

Adran yr Economi a'r Seilwaith  
Department for Economy and Infrastructure



Llywodraeth Cymru  
Welsh Government

**The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) Scheme 201-**

**The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East of Magor) Connecting Road) (Amendment) Scheme 201-**

**The London to Fishguard Trunk Road (East of Magor to Castleton) Order 201-**

**The M4 Motorway (West of Magor to East of Castleton) and the A48(M) Motorway (West of Castleton to St Mellons)(Variation of Various Schemes) Scheme 201-**

**The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and The London to Fishguard Trunk Road (east of Magor to Castleton) (Side Roads) Order 201-**

**The Welsh Ministers (The M4 Motorway (Junction 23 (East of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and the M48 Motorway (Junction 23 (East of Magor) Connecting Road) and the London to Fishguard Trunk Road (East of Magor to Castleton)) Compulsory Purchase Order 201-**

**The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) (Supplementary) Scheme 201-**

**The Welsh Ministers (The M4 Motorway (Junction 23 (East Of Magor) to West of Junction 29 (Castleton) and Connecting Roads) and The M48 Motorway (Junction 23 (East Of Magor) Connecting Road) and The London to Fishguard Trunk Road (East of Magor to Castleton)) Supplementary Compulsory Purchase Order 201-**

## **Proof of Evidence**

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**Welsh Government, Landscape and Visual Impact**

**Document Reference: WG 1.8.1**

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## **M4 CORRIDOR AROUND NEWPORT**

### **Proof of Evidence – Landscape and Visual Impact**

#### **1 Introduction**

##### **1.1. Author**

- 1.1.1. My name is Nicholas John Rowson. I am employed by Atkins Ltd as Principal Landscape Architect in their Bristol Office and head of department for the South West and Wales.
- 1.1.2. My academic qualifications include Bachelor of Science, with Honours, Degree in Horticulture from the University of Bath (1979) and a Bachelor of Landscape Design Degree from the University of Manchester (1982). I am a Member of the Institute of Horticulture (1984) and a Chartered Member of the Landscape Institute (1983).
- 1.1.3. I have practised as a Chartered Landscape Architect since 1983. I joined Atkins Ltd. in January 1988 and have been in my current post, as manager of the South West and Wales landscape department, since then. I am also part of the Bristol regional management team. I have acted as landscape architect or environmental coordinator for a number of landscape design, land use, highway and environmental schemes for which I have prepared, or overseen the preparation of, environmental assessment studies.
- 1.1.4. I am a member of the Atkins Water and Environment Environmental Impact assessment (EIA) Forum and the Technical Excellence team for Landscape and Visual Impact Assessment (LVIA). I specialise in landscape, townscape and visual impact assessment and environmental mitigation by design; reflecting best practice, current legislation and developing bespoke methodologies and guidance where required.
- 1.1.5. My area of specialism is Landscape Design and the assessment of Landscape and Visual Impacts.
- 1.1.6. I am a member of the project team which is responsible for the delivery of the M4 Corridor around Newport. However, I am required by the Landscape Institute to abide by their Code of Conduct and

their guidance (Guidelines for Landscape and Visual Impact Assessment, 3rd edition, which was published and came into force on 17 April 2013) on the undertaking of LVIA assessments.

- 1.1.7. I am the Deputy Environmental Coordinator and lead design and appraisal Landscape Architect for the M4 Corridor around Newport ("the Scheme"). I have worked on the published Scheme since March 2015 and have visited the area on a number of occasions to support the preparation of the landscape design, the preparation of the LVIA chapter of the Environmental Statement (ES), the coordination of the environmental aspects of the Scheme, the preparation and publication of the Draft Orders and the preparation of this Proof of Evidence.
- 1.1.8. In my role as deputy Environmental Coordinator and lead Landscape Architect for the Scheme I have had direct influence on the engineering and environmental design of the Scheme; through an iterative design process working with the environmental team, highway, drainage and structures engineers, with external Statutory Environmental Bodies and with the Design Commission for Wales. I have, in collaboration with Peter Ireland, Scheme Environmental Coordinator, ensured that we have delivered a scheme that embodies mitigation by design, both in engineering and environmental terms.
- 1.1.9. I have extensive experience of the design and implementation of highway schemes in Wales and England. This has included working on the Second Severn Crossing and approach roads, on the M4/M5 managed Motorway Scheme and on the A40 Penblewin to Slebech Park improvements. I have provided advice to the Welsh Government on their Procedures Guidance for Transport Wales and with the South Wales Trunk Road Agency (SWTRA) have overseen the production of landscape and ecology management plans for sections of the trunk roads network.
- 1.1.10. I have worked on a wide range of County and National road schemes in Wales over the last 20 years, both for Early Contractor Involvement (ECI) contractors and as Technical Advisor to the

Welsh Government or County Council. My experience through this of the assessment of landscape and visual impacts, of taking such schemes through the Public Inquiry process and of the successful delivery of these schemes on site is of direct relevance to my work on the Scheme.

- 1.1.11. The evidence that I have prepared and provided for this Inquiry has, as noted, been prepared and is given in accordance with the Code of Practice of the Landscape Institute and I confirm that the opinions expressed are my true and professional opinions.
- 1.1.12. In preparing this Proof of Evidence I have referred to and adopted the work of other members of the Landscape team, however, the opinions I express are my own.
- 1.1.13. I understand my duty to the Inquiry to assist it with matters within my expertise and I believe that I have complied with that duty.

## **1.2. Scope and Structure of this Proof of Evidence**

- 1.2.1. My evidence will address the assessment of the landscape and visual impacts relating to the Scheme, comprising:
  - a) A proposed new dual three-lane motorway to the south of Newport
  - b) Complementary measures relating to the existing M4
  - c) The mitigation of such impacts through the landscape design, not covered by other expert witnesses.
- 1.2.2. My evidence will firstly demonstrate that due regard has been taken of the physical characteristics and constraints imposed by the topography and local features and that the proposed alignment accords with the relevant standards and meets the objectives of the proposed Scheme. In addition it will demonstrate that the landscape and visual issues and proposed mitigation as detailed in the Environmental Statement (ES) 2016 (Document 2.3.2) have been taken into account in the engineering design.
- 1.2.3. My evidence then summarises the changes to the published Scheme since the Welsh Government Key Stage 3 ECI Contract

was awarded and sets out the landscape design strategy and the environmental features incorporated into the Scheme.

- 1.2.4. The evidence continues with a detailed description of the Scheme approach to landscape design and to the mitigation of landscape and visual impacts arising from the Scheme; this is done by reference to a logical division of the Scheme into sections, following the approach taken in the LVIA and ES.
- 1.2.5. I will then explain the general responses to queries and objections received of an environmental nature with respect to matters concerning the landscape and visual impacts of the Scheme.
- 1.2.6. My evidence will demonstrate that in making the Orders that are the subject of this Public Local Inquiry (PLI), due account has been taken of all landscape and visual considerations and the environmental aspects of the Scheme would meet the Welsh Government's Scheme objectives.
- 1.2.7. It is not my intention to reproduce large sections of text from the ES. Where appropriate, I will cross refer to procedural and technical matters that are pertinent to the assessment of the published Scheme. I will therefore refer in my Proof of Evidence to supporting material contained within the ES, the Environmental Statement Supplement September 2016 (Document 2.4.4) and the Environmental Statement Supplement December 2016 (Document 2.4.14) and the ES Supplement where relevant.

