

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



Objection Ref OBJ6902

Llywodraeth Cymru
Welsh Government

File Ref WG/REB/OBJ6902 – Marshfield Community Council

Response to Objector's Evidence: Marshfield Community Council

1. GROUNDS FOR OBJECTION

1.1. Details

- 1.1.1. Marshfield Community Council (MCC) have submitted a Statement of Evidence dated January 2017 in relation to the draft statutory Orders associated with the Welsh Government's proposals for the M4 Corridor around Newport, which has been received via the Programme Officer.
- 1.1.2. The Welsh Government understands the evidence submitted within their Statement to be based on the following:
1. States that a survey was undertaken of local residents' views of the Black Route with 78 residents completing the survey. 52% of respondents felt the MCC should oppose the 'Black Route' and 68% consider the preservation of the Gwent Levels to be a role for MCC.
 2. States that the Blue Route is a better alternative.
 3. States that residents feel that their concerns are being ignored at worst or have not been offered an adequate response. Residents that suggested the Blue Route did not feel the explanation to reject the recommendations were sufficient.
 4. Concerns about the use of Compulsory Purchase and legal powers to take homes, land and livelihood.
 5. States that the 'Black Route' poses a real risk that local residents' homes will devalue over time.
 6. States that there only needs to be a bypass to the Brynglas Tunnels, not a motorway going as far as Magor.
 7. States that as a coastal community sandwiched between two major cities we should be supporting integrated and sustainable transport links that reduce the dependency upon the car.
 8. States that the Published Scheme seems a done deal. There is a lack of information of the alternative routes and no promotion.
 9. States that the whole Scheme should be scrapped and associated funding put into the Metro proposals to encourage more sustainable and reliable public transport links around south east Wales and encourage people out of their cars in the first place.

10. Concerns that the new M4 entails downgrading of the current M4 to a trunk road, thereby making it not an alternative due to difference in speed restrictions.
11. States that the estimated cost currently exceeds £1bn but factoring in VAT, inflation and maintenance could see this figure exceed £2bn.
12. The construction will damage two nature reserves, five sites of Special Scientific Interest (SSIs), the Wales Coastal Path and increase the amount of pollution from construction and traffic seeping into the ancient reed systems.
13. Concerns for the rare birds, water beetles, aquatic plants, otters and water vole that can be found along the Gwent Levels.
14. Concerns regarding landscape visual impacts on the Gwent Levels.
15. Concerns regarding the compulsory purchase of a section of Magor Marsh.
16. Concerns regarding the impact on Berry Hill Farm.
17. States that residents feel that they will not benefit directly because no local entry or exit points are planned on the 'Black Route'.
18. Concerns about levels of post-construction noise emitted by traffic that will use the motorway. Residents are worried that the increased level of noise will impact on their home life with some residents enjoying relatively quiet areas.
19. Concerns that the construction of the 'Black Route' would cause disruption, with the continuous noise that construction trucks transferring materials and the machinery employed to carry out the work will emit.
20. States that the village of Marshfield will be greatly disrupted from construction traffic for many years during the construction period.
21. Concerns regarding light pollution from the 'Black Route'.
22. Concerns that carbon dioxide emitted from traffic will impact on Marshfield residents' health.

23. Concerns regarding SSSIs and the impact the construction will have on the Gwent Levels. The Gwent Levels are areas of ancient grazing marshes and 'reen' drainage ditches virtually untouched for many generations. Residents feel that their concern to the real risk to the SSSI have not been addressed adequately.
24. The Gwent Levels are home to the water beetle and dragonfly, home to farmland birds that are already in decline and the habitat of several mammals like the brown hare, otter and water vole. Working farms are vital to the welfare of the species, and compulsory purchase orders and a decline in land will impact on the survival of the species.
25. States that the flooding in Somerset in recent years has been associated with poorly maintained ditches, and there is a real concern and a real risk of flooding with the Published Scheme.
26. States that residents' land, with the views and perceived benefits of living in a rural area, will be destroyed.
27. States that species such as the Oystercatcher, Curlew, Redshank, Grey Plover, Pintail, Wigeon, Short-eared Owl, Peregrine Falcon and Merlin's can also be found in the area with the risk of the 'Black Route' to their survival unknown.
28. Concerns regarding road user safety as the A48 will see an increase in traffic and concerns that increased traffic through the Ward will cause an increase of accidents and deaths.
29. States that the Published Scheme would damage ancient woodland as well as new woodland only planted to replace the ones torn down for the existing M4. Building this would seriously damage the ecosystem for hundreds of birds and mammals living on the levels.
30. States that the scheme is too expensive.
31. States that congestion will occur in the Marshfield community from traffic trying to get on to the new route.

32. States that water will drain from the elevated section into the reën running along Ty Mawr lane. This will cause thousands of gallons of extra water to be directed through the village posing a threat to 40 homes. The applicant has not visited the site on Ty Mawr lane to look at the effect and consequence of the additional water.
33. States that greenhouse gas emissions are leading to climate change that may well be irreversible; the internal combustion engine is a major contributor to atmospheric pollution.
34. States that the economics of the project are simply staggering, a debt burden for future generations to bear and now it seems that the evidence collected to justify support for the 'Black Route' could be dodgy.
35. Concerns regarding greater congestion on the old A48 through Castleton and at St. Mellon's roundabout.
36. States that there will be no eastbound access from Tredegar roundabout therefore access from Marshfield would cause increased eastbound congestion to St. Mellon's roundabout, Pontpennau roundabout and maybe Cardiff Gate to access the M4.
37. States that any traffic difficulties in the tunnels will not be prevented as motorists will have to decide on their alternative black route a long way in advance prior to knowing of any traffic congestion.
38. States that Newport City Centre is still being revamped in order to attract business and this route will take business away.

