. Close liaison with other disciplines to reduce habitat fragmentation and prioritise habitat connectivity and facilitation of species dispersal has been reflected in the mitigation measures.

9.5.3 Other requirements that guided the mitigation measures were as follows.

- Retain and make best use of existing vegetation as shown on Figure 9.21.
- Prioritise the early re-establishment of vegetation within the highway boundary.
- Integrate the engineering landform with the adjoining topography.
- Design for maintenance, giving due consideration to the maintenance costs and implications, liabilities and access arrangements for all landscape areas.
- Optimise protection for nearby houses or public areas through use of screening, including vegetative and structural methods.
- Re-use coppiced vegetation wherever possible within the planting areas, especially where a screening function is required.
- Avoid loss or damage to landscape features (e.g. hedges/hedgerows/hedgebanks, drystone walls, individual and veteran trees, woodland, water features, or field systems) where possible within the constraints of the design.
- Use native species of local provenance, wherever possible.
- Consider innovative solutions for integrating hard structures into the landscape setting of the Scheme.
- Use suitable and appropriate boundary treatments.

9.5.4 The environmental design is described in Chapter 2 (Scheme Description).

Landscape Design Objectives

9.5.5 The landscape proposals that form part of the Scheme are shown on the Environmental Masterplan on Figure 2.6. These take into account the landscape constraints which were identified as part of the baseline desk study, survey and consultation.

9.5.6 The following Landscape Design Objectives have informed the environmental design.

- Avoid, then minimise and mitigate adverse effects of the new section of motorway upon designated sites and features, and where necessary provide exchange land.
- Where practicable, conserve and enhance the environment through which the new section of motorway passes.
- Reflect the landscape character through which the new section of motorway passes including land use, topography, heritage and landscape pattern.
- Respect the landscape, biodiversity and cultural heritage resource of the new section of motorway, in particular the Gwent Levels.
- Increase areas of Biodiversity Action Plan habitats.
- Maintain the connectivity of existing networks for non-motorised users (NMUs).
- Maximise the positive aspects of the new section of motorway and its surroundings through creative design and use of local materials, including planting. This would enhance the local sense of place and historic character, with emphasis on environmental quality and sustainability.
- Reflect existing landscape character and retain existing features. Creating opportunities to improve landscape character through an integrated approach to mitigation providing adequate land for tree planting.
- Give careful consideration to the location and design of lighting to minimise impacts at both day and night.
- Give careful consideration to the design and integration of new structures into a sensitive landscape throughout the design process with careful selection of materials and planting treatments.
- Where possible create essential features to support the new section of motorway in areas where they have least impact on designated landscapes and minimise physical intrusion on the landscape.
- Re-use and enhance existing ditches and reens whilst maintaining functionality and connectivity.
- Create a sustainable and future focused proposal to support the growing needs of South Wales and its infrastructure.

Landscape Design Principles

9.5.7

The environmental design principles for the new section of motorway reflect the environmental context and key requirements of the environmental drivers for integration and include the following.

- Providing appropriate visual, landscape, ecological and environmental mitigation whilst minimising land take and impact on the areas of Sites of Special Scientific Interest and Special Area for Conservation.
- Retain as much existing maturing vegetation as possible.
- Establish new planting to screen and integrate the new section of motorway into the surrounding landscape whilst retaining cohesion with retained landscape features.
- Maintain the quality of views to and from surrounding receptors.

- Create cohesive connectivity north and south of the new section of motorway for ecology and landscape character through design and planting methods.
- Introduce innovative landscape planting to conserve and enhance areas with specific landscape/ecological importance providing a sustainable and future focussed solution.
- Use new planting to integrate the scale, layout, form and massing of the new section of motorway, to reduce the scale of earthworks and filter views of the Scheme, and to reinforce existing planting.
- Use locally indigenous local plants and species rich grass on embankments and in landscape areas to reflect the distinct local character and to link the new section of motorway design to existing features, providing physical habitat and wildlife corridors and visual continuity.
- Use habitat creation to offset habitat loss and nature conservation value, integrating the new section of motorway into the distinct landscape enhancing the appearance and ecology of new drainage ditches and reens with marginal planting and planting reed beds in balancing ponds and attenuation areas.
- Use lighting with low spillage and careful consideration given design and siting of road signs, traffic signals, environmental barriers and other street furniture.
- Improve cycle and pedestrian approaches along the new section of motorway as well as the interface at junctions and crossings providing opportunity to create potential 'gateways' to Newport.

Scheme Landscape Mitigation Proposals

9.5.8 The physical works associated with the new section of motorway would start at the tie-in with Junction 29 of the M4 at chainage 1520. The existing Castleton Junction on the M4 (Junction 29) would be modified to incorporate the new section of motorway. The junction has been designed to provide a free flowing interchange giving priority to the M4 motorway (including the new section of motorway) and access to and from the A48(M). The works include the construction of a number of new structures, including a replacement footbridge, three overbridges, two underbridges and a gas culvert.

9.5.9 The new section of motorway is on the edge of an elevated ridgeline rising up north of the Wentlooge Levels. This area is heavily wooded, shielding much of the existing junction from view and is a habitat for dormice. Existing vegetation would be retained where possible. Large cuttings to make way for the new interchange would incorporate a species rich grass mix of local provenance with low scrub planting in strategic locations between link roads. There would be an emphasis around the junction to replace woodland to mitigate the loss of habitat for dormice and reflect the scale, massing and layout of the existing landscape character. Woodland on the highest ridges to the north has been carefully considered to retain views for local receptors across the Severn Estuary. Carefully placed mammal crossings have been implemented to maintain the connectivity north and south of the junction.

9.5.10 A number of new footpaths would be incorporated to join those which were severed as part of the new junction layout. These new footpaths would run along desirable routes that have been planted to retain the existing character of the area and provide points of interest to users.

- 9.5.11** South west of the junction, water treatment area 1 would be located within the existing landscape pattern. Ponds would be planted with a mix of species rich grassland of local provenance with shrubs and trees carefully placed to enhance and screen the surrounding context. Reed beds would be implemented to enhance water quality and add ecological interest.
- 9.5.12** From the modified Castleton Interchange, the new section of motorway would curve to the south east on embankment passing to the south of Berryhill Farm. The alignment would pass beneath a realigned Church Lane. Church Lane would be diverted from its current alignment to tie back into existing highway. This diversion would incorporate a new overbridge to carry the realigned lane. To the south east of Church Lane, the alignment has been designed to follow the Duffryn Link road, where practicable. The new section of motorway then follows a series of left hand curves to the south of the Duffryn area of Newport and would pass over the South Wales to London Mainline railway on a skewed structure (the Duffryn Railway Underbridge).
- 9.5.13** The new section of motorway descends from the elevated ridgeline to level ground on embankment where there is a clear transition from wooded landscape to expanses of agricultural fields with a strong field pattern delineated by hedges and reens with intermittent pockets of woodland. As it travels south east from the Castleton Interchange, woodland planting would be continued along the embankment line with a large area proposed to the north east of Little Orchard (the current location of Berry Hill Farm). The woodland planting of native species has been carefully considered to maintain ecological corridors and mitigate the loss of habitat for dormice in the area. Further consideration has been given in this area to provide the local community with recreational woodland and reflect the scale massing and layout of the existing landscape character at the same time as shielding the taller element of Church Lane Overbridge from view. Pockets of 'sacrificial' planting along the embankments and areas located close to Little Orchard Farm would be strategically placed where early planting of large stock native trees would screen and integrate the new section of motorway into the surrounding landscape at its earliest stage. Other planting locations have been designed to follow the local landscape character and to minimise disruption of land pattern. Carefully placed mammal crossings would be included to maintain the connectivity north to south allowing mammals to move freely and maintain ecological diversity in the area.
- 9.5.14** Locations suitable for species rich grassland of local provenance have been identified and are shown on the Environmental Masterplan. Along this part of the new section of motorway, water treatment areas (2, 4a & 4b) have been designed to blend into the existing landscape pattern. The placement, adjoining the embankment, has been carefully considered to minimise land take and physical intrusion on the landscape. The embankments of the attenuation lagoons would incorporate species rich grassland and reed beds to enhance ecological interest and water quality.
- 9.5.15** A number of new/diverted footpaths would be included to join those severed by the new section of motorway. These would run along desirable routes which would be planted to retain the existing character of the area and provide access to areas of recreational use as well as conserve important links to the surrounding area. A new NMU overbridge crossing Percoed Reen has been carefully designed to create a point of interest with planting selected to help integrate the structure into the surrounding landscape. The design and materials

proposed to be used for the finish of the bridge have undergone lengthy consultation to minimise impact and enhance the links to other structures creating sympathetic features to surrounding context along the route. Planting proposals would be implemented using native species with locations of taller planting blocks strategically placed to mitigate the views of the surrounding receptors.

- 9.5.16** To the east of the South Wales to London Mainline railway, the Scheme would continue on a low embankment across the Wentlooge Levels. New overbridges would be provided at Lighthouse Road and New Dairy Farm to maintain access. The new section of motorway would cross the River Ebbw and pass to the south of the Docks Way landfill site. The crossing would consist of three separate structures, carrying the new section of motorway, the westbound merge slip and the eastbound diverge slip. To the east of the River Ebbw, the alignment would continue to the north east towards Newport Docks. A new junction would be provided at this location as a grade-separated roundabout with four slip roads and a gyratory positioned below the Scheme. This junction would provide a connection from the new section of motorway onto the A48 Southern Distributor Road and to the centre of Newport.
- 9.5.17** As the new section of motorway travels east of the South Wales to London Mainline railway the landscape design aims to mimic that of the existing Levels landscape across the Wentlooge Levels. Planting of the low embankments, where appropriate, would include areas of linear belts of native shrubs and trees of local provenance to integrate the new section of motorway into the surrounding landscape character. Small pockets of woodland to mitigate visual intrusion from receptors in close proximity would be strategically placed. The embankments of Lighthouse Road Overbridge concentrate on planting areas of shrubs and intermittent trees to reflect the scale, massing and layout of the existing landscape character. Emphasis on locations for replacement native species hedgerow to mitigate loss and enhance the landscape pattern disrupted by the alignment has been of particular importance. Careful consideration has been given to planting design along this section. The Wentlooge Levels require a balance between the historic landscape character whilst maintaining the landscape pattern and planting proposals.
- 9.5.18** Water treatment areas are located, where practicable, to the north of the new section of motorway to minimise physical intrusion on the landscape. The formation of these areas has been designed to fit with the existing historic landscape pattern with areas of species rich grass of local provenance and reed beds to enhance biodiversity and water quality.
- 9.5.19** Finishes to structures along this part of the new section of motorway have been carefully considered to select materials which are locally sourced and in keeping with the surrounding context whilst providing a clear connection to the Scheme and its overarching vision. The River Ebbw Underbridge and the New Dairy Farm Overbridge have been designed to minimise intrusion on the designated landscape by being sympathetic to the important areas of historic interest and ecological designations found in close proximity to the south.
- 9.5.20** The Docks Way Junction would see a shift in landscape design. Emphasis on creating an important gateway link into Newport has informed the planting strategy and reflects the comments raised by Newport City Council during the Draft Plan Consultation Response in 2014 (see Table 9.2 Consultation Responses), where they highlighted the importance of carefully designing the

approach and access to Newport. The Docks Link Road is surrounded by existing brownfield landscape, which is visually and physically low quality landscape. The landscape design proposes a gateway with strong specimen trees creating an avenue with a stronger amenity/urban realm style enhancing the landscape character and visual amenity in the area. Other landscape planting would further enhance the existing low quality landscape and provide a sustainable future focused landscape design to enhance landscape connectivity.

- 9.5.21** East of the Docks Way Junction, the new section of motorway would continue towards the River Usk, crossing the Newport Docks between the South Dock and North Dock, before straightening out over the main bridge over the River Usk.
- 9.5.22** The bridge crossing is proposed to take the form of a 2.1 km long elevated structure, including a high level cable stayed bridge with the bridge piers located outside the wetted channel of the Usk. The piers have been carefully designed to minimise impact on the ecological designated sites.
- 9.5.23** The River Usk Crossing would pass over the Wales Coast Path, which runs to the east of the river. Immediately east of the docks area, the Scheme would cross the quayside area around Corporation Road and the Uskmouth Railway line as it passes south of the Solutia Chemical Works on low embankment.
- 9.5.24** To the east of the River Usk Crossing, the new section of motorway would follow a left hand curve across the Caldicot Levels. A new overbridge would be provided at Nash Road to maintain access. Nash Road would be diverted offline to the east.
- 9.5.25** As the new section of motorway touches back onto land to the east of the River Usk, the landscape design concentrates on screening and integrating the route into the surrounding context as well as providing ecological and landscape enhancement opportunities. Pockets of land required for water attenuation have been identified as areas for marsh and wet grassland. An area of salt marsh is proposed to mitigate loss of habitat and provide local ecological enhancement.
- 9.5.26** Water treatment area 6 has been designed to be sympathetic to the existing historic landscape pattern and would be placed north of the alignment to mitigate any further loss to the designated landscape. Pockets of native woodland species, species rich grassland and shrubs of local provenance have been selected to mitigate views of the new section of motorway from local surrounding receptors in close proximity. Reed beds in the water treatment areas would aim to enhance biodiversity and water quality.
- 9.5.27** The realignment of Nash Road and the overbridge have had careful consideration to minimise the impact on local designations and mitigate through planting proposals, taking into account the visual amenity and sensitivity of local receptors. The embankments of the overbridge would be planted to mitigate loss of vegetation through construction and to help integrate and screen the new element into its surroundings. Shrubs and belts of trees of linear provenance reduce the scale and proximity of the new feature.
- 9.5.28** A number of new/diverted footpaths would be provided to link to those which would be severed as part of the Scheme. These would run along desirable routes which would be planted to retain the existing character of the area and provide points of interest to users. The Wales Coast Path would be diverted to the south of the Scheme at the base of eastbound carriageway embankment.

The diversion route has been carefully selected along desirable routes which would be planted to retain the existing character of the area and provide access to areas of recreational use as well as conserve important links to the surrounding area.

- 9.5.29** Continuing east, the new section of motorway would follow a large right hand curve across part of the Caldicot Levels towards the former steelworks. The highway would be supported on a low embankment. A new junction would be provided at Glan Llyn in the form of a grade separated roundabout. This would provide a connection for the new section of motorway, via a link road, to the A4810.
- 9.5.30** From the new Glan Llyn junction, the new section of motorway would run in an easterly direction parallel to the A4810 and to the north of Whitson substation. A new overbridge would be provided at North Row to maintain access with the diversion offline to the west.
- 9.5.31** An underbridge would be provided at Bareland Street with the diversion offline to the east. As the new section of motorway continues beyond the Caldicot Levels, the vertical alignment would rise up on embankment over the South Wales to London Mainline railway with the Scheme crossing over the railway on a new structure, the Llandeveyney Railway Underbridge.
- 9.5.32** As the new section of motorway passes through the Caldicot Levels the landscape design has been carefully considered to be sympathetic to the designated landscape. The alignment of the new section of motorway itself has been designed to pass through the most northern extent of the Levels area and take the minimum footprint to reduce, where possible, the physical impact on the SSSIs. Water treatment areas, where practicable, have been positioned to the north of the new section of motorway and designed to fit into the historic land pattern. They would be placed as close to the road as possible to minimise further intrusion on the locality. Each of the water treatment areas would be planted with species rich grass of local provenance designed to enhance the ecological value specific to the area. Reed beds would be designed to enhance water quality before being added back into the natural systems. Reens are a strong characteristic in the Caldicot Levels and the new section of motorway severs a number of reens as they pass north to south. The drainage design has concentrated on retaining the functionality and connectivity north to south. Sections where the new section of motorway severe agricultural fields have been retained and returned back to wetted areas. This land take is to preserve the historic landscape pattern and function found in the Gwent Levels and to enhance biodiversity in the area. This design principle has been followed throughout as a direct response to comments raised by Natural Resource Wales and Newport City Council during landscape meetings held in summer 2015 (see Consultation Responses Table 9.2).
- 9.5.33** Landscape planting has been designed to retain the open views found within the Caldicot Levels and aimed at balancing views in with that of views out. Native hedgerow planting would be provided along this part of the Scheme, placed in locations to mitigate and enhance the historic landscape pattern. Areas of marsh and wet grassland have been identified and would be returned back to original use (before farming) to integrate the landscape into its setting, retain the historic pattern and enhance ecological value. Linear belts of shrubs and trees would be

strategically placed to screen local receptors and integrate the new section of motorway into the landscape.

- 9.5.34** Reed beds at the Tata Steelworks would be remediated and returned to functional reed systems to further boost water quality. Junctions would be integrated into the landscape through use of pockets of native woodland which would mitigate habitat loss and enhance biodiversity in the locality. The Glan Llyn link road would use planting to create a gateway landscape, through the use of strong specimen trees and an avenue approach which creates a stronger amenity/urban realm style.
- 9.5.35** Where appropriate, south facing embankments would be planted using local provenance species rich grass. The North Row Overbridge would be mitigated through strategically placed native shrubs to integrate the elevation and structure into the surrounding landscape. Woodland planting would be implemented to mitigate habitat loss and enhance local biodiversity offering further habitats to dormice.
- 9.5.36** Structures have been designed to fit in with the locality maintaining clear links in character to other structures positioned along the route. Materials would be locally sourced and finishes would be sympathetic and reflect the local character.
- 9.5.37** This section sees a number of short diversions to local public rights of way. These have been considered and would be realigned to run along desirable routes which would be planted to retain the existing character of the area and provide points of interest to users.
- 9.5.38** As the new section of motorway crosses the South Wales to London Mainline railway and runs east, that part of the local allotment gardens on the south west edge of Magor off Green Moor Lane affected by the new section of motorway would be replaced on land to the south, where soil conditions, aspect and drainage would be the same or similar and in close proximity to the community.
- 9.5.39** This part of the new section of motorway, as it runs through the Caldicot Levels would remain unlit, with the exception of major junctions. Lighting would be sympathetic to its surroundings with low spillage lamps reducing impacts on the locality.
- 9.5.40** As the new section of motorway heads further east the landscape character sees a shift to more urban community, and this is reflected in the landscape design.
- 9.5.41** The Scheme would run north easterly from the South Wales to London Mainline railway towards Magor. New overbridges would be provided at Newport Road and Knollbury Lane. Newport Road would be diverted offline to the east to a new roundabout junction. The new roundabout would be provided at the intersection of Newport Road with the A4810. Knollbury Lane would continue on its current alignment. The existing Penhow Magor underbridge would be extended.
- 9.5.42** In the vicinity of St Bride's Road to the north west of Magor, the new section of motorway would merge into the existing M4. A new overbridge would be provided at Knollbury Lane and new underbridge at Rockfield Lane.
- 9.5.43** The new section of motorway would realign with the existing M4 at Junction 23A to the north of Magor. From here, the new section of road would run alongside

the existing M4 to Junction 23, where connections would be provided to the M48 and B4245.

9.5.44 The approach of the new section of motorway to the Magor Interchange sees a change in landscape character which is reflected in the planting strategy and reflects the sensitivity of the area and the importance of the associated Conservation Area, as raised by Monmouthshire County Council in landscape meetings held in June 2015 (see Table 9.2, Consultation Responses). The area transitions from Levels landscape character and rises up to developed areas at Magor. The area is interspersed with small blocks of woodland but remains a rural field pattern. The Magor Interchange has been designed to retain as much existing mature vegetation as possible and to mitigate, any loss has been replaced with a clear view to fully integrate the new interchange into the surrounding landscape as well as enhance biodiversity in the area. Habitat lost through the footprint of the design would be replaced and this planting would also screen the sensitive receptors found on the periphery. Reed beds would be implemented in water treatment areas to boost water quality and water treatment areas would be strategically designed into spaces which are land locked by road, minimising the intrusion in the landscape.

9.5.45 A large woodland block would be introduced to the north of Magor to mitigate habitat loss and enhance ecological value in the area. Lighting of the junction has been considered and would be implemented only where essential using low light spill lamps. Native species of plant and grassland of local provenance are key to the landscape design. Elevated embankments would be strategically planted to screen and boost visual amenity of receptors in the area.

9.5.46 This section sees a number of short diversions to local public rights of way. These have been considered and would be realigned to run along desirable routes which have been planted to retain the existing character of the area and provide points of interest to users.

Monitoring of Scheme Landscape Mitigation Proposals

9.5.47 A five year aftercare period would be put in place for the landscape planting. The aftercare would be directed to ensuring the successful establishment and growth of the new tree and shrub planting, seeding and other landscape elements to ensure these achieve the landscape design aims as set out in this ES chapter, the Environmental Masterplan (see Chapter 2, Figure 2.6) and the Environmental, Landscape and Ecology Aftercare Plan for the Scheme (see Chapter 18).

9.5.48 The aftercare plan would set out not only landscape design intent but the integration of this with ecological, heritage and other environmental aims. Annual and seasonal monitoring of the Scheme during the construction phase and occupation would be undertaken by Landscape, Ecological and other specialists to ensure the Scheme develops as intended and that the inherent mitigation aims are achieved. This would include assessment of plant growth, recording of plant failures (and provision for annual replacement of same), establishment of grassland types, records of target wildlife species, ecological habitat establishment and success of SSSI impact mitigation. Alongside monitoring would be a formal reporting structure supported by remedial measures, including replacement planting as necessary to ensure the anticipated establishment of the landscape is maintained.

- 9.5.49** At the end of the aftercare period the Scheme would be subject to a formal handover process to the South Wales Trunk Road Agency (SWTRA), who would be the maintaining authority for the Scheme thereafter. For the landscape, this would include formal reporting on the progress of the Scheme against stated design and performance aims, against ecological and other environmental aims and on landscape interventions where progress or species establishment has not been as anticipated.

Construction

- 9.5.50** During construction, existing features to be retained would be protected through implementation of the Construction Environmental Management Plan (CEMP). A Pre-CEMP is provided at Appendix 3.2 of this ES.

9.6 Assessment of Potential Land Take Effects

- 9.6.1** Land take effects relate to the permanent loss of land as a result of the Scheme. For landscape and visual effects, it is not possible to separate such effects from the activities that would occur alongside such land take (such as construction activities or the presence of a new motorway). This is because the assessment of landscape and visual effects requires consideration of land take together with consideration of the changes in the landscape character, and views and visual amenity that would arise. Therefore, consideration of land take effects is provided within Sections 9.6 (construction) and 9.7 (operation) below.

9.7 Assessment of Potential Construction Effects

Proposed New Section of Motorway

Assessment of Potential Construction Landscape Effects

Local Landscape Character Area 1: Michaelston-y-Fedw

- 9.7.1** The sensitivity of this Landscape Character Area (LCA) to the proposed development is moderate. This is based on the presence of the existing M4 and A48(M) within the area and the presence of ancient woodland, which could not be replaced. Some of the area is locally designated as a Special Landscape Area.
- 9.7.2** The new section of motorway would pass through this LCA between chainage 0 and 5,700. To the north of the proposed interchange, construction activity would include the working of borrow areas, earthworks activities for the proposed new section of motorway and the creation of topsoil and unsuitable stockpiles. The building of structures including bridges would also be a key feature of construction activity within this LCA. South of the A48 there would be a large borrow and reprofile area as well as topsoil and unsuitable stockpiles. Construction activity would also include works associated with water treatment areas 1 and 2, the Duffryn link and Church Lane overbridge. The main compound, with its associated offices, parking and storage areas would, be situated within this LCA between Celtic Lane and the proposed new section of motorway.

- 9.7.3** Potential effects on landform/drainage patterns/urban form/street pattern: The construction of the new section of motorway would require a large amount of earthworks movement, including both excavation and filling in different parts of the LCA. There would be an increase in the amount of urban form within the area through the presence of construction plant and machinery. Stockpiles would change the physical appearance of the area as well as being an incongruous feature. The layout of Church Lane would change to facilitate construction of the Duffryn link and Church Lane overbridge. New urban form would be present during construction as a result of the site offices and welfare facilities within the main compound.
- 9.7.4** Potential effects on land cover/land use patterns/urban structure: A large proportion of the area would change from agricultural land use to construction work areas. There would be a loss of ancient woodland to the south of Berryhill Farm and loss of mature vegetation within and around the existing M4/A48(M) junction.
- 9.7.5** Potential effects on cultural and historic associations: There would be further erosion of historic features within the area as a result of the loss of ancient woodland. The new new section of motorway would increase the suburban nature of the area between Cleppa Park and Castleton.
- 9.7.6** Potential effects on perceptual aspects: Construction activity would create a new and uncharacteristic conspicuous feature within the landscape, particularly as a result of the scale of works to the north and south of the existing M4 and associated vegetation removal. This would be particularly prominent from the south of the area and reduce the levels of tranquillity within the area. During the hours of darkness lighting from vehicle movements along the existing motorway corridor would be more prominent due to the loss of vegetation and directional lighting would be provided at the site compound.
- 9.7.7** As a result there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Local Landscape Character Area 2: Wentlooge Levels

- 9.7.8** The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area, the distinctive reen landscape pattern and the high landscape value. Much of the area is locally designated as a Special Landscape Area.
- 9.7.9** The new section of motorway would pass through this LCA between chainage 5,700 and 8,500. There would be large scale topsoil, unsuitable and hard stockpile areas within the fields to the west of the Parc Golf Club. Elsewhere, construction activity would be focussed on works associated with the proposed new section of motorway corridor on embankment. There would also be localised construction activity associated with earthworks and structures for the Percoed NMU Bridge, Duffryn Railway Underbridge, Lighthouse Road Overbridge, New Dairy Farm Overbridge, the Morfa-Gromw Reen and Old Dairy Reen culverts, River Ebbw bridge and water treatment areas 4a, 4b, 5. Adjacent to the River Ebbw there would be a small construction compound immediately north of the proposed new section of motorway.

- 9.7.10** Potential effects on landform/drainage patterns/urban form/street pattern: The construction of the new section of motorway would require a large amount of earthworks movement, primarily filling across the eastern side of area. There would be an increase in the amount of urban form within the area through the presence of construction plant and machinery. Earthworks for the new section of motorway and bridge structures would create new raised forms within the flat Levels landscape. The layout of Green Lane and Lighthouse Road would change to enable construction of the associated bridges and diversions.
- 9.7.11** Potential effects on land cover/land use patterns/urban structure: The construction activity would transect the Levels landscape, changing the more regular pattern of the existing fields. A large proportion of the area would change from agricultural land use to construction work areas and stockpiles. Vegetation along field boundaries would be lost, opening up the landscape in places. The reen and ditch pattern would change in places to accommodate construction of the new section of motorway.
- 9.7.12** Potential effects on cultural and historic associations: There would be an erosion of some historic features within the area as a result of the loss of a consistent Levels landscape pattern, cutting through one of the most extensive areas of reclaimed wet pasture in the UK.
- 9.7.13** Potential effects on perceptual aspects: The perception of a tranquil flat rural landscape would change as a result of new earthworks, construction activity and vegetation loss. During the hours of darkness, task lighting at individual locations and inward facing security lighting at the compound would result in a localised change to the darkness of the levels landscape.
- 9.7.14** As a result, there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a very large adverse significance of effect.

Local Landscape Character Area 3: Newport Docks and Uskmouth

- 9.7.15** The sensitivity of this LCA to the proposed development is low. This is based on the presence of features and elements that are in decline and the presence of few features and elements that could not be replaced, with the exception of the Newport Transporter Bridge. The River Usk itself is locally designated as a Special Landscape Area.
- 9.7.16** The new section of motorway would pass through this LCA between chainage 8,500 and 11,500. The main construction activity within this LCA would be works associated with the River Usk Crossing. The crossing would include two large towers on either side of the river, 8 piers on the west bank, and 13 piers on the east bank. Other works would include earthworks and construction work areas associated with Docks Junction, River Ebbw Bridge, the Docks Link to the Southern Distributor Road and the relocation of two electricity pylons to the west of the River Usk. There would be large areas of land used for site compounds, welfare and storage, particularly near Docks Junction and to the east of the River Usk.
- 9.7.17** Potential effects on landform/drainage patterns/urban form/street pattern: Construction activity of the scale required for the River Usk Crossing and approaches would be of a greater scale than that associated with the existing industrial area and would therefore be uncharacteristic and conspicuous.

- 9.7.18** Potential effects on land cover/land use patterns/urban structure: The construction activity would not result in the loss of many key features of the area but would create a large scale change/addition, particularly over the River Usk and River Ebbw.
- 9.7.19** Potential effects on cultural and historic associations: Construction activity across the River Usk may detract from the historic/cultural associations of the Newport Transporter Bridge just to the north.
- 9.7.20** Potential effects on perceptual aspects: Construction activity would add to the existing visual clutter of the area with cranes, plant and other features combining with pylons, chimneys and industrial buildings to intensify the perception of industrial activity. During the hours of darkness there would be an increase in the amount of lighting within the LCA due to the task lighting used at specific locations, directional security lighting at compounds and beacon lighting on tall equipment used to build the River Usk crossing.
- 9.7.21** As a result, there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a moderate adverse significance of effect.

Local Landscape Character Area 4: Newport

- 9.7.22** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 within the area and the presence of a sense of place created by commonplace elements, such as areas of residential housing and areas of historic and cultural association.
- 9.7.23** The new section of motorway would not physically pass through this LCA, although at the Lighthouse Road Overbridge would be located just outside the southern edge of the area.
- 9.7.24** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.25** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.26** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.27** Potential effects on perceptual aspects: The construction of the River Usk Crossing would have some indirect perceptual aspects on the area from locations that have views across the landscape from an elevated position but the overriding character of the area would remain. The construction activity would form a barely noticeable addition of uncharacteristic features.
- 9.7.28** As a result there would be a negligible adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 5: Chepstow Woods Southwest

- 9.7.29** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 and M48 within the area and the presence of ancient woodland and other local landscape features which could not be replaced. Some of the area is locally designated as a Special Landscape Area.
- 9.7.30** The new section of motorway would pass through this LCA between chainages 22,000 and 24,600. The main construction activity within this LCA would be works associated with removal of vegetation, site clearance, earthworks within borrow areas and for the carriageway and creation of multiple topsoil, unsuitable and hard stockpiles. There would also be localised construction activity associated with earthworks and structures for water treatment areas 11c, 12a and 12b, Rockfield Lane Underbridge, Magor Interchange Bridge, Bencroft Lane Underbridge, Red Barn Access Bridge and Caldicot Road Roundabout. There would be a satellite compound and welfare facilities adjacent to both St Bride's Road and Knollbury Lane.
- 9.7.31** Potential effects on landform/drainage patterns/urban form/street pattern: There would be noticeable changes to landform within the area due to the use of borrow pits to the east of Magor and creation of earthworks for the new section of motorway and its junctions. The urban form and street pattern would change throughout the construction period, particularly along the M4 and M48 corridors. There would be a number of diversions to local roads including Rockfield Lane and Bencroft Lane.
- 9.7.32** Potential effects on land cover/land use patterns/urban structure: The construction phase would result in the loss of mature vegetation, particularly along the northern side of the existing M4. Borrow areas, construction compounds and the construction footprint of the new section of motorway would result in the loss of agricultural land and increase the extent of urbanising features within the area.
- 9.7.33** Potential effects on cultural and historic associations: It is not anticipated that there would be a noticeable change in relation to cultural and historic associations.
- 9.7.34** Potential effects on perceptual aspects: Construction activity within the area would increase the prominence of the motorway corridor and reduce tranquillity, particularly around the M4/M48 interchange. During the hours of darkness lighting from vehicle movements along the existing motorway corridor would be more prominent due to the loss of vegetation and directional lighting would be provided at the site compound.
- 9.7.35** As a result, there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Local Landscape Character Area 6: Llanwern Steelworks

- 9.7.36** The sensitivity of this LCA to the proposed development is low. This is based on the presence of features which are discordant, derelict or in decline. It contains few features that could not be replaced.

- 9.7.37** The new section of motorway would pass along the edge of this LCA between chainages 14,200 and 19,100. Within the LCA, construction would include part of the new Glan Llyn junction slip roads and link road to the A4810. To the northeast of the proposed junction, within this LCA, construction would also include the water treatment area 8a, which is to be located between the new section of motorway eastbound on-slip road, the new link road and Monks Ditch / Black Wall Reen. Several existing sludge lagoons and settling ponds to the south of the area have been identified as requiring sludge remediation or excavation, and the containment bunds to these areas would also require realignment to follow the new road, once any treatment has been carried out. A new Motorway Depot is also planned within this LCA, approximately 150-200 metres northwest of the new junction. Construction activity would include extensive earthworks for bunds and embankments for the water treatment area, sludge lagoons and junction, plus works for the new Depot.
- 9.7.38** Potential effects on landform/drainage patterns/urban form/street pattern: The construction activity associated with the new section of motorway would have little direct physical impact on this area. The work would be undertaken primarily along or just outside the boundary, with the exception of the link road between the Glan Llyn junction and the A4810 which would include earthworks movements. There would be a loss of reedbeds to the west of the area, although the majority of these fall within the adjacent LCA. The new junction would be raised above the existing levels and would therefore be visible as a new feature within the flat landscape. The construction of the Motorway Depot approximately 200-250 metres to the northwest of the new Glan Llyn junction would fit within the linear pattern of the existing developments in this LCA, thereby minimising impacts on street patterns. The pattern of the fields, reens and ditches has been interrupted and altered by the previous construction of the steelworks and the electricity distribution facility and there are likely to be further diversions and interruptions to the reen and ditch network in this immediate area to accommodate the new motorway and associated structures. There would be little change to the existing field patterns, mainly due to their limited presence within this LCA. There are likely to be minimal or no impacts on the existing urban form / street pattern, from the proposed works.
- 9.7.39** Potential effects on land cover/land use patterns/urban structure: Construction would involve the clearance of some shrubs, trees and linear tree belts along the ditches and reens, as well as changes to one of the former steelworks balancing ponds. The construction activity associated with the Glan Llyn motorway depot would also change land use within the immediate area, although it would not be incompatible with other large scale industrial, and retail distribution centres already present. There would be a slight reduction in the area of brownfield site available for redevelopment, although the new road link would improve accessibility to the remainder of the development area. As well as vegetation clearance, construction activities and vehicle movements, such as earthworks, deliveries, excavations and road construction would be visible within the LCA, but existing scrub and occasional trees intended to remain would provide effective screening except where construction operations are at an elevated level or in close proximity to the A4810 where loss of vegetation would open up views.
- 9.7.40** Potential effects on cultural and historic associations: This area has long been industrial in nature, and construction activity is unlikely to have any noticeable effect on remaining cultural and historic associations. There are considerable

movements of heavy vehicles already taking place within the area, associated with the large distribution centres and remaining steelworks, and there would be an increase in this due to the construction traffic.

9.7.41 Potential effects on perceptual aspects: There would be a perceptual change to this area as a result of construction activity associated with the new section of motorway – the link road within the area and the new section of motorway just outside. There is already large scale construction activity within the former steelworks site, which limits the impact of further construction activity on this area. Retention of existing areas of trees and scrub would provide a further degree of visual screening for traffic using the existing A4810. During the hours of darkness the light levels within the LCA are likely to remain similar to the baseline condition.

9.7.42 As a result, there would be a minor adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a slight adverse significance of effect.

Local Landscape Character Area 7: Caldicot Levels

9.7.43 The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area, the distinctive reën landscape pattern and the high landscape value. The area is locally designated as a Special Landscape Area and nationally as a SSSI.

9.7.44 The new section of motorway would pass through this LCA between chainages 11,400 and 20,800. The proposed new section of motorway would run across the open low lying land within the north of this LCA, cutting across the existing field, reën and road pattern and introducing a continuous, large scale, wide linear feature which would be alien in the varied pattern of regular and irregular small and medium scale fields. Construction activity would include substantial extensive earthworks and excavations associated with construction of embankments for the motorway, particularly at the approaches to the River Usk, and bunds for the water treatment areas 6, 7, 8, 9 and 10. There would also be substantial earthworks associated with the construction of the new Glan Llyn junction to the south of the boundary with LCA6, and overbridges at Nash Road and North Row, and under-bridges at Bareland Street and Llandevenny Railway Bridge.

9.7.45 Potential effects on landform/drainage patterns/urban form/street pattern: Construction activity associated with the approach to the River Usk Crossing, Glan Llyn Junction and North Row Overbridge would require extensive earth movements and the creation of elevated features that are uncharacteristic of this character area. The street pattern would change locally as a result of individual road closures and diversions, particularly around Pye Corner/Meadows Road where the existing Nash Road would be closed on both sides of the new section of motorway, with a new overbridge provided to re-link the severed road on a modified alignment. At the eastern end of this LCA, a new public footpath would run from Green Moor Lane towards the South Wales to London Mainline railway, to run under the new motorway where it crosses the railway. Additional land would be required for the construction of water treatment areas and reed beds, and whilst these features are not incompatible with the wet grassland and pasture present in the area, their containment bunds would introduce raised earthworks which are not characteristic of the Levels. The construction activities associated

with these features would also be visible due to their slightly elevated nature. Drainage patterns in the vicinity of these new features would be disrupted, but new links would be formed to ensure they continue to function.

9.7.46 Potential effects on land cover/land use patterns/urban structure: Construction activity would result in the severance of the reen landscape pattern and loss of vegetation throughout the area. There would be localised loss and disruption to the vegetation and land use patterns due to construction, with the main areas of vegetation loss associated with the reen-side linear tree belts which would be cleared to allow for both construction and associated vehicular movements. There would be loss of mature vegetation in the vicinity of Pye Corner, where the new motorway cuts through more substantial areas of woodland. At the eastern end of this LCA, southwest of Magor, the existing mature hedgerow along the eastern side of the A4810 would also be lost due to the embankment earthworks for the new section of motorway as it drops down to the Levels. In the short section of new motorway between the railway and the end of the LCA, the carriageway would be in cutting, requiring extensive excavations, which would also adversely affect the adjacent vegetation.

9.7.47 Potential effects on cultural and historic associations: The reen/Levels landscape that is lost through construction cannot be replaced. This character area is a man-made landscape and is therefore rich in cultural features, particularly the reen and ditch network, and in the potential for the survival of archaeological remains, including in the vicinity of the East Usk and Llanwern industrial areas. Excavations and earthworks for the construction of the new motorway, including associated structures, bridges and water treatment areas, could potentially affect or destroy historical and cultural features within the area.

9.7.48 Potential effects on perceptual aspects: The presence of construction activity within the area would be conspicuous and would alter the tranquillity and perception of the area. However within this character area, the effects of the construction activity are focused in the north, also following the boundary with the Llanwern Steelworks character area. There are several small settlements and individual properties which would experience noise and visual disturbance as a result of the construction activities in what is a quiet and peaceful area. This would include lighting during the hours of darkness where vehicular movements continue, or where there is safety or security lighting.

9.7.49 As a result, there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Local Landscape Character Area 8: Caldicot Moor

9.7.50 The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area and the distinctive reen landscape pattern. The area is locally designated as a Special Landscape Area and nationally as a SSSI.

9.7.51 The new section of motorway does not pass through this LCA, although at chainage 20,100, it comes to within approximately 400 metres of the boundary to LCA 8.

- 9.7.52** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.53** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.54** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.55** Potential effects on perceptual aspects: There would be no perceptual change to the character area as a result of the new section of motorway.
- 9.7.56** As a result, the magnitude of impact would be 'no change' without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 9: Magor and Undy

- 9.7.57** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 adjacent to the area and the presence of a sense of place within the area created by commonplace elements such as areas of residential housing and associated features.
- 9.7.58** The new section of motorway would pass through this LCA between chainages 20,800 and 21,900. The proposed new section of motorway would run through a narrow green wedge of farmland to the west of this LCA, and then swing round to the east to merge with the existing M4 along the northern edge of Magor. At this point, the new section of motorway would continue as dual carriageway to the north of the M4, outside of this LCA, to link the existing M4 at Junction 23A with the M48 at a new junction at Llanfihangel. Construction activity would include substantial and extensive earthworks and excavations associated with construction of embankments and cuttings for the motorway and dual carriageway, and bunds for the water treatment area and Reed Bed 11b. There would also be earthworks associated with the construction of the overbridge at Newport Road and the under-bridge at St Brides Road (Magor Penhow underbridge).
- 9.7.59** Potential effects on landform/drainage patterns/urban form/street pattern: The construction activity would result in extensive earthworks and vehicular movements between the western edge of Magor and the A4810. The narrow "green wedge" of farmland between the existing A4810 and the housing at the western edge of Major would be reduced by half due to the construction operations. The M4 would be in a cutting at this point, and there would be a substantial amount of excavation and associated earthworks. The new section of motorway would avoid the sub-urban residential area of Magor, however it would sever it from the Brewery, hotel and offices to the west of the existing A4810. The B4245 would require localised diversion to pass over the new section of motorway and re-join the B4245 at a reconfigured junction. Construction activities would consist of plant and vehicle movements and earthworks.
- 9.7.60** Potential effects on land cover/land use patterns/urban structure: The construction activity along the new section of motorway would increase severance within the area between the western edge of Magor and the west of

the A4810. There would be a loss of vegetation within the area. The A4245 Newport Road between the residential edge of Magor and the A4810, is lined by mature trees and hedgerows, giving it a rural character. These would be lost due to construction, in addition to which the existing mature hedgerow along the eastern side of the A4810 would also be lost due to the excavations for the new section of motorway cuttings.