### **1.3. Links with Other Proofs**

- 1.3.1. Details of environmental surveys and assessments undertaken and reported upon in the ES and the ES Supplements are covered in the Proofs of Evidence of other expert witnesses. These are:
  - a) Engineering Design - Proof of Evidence of Mr Ben Sibert (WG 1.5.1)
  - b) Construction - Proof of Evidence of Mr Barry Woodman (WG 1.6.1)

- c) General Scheme Environmental Matters – Proof of Evidence of Mr Peter Ireland (WG 1.7.1)
- d) Ecology and Nature Conservation – Proof of Evidence of Mr Keith Jones (WG 1.18.1)
- e) Noise and Vibration – Proof of Evidence of Mr Phil Evans (WG 1.14.1)
- f) Air Quality – Proof of Evidence of Mr Michael Bull (WG 1.12.1)
- g) Cultural Heritage – Proof of Evidence of Mr Mick Rawlings (WG 1.9.1)
- h) Agriculture and NMU – Proof of Evidence of Ms Julia Tindale (WG 1.10.1)
- i) Water Quality – Proof of Evidence of Mr Richard Graham (WG 1.15.1)

#### **1.4. Initial Development of the Scheme**

- 1.4.1. The modified preferred route layout published in July 2014 was developed during the period March 2015 to March 2016 up to the preliminary engineering design layout which has been used to prepare the Draft Orders. In developing the landscape and environmental design, I have worked with the other environmental and engineering disciplines and with the contractor to ensure, from a landscape and visual point of view, that the Scheme takes appropriate account of the physical characteristics and constraints imposed by the topography and local features, it accords with the relevant environmental standards and it meets the Scheme objectives.
- 1.4.2. The Scheme design from the Key Stage 3 Commission in March 2015, was prepared by the Atkins Arup Joint venture (AAJV), working with RPS Consultants and in liaison with the Costain Vinci Joint Venture for the contractors. The Scheme Environmental Master Plans (EMPs) (Document 2.3.2), together with the Environmental Statement (ES) (Document 2.3.2), of which the LVIA formed Volume

- 1 Chapter 9, and the LVIA Appendices (ES Volume 3 Chapter 9) formed part of the Draft Orders publication.
- 1.4.3. The Scheme is described in Chapter 2 of the ES, the ES Supplements (Document 2.4.4) and the Scheme Assessment Report (Document 2.3.6).
- 1.4.4. Plans of the Scheme are provided in Figure 2.4, 2.5 and 2.6 as described in 2.3.4 of Chapter 2 of the ES.
- 1.4.5. General arrangement plans of the Scheme are provided as Figure 2.4 of the ES and ES Supplements, which show the highway layout, horizontal alignment, extent of embankment and cuttings and key structures.
- 1.4.6. Plans showing the highway drainage network are provided as Figure 2.5 of the ES.
- 1.4.7. The EMPs, which show the landscape and environmental mitigation to the engineering proposals, are provided as part of the ES.
- 1.4.8. 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 of the ES and photography sheets are included in Figure 9.10 of the ES. I would note that in response to comment by objectors to the Draft Orders, additional viewpoints have been added and are included in the ES Supplement September 2016 (Document 2.4.4), and in the ES Supplement December 2016 (Document 2.4.14).
- 1.4.9. Photomontages have been prepared for a selection of the representative viewpoints and are included in Figure 9.11 of the ES. The location of these viewpoints is identified on Figure 9.9 of the ES. The methodology for the preparation of these non-verified views is summarised in Appendix 9.12 of the ES. I would note that in response to comment by objectors to the Draft Orders, additional supplementary photomontages have been prepared and, where the Scheme has been modified, modified photomontages prepared and are included in Figure R9.11 of the ES Supplement September 2016 (Document 2.4.4) and Figure SR9.11 of the ES Supplement December 2016 (Document 2.4.14).

- 1.4.10. The land required for the published Scheme, as defined by the Compulsory Purchase Order, includes not only land needed for engineering purposes but also essential mitigation to fulfil the key aims of the environmental design. The key supporting documents in this regard are the Environmental Master Plans (Figures 2.6a to 2.6p). The requirements in respect of land required for engineering purposes are explained in the Proof of Evidence of Mr Barry Woodman (WG 1.6.1).
- 1.4.11. More detailed descriptions of the Scheme development and the environmental designations and constraints are set out in the ES and as described in the evidence of Mr Benjamin Sibert (Engineering) (WG 1.5.1), of Mr Peter Ireland (Environment) (WG 1.7.1) and of the other environmental topic witnesses.
- 1.4.12. Environmental constraints and challenges have been considered in an iterative design process working with the engineering design of the Scheme to ensure the alignment of the published Scheme took due consideration of the historic landscape, the existing land use and the sensitive environmental designations and features of national and international importance:
- a) River Usk SAC and SSSI
  - b) Severn Estuary SAC, Special Protection Area (SPA), Ramsar and SSSI
  - c) Rumney and Peterstone SSSI
  - d) St Brides SSSI
  - e) Nash and Goldcliff SSSI
  - f) Whitson SSSI
  - g) Redwick and Llandevenny SSSI
  - h) Magor Marsh SSSI
  - i) Magor and Undy SSSI
  - j) Newport Transporter Bridge
  - k) Devil's Quoit SAM
  - l) Moated site at Undy SAM
  - m) Wilcrick Hill Camp SAM

- n) Gwent Levels Historic Landscape of Outstanding Historic Interest in Wales
  - o) Llanfihangel near Rogiet Conservation Area
- 1.4.13. Details of the engineering aspects of the design development in relation to these environmental designations are more fully set out by Mr Ben Sibert in his Proof of Evidence (WG 1.5.1).
- 1.4.14. The construction of the proposed Scheme is described in Chapter 3 of the Environmental Statement and is described by Mr Barry Woodman in his Proof of Evidence (WG 1.6.1).
- 1.4.15. The Gwent Levels holds a cultural and historic importance on a national scale and is included in the 'Register of Outstanding Historic Interest in Wales' (Cadw 1998), now a Statutory Designation under the Historic Environment (Wales) Act 2016. The registered Gwent Levels Landscape of Outstanding Historic Interest (LOHI) covers much of the new section of motorway. The importance of this has been taken into account in assessing visual and landscape impacts and in the development of the mitigation strategy. More specifically matters pertaining to the historic landscape and cultural heritage of the Scheme area are addressed in the Proof of Evidence of Mr Mick Rawlings (Cultural Heritage) (WG 1.9.1).
- 1.4.16. The components of the SSSIs that are of particular concern for the published Scheme are reed and ditch habitats, invertebrates supported by those habitats and shrill carder bee. The potential effects of the published Scheme on those components and other ecological assets are addressed in the Proof of Evidence of Mr Keith Jones (Ecology and Nature Conservation) (WG 1.18.1). In my evidence I describe how the landscape Scheme addresses and mitigates impacts on these from a landscape perspective.
- 1.4.17. The potential effects of the published Scheme on those living and working close to the M4 Corridor around Newport are addressed in the Proofs of Evidence of my colleagues Ms Julia Tindale (Agricultural Land Use and Non-Motorised Users) (WG 1.10.1), Mr Phil Evans (Noise and Vibration) (WG 1.14.1) and Mr Michael Bull (Air Quality) (WG 1.12.1).

- 1.4.18. Mr John Davies (Sustainable Development) (WG 1.23) addresses the balance between those landscape and visual impacts identified as residual impacts and the need for the Scheme.
- 1.4.19. In respect of the landscape design for the Scheme and as explained later, some details of the landscape design and LVIA have been updated since publication of the ES and Draft Orders to address specific public comments relating to the Scheme design as published and following an ongoing process of design development. These are set out in the Environmental Statement Supplements (Documents 2.4.4 & 2.4.14) and in the Supplementary Orders (Document 2.4).
- 1.4.20. In addition, I would draw the inspector's attention to the further environmental commitments made to date and set out in Appendix R18.1 of the ES Supplement September 2016 (Document 2.4.4) and further qualified in Appendix SR18.1 of the ES Supplement December 2016 (Document 2.4.14), which will further ensure the appropriate design of the Scheme and mitigation of impacts.

## **1.5. Consultation**

- 1.5.1. Details of the consultations undertaken as part of the Scheme development are set out and described in the Proofs of evidence of Mr Matt Jones (Chief Witness) (WG 1.1.1) and of Mr Peter Ireland (General Scheme Environmental Matters (WG 1.7.1). Landscape and visual matters formed part of the information displayed or available at the Public Information Exhibitions and the Draft Orders Exhibitions. Copies of the ES and EMPs were available at these exhibitions.
- 1.5.2. Separate meetings to review landscape and visual issues and design approach were held with NRW and County Landscape Officers. These are listed in the Proof of Evidence of Mr Peter Ireland (General Scheme Environmental Matters) (WG 1.7.1).
- 1.5.3. In addition to such meetings, I attended the two Environmental Liaison Group (ELG) meetings in May and November 2015,

presenting on and taking part in the group discussion Document on landscape issues. I also attended and presented at the presentation of the Scheme development to the Design Commission for Wales (DCfW) on 22<sup>nd</sup> October 2015.

- 1.5.4. Subsequent to the publication of Draft Orders, I have attended meetings with officers of both Monmouthshire County Council and NRW to review their comments on the Orders and ES.
- 1.5.5. Details of specific landscape consultation is set out in Table 9.2 of Chapter 9 of the ES.

