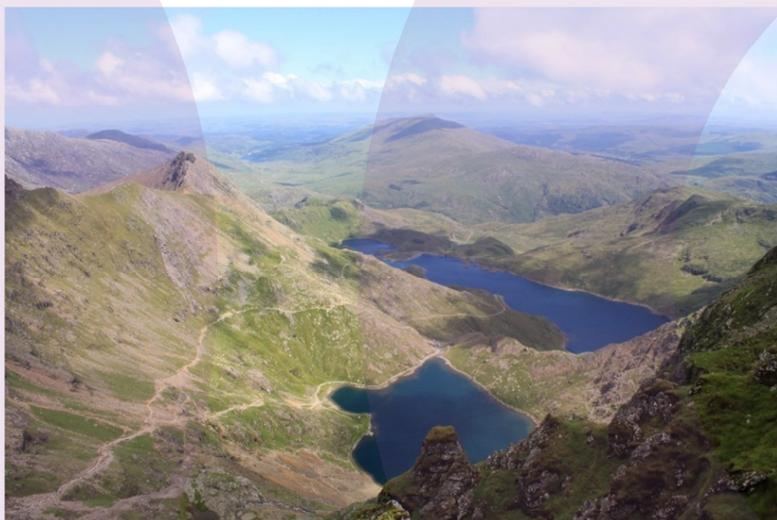


Strategic Environmental Assessment of the Final Water Resources Management Plan 2019

Post Adoption Statement

FINAL



Report for

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1. Introduction

This report forms the Post Adoption Statement (PAS) to accompany the final version of Dŵr Cymru Welsh Water's (Welsh Water) Water Resources Management Plan (WRMP). The report describes the way in which Welsh Water has taken environmental considerations and the views of consultees into account in the adopted WRMP and fulfils the plan and programme adoption requirements of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment and the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004 No. 1633).

1.1 Welsh Water's Water Resources Management Plan

- 1.1.1 Welsh Water is responsible for providing over 3 million people, in much of Wales and parts of Herefordshire in England, with drinking water and for taking away and properly disposing of the associated wastewater. It also has over 100,000 business customers, and in total delivers more than 800 million litres of drinking water every day.
- 1.1.2 Welsh Water, along with all water companies in England and Wales, is required¹ to prepare, maintain and publish a Water Resource Management Plan (WRMP). The plan is developed consistent with guidance from Welsh Government² and Environment Agency and Natural Resources Wales³ (NRW).
- 1.1.3 The Final WRMP 2019 details how Welsh Water will maintain the balance between demand for water from its customers and the resources available to it over the 30 year period from 2020 to 2050. This is termed the 'Supply Demand Balance'. This is considered for each of Welsh Water's 24 water resource zones⁴ (WRZs). Where the Supply Demand Balance identifies WRZs in deficit over the lifetime of the plan, the WRMP presents both supply-side and demand management options for its resolution. Supply-side options will include measures to increase supply such as increasing capacity at an existing groundwater source. Demand management options will include measures to manage the demand for water e.g. water metering or household visits to install water efficiency measures.
- 1.1.4 The Final WRMP 2019 also contains the outcome of an assessment of the resilience of the water supply systems to a drought that might occur 1 in every 200 years with measures identified to increase the resilience of the supply in WRZs.

Water Resource Zones in Deficit and Final Schemes

- 1.1.5 Welsh Water has identified two WRZs with a forecast supply-demand balance deficit over the plan period: Pembrokeshire and Tywyn Aberdyfi. The nature of these zones' vulnerabilities are summarised below:

¹ Under the Water Industry Act 1991, updated by the provisions in section 37A-D of the Water Act 2003 and the Water Act 2014 and the Environment (Wales) Act 2016

² The Welsh Government (2016) *Guiding Principles for Developing Water Resources Management Plans WRMPs for 2020*.