- 9.7.61** Potential effects on cultural and historic associations: It is not anticipated that there would be a noticeable change in relation to cultural and historic associations. Important cultural features recorded for this LCA are located to the south of the settlement, with little historical interest remaining in the vicinity of the existing M4. Construction activities are not anticipated to have any adverse impacts on these features.
- 9.7.62** Potential effects on perceptual aspects: Tranquillity in this area is considered to be limited due to the presence of the existing motorway, the A4810, and the South Wales to London Mainline railway. In addition to the construction activity within the area, works to the north of the area would reduce tranquillity along the northern edge of Magor and result in greater exposure of the existing motorway corridor within the setting of the area. During the hours of darkness vehicle movements along the existing motorway corridor would be more prominent due to the removal of vegetation and task lighting would increase the prominence of lighting around the LCA.
- 9.7.63** As a result, there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a moderate adverse significance of effect.

Local Landscape Character Area 10: Caldicot

- 9.7.64** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M48 adjacent to the area and the presence of a sense of place created by commonplace elements, such as areas of residential housing and areas of historic and cultural association.
- 9.7.65** The new section of motorway would not physically pass through this LCA. The eastern extent would be located 2 km to the west.
- 9.7.66** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.67** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.68** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.69** Potential effects on perceptual aspects: There would be no perceptual change to the character area as a result of the new section of motorway.
- 9.7.70** As a result, the magnitude of impact would be 'no change' without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 11: Severn Estuary

- 9.7.71** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the Second Severn Crossing within the area and balanced by the presence of a landscape of high value. Part of the area is locally designated as a Special Landscape Area.
- 9.7.72** The new section of motorway would not physically pass through this LCA. The River Ebbw Bridge would be located approximately 600 m to the north.
- 9.7.73** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.74** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.75** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.7.76** Potential effects on perceptual aspects: Construction activity associated with the River Usk Crossing would intensify the appearance of industrial activity/visual clutter around the Newport Docks area resulting in indirect and barely noticeable damage to the existing character of this area. The scale of lighting during construction would be unlikely to alter the night-time perception of this area.
- 9.7.77** As a result, there would be a negligible adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a slight adverse significance of effect.

Assessment of Potential Construction Visual Effects – Daylight Hours

- 9.7.78** The potential effects of the construction phase upon views from each of the representative viewpoints, residential properties, public rights of way (PRoW), National Cycle Network routes, permissive paths, other land with public access, schools/community facilities and business properties identified by the study have been assessed. The results of the assessment are presented in the schedules included in Appendices 9.6 - 9.11. The schedules are accompanied by a series of visual receptor location plans (Figures 9.16 - 9.19), which are cross referenced to the schedules by means of a unique number. The predicted significance of effect for each receptor for each phase of the new section of motorway is shown graphically on these plans.

Potential Construction Visual Effects on Representative Viewpoints

- 9.7.79** For the detailed assessment of the potential construction effects upon views from representative viewpoints refer to the visual assessment tables in Appendix 9.6.

Areas to the North of Castleton Junction and A48(M) – Viewpoints 1, 2, 4a, 5 & 6

- 9.7.80** Formation of the Castleton Interchange would be the dominant element for the receptors in this area. The construction of the junction would involve extensive removal of woodland in the area, with large scale earthworks to form and re-grade embankments and major civil engineering operations to build a number of

bridges and flyovers. These elements would involve the use of a large amount of tall plant and machinery. This area would include a number of sites proposed to be utilised for borrow pits and stockpiling of materials.

9.7.81 The viewpoints in close proximity at elevated positions north, overlooking the existing M4 corridor (Viewpoints 4a, 5 and 6 – Pound Hill, PRoW 390/11, and PRoW 390/08 east of Pound Hill) would experience a temporary moderate (VP6) or large (VPs 4a and 5) adverse significance of effect upon their visual amenity whereas viewpoints located further north (Viewpoints 1 & 2 – PRoW 400/17 & 400/12), away from the junction, would have no views of the new section of motorway due to intervening vegetation and topography and there would therefore be a neutral significance of effect upon their visual amenity.

Areas Between the Existing M4 and Proposed New Section of Motorway – Viewpoints 7, 8a & 9

9.7.82 These viewpoints have the potential to be affected by the construction of the eastern elements of the Castleton Interchange and the new motorway itself as it begins to head east, away from the junction. Large scale earthworks to form and re-grade embankments, excavations to allow for borrow pits and major civil engineering operations to build a number of bridges and flyovers would be particularly noticeable elements in the view. The viewpoint in this area which lies very close to the new section of motorway (Viewpoint 7 – Little Orchard) would be surrounded by large scale construction activity at close range in all directions and would experience a temporary very large adverse significance of effect upon visual amenity. Other viewpoints in this area (Viewpoints 8a & 9 – Pedestrian Overbridge at Church Lane & Church Crescent) would see the removal of woodland to accommodate the new section of motorway and open up views towards this part of the new section of motorway. These viewpoints would also be impacted by excavations for nearby borrow-pit areas and would experience a temporary large adverse significance of effect upon their visual amenity.

Areas west of Coedkernew– Viewpoints 11 & 12

9.7.83 Viewpoint 11 would experience a temporary very large adverse significance of effect due to the visibility and nature of the construction area. This viewpoint lies in close proximity to the new section of motorway as it runs to the south west of Imperial Park. Extensive woodland clearance in this area to enable the works would create clear, direct and short range views to the construction areas, including those associated with the construction of the Church Lane Overbridge. The removal of the woodland would also open up views to Imperial Park industrial area, which is currently well screened.

9.7.84 Viewpoint 12 – PRoW at Parc Golf course would experience a temporary moderate adverse significance of effect to visual amenity with the views largely obstructed by mature vegetation belts. However, the elevation of the Castleton Interchange to the north west and the embankments of the new section of motorway as it heads east away from the junction may offer glimpses of re-grading of embankment, civil engineering works for structures and earthworks associated with the new section of motorway as it joins the Wentlooge Levels. The construction of water treatment area 2 is also likely to be visible from these viewpoints, albeit filtered by any intervening mature tree line.

Areas Along the North Eastern Edges of Marshfield – Viewpoints 13 & 14

- 9.7.85** Construction works associated with the formation of the Castleton Interchange may be the only element of the new section of motorway that would potentially affect the visual amenity of the viewpoints in this area. Due to the distance (greater than a kilometre) and the intervening elements, including mature vegetation and hedgerow, it may be perceptible but not a dominant feature in the views available here. Viewpoint 14, PRoW near Tynmawr Farm would experience a moderate temporary adverse significance of effect during the construction phase. However, intervening vegetation in the short distance would block the majority of construction works related to the formation of the Castleton Interchange with only the highest elements being glimpsed once vegetation clearance has taken place.
- 9.7.86** Viewpoint 13, Church Lane would experience negligible during the construction phase. This is due to distance and the quantity of intervening vegetation, particularly around the fields in the short distance. There would be a slight adverse significance of effect.

Areas to the North Western Edge of St. Brides – Viewpoints 16 & 17

- 9.7.87** Viewpoints 16 & 17 (minor roads at Hawse Lane) would experience only a slight temporary adverse significance of effect during the construction phase. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation.

Areas in the Wentlooge Levels to the South of the Railway – Viewpoints 20, 21, 22, 23 & 24

- 9.7.88** Viewpoints 22 Fair Orchard Farm, 23 and 24 Sirhowy Valley Walk would experience a temporary very large adverse significance of effect during the construction phase due to the proximity of major construction works involving significant earthworks and large plant machinery. Viewpoint 22 would see the construction of the Lighthouse Road Overbridge and the raised embankments taking the road over the bridge which would be particularly dominant elements in the view. Viewpoints 23 and 24 would see major civil engineering construction works associated with the River Ebbw crossing and earthworks associated with the elevated junction at the Docks Junction. Tree clearance and earthworks associated with the Castleton Interchange would be visible, along with construction of the bridge over the railway and a significant length of the new section of motorway. Construction of the taller elements of the River Usk Crossing is likely to be seen amongst the existing industrial elements, such as chimneys, pylons and turbines. These viewpoints are also likely to see the construction area for the new section of motorway as it travels east into the Alexandra Docks area.
- 9.7.89** Viewpoint 20, Green Lane would experience a temporary large adverse significance of effect during the construction phase with vegetation clearance opening up the views to storage areas and the construction of the new section of motorway and water treatment area 4a. Earthworks to create the embankment for the raised motorway would also be visible element in the view with vegetation clearance increasing the visibility of the industrial buildings and pylons already present in the area. Viewpoint 21, PRoW at Pennard Close would be obstructed by intervening mature vegetation following the Percoed Reen to the south and

east in views from street level. However, residential properties are likely to have views from upper storeys to some parts of the new section of motorway where intervening vegetation is lower or sparser. In these instances, there would be views of earthworks and plant movements. To the southwest, vegetation clearance for the water treatment area and alterations to the Percoed Reen track would open up the views and there would be clearer views of earthworks, plant movement and construction operations in connection with the Percoed Reen overbridge. This would result in a temporary large adverse significance of effect during construction.

Areas Located on the Northern Edge, and in, the Alexandra Docks – Viewpoints 25, 93 & 94

- 9.7.90** These viewpoints are scattered across the area of the Newport Docks and industrial area following the alignment of the River Usk. Receptors at these locations are considered to have a temporary moderate adverse significance of effect during construction with clear views of the construction related activity associated with the River Usk Crossing spanning across the Newport Docks and the River Usk. Major engineering works would be particularly noticeable for the construction of the bridge piers and the bridge deck as it becomes a horizontal element in the view. The area is currently a heavily industrialised area of south Newport with a large number of vertical manmade features including pylons, wind turbines, chimneys and the Newport Transporter Bridge. There is a strong horizontal emphasis to the open views across the river and the docks, and the flat nature of the landscape, together with the number of individual vertical elements, therefore these new features would not alter the balance of the features in the landscape.

Areas to the Southern & Northern edges of Uskmouth – Viewpoints 26 & 30 (PRoW at Newport Wetlands Centre & South East of Uskmouth Power Station)

- 9.7.91** From this position, viewpoints 26 & 30 would see elevated construction operations, particularly those for the construction of the towers for the Usk River Crossing, although any detail would not be perceptible due to the distance. This would add slightly to the cluttered skyline in front of the hills in the far distance. Tall cranes and features such as moving plant would be evident from this distance during construction. However, as tall industrial features are already present in the view, additional ones would not create a significant change to the character of the view resulting in a temporary slight adverse significance of effect during construction.

Areas within the South Western Suburbs of Newport – Viewpoints 95 & 96 (Stow Park & Dewsland Park)

- 9.7.92** These areas of Newport are densely populated and, generally, the areas where the steeper topography allows for receptors to see over the top of properties and intervening urban development would see the greatest change in visual amenity.
- 9.7.93** Viewpoints 95 and 96 at Stow Park and Dewsland Park are located in elevated parts of the City and are offered far reaching views across the flat topography of the Levels and across the Severn Estuary to England. These areas would see clear views of the construction activity for much of the new section of motorway, particularly in the Newport Docks areas, whilst vegetation clearance and

earthworks take place along the alignment creating a clear contrast to the current landscape. The dense urban sprawl filters into dense industrial areas, which follow the alignment of the River Usk and the edges of the River Ebbw where there is a strong horizontal emphasis of man-made features, large buildings, pylons, chimneys and wind turbines. Due to the densely populated nature of the area and the vast number of detracting elements in the view these new features would not alter the overall balance of features in the landscape. In particular, the addition of the River Usk Crossing would add to the features considered to be iconic to Newport i.e. the Transporter Bridge and the Southern Distributor Road. Viewpoints 95 and 96 have therefore been assessed as having a temporary slight adverse significance of effect during construction.

Area around Pye Corner – Viewpoints 35, 37, 38 & 39

- 9.7.94** Viewpoint 37, Nash Road is considered to have a temporary very large adverse significance of effect to the visual amenity through the construction phase of the new section of motorway. It lies in close proximity to the new section of motorway (approximately 50 metres) and would therefore have open, unfiltered views of construction works associated with the earthworks and engineering works for the Nash Road Overbridge to the north east. Views here would also take in the taller elements of construction related to the River Usk Crossing viewed across the tops of intervening vegetation. These horizontal features would be in addition to those already visible i.e. chimneys, pylons and wind turbines which are common throughout the area particularly around the River Usk, so additional construction elements would not be considered to alter the balance of features seen in the existing view.
- 9.7.95** Viewpoint 38, Nash Road Junction to Broad Street Common, is located further to the south of the new section of motorway (approximately 150 metres). Construction works would become evident from this location when vegetation clearance takes place opening up the views to the receptors using the road. Engineering works for the diversion of Nash Road onto a new overbridge would further open up the views of construction operations as it sweeps north east with earthworks and embankments formed for both the elevated diversion elements and the motorway. Tall plant operations would be evident above any intervening vegetation. It is therefore considered that Viewpoint 38 would see a temporary large adverse significance of effect during the construction phase.
- 9.7.96** Viewpoints 35 and 39 (PRoW by Hart Farm and junction of Broad Street Common with Julian's Reen) are located further from the route of the new section of motorway to the north. These are surrounded by large amounts of mature vegetation, which is to be retained and thus obstructs the views of the new section of motorway in close proximity. Views above existing vegetation belts of the River Usk Crossing found approximately 1.2 km to the west may have glimpses of tall construction equipment, although these would be mixed with a number of tall detracting features which already exist. Viewpoints 35 and 39 would therefore see a temporary slight adverse significance of effect during the construction phase.

Areas on the Southern Edge of Llanwern – Viewpoints 68 & 69

- 9.7.97** These viewpoints situated to the north of the TATA steelworks site at Llanwern Golf Club and Llanwern Church Yard are bounded to the south by dense mature vegetation dividing the South Wales to London Mainline railway between Newport

and the Severn Tunnel from the industrial units. The existing vegetation and the large industrial units block any views across to the new section of motorway. During the construction phase, it is considered that viewpoints 68 and 69 would see no change to their visual amenity and the significance of effect would be neutral.

Area on the Southern Edge of Llandevaud – Viewpoint 73 PRow at Llandevaud Langston

- 9.7.98** This area is located on an elevated level plateau offering far reaching views across to the Severn Estuary. The natural topography of the area, the intervening mature vegetation and the distance obscure any views of the new section of motorway. Therefore Viewpoint 73 would see no change in visual amenity during the construction phase and the significance of effect would be neutral.

Area to the South of Wilcrick Hill – Viewpoint 75

- 9.7.99** Views from this elevated position can be seen across the Caldicot Levels. Large belts of mature vegetation obscure clear views across the flat topography. There would be limited effects on these belts of vegetation during the construction, which would therefore screen much of the new section of motorway from view. Areas where large structural engineering works would require tall cranes and lifting equipment would be visible above the vegetation and would mix with the common vertical elements viewed from this location, including pylons and wind turbines. Viewpoint 75 would therefore see a temporary slight adverse significance of effect during the construction phase.

Areas Around Broad Street Common – Viewpoints 43, 44, 45 & 48

- 9.7.100** Viewpoint 48, Bowleaze Common is located approximately 80 metres from the proposed new section of motorway. The view is typical of the Caldicot Levels, with field patterns bordered by the local reen network. Due to the proximity, construction works would be clearly visible. The existing vegetation in the view would be cleared offering close unobstructed views of construction related earthworks for the new section of motorway and the elevated Glan Llyn Junction and its overbridges to the north west. Viewpoint 48 is therefore considered to have a temporary very large adverse significance of effect on visual amenity during the construction phase.
- 9.7.101** Viewpoint 43, Broad Street Common is located further from the new section of motorway, allowing intervening vegetation to largely screen the construction works. There are intermittent views at specific points where the vegetation is not as dense or mature. This may be more visible when large vehicles are moving on the site and are located on elevated embankments, creating a temporary moderate adverse significance of effect to visual amenity during the construction phase.
- 9.7.102** Other viewpoints in the area (Viewpoints 44 and 45) are further from the new section of motorway. Existing shrub belts along the reens that delineate the local field boundaries would provide intermittent visual screening, given that vegetation found in the short distance which would be retained. Higher elements, such as earthworks associated with the raised Glan Llyn Junction and machinery needed to construct the overbridges crossing the motorway would be seen intermittently

above existing vegetation. These viewpoints would see a temporary slight adverse significance of effect to visual amenity during the construction phase.

Areas along North Row – Viewpoints 52, 53 54 & 55

- 9.7.103** A temporary very large significance of effect on visual amenity would be seen during the construction phase for Viewpoint 52 located at Tonew Kennels. Intermittent mature hedgerows offer views into the surrounding field pattern, which would be within 80 metres of the proposed new section of motorway. There would be clear unobstructed views once vegetation clearance has taken place along the route allowing the receptor to see all construction related works. The taller construction equipment needed for the North Row Overbridge would be an additional elevated element found to the north-west.
- 9.7.104** Viewpoints 53, 54 and 55 located further south on North Row, further from the new section of motorway, would see glimpses of the construction phase. In particular, those in elevated positions such as second storey windows at Appletree Nursery. Some intervening vegetation would provide visual screening. However, taller elements of construction traffic associated with the construction of the North Row Overbridge would be seen above these shelterbelts. These viewpoints are therefore considered to have a temporary large adverse significance of effect during the construction phase.

Coed Y Caerau, Caerlicken Lane & Northern Edge of Llanvaches – Viewpoints 70, 71, 76, 77 & 78

- 9.7.105** Viewpoints 70 and 71 are at elevated positions north of Newport looking across an undulating landscape. The distance of the proposed works, together with the topography, means that the details of construction operations would not be visible resulting in no change to the existing view and a neutral significance of effect.
- 9.7.106** Viewpoints 76, 77 and 78 are all positioned around the area of Mynydd Alltir-fach. As this area is approximately 5 km from the proposed new section of motorway, much of the detail from this distance would be imperceptible. Tall construction elements may be visible at these points but at this distance would not alter the overall balance of the existing elements in the view, creating no change to the visual amenity and a neutral significance of effect.

Areas to the North of Magor Located on the Northern Edge of the Existing M4 Corridor – Viewpoints 81 & 79

- 9.7.107** Viewpoint 81 located on Bencroft Lane would see a large amount of existing mature vegetation removed during the construction phase creating a contrast to the existing landscape in the view. Construction operations that would be seen from this viewpoint include earthworks, stock piles and major civil engineering works associated with the Magor interchange bridge. Moving construction traffic and tall cranes to construct the overbridges associated with the new Magor interchange would be clearly visible in the view, creating a temporary very large adverse significance of effect to the visual amenity.
- 9.7.108** Viewpoint 79, a PRoW located at Upper Grange is at a greater distance from the new section of motorway (approximately 0.5 km) and elevated in comparison to its surroundings. Construction works from this area would be visible through the

short range blocks of mature vegetation. Vegetation clearance for water treatment area 11c would be a visible contrast to the existing landscape with construction traffic and areas used for topsoil stockpiles. This would result in a temporary moderate adverse significance of effect on the visual amenity during the construction phase.

Areas on the Caldicot Levels South of Whitewall Common – Viewpoints 64 & 65

9.7.109 Viewpoint 64, Whitewall Road near Lower Grange Cottage, is located approximately 2 km from the proposed new section of motorway. This area is a typical of the landscape of the Caldicot Levels, with field patterns delineated by the local rean network with mature hedgerows and pockets of taller mature vegetation. The flat low lying nature of the landscape would allow the intervening vegetation to screen the majority of the construction works. Gaps in the vegetation may permit glimpses through to construction works which would be emphasised by moving traffic and taller elements related to structures and earthwork movements. Views of the River Usk Crossing, 10 km to the west, would also be evident. This would result in a temporary moderate adverse significance of effect.

9.7.110 Viewpoint 65, located near Magor Pill Farm on Whitewall Road, would only be offered slight glimpses of construction related works. Changes in the view from vegetation clearance may be identifiable at this distance, changing the tree lines and creating a contrast to the surrounding landscape where glimpses are obtainable. This would result in a temporary slight adverse significance of effect on visual amenity.

Areas on the Edge of Magor, Undy & Llanfihangel Rogiet – Viewpoints 62, 67, 80, 84, 144b

9.7.111 There would be a perceptible change to the views available from Viewpoints 62, 67, 80, 84 and 144b (Blenheim Gardens, B4245, Rockfield Farm, St Michaels & All Saints Church and allotments located just off the B4245) as they are located in close proximity to the major works where the proposed new section of motorway joins and connects to the existing M4 alignment around Magor. Removal of existing vegetation to allow construction to begin would see a perceptible change in the visual amenity. Earthworks to create embankments in these viewpoints to raise the new section of motorway to the existing M4 alignment would be evident in these areas. Major engineering and structural works would be visible for the Magor Interchange in forming the approach roads and bridges. This area would be heavily utilised for stockpiling of material as well as the construction of water treatment area 12. These views would extend to other receptors in the area, resulting in a temporary very large adverse significance of effect on visual amenity during the construction phase.

Areas Across the Severn Estuary in England – Viewpoint 87, 88, 89, 90, 91, 92, 97 & 98

9.7.112 Viewpoint 87, located on Severn Beach on the English side of the Second Severn Crossing, would not have a view of the construction works with the exception of the taller elements related to the River Usk Crossing. However, at the distance it is viewed from, there would be no change to the view during the

construction phase. This would result in a neutral significance of effect to visual amenity.

9.7.113 Due to the distance of Viewpoint 88, Kingsweston House (approximately 16 km) there would be no perceptible view of the construction activities associated with the new section of motorway. This would result in a temporary neutral significance of effect to visual amenity during the construction phase.

9.7.114 All other viewpoints located along the coast of the Severn Estuary in England (Portishead south through to Weston-Super-Mare) are located at further distances from the new section of motorway. No construction elements would be seen from this distance. In clear conditions, as the construction of the River Usk Crossing progresses, it may be distinguishable offering a point of interest. This would result in a temporary neutral significance of effect to the visual amenity.

Assessment of Potential Construction Visual Effects on Representative Viewpoints - Hours of Darkness

9.7.115 The detailed assessment of the potential construction effects upon views from residential properties during the hours of darkness are set out in the visual assessment tables in Appendix 9.6.

9.7.116 Although temporary significant adverse effects are predicted for some representative viewpoints during the hours of darkness during the construction phase, this needs to be considered against the nature of the receptors that are represented by the viewpoint. A number of viewpoints represent public rights of way (PRoWs). The number of receptors on PRoWs during the hours of darkness can reasonably be predicted to be very low. Any significant effects on these representative viewpoints would therefore be experienced by a very small number of receptors during the construction period.

Areas to the North of Castleton Junction and the A48M – Viewpoints 1, 2, 4a, 5 & 6

9.7.117 From this elevated position above the existing M4 Corridor, Viewpoint 4a (Pound Hill) would experience a temporary large adverse significance of effect upon their visual amenity. Views would become open due to the loss of foreground screening vegetation at the beginning of the construction phase. Construction lighting would be in addition to the existing lighting along the M4 and A48(M), which would now also be visible. The more open middle and long distance views would also now include scattered areas of light across an expansive area that were previously screened by the intervening foreground tree belts.

9.7.118 Other viewpoints in this area (Viewpoints 1, 2, 5 & 6 - PRoWs 390/11, 400/17, 400/12 & 390/08 to the east of Pound Hill) would experience either a temporary slight adverse or neutral significance of effect upon their visual amenity. This is due to additional sources of light from the construction areas being screened by natural topography or not being highly noticeable amongst existing light sources.

Areas Between the Existing M4 and Proposed New Section of Motorway – Viewpoints 7, 8a & 9

9.7.119 Viewpoint 7 (Little Orchard) and 9 (Church Crescent) may be affected by lighting from the construction works to the eastern side of Castleton Junction. The

baseline contains limited lighting elements in this location. Vegetation clearance associated with the works would open up views towards construction lighting for the new section of motorway and the Castleton East compound. These would be noticeable elements resulting in a temporary moderate adverse significance of effect on visual amenity.

- 9.7.120** Viewpoint 8a (pedestrian overbridge at Church Lane) would experience occasional views of lighting from construction works across the Berryhill Farm Area, the extent and proximity of which would vary with phasing. The removal of intervening vegetation may allow views of lighting from the Castleton East Compound. The impact of construction lighting would be reduced by the presence of existing street lighting along Blacksmiths Way and the A48. This would result in a temporary slight adverse significance of effect on visual amenity.

Areas West of Coedkernew– Viewpoints 11 & 12

- 9.7.121** The proposed new section of motorway lies in close proximity to Viewpoint 11 (Parc Golf Club). Extensive areas of woodland would be removed during the construction phase revealing construction work lights across an area that is largely unlit in the baseline, resulting in a temporary very large adverse significance of effect on visual amenity. However, whilst the golf club is open, flood lighting across parts of the facility would reduce the impact of construction lighting. Castleton East Compound may be seen as a faint sky glow above retained vegetation to the north.

- 9.7.122** From Viewpoint 12 on the PRoW at Parc Golf Club there would be views towards lighting associated with construction works at Castleton Junction to the north. In addition, vegetation removal would increase visibility of existing street lights and car headlights along the A48 and the existing M4, resulting in a temporary moderate adverse significance of effect on visual amenity.

Areas Along the North Eastern Edges of Marshfield - Viewpoints 13 & 14

- 9.7.123** Existing vegetation provides low level screening for Viewpoint 14 (PRoW near Tynmwar Farm). However, the removal of existing woodland along the Castleton Ridge would reveal glimpsed views of construction work lights and existing street lighting and car headlights along the A48 and the existing M4 above this vegetation, resulting in a temporary moderate adverse significance of effect during the construction phase. Castleton East Compound would produce a light glow above existing vegetation although this is likely to blend in with the Parc Golf Course Driving Range lights.

- 9.7.124** Viewpoint 13 (Church Lane) would experience a slight adverse significance of effect on visual amenity due to the distance of the proposed new section of motorway and the screening effect of existing intervening linear belts of vegetation.

Areas to the North Western Edge of St. Brides – Viewpoints 16 & 17

- 9.7.125** Viewpoints 16 & 17 (minor roads – Hawse Lane) would experience a temporary slight adverse significance of effect as views of the proposed new section of motorway would generally be obscured by intervening linear belts of vegetation. Areas of thinner vegetation would offer partial and filtered views of temporary

lights during the construction phase. A faint glow may be noticeable above existing vegetation coming from the main compound at Coedkernew.

Areas in the Wentlooge Levels to the South of the Railway – Viewpoints 20, 21, 22, 23 & 24

9.7.126 The proximity of construction works to Viewpoints 22 (Fair Orchard Farm), 23 (Welsh Coast Path) and 24 (Sirhowy Valley Walk) is likely to result in a noticeable change in visual amenity due to construction work activity and lights resulting in a temporary very large adverse significance of effect on visual amenity during periods that the nearest construction areas are lit. Viewpoint 22 is likely to experience light glow above existing vegetation from the main site compound at Coedkernew. Receptors at Viewpoints 23 and 24 may experience light glow coming from the River Ebbw West, New Dairy Farm Overbridge, River Usk Viaduct and Bridge Compounds during the construction phase although baseline lighting from the nearby industrial areas would lessen the effect of this.

9.7.127 Views from Viewpoint 20 (Green Lane) would be partially screened by foreground vegetation. However, vegetation cleared along the route of the proposed new section of motorway would allow filtered views of construction work lighting during active phases of work, resulting in a temporary large adverse significance of effect.

9.7.128 Viewpoint 21 north of the proposed new section of motorway would experience a temporary large adverse significance of effects. Intervening vegetation would screen many views from low level, however from second storey residential properties there may be glimpsed views of construction work lighting across an area that has few existing sources of light. A faint sky glow coming from Duffryn West and Coedkernew Compounds may be noticeable above mature vegetation.

Areas Located on the Northern Edge, and in, the Alexandra Docks – Viewpoints 25, 93 & 94

9.7.129 These viewpoints located around Newport Docks would have clear unobstructed views of construction works requiring lighting relating to the River Usk Crossing, resulting in a temporary moderate significance of effects on the visual amenity of the area. The River Usk Viaduct compound located to the west would add ambient light to produce background illumination during the hours of darkness.

Areas within the South Western Suburbs of Newport – Viewpoints 95 & 96 (Stow Park & Dewsland Park)

9.7.130 From these elevated viewpoints there are likely to be glimpsed views of construction activities requiring lighting along the proposed new section of motorway, which would blend in with the existing illuminated skyline of Newport Docks resulting in a temporary slight adverse significance of effects.

Areas Around the Uskmouth – Viewpoints 26 & 30

9.7.131 Viewpoint 26 and 30 would experience a temporary slight adverse significance of effect to the visual amenity of the area. Low level vegetation would provide partial screening leaving elevated works the only noticeable lighting feature which would be in keeping with the already illuminated night sky across Newport Docks.

Areas Around Pye Corner – Viewpoints 35, 37, 38 & 39

- 9.7.132** Viewpoint 37 on Nash Road lies in close proximity to the proposed new section of motorway resulting in a temporary very large significance of effects. Views would be unobstructed of construction phase works requiring lighting and a variance to current conditions.
- 9.7.133** Viewpoint 38 would contain uninterrupted views of construction work lighting along the proposed new section of motorway resulting in a temporary large adverse significance of effects to visual amenity.
- 9.7.134** All other viewpoints would experience a temporary slight adverse significance of effects due to views being screened by existing vegetation during the construction phase and taller elements being exposed to light.

Areas on the Southern Edge of Llanwern – Viewpoints 68 & 69

- 9.7.135** These viewpoints would experience no change in terms of significance of effects due to landform and intervening vegetation screening the proposed new section of motorway.

Area on the Southern Edge of Llandevaud – Viewpoint 73 PRow at Llandevaud Langston

- 9.7.136** Viewpoint 73 would experience no change in terms of significance of effects due to landform and intervening vegetation screening the proposed new section of motorway.

Area to the South of Wilcrick Hill – Viewpoint 75

- 9.7.137** Viewpoint 75 would experience a temporary slight adverse significance of effect during the construction phase with taller vertical elements being partially visible due to lighting resulting in an increase to the visual extent of urban areas around Magor.

Areas Around Broad Street Common – Viewpoints 43, 44, 45 & 48

- 9.7.138** Viewpoint 48 at Bowleaze Common is in close proximity to the proposed new section of motorway and would experience a temporary very large significance of effect due to vegetation clearance revealing construction work lighting.
- 9.7.139** Viewpoint 43 and 45 are located further from the proposed new section of motorway and would experience partial views of construction phase lighting through intervening mature vegetation resulting in a temporary moderate significance of effect to visual amenity.
- 9.7.140** Retained vegetation and the existing substation would offer partial screening to Viewpoint 44 leaving taller vertical elements and works on higher ground being likely seen during the hours of darkness resulting in a temporary slight adverse significance of effect.

Areas Along North Row – Viewpoints 52, 53 54 & 55

- 9.7.141** During the construction phase vegetation clearance would offer clear unobstructed views of lighting along the proposed new section of motorway from

Tonew Kennels (Viewpoint 52) resulting in a temporary very large significance of effect to visual amenity. North Row Construction compound would produce close range illumination to the area.

- 9.7.142** All the other viewpoints in this area, located further away from the proposed new section of motorway, would experience a temporary slight adverse significance of effect due to ambient light from North Row Construction compound producing background illumination.

Areas to the Coed Y Caerau, Caerlicken Lane & Northern Edge of Llanvaches – Viewpoints 70, 71, 76, 77 & 78

- 9.7.143** From the elevated position of Viewpoints 70 and 71, the proposed new section of motorway would be barely perceivable due to landform and existing vegetation. Minimal construction phase lighting would add to existing sky glow in Newport and Magor resulting in a temporary slight adverse significance of effect to visual amenity.

- 9.7.144** Due to landform and existing vegetation, there would be no change at the remaining viewpoints, resulting in a temporary neutral significance of effect to visual amenity.

Areas to the North of Magor Located on the Northern Edge of the Existing M4 Corridor – Viewpoints 81 & 79

- 9.7.145** During the construction phase large amounts of vegetation would be removed at Viewpoint 81 revealing the extent of works on raised embankments and resulting in a temporary large adverse significance of effects. Construction work lighting would add to the existing motorway lighting creating a variance in visual amenity during the hour of darkness.

- 9.7.146** Viewpoint 79, a PRoW located at Upper Grange, would be partially screened by existing vegetation to the proposed new section of motorway. However, the removal of vegetation along the new section of motorway may result in light spillage along raised embankments during night time working. Small amounts of sky glow may be produced by the Knollbury Lane and St Bride's construction compounds resulting in a temporary moderate significance of effect to visual amenity.

Areas on the Caldicot Levels south of Whitewall Common – Viewpoints 64 & 65

- 9.7.147** In this area Viewpoints 64 and 65 would experience a temporary slight adverse significance of effect during the construction phase due to intervening landform and vegetation, resulting in any upward glow from construction lighting being a slight variance in visual amenity during the hours of darkness.

Areas on Edge of Magor, Undy & Llanfihangel Rogiet – Viewpoints 62, 67, 80, 84, 144b

- 9.7.148** Viewpoint 62 at Blenheim Gardens would see a significant change to lighting during the construction phase due to the clearance of vegetation along the A4810 increasing light spillage from the InBev Brewery. Construction work lighting would create a variance of upward glow during the hours of darkness resulting in a temporary very large adverse significance of effects. Magor construction

compound would be lit on a 24 hour basis and produce a small glow during the hours of darkness.

9.7.149 St Michaels Church at Viewpoint 84 would experience a temporary very large adverse significance of effects due to the proximity of the major works associated with constructing embankments resulting in an increase in background illumination.

9.7.150 The remaining Viewpoints 67, 80 and 144b would experience a temporary large adverse significance of effects to visual amenity. Light from the existing motorway would become clearer with the removal of vegetation. Upward glow from construction phase lighting would create a variance in visual amenity and increase the visual extent of urban areas around Undy.

Areas across the Severn Estuary in England– Viewpoint 87, 88, 89, 90, 91, 92, 97 & 98

9.7.151 Due to the distance, few lighting elements associated with the proposed new section of motorway would be distinguishable and would be a minor addition in terms of existing lights along the Welsh Coast, resulting in either a slight beneficial or neutral significance of effect on visual amenity. The only exception is Viewpoint 92 at Weston Super Mare beach which has no views due to an intervening headland.

Potential Construction Visual Effects on Residential Properties

9.7.152 The detailed assessment of the potential construction effects upon views from residential properties is set out in the visual assessment tables in Appendix 9.7. Residential receptors are shown on Figure 9.16.

Areas to the North of Castleton Junction and North of the A48(M) – Receptors/Groups 18, 19, 20a, 21 & 24 (6 properties)

9.7.153 Formation of the Castleton Interchange would be the dominant element for receptors in this area. Construction would involve extensive woodland clearance, large scale earthworks to form and re-grade embankments and cuttings and major civil engineering operations to build a number of bridges and flyovers. These elements would involve the use of large and tall items of plant and machinery. Working areas and machinery would be illuminated for periods during the winter months whilst the Castleton west compound would be lit at all times during the hours of darkness. In addition, a number of areas are proposed to be utilised as borrow pits and for stockpiling of materials. Those properties with direct, close proximity views east along the existing M4 corridor (Receptor 18 - Pant-rhiw-goch) and south from the elevated land above the junction area (Receptors 19 and 20a - New Park Cottage & Penylan Farm) would experience a temporary large adverse significance of effect upon their visual amenity due to the dominance of this construction area within the available views, which would also be a major discordant feature during the hours of darkness.

9.7.154 Other residential receptors in this area that were identified as having possible views of the new section of motorway (Receptor group 21 - Steepholm & Flatholm and Receptor 24 – No. 4 Penylan Road) would experience a temporary slight adverse significance of effect. These receptors have no views of the Castleton Interchange due to topography. They would, however, have

intermittent middle distance views of the construction of the new section of motorway as it runs to the south of Imperial Park and onwards to the River Usk, which is likely to be illuminated for periods during the winter months, as well as long distance views of the Usk River Crossing construction. The expansive nature of the views available and the distances involved mean that these impacts are not considered significant.

- 9.7.155** Properties further north, away from the Castleton Interchange, would have no views of the new section of motorway due to intervening vegetation and topography.

Areas within the Angle of the Existing M4 and the Proposed New Sections of Motorway – Receptors/Groups 20b, 20d & 20e (33 Properties)

- 9.7.156** These receptors have the potential to be affected by the construction of the eastern elements of the Castleton Interchange and the new section of motorway as it begins to head east, away from the junction. Large scale earthworks to form and re-grade embankments and excavate from borrow pits, and major civil engineering operations to build a number of bridges and flyovers would be particularly noticeable elements in the view. Receptor 20b (Little Orchard) lies very close to this part of the new section of motorway and would be surrounded by large scale construction activity at close range in all directions and would experience a temporary very large adverse significance of effect upon their visual amenity.

- 9.7.157** Other receptors in this area are the 25 properties on Church Crescent and the adjacent section of Church Lane (Receptor group 20d). Woodland removal in the area to accommodate the new section of motorway would open up views towards this part of the route for these receptors, whilst excavations across nearby borrow pit areas would also affect these receptors. For periods during the winter months light spill from the construction area may be discernible above the intervening hedgerows. These receptors would experience a temporary large adverse significance of effect upon their visual amenity. However, for a number of these properties large parts of the new section of motorway would only be clearly visible from upper storey windows due to intervening hedgerows and a proposed temporary screening bund.

- 9.7.158** The 7 properties at the western end of Blacksmiths Way (Receptor group 20e) would experience a temporary moderate adverse significance of effect upon their visual amenity. The construction area for the new motorway between the A48 and Imperial Park, the borrow pits adjacent to Church Lane and the elevated section of new motorway over the A48 would all be visible from some of these properties, although mainly from upper storeys.

Areas Alongside the A48 between Castleton and the Proposed New Section of Motorway Flyover over the A48 – Receptors/Groups 11a, 11b, 11c, 11d, 11e, 14c, 17b (14 Properties)

- 9.7.159** Formation of the Castleton Interchange would be the dominant element for receptors in this area, although some properties would also be affected by the formation of water treatment areas, remote drainage connections and stock pile areas. Receptors/receptor groups 11a and 11b (3 properties) lie in close proximity to the multi-tiered area of the junction where the existing A48, the

proposed new section of motorway and westbound diverge lane and reclassified M4 westbound intersect. Working areas and machinery would be illuminated for periods during the winter months whilst the Castleton East compound in this area would be lit at all times during the hours of darkness. Construction of substantial embankments, retaining walls, support columns and elevated road sections and the plant and machinery needed to build these would be particularly dominant elements for these receptors, which would also be a major discordant feature during the hours of darkness and they would experience a very large temporary adverse significance of effect. Receptor group 17b (2 adjacent properties) would also experience a very large temporary adverse significance of effect due to their location to the north of the A48. They lie immediately adjacent to the construction area boundary and major earthworks associated with the re-grading of the A48(M) embankments would take place just beyond this boundary line. Working areas and machinery are likely to be illuminated for periods during the winter months.

9.7.160 Three receptors/groups in this area (11d, 11e and 14c – 4 properties) would experience a large temporary adverse significance of effect. These properties lie slightly further away from the construction works than those discussed in the paragraph above and they generally lie at a lower level with some intervening vegetation. However, the scale of the construction operations would mean that these would still appear as a major discordant feature in the views available from some parts of these properties.

9.7.161 The remaining receptor group in this area (11c – 5 properties) would experience only a temporary slight adverse significance of effect. Despite their proximity to the construction works, the visual amenity of residents of these properties would be largely unchanged, as topography and intervening vegetation would block the vast majority of views north towards the new section of motorway.

Areas to the North of the South Wales to London Mainline Railway within and on the Northern Edge of the Wentlooge Levels – Receptors/Groups 2a, 2b, 2c, 3a, 3b, 3c, 12, 14a, 14b and 42 (15 Properties)

9.7.162 These receptors are scattered across an area of the Wentlooge Levels and its northern margins that is bounded to the south by the South Wales to London Mainline railway and would be bounded to the north by the new section of motorway. Four receptors/groups comprising nine properties, would experience a very large (2a, 2b and 12) or large (42) temporary adverse significance of effect due to the visibility and nature of the construction area. 2a (The Stud Farm) and 2b (Swallows Haven) would lie in close proximity to the new section of motorway as it runs to the south west of Imperial Park. Extensive woodland clearance in this area to enable the works would create clear, direct and short range views to the construction areas, including those associated with the construction of the Church Lane Overbridge, from many windows and garden areas. The removal of the woodland would also open up views to Imperial Park industrial area, which is currently well screened, thereby allowing views across to the main site compound. This extensive compound area would be lit at all times during the hours of darkness with the result that it would be a highly noticeable discordant feature at all times. Receptor group 12, which comprises six properties down an unnamed lane, would also experience a very large temporary adverse significance of effect. Views from these properties would include the extensive woodland clearance and earthworks associated with the Castleton Interchange

and parts of the new section of motorway as it runs south east away from the junction, as well as an extensive stockpile and materials processing area which is proposed immediately to the east of the gardens and grounds of these properties. The construction of water treatment area 2 is also likely to be visible from some parts of these properties, albeit filtered by an intervening mature tree line. Receptor 42 lies slightly further south east at a similar distance from the new section of motorway and would experience a similar change to visual amenity as described above, although the significance of effect is reduced slightly to large adverse as their views towards the new section of motorway already include parts of the Imperial Park Industrial area.

