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Department for Economy, Science and  
Transport  
Welsh Government  
Cathays Park  
Cardiff CF10 3NQ

by email: [info@m4-can.co.uk](mailto:info@m4-can.co.uk)

4 May 2016

Dear Sir or Madam

**Re: NATURAL RESOURCES WALES RESPONSE TO:  
DRAFT ORDERS UNDER THE HIGHWAYS ACT 1980 CONCERNING THE PROPOSED  
M4 CORRIDOR AROUND NEWPORT**

Thank you for the opportunity to comment on the above. Below, we offer the following advice and comments.

**Natural Resources Wales' Purpose**

The purpose of the Natural Resources Body for Wales (NRW) is to ensure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used. In this context sustainably means with a view to benefitting and in a manner designed to benefit the people, environment and economy of Wales now and in the future. Our functions are set out in the Natural Resources Body for Wales (Functions) Order 2012. Our advice and comments are therefore provided in the context of this remit.

Our purpose will be amended by Part 1 of the Environment Act 2016, which comes into force on 21 May 2016, to pursue sustainable management of natural resources in relation to Wales, and apply the principles of sustainable management of natural resources in the exercise of its functions, so far as consistent with their proper exercise. As the deadline for this response is 4 May 2016, we are not responding in the context of this amended purpose but remind you that our new purpose will be relevant to any subsequent stages of scheme development.

Please note that our comments are made without prejudice to any comments we may subsequently wish to make, including upon receipt of further or more detailed information, which we may need to take into account in making a formal comments or responses to the relevant public decision maker.

Natural Resources Wales' comments to the draft Orders, Environmental Statement and other relevant documents, are made in the context inter alia of our role as a statutory consultation body under section 105B of the Highways Act 1980, Statutory Nature Conservation Body under the Conservation of Habitats and Species Regulations 2010 (as amended) as further amended by paragraph 189 of the Natural Resources Body for Wales (Functions) Order 2013, and as advisers to the Welsh Government on matters pertaining to the natural heritage of Wales and its coastal waters.

**In this context we advise that NRW would object to the making of the above named Orders, as from the information provided, we are unable to agree with the conclusions of the Environmental Statement that:**

- **adverse effects on European Protected Species and Water Voles can be avoided;**
- **adverse effects on the Gwent Levels Sites of Special Scientific Interest can be avoided;**

**and:**

- **is contrary to Welsh Government's Technical Advice Note (TAN) 15: Development and Flood Risk**

Further explanation of these and other matters within NRW's remit are given below:

### **Context of Comments**

We welcome the opportunity to respond to the proposals for the M4 Corridor around Newport (M4 CaN) Project, now published as the draft Scheme, Trunk Road Order and Side Road Order detailed above, with a consultation period from 10 March-4 May 2016. Our comments and advice are primarily made in relation to the Sustainable Development Report (comments at Annex 1), Statement to Inform an Appropriate Assessment (comments at Annex 2) and the Environmental Statement (comments at Annex 3).

We have also welcomed the opportunity to have engaged with the consultants acting on your behalf during the pre-publication period and are pleased that there are a number of instances where our comments and advice have been taken on board, both in the draft design of the Scheme, as well as in the environmental impact assessment of these proposals.

Due to the limited time available to respond, we have concentrated on those documents that are most relevant to NRW's remit. To that end, we wish to advise that not all documents have been comprehensively assessed.

## **Sustainability**

Natural Resources Wales is aware that proposals for relieving congestion on the stretch of the M4 motorway in Newport have been subject of discussion and assessment for over 20 years, and our predecessor bodies have engaged with you over this period. More recently, as NRW, we responded to Welsh Government's consultation on a draft M4 CaN plan, in 2013, and we refer you to our response dated 16 December 2013: <https://naturalresources.wales/media/1651/m4-corridor-around-newport-natural-resources-wales-response-to-the-draft-plan-subject-to-public-consultation-between-23-september-2013-and-16-dece.pdf>. We advised that Welsh Government should consider whether the adoption of the Plan would be the most sustainable solution to ease the traffic congestion issues, given the expectation that the Welsh Government would wish to demonstrate an exemplar approach to its Sustainable Development duty. Further, it is noted that the legislative framework has continued to change and this is acknowledged in the ES.

We also refer you to our comments, at Annex 1 to this letter, made in relation to the Sustainable Development Report published as part of this consultation.

## **Environmental Issues**

Due to the nature, size and complexity of the proposals, the draft Orders raise a number of environmental issues within the remit of NRW. Key topics which NRW has considered are:

- Protected Species
- Designated Sites
- Flood Risk
- Caldicot and Wentlodge Levels Internal Drainage and Flood Risk Assets
- Re-use of Llanwern Steelworks lagoon material
- Gwent Levels Registered Historic Landscape of Outstanding Interest in Wales
- Wales Coastal Path
- Other Landscape Issues

We now outline our views on the above

### **Protected Species**

A number of European protected species (EPS) and UK protected species have been confirmed to be present, including dormice, some bat species, otter, great crested newt and water vole.

Our concerns are set out below with detailed comments in Annex 3 to this letter.

Regulation 3(4) of the Conservation (Natural Habitats, &c.) Regulations 1994 requires all competent authorities, in the exercise of their functions, to have regard to the requirements of the Habitats Directive, so far as they may be affected by the exercise of those functions.

All species of bats, otters, dormice and great crested newt (GCN) are EPS, protected under the Conservation of Habitats and Species Regulations 2010 (as amended). Where EPS are present and a development proposal is likely to contravene the legal protection they are afforded, a development may only proceed under licence issued by Natural Resources Wales, having satisfied the three requirements set out in the legislation. A licence may only be authorised if:

- the development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest (IROPI), including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- there is no satisfactory alternative; and
- the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

It is essential therefore that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development is established, before a decision on the proposal is made by the Welsh Ministers in order that a full assessment of the likely impact of the proposals has been completed.

Water vole are listed in Schedule 5 to the Wildlife and Countryside Act 1981. The legislation protects the animals themselves and any place they use for shelter or protection.

### Protected Species Survey

We note and welcome the desk and field surveys undertaken to date to confirm presence of, and where possible population estimates, for a range of protected species. However, a number of surveys remain outstanding, particularly those for GCN and bats:

- surveys of waterbodies within 250m of any positive eDNA results identified in 2015
- activity surveys of buildings assessed as having potential to support bats that will be impacted by the scheme at Fair Orchard Farms.

We understand that these surveys will be carried out in the summer of 2016.

Without this information, NRW has not been able to fully assess the likely effects on and proposed mitigation put forward for GCN and bats. We are unable, therefore, to fully comment at this stage, and we are unable to agree with the assessments in the ES in this regard. .

## Dormouse strategy

Dormice have been confirmed at three locations along the Scheme. The ES states that significant vegetation supporting this species will be cleared to facilitate the Scheme, particularly at Castleton. We consider that there will be insufficient habitat to maintain dormice at this location throughout construction and for a period following completion of the scheme. As it will take a significant period of time before new planting becomes suitable for dormice, the extent of the habitat to be lost together with the time lag until suitable replacement habitat vegetation becomes available is a significant issue for the scheme.

An outline strategy for the conservation of dormice is included in the ES. However, NRW has concerns in relation to the proposed dormouse strategy for this Scheme. Further information has been requested by NRW which is needed before we can come to a view on whether or not there will be detriment to the maintenance of the Favourable Conservation Status (FCS) of dormice. On current information we would not be able to issue an EPS licence for this species. Further advice is given on this matter within Annex 3 to this letter.

On the basis of the available information, we do not support the conclusions in the Environmental Statement (10.9.239) which states that impacts of habitat loss on dormice would be '*Negligible Adverse leading to effects of Neutral or Slight significance*'. We may be able to revise our view if the requested additional information is able to adequately address our concerns.

## Conservation and Mitigation proposals

Outline mitigation measures have been presented within the ES that could contribute to reducing impacts. However, we advise that detailed strategies for dormouse, bats, otter and potentially (depending on the results of the ongoing survey) GCN are provided to enable assessment as to whether there will be a detriment to the maintenance of the FCS of the species concerned.

We also note there is a reliance on the proposed SSSI mitigation area at Caldicot Moor as a receptor site for a number of species including water vole, GCN and reptiles. It is not clear whether the management required to facilitate translocation and to maintain populations post translocation are compatible with the management required to maintain the features of the SSSI mitigation area.

We therefore advise that in drafting conservation strategies for each of the relevant species, the capability of the SSSI mitigation area to accommodate these species is taken into account. If management cannot be delivered which is sympathetic to both the SSSI and the relevant protected species, we advise that an alternative approach is developed. Please note that it is possible that this may require the management of land outside the current development boundary.

**In summary, from the information provided, we are unable to agree with the conclusions of the Environmental Statement that adverse effects on dormice, bats, great crested newt, otter and water vole can be avoided. We request the following additional information:**

- **Additional survey information particularly with regards to great crested newts and bats;**
- **The provision of a comprehensive strategy for the conservation of dormice;**
- **Detailed conservation strategies for bats, great crested newt, otter and water vole.**

We may be able to revise our view if the requested additional information is able to adequately address our concerns. Our detailed comments on these matters are given in Annex 3 to this letter.

### **Designated Sites**

#### River Usk/Afon Wysg SAC and River Usk/Lower Usk SSSI

The project would involve the construction and operation of a new bridge spanning the River Usk/Afon Wysg SAC and the River Usk (Lower Usk) SSSI. The River Usk/Afon Wysg SAC is designated for a range of features including migratory fish (including Atlantic salmon, twaite shad, allis shad, sea and river lamprey) and European otter. In addition the River Usk (Lower Usk) SSSI is of special interest for its saltmarsh.

We welcome the undertaking that no permanent bridge structure will be located in the “wetted channel” of the River Usk and the proposals put forward in Appendix 3.2 (Pre-Construction Environmental Management Plan) for the construction methodology of the proposed River Usk crossing. We refer you to our comments made in Annex 2 to this letter regarding the Statement to Inform an Appropriate Assessment

#### Gwent Levels SSSIs

Much of the proposed route would pass through parts of the suite of Gwent Levels SSSIs.

The Gwent Levels are one of the most extensive areas of reclaimed wet pasture in Great Britain, and the largest in Wales. The only other comparable sites, in England are the Somerset Levels, Romney Marsh and the Pevensy levels.

The Gwent Levels area has been subject to considerable encroachment from development since notification, and NRW, and historically the Countryside Council for Wales, has a long history of advising on development proposals dating back over 25 years.

We remind you of your duty under section 28 G (2) of the Wildlife and Countryside Act 1981, as amended, to take reasonable steps, consistent with the proper exercise of your functions to further the conservation and enhancement of the features for which the site is of special scientific interest.

The protection and enhancement of SSSIs is translated into planning policy through Planning Policy Wales (PPW) and TAN5, where PPW Paragraph 5.5.8 advises that there is a presumption against development likely to damage a SSSI. TAN 5, at paragraph 5.4.4, advises that the Welsh Government expects to 'apply strict tests when carrying out functions within or affecting SSSIs, to ensure that they avoid, or at least minimise, adverse effects'

**In summary, from the information provided, we are unable to agree with the conclusions of the Environmental Statement that adverse effects can be avoided on:**

- **Gwent Levels: Redwick and Llandevenny SSSI**
- **Gwent Levels: Whitson SSSI**
- **Gwent Levels: Nash and Goldcliff SSSI**
- **Gwent Levels: St. Brides SSSI**

**during both the construction and operational phase. In addition, at this stage we are unable to rule out indirect adverse effects on:**

- **Gwent Levels: Magor and Undy SSSI**
- **Magor Marsh SSSI**
- **Gwlyptiroedd Casnewydd/ Newport Wetlands SSSI**
- **Gwent Levels: Rumney and Peterstone SSSI**

Specifically, we have not been reassured that the proposed construction methodologies, combined with the drainage strategy, reed mitigation strategy and SSSI mitigation strategy will fully mitigate for the loss of SSSI area, and disruption to drainage network on those Gwent Levels SSSIs which would be directly affected by the proposals.

We refer you to our detailed comments with respect to:

- Chapter 2 Scheme Description and associated Appendices (Appendix 2.2 Drainage Strategy, Appendix 2.3 Reed Mitigation Strategy);
- Chapter 3 Scheme Construction and associated Appendices (Appendix 3.1 Buildability Report and Appendix 3.2 Pre-Construction Environment Management Plan);
- Chapter 10 Ecology and Nature Conservation and associated Appendices, including the SSSI Mitigation Strategy at Appendix 10.35 and
- Chapter 16 Road Drainage and the Water Environment and associated Appendices (Appendix 16.2 Baseline Water Environment Report and Appendix 16.3 Water Treatment Area DMRB Risk Assessment)

We may be able to revise our view if the requested additional information is able to adequately address our concerns.

## **Flood Risk**

We have reviewed the Flood Consequence Assessment (FCA) presented at Appendix 16.1 to the Environmental Statement.

We consider that the FCA does not fully demonstrate that the consequences of tidal flooding can be acceptably managed and/or mitigated for. The FCA primarily fails to demonstrate that the increase in flooding elsewhere is manageable and can be suitably mitigated for over the development lifetime, in accordance with TAN15.

**In summary, NRW objects to the making of the above named Orders as it is contrary to TAN 15: Development and Flood Risk.**

We refer you to our detailed comments on this and other aspects of flood risk in Annex 3 to this letter with respect to the FCA at Appendix 16.1.

### **Caldicot and Wentlooge Levels Internal Drainage and Flood Risk Assets**

We note and welcome the principle that construction would be undertaken in accordance with the Construction (Design and Management) Regulations (CDM Regs) 2015. However, from experience, we have concerns that this will restrict our ability to undertake our own routine works and emergency incident response within and adjacent to the area to be governed by the CDM Regs due to access restrictions. This is potentially highly significant due to the long linear area which would form the construction site over a period of years and the scale of our operations in the area, specifically in relation to our responsibilities for the Caldicot and Wentlooge Levels Internal Drainage District (IDD), Main River Reens and Flood Risk Management Assets (Severn Estuary and Rivers Usk and Ebbw Flood Banks). We will require reassurance that we will be able to continue to undertake our routine and emergency response operations in and around the construction site for the full period of construction

In terms of the operational phase of the road, we have had initial discussions around how we will be able to continue to undertake management of the above assets. With respect to Internal Drainage District and Main River reens responsibilities we welcome further discussion of the detail of how these proposals have developed. In principle it should be possible to address our concerns, but we require reassurance that our access requirements have been taken account of in the design iterations which have occurred since this was last discussed.

**Before the commencement of any construction works, should the Scheme go ahead, we will need to discuss and agree the arrangements which will need to be put in place to ensure that we can continue to undertake, but not limited to:**

- **routine reens, ditch and flood risk management structure management and maintenance**
- **emergency works, such as blockage removal and repairs to defences**
- **wider compliance and enforcement work within NRW's remit, not directly related to the M4 construction works**

With respect to the proposed crossing of the River Ebbw, and the proximity of our Flood Risk Asset on the right (western) bank of the River Ebbw, we had a meeting with members of the Joint Venture design team on 27 October 2015, where we discussed our requirement to retain access along the River Ebbw at this point, under the proposed, elevated motorway carriageway. This request does not appear to have been carried forward. In coming to this view we have referred to the following Figures – Figure 2.12 (River Ebbw Underbridge) and Figure 2.4 Sheet 5 of 16.

**We therefore request a meeting to discuss and agree a way forward. Not having access along the River Ebbw itself would cause significant time delays in responding to emergency flood risk issues at this location if our staff have to make use of the proposed New Dairy Farm overbridge, at some distance back from the River Ebbw.**

### **Re-use of Llanwern Steelworks lagoon material**

In principle we would be supportive of waste material within the Llanwern lagoon, displaced as a result of any motorway construction, being placed within the new motorway option as the most sustainable option.

However, there are a number of issues to resolve before we can make our regulatory position, which we highlighted in an email of 29 February 2016. In summary, we advised that the material is not considered a made ground or soil in accordance with the Contaminated land: Application in Real Environments (CL:AIRE) Definition of Waste Code of Practice (DoWCoP) and therefore should not be re-used under that scheme.

**We require additional information (as requested in the email) in order to demonstrate compliance with Article 6 of the Waste Framework Directive 2008/98/EC with respect to end-of-waste status.**

We refer you to our comments made with respect to Appendix 11.2 (Outline Remediation Strategy to Chapter 11 Geology and Soils).

### **Gwent Levels Registered Historic Landscape of Outstanding Interest in Wales**

The scheme would establish a new 3-lane section of motorway within the northern part of the Gwent Levels Landscape of Outstanding Historic Interest. This landscape is included in the Register of Landscapes of Historic Interest in Wales.

Therefore, the form and appearance of the proposed development is almost entirely at odds with the historic landscape. The proposal would sever field patterns, require the culverting and re-alignment of reens & ditches, introduce an embanked road and embanked water features with areas of medium-large water bodies, introduce movement, lighting and noise, elevated structures including overbridges, gantries, lighting columns, Usk & Ebbw crossings. It would change the setting of the land and ability to understand and appreciate the enclosure and drainage pattern.

We therefore agree that there would be a significant adverse effect on the historic landscape of the Gwent Levels, which cannot be effectively mitigated.

**We advise that the elements of the Cultural Heritage Mitigation Plan (CHMP) which relate to the Gwent Levels Registered Landscape are further developed into firm proposals.** NRW advises that:

- Further consideration is given to potential offsite screening to protect the setting of Tatton Farm.
- Interpretation of and access to the physical historic landscape should also be considered, to help offset impacts, given the significant adverse effects on the Gwent Levels Registered Landscape. This could include new areas of land set aside for management and incorporation of interpretation and access into areas set aside for ecological management.
- Reens/ditches are referred to specifically in the Annex A table as they are important elements of the historic landscape.

### **Wales Coastal Path**

We note and welcome the commitment to realign the Wales Coastal Path (WCP) in two locations in the vicinity of the River Ebbw and River Usk as a result of the severance to the present route which would occur as a result of the construction and operation of the scheme.

**However, we disagree that in seeking to maintain a continuous route that no significant effects on the WCP would be predicted, as we are of the view that there would be a reduction in amenity.**

For further detail, we refer you to our detailed comments made with respect to Chapter 14, All Travellers, in Annex 3 to this letter.

### **Other Landscape Issues**

We agree with Chapter 9, Landscape and Visual Effects, which acknowledges adverse effects during the construction and operational phases of the road, related to the physical presence of a new section of motorway within a landscape which does not already include infrastructure of this type and scale. Our detailed comments are made in relation to Chapter 9, Landscape and Visual Effects of the ES in Annex 3 to this letter.

### **Register of Commitments**

Without prejudice to our current objection to the making of the relevant Road Orders, for reasons as set out above, **we have made recommendations throughout our response for topics which we would require to be addressed and implemented to our satisfaction, through the Statement of Commitments.**

We recognise that despite the quantity of information published, there is still a lot of detail to be finalised and agreed, and we have therefore attempted to provide views where we consider that the matter could be resolved to our satisfaction, ie the relevant aspect of our statutory remit covered by the full undertaking of a Commitment made in the Commitments Register, as well as on topics where we have yet to be assured that this is possible. We would welcome the opportunity to further develop our detailed requirements.

## **NRW's Regulatory Role**

Our views, advice and comments should also be read without prejudice to any decision our Permitting and Licensing teams may make in relation to applications made to NRW for permits for which NRW is the decision making body, including, but not limited to:

- Marine Licensing
- Permit under Environmental Permitting Regulations (EPR)
- Flood Risk Activity Permit (now covered by EPR)
- Land Drainage Consent – for areas within the Caldicot and Wentlooge Levels IDD
- European Protected Species Licence
- UK Protected Species Licence
- SSSI Consent

With respect to Marine Licensing, we refer you to our detailed comments made in relation to Chapter 1, Introduction of the ES, but in summary in order for NRW's Marine Licensing team to rely on the exception under regulation 10(1) (b) of the Marine Works (Environmental Impact Assessment) Regulations 2007 Regulations, information regarding the effects of the project on navigational interests and the Marine Historic Environment is required. This information is not contained within the Environmental Statement, and we recommend that this omission is corrected. NRW's Marine Licensing team would encourage further pre-application engagement prior to any application being made for a Marine Licence.

We also refer you to our comments made in relation to Appendix 11.5, Environmental Permitting Strategy

## **In summary**

Thank you for the opportunity of commenting on your proposals. We have raised a number of objections, which we would like you to take into account when considering the making of the Orders.

Finally, if you wish to discuss the content of this letter and accompanying Annexes, please contact Jessica Poole.

Yours faithfully



**John Hogg**  
**Head of Operations**  
**South-East Wales**

cc Martin Bates, WG M4 Project Director  
Peter Ireland, RPS, Environmental Coordinator

Encs:

- Annex 1** NRW Comment on Associated Reporting – General Comments on Sustainable Development Report and Economic Appraisal Report
- Annex 2** NRW Comment on Environmental Information: Statement to Inform an Appropriate Assessment under the Conservation of Habitats and Species Regulations 2010
- Annex 3** NRW Comment on Environmental Information: Detailed Comments on Environmental Statement

## NRW COMMENT ON ASSOCIATED REPORTING

### GENERAL COMMENTS ON SUSTAINABLE DEVELOPMENT REPORT AND ECONOMIC APPRAISAL REPORT

NRW welcomes the publication of a Sustainable Development Report, as part of the Associated Reporting alongside the publication of draft Road Orders linked to the M4 Corridor around Newport (CaN). We also support and welcome that this report assesses the delivery of the scheme in respect of what it would contribute to the Well-being Goals as set out in the Well-being of Future Generations (Wales) Act 2015.

However, NRW recognises, as the report itself points out that this is not, and cannot be, an assessment of the sustainability of the Plan *per se*, as the decision to adopt the Plan in 2014, which included bringing forward a project to investigate building a new section of motorway between junctions 23 and 29 of the M4, south of Newport, predates the 2015 Well-being of Future Generations (Wales) Act. With this in mind, we would caution against this report being seen as a model for such appraisals in the future.

We remind you that in our response, dated 16 December 2013, to the draft plan, NRW urged consideration of whether the adoption of the then draft Plan was the most sustainable solution to ease the traffic congestion issues around Newport, in the expectation that the Welsh Government would wish to demonstrate an exemplar approach to its Sustainable Development Duty.

Whilst the document refers to assessment against the principles, it refers to these in relation to the Goals and not the Sustainable Development Principle set out in the Act. It is this Sustainable Development Principle that says how decisions should be taken (consider long term, Integration, prevention, involvement and collaboration), and as such these have not therefore been assessed in relation to the delivery of the Plan. We think this should be made clearer in the report, or the terminology changed for clarity. To assess whether the scheme itself is the most sustainable option, the application of the SD principle would have had to have occurred during the earlier stages of the decision making process, when alternative solutions to easing the acknowledged traffic congestion and capacity issues on the stretch of the M4 between Junctions 23 and 29, which also does not meet modern motorway standards. With this in mind, we would caution against this report being seen as a model for such appraisals in the future, as in effect the principles have been retro-fitted after the decision to proceed had been taken, rather than forming part of the evidence base to inform a decision.

**NRW COMMENT ON ENVIRONMENTAL INFORMATION:****COMMENTS ON STATEMENT TO INFORM AN APPROPRIATE ASSESSMENT UNDER THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2010**

Our comments are restricted to those sites wholly or partially within Wales. We would defer to Natural England for comments on sites wholly or partially within England.

Our comments are informal at this stage and intended to support the further development of this Statement to Inform an Appropriate Assessment. They are made without prejudice to any view we would have on any Appropriate Assessment, undertaken by the Competent Authority, in this case Welsh Ministers, on the M4 Corridor around Newport project.

