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

Llywodraeth Cymru
Welsh Government

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

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

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

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

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

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

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

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

Summary Proof of Evidence

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RPS Planning and Environment, Ornithology

Document Reference: WG 1.21.2

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1. Introduction and Scope of Evidence

1.1 Personal Details

1.1.1 My name is Simon Zisman. I work for RPS as Senior Director and Director of Ecology (Scotland). I hold a BSc Honours Degree in Geography, MSc in Rural Resources and Environmental Policy, and a PhD in coastal conservation. I am a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.1.2 The evidence I will give is based on my own conclusions regarding the potential effects of the Scheme on birds and has been prepared in accordance with CIEEM's Code of Professional Conduct. I confirm that the opinions expressed are given in a fair and impartial manner and are my true and professional bone fide opinions.

1.2 Scope and Structure of this Evidence

1.2.1 My evidence is concerned with the scheme design, baseline conditions, environmental assessment, and mitigation elements of the proposed M4CaN Scheme (hereinafter "the Scheme") in relation to birds.

1.2.2 My evidence is presented in the following structure:

a) Introduction and Scope of Evidence

b) Methodology and Consultation

c) Baseline Conditions

d) Potential Impacts of the Scheme on Birds

e) Mitigation for Birds

f) Residual Effects of the Published Scheme on Birds

g) Consultees' Responses and Objections to the Scheme

h) Summary and Conclusions

2. Methodology and Consultation

2.1 Methodology

Ornithology Desk Study

2.1.1 A desk study for existing bird records was undertaken in 2014 (Appendices 10.2, 10.12 and 10.13 to the March 2016 ES (Document 2.3.2)), including a review of previous surveys completed for the M4 Relief Road and the New M4 Project. NRW and the local records centre were also consulted for records of key bird species within 2 km of the Scheme. A desk study up-date was undertaken in 2015 (Appendix 10.16) and again for the March 2016 ES (Document 2.3.2),

Field Surveys

2.1.2 Informed by desk study results and further consultation with NRW, bird surveys were undertaken in 2014, 2015 and 2016. These consisted of winter and breeding bird surveys, including species-specific surveys in 2015 for barn owl and for Cetti's warbler and common crane in 2016.

2.1.3 An account of these surveys is contained in Chapter 10 of the March 2016 ES (Document 2.3.2) (Appendices 10.12, 10.13 to 10.16 and 10.29), and the September 2016 ES Supplement (Document 2.4.4), (Appendices S10.4 and S10.5). The 2016 survey results for common crane are published as Confidential Appendix SS10.8 of the December 2016 ES Supplement (Document 2.4.14).

2.1.4 The resulting surveys for the Scheme built on previous survey results, took account of feedback from NRW, and as a result have ensured coverage of habitats for wintering, passage and breeding birds, distributed along the corridor of land within the study area.

2.1.5 Consequently, the body of baseline information is sufficient to determine the baseline bird interests, and to inform the impact assessment and mitigation design.

Assessment

2.1.6 In conjunction with the March 2016 ES (Document 2.3.2), an Assessment of Impacts on European Sites has been carried out to fulfil the requirements of the Habitats Regulations in relation to potential effects on the Severn Estuary SPA. The results were published in the SIAA (Document 2.3.4) and are also relevant to the Severn Estuary Ramsar Site in relation to birds. The conclusion of the SIAA was that there would be no adverse impact on the integrity of the Severn Estuary SPA/Ramsar Site, either alone or in combination with other plans or projects.

2.2 Consultation

2.2.1 NRW were consulted on bird survey scope and methodologies. Regular meetings have been held with NRW throughout the development of the proposals. Consultation continues with a view to provision of breeding bird information.

2.2.2 RPS, on behalf of the Welsh Government, was in consultation with RSPB Cymru on common crane survey and breeding data during 2016, and met with them on 18th January 2017 to discuss its concerns and possible areas for further data sharing in 2017.

3. Baseline Conditions

3.1 Through the combination of desk study and surveys, the birds identified as key species in the Scheme area are Annex 1 qualifying species of the Severn Estuary SPA, features of the Severn Estuary Ramsar description, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and notable species listed ion other conservation lists, such as Red or Amber listed Birds of Conservation Concern (BoCC).