9.7.163 Receptors 3b (The Maerdy), 14a (Tyn-y-Nant) and 14b (Adjacent to Tyn-y-Nant) would experience a moderate temporary adverse significance of effect. Receptor 3b would have views across nearby fields to the construction area for the new section of motorway in the vicinity of Imperial Park, and of the construction of the Church Lane Overbridge. However views are generally only clearly available from upper storey windows due to vegetation surrounding the property; lower level views would be well filtered and intermittent. Receptors 14a and 14b, which are semi-detached, would have views of the Castleton Interchange construction area, including the extensive woodland clearance operations and substantial earthworks, but they benefit from intervening vegetation which lessens the impact of this change to their visual amenity. Receptor 14a (Tyn-y-Nant) in particular benefits from dense vegetation around its boundaries which limits views outwards across the landscape.

9.7.164 All other receptors in this area would experience only a slight adverse or neutral temporary significance of effect during the construction phase. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation and/or the orientation of windows.

The Northern and Eastern Edges of the Village of Castleton – Receptors/Groups 8, 9, 15, 16 and 17a (Approximately 43 properties plus a multi-occupancy care home)

9.7.165 Formation of the Castleton Interchange would be the dominant element for receptors in this area, although some properties would also be affected by the formation of water treatment area 1 and associated pipe runs. Construction would involve extensive woodland clearance, large scale earthworks to form and re-grade embankments and excavate material from borrow pits and major civil engineering operations to build a number of bridges and flyovers. These elements would involve the use of large and tall items of plant and machinery. Receptor group 15, which comprises six properties on Walk Farm Drive, would experience a very large temporary adverse significance of effect during the construction phase. As well as the Castleton Interchange works being visible at short range over the trees lining the nearby A48, these properties directly overlook the area proposed for water treatment area 1. Creation of this element would involve substantial excavations and forming of retaining embankments using heavy plant and machinery and these works would be the main focus of views available to the front of these properties from most windows and garden areas in this direction.

9.7.166 Other receptors within Castleton identified as having the potential to have their visual amenity affected by the new section of motorway are located around the

eastern and northern edges of the village (approximately 37 properties) and they would experience a large temporary adverse significance of effect during the construction phase. The construction of the Castleton Interchange would become a noticeable feature of the views available from Receptors/groups 8, 9 and 17a. Receptor 17a (Bryn Ivor Lodge Care Home) would also be affected by the construction of water treatment area 1 and works to install the pipe connections to this area, which would take place alongside the western boundary of this property. Receptor 16 (Heathercroft House) is mainly adversely affected by the formation of water treatment area 1, which lies diagonally opposite this property across the A48.

- 9.7.167** Properties located elsewhere in the village have no measurable views of the new section of motorway due to intervening buildings.

The North Eastern Edges of the Village of Marshfield – Receptor Groups 5, 6 and 7 (approximately 60 properties)

- 9.7.168** Construction works associated with the formation of the Castleton Interchange would be the only element of the new section of motorway that would affect the visual amenity of receptors in this area. Due to distance (greater than a kilometre) and intervening elements, it would be perceptible but not a dominant feature in the views available. Approximately 34 receptors along Marshfield Road and side roads leading off it (Receptor group 7) would experience a moderate temporary adverse significance of effect during the construction phase. Parts of the Castleton Interchange construction area are likely to be visible from some windows facing in this direction although the exact extent of this depends on intervening buildings and vegetation. This varies property to property and cannot accurately be assessed from publicly accessible areas.

- 9.7.169** Receptor group 5 (three properties on Ty Mawr Farm) and 6 (approximately 22 properties on the edges of the Cambrian housing estate) would experience only a slight temporary adverse significance of effect during the construction phase. This is due to distance (approximately 1.8 km) and the quantity of intervening vegetation, particularly around the fields close to these properties.

- 9.7.170** Properties located elsewhere in the village have no measurable views of the new section of motorway due to intervening buildings.

Areas within and around St Mellons– Receptor Groups 26a, 26b & 26c (approximately 50 properties)

- 9.7.171** Construction works associated with the formation of the Castleton Interchange would be the only element of the new section of motorway that would affect the visual amenity of residential receptors in this area. Due to distance (greater than 3 km), expansiveness of views available and/or intervening elements, it would be perceptible but not a dominant feature in the views available. Only the upper reaches of the Castleton ridge are visible intermittently above intervening foreground elements meaning that a small proportion of the woodland clearance and earthworks only would be visible. Approximately 12 receptors along the far southern end of Cyprus Drive and Moor King Close on the south east edge of St Mellons (Receptor group 26a) and approximately 38 receptors in the more central areas of St Mellons (Receptor groups 26b & 26c) would experience a slight temporary adverse significance of effect during the construction phase.

9.7.172 Properties located elsewhere in St Mellons have no measurable views of the new section of motorway due to intervening buildings and distances involved.

The Wentlooge Levels to the South of the South Wales to London Mainline Railway between St Mellons and the Ebbw River – Receptor Groups 27, 29, 34a, 34b, 39a, 39b, 44, 45a, 45b, 45c, and 45d (approximately 42 properties)

9.7.173 Two properties in this area, Receptors 45a (Whitecross Farm) and 45b (Fair Orchard Farmhouse), lie in very close proximity to the new section of motorway in the vicinity of the Lighthouse Road Overbridge. They would experience a very large temporary adverse significance of effect during the construction phase due to the proximity of a key construction site involving significant earthworks and large plant and machinery. The construction of the Lighthouse Road Overbridge and the raised embankments taking the road over the bridge would be a particularly dominant element in the view.

9.7.174 Receptor group 39b, which comprises three properties along Lighthouse Road (Dulce Domum, Pear Tree Cottage and a further house adjacent to Pear Tree Cottage) and Receptor 45d (New Dairy Farmhouse) would experience a large temporary adverse significance of effect. Tree clearance and earthworks associated with Castleton Interchange would be visible from the front of properties in Receptor group 39b, albeit in the distance, along with construction of the Duffryn Railway Underbridge and a significant length of the new section of motorway. Receptors in New Dairy Farmhouse would be able to see the construction area for the new section of motorway as it runs between Lighthouse Road and the New Dairy Farm Overbridge to the north west, as well as the New Dairy Farm Overbridge compound beyond this, although there is a limited number of windows and garden areas overlooking this part of the route. From the rear of the properties, construction of the taller elements of the River Usk Crossing are likely to be seen amongst the existing industrial elements such as chimneys, pylons and turbines. Receptors in New Dairy Farmhouse are also likely to see the construction area for the new section of motorway as it travels east into the Alexandra Docks area.

9.7.175 Within the Wentlooge Levels area to the south of St Mellons and Marshfield, along the B4239, Receptor groups 27 and 29 would experience a moderate temporary adverse significance of effect. Tree clearance and earthworks associated with the Castleton Interchange area are likely to be noticeable in the views available from the north facing parts of these properties (approximately 20 in number). However, intervening vegetation and buildings would frequently block or filter the views from some windows and garden areas. Receptor group 39a (five properties along the southern end of Lighthouse Road including Rose Cottage, New House Farm, Newton House and Pound Farm), would also experience a moderate temporary adverse significance of effect. These properties have no views to the western end of the new section of motorway due to intervening tree belts along the lanes but they would be able to see the construction of the River Usk Crossing to the east from rear windows (mainly upper storey). Tall cranes and the installation of the piers and cables would be particularly noticeable, although this would be in the context of existing bridges, large buildings, chimneys, pylons and turbines. Receptor group 45c (Ty-hir Cottage and Railway Cottage) is in a similar location to 45b (Fair Orchard Farm). However, these two adjacent properties are surrounded by mature tree belts and there are numerous outbuildings within the property boundaries. These

intervening elements mean that, although extensive construction areas including significant earthworks to form bridges and embankments would be in close proximity to these receptors, these elements would only be visible from a limited number of windows and garden areas. This reduces the significance of effect to moderate temporary adverse.

- 9.7.176** All other receptors in this area would experience only a slight adverse or neutral temporary significance of effect during the construction phase. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation and/or the orientation of windows.

The Southern and Eastern Edges of the Newport Suburb of Duffryn – Receptor Groups 46, 47 and 50

- 9.7.177** Receptor group 47 lies to the north of the new section of motorway as it sweeps from the Imperial Park industrial area to the Lighthouse Road Overbridge. Properties on the south west and south east edges of this modern housing area would have views across the adjacent low lying green lined agricultural area to an extensive construction area sweeping around in an arc approximately 350 metres distant. This would encompass the Duffryn West compound, the construction of water treatment area 4, the Duffryn Railway Underbridge, Lighthouse Road Overbridge and more than 2 km of motorway. A number of properties benefit from the screening effect of intervening vegetation and fences around the housing area, which would limit the availability of views from ground floor areas but clear and direct views to the construction areas would frequently be available from second and third storey windows resulting in a large temporary adverse significance of effect. The Duffryn West compound would be lit at all times during the hours of darkness with the result that this element would remain highly visible at all times.

- 9.7.178** Receptor group 50 (two and three storey houses on Edney View) would experience middle and long distance views south east of the construction of the River Usk crossing and associated piers. This would result in a moderate adverse effect for these receptors.

- 9.7.179** All other receptors in this area would experience only a slight adverse or neutral temporary significance of effect during the construction phase. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation and buildings and/or the orientation of windows.

The South Western Suburbs of Newport – Stow Park, Gaer and the Level of Mendalgief

- 9.7.180** These residential areas are too extensive and densely developed to accurately assess exactly which properties would see the new section of motorway and which would not. The ZTV on Figures 9.1 - 9.8 provides an indication of the areas affected. Generally, the areas where the steeper topography allows for receptors to see over the top of properties in front, and where houses are orientated towards the new section of motorway, would have the greatest proportion of properties whose visual amenity would be affected.

- 9.7.181** There would be a perceptible change to the views available for many of the residents in Receptor groups 51 and 52 (properties in Stow Park), 53 and 54 (houses in Gaer) and 58 (new housing development area in an area known as

‘The Level of Mendalgief’). Where the construction areas are visible, there would be long distance views of some stretches of the new section of motorway and of the bridge approach viaducts and bridge construction over the Docks and Rivers Usk and Ebbw. However, the expansive nature of the views available would reduce the dominance of these construction elements within the view and the significance of effect is therefore limited. This would result in a temporary slight adverse significance of effect.

9.7.182 All other receptors in this area would experience no effects during the construction phase. This is due to views towards the new section of motorway being blocked by topography and/or intervening buildings and/or the orientation of windows. Effects would therefore be of neutral significance.

Newport, East of the River Usk, North the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 56, 75, 130, 131, 132 and 133

9.7.183 Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east, the Nash Road Overbridge and the new section of motorway.

9.7.184 Residential receptors at Tatton Farm (Receptor 75) would see construction of the new section of motorway approximately 200 metres to the south including construction traffic, earthworks and features such as lighting, compounds and the main haul road. This would be a significant and perceptible addition to the view due to the proximity of the new section of motorway. Construction of water treatment area 7 located approximately 200 metres to the south west and Nash Road Overbridge 400 metres to the south west would also be visible from this receptor. They would experience a temporary very large adverse significance of effect upon their visual amenity.

9.7.185 Residential receptors at Corporation Road housing development, houses on Edward German Crescent, Elgar Avenue, Lime Crescent and Glanwern Drive (Receptors 56, 130, 131, 132 and 133) would have direct long distance views south west of the bridge construction which would add visual clutter and adversely affect the quality of the view, detracting from the view of the Newport Transporter Bridge. They would experience a temporary slight adverse significance of effect upon their visual amenity.

Newport, East of the River Usk, South of the Proposed New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 70, 72a, 73 and 74

9.7.186 Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape and the construction of this would be the source of most significant effects at this location.

9.7.187 For residents at Little Cross Farm, West Nash Road, Great House and West Winds House (Receptors 70, 72a, 73 and 74) the taller elements associated with the construction of the River Usk Crossing would add further features such as cranes to the existing view. Construction of the bridge piers and the bridge deck would be noticeable but tall features associated with the Newport Docks and power station are already common in the distance and this would not alter the

overall balance of the view. These receptors would experience a temporary slight adverse significance of effect upon their visual amenity.

South of the New Section of Motorway to the North and East of Nash, West of Elyer Pill Reen – Receptors/Groups 68a, 68b, 76, 77, 78a, 79a, 79b, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89a and 89c

- 9.7.188** Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east, construction of the Nash Road Overbridge, construction of the Glan Llyn junction and the new section of motorway throughout.
- 9.7.189** For residents at Fair Orchard (Receptor 68a) and the former Baptist Chapel (68b) the construction relating to the new section of motorway and the re-alignment of Nash Road on the approach to the overbridge would be clearly visible. Removal of linear belts of vegetation along the current road would open up views to traffic, machinery and earthworks related to the construction works. They would experience a temporary large adverse significance of effect upon their visual amenity.
- 9.7.190** For residents at isolated residential properties along Broad Street Common including Decoypool and Moorbarrow Cottages (Receptor 79b) plant movements and earth moving are likely to be intermittently visible in between the remaining intervening vegetation along the ditches and reens. They would experience a temporary moderate adverse significance of effect upon their visual amenity.
- 9.7.191** For residents at isolated residential properties located in and around Goldcliff (Receptors 76-79a, 80-89b and 89c) vertical construction elements associated with the River Usk Crossing would be noticeable above intervening tree lines and would add to the commonly viewed chimneys, pylons and wind turbines. Although these would be additional features, at the proximity from which they are viewed it is not considered to be a perceptible change and would not alter the overall balance of the view. They would experience a temporary slight adverse significance of effect upon their visual amenity.

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 111a, 112, 127, 128 and 129

- 9.7.192** Receptors at this location have the potential to be affected by the construction of the Glan Llyn Junction, North Row Overbridge, works to local roads south of Junction 23A and the new section of motorway throughout.
- 9.7.193** For residents at Manor Farm and Three Gates (Receptors 111a and 112) there would be close proximity, glimpsed and filtered views south and east on the road, earthworks and construction vehicles for the proposed new section of motorway. This view would be somewhat mitigated by the extent of intervening vegetation. There may be glimpsed middle distance views north east onto the construction of the B4245 overbridge. These receptors would experience a temporary slight adverse significance of effect upon their visual amenity.
- 9.7.194** For residents at Hazel Farm, Hazel Court Guest House, Little Milton and Cot Hill (Receptors 127, 128 and 129) looking south west it would be possible to view the construction of the proposed bridge over the River Ebbw above the existing rural

horizon. However, this is a long distance view and taken in the context of other tall vertical elements would not have a significant effect, particularly as it would not be in the line of vision of the current direct view of Newport Transporter Bridge. These receptors would experience a temporary slight adverse significance of effect upon their visual amenity.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 91, 103, 104a, 104b, 106, 107, 108, 139 and 140

- 9.7.195** Receptors at this location have the potential to be affected by the construction of the new section of motorway between Junction 23A and the North Row Overbridge primarily as a result of earthworks activities.
- 9.7.196** For residents at Greenmoor Farm (Receptor 108) there would be very close proximity, direct views north, west and east onto major earthworks. There would be a clear and direct view west onto the construction of the overbridge connecting the A4810 with North Row. These receptors would experience a temporary large adverse significance of effect upon their visual amenity.
- 9.7.197** For residents at Mead Farm (Receptor 107) there would be glimpsed views north of the construction area as it passes to the south of the Tata Steelworks area from limited parts of this property over intervening vegetation. However, intervening vegetation within garden areas and around nearby fields would screen the new section of motorway from many windows and garden areas. These receptors would experience a temporary moderate adverse significance of effect upon their visual amenity.
- 9.7.198** For residents at Lower Grange Farm, Longlands Farm, Brick House Farm, Fir Tree Farm, Grangefield House, Greenfield House, North Court Farm and North Row Farm, 1 and 2 Lower Grange Cottage and Chapel Farm (Receptors 91, 103, 104a, 104b, 106, 139 and 140) the view of construction activity is primarily in relation to glimpsed and filtered middle distance views north and north west of the larger construction vehicles and the earthworks related to the North Row Overbridge. These receptors would experience a temporary slight adverse significance of effect upon their visual amenity.

Magor – Receptors/Groups 93, 94, 96, 97, 98, 99, 100, 134, 142, 143 and 144

- 9.7.199** These receptors have the potential to be affected by the construction of the new M48/M4 junction, link and associated works to local roads. Traffic and construction operations would be visible along the motorway corridor due to the removal of existing screening vegetation. Representative viewpoints for these receptors are Viewpoints 62, 67 and 80.
- 9.7.200** Those residents in properties at 8-16 Queens Gardens, Barecroft Common, Langley Terrace, Langley Close and Langley Villa (Receptors 94, 98 and 100) are located a short distance from the new section of motorway and would have direct views towards construction activity. This would include construction of an underpass for St Brides Road and major earthworks for Junction 23A and the new section of motorway. Residents in properties at Rockfield Farm and The Elms (Receptor 134) are also located a short distance from the new section of motorway and construction phase views would include the new interchange, major earthworks and temporary land use in nearby fields. Receptors 94, 98,

100 and 134 would experience a temporary large adverse significance of effect upon their visual amenity.

9.7.201 Residents in properties at Newport Road, Woodland House, Magor Court, Courtlands, The Haven, Colbost, Llanberis, Belvedere, Lapins, Glen View, Hill Crest, Rock House, Quarry House, Honeysuckle Cottage, Ivy House and two storey houses on Grange Lane (Receptors 93, 96 and 97) are located a short distance from the new section of motorway on the north western edge of Magor. Their view of traffic on the existing motorway would be exposed by vegetation removal, and they would have views towards construction activity for earthworks, lighting, gantries, signage, works to local roads and temporary construction areas as well as the main haul road. Receptor 93 would experience a temporary moderate adverse significance of effect upon their visual amenity whilst receptors 96 and 97 would experience a temporary large adverse significance of effect.

9.7.202 Residents in properties on St Anne's Crescent facing onto Church Road, Great House and properties along the northern edge of Rockfield Grove between the B4245 and The Elms (receptors 142, 143 and 144) are located a short distance from the new section of motorway on the eastern edge of Magor. Their view would change as a result of works on and around Junction 23 and would be readily apparent as a result of vegetation clearance, construction plant and construction of slip roads and other associated infrastructure. Receptors 142, 143 and 144 would experience a temporary moderate adverse significance of effect upon their visual amenity.

9.7.203 Residents in properties on Blenheim Gardens (Receptor 99) would have views towards construction activity including the removal of existing screening vegetation along the A4810. This would open up this previously screened road to views from upper stories. There would be filtered middle distance views of earthworks and machinery as the motorway heads south west alongside the A4810. Receptor 99 would experience a temporary slight adverse significance of effect upon their visual amenity.

Area to the North of the Existing M4 Corridor – Receptors/Groups 116A, 116B, 116C, 118, 145B, 145C and 147

9.7.204 These receptors have the potential to be affected by the construction of the new M48/M4 junction, link and associated works to local roads. Traffic and construction operations would be visible along the motorway corridor due to the removal of existing screening vegetation.

9.7.205 Residents at Beeches Caravan Park (116c) are very close to the new motorway as well as being surrounded by spoil heap areas on all other sides. They would experience a temporary very large adverse significance of effect on their visual amenity during the construction phase due to the proximity of major earthworks and associated large plant and machinery.

9.7.206 Those residents in properties at the western edge of Rogiet, Llanfihangel near Rogiet and Windmill Cottages (Receptors 145B, 145C and 147) are located a short distance away from the new section of motorway. They would have direct views towards construction activity around the M4/M48 junction works (including earthworks, construction plant, haul roads, lighting and security fencing) from a slightly elevated position. These receptors have existing views towards passing traffic on the motorway corridors, which would also become more exposed.

Therefore, they would experience a temporary large adverse significance of effect upon their visual amenity.

9.7.207 Those residents in properties at Knollbury (Receptor 116B) are located a short distance away from the new section of motorway and would have views towards construction activity from a slightly elevated position. Spoil heap areas are proposed across the fields immediately to the south of some of these properties. They would also experience a temporary large adverse significance of effect upon their visual amenity.

9.7.208 From the properties at Upper Grange (Receptor 116A), again located a short distance away from the new section of motorway, receptors would experience views towards construction activity primarily around the B4245 overbridge and surrounding area although this would only form a small proportion of the view. They would experience a temporary slight adverse significance of effect upon their visual amenity.

9.7.209 Residents at Skeliot Farm (Receptor 118) would experience a neutral significance of effect upon their visual amenity as they would not have any views towards the new section of motorway.

Potential Construction Visual Effects on Non-Residential Properties

9.7.210 Non-Residential receptors are shown on Figure 9.17.

Receptors to the North and North East of Castleton (Receptors/Groups 14c, 16, 17a, 17b & 18)

9.7.211 Two receptors in this area would experience a temporary large adverse significance of effect. Receptor 16 (the Coach and Horses pub/restaurant and the adjacent hotel rooms) lies on the northern edge of Castleton immediately adjacent to the existing A48. The existing M4 Castleton Junction is located within approximately 220 metres of this property. The visual amenity experienced by customers of this business would mainly be affected by the formation of water treatment area 1 on the opposite side of the A48. Construction of this element would involve major earthworks and large plant and machinery and would be clearly visible from seating areas and windows that face the A48, albeit filtered to some degree by trees along the road. The construction works associated with the Castleton Interchange area may also just be visible above intervening vegetation from the rear of this property, especially from upper storey windows. The Grow Your Own site (Receptor 17b) located between the A48 and the existing A48(M) westbound carriageway borders the construction boundary. Plot holders and visitors would have clear and very close proximity views of the re-grading of embankments and construction of the amended A48(M) westbound and possibly other lanes and flyovers associated with the Castleton Interchange.

9.7.212 Employees and visitors to the Olli Wood Farm animal sanctuary and Green Lofts (Receptor group 18) would experience a temporary moderate adverse significance of effect. Tree clearance and the extensive earthworks associated with the Castleton Interchange would be clearly visible in the middle distance from the north eastern edges of these properties although intervening buildings mean that views of the construction area would be intermittent, which reduces the significance of effect.

9.7.213 Other non-residential properties identified as having views of the new section of motorway would experience only a temporary slight adverse significance of effect despite being subject to moderate and large impacts. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway.

Receptors in and around Imperial Park Industrial Area (Receptors/Groups 1a & 41)

9.7.214 Non-residential properties within this area identified as having views of the new section of motorway would experience only a temporary slight adverse significance of effect despite being subject to moderate and large impacts. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway and compound areas.

Receptors within the Wentlooge Levels Area (Receptors/Groups 1b, 32a, 32b & 32c)

9.7.215 Receptor group 1b (Parc Golf Club) is located in close proximity to the new section of motorway as it runs around Imperial Park. Visitors to the Club would experience a temporary large adverse significance of effect. The construction areas for the new section of motorway, Castleton Interchange area, water treatment area 2 and Church Lane Overbridge, as well as extensive stockpile areas, would all appear as dominant and detracting features from a significant proportion of the golf course. Woodland removal to accommodate the new section of motorway would increase the visibility of these elements as well as opening up views to the large industrial buildings on Imperial Park.

9.7.216 Other non-residential properties within this area identified as having views of the new section of motorway would experience a temporary slight adverse significance of effect only. For workers in industrial areas this is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway, despite the fact these receptors would be subject to moderate and large impacts. For leisure receptors (visitors to Peterstone Lakes Golf Course and Ty coch Camping Site) this is due to distance and intervening elements.

Receptors Within and Around St Mellons (Receptors/Groups 32d)

9.7.217 The vast majority of non-residential receptors within and around St Mellons have no measurable views of the new section of motorway due to intervening buildings, distance and topography. Only one receptor has been identified as having any measurable views of the new section of motorway; St Mellons Church in Wales Primary School. Only receptors using the central and most open sections of the school site would have any views of the construction phase and distance and the scale of the works results in only a slight adverse temporary significance of effect.

Receptors within and around Duffryn (Receptors/Groups 49)

9.7.218 Nearly all non-residential receptors within this area would have no views of the new section of motorway due to intervening buildings.

9.7.219 Students, staff and visitors to Duffryn High School and Community Sports Centre would experience a temporary moderate adverse significance of effect. There would be intermittent and glimpsed middle distance views of the new section of motorway construction as it approaches the River Ebbw and of the construction of the River Usk Crossing. Views of these elements would, however, be filtered by intervening trees within and around the school area.

Receptors within Industrial Areas around Alexandra Docks and the Level of Mendalgief (Receptors/Groups 57a and 57b)

9.7.220 Non-residential properties within this area identified as having views of the new section of motorway would experience only a temporary slight adverse significance of effect despite being subject to moderate and large impacts. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway.

Newport, east of the River Usk, North the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60, 65a, 65b and 67

9.7.221 Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape during construction. Other sources of impact at this location would arise from construction of the Nash Road Overbridge.

9.7.222 Those workers at Industrial Automation and Control Ltd (IAC) (Receptor 67) are located adjacent to the new section of motorway with the route to the south and Nash Road Overbridge to the east. Views towards construction activity associated with these features would be clear and vegetation would be lost. They would experience a temporary moderate adverse significance of effect upon their visual amenity.

9.7.223 Workers at Orb Industrial Estate and the industrial works on Traston Road (Receptors 60 and 65a) and receptors at Lliswerry High School and Coleg Gwent (Receptor 65b) are located in close proximity to the new section of motorway over the River Usk and would have intermittent views towards construction activity for the River Usk Crossing above or between buildings within the wider industrial context. They would experience a temporary slight adverse significance of effect upon their visual amenity.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash

9.7.224 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

South of the New Section of Motorway to the North and East of Nash, West of Eyler Pill Reen

9.7.225 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 92, 109 and 110

- 9.7.226** Receptors at this location have the potential to be affected by the construction of the Glan Llyn junction, North Row Overbridge, works to local roads south of Junction 23A and the new section of motorway throughout.
- 9.7.227** Users of the Hampton by Hilton hotel, Wales 1 Day Nursery and offices (Receptor 92) are located in close proximity to the works associated with local roads around Junction 23A and the proposed new section of motorway west of Magor. There would be large scale construction activity directly visible from the upper stories of the hotel and offices, but with limited views from the nursery due to its central location and surrounding buildings. However, the loss of existing screening vegetation from both sides of the A4810 would open out views onto the construction activity. They would experience a temporary moderate adverse significance of effect upon their visual amenity.
- 9.7.228** Workers at the Tata offices (Receptor 109) would have glimpsed and direct views south through the existing vegetation along the A4810 towards construction activity on the new section of motorway and oblique views to works associated with the North Row Overbridge. They would experience a temporary slight adverse significance of effect upon their visual amenity.
- 9.7.229** Workers at Gwent Eurocentre (Receptor 110) have their views towards the screen limited by the design of the building and mature vegetation. They would experience a temporary neutral significance of effect upon their visual amenity.

West of Elyer Pill Reen and South of Magor

- 9.7.230** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Magor

- 9.7.231** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Area to the North of the Existing M4 Corridor – Receptors/Groups 98b, 145 and 146

- 9.7.232** Receptors at this location have the potential to be affected by the construction of the realignment of the existing M4 and the construction of Magor Interchange and associated features which include Caldicot Road roundabout and a number of overbridges, underbridges and access roads.
- 9.7.233** For workers at Old Court Farm (Receptors 145 and 146) vegetation clearance, construction plant, arrangements of slip roads, link roads, structures and earthworks would be clearly visible in close proximity. They would experience a temporary large adverse significance of effect upon their visual amenity.
- 9.7.234** For users and workers at Magor Services (Receptor 98b) the view towards construction activities would be restricted to a tall construction machinery including cranes partially visible above the existing earthworks and woodland.

They would experience a temporary slight adverse significance of effect upon their visual amenity.

Potential Construction Visual Effects on Public Rights of Way (PRoW)

9.7.235 PRoW receptors are shown on Figure 9.18.

9.7.236 Detailed information on PRoW to be stopped up and/or diverted is set out in Chapter 14 'All Travellers' and accompanying Figures 14.1, 14.2 and 14.3.

PRoW to the North of Castleton Junction and the A48(M) (PRoW Groups 18a, 18b, 19a, 19b, 19c, 21 & 22)

9.7.237 Formation of the Castleton Interchange would be the dominant element for users of PRoW in this area. Construction would involve extensive woodland clearance, large scale earthworks to form and re-grade embankments and to excavate fill material from borrow pits and major civil engineering operations to build a number of bridges and flyovers. These elements would involve the use of large and tall items of plant and machinery. PRoW groups 19a (users of footpaths 400/1, 400/3 and 400/11) and 19b (users of footpaths 390/4, 390/5 and 390/11) would experience a temporary very large adverse significance of effect upon their visual amenity because of the dominance of these detracting elements within the foreground view for the majority of the length of these paths.

9.7.238 PRoW group 18b (users of footpaths 400/9 and 400/10) would experience a temporary large adverse significance of effect upon their visual amenity. Views from these footpaths would include similar construction elements to those described above, such as extensive woodland clearance, earthworks and construction of flyovers. However, the presence of intervening vegetation lessens the significance of effect, as the construction area would not dominate the visual amenity of the area to the same degree.

9.7.239 PRoW group 18a (users of footpaths 400/6, 400/7 and 400/8) would experience a temporary moderate adverse significance of effect upon their visual amenity. Although clear views of the Castleton Interchange construction area would be available for limited, more elevated sections of these footpaths, the greater proportion would not be directly affected by the new section of motorway as they run within a shallow valley with intervening woodland blocks obscuring views of the construction area. This reduces the significance of effect as walkers would experience the adverse effects for a limited amount of time.

9.7.240 Other footpaths in the area assessed within this section would experience only a temporary slight adverse significance of effect upon their visual amenity. This is due to topography and intervening vegetation obscuring the closer elements of the new section of motorway and the impact of more distant elements (the River Usk Crossing) being reduced due to the wide and expansive nature of existing views.

PROWs Running Across the Area bounded by Castleton and Marshfield to the West, the A48 to the North, Imperial Park to the East and the South Wales to London Mainline Railway line to the South (PROW groups 2a, 2b, 4a, 4b, 6, 7, 8, 10, 13a, 13b, 14b, 15 & 43)

- 9.7.241** Walkers on footpath 399/25 (Receptor 15), which also forms part of the “Castleton Circular Walk”, would experience a temporary very large adverse significance of effect upon their visual amenity. This is due to the proximity of the construction area for water treatment area 1, which would dominate the foreground views for a significant proportion of this route, as well as the visibility of the Castleton Interchange works, which would also be clearly visible slightly further away above and beyond the existing A48. Extensive earthworks and woodland clearance, involving large plant and equipment, would be the most dominant elements. Walkers using paths around Berryhill Farm (PRoW group 2b – footpath numbers 390/15, 390/17 & 390/18) would also experience a temporary very large adverse significance of effect. Sections of these paths would be stopped up and diverted, and numerous construction and elements associated with the new section of motorway as it heads east away from the Castleton Interchange, as well as an extensive borrow pit area, would appear as dominant and discordant elements in the view. The majority of the sections of these routes would be affected.
- 9.7.242** Five PRoW groups (Groups 2a, 13a, 13b, 14b & 43 incorporating footpath numbers 390/12-14, 390/19-21, 390/23, 299/27 & 28 and 399/40) would experience a temporary large adverse significance of effect. These paths run across the arc of semi-rural agricultural and village edge areas that lie to the south of the new section of motorway between Castleton and Imperial Park. Views available from these paths to the north would encompass multiple areas and activities associated with the construction, including construction of the new section of motorway (often on substantial embankments), construction of the Castleton Interchange, overbridges, water treatment areas, borrow pits and stock piles. In addition, the clearance of existing mature woodland would open up views to the large industrial buildings on Imperial Park for walkers using the paths within public rights of way groups 2a and 43 (footpath numbers 390/19-21 and a route with public access). These large buildings and associated traffic and infrastructure are largely screened in the existing views. In addition, this would open up views towards the main site compound. Intervening vegetation and buildings would screen the new section of motorway from some sections of the footpaths within this area. However, the relatively open nature of the landscape and the elevated nature of many parts of the new section of motorway mean that the visual amenity of walkers on the paths would be frequently and noticeably adversely affected by prominent discordant features.
- 9.7.243** Five PRoW groups (Groups 4a, 4b, 7, 8 & 10 incorporating footpath numbers 399/42, 399/44, 399/43, 399/30, 399/32, 399/34 & 399/41) would experience a temporary moderate adverse significance of effect. Footpaths within PRoW groups 4b, 7, 8 and 10 cross the village edge areas to the east of Castleton and Marshfield. These areas are more enclosed by tree belts, hedgerows, copses and buildings than more open land further south and east. These intervening elements limit the frequency of views out towards the new section of motorway from the footpaths in these areas. Due to its proximity and elevation, the construction works associated with the Castleton Interchange would occasionally

appear as a noticeable and detracting feature of the views available but the significance of effect is limited by the frequency of intervening elements. Footpath 399/42 (PRoW reference 4) lies further from the new section of motorway, in the flat and open Wentlooge Levels area to the south of Ty Mawr Lane. The extensive works associated with the Castleton Interchange remodelling would be clearly perceptible in the middle distance, elevated above the lower lying viewpoint. However, as the views available are so expansive and open, the dominance of these elements within the available view would be reduced.

- 9.7.244** Other PRoW within this area would not be significantly affected by the construction phase of the new section of motorway due to the frequency and nature of intervening elements and/or the distances involved.

PRoW Running Across the Wentlooge Levels Area to the South of the South Wales to London Mainline railway line - including PRoW group 48 which Lies Immediately to the North of the Railway Line (PRoW groups 27, 28, 30, 31, 33a, 35, 37, 38, 40, 47 & 48)

- 9.7.245** Walkers using the section of the Wales Coast Path that runs north/south to the west of the River Ebbw (PRoW group 47 - footpath 412/11) would experience a temporary large adverse significance of effect. Construction of the new section of motorway would cut through this route to the north east of New Dairy Farm and a temporary overbridge would be provided to continue the path over the construction area until the New Dairy Farm overbridge is completed. The open nature of the landscape means that there would be clear, uninterrupted near and close proximity views of the construction of the new section of motorway, the New Dairy Farm Overbridge and the bridge over the Rivers Ebbw and Usk from the majority of this section of the coast path. These would constitute major discordant features in the view, although the significance of the effect of the River Usk Crossing construction is reduced slightly due to the industrial context of the surrounding area, which already contains numerous large scale vertical elements and industrial buildings.

- 9.7.246** Four PRoW groups would experience a temporary moderate adverse significance of effect (Groups 27, 28, 33a, & 48). PRoW groups 27 (footpaths 412/3 and 399/47) and 28 (lane with public access) would have views to the Castleton Interchange works, which would be elevated above the intervening flat agricultural areas. Woodland clearance and earthworks would be noticeable but this would be in the context of very wide and expansive views which lessens the impact for users of these paths. The Castleton construction area would also be intermittently visible for walkers on the Wales Coast Path between New Quay and Lighthouse Park (PRoW group 33a) although this would not be a dominant element due to the distances involved and the very expansive and open views that are available. Walkers in this area would also be able to see the piers and cables of the River Usk Crossing above intervening elements.

- 9.7.247** For walkers using the Wales Coast Path further east (PRoW groups 37 & 38), it is the construction of the bridge over the River Usk that would be the noticeable element within the views available resulting in a temporary slight adverse significance of effect. The construction of the majority of this bridge, including the deck, would be visible beyond the very flat intervening terrain. The construction area for this element would sweep across the view to the north east and would

include large cranes and the moving and placing of massive components. However, this would be seen in the context of the existing industrial elements that comprise the baseline view. Users of the Wales Coast Path as it follows Lighthouse Lane and heads towards the A48 (PRoW group 48) would have glimpsed and intermittent views through vegetation alongside the route to construction of the new section of motorway as it approaches the bridge and of the bridge construction itself.

- 9.7.248** All other PRoW in this area (PRoW groups 30, 31, 35 and 40) would experience only a temporary slight adverse significance of effect due to a combination of distance, intervening elements obscuring views of the new section of motorway and/or context.

PRoW Around the Western Edges of Newport (PRoW Group 55)

- 9.7.249** There are a limited number of PRoW within the urban areas of Newport across this area. Where they do exist the majority have no views of the new section of motorway due to intervening buildings. The only PRoW that were identified as having any measurable views of the new section of motorway are those located on the highest ground adjacent to the residential district of Ridgeway. Walkers on these paths would experience only a temporary slight adverse significance of effect due to the distances involved and the frequency of intervening vegetation.

Newport, East of the River Usk, North the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60, 61, 62, 63 and 64

- 9.7.250** Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east, the Nash Road Overbridge and the new section of motorway.
- 9.7.251** Users of the Wales Coast Path (footpath 401/4) (receptors 63 and 64) would be in very close proximity any construction activity with tall elements related to construction such as cranes and machinery being clearly visible within the view and overhead. They would experience a temporary very large adverse significance of effect upon their visual amenity.
- 9.7.252** Further along the path (Receptor 61), users would have views towards construction activity associated with the River Usk Crossing which would be clear in this view adding further tall vertical elements to the docks area. They would experience a temporary large adverse significance of effect upon their visual amenity.
- 9.7.253** From further north on the Wales Coast Path from the Transporter Bridge (Receptor 60) and the junction of Stephenson Street and Corporation Road (Receptor 62), the view directly south would see large construction activity associated with the River Usk Crossing above the mature vegetation and foreground industrial units within the context of the wider industrial area. They would experience a temporary moderate adverse significance of effect upon their visual amenity.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 72c

- 9.7.254** Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape and the construction of this would be the source of most significant effects at this location.
- 9.7.255** Users of the Wales Coast Path (Receptor 72c) would have views towards construction works in the background of the view and would be seen as a series of components intermittently visible, but largely characteristic of the existing view from the receptor. They would experience a temporary slight adverse significance of effect upon their visual amenity.

South of the New Section of Motorway to the North and East of Nash, West of Eyler Pill Reen – Receptors/Groups 78b, 89b

- 9.7.256** Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east, construction of the Nash Road Overbridge, construction of the Glan Llyn junction and the new section of motorway throughout.
- 9.7.257** For users of footpath 392/24 (Receptor 78b), the construction activities would take place in the background of the view and would include predominantly views of the constructed bridge over the River Usk with some filtered views of the works along the route. The construction activities would be viewed as one of a series of components in the wider panoramic view filtered by intervening vegetation. Users would experience a temporary moderate adverse significance of effect upon their visual amenity.
- 9.7.258** For users of footpath 392/19 (Receptor 89b), the views of construction operations would be screened largely by overlapping landscape elements. Some filtered views of tall construction machinery may be available above the belt of existing vegetation that is located close to the proposed new section of motorway that would play a key role in the screening of construction activities. Partial views of construction activities associated the River Usk Crossing would be available above belts of existing vegetation in the background. Users would experience a temporary slight adverse significance of effect upon their visual amenity.

North of the New section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 111b, 113, 114, 115, 123, 124, 125 and 126

- 9.7.259** Receptors at this location have the potential to be affected by the construction of the Glan Llyn junction, North Row Overbridge, works to local roads south of Junction 23a and the new section of motorway throughout.
- 9.7.260** For users of footpaths 372/97/1, 397/16, 388/17 and 388/20 (Receptors 111b, 113 and 114), there would limited views of the construction of the new section of motorway as a result of the intervening existing vegetation and the Tata Steelworks which would screen much of the construction. They would

experience a temporary slight adverse significance of effect upon their visual amenity.

- 9.7.261** For users of footpaths 388/3, 397/6, 405/6, 397/3, 397/2, 405/4, 397/1, 405/6 and 397/2 (Receptors 115, 123, 124, 125 and 126), the topography and extent of the existing vegetation and consequent visual containment results in no noticeable views of the new section of motorway. They would experience a temporary neutral significance of effect upon their visual amenity.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 101a, 102, 105a, 105b, 107 and 149a

- 9.7.262** Receptors at this location have the potential to be affected by the construction of the new section of motorway between Junction 23A and the North Row Overbridge primarily as a result of earthworks activities.

- 9.7.263** For users of Rush Wall track (Receptor 105b) there would be very close proximity, direct but intermittent views north across an extensive construction area. At this close distance all elements of construction would be clearly visible, with earthworks and large plant and equipment being dominating elements. They would experience a temporary large adverse significance of effect upon their visual amenity.