2. REBUTTAL

2.1. Points Raised

2.1.1. The above points are dealt with by topic by the relevant witnesses in the following sections. Readers should also make reference to the Proofs of Evidence in their entirety for a full understanding of the Welsh Government's case. For ease of reference the places where the above points are addressed in this Rebuttal are listed in the table below:

Objector's point reference	Rebuttal paragraph reference	Objector's point reference	Rebuttal paragraph reference
1	2.2.1	20	2.5.1
2	2.2.2	21	2.7.2
3	2.2.2	22	2.9.1
4	2.2.3	23	2.6.1
5	2.2.3	24	2.13.1
6	2.2.4	25	2.12.1
7	2.2.5	26	2.7.3
8	2.2.4	27	2.13.1
9	2.2.5	28	2.3.2
10	2.2.6	29	2.6.1
11	2.4.1	30	2.4.1
12	2.6.1	31	2.3.3
13	2.14.1	32	2.12.1
14	2.7.1	33	2.10.1
15	2.6.2	34	2.4.2
16	2.8.1	35	2.3.4
17	2.3.1	36	2.3.5
18	2.11.1	37	2.3.6
19	2.5.1	38	2.4.3

2.2. Matthew Jones (Chief Witness)

2.2.1 Response to **Point 1** (States that a survey was undertaken of local residents' views of the Black Route with 78 residents completing the survey. 52% of respondents felt the MCC should oppose the 'Black Route' and 68% consider the preservation of the Gwent Levels to be a role for MCC):

1. Section 22 of Matthew Jones' Proof of Evidence (WG1.1.1) summarises supporters and objectors in response to the draft Orders published in March 2016.
 2. Engagement on the problems, objectives and possible solutions to the M4 around Newport has been ongoing since the early 1990s, culminating in a draft Plan and associated consultation documents in September 2013. Taking the responses to the 2013 draft Plan consultation into account, the Welsh Ministers decided to adopt the Plan and modified Preferred Route for the M4 Corridor around Newport in July 2014. Scheme development followed that, leading to the publication of draft Orders, an Environmental Statement and other associated reporting in March 2016.
- 2.2.2 Response to **Points 2 and 3** (States that the Blue Route is a better alternative) and (States that residents feel that their concerns are being ignored at worst or have not been offered an adequate response. Residents that suggested the Blue Route did not feel the explanation to reject the recommendations were sufficient):
1. Section 3 and paragraphs 23.10-23.13 of Matthew Jones' Proof of Evidence (WG1.1.1) summarises the development of the Published Scheme and the process by which suggested alternatives are considered.
 2. An Appraisal of Objectors' Alternative Blue Route Proposals Report (Document 6.2.35) considers the Blue Route as confirms it would not address the problems or achieve the objectives of the M4 Corridor around Newport. As stated in Matthew Jones' Proof of Evidence (WG1.1.1) paragraph 24.17, the Scheme is considered by Welsh Government to be the long term, sustainable solution to the serious problems experienced on the M4 around Newport.
 3. In collaboration with our proposals for a South Wales Metro, it forms a vital part of our vision for an efficient and integrated transport network for Wales.
- 2.2.3 Response to **Points 4 and 5** (Concerns about the use of Compulsory Purchase and legal powers to take homes, land and livelihood) and (States

that the 'Black Route' poses a real risk that local residents' homes will devalue over time.

1. Paragraphs 24.8 of Matthew Jones' Proof of Evidence (WG1.1.1) summarises how the rights of those affected by the Scheme are taken into account and considered against the local, regional and national benefits the Scheme would deliver.
2. The draft Compulsory Purchase Order (draft CPO) (Document 2.1.5), defines the acquisition of all the land and rights required for the construction, operation and maintenance of the new section of motorway and new trunk road and their associated side road proposals. As stated in Matthew Jones' Proof of Evidence (WG1.1.1) paragraph 18.15: "The National Assembly for Wales Revised Circular on Compulsory Purchase Orders NAFWC14/2004 (DD523) provides advice to acquiring authorities in Wales that make compulsory purchase orders (CPO) to which the Acquisition of Land Act 1981 applies."
3. Matthew Jones' Proof of Evidence (WG1.1.1) paragraphs 18.16-18.17 explain that the Welsh Government considers that there is a compelling case for the Scheme in the public interest that necessitates temporary and permanent acquisition of land and rights. The land-take and rights to be acquired as shown in the draft Compulsory Purchase Order are the minimum necessary to construct, mitigate, operate and maintain the proposed Scheme. Ben Sibert's Proof of Evidence (WG 1.5.1) and Barry Woodman's Proof of Evidence (WG 1.6.1) respectively identify why certain land is required permanently and temporarily during the construction period. Peter Ireland's Proof of Evidence (WG 1.7.1) explains why land is required for essential environmental mitigation.