## **1.6. Landscape and Visual Impact Assessment**

- 1.6.1. The overall approach to environmental assessment, as set out in HA200/08 (DMRB 11.1.1) (Document 6.1.8) is set out in Peter Ireland's Proof of Evidence together with the base line and future years points used for all environmental assessment topics.
- 1.6.2. As Peter Ireland has stated in his evidence, mitigation has not been an "add-on", but has been an integral part of the Scheme development process. As such, mitigation measures have been incorporated into the Scheme through its design and through engineering and environmental disciplines working collaboratively on this alongside the contractor inputting on buildability.
- 1.6.3. Whilst the LVIA and other chapters of the ES are required to be, as far as practicable, factual and unbiased, the DCfW in their Design Review Report of the meeting of 22<sup>nd</sup> October 2015 (Document 4.6.10), highlighted that the Scheme should be a celebratory project and that:  
*"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".*

## **1.7. Scoping**

- 1.7.1. In accordance with best practice and HA204/08 (DMRB 11.2.4), a scoping exercise was undertaken and an Environmental Statement

Scoping Report was published in August 2015 which was Appendix 5.1 of the ES (Document 2.3.2).

- 1.7.2. During and following scoping, numerous environmental and particularly ecological surveys were instigated to provide up-to-date information and data on the resources and assets of the environment potentially affected by the published Scheme. Summaries of these surveys are included in the ES Volume 1 with survey reports being provided as appendices in ES Volume 3.
- 1.7.3. The scoping report was issued to statutory consultees. Newport City Council (NCC), Natural Resources Wales (NRW) and Cadw provided responses, copies of which are included in Appendix 5.2 of the ES.

## **2. LVIA Methodology**

### **2.1. Overview**

- 2.1.1. The overall approach to Environmental Impact Assessment (EIA) is set out in Chapter 5 of the ES. That chapter provides a methodological framework for the EIA that is reported on a topic by topic basis in Chapters 7 to 16 of the ES of which Chapter 9 covers the Landscape and Visual Impact topic.
- 2.1.2. 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.
- 2.1.3. Similarly the extent and nature of views varies as does the sensitivity of the people observing those views. In addition to the consideration of the quality of view, 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.

### **2.2. Methodology**

- 2.2.1. The LVIA reports on a combination of desk study review and field work undertaken during 2015 and 2016. The work was undertaken by a core team of six landscape architects, led by myself, covering overlapping sections of the Scheme. The assessment of the significance of effects across the whole Scheme was moderated by myself and another senior chartered landscape architect working for Atkins Ltd. Field work was undertaken during May and June 2015

with further site visits between July and November 2015 to review specific receptor impacts. Site visits were also undertaken in January 2016. These visits were timed to ensure the character of the landscape and potential visual impacts could be assessed in both winter and summer conditions, particularly accounting for the change when deciduous trees and plants were in leaf or not.

## **2.3. Relevant Guidance**

- 2.3.1. Details of the relevant guidance and methodologies used to undertake the formal LVIA are described in detail in section 9.3 of the LVIA ES Chapter. In summary, 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 (Document 10.1.3). I would note that 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). In addition to this guidance, the methodology also referenced a number of supplementary guidance documents as set out in para 9.3.2 of the ES Chapter.
- 2.3.2. I would note that the assessment for the Complementary Measures broadly follows the methodology described and undertaken for the main LVIA for the Scheme. However, the LVIA has been simplified as it was 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.

## **2.4. Approach to Landscape Baseline Studies**

- 2.4.1. Details of the Landscape Baseline Studies are set out in section 9.3 of the LVIA ES Chapter. In summary, a review of the landscape resource and topography within the study area was undertaken as part of the desk study with reference to the relevant published sources to establish the national and regional landscape character.
- 2.4.2. A site-based assessment was undertaken in summer 2015 that validated the findings of the desk study.

## **2.5. Approach to Visual Baseline Studies**

- 2.5.1. Details of the approach to Visual Baseline Studies are set out in section 9.3 of the LVIA ES Chapter. In summary, 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 was undertaken with reference to representative viewpoints listed in ES Appendix 9.3 and to existing receptors that were considered might experience a deterioration in views and visual amenity. This process identified both potential visual receptors, such as residential properties, Public Rights of Way, cycle-ways, open spaces, recreation and amenity areas and potential screening features, such as tree lines, woodland blocks, other vegetation, individual buildings and urban areas.
- 2.5.2. Desk studies were supported by site surveys 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.
- 2.5.3. I would note that Newport Council, in their formal response to the Draft Orders publication (SUP0192), find the LVIA baseline assessment information used acceptable and that, in general and whilst there remain matters of detail to address, both Newport Council and NRW (OBJ0268) in their formal responses agree with the findings of the LVIA assessment itself.

## **2.6. Landscape Character and Context**

- 2.6.1. The Landscape character and context through which the Scheme passes is set out and described in detail in section 9.4 of the LVIA ES Chapter. This describes how Wales is divided into 48 regional-scale landscape character areas that are presented on The Landscape Character Map for Wales (Document 10.3.1) and that the Scheme is located within Landscape Character Area 34: Gwent Levels.
- 2.6.2. Although the Scheme is not an offshore development, it is close to the Severn Estuary and therefore, section 9.4 the LVIA also addresses the potential impact particular elements of the Scheme could have on the Welsh seascapes.
- 2.6.3. The chapter goes on to describe how the landscape character can be further sub-divided into ten Local Landscape Character Areas (LCAs), each with a distinct, consistent and recognisable character and formally described in the LANDMAP landscape information system published by Natural Resources Wales (2015) (Document 10.3.1). This describes landscape character against five aspects: geological landscape; landscape habitats; visual and sensory; historic landscape; and cultural landscape all evaluated at a community, local, national and international level. For each of the ten LCAs, the relevant LANDMAP aspect areas are identified, key summary characteristics are described, and their condition/quality and sensitivity assessed.
- 2.6.4. Within the LVIA ES Chapter, to describe the landscape context for the new section of motorway and to set out the subsequent assessment, the Scheme was divided into five separate sections which approximated to the key changes in landscape character and context. These sections were:
- a) Junction 29 Castleton to South Wales to London Mainline (new Duffryn Railway Underbridge).
  - b) South Wales to London Mainline (new Duffryn Railway Underbridge) across Wentloog Levels to South of Docks.

- c) Docks Way Landfill Site (new Docks Way Junction), south of Newport Docks across River Usk to east of Uskmouth Railway line.
- d) East of Uskmouth Railway line across Caldicot Levels to A4810, south of Bareland Street.
- e) A4810, South of Bareland Street to Junction 23 Magor and Rogiet.

2.6.5. Similarly, for the purposes of the assessment the existing M4 motorway that is subject to Complementary Measures, the motorway corridor was into five sections, reflecting the changing character of the landscape from west to east:

- a) Cleppa Park to Junction 28
- b) Junction 28 to Junction 27
- c) Junction 27 to Junction 26
- d) Junction 26 to Junction 24
- e) Junction 24 to Junction 23a.

## **2.7. Legislation and Policy Context**

2.7.1. It is important that, when preparing an environmental scheme such as that shown on the EMPs for the Scheme, and when undertaking an assessment of the impacts of such a scheme, due account is taken of relevant legislation and policy. A review of topic specific published landscape policies and guidance was undertaken to inform the LVIA and mitigation strategy. This is set out in section 9.2 of the LVIA ES Chapter, with further detail outlined in Volume 3, Appendix 9.1 of the ES.

2.7.2. A review of new legislation and policy has been ongoing and is reflected in the ES Supplements where relevant.

2.7.3. I would note that 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).

## **2.8. Mitigation and approach to Landscape Design forming part of the Scheme Design**

- 2.8.1. The approach to mitigation and landscape design for the Scheme is set out in full in section 9.5 of the LVIA ES Chapter. In my Proof I will summarise the key aspects of this and the changes in the Scheme and landscape design since publication of the preferred route.
- 2.8.2. Mitigation has been addressed through an iterative design and assessment process working closely with the engineering and environmental teams. The design and layout has been amended throughout the process to avoid and reduce impacts of the landscape and visual effects. I have regularly attended design development, Scheme review and buildability meetings to ensure that, within acceptable engineering constraints and standards, the Scheme design takes full account of the existing landscape, habitats and designations and the design intents. I believe that the resultant design will futureproof the Scheme and fulfils Welsh Government objectives for the Scheme.
- 2.8.3. I note the relationship to the ecological importance of the area through which the Scheme runs, especially those international and national designations previously listed, where there was close liaison with ecology and drainage disciplines to reduce habitat fragmentation and prioritise habitat connectivity, especially with regard to reens and ditches, woodland and grassland.
- 2.8.4. I consider that the design and mitigation measures have appropriately 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.
- 2.8.5. The aims for the Welsh Government for the M4 Corridor around Newport, as set out in the Welsh Government M4 Corridor around Newport: The Plan (Document 4.5.7), were to:
- a) Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.