1.1.1 We note that this is in effect a draft report to inform the appropriate assessment, which Welsh Ministers, as the Competent Authority in this instance, will need to undertake of the M4 Corridor around Newport project. Our comments are offered in this context.

2.6.4 We recommend that the permanent and temporary loss of River Usk SAC area is detailed here

3.4.3 We note and welcome that our recommendation has been carried forward into a further full winter (2015/16) overwintering bird survey, which is due to report soon. We assume that the reporting date of March 2016 is a typo as we have been informed that the Addendum to the ES will be published in June 2016

3.5.11 We welcome the use of Tyldesley (2011) guidance for assessment of projects

4.1.1 Following early periods of consultation, both at draft Plan and this current project phase, and having taken on board our advice, we agree with the determination that five sites require appropriate assessment, namely:

- River Usk/Afon Wysg SAC
- Severn Estuary/ Môr Hafren SAC
- Severn Estuary SPA
- Severn Estuary Wetland of International Importance (Ramsar Site)
- Wye Valley and Forest of Dean Bat Sites/ Safloedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

4.1.5 This paragraph states that *The NRW response to the AIES Stage 1: Screening Report is presented in Appendix A1, with Welsh Government responses to the NRW comments presented in Appendix A2*. We have been unable to locate these Appendices.

- 4.1.6 We note and agree with the summary of the significant areas of disagreement, made in a letter dated 5 November 2015 to Dr Peter Ireland, the M4 CaN Environmental Coordinator, that we had with an earlier draft of the Habitats Regulations Assessment work associated with this project.
- 4.1.7 We note the current proposals for bridge construction as set out in Chapter 3: Scheme Construction of the ES. On this basis, we are satisfied that likely significant effect arising from direct land take/habitat loss/ fragmentation and physical presence/displacement/barrier/ collision on the migratory fish features of the River Usk/Afon Wysg SAC can be ruled out at this stage. If there are changes to the construction methodology which means that there would be construction within the wetted channel, this aspect of the screening assessment would need to be re-assessed.

Table 4.2 We support the scope of the plans considered as part of the in-combination assessment.

4.2.5- We agree with the approach taken, which accords with the Tyldesley (2011) guidance 4.2.10 with respect to in-combination assessment of projects.

### **River Usk/ Afon Wysg SAC**

5.2.3 We support the approach taken, and reiterate our previous advice that surveys for migratory fish within the M4 CaN project area would not provide useful data to inform either the ES or the Habitats Regulations Assessment work. We therefore welcome that our advice has been followed to assume that all relevant migratory fish (sea lamprey, river lamprey, twaite shad, allis shad and Atlantic salmon) will migrate through the lower River Usk part of the project area.

5.2.14- We are satisfied that, provided the proposals for the prevention of pollution of the 5.2.27 River Usk, both during the construction and operational phases of the road are fully implemented, adverse effects on migratory fish features arising from pollution can be avoided. **We would require this to be included in the Statement of Commitments, and fully implemented as written.**

5.2.28- We welcome the detailed consideration of the effects of noise on the passage of the 5.2.55 migratory fish features of the River Usk/Afon Wysg SAC, in this and subsequent paragraphs. With reference to the piling methods, we note that a combination of approaches have been put forward to reduce impacts on migratory fish. These include avoiding piling works during the most sensitive fish migratory period of March to June inclusive, piling being restricted to vibro and auger piling. Piling works being undertaken intermittently and with a maximum of a 10 hour working day. Vibro and auger piling are preferred methods by NRW for use in situations where sensitive migratory fish species are present and we note that vibro piling (the more potentially harmful of the two) is only proposed for initial stages of piling and it will be intermittent, allowing breaks in the noise. We would require vibro piling to be “soft-start” which will allow any fish present in the vicinity to adapt to the initial noise.

Overall, we are satisfied that this would give fish sufficient opportunity to migrate up or down stream during the periods when no piling is occurring.

- 5.2.52 We note that a precautionary approach has been taken to the effects of noise, which we welcome as a requirement of the HRA process.
- 5.2.60 We welcome the early consideration of impacts arising from project lighting and support and welcome the steps taken to reduce light spill onto watercourses including the River Usk and River Ebbw.
- 5.2.68 We note that there may be a requirement to undertake some piling works (eg associated with the viaduct structure) during the seasonal restriction, but that these are at a distance from the river channels of both the Usk and Ebbw. We welcome the commitment to further discussion with NRW on this- at this stage, and without prejudice to any further comments we may wish to make when presented with further detail, our minimum requirement would be for any piling works within 30m of the River Usk and River Ebbw (wetted channel) during the shad migration period (defined as April to June inclusive) will only be undertaken during the falling tide of the river (defined as high tide plus one hour and low tide minus one hour).

### **European Otter**

- 5.2.130 In principle NRW would agree with the assessment outlined in Section 5.2.130 that due to the mitigation measures put in place during design, construction and operation, adverse effects on otters from the River Usk SAC are not predicted to occur as a result of the M4CaN works. However, more detailed information as to the specific locations of fencing, planting and mammal crossings will be required.
- 5.2.125 With reference to our comment above, this section states that dry culverts would be provided within 50m of the box culverts to be installed along the reens. The closer the mammal crossing to the culvert, the increased likelihood otters will identify and utilize. Additional details must therefore be provided to support the likely success of these crossings, or designs incorporated closer to the culverts. We also advise utilising ledges within the culverts for times of low water levels. Although outside of the scope of consideration within a Statement to Inform an Appropriate Assessment, such proposals would need to be designed in such a way that they do not cause a flood risk, or on increased risk of culvert blockage.

Please note that the appropriate assessment regarding otter would need to be reconsidered should at any point, an otter holt, particularly natal holt, be identified along the scheme. Otter home ranges can be large and it is considered that individuals which utilize the Gwent Levels may be material to the Usk SAC. Therefore any evidence of a breeding site along the scheme should trigger an assessment of the impacts upon the otter feature of the River Usk SAC.

### **5.3 Severn Estuary/ Môr Hafren SAC**

Our comments with regard to migratory fish are the same as for the River Usk/ Afon Wysg SAC above, as impacts on the Severn Estuary/ Môr Hafren SAC would be indirect.

### **5.4 Severn Estuary SPA**

We await receipt of results of the overwintering bird survey for 2015-16, and subsequent assessment as part of an updated/revised Statement to Inform an Appropriate Assessment, before we are able to offer our full view. However, we do agree with the assessment to date which has been able to take account of data from the full winter period of 2014-15 and the latter half of the winter period 2013-2014. We have stated all along that we would require, as a minimum two full winters of data and we welcome the fact that this earlier advice has been taken into account in programming the additional survey, which has yet to report.

### **5.5 Severn Estuary Ramsar Site**

We refer you to our comments above, against 5.3 for migratory fish and 5.4 for qualifying overwintering bird species and assemblage. In addition, with respect to European Eel, we are satisfied with the current approach to avoiding adverse impacts on this species

### **5.6 Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC**

*In principle NRW would agree with the assessment that has been outlined in section 5.6.90 'considering the limited numbers of lesser and greater horseshoe bats recorded in the survey area during 2014 and 2015 (Appendices 10.7 and 10.23 of the ES) which may be from the SAC (given the distance of the nearest roosts from the Scheme), it is expected that there would be no adverse effect on the viability of the SAC bat populations or integrity of the SAC with regard to bats.'*

We welcome the acknowledgement that while there are no roosts of SAC species along the scheme, there are horseshoe bats foraging and commuting in certain areas and that these individuals are most likely to make up part of the SAC population.

Section 5.2.67 states that *'safe crossing points would be provided as close to known commuting and foraging routes of horseshoe bats,'* And that these would *'comprise box culverts along reens and dry mammal crossings, which would be constructed early on during construction so as to help minimise the impact on bat movement'* (section 5.6.31).

However, there does not appear to be a firm commitment to the provision of hedgerows throughout the eastern section of the scheme to ensure foraging and commuting routes are provided. We refer you to our comments made on Chapter 10 – Ecology and Nature Conservation in relation to bats where we advised that this should be addressed within the conservation strategy for bats. Although not directly relevant to this Statement to Inform an Appropriate Assessment, we acknowledge that we will need to work closely with you to ensure

that these requirements for bats (through provision of hedgerows) for foraging and commuting and requirements in relation to the Gwent levels SSSIs to ensure that hedgerows do not shade the ree and ditch network are addressed in parallel

- We note that proposal that should a roost of lesser or greater horseshoe bats be identified, a bat house would be erected to the east of the new road and north of the existing M4. Please note that should a maternity roost of either of these species be found, NRW would not support the removal of the existing roost until such a time as it could be demonstrated that suitable and effective mitigation had been provided and that evidence to support comparable bat use of this mitigation had been confirmed.
- Surveys to date have not revealed any roosts of lesser or greater horseshoe bat within the zone of influence of the scheme. However, not all buildings to be impacted have been surveyed to date. In the event that a roost of lesser or greater horseshoe bat are found during these surveys, the appropriate assessment regarding bats would need to be reconsidered.

Under Article 6(3) of the Habitats Directive, an appropriate assessment is required where a plan or project is likely to have a significant effect upon a European site, either individually or in combination with other projects.

*“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives”*

Article 6(3)

Any project is to be subject to an appropriate assessment if it cannot be proven, beyond reasonable scientific doubt, that there is no significant effect on that site (a precautionary approach), either alone or in combination with other plans or projects.

Further to this, Article 6(4) states that where an appropriate assessment has been carried out and results in a negative assessment (in other words, any proposed avoidance or mitigation measures anticipated are unable to reduce the potential impact so it is no longer significant) or if uncertainty remains over the significant effect, consent will only be granted if there are no alternative solutions, and there are imperative reasons of over-riding public interest (IROPI) for the development and compensatory measures have been secured.

*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for IROPI, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

Article 6(4)

Regulation 61 of the Habitats Regulations requires the competent authority to consider, inter alia, whether the plan or project is likely to have a significant effect on a European site. If there is a likely significant effect an ‘appropriate assessment’ of the implications of the project for that site must be undertaken. The project can only proceed if it has been

ascertained that it will not affect the integrity of the European site (unless there are no alternatives and there are imperative reasons of overriding public interest supporting the project ('IROPI')).

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised as 'imperative reasons of overriding public importance' (IROPI) are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or such other matters contained in an opinion of the European Commission (Regulations 62 and 66 of the Habitats Regulations, transposing Article 6(4) of the Habitats Directive).

We consider likely significant effects cannot be ruled out for:  
the River Usk SAC,  
the Severn Estuary SAC,  
SPA and Ramsar site, and  
the Wye Valley and Forest of Dean Bat Sites SAC.

This is in accordance with the advice we gave Welsh Government in relation to the Plan stage of the M4 CaN.

We therefore consider that the authorising body, in this case Welsh Government, as the competent authority, will need to carry out a test of likely significant effects under regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended). We welcome the opportunity to advise you further on this and any subsequent stages of the HRA which may be required, including appropriate assessment. Without the information we have required being made available, we would have to advise that a precautionary approach must be followed if the Welsh Ministers proceed to make a determination.

We indicate our intention to make further comments and representations when the information identified has been made available to NRW.

We remind you that, as a competent authority for the purposes of the 2010 Regulations, your authority must not normally agree to any plan or project unless you are sure beyond reasonable scientific doubt that it will not adversely affect the integrity of a SAC, SPA or Ramsar site.

8.1.2 Provided that the measures summarised here are fully implanted, we would agree that adverse effects on migratory fish features of the River Usk/Afon Wysg SAC, Severn Estuary/ Môr Hafren SAC and Severn Estuary Ramsar site can be avoided. We would require this matter to be addressed to our satisfaction within the Statement of Commitments, in advance of giving our formal view on the appropriate assessment

8.1.3 We require further information, as set out in our comments on paragraphs 5.2.130 and 5.2.125, before we can give our view in relation to European otter as a feature of the River Usk/Afon Wysg SAC

- 8.1.4 We require the results of the 2015/16 overwintering bird survey to have been evaluated and considered, before we can give a view in respect of the likelihood of adverse effects on the qualifying bird species/ assemblages of the Severn Estuary SPA and Ramsar site
- 8.1.5 We require the results of the in-progress bat surveys to have been evaluated and their significance considered in relation to assessment of adverse effects on site integrity of the Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

**NRW COMMENT ON ENVIRONMENTAL INFORMATION:  
DETAILED COMMENTS ON ENVIRONMENTAL STATEMENT**

Subsection 105B(5) of the Highways Act 1980 (as amended) provides that the “conservation bodies” (as defined), of which NRW is one, must be given an opportunity to express an opinion on both the project and the environmental statement:

*(4) The Secretary of State [or the strategic highways company] must ensure that the consultation bodies are given an opportunity to express an opinion on the . . . project and the environmental statement before he [or it] decides whether to proceed with the construction or improvement to which the assessment relates.*

As regards the content of the ES, we note that subsections 105A(4) and (5) of the Highways Act 1980 provide:

*(4) To the extent to which the Secretary of State [or the strategic highways company] considers—*

*(a) that it is relevant to the specific characteristics of the project and of the environmental features likely to be affected by it, and*

*(b) that the information may reasonably be gathered (having regard among other matters to current knowledge and methods of assessment),*

*the environmental statement must contain the information referred to in Annex IV.*

And,

*(5) That information must include at least—*

*(a) a description of the project (comprising information on the site, design and size of the project);*

*(b) a description of the measures envisaged in order to avoid, reduce, and, if possible, remedy significant adverse effects;*

*(c) the data required to identify and assess the main effects which the project is likely to have on the environment;*

*(d) an outline of the main alternatives studied by the Secretary of State [or the strategic highways company] and an indication of the main reasons for his [or its] choice (taking into account the environmental effects);*

*(e) a non-technical summary of the information mentioned in paragraphs (a) to (d).*

**We identify here that, in accordance with our comments elsewhere in our response with regard to further information that is or should be to be obtained, NRW’s view is that the requirement of s. 105A(5)(c) above has not been discharged. NRW considers that this information reasonably constitutes part of the “*data required to identify and assess the main effects which the project is likely to have on the environment.*”** The Welsh Ministers consent cannot lawfully grant consent for EIA development unless there has been substantial compliance with the EIA provisions of the Highways Act 1980 (as amended).

Subsection 105B(5) of the Highways Act 1980 (as amended) provides that before a decision on the scheme is made by the Welsh Ministers unless environmental information and / or any opinion on the environmental information or the project has been taken into consideration:

*(5) Before deciding whether to proceed with the construction or improvement in relation to which an environmental impact assessment has been made, the Secretary of State [or the strategic highways company] must take into consideration—*

*(a) the environmental statement; . . .*

*[(b) any opinion on that statement or the project which is expressed in writing by—*

*(i) any of the consultation bodies; or*

*(ii) any other person;*

*and is received by the Secretary of State [or the strategic highways company (as the case may be)] within any period specified for the purpose by him [or it*

## **Chapter 1 Introduction**

### **Separate EIA exception under marine licensing regime**

1.5.6 We note the reference (para 1.5.6) to Regulation 10(1)(b) of the Marine Works (Environmental Impact Assessment) Regulations 2007 and the observation in the Environmental Statement that *'it is anticipated that Regulation 10 will be invoked by NRW'*.

Under regulation 10(1) (b) of the 2007 Regulations, in certain circumstances, the appropriate authority (i.e. NRW in relation to this project) may determine that an EIA is not required if it is satisfied assessment of any effects on the environment of the project in question has already been, is being or is to be carried out by NRW or by another consenting authority and that assessment is (or will be) sufficient to meet the requirements of the EIA Directive in relation to that project. NRW has not made such a determination under regulation 10 of the Marine Works (Environmental Impact Assessment) Regulations 2007.

On 10 March 2016, we gave pre-application advice on the Scoping Report.

In order to rely on regulation 10(1) (b) of the 2007 Regulations as described, NRW would have to be satisfied that the EIA for the project assessment is (or will be) sufficient to meet the requirements of the EIA Directive in relation part(s) of the project affected by the Marine Licensing regime and the Marine Works (Environmental Impact Assessment) Regulations (2007) as amended. Our previous has advice highlighted our concern in that the Scoping Report did not address Navigational interests and the Marine Historic Environment. The Environmental Statement for the project does not address these issues. .

In order for Regulation 20(1) (b) of the 2007 Regulations to apply, the Environmental Statement for the project must include these aspects, to ensure that the impacts of the project as a whole are understood. This must be rectified and the Environmental Statement updated accordingly. Any update should also refer to the relevant Marine Licensing legislation and Policy (Including the Marine Works (Environmental Impact Assessment) Regulations (2007), Marine and Coastal Access Act (2009) and the UK Marine Policy Statement) within the Legislative and Policy context chapter of the ES.

In order for RW to rely on the exception under regulation 10(1) (b) of the 2007 Regulations, information regarding the effects of the project on navigational interests and the Marine Historic Environment is required. This information is not contained within the Environmental Statement. We would however encourage further pre-application engagement with NRW prior to any application being made for a Marine Licence.

## Chapter 2 Scheme Description

2.2.8 We recommend that the reference to local watercourses and ditches (paragraph 2.2.8) is amended to include the network of main River reens, Internal Drainage District (IDD) maintained reens and field ditches, much of which forms part of the Gwent Levels suite of SSSIs.

2.2.15 In relation to the description in paragraph 2.2.15, we observe that summer penning is not just to maintain water levels for farming, it is also fundamental to the management of the SSSI flora and fauna.

2.3.2 In respect of the Proposed New Section of Motorway South of Newport, We request justification for the proposed junctions at Newport Docks and at Glan Llyn (paragraph 2.3.2). This did not form part of the draft Plan consultation in 2013. In our response to the draft Plan consultation, dated 16 December 2013, we noted that *the proposals should be considered in light of the full scale of likely environmental impacts.... as there is no consideration of...junctions.*

We question the need for the Glan Llyn Junction, due to its location within the Gwent Levels: Nash and Goldcliff SSSI; and, because this area is already well served by the local road network, including the recently upgraded Steelworks road. Welsh Government have a duty under Section 28G of the Wildlife and Countryside Act 1981 to *'take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest'*. We would also refer to the commitment in this regard in paragraph 2.11.3 of the Environmental Statement by *'Minimising land take within the Gwent Levels Sites of Special Scientific Interest and, where practical, avoiding land take to the south of the line of the new section of motorway.'*

2.3.67 With regard to the Highway Drainage Strategy, we would wish to state in relation to the statement in paragraph 2.3.67 that the drainage strategy has not been agreed in principle with NRW. We welcome the input so far in developing it. We also refer to our detailed comments on the Drainage Strategy (Appendix 2.2) below. As Section 3.1.2 of the Drainage Strategy acknowledges, it is subject to approval by NRW.

2.3.98 We consider it misleading to state that management works occur on a seven-year cycle (paragraph 2.3.98). There are different rotations for different aspects of ree and ditch management.

2.3.99 With regard to the existing ree network, we reiterate our comment on paragraph 2.2.15 (above) in respect of paragraph 2.3.99.

2.3.102 Replacement Reens and Field Ditches - we refer to our comments (below) on -106 Appendix 2.3: Reen Mitigation Strategy.

2.3.115 In respect of proposals for Long Term Management, we note that the proposed initial aftercare programme would be limited to five years. We have previously suggested that this should be extended to 10 years, given that much of the proposed scheme would pass through SSSI, and the unprecedented level of change to the drainage system which would occur as a result of the construction of this stretch of motorway. **We would expect this to be included in the Statement of Commitments.**

2.11 With regard to Environmental Measures Forming Part of the Scheme (Embedded Mitigation) we welcome the commitments to embedded mitigation as detailed in section 2.11, and would expect these to form part of the Statement of Commitments. We provide our detailed comments on Chapters 2 (Scheme Description), 3 (Scheme Construction), 10 (Ecology and Nature Conservation) and 16 (Road Drainage and the Water Environment) of the Environmental Statement. We are concerned about the overall adequacy of mitigation measures and, in some instances, we do not have sufficient confidence that the proposed measures can mitigate adverse environmental effects to the level required to comply with section 28G of the Wildlife and Countryside Act 1981.

2.12 Similarly, with regard to Additional Mitigation (section 2.12), although we welcome the proposed additional mitigation measures, our comments on the proposed additional mitigation measures are contained in our detailed comments on other Chapters of the Environmental Statement (see below).

## **Appendix 2.1 Traffic Data**

No comment at this stage.

## **Appendix 2.2 Drainage Strategy**

## General Comments

### Drainage

We welcome the efforts which have been put into designing the overall drainage strategy for the scheme, which we note has benefitted from our technical input during the pre-application phase.

We welcome, in principle, the intention to use a more sustainable approach to drainage with the use of 'grass channels' wherever possible and that these will move contaminated water from the road to the Water Treatment Areas (WTA). We note that natural processes would be the key driver to treat the run-off with the intention of discharging water into SSSI reens. We also recognise that the drainage proposals outlined here would treat water to higher standards than usually required for trunk roads. Given the location of the proposal in proximity to European Protected Sites and Species, we consider this to be entirely appropriate. Notwithstanding the above, we maintain our concerns that drainage water entering the Gwent Levels will have significant adverse effects on the integrity of these nationally protected sites

### Operational Stage

It is proposed that drainage from the operational site will be routed through WTAs and not directly into the drainage system, allowing quality to be monitored and discharges prevented if quality is incompatible with the SSSI. We support the use of sediment sumps, catchpits and bypass separators as proposed water quality mechanisms. However, the information provided does not demonstrate how these various control measures will be monitored to ensure only water of appropriate quality will be discharged at greenfield rates to the watercourses of the SSSI.

In principle, and with assurance that our detailed comments made below can be addressed, we are of the view that, if fully implemented, the drainage strategy is capable of addressing NRW's concerns with respect to our continued responsibilities for water level management across the Caldicot and Wentlooge Levels Internal Drainage District (IDD). We make clear that this would be on the basis of introducing a combination of culverts, like for like length replacement of new channels with control structures such as tilting weirs, attenuation ponds in the form of Water Treatment Areas (WTAs) which will enable water to be discharged at greenfield run-off rate into the IDD, and Gwent Levels SSSI network. We note that aspects of the drainage system will not be finalised until the detailed design phase. **We therefore request continued involvement in advising on the development of the Drainage Strategy and note that our requirements will need to be addressed to our satisfaction through the Statement of Commitments.**

## Construction Phase

Our comments above relate to the operational phase of the project only. We require further reassurance as to how effective drainage can occur during the construction phase, both of the construction area itself, but whilst also ensuring continued water level management of the greater IDD area. **Therefore on this additional aspect, we request continued involvement in advising on the development of the Drainage Strategy and note that ultimately our requirements will need to be addressed to our satisfaction through the Statement of Commitments.**

In addition, and while recognising the considerable efforts which have gone into designing the overall system of treatment of carriageway run-off, we are unable to agree, from the information provided, that the appropriate water quality can be achieved for discharge into the Gwent Levels SSSI drainage system and cross refer you to our detailed comments on Chapter 16 and Appendix 16.2.