2.2.4 Response to **Points 6 and 8** (States that there only needs to be a bypass to the Brynglas Tunnels, not a motorway going as far as Magor) and (States that the Published Scheme seems a done deal. There is a lack of information of the alternative routes and no promotion):

1. Sections 3 and 23 of Matthew Jones' Proof of Evidence (WG1.1.1) summarise the development of the Published Scheme and the process by which suggested alternatives are considered.

2. All Suggested Alternatives are appraised within the Objectors' Suggested Alternatives Report (Document 4.7.2). For the specific appraisal of online widening of the existing M4, including the Brynglas Tunnels, refer to Alternative 19. The inspectors will consider the proposed solution and all suggested alternatives and report on the findings. This will inform the final decision on whether to go ahead with construction.

2.2.5 Response to **Points 7 and 9** (States that as a coastal community sandwiched between two major cities we should be supporting integrated and sustainable transport links that reduce the dependency upon the car) and (States that the whole Scheme should be scrapped and associated funding put into the Metro proposals to encourage more sustainable and reliable public transport links around south east Wales and encourage people out of their cars in the first place):

1. Sections 3 and 9 of Matthew Jones' Proof of Evidence (WG1.1.1) summarise the development of the Published Scheme and consideration of Public Transport and the South Wales Metro.
2. The Proof of Evidence of Matthew Jones WG1.1.1 paragraph 13.5 explains that funding for the delivery of this project has been explicitly identified and provision set aside within the Welsh Government's published capital plans for the next four years. Allocations are not made beyond a 4 year period but suitable forecasts are in place to enable assurance to be given that the full funding requirements associated with the project are available within a reasonable timescale should the decision be taken to proceed.
3. The Project would be funded through a combination of UK Government borrowing and Welsh Government Transport capital budgets. We would not be allocating the full amount of our borrowing capacity to this scheme, important though it is. The balance of the current borrowing limit, over £500m, will be available to fund schemes in other parts of Wales from 2018/19 onwards when Stamp Duty & Landfill Tax are planned to be devolved to Welsh Government.
4. The Metro Phase 2 project has been estimated at £734 million and the final cost will be determined during procurement negotiations. Funding includes match funding from the European Regional Development Fund

that we expect the UK Government to guarantee. We are engaging with the Welsh European Funding Office and the European Commission as we develop the bid for ERDF funding for the South Wales Metro. We are planning to submit a major project notification (MPN) to the Commission next year and have held a number of meetings with the European Investment Bank's JASPERS programme which have a key role in advising the Commission. The UK Government agreed a contribution of £125m toward the cost of the scheme as part of the deal to transfer executive functions for franchising in 2014. Welsh Government spend will be funded as money becomes available through the agreed City Deal.

5. The evidence of Bryan Whittaker (WG1.2.1) explains how the public transport network that has been modelled in the M4CaN transport model comprises:
 - Great Western Route Modernisation including the electrification of the Great Western Mainline from London Paddington to Cardiff by 2017;
 - Opening of new stations on the Valley Lines (Metro Phase 1); and
 - Valley Lines electrification (Metro Phase 2).
6. Outside of the transport model, an alternative approach has been developed which assumes further rail elements of a South Wales Metro and a strategic Park and Ride site at Llanwern (Metro Phase 3) together with Newport Bus Rapid Transit in order to assess the potential effect on traffic flows on the existing M4 corridor. For this project, we have therefore fully taken account of the planned mainline rail electrification and the committed elements of Cardiff Metro in our core scenario, and have carried out a sensitivity test on a higher level of Metro investment and Newport Rapid Transit. The results show that the combined effect of these public transport schemes is to reduce M4 traffic by a maximum of 6% and therefore does not resolve the problems on the M4. This does not mean to say that development of an efficient public transport system is not valid. Public transport should be seen as complementary to the M4 proposal and not in competition with it. The transport model suggests that a substantial proportion of the westbound traffic through Brynglas tunnels in the PM peak is longer-distance traffic - around 55% is from the Severn crossings, and another 15% from Gloucester and the M50. None of it is from Newport

city centre. So overall public transport targeted at shorter journeys needs a very high market share in order to make a big impact on overall M4 traffic flows.

2.2.6 Response to **Point 10** (Concerns that the new M4 entails downgrading of the current M4 to a trunk road, thereby making it not an alternative due to difference in speed restrictions):

1. Paragraph 10.15 of Matthew Jones' Proof of Evidence (WG1.1.1) explains why reclassification of the existing M4 is proposed and sets out that it would allow changes to be made to enable traffic management, safety and revised access arrangements. In summary:

- a) The reclassification of the existing M4 around Newport would allow the layout of the existing road to be modified to improve safety by making alterations to junction layouts, whilst traffic could move freely as around half of all vehicles (and up to three quarters of HGVs) transfer onto the new road. This would make travel safer, easier and more reliable.
- b) The reclassification of the existing M4 to the north of Newport, together with the transfer of traffic onto the new motorway, would allow Junction 25 at Caerleon to be reopened to full movement connections. This would make more effective use of the existing transport network and improve accessibility to communities, jobs and services in northern Newport.
- c) The existing Variable Speed Limit would continue to operate when required along the reclassified M4 between Junction 24 (Coldra) and Junction 28 (Tredgar), with a maximum speed limit of 60 miles per hour imposed at the Brynglas Tunnels for safety reasons and 70mph elsewhere.

