# Western Wales ER Appendices

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# Appendix 1: Scoping Consultation Responses Summary

The responses below have been summarised into the main points and corresponding actions.

| Organisation responding | Response to SEA scoping consultation for Western Wales | Action taken |
|---|---|---|
| Natural Resources Wales | The uncertainty over recent caselaw and the Cunliffe review means there is a lack of detail in the approach to the RBMP and the SEA. NRW seeks ongoing engagement to enable comment on the scope and approach of the SEA. | Ongoing engagement with NRW – Strategic Assessment Team. |
| NRW | Greater inclusion of spatially specific information would strengthen the developing assessment. Particularly in terms of soil (BMV & Peatlands), agricultural land use (eg livestock or arable), ancient woodland inventory. | As the spatially specific water body measures were developed our methodology considered the effects spatially for those topics where negative effects were predicted. |
| NRW | Importance of nutrient enrichment to water quality and biodiversity should be more clearly stated in the key issues. | Accepted. Edits have been made to the scope of the SEA. |
| NRW | Pollution from transport sector, including road run off, should have a greater focus. | Noted. This issue has been flagged to the RBMP team for consideration. |
| NRW | Various specific edits to text from specialists across NRW. | Accepted. |
| NRW | Broader consideration of plant pests, diseases and their future impacts on trees and catchments. Consider diversification of tree species in forests and other practices to increase resilience. | Noted. |
| NRW | Opportunities to restore and connect ancient woodland – recommended the use of Resilient Ecological Network (RENs) for woodland. | Noted. |
| NRW | Potential for Sustainable Farming Scheme to have significant benefits for water quality. Design and resourcing of the scheme is vital to secure benefits. | Noted. Comment passed to IWPT for consideration as to how the RBMP can influence the SFS. SEA can flag as an opportunity. |
| NRW | Additional references provided for review of policies, plans and Strategies. | Added to PPP review. |

| Organisation responding | Response to SEA scoping consultation for Western Wales | Action taken |
|---|---|---|
| Cadw | Corrections required for the review of Policies, plans and strategies related to the historic environment. | Amendments made. |
| Cadw | The methodologies outlined in the scoping report are appropriate. | Noted. |
| Historic England | Dee RBD includes Cheshire, Shropshire and Merseyside which contain areas of archaeological and heritage significance which may be of local, regional or national importance. This includes designated and non-designated assets. The Local Planning Authorities Archaeological and Conservation Advisors (LPAACA) provide records and advice. | Amendments to text made. |
| Historic England | These proposals are expected to have the potential to directly and indirectly impact designated, non-designated, and unknown assets of local, to national significance. In line with the advice in the National Planning Policy Framework (NPPF), we would expect any subsequent Environmental Statements or Assessments to contain a thorough assessment of the likely effects which the proposed management might have upon those elements which contribute to the significance of these assets. We would strongly recommend that the LPAACA's are involved in these discussions, and for the development of any assessments. | Noted. The assessment of the draft RBMP will need to be at a strategic level. Water body measures will be considered in greater detail and recommendations will be made for project level assessments. |
| Historic England | It is essential that any changes to the hydrological landscape are considered and<br>assessed in terms of any potential wider landscape impacts to the surrounding archaeology and heritage. | Noted. This will be considered in the assessment of the draft RBMP at a strategic level. |
| Historic England | We would advise that consideration is given to carbon<br>capture and storage projects and their associated connecting pipelines, which will be running through the area of Cheshire and the Wirral and into North-East Wales. | Noted. This will be considered in the cumulative effects assessment. |
| Historic England | A number of detailed comments and amendments. Inclusion of designation information for England and reflection that HE is the governments advisor for the historic environment in England. | Amendments made. |
| Historic England | Given the number of designated heritage assets that have the potential to be affected by the scheme, we would welcome early discussions with you in order to agree the key sites and setting issues which will need to be addressed within any subsequent assessments. | At assessment stage we will contact Cadw /HE as appropriate. It is likely that the discussions are best held at a project level. |
| Anon RD072 | Concerns re chemicals in the water environment & potential impact on wildlife and people. | See above. Chemical risk is considered in SEA and HIA. Both of which seek to influence the draft plan. |

| Organisation responding | Response to SEA scoping consultation for Western Wales | Action taken |
|---|---|---|
| Anon RD073 | SR difficult to understand. All vulnerable population groups are affected. Access to natural areas is very important for wellbeing & health. | SR is a technical document for scrutiny by a wide range of stakeholders. The Non-technical summary is aimed at being more accessible for all. We will seek to improve this for the Environmental Report.<br>Access to natural environments and vulnerable groups are being considered through the SEA and HIA. Both of which seek to influence the draft plan. |
| Anon RD074 | SR too long and complicated. Lifetime chemicals should be considered and legislate to ban them in manufacture. | See above. Persistent chemical risks is considered in SEA and HIA. Both of which seek to influence the draft plan. |
| Anon RD075 | Stricter environmental regulation for sewage in rivers. | Comment for RBMP |
| Anon RD076 | SEA objectives need to make more specific reference to maintaining and enhancing riverscapes and wetlands. At present, 'water' is represented in terms of quantity and quality. Rivers, streams and their corridors provide significant health and wellbeing benefits. | Rivers, streams and their corridors are covered across a number of SEA objectives, including Population & human health, Biodiversity, flora and fauna, Water, landscape, etc |
| Environmental Public Health Service | Private Water supplies should be considered. Agricultural industry is an important part of the economy and culture and better coordination, education and cooperation with the industry is required in order to ensure consistently safe water supplies. Data Centre water use.<br>Public health should become a central part of all water policy. It is essential for life and clean drinking water is one of the most important public health interventions in history. Access to water for recreation including wild swimming, is popular as it can help physical and mental health and wellbeing. | Water resources are valuable and under pressure in our changing climate. Points made will be considered further in the SEA and HIA. |
| Anon RD082 | Mitigation methods should include removal of surface water before entering combined sewers, upgrade of treatment works, UV treat all effluent.<br>We should be able to enjoy water environment without fear of illness from pollution. | Comment for RBMP & considered through HIA. |
| Anon RD083 | Consider diseases caused by pollution. | Considered through HIA and Population and Human Health topic. |

| Organisation responding | Response to SEA scoping consultation for Western Wales | Action taken |
|---|---|---|
| DCWW | Support SEA assessment framework.<br>Better spatial and temporal understanding and coordination of infrastructure programmes between different organisations would create more sustainable, effective and cost-efficient interventions.<br>The SEA should give greater recognition to the breadth of co-benefits delivered by nature based and hybrid solutions.<br>Given the scale of climate impacts now affecting Welsh catchments, the SEA criteria would also benefit from more explicit consideration of both climate adaptation and mitigation.<br>Public health and well-being also deserve a clearer place within the criteria.<br>We would welcome a more transparent link between SEA scoring and the final Programme of Measures. In practice, this means clearly setting out how SEA findings influence the inclusion, exclusion or prioritisation of measures. Given the wide range of pressures identified in the consultation this transparency will be important for building confidence in how difficult trade-offs are being made. | Noted.<br>Support and have included the recommendation for collaboration and coordination of delivery.<br><br>Climate adaptation and mitigation is considered throughout.<br><br>HIA considers public health and has fed into the SEA.<br><br>Inclusion of measures largely based on the Reasons for Not Achieving Good. The SEA has broadly influenced the national measures. No prioritisation exercise has been undertaken. |
| DCWW | Supportive of the need for HIA & recognition of the different ways communities interact with the water environment.<br>Children and young people are particularly sensitive to poor water quality.<br>Older adults also rely heavily on local blue green spaces. Many of the communities we serve use riverside paths, reservoirs and coastal areas for regular exercise and social interaction. Deterioration in water quality, or restricted access following pollution events, can have an outsized impact on their mental and physical health.<br>People with existing health conditions, particularly those with compromised immune systems, respiratory conditions or chronic illness, are also at higher risk from exposure to bacteria or chemical pollutants.<br>The HIA should also consider rural households reliant on private water supplies.<br>For coastal communities and tourism-dependent areas, the health and economic effects of poor bathing water quality can be tightly linked.<br>We would also encourage inclusion of low income or disadvantaged communities.<br>Workers in water dependent industries, such as aquaculture, outdoor activity providers and tourism, experience both economic and health impacts when water quality declines. | Noted. HIA has considered comments. |

| Organisation responding | Response to SEA scoping consultation for Western Wales | Action taken |
|---|---|---|
| DCWW | In summary, the RBMPs have a significant opportunity to deliver wider health and well-being benefits. Clean water, resilient catchments, safe recreation spaces and equitable access to nature all play a vital role in supporting the long-term health of communities across Wales. We will continue to support this through our approaches to improving raw water quality, expanding nature based solutions and working closely with NRW and partners to enhance catchment resilience. | Noted. |
| Hafren Dyfrdwy | We agree that the assessment criteria set out in the SEA scoping reports are appropriate and provide a robust framework for evaluating the environmental effects of the RBMPs.<br>Enhanced integration of catchment scale biodiversity recovery, ensuring that the SEA fully reflects the role of habitat connectivity, nature based solutions and ecosystem resilience in supporting RBMP outcomes.<br>Greater consideration of cumulative and climate driven impacts<br>NRW may wish to consider the opportunities presented by stacking and blending environmental outcomes, where water quality improvements are delivered alongside biodiversity net gain, carbon sequestration and natural capital enhancement. Improved alignment of regulatory and funding frameworks would help enable more integrated and joined up delivery across these objectives.<br>Health and well being considerations should be integrated into the design and delivery of nature based solutions, as approaches that deliver multiple environmental and social benefits strengthen the overall case for their adoption. | Noted. |
| Anon RD115 | Eutrophication promotes overgrowth of toxin-producing phytoplankton, Sewage contains pathogens. Bathing water quality is critical for tourism. | Considered in HIA. |
| Anon RD116 | The state of the environment is critical for mental health. Degree of littering is unacceptable, polluting, and depressing. | Considered in HIA. |
| Wrexham & District Flyfishing Assoc RD117 | Vulnerable population groups include children swimming in river, at risk from E. coli. RBMP should consider STW discharges. | Considered in HIA. |

# Appendix 2: Wales Strategic Alternatives – Identification & Assessment

## Appendix 2.1: Identification of Alternatives

| Alternatives | Description | Take forward for assessment (ie alternative is considered "reasonable") | Justification |
|---|---|---|---|
| A (Do Nothing) | No action taken to review and refresh the RBMP3. | No | The WFD Regulations provide a statutory requirement to update the RBMPs as directed by WG and DEFRA. Therefore, this alternative will not achieve the objectives of the plan and so is not considered reasonable. |
| B | Review and update the RBMP3 programme of measures without including waterbody measures. | No | The WFD Regulations require that a summary programme of measures prepared for a RBD, must set out the individual water body specific measures so that it is clearly identifiable what measures are required to meet a specific water body's environmental objectives. This has been tested by the High Court judgment in April 2025; therefore, this alternative is not considered reasonable and has been screened out. |

| Alternatives | Description | Take forward for assessment (ie alternative is considered "reasonable") | Justification |
|---|---|---|---|
| C | Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential. | Yes | This alternative would meet the requirements of the WFD Regulations and the objectives of the RBMP. The geographical scope would be met as the plans cover the whole of Wales. This alternative would require considerable time, resource and appropriate systems to achieve delivery in the 6 year cycle. |
| D | Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential. | Yes | This alternative would meet the requirements of the WFD Regulations and the objectives of the RBMP. The geographical scope would be met as the plans cover the whole of Wales. This alternative would focus our resource on those waterbodies not achieving good ecological status or potential within the 6 year cycle. This is on the basis that the national measures & NRW's standard operations continue to prevent deterioration in those waterbodies that are already at good ecological status or potential. |
| E | Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for a "test catchment" only. | No | This alternative was considered early in the RBMP4 development. A single test catchment in each RBD would be identified and a programme of measures, including waterbody measures, would be developed and consulted on. This would give an opportunity to consult on the way we were developing waterbody measures in the test catchment and how they would be presented. Then to apply this tested approach to remaining catchments. This option was discounted as the timescales for development of the RBMPs would not allow us to meet the requirements of the WFD Regulations and the recent caselaw. |

| Alternatives | Description | Take forward for assessment (ie alternative is considered "reasonable") | Justification |
|---|---|---|---|
| Supplementary option<br><br>F | As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit. | Yes | This is a supplementary option that would meet the requirements of the WFD Regulations and the recent caselaw. It is included as a consideration to maximise the benefit of RBMPs. Collaboration in delivery would promote efficient use of public spending and focus effort and budgets where they can have most benefit. |

# Appendix 2.2: Assessment of Alternatives

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Population & Human Health**<br><br>*To promote health, wellbeing and equity* | Positive effects on population and human health from the implementation of measures to improve the water environment, including enhanced access to nature, increased opportunities for recreation and physical activity, improved mental wellbeing, and strengthened community identity, stewardship and connection to local water environments.<br><br>Improvements could be limited by the lack of resource, time and appropriate systems for delivery. | Positive effects on population and human health from the implementation of measures to improve the water environment, including enhanced access to nature, increased opportunities for recreation and physical activity, improved mental wellbeing, and strengthened community identity, stewardship and connection to local water environments.<br><br>Limited resources would be focussed on those waterbodies most in need of interventions. | Positive effects on population and human health from the implementation of measures to improve the water environment, including enhanced access to nature, increased opportunities for recreation and physical activity, improved mental wellbeing, and strengthened community identity, stewardship and connection to local water environments.<br><br>Prioritisation of resources and budgets where they can provide the most benefit and working collaboratively with other organisations and communities could enhance delivery of B3. |

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Biodiversity, Flora and Fauna**<br><br>*To halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030* | Overall, positive effects on biodiversity, flora and fauna are expected from the implementation of measures to protect and restore the water environment. This will have direct and indirect benefits on biodiversity, flora and fauna, contributing to the achievement of this objective. Improvements could be limited by the lack of resource, time and appropriate systems for delivery.<br><br>Note: Some localised significant negative impacts on biodiversity, flora and fauna are expected from abandoned mine remediation measures. Alternatives for these measures will be considered further in the HRA. | Overall, positive effects on biodiversity, flora and fauna are expected from the implementation of measures to protect and restore the water environment. This will have direct and indirect benefits on biodiversity, flora and fauna, contributing to the achievement of this objective.<br>Limited resources would be focussed on those waterbodies most in need of interventions.<br><br>Note: Some localised significant negative impacts on biodiversity, flora and fauna are expected from abandoned mine remediation measures. Alternatives for these measures will be considered further in the HRA. | Overall, positive effects on biodiversity, flora and fauna are expected from the implementation of measures to protect and restore the water environment. This will have direct and indirect benefits on biodiversity, flora and fauna, contributing to the achievement of this objective. Prioritisation of resources and budgets where they can provide the most benefit and working collaboratively with other organisations and communities could enhance delivery of B3.<br><br>Note: Some localised significant negative impacts on biodiversity, flora and fauna are expected from abandoned mine remediation measures. Alternatives for these measures will be considered further in the HRA. |

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Land use, Geology, Soil & Contaminated land**<br><br>*To protect geology and soil and promote the sustainable use and management of land* | Overall, the RBMP is expected to positively contribute towards this objective. Measures to address diffuse pollution will conserve and enhance soil health and function. Sustainable land management is promoted through the RBMP to improve the water environment. In delivering the measures the protection of sensitive geological features will be considered.<br><br>Improvements could be limited by the lack of resource, time and appropriate systems for delivery. | Overall, the RBMP is expected to positively contribute towards this objective. Measures to address diffuse pollution will conserve and enhance soil health and function. Sustainable land management is promoted through the RBMP to improve the water environment. In delivering the measures the protection of sensitive geological features will be considered.<br><br>Limited resources would be focussed on those waterbodies most in need of interventions. | Overall, the RBMP is expected to positively contribute towards this objective. Measures to address diffuse pollution will conserve and enhance soil health and function. Sustainable land management is promoted through the RBMP to improve the water environment. In delivering the measures the protection of sensitive geological features will be considered.<br><br>Prioritisation of resources and budgets where they can provide the most benefit and working collaboratively with other organisations and communities could enhance delivery of B3. |
| **Water Quality & Quantity**<br><br>*To protect and improve water quality and quantity* | The RBMP is primarily aimed at improving the water environment and so is predicted to positively contribute to this objective.<br><br>Improvements could be limited by the lack of resource, time and appropriate systems for delivery. | The RBMP is primarily aimed at improving the water environment and so is predicted to positively contribute to this objective.<br><br>Limited resources would be focussed on those waterbodies most in need of interventions | The RBMP is primarily aimed at improving the water environment and so is predicted to positively contribute to this objective.<br><br>Prioritisation of resources and budgets where they can provide the most benefit and working collaboratively with other organisations and communities could enhance delivery of B3. |

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Air**<br><br>*To protect and improve air quality* | Combustion by-products and air pollutants have pathways for effects on water bodies and any measures addressing this will benefit air quality as well as water quality. With secondary health benefits. Overall, the RBMP is predicted to have a neutral effect on air quality at a RBD scale. | Combustion by-products and air pollutants have pathways for effects on water bodies and any measures addressing this will benefit air quality as well as water quality. With secondary health benefits. Overall, the RBMP is predicted to have a neutral effect on air quality at a RBD scale. | Combustion by-products and air pollutants have pathways for effects on water bodies and any measures addressing this will benefit air quality as well as water quality. With secondary health benefits. Overall, the RBMP is predicted to have a neutral effect on air quality at a RBD scale. |
| **Materials, Infrastructure & Assets**<br><br>*To sustainably construct, maintain/operate and dispose of material assets and infrastructure* | Overall, the RBMP is expected to be neutral or positively contribute towards this objective. The RBMP will result in improvements to water management infrastructure. Physical modifications have potential for effects on infrastructure and assets.<br><br>Improvements could be limited by the lack of resource, time and appropriate systems for delivery. | Overall, the RBMP is expected to be neutral or positively contribute towards this objective. The RBMP will result in improvements to water management infrastructure. Physical modifications have potential for effects on infrastructure and assets.<br><br>Limited resources would be focussed on those waterbodies most in need of interventions | Overall, the RBMP is expected to be neutral or positively contribute towards this objective. The RBMP will result in improvements to water management infrastructure. Physical modifications have potential for effects on infrastructure and assets.<br><br>Prioritisation of resources and budgets where they can provide the most benefit. Where measures are being delivered in the same waterbody consideration should be given to working collaboratively (eg River Restoration and Water Companies) to enhance delivery of B3. |

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Cultural Heritage**<br><br>*To protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features* | The RBMP has potential to negatively effect heritage resources and landscapes where they are associated with the water environment, for example abandoned metal mines and historic weirs or bridges.<br><br>Heritage impacts will be specific to individual locational sensitivities and will require additional project level options appraisal and assessment | The RBMP has potential to negatively effect heritage resources and landscapes where they are associated with the water environment, for example abandoned metal mines and historic weirs or bridges.<br><br>Heritage impacts will be specific to individual locational sensitivities and will require additional project level options appraisal and assessment | The RBMP has potential to negatively effect heritage resources and landscapes where they are associated with the water environment, for example abandoned metal mines and historic weirs or bridges.<br><br>Heritage impacts will be specific to individual locational sensitivities and will require additional project level options appraisal and assessment. Heritage would need consideration in the cost/benefit analysis and would inform the options appraisal at a local level. |
| **Landscape & Seascape**<br><br>*To maintain and enhance landscape and seascape character* | There is likely to be an overall neutral effect on landscape and seascape from the RBMP. There could be localised opportunities to restore the natural landscape and the prevention or reduction of pollutants could also support the recovery of natural habitats and restoration of wider landscape character. The extent of delivery is unlikely to have a significant effect on landscape or seascape at a RBD scale. | There is likely to be an overall neutral effect on landscape and seascape from the RBMP. There could be localised opportunities to restore the natural landscape and the prevention or reduction of pollutants could also support the recovery of natural habitats and restoration of wider landscape character. The extent of delivery is unlikely to have a significant effect on landscape or seascape at a RBD scale. | There is likely to be an overall neutral effect on landscape and seascape from the RBMP. There could be localised opportunities to restore the natural landscape and the prevention or reduction of pollutants could also support the recovery of natural habitats and restoration of wider landscape character. The extent of delivery is unlikely to have a significant effect on landscape or seascape at a RBD scale. |

| Topic | C Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales, to maintain or achieve good ecological status or potential | D Action taken to review and update RBMP3 programme of measures, including the development of waterbody measures for all waterbodies across Wales that are not achieving good ecological status or potential | F As option B3, but prioritise delivery based on:<br>• collaborative opportunities<br>• measures that drive the most improvement / multiple benefits<br>• a robust cost benefit |
|---|---|---|---|
| **Climatic Factors**<br><br>*To limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change* | Overall the RBMP is considered likely to have a neutral effect on Climatic Factors. However, in delivering the measures, the design must take into account the changing climate and ensure they are adaptable to climate change.<br><br>The RBMP aims to improve the water environment which inherently will help it to adapt to the changing climate. | Overall the RBMP is considered likely to have a neutral effect on Climatic Factors. However, in delivering the measures, the design must take into account the changing climate and ensure they are adaptable to climate change.<br><br>The RBMP aims to improve the water environment which inherently will help it to adapt to the changing climate. | Overall the RBMP is considered likely to have a neutral effect on Climatic Factors. However, in delivering the measures, the design must take into account the changing climate and ensure they are adaptable to climate change.<br><br>The RBMP aims to improve the water environment which inherently will help it to adapt to the changing climate. |