A further crucial aspect which pertains to NRW's overall view of the project is a decision on who would take on management responsibility in perpetuity of the new reens, ditches, culverts and water control devices. We are aware that it has been intimated that NRW could take on the longer term management responsibility of the new aspects of the drainage system. Significant cost would be associated with this work, and therefore NRW needs to be reassured that a satisfactory proposal is in place in order for us to be reassured that appropriate management will occur. **Detailed discussions and negotiation will be required on this point, which would ultimately need to be addressed to our satisfaction via the Statement of Commitments, and potentially through additional legal agreement.**

### Specific comments:

- 3.1.1 We welcome the recognition of the unique hydrological environment of the Gwent Levels, and therefore the design of a bespoke drainage strategy
- 4.1.1 Welcome the intention to use a sustainable approach to carriageway drainage, with the use of grass lined channels for the majority of scheme length, where appropriate conditions occur. We recognise that this system will start to ameliorate the quality of the drainage waters from the motorway in advance of entering the WTAs. However we still have concerns that water entering the Gwent Levels will not be compatible with the features of interest. See detailed comments on Chapter 16 and Appendix 16.2
- 4.1.2 We welcome the proposal that discharge from the Water Treatment Areas (WTAs) to the drainage system of the Gwent Levels SSSIs will be to "major NRW reens" which we take to mean Main River. However this intention does not appear to have been followed through to Figure 2.5, which appears to indicate some discharge to field ditches, and some to IDD reens. We would welcome clarification of this point, as this has implications for our overall view on the drainage strategy.

Our strong preference for discharge to Main River reens relates to the greater dilution and dissipation capacity and also that all Main River reens discharge directly to the Severn Estuary via a tidal flap. We make the general point throughout these documents of need for precision when referring to reens to enable ease of separation between Main River reens and IDD maintained reens- as there are differences both in Regulation (through Flood Risk Activity Permits or Land Drainage Consent process respectively) but also in terms of management requirements.

- 7.1.1 We support and welcome detailed survey to determine exact bed levels for culverts and note that this could lead to increased culvert sizes to allow sufficient freeboard. We are however concerned to note that no reference is made in this section to the proposals for ongoing maintenance of new culverts including routine desilting and reactive blockage removal. Resolution of this point is crucial to our overall view on the adequacy of the proposed drainage system. NRW request further involvement in discussing and
- 7.1.4 We note that secondary culverts may also be required, but that this would be developed during the detailed design phase.
- 8.1.1& We note and welcome that our recommendations for mitigation of reen and ditch
- 8.1.2 dimensions have been taken forward, including the provision of a berm for reens
- 8.1.3 We note that it is proposed to provide means of regulating flows on the cross flow culverts, which we support. We have previously recommended up to 3 tilting weirs at each end of each culvert and request that NRW be involved in further discussions on the detailed design requirements. **In addition we request that this aspect be covered within the Statement of Commitments.**

## **Appendix 2.3 Reen Mitigation Strategy**

### **General Comments**

Our comments in respect of Appendix 2.2 - Drainage Strategy (above) are also relevant to our response to the Reen Mitigation Strategy.

We would welcome an explanation of the proposed set up of WTA and receiving watercourses on the Caldicot Level in relation to how it would alter flows towards the Colister Pill (Main River) pumping station. Various NRW teams are working towards solutions, based on effective water level management to reduce the flows through this asset, to reduce NRW's costs. We therefore would seek reassurance that works associated with the M4 drainage and reen mitigation strategies will not increase the required use of the Colister Pill (Main River) pumping station.

We note that the discharge points should enter reens not ditches but this does not appear to have been depicted in Figure 2.5. We could also comments that, wherever discharge points are located, it is vital that they would have the necessary water capacity and flow to ensure dissipation. We consider that the use of smaller, blind or watercourses not managed by NRW (IDD) are likely to be unsuitable.

Whereas Appendix 2.3 4.1.2 states that only 'major' NRW reens will be utilised as they have the greatest flow of water, this does not appear to have transposed into the plans. According to the plans, discharge points from WTAs go to both field ditches and reens. We are concerned that the amount of water and flow could have a huge impact on the levels of determinants present over time, especially with maintenance differences.

We note and welcome compensation measures for length for length replacement of reen and ditch lost as part of the development, and the recognition that ongoing management will need to be secured. However this in itself does not provide NRW with the necessary reassurance, in the context of advising on whether adverse effects on the Gwent Levels SSSIs can be avoided, that the replacement drainage system will be capable of supporting the notified features of interest of the SSSIs. We would want to be satisfied that that replacement reens and ditches can be supplied with water of a quality and quantity which should enable the notified features to spread into any new part of the drainage system. (We also refer to our comments (below) with respect to Chapter 10 – Ecology and Nature Conservation and Chapter 16 – Road Drainage and the Water Environment.)

We would welcome continued involvement in refining the detail of both the reen mitigation strategy and drainage strategy, which may enable us to be reassured that these aspects of the project fully meet our requirements with respect to the IDD and Gwent Levels suite of SSSIs, and the Welsh Ministers' statutory duty with respect to SSSIs.

- We recommend that this section should detail the hierarchy of Main River reens the IDD managed reens, and then field ditches, for clarity
- We advise that the requirement for a Summer Penning Level (SPL) is not purely required for water level management for agricultural purposes. An important aspect of the Water Level Management Plan for the IDD is the management of water levels for a variety of purposes, including nature conservation within the Gwent Levels SSSIs. Active Water level management for a variety of purposes requires flexibility to move water around, with the aid of water level control structures, which will need to be replicated and implemented as part of any reen mitigation strategy.
- In addition we point out that NRW do not technically have responsibility for reen maintenance, which remains with the riparian owners. NRW simply exercises its permissive powers to undertake maintenance works.
- We note and welcome the proposal to continue working with NRW with regard to reen and ditch design, but we are satisfied with the proposed dimensions as set out here. We note that these replicate those set out in Appendix 2.2 Drainage Strategy (8.1.1 and 8.1.2) but not those given in Appendix 3.1 (Buildability Report), section 4.2.2. We are concerned about this discrepancy and request an urgent meeting to resolve.
- With regard to ongoing maintenance of these new reens and field ditches, we note that this is to be agreed with NRW. We draw your attention to our general comment made with respect to Appendix 2.2 Drainage Strategy, with respect to a decision and agreement on the management responsibility in perpetuity for the new drainage network, including reens, ditches, culverts and water control devices.

## Highways Drainage and Reen Mitigation Figures (Appendix 2.3)

We make the following comments:

- Sheet 1 of 16 – no comment
- Sheet 2 of 16 – no comment
- Sheets 3, 4 of 16 – we query why ‘WTA 4’ (Note: this is not labelled as such but we have assumed from adjacent numbering) is split between north and south of the proposed motorway. As we have made clear during pre-application discussions, our preference is for all WTAs within the Gwent Levels SSSIs to be situated to the north of the proposed motorway. We have clearly communicated our advice in pre-application discussions that all WTAs within the Gwent Levels SSSIs should be situated to the north of the proposed motorway. Please also refer to our comment in relation to Chapter 2 – Scheme Description (2.3.2) with reference to Junctions.
- Sheet 5 of 16 – no comment
- Sheet 6 of 16 – no comment
- Sheet 7 of 16 – no comment
- Sheet 8, 9 of 16 – (as per above) we query why WTA 8 is proposed to be located to the south of the proposed motorway. It would appear that the location/ presence of a proposed junction here has determined the proposed location of WTA 8.
- Sheet 10 of 16 – no comment
- Sheets 11, 12 of 16 – (as per above) we query why WTA 10 is proposed to be located to the south of the proposed motorway.
- Sheet 13 of 16 - WTA 11b & 11c – The Strategy indicates discharge points into St Brides Brook which is actually Mill Reen , a Main river)
- Sheet 14 of 16 - WTA 12a – The Strategy indicates that the WTA located outside IDD district, would discharge into Pratt Reen which has been modified in recent years by the land owner (an on-line pond / landscape feature was created). We would advise investigation into the condition of the top end of Pratt Reen to assess the suitability and feasibility of this option.
- Sheet 15 of 16 - WTA 12b – The Strategy describes Vurlong Reen as the receiving watercourse. Both the WTA and the brook are located outside IDD area. Vurlong Reen does not appear on our records (there are some dead-end sections marked on our maps, Monmouthshire CC are the LLFA for this area. We would ask for clarification as to how water from WTA 12b would be connected to the network of reens.
- Sheet 16 of 16 – no comment

## **Appendix 2.4 Carbon Report**

No comment at this stage.

### **Chapter 3 Scheme Construction**

3.2.2 We note the proposal for a five-year landscape aftercare period. Given the scale of landscape works, and their purpose in many locations to seek to provide essential mitigation for adverse impacts on European Protected Sites and / or Species, we consider that this should be extended to at least 10 years, with the ability to review and extend if required.

3.3.6 With regard to the construction of the River Usk crossing we refer to our views made on the relevant section of the Statement to Inform an Appropriate Assessment (5.2)

### **Appendix 3.1 Buildability Report**

#### **Section 1 – Introduction**

1.4.1 Construction Strategy- we note and welcome that construction would be undertaken in accordance with the Construction (Design and Management) Regulations (CDM Regs) 2015. However, from experience, we have concerns that this will restrict our ability to undertake our own routine and emergency incident response within and adjacent to the area to be governed by the CDM Regs due to access restrictions. Before the commencement of any construction works, we would require agreement as to the arrangements which will need to be put in place to ensure that we can continue to undertake, but not limited to:

- routine reens, ditch and flood risk management structure management and maintenance;
- emergency works, such as blockage removal and repairs to defences;
- wider compliance and enforcement work within NRW's remit, not directly related to the M4 construction works.

**We require this matter to be addressed through a robust, deliverable commitment, as part of the Register of Commitments**

#### **Table 1.2 Construction Phasing**

We are concerned that no consideration has been given to the mitigation measures required for the Gwent Levels SSSIs. We would expect the phasing to include the creation of new reens and ditches and the infilling of old ones. There is also no mention of the construction of the Water Treatment Areas (WTAs). We note that some of the required tasks are listed later in this document in 2.1.3, this is in the absence of any timeframe. In addition we note that the general construction sequencing is set out in Section 10.3, but again would expect the detail to be covered in Table 1.2. We recognise that all phasing is indicative for now, but we would expect it to comprehensively cover all required operations and take due account of the sensitivity of these works, as this forms part of our scrutiny of and view on likely overall impacts on the Gwent Levels suite of SSSIs.

**We will require the issue of phasing of the construction of new reens and ditches and the infilling of stretches of reen and ditch to be addressed as part of an overall construction phase Drainage Masterplan to be discussed as agreed with ourselves and then comprehensively and robustly addressed within the Statement of Commitments**

## **Section 2 - Enabling/ Pre-construction Works**

2.2 We note reference to the need for alternative ecological mitigation but once again emphasise the importance of this being properly identified within the pre-construction works to give us confidence, at this stage that this issue is being given sufficient consideration and priority.

## **Section 4 – Water Management**

Overall, it is difficult to differentiate between temporary and permanent drainage and water treatment practices. We require clarification of both approaches, including detail of how the construction phase drainage and water treatment system will be put in place without this operation in itself causing adverse effects on both the water quality and water quantity entering the Gwent Levels drainage system

- 4.2.2 refers to set of drawings within Annex 1 (*Proposed Reen Crossings*). The drawings do not meet with our requirements, and would not meet standards required as part of any Land Drainage Consent application. We make this comment both in the context of the quality of the published drawings, but also due to concerns with approach – for example the use of multiple pipes and therefore potential blockage points. In addition, these drawings have not taken account of our previously submitted design requirements, which we provided to scheme consultants on 14 May 2015. While we welcome that our design requirements have been taken into account in Appendix 2.2, Drainage Strategy and Appendix 2.3 Reen Mitigation Strategy, we are concerned by the discrepancy within the overall Environmental Statement. We would be happy to provide this information again if required. We would welcome an opportunity to discuss and resolve this issue, so that we might have confidence in the overall drainage strategy being put forward. We note that these drawings are different to the approach presented in Chapter 2, which decreases our confidence in how this issue is being addressed overall.

**We will require this matter to be resolved to our satisfaction and then confirmed and addressed through a robust, deliverable approach to construction and operational phase drainage, as part of the Register of Commitments**

- 4.3.2 We note that water sampling regime would be implemented to confirm that the settled water achieves required parameters and can be discharge into the network of reens. However, we are concerned that no consideration is given to what would occur if the water quality did not meet the required standards.

We require details of the measures which would be deployed in these situations before we are able to advise fully on whether we are of the view that water quality can be managed correctly during the construction phase to ensure no adverse effect on the Gwent Levels SSSIs. Without this information we are unable to agree there would not be significant adverse effect on the integrity of the Gwent Levels SSSIs during the construction phase. We refer you to our detailed comments on Chapter 10, Ecology and Nature Conservation and Chapter 16, road Drainage and the Water Environment

## **Section 7 – Earthworks**

7.2.2 'Borrow pits' are referred to at two locations. We highlight that material excavated from these sites will need to be tested for suitability of use, and that procedures will need to be in place if any of the excavated material is found to be waste and not suitable for use in the project. Similarly, when the borrow pits are being filled there needs to be associated tests to ensure the material is suitable for the pit and that it is not waste.

7.3.21 Consideration needs to be given to the transport of dust to the TATA sludge lagoons, where would be accepted onto the permitted site for storage prior to being used. The material would be within the permitted boundary and we highlight that TATA will need to check that they are permitted to accept this material and be able to demonstrate that there will be no fugitive releases.

7.3.25 Dewatering of Borrow Pits is likely to require abstraction and discharge permits.

7.3.30 Any discharges to controlled waters will require discharge permits.

7.3.31 This paragraph states that material excavated from the TATA sludge lagoons will be processed in an area to the east of Air Products. Notwithstanding that this issue is subject to ongoing discussion with NRW, we previously understood that any processing would occur within the TATA sludge lagoons permitted area subject to the Environmental Permitting (England and Wales) Regulations 2010. Material from the sludge lagoons has the potential to be waste and will therefore need to be processed within an EPR permitted area. Further detail is required to determine any environmental permitting implications.

7.3.35 This paragraph refers to a 'discovery strategy' in relation to how any previously unidentified contamination would be dealt with. We support and welcome this approach and request that the principles of this approach be agreed to our satisfaction and included within the Statement of Commitments

## **Section 8 – Roadworks and Surfacing**

8.1.3 We note that it is anticipated that the grass lined channels would be lined. We consider this to be essential to prevent risk of groundwater contamination.

8.3.4 It is possible that some elements described here may require Land Drainage Consent (e.g. cable crossings over ditches).

## **Section 10 – Gwent Levels**

10.2.1 We welcome identification of the main key constraints. We would add to this an additional constraint of construction within the Gwent Levels Registered Historic Landscape.

10.3 We refer to our comment (above) with respect to Table 1.2. In addition we note the need to over-pump might be required to keep continuity of flow in some cases.

10.3.4 Haul road stabilisation works will require protection from causing pollution from contaminated surface water run-off (ie high pH from concrete products).

10.3.12 We would require that there must be no deterioration in existing discharge quality from the site during the relocation of reed beds.

10.3.4 In relation to the indication for the need to construct haul roads, we would highlight the need for Land Drainage Consents if any culverts are proposed (if not already included within the main footprint of the scheme)

14.1 Site Compounds – we are satisfied with the proposals as currently set out.

## **Appendix 3.2 Pre-Construction Environmental Management Plan**

We welcome the early production of the Pre-Construction Environmental Management Plan (Pre-CEMP), and recognise that this is, by necessity, a very early draft, and part of an iterative process. At this stage we offer our initial views and recognise that we would need to have continued involvement, both in the development and implementation of this document, should the project proceed through any subsequent stages. The production and agreement of a detailed CEMP which comprehensively covers and addresses NRW's full remit and which we have confidence would be able to be fully implemented will be a key requirement of NRW, and we would welcome the opportunity to work closely with you on the development of this document. **We would require the Statement of Commitments to require the final approved CEMP to be agreed with NRW and works to be carried out in full accordance with it.**

### **Specific comments:**

Table 5.1 9 The Gwent Levels SSSIs are not listed in the Ecology section of this table We request that they be added to Table 5.1.9 and that consideration is given to the likely impacts on the Gwent Levels SSSIs

6.2 We advise that nuisance atmospheric dust issues would be regulated by the Local Authority. Dust suppression must be managed in such a way that surface water run-off from dust suppression activities must not enter controlled waters.

- 6.4 We note that landscaping proposals include: existing vegetation would be retained where possible, early re-establishment of planting in the highway boundary, re-use of coppiced vegetation in planting areas, especially for screening, loss or damage of features avoided where possible, native species of local provenance used wherever possible, careful consideration to location & design of lighting. We support these proposals, but in addition recommend that sources of local provenance native species are investigated and/or a programme for growing on local provenance plants begun at the earliest opportunity. The approach to be taken should be outlined in the CEMP.

We recommend that tree and hedgerow protection also needs to be included in the CEMP, including a commitment to replacement as a result of damage.

We would welcome detailed involvement in the development of proposals relating to hedgerows and trees. We recognise that our requirements may be different dependent on the location within the scheme, taking account of what may at times be conflicting requirements – relating to the Gwent Levels SSSIs, protected species (particularly in this context bats and dormice), the Gwent Levels Registered Historic Landscape and general landscaping principles.

- 6.5 Translocation of species to the SSSI mitigation area – please also refer to our detailed, species specific comments made in relation to Chapter 10. However we note here that there appears to be a heavy reliance on the SSSI mitigation area to potentially support the translocation of a number of species including water vole, reptiles (including grass snake) and GCN.

NRW does not object in principle to the translocation of certain species to a suitable receptor site within the SSSI mitigation areas (under licence where necessary). However, it is not clear whether this site is suitable to support the variety of species outlined for translocation together with the potential numbers of individual species to be translocated. Further, it is not clear whether the management required to facilitate translocation, and to maintain populations post translocation, are compatible with the management required to maintain the features of the SSSI.

We therefore advise that in drafting conservation strategies for each of the relevant species, the capability of the SSSI mitigation area to accommodate these species is taken into account. If management cannot be delivered which is sympathetic to both the SSSI and species, we advise that an alternative approach is developed. Please note that it is possible that this may require the management of land outside the current development boundary.

- 6.5.53 This paragraph only summarises the SSSI features and we refer to the relevant SSSI Features Sheet for the full list of qualifying features

- 6.5.58 We note that a Ground and Surface Water Management plan is in preparation. NRW request involvement in the development of these proposals at an early stage, given the sensitivities of the Gwent Levels SSSIs.

6.5.59 We note that no detail is provided here as to how field ditches and reens will be infilled. Again, would we request involvement in developing proposals due to our knowledge of good and bad practice examples from other developments on the Gwent Levels?

6.5.75 Before we are in a position to comment on adequacy, the monitoring proposals require much greater detail. It is also important that any monitoring should trigger timely action where problems are identified. This aspect will be key to NRW's overall view and advice as to whether the M4 CaN project can be undertaken without adverse effects, particularly to the Gwent Levels environment. It is also important that monitoring locations are chosen carefully, so that any impacts arising can be attributed to the M4 construction project, and separated from the surrounding environment. We also refer to our comments on Appendix 10.35, SSSI Mitigation Strategy

6.10.1 The use of flocculants must be agreed with NRW in advance.

### **Annex C – Biosecurity Safe System of Works:**

We welcome the early identification of the importance of biosecurity during any construction phase and support the proposals as currently set out. We recommend that the section titled "Disease" in Annex D on Invasive Species is also included within this document as the detail on amphibian and plant disease is linked to biosecurity.

### **Annex D – Invasive Species:**

We are concerned to note that Floating Pennywort has been recorded during surveys to support the EIA, as we had hoped that the plant had been eradicated from the area. We thank you for drawing this to our attention, and we will be following up this information.

Giant Hogweed is mentioned in both plants found during survey work and as an additional species which is at risk of being present. We recommend that this is corrected.

It is an offence to cause any invasive plant species listed in Part 2 of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) to spread in the wild. Therefore we will require reassurance, through the development of this CEMP, that the necessary procedures are in place to prevent the spread of such species from infected areas identified with this scheme.

### **Annex E – Outline Pollution Control and Prevention Plan**

4.1.3 We advise that wheel wash effluents should be contained / recycled and not discharged to foul sewer.

## **Annex F – Outline Site Waste Management Plan**

2.2.5 We require clarification of what is meant by the pre-treatment of wastes. Depending on what is proposed, an environmental permit may be required for this activity.

4.1.10 We require clarification as to what is meant by 'Site won materials' before we can comment further (i.e. whether or not they relate to permitted sites).

4.1.21 Any material defined and stored as a waste must have the appropriate permit or exemption.

6.3.1 We request clarification: who would be responsible for check and comment on / approve the monitoring reports.

## **Annex G Outline Ground and Surface Water Management Plan**

3.1.1 We advise that wheel wash effluents should not be discharged to foul sewer. In addition, we note that no reference is made to sewage disposal from office compounds. Proposals for this will need to be part of this plan. We reiterate that the plan will need to demonstrate to us how adverse effects to the Gwent Levels SSSIs will be avoided.

## **Annex H - Outline Materials Management Plan**

3.2.2 We note that the draft Materials Management Plan (MMP) has been provided in Annex 1 but refers only to the CL:AIRE protocol for the use of materials not from permitted sites. We advise that the MMP should also detail how waste excavated from the permitted waste areas will be managed prior to any use in the project. We also refer you to our advice and outline regulatory permission with respect to the potential reuse of material, currently within the permitted area of the Tata Lagoon, within the scheme. Please refer to our detailed comments (below) \_with respect to Appendix 11.2 (Outline Remediation Strategy to Chapter 11 Geology and Soils.

## **Appendix 3.3 Preliminary Construction Traffic Figures**

We have no comments at this time.

## **Chapter 4 Scheme Development and Alternatives Considered**

We have no comments at this time

## **Chapter 5 Approach to Environmental Assessment**

We have no comments at this time

## Chapter 6 Legislative and Policy Context

### Well-being of Future Generations (Wales) Act 2015

We note that relevant provisions in Part 2 of the Well-being of Future Generations (Wales) Act 2015, including the duty under section 3, came into force on 1 April 2016: the Well-being of Future Generations (Wales) Act 2015 (Commencement No. 2) Order 2016, Article 2.

### Natural Environment and Rural Communities (NERC) Act 2006 & Environment (Wales) Bill 2015

We note the references in Chapter 6 to biodiversity duty under the NERC Act 2006 and the Environment (Wales) Bill 2015. The Environment (Wales) Act 2016 has been passed by the National Assembly for Wales and received the Royal Assent on 21 March 2016. The commencement provisions of the Environment (Wales) Act 2016 are set out within the body of the statute itself (section 88), which provides for commencement of the entirety of Part 1 at the end of the period of two months beginning with the day on which this Act receives Royal Assent (i.e. by our calculations, on 21 May 2016). We note in particular the duty under section 6 on public authorities, including the Welsh Ministers, a biodiversity and resilience of ecosystems duty in the exercise of functions in Wales.

We note the reference in Chapter 6 to the duty on the Welsh Ministers under section 40 of NERC Act 2006. Where the duty under section 6 of the Environment (Wales) Act 2016 will apply, public authorities are required to comply with that duty instead of the duty in section 40 of the NERC Act 2006.

Subsection 6(4) also provides that the Welsh Ministers must have regard to the United Nations Environmental Programme Convention on Biological Diversity of 1992.

### EIA Process under the Highways Act 1980

Part VA of the Highways Act 1980 as amended by the Highways (Environmental Impact Assessment) Regulations 1999 and the Highways (Environmental Impact Assessment) Regulations 2007 (EIA Regulations) transposed Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (as amended). The Directive and its amending instruments have since been repealed and replaced by consolidated Council Directive 2011/92/EU (the EIA Directive).