³ Environment Agency and Natural Resources Wales (2018) *Water Resources Planning Guideline: Interim Update*. Available at: <https://cdn.naturalresources.wales/media/686174/interim-wrpg-update-july18-final-changes-highlighted.pdf> [Accessed August 2018].

⁴ Defined in the Water Resource Planning Guideline as "an area within which the abstraction and distribution of supply to meet demand is largely self-contained (with the exception of agreed bulk transfers)...Within a WRZ all parts of the supply system and demand centres (where water is needed) should be connected so that all customers in the WRZ should experience the same risk of supply failure and the same level of service for demand restrictions".

- **Pembrokeshire:** a regulated river flow/reservoir resource base provides much of Pembrokeshire's public water supply. The Pembrokeshire WRZ is forecast to fall into deficit before the end of the planning period. The deficit is driven by low storage in Llys y Fran and reaches a maximum of 14 MI/d in 2049/50 under one of the scenarios considered.
- **Tywyn Aberdyfi:** a very small zone which is dependent on two small river abstractions and has no water transfer facilities. The Tywyn Aberdyfi WRZ is forecast to have a small supply demand deficit from the start of the planning period in 2020, reaching a maximum shortfall of 2.79 MI/d by the end of the period in 2050 under one scenario considered. The small demand restricts the type of supply or demand options that could be technically and economically feasible.

1.1.6 To address these issues, the WRMP contains the following schemes:

- For the Pembrokeshire resource zone:
 - ▶ **PEM024b: Canaston Bridge - upgrade pumping station:** This scheme involves asset upgrades at the Canaston Bridge raw water pumping station that would allow finer control of abstraction volumes from the Afon Cleddau and in-turn enable water to be conserved within the Llys y Fran reservoir by matching compensation releases to actual abstraction. It requires a low-lift pump set which has extensive variability of pump rate between 30 MI/d and 55 MI/d. This may be supplemented with additional raw water storage capacity of 30,000m³.
- For the Tywyn Aberdyfi resource zone:
 - ▶ **TYA004: New abstraction from Afon Dysynni at Pont y Garth (transfer to Pen y Bont water treatment works (WTW))** This scheme allows Pen y Bont Water Treatment Works (WTW) to receive abstracted water from the Afon Dysynni directly via a new raw water transfer main. Due to topography, the supply would need to be pumped from source. It requires the construction of an intake and pumping station at Pont y Garth and the laying of approximately 6km of pipeline running alongside a road to the WTW at Pen y Bont. This option may also be supplemented with additional raw water storage as described in option TYA009a.
 - ▶ **TYA009a: Pen-y-Bont WTW Bankside Storage (8MI)** This scheme would involve the construction of an 8 MI non-impounding raw water reservoir adjacent to Pen-y-Bont WTW in order to provide a buffer raw water supply and improve the resilience of the Tywyn Aberdyfi system. The reservoir would be filled from the existing Afon Fathew source in winter (under existing licence volumes) and would be used to supply Pen y Bont WTW during periods of poor raw water conditions in other stream sources.

1.1.7 The solutions put forward to resolve the supply demand balance for the Pembrokeshire and Tywyn Aberdyfi zones will also address water supply resilience for these two zones.

Vowchurch WRZ

1.1.8 Welsh Water assessed the susceptibility of the Vowchurch WRZ to severe droughts and identified that the River Dore and associated gravel aquifer may not provide the required yield to meet customer demands during a 1 in every 200 years drought event.

1.1.9 Given the water supply risks related to poor raw water quality and resilience to drought, Welsh Water plan to lay a new potable water main between the Hereford and Vowchurch zones, capable of meeting the whole Vowchurch demand from Broomy Hill WTW when needed. It requires the installation of approximately 12km of main between Broomy Hill WTW and Kingstone service reservoir (SR) together with an upgrade to Broomy Hill water pumping station (WPS).