2.2.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.3. Bryan Whittaker (Traffic)

2.3.1 Response to **Point 17** (States that residents feel that they will not benefit directly because no local entry or exit points are planned on the 'Black Route'):

1. Access from the Marshfield area to the Published Scheme would be available via Tredegar Park and the A48 Southern Distributor Road to the proposed Docks Link Road. Alternatively, access to the existing M4 would remain available from Tredegar Park, and Marshfield residents would benefit from the reduced traffic volumes on the existing M4 as a result of constructing the Published Scheme, which will enable increased speeds and better journey time reliability, particularly at peak times.
- 2.3.2 Response to **Point 28** (Concerns regarding road user safety as the A48 will see an increase in traffic and concerns that increased traffic through the Ward will cause an increase of accidents and deaths):
1. Future traffic volumes are likely to increase on all roads as a result of the general background increase in traffic flows. . An associated increase in accidents could therefore occur irrespective of whether the published Scheme is built. However, as a result of the published Scheme, traffic forecasts indicate a slight reduction in traffic volumes using the A48 through Marshfield, ranging from about 2% in 2022 to about 6% in 2037 compared to without the published Scheme.. There would, therefore, be slightly fewer accidents on the A48 through Marshfield with the Published Scheme in place.
- 2.3.3 Response to **Point 31** (States that congestion will occur in the Marshfield community from traffic trying to get on to the new route):
1. The increase in trips from the Marshfield area wishing to gain access to the new route compared to accessing the existing M4 is likely to be negligible. As noted in my response to Point 28 above, the forecast increase in traffic using the A48 through Marshfield is likely to be slightly lower. There is therefore no reason to suppose that the implementation of the Published Scheme will lead to an increase in congestion in the Marshfield area.
- 2.3.4 Response to **Point 35** (Concerns regarding greater congestion on the old A48 through Castleton and at St. Mellon's roundabout):
1. As noted in my response to Point 28 above, with the published Scheme in place, traffic forecasts indicate a slight reduction in the volume of traffic using the A48 compared to a situation without the Published Scheme. Similar reductions are also predicted for the link between St Mellons

Roundabout and the A48 at Junction 29A. The forecasts therefore indicate that the Published Scheme will not lead to greater congestion on the A48 through Castleton or at St Mellons roundabout.

2.3.5 Response to **Point 36** (States that there will be no eastbound access from Tredegar roundabout therefore access from Marshfield would cause increased eastbound congestion to St. Mellon's roundabout, Pontprennau roundabout and maybe Cardiff Gate to access the M4):

1. Eastbound access to the new M4 can be achieved via Tredegar Park and the A48 Southern Distributor Road to the proposed Docks Link. Alternatively, access to the existing M4 (which will benefit from greatly reduced traffic volumes as a result of the scheme), will remain available as at present via Tredegar Park. There is therefore no reason for traffic from Marshfield to route via St Mellons and Cardiff Gate in order to travel east on the M4

2.3.6 Response to **Point 37** (States that any traffic difficulties in the tunnels will not be prevented as motorists will have to decide on their alternative black route a long way in advance prior to knowing of any traffic congestion):

1. The methods and techniques of advising motorists of network problems and alternative routes have evolved considerably in recent years, and will no doubt continue to improve. At present, the main alternative route in the event of a problem at the tunnels is via the A48 SDR from Tredegar Park, and this will remain available. The Published Scheme provides an additional alternative route for traffic unable to get through the tunnels from a point slightly further west at Castleton, so adding to the resilience of the strategic network. Furthermore, by relieving the existing M4 of a substantial proportion of its current traffic volume, the Published Scheme will greatly reduce the number of accidents and incidents that create traffic difficulties at the tunnel.

2.3.7 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.4. Stephen Bussell (Economics)

2.4.1 Response to **Points 11 and 30** (States that the estimated cost currently exceeds £1bn but factoring in VAT, inflation and maintenance could see this figure exceed £2bn) and (States that the scheme is too expensive):

1. The economic appraisal of the Scheme compares the cost of investment with the benefits that the Scheme is expected to deliver. This indicates that the scheme provides value for money. When Wider Impacts are included in the assessment, the Scheme shows a Benefit-Cost Ratio of over 2 to 1. In other words, the benefits of the Scheme outweigh its costs by a ratio of over 2 to 1
2. The economic appraisal takes account of future maintenance costs. Regarding inflation, the cost of a project can only be understood in the context of the prices of goods and services in the economy more generally. Because of inflation, the price of the project will increase over time. However, if the general level of prices in the economy increase at the same rate, in 'real terms', the cost of the project will be unchanged. Government budgets will also increase with inflation. For this reason it is normal practice for the public sector to express the cost of a project in a particular price base and this convention is followed by the Welsh Government on all of its highway schemes.
3. In accordance with transport appraisal guidance (WebTAG), the scheme costs used in the economic appraisal excludes VAT. Expenditure on VAT represents an internal Government transfer. Any expenditure subject to VAT will result in an increase in overall Government tax receipts. Therefore, any expenditure relating to VAT does not represent an economic cost and there is no loss of welfare associated with it. It is therefore appropriate to exclude VAT from the economic appraisal. The treatment of VAT for the project and the extent to which VAT will be charged and recovered is currently being investigated by the Welsh Government.