Part VA of the Highways Act 1980, subsections (1) and (6) which provide:

*(1) [...] “relevant project” means a project for constructing or improving a highway where the area of the completed works together with any area occupied during the period of construction or improvement by requisite apparatus, equipment, machinery, materials, plant, spoil heaps or other such facilities exceeds 1 hectare or where any such area is situated in whole or in part in a sensitive area.*

And,

*(6) “Sensitive area” means any of the following:—*

*(a) a site of special scientific interest (within the meaning of the Wildlife and Countryside Act 1981);*

*(b) land adjacent to such an area that is notified to the local planning authority in accordance with paragraph (u)(ii) in the table in article 10 of the Town and Country Planning (General Development Procedure) Order 1995;*

*[...]*

*(d) a National Park within the meaning of the National Parks and Access to the Countryside Act 1949;*

*(e) an area of outstanding beauty designated as such under section 82 of the Countryside and Rights of Way Act 2000;*

*[...]*

*(g) a property appearing on the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage;*

*(h) a scheduled monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979;*

*(i) a European site within the meaning of the Conservation of Habitats and Species Regulations 2010 (see regulation 8).*

Subsections 105A(4) and (5) of the Highways Act 1980 provide:

*(4) To the extent to which the Secretary of State [or the strategic highways company] considers—*

*(a) that it is relevant to the specific characteristics of the project and of the environmental features likely to be affected by it, and*

*(b) that the information may reasonably be gathered (having regard among other matters to current knowledge and methods of assessment),*

*the environmental statement must contain the information referred to in Annex IV.*

And,

*(5) That information must include at least—*

*(a) a description of the project (comprising information on the site, design and size of the project);*

*(b) a description of the measures envisaged in order to avoid, reduce, and, if possible, remedy significant adverse effects;*

*(c) the data required to identify and assess the main effects which the project is likely to have on the environment;*

*(d) an outline of the main alternatives studied by the Secretary of State [or the strategic highways company] and an indication of the main reasons for his [or its] choice (taking into account the environmental effects);*

*(e) a non-technical summary of the information mentioned in paragraphs (a) to (d).*

Subsection 105B(5) of the Highways Act 1980 (as amended) provides that the “conservation bodies” (as defined), of which NRW is one, must be given an opportunity to express an opinion on both the project and the environmental statement:

*(4) The Secretary of State [or the strategic highways company] must ensure that the consultation bodies are given an opportunity to express an opinion on the . . . project and the environmental statement before he [or it] decides whether to proceed with the construction or improvement to which the assessment relates.*

Subsection 105B(5) of the Highways Act 1980 (as amended) provides that before a decision on the scheme is made by the Welsh Ministers unless environmental information and / or any opinion on the environmental information or the project has been taken into consideration:

*(5) Before deciding whether to proceed with the construction or improvement in relation to which an environmental impact assessment has been made, the Secretary of State [or the strategic highways company] must take into consideration—*

*(a) the environmental statement; . . .*

*[(b) any opinion on that statement or the project which is expressed in writing by—*

*(i) any of the consultation bodies; or*

*(ii) any other person;*

*and is received by the Secretary of State [or the strategic highways company (as the case may be)] within any period specified for the purpose by him [or it].*

## **Highways Act 1980**

For clarification on the relevance of local and planning considerations to the scheme, subsection 16(8) of the Highways Act 1980 (as amended) provides:

*(8) Before making or confirming a scheme under this section, the Minister shall give due consideration to the requirements of local and national planning, including the requirements of agriculture.*

We consider that this provides the clear statutory basis and context for consideration of local and national policy in relation to the draft Orders.

## **Planning Policy Wales**

We acknowledge reference to chapters 8 and 4 of Planning Policy Wales (Edition 8, January 2016). We would also refer to chapters 5, 6 and 13 of PPW.

## **TAN 5**

We consider that reference should have been made to Technical Advice Note 5 (TAN 5), which provides national level planning advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. TAN should be read in conjunction with Planning Policy Wales. We acknowledge that TAN 5 is

referred to elsewhere in the ES (e.g. Chapter 10) but we consider reference should be included in Chapter 6, which sets out the legislative and policy context for consideration of the draft Orders.

## Chapter 7 Air Quality

### General Comments

We welcome the precautionary approach which has been adopted to assessing the impacts of changes to air quality, likely to arise as a result of the construction and operation of the proposed new stretch of M4 motorway around Newport, on designated sites, including consideration of impacts on sites at some distance from the project area. The work as presented in Chapter 7, and its associated appendices, raises some detailed queries relating to the modelling:

- 7.3.50 to **Meteorological Data** – we note and welcome that sensitivity analysis has been carried out for choosing a representative meteorological station, but request clarity on whether the inter-annual variation impact of meteorological data on the model predicted results has been considered as part of the air quality impact assessment.
- 7.3.53
- 7.3.59 We request that evidence be presented to back up the statement *IAN170/12v3 represents a more pessimistic future scenario prediction, these results have been used in the assessment of significance*. We make this comment on the basis that the EU will allow higher on-road testing of nitrogen oxides, than that set by EU6, even after 2020 and based on the recent issue which VW has had with its diesel emissions
- 7.3.64 to **Calculation of Short Term Statistics** it is stated that *“Analysis of UK continuous NO<sub>2</sub> monitoring data has shown that it is unlikely that the 1-hour mean objective would be exceeded where the annual mean objective is below 60 µg/m<sup>3</sup> (Defra, 2009). Therefore, potential exceedances of the 1-hour mean objective have been identified based on this criterion.”* The study cited by the Defra Guidance (LAQM TG09) identified the need to re-evaluate the monitoring data from time to time in order to confirm that this relationship remained appropriate. The relationship was derived based on the measurements data before 2008, since then the primary NO<sub>2</sub> fraction from the traffic has significantly increased; furthermore, the majority of the monitoring sites used in deriving this relationship were not representative of a motorway.
- 7.3.66
- 7.3.74 of Chapter 7 (and Table 7.1.5 of Appendix 7.1) We request clarification of how the adjustment factor of 3.11 was derived? The adjustment factor still leads to underestimates as shown in Table 7.1.5, for example, only 2 of 8 sites with over prediction of 2%, but 6 out of 8 sites with under prediction of 1, 6, 14, 15, 37 and 40%. This contradicts with the statement *“With this factor (3.11) applied to the modelled results, the modelling indicates a good relationship with monitored concentrations, with all locations adjacent to the ARN within 15% with no significant under prediction where monitored concentrations are above the annual mean NO<sub>2</sub> standard.”*

We request clarification of the points made above, before we can give our formal view in relation to air quality impacts on designated sites, but we note at this stage that this Chapter concludes that in relation to:

- **Severn Estuary SSSI/Ramsar/SPA/SAC** - that there is unlikely to be a significant effect on any of the Severn Estuary designations arising from increases in nitrogen deposition compared to current conditions, arising from either the construction or operation of the proposed M4 Corridor around Newport project.
- **Gwent Levels suite of SSSIs** - we note that **Gwent Levels: St Brides SSSI is the Gwent Levels site at greatest risk, with respect to impacts arising from increased levels of nitrogen deposition, but that significant effects are not predicted on any of the Gwent Levels SSSIs**, arising from either the construction or operation of the proposed M4 Corridor around Newport project.
- **Langstone and Llanmartin SSSI** - we note the **predicted improvements in annual mean NO<sub>x</sub> concentrations** for Langstone and Llanmartin Meadows SSSI as a result of the predicted decreases in traffic utilising the existing M4 in the vicinity of this site.

In addition, we point out that, in relation to Table 7.2, Fforestganol a Chwm Nofydd SSSI is notified for its woodland habitat. Although valley mire is present within the SSSI boundary it is not a qualifying feature. We note this for completeness, as this SSSI is at some distance from the M4 Corridor around Newport project, plus the alteration of habitat would not significantly alter the assessment as the critical loads are similar (10 – 15kgN/ha/yr for valley mires, 10 – 20kgN/ha/yr for woodland).

## Chapter 8 Cultural Heritage

8.13.1 The assessment concludes at 8.13.1 that there would be a long term large adverse effect on the Gwent Levels Landscape of Outstanding Historic Interest. We agree with this conclusion.

Table 8.4 It should be noted that the Register of Historic Landscapes in Wales makes clear that Landscapes of Outstanding Historic Interest and Landscapes of Special Historic Interest are of the same value on the Register. Landscapes of Outstanding Historic Interest are therefore not of higher value than those of Special Historic Interest as indicated in the table. Both would be classed as High value, as would undesignated landscapes of equivalent quality.

Table 8.7 We do not agree that total change to the historic landscape character unit is required for there to be a major impact. This differs from the ASIDOHL2 method of assessment.

8.3.48 It is noted that moderate or greater effects are considered significant under the ES.

8.6.37 it is recognised that the terminology of ASIDOHL2 does not equate directly with that used in DMRB and although DMRB references ASIDOHL and LANDMAP, it does not provide advice on how to incorporate the results of an ASIDOHL2 into the DMRB methodology.

8.6.38 It is stated that in order to assess the magnitude of impact, Table 8.7 has been referred to, and it is concluded that there would be a moderate magnitude of impact. The Registered Landscape is of high value (and sensitivity) and therefore the significance of potential land take and operational effects has been assessed as large adverse. We concur with this conclusion.

8.6.39- An additional 31 HLCAs have been identified outside the Registered area using the onwards DMRB methodology and LANDMAP, in recognition of the fact that the landscape outside the Registered area also has historic character. Of these additional 31 HLCAs, 12 experience direct physical impacts and the remaining 19 predominantly indirect visual impacts.

The 12 HLCAs with direct physical impact are assessed as having no more than low value and no more than slight adverse significance of effect. We are generally in agreement with this assessment, although we consider that HLCA117-Pye Corner and HLCA119-Wilcrick potentially have moderate adverse significance of effect, depending where the boundary of the HLCA is drawn. The indirect visual effects on the 19 additional HLCAs is assessed as no more than slight adverse. We concur with this conclusion.

8.9.94 It is noted that 26,957m of 'Important Hedgerows' under the Hedgerow Regulations would be removed, 10,737m within the Wentlooge Levels and 16,220m in the Caldicot Levels.

8.7.27 We are of the view that the complimentary measures to the current M4 section to the north would have no discernible effect on historic landscapes.

#### **Appendix 8.1 Relevant National and Local Plan Policies**

#### **Appendix 8.2 Desk-based Historic Environment Assessment**

We do not have any comments at this time.

#### **Appendix 8.3 Assessment of Significance of the Impact of Development on the Historic Landscape (ASIDOHL)**

6.1.11 We agree with the concluding statement at 6.1.11. Overall, the scheme would result in an 'appreciable reduction in capacity for understanding and appreciating the significance of the historic landscape on the Register'. We consider this to be a significant adverse effect on the historic landscape of the Gwent Levels, which cannot be effectively mitigated.

- 6.1.4 We agree with the statement here that there would be direct physical impacts on 7 of 21 HLCAs.  
There would be considerable physical impact on one HLCA (008 Northern Redwick), due to the loss of a moated enclosure; moderate physical impact on 5 HLCAs and slight physical impact on one HLCA.
- 6.1.5 We agree that there would be direct loss of fields and boundaries including green lanes and the culverting/ realignment of reens and ditches.
- 6.1.6 We agree that there would be indirect physical impacts on five HLCAs, arising from severance of land resulting in increased vulnerability to development pressures for the severed parts north of the new road.
- 6.1.7 We agree that there would be indirect visual impacts on 14 of 21 HLCAs, severe impact on four HLCAs, considerable impact on one HLCA, moderate on four HLCAs and slight impact on five HLCAs.
- 6.1.8 We agree that, overall, significance would be fairly severe on five HLCAs, moderate on eight HLCAs and slight on one HLCA.
- 6.1.9 As noted in 6.1.9 & 6.1.10, the greatest impacts would be on HLCA001-Nash/Goldcliff Coastal Zone, HLCA002-Christchurch/Nash/Whitson Back Fen, HLCA008-Northern Redwick, HLCA009-Green Moor, HLCA015-Eastern St Brides. This is mainly due to the amount of land lost and severance from related historic landscape. There would also be loss/severance of green lanes and effects on the settings of listed buildings (Tatton Farm & Pye Corner Farm) (001 & 002), loss/severance of green lanes, loss of a historic buildings and effect on the setting of a SAM (Grangefield moated site) (009) and loss/severance of green lanes and effects on the setting of earthwork complexes (015).
- 3.1.6 We note that land within the historic landscape (within the registered area and in historic landscape extending beyond the registered area) has been identified for ecological habitat management to offset impacts on the SSSI (at Maerdy Farm, Tatton Farm & Caldicot Moor). Proposed management would include reversion of arable to grassland, reseeding of grassland and management for grazing or hay cut, re-profiling of reens/ditches, clearance of hedges/scrub along reens and establishment of shallow scrapes & grips. These management proposals are not considered to adversely affect the historic landscape and the setting aside of these areas of land would indirectly protect small areas of the historic landscape from future development. The area of fields north east of Tatton Farm would indirectly protect part of the setting of the listed building.
- 5.2.1 It is stated that the impacts have been minimised by adjustments to the vertical alignment, architectural input, and location of water treatment areas and retention of access to key elements in the historic landscape. However, we remain of the view that there remains a significant adverse effect on the Registered Landscape

5.2.2 We welcome the proposal to take forward an integrated programme of historic landscape analysis in order to offset some of the impacts on the historic landscape. We recommend that interpretation of and access to the physical historic landscape should also be considered, given the significant adverse effects on the Gwent Levels Registered Landscape. **We would expect these proposals to be taken forward within the Statement of Commitments**

Annex A & B These documents consider the physical impacts of loss of land & field patterns. We have assumed that the severance and re-alignment of reens & ditches is included under this aspect. We recommend that reens/ditches are referred to specifically in the table as they are important elements of the historic landscape.

Annex C This document identifies adverse impacts on the settings of Tatton Farm (clearly visible, severs green lane access route and fields, new access cuts across fields, introduces noise) and Pye Corner Farm (clearly visible, removes part of field setting, introduces noise) listed buildings, the setting of the moated site at Goldcliff (SAM), enclosures at Tatton Farm and Moor Barn Farm and earthworks at Fair Orchard Farm. Mitigation in the form of screen planting along the road would help to reduce some impacts in the long term (e.g. on Pye Corner Farm), but would not mitigate noise impacts. We agree that the form and appearance of the development is almost entirely at odds with the historic landscape. This applies to all affected HLCAs to varying degrees of severity depending on proximity and visibility.

**Appendix 8.4 Detailed Gradiometer Survey Report**

**Appendix 8.5 Newport Docks Historic Built Environment Assessment 2008**

**Appendix 8.6 Results of the Electrical Resistivity Tomography and Electro-magnetic Surveys**

**Appendix 8.7 Results of Aerial and Light Detection and Ranging (LiDAR) Survey and Satellite Image Analysis.**

**Appendix 8.8 Gwent Levels Archaeological Deposit Model**

**Appendix 8.9 Non-designated Historic Landscape Characterisation**

We do not have any comments at this time.

**Appendix 8.10 Cultural Heritage Mitigation Plan**

NRW welcomes the production of the Cultural Heritage mitigation Plan (CHMP) and the proposed Historic Landscape Study and would be pleased to receive a copy of the 'Popular Report'.

1.1.2 We welcome and concur with the acknowledgement that none of the works in the CHMP can be considered as 'mitigation' in the sense that the term is used within the EIA process. The works would not reduce impacts, but help to remedy the adverse nature of the impacts and can be viewed as offsetting.

- 2.1.23 We note and welcome that the total replacement reens, ditches and culverts are equal to or greater than the length lost –we refer you to our detailed comments on Appendix 2.1 Drainage Strategy and Appendix 2.2 Reen Mitigation Strategy
- 4.1.33 Proposed research noted at 4.1.33 includes mapping of landscape change (emparking, enclosure and desertion, study of evolving social/tenorial relations) and palaeoecological studies and the relation to knowledge of crafts through documentary research.
- 5.2.63 Given the acknowledged adverse effects that would occur to the Gwent Levels Landscape of Outstanding Historic Interest, we welcome the proposal to undertake a Historic Landscape Study, with the aim of seeking to improve the understanding of the historic landscape; illustrate that the landscape is not ‘natural’, but a cultural artefact; provide ways of engaging with the public and raising awareness of the importance of the Gwent Levels. We recognise that this has been proposed as a means of seeking to offset adverse effects on the Gwent Levels Registered Historic Landscape.

## Chapter 9 Landscape and Visual Effects

We consider that there would be significant adverse landscape and visual effects on the landscape, including the highly sensitive landscape of the Gwent Levels. Mitigation would reduce the impacts in a number of cases after 15 years, but significant adverse effects on landscape character would remain on LCA2-Wentlooge Levels (large), LCA7-Caldicot Levels (large), LCA1-Michaelston-y-Fedw (moderate) and LCA9-Magor & Undy (moderate). A number of significant adverse effects on visual amenity would remain; on viewpoints, residential properties and public rights of way.

We make the following recommendations:

- Further consideration is given to the design of the heavily engineered water attenuation features, including variations to slope gradients to improve the integration of these features into the landscape.
- Further consideration is given to potential offsite screening to protect the setting of Tatton Farm.
- Further consideration is given to opportunities for areas of wet grassland and other habitats in small areas of land cut off by the road and likely to be difficult to manage as part of a farm holding e.g. field n. of attenuation features, Sheet 4 and land adjoining the ‘nature reserve’ on Sheet 8.
- Further areas of species-rich grassland are included along the road embankment through the Gwent Levels.
- The inclusion of open areas and a range of habitats in the areas shown as woodland at Berry Farm and east of Undy.
- The inclusion of access for informal community use to the area of woodland south of the M4 east of Undy to offset impacts on the amenity of the community.
- An outline of the design approach for structures, including bridges and noise attenuation features.
- Further consideration of the design of the River Ebbw crossing.

- Further consideration of the route of the Wales Coast Path south of the new road (Sheet 7) through woodland, rather than simply following the foot of the embankment.
- Replacement planting of trees along the 'slag heap' to the north of the new road to screen existing and proposed industrial development
- Consideration of offsite measure to enhance the setting of Tredegar House under the Complimentary Measures.
- Include reference to Marine Character Areas
- A long term management plan (25 years) to ensure the design aims of the scheme are realised. We consider a 5 year aftercare period to be inadequate for a scheme of this scale and nature.

## ES Vol 2: Figures

- Provision of illustrative 3D modelling of the two main intersections to aid understanding of these complex junctions.
- That the indicative road alignment is shown on the photographs to help locate the road within the landscape.
- Additional photomontages are recommended to help illustrate and understand the scheme: view of the Castleton interchange e.g. from a public footpath to the south; view from the Wales Coast Path e.g. where it approaches under the new Usk bridge or where diverted alongside the south road embankment; view from Wales Coast Path of the Ebbw crossing; from housing areas on the west side of Magor; from Tatton Farm.
- It should be noted that single frame photomontages with a 75 degree horizontal field of view do not show the level of detail seen in the field and that objects will tend to look smaller in these images than with the eye. A 40 degree horizontal field of view would show the level of detail more accurately. All photographs are a tool and should be compared with the reality in the field.
- Clarify where areas of woodland edge are on the Landscape Environmental Masterplans.
- Clarify the difference between areas of open grassland (assumed amenity grassland) and species-rich grassland.
- Clarify where all areas of existing woodland are on the Landscape Environmental Masterplans.
- Clarify what is meant by the statement that materials for structures would be locally sourced and finishes sympathetic with local character.
- A single plan showing the location of the sections along the route would be helpful.

At 9.3.13 the Wales National Seascape Character Assessment (Fig 9.14) is referred to. It should be noted that Marine Character Areas (01 Severn Estuary & Cardiff Bay) have now been published on NRW's website.

Local Landscape Character Areas have been identified (9.3.14) and have used the value of LANDMAP aspect areas to inform local value.

Adverse effects during construction include: construction traffic noise & movement; earth moving; loss and disruption of woodland, hedgerows & reens/ditches; cranes for bridge

structures; site compounds; borrow pits (Castleton & Magor interchanges); haul roads; storage of material; temporary lighting; construction of attenuation ponds.

Adverse effects during operation include: new 23km long, 3-lane section of motorway; road embankments & overbridge structures, four junctions, including 2 major interchanges; close views of the River Usk and Newport Docks crossing (2.1km), Ebbw bridge; barriers, gantries & signage; noise and movement of traffic; new lighting; attenuation ponds.

The new M4 section would be raised on an embankment averaging 2-3m in height as it crosses the Gwent Levels. Higher embankments of 18m at the Castleton interchange, 10m at the Duffryn Railway Bridge and 18m at the docks, 13m at the Llandeenny Railway Bridge and 4m at St Bride's Road would be required. Tall structures would include the 17m high Duffryn railway bridge, 23m Lighthouse Road overbridge, 10m Ebbw bridge and 40m Usk bridge.

The River Usk crossing bridge is considered visually beneficial, especially in medium-distant views where its scale, form, design and landscape location are understood. At distances of more than 15km, the Second Severn Crossing is prominent in the open estuarial setting. The Llanwern steel works is barely discernible from the English side of the estuary. The new Usk crossing would be visible as a distant feature. Close range views of the new Usk crossing are generally cluttered, with pylons, wind turbines and buildings and there are considered to be some negative impacts at close range. We agree with this assessment. The towers of the new bridge appear dark grey in images, in contrast to the cable stays. It is unclear whether this is a deliberate design feature.

The River Ebbw crossing is 3 separate structures rather than one bridge and is considered to have an adverse impact. A photomontage of the Ebbw crossing would assist assessment and further consideration of the design is recommended.

### Landscape Effects

During construction, the LVIA identifies a very large adverse significance of effect on LCA2-Wentlooge Levels, a large adverse significance of effect on LCA1-Michaelston-y-Fedw, LCA5-Chepstow Woods SW and LCA7-Caldicot Levels and a moderate adverse significance of effect on LCA3-Newport Docks & Uskmouth and LCA9-Magor & Undy. Effects of moderate and greater are considered significant. Some of these effects have reduced to an extent by year 1.

By year 15, when mitigation would have become established, the LVIA identifies that effects have been reduced to large on LCA2, moderate on LCA1 and slight on LCA5 and LCA3. The effects on LCA7 and LCA9 remain large and moderate respectively.

We are generally in agreement with the LVIA assessment of landscape effects.

### Visual Effects

The LVIA identifies a large number of significant effects (adverse) on visual impact during construction and at year 1. By year 15, when mitigation would have become established, the LVIA identifies very large adverse significance of effect at viewpoints 22, 23 & 24 & 144b, large adverse significance of effect at viewpoints 7, 8, 11, 37, 38, 48, 52, 53, 54, 55, 81, 67 & 84.

In the hours of darkness, very large significance of effects remain at year 15 at viewpoints 22, 23, 52 & 84 and large significance of effects remain at viewpoints 4a, 5, 7, 11, 37, 53, 54 & 55.

The LVIA identifies very large or large significance of effects (adverse) on a number of residential properties near the Castleton interchange, Coedkernew area, Lighthouse Road, Fair Orchard & Greenmoor Farm, Tatton Farm, around Barecroft, Knollbury, Magor and Llanfihangel Rogiert during construction and at year 1. A number of moderate significance of effect are also identified. By year 15 many of these effects have reduced as a result of mitigation but large significance of effects remain on Tatton Farm (75), the Langley group (94), Little Orchard (20c), properties in Receptor group 8 (Marshfield Rd/Castleton Rise), 45a Whitecross Farm, 45b Fair Orchard Farmhouse.

The LVIA identifies a number of very large and large significance of effects (adverse) on public rights of way, including the Wales Coast Path. A number of moderate significance of effects are also identified. By year 15 some large significance of effects would remain on PROWs around Castleton and Marshfield and the Wentlooge Levels and Caldicot Levels including the Rush Wall Track. There would arguably be some benefits around the Usk crossing.