Preparation of the Water Resource Management Plan

- 1.1.10 Consistent with the Welsh Government and NRW and Environment Agency guidance, the development of the WRMP has included the completion of three key stages:
- the publication of a Draft WRMP for public consultation;
 - the publication of a Revised Draft WRMP and the publication of a Statement of Response describing the consultation on the Draft WRMP and how the company took into account the comments received in the preparation of a Revised Draft WRMP; and
 - the publication of a Final WRMP.
- 1.1.11 The Draft WRMP was published on 16th March 2018 for a 12 week public consultation. Representations on the Draft WRMP were received from a total of 11 consultees.
- 1.1.12 Welsh Water published the Revised Draft WRMP along with the Statement of Response to the consultation on 14th September 2018.
- 1.1.13 Following a review of the Statement of Response to the consultation and the changes made in the Revised Draft WRMP, Welsh Government gave Welsh Water direction to publish the Final WRMP on the 8th March 2019. Welsh Water has now published the Final WRMP. It is available on Welsh Water's website at: <https://www.dwrcymru.com/en/My-Water/Water-Resources/Draft-Water-Resources-Management-Plan-2019.aspx>

Strategic Environmental Assessment and the Water Resources Management Plan

- 1.1.14 Strategic Environmental Assessment (SEA) is a statutory requirement⁵ for plans and programmes that could have significant environmental effects. The SEA process identifies, describes and evaluates potential effects; proposing where appropriate, mitigation and/or enhancement measures. The Welsh Government's guidance⁶ on WRMPs (April 2016) identifies the need to carry out a SEA of plans.
- 1.1.15 Consultation on the scope of the SEA was undertaken for six weeks in March and April 2017. Consultation responses were used to refine the proposed scope and approach to the SEA. The Draft WRMP was then subject to SEA. The findings of the SEA of the Draft WRMP were recorded in the Environmental Report. This was published alongside the Draft WRMP for consultation in March 2018. The Environmental Report presented the findings of the assessment of the likely significant effects on the environment of the Draft WRMP including an assessment of all the feasible options and the preferred options.
- 1.1.16 A revised Environmental Report was completed to accompany the Revised Draft WRMP, published in September 2018. Following the receipt of direction to publish the Final WRMP from Welsh Government, Welsh Water has published the Final WRMP. For completeness, a final Environmental Report has also been completed.
- 1.1.17 The final Environmental Report and this PAS have been published on Welsh Water's website at: <https://www.dwrcymru.com/en/My-Water/Water-Resources/Draft-Water-Resources-Management-Plan-2019.aspx>

⁵Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) and *Statutory Instrument 2004 No. 1633 – The Environmental Assessment of Plans and Programmes Regulations 2004*. In Wales, this was transposed into legislation on 12th July 2004 as *Statutory Instrument 2004 No.1656 - The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004*.

⁶ Welsh Government (2016), *The Welsh Government Guiding Principles for Developing Water Resources Management Plans (WRMP's) for 2020*

1.2 Purpose of the Post Adoption Statement

1.2.1 Article 9 of the SEA Directive and regulation 16 (4) of the SEA Regulations requires that when a plan or programme is adopted (in this case, the WRMP), the consultation bodies, the public and any other Member States consulted on the Environmental Report are informed and the following specific information is made available:

- the plan as adopted;
- a statement summarising:
 - ▶ how environmental considerations have been integrated into the WRMP;
 - ▶ how the Environmental Report has been taken into account;
 - ▶ how opinions expressed in response to the consultation on the Draft WRMP and the Environmental Report have been taken into account;
 - ▶ the reasons for choosing the WRMP, as adopted, in the light of the other reasonable alternatives dealt with; and
 - ▶ the measures that are to be taken to monitor the significant environmental effects of the implementation of the WRMP.

1.2.2 The purpose of this Post Adoption Statement is to provide the specific information outlined under each of the points listed above and which is presented in the following sections of this statement. A table demonstrating how this Post Adoption Statement complies with the SEA Regulations is included in **Appendix A**.