2.4.2 Response to **Point 34** (States that the economics of the project are simply staggering, a debt burden for future generations to bear and now it seems that the evidence collected to justify support for the 'Black Route' could be dodgy):

1. Mr Matthew Jones in his Proof of Evidence (WG1.1.1 paragraph 13.5) sets out the Welsh Government's position on scheme funding. As noted, the scheme will deliver economic benefits equivalent to over £2 for every £1 spent. The economic appraisal of the Scheme has been undertaken in accordance with transport appraisal guidance published by the Welsh Government (WelTAG) and the Department for Transport (WebTAG).
- 2.4.3 Response to **Point 38** (States that Newport City Centre is still being revamped in order to attract business and this route will take business away):
1. By reducing congestion and providing new points of access, the Scheme will improve access to Newport and the City Centre. This is likely to make the City more attractive to visitors and potential investors, reinforcing the benefits of recent investment in the City. Evidence detailed in the Revised Wider Economic Impact Assessment demonstrates that improvements in the highway network delivers a range of wider economic benefits both locally in Newport and across South East Wales as a whole.
- 2.4.4 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.
- 2.5. Barry Woodman (Construction)**
- 2.5.1 Response to **Points 19 and 20** (Concerns that the construction of the 'Black Route' would cause disruption, with the continuous noise that construction trucks transferring materials and the machinery employed to carry out the work will emit) and (States that the village of Marshfield will be greatly disrupted from construction traffic for many years during the construction period):
1. Paragraphs 5.16-5.19, 7.9, 8.3 and 10.7 of Barry Woodman's Proof of Evidence (WG1.6.1) and Appendix 1.3 Figure 1 of its Appendices (WG1.6.3) outline proposals for management of construction traffic during construction for the Scheme.
 2. It is also covered in Appendix SR3.1 Buildability Report of the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14) December 2016 ES supplement in the following locations: Annex 4 Figures 1-5.

2.5.1. We will establish material delivery routes to the project which will avoid the use of residential streets as far as possible. Our major earthworks traffic will be restricted to our proposed on site haul road. There will be a need to use manned signalised construction plant crossings on local roads whilst new overbridges are constructed. There will be the need for occasional overnight or weekend road closures for Statutory Utility diversion works, existing bridge demolition works on the M4 and bridge beam installation works. Noise and dust will be controlled by regular damping down of the access roads. Noise and dust monitoring will be carried out to ensure compliance with the dust and noise levels agreed with the Newport City Council Environmental Health Officer. Out of hours lighting will be carefully positioned to direct lighting away from nearby residential properties.

2.5.2. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.6. Peter Ireland (Environment)

2.6.1. Response to **Points 12, 23 and 29** (The construction will damage two nature reserves, five sites of Special Scientific Interest (SSIs), the Wales Coastal Path and increase the amount of pollution from construction and traffic seeping into the ancient reen systems), (Concerns regarding SSSIs and the impact the construction will have on the Gwent Levels. The Gwent Levels are areas of ancient grazing marshes and 'reen' drainage ditches virtually untouched for many generations. Residents feel that their concern to the real risk to the SSSI have not been addressed adequately) and (States that the Published Scheme would damage ancient woodland as well as new woodland only planted to replace the ones torn down for the existing M4. Building this would seriously damage the ecosystem for hundreds of birds and mammals living on the levels):

1. The effect of building and operating the new section of motorway on the environment is set out in the Environmental Statement (ES) (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14). The Environmental Statement clearly identifies the magnitude and significance of effects on a wide range of environmental features and assets.
2. The scheme would affect less than 2% of the area of the Gwent Levels SSSIs. I accept that it is never possible to fully understand the complex

relationships that operate within any but the simplest ecosystems. However much of the grassland of the Gwent Levels is improved or semi-improved agricultural grassland and thus does not have the high intrinsic interest of unimproved grasslands. All of the new reens and ditches would be connected to existing neighbouring reens and ditches, and that it is proposed that plant material and sediment from watercourses which would be lost would be transferred to the new watercourses. The new reens would also incorporate berms to provide areas for marginal plant species to establish. It should also be noted that the existing reens and ditches are periodically disturbed by dredging and this is important in providing a range of water conditions necessary to maintain the diversity of aquatic flora and fauna.

3. As explained in the September 2016 ES Supplement (Doc 2.4.4), NRW have advised that condition assessments for the Gwent Levels SSSIs are still being finalised on the basis of their own survey information collected over the last few years. However, they have advised that preliminary draft analysis indicates that most features are likely to be classified as being in 'unfavourable' condition. The main causes of unfavourable condition are the combination of a lack of in-channel submerged vegetation, an over-dominance of terrestrial vegetation and the lack of bare ground/poaching across the SSSIs.
4. As the data form a baseline survey, NRW are not able at this stage to assess whether the features should be classified as 'Unfavourable Declining' or 'Unfavourable Improving'.
5. As stated in the September 2016 ESS (Document 2.4.4) a total of some 125 ha of land within the Gwent Levels SSSIs would be affected by the Scheme. Of this some 86 ha would be grazing marsh (measured as all grassland within the Gwent Levels SSSIs within the footprint of the proposed new section of motorway). Similarly the figures for loss of reens and distiches are from the September 2016 ESS (Document 2.4.4).
6. The Measure to mitigate for these impacts are set out in the SSSI Mitigation Strategy and the Reen Mitigation Strategy respectively.