- 9.7.264** For users of footpaths 404/3, 392/15A and 392/15 (Receptor 107) there would be long distance intermittent and glimpsed views north of major earthworks and machinery. For users of footpaths 378/14/1 and 378/14/2 (Receptor 149a) vegetation clearance may see a discernible change allowing for the arrangements of slip roads, link roads, structures and proposed landforms. Construction activity would become visible. Receptors 107 and 149a would experience a temporary moderate adverse significance of effect upon their visual amenity.

- 9.7.265** For people using the bridleway and public footpath 372/64/1 (Receptors 101a and 102), there would be intermittent views west and north west of the construction of the new section of motorway, with earthworks and machinery directly visible. The intervening hedgerow vegetation would, however, limit these views to glimpsed or partial views. However, there would be an effect upon the current isolated landscape character as the construction workings would be seen intermittently along a large section of the horizon looking west. They would experience a temporary slight adverse significance of effect upon their visual amenity. Users of the route with public access connecting Longlands Farm with Rush Wall track (Receptor 105a) would have very limited views of the construction as a result of the overgrown nature of the hedgerows flanking the path. Views of construction activity would be intermittent and infrequent. The overgrown nature of the path suggests the route is little used. Walkers on this path would also experience a temporary slight adverse significance of effect upon their visual amenity.

Magor – Receptors/Groups 95

- 9.7.266** These receptors have the potential to be affected by the construction of the new M48/M4 junction, link and associated works to local roads. Traffic and construction operations would be visible along the motorway corridor due to the removal of existing screening vegetation.

9.7.267 For users of footpaths 372/13/1, 372/87/1 and 372/9/2 (Receptor 95), there would be close proximity views of large scale construction activity, including construction of road and major earthworks. An existing substantial mature tree belt is to be removed to accommodate the new section of motorway, which would open up views from these footpaths and provide clear, direct and uninterrupted views of an extensive construction area. They would experience a temporary very large adverse significance of effect upon their visual amenity.

Area to the North of the Existing M4 Corridor – Receptors/Groups 116c, 117, 119, 120, 121, 122, 135, 136, 137, 147 and 149b

9.7.268 These receptors have the potential to be affected by the construction of the new M48/M4 junction, link and associated works to local roads. Traffic and construction operations would be visible along the motorway corridor due to the removal of existing screening vegetation.

9.7.269 For users of footpath 372/40/1, 372/34/1, 372/85/1, 372/86/1, 378/3/1, 378/14/1 and 378/14/2 (receptors 116c, 137, 147 and 149b) the features of Junction 23 and associated construction activity would be readily apparent including vegetation clearance, heavy and moving machinery, arrangements of slip roads, link roads, structures and proposed landforms. They would experience a temporary large adverse significance of effect upon their visual amenity.

9.7.270 Users of footpaths 372/33/1, 372/29/1 and 372/30/1 (Receptors 135 and 136) would have views towards an extensive construction site with large machinery and earth moving operations being prominent. The construction of several slip roads and elevated sections of motorway would also be visible. They would experience a temporary moderate adverse significance of effect upon their visual amenity.

9.7.271 For users of footpath 372/69/4 (Receptor 117), as a result of the removal of existing vegetation, particularly around Junction 23A, there would be middle distance glimpsed views south east from the PRoW onto the construction works. It would be possible to see major earthworks, machinery and signs and gantries, together with the construction of the overbridge on the B4245. However, as the construction is located on the east side of the junction it is anticipated these views would be very limited. It may be possible to see glimpses of the construction as the new section of motorway heads south west but these would be limited and long distance. Users would experience a temporary slight adverse significance of effect upon their visual amenity.

9.7.272 Due to the presence of topographic features and vegetation users of footpaths 402/36, 402/29, 402/28, 402/39, 394/37, 394/38 and 372/71/1 (Receptors 119, 120, 121 and 122) would have no views towards construction activity associated with the new section of motorway. They would experience a temporary neutral significance of effect upon their visual amenity.

Potential Construction Visual Effects on Land with Public Access (LwPA)

Land with Public Access Within and Around St Mellons (LwPA Group 54c)

9.7.273 The vast majority of land with public access within the north eastern districts of Cardiff (St Mellons) has no measurable views of the new section of motorway due to intervening buildings, distance and topography. Only one area has been

identified as having any measurable views of the new section of motorway. This is an informal recreation area between housing estates in the district of Llanrumney. Only receptors using the highest and most open sections of this land would have any views of the construction phase, but distance and the scale of the works within the available expansive views results in only a slight adverse significance of effect.

Land with Public Access Within and Around the Western Districts of Newport (LwPA Groups 54a and 54b)

- 9.7.274** Many areas of land with public access within Newport and its western suburbs have no views of the new section of motorway due to intervening buildings. The only areas of land with public access that were identified as having any measurable views of the new section of motorway are those located on the highest and steepest ground with a lack of nearby buildings blocking views outwards.
- 9.7.275** Receptors visiting Belle Vue Park (Receptor group 54b) would experience a temporary moderate beneficial significance of effect. The construction of the River Usk Crossing would be a highly noticeable feature, which would be visible intermittently as visitors move around the park. However, it is considered that, within the context of the park and the existing views available, which are framed and focussed rather than expansive and are directed to the industrial areas of Newport, this would be perceived as a positive point of interest.
- 9.7.276** Receptors using the open spaces associated with Gaer Hill Fort (Receptor group 54a) would experience a temporary slight adverse significance of effect. Construction of the new section of motorway as it travels across the Wentlooge Levels area would be perceptible in the views but the construction of the River Usk Crossing would be the most noticeable element. The large cranes that would be required to construct the bridge and the various deck and pier components as they are placed within the structure would be the most noticeable elements, although they would coalesce to some degree with the surrounding complex and multifarious industrial areas.

Newport, East of the River Usk, North the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60

- 9.7.277** Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape and the construction of this would be the source of any significant effects at this location.
- 9.7.278** Those users of Orb Industrial Estate recreational ground (Receptor 60) are located in close proximity to the proposed overbridge and construction activity associated with the building would be visible beyond intervening vegetation. Therefore, they would experience a temporary moderate adverse significance of effect upon their visual amenity.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 72b

9.7.279 Receptors at this location have the potential to be affected by the construction of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape and the construction of this would be the source of most significant effects at this location.

9.7.280 Those users of Newport Wetlands Nature Reserve (Receptor 72b) are located approximately 2 km from the proposed overbridge and there would be partial views from some locations within the Nature Reserve towards activity associated with its construction. This change would form part of the background of the view in the context of other detracting elements such as pylons and industrial buildings. Therefore, users would experience a temporary slight adverse significance of effect upon their visual amenity.

South of the New Section of Motorway to the North and East of Nash, West of Elyer Pill Reen

9.7.281 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A

9.7.282 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 101b

9.7.283 Receptors at this location have the potential to be affected by the construction of the new section of motorway between Junction 23A and North Row Overbridge primarily as a result of earthworks activities.

9.7.284 Those users of Magor Marsh Nature Reserve (Receptor 101b) are located approximately 1 km from the new section of motorway but it is considered that the woodland and vegetation within and surrounding the Nature Reserve and residential properties at Magor restrict views towards the construction of the new section of motorway. Therefore, they would experience a temporary neutral significance of effect upon their visual amenity.

Magor

9.7.285 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Area to the North of the Existing M4 Corridor

9.7.286 There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Potential Construction Visual Effects on Roads and Transport Routes

9.7.287 Roads and transport route receptors are shown on Figure 9.19.

9.7.288 The detailed assessment of the potential construction effects upon views from roads and transport routes is set out in the visual assessment tables in Appendix 9.11.

Roads to the North of Castleton Junction and the A48M (Receptor Group 150)

9.7.289 No significant effects are predicted for motorists in this area.

9.7.290 Formation of the Castleton Interchange would be the main element of the new section of motorway that in theory may be visible for receptors using the road network in this area. Construction would involve extensive woodland clearance, large scale earthworks to form and re-grade embankments and cuttings and major civil engineering operations to build a number of bridges and flyovers. These elements would involve the use of large and tall items of plant and machinery. Working areas and machinery are likely to be illuminated for periods during the winter months. In addition, a number of areas are proposed to be utilised as borrow pits and for stockpiling of materials. However, roads in this area are largely lined with mature hedgerows and tree belts. Views available across the surrounding landscape are limited and, where they are available, they are fleeting and often well filtered by roadside vegetation. As a result no significance impacts are predicted with only a temporary slight adverse significance of effect predicted for motorists using the roads in this area.

9.7.291 Roads further north, away from the Castleton Interchange area, would have no views of the new section of motorway due to intervening vegetation and topography.

Roads to the South of Castleton Junction/Imperial Park/A48M (Receptor Groups 151, 153, 154, 155, 156, 157 & 158)

9.7.292 These roads cross an area of the Wentlooge Levels and its northern and eastern margins. Many of the roads across this area are minor rural lanes or residential village roads, although this area also includes the A48 along its northern edge (Receptor group 151) and the B4239 in the south (Receptor group 156). The vast majority of roads are lined with hedgerows, tree belts and/or (within the villages) buildings. Consequently, clear views out across the surrounding landscape are limited. Where views are available they are fleeting at normal traffic speeds.

9.7.293 Ty Mawr Lane (Receptor group 157) and Hawse Lane (Receptor group 158) are the only routes in this area with significantly more open stretches which, at normal traffic speeds, would afford some clear views out across the landscape towards the construction area for the new motorway. Views from the more open stretches would include the extensive woodland clearance and earthworks associated with the Castleton Interchange, which would be visible beyond the intervening low lying agricultural Levels landscape. Motorists using Church Lane (Receptor group 158) would also have clear views of the new section of motorway from some parts of this road by virtue of the fact that Church Lane intersects with the new section of motorway and would ultimately be diverted across the new section of motorway via a new overbridge. Motorists on these three roads would experience a temporary moderate adverse significance of effect from a proportion of the route.

9.7.294 The significance of effect on visual amenity from all other roads in this area (Receptor groups 151, 153, 154, 155 and 156) would be temporary slight adverse or neutral only. This is due to the amount of intervening foreground elements alongside the roads restricting views out across the landscape to intermittent and/or fleeting views only.

Roads within St Mellons and Llanrumney (Receptor Group 152)

9.7.295 No significant effects are predicted for motorists in this area.

9.7.296 The majority of the roads in this area run through densely developed urban areas with limited views out beyond the immediate highway corridor. There is a very limited number of intermittent longer range views in the direction of the new section of motorway from some elevated lengths of road and roads on the very eastern edges of the district, where the surrounding buildings and vegetation afford glimpsed views in between. Very occasional and fleeting views of woodland clearance and earthworks associated with the elevated Castleton Junction area may be available in the middle distance from a very small number of locations along the road network in this area. At normal traffic speeds the fleeting nature of changes in visual amenity due to the construction of the new section of motorway would be barely perceptible. As motorists in this area have a low sensitivity to change this would result in a negligible impact with neutral significance.

Roads within the Urban Areas of Newport (Receptor groups 159, 160, 161, 162, 163 & 167)

9.7.297 No significant effects are predicted for motorists in this area. Even where visual amenity would be affected by the construction of parts of new section of motorway, the limited nature of the change in the views, combined with the low sensitivity of receptors, means that effects would not be of more than slight significance.

9.7.298 This area includes residential streets, local distributor roads, a section of the A48 trunk road and roads through industrial areas. Motorists using a limited proportion of these roads would have intermittent views of the construction of the Usk River Crossing and the sections of motorway that approach it. Motorists using roads that run generally north to south up and down the most steeply sloping elevated residential districts (Receptor group 159), the A48 in the vicinity of the Usk River (Receptor group 160), and roads running around and through the industrial areas to the east of the River Usk (Receptor group 162) would have views of construction of the new section of motorway over the River Ebbw and/or the Usk River Crossing. Motorists using Lighthouse Road as it runs to the east of Duffryn (Receptor group 167) would have intermittent glimpsed views of large plant and equipment between and over intervening vegetation. The effect on views from the more distant, elevated roads is considered to be a temporary slight beneficial significance of effect due to the construction of the bridge being a prominent feature of interest within the surrounding industrial area. For all other affected motorists the effect would be of temporary slight adverse significance.

9.7.299 The built up nature of the surroundings means that there are very limited, fleeting views out beyond the immediate highway corridor from the remaining roads (Receptor groups 161 & 163) and therefore the new section of motorway would have no measurable effect on visual amenity.

Roads between St Brides Wentlooge and Duffryn (Receptor Groups 164, 165 & 166)

9.7.300 These roads run across the far eastern end of the Wentlooge Levels. Motorists using a proportion of the B4239 in this area (Receptor group 165) would experience a temporary moderate adverse significance of effect during the construction phase. They would have intermittent views of the Castleton Junction construction area and the construction of the elevated section of motorway over the railway. They would also have clear and direct close range views of an extensive section of the construction area from the section of this road in the vicinity of Fair Orchard Farm.

9.7.301 Motorists using other roads in this area (Receptor groups 164 & 166) would experience no significant effects during the construction phase. This is due to intervening foreground vegetation, distance and, in the case of Green Lane/Pont Estyll Lane, (Receptor group 164) the extremely low frequency of traffic using the road.

Roads Crossing the Western End of the Caldicot Levels (Receptor groups 168 & 169)

9.7.302 Motorists using the roads in this area would experience a temporary moderate adverse significance of effect during the construction phase. Visual amenity from roads around Pye Corner (Receptor group 168) would be affected by the construction of the new section of motorway in this area as well as the diversion of Nash Road, the Nash Road overbridge, a new junction between Nash Road and Meadows Road and water treatment area 6. Although these works would be highly prominent from the nearest roads, intervening elements would soon obscure the works as motorists travel away from the area and this reduces the significance of effect. Motorists using other roads in the area, around the hamlet of Nash, (Receptor group 169) would have intermittent views of the construction of the Usk River Crossing and, in particular, the piers.

Roads to the East of Newport, North of the South Wales to London Mainline Railway (Receptor Groups 171, 172, 175, 176 & 177)

9.7.303 Roads in this area comprise rural lanes crossing gently rolling agricultural landscapes as well as urban roads within and around the settlements of Magor and Caldicot.

9.7.304 The only roads from which motorists would experience a significant affect are the lanes to the north of Magor and the existing M4 motorway (Receptor group 175). The topography in this area climbs away from the existing motorway and Magor Junction giving motorists elevated views down across these existing roads. There would be intermittent views of the extensive construction area associated with the Magor Junction works with a resultant temporary moderate adverse significance of effect. The intermittent nature of the views and the relatively limited proportion of the roads affected would reduce the significance.

9.7.305 Motorists using other roads in this area (Receptor groups 171, 172, 176 & 177) would experience no significant effects during the construction phase. This is due to intervening foreground vegetation and/or buildings obscuring views out

from the immediate highway corridor and/or the very limited and fleeting nature of views.

Roads Crossing the Central and Eastern Parts of the Caldicot Levels (Receptor Groups 170, 173 & 174)

- 9.7.306** Roads in this area are largely rural lanes that link settlements across the Levels area and numerous scattered dwellings in between. However, this area also includes the A4810, which runs through the industrial area in the vicinity of the Llanwern steelworks.
- 9.7.307** Motorists using the lanes across the central part of the Levels (Receptor group 170) would experience a temporary moderate adverse significance of effect. To the west of this area this would largely be due to intermittent views of the River Usk Crossing. To the north of this area, construction of the motorway as it runs to the south of the Llanwern steelworks, particularly in the vicinity of the Glan Llyn Junction, would be the most prominent element. There would be frequent intermittent and well filtered views with some more limited clear and open views from the far eastern end of Broad Street Common and the western end of North Row. There would also be a temporary moderate adverse significance of effect for motorists using the eastern end of the A4810 as it heads towards the existing M4 (Receptor group 173). There would be intermittent but frequent views of an extensive construction area, including the main haul road, the construction of a significant length of the new motorway, the Bareland Street Compound, water treatment area 9, several overbridges and large embankments and interchanges.
- 9.7.308** Motorists using other roads in this area (Receptor group 174) would experience no significant effects during the construction phase. This is due to intervening foreground vegetation and/or buildings obscuring views out from the immediate highway corridor and/or the very limited and fleeting nature of views.

Railways (Receptor Group 178)

- 9.7.309** No significant effects are predicted for train travellers within the study area. Even where visual amenity would be affected by the construction of parts of the new motorway, the very fleeting nature of these views combined with the low sensitivity of receptors means impacts would be less than negligible with a resultant neutral significance of effect.

Rivers (Receptor Groups 179, 180 & 181)

- 9.7.310** Receptors on boats sailing up and moored on the Ebbw River (Receptor group 180) would experience a temporary large adverse significance of effect during the construction phase. The construction of the elevated sections of road over the river would dominate views for boat users in this vicinity. Immense structures such as supporting piers and precast road sections and the large plant and lifting equipment involved would be highly noticeable.
- 9.7.311** Receptors on boats sailing up and moored on the River Usk (Receptor group 181) would experience a temporary moderate adverse significance of effect during the construction phase. The construction of the River Usk Crossing and the elevated approaches would dominate views for boat users in this vicinity in much the same way as for receptors on the River Ebbw. However, despite the

scale of the construction works in this area, the industrial baseline context would reduce the magnitude of impact.

- 9.7.312** Receptors on boats travelling up the Severn estuary (Receptor group 179) would experience only a temporary slight significance of effect due to distance, the industrial context of the more prominent elements of new section of motorway and the expansive nature of the baseline views. The main elements affecting visual amenity would be the construction of the River Usk Crossing. This effect is assessed as beneficial as it is considered that this would be a positive feature of interest.

Complementary Measures

- 9.7.313** Complementary Measures would involve minor works within the existing highway corridor during a short term construction period resulting in a similar effect to regular highway maintenance works with no significant effects predicted. The effect of the construction phase on the landscape character, views and visual amenity has therefore not been assessed further.

9.8 Assessment of Potential Operational Effects

Proposed New Section of Motorway

Assessment of Potential Operational Landscape Effects

- 9.8.1** This assessment considers the effects of the new section of motorway in the operational phase. The assessment takes into account the measures proposed as part of the design of the new section of motorway, including those shown on the Environmental Masterplans provided at Figure 2.4 of this ES. Further details of the measures included in the Scheme design are provided in Section 9.5 of this chapter.

Local Landscape Character Area 1: Michaelston-y-Fedw

- 9.8.2** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 and A48(M) within the area and the presence of ancient woodland which could not be replaced. Some of the area is locally designated as a Special Landscape Area.
- 9.8.3** The new section of motorway would pass through this LCA between chainages 0 and 5,700. The proposals include the Castleton interchange with associated structures, cuttings, embankments, gantries, lighting and signage. Adjacent to the new section of motorway cutting slopes would be planted with a mixture of species-rich grassland, shrubs and intermittent trees. Further away from the motorway would be extensive woodland planting, particularly to the north of the motorway, in part to mitigate loss of ancient woodland within the LCA. Water treatment areas would be located to the south of the A48 adjacent to Castleton and also south of the motorway at chainage 4,200. The treatment areas would be planted with reedbeds and have a boundary treatment of shrubs and species-rich grassland.
- 9.8.4** Potential effects on landform/drainage patterns/urban form/street pattern: The new section of motorway would create new large scale cuttings and embankments through different parts of the area. There would be an increase in

the amount of urban form within the area through the presence of over and underbridges, lighting, gantries and the motorway itself.

9.8.5 Potential effects on land cover/land use patterns/urban structure: A large proportion of the area would change from agricultural land use to new motorway infrastructure. There would be a loss of ancient woodland to the south of the existing M4 and loss of mature vegetation within and around the existing M4/A48(M) junction. Mitigation woodland planting would cover a greater footprint than present although would be younger than that previously present and would not fully replace the ancient woodland lost. Water treatment areas would also form a new feature within the landscape.

9.8.6 Potential effects on cultural and historic associations: There would be further erosion of historic features within the area as a result of the loss of ancient woodland which cannot be replaced.

9.8.7 Potential effects on perceptual aspects: The new section of motorway would have a larger influence on the tranquillity and landscape character of the area due to increased exposure, particularly in the south and in the years whilst the mitigation planting is maturing. Additional lighting provided around the junction would increase the intensity of lighting within the LCA during the hours of darkness.

Winter Year 1 Assessment

9.8.8 As a result there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Summer Year 15 Assessment

9.8.9 The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a moderate adverse magnitude of change in year 15. Overall the LCA would experience a moderate adverse significance of effect.

Local Landscape Character Area 2: Wentlooge Levels

9.8.10 The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area, the distinctive reën landscape pattern and the high landscape value. Much of the area is locally designated as a Special Landscape Area.

9.8.11 The new section of motorway would pass through this LCA between chainages 5,700 and 8,500. The proposals include the motorway on embankment with gantries and signage as well as earthworks and structures for the Percoed NMU Bridge, Duffryn Railway Underbridge, Lighthouse Road overbridge, New Dairy Farm Overbridge, the Morfa-Gromw Reën and Old Dairy Reën culverts, and the River Ebbw bridge. Adjacent to the new section of motorway a corridor of planting would be in place including grassland, trees and shrubs. Two water treatment areas would be located adjacent to the motorway at chainages 5,900 and 7,200. The treatment areas would be planted with reedbeds and have a boundary treatment of shrubs and species-rich grassland.

9.8.12 Potential effects on landform/drainage patterns/urban form/street pattern: The new section of motorway would require new embankments and structures across

the eastern side of area, including a bridge over the existing South Wales to London Mainline railway. There would be an increase in the amount of other urban form within the area through the presence of lighting, gantries and the new section of motorway itself. The new section of motorway would change the 'street pattern' of the area.

- 9.8.13** Potential effects on land cover/land use patterns/urban structure: The new section of motorway would transect the Levels landscape severing the network of reens and ditches. Some of the area would change from agricultural land use to new motorway infrastructure. There would be a loss of vegetation across the area that would be mitigated to some degree alongside the motorway. Water treatment areas would also form a new feature within the landscape.
- 9.8.14** Potential effects on cultural and historic associations: There would be erosion of some historic features within the area as a result of the loss a consistent Levels landscape pattern and change in land use.
- 9.8.15** Potential effects on perceptual aspects: As a result of the new large scale infrastructure feature within the area, the perception of the feeling of isolation and tranquillity within the landscape would reduce. During the hours of darkness, lighting along the new section of motorway to the east of Lighthouse Road Overbridge and lighting from vehicles moving along the motorway would be a noticeable lit linear feature within a generally dark landscape.

Winter Year 1 Assessment

- 9.8.16** As a result there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Summer Year 15 Assessment

- 9.8.17** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a moderate adverse magnitude of change in year 15. Overall the LCA would experience a large adverse significance of effect.

Local Landscape Character Area 3: Newport Docks and Uskmouth

- 9.8.18** The sensitivity of this LCA to the proposed development is low. This is based on the presence of features and elements that are in decline and it contains few features and elements that could not be replaced, with the exception of the Newport Transporter Bridge. The River Usk itself is locally designated as a Special Landscape Area.
- 9.8.19** The new section of motorway would pass through this LCA between chainages 8,500 and 11,500. The Scheme includes the motorway on embankment with gantries, lighting and signage as well as earthworks and structures for the River Usk Crossing. Other elements would include the Docks Junction, the River Ebbw Bridge and the Docks Link to the Southern Distributor Road. Landscape treatment for the Scheme includes open grassland and ornamental shrub planting. The Docks Link to the Southern Distributor Road would be planted with ornamental shrubs and avenue trees. The new motorway approach to the River Usk Crossing would be contained by retaining walls near the Docks Junction

before being elevated on piers. The River Usk Crossing itself would be a large scale suspension bridge with a tower on either side of the river.

- 9.8.20** Potential effects on landform/drainage patterns/urban form/street pattern: Whilst there are other bridges within the area, the River Usk Crossing would be of a much larger scale and would form the dominant feature of the area. The presence of the new section of motorway and new junction would change the street pattern of the area.
- 9.8.21** Potential effects on land cover/land use patterns/urban structure: Once vegetation has matured, the link road between the new junction and the A48 would provide a positive feature to the area through the introduction of a tree-lined avenue, which has the potential to be a positive arrival feature to Newport.
- 9.8.22** Potential effects on cultural and historic associations: The setting of the Newport Transporter Bridge would change and it would no longer be the most prominent feature in the area. However, the landscape characteristic of bridges crossing the River Usk built at different periods of time would be further defined.
- 9.8.23** Potential effects on perceptual aspects: In close proximity to the new section of motorway, junction and retaining walls the motorway and structures would dominate the perception of the landscape. The new bridge would be of some architectural merit, although this would only be realised from further afield within the area and from higher vantage points. During the hours of darkness the levels of light within the landscape would increase as a result of lighting along the new section of motorway, Docks Link and the River Usk Crossing. Lighting associated with the River Usk crossing includes warning beacons on top of the two towers and uplighting from the main deck. Vehicles moving along the motorway and across the River Usk would be a noticeable feature.

Winter Year 1 Assessment

- 9.8.24** As a result there would be a major adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a moderate adverse significance of effect.

Summer Year 15 Assessment

- 9.8.25** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a major adverse magnitude of change in year 15. Overall the LCA would experience a slight adverse significance of effect.

Local Landscape Character Area 4: Newport

- 9.8.26** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 within the area and areas of historic and cultural association.
- 9.8.27** The new section of motorway would not physically pass through this LCA, although at the Lighthouse Road Overbridge would be located just outside the southern edge of the area.

- 9.8.28** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.29** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.30** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.31** Potential effects on perceptual aspects: The River Usk Crossing would be visible from some locations but it is considered that it would not result in any alteration to the characteristics of this area.

Winter Year 1 Assessment

- 9.8.32** As a result there would be no change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Summer Year 15 Assessment

- 9.8.33** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be no change in year 15. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 5: Chepstow Woods Southwest

- 9.8.34** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 and M48 within the area and the presence of ancient woodland and other local landscape features which could not be replaced. Some of the area is locally designated as a Special Landscape Area.
- 9.8.35** The new section of motorway would pass through this LCA between chainages 22,000 and 24,600. The proposals include the motorway on embankment and in cutting with gantries, lighting and signage as well as water treatment areas 11c, 12a and 12b, the Rockfield Lane Underbridge, the Magor Interchange Bridge, the Bencroft Lane Underbridge, the Red Barn Access Bridge and the Caldicot Road Roundabout. Extensive woodland planting would be provided around water treatment area 11b with linear belts of shrubs and trees alongside the motorway corridor.
- 9.8.36** Potential effects on landform/drainage patterns/urban form/street pattern: There would be noticeable changes to landform within the area due to the presence of water treatment areas and embankments for the new section of motorway and junctions. There would be permanent diversions and adjustments to local roads but connectivity would be retained.
- 9.8.37** Potential effects on land cover/land use patterns/urban structure: The new section of motorway would result in the loss of mature vegetation alongside the existing M4. Mitigation planting would be provided alongside the corridor and integrate the new section of motorway into the landscape over time. The

increased footprint of the motorway corridor and associated junction access would result in the loss of agricultural land and increase the extent of urbanising features within the area, as would the presence of additional lighting, signage and gantries.

9.8.38 Potential effects on cultural and historic associations: It is not anticipated that there would be a noticeable change in relation to cultural and historic associations.

9.8.39 Potential effects on perceptual aspects: The new section of motorway would increase the prominence of the motorway corridor within the area and reduce tranquillity, particularly in the period whilst mitigation planting is maturing and around the M4/M48 interchange. Additional lighting provided around the junction would increase the intensity of light within the LCA during the hours of darkness.

Winter Year 1 Assessment

9.8.40 As a result there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a moderate adverse significance of effect.

Summer Year 15 Assessment

9.8.41 The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a minor adverse magnitude of change in year 15. Overall the LCA would experience a slight adverse significance of effect.

Local Landscape Character Area 6: Llanwern Steelworks

9.8.42 The sensitivity of this LCA to the proposed development is low. This is based on the presence of features which are discordant, derelict or in decline. It contains few features that could not be replaced.

9.8.43 The new section of motorway would pass along the edge of this LCA between chainages 14,200 and 19,100. The proposals include part of the new Glan Llyn junction slip roads and link road to the A4810 which would be planted with ornamental shrubs and avenue trees. To the northeast of the proposed junction, within this LCA, would also be water treatment area 8a, which would be surrounded by woodland planting and located between the new section of motorway eastbound on-slip road, the new link road and Monks Ditch / Black Wall Reen. A new Motorway Depot would also be built, approximately 150-200 metres northwest of the new junction with a boundary treatment of linear tree and shrubs planting.

9.8.44 Potential effects on landform/drainage patterns/urban form/street pattern: The reed beds outside of the permanent footprint would be reinstated. The street pattern would change as a result of the link road created between the A4810 and the Glan Llyn junction.

9.8.45 Potential effects on land cover/land use patterns/urban structure: As vegetation along the link road between the A4810 and the Glan Llyn junction matures, it could start to reinforce the character of the area, with its straight form and avenue planting reflecting that along the A4810. The presence of the Glad Llyn

motorway depot would add new built form to the area but it would be consistent in scale and form to other buildings within this area.

9.8.46 Potential effects on cultural and historic associations: The new section of motorway is unlikely to have any noticeable effect on cultural and historic associations within this area.

9.8.47 Potential effects on perceptual aspects: The presence of the new section of motorway alongside the southern edge of this area would change the perception of the area and increase the influence of transport corridors and reduced tranquillity associated with traffic using the new infrastructure. During the hours of darkness lighting along the Glan Llyn Junction Link would be a noticeable addition within the LCA but the overall perception of the night time landscape is likely to remain similar to the baseline condition.

Winter Year 1 Assessment

9.8.48 As a result there would be a minor adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a slight adverse significance of effect.

Summer Year 15 Assessment

9.8.49 The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a minor adverse magnitude of change in year 15. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 7: Caldicot Levels

9.8.50 The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area, the distinctive reën landscape pattern and the high landscape value. The area is locally designated as a Special Landscape Area.

9.8.51 The new section of motorway would pass through this LCA between chainages 11,400 and 20,800. The proposed new section of motorway would run across the open low lying land within the north of this LCA, cutting across the existing field, reën and road pattern on embankment and introducing a continuous, large scale, wide linear feature which would be alien in the varied pattern of regular and irregular small and medium scale fields. There would also be substantial features at the new Glan Llyn junction to the south of the boundary with LCA 6, overbridges at Nash Road and North Row, and under-bridges at Bareland Street and Llandevenny Railway Bridge. Water treatment areas and Reed Beds 6, 7, 8, 9 and 10 would be present across the area. Landscape treatment within the area would include linear tree and shrub planting alongside the new section of motorway with an area of marsh and wet grassland to the south of the motorway between chainages

9.8.52 Potential effects on landform/drainage patterns/urban form/street pattern: Embankments associated with the approach to the River Usk Crossing, the Glan Llyn Junction and the North Row Overbridge would be noticeable elevated features that are uncharacteristic of this character area. The street pattern would permanently change as a result of road closures and diversions, particularly around Pye Corner/Meadows Road.

- 9.8.53** Potential effects on land cover/land use patterns/urban structure: The new section of motorway would result in the severance of the reen landscape pattern and loss of vegetation throughout the area. New overbridges and junctions as well as the new section of motorway, would create a new urban structure within the area which does not exist at present. Whilst mitigation planting would help to integrate the new section of motorway into the landscape over time, it cannot mitigate the change to landcover, pattern and form.
- 9.8.54** Potential effects on cultural and historic associations: The presence of the motorway within the area as well as lighting, signage and gantries at some locations would be conspicuous and alter the tranquillity and perception of the area. The effects would be focused in the north of the area.
- 9.8.55** Potential effects on perceptual aspects: The presence of the new section of motorway and associated earthworks would be likely to result in a change in the boundaries of this character area. The southern edge of the motorway would become the new perceived northern boundary of the Levels landscape at this location due to the earthworks and association of an urban typology. During the hours of darkness the lighting associated with the Glan Llyn junction would be a noticeable addition within the north of the area. Vehicles moving along the motorway would be a noticeable feature of the night time landscape of this LCA. This encroachment onto the reen/levels landscape may make it more vulnerable to further change and development.

Winter Year 1 Assessment

- 9.8.56** As a result there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a large adverse significance of effect.

Summer Year 15 Assessment

- 9.8.57** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a moderate adverse magnitude of change in year 15. Overall the LCA would experience a large adverse significance of effect.

Local Landscape Character Area 8: Caldicot Moor

- 9.8.58** The sensitivity of this LCA to the proposed development is high. This is based on the absence of major road infrastructure within the area, the distinctive reen landscape pattern. The area is locally designated as a Special Landscape Area.
- 9.8.59** The new section of motorway does not pass within this LCA, although at chainage 20,100, it comes to within approximately 400 metres of the boundary to LCA 8.
- 9.8.60** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.61** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.

9.8.62 Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.

9.8.63 Potential effects on perceptual aspects: There would be no perceptual change to the character area as a result of the new section of motorway.

Winter Year 1 Assessment

9.8.64 As a result the magnitude of impact would be 'no change' without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Summer Year 15 Assessment

9.8.65 The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a magnitude of 'no change' in year 15. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 9: Magor and Undy

9.8.66 The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M4 adjacent to the area and the presence of a sense of place within the area created by commonplace elements, such as areas of residential housing and associated features.

9.8.67 The new section of motorway would pass through this LCA between chainages 20,800 and 21,900. The proposed new section of motorway would run through a narrow green wedge of farmland in cutting to the west of this LCA, and then swing round to the east to merge with the existing M4 along the northern edge of Magor. At this point, the new section of motorway would continue as dual carriageway to the north of the M4, outside of this LCA, to link the existing M4 at Junction 23A with the M48 at a new junction at Llanfihangel. The motorway would have associated gantries, lighting and signage, there would also be the overbridge at Newport Road, the under-bridge at St Brides Road (Magor Penhow Underbridge) and water treatment area 11b between the new motorway and the existing junction roundabout. Landscape treatment would consist of woodland planting and linear trees and shrubs alongside the new motorway with open grassland alongside local roads.

9.8.68 Potential effects on landform/drainage patterns/urban form/street pattern: The new section of motorway would result in new large scale embankments between the western edge of Magor and the A4810. Local roads within the area would also have been adjusted but would still provide the same connectivity.

9.8.69 Potential effects on land cover/land use patterns/urban structure: The presence of the new section of motorway would increase severance within the area between the western edge of Magor and the west of the A4810. Associated underbridges for local roads and the presence of lighting, gantries and signage would also add additional urban structure to the area. Mitigation vegetation would replace some of that lost and would become more effective at integrating the new section of motorway into the landscape over time.

9.8.70 Potential effects on cultural and historic associations: It is not anticipated that there would be a noticeable change in relation to cultural and historic associations.

9.8.71 Potential effects on perceptual aspects: As a result of traffic along the new section of motorway within and to the north of the area, tranquillity would be reduced as a result of noise and greater visual exposure of the existing motorway corridor within the setting of the area. Maturing vegetation would reduce this effect over time. Additional lighting provided around the junction and on the new section of motorway to the west of Magor would increase the intensity of lighting within the LCA during the hours of darkness.

Winter Year 1 Assessment

9.8.72 As a result there would be a moderate adverse magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a moderate adverse significance of effect.

Summer Year 15 Assessment

9.8.73 The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a moderate adverse magnitude of change in year 15. Overall the LCA would experience a moderate adverse significance of effect.

Local Landscape Character Area 10: Caldicot

9.8.74 The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the existing M48 adjacent to the area and the presence of a sense of place created by commonplace elements, such as areas of residential housing and areas of historic and cultural association.

9.8.75 The new section of motorway would not physically pass through this LCA. The eastern extent would be located 2 km to the west.

9.8.76 Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.

9.8.77 Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.

9.8.78 Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.

9.8.79 Potential effects on perceptual aspects: There would be no perceptual change to the character area as a result of the new section of motorway.

Winter Year 1 Assessment

9.8.80 As a result the magnitude of impact would be 'no change' without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Summer Year 15 Assessment

- 9.8.81** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a magnitude of impact of 'no change' in year 15. Overall the LCA would experience a neutral significance of effect.

Local Landscape Character Area 11: Severn Estuary

- 9.8.82** The sensitivity of this LCA to the proposed development is moderate. This is based on the presence of the Second Severn Crossing within the area and balanced by the presence of a landscape of high value. Part of the area is locally designated as a Special Landscape Area.
- 9.8.83** The new section of motorway would not physically pass through this LCA. The River Ebbw Bridge would be located approximately 600 m to the north.
- 9.8.84** Potential effects on landform/drainage patterns/urban form/street pattern: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.85** Potential effects on land cover/land use patterns/urban structure: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.86** Potential effects on cultural and historic associations: There would be no physical change to the character area as a result of the new section of motorway.
- 9.8.87** Potential effects on perceptual aspects: Within the context of the scale of this area, the presence of the River Usk Crossing would add a feature that provides visual interest around the Newport Docks area, both day and night, resulting in indirect and barely noticeable improvement to the existing character of this area.

Winter Year 1 Assessment

- 9.8.88** As a result there would be a negligible beneficial magnitude of change without mitigation which would remain the same with committed mitigation measures. Overall the LCA would experience a neutral significance of effect.

Summer Year 15 Assessment

- 9.8.89** The year 15 assessment would remain the same as year 1 assessment without any committed mitigation measures. With committed mitigation measures there would be a negligible beneficial magnitude of change in year 15. Overall the LCA would experience a neutral significance of effect.

Assessment of Potential Operational Visual Effects

- 9.8.90** As with the construction phase effects, the potential effects of the operational phase upon views from each of the representative viewpoints, residential properties, public rights of way (PRoW), cycle routes (including National Cycle Network routes), permissive paths, other land with public access, schools/community facilities and business properties identified by the study has been assessed. The results of the assessment are presented in the schedules included in Appendices 9.7 - 9.12. The schedules are accompanied by a series

of visual receptor location plans (Figures 9.16-9.19), which are cross referenced to the schedules by means of a unique number. The predicted significance of effect for each receptor for each phase of the new section of motorway is shown graphically on these plans.

Assessment of Potential Operational Visual Effects on Representative Viewpoints - Daylight Hours

9.8.91 For the detailed assessment of the potential operational effects upon views from representative viewpoints refer to the visual assessment tables in Appendix 9.6.

Areas North of Castleton Junction and the A48(M) – Viewpoints 1, 2, 4a, 5 & 6

Year 1

9.8.92 Infrastructure and traffic associated with the Castleton Interchange would be the dominant element within views available for receptors in the area. The contrast of the bare earth and engineered appearance of the newly formed and re-graded embankments as well as restored borrow pits would be noticeable against the surrounding undulating agricultural areas.

9.8.93 Viewpoints in close proximity at elevated positions north, overlooking the existing M4 corridor (Viewpoint 4a & 5 - Pound Hill & PRow 390/11) would experience a large adverse significance of effect upon their visual amenity as they would see a greater loss in the existing established vegetation around the junction. The extended M48/M4 junction would form a highly visible element in the view and the new planting would not yet be contributing to the landscape.

9.8.94 Other viewpoints in this area that were identified as having possible views of the new section of motorway (Viewpoint 6 – PRow 390/08 east of Pound Hill) would experience a moderate adverse significance of effect. The M4/M48 junction would not be visible due to screening provided by the break in the slope. The new section of motorway and the River Usk Crossing would be visible in the middle long distance views as a narrow ribbon of earthworks across the Levels landscape.

9.8.95 Viewpoints located further north (Viewpoints 1 & 2 PRow 400/17 & 400/12), away from the junction, would have no views of the new section of motorway due to intervening vegetation and topography and would therefore have a neutral significance of effect upon their visual amenity.

Year 15

9.8.96 By this stage mitigation planting implemented into the Castleton Interchange area would have matured and would largely screen and integrate this part of the new section of motorway into its surroundings. Views available would largely return to baseline conditions.

9.8.97 Viewpoints 4a, 5 and 6 would still have visibility of parts of the M48/M4 junction and the main carriageways/bridges. The extensive earthworks to make the junction cuttings would also still be visible albeit with established planting and seeding resulting in a moderate significance of effect on visual amenity.

9.8.98 All other viewpoints in this group (Viewpoints 1 & 2), away from the junction with no views remain as a neutral significance of effect on visual amenity.

*Areas Between the Existing M4 and Proposed New Section of Motorway –
Viewpoints 7, 8a & 9*

Year 1

- 9.8.99** The eastern elements of the Castleton Interchange and the new section of motorway as it begins to head east, away from the junction would remain as dominant elements in the views available to viewpoint 7, Little Orchard. Newly formed embankments, bridges and flyovers, signs gantries, lighting columns and moving traffic would be particularly noticeable elements in the view. Although 'sacrificial' planting of larger nursery stock is proposed around this property, the canopies in the first winter would not be very dense and would therefore have only limited effect in reducing the visibility of these elements, which would be visible at close range in three directions. This would result in a very large adverse significance of effect upon the visual amenity.
- 9.8.100** Other viewpoints in this area (Viewpoints 8a & 9 – pedestrian overbridge at Church Lane & Church Crescent) that lie further east at a greater distance from the new section of motorway would have open views due to vegetation removal during the construction phase. This removal would mean that views would be available above mature hedgerows to the section of motorway running east away from the junction along with associated traffic and highway infrastructure, with a resultant large adverse significance of effect upon their visual amenity.