- b) Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.
- c) To produce positive effects overall on people and the environment, making a positive contribution to the over-arching Welsh Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

2.8.6. The Strategic Environmental Assessment (SEA) Post Adoption Statement (Document 4.5.13) also identified a number of Scheme-specific environmental objectives with specific reference to the landscape design:

*Objective 10 – Ensure that diversity, local distinctiveness and cultural heritage are valued, protected, celebrated and enhanced;*

*Objective 11 – Ensure that landscape and townscape is properly valued, conserved and enhanced.*

2.8.7. This went on to say that 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.

2.8.8. Other requirements that guided the mitigation measures were:

- a) Retain and make best use of existing vegetation.
- b) Prioritise the early re-establishment of vegetation within the highway boundary.
- c) Integrate the engineering landform with the adjoining topography.
- d) Design for maintenance, giving due consideration to the maintenance costs and implications, liabilities and access arrangements for all landscape areas.
- e) Optimise protection for nearby houses or public areas through use of screening, including vegetative and structural methods.
- f) Re-use coppiced vegetation wherever possible within the planting areas, especially where a screening function is required.

- g) 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.
- h) Use native species of local provenance, wherever possible.
- i) Consider innovative solutions for integrating hard structures into the landscape setting of the Scheme.
- j) Use suitable and appropriate boundary treatments.

2.8.9. The environmental design is described in Chapter 2 (Scheme Description) of the ES. The landscape proposals that form part of the Scheme are shown on the Environmental Masterplan on Figure 2.6 of the LVIA ES Chapter. These take into account the landscape constraints that were identified as part of the baseline desk study, survey and consultation. They also embody mitigation for, in particular, noise and ecological impacts. Keith Jones sets out in his Proof the land area ratios agreed with NRW as appropriate for ecological mitigation for specific habitat and vegetation loss.

2.8.10. I note that, although not directly provided for landscape mitigation, the three ecological mitigation areas identified at Maerdy Farm, Tatton Farm and Caldicot Moor, will derive a minimum of 130ha of landscape benefit.

2.8.11. The Landscape Design Objectives were derived from and developed through the Welsh Transport planning and Appraisal Guidance (WelTAG) process, as set out in the Welsh Government Strategic Environmental Assessment (SEA) Report (Document 4.4.6) and SEA Post Adoption Statement by the environmental team through discipline consultation. This is set out more fully in Mr Matt Jones' Proof of Evidence (WG 1.1.1). These objectives were presented to the DCfW (Presentation 22<sup>nd</sup> October 2015) (Document 4.6.10) as:

- a) Avoid, then minimise and mitigate adverse effects of the new section of motorway upon designated sites and features, and where necessary provide exchange land.

- b) Where practicable, conserve and enhance the environment through which the new section of motorway passes.
- c) Reflect the landscape character through which the new section of motorway passes including land use, topography, heritage and landscape pattern.
- d) Respect the landscape, biodiversity and cultural heritage resource of the new section of motorway, in particular the Gwent Levels.
- e) Increase areas of Biodiversity Action Plan habitats.
- f) Maintain the connectivity of existing networks for non-motorised users (NMUs).
- g) 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.
- h) 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.
- i) Give careful consideration to the location and design of lighting to minimise impacts at both day and night.
- j) 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.
- k) 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.
- l) Re-use and enhance existing ditches and reens whilst maintaining functionality and connectivity.
- m) Create a sustainable and future focused proposal to support the growing needs of South Wales and its infrastructure.

- 2.8.12. I consider that these objectives have, within the engineering constraints and the definition of land which constitutes essential mitigation land, been substantially met.

### **3. Landscape Design**

#### **3.1. Landscape Design Principles**

- 3.1.1. I note that in the ES, the environmental objectives are underpinned by a number of environmental design principles for the new section of motorway and, as set out in 2.8.9 above these have been developed through the historic and current design and Welsh Government processes. These reflect the environmental context and key requirements of the environmental drivers for integration and include the following:

- a) 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.
- b) Retain as much existing maturing vegetation as possible.
- c) Establish new planting to screen and integrate the new section of motorway into the surrounding landscape whilst retaining cohesion with retained landscape features.
- d) Maintain the quality of views to and from surrounding receptors.
- e) Create cohesive connectivity north and south of the new section of motorway for ecology and landscape character through design and planting methods.
- f) Introduce innovative landscape planting to conserve and enhance areas with specific landscape/ecological importance providing a sustainable and future focussed solution.
- g) 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.

- h) 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.
- i) 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.
- j) Use lighting with low spillage and careful consideration given design and siting of road signs, traffic signals, environmental barriers and other street furniture.
- k) 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.

3.1.2. In seeking to meet these objectives and principles it is important to understand that the landscape design does not seek to hide the Scheme but to integrate it, where appropriate, into the historic landscape. This includes providing views of the Levels from the Scheme and from the highpoints created by overbridges; creating landscape distinctiveness to highlight junctions and other key features and, working with the engineers and architects, ensuring the main structures are visually suited and that the Usk bridge is of a design worthy of celebration.

3.1.3. The landscape design seeks not only to mitigate the potential impact on the environment and significant species but to provide overall biodiversity enhancement through providing landscapes tailored to BAP and SSSI species, enhancing the SSSI landscape and providing new reens and ditches.

- 3.1.4. I consider that these principles have, within the engineering constraints and the definition of land which constitutes essential mitigation land, been substantially applied.
- 3.1.5. I consider it important to note that the EMPs have developed the landscape scheme to a point where the type and purpose of each area of landscape can be described in sufficient detail to determine the extent of essential mitigation land required and for consultees and the general public to be able to understand what the landscape will look like. The EMPs have, for example assisted in the Scheme visualisation shown on the photomontages and on 3D digital model and fly-through. The EMPs are not, however, detailed design. That is a stage for both the engineering and landscape design which will happen should the outcome of this Inquiry be that the Scheme progresses. At that stage, detailed design development would allow both landscape objectives and principles to be more fully met through further definition of areas, species, planting densities and landform.
- 3.1.6. As noted above, the approach to mitigation and landscape design for the Scheme is set out in full in section 9.5 of the LVIA ES Chapter. It is important for this inquiry that I summarise some of the key elements of this:
- 3.1.7. Firstly, the landscape design across the Levels has evolved considerably from that developed by the client at Key Stage 2. At that point the landscape design sought to screen the Scheme more fully, taking as its lead the pattern of treed hedgerows on some parts of the Levels.
- 3.1.8. In review with the NRW and local authority landscape architects a consensus emerged that the landscape of the Levels would be better served by a landscape scheme with less vegetation; one which, whilst mitigating impacts on key receptors, focused on a predominantly grassland approach allowing views into the Levels, reducing shading of reens and ditches and thereby improving their biodiversity potential. Whilst I note that some people consider the Levels to be open with extensive views, the reality is that for much of

the wider Levels landscape, the flatness of the land, coupled with the predominance of hedges and hedgerow trees, would reduce views out from the Scheme (and towards the Scheme) to the local views only.

- 3.1.9. Secondly, where the Scheme severs the existing field pattern, the project team have reviewed the remaining elements of each field land to consider whether the size of each piece is viable for future agricultural use. Where not, the land has been incorporated as essential mitigation, either to protect the existing hedgerows and ditches from being lost to field aggregation and/or to provide essential mitigation for the direct loss of SSSI land or protected species habitat.
- 3.1.10. Thirdly, the proposals for drainage ponds and reed beds have been through a series of significant changes as the design has developed. This has focused on two key environmental drivers:
- a) To put as many as possible of the drainage lagoons and reed beds on the northern side of the Scheme, reducing further loss or fragmentation of SSSI land within the greater part of the SSSI retained south of the Scheme
  - b) To re-profile these features to link them better to the historic field pattern and to the main motorway alignment.
- 3.1.11. Whilst there is scope to further refine the design through the detailed design phase it was considered that for the majority of these drainage features, especially those on the Levels, a geometric, man-made design approach was more in keeping with the angular pattern of the existing drainage system than would be softer, naturalistic pond forms. Again, on the Levels, the lagoons and reed beds have to be raised above existing ground level in order for the drainage design to function. Consideration was given to slackening the side slopes to better integrate the lagoons with the surrounding landscape. This is often done on highway embankments or cuttings to facilitate safe maintenance, improve plant establishment, reduce the risk of erosion and, at best, to allow more land to be returned to agriculture post construction. However in an essentially flat

landscape, such gentle batters would in my opinion be incongruous visually. Further, whilst it is recognised that the inherent value in the SSSI designations lies with the water environment and that much of the field system comprises improved or semi-improved grassland, the overarching principle across the Levels was to minimise the physical loss of SSSI land. To slacken the batters would have significantly increased the direct loss of SSSI or similar land and, even though the landscape scheme could have provided for grassland of similar or ecologically better quality the inherent ability of the management of the Levels, to vary the water table and hence the nature of the grassland would have been lost. I consider therefore that the design approach taken, albeit capable of refinement in detail design, is the most appropriate.