7. The SSSI mitigation strategy sets out the measures proposed to convert existing arable land to grassland and to enhance existing grassland habitats.
8. The proposals for replacement of reens and ditches are set out in the Reen Mitigation Strategy (Appendix 2.3 of the March 2016 ES (Doc 2.3.2)) and the Supplementary File Note on the Reen Mitigation Strategy (Appendix S2.1 to the September 2016 ES Supplement (Doc 2.4.4)).
9. As explained in Keith Jones Proof of Evidence (WG 1.18.1 paragraph 5.3.41 *et seq*) 2755 m of reen and 9373 m of field ditches would be infilled or culverted during the construction of the new section of motorway. These would be replaced by a total of 2826 m of new reen and 10594 m of new field ditch.
10. New reens would be provided along the north of the new section of motorway in areas where existing reens would be cut off by the new motorway. The proposals are that the reens would generally be excavated to a depth of 2.0 m with 1 in 1 side slopes, a 0.7 m berm, and would be approximately 5.7 m wide at the surface. As stated in the Reen Mitigation Strategy (March 2016 ES (Doc 2.3.2) Appendix 2.3), the dimensions of the replacement reens referred to are the general proposals but continuing advice would be sought from NRW on the specification for reen design.
11. These new reens would connect reens cut off by the new section of motorway, with sluices to allow management of water levels.
12. Where existing field ditches would be cut off by the new section of motorway, new field ditches would be provided. These would generally be 2.5 m wide with 1 in 1 slopes and a depth of 1 m. They would connect to the nearest main reens to provide connectivity. In addition to the new watercourses to be provided through the Reen Mitigation Strategy, the revised proposals for SSSI Mitigation (revised SSSI Mitigation Strategy (Appendix SR10.35 of the December 2016 ES Supplement (Doc 2.4.14)) include recutting of some 5.9 km of former field ditches.
13. This would ensure that there was no reduction in the extent of the freshwater ecosystem which is the basis of much of the interest of the Gwent Levels SSSIs. In addition, the provision of berms within the

replacement reens, and the lack of shading hedgerows, would provide good opportunities for growth of aquatic macrophytes compared to some of the reens which they would replace.

14. The new reens and ditches would be in close proximity to the new section of Motorway through the Gwent Levels and thus would be within the SSSIs. The measurement of the land take for the scheme includes the area of the new reens and ditches.
15. The ratio for provision of new reens and ditches was agreed with NRW. The reason that the ratio of new to existing is not greater is because NRW were concerned that the original proposals (7,610 m of new reens and 11,800 m of new ditches) could have had adverse effects on the hydrology of the levels.
16. The ecology surveys carried out to inform the ES (Document 2.3.2) have been extensive and have considered those species considered to be of most importance in the context of the Scheme, both in terms of their conservation status and susceptibility to adverse impacts as a result of the Scheme, and for which specific mitigation measures are required. The extensive planting and habitat establishment proposed as part of the scheme and shown on the Environmental Management Plan (EMP), and the habitat enhancements which would be implemented across the three SSSI mitigation areas will benefit a wide range of wildlife, not just those species specifically addressed in the ES.
17. In Keith Jones' evidence (WG1.18.1) at paragraph 7.3.71-72, it is set out that the total loss of woodland across the scheme would thus be some 49.8 ha. The area of ancient woodland which would be lost would be 1.04 ha. The new planting shown on the revised EMP (September 2016 ES Supplement (Doc 2.4.4) Figure R2.6) comprises 104.4 ha of 'Woodland' and 'Linear Belts of Trees and Shrubs' similar to those associated with the existing M4. Unlike the existing woodland, there would be extensive new woodland blocks at Berryhill Farm in the west, and east of Rockfield Farm at Undy in the east.
18. A separate rebuttal to the Woodland Trust (OBJ0271 Richard Barnes) has been provided.

19. The duty under Section 7 of the Environment Wales Act states that without prejudice to section 6, the Welsh Ministers must—
- a) take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and
- The requirement under section 6 is that:
- (1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.
20. In my opinion, the Welsh Government has taken all steps that are reasonable with respect to maintaining and enhancing the relevant habitats and species insofar as that is consistent with the proper exercise of its functions regarding the motorway network.
21. In terms of the Wales Coast Path, the evidence of Julia Tindale (WG1.10.1) confirms that at a meeting with NRW in September 2016, agreement was reached on the temporary and permanent arrangements for the Wales Coast Path (WCP) and NRW confirmed that subject to the provision of a commitment on construction measures it was agreed that there are no significant issues with regards to the WCP that cannot be resolved. As a result the following commitment (Commitment 171) has been added to Register of Environmental Commitments Update (Appendix SR18.1 of the December 2016 ES Supplement [Document 2.4.14]):
- “Prior to construction a Rights of Way Interface Plan will be prepared, and then implemented during construction, by the contractor detailing how the interface between walkers and other NMUs and construction activities will be managed during the construction period. NRW, Newport City Council, Monmouthshire County Council and Sustrans will be consulted on the plan”.*
22. Meetings with Newport City Council were also held to discuss the measures that were being incorporated into the Scheme to maintain the connectivity of the highway network (including public rights of way, other routes used by Non-Motorised Users (NMUs) and sections of the Wales Coast Path/Newport Coast Path) and the provision of new NMU routes.