# Appendix 3: National Measures Scoping

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| CYM18 | AMP - Catchment Management / SMNR | Pollution from waste water | Water companies develop and deliver catchment management options that improve water quality and deliver additional ecosystem services. | Water company investment (AMP) | **Scope in.** |
| CYM2 | Fisheries | Physical modifications | Deliver our statutory duties to maintain, improve and develop salmon, trout, freshwater and eel fisheries. | Strategic plans | **Scope in.** |
| CYM25 | Misconnections | Pollution from towns, cities and transport | Work in partnership to investigate misconnections. Include outreach work to increase public and community awareness and engagement. | Investigations | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM31 | AMP - water resources | Physical modifications | National Environment Programme schemes to investigate and implement measures to resolve impacts caused by water storage reservoir. | Water Company Investment (AMP) | **Scope in.** |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| CYM32 | Abstraction | Changes to natural flow and levels of water | Prioritise investigations to tackle water body failures due to abstraction. | Investigations | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM34 | INNS | Non-native invasive species | Continue to improve knowledge of species distributions and improve public awareness of new and established INNS, including using mechanisms such as online and smart phone recording systems. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM35 | INNS | Non-native invasive species | Support implementation of the Invasive Non Native Species Regulations and Marine Strategy Framework Regulations 2010 to improve the coordination of measures and create stronger controls on pathways of entry for the most damaging species, especially those arriving in estuarine and coastal water bodies. | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM36 | INNS | Non-native invasive species | Implement the updated GB strategy on invasive non-native species including working with others in a strategic and coordinated way to meet the Global Biodiversity Framework Target 6. | Strategic plans | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM4 | Fisheries | Physical modifications | Deliver the strategic outcomes of the Climate Resilient Fisheries Strategy for the sustainable management of migratory and freshwater fisheries of Wales. | Strategic plans | **Scope in.** |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| CYM41 | Forestry | Pollution from rural areas | NRW delivers a prioritised programme of measures on the Welsh Government Woodland Estate to support delivery of WFD Regulations 2017 and Protected Area objectives. | Strategic plans | **Scope in.** |
| CYM44 | Forestry | Pollution from rural areas | Welsh Government target Woodland Management incentives to deliver improvements to the water environment. | Financial incentives | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM49 | Mine waters | Pollution from abandoned mines | Mining Remediation Authority work through the Wales Metal Mine Programme to deliver abandoned metal mine remediation. | Strategic plans | **Scope in.** |
| CYM50 | FRM | Physical modifications | In waterbodies designated as heavily modified due to flood and coastal protection, mitigation for NRW owned assets and activities will be reviewed and delivered on a prioritised basis. | Strategic plans | **Scope in.** |
| CYM51 | Forestry | Pollution from rural areas | Continue to improve awareness and implementation of the UK Forestry Standard Guidelines (including “Forests and Water” Guidelines), and Practice Guides (including “Managing forests in acid sensitive water catchments”), across the forest sector. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM60 | INNS | Non-native invasive species | Promote biosecurity initiatives, and raise awareness of impacts of INNS across marine, terrestrial and freshwater habitats and species. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| CYM61 | INNS | Non-native invasive species | Ensure that risks posed by INNS are managed by integrating biosecurity best practice into appropriate regulatory regimes. | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment. This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM62 | INNS | Non-native invasive species | Support research into effective control and eradication methods for INNS (marine, terrestrial and freshwater).- | Research or demonstration projects or pilots | Scope out. In itself there will be no pathways for adverse effects on the environment. This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM69 | Forestry | Pollution from rural areas | Investigation to identify where European sites downstream of forestry may benefit from improvements (i.e. riparian vegetation improvements, forest drain realignment and roadside drain disconnection from watercourses) to meet current UKFS standards, in order to minimise any risk of diffuse pollution and acidification. | Investigations | Scope out. In itself there will be no pathways for adverse effects on the environment. This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM73 | NPAP | Changes to natural flow and levels of water | Support the delivery of the Welsh Government National Peatland Restoration Programme. | Strategic plans | **Scope in.** |
| CYM74 | European Sites | Pollution from rural areas | Align statutory duties under permitting and planning legislation to support a holistic approach to nitrogen deposition in Wales, integrating both air and water quality impacts and engage with external stakeholders to deliver a natural resources management approach | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment. This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| CYM82 | Chemicals | Pollution from towns, cities and transport | Control the release of chemicals, to the environment, at source i.e. production and use, through the implementation of domestic Legislation and International agreements. | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment. This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| DE0014 | Mine waters | Pollution from abandoned mines | Mine Remediation Authority mine water preventative and remediation programme. | Strategic plans | **Scope in.** |
| DrWPA0488 | DrWPA | Pollution from rural areas | Monitor and investigate the source of pollution in Drinking Water Protected Areas. | Water company investment (AMP) | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WW0010 | Sustainable drainage | Pollution from towns, cities and transport | Raise awareness of the benefits and successes of managing surface water run-off through Sustainable Drainage Systems (SuDS) and rainwater harvesting in order to mitigate flooding and pollution. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WW0031 | Mine waters | Pollution from abandoned mines | NRW work through the Wales Metal Mine programme to investigate the impacts of abandoned metal mines. | Strategic plans | **Scope in.** |
| WW0212 | Sustainable drainage | Pollution from waste water | Promote the use of Sustainable Drainage Systems (SuDS) and provide guidance for integrating development and water planning. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WW0216 | Sustainable drainage | Pollution from towns, cities and transport | Advise small and medium sized businesses on pollution prevention. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL02 | River restoration | Physical modifications | A programme to develop, support, promote and deliver appropriate river restoration options to deliver multiple benefits at a number of high priority, river catchments identified under the integrated River Restoration Programme for Wales. | Strategic plans | **Scope in.** |
| WAL03 | Opportunity catchments | All | NRW and its partners deliver improvements for water-in-'Opportunity Catchments' using the Sustainable Management of Natural Resources (SMNR) principles. | Partnerships | **Scope in.** |
| WAL05 | DrWPA | Pollution from rural areas | At risk DrWPAs (and all upstream water bodies) have been taken forward as Safeguard Zones for funded Asset Management Plan (AMP) Investigations to assess the sources of the raw water failure and to identify viable catchment solutions. Where catchment solutions are found to be possible, and stakeholder agreement can be assured, improvement measures will be delivered through the AMP. | Water company investment (AMP) | **Scope in.** |
| WAL06 | Shellfish Water Protected Areas | Pollution from waste water | Deliver measures in AMP8 (Menai Strait and Burry Inlet SWPA's) to endeavour to achieve the Shellfish Water Protected Area objective. Plans are also in place to continue to gain a better understanding of improvements required to achieve Shellfish Water Protected Area objective in the wider hydrological catchments. | Water company investment (AMP) | **Scope in.** |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL08 | European Sites | All | Natural Resources Wales reviews its Core Management Plans for European sites to ensure that the conservation objectives reflect the latest knowledge. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL10 | AMP - Waste Water | Pollution from waste water | The Water Industry will deliver a programme of investigations and improvements to sewage discharges (both continuous and intermittent) in order to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP. | Water company investment (AMP) | **Scope in.** |
| WAL11 | Stakeholders | All | Working with other organisations to protect and improve the water environment through NRWs Forums, in particular the Wales Water Management Forum. | Partnerships | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL12 | Agriculture | Pollution from rural areas | Ensure compliance with the Water Resources (Control of Agricultural Pollution)(Wales) Regulations 2021 in Wales including: nutrient management planning; sustainable fertiliser applications linked to the requirements of the crop; protection of water from pollution related to when, where and how fertilisers are spread; manure storage standards. | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL17 | FRM | Physical modifications | Support Wales to have a coastline that is sustainable and resilient to climate change. Plan for coastal adaptation in line with Shoreline Management Plan policy for coastal defence management. Enable the National Habitat Creation Programme to deliver compensatory intertidal habitat where required. Integrate, where appropriate, nature-based solutions into the delivery of coastal defence schemes. | Strategic plans | **Scope in.** |
| WAL19 | Amp - Fish Passage | Physical modifications | Water Companies will address the impacts of water company assets on fish passage causing failure of WFD Regulations 2017 objectives in accordance with objectives in AMP. This will address structures that act as barriers to fish migration which are associated with other aspects of water company operations, such as trunk sewers and mains pipes located in river channels, and associated concrete sills and structures. In some cases, there may be uncertainty over asset ownership which will need to be resolved. Solutions may often be implemented through working in partnership with other sectors. | Water company investment (AMP) | **Scope in.** |
| WAL20 | European Sites | All | Deliver actions within the annual Marine Protected Area Network Management Action Plan linked to the MPA Network Management Frameworks for Wales. These actions include reviewing impacts of unregulated activities, improving biosecurity for marine invasive species and improving condition of features within-European Marine sites. | Strategic plans | **Scope in.** |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL22 | Biodiversity & Nature Emergency | All | Deliver biodiversity net benefit and restore ecosystem resilience at a catchment scale by creating, restoring and connecting semi-natural habitats, freshwater and marine systems, achieving bigger, better and more connected ecosystems. Supporting the recovery of species and habitats, improve ecological connectivity, and strengthen catchment resilience to climate change, pollution and hydrological extremes, contributing to the objectives of Sustainable Management of Natural Resources (SMNR), the Environment (Principles, Governance and Biodiversity Targets) (Wales) Act, and the Wales Nature Recovery Action Plan. | Strategic plans | Scope out. |
| WAL23 | AMP - Chemicals and EQSD | Pollution from waste water | Water Companies will deliver a programme of investigations and improvements to deal with chemicals to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP. | Water company investment (AMP) | **Scope in.** |
| WAL24 | UWWTR Sensitive Areas | Pollution from waste water | Implement the Urban Wastewater Treatment (England and Wales) Regulations 1994 sensitive areas review | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL25 | DWMP | Pollution from waste water | Water Companies will deliver Drainage and Waste Water Management Plans (DWMPs). | Strategic plans | Scope out. DWWMP's underwent SEA and HRA |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL29 | Water Efficiency | Changes to natural flow and levels of water | Collaborative working with Wales Water Efficiency Group chaired by Waterwise to identify water efficiency evidence gaps, prioritise and co-ordinate research, engagement, initiatives in Wales. | Research or demonstration projects or pilots | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL30 | Agriculture | Pollution from rural areas | Welsh Government and Natural Resources Wales will work with the sectors to develop and deliver a programme of voluntary measures to drive improvements to diffuse pollution in order to support delivery of WFD Regulations 2017and Protected Area objectives. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL31 | Agriculture | Pollution from rural areas | Welsh Government and Natural Resources Wales will develop embed and deliver a programme of advice and guidance to drive improvements to diffuse pollution in order to support delivery of WFD Regulations 2017 and Protected Area objectives. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL32 | Agriculture | Pollution from rural areas | Welsh Government and regulators will develop and deliver an integrated programme of regulation to drive improvements in order to support delivery of WFD Regulations 2017 and Protected Area objectives. | Regulation | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| WAL33 | Agriculture | Pollution from rural areas | Welsh Government and Natural Resources Wales will work with innovation funding to develop and deliver a programme of innovation to drive improvements to diffuse pollution in order to support delivery of WFD Regulations 2017 and Protected Area objectives. | Research or demonstration projects or pilots | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| WAL34 | Agriculture | Pollution from rural areas | Welsh Government and Natural Resources Wales and others will embed checks and balances and deliver a programme of incentives to drive improvements to diffuse pollution in order to support delivery of WFD Regulations 2017 and Protected Area objectives. | Financial incentives | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| NEW01 | Bathing waters protected areas | Pollution from waste water | Investigate, identify and deliver a range of catchment measures to achieve and maintain the bathing water standard in all designated bathing waters. | Water company investment (AMP) | **Scope in.** |
| NEW02 | Diffuse Pollution | Pollution from towns, cities and transport | Support Local Authorities implement Part 2A Contaminated Land regime through provision of specialist advice on pollution of controlled waters. | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| NEW03 | Diffuse Pollution | Pollution from towns, cities and transport | Support voluntary remediation of land affected by contamination through NRWs Discretionary Planning Advice Service (DPAS). | General education or advice campaign or scheme | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |
| NEW04 | European Sites | All | Marine Nature Networks Programme delivering investigations and management actions within the MPA network. | Strategic plans | **Scope in.** |
| NEW05 | Water Efficiency | Changes to natural flow and levels of water | Continue Multi-Sector demands work to identify where water efficiency measures can be best applied. | Investigations | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

| Draft C4 Measure ID | Main Driver | SWMI Header | Draft C4 PoM | Delivery Mechanism | SEA Scoping & justification |
|---|---|---|---|---|---|
| NEW06 | European Sites | All | Delivery of an integrated approach through nutrient management plans for SAC River catchments and catchment nutrient recovery plans for prioritised Marine SAC's. | Strategic plans | Scope out. In itself there will be no pathways for adverse effects on the environment.<br>This work will have beneficial effects for the water environment that the SEA should recognise at a strategic scale. |

# Appendix 4: Waterbody Measures Scoping Western Wales

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| IN1.0 | Identify the cause of the failure or deterioration to determine the RNAGs/RfDs | N/A | OUT – Investigation only | n/a | 166 |
| IN2.1 | Identify alternative mitigation for impacts on fish migration caused by water storage impoundments | Physical Modifications | OUT – Investigation only | n/a | 5 |
| IN2.2 | Identify actions needed to mitigate impacts caused by an insufficient flow regime (baseline flow quantity or flow variability) downstream of water storage impoundments | Physical Modifications | OUT – Investigation only | n/a | 24 |
| IN2.3 | Identify actions needed to mitigate impacts caused by insufficient sediment supply and transport downstream of water storage impoundments. | Physical Modifications | OUT – Investigation only | n/a | 25 |
| IN2.4 | Identify actions needed to mitigate impacts on river water temperature and dissolved oxygen downstream of water storage impoundments | Physical Modifications | OUT – Investigation only | n/a | 15 |
| IN2.6 | Identify actions needed to resolve impacts caused by hard / engineered protection of river and tidal channel banks | Physical Modifications | OUT – Investigation only | n/a | 28 |
| IN2.7 | Identify actions needed to resolve impacts caused by barriers to fish migration and natural continuity in river and tidal channels (e.g., dams, weirs, culverts, sluices, tidal gates). | Physical Modifications | OUT – Investigation only | n/a | 28 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| IN2.8.1 | Identify actions needed to resolve impacts caused by straightening and or re-alignment of river and tidal channels. | Physical Modifications | OUT – Investigation only | n/a | 26 |
| IN2.8.2 | Identify actions needed to resolve impacts caused by artificial modification of river and or tidal channel beds. | Physical Modifications | OUT – Investigation only | n/a | 26 |
| IN2.9 | Identify actions needed to resolve impacts caused by hard / engineered flood banks and walls (e.g., embankments, artificial high ground). | Physical Modifications | OUT – Investigation only | n/a | 28 |
| IN2.10 | Identify actions needed to resolve impacts caused by water level management for land drainage or flood protection | Physical Modifications | OUT – Investigation only | n/a | 14 |
| IN2.11 | Identify actions needed to resolve impacts caused by tidal channel reclamation | Physical Modifications | OUT – Investigation only | n/a | 4 |
| IN3.0 | Identify the cause of the SAC compliance failure to determine the measures required | N/A | OUT – Investigation only | n/a | 16 |
| IN3.1 | Further investigation needed to improve confidence/evidence in the cause of the SAC compliance failure to determine the measures required | N/A | OUT – Investigation only | n/a | 4 |
| IN4.0 | Improve confidence / evidence in failure | N/A | OUT – Investigation only | n/a | 13 |
| RA1.0 | Ensure regulatory compliance with the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021, the Water Resources Act 1991, the Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016, The Sludge (Use in Agriculture) Regulations 1989, and Environmental Permitting (England and Wales) Regulations 2016 and 'sheep dip:groundwater protection code' | Pollution from rural areas | OUT – Regulatory compliance | n/a | 103 |
| RA1.1 | Adhere to the Welsh Government Code of Good Agricultural Practice and other relevant guidance on reducing ammonia losses. | Pollution from rural areas | OUT – Good practice | n/a | 103 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| RA1.2 | Improve land management to ensure that all nutrient and fertiliser applications match soil and crop requirements and reduce soil erosion to minimise nutrient and sediment losses from land. | Pollution from rural areas | IN | n/a | 103 |
| RA1.3 | Ensure that soil is managed appropriately preventing and reducing compaction and subsequent erosion caused by vehicle movements and/or livestock poaching/overgrazing. | Pollution from rural areas | OUT – Good practice | n/a | 103 |
| RA1.4 | Ensure chemical products are applied according to manufacturers instructions and any waste generated is disposed of appropriately. | Pollution from rural areas | OUT – Good practice | n/a | 104 |
| RA1.5 | Ensure the provision and adequate maintenance of farm infrastructure, including track/ private rural roads to reduce pollution. | Pollution from rural areas | OUT – Good practice | n/a | 103 |
| RA1.6 | Where required remove/remediate sediment from watercourses and treat contaminated water. | Pollution from rural areas | IN | WAL12 (Scoped out of national measures assessment) but WM considered under Table 3. | 1 |
| RA1.7 | Reduce inputs at source | Pollution from rural areas | OUT – Good practice | n/a | 3 |
| RA1.8 | Ensure that management complies with the UK Forestry Standard and improve awareness and implementation of UK Forestry Standard and associated practice guides across the forestry sector. | Pollution from rural areas | OUT – Good practice | n/a | 15 |
| RA1.9 | Remediate polluted water and or soil/sediment where necessary | Pollution from rural areas | IN | WAL12 (Scoped out of national measures assessment) but WM considered under Table 3. | 6 |
| RA1.10 | Secure compliance through regulation and/or advice and guidance | Pollution from rural areas | OUT – Regulatory compliance | n/a | 6 |
| RA1.11 | National chemical measure(s) apply | Pollution from rural areas | OUT – Regulatory compliance | n/a | 1 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| RA2.0 | Reduce nutrient and/or organic loading within the waterbody to restore SAC towards favourable condition | Pollution from rural areas | OUT – Good practice | n/a | 20 |
| AM1.0 | Control and remediate point and/or diffuse discharges from abandoned metal mines | Pollution from abandoned mines | IN | CYM49 (Table 4) | 39 |
| AM1.1 | Control and remediate point and/or diffuse discharges from abandoned coal mines | Pollution from abandoned mines | IN | DE0014 (Table 4) | 2 |
| TC1.0 | Secure compliance through regulatory controls on emissions with Environmental Permitting (England and Wales) Regulations 2016 | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 22 |
| TC1.1 | Secure compliance through regulatory controls on emissions with Environment (Air Quality and Soundscapes)(Wales) Act 2024 and Environment Act 1995. | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 21 |
| TC1.2 | Maintain and improve sewerage drainage system to rectify misconnections and leaks. | Pollution from towns, cities & transport | IN | No national measures align with this waterbody measures. WM assessed under Table 11. | 3 |
| TC1.3 | Where appropriate remove/remediate sediment from watercourses and treat contaminated water. | Pollution from towns, cities & transport | IN | No national measures align with this waterbody measures. WM assessed under Table 11. | 2 |
| TC1.4 | Reduce Inputs at source | Pollution from towns, cities & transport | OUT – Good practice | n/a | 2 |
| TC1.5 | Improve the drainage outfalls from the transport network and urban environment to reduce levels of contaminants. | Pollution from towns, cities & transport | IN | No national measures align with this waterbody measures. WM assessed under Table 11. | 2 |
| TC1.6 | Maintain and improve sewerage drainage system to rectify misconnections and leaks. | Pollution from towns, cities & transport | IN | No national measures align with this waterbody measures. WM assessed under Table 11. | 6 |
| TC1.7 | Secure compliance through regulatory controls | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 3 |
| TC1.8 | Deliver pollution prevention advice and guidance | Pollution from towns, cities & transport | OUT – Good practice | n/a | 3 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| TC1.9 | Review and where appropriate vary and/or enforce existing Discharge Permits. | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 9 |
| TC1.10 | Secure compliance through regulatory controls | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 9 |
| TC1.11 | Remediation of landfill and extraction/treatment of leachate. | Pollution from towns, cities & transport | IN | No national measures align with this waterbody measures. WM assessed under Table 10. | 5 |
| TC1.12 | National chemical measure(s) apply | Pollution from towns, cities & transport | OUT – Regulatory compliance | n/a | 27 |
| WW1.0 | Secure compliance through regulatory controls | Pollution from waste water | OUT – Regulatory compliance | n/a | 78 |
| WW1.1 | Where required review/amend permits to reduce impact of discharges | Pollution from waste water | OUT – Regulatory compliance | n/a | 73 |
| WW1.3 | Ensure septic tanks are compliant with regulatory requirements, follow advice and guidance on maintenance | Pollution from waste water | OUT – Regulatory compliance | n/a | 37 |
| WW1.4 | Deliver improved discharge quality/reduce spills from all intermittent point source discharges e.g. CSOs, emergency overflows etc. | Pollution from waste water | IN | WAL10 (Table 9) | 13 |
| WW1.5 | National chemical measure(s) apply | Pollution from waste water | IN | WAL23 (Table 9) | 16 |
| WW2.0 | Deliver action(s) identified in the NEP / AMP to restore SAC towards favourable condition | Pollution from waste water | IN | WAL10 (Table 9) | 16 |
| PM2 | Improve insufficient flow regime (baseline flow quantity or flow variability) downstream of water storage impoundments | Physical modifications | IN | CYM31 (Table 7) | 11 |
| PM3 | Improve and or maintain sediment supply and transport downstream of water storage impoundments | Physical modifications | IN | CYM31 (Table 7) | 6 |
| PM6 | Resolve impacts caused by hard / engineered protection of river and tidal channel banks (e.g., steel piling, concrete, gabions). | Physical modifications | IN | CYM50 (Table 1) | 4 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| PM7 | Resolve impacts caused by barriers to fish migration and natural continuity in river and tidal channels (e.g., dams, weirs, culverts, sluices, tidal gates). | Physical modifications | IN | CYM50 (Table 1) | 28 |
| PM8.1 | Resolve impacts caused by straightening and or re-alignment of river and tidal channels. | Physical modifications | IN | CYM50 (Table 1) | 4 |
| PM8.2 | Resolve impacts caused by artificial modification of river and or tidal channel beds. | Physical modifications | IN | CYM50 (Table 1) | 5 |
| PM9 | Resolve impacts caused by hard / engineered out-of bank flood walls, embankments and high ground | Physical modifications | IN | CYM50 (Table 1) | 4 |
| PM10 | Resolve impacts caused by operational water level management for land drainage or flood protection | Physical modifications | IN | CYM50 (Table 1) | 4 |
| PM12 | Resolve impacts of operational and maintenance activities in river and tidal channels managed for flood and coast protection | Physical modifications | IN | CYM50 (Table 1) | 35 |
| FL1.0 | Review and where appropriate amend abstraction license / permit | Flow | OUT – Regulatory compliance | n/a | 2 |
| NA1.0 | no measure required | Natural | OUT – no measure applied | n/a | 12 |
| NA1.1 | Assess the need for a more appropriate standard | Natural | OUT - Investigation | n/a | 4 |
| NA1.2 | Further investigation needed to improve confidence/evidence | Natural | OUT - Investigation | n/a | 2 |
| NA1.3 | Consider nature based solutions for increased ecosystem resilience | Natural | IN | NEW05 (Table 1) | 6 |
| OT1.0 | No Measure required | Other pressures | OUT – no measure applied | n/a | 9 |
| OT1.1 | Secure compliance through regulatory controls | Other pressures | OUT – Regulatory compliance | n/a | 1 |
| OT1.2 | Implement relevant NASCO Conservation Commitments and the Salmon and Sea trout Plan of Action measures. | Other pressures | IN | CYM4 (Table 1) | 9 |
| SU1.0 | No measure required | Suspect data | OUT | n/a | 7 |