Year 15

- 9.8.101** There would be a large adverse effect for Viewpoints 7 (Little Orchard) and 8a (Church Lane pedestrian bridge) at year 15. Proposed woodland planting would screen the majority of the road and traffic but taller vehicles, signs and gantries and flyover sections of road are likely to still be visible. Countryside views to the south would be blocked by wooded embankment.
- 9.8.102** Viewpoint 9 at Church Crescent is unlikely to still be able to see the road or its traffic and infrastructure due to the extent and proximity of woodland screen planting. However, this woodland planting would noticeably alter the visual amenity and screen the more open countryside that is currently experienced here. This would result in a moderate adverse significance of effect on the visual amenity.

Areas West of Coedkernew – Viewpoints 11 & 12

Year 1

- 9.8.103** Viewpoint 11, Parc Golf Club would remain as a very large adverse significance of effect due to the visibility and nature of the new section of motorway. The close proximity to the route as it runs to the south east of Imperial Park coupled with the extensive removal of woodland as part of construction works means that there would be clear, direct and short range views into bare earth and engineered areas. Church Lane Overbridge would be seen at its elevated position and planting would not have established enough to provide sufficient screening.
- 9.8.104** Viewpoint 12, public right of way at Parc Golf Course would remain as a moderate adverse significance of effect at year 1. This view is largely obstructed by intervening mature vegetation belts and is likely to see the elevated parts of the Castleton Interchange to the north west and the embankments of the new

section of motorway as it heads east away from the junction. Any planting would be of no benefit in screening the new section of motorway. 'Sacrificial' planting of larger nursery stock is proposed around the embankments as the road sweeps east away from the junction. However, the canopies in the first winter would not be very dense and would therefore have only limited effect on reducing the visibility of these elements.

Year 15

9.8.105 By this stage vegetation implemented would have had time to mature, screening the Castleton Interchange from full view. Viewpoint 11, Parc Golf Club, would no longer have clear views of the embankments in close proximity as the new section of motorway heads east away from the junction. Planting here would visually soften the engineered profile of the embankments helping them to blend and integrate with the surrounding landscape. Vertical elements, such as highway signage, gantries, lighting columns and taller vehicles, may still be visible resulting in a large adverse significance of effect.

9.8.106 Viewpoint 12, public right of way at Parc Golf Course would still be shielded from much of the new section of motorway. The extensive woodland planting around the Castleton Interchange would act as screening for the embankments and higher elements of the slip road overbridges resulting in a slight adverse significance of effect.

Areas Along the North Eastern Edges of Marshfield - Viewpoints 13 & 14

Year 1

9.8.107 The formation of the Castleton Interchange may be the only element of the new section of motorway that would potentially affect the visual amenity of the viewpoints in this area. Due to the distance (greater than a kilometre) and the intervening elements, including mature vegetation and hedgerows, it may be perceptible but not a dominant feature in the views available here. The contrast of bare earth from the engineering works of cuttings and formation along the Castleton ridge would be a noticeable element when viewed against the surrounding landscape. Viewpoint 14, PRow near Tynmawr Farm would experience a moderate adverse significance of effect during year one. Mitigation planting would not be contributing to screening at this time, with the higher elements including structures, signage and gantries also being noticeable components in the view.

9.8.108 Viewpoint 13, Church Lane would experience a neutral significance of effect during year one. This is due to distance and the quantity of intervening vegetation particularly around the field boundaries in the short distance.

Year 15

9.8.109 By this stage, extensive woodland planting around the Castleton Interchange and alongside the new section of motorway as it heads east would have matured and would largely screen and integrate these parts of the new section of motorway with the surrounding landscape. Viewpoint 13 would experience a neutral significance of effect with Viewpoint 14 experiencing a slight adverse significance of effect in year 15.

Areas to the North Western Edge of St. Brides – Viewpoints 16 & 17

Year 1

- 9.8.110** Viewpoints 16 and 17 (minor roads at Hawse Lane) would experience a slight adverse significance of effect during year 1. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation on field boundaries. Vertical elements, such as gantries and signage, would be visible from these viewpoints along with glimpses of moving traffic and bare earth embankments and where the new section of motorway rises up toward the Castleton Interchange.

Year 15

- 9.8.111** By year 15, the existing vegetation would continue to provide a low screen to the new section of motorway in wider views. The establishing woodland blocks and linear belts of mitigation planting would be contributing to further screening and integrating the embankments and engineered solutions into the surrounding landscape. This would create a barely perceptible change to the view resulting in a slight adverse significance of effect for Viewpoints 16 & 17.

Areas in the Wentlooge Levels to the South of the Railway – Viewpoints 20, 21, 22, 23 & 24

Year 1

- 9.8.112** Viewpoints in this area – Viewpoints 22 Fair Orchard Farm, 23 and 24 Sirhowy Valley Walk would experience a very large adverse significance of effect during year 1 due to the proximity of significant earthworks exposing bare ground. Viewpoint 22 would see the Lighthouse Road Overbridge and the raised embankments taking the road over the bridge, which would be particularly dominant elements in the view. Viewpoints 23 and 24 would see the new River Ebbw Underbridge and retaining walls associated with the elevated junction at the Docks Junction. Tree clearance and earthworks associated with the Castleton Interchange would open up views of the bridge over the railway and a significant length of the motorway. Taller elements of the River Usk Crossing are likely to be seen amongst the existing industrial elements such as chimneys, pylons and turbines. These viewpoints are also likely to see the main deck of the new section of motorway as it travels east into the Alexandra Docks area.
- 9.8.113** Viewpoint 20, Green Lane would experience a large adverse significance of effect during the year 1 operational phase with vegetation clearance opening up the views to the construction of the new section of motorway and water treatment area 4a. Embankments for the raised section of motorway would also be a visible element as bare earth whilst planting is young, therefore not offering any integration into the surrounding landscape. Vegetation clearance would have increased the visibility of the industrial buildings and pylons already present in the area. Viewpoint 21, PRow behind Pennard Close would have intermittent views from upper storeys of the vertical highway features such as gantries, signage and lighting along with the noise barrier and moving traffic along the carriageway visible above this, particularly where the motorway is raised over the main Cardiff-London railway. The embankments approaching the crossing would also be visible between and above the level of the existing vegetation. There would also be views to the southwest towards the Percoed Reen overbridge and the

embankments of the water treatment area 4b. This results in a large adverse significance of effect in year 1 operational phase.

- 9.8.114** The towers of the Usk River Crossing would remain visible to properties orientated towards this direction.

Year 15

- 9.8.115** This area in particular has little opportunity in the form of mitigation planting to fully screen the major earthworks related to the River Ebbw Underbridge and River Usk Crossing. The raised embankments on the approach and the retaining walls associated with the junction would remain dominant elements in the view with the motorway deck sweeping horizontally over the docks area of Newport. Other elements, such as the crossing at Lighthouse Road, would also remain highly perceptible despite the fact that proposed mitigation planting would by this stage have softened and integrated these elements to some extent. Viewpoints 22 (Fair Orchard Farm) and 23 and 24 (Sirhowy Valley Walk) would continue to experience a very large adverse significance of effect during year 15 operational phase.

- 9.8.116** Viewpoint 20 and viewpoint 21, Green Lane and PRoW at Pennard Close, would experience a moderate adverse significance of effect at year 15. Proposed hedgerows and trees would have filtered and partially screened the water treatment area by this stage although some of the embankment profiles may remain visible albeit 'greened' through planting. Traffic and signage associated with the new section of motorway is likely to remain visible above and through intervening vegetation.

Areas Located on the Northern Edge, and in, the Alexandra Docks – Viewpoints 25, 93 & 94

Year 1

- 9.8.117** These viewpoints are scattered across the area of the Newport Docks and industrial area following the alignment of the River Usk. Receptors at these locations are considered to have a moderate adverse significance of effect during year 1 operational phase with clear views of the River Usk Crossing spanning the Newport Docks and the River Usk. Particularly noticeable elements of the new section of motorway would be the bridge piers and the bridge deck as it becomes a horizontal element in the view. Further distant views would see the new section of motorway snaking through the landscape with the contrast of bare earth where new planting has not had time to establish. The area is currently a heavily industrialised area of south Newport with a large number of vertical man made features including pylons, wind turbines, chimneys and the Newport Transporter Bridge. There is a strong horizontal emphasis to the open views across the river and the docks, and the flat nature of the landscape, together with the number of individual vertical elements, therefore these new features would not alter the balance of the features in the landscape.

Year 15

- 9.8.118** The most noticeable elements of the new section of motorway at these viewpoints are the elevated structures which cannot be mitigated through planting strategies. Therefore, these are considered to have the same significance of impact as in the year 1 operational phase i.e. moderate adverse.

*Areas to the Southern & Northern Edges of Uskmouth – Viewpoints 26 & 30
(PRoW at Newport Wetlands Centre & south east of Uskmouth Power Station)*

Year 1

- 9.8.119** Viewpoints 26 & 30 would see the towers of the Usk River Crossing above existing mature vegetation. The road deck may just be visible where it is in an elevated position crossing the River Usk. The Usk River Crossing, although it would be seen as an additional feature in the view from a high sensitivity receptor, would not be out of character nor alter the overall balance of features within the existing view due to the presence of a number of existing detractors e.g. pylons, wind turbines and power station chimneys, resulting in a slight adverse significance of effect during year 1 operation.

Year 15

- 9.8.120** Viewpoints 26 and 30 would only experience a slight adverse effect in year 15 due to intervening mature vegetation screening most elements of the new section of motorway. Only the tallest elements would be visible in an existing industrial backdrop.

Areas Within the South Western Suburbs of Newport – Viewpoints 95 & 96 (Stow Park & Dewsland Park)

Year 1

- 9.8.121** These areas of Newport are densely populated and, generally, the areas where the steeper topography allows for receptors to see over the top of properties and intervening urban development would see the greatest change in visual amenity.

- 9.8.122** Viewpoints 95 and 96, Stow Park and Dewsland Park are located in elevated parts of the City and are offered far reaching views across the flat topography of the Levels and across the Severn Estuary to England. These areas would see clear views of the new section of motorway as vegetation clearance and bare embankments open views and create contrast along the alignment. The dense urban sprawl filters into dense industrial areas which follow the alignment of the River Usk and the edges of the River Ebbw where there is a strong horizontal emphasis of man-made features, large buildings, pylons, chimneys and wind turbines. These viewpoints would have clear views of the new section of motorway and its structures, particularly in the Newport Docks areas. Due to the densely populated nature of the area and the vast number of detracting elements in the view, these new features would not alter the overall balance of features in the landscape. In particular, the addition of the River Usk Crossing would add to the features considered as being iconic to Newport, the Transporter Bridge and the Southern Distributor Road (SDR). Viewpoints 95 and 96 have therefore been assessed as having a slight adverse significance of effect on visual amenity.

Year 15

- 9.8.123** Viewpoints in this area look upon elements of the new section of motorway that cannot be mitigated with planting strategies. It is therefore considered that these would have the same slight adverse significance of effect as year 1.

Areas Around Pye Corner – Viewpoints 35, 37, 38 & 39

Year 1

- 9.8.124** These viewpoints are scattered around the area of Pye Corner. Mitigation planting would not have had a chance to establish along the corridor at this stage so would offer little in the way of integrating the new section of motorway into the surrounding landscape.
- 9.8.125** Viewpoint 37, Nash Road is considered to have a very large adverse effect to the visual amenity through year 1 operational phase. It lies in close proximity to the new section of motorway, approximately 50 metres, and would therefore have open, unfiltered views of new section of motorway and its bare earth embankments as well as the Nash Road Overbridge found to the north east of the location. Views here would also see the piers of the River Usk Crossing viewed across the tops of intervening vegetation. These horizontal features would be in addition to those already visible, chimneys, pylons and wind turbines throughout the area so would not affect the overall balance of the visual amenity.
- 9.8.126** Viewpoint 38, Nash Road Junction to Broad Street Common, is located further south of the new section of motorway (approximately 150 metres). Vegetation clearance would have opened up the views to the receptors using the road. Engineering works for the diversion of Nash Road onto a new overbridge would be evident in the landscape and would have further opened up the views of the new section of motorway as it sweeps north east with bare embankments creating a contrast to the surrounding landscape. It is therefore considered that Viewpoint 38 would see a large adverse significance of effect during year 1 operational phase.
- 9.8.127** Viewpoints 35 and 39 (PRoW by Hart Farm and junction of Broad Street Common with Julian's Reen) are located further from the route of the new section of motorway to the north. These are surrounded by large amounts of mature vegetation which is to be retained and thus obstructs the views of the new section of motorway in close proximity. Views above existing vegetation belts of the River Usk Crossing, approximately 1.2 km to the west, may have glimpses of the bridge piers although these would be mixed with a number of tall detracting features which already exist. Viewpoints 35 and 39 would therefore see a slight adverse significance of effect during year 1 operational phase.

Year 15

- 9.8.128** Due to the proximity and the extent of the views these viewpoints have of the new section of motorway it is considered that they have the same adverse significance of effect as year 1 operational phase. Although mitigation planting would have had time to establish, it is not considered that these areas would prevent views in such close proximity in order to assess them as a lower adverse significance of effect.

Areas on the Southern edge of Llanwern – Viewpoints 68 & 69

Year 1 and Year 15

- 9.8.129** These viewpoints situated to the north of the Tata steelworks site at Llanwern Golf Club and Llanwern Church Yard are bounded to the south by dense mature vegetation dividing the railway between Newport and the Severn Tunnel from the

industrial units of Tata Steel. The existing vegetation and the large industrial units block any views across to the new section of motorway resulting in Viewpoints 68 and 69 having no change to their visual amenity year 1 and year 15 and a neutral significance of effect.

Area on the Southern Edge of Llandevaud – Viewpoint 73 PRow at Llandevaud Langston

Year 1 and Year 15

- 9.8.130** This area is located on an elevated level plateau offering far reaching views across to the Severn Estuary. The natural topography of the area, the intervening mature vegetation and the distance obscure any views of the new section of motorway, therefore Viewpoint 73 would see no change in visual amenity during the operational phase and a neutral significance of effect.

Area to the South of Wilcrick Hill – Viewpoint 75

Year 1 and 15

- 9.8.131** Views from this elevated position reach across the Caldicot Levels. Large belts of mature vegetation obscure clear views across the flat topography. The operational phase would not affect much of these belts of vegetation, which would therefore screen much of the new section of motorway from view. Areas where large structural engineering works would add tall elements into the landscape would be visible above the vegetation and mix with the common vertical elements viewed from here, including pylons and wind turbines. Viewpoint 75 would therefore see a slight adverse significance of effect during year 1. Lengths of linear planting would have time to establish further by year 15 and would obstruct views along the new section of motorway, resulting in a slight adverse significance of effect on visual amenity.

Areas Around Broad Street Common – Viewpoints 43, 44, 45 & 48

Year 1

- 9.8.132** Viewpoint 48, Bowleaze Common is located approximately 80 metres from the proposed new section of motorway. The view is typical of the Caldicot Levels, with field patterns bordered by the local rean network. Due to the proximity, the new section of motorway would be clearly visible. The existing vegetation in the view would have been cleared offering close unobstructed views of bare earth embankments and moving traffic on the motorway. The elevated Glan Llyn Junction and its overbridges to the north west would also be clearly visible. Viewpoint 48 is therefore considered to have a very large adverse significance of effect on visual amenity during year 1 operational phase.

- 9.8.133** Other viewpoints in the area (Viewpoints 43, 44 & 45) are further from the new section of motorway alignment and existing shrub belts along the reans that delineate the local field boundaries would provide intermittent visual screening, particularly given that vegetation found in the short distance which would be retained. Higher elements, such as embankments of the raised Glan Llyn Junction and overbridge structures crossing the new section of motorway would be seen intermittently above existing vegetation. Therefore Viewpoint 43 would see a moderate adverse significance of effect to visual amenity during the year 1

operational phase and Viewpoints 44 and 45 would see a slight adverse significance of effect in year 1 operational phase.

Year 15

- 9.8.134** At this stage, linear belts of mitigation planting would have had time to mature helping to obstruct views of the new section of motorway as it passes to the north. However, due to the proximity of the route it would still be evident, particularly in winter months, to receptors here as moving traffic, signage and gantries would still be clearly visible resulting in a large adverse significance of effect on visual amenity for Viewpoint 48.
- 9.8.135** Viewpoint 43 would see benefits from the proposed planting maturing on the embankment slopes. The new section of motorway, slip roads and junction would be screened by the overlapping linear tree and shrub belts and mitigation planting, with possible glimpses of the traffic and the taller vertical highway elements such as gantries and signage around the junction. The main carriageway itself would be screened from the wider landscape as it passes through the junction where the earthworks of the slip roads and junction would block the views resulting in a moderate adverse significance of effect in year 15.
- 9.8.136** Viewpoints 44 and 45 would benefit from the embankment slopes having mature planting which would be contributing to the screening provided by the intervening offsite vegetation. There are likely to be glimpses of the signs and gantries on the Glan Llyn Junction and slip road, and the Usk River Crossing would be clearly visible to the west resulting in a slight adverse significance of effect in year 15.

Areas Along North Row – Viewpoints 52, 53 54 & 55

Year 1

- 9.8.137** A very large adverse significance of effect on visual amenity would be seen during the year 1 operational phase for Viewpoint 52, located at Toney Kennels. Intermittent mature hedgerows offer views into the surrounding field pattern, which would be within 80 metres of the new section of motorway. Clear unobstructed views would be seen of bare earth embankments allowing the receptor to see all moving traffic, signs and gantries. The taller North Row Overbridge would be an additional elevated element found to the north west. Mitigation planting here would not have had time to establish and would therefore offer no beneficial screening.
- 9.8.138** Viewpoints 53, 54 and 55 located further south on North Row, although further from the new section of motorway, would see glimpses of the new section of motorway and traffic moving along it. In particular, those in elevated positions such as second storey windows at Appletree Nursery. Some intervening vegetation would provide visual screening, however taller elements of the North Row Overbridge would be seen above these shelterbelts. These viewpoints are therefore considered to have a large adverse significance of effect during year 1 operational phase.

Year 15

- 9.8.139** This stage would see mitigation planting beginning to mature. However, along this section of the new section of motorway there are very few areas of tall planting due to the proximity of the Gwent Levels Sites of Special Scientific

Interest and the emphasis on retaining the historic landscape in the area. This would result in Viewpoint 52 at Tonew Kennels still having clear views, particularly in the winter months of moving traffic, signs and gantries in the short distance. This would result in a large adverse significance of effect on their visual amenity.

Areas to the Coed Y Caerau, Caerlicken Lane & Northern Edge of Llanvaches – Viewpoints 70, 71, 76, 77 & 78

Year 1 & Year 15

9.8.140 Viewpoints 70 and 71 are at elevated positions north of Newport looking across undulating landscape. The distance of the Scheme mixed with the topography means that the details of new section of motorway would not be visible, resulting in a neutral significance of effect in year 1 and year 15.

9.8.141 Viewpoints 76, 77 and 78 are all positioned around the area of Mynydd Alltir-fach. This area is approximately 5 km from the new section of motorway meaning much of the detail from this distance would be imperceptible. Taller elements may be visible at these points but again at this distance would not alter the overall balance of the features already existing in the view, creating no change to the visual amenity in year 1 and year 15 operational phase. The significance of effect would therefore be neutral.

Areas to the North of Magor Located on the Northern Edge of the Existing M4 Corridor – Viewpoints 81 & 79

Year 1

9.8.142 Viewpoint 81 located on Bencroft Lane would have open views due to clearance of existing mature vegetation. Areas of the new Magor Interchange and the proposed new bridge, particularly the highest elements, would be seen in the view as new features. The junction embankments would appear as bare earth creating contrast in the view to the surrounding pastoral landscape. Moving traffic would be clearly visible in the view, creating a very large adverse significance of effect to the visual amenity.

9.8.143 Viewpoint 79, a public right of way located at Upper Grange is at a greater distance from the new section of motorway (approximately 0.5 km) and elevated in comparison to its surroundings. The new section of motorway would be visible through the short range blocks of mature vegetation. Vegetation clearance would have opened up water treatment area 11c making it a visible contrast to the existing landscape. This viewpoint is perceived to have a slight adverse significance of effect on the visual amenity during year 1 operational phase.

Year 15

9.8.144 At this stage, extensive woodland planting around the Magor Interchange would have had time to establish screening the new trunk road and link road from view for Viewpoint 81, Bencroft Lane. Linear tree belts of embankments would hide the previous bare earth, helping to integrate the junction into the surrounding landscape. The taller elements of the Magor interchange bridge would still be seen above mature vegetation offering frequent glimpses of moving traffic with

vertical highway elements such as gantries, signage and lighting being visible resulting in a large adverse significance of effect on the visual amenity.

- 9.8.145** Viewpoint 79, public right of way located at Upper Grange would also benefit from the extensive planting once it has matured, screening the new section of motorway from view. Glimpses of the traffic and taller vertical highway elements, such as gantries and signage and lighting, would be possible particularly in views to the south west resulting in a slight adverse significance of effect on visual amenity.

Areas on the Caldicot Levels South of Whitewall Common – Viewpoints 64 & 65

Year 1

- 9.8.146** Viewpoint 64, Whitewall Road near Lower Grange Cottage, would be screened by mature vegetation. Only glimpses of the piers of the River Usk Crossing would be visible to this viewpoint and these would be distinct but small elements in the overall expansive view. Planting implemented as part of mitigation would not be contributing yet so views of taller elements may be visible above existing vegetation. However, due to distance they would not be a dominant feature resulting in a moderate adverse significance of effect in year 1 operational phase.
- 9.8.147** Viewpoint 65, Whitewall Road near Magor Pill Farm, would have intervening mature vegetation screening views of the new section of motorway. Again, receptors would see the piers of the River Usk Crossing to the north west but these would be above vegetation and at such a distance they would not dominate the view resulting in a slight adverse significance of effect in year 1.

Year 15

- 9.8.148** Both Viewpoints 64 and 65 would result in a slight adverse significance of effect in year 15. Mitigation planting and existing intervening mature vegetation would have grown sufficiently to integrate any elements previously viewed in these areas into the landscape.

Areas on edge of Magor, Undy & Llanfihangel Rogiet – Viewpoints 62, 67, 80, 84, 144b

Year 1

- 9.8.149** There would be a perceptible change to the views available from Viewpoints 62, 67, 80, 84 and 144b (Blenheim Gardens, B4245, Rockfield Farm, St Michaels & All Saints Church and allotments) as they are located in close proximity to major works where the proposed new section of motorway joins and connects to the existing M4 alignment around Magor. Removal of existing vegetation at the new junction would see a perceptible change in the visual amenity, with bare earth embankments and proposed planting not yet contributing to integration into the surrounding landscape. Higher structural elements, particularly the Magor interchange bridge would be visible as well as taller elements including noise barriers, signage, lighting, and gantries. Moving traffic around the new section of motorway would be clearly visible for these receptors. Views would extend to other receptors in the area resulting in a very large adverse significance of effect on visual amenity during year 1 operational phase.

Year 15

- 9.8.150** Viewpoint 144b (allotments), which lie in close proximity to the new section of motorway would see the benefits from the extensive mitigation planting in and around the newly formed junction, partially screening the slip roads and higher elements of infrastructure. The junction would have integrated into the surrounding landscape, however, it would still be a dominant feature to this viewpoint with the Magor interchange bridge still being visible above the mature vegetation resulting in a very large adverse significance of effect on visual amenity.
- 9.8.151** Viewpoint 67 and 84 (B4245 and St Michaels & All Saints Church) would be mostly screened by the maturing linear tree and shrub belts on the embankments along the new section of motorway. These should also provide visual and physical links with offsite vegetation, helping to create a more cohesive landscape. There would be glimpses of the traffic and the taller vertical highway elements of the Magor Interchange bridge would be clearly visible above the mature vegetation. Glimpses of other vertical elements such as gantries, signage and lighting would result in a large adverse significance of effect in year 15.
- 9.8.152** Viewpoints 80 (Rockfield Farm) would have much of the view screened by the matured mitigation planting with only the taller structural elements, signs and gantries visible in places resulting in a moderate adverse significance of effect on visual amenity.
- 9.8.153** Viewpoint 62 (Blenheim Gardens) would have much of the new section of motorway obscured by the mature screen planting which would be in cutting for most of the length that passes this viewpoint. By year 15 there would remain a slight adverse significance of effect.

Areas Across the Severn Estuary in England– Viewpoints 87, 88, 89, 90, 91, 92, 97 & 98

Year 1

- 9.8.154** Viewpoint 87 located on the Severn Beach on the English side of the Second Severn Crossing would not have a view of the new section of motorway, with the exception of the taller elements related to the River Usk Crossing. However, at the distance it is viewed from there would be no change to the view during operational phases and if viewed on a clear day the new River Usk Crossing would be a point of interest for Newport resulting in a neutral significance of effect to visual amenity.
- 9.8.155** Due to the distance of Viewpoint 88, Kingsweston House (approximately 16 km), there would be no perceptible view of the operational activities associated with the new section of motorway. On a very clear day, however, the River Usk Crossing may be distinguishable giving Newport a point of interest. This would result in a neutral significance of effect to visual amenity during the operational phase.
- 9.8.156** Viewpoint 89 and 90 located along the coast of the Severn Estuary at Portishead are located at greater distances from the new section of motorway, no elements of which would be seen from this distance. In extremely clear conditions, the River Usk Crossing may be distinguishable offering a point of interest in this long distance view, resulting in a slight beneficial significance of effect.

9.8.157 Viewpoints 92, 97 and 98 result in a neutral significance of effect due to distance with nor perceptible change to the view.

Year 15

9.8.158 Due to the distance from the new section of motorway the only perceptible element on very clear days would be the River Usk Crossing and this would not be impacted by any establishing vegetation resulting in all the receptors in this area having the same significance of effect as year 1 operational phase.

Assessment of Potential Operational Visual Effects on Representative Viewpoints - Hours of Darkness

Areas North of Castleton Junction and the A48(M) – Viewpoints 1, 2, 4a, 5 & 6

Year 1

9.8.159 Viewpoints in close proximity at elevated positions to the north, overlooking the existing M4 corridor (Viewpoint 4a & 5 - Pound Hill & PRow 390/11) would experience a large adverse significance of effect upon their visual amenity. The loss of established vegetation in the foreground of these views would open up views to the new section of motorway and allow views across to the Wentlooge Levels. New lighting along the new section of motorway and slip roads would dominate the view. Where the new section of motorway sweeps through the Levels landscape, it would be apparent at junctions where new lighting is proposed particularly on the approach roads to the River Usk Crossing and the bridge towers, which would be illuminated at night.

9.8.160 All other viewpoints in this group (Viewpoints 1, 2 & 6 - PRow 400/17, 400/12 & 390/08 east of Pound Hill), which are further north would either see no change due to the natural land form hiding the route (Viewpoints 1 and 2) or would only see the new section of motorway lighting at a distance on the approach to the docks and the River Usk Crossing. However, this would be in keeping with the already lit landscape for the docks and industrial area south of Newport. This would result in these viewpoints having a neutral (Viewpoints 1 and 2) and slight adverse (Viewpoint 6) significance of effect on visual amenity.

Year 15

9.8.161 At this stage planting that has been implemented would have matured, however from Viewpoints 4a & 5 (Pound Hill & PRow 390/11) lighting from the new section of motorway would still be readily apparent. Further south the new section of motorway would have screened views from large blocks of woodland which would obstruct views further into the Wentlooge Levels resulting in a large adverse significance of effect on the visual amenity.

9.8.162 Viewpoint 6 (PRow 390/08 east of Pound Hill) is considered to have a slight adverse significance of effect on visual amenity. The addition of the new section of motorway as it approaches the docks and the full extent of the River Usk Crossing would be apparent from a distance from here. This lighting for the docks junction and its associated slip roads would be seen sweeping through the landscape and the illuminated piers and new section of motorway as it crosses the River Usk would be a focal point to the view, albeit in keeping with the current lit features of the Newport Docks and surrounding industrial sites.

- 9.8.163** All other viewpoints in this group (Viewpoints 1 & 2), away from the junction with no views, remain as a neutral significance of effect on visual amenity.

*Areas Between the Existing M4 and Proposed New Section of Motorway –
Viewpoints 7, 8a & 9*

Year 1

- 9.8.164** Viewpoint 7, Little Orchard, would remain a very large adverse significance of effect as lighting around the Castleton Interchange would illuminate the newly formed embankments, bridges, flyovers, signs and gantries. Moving headlights from traffic would also be viewed from this vantage point. The ‘sacrificial’ planting would not be very dense at this stage and would therefore have only a limited effect on reducing the visibility of these elements, which would be close range in three directions.

- 9.8.165** Viewpoints 8a and 9 (Pedestrian Overbridge at Church Lane and Church Crescent), which lie further east are at a greater distance from the new section of motorway, and that have open views due to vegetation removal, would be able to see moving traffic, lighting, gantries and signage as the new section of motorway runs east away from the Castleton Interchange. This would remain as a large adverse significance of effect to visual amenity.

Year 15

- 9.8.166** Although vegetation implemented as part of the Scheme would have had time to establish, Viewpoint 7 (Little Orchard) would see some further screening of the new section of motorway and the Castleton Interchange but would still see taller vehicles, signs, gantries and flyover sections illuminated in the view. This has a resultant large adverse significance of effect on the visual amenity.
- 9.8.167** Viewpoint 9, Church Crescent, would be further screened by the woodland planting that has had time to establish but would be able to see the lighting illuminating the Castleton Interchange and the new section of motorway as it heads east away from the junction, resulting in a moderate adverse significance of effect on visual amenity in year 15.
- 9.8.168** Viewpoint 8a (Pedestrian Overbridge at Church Lane) would be partially screened by maturing vegetation. However, some larger vehicles and lighting columns may still be seen on the alignment and the Castleton Interchange would be illuminated above the tree lines resulting in a slight adverse significance of effect on visual amenity in year 15.

Areas West of Coedkernew– Viewpoints 11 & 12

Year 1

- 9.8.169** Viewpoint 11, Parc Golf Club, lies in close proximity to the new section of motorway as it moves east away from the Castleton Interchange. The intervening mature belts of vegetation would have been removed and the bare engineered embankments would be in clear view and illuminated by the lighting columns running away from the junction. Planting at this stage would add no screening with all lighting, gantries, signs and moving vehicles being seen in the view resulting in a very large adverse significance of effect on visual amenity in year 1.

9.8.170 Viewpoint 12, public right of way at Parc Golf Club, would be shielded from the new section of motorway as it moves east away from the Castleton Interchange by intervening mature belts of vegetation. Views of the Castleton Interchange at its elevated position and the engineered profile of the junction would be a visible element in the view. Highway signage, overbridges for slip roads, gantries and lighting columns would all be visible on the illuminated junction resulting in a moderate adverse significance of effect on visual amenity.

Year 15

9.8.171 Replacement planting on the embankments and base of the engineered profile would have matured to help screen the view from Parc Golf Course at Viewpoint 11. Moving traffic, signage, gantries and lighting columns would be exposed to the view as the new section of motorway runs east away from the junction resulting in a large adverse significance of effect on visual amenity. The Church Lane Overbridge may also be visible.

9.8.172 Viewpoint 12 on the public right of way at Parc Golf Course would see a change in the view as significant woodland belts around the Castleton Interchange would have had time to mature, shielding much of the engineered profile from view. The taller elements of the Interchange, such as the embankments which would be illuminated by lighting columns, may be seen above the tree lines. Taller gantries, signs and tops of lighting columns may be glimpsed from this viewpoint but the moving traffic would be shielded from view resulting in a slight adverse significance of impact in year 15.

Areas Along the North Eastern Edges of Marshfield - Viewpoints 13 & 14

Year 1

9.8.173 The level fields in the foreground are unlit and bounded by mature vegetation belts, which gradually rise up to the A48 and M4 on the edge of the Castleton ridge. The lighting of the junction would be identified by a continuous corridor of lights at Viewpoint 14, public right of way near Tynmwar Farm. In year 1 this viewpoint would experience a moderate adverse significance of effect as the removal of mature vegetation to form the Castleton Interchange would expose the new lighting, signage, gantries and structures. Viewpoint 13, Church Lane, would experience a slight adverse significance of effect. Due to distance some glimpses of lighting would be seen but most would be obscured by intervening vegetation.

Year 15

9.8.174 At this stage, the extensive woodland planting around the junction would have matured offering screening of the junction. During hours of darkness only glimpses of lighting may be seen directly, however the junction would have a permanent glow on the edge of the ridge which would identify it as a junction but would not change the overall balance in this area due to its current situation. This would result in Viewpoint 13 having a neutral significance of effect and viewpoint 14 having a slight adverse significance of effect at year 15.

Areas to the North Western Edge of St. Bride's – Viewpoints 16 & 17

Year 1

- 9.8.175** Much of the new section of motorway running across the level ground would be screened by the surrounding mature belts of vegetation. Where the new section of motorway rises up to the Castleton Interchange, distant views of the lighting and glimpses of moving traffic would be seen resulting in a slight adverse significance of effect in visual amenity for Viewpoints 16 and 17, minor roads at Hawse Lane.

Year 15

- 9.8.176** At this stage, planting in and around the new section of motorway would have had a chance to establish, offering an amount of screening to the alignment. Distant views would still be seen in and around the Castleton Interchange with a constant glow around the surrounding landscape. Glimpses of moving traffic may be viewed from a distance with taller gantries, signage and structures viewed above vegetation lines resulting in a slight adverse significance of effect to visual amenity for Viewpoints 16 and 17, minor roads at Hawse Lane.

Areas in the Wentlooge Levels to the South of the Railway – Viewpoints 20, 21, 22, 23 & 24

Year 1

- 9.8.177** Due to the proximity of the new section of motorway, Viewpoints 22 (Fair Orchard Farm), 23 and 24 (Sirhowy Valley Walk) would experience a very large adverse significance of effect. The part of the new section of motorway closest to the viewpoints would be unlit, however moving traffic would be a visible element. The approach to the River Ebbw Underbridge, the elevated Docks Junction and the River Usk Crossing, all lit, would be a noticeable addition illuminated at night.
- 9.8.178** Viewpoint 20, Green Lane would see the moving traffic using the motorway in closest proximity north east which would be unlit. The elevated Castleton Interchange would be visible in its elevated position, albeit from a distance resulting in a moderate adverse significance of effect in year 1.
- 9.8.179** Viewpoint 21 would experience a slight adverse significance of effect with the closest part of the new section of motorway being unlit with glimpses of moving traffic seen from upper storey windows.

Year 15

- 9.8.180** Mitigation planting around the raised structures and along planted embankments would have had time to mature, with areas partially screening lights of moving traffic along the new section of motorway. The length of new section of motorway in close proximity would be unlit. However, as the new section of motorway rises up to meet the River Ebbw and the elevated Docks Junction heading east over the River Usk, the receptors here would have clear views of the illuminated approach roads and bridges resulting in Viewpoints 22 (Fair Orchard Farm), 23 and 24 (Sirhowy Valley Walk) experiencing a very large adverse significance of effect.

9.8.181 Viewpoint 20, Green Lane, would have intermittent views of traffic moving along the new section of motorway although mitigation planting would have had a chance to establish, helping to screen the new section of motorway resulting in a slight adverse significance of effect in year 15.

9.8.182 Viewpoint 21 would experience a slight adverse significance of effect in year 15 with mitigation planting around the new section of motorway having matured as well as intervening vegetation retained blocking views in from the short distance.

Areas Located on the Northern Edge, and in, the Alexandra Docks – Viewpoints 25, 93 & 94

Year 1

9.8.183 The viewpoints in this location would have clear unobstructed views to the illuminated River Usk Crossing and some viewpoints may see further junctions lit along the route snaking through the Levels, albeit from a distance. The River Usk Crossing, being a new illuminated focal feature in what is generally a lit up landscape, would be seen from these vantage points resulting in a moderate adverse significance of effect in year 1 operational phase.

Year 15

9.8.184 The most noticeable elements of the new section of motorway at these viewpoints would be the elevated structures which cannot be mitigated against through planting strategies. Therefore, these are considered to have the same significance of impact as year 1 operational phase i.e. moderate adverse.

Areas to the Southern & Northern Edges of Uskmouth – Viewpoints 26 & 30 (PRoW at Newport Wetlands Centre & South East of Uskmouth Power Station)

Year 1

9.8.185 Viewpoints 26 and 30 would be largely screened by existing mature vegetation, however, the piers of the River Usk Crossing would be faintly lit and red warning beacons for aircrafts would be visible at the top of the towers above the intervening belts of existing vegetation resulting in a slight adverse significance of effect in year 1 operational phase.

Year 15

9.8.186 Viewpoints 26 and 30 would experience the same slight adverse significance of effect as year 1 operational phase.

Areas within the South Western Suburbs of Newport – Viewpoints 95 & 96 (Stow Park & Dewsland Park)

Year 1

9.8.187 The viewpoints in this location would have clear unobstructed views to the illuminated River Usk Crossing and some viewpoints may see further junctions lit along the route snaking through the Levels, albeit from a distance. The River Usk Crossing, being a new illuminated focal feature in what is generally a lit up landscape, would be seen from these vantage points resulting in a slight adverse significance of effect in year 1 operational phase.

Year 15

- 9.8.188** The most noticeable elements of the new section of motorway at these viewpoints are the elevated structures which cannot be mitigated against through planting strategies. Therefore, these are considered to have the same significance of effect as year 1 operational phase i.e. slight adverse.

Areas Around Pye Corner – Viewpoints 35, 37, 38 & 39

Year 1

- 9.8.189** Viewpoint 37, Nash Road, would see existing orange foreground lighting as well as additional new white lighting from the approach road to the docks and the full extent of the illuminated River Usk Crossing to the west. Vertical elements, such as signage and gantries as well as the piers, would be clearly visible from this view resulting in a very large adverse significance of effect in year 1 operational phase.
- 9.8.190** Viewpoint 35, public right of way by Hart Farm on Picked Lane, would be in close proximity to the River Usk Crossing and would experience views of lighting columns leading up to and across the River Usk to the west resulting in a moderate adverse significance of effect in year 1 operational phase.
- 9.8.191** All other viewpoints in this area located further south would view the existing orange glow and additional white lighting on the approach road to the River Usk Crossing as it would be clearly illuminated to the west, resulting in a slight adverse significance of effect on the visual amenity.

Year 15

- 9.8.192** At this stage, mitigation planting along the new section of motorway would have had time to establish and would offer areas of slight screening. However, this planting is not considered to prevent all views of traffic headlights, lighting columns, signage and gantries, resulting in Viewpoint 37 having a large adverse significance of effect, and Viewpoints 35, 38 and 39 having a slight adverse significance of effect in year 15.

Areas on the Southern Edge of Llanwern – Viewpoints 68 & 69

Year 1 & Year 15

- 9.8.193** These viewpoints situated to the north of the Tata steelworks site at Llanwern Golf Club and Llanwern Church Yard are bounded to the south by dense mature vegetation dividing the railway between Newport and the Severn Tunnel from the industrial units of Tata Steel. The existing vegetation and the large industrial units block any views across to the new section of motorway resulting in Viewpoints 68 and 69 having no change to their visual amenity in year 1 and year 15 resulting in a neutral significance of effect.

Area on the southern edge of Llandevaud – Viewpoint 73 PROW at Llandevaud Langston

Year 1 & Year 15

- 9.8.194** This area is located on an elevated level plateau, offering far reaching views across to the Severn Estuary. The natural topography of the area, the

intervening mature vegetation and the distance would obscure any views of the new section of motorway. Therefore, Viewpoint 73 would see no change in visual amenity during the operational phase resulting in a neutral significance of effect.

Area to the South of Wilcrick Hill – Viewpoint 75

Year 1 & Year 15

- 9.8.195** This viewpoint may experience additional glow above existing mature vegetation from lighting added to junctions along the new section of motorway on the Caldicot Levels. This area already sees a large amount of light pollution from the surrounding industrial areas. As views from this viewpoint are obstructed by the existing tall belts of vegetation and intervening lighting, it is considered that both year 1 and year 15 operational phase would see a slight adverse significance of effect on visual amenity during the hours of darkness.