SPA Qualifying Species and Ramsar Features

3.2 Survey results showed that the study area populations of three wintering species were of National (High) value (redshank, gadwall and pintail). The breeding components of the Severn Estuary SPA/Ramsar site were not recorded using the study area for breeding.

3.3 Of the three species, desk study and field surveys showed redshank was the most frequently recorded and abundant SPA qualifying species recorded in the study area. They were recorded at the River Usk but with lower activity levels in comparison to the Ebbw River. On the Ebbw River, the favoured foraging and roosting areas were to the north and south of the new crossing point (the new crossing is illustrated in Appendix A of my Proof of Evidence).

3.4 Gadwall mainly favoured ditches to the south of the Tata Llanwern Steelworks site. They were either absent or recorded in low numbers at the Ebbw River or River Usk crossings over the survey period.

3.5 Pintail were recorded less commonly over the survey period, foraging and roosting to the south of the Tata Llanwern Steelworks site.

3.6 In conjunction with the ES, an Assessment of Impacts on European Sites (AIES) has been carried out, including on the Severn Estuary SPA. This was reported separately in the Statement to Inform an Appropriate Assessment (SIAA) (Document 2.3.4). This concluded there would be no adverse effect on the integrity of the SPA, either alone or in combination with other plans and projects.

SSSI Ornithological Features

3.7 Only one of the SSSIs crossed by, or within disturbance distance of the new section of motorway, has birds as notified features, namely the River Usk (Lower Usk) SSSI. The SSSI's breeding species were either not recorded or were recorded in low numbers. For the three wintering bird features of this SSSI, teal were recorded in relatively low numbers (but appeared to favour areas outside the SSSI, in wet ditches to the south of the Tata Llanwern Steelworks site). The SSSI's other two wintering and passage species, greenshank and green sandpiper, were either not recorded or were recorded in very low numbers.

SINCs With Ornithological Features

3.8 The majority of the SINCs that are crossed by, or are in proximity to the Scheme, do not have specific bird interests.

3.9 The Afon Ebbw River SINC does, however, have kingfisher and sand martin as named interests but these were not recorded in significant numbers by the vantage point surveys.

3.10 Cetti's warbler is a named interest in five of the SINCs within 1 km of the Scheme. Survey data revealed that singing males were mainly located south of the Tata Llanwern Steelworks area from Tatton Farm to Green Moor, where there was a mix of reedbeds, scrub, grassland, ditches and water bodies.

Key Species

3.11 In addition to key birds identified in relation to designated areas, baseline surveys identified three key species in the study area. Cetti's warbler was considered in its own right, given its widespread occurrence outside designated sites. The second species was barn owl, on account of the presence of a possible nesting site (in combination with its Schedule 1 status). The third species was common crane. Whilst not a protected bird species, it is in the process of recolonising the UK, and had not been recorded breeding in Wales for over 400 years. A single pair successfully nesting and fledged young in 2016, close proximity to the proposed new motorway route.

4. Potential Effects of the Scheme on Birds

4.1 Road schemes can affect birds in various ways. Potential impacts relevant to the Scheme are effects of land take, effects of construction and effects of the operational road. These include:

a) Loss of roosting, commuting and foraging habitats

b) Severance and fragmentation of habitats

c) Disturbance, including from operational noise, of breeding, foraging or roosting birds

d) Disruption of hydrology affecting waterbirds

e) Pollution of water bodies affecting food chains on which birds depend

f) Road traffic casualties from vehicle collisions

g) Road lighting disrupting bird behaviour or that of their prey

4.2 All of the above effects may contribute to an overall reduction in the value of habitats for birds close to roads, exacerbating the barrier/severance effect from land take.

5. Potential Effects and Mitigation for Birds

Habitat Loss

5.1 Habitat loss would be mitigated through the revised Environmental Masterplan (September 2016 ES Supplement (Document 2.4.4)), the Reen Mitigation Strategy (Appendix 2.3 of the March 2016 ES (Document 2.3.2) and its Supplementary File Note (Appendix S2.1 to the September 2016 ES Supplement) (Document 2.4.4)) and the revised SSSI Mitigation Strategy (Appendix SR10.35 of the December 2016 ES Supplement (Document 2.4.14)).