The LVIA identifies a number of moderate significance of effects (adverse) are identified on roads during construction and year 1. By year 15 these effects have reduced to slight or neutral.

The LVIA identifies a large significance of effect (adverse) on river boats within the Ebbw, moderate significance of effect on river boats within the Usk and slight significance of effect on those within the Severn.

We are generally in agreement with the LVIA assessment of visual effects.

### Water Treatment Areas

WTAs 2, 4a & 4b are described as being designed to blend with the existing landscape pattern. They are contained within existing field boundaries. Overall the WTAs do not integrate well with the landscape, either sitting within the left over parts of fields cut by the motorway or within parts of fields. Boundary features and ditches are lost under a number of these features and ditches re-aligned. Medium-large water bodies and reed beds of polygonal shape and surrounded by steep embankments are not characteristic of this landscape and are incongruous features. Further consideration of the design of these features, including variations in slope gradients is recommended to improve the integration of these features into the landscape. Multi-functional designs which have regard to landscape and wildlife benefits, rather than purely functional reservoirs/soakaways are desirable.

### Mitigation Measures

Mitigation measures include woodland planting, trees, shrubs and ornamental planting to embankments, species-rich grassland and areas of wet grassland. The planting design aims to mimic the vegetation of the levels and adjoining high ground. Reed beds are redolent of the Levels landscape. Reens and field ditches have been re-aligned.

The proposal aims to minimise land take within the Gwent Levels, including by locating water treatment areas to the north where practical. A substantial part of the Gwent Levels and its landscape pattern remain affected however and WTA8 & 10 remain to the south of the new road.

It is stated that materials for structures would be locally sourced and finishes sympathetic with local character. It is unclear what this means. It would appear that the majority of structures associated with the new road would be constructed of concrete and steel.

### 5 Year Aftercare Scheme

A 5 year aftercare scheme is proposed for the landscape scheme, which would then be handed over to the S Wales Trunk Road Agency (SWTRA). We consider a 5 year aftercare period to be inadequate for a scheme of this scale and nature. This represents an early establishment phase and we consider a long term management plan (25 years) is needed to ensure the design aims of the scheme are realised.

### Complimentary Measures

The LVIA identifies negligible to slight beneficial significance of landscape and visual effects resulting from a reduction in traffic flow and noise. The current M4 cuts across an avenue at Tredegar House and is visible in the view. The scheme may provide opportunities to enhance the setting through an offsite agreement with the National Trust.

## **Chapter 10 Ecology and Nature Conservation**

### **Chapter 10 Ecology and Nature Conservation**

#### **General Comments**

***NB All comments in relation to protected species are provided here for clarity and completeness, rather than split between the various relevant sections of Chapter 10 and accompanying Appendices***

#### **European Protected Species**

We note that a number of surveys of European Protected Species are yet to be completed, including surveys of structures for bats, bat activity surveys and presence/absence and population assessment surveys for great crested newt. We acknowledge that inferences have been drawn from data already obtained to date and that additional surveys are planned for the near future. Until such surveys have been completed, we will not be able to fully assess the impacts upon European Protected Species arising from the scheme. Any comments made now are to be taken in light of information submitted in the Environmental Statement and may be revised once additional data is received. Notwithstanding this, a number of European Protected Species have already been confirmed within and adjacent to the scheme corridor including dormice, bats, otters and great crested newt.

- **Legislative Background**

All species of bats, otters, dormice and great crested newt are European Protected Species and are protected under the Conservation of Habitats and Species Regulations 2010 (as amended).

Where European Protected Species are present and a development proposal is likely to contravene the legal protection they are afforded, a development may only proceed under licence issued by Natural Resources Wales, having satisfied the three requirements set out in the legislation. A licence may only be authorised if:

1. the development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest (IROPI), including those of a social or economic nature and beneficial consequences of primary importance for the environment;
2. There is no satisfactory alternative and;
3. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range;

Regulation 3(4) of the Conservation (Natural Habitats, &c.) Regulations 1994 requires all competent authorities, in the exercise of their functions, to have regard to the requirements of the Habitats Directive, so far as they may be affected by the exercise of those functions.

It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.

A competent authority should therefore not grant permission without having satisfied itself that the proposed development either would not impact adversely on any EPS on the site or that, in its opinion, all three conditions for the eventual grant of a licence are likely to be satisfied.

- **Dormouse**

Dormice have been confirmed at 3 locations along the scheme, at Castleton, at the eastern end north of Magor and some evidence at Tata Steel. Throughout the ES no consideration has been given to the differing requirements of these populations or what approach to their conservation might be appropriate to the maintenance of these distinct populations throughout works.

The ES states that significant vegetation supporting this species will be cleared to facilitate the scheme particularly at Castleton. Insufficient habitat will remain to support dormice at this location throughout and immediately following completion of the scheme and it will take a significant period of time before new planting becomes suitable for dormice. The extent of the habitat to be lost with this lag until suitable replacement habitat vegetation is available is a significant issue for the scheme.

An outline strategy for the conservation of dormice is included in the ES. However, NRW have significant concerns in relation to the proposed dormouse strategy for this scheme and further information will need to be provided before we can comment on whether there will be detriment to the maintenance of the FCS of dormice.

In the absence of additional information, we do not support the conclusions in the Environmental Statement (10.9.239) which states that impacts of habitat loss on dormice would be '*Negligible Adverse leading to effects of Neutral or Slight significance*'. We therefore advise that the following points are addressed in detail within a comprehensive dormouse strategy for the scheme.

- A detailed assessment of the impacts of the proposals on dormice in the short, medium and long term
- Suitable mitigation/compensation strategies appropriate to the impacts and proportionate to the scale
- Consideration of the distinct populations along the scheme and specific mitigation strategies for each of these
- With respect to Castleton, the current strategy focusses on trapping dormice and either translocating them to an alternative location or taking them into captivity. NRW advises that alternative strategies are also considered. These measures could include off line habitat improvement of woodland and hedgerows. We advise that planting and management of potential Compulsory Purchase Order (CPO) land adjacent to the scheme is also considered. Should these not be considered feasible, a detailed justification for the favoured approach should be provided along with evidence of the success of the approach in other circumstances?
- Information about the suitability of the proposed receptor site(s) to support translocated animals. To date it is unknown if the proposed site at Coed Mawr Woods is suitable to support the translocated population or whether there is an existing population. Further information should include survey to ascertain whether the species is already present, a habitat assessment to determine the capacity of the site to support dormice and management options.
- The other possible receptor site put forward is Bristol Zoo. There are many considerations to translocating a population into a captive bred situation and these have not been addressed to date. Considerations must include cost implications, population management, and future release strategies. If a receptor site cannot be identified and agreed additional information as to the strategy for captive breeding would need to be provided, together with confirmation of the agreement between the developer and Bristol Zoo.
- Other outline mitigation proposals include suitable planting of habitat and the provision of mammal crossings to provide connectivity between new woodland parcels. However, we advise that improved habitat links into the wider area are considered to ensure opportunities for dispersal.
- The current calculations show that suitable habitat will be replaced at a 2.1:1 ratio along the scheme but it is not clear to what extent this habitat will be accessible to dormice. Section 10.5.35 states that Mammal crossings will be provided at the western interchange at Castleton to provide a means for dormice to cross.

No further details are included here as to design and form of these crossings would take. Additional information would therefore be required to address these proposals:

- Production of a detailed project plan, to include timescales and species-specific mitigation strategies to be implemented in the short, medium and long term to mitigate for the habitat loss and severance issues likely to occur. This should include proposals for vegetation translocation where possible and timetables for vegetation replacement at the earliest opportunity along with information about the species composition and age of stock.
- Detail about how the long term site security of dormouse populations will be delivered and the habitat to support them
- A detailed management plan and monitoring plan.

Currently the information presented does not allow us to conclude that there will not be a detriment to the maintenance of the favourable conservation status of dormice.

19.8.68 – 19.8.74 – We are unable to agree with the residual effects conclusions set down here. We would be in a position to comment further, once we have received and reviewed the requested additional information – a draft of the requested comprehensive strategy for the conservation of dormice may adequately address our concerns.

- **Bats**

We welcome the provision of the Environmental Statement in relation to bats. We acknowledge that to date a number of bat roosts will be impacted by the scheme.

We understand that additional surveys of buildings assessed as having potential to support bats at Fair Orchard Farm will be carried out in the summer of 2016. The results of these and previous surveys should be used to enable a more targeted and detailed mitigation strategy.

Table 10.8 identifies that significant impacts upon bats will occur through habitat loss and severance of flight lines and foraging areas. Therefore the placing of hedgerows to maintain these flight corridors needs to be considered carefully and may require planting of hedgerows within the SSSIs, particularly at the eastern section, contrary to statements outlined within the ES.

The proposal to design planting to guide bats to culverts (section 10.5.38) is welcomed. However, Table 8 confirms a number of proposed crossing points for bats ranging from 50m to over 100m from existing crossing points. In our experience, crossing points for bats are more likely to be used if they are retained on-line. In order to demonstrate the likely efficacy of these, we advise that locations of crossing points in relation to the activity surveys and known commuting routes is mapped for clearer interpretation.

19.8.89-19.8.94 We are unable to agree with the residual effects conclusions set down here with respect to bats. We would be in a position to comment further, once we have received and reviewed the requested additional information – results of ongoing survey work and a draft of the requested detailed conservation strategy for bats

- **Otter**

Evidence of Otter has been confirmed along the scheme, utilising the water courses within the Gwent Levels and the Rivers Usk and Ebbw.

We note that, to date, no breeding site or resting places have been confirmed to be present within the route corridor. However, we note that as outlined in Table 10.19, habitat severance, possible pollution incidents and disturbance are judged to be likely to have a significant impact upon otters. Therefore, we advise that more robust and species specific mitigation measures are put forward to reduce these impacts upon this species.

We welcome the intention to carry out preconstruction surveys for otter. Please note that the assessment of impact and corresponding mitigatory measures would need to be revised if at any point an otter holt is confirmed along the scheme. In this context, please note that although the survey did not identify any resting places on the Gwent Levels, our experience is such that use by this species on the Levels is difficult to confirm.

Section 10.8.214 of the ES Vol 1 suggests that a licence will not be necessary for works to proceed unless a holt is discovered and we concur with this advice. However due to the nature of the scheme, its size and duration, we would advise that in the event a licence is not required, a method statement detailing the working methods and specific mitigation measures is prepared and submitted to NRW for approval.

Please note that should a holt be discovered at any point along the scheme, we advise that the Appropriate Assessment in relation to the otter as a feature of the River Usk SAC is revisited.

19.8.36-18.8.52 Likely effects on these species are not consistently summarised here. However we advise that we cannot rule out significant effects at this stage – due to land take, construction or operational phase impacts. We may be able to revise this view if the requested additional information (detailed conservation strategies) is able to adequately address our concerns.

- **Great Crested Newt**

We welcome the provision of the Environmental Statement in relation to GCN.

Additional surveys are required to enable NRW and yourself to fully assess any impacts upon this species. This in turn will enable a more targeted mitigation strategy.

We note (Section 2.3 of ES Vol 3 Appendix 10.6) that a large proportion of the waterbodies proposed for survey could not be surveyed (55 of the 89 waterbodies were surveyed) and that at many of the waterbodies survey did not conform to best practice as a full suite of surveys were not possible. NRW therefore welcomed the uptake of eDNA surveys along the reen systems in 2015.

A number of positive eDNA results were confirmed in 2015. Due to the nature of the reen and ditch habitat, we welcome the proposal to carry out additional surveys of all waterbodies within 250m of any positive eDNA results identified in 2015.

However, it is not clear if this will ensure that all water bodies to be directly impacted by the scheme (particularly those assessed with a high HSI but not covered within one of the seven zones for eDNA surveys previously), will be surveyed in 2016. NRW advises that the additional survey ensures that all relevant waterbodies are covered.

It is noted that 2657m of main reen and 9771m of field ditch will be created to compensate for that lost to the scheme. We welcome the provision that existing reens would continue to be linked ensuring ongoing connectivity and would recommend this is included within any GCN method statement.

In the absence of this survey information, we are unable to comment further on GCN at this time. We advise that these surveys are carried out, impacts assessed and if necessary detailed mitigation measures proposed prior to determination of this scheme.

19.8.36-18.8.52 Likely effects on these species are not consistently summarised here. However we advise that we cannot rule out significant effects at this stage – due to land take, construction or operational phase impacts. We may be able to revise this view if the requested additional information (survey results and detailed conservation strategies) is able to adequately address our concerns.

### **Other Protected Species**

A number of additional protected species have been confirmed and will be impacted by the scheme. These receive varying levels of protection through the Wildlife and Countryside Act 1981 (as amended) and Protection of Badgers Act 1992. Those relevant to this scheme and of which comments are included below are water vole, badger and reptiles.

- **Water Vole**

In principle, NRW do not object to the proposals currently put forward to conserve water vole along the scheme. However, as pre construction surveys are not yet complete and detailed mitigation measures and methods of working submitted, we cannot assess fully the impacts upon this species.

We welcome the current mitigation proposals included in section 10.8.221 of the ES Vol 1. These include habitat management, infilling/excavation of burrows once evacuated, drainage of watercourses and steel mesh to prevent burrows being established.

Should it prove necessary, the ES identifies a receptor site for possible translocated animals in the SSSI Mitigation Area. Before we can comment further on the acceptability of this proposal, more information would be required on the existing presence or otherwise of water vole in this area, current population density if present and suitability of the habitats to support them.

We therefore advise surveys are undertaken to include the SSSI mitigation area together with any areas identified as potential receptor sites to determine the suitability of this site as a receptor site.

19.8.36-18.8.52 Likely effects on these species are not consistently summarised here. However we advise that we cannot rule out significant effects at this stage – due to land take, construction or operational phase impacts. We may be able to revise this view if the requested additional information (survey results and detailed conservation strategies) is able to adequately address our concerns.

- **Badger**

In principle NRW do not object to the proposals put forward to conserve badger along the scheme. However, as pre construction surveys are not yet complete and detailed mitigation measures and methods of working submitted, we cannot comment at this time.

**Please note that any works affecting badger setts will need to be carried out under licence issued by NRW under Section 10 (d) of the Protection of Badgers Act 1992. Licences will only be issued by NRW outside of the closed season (July to November inclusive).**

- **Reptiles**

We note the presence of reptiles throughout the scheme including grass snake.

Licences cannot be issued for works carried out on reptiles. However, we advise that a method statement is prepared for works impacting on reptiles demonstrating how these impacts will be minimized by the mitigation measures implemented across the scheme.

**Preparation and implementation of such a strategy could form part of the Statement of Commitments**

- **Preparation of ‘Ghost’ Licences**

We welcome the intention to produce draft ‘ghost’ licence applications for review prior to the Orders being published, as outlined in ES Vol 1 Section 10.5.103.

Please note, we advise these draft applications include all the information NRW would require to be able to fully assess impacts upon EPS during construction and operation of the scheme, including an impact assessment, comprehensive mitigation strategy including long term management provisions, and a monitoring programme.

Monitoring of species and habitats under management are a vital part of the mitigation and will be required for all EPS impacted by the scheme. Remedial measures must also be included to ensure results of monitoring are fed into management plans to ensure long term favourable conservation status of the species concerned.

We would advocate that the same approach is taken for water vole.

**In the absence of comprehensive strategies for the conservation of these species within the ES, we advise that ghost' licence applications are submitted prior to determination of the scheme for bats, dormice, otter and water vole. Should GCN be identified to be directly impacted by the scheme, we advise that a similar approach would also be required for this species.**

### **Gwent Levels SSSIs**

SSSIs are designated under section 28 of the WCA 1981, where the land is of special interest by reason of any of its flora, fauna, or geological or physiographical features.

Section 28G of the WCA 1981 places legal obligations on public authorities in relation to SSSIs. These authorities are known as 'section 28G authorities', and the definition given at s.28G(3) embraces all public office-holders including the Welsh Ministers.

An authority to whom section 28G applies has a duty in exercising its functions so far as their exercise is likely to affect the flora, fauna or geological or physiographical features by reason of which a SSSI is of special interest to:

*'take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest.'*

In addition, where the permission of a section 28G authority is needed before proposed operations may be carried out, the section 28G authority must, in accordance with section 28I(5) of the WCA 1981, take any advice received from NRW into account:

- (a) in deciding whether or not to permit the proposed operations;  
and
- (b) if it does decide to do so, in deciding what (if any) conditions are to be attached to the permission.

'Permission' is defined so as to include any kind of consent or authorisation (WCA 1981, s.28I(7)).

As consent from the Welsh Ministers is required in order to proceed with the proposals, and as the Welsh Ministers are a section 28G authority, the duties under section 28I(5) apply to the Welsh Ministers.

The protection and enhancement of SSSIs is translated into planning policy through PPW and TAN5, where PPW Paragraph 5.5.8 advises that there is a presumption against development likely to damage a SSSI. TAN 5 at paragraph 5.4.2 further advises that the duty applies to the formulation of plans, and at paragraph 5.4.4 that the Welsh Government expects to 'apply strict tests when carrying out functions within or affecting SSSIs, to ensure that they avoid, or at least minimise, adverse effects'.

The Gwent Levels SSSIs are notified for its range of aquatic plants and invertebrates associated with the reens and ditches of the drainage system. In summary, the special interests of the SSSI are dependent on the water quality, water quantity, the existence of the drainage system and its continued management. Any development which has an adverse impact on any of these factors is likely to have an adverse impact on the wildlife for which the area was notified.

The variety of management practices and the timing and location of management within the ditches has led to the establishment of a rich variety of plants and associated populations of invertebrates, which forms the special interest of these sites. Many species are rare or absent in other levels systems in Great Britain.

The Gwent Levels are important for both submerged plant species associated with open water, such as the hairlike pondweed *Potamogeton trichoides*, and emergent plants such as arrowhead *Sagittaria sagittifolia*. The invertebrate interest is associated with open water, emergent dominated ditches, flowery banks and adjacent hedgerows and supports species such as *Haliphus mucronatus*, *Hydrophilus piceus*, *Pipinculus fonsecai* and *Tomosovaryella minima*. The area as a whole is particularly important for its large numbers of invertebrate species particularly snails and dragonflies, and includes the species *Physa heterostropha* and *Brachytron pratense* respectively. The area also supports plant species such as the rare thread-leaved water-crowfoot *Ranunculus trichophyllus* and small pondweed *Potamogeton berchotoldii*.

We welcome the consideration of the potential adverse impacts on the suite of Gwent Levels SSSI's: St.Brides SSSI, Nash and Goldcliff SSSI, Whitson SSSI, and Redwick and Llandevenny SSSI. However, we remain concerned that all potential impacts on the Gwent Levels SSSIs, during construction and operation phases of the development, have not been fully addressed in the ES.

Our main concerns relate to the specific topics below;

- direct loss of /damage to the features of the SSSI from construction and operation activities;
- direct loss of /damage to the features of the SSSI from pollution events from construction and operation activities;

- direct loss of /damage to the features of the SSSI from poor quality surface water run-off from construction and operation activities including the storage of materials;
- indirect loss/damage to the features of the wider SSSI from poor quality surface water run-off from construction and operation activities; due to the location of the site and the interconnected nature of the drainage system impacts at this location could affect a large area of the SSSI;

With respect to the Gwent Levels SSSIs, we believe that insufficient evidence has been presented in the Chapter, its supporting Appendices and elsewhere within this document (including Chapter 2 (Scheme Description) and Chapter 16 (Road Drainage and the Water Environment and their supporting Appendices to reassure us that significant adverse impacts can be avoided, both during the construction and operational phases.

The unprecedented scale of this development proposal within the Gwent Levels mean that there are too many unknowns at this stage to have full confidence that the proposed scheme construction, ways of working and mitigation can fully avoid adverse effects and therefore we are unable to agree with the conclusions of the assessment.

We require further detailed discussions on, but not limited to, the Drainage Strategy (Appendix 2.2), the Reen Mitigation Strategy (Appendix 2.3) the Construction Environmental Management Plan (Appendix 3.2) the SSSI Mitigation Strategy (Appendix 10.35) and the construction and operational phase monitoring strategy, before we are able to consider revising this position. Should we be able to revise our position we would also need to see all of these elements addressed to our satisfaction within the Statement of Commitments

10.1.2 With regard to severance and habitat fragmentation, we point out the connected drainage system of the Gwent Levels is also an important wildlife corridor. Land take can also leave remaining land uneconomical to farm and can also impede the management of watercourses for flood storage capacity and/or nature conservation.

With regard to the construction phase, the risk of pollution to watercourses, particularly across the Gwent Levels will be one of the key issues to manage, alongside the timing of works, methodology of replacement reens and field ditches

Once operational, key issues also relate to the water treatment areas (WTAs) and the discharge into Gwent Levels: refer to our comments on Chapter 16.

This section lists the potential impacts of the scheme on biodiversity. However we are concerned that there is no acknowledgement of the potential for direct mortality on species through land take and/or construction operations. This potentially significant impact does not appear to have been considered. This will need to be considered in the production of conservation strategies for relevant species.

10.2.1 We welcome acknowledgement in the ES of the Environment Bill, which since the drafting of this document has received Royal Assent and is now the Environment (Wales) Act 2016 with relevant parts coming into force on 21 May 2016. We would therefore seek an explanation as to how the project would meet the statutory duty on

Welsh Government to maintain and enhance biodiversity. We make this point particularly in the context of loss and severance of Gwent Levels SSSI area and impacts on protected species, including dormouse.

10.2.43 With reference to the HLF funded Living Levels project, we reiterate previous advice that whilst it is important for the M4 project to keep abreast of the development of the Living Levels project, it cannot be used to seek to provide mitigation for, or offset damage caused by any M4 project.

10.2.46 The Severn Estuary SMP is now approved.

### **Wintering Birds**

10.3.94 We welcome the commitment, in line with our previously made recommendation, to undertake a further full winter (2015/16) of survey for wintering birds, and note that this will be reported shortly. We will consider and respond to the wintering bird data as a whole at that point.

### **Breeding birds**

10.3.181 We have concerns with the overall quality of the 2015 breeding bird survey, and refer you to our comments with respect to Appendix 10.28 for more detail. Lack of access has meant that the overall survey coverage is less than expected and we therefore question how representative the survey is of the scheme area as a whole. We therefore request a meeting with the consultants to discuss and agree a way forward.

10.7.251 As we are of the view that the breeding bird survey does not provide a robust data set, we are unable to comment on predicted magnitude of impact at this stage. This comment is also relevant to 10.7.252, 10.7.256, 10.8.424, 10.8.427, 10.9.297, and 10.9.301

We are unable to agree with the residual effects conclusions. We would be in a position to comment further once we have received and reviewed the results and analysis of the recently completed 2015-16 wintering bird's survey.

10.3.107-109 We refer to our detailed comments on Appendix 10.14 and 10.30 refer to comments of app 10.14 and 10.30 – Aquatic Macrophyte surveys of 2014 and 2015 respectively.

10.3.116 We welcome the acknowledgement that the approach taken within the ES is to assume that all reens and ditches within the various SSSI boundaries are capable of supporting the individually qualifying and invertebrate assemblage of each specific SSSI.