Areas Around Broad Street Common – Viewpoints 43, 44, 45 & 48

Year 1

- 9.8.196** Viewpoint 48, Bowleaze Common, is located approximately 80 metres from the proposed new section of motorway. The removal of existing linear belts of trees and shrubs would result in the new section of motorway being highly visible. Headlights from vehicles using the motorway would be evident and taller elements such as gantries would result in a very large adverse significance of effect in year 1.
- 9.8.197** Viewpoint 43, Broad Street Common at Little Common, would see the introduction of a double line of new lighting elements which would be evident through the existing vegetation providing a wider corridor of white light. It is likely that moving traffic would also be visible resulting in a moderate adverse significance of effect in year 1.
- 9.8.198** Other viewpoints in this area (Viewpoints 44 and 45) located further south of the new section of motorway would see intermittent views of lighting at the Glan Llyn Junction through intervening existing mature vegetation. Views, albeit intermittent, of headlights from vehicles moving along the corridor may also be evident here resulting in these viewpoints having a slight adverse significance of effect in year 1.

Year 15

- 9.8.199** Mitigation planting would have had time to mature around the Glan Llyn Junction further obstructing clear views of lighting in these areas.
- 9.8.200** Viewpoint 43 and 48, Broad Street Common and Bowleaze Common, would have a moderate adverse significance of effect on visual amenity with planting partially screening the lights of moving traffic, however, the glow of lighting would still be seen above the vegetation.
- 9.8.201** All other viewpoints in this area, located further away from the new section of motorway and with intervening retained vegetation, would see the glow of lighting above which would obstruct the clear views resulting in a slight adverse effect of significance in year 15.

Areas Along North Row – Viewpoints 52, 53 54 & 55

Year 1

9.8.202 Viewpoint 52, Tonew Kennels, would have a very large adverse significance of effect in year 1 due to its proximity to the new section of motorway. The raised new section of motorway would allow clear views of the moving traffic and headlights using the route and would be silhouetted by the large warehouses illuminated at the Euro Park industrial estate located to the north.

9.8.203 Viewpoints 53, 54 and 55 located further south on North Row, although further from the new section of motorway, would see glimpses of headlights from traffic travelling along the route as well as signage and gantries. Some intervening vegetation would provide visual screening of lighting. These viewpoints are therefore considered to have a moderate adverse significance of effect during the year 1.

Year 15

9.8.204 At this stage, linear belts of mitigation planting would have had time to mature helping to obstruct views of the new section of motorway as it passes to the north. However, due to the proximity of the route it would still be evident, particularly in winter months to receptors here, as moving traffic, signage and gantries would still be clearly visible from here resulting in the same adverse significance of effect as year 1 for all viewpoints in this group.

Coed Y Caerau, Caerlicken Lane & Northern Edge of Llanvaches – Viewpoints 70, 71, 76, 77 & 78

Year 1 & Year 15

9.8.205 Viewpoints 70 and 71 are at elevated positions north of Newport looking across an undulating landscape. The distance of the Scheme mixed with the topography means that the details of new section of motorway would not be visible resulting in no change, and a neutral significance of effect, to the existing view at night in year 1 and year 15.

9.8.206 Viewpoints 76, 77 and 78 are all positioned around the area of Mynydd Alltir-fach. This area is approximately 5 km from the proposed new section of motorway meaning much of the detail from this distance would be imperceptible. Taller elements of the new section of motorway, which are illuminated and linear belts of lighting following the junctions may be visible at these points but again at this distance would not alter the overall balance of the features already existing in the view creating no change to the visual amenity in year 1 and year 15 and a neutral significance of effect.

Areas to the North of Magor Located on the Northern Edge of the Existing M4 Corridor – Viewpoints 81 & 79

Year 1

9.8.207 The proximity of the M4 to existing viewpoints would not change. However, the addition of the new section of motorway to the north and slip road connecting to the B4245 would increase lighting and visibility of moving traffic in the area. Any mitigation planting on the embankments would not be contributing to the

landscape at this stage, resulting in Viewpoint 81, Bencroft Lane, having a large adverse significance of effect on visual amenity in year 1.

- 9.8.208** Viewpoint 79 would benefit from the mature belts of vegetation and woodland screening views of the new section of motorway. Glimpses of the taller elements of highway infrastructure, such as lighting gantries and signage, as well as intermittent views of moving headlights may also be seen, resulting in a slight adverse significance of effect in year 1.

Year 15

- 9.8.209** At this stage, planting would have matured significantly helping to screen views of receptors in this area. Viewpoint 81, Bencroft Lane, is still in close proximity to the new section of motorway and intermittent glimpses of headlights moving along the route and associated on slips would be seen through the linear belts of trees and shrubs. Taller signage and gantries may also be glimpsed above tree lines resulting in a moderate adverse significance of effect in year 15.

- 9.8.210** Viewpoint 79, located at a greater distance at Upper Grange would benefit from the extensive planting screening much of the new section of motorway from view. Lighting columns, signage and gantries may be visible in some of the view and glimpses of moving traffic would result in a slight adverse significance of impact in year 15.

Areas on the Caldicot Levels South of Whitewall Common – Viewpoints 64 & 65

Year 1 & Year 15

- 9.8.211** Due to the distance of the new section of motorway from Viewpoints 64 and 65 (Whitewall Road near Lower Grange Cottage & Whitewall Road near Magor Pill Farm) and the intervening mature belts of vegetation screening all but the piers of the River Usk Crossing that would form a small but distinct element in the view would be visible. It is therefore considered that these viewpoints would have only a slight adverse effect to visual amenity at night in both year 1 and year 15.

Areas on Edge of Magor, Undy & Llanfihangel Rogiet – Viewpoints 62, 67, 80, 84, 144b

Year 1

- 9.8.212** Viewpoint 84, St Michaels Church, would see a very large adverse significance of effect on visual amenity. Lighting columns and illumination of the new junction would be a dominant feature in the view. Mitigation proposals would not contribute to integrating the engineering works into the surrounding landscape at this point. This, combined with proximity and extent of the proposals, would have a significant effect with clear views of moving traffic along the new section of motorway.

- 9.8.213** Viewpoints 62, 67 and 144b (Blenheim Gardens, B4245 and allotments) would see a significant change in the landscape with the slip roads and newly formed structures being an evident feature in the area. Mitigation planting would not be contributing to the integration of the new section of motorway into the surrounding landscape resulting in a large adverse significance of effect on the visual amenity of the area. Illumination of this part of the new section of motorway would be clear from these viewpoints.

9.8.214 Viewpoint 80, Rockfield Farm, would be in close proximity to the M4 as existing. However, the addition of slip roads and structures connecting the B4245 and the M48 would add additional lighting to the area, further illuminating the junction and resulting in a moderate adverse significance of effect on visual amenity.

Year 15

9.8.215 Viewpoint 84, St. Michaels Church, would still see a very large adverse significance of effect to visual amenity as the additional lighting columns in and around the junction would further illuminate the area, highlighting the new infrastructure as a dominant feature in the view resulting in a very large adverse significance of effect on visual amenity.

9.8.216 Viewpoints 67, 80, and 144b would see a moderate adverse significance of effect on visual amenity with mitigation planting having matured and helping to screen much of the new section of motorway from view. Glimpses of moving traffic may still be seen and high lighting columns, signs and gantries would be seen above vegetation. The extra lighting in the area would further illuminate it as a feature in the landscape and taller structures may also be seen.

9.8.217 Viewpoint 62 would be screened from the new section of motorway by mature vegetation with only glimpses of moving traffic, particularly on winter months when trees are without their leaves, resulting in a slight adverse significance of effect.

Areas Across the Severn Estuary in England– Viewpoints 87, 88, 89, 90, 91, 92, 97 & 98

Year 1 & Year 15

9.8.218 Due to the distance from the new section of motorway, the only perceptible element on very clear nights would be the River Usk Crossing warning beacons and the illuminated piers giving Newport a point of interest resulting in Viewpoints 87, 88, 89, 90 and 91 having a slight beneficial significance of effect on visual amenity in year 1 and year 15, with Viewpoints 92, 97 and 98 having a neutral significance of effect in year 1 and 15.

Assessment of Potential Operational Visual Effects on Residential Properties

9.8.219 For the detailed assessment of the potential operational effects upon views from residential properties refer to the visual assessment tables in Appendix 9.7.

Areas to the North of Castleton Interchange and North of the A48(M) – Receptors/Groups 18, 19, 20a, 21 & 24 (6 properties)

Year 1

9.8.220 Infrastructure and traffic associated with the Castleton Interchange would be the dominant element within views available for receptors in this area. The bare earth and engineered appearance of newly formed and re-graded embankments and restored borrow pits would be noticeable against the surrounding rolling agricultural areas. During the hours of darkness, headlights and lighting along the multiple carriageways would be highly noticeable cutting through and across the slope of the Castleton Ridge. Those properties with direct, close proximity views east along the existing M4 corridor and south from the elevated land above

the junction area (three two storey properties Viewpoints 18, 19 and 20a) would experience a large adverse significance of effect upon their visual amenity.

- 9.8.221** The visual amenity for other residential receptors in this area that were identified as having possible views of the new section of motorway (three properties – receptors/groups 21 and 24) would not be affected by the Castleton Interchange area or new section of motorway as it lies below and beyond an intervening ridge. They would, however, have long range views of the River Usk Crossing. At the distances involved it is considered that this landmark feature would be seen as a positive addition amongst the complex and multifarious landscape of the industrial areas, which would not dominate the views due to their expansive nature. Therefore at year 1 it is considered that these three properties would experience a slight beneficial effect.

Year 15

- 9.8.222** By this stage, the extensive woodland proposed as part of the Castleton Interchange area would have matured and would largely screen and integrate this part of the new section of motorway. Road lighting and headlights are likely to be glimpsed through the vegetation but this would be broadly similar to the existing situation. Views available to receptors would largely return to the baseline conditions. The significance of effect for all of the receptors in this area would be improved to slight adverse, slight beneficial or neutral.
- 9.8.223** Properties further north, away from the junction, would have no views of the new section of motorway due to intervening vegetation and topography.

Areas within the Angle of the Existing M4 and the Proposed New Section of Motorway – Receptors/Groups 20b, 20d and 20e (33 properties)

Year 1

- 9.8.224** The eastern elements of the Castleton Interchange and the new section of motorway as it begins to head east, away from the junction, would remain as dominant elements in the views available to Receptor 20b (Little Orchard). Newly formed embankments, bridges and flyovers, signs, gantries, lighting columns and moving traffic would be particularly noticeable elements in the view. Although ‘sacrificial’ planting of larger nursery stock is proposed around this property, the canopies in the first winter would not be very broad or dense and would therefore have only a limited effect on reducing the visibility of these elements, which would be visible at close range in three directions. During the hours of darkness, headlights and lighting along the new section of motorway and nearest flyovers would be highly noticeable where clear open views are available and would be clearly discernible glinting through intervening vegetation. This receptor would experience a very large adverse significance of effect upon their visual amenity.
- 9.8.225** There are 25 properties on Church Crescent and the adjacent section of Church Lane that lie further east at a greater distance from the new section of motorway (Receptor group 20d). Woodland removal during the construction phase would mean that these properties would have views to the elevated part of the new section of motorway running east away from the junction including the associated traffic, highway infrastructure and lighting, with a resultant large adverse significance of effect upon their visual amenity. However, for a number of these

properties these elements would only be clearly visible from upper storey windows due to intervening hedgerows.

- 9.8.226** The 7 properties at the western end of Blacksmiths Way (Receptor group 20e) would experience a moderate adverse significance of effect upon their visual amenity. The newly restored and planted borrow pit area adjacent to Church Lane would be the most noticeable element of the new section of motorway for these receptors, although mainly from upper storeys.

Year 15

- 9.8.227** There would remain a large adverse significance of effect for Receptor 20b (Little Orchard) at year 15. Proposed woodland planting would screen the majority of the road and traffic but taller vehicles, signs and gantries and flyover sections of road and lighting during the hours of darkness are likely to still be visible. Additionally, this property would have lost the open countryside views to the south which would be blocked by a wooded embankment.

- 9.8.228** The 25 properties on Church Crescent and the adjacent section of Church Lane are unlikely to still be able to see road or its traffic and infrastructure due to the extent and proximity of woodland screen planting. However, this woodland planting would noticeably alter their visual amenity and screen the more open countryside views that these residents currently experience. There would remain a moderate adverse significance of effect.

- 9.8.229** Once established as a screen the woodland planting across the borrow pit area would reduce the significance of effect on visual amenity for the seven properties at the western end of Blacksmiths Way to a slight adverse significance of effect.

Areas Alongside the A48 between Castleton and the Proposed New Section of Motorway Flyover over the A48 – Receptors/Groups 11a, 11b, 11c, 11d, 11e, 14c, 17b (14 properties)

Year 1

- 9.8.230** The newly formed and largely bare embankments and various bridges and flyovers associated with the Castleton Interchange would be the dominant elements for receptors in this area, along with the traffic and infrastructure above these. Receptor group 17b (two adjacent properties; Spring Cottage and The Croft) would experience a very large adverse significance of effect due to their location to the north of the A48. They lie immediately adjacent to the highway boundary and a proportion of the garden area of The Croft would be permanently lost to accommodate the embankments. Newly planted embankments with a large expanse of bare soil would be a particularly noticeable element in year 1, with traffic moving along the A48(M) westbound clearly visible above. During the hours of darkness street lighting and headlights would be highly noticeable elements as lighting associated with the A48(M) westbound and the new section of motorway would be visible.

- 9.8.231** Receptors/groups 11a and 11b (three properties) lie in close proximity to the multi-tiered area of the junction where the existing A48, the proposed new section of motorway and westbound diverge lane and the reclassified M4 westbound intersect. Substantial embankments, retaining walls, support columns and elevated road sections along with associated moving traffic would be particularly

dominant elements for these receptors when looking to the north. During the hours of darkness street lighting and headlights would be highly noticeable. 'Sacrificial' woodland planting (i.e. planted as larger nursery stock) would help to filter views from Longhouse Farm (Receptor 3) but in the winter of year 1 the canopies of these trees would not be very substantial so the screening effect would be limited. Residents of Spring Court (Receptor 14c) are likely to be able to see multiple tiers of traffic using the various elements of the junction as they are set further back from the junction than other properties along the A48, allowing a wider angle of view of the new section of motorway, and there is little intervening vegetation. These receptors would experience a large adverse significance of effect.

9.8.232 Two receptors/groups in this area (11d and 11e – three properties) would experience a moderate adverse significance of effect. These properties lie slightly further away from the new section of motorway than those described above and they generally lie at a lower level than the new section of motorway, with some intervening vegetation. However, the scale of the new section of motorway in the Castleton area, in particular the extensive newly formed embankments and multi layered tiers of new road, would mean that these would still appear as a major discordant feature in the views available from some parts of these properties.

9.8.233 The remaining receptor group in this area (11c – five properties) would experience only a slight adverse significance of effect. Despite their proximity to the new section of motorway, the visual amenity of residents of these properties would be largely unchanged, as topography and intervening vegetation blocks the vast majority of views north towards the new section of motorway.

Year 15

9.8.234 By this stage, the extensive woodland proposed as part of the Castleton Interchange area would have matured and would largely screen and integrate this part of the new section of motorway. However, three receptors/groups (11a, 11b and 17b) would still experience a moderate adverse significance of effect at this stage. Receptors 11a and 11b (Longhouse Farm, Coedkernew House and Moorland View) may still have glimpsed views of moving traffic and signs, lighting columns and gantries above the proposed woodland due to their proximity to the motorway and in particular the flyovers. Street lighting and headlights would remain visible during the hours of darkness, clearly visible where the flyover sections are in view and glimpsed through vegetation elsewhere. The woodland itself, which borders the garden of Longhouse Farm to the north and east, would noticeably and permanently alter the outlook in this direction from this property. The Croft (one of two receptors in group 17b) would experience a noticeable and permanent change to their visual amenity due to the permanent loss of garden area, which is replaced by a wooded embankment.

9.8.235 The significance of effect for all other receptors in this area would be reduced to slight adverse or neutral due to the screening effects of the proposed woodland planting. It is predicted that although glimpsed and filtered views of moving traffic and some infrastructure is possible this would be very limited in extent and mainly from upper storey windows and would therefore be barely perceptible. Street lighting and headlights are likely to be visible through intervening planting during the hours of darkness but this is similar to the baseline situation.

Areas to the North of the South Wales to London Mainline Railway Line within and on the Northern Edge of the Wentlooge Levels. – Receptors/Groups 2a, 2b, 2c, 3a, 3b, 3c, 12, 14a, 14b and 42 (15 properties)

Year 1

- 9.8.236** These receptors are scattered across an area of the Wentlooge Levels and its northern margins that is bounded to the south by the South Wales to London Mainline railway and would be bounded to the north by the new section of motorway. Due to clearance of existing woodland areas during the construction phase, Receptor 2a (The Stud Farm) would have direct and open views to the section of motorway running around the south western corner of Imperial Park from rear windows and garden areas. The new section of motorway, Church Lane Overbridge, traffic and signs would appear as dominant and discordant elements in the view and the buildings of Imperial Park would form an urban industrial background. During the hours of darkness, headlights of traffic moving along the motorway and lighting associated with Imperial Park beyond would be highly noticeable. Residents at this property would experience a very large adverse significance of effect.
- 9.8.237** Receptors/groups 2b, 12 and 42, (8 properties) would experience a large adverse significance of effect. Views from properties in Receptor group 12 would include the Castleton Interchange area as well as parts of the new section of motorway as it runs south east away from the junction and possibly water treatment area 2. Receptor 2b (Swallows Haven) would experience similar views to Receptor 2a (described above) but the effect is reduced slightly due to the screening effect of intervening vegetation. Similarly, for Receptor 42 the new section of motorway, Church Lane Overbridge, traffic and signs would appear as dominant and discordant elements in the view and lighting during the hours of darkness would be highly noticeable. However, residents at this property already have some open views of Imperial Park so the change from this more urban baseline would not be so discordant.
- 9.8.238** Receptors 14a (Tyn-y-Nant) and 14b (adjacent to Tyn-y-Nant) would experience a moderate adverse significance of effect. These properties, which are semi-detached, would have views of parts of the Castleton Interchange area, including newly formed embankments, traffic, infrastructure and lighting during the hours of darkness but would benefit from intervening vegetation which lessens the impact of this change to their visual amenity. Receptor 14a (Tyn-y-Nant) in particular benefits from dense vegetation around its boundaries which limits views outwards across the landscape.
- 9.8.239** All other receptors in this area would experience only a slight adverse or neutral temporary significance of effect during year 1. This is due to views towards the new section of motorway being well filtered and/or screened by intervening vegetation and/or the orientation of windows.

Year 15

- 9.8.240** By this stage, the extensive woodland proposed as part of the Castleton Interchange area and alongside the new section of motorway as it heads east would have matured and would largely screen and integrate these parts of the new section of motorway. A limited number of receptors would, however, still be subject to a significant adverse level of effect due to their close proximity to

particularly prominent elements of the new section of motorway. Receptors/groups 2a, 12 and 42 (eight properties) would experience a moderate adverse significance of effect in the summer 15 years after completion. Elements such as overbridges, flyovers at the Castleton Interchange and water treatment area 4 would remain noticeable in the views available from these properties.

- 9.8.241** All other receptors in this area would experience only a slight adverse or neutral significance of effect at year 15 largely due to the proposed woodland planting screening and integrating the new section of motorway by this stage.

The Northern and Eastern Edges of the Village of Castleton – Receptors/Groups 8, 9, 15, 16 and 17a (approximately 43 properties plus a multi-occupancy care home)

Year 1

- 9.8.242** The Castleton Interchange would be the dominant part of the new section of motorway for receptors in this area, although some properties would also be affected by water treatment area 1. The junction area would comprise large scale bare embankments and cutting faces, a number of bridges and flyovers, multiple carriageways and traffic and infrastructure. Receptor group 15, which comprises six properties on Walk Farm Drive, would experience a very large adverse significance of effect. As well as the Castleton Interchange embankments, traffic, infrastructure and lighting being visible at short range over the trees lining the nearby A48, these properties directly overlook the area proposed for water treatment area 1. At year 1 this element would comprise largely bare, engineered embankments, a large expanse of open water and sparsely vegetated reed beds. This would be a dominant and discordant feature compared to the baseline of pastoral fields and would be the main focus of views available to the front of these properties from most windows and garden areas in this direction.

- 9.8.243** Receptor groups 8, and 9 (approximately 37 properties) are located around the eastern and northern edges of Castleton village and they would experience a large adverse significance of effect. Traffic, infrastructure and the newly formed bare embankments associated with the Castleton Interchange would become a noticeable feature of the views. Street lights and headlights would be highly noticeable during the hours of darkness. Receptor 16 (Heathercroft House) is mainly adversely affected by water treatment area 1, which lies diagonally opposite this property across the A48.

- 9.8.244** Views from Receptor 17a (Bryn Ivor Lodge Care Home) would also include parts of the Castleton Interchange and its embankments, traffic and infrastructure. However, existing intervening vegetation would mean that these elements are perceptible but not dominant in the view, resulting in a moderate adverse significance of effect.

- 9.8.245** Properties located elsewhere in the village have no measurable views of the new section of motorway due to intervening buildings.

Year 15

- 9.8.246** By this stage, the extensive woodland proposed as part of the Castleton Interchange area would have matured and would largely screen and integrate

this part of the new section of motorway. A limited number of receptors would however still be subject to a large adverse significance of effect due to the visibility of particularly prominent elements of the new section of motorway. Traffic and some of the highway infrastructure and lighting during the hours of darkness at the Castleton Interchange would still be visible as glimpses through and over the trees for some properties within Receptor group 8 (properties along the eastern side of Marshfield Road on the north eastern edge of Castleton and at the eastern end of Castleton Rise). The multi-tiered flyover section where the A48, new section of motorway and the reclassified M4 converge would remain clearly visible for some receptors within this group. Receptors in group 15 (Houses on Walk Farm Drive, Walk Farm and The Barn) would still be able to see water treatment area 1 from parts of their properties. Although shrub and tree screen planting would have matured and would limit views across the open water and reed beds to filtered and glimpsed views, this planting itself would also block the open countryside views that were available to these receptors. The proposed grassland and reed bed areas would by this stage visually soften the engineered structures but the area would remain as a highly perceptible uncharacteristic feature.

9.8.247 Receptor 16 (Heathcroft House) would experience a moderate adverse level of effect due to the presence of water treatment area 1 as a noticeable and uncharacteristic feature in the foreground of views from the front of this property, although a significant proportion of the open water area would be largely screened by existing mature trees along the A48.

9.8.248 Other receptors identified as being adversely affected in year 1 would experience no more than a slight adverse or neutral effect by year 15 due to visual impacts being successfully mitigated by the proposed woodland planting.

The North Eastern Edges of the Village of Marshfield – Receptor Groups 5, 6 and 7 (approximately 60 properties)

Year 1

9.8.249 Traffic, infrastructure, lighting and newly formed embankments associated with the formation of the Castleton Interchange would be the only element of the new section of motorway that would affect the visual amenity of receptors in this area. Due to distance (greater than a kilometre) and intervening elements, these would be perceptible but not dominant features in the views available. As the existing Castleton Interchange is illuminated, changes to visual amenity during the hours of darkness would not be highly noticeable. Approximately 34 receptors along Marshfield Road and side roads leading off it (Receptor group 7) would experience a moderate adverse significance of effect during year 1 when viewing the new section of motorway from some windows and garden areas.

9.8.250 Other receptors identified as having views of the new section of motorway would experience no more than a slight adverse or neutral effect due to intervening elements blocking views from the majority of windows and garden areas; where views of traffic and infrastructure would be available they would be distant and intermittent and therefore barely perceptible within the wider view.

9.8.251 Properties located elsewhere in the village have no measurable views of the new section of motorway due to intervening buildings.

Year 15

- 9.8.252** All receptors identified as being adversely affected in year 1 would experience no more than a slight adverse effect by year 15 due to visual impacts being successfully mitigated by the proposed woodland planting around Castleton Junction.

Areas Within and Around St Mellons– Receptor Groups 26a, 26b & 26c (approximately 50 properties)

Year 1

- 9.8.253** Receptors identified as having views of the new section of motorway from this area would experience no more than a slight adverse effect due to distance, expansiveness of views and/or intervening vegetation blocking views from the majority of windows and garden areas. Where views of traffic and infrastructure at the Castleton Interchange would be available they would be distant and intermittent and therefore barely perceptible within the wider view.

- 9.8.254** Properties located elsewhere in St Mellons have no measurable views of the new section of motorway due to intervening buildings and distances involved.

Year 15

- 9.8.255** By this stage the proposed woodland planting would have matured and would effectively screen the junction area from these receptors. With the exception of 26a which would experience a slight adverse effect, no effects are predicted at year 15.

The Wentlooge Levels to the South of the South Wales to London Mainline Railway between St Mellons and the Ebbw River – Receptor Groups 27, 29, 34a, 34b, 39a, 39b, 44, 45a, 45b, 45c, and 45d (approximately 42 properties)

Year 1

- 9.8.256** Two properties in this area, receptors 45a (Whitecross Farm) and 45b (Fair Orchard Farmhouse), lie in very close proximity to the new section of motorway in the vicinity of the Lighthouse Road Overbridge. They would experience a large and very large adverse significance of effect respectively in year 1 due to the proximity of the new section of motorway and the overbridge. The significance of effect is reduced slightly for Whitecross Farm due to the mature intervening vegetation around the property. Traffic and infrastructure as well as the Lighthouse Road Overbridge itself would be dominant elements in the views. Receptor group 39b (three properties), which lies slightly further away from the new section of motorway, south down Lighthouse Road, would also experience a large adverse significance of effect. These receptors would be able to see multiple parts of the new section of motorway, including the more distant Castleton Interchange area and River Usk Crossing. The illuminated section of the new section of motorway to the east of the Lighthouse Road Overbridge would be visible during the hours of darkness. However, it is the closest sections of motorway and the elevated section over the Duffryn Railway Underbridge that would be most dominant in the views.

- 9.8.257** Receptors/groups 45c (Ty-hir Cottage and Railway Cottage) and 45d (New Dairy Farmhouse) would experience a moderate adverse significance of effect. The

two adjacent properties comprising group 45c are surrounded by mature tree belts and there are numerous outbuildings within the property boundaries. This means that, although the new section of motorway, Lighthouse Road Overbridge and the elevated section of motorway over the Duffryn Railway Underbridge are theoretically visible, there is a limited number of windows and garden areas that would afford views of the new section of motorway. This would reduce the significance of effect. Residents of New Dairy Farmhouse would have oblique views of the new section of motorway and its traffic, infrastructure and lighting as it runs between Lighthouse Road and the New Dairy Farm Overbridge to the north west from a limited number of windows and garden areas, and then again from a small number of rear windows as it travels east into the Alexandra Docks area. The piers of the River Usk Crossing are likely to be seen amongst the existing industrial elements such as chimneys, pylons and turbines.

9.8.258 All other receptors in this area would experience no more than a slight adverse significance of effect due to distance and/or views towards the new section of motorway being well filtered/screened by intervening vegetation and/or the orientation of windows.

Year 15

9.8.259 Receptors 45a (Whitecross Farm) and 45b (Fair Orchard Farmhouse) would continue to experience a large adverse significance of effect. There is limited screen planting along the new section of motorway so traffic and infrastructure, and headlights during the hours of darkness, would continue to be dominant features in the views available. Tree and shrub planting would by this stage soften and integrate the Lighthouse Road Overbridge but traffic moving along it is likely to remain visible above and through the planting and it would continue to appear as a discordant feature in the view.

9.8.260 Other receptors identified as having views of the new section of motorway would experience no more than a slight adverse effect due to intervening elements blocking views from the majority of windows and garden areas, the effect of proposed screen planting and/or views of traffic and infrastructure being distant and only intermittently visible and therefore barely perceptible within the wider view.

The Southern and Eastern Edges of the Newport Suburb of Duffryn – Receptor Groups 46, 47 and 50

Year 1

9.8.261 There would be a large adverse significance of effect for Receptor group 47 (properties on the south west and south east edges of modern housing estate). These receptors would have glimpsed and filtered upper storey views across the adjacent low lying green and tree lined agricultural area to the new section of motorway and noise barriers, traffic and infrastructure sweeping around in an arc approximately 350 metres distant. Glimpses of water treatment area 4 and Lighthouse Road Overbridge would also be discernible in the views from a number of these properties. Traffic moving along the elevated section of the new section of motorway as it passes over the Duffryn Railway Underbridge is likely to be particularly noticeable as it is elevated some way above the surrounding Levels landscape. During the hours of darkness headlights moving along the road would be highly perceptible in what is otherwise a largely unlit landscape,

although noise barriers would reduce the visibility of these elements for much of this length of the new motorway.

9.8.262 Receptor group 50 (two and three storey houses on Edney View) would experience views towards the River Usk crossing which would become a prominent, probably the dominant, landscape feature as one looks south east. This would result in a moderate adverse effect for these receptors. Other receptors located around the edges of Duffryn identified as having views of the new section of motorway would experience no more than a slight adverse or neutral effect due to intervening elements blocking views from the majority of windows and garden areas.

9.8.263 Properties located elsewhere in the more central areas of Duffryn have no measurable views of the new section of motorway due to intervening buildings.

Year 15

9.8.264 The proposed tree belts along parts of the new section of motorway and further growth of intervening vegetation would obscure the route further from Receptor group 47 by this stage. However, glimpsed and filtered views of larger infrastructure and moving traffic and headlights during the hours of darkness are likely to remain for a limited number of residents within this receptor group, with a resultant moderate adverse significance of effect.

9.8.265 Other receptors within Duffryn would experience no more than a slight adverse or neutral effect due to intervening elements blocking views from the majority of windows and garden areas.

The South Western Suburbs of Newport – Stow Park, Gaer and the Level of Mendalgief – Receptor Groups 51, 52, 53, 54 and 58

Year 1

9.8.266 There would be a perceptible change to the views available for many of the residents in Receptor groups 51 and 52 (properties in Stow Park), 53 and 54 (houses in Gaer) and 58 (new housing development in an area known as 'The Level of Mendalgief.') The new bridge over the River Usk, in particular its piers and cables, would be a noticeable element in the views available. This landmark feature is considered to make a positive contribution to the views of this visually chaotic industrial area. However, the expansive nature of the views available would reduce the dominance of this element within the view and the significance of effect is therefore limited with a resulting slight beneficial significance of effect.

9.8.267 All other receptors in this area would experience no effects. This is due to views towards the new section of motorway being blocked by topography and/or intervening buildings, the orientation of windows and/or the distances involved.

Year 15

9.8.268 The significance of effect remains the same for all these receptors in year 15 as it was for year 1. Perceptible changes to visual amenity are related to the bridge over the River Usk, and the views towards this from these elevated locations would not alter over time.

Newport, East of the River Usk, North of the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 56, 75, 130, 131, 132 and 133

Year 1

- 9.8.269** Receptors at this location have the potential to be affected by the presence of the new overbridge across the River Usk and the approach on embankment from the east, the Nash Road Overbridge and the new section of motorway.
- 9.8.270** Residential receptors at Tatton Farm (Receptor 75) would see the new section of motorway approximately 200 metres to the south including traffic and any signage. This would be a significant and perceptible addition to the view due to the proximity of the new section of motorway. Nash Road Overbridge, 400 metres to the south west would also be visible from this receptor. They would experience a very large adverse significance of effect upon their visual amenity.
- 9.8.271** Residential receptors at Corporation Road housing development, houses on Edward German Crescent, Elgar Avenue, Lime Crescent and Glanwern Drive (Receptors 56, 130, 131, 132 and 133) would have direct long distance views south west of the bridge. The view of the bridge is along the line of vision of the current view of Newport Transporter Bridge and may detract from this historically interesting architectural component. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.272** Residential receptors at Tatton Farm (Receptor 75) would see the new section of motorway approximately 200 metres to the south including traffic and any signage. Vegetation would have matured and would filter views towards the new section of motorway. However, this would be a significant and perceptible addition to the view due to its proximity. They would experience a very large adverse significance of effect upon their visual amenity.
- 9.8.273** Residential receptors at Corporation Road housing development, houses on Edward German Crescent, Elgar Avenue, Lime Crescent and Glanwern Drive (receptors 56, 130, 131, 132 and 133) would remain with a slight adverse significance of effect.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 70, 72a, 73 and 74

Year 1

- 9.8.274** Receptors at this location have the potential to be affected by the presence of the new overbridge across the River Usk and the approach on embankment from the east. The height of the proposed overbridge would make it a prominent feature in the landscape and the presence of this would be the source of most significant effects at this location.
- 9.8.275** For residents at Little Cross Farm, West Nash Road, Great House and West Winds House (Receptors 70, 72a, 73 and 74) the River Usk Crossing piers and catenary cables would be visible above existing mature vegetation and would be more visible from a higher vantage point such as the second storey windows. This elevated position may also have views of the main deck of the bridge as it

crosses the River Usk. This would see a change to the existing view for this receptor but would not form a perceptible change as a number of large detracting features and intervening structures associated with the two power stations and Mir Steel UK are in the foreground of the view. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.276** As there is no planting associated with the overbridge, which is the source of the effect for this receptor, the significance of effect would remain at slight adverse in year 15.

South of the New Section of Motorway to the North and East of Nash, West of Eyler Pill Reen – Receptors/Groups 68a, 68b, 76, 77, 78a, 79a, 79b, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89a and 89c

Year 1

- 9.8.277** Receptors at this location have the potential to be affected by the presence of the new overbridge across the River Usk and the approach on embankment from the east, presence of the Nash Road Overbridge, presence of the Glan Llyn junction and the new section of motorway throughout.
- 9.8.278** The former Baptist Church (Receptor 68b) is located adjacent to the new section of motorway and in close proximity to the Nash Road Overbridge. Views towards these features and associated infrastructure would be clear and planting would not yet be established meaning passing traffic would be visible. They would experience a large adverse significance of effect upon their visual amenity
- 9.8.279** For residents at Fair Orchard (Receptor 68a) the presence of the re-aligned Nash Road on the approach to the overbridge would be clearly visible. Planting would not be mature and so would not provide a screening effect. They would experience a moderate adverse significance of effect upon their visual amenity.
- 9.8.280** For residents at isolated residential properties along Broad Street Common, including Decoypool and Moorbarn Cottages (Receptor 79b), the embankment slopes and the taller vertical elements such as gantries and signage are likely to be evident through the vegetation as the planting would not have any effect on screening at this stage. The proposed embankments may screen some views towards the industrial buildings to the north. They would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.281** For residents at isolated residential properties located in and around Goldcliff (Receptors 76-79a, 80-89b and 89c) the tallest elements of the new section of motorway at the River Usk Crossing would be seen in the view with the proximity deeming them as barely perceptible in the view. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.282** For residents at Fair Orchard (Receptor 68a) the presence of the re-aligned of Nash Road on the approach to the overbridge would be clearly visible. Vegetation implemented as part of the Scheme would have had time to mature. Pockets of shrubs with intermittent trees would offer additional screening and integrate the new section of Nash Road into its existing surroundings returning

the view back to its original balance within the landscape. Whilst the magnitude of impact would be reduced, the receptor would still experience a moderate adverse significance of effect upon their visual amenity. Maturing vegetation around the new section of motorway would reduce visibility of traffic and motorway infrastructure for residents of the former Baptist Chapel (Receptor 68b) to some degree. However, the proximity of the proposal and magnitude of change from the baseline scenario means that they would also still experience a moderate adverse significance of effect upon their visual amenity.

9.8.283 For residents at isolated residential properties along Broad Street Common, including Decoypool and Moorbarn Cottages (Receptor 79b), the planting on the embankment slopes would have established and the new motorway, slip roads and junction would be screened by the overlapping linear tree and shrub belts and new planting, with possible glimpses of the traffic and the taller vertical highway elements such as gantries and signage around the junction. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.284 For residents at isolated residential properties located in and around Goldcliff (Receptors 76-79a, 80-89b and 89c) would experience the same view as described in Year 1, a slight adverse significance of effect upon their visual amenity.

North of the New section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 111a, 112, 127, 128 and 129

Year 1

9.8.285 Receptors at this location have the potential to be affected by the presence of the Glan Llyn junction, North Row Overbridge, changes to local roads south of Junction 23A and the new section of motorway throughout.

9.8.286 For residents at Manor Farm and Three Gates (Receptors 111a and 112) there would be short and middle distance glimpsed views east and south of moving traffic and signs and gantries on the motorway. It is anticipated, however, that the existing intervening vegetation would limit the extent and impact of these views. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.287 For residents at Hazel Farm, Hazel Court Guest House, Little Milton and Cot Hill (Receptors 127, 128 and 129) looking south west it may be possible to view the bridge over the River Ebbw and the South Docks area above the existing rural horizon. The impact of this is minor but given the fact that the location has a relatively secluded aspect it would introduce a new urban element into an otherwise rural landscape. They would experience a slight significance of effect upon their visual amenity.

Year 15

9.8.288 For residents at Manor Farm and Three Gates (Receptors 111a and 112) the extensive woodland planting along the eastern edge of the new section of motorway would largely screen views south and east with only limited glimpsed views of moving traffic, though it is probable that signs and gantries would remain

visible above the tree line. They would experience a slight adverse significance of effect upon their visual amenity.

- 9.8.289** For residents at Hazel Farm, Hazel Court Guest House, Little Milton and Cot Hill (Receptors 127, 128 and 129) the view would remain as the same as Year 1, experiencing a slight significance of effect upon their visual amenity.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 91, 103, 104a, 104b, 106, 107, 108, 139 and 140

Year 1

- 9.8.290** Receptors at this location have the potential to be affected by the presence of the new section of motorway between Junction 23A and the North Row Overbridge, primarily as a result of the new motorway and elevated road structures.

- 9.8.291** For residents at Greenmoor Farm (Receptor 108) there would be very close proximity, direct views north, west and east onto the new section of motorway of moving traffic, the road itself and signs and gantries. The view east would be dominated by the overbridge, with direct views of moving traffic and highway signs. They would experience a large adverse significance of effect upon their visual amenity.

- 9.8.292** For residents at Lower Grange Farm, Longlands Farm, Brick House Farm, Fir Tree Farm and Mead Farm, Grangefield House, Greenfield House, North Court Farm and North Row Farm, 1 and 2 Lower Grange Cottage and Chapel Farm (Receptors 91, 103, 104a, 104b, 106, 107, 139 and 140) there would be filtered views towards signs, gantries, the North Row Overbridge and moving traffic on the new section of motorway. This would form a small proportion of the overall view. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.293** For residents at Greenmoor Farm (Receptor 108) there would still be direct, close proximity views north onto the new section of motorway of moving traffic, the road and motorway signs and gantries. This would be accentuated as it travels along a raised embankment along this section. The view east onto the overbridge would largely be mitigated by woodland planting, though there may still be glimpsed views of moving traffic of the signs and gantries. Therefore they would still experience a reduced moderate adverse significance of effect upon their visual amenity in Year 15.

- 9.8.294** For residents at Lower Grange Farm, Longlands Farm, Brick House Farm, Fir Tree Farm and Mead Farm, Grangefield House, Greenfield House, North Court Farm and North Row Farm, 1 and 2 Lower Grange Cottage and Chapel Farm (Receptors 91, 103, 104a, 104b, 106, 107, 139 and 140) woodland planting and other mitigation would have matured to further filter views towards signs, gantries, the North Row Overbridge and moving traffic on the new section of motorway. This would form a small proportion of the overall view. They would experience a slight adverse significance of effect upon their visual amenity.

*Magor – Receptors/Groups 93, 94, 96, 97, 98, 99, 100, 134, 142, 143 and 144***Year 1**

- 9.8.295** These receptors have the potential to be affected by the presence of the new M48/M4 junction, link and associated works to local roads. Traffic would be visible along the motorway corridor due to the removal of existing screening vegetation.
- 9.8.296** Those residents in properties at 8-16 Queens Gardens, Barecroft Common, Langley Terrace, Langley Close and Langley Villa (Receptors 94, 98 and 100) are located a short distance from the new section of motorway and would have direct views towards the underpass for St Bride's Road, earthworks for Junction 23A and the new section of motorway to the west of Magor with passing traffic, lighting, signs and gantries. Residents in properties at Rockfield Farm and The Elms (Receptor 134) are also located a short distance from the new section of motorway and Year 1 views would include the new interchanges with passing traffic, lighting, signs and gantries. Receptors 94, 98, 100 and 134 would experience a large adverse significance of effect upon their visual amenity.
- 9.8.297** Residents in properties at Newport Road, Woodland House, Magor Court, Courtlands, The Haven, Colbost, Llanberis, Belvedere, Lapins, Glen View, Hill Crest, Rock House, Quarry House, Honeysuckle Cottage, Ivy House, two storey houses on Grange Lane, St Anne's Crescent facing onto Church Road, Great House and properties along the northern edge of Rockfield Grove between the B4245 and The Elms (Receptors 93, 96, 97, 142, 143 and 144) are located a short distance from the new section of motorway on the north western and eastern edges of Magor. Their view of traffic on the existing motorway would remain exposed due to vegetation removal in construction, and they would have views towards passing traffic on new infrastructure along with noise barriers, lighting, gantries, signage and changes made to local roads. Receptors 93, 96, 97, 142, 143 and 144 would experience a moderate adverse significance of effect upon their visual amenity.
- 9.8.298** Residents in properties on Blenheim Gardens (Receptor 99) would have middle distance views of noise barriers, moving traffic, road and signs and gantries of the road from upper stories. Similarly, there would be views of the A4810 hitherto screened by vegetation. Receptor 99 would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.299** Those residents in properties at Langley Terrace, Langley Close and Langley Villa (Receptor 94) are located a short distance from the new section of motorway and would have views towards the underpass for St Bride's Road and earthworks for Junction 23A with passing traffic, lighting, signs and gantries filtered to some degree by mature planting. Receptor 94 would experience a large adverse significance of effect upon their visual amenity.
- 9.8.300** Residents in properties at 8-16 Queens Gardens, Barecroft Common, Rockfield Farm and The Elms (Receptors 98, 100 and 134) are also located a short distance from the new section of motorway and Year 15 views would include the new interchanges with passing traffic, lighting, signs and gantries which are more heavily filtered by mature mitigation planting. Receptors 98, 100 and 134 would experience a moderate adverse significance of effect upon their visual amenity.