5.2 Replacement reens would create new habitat for waterbirds such as gadwall and teal and new wetlands at Caldicot Moor would aim to replace nesting habitat for common cranes. The habitats created for the SSSI and Reen Mitigation Strategies would also benefit barn owl, by providing additional hunting habitat. Further mitigation for barn owl would be nest box provision in suitable locations to help encourage breeding barn owl further away from the motorway carriageway itself. NRW have agreed that the mitigation strategy for barn owl, encompassing these measures, can be prepared ahead of construction. For Cetti's warbler, restoration of the construction sites at Tata Llanwern Steelworks would create a suitable mosaic of habitats, in addition to measures included in the Reen and SSSI Mitigation Strategies.

Severance/Fragmentation

5.3 The early programming of habitat mitigation works would reduce the effects of severance or fragmentation during construction, notably through the SSSI and Reen Mitigation Strategies and the Barn Owl Mitigation Strategy.

5.4 As highlighted above, the design of the Usk and Ebbw river crossings would retain open flyways, and would therefore lower the risk of habitat fragmentation. Together with the saltmarsh creation, this aims to avoid

any significant impacts on river habitats and associated species, including redshank, teal and other waders and wildfowl.

Disturbance

5.5 Construction disturbance to wintering and breeding birds will be minimised through a combination of measures, including advanced clearance of nesting vegetation, pre-construction bird surveys by Ecological Clerk of Works (ECOW), and deployment of exclusion zones under their supervision. Soft starts for piling machinery, and scheduling of works to avoid the most sensitive times of year would also be developed in liaison with NRW. Construction lighting would be limited to the local working area and times of working.

Pollution and Hydrology

5.6 As provided in evidence from Mr Barry Woodman (WG 1.6.1) and Mr Richard Graham (WG 1.15.1), the Scheme would include standard measures to minimise pollution to ensure no likely significant effect on watercourses. This would avoid direct and indirect impacts on wetland habitats and birds using them for foraging, nesting or roosting.

Road Traffic Casualties

5.7 In accordance with Highways Agency recommendations, tree and shrub planting would be set back from the road edge so as to help keep bird species away from the road. Provision of barn owl next boxes away from the new motorway would aim to reduce the risk of collision to this species.

Road Lighting

5.8 Evidence provided by Mr Ben Sibert (WG 1.5.1) explains the design of permanent lighting for the River Usk and River Ebbw crossings would avoid lighting the river channels and banks. This would reduce the risk of direct or indirect changes that might inhibit foraging or roosting by waders and wildfowl on habitats adjacent to the crossings.

Monitoring in Relation to Mitigation of Bird Impacts

5.9 Monitoring would be carried out during construction and the operation of the new section of the motorway in order to confirm the effectiveness of the mitigation measures, and, if necessary, to inform the need for changes to mitigation.

6. Residual Effects of the Scheme on Birds

Habitat Loss

6.1 With respect to land take, I conclude that there is no significant risk to any of qualifying species of the Severn Estuary SPA/Ramsar Site.

6.2 There would be no significant impact on SSSI qualifying bird features as a result of land take, including the River Usk (Lower Usk) SSSI.

6.3 Of the non-statutory sites, the Solutia SINC has Cetti's warbler as a named breeding bird interest. Land take would have a Major Adverse impact with an effect of Moderate or Large significance in the short term. This would diminish to a magnitude of impact of Moderate Adverse and a significance of Moderate in the medium to long term, as mitigation areas matured.

6.4 Bowkett Field, Barecroft SINC hosts many bird species, one of which survey data suggest is Cetti's warbler. As a result of land take, after mitigation the short term residual impact on Bowkett Field, Barecroft SINC would be Major Adverse, resulting in an initial residual effect of moderate or large significance. In the medium to long term, the magnitude of impact would decrease to Moderate Adverse, leaving a residual impact of Moderate significance.