| Waterbody Measure ID | Waterbody Measure Description | Significant Water Management Issue | SEA scope in/out | National Measure / National Measure Assessment Matrix | No. of WB's WBM applied to in RBD (566 WB in RBD) |
|---|---|---|---|---|---|
| SU1.1 | Review sample point(s) as not considered representative | Suspect data | OUT | n/a | 6 |
| SU1.2 | Reclassify using revised data | Suspect data | OUT | n/a | 10 |

# Appendix 5: Assessment of Significant Environmental Effects of the Draft Western Wales Programme of Measures

## GROUP 1: National Measures Assessment – Strategic Plans – Physical Modifications

**National Measures:**

- **CYM2** Deliver our statutory duties to maintain, improve and develop salmon, trout, freshwater and eel fisheries
- **CYM4** Deliver the strategic outcomes of the Climate Resilient Fisheries Strategy for the sustainable management of migratory and freshwater fisheries of Wales.
- **CYM50** In waterbodies designated as heavily modified due to flood and coastal protection, mitigation for NRW owned assets and activities will be reviewed and delivered on a prioritised basis.
- **WAL02** A programme to develop, support, promote and deliver appropriate river restoration options to deliver multiple benefits at a number of high-priority river catchments identified under the integrated River Restoration Programme for Wales
- **WAL17** Support Wales to have a coastline that is sustainable and resilient to climate change. Plan for coastal adaptation in line with Shoreline Management Plan policy for coastal defence management. Enable the National Habitat Creation Programme to deliver compensatory intertidal habitat where required. Integrate, where appropriate, nature-based solutions into the delivery of coastal defence schemes.

## Waterbody Measures:

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a % of 566 waterbodies in RBD) | No. of Waterbodies in Wales Measure applied to (also as a % of 933 waterbodies in Wales) |
|---|---|---|---|
| PM7 | Resolve impacts caused by barriers to fish migration and natural continuity in river and tidal channels (e.g., dams, weirs, culverts, sluices, tidal gates). | **28 (4.9%)** | **70 (7.5%)** |
| PM12 | Resolve impacts of operational and maintenance activities in river and tidal channels managed for flood and coast protection | **35 (6.2%)** | **58 (6.2%)** |
| PM6 | Resolve impacts caused by hard / engineered protection of river and tidal channel banks (e.g., steel piling, concrete, gabions). | **4 (0.7%)** | **13 (1.4%)** |
| PM8.1 | Resolve impacts caused by straightening and or re-alignment of river and tidal channels. | **4 (0.7%)** | **15 (1.6%)** |
| PM8.2 | Resolve impacts caused by artificial modification of river and or tidal channel beds. | **5 (0.9%)** | **16 (1.7%)** |
| PM9 | Resolve impacts caused by hard / engineered out of bank flood walls, embankments and high ground | **4 (0.7%)** | **13 (1.4%)** |
| PM10 | Resolve impacts caused by operational water level management for land drainage or flood protection | **4 (0.7%)** | **8 (0.9%)** |
| NA1.3 | Consider nature-based solutions for increased ecosystem resilience | **6 (1.1%)** | **10 (1.1%)** |
| OT1.2 | Implement relevant NASCO Conservation Commitments and the Salmon and Sea trout Plan of Action measures. | **9 (1.6%)** | **11 (1.2%)** |

## 1.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

CYM2 and CYM4 relate to fisheries and fish passage.  It is unlikely these measures will have a negative effect on population and health due to the nature of their aims and likely scale of works they promote.

While the primary purpose of CYM2 and CYM4 is ecological improvement, enhanced fisheries and fish passage can contribute positively to population health and wellbeing through supporting recreational angling, outdoor activity, cultural connections with river environments and improvements in environmental quality. Benefits are likely to be experienced locally and cumulatively across the RBD.

CYM50 relates to habitat improvements and mitigation associated with existing physical modifications.  Although these measures are primarily ecological in nature, improvements to the quality, appearance and functioning of local water environments can contribute positively to community wellbeing, recreation and people's connection with nature.

WAL17 promotes the adaptation and resilience of coastal areas to climate change and associated pressures such as extreme weather, coastal erosion and sea level rise. Through sustainable coastal management, habitat creation and nature-based solutions, the measure can help reduce community vulnerability to climate-related hazards, particularly for vulnerable populations and communities most exposed to these risks. This offers benefits by reducing the frequency and severity of impacts, protecting homes, infrastructure and community facilities, shortening recovery times, and reducing anxiety associated with climate change. These benefits are likely to be particularly important in Western Wales given its extensive coastline, coastal communities and tourism assets. The measure may also help reduce health and wellbeing inequalities through enhanced environmental quality, improved access to blue and green spaces, reduced flood and coastal risk, and strengthened community resilience, consistent with the findings of the accompanying HIA.

River restoration associated with WAL02 provides opportunity for engagement and collaboration with local communities and stakeholders in the identified high-priority river catchments to focus the benefits on issues most appropriate to that local population. An inclusive approach can support community stewardship and empowerment, enabling local communities to feel listened to and more engaged with their local environment. Restoration schemes should look to avoid negative impacts and aim to provide multiple benefits including for example increased access to safe, quality green and blue space provision.

The accompanying Health Impact Assessment (HIA) identifies potential positive health and wellbeing effects associated with river restoration and fisheries improvements, including enhanced access to nature, increased opportunities for recreation and physical activity, improved mental wellbeing, and strengthened community identity, stewardship and connection to local water environments.

Implementation of projects can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87, including consideration of population and human health, will provide an opportunity to understand community characteristics and social vulnerabilities, and to identify and assess the potential direct and indirect impacts of specific schemes on communities and places. This will help ensure any negative impacts are avoided, reduced or mitigated wherever possible.
- Community socio-economic status/drivers of deprivation should be considered.
- Draw on relevant evidence, from the accompanying HIA, local Well-being Plans and local public health expertise where appropriate, to enhance and protect the determinants of health e.g. through improved physical environment (built and natural environment) improvements and access to green corridors, urban greenspaces and recreational opportunities to benefit physical and mental well-being.
- Consider opportunities to improve equitable access to green and blue spaces, particularly for older people, disabled people and other vulnerable groups who may experience barriers to accessing the natural environment.
- Work specifically associated with WAL02 and WAL17 should include an element of suitable stakeholder and local community engagement and collaboration, with an overall aim to deliver multiple benefits focussed on issues most appropriate to that local population and area. This may include incorporating improvements to green and blue space conditions and access, active travel health opportunities, and environmental resilience to reduce impacts on local communities from extreme weather conditions as a result of climate change; however, this should be driven by local community requirements. These measures provide potential opportunity for empowerment of local communities in the high priority river catchments and engagement/education. Opportunities for local skills development, employment, recreation and community engagement should be explored where appropriate. Welsh language, cultural heritage and interpretation should be incorporated where relevant to maximise local participation and sense of place.

### Significance of Effect: **Positive**

## 1.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

## Description of Effect

WAL17 will contribute to achievement of this SEA objective through supporting the long-term protection and restoration of coastal physical processes and habitats with a view to adaptation to climate change and sea level rise. This measure supports coastal adaptation in line with Shoreline Management Plan (SMP) Policy and associated delivery of the National Habitat Creation Programme (NHCP) to ensure coastal habitats are not negatively affected by the construction of coastal schemes nor the coastal squeeze that occurs as a result of them. The overall impact associated with this national measure is neutral as delivery of habitat under NHCP is required as compensation under the HRA derogations of the SMP's. Where appropriate, nature-based solutions should be incorporated into the delivery of coastal FRM schemes for long-term benefit; however, construction of these projects may still cause temporary negative effects to sites, habitats and species. This measure is aimed at ensuring that where hard-engineered defences are still required (where SMP policy is Hold the Line due to existing communities and assets), and after the required EIA and HRA processes have sought to avoid, reduce and mitigate effects, there is a mechanism for compensatory habitat to be delivered on a strategic basis.

CYM50 relates to delivery, on a prioritised basis, of habitat improvements and mitigation associated with existing physical modifications as a result of FRM assets and activities. The focus is on restoration of hydromorphological processes which will benefit physical habitat and associated species. The achievement of the positive effect will be dependent upon the level of delivery. Whilst these may have some benefit through overall improvement to the local environment, engineered schemes to deliver mitigation could have the potential for negative effects on biodiversity depending on the nature, scale and location of the activities proposed.

CYM2 and CYM4 include restoration of degraded rivers, removal of man-made barriers, improvement of groundwater and soil infiltration and increase in shading of rivers. They aim to directly invest in and contribute to fish passage and habitat improvements to maximise habitat connectivity. Overall, these measures will have a positive effect on fish and fluvial /estuarine ecological condition of waterbodies more broadly. However, temporary negative effects can occur at a project level on biodiversity as a result of construction, remediation or removal of infrastructure. The scale of delivery is indicated by the application of PM7 to almost 5% of waterbodies in the RBD.

River restoration associated with WAL02 provides opportunity for nature-based solutions to be introduced and for significant Net Benefit for Biodiversity (NBB). Appropriate restoration should also provide protection and restoration of natural riverine processes with long-term benefit for habitats and species present. During restoration projects however, there is likely to be some temporary negative effects to biodiversity from construction activities.

These measures overall are aimed at contributing to the achievement of this SEA objective, however, there is potential for temporary negative effects to arise as a result of any construction activities. With delivery of the proposed mitigation, it is anticipated that these temporary and local negative effects can be avoided or minimised resulting in these measures having a positive effect at a RBD scale. The significance of this positive effect will be dependent upon the scale of delivery.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any temporary negative effects as a result of construction or remediation activities are avoided, reduced or mitigated.
- Best practice is applied through project level assessment to deliver wider benefits including delivery of NBB (using the DECCA framework) and treatment of INNs.
- All projects delivering work on the ground will undergo Habitat Regulations Assessment, where there are pathways for effects on European sites.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques, in line with Section 6 - Biodiversity and resilience of ecosystems duty of the Environment Act.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.
- Where multiple benefits are being delivered through a project (e.g. measures to increase recreational use) design should be sensitive to biodiversity to minimise conflict and avoid long-term habitat degradation, disturbance or loss and negative impacts to sensitive species present (e.g. consideration of appropriate lighting, minimising habitat fragmentation, retaining buffers where appropriate etc.).
- Whilst NHCP (WAL17) is closely managed and reported through FRM Section 18 reporting, it is recommended that delivery of benefits under CYM50 is also captured and reported.

### Significance of Effect: **Positive**

## 1.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

CYM2 and CYM4 are unlikely to have significant positive or negative effects on land use, geology, soil or contaminated land.

WAL17 which supports coastal adaptation plans to address risk associated with climate change is likely to result in positive effects on the sustainable use and management of land; however negative effects could also arise depending on land use, geology, soil, and contaminated land in the area – as a potential result of change of land use and land management with resulting effects on soil and geomorphology.

Measures relating to CYM50 and WAL02 offer opportunity for nature-based solutions within catchments with potential positive effects on this topic, including measures to reduce run-off which in turn will conserve and enhance soil health and function as well as having positive effects relating to diffuse pollution. However, if changes to land use and land management arise as a result of projects this may have a negative effect, depending on land use, geology, soil and contaminated land in the area. Measures may involve riparian tree planting to provide shade and reduce erosion of riverbanks. This will increase canopy cover, but it is unlikely to be at a significant level.

Riparian improvements, tree planting and NBS will contribute to this SEA objective. However, negative effects are possible if land use change or high value agricultural land is affected by Coastal Adaptation (WAL17). Environmental assessment and stakeholder engagement at a project level will mitigate this risk so that on balance, measures will result in a neutral effect on this SEA objective

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN87 will ensure any negative effects are avoided, reduced or mitigated.
- Geologically important sites should be protected during works and increased opportunities for education considered.
- Potential to introduce measures to reduce run-off and soil degradation/diffuse pollution (e.g. riparian habitat planting and natural flood management techniques) should be explored as part of the programme of measures.
- If contaminated land is present, options should be explored at the project level for potential remediation solutions to bring land back into use.
- Liaison with local stakeholders could offer opportunity to link land management solutions to other catchment management schemes such as agri-environment and woodland management which could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution.

### Significance of Effect: **Neutral**

## 1.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

## Description of Effect

CYM2 and CYM4 promote sustainable management of fisheries with benefit for ecosystems and recreational activities. Delivery of these measures will result in positive effects on the ecological status of waterbodies.

CYM50 will provide mitigation for NRW owned assets and activities on a prioritised basis. Where nature-based solutions can be incorporated into design there are potential benefits associated with water quality and flood resilience as a result of the restoration of natural fluvial and ecosystem processes.

WAL02 supports a programme to develop, support, promote and deliver appropriate river restoration options to deliver multiple benefits at a number of high-priority river catchments identified under the integrated River Restoration Programme for Wales. This offers substantial opportunity for habitat creation and restoration of fluvial and ecosystem process resulting in multiple benefits to water quality and quantity such as possible reduction of surface run off and diffuse pollution, increased flood resilience and adaptability of ecosystems and catchments to climate change.

WAL 17 supports coastal adaptation in line with Shoreline Management Plan policy and the NHCP enables delivery of compensatory intertidal habitat to allow the continued flood risk management of coastal communities. There is potential for localised negative effects on some freshwater river systems where “managed realignment” or “no active intervention” policies are implemented. This could impact on water resource (e.g. for abstraction). This would be assessed at a project level. The significance of this effect is not considered to be significant at a RBD scale.

The presence of FRM assets can however also affect the WFD status of coastal and estuarine waterbodies. WAL17 could seek to mitigate for this as part of the coastal adaptation and Shoreline Management Plan policy for coastal defence management. The measure also aims to deliver compensatory intertidal habitat where required with additional benefits for both water quality and resilience to climate change events (flood risk and sea level rises).

It is anticipated that design for projects associated with these measures would seek to restore natural processes and deliver nature-based solutions wherever possible.

## Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any temporary negative effects as a result of construction or remediation activities are avoided, reduced or mitigated.

- Potential opportunity to incorporate measures to reduce run-off and to restore natural ecological and fluvial processes to reduce flood risk.

- Opportunities for long-term protection of habitats.

- Early design input to minimise use of hard engineering in favour of nature-based solutions.
- Seek to maximise opportunity to work with natural catchment and coastal processes for projects by implementation of innovative alternatives to traditional grey engineered solutions.

### Significance of Effect: **Significant Positive**

## 1.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

Whilst there could be localised air quality benefits and small changes to air pollutant pathways into waterbodies as a result of WAL02 and WAL17 (through restoration of river corridors and their natural forms/habitats as well as provision of compensatory inter-tidal habitats as part of coastal adaptation plans), These are unlikely to be significant for air quality at an RBD scale or to contribute substantially to achieving this SEA objective, although there may be some indirect benefits through improved ecosystem resilience in catchments affected by atmospheric pollutant deposition.

During construction work associated with measures WAL02, WAL17, CYM2, CYM4 and CYM50 it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through standard environment management practice on-site.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any temporary negative effects as a result of construction or remediation activities are avoided, reduced or mitigated.

### Significance of Effect: **Neutral**

## 1.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

## Description of Effect

CYM2 and CYM4 look to build resilience for Welsh fisheries assets with direct benefit to this SEA objective.

CYM50 looks to identify appropriate mitigation associated with FRM assets (and activities) in heavily modified waterbodies. This will consider existing hard engineering solutions for flood and coastal protection, contributing to this SEA objective, where mitigation can be built into local areas allowing the continued management of flood risk to the local community and assets. The continuing management of flood risk to existing material assets and infrastructure has the potential to significantly benefit local communities. There are also additional potential opportunities for assets to deliver multiple benefits (e.g. increased access for local communities to green and blue corridors).

WAL 17 supports coastal adaptation in line with Shoreline Management Plan policy and the NHCP enables delivery of compensatory intertidal habitat to allow the continued flood risk management of coastal communities including the management of risk to existing important assets and infrastructure.

River restoration options as part of measure WAL02 would aim to remediate physical modifications from historic assets and infrastructure such as artificial straightening of rivers and streams, culverts, bridges, etc. Project level appraisal would determine whether such assets are still required and if so, restoration should maintain that function.

Construction work for all measures would require material usage and produce waste. It is anticipated this would be managed efficiently through design and options appraisal by use of carbon calculator and consideration of alternatives. Locally sourced and sustainable materials must be used wherever possible.

There may also be disruption to material assets during construction periods (e.g. local businesses and infrastructure such as highways or rail) that would need to be managed appropriately at a project level.

## Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices.  Options appraisals and design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.
- Projects should engage with local stakeholders early in scheme development to minimise disruption to existing assets, businesses and infrastructure through appropriate design and programming.
- Project level environmental assessment in line with OGN 87 and production/implementation of Environmental Action Plans should fully consider materials use and disposal as well as avoidance, reduction and/or mitigation for any anticipated impacts to local assets and infrastructure.
- Opportunities to enhance assets to provide multiuser access.

- Opportunities to consider renewable energy sources through project work.

### Significance of Effect: **Positive**

## 1.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

CYM2 and CYM4 relate to fisheries and fish passage. These measures have potential for negative effects on heritage assets such as historic weirs and bridges, where they form barriers to fish migration. At a project level, such sensitivities will be identified and will inform the options appraisal, in close consultation with Cadw &/or Heneb.

Planning for coastal adaptation and resilience as part of WAL17 is beneficial for heritage receptors that could be vulnerable to land loss and flooding in the future. Where there is still a requirement for hard-engineered defences to be introduced, this could have direct temporary (construction) and/or long-term physical and visual impact on archaeological features, and heritage assets and their setting. However, there is also potential for new interventions to restore and/or enhance heritage assets and their setting.