2. How Environmental Considerations have been Integrated into the WRMP

2.1 Environmental Considerations in the WRMP

- 2.1.1 Environmental considerations have been integral to the development of Welsh Water's 2019 WRMP. Importantly, the plan has been prepared in accordance with the Environment (Wales) Act 2016⁷ and The Well-being of Future Generations (Wales) Act 2015⁸ and aligns with the Water Strategy for Wales 2015⁹ which together support the sustainable use of natural resources.
- 2.1.2 The subsections that follow set out in more detail how environmental considerations have been taken into account by Welsh Water during the following key stages of the plan preparation process:
- supply-demand forecasting;
 - options identification, appraisal and selection; and
 - consultation and engagement.

Supply-Demand Forecasting

- 2.1.3 All water companies in England and Wales are required to set out a baseline forecast of demand for water for a minimum of 25 years, assuming current demand policies. This must be compared against a baseline forecast of available water supply, including current resources and future planned supply schemes/policies in order to determine whether there is likely to be a deficit in any water resources zone (WRZ) over the planning horizon of the WRMP.
- 2.1.4 In calculating the baseline forecast of available water supply for the WRMP, Welsh Water has taken into account a range of environmental factors, which are summarised below.

Review of Consents

- 2.1.5 Reduction in abstraction from environmentally sensitive sites has the potential to significantly reduce the quantity of water that can be reliably abstracted from some water sources and result in the need for significant expenditure to enhance water supply capability and/or reduce demand for water. In this context, the environmental sensitivity of the area in which Welsh Water operates has been a key consideration in the development of the WRMP. The area contains three National Parks (Snowdonia, the Pembrokeshire Coast and the Brecon Beacons) along with five Areas of Outstanding Natural Beauty (AONB) (the Llyn, Ynys Môn, the Clwydian Range, the Gower and the Wye Valley). There are also 122 'Natura 2000' sites in Wales and along the border region with England, which include 10 Ramsar sites, 92 Special Areas of Conservation (SACs), and 20 Special Protection Areas (SPAs).
- 2.1.6 The Habitats Directive (92/43/EEC) was brought into Welsh law through the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) and: provides for the designation of 'European sites'; affords protection of 'European protected species'; provide for the adaptation of planning and other controls for the protection of such sites; and imposes a statutory requirement to deliver improvement schemes. Under the Habitats Regulations, NRW is required to ensure that

⁷ Welsh Government (2016) *Environment (Wales) Act 2016*

⁸ Welsh Government (2015) *The Well-being of Future Generations (Wales) Act 2015*

⁹ Welsh Government (2015) *Water Strategy for Wales 2015*

its 'permissions' (i.e. abstraction licences and discharge consents) and its operations have no adverse effect on the 'integrity' of the SACs and SPAs that form part of the pan-European network of Natura 2000 sites. As a competent authority, Welsh Water must also have regard to the requirements of the Habitats Regulations so far as they may be affected by the exercise of the company's functions.

- 2.1.7 Under an exercise called the 'Review of Consents', NRW and the Environment Agency (EA) have reviewed Welsh Water's existing abstraction licences to make sure that the company's activities continue to have no significant adverse impact on the environment. NRW and the EA concluded there were a total of 21 sites where potential adverse effects upon the protected species could not be discounted. Working closely with both the EA and NRW, Welsh Water has agreed all the required amendments to its abstraction licences in order to ensure they are sustainable now, and into the future. These amendments have been built into Welsh Water's baseline deployable output (DO) calculations (see Chapter 3 of the WRMP for further detail).