9.8.301 Residents in properties at Newport Road, Woodland House, Magor Court, Courtlands, The Haven, Colbost, Llanberis, Belvedere, Lapins, Glen View, Hill Crest, Rock House, Quarry House, Honeysuckle Cottage, Ivy House, two storey houses on Grange Lane, St Anne's Crescent facing onto Church Road, Great House and properties along the northern edge of Rockfield Grove between the B4245 and The Elms (Receptors 93, 96, 97, 142, 143 and 144) are located a short distance from the new section of motorway on the north western and eastern edges of Magor. Their view of traffic on the existing motorway would become filtered due to maturing of vegetation planted as part of the new section of motorway and restoring a situation similar to the baseline condition, albeit with some additional features. Receptors 93, 96, 97, 142, 143 and 144 would experience a slight adverse significance of effect upon their visual amenity.

9.8.302 For residents in properties on Blenheim Gardens (Receptor 99) the re-establishment of vegetation alongside the A4810 and extensive woodland planting along the new section of motorway should fully screen both roads. Receptor 99 would experience a neutral significance of effect upon their visual amenity.

Area to the North of the Existing M4 Corridor – Receptors/Groups 116a, 116b, 116c, 118, 145b, 145c and 147

Year 1

9.8.303 These receptors have the potential to be affected by the presence of the new M48/M4 junction, link and associated adjustments to local roads. Traffic, signs, lighting and gantries would be visible along the motorway corridor due to the removal of existing screening vegetation.

9.8.304 Those residents in properties at the western edge of Rogiet, Llanfihangel near Rogiet and Windmill Cottages (Receptors 145b, 145c and 147) are located a short distance away from the new section of motorway and would have direct views towards the new slip roads with associated traffic and infrastructure in addition to passing traffic on the M4 and M48 as well as lighting, signs and gantries from a slightly elevated position. Therefore, they would experience a moderate adverse significance of effect upon their visual amenity.

9.8.305 Those residents in properties at Knollbury (Receptor 116b) are located a short distance away from the new section of motorway and would have views towards passing traffic, lighting and signs along the new section of motorway from a slightly elevated position. They would experience a moderate adverse significance of effect upon their visual amenity. Residents at Beeches Caravan Park (Receptor 116c) would also experience a slight adverse significance of effect. The new motorway would not be visible as it is in cutting, however the tops of lighting columns and signs would adversely impact on visual amenity.

9.8.306 From the properties at Upper Grange (Receptor 116A), again located a short distance away from the new section of motorway, there would be middle distance views south onto the new section of motorway with views of moving traffic, signs and gantries. It would be possible to see moving traffic and signs and gantries on the overbridge on the B4245. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.307 Residents at Skeliot Farm (Receptor 118) would experience a neutral significance of effect upon their visual amenity as they would not have any views towards the new section of motorway.

Year 15

9.8.308 Those residents in properties at the western edge of Rogiet, Llanfihangel near Rogiet and Windmill Cottages (Receptors 145b, 145c and 147) are located a short distance away from the new section of motorway and would have views towards the new slip roads with associated traffic and infrastructure in addition to passing traffic on the M4 and M48 as well as lighting, signs and gantries filtered to some degree by mature mitigation planting. Therefore, they would experience a slight adverse significance of effect upon their visual amenity.

9.8.309 Those residents in properties at Knollbury (Receptor 116B) are located a short distance away from the new section of motorway and it is expected that by Year 15 planting would mature to provide similar level of screening to the existing road corridor however the corridor would be in closer proximity. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.310 From the properties at Upper Grange (Receptor 116A) it is anticipated that the re-establishment of vegetation, particularly around Junction 23A, would return the view to its original condition and there would be no significant views of the new section of motorway. It may be possible to see the overbridge on the B4245 but this would be limited glimpsed views because of the intervening vegetation. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.311 Residents at Skeliot Farm (Receptor 118) and Beeches Caravan Park (Receptor 116c) would experience a neutral significance of effect upon their visual amenity as they would not have any views towards the new section of motorway.

Assessment of Potential Operational Visual Effects on Non-residential Properties

9.8.312 For the detailed assessment of the potential operational effects upon views from non-residential properties refer to the visual assessment tables in Appendix 9.8.

Receptors to the North and North East of Castleton (Receptors/groups 14c, 16, 17a, 17b & 18)

Year 1

9.8.313 Two receptors in this area would experience a large adverse significance of effect. Receptor 16 (the Coach and Horses pub/restaurant and the adjacent hotel rooms) lies on the northern edge of Castleton immediately adjacent to the existing A48. The existing M4 Castleton Junction is located within approximately 220 metres of this property. The visual amenity experienced by customers of this business would mainly be affected by water treatment area 1 on the opposite side of the A48. The expansive open water area and bare embankments and margins would be clearly visible from seating areas and windows that face the A48, albeit filtered to some degree by trees along the road. The bare embankments, traffic and infrastructure associated with the Castleton Interchange area may also just be visible above intervening vegetation from the rear of this property, especially from upper storey windows. The Grow Your Own site (Receptor 17b) located between the A48 and the existing A48(M) westbound carriageway borders the boundary of the new section of motorway. Plot holders

would have clear and very close proximity views of the newly planted, generally bare embankment below the amended A48(M) westbound and traffic travelling above this, along with signs and lighting columns. Traffic travelling along other lanes and flyovers associated with the Castleton Interchange above and beyond this may also be visible although the proximity of the A48(M) embankment means that it would serve as an intervening ridgeline and is likely to screen many of the other lanes.

9.8.314 Employees and visitors to the Olli Wood Farm animal sanctuary and Green Lofts (Receptor group 18) would experience a moderate adverse significance of effect. The newly formed extensive embankments and cutting faces associated with the Castleton Interchange, along with traffic moving through the junction, are likely to be clearly visible in the middle distance from the north eastern edges of these properties. During the hours of darkness street lighting and headlights would be noticeable. However, intervening buildings mean that views of these elements would be intermittent, which reduces the significance of effect.

9.8.315 Other non-residential properties identified as having views of the new section of motorway would experience only a slight adverse significance of effect. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway.

Year 15

9.8.316 By year 15 only one receptor group would still experience a significant adverse effect. Customers of Receptor 16 (the Coach and Horses pub/restaurant and the adjacent hotel rooms) would experience a moderate adverse significance of effect. Although tree, shrub and grassland planting would have softened and integrated the water treatment area 1 into the surrounding landscape it would remain as a highly perceptible uncharacteristic feature for receptors viewing this area from the front of the property.

9.8.317 Other non-residential properties identified as having views of the new section of motorway would experience only a slight adverse or neutral significance of effect by year 15. This is due to the low sensitivity of these receptors, the lack of windows affording views of the new section of motorway and/or the screening effect of the proposed woodland around the Castleton Interchange.

Receptors in and around Imperial Park Industrial Area (Receptors/groups 1a & 41)

Year 1

9.8.318 Non-residential properties within this area identified as having views of the new section of motorway would experience only a slight adverse significance of effect despite being subject to moderate and large impacts. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway.

Year 15

9.8.319 Non-residential properties within this area identified as having views of the new section of motorway would experience only a slight adverse significance of effect by year 15. This is due to the low sensitivity of these receptors, the lack of

windows affording views of the new section of motorway and/or the predicted screening effect of the proposed woodland along the motorway.

Receptors within the Wentlooge Levels Area (Receptors/groups 1b, 32a, 32b & 32c)

Year 1

9.8.320 Receptor group 1b (Parc Golf Club) is located in close proximity to the new section of motorway as it runs around Imperial Park and a proportion of the golf course area would be subsumed by the new road. Visitors to the Club would experience a large adverse significance of effect. The traffic and infrastructure associated with the new section of motorway and the Castleton Interchange area would be dominant detracting features in the views available from a significant proportion of the golf course, particularly when these sections of road are raised up on embankments and flyover sections. During the hours of darkness street lights along the motorway as it approaches the Castleton Interchange area and the headlights of traffic would be highly noticeable. However, the impact of this would be reduced by the existence of floodlighting on the golf course itself. Water treatment area 2 and Church Lane Overbridge would also be highly visible elements. Woodland removed during the construction phase to accommodate the new section of motorway would increase the visibility of these elements in year 1, as well as opening up views to the large industrial buildings on Imperial Park.

9.8.321 Other non-residential properties within this area identified as having views of the new section of motorway would experience a slight adverse significance of effect only. For workers on employment sites this is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway. For leisure receptors (visitors to Peterstone Lakes Golf Course and Ty coch Camping Site) this is due to distance and intervening elements.

Year 15

9.8.322 By year 15 visitors to Parc Golf Club (receptor group 1b) would continue to experience a moderate adverse significance of effect. Although proposed screen planting would block views to the majority of traffic and infrastructure, traffic crossing Church Lane Overbridge and using the elevated sections of road at Castleton Interchange are likely to remain visible above intervening vegetation. During the hours of darkness street lighting and light from headlights is likely to be glimpsed through the intervening woodland belt. The loss of part of the golf course area would permanently alter the layout and design of this part of the facilities. Changes to visual amenity would remain noticeable from many parts of the site.

9.8.323 Other non-residential properties within this area identified as having views of the new section of motorway would experience no effects by year 15. This is due to the predicted screening effect of the proposed woodland around the Castleton Interchange area and the distances between the new section of motorway and these receptors.

Receptors within and around St Mellons (LwPA Group 32d)

Year 1

9.8.324 The vast majority of non-residential receptors within the north eastern areas of Cardiff (St Mellons) have no measurable views of the new section of motorway due to intervening buildings, distance and topography. Only one receptor group has been identified as having any measurable views of the new section of motorway, St Mellons Church in Wales Primary School. Only receptors using the central and most open sections of the school area would have any views of the new section of motorway, and distance and the scale of the Scheme within the available expansive views would result in only a slight adverse significance of effect.

Year 15

9.8.325 By year 15 there would be no change. Proposed woodland screen planting would return the visual amenity for receptors in this area to the baseline situation.

Receptors within and around Duffryn (Receptors/groups 49)

9.8.326 Nearly all non-residential receptors within this area have no views of the new section of motorway due to intervening buildings.

Year 1

9.8.327 Students, staff and visitors to Duffryn High School and Community Sports Centre (Receptor group 49) would experience a moderate adverse significance of effect. There would be intermittent and glimpsed middle distance views from limited parts of the school and grounds of the elevated motorway and associated traffic and infrastructure as it approaches the Docks Way Junction and of the junction itself as it spans the River Ebbw. Views of these elements would however be filtered by intervening trees within and around the school area which reduces the significance.

Year 15

9.8.328 There is minimal screen planting proposed along the section of the new section of motorway visible from this property. The views available in year 15 would be largely comparable to those available in year 1 i.e. a moderate adverse significance of effect.

Receptors within Industrial Areas around Alexandra Docks and the Level of Mendalgief (Receptors/groups 57a and 57b)

Year 1

9.8.329 Non-residential properties within this area identified as having views of the new section of motorway would experience only a slight adverse significance of effect despite being subject to moderate and large impacts. This is due to the low sensitivity of these receptors and the lack of windows affording views of the new section of motorway.

Year 15

The significance of effect on visual amenity would remain at slight adverse significance as described for year 1.

Newport, East of the River Usk, North of the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60, 65 and 67

Year 1

- 9.8.330** Receptors at this location have the potential to be affected by the presence of the new overbridge across the River Usk and the approach on embankment from the east. The height of the overbridge would make it a prominent feature in the landscape. Other sources of impact at this location would arise from the presence of the Nash Road Overbridge.
- 9.8.331** The workers at Industrial Automation and Control Ltd (IAC) (Receptor 67) are located adjacent to the new section of motorway to the south and Nash Road Overbridge to the east. Views towards these features and associated infrastructure would be clear and planting would not yet be established meaning passing traffic would be visible. They would experience a moderate adverse significance of effect upon their visual amenity.
- 9.8.332** Workers at Orb Industrial Estate and the industrial works on Traston Road (Receptors 60 and 65a) and receptors at Lliswerry High School and Coleg Gwent (Receptor 65b) are located in close proximity to the new section of motorway over the River Usk and would have intermittent views towards the River Usk Crossing above or between buildings within the wider industrial context. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.333** Maturing vegetation around the Nash Road Overbridge and alongside the motorway would reduce visibility of traffic and motorway infrastructure for workers at Industrial Automation Ltd (Receptor 67) to some degree. However, the Nash Road Overbridge itself would remain visible and the width of planting alongside the new section of motorway would not provide full screening even in summer months. They would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.334** As there is no planting associated with the overbridge, which is the source of the effect for these receptors, the significance of effect would remain at slight adverse in year 15 for receptors at Orb Industrial Estate, the works on Traston Road, Lliswerry High School and Coleg Gwent (Receptors 60, 65a and 65b).

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash

- 9.8.335** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

South of the New Section of Motorway to the North and East of Nash, West of Elyer Pill Reen

- 9.8.336** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 92, 109 and 110

Year 1

- 9.8.337** Receptors at this location have the potential to be affected by the presence of the Glan Llyn junction, the North Row Overbridge, revised local roads south of Junction 23a and the new section of motorway throughout.
- 9.8.338** Users of the Hampton by Hilton hotel, Wales 1 Day Nursery and offices (Receptor 92) are located in close proximity to that part of the Scheme associated with local roads around Junction 23A and the new section of motorway west of Magor. Traffic on the new section of motorway and associated lighting, gantries and signage would be visible. They would experience a moderate adverse significance of effect upon their visual amenity.
- 9.8.339** Workers at the Tata offices (Receptor 109) would have glimpsed and direct views south through the existing vegetation along the A4810 towards moving traffic on the motorway. They would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.340** Workers at Gwent Eurocentre (Receptor 110) would have their views towards the screen limited by the design of the building and mature vegetation. They would experience a neutral significance of effect upon their visual amenity.

Year 15

- 9.8.341** For users of the Hampton by Hilton hotel, Wales 1 Day Nursery and offices (Receptor 92) the new section of motorway would be less visible in year 15 due to the establishment of vegetation along the A4810. However, glimpsed views of moving traffic are likely to remain, especially as the motorway rises out of the cutting as it heads south. They would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.342** By year 15 the significance of effect on visual amenity for workers at the Tata offices (Receptor 109) and the Gwent Eurocentre (Receptor 110) would be neutral.

West of Elyer Pill Reen and South of Magor

- 9.8.343** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Magor

- 9.8.344** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Area to the North of the Existing M4 corridor – Receptors/Groups 98b, 145 and 146

Year 1

- 9.8.345** Receptors at this location have the potential to be affected by the new section of motorway and the presence of the Magor Interchange and associated features which include the Caldicot Road roundabout and a number of overbridges, underbridges and access roads as well as lighting, gantries and signage.
- 9.8.346** Workers at Old Court Farm (Receptor 145 and 146) would have open views towards traffic moving along the new section of motorway as well as lighting columns, gantries and motorway signage. Several lines of traffic and infrastructure would be noticeable in the junction area due to the differing heights of the roads. They would experience a large adverse significance of effect upon their visual amenity.
- 9.8.347** For users and workers at Magor Services (Receptor 98b) there would be no change to the baseline view.

Year 15

- 9.8.348** The view for workers at Old Court Farm (Receptor 145 and 146) towards traffic moving along the new section of motorway would be reduced as a result of maturing vegetation on embankments and other areas. Filtered and glimpsed views of traffic would remain with lighting, larger signs and gantries visible above vegetation. They would experience a moderate adverse significance of effect upon their visual amenity.
- 9.8.349** For users and workers at Magor Services (Receptor 98b) there would be no change to the baseline view.

Assessment of Potential Operational Visual Effects on Public Rights of Way (PRoW)

- 9.8.350** For the detailed assessment of the potential operational effects upon views from PRoW refer to the visual assessment tables in Appendix 9.9.
- 9.8.351** For detailed information on PRoW diversions and PRoWs to be stopped up refer to Chapter 14 'All Travellers'. For maps showing locations and reference numbers of all affected PRoWs refer to Figures 14.1, 14.2 and 14.3.

PRoWs to the North of Castleton Interchange and the A48(M) (PRoW Groups 18a, 18b, 19a, 19b, 19c, 21 & 22)

Year 1

- 9.8.352** Castleton Interchange would be the dominant element for users of PRoW in this area. Prominent elements would be the multiple slip roads and new section of motorway with their associated traffic and infrastructure, bridges and flyovers and newly formed embankments and cutting faces. PRoW groups 18b, 19a & 19b (users of footpaths 400/1, 400/3, 400/9, 400/10, 400/11, 390/4, 390/5 and 390/11) would experience a large adverse significance of effect upon their visual amenity because of the dominance of these detracting elements within the foreground view for the majority of the length of these paths.

9.8.353 PRow group 18a (users of footpaths 400/6, 400/7, 400/8,) would experience a moderate adverse significance of effect upon their visual amenity. Although clear views of the Castleton Interchange area would be available for limited, more elevated sections of these footpaths, the greater proportion would not be directly affected by the new section of motorway as they run within a shallow valley with intervening woodland blocks obscuring views of the roads and traffic. This reduces the significance of effect as walkers would experience the adverse effects for a limited amount of time.

9.8.354 Other footpaths in the area would experience only a slight significance of effect upon their visual amenity. This is due to topography and intervening vegetation obscuring the closer elements of the new section of motorway and more distant elements, such as the River Usk Crossing, being perceptible but not highly noticeable within the expansive views available. For receptors where the bridge is the main element of the new section of motorway that impacts upon visual amenity, effects are considered to be slight beneficial.

Year 15

9.8.355 By the summer of year 15 the proposed woodland planting around the Castleton Interchange area would have matured and would screen the vast majority of the traffic and infrastructure. The woodland on the cuttings and embankment faces would allow them to visually blend with the surrounding landforms. However, this woodland would also completely block the expansive views that were available from footpaths in public right of way group 19b. These views currently define the visual amenity experienced by walkers using these paths and they would experience a large adverse significance of effect due to the loss of these views.

9.8.356 Walkers using PRow group 19c (footpaths 390/8 & 390/9) would continue to be able to see the new section of motorway and its traffic curving through the landscape in the middle distance although at the distances involved this would not be a highly noticeable element. The River Usk Crossing would be a noticeable feature as it sweeps over the industrial areas below, although its dominance would be limited by distance and the expansiveness of the views. It is considered that this element would be a positive contribution to visual amenity which would add interest to the views, being a higher quality and more aesthetically pleasing feature than the surrounding industrial buildings and chimneys. This would result in a slight beneficial significance of effect.

9.8.357 Due to the woodland screen planting, only occasional glimpses of moving traffic and larger signs and gantries may be visible from very limited sections of the remaining footpaths in the area. Users of these footpaths would experience only a slight adverse or neutral significance of effect upon their visual amenity by year 15.

PRow's Running Across the Area Bounded by Castleton and Marshfield to the West, the A48 to the North, Imperial Park to the East and the South Wales to London Mainline Railway to the South (PRow groups 2a, 2b, 4, 6, 7, 8, 10, 13, 14b, 15 & 43)

Year 1

9.8.358 Seven PRow groups (Groups 2a, 2b, 13a, 13b, 14b, 15 & 43 incorporating footpath numbers 390/19 & 21, 390/15, 17 & 18, 399/25, 390/12-14, 390/23,

299/27& 28 and 399/40) would experience a large or very large adverse significance of effect. These paths travel across the arc of semi-rural agricultural and village edge areas that lie to the south of the new section of motorway between Castleton and Imperial Park. For walkers on footpath 399/25 (Receptor 15), which also forms part of the “Castleton Circular Walk”, adverse effects are primarily due to the proximity of the construction area for water treatment area 1, which would dominate the foreground views for a significant proportion of this route. In addition, moving traffic within the Castleton Interchange area, including bare embankments, signs and gantries, would be clearly visible slightly further away above and beyond the existing A48. Walkers using paths around Berryhill Farm (PRoW group 2b – footpath numbers 390/15, 390/17 and 390/18) would be diverted along the base of the motorway embankment and around water treatment area 2. The bare embankments and traffic moving along the new section of motorway and the open water and bare earthworks associated with the water treatment area would be dominant elements in the views available and the majority of the sections of these routes would be affected. The remaining public rights of way groups who would experience a large adverse significance of effect (2a, 13a, 13b, 14b and 43) would have varying views of the new section of motorway and Castleton Interchange, bare embankments, bridges, flyovers, moving traffic, gantries and signs. In addition, views of the large industrial buildings on Imperial Park, which are currently largely screened by woodland, would remain highly noticeable for walkers in this vicinity due to the clearance of this woodland during the construction phase. Visibility of the new section of motorway would vary along the lengths of the routes depending on the presence and nature of intervening elements. Overall, walkers using the paths would have frequent and occasionally clear views of the new section of motorway and this would appear as a major discordant feature in the view.

9.8.359 Five PRoW groups (Groups 4a, 4b, 7, 8 and 10 incorporating footpath numbers 399/41, 399/42, 399/44, 399/43, 399/30, 399/32 and 399/34) would experience a moderate adverse significance of effect. Footpaths within PRoW groups 4b, 7, 8 and 10 cross the village edge areas to the east of Castleton and Marshfield. These areas are more enclosed by tree belts, hedgerows, copses and buildings than more open land further east. These intervening elements limit the frequency of views out towards the new section of motorway from the footpaths in these areas. Due to its proximity and elevation the bare embankments, traffic and infrastructure associated with the Castleton Interchange would occasionally appear as noticeable and detracting features of the views available but the significance of effect is limited by the frequency of intervening elements. Footpath 399/42 (PRoW reference 4) lies further from the new section of motorway, in the flat and open Wentlooge Levels area to the south of Ty Mawr Lane. The Castleton Interchange area would be clearly perceptible in the middle distance, elevated as they are above the lower lying viewpoint. However, as the views available are so expansive and open, the dominance of these elements within the available view would be limited.

9.8.360 Other PRoW within this area are not significantly affected by the construction phase for the new section of motorway due to the frequency and nature of intervening elements and/or the distances involved.

Year 15

9.8.361 By year 15 there would remain a large adverse significance of effect for walkers using footpaths around the Berryhill Farm area (PRoW group 2b). Although

proposed woodland would screen the new section of motorway and its traffic and infrastructure for large stretches of these routes, the woodland itself would change the visual amenity of the area. Views out across the surrounding landscape would be blocked and using the footpaths would be a very different experience from the existing condition. Additionally, walkers on footpath 390/17 would now divert and cross the new section of motorway using Church Lane Overbridge, at which point the motorway and the traffic passing under the bridge would remain as a detracting feature.

9.8.362 Five PRow groups would continue to experience a moderate adverse significance of effect (PRow groups 13a, 13b, 14b, 15 and 43). Although woodland planting around the Castleton Interchange and alongside the new section of motorway would screen and filter the majority of views to the road, traffic and infrastructure, glimpsed views of moving traffic are likely to remain, particularly given that associated with the flyover sections, along the top of the largest and steepest embankments. In addition, walkers on footpath 399/25 (PRow ref 15) would still have intermittent and close proximity views of water treatment area 1, which would remain as a highly perceptible uncharacteristic feature.

9.8.363 For all other PRow in this area, by year 15 there would be no significant adverse effects due to distance in combination with woodland screen planting, although glimpsed views of moving traffic may be occasionally available this would be barely perceptible as walkers travel along the footpaths.

PRows Running Across the Wentlooge Levels Area to the South of the South Wales to London Mainline Railway - including PRow Group 48 which Lies Immediately to the North of the Railway Line (PRow groups 27, 28, 30, 31, 33, 35, 37, 38, 40, 47 & 48)

Year 1

9.8.364 Walkers using the section of the Wales Coast Path that runs north/south to the west of the River Ebbw (PRow group 47 - footpath 412/11) would experience a large adverse significance of effect. The new section of motorway would cut through this route to the north east of New Dairy Farm and the path would cross the road using the New Dairy Farm Overbridge. The open nature of the landscape means that there would be clear, uninterrupted near and close proximity views of the new section of motorway and its traffic and infrastructure, the New Dairy Farm Overbridge, the River Usk Crossing and River Ebbw Underbridge from this section of the coast path. These would constitute major discordant features in the view, although the significance of the effect of the River Usk Crossing is reduced slightly due to the industrial context of the surrounding area, which already contains numerous large scale vertical elements and industrial buildings.

9.8.365 Two PRow groups would experience a moderate adverse significance of effect (Groups 33a & 48). The bare, newly formed embankments and cutting faces of the Castleton Interchange area and traffic moving along the motorway and slip roads would be intermittently visible for walkers on the Wales Coast Path between New Quay and Lighthouse Park (PRow group 33a). However, this would not be a dominant element due to the distances involved and the very expansive and open views that are available. Walkers in this area would also be

able to see the moving traffic on the deck, and piers and cables of the River Usk Crossing above intervening elements. Users of the Wales Coast Path as it follows Lighthouse Road and heads towards the A48 (PRoW group 48) would have glimpsed and intermittent views through vegetation alongside the new section of motorway as it approaches the River Usk Crossing. The intermittent nature of these views reduces the significance of effect.

- 9.8.366** All other PRoW in this area would experience only a slight or neutral significance of effect due to a combination of distance, intervening elements obscuring views of the new section of motorway and/or baseline context. For receptors where the River Usk Crossing is the main element of the new section of motorway that impacts upon visual amenity, effects are considered to be slight beneficial.

Year 15

- 9.8.367** Walkers on footpath 412/11 (PRoW group 47) would continue to experience a large adverse significance of effect. There would be limited screen planting associated with the new section of motorway as it approaches the rivers Ebbw and Usk in order to maintain the open character of the Levels. Views of the new section of motorway would therefore largely remain the same for year 15 as for year 1.

- 9.8.368** Walkers using the Wales Coast Path as it follows Lighthouse Road and heads towards the A48 (PRoW group 48) would also continue to experience a moderate adverse significance of effect for the same reasons outlined above.

- 9.8.369** By year 15, for all other PRoW in this area, there would be no significant adverse effects due to distance in combination with woodland screen planting. Glimpsed views of moving traffic may be occasionally available although this would be barely perceptible as walkers travel along the footpaths.

PRoWs Around the Western Edges of Newport (PRoW group 55)

- 9.8.370** There are a limited number of PRoW within the urban areas of Newport across this area. Where they do exist, the majority have no views of the new section of motorway due to intervening buildings. The only PRoW that were identified as having any measurable views of the new section of motorway are those located on the highest ground adjacent to the residential district of Ridgeway. Walkers on these paths would experience only a slight significance of effect due to the distances involved and the frequency of intervening vegetation. The River Usk Crossing is the main element that impacts upon visual amenity for users of these paths and the effects are considered to be slight beneficial.

Newport, East of the River Usk, North of the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60, 61, 62, 63 and 64

Year 1

- 9.8.371** Receptors at this location have the potential to be affected by the presence of the River Usk Crossing and the approach on embankment from the east. The height of the crossing would make it a prominent feature in the landscape. Other sources of impact at this location would arise from the presence of the Nash Road Overbridge.

9.8.372 Users of the Wales Coast Path (footpath 401/4) (Receptors 63 and 64) would have views towards the new section of motorway in close proximity and in an elevated position. The proximity would show clear detail of the deck underside and supporting structures of the bridge. They would experience a very large adverse significance of effect upon their visual amenity.

9.8.373 Further along the coast path (Receptor 61) users would have views towards the elevated section of motorway, which would run over the buildings in the middle distance of Alexandra Docks and across the River Usk, adding a solid linear element clearly visible for receptors using the Wales Coast Path. The proximity of the crossing would allow signage detail and associated lighting to be visible. The bridge piers and associated catenary cables would be a dominant vertical element. They would experience a large adverse significance of effect upon their visual amenity.

9.8.374 From further north on the Wales Coast Path/footpath 401/4, from the Transporter Bridge (Receptor 60) and the junction of Stephenson Street and Corporation Road (Receptor 62), the view would contain traffic and elevated infrastructure forming dominant elements. However, other vertical detracting elements are common in the view and would mean that the additional tall piers of the overbridge and visible infrastructure would not majorly alter the overall balance of the features. They would experience a moderate adverse significance of effect upon their visual amenity.

Year 15

9.8.375 As there is no screen planting associated with the River Usk Crossing and elevated sections of motorway leading to it, and as these are the primary source of the effect for all these receptors, in year 15 the significance of effect would remain the same as year 1.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 72c

Year 1

9.8.376 Receptors at this location have the potential to be affected by the presence of the River Usk Crossing and the approach on embankment from the east. The height of the crossing would make it a prominent feature in the landscape and the presence of this would be the source of most significant effects at this location.

9.8.377 For users of the Wales Coast Path (footpath 401/12) (Receptor 72c) the new section of motorway would result in a minor alteration to the baseline characteristics of the view. The addition of the River Usk Crossing would result in a minor alteration to the background of the view. Some users of the PRoW may be of the view that introduction of the bridge would be a beneficial change due to its architectural beauty amongst other industrial elements associated with the docks. They would experience a slight beneficial significance of effect upon their visual amenity.

Year 15

9.8.378 As there is no planting associated with the overbridge, which is the source of the effect for this receptor, the significance of effect would remain at slight adverse in year 15.

South of the New Section of Motorway to the North and East of Nash, West of Elyer Pill Reen – Receptors/Groups 78b, 89b

Year 1

- 9.8.379** Receptors at this location have the potential to be affected by the presence of the River Usk Crossing and the approach on embankment from the east, the Nash Road Overbridge, the Glan Llyn Junction and the new section of motorway throughout.
- 9.8.380** For users of footpath 392/19 (Receptor 89b) the views of the new section of motorway would be largely obscured by intermittent vegetation and built form although occasional glimpsed views of moving traffic and infrastructure are likely. Occasional views of the River Usk Crossing piers would also be available from parts of this path. Walkers would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.381** For users of footpath 392/24 (Receptor 78b) very limited views of traffic and infrastructure associated with the new section of motorway to the north may be available but it is not considered that this would have a noticeable impact on visual amenity. However, there would be views of the River Usk Crossing bridge piers. It is considered that this element would create a beneficial impact due to the elegant and potentially iconic nature of this part of the Scheme with a resultant slight beneficial significance of effect upon visual amenity.

Year 15

- 9.8.382** It is judged that the views available for receptors 78b and 89b would remain largely as per year 1, with a slight adverse significance of effect for receptor 89b and a slight beneficial significance of effect for receptor 78b.

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A – Receptors/Groups 111b, 113, 114, 115, 123, 124, 125 and 126

Year 1

- 9.8.383** Receptors at this location have the potential to be affected by the presence of the Glan Llyn Junction, the North Row Overbridge, revised local roads south of Junction 23A and the new section of motorway throughout.
- 9.8.384** For user of footpaths 372/97/1, 397/16, 388/17 and 388/20 (Receptors 111b, 113 and 114), there would be limited views of the new section of motorway and its traffic. Existing intervening vegetation and the Tata Steelworks would screen much of the Scheme but glimpses are likely between and above these elements. Users of these paths would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.385** For users of footpaths 388/3, 397/6, 405/6, 397/3, 397/2, 405/4, 397/1, 405/6 and 397/2 (Receptors 115, 123, 124, 125 and 126), the topography and extent of the existing vegetation and consequent visual containment results in no significant views of the new section of motorway. These users would experience a neutral significance of effect upon their visual amenity.

Year 15

- 9.8.386** For users of footpaths 397/16, 388/17 and 388/20 (Receptors 113 and 114), there would be no noticeable difference between year 1 and year 15 and the significance of effect would remain slight adverse.
- 9.8.387** It is considered that the view for receptors 111b, 115, 123, 124, 125 and 126 would remain broadly unchanged from the baseline in year 15. The significance of effect on their visual amenity would be neutral.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 101a, 102, 105a, 105b, 107 and 149a

Year 1

- 9.8.388** Receptors at this location have the potential to be affected by the presence of the new section of motorway between Junction 23A and the North Row Overbridge, primarily as a result of the new section of motorway and elevated road structures.
- 9.8.389** For users of the Rush Wall track (Receptor 105b) there would be very close proximity, direct but intermittent views north onto the new section of motorway with moving traffic, signs and gantries dominating the view. They would experience a large adverse significance of effect upon their visual amenity.
- 9.8.390** For users of footpaths 404/3, 392/15A, 392/15, 378/14/1, 378/14/2 and 372/64/1 and the route with public access linking Longlands with Rush Wall track (Receptors 105a, 107, 149a, 101a and 102), the baseline condition would be partially altered as a result of glimpsed and partial views of traffic, signage and gantries on the new section of motorway. They would experience a slight adverse significance of effect upon their visual amenity.

Year 15

- 9.8.391** For users of Rush Wall track (Receptor 105b), there would remain very close proximity, direct but intermittent views north onto the new section of motorway with moving traffic, signs and gantries dominating the view. They would experience a large adverse significance of effect upon their visual amenity.
- 9.8.392** For users of footpaths refs 378/14/1 and 378/14/2 and the route with public access linking Longlands with Rush wall Track (Receptors 105a and 149a) planting implemented as part of the new motorway would partially conceal the road and its traffic and infrastructure from view. Views from these routes would remain at a slight variance from the baseline situation. They would experience a slight adverse significance of effect upon their visual amenity.
- 9.8.393** For users of footpath refs 404/3, 392/15A, 392/15, and 372/64/1 (Receptors 107, 101a and 102) there would be very limited views of the new section of motorway as a result of matured mitigation planting and intervening vegetation within the wider landscape. They would experience a neutral significance of effect upon their visual amenity.

Magor – Receptors/Groups 95

Year 1

9.8.394 These receptors have the potential to be affected by the presence of the new M48/M4 junction, link and associated works to local roads. Traffic would be visible along the motorway corridor due to the removal of existing screening vegetation.

9.8.395 For users of footpaths 372/13/1, 372/87/1 and 372/9/2 (Receptor 95), the new section of motorway would run very close to footpaths, with traffic and infrastructure forming dominant elements in the foreground view. The experience of using these paths would be noticeably altered. Removal of existing vegetation that currently screens the existing M4 would open views onto the reclassified M4. They would experience a very large adverse significance of effect upon their visual amenity.

Year 15

9.8.396 By year 15, for users of footpaths 372/13/1, 372/87/1 and 372/9/2 (Receptor 95), woodland planting would screen views of the new section of motorway from the paths running across the fields. Filtered views of moving traffic and the largest signs and gantries would be available from the path. They would experience a slight adverse significance of effect upon their visual amenity.

Area to the North of the Existing M4 Corridor – Receptors/Groups 116c, 117, 119, 120, 121, 122, 135, 136, 137, 147 and 149b

Year 1

9.8.397 Receptors at this location have the potential to be affected by the new section of motorway and the presence of the Magor Interchange and associated features which include the Caldicot Road roundabout and a number of overbridges, underbridges and access roads as well as lighting, gantries and signage.

9.8.398 For users on footpaths 372/40/1, 372/34/1, 372/85/1, 372/86/1 and 378/3/1 (Receptors 116c, 137 and 147), there would be moving traffic seen on the new section of motorway and the M48, along with lighting, signs and gantries. Newly planted embankments would be bare and would stand out in contrast to surrounding fields and woodlands. They would experience a large adverse significance of effect upon their visual amenity.

9.8.399 Users of footpaths 372/29/1, 372/30/1, 372/33/1 and 378/21/1 (Receptors 135, 136 and 149b), would experience views of moving traffic and signs and gantries on both the new section of motorway and some of the slip roads. This would change the current character from these locations as more urban elements are introduced. They would experience a moderate adverse significance of effect upon their visual amenity.

9.8.400 For users of footpath 372/69/4 (Receptor 117) there would be very limited middle distance views south east onto the new section of motorway with glimpsed views of moving traffic, signs and gantries. It would be possible to see moving traffic and signs and gantries on the overbridge on the B4245. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.401 Due to the presence of topographic features and vegetation users of footpaths 402/36, 402/29, 402/28, 402/39, 394/37, 394/38 and 372/71/1 (Receptors 117, 119, 120, 121 and 122), would have no views towards the new section of motorway. They would experience a neutral significance of effect upon their visual amenity.

Year 15

9.8.402 For users on footpaths 372/40/1, 372/34/1, 378/3/1 (Receptors 137 and 147), there would be direct, middle distance views of moving traffic, the road and signs and gantries of both the existing M4 and the proposed new section of motorway, though mitigation would reduce the extent of these to being glimpsed and filtered views. The extent of the road system, slip roads, new roads and embankments would still fundamentally change the landscape character of the landscape in the immediate proximity of the new section of motorway, though extensive woodland planting would lessen the urbanising effect. They would experience a moderate adverse significance of effect upon their visual amenity.

9.8.403 For users on footpaths 372/85/1, 372/86/1, 372/33/1 and 378/21/1 (Receptors 116c, 136 and 149b), extensive woodland and other screening planting in and around the new interchanges would reduce the urbanising effect of the slip roads and the new section of motorway. However, it is anticipated that, as some the interchanges and slip roads travel along raised embankments, they would be visible and would thus add an urban element to an otherwise largely rural landscape, reducing the overall quality of the landscape. They would experience a slight adverse significance of effect upon their visual amenity.

9.8.404 For users of footpaths 372/29/1, 372/30/1 and 372/69/4 (Receptors 117 & 135), it is anticipated that the re-establishment of vegetation, particularly around Junction 23A, would largely return the view to its original condition and there would be no highly noticeable views of the new section of motorway. It is likely however that glimpsed views of the elevated Magor Interchange and/or traffic on the higher sections of the junction would remain. Users of these routes would experience a slight adverse significance of effect upon their visual amenity.

9.8.405 Due to the presence of topographic features and vegetation, users of footpaths 402/36, 402/29, 402/28, 402/39, 394/37, 394/38 and 372/71/1 (Receptors 119, 120, 121 and 122), would have no views of the new motorway. Users would experience a neutral significance of effect upon their visual amenity.

Assessment of Potential Operational Visual Effects on Land with Public Access (LwPA)

Land with Public Access within and Around St Mellons (LwPA Group 54c)

9.8.406 For the detailed assessment of the potential operational effects upon views from land with public access refer to the visual assessment tables in Appendix 9.10.

Year 1

9.8.407 The vast majority of land with public access within the north eastern parts of Cardiff (St Mellons) has no measurable views of the new section of motorway due to intervening buildings, distance and topography. Only one area has been identified as having any measurable views of the new section of motorway. This is an informal recreation area between housing estates in Llanrumney. Only

receptors using the highest and most open sections of this land would have any views of the new section of motorway, but distance and the scale of the Scheme within the available expansive views results in only a slight adverse significance of effect.

Year 15

- 9.8.408** By year 15 woodland screen planting would return the visual amenity for receptors in this area to the baseline situation.

Land with Public Access within and around the Western Districts of Newport (LwPA Groups 54a and 54b)

Year 1

- 9.8.409** Many areas of land with public access within Newport and its western suburbs have no views of the new section of motorway due to intervening buildings. The only areas of land with public access that were identified as having any measurable views of the new section of motorway are those located on the highest and steepest ground with a lack of nearby buildings blocking views outwards.

- 9.8.410** Receptors visiting Belle Vue Park (Receptor group 54b) would experience a moderate beneficial significance of effect. The River Usk Crossing would be a highly noticeable feature which would be visible intermittently as visitors move around the park. However, it is considered that, within the context of the park and the existing views available, which are framed and focussed rather than expansive, this would be perceived as a positive point of interest.

- 9.8.411** Other receptors using land with public access that were identified as having views of the new section of motorway would experience no significant effects due to distance, baseline context and/or intervening elements.

Year 15

- 9.8.412** Receptors visiting Belle Vue Park (Receptor group 54b) would continue to experience a moderate beneficial significance of effect for the same reasons outlined under the year 1 assessment above.

- 9.8.413** Other receptors using land with public access that were identified as having views of the new section of motorway would experience no significant effects due to distance, baseline context and/or intervening elements.

Newport, East of the River Usk, North the New Section of Motorway and West of the Former Steelworks – Receptors/Groups 60

Year 1

- 9.8.414** Receptors at this location have the potential to be affected by the presence of the River Usk Crossing and the approach on embankment from the east. The height of the crossing would make it a prominent feature in the landscape and the presence of this would be the source of any significant effects at this location.