CYM50 has the potential to enhance heritage assets where existing FRM assets negatively impact upon them or their setting. The nature, scale and location of the mitigation measures will determine potential effects. Where mitigation may include the removal of existing flood and coastal protection, there is potential for negative impacts on heritage assets.

Nature-based solutions to river restoration associated with WAL02 may have benefits for the historic environment by, for example, restoring paleo channels and the natural course of a waterbody. As with CYM2 and CYM4, however, there is potential for river restoration projects to negatively impact heritage assets where those assets may be a physical modification to the river that the project seeks to remove. However, there is similar potential for projects to be restoring the natural landscape that would enhance the setting or understanding of heritage assets.

Waterbody measures PM6, PM7, PM8.1, PM8.2, PM9, PM10 and PM12 all relate to addressing physical modifications resulting from Flood Risk Management within the Western Wales RBD, including addressing fish passage, coastal and fluvial hard engineering and restoring natural river geomorphology. These Waterbody Measures are spread throughout the whole RBD, and intersect with various heritage features, and therefore all have the potential to intersect with a number of Heritage features

throughout the RBD. This will need to be assessed on a project level basis for any large scale works undertaken as part of these measures.

Waterbody measures NA1.3 and OT1.2 are mostly located around south-mid portion of Western Wales RBD, with one waterbody on the North Wales coast (Afon Gele) and another one in central Pembrokeshire (Taf headwaters). NA1.3 and OT1.2 measures relate to the implementation of NBS and the conservation of salmon and trout. All waterbodies that measures NA1.3 and OT1.2 apply to have numerous heritage features varying from Registered Historic Landscape Areas, Scheduled Monuments, Conservation areas and Listed Buildings.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 and good design will ensure any negative impacts are avoided, reduced or mitigated.
- Early engagement with Heneb &/or Cadw regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.
- Scheduled Monument consenting process to be adhered to.
- Opportunities for recording heritage assets and sharing information should be explored.
- An opportunity to work collaboratively with others (e.g. Cadw, Heneb, local heritage groups, local community) when developing projects, to deliver cultural heritage benefits that are meaningful for local stakeholders and residents.

### Significance of Effect: **Negative**

## 1.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

CYM2 and CYM4 relate to fisheries and fish passage. These measures can contribute to achievement of this SEA objective due to the nature of the potential river corridor restoration actions. There is potential however for localised, temporary, negative effects on landscape during construction, remediation or removal of infrastructure, and the introduction of new infrastructure such as fish

passes; however, it is anticipated this would be managed appropriately through the environmental assessment process and scheme design.

CYM50 relates to habitat improvements and mitigation associated with existing physical modifications. This is likely to contribute to achieving this SEA objective where it is possible for hard engineering solutions to be removed or adapted in favour of more nature-based solutions, restoring landscape character and potentially increasing climate change resilience. Where these schemes are in designated landscapes, this could have significant localised benefit. During implementation of schemes there is potential for localised, temporary, negative effects on landscape; however, it is anticipated this would be managed appropriately through the environmental assessment process and project design.

River restoration associated with WAL02 provides opportunity for NBS to be introduced and for this measure to contribute to achieving this SEA objective. Where waterbodies become more 'natural' there are benefits not just to the aesthetic of the visual landscape but also allowing fluvial processes to naturally shape local ecosystems and increase resilience to climate change. Where new natural habitats can be created through project design, there are opportunities to link these with other valuable ecological networks and areas of landscape value. Where these projects are in designated landscapes there could be significant localised benefit. During restoration projects, there is likely to be some temporary negative visual effect; however, it is anticipated this would be managed appropriately through the environmental assessment process and project design with overall long-term benefit. Delivery of multiple benefits through the projects (e.g. increased recreational access) would need to be sensitively approached to ensure new infrastructure (e.g. footpaths/signage) do not detract from landscape benefits.

WAL 17 supports coastal adaptation in line with Shoreline Management Plan policy and the NHCP enables delivery of compensatory intertidal habitat to allow the continued flood risk management of coastal communities. This measure could include the introduction and modification of coastal assets. This will contribute to achievement of this SEA objective through supporting the long-term protection and restoration of coastal landscapes with a view to adaptation to climate change and sea level rise. Hard-engineered defences with potential for visual impact to landscape and seascape can be addressed through design and nature-based solutions may be appropriate for existing and proposed defences.

## Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 and design will ensure any negative effects are avoided, reduced or mitigated.
- Promoting solutions that work with natural processes, avoiding and minimising environmental impact and seeking to provide environmental benefits are all consistent with minimising negative effects on the landscape.
- Opportunities for new strategic networks of habitat should be explored to strengthen landscape resilience to climate change.

- The promotion of NBS for all these measures would have the potential to deliver positive effects on landscape and seascape, such as restoring waterbodies back to their natural states, and enabling fluvial and coastal processes to naturally shape features and ecosystems.
- Where the use of hard engineering is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.
- Avoidance of new lighting or use of appropriate lighting if essential (e.g. for recreational access or Health and Safety reasons), in particular with reference to tranquillity and dark skies. This applies for any project but would be of increased importance where schemes are within designated landscapes.
- An opportunity to work collaboratively with others when developing projects (e.g. local stakeholders), to deliver landscape benefits valued by local communities.

### Significance of Effect: **Positive**

## 1.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

CYM4 and WAL17 have aims directly linked to adaptation to climate change.

CYM4 which aims to deliver the strategic outcomes of the Climate Resilient Fisheries Strategy for the sustainable management of migratory and freshwater fisheries of Wales, will work towards supporting aquatic ecosystems to adapt to climate change.

WAL17 which aims to support Wales to have a coastline that is sustainable and adaptable/resilient to climate change will put in place actions that support coastal ecosystems to adapt to climate change.

River restoration schemes associated with WAL02 will restore natural fluvial processes and ecosystems such that they can adapt to climate change. Opportunities for the use of nature-based solutions in these projects will protect and enhance existing ecosystems building natural resilience high temperatures, flood events, droughts etc. Creation of new habitats (e.g. wetlands and riparian habitats) have the potential for carbon sequestration.

Mitigation for physical modifications in heavily modified waterbodies (CYM50) and introduction of NBS can protect and enhance existing ecosystems, building natural resilience and creating new habitats with the potential for beneficial climate mitigation effects.

Maintenance, improvement and development of fisheries (CYM2) should aim to build long term resilience including to the effects of climate change.

Design and construction work for all measures could result in localised emissions and emissions associated with material usage. This requires consideration through options appraisal, design and construction to ensure that carbon emissions are minimised and where feasible, offset.

## Opportunities and Mitigation

- Measures to mitigate FRM assets and river restoration projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.
- Projects should be designed to have net carbon benefit by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.
- Where possible, design of projects should look to incorporate nature based solutions that minimise risk and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.
- Adopt solutions that work with natural processes such as wetland creation and woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

## Significance of Effect: **Significant Positive**

# GROUP 2: National Measures Assessment – Strategic Plans – Changes to natural flow and levels of water

**National Measures:**

- **CYM 73** Support the delivery of the Welsh Government National Peatland Restoration Programme

**Waterbody Measures:**

Not Applicable.

## 2.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Peatland restoration will result in water quality improvements, increased flood risk resilience and reduction in wildfire occurrence (and reduction in the smoke/pollutants that causes). Restored peatlands also act as carbon sinks reducing greenhouse gases and their contribution to climate change.

The accompanying HIA identifies additional health and wellbeing benefits associated with climate resilience, reduced flood risk, ecosystem recovery and access to high-quality natural environments, all of which may arise through peatland restoration

Opportunities for recreational use and access to nature in peatland areas is likely to be restricted due to their nature and conflict with their preservation.

#### Opportunities and Mitigation

- Peatland restoration projects are screened under OGN86. Given the nature of the projects they are largely deemed to be low environmental risk. But the screenings provide advice and best practice to follow, including consideration of rights of way and any local community.

- Consider relevant findings of the accompanying HIA, local Well-being Plans and public health evidence during implementation to maximise health and wellbeing benefits and address potential inequalities.

- Where appropriate, community engagement, interpretation, education and volunteering opportunities should be explored to increase awareness, stewardship and understanding of peatland environments.

### Significance of Effect: **Positive**

## 2.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

Ongoing support for delivery of the National Peatland Restoration Programme through CYM73 will continue to have significant positive effect for biodiversity. The overall aim of the programme is to co-ordinate peatland restoration in Wales (including sustainable management of blanket and lowland peats) as well as safeguarding peatlands that are in good and recovering condition. This will have overall significant positive effect for biodiversity, halting and reversing loss of this valuable habitat and the rare species that it supports and promoting effective management of peatland going forward.

Whilst there may be some temporary disruption during implementation of on the ground measures, it is anticipated this would be managed appropriately resulting in an overall significant positive effect and contributing significantly to this SEA objective.

### Opportunities and Mitigation

- Peatland restoration projects are screened under OGN86. Given the nature of the projects they are largely deemed to be low environmental risk. But the screenings provide advice and best practice to follow, including consideration of HRA, ecological appraisals etc.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing actions and management strategies, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Significant Positive**

## 2.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

CYM 73 which supports the delivery of the Welsh Government National Peatland Restoration Programme aligns directly with the aims of this SEA objective – both through direct restoration of peatlands and the stakeholder engagement promoting sustainable management of peatland areas.

Some peatland projects occur on areas of Welsh Government Woodland Estate that have been deforested, meaning that the overall area of woodland is reduced.

### Opportunities and Mitigation

- To prevent a net reduction in the tree canopy as a result of taking peatland areas out of forestry, there are funding schemes such as the Woodland Creation Grant to plant new, diverse woodlands on marginal agricultural land, improving overall soil health and sediment control.

### Significance of Effect: **Significant Positive**

## 2.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

Restoration and re-wetting of peatlands will, through the ecosystem function they provide, improve water quality, and regulate water flow into rivers and streams, helping to reduce flood risk.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Significant Positive**

## 2.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

Healthy peatlands filter pollutants and act as a sink for greenhouse gas emissions. When degraded they can however contribute to air quality issues as greenhouse gases and pollutants they store are released. Common management practices in peatland areas (e.g. burning heather) also can release pollutants (e.g. smoke containing pollutants) that can negatively impact air quality. The increased occurrence of wildfires in peatland areas due to changes to their hydrology, similarly, poses a risk to air quality.

Measure CYM 73 which supports the delivery of the Welsh Government National Peatland Restoration Programme therefore has potential for air quality improvement, promoting a reduction in air pollutants and their pathways for effects on waterbodies. Restoration and appropriate management should build habitat resilience, with peatlands able to function as a more robust greenhouse gas and pollutant sink/filter with rewetted peatlands under sustainable grazing management less likely to burn and more resistant to wildfire if it does occur. The measure is therefore considered likely to contribute to this SEA Objective; however, it is not considered likely to have significant effects on air quality at a strategic level, although some indirect benefits may arise in areas where waterbodies are affected by combustion-related air pollution pressures.

### Opportunities and Mitigation

- Peatland restoration projects are screened under OGN86. Given the nature of the projects they are largely deemed to be low environmental risk. But the screenings provide advice and best practice to follow, including minimising emissions through efficient use of plant and machinery, low-emission technologies and good construction practice where appropriate.

### Significance of Effect: **Positive**

## 2.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

Given the location/setting of peatlands and type of restoration/management likely through the restoration programme, it is considered unlikely CYM73 would have significant benefit or negative effect for material assets and infrastructure. Restoration projects are unlikely to require large amounts of material usage.

### Opportunities and Mitigation

Not Applicable.

Significance of Effect: **Neutral**

## 2.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

Peatlands are historic living landscapes that often preserve unique heritage records (at the surface, within and below the peat layer) and the deposits themselves offer research potential and information regarding historic increase resilience to drought events environmental conditions and changes.

As such CYM73, supporting delivery of the Welsh Government National Peatland Restoration Programme, can contribute to achieving this SEA objective, conserving an important cultural heritage asset and landscape.

Landscape scale peatland restoration can reduce the likelihood and extent of events associated with climate change such as flooding drought and wildfire that can impact heritage assets, and historic landscapes.

The restoration of peatland following felling of coniferous forestry can reinstate and/or enhance historic landscapes and the setting of heritage assets.

Projects may provide opportunity for recording of previously unknown heritage assets.

Changes to drainage and hydrology can negatively impact heritage assets, but generally this measure involves the storage of water which would preserve archaeology.

### Opportunities and Mitigation

- Peatland restoration projects are screened under OGN86. Given the nature of the projects they are largely deemed to be low environmental risk. These screenings include the provision of advice from Heneb under the NRW/Cadw/Heneb MoU.

Significance of Effect: **Positive**

## 2.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Peatlands across Wales offer unique visual landscapes.

68% of the Visual & Sensory outstanding landscapes are upland and the majority of peatland landscapes have a high or outstanding LANDMAP visual and sensory evaluation.

Ongoing support for delivery of the National Peatland Restoration Programme through CYM73 aligns with and contributes to achieving this SEA Objective as it aims to restore and protect this unique landscape of value across Wales, which also increases wider landscape climate change resilience.

Peatland restoration generally follows the removal of conifer plantations which in itself results in a positive change to landscape character, and the restoration of the natural landscape is a further positive change.

There can be minor negative impacts on landscape pattern and visual amenity resulting from the man-made grid appearance of some measures e.g. bunds, but this is generally only perceptible from above.

Whilst there may be some temporary disruption during implementation of on the ground measures, it is anticipated this would be managed appropriately and be temporary in nature, resulting in an overall positive effect and contributing positively to this SEA objective.

### Opportunities and Mitigation

- Peatland restoration projects are screened under OGN86. Given the nature of the projects they are largely deemed to be low environmental risk.

### Significance of Effect: **Positive**

## 2.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Healthy peatlands act as a sink for greenhouse gas emissions.  When degraded they can release stored greenhouse gases.

Measure CYM 73 which supports the delivery of the Welsh Government National Peatland Restoration Programme looks to promote restoration and appropriate management of peatlands which in turn will increase their function for carbon sequestration. Promoting a reduction in greenhouse gas emissions, mitigating climate change.

Rewetting peatlands will also build resilience to wildfires which are likely to become more prevalent as a result of climate change, therefore supporting this valuable ecosystem to adapt to climate change. Reduction in fires will also reduce the release of smoke and pollutants that arise from those.

The measure is considered to align with and to contribute significantly to achieving this SEA objective.

## Opportunities and Mitigation

- Restoration projects must consider the carbon footprint associated with activities, designs and materials early in project development.
- Projects should be designed to have net carbon benefit by minimising use of materials that use carbon in their manufacture.
- The programme may present opportunities for monitoring to gather additional information regarding peatlands and their importance for climate change resilience.

## Significance of Effect: **Significant Positive**

# GROUP 3: National Measures Assessment – Strategic Plans – Pollution from rural areas

### National Measures:

- **CYM41** NRW delivers a prioritised programme of measures on the Welsh Government Woodland Estate to support delivery of WFD Regulations 2017 and Protected Area objectives

### Waterbody Measures:

Not Applicable.

## 3.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Delivery of measures on the Welsh Government Woodland Estate through measure CYM41 provides potential opportunity for benefit to health and wellbeing through suitable design.

In particular, opportunities for provision of improved access to clean and safe green and blue space should be explored with associated positive impacts on mental and physical wellbeing. The use of nature based solutions should also be considered with potential for reduction of flood risk as natural fluvial and ecosystem process are restored – building resilience and benefitting local communities through reduction in frequency and impact of these flood events.

As the implementation of the above as part of the measures is currently aspirational, it is not possible to assume benefits; these would have to be ascertained at a project level.

Implementation of schemes can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

#### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Community socio-economic status/drivers of deprivation should be considered.

- Relevant findings of the accompanying HIA, alongside
- relevant evidence, local Well-being Plans and local public health expertise, should be used where appropriate to maximise health and wellbeing benefits, address potential inequalities to enhance and protect the wider determinants of health through improved physical environment (built and natural environment) improvements and access to green corridors, urban greenspaces and recreational opportunities.
- Particular consideration should be given to vulnerable population groups and communities that may experience barriers to accessing environmental benefits or disproportionate effects from poor environmental quality.
- Introduction of nature based solutions where possible to promote restoration of natural fluvial and ecosystem process and their benefit to flood risk reduction.
- Sensitive engagement with local communities and stakeholders prior to and during construction periods.

### Significance of Effect: **Neutral**

## 3.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

Delivery of measures on the Welsh Government Woodland Estate to support delivery of WFD Regulations 2017 and Protected Area objectives aligns with the overall SEA objective for biodiversity through promoting protection and effective management of NRW land and should result in a positive contribution to the SEA objective.

This measure provides opportunity for overall benefit to protected sites and riverine habitats and species; however, could result in positive or negative effects at a project level depending upon the habitats and species that are present and nature of the action. It is anticipated that such measures would be delivered under the UK Forestry Standards which would avoid, reduce or mitigate any wider effects.

### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Appropriate use should be made of the DECCA (Diversity, Extent, Condition, Connectivity and Adaptability) framework to evaluate ecosystem resilience and ensure compliance of projects with Net Benefit for Biodiversity requirements.

- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques, in line with Section 6 - Biodiversity and resilience of ecosystems duty of the Environment Act.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Positive**

## 3.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

CYM41 offers potential to both increase canopy woodland cover and to provide measures reducing run-off which in turn will conserve and enhance soil health and function in these NRW managed assets as well as having positive effects relating to diffuse pollution. There also may be opportunities to increase connectivity across the woodland habitat network (in particular taking into account the presence of ancient woodland and Welsh Atlantic rainforests to tie in with the country-wide Resilient Ecological Network for woodland).

### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Geologically important sites should be protected during works and increased opportunities for education considered.
- Potential opportunities to increase woodland canopy cover and tie in with the woodland habitat network.
- Potential to introduce measures to reduce run-off and soil degradation/diffuse pollution (e.g. riparian habitat planting and natural flood management techniques) should be explored as part of the programme of measures.
- Liaison with local stakeholders could offer opportunity to link land management solutions to other catchment management schemes such as agri-environment and woodland management which could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution.

### Significance of Effect: **Positive**

## 3.4 Water Quality and Resources

### Will the draft RBMP protect and improve water quality and quantity?

### Description of Effect

A prioritised programme of measures on the Welsh Government Woodland Estate to support delivery of WFD Regulations 2017 and Protected Area objectives is likely to benefit catchment water quality and in particular contribution to improvements to ecological and chemical status of waterbodies. Individual projects may not achieve status improvement alone but would contribute to achieving this SEA objective.

The measures also offer potential for actions to reduce run-off (e.g. through habitat creation and restoration) which in turn would benefit water quality in catchment and reduce diffuse pollution. Measures may also offer potential to restore natural ecological and fluvial processes reducing flood risk.

It is anticipated that design for measures in the NRW woodland estate would focus on nature-based solutions where possible and would not seek to heavily modify stream or river channels.

### Opportunities and Mitigation

- Opportunity to contribute to WFD objectives to maximise the qualitative and quantitative status of waterbodies.
- Potential opportunity to incorporate measures to reduce run-off and to restore natural ecological and fluvial processes to reduce flood risk.
- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Early design input to minimise use of hard engineering in favour of nature based solutions and where possible to avoid modification to river channels – in particular those that may have a detrimental effect on river processes and ecosystem functioning.
- Seek to maximise opportunity to work with natural catchment processes for projects by implementation of innovative alternatives to traditional grey engineered solutions.

### Significance of Effect: **Positive**

## 3.5 Air

### Will the draft RBMP protect and improve air quality?

#### Description of Effect

These measures are not specifically intended to reduce air pollutant emissions or improve air quality.

This measure is considered unlikely to contribute to achieving this SEA objective.

#### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.

#### Significance of Effect: **Neutral**

## 3.6 Materials, Assets and Infrastructure

### Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?

#### Description of Effect

The programme of measures on the NRW woodland estate, may be able to build some asset/infrastructure resilience in localised areas prone to flooding through habitat creation and restoration. However, this would depend on the type of project that is being implemented and whether nature based solutions can be incorporated and benefit may be fairly localised. Measures are unlikely to require large amounts of material usage or to have significant adverse effects on existing assets and infrastructure.

#### Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.
- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Opportunities to enhance assets to provide multiuser access.

Significance of Effect: **Neutral**

## 3.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

The programme of measures resulting from CYM41 may (depending on location and type) result in pathways for effects on the historic environment, however, the projects are likely to be small scale and will be delivered under the UKFS. It is considered unlikely therefore that they would detract overall from achievement of this SEA objective.

Where measures in the woodland estate reduce flood risk in a local area/ catchment, this may also have some benefit for heritage assets through a reduction in damage associated with flooding, although the scale to which this would contribute to achieving this SEA objective would be dependent on the measures being implemented and their location.

### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.