- 3.1.12. Fourthly, the Scheme has sought to minimise disruption to the existing NMU routes and where new crossings or diversions are required to keep any increase in length to a minimum.
- 3.1.13. Fifthly, in discussion with statutory consultees, including DCfW, and with the structures engineers a palette of suited structure types has been developed. I consider this a better approach visually than for each structure to be of different materials.
- 3.1.14. An exception to this suiting of structures is the design of the Percoed footway/cycle Bridge. This was initially designed as a bowstring bridge and shown as such in the second presentation to the DCfW. Because of their adverse comments on the design aesthetics of this, the design team undertook a comprehensive optioneering approach to redesign of the bridge. This resulted in a new bridge design that, in my opinion, is aesthetically a significant improvement on the original design and demonstrates the way the Scheme overall has developed through an iterative process between the design and contracting teams and consultees.
- 3.1.15. Finally, the primary focus of the Scheme in referencing the industrial and post-industrial landscape is within the docks area where the River Usk Crossing and approach structures sail over the historic landscape giving new views of the Newport Docks, the Transporter

Bridge and the urban fabric of Newport. The visual impacts of the bridge will vary and the character of land and in particular public rights of way will change where they lie under or close to the bridge. This however is in the physical context of an existing, heavily industrialised docks landscape with a number of large buildings, structures and the Transporter Bridge.

3.1.16. I now turn to a very high-level review of the main engineering elements and the landscape approach to these.

### **3.2. Motorway Junctions**

#### **Key Issues:**

3.2.1. Both the Magor and Castleton junctions involve the redesign of or are close to existing Junctions. The existing M4 landscape of maturing scrub, woodland and grassland together with the existing bridges and other structures defines the corridor style. Both are on rising ground, above and overlooking the Levels, characterised by fields and blocks of woodland.

#### **Approach:**

3.2.2. The approach used for the Scheme has been the retention of as much existing mature vegetation as possible. Where this has not been possible, and in keeping with the existing character, the Scheme design has sought to establish new woodland planting. Linear woodland planting around the southern side at both junctions and on the rising ground from the Levels, screens and integrates the M4 into the surrounding landscape. This approach also provides essential mitigation planting in respect of the loss of dormouse habitat.

### **3.3. Gwent Levels**

#### **Key Issues:**

3.3.1. As described earlier, the Levels are an important existing historic landscape; manmade and characterised by the gridded pattern of linear reens ditches. SSSI designations cover a lot of the area of this essentially flat topography. The landscape has however been the

subject of numerous more modern interventions including the Steelworks, now in part being substantially redeveloped, the Uskmouth Power Station (in particular the pylons and overhead lines taking electricity from this), wind turbines and new industrial development.

**Approach:**

- 3.3.2. As can be seen from the EMPs, the approach described above has sought to create a more open landscape of grassland/wildflower mix with occasional small groups of trees. The exception to this is where it has been considered greater screen planting is required for residential receptors closer to the road alignment.

**3.4. New Gateway Links**

**Key Issues:**

- 3.4.1. The Scheme creates new 'gateway' links into Newport with the access junctions at the new Usk Crossing and east of the River Usk with the junction linking to the Steelworks Road and the regeneration development. Much of the land is existing brownfield land and/or of visually and physically low quality landscape.

**Approach:**

- 3.4.2. The Scheme has sought to create a distinctive gateway landscape to these junctions with strong, specimen tree based avenue approaches along the link roads. During detailed design this will be developed to create distinctive 'locator' planting to the new M4 junctions; the planting to be of a stronger amenity/urban realm style.

**3.5. Construction Phase**

- 3.5.1. It is important to note that the EMPs do not show any construction phase work outside the footprint of the final scheme nor do they show any restoration work. The presumption is that land required for construction but not required for the final scheme will be restored to the condition and landscape type as before work commenced (Commitment 104 of the commitments register set out in the ES

Supplements) and therefore there is no changed landscape to be shown on the EMPs.

3.5.2. The construction works areas, outside the area of permanent works, primarily comprise:

- a) Haul roads, especially that associated with Ifton Quarry;
- b) Site compounds;
- c) Borrow pits for the excavation of fill material and disposal of unsuitable material excavated from the Scheme trace, and;
- d) Fabrication areas and areas required for construction, most notably for the new Usk bridge.

3.5.3. I would note that the areas for construction works have been the subject of detail review and design input by myself and the environmental team to ensure that adverse impacts have as far as possible been mitigated and the areas capable of restoration to their pre-existing state. For example, initial proposals for the haul roads across the Levels to run parallel to the main alignment were changed to run on the same alignment as the permanent road. This has reduced the extent of direct physical disturbance of the Levels and within SSSIs and has overcome concerns that had they remained off-line, physical ground compaction and consequential reduction in the height of the land could not be mitigated. Similarly I worked with my colleagues Julia Tindale, Peter Ireland and Barry Woodman to ensure borrow pits were located where there would have the least impact possible, having regard to all the constraints, on the agricultural landscape and on individual farm farming practice.

3.5.4. I would note that the landscape and visual impacts of the construction work and the potential for mitigation are specifically addressed in section 9.7 of the LVIA ES Chapter.

### **3.6. Approach for the River Usk Crossing**

3.6.1. Generally the design of the Scheme is that of a conventional motorway, albeit that there are specific design features such as the drainage system, ecological mitigation measures and the areas of

‘no-dig’ construction that recognise the sensitivity of the setting. The new River Usk Crossing, however, would be a major intervention in the existing landscape, with potential adverse impact on Cultural Heritage, Ecology and other environmental aspects as well as on the landscape character and visual integrity of the area. The new River Usk Crossing would be of a scale similar to that of the Second Severn Crossing, with views ranging from nearby to distant receptors, including some views from England, on the other side of the Severn Estuary.

- 3.6.2. 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.
- 3.6.3. I would note that the design for the River Usk Crossing has been through considerable design review and development, including the specific involvement of Knight Architects as specialist architectural bridge designers to ensure the bridge provides an appropriate balance between engineering function and aesthetic appearance. The approach and resultant design has been the subject of independent review by the DCfW. In respect of the LVIA assessment of the Scheme, they have made several observations that are pertinent to our methodology and approach to the assessment of the River Usk Crossing.
- 3.6.4. The DCfW formally responded to the Scheme presentation of 22<sup>nd</sup> October 2015 in their document DCfW REF: 77, DESIGN REVIEW. In respect of the bridge design I would reference two of their comments, as follows:
- ‘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.'*

- 3.6.5. Similarly, NRW in their response to the Draft Orders agreed specifically with the landscape and visual impact assessment of the new River Usk Crossing.
- 3.6.6. Consideration of whether the visual effects of the River Usk Crossing will be positive or adverse is difficult. In much the same way as is the case for wind farms in assessing the degree of effect and whether it is positive, neutral or adverse, much will depend on the attitude and predisposition of the observer.
- 3.6.7. I consider 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. However, in some closer views and for some receptors, consideration of factors such as proximity of the bridge and its scale relative to surrounding buildings would have an adverse impact. This would include those using the Welsh Coastal Path where it passes under the approaches to the River Usk Crossing to the eastern side of the Usk.
- 3.6.8. However, I note that at a meeting in September 2016, agreement was reached on the temporary and permanent arrangements for the Wales Coast Path (WCP) and NRW confirmed that subject to the provision of a commitment on construction measures it was agreed that there are no significant issues with regards to the WCP that cannot be resolved. This is set out as Commitment 171 of Appendix SR18.1 of the ES Supplement December 2016 (Document 2.4.14).