10.3.186 We would advise that mowing banks will not impact the aquatic species present which is most important.

- 10.4.20 We observe that duckweed *Wolffia arrhizal*, is found within other Gwent Levels SSSIs.
- 10.4.21 We observe that the hairlike pondweed *Potamogeton trichoides* is found across the Gwent Levels and is an individually qualifying species. We recommend that the complete set of features of interest of each SSSI are recorded here, as has been done for the Newport Wetlands SSSI.
- 10.4.26 Magor Marsh SSSI features are not all listed: please refer to Feature of Interest sheet.
- 10.4.28 – We consider that correction is required: Rectory Meadows, Rogiet SSSI not Rogiet Meadows.
- 10.4.74 We welcome the intention to only use native species for planting proposals; however, we question how this accords fully with the Environmental Masterplans.
- 10.4.98 NRW recommendation would be for natural regeneration as opposed to the use of seed mixes on the Gwent Levels.
- 10.4.124 A correction is required: for the reference to EA substitute with NRW.
- 10.4.136 We have concerns with the quality of this survey: refer to our comments on Appendix 10.14
- 10.4.137 We have concerns that only tubular water-dropwort *Oenanthe fistulosa* is pulled out for specific consideration. We refer to our comments on Appendices 10.14 and 10.30.
- 10.4.140-141 See our comments on Appendix 10.30. Lower diversity in field ditches compared to reens to be expected due largely to lack of management agree that maintaining high diversity on reens will be key.
- Table 10.7 We note and welcome that all rare species are listed here: please refer to our comment on 10.4.137.
- 10.4.151 We support the recognition of the value of the reen system as high.
- 10.4.185 We observe note that hedgerows on GL can be detrimental to the GL features and it is usual for NRW to request removal in SSSI management agreements and in Glastir
- 10.4.209 Rigid Hornwort *Ceratophyllum demersum* and Horned Pondweed *Zanichlla palustris* are part of the Gwent Levels aquatic macrophytes assemblage, so recommend that they are upgraded to primary.

- 10.4.566 There is an incorrect reference to Rectory Meadows, Rogiet SSSI in table 10.17
- 10.5.4 See our detailed comments on the SSSI Mitigation Strategy (Appendix 10.35). We concur that mitigation must cover land severed and that rendered uneconomical to farm.
- 10.5.12 We note reference to removal of hedgerows in relation to the (Gwent Levels) SSSI mitigation strategy. Whilst we are supportive of this in the context of these SSSIs, we also recognise the need to retain and enhance connectivity in the form of hedgerows, specifically in relation to bats. We recognise that we will need to work closely to ensure both these, potentially conflicting requirements can be met
- 10.5.17 We welcome the statement that the majority of water treatment areas (WTAs) are to be located to the north of the proposed scheme, but refer you to our detailed comments on the Reen Mitigation Strategy (Appendix 2.3)
- 10.5.24 Water quality from WTAs – please refer to our comments on Chapter 16. We require reassurance that the WTAs are able to reduce concentrations of determinands to ambient levels.
- 10.5.44-47 See our detailed comments on Appendix 2.3: reen mitigation strategy. We also refer you to our comment on 10.5.12.
- 10.5.52 -62 See our detailed comments on Appendix 10.35 SSSI Mitigation Strategy
- 10.5.121 The monitoring strategy for the construction and operational phases will need to be discussed and agreed with NRW, and undertaken in full accordance with this agreement. A key aspect, with respect to the Gwent levels, will be that any breaches/concerns highlighted through monitoring are quickly reported and trigger the necessary remedial action. Prior to agreeing any monitoring strategy, NRW will need to be reassured that agreed trigger levels are capable of being met, throughout the year. **This is an aspect which will require to be covered to our satisfaction within the Statement of Commitments**
- 10.7.15 The reen mitigation strategy has not yet been agreed with NRW. Please refer to our detailed comments on (Appendix 2.3).
- 10.7.18 We request clarification of the estimated total loss of Gwent Levels SSSI area through the undertaking of this scheme, as varying figures are quoted here (77.6 ha), in 10.7.13 (105 ha) and in 10.5.54 (125 ha of which 86 ha is defined as grazing marsh). We will look to resolve this as part of our ongoing discussions on SSSI Mitigation Strategy, and refer you to our detailed comments on this at Appendix 10.35.
- 10.7.55 We note the percentage of reen and field ditch lost, which is based on the full suite of Gwent Levels SSSIs. We request that this is broken down to the four individual sites which would be directly impacted.

- 10.7.56 No agreement has yet been sought with NRW to take on the management of the newly created reed and ditch network. We refer to our detailed comments on Appendix 2.2 Drainage Strategy.
- 10.7.64 We are of the view that reedbeds within the WTAs should not be counted as mitigation for wider habitat loss as their purpose is to seek to treat road run-off to enable it to be of an acceptable quality to be released into the Gwent Levels drainage system.
- 10.7.74 We disagree with the classification of tubular water dropwort *Oenanthe fistulosa* as widespread and hairlike pondweed *Potamogeton trichoides* as abundant across the Gwent Levels.
- 10.7.126-10/7/128 We refer you to our detailed comments on Appendix 10.35 SSSI Mitigation Strategy. Need to ensure that management of the mitigation areas can be sustained in long term. Relying on landowners to achieve this is not sufficient and so the magnitude of impact should change to reflect this or alternative arrangements be put in place to secure management in perpetuity
- 10.7.129-135 With respect to shrill carder bee we refer you to our comments on Appendix 10.31 2015 Survey of Gwent Levels Bumblebees
- 10.8.12 As previously mentioned - Rectory Meadows, Rogiet SSSI
- 10.8.130 See detailed comments on the Buildability Report at Appendix 3.1 onwards
- 10.8.173 Our comment made with respect to 10.5.123 is also of relevance here.
- Table 10.19 We note that the assessments present here are incomplete, in the absence of complete survey data, including for bats and GCNs. In addition, the assessments of each valuable ecological receptor (VER) cannot be carried out without the additional survey information being undertaken for great crested newt and bats. We note the table does not include a comprehensive list of the possible impacts upon each VER and how these impacts may differ in the short, medium and long term. We advise that all possible impacts whether permanent or temporary are considered for each VER.

### **Appendix 10.1 Relevant Planning Policy**

We have no comments at this time

### **Appendix 10.2 Extended Phase 1 Habitat Survey 2014 Report (Arup 2015)**

We have no comments at this time.

### **Appendix 10.3 Ecological Survey Site Selection Report (Arup 2014)**

We have no comments at this time.

#### **Appendix 10.4 National Vegetation Classification Survey Report (Sturgess Ecology 2014)**

We have no comments at this time.

#### **Hedgerow Survey 2014 Report (Arup 2015)**

We have no comments at this time.

#### **Appendix 10.6 Great Crested Newt Presence/Absence Survey 2014 Report (Arup 2014)**

Refer to our comments on GCN above.

#### **Appendix 10.7 Bat Survey 2014 Report (Arup 2015)**

Refer to our comments on bats above.

#### **Appendix 10.8 Otter and Water Vole Survey 2014 Report (Arup 2015)**

Refer to our comments on otter and water vole above.

#### **Appendix 10.9 Dormouse Survey 2014 Report (Arup 2014)**

Refer to our comments on dormice above.

#### **Appendix 10.10 Hedgehog Survey 2014 Report (Arup 2014)**

We have no comments at this time.

#### **Appendix 10.11 Reptile Survey 2014 Report (Arup 2014)**

Refer to our comments on reptiles above.

#### **Appendix 10.12 Wintering Bird Survey 2014 Report (Arup 2014)**

Please refer to comment with respect to 10.3.94 of Chapter 10, Ecology and Nature Conservation

#### **Appendix 10.13 Breeding Bird Survey 2014 Report (Arup 2014)**

We are satisfied with the overall quality of the bird survey but cross-refer to the point made in 10.3.99 of Chapter 10 of the ES, Ecology and Nature Conservation, that the aim of survey at this stage was to cover a “representative sample” of locations and therefore an additional round of survey was programmed for 2015. We refer you to our comment on Appendix 10.28 – Breeding Bird and Wader Survey 2015

## **Appendix 10.14 Aquatic Macrophyte Survey 2014 Report (Rachel Hacking Ecology 2014)**

### **General comments**

We have concerns over the overall quality and level of representation arising from this survey, as set out below:

Of the 100 samples that were due to be sampled, it is stated that only 41 sites were visited, although we could only find results for 36 in the document. At less than 50 % coverage, NRW would question whether this can be regarded as representative when sampling across such a large and variable area. Whilst in general we note that Countryside Council for Wales guidance was followed, at our recommendation we note that some surveys were undertaken outside of the optimum survey period of May-September.

In addition we were concerned to note that many of the samples either fell outside of the SSSI boundary, ie on watercourses not part of the formal SSSI designation and therefore unlikely to support the features of interest or on field ditches with only a limited number of reens where you would expect to see higher diversity. We have located the samples as follows:

Outside boundary – 8, 10, 11, 25, 26, 27, 28, 29, 30, 31, 35, 36, 41 - total of 13

Field ditches – 2, 7, 12, 13, 14, 17, 18, 19, 22, 23, 24, 32, 38, 39, 40 – total of 15

Reens – 1, 3, 4, 5, 6, 9, 15, 16, 20, 21, 33, 34, 37 – total of 13

This is despite the fact that most sample sites are described as *reens* within the report

In addition 4 control sites were visited (1- reen, 2- ditch and a blind one, 3 –ditch, 4- reen) although the rationale for this is not explained within the report

Despite this a number of important macrophyte species were recorded, including rigid hornwort (*Ceratophyllum demesum*), flowering rush (*Butomus umbellatus*), arrowhead (*Sagittaria sagittarioides*) and frogbit (*Hydrocharis morsus-ranae*) However report fails to mention any of these notable species except tubular water-dropwort (*Oenanthe fistulosa*)

Overall we are disappointed with the quality of this report, but refer you to our comments on the macrophyte survey in 2015 – presented in Appendix 10.30.

The overall effect of this poor quality report is to down grade the importance of the botanical diversity present within the Gwent Levels suite of SSSIs. We recognise that further survey was undertaken in 2015, which goes some way to allaying our concerns – we refer you to our detailed comments on Appendix

### **Appendix 10.15 Terrestrial and Aquatic Invertebrate Survey 2014**

The report fails to highlight the nine SSSI Qualifying invertebrate species, and the survey recorded just two (*Hydrophilus piceus* and *Hydaticus transversalis*).

This is likely to be due to limitations of the survey (poor weather conditions, lack of access and short survey times) as the surveyors employed to undertake the fieldwork are well-respected entomologists.

#### **Appendix 10.16 Wintering Bird Survey Report (Hyder 2015)**

Please refer to comment with respect to 10.3.94 of Chapter 10, Ecology and Nature Conservation

#### **Appendix 10.17 Desk Study Data (RPS 2015)**

We have no comments at this time.

#### **Appendix 10.18 Aquatic Desk Study (RPS 2015)**

- 2.2.1 CCW survey work undertaken on the Gwent Levels between 2010-2012 is not referenced in this desktop review, despite being provided. We therefore seek clarification as to whether or not it has been utilised.
- 3.1 We recommend that these sections are amended to include all statutory designations of the Severn Estuary (SAC, SPA, Ramsar Site and SSSI) and River Usk (SAC and SSSI), both here and throughout this document.
- 3.1.11 We disagree that field ditches are “frequently dry” and refer you to the already supplied CCW surveys 2010-12 which provides evidence to the contrary. We would also note that reens do have 'flow' but not in the usual sense; rather, it is determined by tides and the opening and closing of tidal flaps and so flow can be reversed depending on the state of tide lock. Hedgerows are present but, in our view, these are due to a reduction in appropriate management of field ditches in recent years – and can reduce the occurrence of the features of interest of the Gwent Levels SSSIs where they shade the water channel.
- 3.1.12 These rare or scarce aquatic plants are Individually Qualifying (IQ) features of the SSSIs or form part of the plant assemblage feature.
- 3.2.3 - 8 We agree that, given the level of variability in interpretation, it is not really a useful tool to determine WQ especially as GL unique in nature.
- 3.2.10 We disagree with the interpretation that the majority of plant species recorded are found commonly across the UK. We refer you to our comments on Appendix 10.14 and 10.30.
- 3.2.11 *Oenanthe fistulosa* is an IQ plant species of Gwent Levels SSSIs but as already noted other IQ plants and those in assemblage have been recorded but not further referred to – again please refer to our comments on Appendix 10.14 and 10.30.

3.2.12 We agree that lack of management, and where the reed or ditch is in its succession following management, will have an influence on species diversity. It also highlights the differences in survey effectiveness between the 2014 and 2015 survey - again please refer to our comments on Appendix 10.14 and 10.30.

3.2.13 We refer to the relevant Features of Interest sheets for each SSSI for the definitive list of qualifying features – neither the Site Management Statements nor the citations should be used for this purpose.

3.2.14 Following on from our comment above, we point out that it is incorrectly stated that water beetle and dragonfly assemblages are Qualifying features, and that *Physella acuta* (a non-native mollusc) is important in Welsh context. We would expect this document and Chapter 10 of the ES to clearly state the qualifying features of the Gwent levels SSSIs and to focus assessment primarily on these.

3.3.43 we point out that eels are present throughout the Gwent Levels drainage system.

#### **Appendix 10.19 Phase 1 Habitat Survey 2015 (RPS 2015)**

We have no comments at this time.

#### **Appendix 10.20 National Vegetation Classification Survey 2015 Report (Sturgess Ecology 2015)**

We have no comments at this time.

#### **Appendix 10.21 Hedgerow Survey 2015 Report (RPS 2015)**

We have no comments at this time.

#### **Appendix 10.22 Great Crested Newt Survey 2015 Report (RPS 2015)**

Refer to comments on GCN above

#### **Appendix 10.23 Bat Activity Survey 2015 Report (RPS 2015)**

Refer to comments on bats above

#### **Appendix 10.24 Bat Roost Survey 2015 Report (RPS 2015)**

Refer to comments on bats above

#### **Appendix 10.25 Otter and Water Vole Survey 2015 Report (RPS 2015)**

Refer to comments on otters and water vole

## **Appendix 10.26 Dormouse Survey 2015 Report (RPS 2015)**

Refer to comments on dormice above

## **Appendix 10.27 Reptile Survey 2015 Report (RPS 2015)**

Refer to comments on reptiles above

## **Appendix 10.28 Breeding Bird and Wader Survey 2015 Report (Thomson Ecology 2015)**

- 2.4.1 We have concerns about the overall quality of this survey work reported here due to access restrictions, which therefore also required a modified approach to survey; meaning that much of the work was undertaken from public footpaths
- 2.4.2 We note that survey work commenced in May, and therefore missed any survey during April, a period which is recognised as an important period to be included.

In addition we advise that:

- 4.1.8 Cuckoo and willow warbler have been mis-classified as not of conservation concern. We note that cuckoo are both red listed and a Section 42 species and willow warbler is Amber listed
- 4.2.3 Similarly, we note that curlew is red listed (not amber)

## **Appendix 10.29 Barn Owl Survey 2015 Report (RPS 2015)**

We are satisfied with the quality of the survey presented here. We support the requirement for a barn owl mitigation strategy (5.3.1) and would welcome the opportunity to input to this. We also support the need for further, pre-construction, survey.

Due to concerns over the adequacy of survey coverage for breeding birds, we are unable to agree with the predicted effects on breeding birds. At this stage we welcome the recognition of likely significant effects on cetti's warbler and barn owl, and would welcome the opportunity to discuss mitigation options in further detail.

## **Appendix 10.30 Aquatic Macrophyte Survey 2015 Report (RPS 2015)**

### **General comments**

We have far greater confidence in this survey compared to that prepared in 2014 – refer to our comments made in relation to Appendix 10. 14. The survey was undertaken at the optimum time of year (June to August) and results accord with those obtained by CCW during their surveys undertaken during 2010-12, with similar species present. The findings concur with our local knowledge and experience of the Gwent Levels – ie that greater species diversity will be found in reens compared to field ditches and the importance of

management in maintaining diversity. We note that of 40 samples taken 28 (70%) of samples were classified as moderate or above botanical diversity.

We disagree that rootless duckweed (*Wolffia arrhiza*) is confined to one location. Survey work undertaken by CCW between 2010-12 confirmed its presence at a number of locations

3.3.5 Please note that Main River reens are NRW managed (not NRA), and all other reens are also managed by NRW, as part of an Internal Drainage District.

3.3.8 We welcome the early engagement in discussions with surveyors before they undertook the survey work, the value of which we note and welcome is acknowledged in 3.3.10

We note that this report confirms a high impact to designated site given the species present and abundance. This does not translate into ES Chapter 10 which has reported no long-term impacts. Link this into response to Chapter 10. We consider the key issue to be addressed is whether species diversity can be replicated over such a large area of the Gwent Levels. There are no fail safes once reens and ditches are infilled and we could be left with kilometres of watercourses that hold (or not) water for Water management and movement but do not support the features of SSSI.

## **Appendix 10.31 Terrestrial Invertebrate Survey 2015 Reports (David Gibbs 2015)**

- **ABP and Tata Land**

The 3-day surveys at each of these sites have highlighted that both sites support rich invertebrate faunas of at least regional importance and our view is that further work would undoubtedly add other significant species.

We agree with the recommendations made, that mitigation should aim to retain as much of the key habitats as possible and that these should not be lost to subsequent associated development.

- **2015 Survey of Gwent Levels Bumblebees**

We note that no reference is made to relevant CCW contracted reports for bumble bees on the Gwent Levels. However, this 2015 survey re-affirmed the national importance of the Gwent Levels for both Shrill Carder bee *Bombus sylvarum* and Brown-banded carder Bee *Bombus humilis*.

The proposed M4 motorway construction has the potential to act as a barrier to localised dispersal. We therefore welcome the proposals for management of significant lengths of the proposed motorway embankment as species rich grassland, and we'd welcome involvement in the further development of these proposals, including long-term management requirements.

However, more effective mitigation is likely to arise from securing the sympathetic management of flower rich swards within pastures – we'd therefore also welcome the opportunity to discuss this further with respect to the SSSI mitigation strategy, and we refer you to our detailed comments on this document at Appendix 10.35

#### **Appendix 10.32 River Corridor Survey 2015 Report (RPS 2015)**

We have no comments at this time.

#### **Appendix 10.33 Waxcap Survey Report (Sturgess Ecology 2015)**

We have no comments at this time.

#### **Appendix 10.34 Valued Ecological Receptors – Designated Sites Summary Table**

- We reiterate an overarching issue that designated sites features of interest should be drawn from their individual Features of Interest sheets, not from the relevant citation or Site Management Statement.
- Amend title of Rogiet Meadows SSSI to its correct title of Rectory Meadows, Rogiet SSSI.

#### **Appendix 10.35 SSSI Mitigation Strategy**

##### **General Comments**

- We note that this work is additional and complementary to Appendix 2.2 Drainage Strategy and Appendix 2.3 Reen Mitigation Strategy.
- We regard grazing marsh to be an integral part of the Gwent Levels suite of Sites of Special Scientific Interest (SSSIs), hence why it falls within the designated site boundaries. We recognise that the favourable management of this land, as wet pasture, is the best means of conserving the specific notified features of interest for which these sites are designated.
- Taking into account the nature of the Gwent Levels, as a relatively extensive area containing a variety of land use practices within the site boundaries, we are prepared to accept the principle that works within the Gwent Levels SSSIs could be regarded as making a contribution both to the compensation for the loss of SSSI grazing marsh area due to the undertaking of the M4 CaN project, and to favourable management of the reen and field ditch network as a whole. In particular, we would look favourably on proposals which sought to restore current arable use to grazing marsh, where this seeks to restore the historic drainage pattern including in field grips.

However, we would wish to comment on a case by case basis on the suitability of any such proposals brought forward as there may be site specific issues which also need to be taken into account. In this context, we refer you to our comments below with respect to the two examples currently proposed at Maerdy and Tatton Farms

- We would not wish to see all such mitigation/ compensation/ enhancement works brought forward within the existing SSSI boundaries and for that reason we welcome the consideration of Caldicot Moor – see further specific comments below.
- Such works would also need to be considered in the context of the Gwent Levels Historic Landscape of Outstanding Historic Interest in Wales. Once again in principle we are satisfied that these proposals could be considered as potentially making a contribution to offsetting the adverse impact on this historic landscape. However, we recommend that you also seek the views of both Cadw and Glamorgan Gwent Archaeological Trust (GGAT) with respect to both the historic landscape and impacts on archaeology.
- For any site, we would need to be assured that both management control and the practical ability to manage has been secured in perpetuity, and therefore that development could not occur on these areas. In this context, we note that Caldicot Moor forms part of the draft Compulsory Purchase Order.
- We cannot comment on whether the total area put forward at this stage is sufficient as we are unclear what the total loss of SSSI area would be if the M4 CaN project were taken forward. As previously stated such a calculation would need to take into account both permanent and temporary land losses during the construction phase. We would consider permanent loss to include both the road carriageways themselves as well as associated infrastructure including the Water Treatment Areas. Areas of severed land which can no longer be practically managed should also be included. We'd be looking for at least an equivalent area of land to be provided as compensation for that which has been lost.
- Links to the Living Levels HLF project will need to be carefully considered such that works required as a result of M4 CaN be separated, but are complementary to those undertaken as part of the Living Levels project.
- Links also need to be made to the Rail Electrification project through the M4 CaN scheme area to again ensure there is separation between the mitigation/ compensation requirements of the two projects.
- We note that as well as being proposed for SSSI mitigation, the areas are also being put forward to provide mitigation for a number of protected species – water voles, reptiles and potentially GCNs. We refer you to our general comments with respect to protected species in relation to Chapter 10, Ecology and Nature Conservation
- Comments on the detail are provided below, but we are aware that these are high level and that further detailed discussions are required

- Any hedgerow removal, which we would support in the context of the SSSI mitigation needs to be considered alongside the requirements of bats, where hedgerow connectivity is important for foraging and commuting routes. We recognise that we will need to work closely with the consultants developing these proposals to ensure these needs can be balanced
- We note that, as Caldicot Moor did not form part of the area considered through the Environmental Statement that no protected species surveys have been undertaken here as part of the ES. We recommend that further discussion with NRW is required on this point.

### **Specific Comments on the SSSI Mitigation Strategy**

- 1.2.5 As advised elsewhere in the ES, we recommend that this document fully lists the qualifying features of the relevant SSSIs.
- 1.2.9 We advise that this paragraph be amended to clearly break down the structure and management responsibility of the hierarchy of watercourses within the Gwent Levels – we refer you to Section 2 of Appendix 2.3 Reen Mitigation Strategy, which provides a useful breakdown, as well as our comments on this and request for clarity as to who would manage the watercourses.
- 1.2.10 We advise that shrill carder bee is a qualifying feature of the Gwent Levels suite of SSSIs – see also our comment on 1.2.5
- 1.3.2 We refer you to our comments on Appendix 10.31, Survey of Gwent Levels Bumblebees. We would welcome the opportunity to discuss favourable management of the proposed SSSI mitigation areas for shrill carder bee
- 1.3.6 We consider that small parcels of land which would become severed by the new motorway and therefore unviable for management should be included within permanent loss figures.
- 1.3.7 We would comment that hedgerows and small areas of tree planting would only be compatible with the SSSI designations, if they do not shade the reen and field ditch network.
- 3.1.1 We note that it is proposed that detailed Method Statements will be agreed with NRW prior to the commencement of works, which we welcome. However we would need to be satisfied at a much earlier stage that this SSSI mitigation strategy is capable of delivering, alongside the Drainage Strategy and Reen Mitigation Strategy, a part of the essential mitigation that will be required in order that you are able to demonstrate compliance with your duties with respect to SSSIs. **In addition, and once we are satisfied on this earlier point, we would require the full implementation of the SSSI Mitigation Strategy to form part of the Statement of Commitments.**

3.1.2 We note and support the broad principles for the SSSI mitigation areas as set out here – but would welcome the opportunity to be involved in working these up in greater detail.