Significance of Effect: **Neutral**

## 3.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

The programme of measures resulting from CYM41 may (depending on location and type) result in some localised negative effects on landscape; however, the projects are likely to be small scale and within the context of the woodland estate, and will be delivered under the UKFS. It is considered unlikely therefore that they would detract overall from achievement of this SEA objective.

Where measures can incorporate nature-based solutions and protect valuable habitats within the woodland estate, these may offer a long-term benefit for the local landscape and support achieving this SEA objective.

### Opportunities and Mitigation

- This programme of measures would be delivered under the UKFS which will ensure any negative effects are avoided, reduced or mitigated.
- Promoting solutions that work with natural processes, minimising damage to the environment and seeking to provide environmental benefits are all consistent with minimising negative effects on the landscape.
- The promotion of nature-based solutions would have the potential to deliver positive effects on landscape, in particular where these have potential to revert waterbodies back to their natural states, enabling fluvial and coastal processes to naturally shape features and ecosystems.
- Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.

### Significance of Effect: **Neutral**

## 3.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

The programme of measures on the NRW woodland estate, may be able to build some resilience in localised areas prone to flooding through habitat creation and restoration. However, this would depend on the type of project that is being implemented and whether nature based solutions can be incorporated and may be fairly localised.

Measure CYM41 is considered unlikely to have pathways for effect on climatic factors.

### Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.
- Projects should be designed to have net carbon benefit by minimising use of materials that use carbon in their manufacture.

- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.
- Adopt solutions that work with natural processes such as wetland creation and woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

Significance of Effect: **Neutral**

# GROUP 4: National Measures Assessment – Strategic Plans –Pollution from abandoned mines

### National Measures:

- **CYM49** Mining Remediation Authority work through the Wales Metal Mine Programme to deliver abandoned metal mine remediation
- **DE0014** Mine Remediation Authority minewater preventative and remediation programme
- **WW0031** NRW work through the Wales Metal Mine programme to investigate the impacts of abandoned metal mines

### Waterbody Measures:

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a %) | No. of Waterbodies in Wales Measure applied to (also as a %) |
|---|---|---|---|
| **AM1.0** | Control and remediate point and/or diffuse discharges from abandoned metal mines | **39 (6.9%)** | **59 (6.3%)** |
| **AM1.1** | Control and remediate point and/or diffuse discharges from abandoned coal mines | **2 (0.4%)** | **6 (0.6%)** |

## 4.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Water quality improvements resulting from metal mine remediation offer downstream benefits to human health and wellbeing through: visual improvement to blue space (in particular where ochre discharge sources are removed or reduced) and the resulting mental health benefit associated with access to visually pleasing environments; increased fishing potential and the recreational and health benefits that brings to people; and safer water for water based activities such as canoeing.

The remediation schemes at mine sites also offer potential for increased access to unique landscapes and to tie into existing footpath networks, increasing potential for physical recreation and the health benefits that brings. There are also increased opportunities for educational visits and use of sites by community groups.

There is opportunity through mine remediation schemes to engage with communities and understand design and actions that would offer most benefit to local population health and wellbeing – in particular in more deprived communities.

Communities local to mine sites often have local historical knowledge and affiliation with the mine sites which can be drawn upon, both to engage current populations with ongoing work at these sites and to ensure continued cultural value of these sites within the local community through opportunities for information sharing (including for example provision of heritage trails, information boards and educational opportunities). Local stakeholders (e.g. mine, wildlife and heritage enthusiasts) also will have valid contribution to make to design of remediation projects. Welsh language should be promoted on any information boards and education material.

Mine sites can however also have negative connection with and connotation for local populations. They could be a source of mental health concerns and anxiety as a result of legacy individual/family/community experiences associated with the mines and their closure. Abandoned mine sites can also encourage anti-social behaviour and vandalism which results in significant impact on local community feelings of safety and an increase in anxiety and depression.

The positive and negative local community associations with mine sites are important considerations when identifying opportunities for mine remediation and associated wider benefits. Remediation can also reduce historic contamination pressures affecting communities, fisheries, recreation and water resources. The accompanying HIA identifies major long-term health and wellbeing benefits through reduced exposure to contaminants, improved environmental quality and increased community confidence, whilst also recognising potential short-term adverse effects during investigation and remediation activities.

Implementation of projects can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

## Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance, including consideration of population and human health, should be used to understand community characteristics, social vulnerabilities and the potential direct and indirect impacts of specific projects on population groups, communities and places.
- Community socio-economic status/drivers of deprivation should be considered. Consideration should be given to vulnerable population groups who may experience disproportionate effects from poor environmental quality or unequal access to the benefits arising from remediation schemes.
- Relevant findings of the accompanying HIA, alongside relevant evidence, local Well-being Plans and local public health expertise should be used where appropriate, to maximise health and well-being benefits, address potential health inequalities and protect the determinants of health through improved physical environment (built and natural environment) improvements and access to green corridors, urban greenspaces and recreational opportunities.

- Local community engagement regarding the value of and concerns about mine sites should be used wherever possible to design remediation schemes and consider multiple benefits these could deliver.
- Provide clear, accessible and bilingual information regarding remediation progress, risks and outcomes to support community confidence, understanding and engagement. Welsh language should be promoted on any information boards and education material.
- Opportunities to reduce/discourage anti-social behaviour and vandalism should be explored where possible.
- Sensitive engagement with local communities and stakeholders prior to and during construction periods.

Significance of Effect: **Significant Positive**

## 4.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

Whilst the national measures to investigate mine impacts and deliver mine remediation will likely result in some ecological improvement to select watercourses through reduction in contamination, this is unlikely to contribute significantly to this SEA objective.

During on the ground investigations and delivery of remediation projects, there is a significant risk to biodiversity by the nature of the habitats in which work is likely to be undertaken (often specific to that mine locality and ground condition/contamination level – many of which are features of protected sites) and additionally the potential for downstream impacts to protected sites which may be designated for features associated with a particular contamination type. There is therefore potential for negative effects on protected sites, sensitive habitats and sensitive species with potential for degradation, long-term decline and immediate losses associated with investigation and remediation works under these national measures. This could detract significantly from achievement of this SEA objective. Projects will need to be managed sensitively and effectively to avoid, remediate impact where possible. Where this is not possible there will be a need for compensation to be delivered. (Refer to draft HRA)

These measures are aimed at improving the chemical and ecological status of waterbodies that drain from/through areas of historic metal mining. In delivering these improvements the sensitive habitats that have developed as a result of this contamination, might be impacted. As this habitat is nationally significant a significant negative effect has been concluded. This could be reduced to negative depending upon the scale of remediation and the delivery of mitigation and compensation associated with projects.

AM1.0 and AM1.1 have been applied to 6.9% and 0.4% of waterbodies in the Western Wales RBD respectively. Following spatial analysis, Calaminarian grassland as a feature of a European site (Grogwynion SAC) is located against the watercourses within and downstream of where AM1.0 will be applied. It may also be present either upstream or at the location of the likely works (eg Elenydd SAC) where there is flexibility for project design to avoid, reduce or mitigate impact, but where remediation of the sites by it's very nature could impact upon this feature of the Elenydd SAC (refer to draft HRA for further details).

### Opportunities and Mitigation

- Ensure early ecological survey/assessment to contribute to sensitive design and timing of actions proposed at a project level.
- Project level environmental assessment in line with OGN 87 to ensure projects are designed and delivered to avoid, reduce, mitigate or compensate negative effects.
- Appropriate use should be made of the DECCA (Diversity, Extent, Condition, Connectivity and Adaptability) framework to evaluate ecosystem resilience and ensure compliance of projects with Net Benefit for Biodiversity requirements.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques, in line with Section 6 - Biodiversity and resilience of ecosystems duty of the Environment Act.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Significant Negative**

## 4.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

Mine remediation projects offer potential for capping / management of land contamination with the potential for multiple user benefits (e.g. back into 'use' or opportunities for recreational use).

However, land contamination remediation at mine sites needs to be carefully managed taking into account geologically important sites which are often present at historic mine sites, due to the prior human disturbance uncovering unique geological landscapes of value for educational purposes.  Investigative and remediation schemes therefore have the potential to have negative effects on these sites.

Measures to protect against flash flood events across mine sites would protect substrate from degradation/loss.

On balance these measures are aimed at remediating metal mine sites to contain contamination to prevent leaching into watercourses. The remediation contributes to this objective by promoting the sustainable use and management of land. With the mitigation applied at a project level, geologically important sites can be avoided or protected.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN87 will ensure any negative effects are avoided, reduced or mitigated.
- Geologically important sites must be protected during works and increased opportunities for education considered. There is an opportunity for projects to provide an enhancement by introducing management proposals to the sites (i.e removing overgrowth of important exposures etc).
- Potential to incorporate protection of spoil from flash flooding and run-off into scheme design.
- Potential for contaminated land remediation (where this is appropriate and does not conflict with biodiversity requirements) to offer multiple benefits to local stakeholders.

### Significance of Effect: **Positive**

## 4.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

Minewater remediation projects aim to contribute to improvement of chemical status of waterbodies, through both point source treatment/management and management of diffuse pollution sources. Through improved chemical water quality and sensitive design, this has the potential to improve the ecological status of waterbodies. Individual projects may not achieve status improvement alone and the significance of the positive effect on water quality is dependent upon the delivery of remediation projects.

These projects, however, can also have a detrimental effect on river processes and ecosystem functioning depending on scheme scale if design requires hard engineered bank reinforcement and modifications, such as lining of channels. It is anticipated that design would focus on nature-based solutions where possible (providing this does not conflict with biodiversity or cultural heritage requirements) and would not seek to heavily modify stream or river channels.

On balance, these measures are aimed at remediating metal mine sites to improve water quality, thereby contributing to this objective. Good design and application of mitigation will maximise the benefits of these measures.

### Opportunities and Mitigation

- Opportunity to contribute to WFD objectives to maximise the qualitative and quantitative status of waterbodies.
- Project level assessment in line with OGN 87 and the Terms of Reference between the Mine Remediation Authority and NRW, to ensure any negative effects are avoided, reduced or mitigated and opportunities are maximised.
- Early design input to minimise use of hard engineering and where possible to avoid modification to river channels – in particular those that may have a detrimental effect on river processes and ecosystem functioning.
- Seek to maximise opportunity to work with natural catchment processes for projects by implementation of innovative alternatives to traditional grey engineered solutions.

### Significance of Effect: **Positive**

## 4.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

These measures are not specifically intended to reduce air pollutant emissions or improve air quality.

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices and use of Environmental Action Plans etc.

This measure is considered unlikely to contribute to achieving this SEA objective.

### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work. Where appropriate, opportunities to minimise emissions through efficient use of plant and machinery, low-emission technologies and good construction practices should be considered during scheme design and delivery.

Significance of Effect: **Neutral**

## 4.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

These measures are aimed at abandoned metal and coal mine sites and so their value as a material asset/infrastructure is considered below under cultural heritage.

Construction work for all measures would require material usage and produce waste. It is anticipated this would be managed efficiently through design and options appraisal by use of carbon calculator and consideration of alternatives. Locally sourced and sustainable materials must be used wherever possible.

There may also be disruption to material assets during construction periods (e.g. local businesses and infrastructure such as highways) that would need to be managed appropriately at a project level.

### Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and project design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.
- Projects should engage with local stakeholders early in scheme development to minimise disruption to existing assets, businesses and infrastructure through appropriate design and programming. This engagement should also explore opportunities to enhance assets to provide multiuser access and educational potential.
- Project level assessment in line with OGN 87 and the Terms of Reference between the Mine Remediation Authority and NRW, to ensure any negative effects are avoided, reduced or mitigated and opportunities are maximised.

Significance of Effect: **Neutral**

## 4.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

These measures involve on-site investigation and delivery of remediation projects of varying scale at historic mines.

The majority of sites are clustered in mid-Wales, east of Aberystwyth but also at Ynys Mon (e.g. Amlwch) and the Afon Tywi near Llandeilo. Many of the catchments also include areas of The Slate Landscape of Northwest Wales WHS designations and the majority also lie within Registered Historic Landscapes.

Historic mines are an important historic landscape feature and contain numerous known and unknown heritage assets including above ground infrastructure and buried archaeology. Scheduled Monuments are also often present, either associated with the industrial heritage site or the numerous camps, forts and barrows etc associated with the topography. AM1.1 does not apply to areas with historic landscape designations but there are features associated with industrial heritage. There is therefore potential risk to cultural heritage assets as a result of these measures.

It is anticipated projects will be managed sensitively, and negative effects can be avoided/reduced/mitigated; however, given the sensitivity of sites and that remediation projects inevitably result in changes to the historic landscape and/or setting of historic assets, it is possible that these measures could have negative effects.

However, remediation projects may protect in-situ heritage assets in the long-term e.g. measures that reduce likelihood of ground scouring and damage during high flow events, support achievement of this SEA objective.

Investigation and remediation projects may provide opportunity for recording of previously unknown heritage assets.

There is also potential for larger scale remediation projects to incorporate cultural heritage improvements, for example provision of heritage trails, exploring historic links with local communities or use of sites for educational purposes.

### Opportunities and Mitigation

- Project level assessment in line with OGN 87 and the Terms of Reference between the Mine Remediation Authority and NRW, to ensure any negative effects are avoided, reduced or mitigated and opportunities are maximised.

- Design to consider measures that may result in long-term protection of heritage assets (e.g. scour protection, building repairs).
- Early engagement with Heneb &/or Cadw regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.
- Scheduled Monument consenting process to be adhered to.
- Where projects fall within Registered Historic Landscapes or are within / associated with World Heritage Sites, early engagement with CADW will be required.
- Opportunities for recording of heritage assets and information sharing with local museums should be explored.
- An opportunity to work collaboratively with others (e.g. Heneb, local heritage groups, local community) when
- developing projects, to deliver cultural heritage benefits as part of site remediation (e.g. information sharing, heritage trails, educational opportunities).

### Significance of Effect: **Negative**

## 4.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Delivery of remediation projects could result in negative effects on mining landscapes (e.g. if hard engineering solutions are necessary or construction of new infrastructure is required). This could detract from achieving this SEA objective.

Projects must be designed and managed sensitively and effectively to ensure negative impacts are avoided or reduced. The constraints of the locations, necessary engineering solutions and preventing heritage and biodiversity impacts can make this challenging, however projects could contribute to the long-term protection and enhancement of these culturally important landscapes.

The prevention or reduction of pollutants could also support the recovery of natural habitats (on site and across the RBD) and restoration of wider landscape character.

Catchments associated with AM1 are concentrated in mid-Wales, east of Aberystwyth. A large area around Gower is associated with AM1.1. Many of the catchments and AM1.1 areas are within / partially within nationally designated landscapes (Eryri NP and Bannau Brycheiniog NP and their settings), with further areas within Ynys Mon and Gower NLs. The cluster of catchments in mid-Wales, while outside these national designations, are in Special Landscape Areas.

These waterbody measures may also have potential to impact upon the Heritage Coasts of Western Wales at Gower, around Ynys Mon, Great Orme, Llyn Coast, Ceredigion Coast and Glamorgan Coast should any built development be required. Changes to coastal environments also need to consider impacts on seascape character, especially those that relate to industrial heritage.

### Opportunities and Mitigation

- Project level assessment in line with OGN 87 and the Terms of Reference between the Mine Remediation Authority and NRW, to ensure any negative effects are avoided, reduced or mitigated and opportunities are maximised.
- The promotion of nature-based solutions and/or soft landscaping for these measures would minimise landscape and visual impacts. Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to the landscape character of the mine sites and their setting.
- An opportunity to work collaboratively with others when developing projects (e.g. local stakeholders), to deliver landscape benefits valued by local communities.

### Significance of Effect: **Negative**

## 4.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Projects (in particular large-scale e.g. construction of minewater treatment plants) require energy to operate. Sites are generally remote and “off grid” and so utilise renewable energy.

Depending on location, some habitat creation may be possible (where this does not result in loss of unique mine habitats) to promote carbon sequestration and ecosystem resilience.

There may be some opportunity for design to incorporate measures to reduce flood risk on mine sites and build resilience to climate change and more regular flood events.

## Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.
- Projects should be designed to have net carbon benefit by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.
- Remediation projects should consider ways to reduce flood risk at mine sites (in particular flash flood events) to protect habitats on site and downstream and build resilience into the catchment.
- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.
- Adopt solutions that work with natural processes such as wetland creation and woodland planting (depending on location – noting the significant importance of unique mine habitats) that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

## Significance of Effect: **Neutral**

# GROUP 5: National Measures Assessment – Strategic Plans – All

### National Measures:

- **WAL20** Deliver actions within the annual Marine Protected Area Network Management Action Plan linked to the MPA Network Management Frameworks for Wales. These actions include reviewing impacts of unregulated activities, improving biosecurity for marine invasive species and improving condition of features within European Marine sites.
- **NEW04** Marine Nature Networks Programme delivering investigations and management actions within the MPA network.

### Waterbody Measures:

Not Applicable.

## 5.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

WAL20 provides the strategic framework for improving the management, condition and resilience of Wales' Marine Protected Area (MPA) network through actions relating to strategic planning, regulation, management advice and guidance, improved understanding of site condition and pressures, biosecurity measures to address marine invasive non-native species, and wider management activities. NEW04 focuses on delivering funded investigations, restoration projects and management actions within the MPA network, including habitat restoration initiatives.

Collectively, these measures have the potential to improve environmental quality, ecosystem resilience and the condition of coastal and marine environments. This may contribute indirectly to population health and wellbeing through the maintenance and enhancement of high-quality blue spaces, opportunities for recreation, learning, volunteering and community stewardship, and support for coastal communities whose wellbeing, culture and livelihoods are linked to the marine environment. Improved biosecurity and ecosystem resilience may also help reduce future environmental pressures and maintain the long-term benefits that healthy marine environments provide to communities. Benefits are expected to be long term but are dependent on the extent, location and accessibility of delivery.

The significance of the positive effect will be dependent upon the scale of delivery.

#### Opportunities and Mitigation

- Project-level environmental assessment should be undertaken in accordance with relevant NRW guidance, including OGN 87 where applicable, to identify opportunities to enhance health, wellbeing and equity outcomes and avoid or minimise adverse effects.
- Delivery should draw on evidence from the accompanying HIA, local Well-being Plans and local public health expertise, where appropriate, to maximise benefits associated with improved coastal and marine environments, recreation, education, volunteering and community stewardship.
- Particular consideration should be given to opportunities to reduce health inequalities by improving participation in, and access to, the benefits provided by high-quality coastal and marine environments, especially for communities who may experience barriers to accessing blue spaces.
- Community and stakeholder engagement should be undertaken where appropriate to identify local priorities and opportunities for skills development, local employment, Welsh language promotion, cultural interpretation and stewardship. Any temporary disruption associated with investigations, restoration or management activities should be minimised through sensitive communication and engagement.

### Significance of Effect: **Positive**

## 5.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

The MPA Network Plan contains actions split into 5 principles: Strategic planning, regulation, management advice and guidance, understanding condition, pressures threats on sites and wider management. Wider management activities can be delivery of actions eg NRW's Marine Nature Networks Prog which includes project delivery such as intertidal habitat restoration.

These measures will have positive effects on the Marine Protected Area Network through improvements to biosecurity for marine invasive species and improvements to the condition of features within European Marine sites which in turn should have positive effects for the overall ecosystem resilience of these areas.  This will support the protection, restoration and effective management of internationally designated nature conservation sites and promote good practice which should significantly contribute to achievement of this SEA objective.

Delivery of projects eg Intertidal habitat restoration has the potential for wider negative effects on biodiversity, for example freshwater habitats, but with standard practices and mitigation, the risk and scale of such an impact is considered to be low.

The significance of the positive effect will be dependent upon the scale of delivery.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87.
- All projects delivering work physical activities with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when considering improvements, to deliver sympathetic solutions with wider biodiversity benefits.
- Opportunities should be explored through delivery of coastal projects to support the protection and restoration of coastal physical process and habitats with a view to future resilience (climate change and sea level rise).
- Make use of up-to-date knowledge regarding coastal squeeze impacts to deliver benefits where possible to maintain the integrity of the Marine Protected Area Network.
- Ensure cross-site working and sharing of best practice across the Marine Protected Area Network.

### Significance of Effect: **Positive**

## 5.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

Delivering investigations and management actions within the Marine Protected Area network is unlikely to impact on land use, geology and soil. The project investigating the impact of landfill sites at the coast on MPA features is aimed at improving our understanding of these potential impacts to better inform protection of the MPA network from landfill waste, prioritising the most vulnerable features and habitats and the most effective actions and contaminated land. The work is investigatory and so there are no pathways for effects at this stage.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Neutral**

## 5.4 Water Quality and Resources

### Will the draft RBMP protect and improve water quality and quantity?

#### Description of Effect

Actions associated with WAL20 including reviewing impacts of unregulated activities, improving biosecurity for marine invasive species and improving condition of features within European Marine sites is likely to have direct/indirect benefit for overall water quality in the Marine Protected Area Network and its ability to support thriving ecosystems.