### **3.7. Monitoring of Scheme Landscape Mitigation Proposals**

- 3.7.1. Section 9.5 of the LVIA ES Chapter also sets out the commitment to the provision of a five year aftercare period for the landscape planting once the Scheme opens. The aftercare period is important in ensuring successful establishment and growth of the new tree and shrub planting, seeding and other landscape elements such that the landscape achieves the mitigation set out in the ES. The

Environmental, Landscape and Ecology Aftercare Plan for the Scheme is set out in Chapter 18 of the ES. The annual and seasonal monitoring of the Scheme during construction and operation 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 is set out in commitments 117, 130 and 161 of the Scheme Environmental Commitments Register (Appendix SR18.1 of the ES Supplement December 2016 – Document 2.4.14).

3.7.2. Chapter 18 of the ES describes how the environment would be managed during construction of the Scheme (referred to as Key Stage 6) through the further development and implementation of the Scheme-specific Construction Environmental Management Plan or CEMP. A Pre-CEMP for the Scheme is appended to the Construction Chapter (Chapter 3) of the ES at Appendix 3.2. The CEMP will be updated at the end of the construction phase to form the Maintenance Environmental Management Plan (MEMP).

3.7.3. It is important to note that at the end of the contract 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 and who would carry forward maintenance of the soft estate in accordance with the above commitments. Maintenance aims and objectives would be guided by a handover management plan (the HEMP) and by updated landscape design EMPs showing the design development through construction and maintenance.

### **3.8. Assessment of Potential Construction and Operational Effects**

3.8.1. The assessment of the landscape and visual impacts of the Scheme during construction are set out in section 9.7 of the ES Chapter and in the September 2016 and December 2016 ES Supplements. The Assessment of potential operational effects and their impact is set out in section 9.8 of the ES chapter. The assessment of potential land take effects is incorporated into these two sections.

3.8.2. The LVIA covers both day and night time conditions and, for the Scheme once operational, consideration is given to the situation at both year 1 and year 15 after opening. Year 15 is generally considered as the earliest appropriate year when a scheme can be assessed assuming the vegetation has reached sufficient maturity to be capable of achieving the design and mitigation function ascribed to it.

### **3.9. Additional Mitigation and Monitoring**

3.9.1. 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 of the ES. I am of the opinion that the Scheme provides an appropriate level of mitigation.

3.9.2. Monitoring of the success of the landscape and associated ecological mitigation will be a key component of the operational phase of the Scheme.

### **3.10. Assessment of Construction Effects**

3.10.1. Construction effects will include:

- a) Loss of existing landscape features and land
- b) Visual intrusion of the works themselves
- c) Unmitigated construction work, e.g. embankments
- d) Construction traffic and plant, e.g. lorries moving fill and large cranes to construct the River Usk Crossing
- e) Plant, compound and vehicle lights during hours of darkness
- f) Landscape and visual impact of temporary works.

3.10.2. As set out above, the proposed mitigation during construction is part of the Scheme and would help to minimise the loss and effects of landscape features, pattern and vegetation, the change in land use, and the adverse impact on visual receptors.

3.10.3. I do not, therefore, consider there to be any need for additional mitigation. The residual effects of the Scheme would therefore be as set out in Section 9.7 of the ES.

### **3.11. Assessment of Operational Effects**

- 3.11.1. Operational effects will include:
- a) Moving traffic on the Scheme;
  - b) Lighting on the Scheme;
  - c) Visual and physical impact of large structures, and;
  - d) Visual and physical impact of equipment associated with the operation of the Scheme, e.g. signage.
- 3.11.2. The proposed mitigation described in Section 9.5 of the ES is an inherent part of the Scheme and shown on the Environmental Masterplan (Figure 2.6).
- 3.11.3. There is inherent mitigation built into the engineering design of the Scheme including the earthworks and the physical location of the route chosen for the new section of motorway to avoid sensitive landscape and visual receptors as far as possible.
- 3.11.4. I am of the opinion that the Scheme has been mitigated as much as it can be through design and additional measures. The residual effects of the Scheme would therefore be as set out in Section 9.8 of the LVIA ES Chapter. This recognises that there will be adverse landscape and visual residual effects and effects on tranquillity resulting from factors such as the loss of woodland (including ancient woodland), changes to and severance of historic landscape, vehicle movements, structures and visibility of Scheme lighting.
- 3.11.5. The LVIA recognises that there will be landscape and visual impacts that are in places large to very large on designated, sensitive landscapes. The more formal, Assessment of the Significance of Impacts of Development on Historic Landscape (ASIDOHL) (a detailed process for assessing, as objectively as possible, how much change a proposed development might bring to the fabric and appearance of the surrounding historic landscape) and the interface with the LOHI designation, has been considered in liaison with Mick Rawlings and is reported in the Heritage Chapter of the ES and set out in his Proof.
- 3.11.6. I consider that the Scheme has been designed, with the anticipated landscape and visual impacts assessed and mitigated through

design development and additional measures, with any residual impacts described in Chapter 9 of the ES.

### **3.12. Assessment of Cumulative Effects**

- 3.12.1. Assessment of 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) of the ES.
- 3.12.2. The landscape assessment presented in Chapter 9: Landscape, includes the consideration of all potential impacts on landscape character and landscape quality. Therefore, no additional cumulative effects are considered likely to occur beyond those identified in the chapter.

### **3.13. Inter-relationships**

- 3.13.1. The LVIA process and the preparation of the EMPs has been an iterative and collaborative process across both the other environmental disciplines and with the Welsh Government M4 Corridor around Newport Construction Joint Venture team. This is reflected in the LVIA 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).

### **3.14. Summary of Effects**

- 3.14.1. The effects of the Scheme on both the landscape and on views are summarised in Section 9.15 of the LVIA ES Chapter. Effects on the 11 local landscape character areas, and on views from identified receptors are summarised for the construction period and for years 1 and 15 after opening. They are also summarised for the complementary measures work and effects on the existing M4. There will be landscape and visual impacts from the construction of the Scheme, some of which will be permanent, e.g. within the extent of the permanent footprint of the Scheme, and some of which will be

temporary e.g. associated construction areas, compounds, borrow pits and haul roads that will be reinstated after construction. Visual impacts will include the Scheme itself, fixed structures required to construct the Scheme e.g. cranes or batching plant, and the movement of construction traffic to and from the Scheme and within the working area. These impacts potentially will affect landform, drainage patterns, urban form and street pattern and are set out in section 9.6 of the LVIA ES Chapter.

- 3.14.2. Landscape and Visual impacts from the complementary measures have been assessed. Landscape impacts have not been considered as, aside from minor interventions, there will be no direct or indirect impact on the existing landscape. The visual impact at Year 1 will be slightly beneficial, largely as a result of decreased traffic, with this benefit decreasing by year 15 as traffic volume increases.
- 3.14.3. Visual impacts will potentially affect all identified receptor types including users of the Coastal Path and other public rights of way (PRoW's), where these are diverted or have managed crossings of the Scheme. At the meeting of 13th September 2016 with NRW, the mitigation measures for PRoW users were discussed and agreed as appropriate.
- 3.14.4. I recognise that the Scheme will have a permanent effect on the landscape and visual appearance of the Gwent Levels LOHI and on the landscape at the Castleton and Magor extents of the Scheme. The impacts of the Scheme when operational are set out in section 9.7 of the LVIA chapter. This assesses the effectiveness of the proposed mitigation at Year 1, i.e. when the Scheme has just been completed and planting has not developed, and at Year 15 when it is expected that planting will have established and matured sufficiently to achieve the intended landscape and visual mitigation.
- 3.14.5. Landscape impacts within each of the Landscape Character Areas (LCAs) range at Year 1 from Neutral to Large Adverse, with the greater impacts to LCAs 1 (Michaelston-y-Fedw), 2 (Wentloog Levels) and 7 (Caldicot Levels). Generally, the assessment of impact is on the physical landscape and as such does not generally improve

over time. Where it does it is generally where the existing landscape itself was of a low quality.