23. The evidence of Matthew Jones (WG1.1.1) and John Davies (WG1.23.1) considers the balance between the economic, social, cultural and environmental impacts of the Scheme and concludes that the Scheme should proceed.

2.6.1 Response to **Points 15** (Concerns regarding the compulsory purchase of a section of Magor Marsh):

1. Neither the Newport Wetlands National Nature Reserve and RSPB Reserve, nor the Magor Marsh and Great Traston Meadows Gwent Wildlife Trust Nature Reserves would be significantly affected, although a small area of land owned by the Gwent Wildlife Trust would be acquired. Views of the new section of motorway from Magor Marsh Nature Reserve would be screened by the existing woodland and vegetation within and surrounding the nature reserve and residential properties within Magor. The draft CPO (and hence the footprint of the Scheme) covers 3395 sq m (0.34 ha) at the northern corner of this land (excluding the adjacent section of road - 766 sq m) and thus only some 3% of the area (11.3 ha) of the fields Gwent Wildlife Trust purchased in 2012.

2.6.2. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.7. Nicholas Rowson (Landscape)

2.7.1 Response to **Point 14** (Concerns regarding landscape visual impacts on the Gwent Levels):

1. The cultural and historic importance of the Gwent Levels is recognised and has been taken into account in assessing visual and landscape impacts. This is acknowledged in paragraph 1.4.15 of my Proof and in Section 9.4 of the ES. There would be variable levels of residual visual impact on the Gwent Levels and it is recognised that for some Landscape Character Areas, for example Wentlooge Levels and Caldicot levels, these would remain Large Adverse impacts. Although large adverse, the scheme has been designed and mitigated in so far as possible with due consideration of the character of those areas as described in Chapter 9, Section 9.4. The assessment of this in detail is set out in Chapter 9.8 (Assessment of Potential Operational Effects) of the ES.

2.7.2 Response to **Point 21** (Concerns regarding light pollution from the 'Black Route'):

1. Sections 9.6 and 9.7 of the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14) set out the Assessment of Potential Construction Effects and the Assessment of Potential Operational Effects, including the impact of lighting on landscape and visual receptors.
2. The following paragraphs of Nicholas Rowson's Proof of Evidence (WG1.8.1) outline the consideration of road lighting in respect of landscape and visual receptors: 2.8.11 (i), 3.1.1 (j), 3.6.4, 3.11.1 (b), 3.11.4, 3.14.14, 3.14.15, 3.14.16, 5.5.3 and 5.7.4.
3. Further, a commitment has already been given to the Inquiry to further reduce lighting around the Glan Lynn junction.

2.7.3 Response to **Point 26** (States that residents' land, with the views and perceived benefits of living in a rural area, will be destroyed):

1. Chapter 9 of the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14) include a full assessment of Landscape and Visual Impacts.
2. It is recognised that for some residential receptors there will be significant impacts from the Scheme. Equally, some areas adjacent to the existing M4 will have slight benefit in the reduction in visible traffic. In both cases, mitigation measures that reduce visual impact have been proposed where possible.
3. Land taken for the Scheme and essential mitigation is set out in the draft Orders plans.

2.7.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.8. Julia Tindale (Land Use, Community and Recreation)

2.8.1 Response to **Point 16** (Concerns regarding the impact on Berry Hill Farm):

1. Sections 15.6 and 15.7 of the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14) set out the potential land take and construction effects of the Scheme on Berry Hill Farm.

2.8.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.9. Michael Bull (Air Quality)

2.9.1 Response to **Point 22** (Concerns that carbon dioxide emitted from traffic will impact on Marshfield residents' health):

1. This is not the case; Appendix A of Michael Bull's Proof of Evidence (WG1.12.1) outlines the operational air quality impacts of the Scheme. Carbon dioxide is not considered a local air pollutant, it is a greenhouse gas and Mr Chapman has responded on this topic.

2.9.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.10. Tim Chapman (Carbon)

2.10.1 Response to **Point 33** (States that greenhouse gas emissions are leading to climate change that may well be irreversible; the internal combustion engine is a major contributor to atmospheric pollution):

1. Section 4.2 of Tim Chapman's Proof of Evidence (WG1.13.1) describes the carbon emissions in Wales and the contribution of the transport sector. Analysis of the traffic flows on the wider network (both on the existing M4 and new section of motorway) shows that, even with forecast traffic increases, the Scheme is effectively Whole Life Carbon neutral, with calculations showing a small saving overall. This is because of a combination of the new route being some 2.8km shorter and also it having significant congestion alleviation benefits.