Delivering investigations and management actions within the Marine Protected Area network could have direct/indirect benefit for overall water quality in the Marine Protected Area Network and its ability to support thriving ecosystems.

Delivery of projects eg Intertidal habitat restoration has the potential for effects on water quality during construction but with standard practices and mitigation, the risk and scale of such an impact is considered to be low.

The significance of the positive effect will be dependent upon the scale of delivery.

#### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87.

#### Significance of Effect: **Positive**

## 5.5 Air

### Will the draft RBMP protect and improve air quality?

#### Description of Effect

WAL20 activities are unlikely to result in direct effects on air quality.

NEW04 supports the delivery of investigations, habitat restoration and management actions within the MPA network. Whilst implementation may result in minor, temporary and localised air emissions associated with vessel movements, machinery use or restoration activities, these effects are expected to be short term and limited in scale. Collectively, the measures are not expected to promote a significant reduction in air pollutants or result in a significant effect on air quality at the RBMP scale.

#### Opportunities and Mitigation

- Where delivery activities are undertaken through NEW04, opportunities should be explored to minimise emissions through efficient use of vessels, plant and vehicles, adoption of low-emission technologies where appropriate, and implementation of good environmental management practices during project delivery.

Significance of Effect: **Neutral**

## 5.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

It is considered unlikely WAL20 & NEW 04 would have significant benefit or negative effect for material assets.

### Opportunities and Mitigation

Not Applicable.

Significance of Effect: **Neutral**

## 5.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

Improving biosecurity for marine invasive species and improving condition of features within European Marine sites will have no pathways for effects on this receptor.

Delivery of projects eg Intertidal habitat restoration has the potential for effects on cultural heritage during construction but with standard practices and mitigation, the risk and scale of such an impact is considered to be low.

### Opportunities and Mitigation

- Project level assessment in line with OGN 87 to ensure any negative effects are avoided, reduced or mitigated and opportunities are maximised.
- Early engagement with Heneb &/or Cadw regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.

### Significance of Effect: **Neutral**

## 5.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Marine Protected Areas (MPA) are parts of the sea identified for the protection of marine habitats and species.

Delivering actions within the annual MPA Network Management Action Plan (reviewing impacts of unregulated activities, improving biosecurity for marine invasive species and improving condition of features within European Marine sites) could contribute to achieving this SEA objective through management activities maintain or enhance feature condition and address issues and pressures however it is unlikely to have a significant positive effect for landscape.

Negative effects to landscape or seascape are unlikely as a result of the measure.

Delivering investigations and management actions within the MPA network will have no pathways for effects on this receptor.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Neutral**

## 5.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

## Description of Effect

Improving biosecurity for marine invasive species and improving condition of features within European Marine sites is unlikely to have significant benefit or create negative effects for climatic factors.

Delivering investigations and management actions within the Marine Protection Area network is unlikely to have significant positive or negative effects for climatic factors.

## Opportunities and Mitigation

Not Applicable.

## Significance of Effect: **Neutral**

# GROUP 6: National Measures Assessment – Partnerships – All (Delivery Mechanism – Partnerships)

**National Measures:**

- **WAL03** NRW and its partners deliver improvements for water in 'Opportunity Catchments' using the Sustainable Management of Natural Resources (SMNR) principles

**Waterbody Measures:**

Not Applicable.

## 6.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Delivery of improvements for water in 'Opportunity Catchments' using the Sustainable Management of Natural Resources (SMNR) principles is intended to deliver multiple environmental, social and economic benefits through partnership working and collaborative action. Activities may include peatland and river restoration, nature-based solutions, heritage and landscape conservation, community stewardship, improved access to nature and restoration of ecosystem services.

These activities are expected to contribute positively to health and wellbeing through improved environmental quality, with associated positive effects for mental and physical wellbeing.

The use of nature-based solutions should also be considered with potential to reduce flood risk as natural fluvial and ecosystem processes are restored – building resilience and benefitting local communities through a reduction in the frequency and severity of flood events.

The scale and distribution of these benefits will depend on the specific interventions delivered and should be confirmed at a project level.

Implementation of schemes can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

### Opportunities and Mitigation

- Project-level environmental assessment should be undertaken in accordance with relevant NRW guidance, including OGN 87 where applicable, to identify opportunities to enhance health, wellbeing and equity outcomes and avoid or minimise adverse effects.
- Delivery should draw on the relevant findings of the accompanying HIA, alongside local evidence, Well-being Plans and public health expertise, should be used where appropriate to maximise health and wellbeing benefits, reduce inequalities, and enhance determinants of health through improvements to the natural and built environment, including equitable access to green and blue spaces, green corridors and recreational opportunities, particularly for groups who may face barriers to accessing the natural environment (e.g. older people, disabled people and deprived communities).
- Community socio-economic circumstances and drivers of deprivation should be considered throughout scheme design and delivery to maximise equitable distribution of benefits.
- Opportunity Catchment initiatives should seek to deliver multiple benefits through partnership working, including nature recovery, climate resilience, recreation, ecosystem services and community wellbeing. Welsh language, cultural interpretation and inclusive community engagement should be incorporated where appropriate to maximise participation, accessibility and sense of place.
- Sensitive engagement with local communities and stakeholders prior to and during construction periods.

### Significance of Effect: **Positive**

## 6.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

The opportunity catchment approach aims to provide a focus for collaboration and partnership working to improve water. Use of the Sustainable Management of Natural Resources (SMNR) principles to approach works will ensure resilience of ecological networks and their value/contribution to local communities is considered.

A range of projects are delivered under this measure from fora (eg Clwyd Forum) to the Clear Streams Initiative in Swansea to peatland and river restoration in the Uwch Conwy Project. Overall, there should be a positive effect by taking a collaborative

approach to delivery. At a project level, there could be temporary negative effects on biodiversity depending upon the habitats and species that are present and nature of the action.

Environmental risk is managed through application of OGN 87 for projects delivered by NRW. Where partners are leading delivery, there must be agreements in place to ensure environmental assessment is applied appropriately and necessary consents are sought.

Whilst this measure is aimed at improvement of the water environment, the main focus is on collaboration and partnership. The work could be delivered and benefits demonstrated through other measures eg WAL02 but the focus of this measure is on ways of working, hence on balance this measure being neutral.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any negative impacts are avoided, reduced or mitigated.
- Partnership agreements must ensure that environmental assessments and consents are in place as appropriate.
- Appropriate use should be made of the DEECA (Diversity, Extent, Condition, Connectivity and Adaptability) framework to evaluate ecosystem resilience and ensure compliance of projects with Net Benefit for Biodiversity requirements.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques, in line with Section 6 - Biodiversity and resilience of ecosystems duty of the Environment Act.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Neutral**

## 6.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

WAL03 delivery of improvements for water in 'Opportunity Catchments' using the Sustainable Management of Natural Resources (SMNR) principles may offer potential for nature-based solutions with potential benefits for land use and soils. This may include for example introduction of measures to reduce run-off and protect soil from erosion. There also may be opportunities to increase connectivity across the woodland habitat network (in particular taking into account the presence of ancient woodland and Welsh Atlantic rainforests to tie in with the country-wide Resilient Ecological Network for woodland). The opportunities for this and scale of benefit would be dependent on type of measure and its location etc.

There may also however be potential for negative effects to arise, depending on the types of measure being implemented and land use, geology, soil, and contaminated land in the area – as a potential result of change of land use and land management with resulting effects on soil and geomorphology.

Given the scale of positive or negative effect likely to arise as a result of this measure, it is considered unlikely they would either detract from or contribute to achievement of this SEA objective.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN87 will ensure any negative impacts are avoided, reduced or mitigated.
- Partnership agreements must ensure that environmental assessments and consents are in place as appropriate.
- Geologically important sites should be protected during works and increased opportunities for education considered.
- Potential opportunities to increase woodland canopy cover and tie in with the woodland habitat network.
- Potential to introduce measures to reduce run-off and soil degradation/diffuse pollution (e.g. riparian habitat planting and natural flood management techniques) should be explored as part of the programme of measures.
- If contaminated land is present, options should be explored at the project level for potential remediation solutions to bring land back into use.
- Liaison with local stakeholders could offer opportunity to link land management solutions to other catchment management schemes such as agri-environment and woodland management which could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution.

### Significance of Effect: **Neutral**

## 6.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

Improvements for water in 'Opportunity Catchments' are likely to directly contribute to this SEA objective.

A range of projects are delivered under this measure from fora (eg Clwyd Forum) to the Clear Streams Initiative in Swansea to peatland and river restoration in the Uwch Conwy Project. Overall, there should be a positive effect on water quality and resources by taking a collaborative approach to delivery. At a project level, there could be temporary negative effects on water quality depending upon the nature of the action.

It is anticipated that design for improvement schemes would focus on nature-based solutions where possible and would not seek to heavily modify stream or river channels, minimising negative effects of any proposed works on water resources.

### Opportunities and Mitigation

- Seek to maximise opportunity to work with natural catchment processes by implementation of innovative alternatives to traditional grey engineered solutions.
- Early design input to minimise use of hard engineering in favour of nature-based solutions and where possible to avoid modification to river channels – in particular those that may have a detrimental effect on river processes and ecosystem functioning.
- Opportunity to consider wider benefits associated with water quality and resources through the catchment measures that will be implemented.
- Project level assessment in line with OGN 87 to ensure any negative impacts of construction are avoided, reduced or mitigated and opportunities are maximised.
- Partnership agreements must ensure that environmental assessments and consents are in place as appropriate.

### Significance of Effect: **Positive**

## 6.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices and use of Environmental Action Plans etc.

This measure is not considered likely to contribute significantly to achieving this SEA objective, although indirect air quality benefits may arise through catchment-scale habitat restoration and nature-based solutions that help intercept airborne pollutants and improve ecosystem resilience to atmospheric deposition pressures.

### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work. Where appropriate, opportunities to minimise emissions through efficient use of plant and machinery, low-emission technologies and good construction practices should be considered during scheme design and delivery.

### Significance of Effect: **Neutral**

## 6.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

The programme of improvements associated with WAL03, may be able to build some asset/infrastructure resilience in localised areas prone to flooding through habitat creation and restoration. However, this would depend on the type of measure that is being implemented and whether nature-based solutions can be incorporated and the benefit may be localised. Measures are unlikely to require large amounts of material usage or to have significant negative effects on existing assets and infrastructure.

### Opportunities and Mitigation

- Improvement measures should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.
- Project level environmental assessment in line with OGN 87. Partnership agreements must ensure that environmental assessments and consents are in place as appropriate.
- Opportunities to enhance assets to provide multiuser access.

### Significance of Effect: **Neutral**

## 6.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

The opportunity catchment approach aims to provide a focus for collaboration and partnership working to improve water. Use of the Sustainable Management of Natural Resources (SMNR) principles to approach works will ensure resilience of ecological networks and their value/contribution to local communities is considered.

A variety of projects and programmes can be delivered which may result in positive or negative effects on cultural heritage depending on the nature of the action

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 will ensure any negative impacts are avoided, reduced or mitigated.
- Partnership agreements must ensure that environmental assessments and consents are in place as appropriate
- Early engagement with Heneb &/or Cadw regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.

### Significance of Effect: **Unknown**

## 6.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

The opportunity catchment approach aims to provide a focus for collaboration and partnership working to improve water. Use of the Sustainable Management of Natural Resources (SMNR) principles to approach works will ensure resilience of ecological networks and their value/contribution to local communities is considered.

A variety of projects and programmes can be delivered which may result in positive or negative effects on landscape depending on the nature of the action.

Environmental risk will be managed through application of OGN 87, however, given there is uncertainty regarding the scale of works proposed and location that may be affected.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 will ensure any negative impacts are avoided, reduced or mitigated.
- Partnership agreements must ensure that environmental assessments and consents are in place as appropriate
- The promotion of nature-based solutions and/or soft landscaping for these measures would minimise visual impact. Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.

### Significance of Effect: **Unknown**

## 6.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Measure WAL03 is considered unlikely to have pathways for significant effect on climatic factors. Carbon footprint of any solutions/projects may cause some negative effects but there may also be some opportunity for nature-based solutions that promote carbon sequestration at a localised scale.

### Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.
- Projects should be designed to have net carbon benefit by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.
- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.

- Adopt solutions that work with natural processes such as wetland creation and woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

Significance of Effect: **Unknown**

# GROUP 7: National Measures Assessment – Water Company Investment (AMP) – Physical Modifications (Delivery Mechanism – Water Company Investment)

## National Measures:

- **CYM31** National Environment Programme schemes to investigate and implement measures to resolve impacts caused by water storage reservoirs

- **WAL19** Water Companies will address the impacts of water company assets on fish passage causing failure of WFD Regulations 2017 objectives in accordance with objectives in AMP7. This will address structures that act as barriers to fish migration which are associated with other aspects of water company operations, such as trunk sewers and mains pipes located in river channels, and associated concrete sills and structures. In some cases, there may be uncertainty over asset ownership which will need to be resolved. Solutions may often be implemented through working in partnership with other sectors.

## Waterbody Measures:

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a %) | No. of Waterbodies in Wales Measure applied to (also as a %) |
|---|---|---|---|
| **PM2** | Improve insufficient flow regime (baseline flow quantity or flow variability) downstream of water storage impoundments | **11 (1.9%)** | **24 (2.6%)** |
| **PM3** | Improve and or maintain sediment supply and transport downstream of water storage impoundments | **6 (1.1%)** | **35 (3.8%)** |
| **PM4** | Mitigate impacts on river water temperature and dissolved oxygen downstream of water storage impoundments | **0** | **2 (0.2%)** |

# 7.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

## Description of Effect

CYM31 may offer some benefit to local community health and well-being, depending on the impacts it looks to mitigate for/resolve. As improvements to environmental conditions and opportunities for example to improve access to safe blue and green space are unknown it is not possible to confirm whether benefit would result in contribution to this SEA objective, however, improvements to environmental quality, habitat condition and ecosystem function have the potential to contribute positively to health and wellbeing outcomes. Benefits will depend on the nature and scale of interventions delivered.

WAL19 relates to fisheries and fish passage.  It is unlikely this measure will have a negative effect on population and health due to the nature of its aims and likely scale of works it promotes.

While there are likely to be some benefits to local populations through the improvement and development of fisheries (e.g. provision of recreational opportunity and improvements to overall environmental quality), these benefits are expected to contribute positively to health and wellbeing, particularly through recreation, connection with nature and enjoyment of the aquatic environment. Benefits may be of particular relevance in catchments supporting important migratory fisheries and recreational angling. Opportunities for additional benefit to be incorporated (e.g. improvements to green and blue space access or job opportunities) are likely to be limited due to the scale of works being undertaken.

Implementation of projects can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

## Opportunities and Mitigation

- The Wales Water Industry Strategic Environmental Requirements (WWISER) sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Discharges of water from reservoirs requires consent from NRW and are subject to a risk assessment.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and including consideration of population and human health, provides an opportunity to understand community characteristics and social vulnerabilities and assess the potential direct and indirect impacts of specific schemes on population groups, communities and places.

- Draw on relevant evidence, including findings from the accompanying HIA, local Well-being Plans and local public health expertise where appropriate, to enhance and protect the determinants of health e.g. through improved physical environment (built and natural environment) improvements and access to green corridors, urban greenspaces and recreational opportunities to benefit physical and mental well-being.
- Particular consideration should be given to vulnerable population groups and communities that may experience disproportionate effects from poor environmental quality or barriers to accessing environmental benefits.
- Opportunities for local skills development, community engagement, Welsh language promotion and cultural interpretation should be explored where appropriate.
- Sensitive engagement with local communities and stakeholders prior to and during construction periods.

Significance of Effect: **Positive**

## 7.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

CYM31 and WAL19 all aim to resolve or decrease impacts caused by Water company assets. The nature of the measures delivered under CYM31 is uncertain, and given the need to maintain reservoirs, is likely to include actions such as altering discharge regimes or mitigating impacts in waterbodies downstream of reservoirs, with the overall ambition of improving the environment.

Measures WAL19 addresses impacts of water company assets on fish passage. It is likely to positively contribute to the SEA objective, in particular through restoring riverine processes in favour of habitat and species resilience. The significance of this positive effect will depend upon the level of application of the measure.

Habitat improvements and removal/remediation of existing physical modifications however do have the potential for negative effects on biodiversity depending on the nature, scale and location of the activities proposed.

As the overall aim for CYM31 and WAL19 is one of ecological improvement, it is anticipated that nature-based solutions can potentially be explored and action will be taken to avoid, reduce and mitigate negative effects through design and on-site approach to works.

### Opportunities and Mitigation

- The Wales Water Industry Strategic Environmental Requirements (WWISER) sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Discharges of water from reservoirs requires consent from NRW and are subject to a risk assessment.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and including consideration of biodiversity, flora and fauna. Any projects requiring planning permission will need to demonstrate Net Benefit for Biodiversity.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Positive**

## 7.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

CYM31 and WAL19 look to address impacts of physical modifications in catchments through water company investment. There may be some potential through these measures for nature based solutions to be implemented with potential benefits for land use

and soils.  This may include for example introduction of measures to reduce run-off and protect soil from erosion.  The opportunities for this and scale of benefit would be dependent on type of measure and its location etc.

There may also however be potential for negative impacts to arise, depending on the types of measure being implemented and land use, geology, soil, and contaminated land in the area – as a potential result of change of land use and land management with resulting effects on soil and geomorphology.

Given the scale of positive or negative effect likely to arise as a result of these measures, it is considered unlikely they would either detract from or contribute to achievement of this SEA objective.

### Opportunities and Mitigation

- The Wales Water Industry Strategic Environmental Requirements (WWISER) sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.
- Geologically important sites should be protected during works and increased opportunities for education considered.
- If contaminated land is present, options should be explored at the project level for potential remediation solutions to bring land back into use.
- Potential to introduce measures to reduce run-off and soil degradation/diffuse pollution (e.g. riparian habitat planting and natural flood management techniques) should be explored as part of the programme of measures.

### Significance of Effect: **Neutral**

## 7.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

CYM31 and WAL19 all aim to resolve or decrease impacts caused by Water company assets. The nature of the measures delivered under CYM31 is uncertain, and given the need to maintain reservoirs, is likely to include actions such as altering

discharge regimes or mitigating impacts in waterbodies downstream of reservoirs, with the overall ambition of improving the environment.

It is anticipated that design for measures to mitigate impacts caused by water storage reservoirs would focus on nature-based solutions where possible and would not seek to heavily modify stream or river channels, minimising negative effects of any proposed works.

Although these measures are not specifically related to water quality, it is considered likely that through appropriate design and use of nature based solutions there could be an overall benefit to water quality and resources.

WAL19 would aim to remove or remediate infrastructure currently impeding fish passage. Where possible nature based solutions should be utilised in favour of hard engineering solutions.

These improvements in turn should allow for natural fluvial processes to recover with overall benefit for water quality as healthier ecosystems return. There also may be potential benefits associated with flood resilience with reduction in surface run off and diffuse pollution if schemes can include restoration of riparian habitats and as a result, improvements to sediment management in waterbodies.

## Opportunities and Mitigation

- The Wales Water Industry Strategic Environmental Requirements (WWISER) sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.

- Discharges of water from reservoirs requires consent from NRW and are subject to a risk assessment.

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

- Seek to maximise opportunity to work with natural catchment processes by implementation of innovative alternatives to traditional grey engineered solutions.

- Early design input in favour of nature based solutions for replacement of in channel infrastructure wherever possible and to avoid further modification to river channels where hard engineering cannot be avoided – in particular infrastructure that may have a detrimental effect on river processes and ecosystem functioning.

Significance of Effect: **Positive**

## 7.5 Air

### Will the draft RBMP protect and improve air quality?

#### Description of Effect

The measure is not specifically intended to reduce air pollutant emissions or improve air quality. Whilst wider environmental benefits and indirect ecosystem benefits may arise, effects on air quality are expected to be limited.

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices.

These measures are considered unlikely to contribute to achieving this SEA objective.

#### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work. Where appropriate, opportunities to minimise emissions through efficient use of plant and machinery, low-emission technologies and good construction practices should be considered during scheme design and delivery.

Significance of Effect: **Neutral**

## 7.6 Materials, Assets and Infrastructure

### Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?

#### Description of Effect

CYM31 aims to investigate and implement measures to resolve impacts caused by water storage reservoirs. This should have benefit for these existing important material assets as measures look to mitigate their effects, protecting and maintaining them for the future. Depending on impacts being addressed there may be some benefit for other material assets and infrastructure in the area; however, benefit may be fairly localised.

WAL19 looks to address impacts of physical modifications in river catchments –specifically in relation to assets and infrastructure currently impeding fish passage (e.g. pipes in river channels and associated sills and structures).

Measures to address these asset impacts will have benefit for the local environment in the long-term and should, through appropriate design, also give opportunity for nature-based solutions and measures to address flood risk and build resilience in local ecosystems to future climate change events and reduce risk to other material assets and infrastructure in the area, albeit potentially at a localised scale.