- 3.14.6. Visual impacts at Year 1 are at their greatest as it is assumed that the landscape mitigation provided by the Scheme will not yet be effective, other than where there is physical mitigation such as earth mounds, false cuttings other built mitigation or existing vegetation and structures. By Year 15 shrub, tree and woodland planting will have matured and will be achieving, or starting to achieve the intended mitigation of visual impact.
- 3.14.7. Visual impacts have been assessed for the selected representational viewpoints, for residential properties, public rights of way, permissive paths and other land with public access, schools/community facilities and business properties. Generally the proposed mitigation has been assessed at Year 15 as reducing the operational impact at Year 1. I would however note:
- a) In some situations, e.g. viewpoint 9, at Church Crescent, the landscape mitigation, whilst effective for the direct visual impacts, (will have an adverse effect by changing the existing wider views.
  - b) For the elevated structures the impact on views cannot be mitigated through planting strategies.
- 3.14.8. As I have set out, in early discussion with statutory consultees, it was agreed that to attempt to screen the Scheme completely with tree and woodland planting across the Levels would, itself, have an adverse impact on the historic landscape both physically and visually. It would also have adverse impacts on the ecological quality of the drainage network through shading, and would potentially result in unnecessary loss of SSSI land. Visual mitigation, therefore, has been balanced with minimising the shading of drains and reens and keeping the extent of land take within the SSSI designations to the minimum necessary to deliver the Scheme.
- 3.14.9. This approach delivers direct and indirect ecological benefit through reduced shading and new areas of grassland suitable for shrill carder bee habitat.

- 3.14.10. Where there are visual receptors close to the Scheme across the Levels tree planting has been introduced to screen views. However it is recognised that some receptors, particularly those located within approximately 300 metres of the new section of motorway, would continue 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
- 3.14.11. Following comment on the published Orders and ES, off site planting on Welsh Government land has been introduced to mitigate the impact of the Scheme on the setting of the Listed Tatton Park farm.
- 3.14.12. Statutory consultees, during the development of the Scheme, have noted that there are potential positive benefits from new views within and across the Levels. DCfW have expressed the opinion that a 'less is more' approach to mitigation is appropriate, stating that: *"In some cases, it might be of value to take away or leave things out, rather than adding new elements to the landscape. For example, the landscape character of The Levels would be emphasised by minimising planting and maximising uninterrupted horizontal views; i.e. the design approach may benefit from more simplicity."*
- 3.14.13. As noted in the Register of Commitments, the Scheme will be constructed in accordance with the design set out in the ES, ES Supplement and design documents (Commitment 95) and all temporary construction work sites removed and the land restored on completion of the works (Commitment 104).
- 3.14.14. Section 9.4 of the LVIA assesses the existing Levels of visible illumination during the hours of darkness and notes that for much of the Scheme extents, the night sky is already illuminated by lighting from industrial areas, urban areas and from existing highway lighting.
- 3.14.15. Road lighting on the proposed new motorway would be provided only at junctions and their immediate approaches. Lighting would be to current design standards, minimising glare and light spillage. The Usk Crossing would have road lighting and illumination to highlight elements of the structure.

- 3.14.16. I note that Commitment 134 specifically commits to minimising lighting and avoid lighting the Usk and Ebbw River channels. This recognises both the potential visual impacts and the potential impact on ecological designations and protected species.

## 4. Environmental Statement Supplements

- 4.1. The Draft Orders and an accompanying ES for the Scheme were published on 10th March 2015. Since then, the detail of the design has continued to be progressed and those potentially affected by the Draft Orders have had the opportunity to comment on them. Those processes have resulted in new information becoming available that could have a bearing on the EIA as reported in the ES and on the LVIA chapter of this.
- 4.2. These design developments and minor modifications in response to comments and objections, for example, changes to the height of the River Usk Crossing, are explained in more detail in Mr Ben Sibert's Proof of Evidence (WG 1.5.1).
- 4.3. These Scheme changes have been reassessed using the same LVIA methodology as for the published ES and consequential amendments in impact have been set out in the first ES Supplement which was published in September 2016 (Document 2.4.4) and in the second ES Supplement published in December 2016 (Document 2.4.14). In addition and where appropriate, mitigation has been reassessed and changes made to the EMPs to reflect new or modified landscape or other environmental mitigation.
- 4.4. As noted in paragraph 1.4.9, to reflect these changes, photomontages produced as part of the ES have been modified. Further, in response to comment and objections, new viewpoints have been added and a photographic record taken and new photomontages prepared. These are to be found in the ES Supplements.
- 4.5. Overall, it is my opinion that these Scheme developments have not worsened the assessment of landscape or visual impact.

## **5. General Responses To Queries And Objections**

### **5.1. Landscape And Visual Impacts**

- 5.1.1. A number of objections to the Scheme have been received, many of which raise objection on multiple grounds, and, where the objections specifically mention impacts on the landscape, or visual impacts, these objections are very general in nature. In my evidence I address those where specific objections on Landscape or Visual grounds have been raised.
- 5.1.2. These objections can be considered under six categories, covering similar topics, which I have broken down as follows:
- a) General landscape
  - b) General visual
  - c) The Gwent Levels
  - d) Magor junction area
  - e) Proximity to receptors
  - f) Specific objector issues

### **5.2. General Landscape**

Objections 0037, 0119, 0164, 0177, 0199, 0249, 0281, 0290, 0318, 0332, 0334

- 5.2.1. These objections relate to general concerns about impacts of the Scheme on the local landscape and the tranquillity of the area. They include suggestions that it would spoil the distinctive and historic landscape and natural beauty of the area, lead to loss of greenbelt, loss of trees, and result in loss of land precious to wildlife. The objections do not refer to specific impacts on landscape components or features.
- 5.2.2. A general response has been issued in respect of these objections. This explained that the effect of the Scheme on Landscape Character has been assessed in accordance with appropriate and current guidance and is reported in Chapter 9 of the ES.
- 5.2.3. It also explained that the new section of motorway would have a large or very large adverse effect on the landscape character of the

Levels during the construction and operation phases. This is despite aligning the proposed new section of motorway as far north as possible to avoid having a significant detrimental effect on the Levels, and sufficiently far south to avoid these effects on the existing residential areas of Newport.

- 5.2.4. The response also stated that currently the sense of tranquillity on the Gwent Levels increases as the distance between the rural landscape and the industrial features of Newport, main roads and rail links increases.

### **5.3. General Visual**

Objections 0114, 0123, 0139, 0174, 0293

- 5.3.1. These objections relate to general concerns about visual impacts of the Scheme on the local landscape and views within the area, including general concerns that the proposals will be an eyesore, and the structures overshadow or ruin the beauty of the landscape. The objections do not refer to specific visual impacts on individual receptors.
- 5.3.2. A general response has been issued in respect of these objections. This explained that the effect of the Scheme on Visual Amenity has been assessed in accordance with appropriate and current guidance and is reported in Chapter 9 of the ES.
- 5.3.3. The assessment has been carried out on the basis of impacts during the construction period and impacts during the operational period at day one on year one, after opening, and at year 15 after opening. It has been assessed from approximately 97 locations across the Gwent Levels, including residential and non-residential properties, public rights of way and from roads and other transport routes.
- 5.3.4. The response explained that the level of visual impact at any particular location is partly a function of the distance from the Scheme but also of the nature and density of intervening vegetation and other elements in the view. It was also acknowledged that there would be significant visual impacts on parts of the Gwent Levels.

- 5.3.5. It also stated that at opening of the Scheme (in 2022), there would be no significant views visible from 74% of the representative locations, this figure increasing to 88% fifteen years later.

#### **5.4. The Gwent Levels**

Objections 0020, 0029, 0058, 0085, 0089, 0091, 0105, 0106, 0141, 0173, 0175, 0176, 0179, 0194, 0198, 0204, 0258, 0261, 0285, 0284, 0290

- 5.4.1. These objections oppose the proposals to build a new M4 motorway through the Gwent Levels, a number of these are modified generic letters based on a template provided by Gwent Wildlife Trust (Wildlife Trust Wales). The concerns include the loss of habitat, impacts on a Landscape of Outstanding Historic Interest, damage to ditches and reens and the cumulative impacts of the Scheme with other existing and planned developments. They also believe that the Welsh Governments should do all it can to encourage cars off the road by providing greener transport options and consider greener transport options and viable alternatives such as the blue route. Aside from reference to the Landscape of Outstanding Historic Interest and the ditch and reen features, the objections do not reference specific landscape or visual impact issues.

- 5.4.2. A general response has been issued in respect of these objections. It refers to the comprehensive ecological assessment in Chapter 10 of the ES.

- 5.4.3 The response also referred to the historic environment assessment in Chapter 8 of the ES, with regard to the historic landscape, and to Chapter 4 with regard to alternative transport options, including the alternative “blue route”, which is also addressed in the response.

#### **5.5. Magor Junction Area**

Objections 0004, 0020, 0053 and 0210

- 5.5.1. These objections raise concerns over a number of topics at the Magor junction area, including increases in traffic and congestion, loss of farm land, increase in noise, air and light pollution, and no consideration of the existing areas of special interest and the visual

impacts on residents. There are general concerns about the impact the proposed interchange will have on Llanfihangel Rogiet in general, and the view from 1 Windmill Cottage, Windmill Lane, Rogiet.