We note proposals to provide mitigation for wider biodiversity than the SSSI features of interest, including water voles. This will require further detailed consideration, but at this stage we consider that management requirements are likely to be compatible.

### 3.2 **Maerdy Farm**

We have some concerns over the location of these proposals, given that the site has a long boundary with the main Cardiff-London railway line. We have historic and ongoing concerns with the quality of the ditches which run along the bottom of the railway embankment due to historic contamination and we therefore do not recommend that adjacent ditches are opened up as this has the potential to spread this contamination further. We therefore note the reference to pollution in ditches adjacent to railway line and that they will remain unconnected. However on Figure 2a it shows replacement field ditches running from the railway line. Removing these 8 ditches from the measures leaves only 5 replacement ditches. We also request further detailed discussion around whether there is sufficient water in the vicinity of the proposed mitigation area to enable the ditches to be wet for much of the year.

#### **Tatton Farm**

This land holding would be north of any new stretch of motorway – we would therefore require reassurance that favourable management can be assured in perpetuity – ie that the land constitutes a viable agricultural tenancy and that it will be practically possible to manage the reed and ditch network here. Given the above, we would support this site being considered further given its important location on the northern edge of the Gwent Levels: Nash and Goldcliff SSSI, within the historic back-fen. Please also refer to our comments on Appendix 8.3 ASIDOHL, Section 3.1.6

#### **Caldicot Moor**

We are fully supportive of this area having continued consideration, as there would be good continuity with the existing Gwent Levels: Magor and Undy SSSI. It falls within the Caldicot and Wentlooge Levels Internal Drainage District and therefore the reed network is already subject to similar management to that of the Gwent Levels SSSIs. The reason that this area was not designated was due to much more intensive drainage which had occurred here, including pumped drainage, leading to generally low water levels and an overall drainage system which is currently unable to support the SSSI features of interest. However, if works could be undertaken to retain water in the area for longer, by removing the within field drainage, we can see that there is scope to make significant improvements. We would also be prepared to consider the principle of re-wetting of fields, for example through the digging of scrapes. All works will require careful consideration by NRW and particularly IDD as the most knowledgeable on water movement within the Gwent Levels.

- 4.3.1 The management of both Main River reens and IDD maintained reens would continue as currently. We will continue to undertake necessary management of the reens within all 3 sites as part of the annual maintenance programme, although there may be opportunities to consider the sequencing of management of all watercourses, including field ditches in a way which is beneficial to the overall strategy.
- 4.3.3-4 Timing of clearance works must be in line with NRW guidance.
- 4.3.6 Removal of spoil would be contrary to the Environmental Permitting Regulations 2010 Wales: spoil must remain within 10m of the watercourse to qualify for an exemption. Dredged spoil spread away from the place where it had been dredged would require a permit.
- 4.4.2 NRW do not advocate use of seed mix, spreading of material is enough to secure natural regeneration.
- 4.4.4 We would only recommend reprofiling of field ditches – and would be happy to provide further detail of our requirements as part of ongoing discussions.
- 4.5 We welcome in principle the recreation of grips and field boundaries
- 4.7 We welcome in principle the construction of scrapes
- 4.8.4 NRW's recommended option would be to remove at least one side of hedge completely and managed so does not regrow, the other bank should be managed either to a certain height and or remove as well – balance across the side with fully open and partially shaded areas to encourage full range of species
- 4.8.8 In NRW experience 3-5 year rotation is too long; we recommend a period of 1-2 years.
- 4.10 NRW welcomes, in principle, arable conversion.
- 4.10.34 NRW recommend that more vigorous management be employed in the establishment phase to provide best possible environmental conditions for success i.e. early cuts and mob grazing
- 4.10.50 Further detailed discussions will be required around the development of a monitoring programme.
- 4.10.52 We would consider that use of farmyard manure may be inappropriate, given overall aims – further discussions will be required on this point
- 4.10.55 We disagree that the mowing regime advocated here would be suitable for maintaining ditch margins. Any grass margins alongside watercourses should be mown once every two years to ensure over shading does not occur. Elsewhere, longer rotations can be considered.

4.10.55 Where stock fencing has been erected adjacent to watercourses management of the margins must be maintained mechanically.

5.1.2 Note that long term management will be responsibility of SWTRA but that management likely to be undertaken by tenant farmers under management plans – to be drafted and agreed with NRW. We will require further detailed discussion on this point, including exploring alternative options and discussion as to how management works will be funded in perpetuity.

## **Chapter 11 Geology and Soils**

Table 1.1 We disagree that no response was provided by NRW with respect to consultation in September 2015 regarding geological designations. A further copy can be provided if required, although please also note our points below

11.4.30 We agree that there are no geological designated sites (statutory or non-statutory) located within the route of the proposed new section of motorway.

Although we recognise not forming part of this ES, we note that elsewhere in this consultation it is stated that Machen Quarry and Ifton Quarry may be used as sources of aggregate. We advise that Machen Quarry has been identified as a possible Site of Special Scientific Interest (pSSSI).

Table 11.2 As a point of principle, we are of the view that non-designated Geological Conservation Review (GCR) sites are of the value (sensitivity) as designated geological SSSIs.

11.4.28 Please refer to our comment above on Table 11.2, also of relevance here

Table 11.9 With respect to CL-26, we'd query whether in addition there is a risk associated with the presence of potentially explosive gases

### **Appendix 11.1 - Land Contamination Assessment Report**

1.2.2 We note that this section is incorrect as currently write and advise that. in Wales Part 2A of the Environmental Protection Act (EPA) 1990 came into effect in July 2001. This was as a result of the 'Contaminated Land (Wales) regulations, 2001' not the 'Contaminated Land Regulations, 2000'. In addition this was superseded by Wales' specific/published regulations in 2006 and 2012 (amendment).

4.4.3 Change of context required in relation to new Environmental Quality Standards (EQS) not coming into force "until 22<sup>nd</sup> December 2015". Date has passed.

4.4.9 In relation to the statement “However it is notable that groundwater areas of the new section of the motorway is naturally saline and thus unsuitable as a potable water supply”. We recommend that this be clarified with references/ justification, as we would query whether this is the case for the entire proposed stretch of motorway.

NB – We have not reviewed sections 4.2, 4.3, 5.2, 5.3 as these relate to risks to human health, for which the local authority is the regulator.

## **Appendix 11.2 - Outline Remediation Strategy**

1.3.2 Would advise reference is also made to a similar Wales specific piece of guidance published by the Welsh Local Government Association titled *Development of Land Affected by Contamination: A Guide for Developers (2012)*”

3.3 Remediation Criteria – we are satisfied with the proposals and note and welcome that our agreement will be required for the proposals once defined.

3.4.16 We note and welcome the principle to manage ground and surface water discharge during the construction phase by means of a Surface Water and Ground Water Management Plan. **We recommend that this principle be captured in the Statement of Commitments, including that the Plan would need to be developed and approved to the satisfaction of NRW and implemented in full accordance with the approved Plan.** We also advise that it would also be necessary to obtain NRW consents/ permits to implement much of this work.

5.5.2 With reference to the reuse of the Tata Llanwern lagoon material within the proposed motorway embankment, we refer you to our earlier position (outlined in an email dated 29/2/16 titled “M4 Corridor around Newport - NRW Response to Waste Query relating to Tata Slurry Lagoons - 29 February 2016”) that the material is not considered a made ground or soil in accordance with the Contaminated land: Application in Real Environments (CL:AIRE) Definition of Waste Code of Practice (DoWCoP) and therefore should not be re-used under that scheme. We require additional information (as requested in the email) in order to demonstrate compliance with Article 6 of the Waste Framework Directive 2008/98/EC with respect to end-of-waste status.

6.8.1 In relation to the groundwater monitoring wells referred to, there do not appear to be any locations provided. It is understood that these will be provided in the ‘Final Remediation Strategy’.

7.2.6 References to “Environment Agency” need to be amended to Natural Resources Wales.

### **Appendix 11.3 - Land Contamination Management Strategy**

We note and welcome that our comments made on earlier drafts have influenced this current iteration. Therefore our only remaining comment is to note that 2.1.3 refers to the re-use of suitable materials should be in accordance with CL:AIRE Definition of *Waste Development Industry Code of Practice (v2 011) (DoWCoP)* .

Whilst this is acceptable in most circumstances, please refer to our comment made in relation to 5.5.2 of Appendix 11.2, Outline Remediation Strategy - in the case of the Llanwern lagoon material NRW is not of the view that this constitutes a suitable source under the CL:AIRE DoWCoP. As outlined in our email of 29 February, we are awaiting receipt of specific detail before we can advise further.

### **Appendix 11.4 UXO Risk and Mitigation Map**

Noted

### **Appendix 11.5 Environmental Permitting Strategy**

Table 1 – Reference to permit JHT/PMB/H14/7 for Newport City Council. The permit number for Area 1 is EA WML30058.

2.1.5 The Charging Scheme in section 4.5.2 states that a partial surrender should be applied for when reducing the area of land. *Regulatory Guidance Note (RGN) 9: Surrender* should be used to determine the level of surrender to be applied for. RGN 9 states:

*The regulator must accept an application to surrender an environmental permit in whole or in part under regulation 25(2) if it is satisfied that the necessary measures have been taken –*

*(c) to avoid a pollution risk resulting from the operation of the regulated facility;*

*and*

*(d) to return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation.*

2.1.7 OPRA profile would only be required if not a fixed charged variation.

2.1.14 Excavated waste will require treatment in line with the materials management plan.

2.1.19 as paragraph 2.1.5.

2.1.20 OPRA profile would only be required if not a fixed charged variation.

3.1.8 We advise that the construction phase (temporary) water treatment areas (WTAs) will also require discharge permits. We refer you to Annex G of Appendix 3.2 (Pre-Construction Environmental Management Plan) where this requirement is noted.

4.2.2 OPRA profiles are only required if there are no associated fixed charge fees listed in the NRW Charging Scheme.

Table 2 OPRA profile would only be required if not a fixed charged variation. The level of assessment for the surrender will be determined by the agreed application type. RNG 9 Surrender will determine the level of surrender to apply for.

Figure 1b linked to Chapter 11 – Identifies EP8 as being impacted by the ‘Other Permanent Land take’. This site has a permit held by Sims Group UK Limited, permit number EPR/CP3795FY. This site would require a partial surrender.

## **Marine Licensing**

It should be noted that were an application for a Marine Licence to be made to the Marine Licencing Team (MLT), full consultation would be undertaken with numerous consultation bodies, including but not limited to NRW, the Maritime and Coastguard Agency, Trinity House and Cadw. In providing the comments the MLT has not undertaken consultation upon the Environmental Statement for the Highways Act at this stage.

On submission of the Marine Licence application the MLT will be undertaking a full consultation with numerous Consultation Bodies, including but not limited to NRW, the Maritime and Coastguard Agency, Trinity House and Cadw. In providing the comments the MLT has not undertaken consultation upon the Environmental Statement for the Highways Act at this stage.

3.1.10 We note that this section states that a Marine Licence is required for the construction, alteration or improve any works within the UK Marine Licensing area, either in or over the sea, or on or under the sea bed.

3.1.11 This section does not reflect 3.1.10 and should be amended to reflect that the marine licensable area also relates to structures over the sea (seaward of Mean High Water Springs). We recommend that ‘submerged at mean high water spring tide’ is removed from the text and the bullet points utilised in 3.1.11 are used to describe the “sea and sea bed”.

3.1.13 & As above, should also be clarified to reflect the needs for a marine licence for all

3.1.14 structures over the sea, this would include the span of the bridge and would not be restricted to the foundations.

3.1.15 the list of supporting documentation is not exhaustive. Additional information to inform a marine licence application would be required including Water Framework Directive Assessment information and Report to Inform Habitats Regulations Assessment.

## **Flood Defence Consents (Flood Risk Activity Permits)**

Sections 3.1.17 and 3.1.18 are not correct due to a change in Regulations. We advise that these sections be amended as follows:

**3.1.17** The Environmental Permitting Regulations (EPR) have been extended to include Flood Defence Consenting, which will come into force on 6<sup>th</sup> April 2016. The amended regulations introduce Flood Risk Exclusions and Flood Risk Exemptions which mean that certain activities will be permitted in, over, under or adjacent to a main river without charge and without needing a permit, providing certain conditions are met. All remaining activities will require a bespoke **Flood Risk Activity Permit** (previously a Flood Defence Consent). Further detail is available:

<http://www.naturalresources.wales/apply-for-a-permit/flood-risk-activities/?lang=en>

**3.1.18** The Flood Risk Activity Permit application will require the relevant supporting documentation listed below (this list is not exhaustive).

- Application Forms.
- Location Plan of the proposed works
- Description and purpose of the proposed works.
- Plans and sections.
- Detailed drawings/Construction details.
- Method statement to cover the construction phases of the works e.g. Temporary Works
- Water Framework Directive Assessment (if required by NRW)
- Maintenance of works/structure(s) during and upon completion

## **Land Drainage Consent**

3.1.19 Land drainage consenting on Ordinary watercourses within the Caldicot and Wentlooge Land Drainage District is the responsibility of NRW. Outside of this area, the responsibility is with the relevant Local Authority, and we therefore recommend that you seek their views as well. We'd note that LDC may also be required outside of the main footprint of the proposed road – eg where works are required for access roads.

3.1.22 Land drainage consent would be required for all culverts, new channels, control structures, lagoons and outfalls

3.1.23 We disagree that all culverts with a span greater than 3m would be classified as a bridge. However, from a LDC perspective the key issue which is assessed to determine whether consent can be granted is whether the structure would have any adverse impact on the operations of the Drainage District and the ability to provide water level management.

3.1.24 Currently the fee for LDC is £50, per structure. We'd recommend that applications are separated into structure types – ie one application covering culverts, another covering outfalls, but emphasise that the fee charged remains per structure, rather than per application

## **Environmental Protection Licences**

A more appropriate title for this section would be Protected Species Licences. Note possible confusion between title of this document, Environmental Permitting Strategy and European Protected Species, both of which are routinely abbreviated to “EPS”

3.1.26 we welcome that where required a European Protected Species (EPS) licence will be sought from NRW. Section 3.1.26 outlines the parameters that must be met and the processes by which NRW licences are assessed. However, please note that licences are only granted if the three requirements set out in the legislation have been satisfied. These are;

1. The development works to be authorised are for the purpose of preserving public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.
2. There is no satisfactory alternative and
3. The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

3.1.27 we note that this section states that the licence applications required for works relating to EPS will include;

- survey information;
- mitigation and compensation;
- project surveillance and post project monitoring; and
- compliance

Although we welcome this approach we would advise that a key additional component of this application is the completion of a detailed and species specific impact assessment. It provides both NRW and the licence holder with a clear view of the impacts of a scheme and informs the mitigation and compensation strategy. As indicated above, we also advise that management of and long term site security and funding for any compensation / mitigation measures is also addressed.

## **Chapter 12 Materials**

12.3.9 We refer you to our comments made with respect to Appendix 11.2 (Outline Remediation Strategy to Chapter 11 Geology and Soils, which are also of relevance here, i.e. we have confirmed our regulatory position, and our awaiting further information before we can advise further. Notwithstanding this point, we have assumed that the intention would be to treat and re-use materials in accordance with the Materials Management Plan.

12.7.50 We remind you of your responsibilities to ensure that any material defined and stored as a waste has the appropriate permission in place.

12.7.61 As paragraph 12.7.50.

## **Chapter 13 Noise and Vibration**

Appendix 13.1 Assessment Methodology

Appendix 13.2 Baseline Sound Monitoring

Appendix 13.3 Construction Noise Assessment

Appendix 13.4 Operational Noise and Vibration Assessment

We have not reviewed these documents

## **Chapter 14 All Travellers**

The focus of our review of this Chapter has been in relation to potential impacts on the Wales Coastal Path (WCP). We refer you to the relevant Local Authority and Sustrans for wider advice and views in the context of this Chapter.

The WCP is principally a tourism/ leisure route fulfilling economic, health and wellbeing objectives. In this context, quality of experience or amenity must be considered as well as connectivity. We are therefore of the view that the noise/ visual impact of the M4 will significantly reduce the quality of experience for WCP users.

The opportunities for realignment/ re-design presented by the M4 development may be used to reduce the impact of this reduction in quality. This is likely to be best achieved by high quality design/ landscaping. In addition, west of the Usk, the current alignment following the access track to New Dairy Farm gives a poor experience due to the surface, surroundings and frequent delivery traffic. Although the proposed re-alignment to the new access road will include a footway, the overall experience will still be poor as it will be in the vicinity of frequent heavy delivery traffic serving the dairy and other industrial enterprises.

We'd welcome the opportunity to work closely with the project team to further develop proposals for the permanent re-alignments which would be required as a result of any M4 construction in this location. In the vicinity of the River Ebbw there is an aspiration to seek to realign the WCP as close to the coast as possible and, as previously discussed, we'd like to explore this option with you further.

This would require access on foot beneath the proposed River Ebbw overbridge – in this context we refer you to our comments in our covering letter to this consultation with respect to our operational requirement to retain access in close proximity to the River Ebbw to enable effective flood incident response, and the fact that Figure 2.12 does not appear to show that this requirement has been designed in at this stage. In addition we'd wish to further explore the detail of re-alignments proposals to the east of the Usk – in terms of detailed design but, if possible, not rule out alignment of the WCP along the coast to the south of the M4 CaN project, should opportunities arise, through change in land-use, in the future.

Specific comments in this context:

14.2 Planning policy guidance objectives most relevant to the WCP are Tourism, Sport and Recreation (chapter 11) although some sections of the WCP may provide useful links as part of the active travel network.

Objective 11.1.8 is especially relevant: 'Long distance routes,...are important tourism and recreation facilities both in their own right and as a means of linking other attractions'. and 'Welsh Government's aim is for tourism to grow in a sustainable way and make an increasing contribution to the economic, social and environmental well-being of Wales'.

Two statements in Newport's local plan are especially relevant: Policy T8 All Wales coast Path states that 'development proposals should protect and enhance this route' and Policy CF4 Riverfront access refers to 'access to the riverfront in the form of managed footpaths and cycle routes will be encouraged, where practicable'.

Table 14.10 We disagree that the proposed route of the WCP in the vicinity of New Dairy Farm (412/11) has been developed in consultation with NRW; we provided advice when an earlier iteration was being considered We would welcome the opportunity to provide advice on design – both here and to the east of the River Usk, where diversion is required in the vicinity of Solutia/ Eastmans. We also refer you to our comments on Chapter 9 Landscape and Visual Effects

14.6.4 We agree with the assessment of sensitivity/ value for the WCP as high, but disagree with the magnitude of the impact as minor / beneficial. We are of the view that this is due to the assessment considering impacts in terms of connectivity only, and not considering changes in amenity, ie 'the relative pleasantness of a journey' as described in section 14.3.25. We consider that there would be a reduction in amenity arising from the additional noise and visual impact of walking in proximity of, or over, the new stretch of M4.

14.7.5 We note the proposed, temporary construction phase diversions and recommend that the best possible experience is provided for users during this period by complying with WCP principles, i.e. - a continuous route available 24/7, following least restrictive guidelines and easy to follow without a map.

14.8.29 We disagree, in the context of the purpose of the WCP with the implied reference to a positive effect on amenity which would arise from uninterrupted views of the new motorway to the west of the River Ebbw and the opportunity to

#### **Appendix 14.1 Public Rights of Way User Survey Report**

We have not reviewed this document

#### **Appendix 14.2 Non-Motorised User Context Report Volume 1**

We have not reviewed this document

#### **Chapter 15 Community and Private Assets**

Appendix 15.1 Soil Auger Boring Descriptions

Appendix 15.2 Farm Holding Proforma

We have not reviewed these documents

#### **Chapter 16 Road Drainage and the Water Environment**

##### **General Comment**

NRW welcomes and acknowledges the time, effort and detailed expertise which has been applied to preparing this Chapter. NRW has had a number of pre-application meetings with the consultants to develop this area of work, around our key issues of flood risk and water quality issues relating to the Gwent Levels suite of SSSIs. A number of significant issues remain and our detailed comments are given below.

The Gwent Levels suite of SSSIs are designated because they support a range of qualifying features (wetland plants and freshwater invertebrates) which are able to survive and/or thrive in the prevalent eutrophic conditions. This interest has developed due to the specific environmental conditions which prevail in this artificially (man-made) created and managed drainage system. We recognize that the environment is naturally nutrient rich and is very difficult to compare to the environmental condition we would expect in flowing water. During the summer months the Gwent levels are, in effect, managed as static water bodies which means that concentrations of various water quality determinands can build up.

The special features of the SSSIs are adapted to deal with these conditions. An important part of the management of the Gwent Levels is the removal of penning boards/ lowering of sluice gates during the winter to prevent flooding, which in effect “flushes” the water out through tidal flaps into the Severn Estuary, thus preventing determinands from accumulating indefinitely. It is on this basis, and based on evidence gathered other advising on developments on the Gwent Levels for more than 25 years, commencing with the Second Severn Crossing, that CCW (now NRW) developed its water quality trigger levels.

Water quality trigger levels have been derived, historically by CCW but now used by NRW, to assist developers in designing their projects and in undertaking their water quality monitoring. The trigger levels indicate the concentration above which we become concerned that damage could be occurring to the SSSI features and which therefore needs to trigger follow up monitoring and implementation of remedial action.

Baseline surveys have been undertaken in line with NRW guidance. We note the findings and in particular the high levels at certain locations of inorganic pollutants (NO<sub>x</sub>, TON, P, DO, BOD and TSS). We acknowledge that these are above NRW recommended trigger levels and are now in the process of investigating the exceedances.

We also note that 'average levels' and 'ranges' are provided. This data is of limited use in interpreting water quality data trends with respect to the SSSIs. All data from samples must be viewed independently as this is the only way to ensure exceedances of contaminants can be identified. In particular, when considered in conjunction with the proposals and the potential for adverse impact on water quality during both construction and operation phases. The data also includes Titan results, these are over 5 years old and whilst it can be useful to see historic data these figures are all unusually high and distort the averages presented as overall baselines. NRW recommend removing these from the data sheets, could include as background data, and only use the water quality (WQ) samples taken from the last 4 quarters to use as the Road Schemes WQ baseline.

The importance of implementing a monitoring programme linked to appropriate remedial action for the Gwent Levels SSSIs is a key mechanism for identifying and remedying any potential adverse impacts on the features of the SSSIs. We therefore strongly recommend that a monitoring programme is devised in line with NRW's guidelines, to include further baseline monitoring, and monitoring during construction and operation. We recommend reference is made to the specific threshold limits or 'trigger levels' for the key determinants and that suitable remedial action is identified should these thresholds be exceeded, and a full reporting mechanism be put in place. Currently the ES does not include a table of what trigger levels the scheme will be working too.

Without reference to the implementation of a SSSI monitoring programme, with suitable water quality thresholds and a remedial action and reporting protocol, as a measure to avoid impact on the special interest of the Gwent Levels SSSIs, we cannot concur with the assessment conclusion that the potential effects on reens from the Road Scheme with the implementation of mitigation measures, is to be of negligible to moderate adverse significance.

Overall, we request clarification of the proposed approach to be taken to setting the trigger levels to be applied to construction and operational phase water quality monitoring of the Gwent Levels in the vicinity of the road scheme. In discussions with the consultants working on this aspect of the scheme we have developed proposals, based around a refinement of the CCW trigger levels mentioned above. We suspect that this is what is proposed to be used, but require confirmation of this assumption. However, based on this assumption, we have not been provided with evidence at this stage to enable us to conclude that these trigger levels would be met.