2.10.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.11. Philip Evans (Noise and Vibration)

2.11.1 Response to **Point 18** (Concerns about levels of post-construction noise emitted by traffic that will use the motorway. Residents are worried that the increased level of noise will impact on their home life with some residents enjoying relatively quiet areas):

1. The majority of Marshfield lies closer to the existing M4 and M48 than it does the proposed Scheme. Although most of Marshfield falls outside the

1km assessment area, within the assessment area noise contours indicate that any change will be negligible.

2.11.1. I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.12. Mike Vaughan (Flood Consequences Assessment)

2.12.1 Response to **Point 25** (States that the flooding in Somerset in recent years has been associated with poorly maintained ditches, and there is a real concern and a real risk of flooding with the Published Scheme):

1. The winter 2013-14 flooding in Somerset was attributed to multiple sources and factors, not least the River Parrett draining the levels which is tidal. There was much debate on the benefit of the dredging of the River Parrett. Members of the design team were previously part of a team that developed a flood risk management strategy for the Somerset Levels and Moors. The hydraulic modelling work undertaken for that demonstrated at the time that dredging of the lower Parrett and Tone would have little impact on flooding.
2. Welsh Government is committed to the long term maintenance of the proposed Scheme, and this is described in the Commitments Register under items 98, 101, and 106. The signed Statement of Common Ground on Flood Risk (ID/048) between Welsh Government and Natural Resources Wales agrees that the Scheme will not increase flood risk. The published Welsh Government-Natural Resources Wales meeting notes (ID/058) also record that matters of maintenance can be accepted. The signed Statement of Common Ground on Water Quality (ID/0053) between Welsh Government and Natural Resources Wales agrees that maintenance of the Scheme will ensure discharges of the appropriate quantity and quality into the future.

2.12.2 Response to **Point 32** (States that water will drain from the elevated section into the reën running along Ty Mawr lane. This will cause thousands of gallons of extra water to be directed through the village posing a threat to 40 homes. The applicant has not visited the site on Ty Mawr lane to look at the effect and consequence of the additional water):

1. Paragraphs 4.69-4.75 of Mike Vaughan's Proof of Evidence (WG1.17.1) outlines the use of attenuation lagoons to limit the outfall of surface water.
2. The outfall from proposed water treatment area 2 (WTA2) would discharge up to 40.1 l/s to Tyn-y-Brwyn reën during a 1 in 100 year return period event with allowance for climate change. This flows southwards to Ty Mawr Lane. Over the storm and drain period, this amounts to some 1500 gallons of water. The WTA provides both peak flow and volumetric control on the discharges and hence flows passing Ty Mawr Lane will be similar to those witnessed today.
3. The lagoon is sized to attenuate the 1 in 100 year storm with 30% allowance for climate change, and provide both flow and volumetric control at 3.5 l/s/ha. This means that the discharge rate will be restricted below what might be expected at the site today, and that the volume of discharge is spread out over a longer timeframe, so preventing any increase in flood risk downstream. The drainage and attenuated discharges have been included in the hydraulic modelling: the results from this modelling process demonstrate that the proposed drainage causes no detriment to fluvial or surface water flood risk.

2.12.1.1 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

2.13. Keith Jones (Ecology)

- 2.13.1 Response to **Points 13, 24 and 27** (Concerns for the rare birds, water beetles, aquatic plants, otters and water vole that can be found along the Gwent Levels), (The Gwent Levels are home to the water beetle and dragonfly, home to farmland birds that are already in decline and the habitat of several mammals like the brown hare, otter and water vole. Working farms are vital to the welfare of the species, and compulsory purchase orders and a decline in land will impact on the survival of the species) and (States that species such as the Oystercatcher, Curlew, Redshank, Grey Plover, Pintail, Wigeon, Short-eared Owl, Peregrine Falcon and Merlin's can also be found in the area with the risk of the 'Black Route' to their survival unknown):
1. The effect of building and operating the new section of motorway on the environment is set out in the Environmental Statement (Document 2.3.2)

and its Supplements (Documents 2.4.4 and 2.4.14). The Environmental Statement clearly identifies the magnitude and significance of effects on a wide range of environmental features and assets.

2. In particular, Chapter 10 Ecology and Nature Conservation of the March 2016 Environmental Statement addresses the effects of the Scheme on the interests referred to in the Objector's evidence, including plant species, aquatic and terrestrial invertebrates, mammals and birds. The March 2016 Environmental Statement and its Supplements describe the ecological surveys which have been carried out with respect to these features (with the survey reports appended), the potential effects of the Scheme, the mitigation measures which are proposed, and the significance of the effects of the Scheme.
3. Draft mitigation strategies for the Gwent Levels SSSIs, dormouse, bats, water vole and great crested newt were appended to the December 2016 Environmental Statement Supplement, and revised drafts of the Gwent Levels SSSI, bats and dormouse strategies have been submitted to the Public Inquiry.
4. Detailed evidence on these matters is presented in the Proofs of Evidence of Dr Keith Jones (WG 1.18.1), Dr Jonathan Davies (dormouse and water vole) (WG 1.19.1), Richard Green (bats) (WG 1.20.1) and Simon Zisman (birds) (WG 1.21.1).
5. A Statement of Common Ground covering effects on Nationally Designated Sites has been agreed between Welsh Government and NRW. Similar statements covering Internationally Designated Sites, Bats, Dormouse and Other Protected Species are the subject of discussions.

2.13.2 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.