- 5.5.2. OBJ0004: This objection is a general one from a Monmouthshire County Councillor, objecting to the expense of the proposed Scheme and expressing concerns raised by residents at Rogiet, that it will not serve the village, but cause an increase in traffic, congestion and disruption to the residents. It is felt that a junction to the east of the village would be a better solution. It is also felt that there has been no consideration of the area of special interest and that it will destroy the whole visual impact of this area. There are also concerns about the loss of farm land and the increase in traffic, noise, light and air pollution.
- 5.5.3. A response was issued, referring to the forecast traffic volumes and predicted future traffic flows and capacity of the B4245, along with the improved access to Magor, Undy, Rogiet and Caldicot, thereby improving access to the Severn Tunnel Junction station. It also refers to Chapters 15, 7, 13, and 2 in the ES with regard to Compulsory Purchase Orders (CPO), noise, air quality and lighting respectively.
- 5.5.4. The response to the concern over the visual impact of the new road confirmed that it had been assessed in accordance with appropriate guidance and is reported in Chapter 9 of the ES. In view of the general nature of this objection, no further response is deemed necessary, however, landscape mitigation design will continue to be developed as the Scheme progresses.
- 5.5.5. OBJ0020: This objection raises concerns over the consultation process, flooding and water management, cost and funding of the Scheme, increased traffic in the Rogiet area, impacts on the Gwent Levels and SSSIs, and lack of mitigation for noise, pollution and visual impact at Rogiet. It also suggested alternative route options.
- 5.5.6. The response addressed the concerns raised and referred to the relevant Chapters in the ES. The landscape mitigation design will

- continue to develop in this area as the Scheme progresses, in order to minimise the impact on views for residents of Rogiet.
- 5.5.7. OBJ0053: This objection includes concerns about the impact on the character of the village of Magor.
- 5.5.8. The response to this objection referred to the relevant Chapters in the ES. This was summarised to state that 3 individual residential properties within the permanent land take area for the scheme in Magor would be lost; there would be no loss of community facilities; and a new area of allotments at Green Moor Lane would be provided to mitigate for the loss of part of the existing site. It also acknowledged the potential for an alteration in the visual amenity of some individual properties located along the alignment which would mostly be screened or filtered by the maturing linear tree and shrub belts on the embankments along the Scheme.
- 5.5.9. OBJ0210: This objection is from residents at 1 Windmill Cottage, Windmill Lane, Rogiet, and raises concerns over the proposed relocation of Junction 23 away from Magor, repositioning it at Llanfihangel Rogiet to form a new B4245/M48/M4 junction and the creation of two new junctions to serve Newport. The objection highlights concerns that there will be pressure for further development which will urbanise an historical location. Landscape (visual impact) specific concerns are regarding the view from the back garden which is currently of open countryside, and would become a view of a motorway junction.
- 5.5.10. The response to this objection addresses the various topics raised, referring to the appropriate Chapters in the ES. The landscape (visual impact) section of this response states that the Scheme has been assessed in accordance with appropriate guidance, and is reported in Chapter 9 of the ES. It looks at impacts during construction, at year 1 (on opening) and after 15 years. The landscape mitigation design will continue to develop in this area as the Scheme progresses.

**5.6. Proximity to Receptors**

Objections 0049, 0218, 0227

- 5.6.1. The following objections raise landscape or visual impact issues relating to the proximity of the proposed Scheme to individual properties, potentially affecting the viability of the business or the views from the farmstead.
- 5.6.2. Initial general responses have been made and followed up with more detailed correspondence and/or meetings. In each case, discussions remain under way with the landowners or business owners.
- 5.6.3. OBJ0049: This objection, received from the land agent on behalf of the Parc Golf Club, relates to concerns about proximity of the Scheme to Parc Golf Club and the potential loss of land affecting viability of the club and the uncertainty of the scheme affecting confidence in the club, leading to loss of income. Discussions are ongoing, which may require modification of the EMPs.
- 5.6.4. OBJ0218: This objection relates to concerns about proximity of proposed Scheme in relation to noise and visibility from farmstead (Arch Farm). Discussions are ongoing.
- 5.6.5. OBJ0227: This objection relates to concerns about proximity of proposed road to residential dwelling and suggestion of an alternative dwelling to the north of the farm buildings to help mitigate the effects of the Scheme. It also objects to loss of land for purposes not essential to the Scheme, details of which have not formally been notified but are understood to include extraction of stone and mitigation tree planting on high quality agricultural land immediately adjacent to the farmstead. Discussions are ongoing.

**5.7. Specific Objector Issues**

Objections 0022, 0111, 0144, 0146

- 5.7.1. OBJ0022: This objection raises concerns over several topics, including noise, light and environmental pollution, plus specific landscape issues, construction phase impacts and quality of life and value and saleability of the objector's house. The landscape specific

part of this letter of objection relates to the wooded escarpment to the north of the A48 near Castleton Interchange, requesting more information about how existing woodland would be retained or what might be lost to re-profiling, and therefore how long new structure planting would take to have a significant visual impact. It also asked whether some semi-mature re-planting be considered to yield a greater immediate visual impact.

- 5.7.2. A response has been issued, covering all topics raised. The response to the landscape specific query states that the assumption is that the majority of the existing trees and shrubs in the Castleton Interchange area would be lost. However as the scheme progresses, through the design and construction phases, ways to maximise the retention of existing trees and shrubs would continue to be looked at. It is estimated that new structure planting will take between 10 and 15 years to become effective in providing screening, but where required by the scheme, the use of larger tree planting for more immediate visual impact will be considered. The landscape mitigation planting in this area will continue to be developed as the Scheme progresses.
- 5.7.3. OBJ0111: This objection relates to concerns that the proposal is contrary to Welsh Government policy with regards to ancient woodland. It also expresses concerns about light pollution.
- 5.7.4. The response to this objection addresses the various topics raised, referring to the appropriate Chapters in the ES. It confirmed that other than at junctions and their approaches (including the River Ebbw underbridge) and at the River Usk Crossing the new section of motorway would be unlit. Where present the lighting would be designed to minimise light spill outside the motorway carriageway. It also stated that soils from the ancient woodland would be reused elsewhere on the Scheme as a medium for the replacement planting of deciduous broad leaved woodland and that, during detailed design the development of the detailed Construction Environmental Management Plan, further work would be undertaken to minimise significant adverse effects on ancient woodland.

- 5.7.5. OBJ0144: This objection (from CPRW) relates to concerns that the proposed Scheme is unnecessary, inappropriate, would change the character of the Levels, create pressures for further development and lead to total loss of the irreplaceable special area of countryside. There are also comments from CPRW recognising the Landscape and Visual Impact Assessment in the ES, and agreeing with it. Their concerns regarding landscape and visual impacts relate to an earlier Strategic Environmental Assessment (SEA), published and consulted upon September-December 2013, which CPRW consider to be defective.
- 5.7.6. A response has been issued, addressing the various topics within the letter of objection. The response also comments on the earlier SEA. There are no further comments to add to this as this part of the objection refers to a previous consultation.
- 5.7.7. OBJ0146: This objection raises concerns over the loss of fields near Undy, and loss of two trees that children play in. It also expresses concern over the impacts on the public footpaths and safety. There are also concerns over the traffic noise that will be experienced by the residents of Undy.
- 5.7.8. A response has been issued, covering the topics raised in this objection. It explained that the route for the motorway has been chosen carefully with consideration to the environment and residents. It also explains that some land is needed for the proposed Scheme, and some trees will need to be taken down, but more trees will be planted than are being removed and new habitats will be created for the wildlife. In addition, new footpaths and cycleways will be created to encourage people to use them, and a new junction will encourage fewer cars and lorries to use the roads through Magor and Undy.

## **6. Conclusion**

- 6.1 My Proof of Evidence demonstrates that the Scheme has been designed, with the anticipated landscape and visual impacts assessed and mitigated. Residual landscape and visual impacts, those that cannot be directly mitigated by the Scheme are, described in the ES. Objections to the Scheme have been shown to either have been addressed by the Scheme design and mitigation; through design changes to the Scheme since publication of the Orders, or pertain to matters more appropriately addressed through future detailed design development and the commitments given.
- 6.2 My Proof of Evidence includes all facts I regard as being relevant to the opinions I have expressed and the Inquiry's attention has been drawn to any matter that would affect the validity of that opinion.
- 6.3 I believe the facts I have stated in this Proof of Evidence are true and that the opinions expressed are correct.