- 9.8.415** The users of the Orb Industrial Estate recreational ground (Receptor 60) are located in close proximity to the structure of the crossing and passing traffic would be visible beyond intervening vegetation amongst other vertical features

such as pylons. Therefore, they would experience a moderate adverse significance of effect upon their visual amenity.

Year 15

- 9.8.416** As there is no planting associated with the overbridge, which is the source of the effect for this receptor, the significance of effect would remain at moderate adverse in year 15.

Newport, East of the River Usk, South of the New Section of Motorway within the Areas West and South of Nash – Receptors/Groups 72b

Year 1

- 9.8.417** Receptors at this location have the potential to be affected by the presence of the River Usk Crossing and the approach on embankment from the east. The height of the crossing would make it a prominent feature in the landscape and the presence of this would be the source of most significant effects at this location.

- 9.8.418** Those users of Newport Wetlands Nature Reserve (Receptor 72b) are located approximately 2 km from the River Usk Crossing and there would be partial views from some locations within the nature reserve towards the bridge, piers and passing traffic on it. This change would form part of the background of the view in the context of other detracting elements such as pylons and industrial buildings. Therefore, they would experience a slight beneficial significance of effect upon their visual amenity.

Year 15

- 9.8.419** As there is no planting associated with the River Usk Crossing, which is the source of the effect for this receptor, the significance of effect would remain at slight beneficial in year 15.

South of the New Section of Motorway to the North and East of Nash, West of Elyer Pill Reen

- 9.8.420** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

North of the New Section of Motorway from the Western Edge of the Former Steelworks between the A48 and the Existing M4 Corridor to Junction 23A

- 9.8.421** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

West of Elyer Pill Reen and South of Magor – Receptors/Groups 101b

Year 1

- 9.8.422** Receptors at this location have the potential to be affected by the presence of the new section of motorway between Junction 23A and the North Row Overbridge.

- 9.8.423** Those users of the Magor Marsh Nature Reserve (Receptor 101b) are located approximately 1 km from the new section of motorway but it is judged that the woodland and vegetation within and surrounding the nature reserve and residential properties at Magor would restrict views towards the new section of

motorway and traffic upon it. Therefore, they would experience a neutral significance of effect upon their visual amenity.

Year 15

- 9.8.424** The significance of effect would remain at neutral in year 15.

Magor

- 9.8.425** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Area to the North of the Existing M4 Corridor

- 9.8.426** There are no receptors/groups of this type in this location that have the potential to be significantly affected by the new section of motorway.

Potential Operational Visual Effects on Roads and Transport Routes

- 9.8.427** For the detailed assessment of the potential operational effects upon views from roads and transport routes refer to the visual assessment tables in Appendix 9.11.

Roads to the North of Castleton Junction and the A48M (Receptor group 150)

- 9.8.428** No significant effects are predicted for motorists in this area.

Year 1

- 9.8.429** The Castleton Interchange would be main element of the Scheme that may in theory be visible for receptors using the road network in this area. An increase in traffic and infrastructure and bare cutting faces may be glimpsed as these roads near and cross overbridges across the new section of motorway. In year 1 proposed planting would yet to provide any screening function. However, roads in this area are largely lined with mature hedgerows and tree belts. Views available towards the junction area would be limited and, where available, they would be fleeting and often well filtered by roadside vegetation. As a result no significance impacts are predicted with only a slight adverse significance of effect predicted for motorists using the roads in this area.

Year 15

- 9.8.430** Proposed woodland planting would largely return the visual amenity as experienced by users of these roads to the baseline situation. The significance of effect would be neutral.

Roads to the South of Castleton Interchange/Imperial Park/A48M (Receptor Groups 151, 153, 154, 155, 156, 157 & 158)

- 9.8.431** These roads cross an area of the Wentlooge Levels and its northern and eastern margins. Many of the roads across this area are minor rural lanes or residential village roads, although this area also includes the A48 along its northern edge (Receptor group 151) and the B4239 in the south (Receptor group 156). The vast majority of roads are lined with hedgerows, tree belts and/or buildings within the villages. Consequently, clear views out across the surrounding landscape are limited. Where views are available they are fleeting at normal traffic speeds.

Year 1

- 9.8.432** Ty Mawr Lane (Receptor group 157) and Hawse Lane (Receptor group 158) are the only routes in this area with significantly more open stretches which, at normal traffic speeds, would afford some clear views out across the landscape towards the new section of motorway. Views from the more open stretches would include traffic, infrastructure and newly formed bare embankments and cutting faces associated with the Castleton Interchange, which would be visible beyond the intervening low lying agricultural Levels landscape. Motorists using Church Lane (Receptor group 158) would also have clear views of the new section of motorway from some parts of this road by virtue of the fact that Church Lane intersects with the Scheme and would be diverted across it via the new Church Lane Overbridge. Motorists on these three roads would experience a moderate adverse significance of effect from a proportion of the route.
- 9.8.433** The significance of effect on visual amenity from all other roads in this area (Receptor groups 153, 154, 155 and 156) would be slight adverse or neutral only. This is due to the amount of intervening foreground elements alongside the roads restricting views out across the landscape to intermittent and/or fleeting views only and and/or distance and expansiveness of views reducing the dominance of identified impacts.

Year 15

- 9.8.434** By year 15 no significant operational effects are predicted for motorists in this area.
- 9.8.435** The significance of effect on visual amenity from all roads in this area would be slight adverse or neutral only. Proposed woodland planting would obscure the majority of the new section of motorway with just fleeting glimpses of some of the higher, flyover sections at Castleton Interchange. The visual amenity from the section of Church Lane (Receptor group 158) as it approaches and crosses the Scheme would remain significantly altered from the baseline and traffic and infrastructure would dominate the views available. However, the relatively small proportion of the route affected by these changes would reduce the magnitude of impact.

Roads within St Mellons and Llanrumney (Receptor Group 152)

- 9.8.436** No significant operational effects are predicted for motorists in this area.

Year 1

- 9.8.437** The majority of the roads in this area run through densely developed urban areas with limited views out beyond the immediate highway corridor. There are a very limited number of intermittent longer range views in the direction of the new section of motorway from some elevated lengths of road and roads on the very eastern edges of the district, where the surrounding buildings and vegetation afford glimpsed views in between. Very occasional and fleeting views of the elevated Castleton Interchange area may be available in the middle distance from a very small number of locations along the road network in this area. At normal traffic speeds the fleeting nature of changes in visual amenity due to the new section of motorway would be barely perceptible. As motorists in this area have a low sensitivity to change this would result in a negligible impact with neutral significance.

Year 15

- 9.8.438** Proposed woodland planting associated with the elevated Castleton Interchange area would largely return the visual amenity from roads in this area to the baseline situation. There would be a neutral significance of effect.

Roads within the Urban Areas of Newport (Receptor groups 159, 160, 161, 162, 163 & 167)

- 9.8.439** No significant operational effects are predicted for motorists in this area. Even where visual amenity would be affected by views of the new section of motorway, the limited nature of the change in the views, combined with the low sensitivity of receptors, means that effects would not be more than slight.

Year 1

- 9.8.440** This area includes residential streets, local distributor roads, a section of the A48 trunk road and roads through industrial areas. Motorists using a limited proportion of these roads would have intermittent views of the River Usk Crossing and the new section of motorway as it approaches it. Motorists using roads that run generally north to south up and down the most steeply sloping elevated residential districts (Receptor group 159), the A48 in the vicinity of the River Usk (Receptor group 160) and roads running around and through the industrial areas to the east of the River Usk (Receptor group 162) would have views of the new section of motorway over the River Ebbw and/or the River Usk, with the associated traffic and infrastructure. Motorists using Lighthouse Road as it runs to the east of Duffryn (Receptor group 167) would have intermittent glimpsed views of the tops of moving traffic and infrastructure between and over intervening vegetation. The effect on views from the more distant, elevated roads and from parts of the A48 is considered to be beneficial. A slight beneficial significance of effect has been assigned due to the River Usk Crossing forming a prominent and elegant feature of interest within the surrounding industrial area. However, where the River Usk Crossing adversely influences the visual setting of the historic Transporter Bridge when viewed from the A48, by cutting through the otherwise uncluttered sky beyond this historic feature, then this is judged to be a slight adverse significance of effect. For all other affected motorists the effect is deemed to be of slight adverse significance.

- 9.8.441** The built up nature of the surroundings means that there are very limited, fleeting views out beyond the immediate highway corridor from the remaining roads (Receptor groups 161 & 163) and therefore the new section of motorway would have no measurable effect on visual amenity.

Year 15

- 9.8.442** Due to the urban nature of the most prominent elements of the Scheme that would affect visual amenity in this area (the River Usk Crossing and the urban, elevated sections of the new section of motorway) the operational effects at year 15 are judged to be the same as for year 1.

Roads between St Brides Wentlooge and Duffryn (Receptor groups 164, 165 & 166)

- 9.8.443** No significant operational effects are predicted for motorists in this area.

Year 1

9.8.444 Motorists using roads in this area would experience only a slight adverse significance of effect at year 1. This is due to intervening foreground vegetation, distance, the infrequent and fleeting nature of views of the new section of motorway and, in the case of Green Lane/Pont Estyll Lane (Receptor group 164) the extremely low frequency of traffic using the road.

Year 15

9.8.445 The significance of effect at year 15 remains the same as for year 1. Proposed planting would further reduce the visibility of the new section of motorway and associated traffic. Only very occasional fleeting views of bridge piers and traffic would remain from a minor proportion of the road network in this area.

Roads Crossing the Western End of the Caldicot Levels (Receptor groups 168 & 169)

Year 1

9.8.446 Motorists using the road network around Pye Corner (Receptor group 168) would experience a moderate adverse significance of effect at year 1. Traffic travelling along the new section of motorway would be visible from the lengths of these roads closest to the Scheme, although these views would often be glimpsed and filtered due to intervening vegetation. The visual amenity for motorists using Nash Road as it follows the realigned route towards and over the new section of motorway would be noticeably altered.

9.8.447 Motorists using other roads in the area, around the hamlet of Nash (Receptor group 169), would have intermittent views of the River Usk Crossing only. Most commonly only the piers would be visible and these would be seen in the context of other vertical elements such as pylons and chimneys. There would be a slight adverse significance of effect.

Year 15

9.8.448 By year 15 the effect on visual amenity for motorists using all of the roads in this area would be of slight adverse significance only. Proposed linear tree belts would reduce the dominance of the Scheme, leaving only intermittent glimpsed views of traffic and the piers of the River Usk Crossing from a minor proportion of the road network in this area.

Roads to the East of Newport, North of the South Wales to London Mainline Railway (Receptor groups 171, 172, 175, 176 & 177)

9.8.449 Roads in this area comprise rural lanes crossing gently rolling agricultural landscapes as well as urban roads within and around the settlements of Magor and Caldicot.

Year 1

9.8.450 Motorists using the lanes to the north of the Magor Junction (Receptor group 175) would experience a moderate adverse significance of effect at year 1. An extensive network of roads, junctions and bridges and associated traffic, signs and lighting related to the Magor Junction would be visible from parts of the

southern stretches of the roads in this area. Although the baseline already includes a busy motorway and junction area the quantity of traffic, signage, lighting columns and road area would be noticeably increased.

- 9.8.451** Motorists using other roads in this area (Receptor groups 171, 172, 176 & 177) would experience no significant effects during year 1. This is due to intervening foreground vegetation and/or buildings obscuring views out from the immediate highway corridor and/or the very limited and fleeting nature of the views that are available.

Year 15

- 9.8.452** By year 15 all predicted impacts would be reduced to a slight or neutral significance of effect. Extensive screen planting associated with the eastern end of the Scheme and the associated Magor Junction would effectively screen the new section of motorway from the majority of roads in the area. Only occasional glimpses of moving traffic, signs, gantries and lighting columns are predicted from a limited number of roads in this area. As the existing baseline already includes a substantial number of these elements the significance of effect is further reduced.

Roads Crossing the Central and Eastern Parts of the Caldicot Levels (Receptor Groups 170, 173 & 174)

- 9.8.453** Roads in this area are largely rural lanes, linking settlements across the Levels area and numerous scattered dwellings in between. However, this area also includes the A4810 which runs through the industrial area in the vicinity of the Llanwern steelworks.

Year 1

- 9.8.454** Motorists using the eastern end of the A4810 (Receptor group 173) would experience a moderate adverse significance of effect at year 1. Traffic moving along the new section of motorway, together with associated signage would be intermittently but clearly visible at close range in the vicinity of Greenmoor Arch and these elements would visually separate the rural Levels landscape beyond from motorists using this road. As the A4810 nears and passes Magor the new section of motorway would be elevated on substantial embankments and visual amenity from this road would be dominated by these newly formed, bare earth embankments.

- 9.8.455** Motorists using other roads in this area (Receptor groups 170 and 174) would experience no significant effects during year 1 with only a slight adverse significance of effect anticipated. This is due to intervening foreground vegetation and/or buildings obscuring views out from the immediate highway corridor and/or the limited and fleeting nature of the views that are available.

Year 15

- 9.8.456** By year 15 all predicted impacts would be reduced to a slight or neutral significance of effect. Existing intervening vegetation and extensive screen planting associated with the eastern end of the Scheme as it passes the Magor area would effectively screen the new section of motorway from the majority of roads in the area. Clear and close views of traffic and infrastructure would still be available from the A4810 as it passes Greenmoor Arch (Receptor group 173) but

at normal traffic speeds views of these elements would be fleeting in the context of a journey along this road. The Glan Llyn Link Road and its junction would also remain clearly visible from the A4810. However, considering the baseline context in this area it is not considered that this would have any measurable adverse impacts. Only occasional glimpses of moving traffic, signs, gantries and lighting columns are predicted from the remainder of the roads in this area.

Railways (Receptor Group 178)

- 9.8.457** No significant effects are predicted for train travellers within the study area during the operational phase of the Scheme. Even where visual amenity would be affected by the new section of motorway, the very fleeting nature of these views combined with the low sensitivity of receptors means impacts would be less than negligible with a resultant neutral significance of effect.

Rivers (Receptor Groups 179, 180 & 181)

Year 1

- 9.8.458** Receptors on boats sailing up and moored on the River Ebbw (Receptor group 180) would experience a large adverse significance of effect at year 1. The elevated section of the Scheme over the river, which is a functional engineered structure (in contrast to the more aesthetically positive River Usk Crossing) would dominate views for boat users in this vicinity. Immense structures such as supporting piers and traffic travelling along the new section of motorway would be highly noticeable and would constitute a major discordant feature in the views available.
- 9.8.459** Receptors on boats sailing up and moored on the River Usk (Receptor group 181) would experience a moderate beneficial significance of effect at year 1. The River Usk Crossing would dominate views for boat users in this vicinity in much the same way as the preceding elevated section does for receptors on the River Ebbw. However, it is considered that the elegant piers and cable structures would be perceived as a positive visual feature for users of the River Usk and that this new landmark would complement the existing succession of bridges over the River Usk as it flows through Newport.
- 9.8.460** Receptors on boats travelling up the Severn Estuary (Receptor group 179) would experience a slight beneficial significance of effect. The significance is reduced due to distance, the industrial context of the more prominent elements of the new section of motorway and the expansive nature of the baseline views. The main element affecting visual amenity would be the River Usk Crossing. This effect is assessed as beneficial as it is considered that this would be a positive feature of interest.

Year 15

- 9.8.461** The significance of effect for all receptors using rivers in the study area would be the same at year 15 as for year 1.

Complementary Measures

Assessment of Potential Operational Landscape Effects

- 9.8.462** The Complementary Measures would have no impact on the physical elements of the landscape apart from highway infrastructure elements such as signs and kerbs – there are no changes to vegetation, topography or highway boundaries. No impacts are therefore predicted for the physical elements of the landscape. Assessment of landscape effects is therefore limited to effects on landscape character.
- 9.8.463** The Tredegar House area, which lies near to the Cleppa Park to junction 28 section of existing M4 motorway, is considered to have a high sensitivity to change of the type proposed due to its value as a high grade registered historic building and landscape and as a visitor attraction. All other areas immediately surrounding the road in this section are considered to have a moderate sensitivity to change – the elements that make up the landscapes are commonplace, with unremarkable character, but there is some sense of place.
- 9.8.464** The section of the existing M4 that is subject to complementary measures has been divided up into five sections. These broadly follow changes in existing baseline character of the landscapes within 1km of the road, as follows.

Cleppa Park to Junction 28

- 9.8.465** The removal of a limited proportion of the existing signs is predicted to have no noticeable effect on the character of the surrounding area; there is limited inter-visibility between the signs and the surrounding landscape and the majority of the road infrastructure would remain, including the lighting columns. The only impact that would have any effect is therefore the predicted changes to traffic flows. Traffic levels are predicted reduce along the main carriageway (39 % to 43 %) and this would have some beneficial effect on the character of the surrounding areas, particularly the more rural area to the north of the M4 and Tredegar house and its surrounds to the south. The traffic is visible intermittently between intervening vegetation from these areas and is a detracting element. Traffic noise is noticeable and constant and draws visual attention towards the motorway. However, as there is predicted to still be a continual flow of traffic along the road, albeit at a reduced volume, it would remain as a detracting element. Additionally Junction 28 is in close proximity to Tredegar house and the main circulatory roundabout for the junction and majority of the approach arms is located between the main carriageway and Tredegar. This would dilute any beneficial impacts of the reduced traffic flows along the main carriageway on the character of the Tredegar House area. It is predicted that overall in year 1 the complementary measures for this area would result in a negligible beneficial impact with a slight beneficial significance of effect on landscape character as the changes, although visible, would be barely noticeable.

Junction 28 to Junction 27

- 9.8.466** Proposed changes to infrastructure are particularly limited for this section of road. All of the signs that are to be removed are located along the eastbound entry slip road at Junction 28, and this section of road is well wooded and visually separate from its surroundings. This change would therefore have no noticeable effect on landscape character. The only impact that would have any effect is therefore the

predicted changes to traffic flows. Traffic levels are predicted to reduce along the main carriageway (35 % to 37 %). The road and its traffic is currently a noticeable and detracting feature of the valley bottom landscape around the Ebbw River, elevated as it is above the flood plain areas, and of the area around Gaer Hill. However, its influence on the character of these areas is diminished by frequent tree belts along the embankments. The noise of the traffic along the road is a noticeable element which draws visual attention towards the road, with no cuttings to lessen its effect. The predicted reduction in traffic volumes would constitute an improvement in the character of these areas. However, the road and its infrastructure, still with significant volumes of fast moving traffic, would remain a significant element in the landscape and the beneficial effects are considered to be barely noticeable with a resultant negligible beneficial impact and a slight beneficial significance of effect on the valley bottom landscape and Gaer hill areas. As the road is in cutting as it travels through the urban areas of this section, its infrastructure and traffic has limited influence on the character of the surroundings – the well wooded embankments, which would remain unaltered, are the feature of the road with the greater effect on character. For this reason the change in traffic flows is considered to be a barely noticeable improvement resulting in a negligible beneficial impact on the urban areas of West Newport and High Cross.

Junction 27 to 26

9.8.467 Changes to infrastructure are especially limited for this section of road. With only one sign being removed and minor adjustments to the junction lanes these impacts would have no noticeable effect on landscape character. The only impact that would have any effect is therefore the predicted changes to traffic flows. The volume of traffic is predicted to reduce along the main carriageway. (35% to 34%). The Landmap ‘visual and sensory’ description for both sides of the road in this area makes reference to the road’s negative effect on the character of the areas. For the area to the south the description states that ‘*The area is significantly disturbed by the M4.*’ The reduction in traffic volumes would reduce this disturbance, both by reducing the intensity of the effect of the moving traffic on the areas character and by reducing noise. However, the infrastructure would remain unaltered, including lighting columns, gantries and large electronic message boards. The character of the surrounding areas would remain heavily influenced by the presence of the road and its traffic. The reduction in traffic volumes is considered to be a slight improvement of character due to a reduction in the number of uncharacteristic elements (cars and HGVs) resulting in a minor beneficial effect.

Junction 26 to 24

9.8.468 Although there is a relatively large number of changes proposed to the infrastructure for this stretch of the road this is not predicted to have a noticeable effect on the character of the surrounding areas. This is because either the road is so physically separated from its surroundings that the changes cannot be seen or the road is such a dominant feature that the changes are too insignificant to be noticeable in the context of what remains. The only impact that would have any measurable effect is therefore the predicted changes to traffic flows. The volume of traffic is predicted to reduce along the main carriageway. (47% to 45%). For the most part the road in this area is in an urban context. Where it is visible the road and its traffic forms an integral (albeit dominant and detracting) part of the

baseline character of the area. It is predicted that changes to traffic volumes travelling along it would constitute a barely noticeable improvement to character of the area, with a resulting negligible beneficial impact. Where it is screened by cuttings and or vegetation it is physically separated from the surrounding areas and therefore changes to traffic flows along it would have no effect on landscape character.

Junction 24 to 23a

- 9.8.469** Although there is a relatively large number of signs being removed from this section of road this is not predicted to have a noticeable effect on the character of the surrounding areas. This is because there is still a number of prominent infrastructure elements remaining (five gantries, six variable message boards and eighteen signs) so the removal of a proportion of signs would not be noticeable in the context of what remains. The only impact that would have any effect is therefore the predicted changes to traffic flows. The volume of traffic is predicted to reduce along the main carriageway. (62% to 54%). This is the most rural of all the sections of road affected by the complementary measures and therefore one whose character is currently most adversely affected by the presence of a major highway and its associated infrastructure and traffic. The Landmap description of the Penhow Lowlands, which comprises the majority of the area around the road in this vicinity, states that *'the M4 and A48 roads are a source of noise and movement in an otherwise tranquil area.'* The predicted reduction in traffic volumes passing through the landscape would remove some of the noise and movement. However, there would still be a constant flow of traffic, albeit at a lower density. It is considered therefore that the changes would allow for a slight improvement in character by the removal of uncharacteristic elements which would have a minor beneficial magnitude of impact on the landscape character of the areas closest to the road with a slight beneficial significance of effect.

Assessment of Potential Operational Visual Effects

Year 1

Cleppa Park to Junction 28

- 9.8.470** The Complementary Measures that would impact upon visual amenity at this location would include the removal of six signs and the replacement of existing signs with new versions along the re-classified section of the M4. Minor amendments to the lane layouts of the westbound entry slip road are also proposed.
- 9.8.471** Only a very limited number of receptors would be able to see the areas where signs would be removed, most of which are screened by roadside vegetation. Where signs are visible only a proportion of the sign would be in the view due to intervening vegetation and/or buildings. The removal of these signs is considered to have a barely noticeable effect on the visual amenity of the residents at the eastern end of Blacksmiths Way and users of footpaths closest to the road. The removal of signs has no noticeable effect on the visual amenity of any other receptors.
- 9.8.472** The predicted reduction in traffic volumes (30 – 45% overall) would improve the visual amenity for residents of Blacksmiths Way, users of the local footpath network and visitors to Tredegar House. The intrusive nature of the passing

traffic would lessen due to lower volumes and there would be a parallel reduction in noise pollution. Again, however, the presence of other busy roads in closer proximity to Tredegar House than the re-classified M4 would lessen the beneficial effect for receptors in this area.

- 9.8.473** It is predicted that overall the Complementary Measures in this area would result in a slight improvement in visual amenity for sensitive receptors resulting in a minor beneficial impact by reducing visual clutter, including moving traffic, and by reducing traffic imposition on the tranquillity of the area. This would result in a slight beneficial significance of effect.

Junction 28 to Junction 27

- 9.8.474** The Complementary Measures that would impact upon visual amenity at this location comprise the removal of three signs, two emergency telephones and minor adjustments to the lane layout of the eastbound entry slip road.

- 9.8.475** Visibility of the re-classified M4 and its traffic is limited in this area due to roadside and other intervening vegetation, and the fact that the length through the urban area is in cutting. Users of Tredegar Park Sports ground have filtered and intermittent views of the traffic on the road and some of the infrastructure. The only sensitive receptors with clear views of the road and its traffic are visitors to Gaer Hill, although the road appears as a relatively distant feature within the expansive views available and views are intermittent due to topography and intervening vegetation on the hill itself. The road is well screened from the residents of west Newport and High Cross by the cuttings and roadside vegetation. Only a limited number of adjacent houses have any views of the road and its traffic (flats and houses along Golden Mile View and the two houses nearest the road on Bassaleg Road). Views of the road from these properties are limited to first floor windows and above.

- 9.8.476** For those residential receptors with a view of the road, the predicted reduction in traffic volumes, which run very close to their properties, is considered to be a slight improvement in visual amenity with a minor beneficial impact. This would result in a slight beneficial significance of effect. For other receptors, who only have intermittent, filtered and/or generally more distant views of the road and its traffic, the predicted reduction in volume would constitute a barely noticeable improvement and the magnitude of impact is therefore negligible beneficial. Due to the sensitivity of these receptors this is also assessed to be a slight beneficial significance of effect.

Junction 27 to 26

- 9.8.477** The Complementary Measures at this location that would impact upon visual amenity are limited to the removal of one sign near to Junction 27 and minor adjustments to the lane layout of the eastbound entry/west bound exit slip road.

- 9.8.478** There are a number of sensitive visual receptors in close proximity to the reclassified M4 in this area. The road is relatively open on both sides compared to the previously assessed lengths to the west, with tree cover on the highway verges once away from the junctions intermittent and sparse. Any changes to traffic movement along the road would therefore be more noticeable compared to areas with more screening. The predicted reduction in traffic volumes and the resultant reduction in noise disturbance, which although not visual, influences a

receptors perception of their visual amenity, is assessed to be a slight improvement and the magnitude of impact is therefore minor beneficial. This would result in a slight beneficial significance of effect.

Junction 26 to 24

9.8.479 Complementary Measures at this location that would impact upon visual amenity comprise the removal of ten signs, two electronic message boards, emergency telephones and two variable message signs. In addition, there are changes to the layout of the slip roads and lanes, and adjustments to retaining walls at Junctions 25a and 25 and the roundabout above Junction 25 is to be signalised.

9.8.480 As identified in the baseline there are a number of sensitive receptors in proximity to the existing M4. It is assessed that only those who are very close to the moving traffic would notice a slight improvement in their visual amenity. These would be the residents of houses who are immediately adjacent to the road, with no intervening trees or other screens, who have views from their ground floor and upper stories. For these receptors there would be a minor beneficial impact as a result of the predicted reduction in traffic volumes. This would result in a slight beneficial significance of effect. For all other receptors who have a line of sight to the moving traffic but are not immediately adjacent, or whose views are filtered by vegetation or partially obscured by fencing, the change in traffic volumes would be barely noticeable and therefore they would experience a negligible beneficial impact. Due to the sensitivity of these receptors this is also assessed to be a slight beneficial significance of effect.

Junction 24 to 23a

9.8.481 Complementary Measures that would impact upon visual amenity at this location comprise the removal of seventeen signs and changes to the carriageway markings on the slip roads at Junction 23a.

9.8.482 As identified in the baseline there are a number of sensitive receptors in proximity to the road. Those that would notice a slight improvement and therefore experience a minor beneficial effect would be the residents of houses who are immediately adjacent to the road, with no intervening trees or other screens, and who have views from their ground floor and upper stories. For these receptors there would be a minor beneficial impact as a result of the predicted reduction in traffic volumes. This would result in a slight beneficial significance of effect. For all other receptors who have a line of sight to the moving traffic but are not immediately adjacent, or whose views are filtered by vegetation or partially obscured by fencing, the change in traffic volumes would be barely noticeable and therefore they would experience a negligible beneficial impact. Due to the sensitivity of these receptors this is also assessed to be a slight beneficial significance of effect.

Year 15

9.8.483 By year 15 the intervening vegetation would be expected to play an even larger part in screening the road from the surrounding areas. Local traffic using the road is predicted to increase in line with predicted population increases and increased employment opportunities. Any beneficial impacts as a result of the complementary Measures would therefore be expected to decrease slightly by year 15.

9.9 Additional Mitigation and Monitoring

9.9.1 The key mitigation for landscape and visual effects is the landscape strategy, which forms an integral part of the Scheme design and is described in Section 9.5 above. No further mitigation is required.

9.10 Assessment of Land Take Effects

9.10.1 Land take effects relate to the permanent loss of land as a result of the Scheme. For landscape and visual effects, it is not possible to separate such effects from the activities that would occur alongside such land take (such as construction activities or the presence of the new section of motorway). This is because the assessment of landscape and visual effects requires consideration of land take together with consideration of the changes in the landscape character, and views and visual amenity that would arise. Therefore, consideration of land take effects with additional mitigation, where relevant, is provided within Sections 9.11 (construction) and 9.12 (operation) below.

9.11 Assessment of Construction Effects

9.11.1 As set out above, the proposed mitigation during construction is part of the Scheme and would help to minimise the loss of landscape features, pattern and vegetation, the change in land use, and the adverse impact on visual receptors.

9.11.2 There is not therefore considered to be any need for additional mitigation. The residual effects of the Scheme would therefore be as set out in Section 9.7.

9.12 Assessment of Operational Effects

9.12.1 As set out above, the proposed mitigation described in Section 9.5 is an inherent part of the Scheme and shown on the Environmental Masterplan (see Figure 2.6).

9.12.2 There is inherent mitigation built into the engineering design of the Scheme including earthworks, and the physical location of the route chosen for the new section of motorway to avoid sensitive landscape and visual receptors as much as possible.

9.12.3 There is not therefore considered to be any need for additional mitigation. The residual effects of the Scheme would therefore be as set out in Section 9.8.

9.13 Assessment of Cumulative Effects

9.13.1 The cumulative landscape and visual effects of the Scheme in combination with known planning applications and allocated development sites is contained within Chapter 17 (Assessment of Cumulative Effects and Inter-relationships).

9.14 Inter-relationships

9.14.1 The Landscape and Visual Impact Assessment process and the preparation of the Environmental Management Plans has been an iterative and collaborative process across both the other environmental disciplines and with the

Construction Joint Venture team. This is reflected in this ES chapter, which should be read in conjunction with the other ES chapters, in particular those relating to Cultural Heritage (Chapter 8), Ecology (Chapter 10) and All Travellers (Chapter 14).

9.15 Summary of Effects

Proposed New Section of Motorway

Landscape

- 9.15.1** The landscape assessment identified 11 local landscape character areas (LCAs), the boundaries of which have been established through a combination of desk study, review of LANDMAP data and site visits. The LCAs capture the varying character of the study area which includes the Levels, the urban area of Newport, more undulating agricultural land to the north and the River Severn Estuary. The effects of the new section of motorway on each of the LCAs have been assessed for the construction phase, year 1 of operation and year 15 of operation.
- 9.15.2** During construction, the new section of motorway would result in a very large adverse significance of effect on LCA2 (Wentlooge Levels), large adverse significance of effect on LCA1, LCA5 and LCA7 (Michaelston-y-Fedw, Chepstow Woods Southwest and Caldicot Levels), moderate adverse significance of effect on LCA3 and LCA9 (Newport Docks and Uskmouth and Magor and Undy) and slight adverse significance of effect on LCA6 and LCA11 (Llanwern Steelworks and Severn Estuary). These effects would arise primarily as a result of the change of land use, loss of vegetation, decrease in tranquillity and extensive topsoil, unsuitable material and hard stockpile areas.
- 9.15.3** During year 1 of operation, the significance of effect associated with the new section of motorway would reduce for LCA2, LCA5 and LCA11 to large adverse, moderate adverse and neutral respectively. This reduction in the significance of effect when compared to the construction phase would be as a result of a reduced physical land take, the restoration of temporary land use areas and establishment of landscape planting. The main landscape impacts arising during year 1 of operation would be those associated with the physical presence of a new section of motorway within a landscape which does not already include infrastructure of this type and scale, particularly across the Levels (LCA2 and LCA7). The River Usk Crossing would form the dominant feature of LCA3 and be visible from within surrounding LCAs.
- 9.15.4** During year 15 of operation, the significance of effect associated with the new section of motorway would reduce to moderate adverse for LCA1, slight adverse for LCA3 and LCA5 and neutral for LCA6. This reduction in the significance of effect when compared to those in year 1 of operation would be as a result of maturing landscape planting which would mitigate the loss of vegetation removed during construction and integrate the new section of motorway into the wider network of woodlands, hedgerows and other soft landscape features. The main landscape impacts arising during year 15 of operation would be similar to those during year 1 and associated with the physical presence of a new section of motorway within a landscape which does not already include infrastructure of this type and scale, particularly across the levels (LCA2 and LCA7). The River Usk

Crossing would form the dominant feature of LCA3 and be visible from within surrounding LCAs.

- 9.15.5** LCA7 and LCA9 (Caldicot Levels, and Magor and Undy) would experience a consistent significance of effect (large adverse and moderate adverse respectively) throughout construction, year 1 and year 15. However, LCA4, LCA8 and LCA10 (Newport, Caldicot Moor and Caldicot) would experience a neutral significance of effect throughout construction, year 1 and year 15.

Visual

Construction Effects

- 9.15.6** The number of visual receptors from which views would be significantly adversely affected by the Scheme would be at its greatest during the construction phase. The construction area for a six lane motorway would be, by its very nature, a substantial and highly noticeable element within any context. For a major new road project of this scale and complexity, and given the inherent sensitivity of many of the visual receptors, it is considered that significant adverse effects upon visual amenity for a sizeable number of receptors could not be completely avoided. Adverse effects of the greatest significance are predicted for the following types of receptors:

- Receptors that lie in relatively close proximity to the road, with a limited area of intervening elements in the foreground to help with screening, resulting in construction elements and operations being highly noticeable.
- Receptors that have an open, elevated viewpoint within undeveloped rural areas, where a large proportion of the Scheme is visible within expansive and far reaching views. This applies to receptors on the Castleton Ridge and across the rising ground to the north of Magor and Undy.
- Receptors in rural, undeveloped areas where there are relatively few existing urban intrusions. This applies to many receptors across the Wentlooge and Caldicot Levels areas.

Operational Effects - Year 1 Winter

Residential Receptors

- 9.15.7** Twenty one residential receptors/receptor groups would experience a moderate adverse significance of effect, twenty-two would experience a large adverse significance of effect and six would experience a very large adverse significance of effect in the winter of year 1. Of these receptors, those that are located in the western parts of the study area would experience significant adverse effects mainly due to the Castleton Interchange element of the new section of motorway. This part of the Scheme is elevated above the expansive low lying Wentlooge Levels area to the south. This means that, even with many intervening foreground elements and with some receptors at some distance from the Scheme, views of the traffic and associated highway infrastructure and bridges and flyovers would be available for many receptors to the south of the Castleton Interchange. These elements would often be highly noticeable and perceived as detracting urban features beyond the largely rural foreground. Receptors across other parts of the study area that would experience significant adverse effects are generally located within close proximity to the Scheme, often in locations where

proposed overbridges would add to the quantity and visibility of detracting features.

Non-residential Receptors

- 9.15.8** This receptor group includes schools, leisure facilities, places of worship and commercial and industrial premises. Four non-residential receptors would experience a moderate significance of effect and five would experience a large adverse significance of effect in the winter of year 1. Non-residential receptors that would experience significant adverse effects in the winter of operational year 1 are located within close proximity to the Scheme, often in locations where proposed overbridges would add to the quantity and visibility of detracting features. Despite the often low sensitivity of these receptors the Scheme would adversely impact on their visual amenity due to the dominance of traffic and infrastructure on the views available.

PRoWS and Land with Public Access

- 9.15.9** Fifteen receptor groups would experience a moderate significance of effect (fourteen adverse and one beneficial), fifteen would experience a large adverse significance of effect and four would experience a very large adverse significance of effect in the winter of year 1. Walkers using PRoWS and other public access areas in the western parts of the study area would experience significance adverse effects mainly due to the Castleton Interchange. This part of the Scheme is elevated above the expansive low lying Wentlooge Levels area to the south. This means that, even with many intervening foreground elements and with some receptors at some distance from the Scheme, views of the traffic and associated highway infrastructure and bridges and flyovers would be available for many receptors to the south of the Castleton Interchange. These elements would often be highly noticeable and perceived as detracting urban features beyond the largely rural foreground. Receptors across other parts of the study area that would experience significant adverse effects are generally located within close proximity to the Scheme (within approximately 600 metres), often in locations where proposed overbridges would add to the quantity and visibility of detracting features. Moderate beneficial effects are anticipated for visitors to Belle View Park in Newport. These receptors would have intermittent views of the River Usk Crossing as they move around the park. This element would often be framed by foreground trees and would be seen in the context of views of other existing bridges across the River Usk. It is considered that it would appear as a positive point of interest.

Roads and Transport Routes

- 9.15.10** Motorists would only experience significant adverse effects from a very limited proportion of the roads within the study area. This is due to the low or moderate sensitivity of these receptors and the fleeting nature of views at normal traffic speeds. Five receptor groups using roads are predicted to experience a moderate adverse significance of effect on their visual amenity during the winter of year 1. Adversely affected stretches of road are located in very close proximity to the new section of motorway and/or have some more open stretches that afford views up to the Castleton Interchange (Hawse lane and Ty Mawr Lane) or down across the Magor Junction (lanes to the north of Magor). There are no significant effects predicted for users of the railways in the study area.

- 9.15.11** Passengers on boats on the River Usk and River Ebbw would experience significant effects. These are graded as large adverse for the River Ebbw due to the elevated sections of motorway spanning this river and moderate beneficial for the River Usk due to the River Usk Crossing being considered as a positive addition to visual amenity.

Operational Effects - Year 15 Summer

Residential Receptors

- 9.15.12** Seventeen residential receptors/receptor groups would experience a moderate significance of effect, six would experience a large significance of effect and one would experience a very large significance of effect in the summer of year 15. All of these receptors are located within approximately 300 metres of the new section of motorway. It is this proximity that would result in them continuing to experience a residual significant adverse effect on their visual amenity as traffic and infrastructure associated with the Scheme would remain highly perceptible at these closer distances.

Non-residential Receptors

- 9.15.13** Five non-residential receptors would experience a moderate significance of effect in the summer of year 15. All of these receptors who would continue to experience a residual significant adverse effect are located within approximately 300 metres of the new section of motorway. It is this proximity and a lack of intervening elements that would result in them continuing to experience a residual significant adverse effect on their visual amenity as traffic and infrastructure associated with the new section of motorway would remain highly perceptible at these closer distances.

PRoWs and Land with Public Access

- 9.15.14** Twelve receptor groups would experience a moderate significance of effect (eleven adverse and one beneficial), five would experience a large adverse significance of effect and two would experience a very large adverse significance of effect by the summer of year 15. The significance of adverse effects due to the Castleton Interchange would diminish as the landscape mitigation planting matures, but views, albeit in part mitigated, of the traffic and associated highway infrastructure and bridges and flyovers would still be available for many receptors to the south of the Castleton Junction area. Those receptors located within close proximity to the Scheme across other parts of the study area would experience a similar diminution of impact, but users of some paths that run closest to the Scheme would continue to experience a significant effect on their visual amenity. For receptors using Belle Vue Park these impacts are considered to be beneficial. For all other receptors that would be significantly adversely affected, the continuing intrusion of traffic, motorway structures and highway infrastructure into the views that are available to them is considered to adversely affect their visual amenity.

Roads and Transport Routes

- 9.15.15** There are no significant residual effects for roads or railways in the study area.

- 9.15.16** Passengers on boats on the River Usk and River Ebbw would experience significant residual effects. These are graded as large adverse for the River Ebbw due to the elevated sections of motorway spanning this river and moderate beneficial for the River Usk due to the River Usk Crossing being considered as a positive addition to visual amenity.

Complementary Measures

Landscape

- 9.15.17** During the construction period complementary measures would involve minor works within the existing highway corridor during a short term construction period resulting in a similar effect to regular highway maintenance works. No measurable effects on landscape are predicted.
- 9.15.18** During the operational phase, no significant effects are predicted on landscape. The complementary have no impact on the physical elements of the landscape apart from minor changes to highway infrastructure elements such as signs and kerbs – there are no changes to vegetation, topography or boundaries. No measureable impacts are therefore predicted for the physical elements of the landscape. The removal of a proportion of the existing signs is predicted to have no noticeable effect on the character of any of the surrounding areas due to the less than negligible magnitude of this change. The predicted reduction in traffic volumes is considered to be a slight improvement of character due to a reduction in the number of uncharacteristic elements (i.e cars and HGVs), resulting in a minor beneficial effect on areas surrounding the section of the reclassified M4 that is subject to complementary measures.

Visual

- 9.15.19** No significant visual effects are predicted for visual amenity as a result of the complementary measures. There is predicted to be a slight beneficial significance of effect on visual amenity for a limited number of sensitive receptors. Predicted reductions in traffic flows along the existing M4 would result in a lessening of the number of intrusive elements within views of the motorway area. The significance of effect remains largely the same for winter year 1 and summer year 15. Traffic levels are likely to increase again by year 15 but this change is unlikely to be discernible.