6.5 No other non-statutory nature reserves would be affected by land take for the Scheme.

6.6 The Scheme would result in significant impacts for three breeding birds, namely Cetti's warbler, barn owl and common crane.

6.7 For Cetti's warbler, Taking account of the restoration of the land at Tata Llanwern Steelworks site and other enhancements of the Environmental Management Plan, and the SSSI and Reen Mitigation Strategies, residual impacts would be Moderate Adverse in the long term, and therefore of Moderate or Large significance.

6.8 For barn owl, land take would reduce the foraging area available. As mitigation habitats became established in the medium term, through the Reen and SSSI Mitigation Strategies, residual impact on barn owl would no longer be significant.

6.9 For common cranes, it is likely that land take would compromise the birds' nesting location, given its close proximity to the Scheme. Taking mitigation into account, the significance of the effect would be Large/Very Large in the short-term but decline as the mitigation habitat for nesting crane at Caldicot Moor matured and increased in suitability. In the event that the cranes re-located and nested successfully in this area, the medium to long term impact would be reduced, but as breeding at the new mitigation nesting habitat cannot be guaranteed, a precautionary approach has been taken to the assessment and the residual effect has been judged as Slight/Moderate in the long term.

Disturbance Displacement and Severance

6.10 For the Severn Estuary SPA/Ramsar Site, there is the risk redshank would be disturbed during construction of the Ebbw River crossing, potentially up to some 300 m. The resulting significance of disturbance effect would be Slight or Moderate. No additional impacts are anticipated from operation of the Scheme and drawing on the Waterbird Disturbance Mitigation Toolkit (Document 11.3.67) operation of the new section of motorway is not likely to have any more than a localised effect. The magnitude of the residual impact is judged to be Negligible Adverse, resulting in the significance on redshank, gadwall and pintail being Slight, with the other SPA/Ramsar Site species lower than this.

6.11 There would be no residual impacts on notified bird features of any SSSIs. The magnitude of residual impact would be No Change and the significance of effect would be Neutral.

6.12 There is the potential for operational noise to have some effect on SINCs that would be closer to the new motorway. Taking into account the habitats created and improved through the SSSI and Reen Mitigation

Strategies, the residual magnitude of operational impacts on SINCs is assessed as Minor Adverse and the significance of effects as Slight.

6.13 In relation to key bird species, whilst alternative habitat for Cetti's warbler would be established as part of the Scheme, to mitigate for land take and disturbance effects, where these areas are in proximity to the new section of motorway the consequence of noise disturbance may limit the birds' breeding success by interfering with territory establishment (Document 11.3.60 and Document 11.3.61). Therefore, for the purposes of the assessment in the March 2016 ES (Document 2.3.2), it has been assumed that the magnitude of impact on the Cetti's warbler population would remain Moderate Adverse, and the residual significance of effect would remain Moderate or Large.

6.14 For barn owl, the provision of alternative nest sites would reduce the magnitude of the impacts of construction to Minor Adverse and the significance of effects to Slight.

6.15 The magnitude of impact on common crane could potentially remain Minor Adverse. This is because the level of operational disturbance that would occur to the current nesting location means it would not be likely to continue to be used. If the alternative nesting habitat created as part of the SSSI Mitigation Strategy was not used for nesting, the residual significance of effect could therefore be Slight/Moderate.

Disruption of Hydrology

6.16 As explained by Mr Ben Sibert (WG 1.5.1), all existing watercourses and reen connections across the line of the new section of motorway would be retained or replaced to maintain the hydrology of the surrounding land. With appropriate design, construction, implementation and maintenance there would be no significant adverse effects on birds from disruption of hydrology during operation of the Scheme.

Pollution

6.17 A range of pollution prevention measures would be put in place during construction, overseen by the ECOW team working with the contractors. With stringent implementation of pollution prevention measures, and adherence to the guidance provided by the ECOW team, and on the basis that contractors fully implement good practice, working in adherence to guidance from the ECOW team, there would be minimal risk of pollution.