Where work to and/or temporary diversion of infrastructure (e.g. pipelines in river channels) is required, this could have temporary negative effects on important infrastructure, but it is anticipated this would be managed appropriately to minimise risk to supply and network.

Construction work and habitat improvement schemes would require material usage and produce waste.

### Opportunities and Mitigation

- Improvement measures should consider sustainable procurement of materials and appropriate construction and waste management practices.  Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.
- Opportunities to enhance assets to provide multiuser access.
- Opportunities to consider renewable energy sources through project work.

### Significance of Effect: **Positive**

## 7.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

CYM31 is unlikely to contribute to achievement of this cultural heritage SEA objective.

The programme of measures associated with CYM31 may (depending on location, type and scale) result in pathways for effects on the historic environment.

WAL19 looks to address impacts of physical modifications in river catchments –specifically in relation to assets and infrastructure currently impeding fish passage (e.g. pipes in river channels and associated sills and structures).

Works could involve changes to heritage assets or their removal, or the introduction of new features such as fish passes to the existing barriers. Such interventions can be positive or negative by removing impacts from historic landscapes, facilitating recording of heritage assets (known and unknown) or the removal of assets with heritage value or addition of features that could impact upon a heritage asset or its setting, or a historic landscape.

Waterbody Measures PM2 and PM3 apply to a small number of waterbodies (4 rivers and 8 lakes) spread out across the Western Wales RBD (in Anglesey, Mid Wales, Pembrokeshire and South Wales). Five of the 8 lakes have no pathways for effect. The remaining 3 lakes and 4 rivers have a mixture of heritage features including Registered Historic Landscapes, Scheduled Monuments and Listed Buildings, with the Alaw catchment in Anglesey and Syfynwy catchment in Pembrokeshire having the highest number of heritage features present.

National Measures to which these Waterbody Measures relate to may include obstruction removal works (WAL19). This measure is unlikely to contribute to the cultural heritage SEA objective but may have limited impacts to a small number of heritage features within small number of disperse catchments across Western Wales RBD.

## Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.
- Early engagement with Heneb &/or Cadw is recommended regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.
- Scheduled Monument consenting process to be adhered to.
- Where projects fall within Registered Historic Landscapes or are within / associated with World Heritage Sites, early engagement with CADW will be required.

## Significance of Effect: **Negative**

## 7.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

The nature of the measures delivered under CYM31 is uncertain and given the need to maintain reservoirs, is unlikely to make a significant contribution to this SEA objective.

In addressing the impacts of water company assets on fish passage, WAL 19 has the potential to support the SEA objective where projects remove existing physical features that are detrimental to landscape character, or that result in habitat improvements that would be beneficial to the receiving landscape and also provide wider climate change resilience. Where projects include the addition of new features or structures e.g. fish passes, there is potential for negative landscape impacts but this would be managed through the environmental assessment and design process including mitigation measures that could deliver wider landscape benefit.

### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.
- The promotion of nature-based solutions and/or soft landscaping for these measures would minimise landscape and visual impacts. Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.

### Significance of Effect: **Neutral**

## 7.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Measures CYM31and WAL19 are considered unlikely to have pathways for significant effect on climatic factors due to their scale.

In delivering the measures, the design must take into account the changing climate and ensure they are adaptable to climate change. Indirectly, delivery of these measures should enable adaptation to climate change pressures.

Carbon footprint of any solutions/projects may cause some negative effects but there may also be some opportunity for nature-based solutions that promote carbon sequestration at a localised scale.

## Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.
- Projects should be designed to have net carbon benefit by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.
- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.
- Adopt solutions that work with natural processes such as wetland creation and woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

## Significance of Effect: **Neutral**

# GROUP 8: National Measures Assessment – Water Company Investment (AMP) – Pollution from rural areas

### National Measures:

- **WAL05** At risk DrWPAs (and all upstream water bodies) have been taken forward as Safeguard Zones for funded Asset Management Plan (AMP) Investigations to assess the sources of the raw water failure and to identify viable catchment solutions. Where catchment solutions are found to be possible, and stakeholder agreement can be assured, improvement measures will be delivered through the AMP.

### Waterbody Measures:

Not Applicable.

## 8.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Catchment solutions to address raw water failure in at risk DrWPAs will have benefit for local populations, particularly through protecting and improving drinking water quality and supporting physical health outcomes.

Informed by the findings of the accompanying HIA, benefits may be particularly important for vulnerable population groups, including children and young people, older adults, and communities experiencing poorer environmental quality or greater exposure to drinking water quality issues.

Water quality improvement in at risk DrWPAs may also help restore confidence in environmental management and reduced stigma associated with contaminated environments. This may contribute positively to mental wellbeing through increased confidence in drinking water quality and reduced anxiety regarding contamination risks.

Opportunities for additional benefit to be incorporated (e.g. improvements to green and blue space access, improvements to environmental conditions in the most deprived communities, or job opportunities) are likely to be limited due to the scale and type of works being undertaken.

Implementation of schemes can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

### Opportunities and Mitigation

- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and including consideration of population and human health, will provide an opportunity to understand community characteristics and social vulnerabilities and assess the potential direct and indirect impacts of specific schemes on population groups, communities and places.
- Sensitive engagement with local communities and stakeholders prior to and during construction periods.
- Clear, accessible and bilingual communication regarding risks, proposed improvements and outcomes should be provided where appropriate to support community confidence, understanding and trust
- Opportunity for positive PR where solutions have been addressed in DrWPAs, including communication of benefits associated with improved drinking water quality and source water protection.
- Consideration should be given to vulnerable population groups and communities experiencing poorer environmental quality or barriers to accessing environmental benefits, with opportunities sought to reduce health inequalities where possible.

### Significance of Effect: **Positive**

## 8.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

This measure aims to investigate and deliver catchment solutions to improve the raw water quality in DrWPAs. These measures could involve interventions to address diffuse pollution as well as point source. Interventions to improve water quality are likely to have indirect positive effects on biodiversity but physical works on the ground could have the potential for negative effects on biodiversity depending on the nature, scale and location of the activities proposed.

Whilst nature-based solutions can potentially be explored and action taken to avoid, reduce and mitigate negative effects, given there is uncertainty regarding the scale of works proposed and type of habitats/species that may be affected it is considered that this measure is likely to have a neutral effect on biodiversity.

### Opportunities and Mitigation

- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance must be applied and projects requiring planning permission will be required to demonstrate a Net Benefit for Biodiversity.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation and restoration, green engineering and natural management techniques.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Neutral**

## 8.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

WAL05 investigations to assess the sources of the raw water failure and to identify viable catchment solutions for at risk DrWPAs may offer some potential for promoting sustainable use and management of land, depending on the scale of measures being implemented.

There may also however be potential for negative impacts to arise, depending on the types of measure being implemented and land use, geology, soil, and contaminated land in the area – as a potential result of change of land use and land management with resulting effects on soil and geomorphology.

Given the scale of positive or negative effects likely to arise as a result of this measure, it is considered unlikely they would either detract from or contribute to achievement of this SEA objective.

### Opportunities and Mitigation

- Geologically important sites should be protected during works and increased opportunities for education considered.
- Potential to introduce measures to reduce run-off and soil degradation/diffuse pollution (e.g. riparian habitat planting and natural flood management techniques) should be explored as part of the identified solutions.
- If contaminated land is present, options should be explored at the project level for potential remediation solutions to bring land back into use.
- Liaison with local stakeholders could offer opportunity to link land management solutions to other catchment management schemes such as agri-environment and woodland management which could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution.

### Significance of Effect: **Neutral**

## 8.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

Delivery of catchment solutions and improvement measures for at risk DrWPAs through investigations to assess and mitigate sources of raw water failure will directly contribute to this SEA objective through reduction in pollution and associated water quality improvements and to secure water resource availability.

The scale of application of this measure will determine the significance of the positive effect.

### Opportunities and Mitigation

- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

- Seek to maximise opportunity to work with natural catchment processes for measures by implementation of innovative alternatives to traditional grey engineered solutions.

- Opportunity to consider wider benefits associated with water quality and resources through the catchment measures that will be implemented.

### Significance of Effect: **Positive**

## 8.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

The measure is not specifically intended to reduce air pollutant emissions or improve air quality. Whilst wider environmental benefits and indirect ecosystem benefits may arise, effects on air quality are expected to be limited.

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices.

This measure is considered unlikely to contribute to achieving this SEA objective

### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work.

### Significance of Effect: **Neutral**

## 8.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

WAL05 seeks to assess sources of raw water failure and to identify viable catchment solutions for at risk DrWPAs as Safeguard Zones through the AMP. As these form a valuable material asset and resource to the water network with significance for population and human health, any improvements to water quality at these locations will have benefit to the local community and environment.

Construction work would require material usage and produce waste – it is anticipated this would be managed efficiently through good environmental practice. Depending on solutions implemented and their location, there may be short-term adverse impacts on local material assets and infrastructure.

### Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.

- Projects should engage with local stakeholders early in scheme development to minimise disruption to existing assets, businesses and infrastructure through appropriate design and programming.

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

### Significance of Effect: **Positive**

## 8.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

Investigations to assess sources of raw water failure associated with DrWPAs and identifying catchment solutions are unlikely to have pathways for effects on cultural heritage assets therefore WAL05 is unlikely to contribute to achievement of the cultural heritage SEA objective.

### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

- Early engagement with Heneb &/or Cadw is recommended regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.
- Scheduled Monument consenting process to be adhered to.
- Where projects fall within Registered Historic Landscapes or are within / associated with World Heritage Sites, early engagement with CADW will be required.

### Significance of Effect: **Neutral**

## 8.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Investigations to assess sources of raw water failure associated with DrWPAs and identifying catchment solutions are unlikely to have pathways for effects on landscape & seascape therefore WAL05 is unlikely to contribute to achievement of the landscape & seascape SEA objective.

### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

### Significance of Effect: **Neutral**

## 8.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

WAL05 is considered unlikely to have pathways for significant effect on climatic factors.  Carbon footprint of any solutions/projects may cause some negative effects but there may also be some opportunity for nature-based solutions that promote carbon sequestration at a localised scale.

## Opportunities and Mitigation

Projects must consider the carbon footprint associated with activities, designs and materials early in project development, seeking innovative solutions to reduce carbon through options appraisal and design.

Projects should be designed to have net carbon benefit wherever possible by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.

Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.

Adopt solutions that work with natural processes such as wetland creation and woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

## Significance of Effect: **Neutral**

# GROUP 9: National Measures Assessment – Water Company Investment (AMP) – Pollution from wastewater

## National Measures:

- **CYM18** Water companies develop and deliver catchment management options that improve water quality and deliver additional ecosystem services

- **WAL06** Deliver measures in AMP8 (Menai Strait and Bury Inlet SWPA's) to endeavour to achieve the Shellfish Water Protected Area objective. Plans are also in place to continue to gain a better understanding of improvements required to achieve Shellfish Water Protected Area objective in the wider hydrological catchments.

- **WAL10** The Water Industry will deliver a programme of investigations and improvements to sewage discharges (both continuous and intermittent) in order to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP.

- **WAL23** Water Companies will deliver a programme of investigations and improvements to deal with chemicals to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP

- **NEW01** Investigate, identify and deliver a range of catchment measures to achieve and maintain the bathing water standard in all designated bathing waters.

## Waterbody Measures:

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a %) | No. of Waterbodies in Wales Measure applied to (also as a %) |
|---|---|---|---|
| **WW1.4** | Deliver improved discharge quality/reduce spills from all intermittent point source discharges e.g. CSOs, emergency overflows etc. | **13 (2.3%)** | **19 (2.0%)** |
| **WW1.5** | National chemical measure(s) apply | **19 (3.4%)** | **26 (2.7%)** |
| **WW2.0** | Deliver action(s) identified in the NEP / AMP to restore SAC towards favourable condition | **16 (2.8%)** | **25 (2.7%)** |

## 9.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Measures to deliver catchment management options to improve water quality (CYM18), to deliver measures to implement improvements to meet Shellfish Water Protected Area objectives (WAL06) and to improve sewage discharges to support delivery of WFD Regulations 2017 (WAL10) will have benefit for human health and contribute significantly to achieving this SEA objective. This will result through reduction in waterborne disease, improved recreational water safety, lower microbial and chemical contamination, and improved shellfish safety.

These findings are consistent with the accompanying HIA, which identifies major positive health effects associated with reductions in microbial pollution, improved shellfish safety, reduced health inequalities and increased public confidence in water quality.

There are also additional benefits that could arise through opportunities for reduced flood risk where nature based solutions are introduced and fluvial and ecosystem processes can recover.

There are opportunities for improved mental wellbeing through reduced anxiety about sewage pollution and increased confidence in water safety. Improved public trust and confidence in water quality through transparent monitoring and visible reductions in sewage pollution will also have benefit for local populations.

The catchment measures associated with CYM18 also offer opportunity for engagement and collaboration with local communities and stakeholders to focus wider benefits on issues most appropriate to that local population. An inclusive approach would provide opportunity for local communities to feel listened to and more engaged with their local environment. Schemes should look to avoid negative impacts and aim to provide multiple benefits including for example increased access to safe, quality green and blue space provision and increased opportunity for recreational use.

NEW 01 Designated bathing waters offer a valuable resource for physical recreation and access for people to blue and greenspace. This offers a range of health and wellbeing benefits including to mental and physical health.

Where bathing water is below standard, this creates potential health implications, in particular for vulnerable individuals and groups. Measure NEW01 therefore seeking to achieve and maintain the bathing water standard in all designated bathing waters directly

contributes to this SEA objective providing access to safe water and increased opportunity for recreational benefit. Improvements may be particularly beneficial for communities that currently experience poorer environmental quality or rely on accessible local blue spaces for recreation and wellbeing

Where the message regarding provision of safe bathing water and designated bathing water locations can be cascaded to local populations this has additional health and wellbeing benefit for local populations through for example: encouraging water access at safe locations instead of access to less safe and potentially dangerous locations (in particular during periods of heatwave which are likely to increase in frequency as a result of climate change); and decreasing anxiety regarding potential implications of bathing in 'contaminated' water that may have been fuelled by media and social media messages.

However, encouraging increased use of designated bathing waters can also create negative effects on local populations – e.g. through congestion and overcrowding (during heatwave events) and the anxiety/depression that can result in.

WAL23 There is likely to be benefit to local populations through improvement to water quality as a result of chemical reduction, resulting in reduced exposure to harmful chemicals, and improved drinking water safety etc. Taking account of the findings of the accompanying HIA, benefits may be particularly important for vulnerable population groups, including children and young people, older adults, private water supply users, and communities experiencing poorer environmental quality or historic exposure to chemical contamination.

Improvement relating to chemicals in water may also help restore confidence in environmental management and reduced stigma associated with contaminated environments. This may contribute to improved mental wellbeing through reduced anxiety and concern regarding chemical pollution and environmental quality and is consistent with the accompanying HIA, which identifies health benefits associated with reduced exposure to harmful chemicals, improved drinking water safety and reduced anxiety regarding environmental contamination, particularly for vulnerable groups and communities with historic exposure to pollution.

Implementation of schemes can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

## Opportunities and Mitigation

- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and including consideration of population and human health, will provide an opportunity to understand community characteristics and social vulnerabilities and assess the potential direct and indirect impacts of specific schemes on population groups, communities and places.

- Community socio-economic status/drivers of deprivation should be considered.

- Relevant findings of the accompanying HIA, local Well-being Plans and public health evidence should be used, where appropriate, to maximise health and wellbeing benefits, reduce health inequalities and improve equitable access to clean and safe blue spaces, recreation and the natural environment.

- Particular consideration should be given to vulnerable population groups, including children and young people, older adults, private water supply users and communities experiencing poorer environmental quality or barriers to accessing environmental benefits.

- Catchment measures should seek to deliver multiple benefits through partnership working, including improved environmental quality, climate resilience, access to nature, recreation and community wellbeing.

- Clear, accessible and bilingual communication regarding bathing water quality, shellfish water quality and wider water quality improvements should be provided where appropriate to maximise public confidence, support informed use of water environments and reduce anxiety regarding pollution and contamination risks.

- Any temporary disruption associated with investigations or implementation works should be minimised through early and sensitive engagement with local communities and stakeholders.

### Significance of Effect: **Significant Positive**

## 9.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

These measures could involve interventions to address diffuse pollution as well as point source. Interventions to improve water quality are likely to have indirect positive effects on biodiversity, flora and fauna, thereby improving ecological status and potential. The measures have the potential to restore condition of waterbodies and therefore benefit their role in connectivity. The significance of the positive effect will depend upon the scale of delivery.

Nature-based solutions should be explored to seek to deliver wider benefits.

Physical works on the ground could have the potential for negative effects on biodiversity depending on the nature, scale and location of the activities proposed. Project level environment assessment should seek to avoid, reduce and mitigate negative effects.

The focus of these measures is on water quality and so there are limited opportunities to restore natural processes and monitor / control INNS, but these could be explored as wider benefits through project delivery.

### Opportunities and Mitigation

- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and ensure compliance of projects with Net Benefit for Biodiversity requirements.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques.
- An opportunity to work collaboratively with others (e.g. conservation bodies, wildlife trusts / organisations) when developing the programme of measures, to deliver sympathetic solutions with wider biodiversity benefits.

### Significance of Effect: **Positive**

## 9.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

## Description of Effect

These measures involve the water companies investing in making improvements to existing assets and infrastructure e.g. sewage discharges, to support delivery of WFD Regulations 2017 and Protected Area objectives (including for Shellfish Water Protected Areas (SWPA)), to improve water quality and to deliver additional ecosystem services.

The measures also deliver catchment measures to achieve water quality standards for SWPA objectives and bathing water standards. This may offer some potential for promoting sustainable use and management of land, and the introduction of nature-based solutions, which would increase protection of soils through reduction in run-off. The level of positive effect would depend on the scale of measures being implemented.

There may also however be potential for negative effects to arise, depending on the types of measure being implemented and land use, geology, soil, and contaminated land in the area – as a potential result of change of land use and land management with resulting effects on soil and geomorphology.

Given the scale of positive or negative effect likely to arise as a result of this measure, it is considered unlikely they would either detract from or contribute to achievement of this SEA objective.

## Opportunities and Mitigation

- Linking the identified catchment measures that will be implemented with other catchment management schemes such as agri-environment and woodland management could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution. This would be dependent on the scale and type of measure being proposed.

- Geologically important sites should be protected during works and increased opportunities for education considered.

- If contaminated land is present, options should be explored at the project level for potential remediation solutions to bring land back into use.

- Liaison with local stakeholders could offer opportunity to link land management solutions to other catchment management schemes such as agri-environment and woodland management which could promote measures to deliver wider flood risk (and other) management benefits through improvements to soil functions and reductions in diffuse pollution.

## Significance of Effect: **Neutral**

## 9.4 Water Quality and Resources

### Will the draft RBMP protect and improve water quality and quantity?

### Description of Effect

These measures all seek to manage pollution from sewage and wastewater through water company investment, with direct significant contribution to achievement of this SEA objective.

CYM18 will look to deliver catchment management options that improve water quality. These also offer potential for schemes to add benefit associated with increased resilience to flood risk across catchment as well as reduction in surface run-off and diffuse pollution as a result of implementation of nature-based solutions, habitat creation and increased ecosystem services.

WAL10 relates to a more directed approach by the water industry to delivering investigations and improvements to existing sewage discharges (continuous and intermittent) in order to support delivery of WFD Regulations 2017 and Protected Area objectives.

It is anticipated that design for schemes associated with these measures would not seek to heavily modify stream or river channels.

NEW 01 Delivery of catchment measures to achieve and maintain the bathing water standard in designated bathing waters will directly contribute to this SEA objective as a result of water quality improvements and may offer wider benefits.

WAL23 Water Companies will deliver a programme of investigations and improvements to deal with chemicals to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP.

Individual projects may not achieve status improvement alone and the degree of contribution to achieving this SEA objective will depend upon the scale of delivery.

### Opportunities and Mitigation

- Opportunity to contribute to WFD objectives to maximise the qualitative and quantitative status of waterbodies.
- Potential opportunity to incorporate measures to reduce run-off and to restore natural ecological and fluvial processes to reduce flood risk.
- WWISER sets out NRW's expectations of water companies that operate in Wales or rely on resources from Wales. It sets out the requirements each company should address when meeting their environmental obligations.
- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.

- Early design input to minimise use of hard engineering in favour of nature based solutions and where possible to avoid modification to river channels – in particular those that may have a detrimental effect on river processes and ecosystem functioning.

- Seek to maximise opportunity to work with natural catchment processes for projects by implementation of innovative alternatives to traditional grey engineered solutions.

- Opportunity to consider wider benefits associated with water quality and resources through the catchment measures that will be implemented.

### Significance of Effect: **Significant Positive**

## 9.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

The measure is not specifically intended to reduce air pollutant emissions or improve air quality. Whilst wider environmental benefits and indirect ecosystem benefits may arise, effects on air quality are expected to be limited.

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices.

### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work, including consideration of opportunities to minimise emissions through efficient use of plant and machinery, low-emission technologies and good construction practice where appropriate.

### Significance of Effect: **Neutral**

## 9.6 Materials, Assets and Infrastructure

### Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?

### Description of Effect

These measures place a responsibility on water companies to invest in making improvements to existing assets and infrastructure e.g. sewage discharges, to support delivery of WFD Regulations 2017 and Protected Area objectives (including for Shellfish Water Protected Areas), to improve water quality and to deliver additional ecosystem services.

Remediation and improvement of these assets will have long-term benefit to the local environment and human health. Projects should also aim to build resilience in the network to future climate change events (e.g. reducing risk of sewage discharge following high rainfall events) and to ensure greater protection of assets and infrastructure from damage arising from climate change events such as flooding and sea level rise.

NEW 01 Designated bathing waters and the physical assets/infrastructure underpinning these are becoming more valuable material assets as wild swimming and outdoor recreation becomes increasingly important to local communities. These benefits are recognised under Population and Human Health above.

WAL23 Water Companies will deliver a programme of investigations and improvements to deal with chemicals to support delivery of WFD Regulations 2017 and Protected Area objectives through AMP. This measure is unlikely to have significant benefit for material assets and infrastructure.

Any construction work associated with these measures would require material usage and produce waste – it is anticipated this would be managed efficiently through assessment and good environmental management during construction. Depending on solutions implemented and their location, there may be short-term negative impacts on local material assets and infrastructure.

### Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.

- Projects should engage with local stakeholders early in scheme development to minimise disruption to existing assets, businesses and infrastructure through appropriate design and programming.

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance should fully consider materials use and disposal as well as avoidance, reduction and/or mitigation for any anticipated impacts to local assets and infrastructure.
- Opportunities to enhance assets to provide multiuser access.
- Opportunities to consider renewable energy sources through project work.

### Significance of Effect: **Positive**

## 9.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

These measures are unlikely to contribute to achievement of the cultural heritage SEA objective.

Investigations and improvements to improve water quality are unlikely to have positive effects on cultural heritage assets but physical works on the ground could have the potential for negative effects, depending on the nature, scale and location of the activities proposed.

Given there is uncertainty regarding the nature and scale of works proposed and type of heritage receptor that may be affected, it is considered that potential negative impacts could be avoided through the assessment and design process but it is unlikely that this measure will support the achievement of this SEA objective.

Reduced pollution delivered by the measures may indirectly enhance the historic environment.

### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.
- Early engagement with Heneb &/or Cadw is recommended regarding project proposals and options appraisal. Where heritage assets or archaeological sensitivity are present, a Desk Based Assessment, agreement of a Written Scheme of

Investigation and suitable archaeological watching brief could be required, in line with the relevant consents and planning permission.

### Significance of Effect: **Neutral**

## 9.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Measures to improve water quality could contribute to achievement of the landscape and seascape SEA objective where the removal of pollution allows the recovery of habitats and associated restoration of the landscape.

Where improvements under WAL06, WAL10 and WAL23 include physical interventions, potential negative impacts on the landscape, seascape and visual amenity will be managed by project assessment and design. Consideration should be given to NBS in the options appraisal at the project level.

CYM18 and NEW01 seek to deliver catchment management options to improve water quality which could support the restoration of habitats and therefore indirectly improve landscape condition, character and special qualities, and increase climate change resilience.

### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance.
- The promotion of nature-based solutions and/or soft landscaping for these measures would minimise landscape and visual impacts. Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.

### Significance of Effect: **Neutral**

## 9.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Measure WAL06 and WAL10 are considered unlikely to have pathways for significant effect on climatic factors. CYM18 offers some potential for nature based solutions to build resilience in ecosystems to climate change and to reduce flood risk.

NEW 01 Delivering catchment measures to achieve and maintain the bathing water standard in designated bathing waters is unlikely to have significant benefit or create negative effects for climatic factors.

Measure WAL23 is considered unlikely to have pathways for significant effect on climatic factors due to its scale. Carbon footprint of any solutions/projects may cause some negative effects but there may also be some opportunity for nature-based solutions that promote carbon sequestration at a localised scale.

### Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development through options appraisal and design, seeking innovative solutions to reduce carbon.
- Projects should be designed to have net carbon benefit by developing habitat that sequesters carbon and minimising use of materials that use carbon in their manufacture.
- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.
- Adopt solutions that work with natural processes such as wetland creation. woodland planting that can provide carbon sequestration, hence contributing to mitigating climate change whilst also benefitting natural systems in adapting to effects of climate change.

### Significance of Effect: **Neutral**

# GROUP 10: Waterbody Measures Assessment

### National Measures:

Not Applicable.

### Waterbody Measures:

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a %) | No. of Waterbodies in Wales Measure applied to (also as a %) |
|---|---|---|---|
| **TC1.2** | Remediate contaminated land | **3 (0.5%)** | **3 (0.3%)** |
| **TC1.11** | Remediation of landfill and extraction/treatment of leachate. | **5 (0.9%)** | **6 (0.6%)** |

## 10.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

Water quality improvements resulting from remediation of contaminated land and landfill sites offer downstream benefits to human health and wellbeing through: protection of groundwater and surface water resources, including, where relevant, drinking water supplies, visual improvement to blue space and the resulting mental health benefit associated with access to visually pleasing environments; increased fishing potential and the recreational and health benefits that brings to people; and safer water for water based activities such as canoeing.

There could also be positive effects on communities local to contaminated land / landfill sites in terms of odour and pest control.

Implementation of schemes can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

#### Opportunities and Mitigation

- Project-level environmental assessment, undertaken in line with relevant regulatory and organisational guidance and including consideration of population and human health, will provide an opportunity to understand community characteristics and social vulnerabilities and assess the potential direct and indirect impacts of specific schemes on population groups, communities and places.
- Relevant findings of the accompanying HIA, local Well-being Plans and public health evidence should be considered, where appropriate, to maximise health and wellbeing benefits and reduce environmental health inequalities.
- Any temporary disruption associated with implementation works should be minimised through early and sensitive engagement with local communities and stakeholders.

### Significance of Effect: **Positive**

## 10.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

Remediation of contaminated land and landfill sites will treat / prevent leachate reaching waterbodies and groundwater and surrounding soils. This will have benefits for designated sites and the habitats and species in the local vicinity of these sites and downstream benefit for waterbodies.

The local and specific nature of these measures is unlikely to present wider positive effects for RENs, green infrastructure, NBB, physical processes or INNS.

Implementation of remediation can be disruptive to the local environment in the short term, it is anticipated however that this would be managed appropriately through application of good environment management practice during construction works.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any temporary negative effects as a result of construction or remediation activities are avoided, reduced or mitigated.
- Best practice is applied through project level assessment to deliver wider benefits including delivery of NBB (using the DECCA framework) and treatment of INNs.

- All projects delivering work on the ground will undergo Habitat Regulations Assessment, where there are pathways for effects on European sites.

### Significance of Effect: **Positive**

## 10.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

Remediation of contaminated land and landfill sites will treat / prevent leachate reaching surrounding soils, thereby enhancing soil health and function. This will have benefits for surrounding land quality and will directly contribute to this SEA objective by reducing/managing land contamination.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Positive**

## 10.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

Remediation of contaminated land and landfill sites will treat / prevent leachate reaching waterbodies and groundwater, having a positive effect on the water quality of waterbodies surrounding and downstream of these sites. This will improve the ecological and chemical status of local waterbodies. This will be significant positive locally by reducing point source pollution.

Implementation of remediation can be disruptive to the local water environment in the short term, it is anticipated however that this would be managed appropriately through application of good environment management practice during construction works.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Positive**

## 10.5 Air

**Will the draft RBMP protect and improve air quality?**

### Description of Effect

Remediation of contaminated land and landfill sites will manage emissions such as methane, having a positive effect on the local air quality. The remediation will also reduce odour from such sites. This will be significant positive locally.

Implementation of remediation can be disruptive to the local air quality in the short term, it is anticipated however that this would be managed appropriately through application of good environment management practice during construction works.

### Opportunities and Mitigation

- Preparation and implementation of Environmental Action Plans should ensure that any temporary air quality effects associated with remediation and construction activities are avoided, reduced or mitigated through good construction practice, including dust suppression and efficient use of plant and machinery. Opportunities to reduce landfill gas emissions through effective containment, extraction and treatment should be explored where appropriate. Monitoring of emissions and odour should be undertaken where necessary.

### Significance of Effect: **Positive**

## 10.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

Remediation of contaminated land and landfill sites will utilise natural resources such as clay and top-soil as well as synthetic materials such as geomembranes and liners. Given the low number of waterbodies that these measures are being applied to, this is not considered to be negative at a RBD scale.

Landfill sites themselves are considered as material assets / infrastructure and their remediation and resilience to climate change and sea level rise must also be considered, particularly those sites at coastal locations. Their remediation must consider this and will provide a benefit in managing the environmental effects from them in the long term.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Neutral**

## 10.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

These measures are unlikely to contribute to achievement of the cultural heritage SEA objective.

There could be some local benefits to historic assets or landscapes locally through the remediation but this would not be deemed significant at a RBD scale.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Neutral**

## 10.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

These measures are unlikely to contribute to achievement of the landscape and seascape SEA objective.

There could be some local benefits to landscapes and seascapes locally through the remediation but this would not be deemed significant at a RBD scale.

### Opportunities and Mitigation

Not Applicable.

### Significance of Effect: **Neutral**

## 10.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

Remediation of contaminated land and landfill sites will manage emissions of greenhouse gasses such as methane and carbon dioxide. These measures are in relation to existing sites and so there is unlikely to be any reduction in greenhouse gases but the remediation presents an opportunity to capture methane for use in energy production.

These measures present an opportunity to ensure landfill /contaminated sites are resilient to climate change and sea level rise, particularly those sites at coastal locations. Their remediation must consider this and will provide a benefit in managing the environmental effects from them in the long term.

### Opportunities and Mitigation

There could be an opportunity to capture methane production for energy.

### Significance of Effect: **Positive**

# GROUP 11: Waterbody Measures Assessment

### National Measures:

Not Applicable.

### Waterbody Measures:

NOTE: These MEASURES ARE ONLY APPLIED IN WESTERN WALES AND SEVERN

| Waterbody Measure ID | Waterbody Measure | No. of Waterbodies in RBD Measure applied to (also as a %) | No. of Waterbodies in Wales Measure applied to (also as a %) |
|---|---|---|---|
| **TC1.3** | Where appropriate remove/remediate sediment from watercourses and treat contaminated water. | **2 (0.4%)** | **2 (0.2%)** |
| **TC1.5** | Improve the drainage outfalls from the transport network and urban environment to reduce levels of contaminants. | **2 (0.4%)** | **3 (0.3%)** |
| **TC1.6** | Maintain and improve sewerage drainage system to rectify misconnections and leaks | **6 (1.1%)** | **23 (2.5%)** |

## 11.1 Population and Human Health

### Will the draft RBMP promote health, wellbeing and equity?

#### Description of Effect

These waterbody measures aim to improve water quality and sediment in waterbodies affected by transport/urban/sewerage drainage outfalls which will have benefit for human health and contribute to achieving this SEA objective. Implementation of the measures will result in reduction in waterborne disease, lower microbial and chemical contamination, and improved shellfish safety. These findings are consistent with the accompanying HIA, which identifies major positive health effects associated with reductions in microbial pollution, improved shellfish safety, reduced health inequalities and increased public confidence in water quality.

There are opportunities for improved mental wellbeing through reduced anxiety about sewage pollution and increased confidence in water safety.  Improved public trust and confidence in water quality through transparent monitoring and visible reductions in sewage pollution will also have benefit for local populations.

Implementation of projects can be disruptive to determinants of health in local communities in the short-term, during construction, it is anticipated however that this would be managed appropriately through sensitive stakeholder engagement and suitable management during construction works.

Opportunity for recreational use.

### Opportunities and Mitigation

Project level environmental assessment in line with OGN 87, including consideration of population and human health, will provide an opportunity to understand community characteristics and social vulnerabilities and assess the potential direct and indirect impacts of specific projects on population groups, communities and places.

The measures will also reduce potential exposure to contaminants and pollutants in the water environment and improve confidence in the safety and quality of local water resources.

Projects aimed at improving drainage from the transport network might also present opportunities to promote and support active travel.

Clear, accessible and bilingual communication regarding water quality improvements should be provided where appropriate to maximise public confidence, support informed use of water environments and reduce anxiety regarding pollution and contamination risks.

Any temporary disruption associated with implementation works should be minimised through early and sensitive engagement with local communities and stakeholders

### Significance of Effect: **Positive**

## 11.2 Biodiversity, Flora and Fauna

**Will the draft RBMP halt and reverse biodiversity loss and contribute to the protection and effective management of 30% of our land, freshwater and sea for nature by 2030?**

### Description of Effect

These waterbody measures involve interventions to address point source pollution and sediment from transport/urban/sewerage drainage outfalls, improving water quality within and downstream of the waterbodies where they are applied. This will have indirect positive effects on biodiversity but physical works on the ground could have the potential for negative effects on biodiversity depending on the nature, scale and location of the activities proposed.

Nature-based solutions such as SuDS should be explored for urban and transport run-off which could have localised biodiversity improvements through green infrastructure provision and potential for improving connectivity.

The scale of application of these waterbody measures is such that they are likely to have a neutral effect on biodiversity.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN 87 to ensure any negative impacts are avoided, reduced or mitigated.
- Appropriate use should be made of the DECCA (Diversity, Extent, Condition, Connectivity and Adaptability) framework to evaluate ecosystem resilience and ensure compliance of projects with Net Benefit for Biodiversity requirements.
- All projects delivering work on the ground with pathways for effects on European sites will undergo Habitat Regulations Assessment.
- Opportunity to work with and restore natural processes to enhance biodiversity and ecosystem resilience through habitat creation, green engineering and natural management techniques, in line with Section 6 - Biodiversity and resilience of ecosystems duty of the Environment Act.

### Significance of Effect: **Neutral**

## 11.3 Land Use, Geology, Soil and Contaminated Land

**Will the draft RBMP protect geology and soil and promote the sustainable use and management of land?**

### Description of Effect

These waterbody measures involve interventions to address point source pollution and sediment from transport/urban/sewerage drainage outfalls, improving water quality within and downstream of the waterbodies where they are applied. Given the nature of the

measures, their application is likely to be urban and so there will be limited pathways for effects on land use, geology, soil and contaminated land.

Given the scale of positive or negative effect likely to arise as a result of these measures, it is considered unlikely they would either detract from or contribute to achievement of this SEA objective.

### Opportunities and Mitigation

Project level environmental assessment in line with OGN87 will ensure any negative effects associated with construction activities are avoided, reduced or mitigated.

### Significance of Effect: **Neutral**

## 11.4 Water Quality and Resources

**Will the draft RBMP protect and improve water quality and quantity?**

### Description of Effect

These waterbody measures involve interventions to address point source pollution and sediment from transport/urban/sewerage drainage outfalls, improving water quality within and downstream of the waterbodies where they are applied. These measures will make a direct positive contribution to achievement of this SEA objective. The scale of application of the measures is such that a positive effect at RBD scale has been predicted.

Where measures reduce or slow down run-off through nature-based solutions such as SuDs there are indirect benefits for flood risk, although the scale of the application of the measures is such that this is unlikely to be significant.

Individual projects may not achieve status improvement alone but would contribute directly to achieving this SEA objective.

It is anticipated that design for improvement schemes would not seek to heavily modify stream or river channels.

### Opportunities and Mitigation

- Potential opportunity to incorporate measures to reduce run-off and to restore natural ecological and fluvial processes to reduce flood risk.

- Project level environmental assessment in line with OGN87 will ensure any negative effects associated with construction activities are avoided, reduced or mitigated.

- Early design input to minimise use of hard engineering in favour of nature-based solutions and where possible to avoid modification to river channels, in particular those that may have a detrimental effect on river processes and ecosystem functioning.

### Significance of Effect: **Positive**

## 11.5 Air

### Will the draft RBMP protect and improve air quality?

### Description of Effect

The measure is not specifically intended to reduce air pollutant emissions or improve air quality. Whilst wider environmental benefits and indirect ecosystem benefits may arise, effects on air quality are expected to be limited and are unlikely to be significant at a River Basin District scale.

During construction work it is possible that localised temporary air quality issues could arise (through dust generation, machinery use etc.), these would be mitigated through appropriate management of on-site practices and use of Environmental Action Plans etc.

### Opportunities and Mitigation

- Preparation and implementation of an Environmental Action Plan for construction work, including consideration of opportunities to minimise emissions through efficient use of plant and machinery, low-emission technologies and good construction practice where appropriate.

### Significance of Effect: **Neutral**

## 11.6 Materials, Assets and Infrastructure

**Will the draft RBMP sustainably construct, maintain/operate and dispose of material assets and infrastructure?**

### Description of Effect

These measures identify the need for water companies/ local authorities to invest in making improvements to existing assets and infrastructure e.g. sewage discharges, surface water management and highways run-off to improve water quality and to deliver additional ecosystem services.

Remediation and improvement of these assets should also aim to build resilience in the network to future climate change events (e.g. reducing risk of sewage discharge following high rainfall events) and to ensure greater protection of assets and infrastructure from damage arising from climate change events such as flooding and sea level rise.

Measures are unlikely to require large amounts of material usage or to have significant negative effects on existing assets and infrastructure.

### Opportunities and Mitigation

- Projects should consider sustainable procurement of materials and appropriate construction and waste management practices. Options appraisals and scheme design should take into account the whole lifecycle of products from purchase to disposal to help promote efficient use of resources and to reduce waste.

- Projects should engage with local stakeholders early in scheme development to minimise disruption to existing assets, businesses and infrastructure through appropriate design and programming.

- Project level environmental assessment in line with OGN 87 and production/implementation of Environmental Action Plans should fully consider materials use and disposal as well as avoidance, reduction and/or mitigation for any anticipated impacts to local assets and infrastructure.

### Significance of Effect: **Positive**

## 11.7 Cultural Heritage

**Will the draft RBMP protect and sustainably manage the historic environment including cultural heritage resources and landscapes, historic buildings and archaeological features?**

### Description of Effect

These waterbody measures involve interventions to address point source pollution and sediment from transport/urban/sewerage drainage outfalls, improving water quality within and downstream of the waterbodies where they are applied. They are unlikely to have effects on cultural heritage assets but physical works on the ground could have the potential for negative effects, depending on the nature, scale and location of the activities proposed.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN87 will ensure any negative effects associated with construction activities are avoided, reduced or mitigated.
- Projects should be managed appropriately through agreement of a Written Scheme of Investigation and suitable archaeological watching brief during works where required.
- Preparation and implementation of an Environmental Action Plan for construction works.

### Significance of Effect: **Neutral**

## 11.8 Landscape and Seascape

**Will the draft RBMP maintain and enhance landscape and seascape character?**

### Description of Effect

Measures to address point source pollution and sediment from transport/urban/sewerage drainage outfalls aim to improve water quality could contribute to achievement of the landscape and seascape SEA objective where the removal of pollution allows the recovery of habitats and associated restoration of the landscape.

Where improvements include physical interventions, potential negative impacts on the landscape, seascape and visual amenity will be managed by project assessment and design. Delivery of these measures should consider green engineering, SuDS and other nature based solutions.

Improved water quality could support the restoration of habitats and therefore indirectly improve landscape condition, character and special qualities, and increase climate change resilience.

### Opportunities and Mitigation

- Project level environmental assessment in line with OGN87 will ensure any negative effects associated with construction activities are avoided, reduced or mitigated.

- The promotion of nature-based solutions and/or soft landscaping for these measures would minimise landscape and visual impacts. Where the use of hard landscaping is unavoidable, innovative solutions and sympathetic design should be used to deliver designs that are sensitive to landscape character.

### Significance of Effect: **Neutral**

## 11.9 Climatic Factors

**Will the draft RBMP limit the causes and effects of climate change and ensure resilience and adaptation to any consequences of climate change?**

### Description of Effect

These waterbody measures are considered unlikely to have pathways for significant effect on climatic factors. However, the remediation and improvement of these assets should aim to build resilience in the network to future climate change events (e.g. reducing risk of sewage discharge following high rainfall events) and to ensure greater protection of assets and infrastructure from damage arising from climate change events such as flooding and sea level rise.

Carbon footprint of any solutions/projects may cause some negative effects but there may also be some opportunity for nature-based solutions that promote carbon sequestration at a localised scale.

### Opportunities and Mitigation

- Projects must consider the carbon footprint associated with activities, designs and materials early in project development through options appraisal and design, seeking innovative solutions to avoid and reduce carbon emissions. Where necessary, projects should be designed to have net carbon benefit by developing habitat that sequesters carbon to offset use of materials that use carbon in their manufacture.

- Where possible, design of projects should look to incorporate nature based solutions that minimise risk of and build ecosystem resilience to climate change events (e.g. flooding) and allow habitats to adapt to climate change.

Significance of Effect: **Neutral**