At this stage, these concerns relate to both the construction and operational phase. Therefore we are unable to advise at this stage that adverse impacts on the Gwent Levels SSSIs can be avoided. Our detailed comments are below:

- Table 16.1** indicates that previous CCW water quality trigger levels are appropriate to use given the nature and context of the land. We note and welcome this approach, but are confused by later discussion of this topic throughout this Chapter. We require urgent clarification as to the proposed approach to water quality monitoring, including the trigger levels/ compliance criteria to be used
- 16.3.12 recommend that only the past 12 months data is presented as the baseline. The inclusion of older date (Titan results) distorts the averages and therefore makes less representative of current conditions.
- 16.3.28 Magnitude of Impact criteria listed does not include the NRW trigger levels that have been utilized by consultants to interpret the baseline WQ conditions.
- 16.3.34 we welcome the recognition of the applicability of the NRW trigger levels in relation to development proposals within the Gwent Levels
- 16.4.27 we support the approach set out here – but refer to our comments made in relation to Table 16.1, 16.8.13, Table 16.8 and 16.9.2
- 16.5.5 NRW have not agreed in principle the drainage strategy we have engaged in discussions but have always stated that it was without prejudice to making our formal comments for the ES – we therefore refer you to our detailed comments on Appendix 2.2
- 16.5.8 we are satisfied that discharges to the Rivers Usk and Ebbw have lesser requirements for attenuation and treatment and, provided these requirements are adequately covered to our satisfaction within the Statement of Commitments, we advise that that the proposals presented into these tidal waters are adequate.
- 16.5.9-10 we refer you to our detailed comments on Appendix 2.2
- 16.5.13 we support and welcome the aim to preserve existing water quality within the reens. This is on the basis of our interpretation of this sentence as meaning an aim to be able to demonstrate, through an agreed with NRW monitoring scheme that water quality has not altered significantly within the Gwent levels drainage system following construction compared to the preconstruction baseline. However, this statement appears to disagree with Appendix 16.3, Section 4.5.4, which predicts a departure from existing baseline quality, which we have interpreted as stating that you cannot meet Ambient Baseline Concentration (ABC). We request clarity on this apparent contradiction

- 16.5.15 we advise that one year post construction monitoring would not be acceptable – five years would be required as a starting point to check “bedding in” following construction, plus routine monitoring in perpetuity given the sensitivity of the receiving waters.
- 16.5.16 NRW has not agreed in principle the re-en mitigation strategy. We have engaged in discussions but have always stated that it was without prejudice to making our formal comments for the ES - we therefore refer you to our detained comments on Appendix 2.3
- 16.5.18 we note and welcome the proposed replacement re-en dimensions quoted here which replicate those stated in Appendices 2.2 & 2.3, which have been taken from earlier advice from ourselves. However, different figures are quoted in Appendix 3.1 Buildability Report. ), section 4.2.2. We are concerned about this discrepancy and request an urgent meeting to resolve.
- 16.7.9 No reference to mitigation against pollution from dewatering of borrow pits and request that the proposed approach be set out here
- 16.8.13 we are confused as to what water quality criteria, apparently agreed with NRW, are being referred to here. We acknowledge and welcome that significant consideration and effort, including detailed liaison with ourselves, has occurred with respect to determining water quality criteria, but we request an urgent meeting to discuss and ideally agree the water quality trigger levels to be used for the range of Water Treatment Areas (WTAs) discharging within or outside of the Gwent Levels. This is a key issue for NRW and we want to continue to work with the project consultants to agree a way forward.
- Table 16.8 Linked to our comment above, we request clarification of Table 16.18, as we currently disagree with the classification of magnitude of impact as “negligible”. Our view is that we have yet to have been presented with evidence that road run-off can be treated to a standard which we are satisfied is compatible with the Gwent Levels - ie in line with the statement made in 16.5.13 to preserve existing water quality. Again this reassurance is a key requirement for NRW in terms of our overall view and advice on whether adverse environmental impacts can be avoided.
- 16.9.2 Linked to our comments above, we support and welcome the proposal to undertake a surface water and groundwater monitoring programme before and during construction works. We require further detail to be drawn up and agreed including the determinants to be tested for, monitoring schedule and quality standards/ trigger levels to be used
- We note no reference to discharge permits here, or to proposals for flocculent types – we recognise this is addressed in Appendix 3.2 (Pre-construction Environmental Management Plan), 6.10.1, but recommend is cross referenced here

- 16.9.8 We reiterate our comments made in relation to 16.9.2 and Table 16.8
- 16.11.2 Recommend that reference be made here to sewage disposal. It is addressed in Appendix 3.1 - Buildability Report - 14.1.4).
- 16.11.18 we note that compliance criteria are to be agreed with NRW. This further links to our comments above, on 16.8.13, Table 16.8 and 16.9.2
- 16.13.1 We request clarification as to who will be responsible for long term management and maintenance of the WTAs.
- 16.15.3 need to link to remedial action if an event occurs or monitoring shows breaches It will be important to detail the difference in monitoring requirements for construction and operational phases, as these different phases raise different concerns for NRW.

## **Appendix 16.1 Flood Consequences Assessment**

2.2.6 Please amend as follows:

*Appendix A1.14 of TAN15 defines that general infrastructure, such as a trunk road, should be designed to be flood free during the 1% (1 in 100) / 0.5% (1 in 200) annual chance fluvial/tidal flood event allowing for climate change over the intended development lifetime.*

3.1.3 We are aware that the approved Severn Estuary Shoreline Management Plan 2 (SMP2) has adopted a policy of “Hold the Line” for all the coastal management units potentially affected by the scheme. However, we reiterate that this policy position is no guarantee that funds will be made available to support the meeting of this policy.

**3.1.9** We do not dispute that the economic case for strategic improvements to the tidal defences along the Caldicot and Wentlooge Levels is robust, with the associated Benefit Cost ratios presented in this FCA.

**3.1.10** *Strategic improvements to the tidal defences will be required whether the proposed new section of motorway project is built or not. Whether or not this will be delivered with or without the new motorway is subject to robust plans and associated funding (please see comments below for Section 3.1.11)*

**3.1.11** The Severn Estuary Flood Risk Management Strategy (SEFRMS) is still undergoing final EA/NRW agreement and a decision from both WG and Defra as to whether they believe the required Imperative Reasons of Overriding Public Interest (IROPI) test has been met. However, in the absence of a decision, the SEFRMS is being used as a technical document to guide the future management of Flood Risk Management assets within the Severn Estuary.

The SEFRMS is considered to be an aspiration and must not be relied upon to allow development in high flood risk areas such as the Caldicot or Wentlooge Levels.

Therefore, it cannot be guaranteed that the flood risk proposals put forward in the SEFRMS will be delivered. The proposed schemes will be subject to a firm commitment by government, with the necessary funding and robust plans being put in place to implement any future works.

3.1.17 Please see comments for Section 3.1.11 above

3.1.20 This is acknowledged and is critical to the outcomes of this FCA in terms of compliance with the requirements of TAN 15

3.1.22 We note and agree that for increased tidal flooding effects, as a result of the construction of the scheme, to be experienced would require the sea defences to be breached by wave action or overtopped. However we also note and agree that the construction of proposed new section of motorway will intercept these flows and that the consequence is a rise in flood depths on the seaward side and a reduction of flood depths on the landward side of the proposed new section of motorway. The rise in flood depths on the seaside side is contrary to TAN 15 as it would cause detriment to properties in this area.

Table 3.1 We note that analysis reported here has concluded the following:

Tidal

Year 2113 (T1000 – 0.1% tidal event) a total of 708 properties will be subject to flooding detriment as follows:

599	– increase in depth up to 200mm
91	– increase in depth of between 200 and 300mm
16	– increase in depth of between 300 and 400mm
1	– increase in depth of between 400 and 500mm
1	– increase in depth greater than 1 metre

3.1.26 We agree that NRW’s proposed flood defence improvements will provide the required level of protection up to 2030 to comply with current planning policy guidance with respect to flood risk, (TAN15). Most of the schemes in this category are already underway.

3.3.1 We recommend a sentence be added to this section to clearly state that this is based on present day sea level estimates.

4.1.2 We have yet to be given a definitive steer from WG (even though the summary suggests a “commitment”) on our advice in respect of this FCA in line with the requirements of their Planning Policy Guidance i.e. TAN 15. We have previously raised this issue in our liaison meetings with the group.

This section confirms that the tidal flood risk to this scheme and the impacts on flooding elsewhere will not be assessed.

The reports in support of this are continually referring to the SEFRMS and the proposals to manage tidal flood risk by tidally defending both the Caldicot and Wentlooge Levels to a 0.1% (1 in 1000) standard of protection over the next 100 years.

We have made reference to the SEFRMS as being an aspiration only which cannot be guaranteed over the development lifetime of the motorway scheme. The proposals to manage tidal flood risk over the next 100 years will need to be supported by a strong commitment, robust plans and the necessary funding being made available in delivering the various improvements along the existing line of the sea defences.

## **6 SUMMARY**

### **6.1 Tidal Flood Risk**

Whilst acknowledging the points summarised in this section, we remain of the view that the increase in tidal Flood Risk which would arise to properties and infrastructure to the south of any new stretch of motorway is contrary to the requirements of TAN 15.

The key issue is lack of certainty that improvements to the coastal defences will be funded, programmed and implemented to keep track with providing a standard of protection which would mean that the Scheme, and properties to the south would remain flood free during a 0.1% (1 in 1000) tidal event throughout the lifetime of the scheme.

### **6.2 Fluvial Flood Risk (Gwent Levels)**

We advise that the fluvial flood risk as a result of the scheme appears to be in line with the requirements of TAN 15

### **6.3 Fluvial Flood Risk (St Brides Brook/ Mill Reen)**

We advise that the fluvial flood risk as a result of the scheme appears to be in line with the requirements of TAN 15

### **6.4 Fluvial Flood Risk (River Usk and River Ebbw Crossings)**

We advise that the fluvial flood risk as a result of the scheme appears to be in line with the requirements of TAN 15

### **6.5 Pluvial Flood Risk (Surface Water Flooding)**

We advise that the pluvial flood risk as a result of the scheme appears to be in line with the requirements of TAN 15

## 6.6 Scheme Drainage

We advise that the scheme drainage proposals appear to be in line with the requirements of TAN 15. We also refer you to our detailed comments on the Drainage Strategy (Appendix 2.2) and Reen Mitigation Strategy (Appendix 2.3)

### Appendix 16.2 Baseline Water Environment Report

4.8.4 We are satisfied that this list of determinands would address all of NRW concerns

4.8.6- Baseline surveys have been undertaken in line with NRW guidance.

onwards Note the findings and in particular the issues at certain locations for inorganic pollutants (NO<sub>x</sub>, TON, P, DO, BOD and TSS). We acknowledge that these are above NRW recommended trigger levels and are now in the process of investigating the exceedances.

NRW note the use of ranges and averages but it's important to note that all samples must be viewed independently as this is the only way to ensure picking up elevated levels of contaminants.

We recommend that this document should include a table of trigger levels, based on the current baseline results and the use of CCW/NRW trigger levels, as we are not clear as to what is being proposed This will be critical when it comes to future monitoring during construction and operation so a proposal must be set out now, for us to comment and ideally agree on.

We note that the data includes Titan results. These are over 5 years old and, whilst it can be useful to see historic data, these figures are all unusually high and distort the averages presented as overall baselines. Recommend removing from the data sheet. Whilst useful as background data, we recommend that only the previous year's data (four quarterly sample periods) be used as the water quality baseline.

We advise that any discharge permits issued for the construction phase will require maximum limits to be set. Any environmental monitoring carried out during both construction and post construction phases will require trigger levels to be set, as well as ongoing trend analysis, to demonstrate ongoing effectiveness of pollution prevention / mitigation works and compliance with WFD no deterioration principles linked to our requirements with respect to the Gwent Levels SSSIs

### Appendix 16.3 Water Treatment Area DMRB Risk Assessments

2.1.22 references discharge from WTA only into 'major reens' as per the drainage strategy.

However as set out in our comments on that document (Appendix 2.2) and the reen mitigation strategy (Appendix 2.3) we require clarification that this is always the case. We have taken major reen to be a Main River reen. This raises concerns with respect to dilution rates, lack of flow which will impact the ability of the watercourse to maintain the SSSI features of interest.

- 3 We note the assessment of the Water Treatment Area Stages and support and welcome the significant effort which has gone into designing these proposals, taking account of the concerns we have raised with respect to the requirement to discharge at a rate and quality compatible with the Gwent Levels SSSIs. We note that the assessment suggests that combined elements of the proposed system (grass lined channels and WTAs should remove up to 80-90% of some metals, oils and total suspended solids but appears less efficient with respect to the removal of nutrients (around 60%)

These figures are still only theoretical and not based on any real testing. This is the key concern for NRW, and is based on practical experience of advising on and witnessing the significant issues which other, much smaller developments have had when seeking to meet our requirements for water quality discharges to the Gwent Levels.

- 3.2.6 We request clarification as to how any build-up of sediment would be removed from the grass lined channels
- 4.5.4 acknowledges that there will be 'a departure from existing baseline quality' which we take to mean that you are stating that you cannot meet Ambient Baseline Concentration (ABC). We require clarification of what you are stating here in terms of ability to meet the trigger levels previously discussed, alongside the WFD requirement of no deterioration

#### **Appendix 16.4 Water Framework Directive Compliance Assessment**

Overall we welcome the production of this report and the statements made into overall good environmental practice which would be employed including the use of silt fencing, eel passes on all new sluices and reuse of approved vegetation to ensure quick regeneration. We offer our detailed comments below, many of which are points of principle:

- 1.2.8 We support and welcome the use of the most up to date data, ie 2015 Cycle 2 data where available, as we requested
- 2.2 Title should be Severn River Basin Management (ie no Estuary)
- 2.2.3 Reference missing at end of this section
- 3.2.9 Again we welcome the use of the latest data sets
- 3.3.7 We do not recall agreeing that groundwater could be scoped out of this WFD Compliance Assessment, and for completeness, recommend are assessed.
- 5.1.4 Indicates that priority and hazardous substances have been scoped out of further assessment (as they are considered as unlikely to be present). However Annex A indicates they will be scoped in (except for Broadway Reen and River Ebbw). This is unclear - further explanation required. We recommend that

Impacts from priority substances and priority hazardous substances are not scoped out of assessment. We agree that they are unlikely to be present in the study area at present, but could be introduced as part of the scheme, and NRW are yet to be assured that the WTAs will be capable of dealing with these substances in line with WFD requirements – please refer to our comments on Appendix 16.3 and Chapter 16 itself.

- Table 1      Broadway Reen – source to Severn estuary, should also have ‘Severn Lower’ as a WB potentially indirectly affected (rather than N/A)
- Table 3      We have reviewed this table - Water Body Summary Data for all Water Bodies Screened in for Initial Assessment (EA, 2015) and can confirm that this is a correct representation.
- Table 8      We welcome the proposal to avoid piling during the main fish migration period of March to June inclusive. We refer you to our comments on the Statement to Inform an Appropriate Assessment.
- Table 11     With regards the Usk says *Pressure from ‘Chemicals’ on invertebrates status has led to an unknown SWMI which is also currently pending investigation in terms of both the activities causing the SWMI and the sector to hold responsibility for its management.* We disagree with aspects of this statement – the pressure from chemical is incorrect as the source of the pressure is unknown. We make the same comment on Table 14.

In relation to River Usk, Table 11 goes on to state that *as no impacts have been identified which could cause deterioration in any WFD quality elements, it is considered unlikely that the new section of motorway will negatively impact on the conservation status of the River Usk/Afon Wysg.* We disagree with this statement: under the WFD this waterbody is not assessed for fish, or otters. However, we refer to our comments on the Statement to Inform an Appropriate Assessment.

- Table 16 Discharges to River Usk and Ebbw will be untreated (except for the use of oil interceptors and lagoon). Chapter 16.3 (4.6.10) and Chapter 16 (16.8.8) supports this proposal. NRW consider that this is reasonable given the high dilution and saline conditions afforded by the estuaries at these locations.

- 5.3.25      In relation to the River Ebbw it is stated that *No construction works are planned to take place within or in close proximity to the water body. In addition, it is considered unlikely that any impacts to water quality, such that could cause deterioration in WFD quality elements, could affect this upstream location, and so no indirect impacts have been identified.* We advise that while there is mention of water quality impacts, potential impacts on fish are not addressed (bridge construction downstream could impact fish migration), and we recommend that this omission be rectified.

6.3.7 We advise that the statement *the only water body to contain protected area designations is the River Usk transitional water body* be revised as the Severn Lower Water Body also has protected areas designations – as referenced in relation to the River Usk.

## **Chapter 17 Assessment of Cumulative Effects and Inter-relationships**

We refer you to our observations in relation to the relevant topic Chapter

## **Chapter 18 Environmental Management**

18.1.2 We refer to our comments on the pre-CEMP (Appendix 3.2 of Chapter 3, Scheme Construction. We recognise the need for our further detailed involvement in the development, agreement and implementation of this document. **We would require approval of the CEMP (including all sub-Plans embedded within) by NRW and full implementation in accordance with the CEMP to form part of the Statement of Commitments**

18.6.3 We note and welcome the proposal to prepare the following, as part of the CEMP:

- Environmental Masterplan.
- Environmental, Landscape and Ecology Aftercare Plan.
- Ground and Surface Water Management Plan
- Site Waste Management Plan
- Materials Management Plan.
- Construction Traffic Management Plan.
- Remediation Strategy.
- Dust Management Plan.
- Cultural Heritage Mitigation Plan.
- Sites of Special Scientific Interest Mitigation Strategy.
- Pollution Control and Prevention Plan.

If not proposed to be covered in any of the above, there would also be requirement for a plan covering Biosecurity- Safe System of Work

We recommend our detailed involvement in their development, agreement and implementation

18.8 **Environmental, Landscape and Ecology Aftercare Plan** - we consider the five year period of the proposed plan implementation to be inadequate.

As noted elsewhere in this document, we consider a more appropriate length of time for such aftercare to be 25 years, given the scale of, for example, the woodland planting. We would welcome the opportunity to meet and discuss the detailed

proposed scope of this document, and other linked proposals, including the timescales and scope of ongoing environmental monitoring, and the Handover Environmental Management Plan (HEMP). **We would require approval of the Environmental, Landscape and Ecology Aftercare Plan by NRW embedded within) by NRW and full implementation in accordance with the Plan to form part of the Statement of Commitments**

**18.9 Handover Environmental Management Plan** – please refer to our comments above on 18.8. **We’d require approval of the HEMP by NRW and full implementation in accordance with the HEMP to form part of the Statement of Commitments**

## **Chapter 19 Conclusions**

In response to this Chapter, we provide our view, with respect to each relevant topic Chapter to NRW:

### **19.5 Air Quality**

NRW’s comment with respect to air quality is restricted to potential air quality impacts on designated sites.

**19.5.9** With reference to our comments with respect to Chapter 7, we have raised some detailed queries with respect to the modelling. We are therefore unable to comment at this stage on whether the scheme would result in adverse effects on air quality, in the context of the relevant designated sites (Gwent Levels SSSIs and Severn Estuary SAC/SPA/Ramsar/ SSSI)

### **19.6 Cultural Heritage**

**19.6.1** We agree with the conclusion of long term large adverse effect on the Gwent Levels Landscape of Outstanding Historic Interest.

### **19.7 Landscape and Visual Influence Landscape**

**19.7.1-19.7.5** we agree with the conclusions with respect to construction phase and operational phase (at year 1 and year 15) impacts on landscape, and specifically the large adverse landscape impact remaining at year 15 across the Wentlooge Levels and Caldicot Levels

#### **Visual**

**19.7.6-19.7.16** we agree with the conclusions on visual effects

### **19.8 Ecology and Nature Conservation European Designated Sites**

We refer you to our comments in Annex 1 on the Statement to Inform an Appropriate Assessment

## **National Designated Sites**

**19.8.17 Landtake** - we agree that the short, medium and long term effects on the Gwent Levels SSSIs would be significant

**19.8.18 Construction** – we agree that effects on the Gwent Levels SSSIs would be significant in the short and medium term, but disagree that these would not be significant in the long-term

**19.8.19 Operation** - we disagree that effects on nationally designated sites are slight  
Overall therefore we have not received sufficient reassurance that adverse effects on the Gwent Levels SSSIs can be avoided, either during the construction or operational phase. The scale of this development proposal within the Gwent Levels area is unprecedented, and we have yet to be reassured that the proposed construction methodologies, combined with the drainage strategy, re-en mitigation strategy and SSSI mitigation strategy will fully mitigate for the loss of SSSI area, and disruption to drainage network

## **Otters, Water Voles and Great Crested Newts**

19.8.36-18.8.52 Likely effects on these species are not consistently summarised here. However we advise that we cannot rule out significant effects at this stage – due to land take, construction or operational phase impacts. We may be able to revise this view if the requested additional information (survey results for great crested newts, and detailed conservation strategies for all three species) is able to adequately address our concerns.

### **Dormouse**

19.8.68 – 19.8.74 – we are unable to agree with the residual effects conclusions set down here. We would be in a position to comment further, once we have received and reviewed the requested additional information – a draft of the requested comprehensive strategy for the conservation of dormice is able to adequately address our concerns.

### **Bats**

19.8.89-19.8.94 - we are unable to agree with the residual effects conclusions set down here with respect to bats. We would be in a position to comment further, once we have received and reviewed the requested additional information – results of ongoing survey work and a draft of the requested detailed conservation strategy for bats

### **Breeding Birds**

19.8.95-19.8.104 – due to concerns over the adequacy of survey coverage for breeding birds we are unable to agree with the predicted effects on breeding birds. At this stage we welcome the recognition of likely significant effects on cetti's warbler and barn owl, and would welcome the opportunity to discuss mitigation options in further detail.

### **Wintering Birds**

19.8.105-19.8.109 – we are unable to agree with the residual effects conclusions set down here. We would be in a position to comment further once we have received and reviewed the results and analysis of the recently completed 2015-16 wintering birds survey.

## **19.9 Geology and Soils**

19.9.11 we agree with the assessment of effects here, including that the only significant effect could be on the sensitive surface waters of the Gwent Levels where a potentially significant effect is predicted during construction associated with the handling and management of lagoon wastes.

In addition we note the need to agree an approach with respect to the proposed re-use of Tata slurry lagoon materials

## **19.10 Materials**

19.10.9 We agree that during the operational phase there would be no significant effects anticipated associated with material resources.

## **19.11 Noise and Vibration**

We have not reviewed the relevant ES Chapter, therefore no comments offered

## **19.12 All Travellers**

Our comments are restricted to issues associated with the Wales Coast Path (WCP)

19.12.6 We disagree that no significant effects on the WCP would be predicted. We recognise that a continuous route is retained during both construction and operation, however the assessment fails to take account of the noise and visual impact of the scheme on users of the WCP, and the overall reduction in amenity.

## **19.13 Community and Private Assets**

We have not reviewed the relevant ES Chapter, therefore no comments offered

## **19.14 Water Environment**

19.4.6 We have not been provided with sufficient evidence to enable us to agree that the drainage strategy, including water treatment areas, proposed for either the construction or operational phase will be able to sufficient to enable water to be discharged to the Gwent Levels SSSI drainage system of suitable quality

19.4.8 We disagree with the conclusion that the proposed new stretch of motorway would remain flood free, as there is no guarantee that funding of flood defence improvements will keep pace with climate change to provide protection from tidal sources up to the 1:1000 year event. As well as the effects on the scheme itself, the consequential effects should also be summarised here, including that the detriment to properties to the south of the proposed motorway is contrary to TAN 15.