6.18 As explained by Mr Ben Sibert in his evidence (WG 1.5.1), once operational, runoff from the new motorway would be intercepted and treated by various means, including grassed channels, water treatment areas, oil separators and storage lagoons. Providing the measures proposed to prevent runoff of pollution are implemented and maintained, watercourses would therefore be protected. The water quality, vegetation, fish, amphibians and other food sources on which many bird species depend would therefore be maintained. In my opinion, with these measures in place, no significant adverse effect on birds would result from pollution runoff during operation of the Scheme.

Road traffic Casualties

6.19 By provision of nest boxes away from the road corridor and through habitat mitigation, the magnitude of impact on barn owl is predicted to be Minor Adverse and the significance of the residual effect to be Slight.

6.20 Other bird species are not considered to be particularly susceptible to traffic collisions so No Change is predicted.

Road Lighting

6.21 The extent of lighting for the new motorway section is described by Mr ProorfBen Sibert (WG 1.5.1). The design of lighting would avoid unnecessary light spill to minimise the potential effect on birds. Light fixtures would be directed towards the new road and away from

surrounding habitats of potential value to birds (notably scrub, and in the case of the River Usk crossing, mudflats and saltmarsh). In my opinion, the magnitude of the residual impact of road lighting on birds would be Negligible Adverse and therefore the significance of effect would be Slight or less.

7. Consultees' Response and Objections to the M4CAN Scheme

7.1 Consultation responses and objections to the Draft Orders for the Scheme which are relevant to birds have been submitted by:-

a) Newport City Council (SU0192)

b) Monmouthshire County Council (ISU0002)

c) Natural Resources Wales (OBJ0268)

d) RSPB (OBJ0245)

e) Gwent Wildlife Trust (OBJ0270)

f) Wildlife Trusts Wales (OBJ0260)

g) Friends of the Earth Cymru (OBJ0125)

7.2 I have addressed the relevant points in my evidence. Comments generally relate to survey coverage, assessment of impacts or mitigation design. Additional surveys have been undertaken and further consultation continues with NRW on refinement of the Reen and SSSI Mitigation Strategies, both of which would benefit birds. NRW have also agreed that a Barn Owl Mitigation Strategy could be produced ahead of construction.

7.3 Further consultation would be undertaken to refine mitigation for Cetti's warbler and common crane.

8. Summary and Conclusions

8.1 In relation to survey coverage, I consider the combination of desk study and survey work sufficient to inform a robust assessment of the Scheme's effects on key bird species. The scope of this work has been developed in consultation with NRW over an extended period, and been supplemented by additional targeted surveys in response to particular findings (notably the surveys for common cranes).

8.2 My evidence also describes the potential impacts of the Scheme on birds, and the mitigation proposed to reduce these impacts. The conclusions I have reached on residual impacts assumes that the proposed mitigation measures and commitments would be fully implemented, and that they would be refined if necessary, by results of monitoring that would also be undertaken.

8.3 With regard to the Severn Estuary SPA/Ramsar Site, there would be no adverse effect on its integrity as a result of the Scheme, either alone or in combination with other plans or projects.

8.4 There would be no significant impacts on breeding or wintering bird interests of SSSIs.

8.5 In relation to bird interests of SINCs, there would be effects from land take on the Solutia Site SINC and Bowkett Field Barecroft SINCs, The effect would be Moderate in the medium to long term, as mitigation areas matured.

8.6 There would be no significant residual operational impacts on SINCs bird interests in the medium to long term, due to the Reen and SSSI Mitigation Strategies.

8.7 Land take and construction for the Scheme would result in significant impacts on three breeding birds (Cetti's warbler, barn owl and common crane) and one wintering species (redshank). Once operational,

significant long term impacts are likely for Cetti's warbler and cannot be ruled out for common crane.

8.8 My evidence includes all facts which I regard as being relevant to the opinions which I have expressed and the Inquiry's attention has been drawn to any matter which would affect the validity of that opinion.

8.9 I believe the facts which I have stated in my evidence are true and that the opinions expressed are correct.

8.10 I understand my duty to the Inquiry to assist it with matters within my expertise and I believe that I have complied with that duty.