Water Framework Directive

- 2.1.8 Under the Water Framework Directive (WFD) (2000/60/EC), all inland water courses are divided into 'water bodies'; some water bodies are designated as 'heavily modified'. Where a water body is classified as heavily modified, the UK should aim for that water body to reach Good Ecological Potential (GEP). Where a waterbody is not at GEP then the required mitigation measures should not have a significant adverse impact upon the use of the water body; in this case on public water supply.
- 2.1.9 All heavily modified water bodies (HMWBs) should meet GEP by 2027. While the general objective of the WFD is to ensure Good Ecological Status (GES) is attained or retained for all possible water bodies, this may conflict with the specified use of a water body which provides social and economic benefits. Where a water body is designated as a HMWB, the environmental objective under the WFD is therefore to achieve GEP rather than GES.
- 2.1.10 A number of water bodies in the Welsh Water area have been designated as HWMB due to the presence of Welsh Water's assets and their operation (e.g. impounding reservoirs that have dammed the river and disrupted the natural flow regime). For those sites identified as not being at GEP, NRW required Welsh Water to investigate whether the main cause of this failure is the effects of the company's assets, and if so, what steps should be taken to resolve this. Following completion of the investigations, a number of schemes have been identified for delivery in order for these water bodies to achieve GEP.
- 2.1.11 After discussions with NRW and EA, Welsh Water has confirmed that for AMP7 there are currently no abstraction sites identified that will cause an impact upon the waterbody status. This is principally a function of the work completed to date under the Habitats Directive and HMWB projects that have modified a number of Welsh Water's abstraction licences to ensure they are sustainable at their maximum volumes. Further, all potential new options considered as part of the development of the WRMP that involve either increasing existing abstraction, re-instating currently disused abstraction or wholly new abstraction, have been assessed against WFD objectives for the particular water bodies of interest, to ensure no deterioration in their status (this is discussed further below).

Abstraction Reform

- 2.1.12 In its 'Water Strategy for Wales' (2015), the Welsh Government confirmed its commitment to reforming the system of abstraction licensing in Wales in order to "Create a better, fairer and more modern approach that will ensure that we make the best possible use of our water resources whilst protecting the environment."

- 2.1.13 In this context, and as part of the preparation of the WRMP, Welsh Water has undertaken an initial risk assessment of all its abstraction licences to identify those unused licensed volumes that could potentially be removed without impact to its short term and long term water resource capability.

Resilience

- 2.1.14 National guidance¹⁰ has emphasised the importance of assessing and improving resilience of the water supply systems and water resources. This has included determining resilience to droughts, and the severity of the drought that would require the imposition of severe restrictions to water supplies beyond the use of hosepipe and non-essential use bans.
- 2.1.15 To answer this question, in line with new guidance¹¹ Welsh Water has undertaken an assessment of whether water supply systems could cope with a drought that might occur 1 in every 200 years.
- 2.1.16 In addition, to ensure customer supplies are secure and robust in the long term, Welsh Water has also taken into the future effects of climate change in determining the supply demand balance by:
- estimating the most likely impact of climate change upon supply capability into the future using WRAPSim supply system models and making a direct allowance for this in supply demand balances; and
 - by looking at the uncertainty around the climate change driven projections used in model runs.
- 2.1.17 The assessments have been applied to each WRZ, and have indicated where additional interventions are required to improve zonal resilience to future environmental changes.

Options Identification, Appraisal and Selection

- 2.1.18 As set out in Section 1, Welsh Water has identified two WRZs with a forecast baseline supply-demand balance deficit over the plan period; Pembrokeshire and Tywyn Aberdyfi. The identification, appraisal and selection of options to address the supply demand deficit within these zones has been informed by detailed consideration of their potential environmental effects.
- 2.1.19 The process of options identification included a review of as many potential solutions as possible (the 'unconstrained list' of options) to identify 'feasible' (constrained) water management options (including supply-side, demand management and leakage reduction options) for each WRZ where deficits are predicted. These 'feasible' options were then reviewed in relation to financial, environmental and social costing to identify 'preferred options' to resolve the supply deficits
- 2.1.20 Options were initially screened using Multi-Criteria Assessment (MCA). This is an approach that enhances the links between option appraisal and environmental assessment while remaining consistent with the evaluation of options undertaken during previous plans. Importantly, the MCA process was updated for WRMP19 to account for new legislation, regulatory standards and guidance, and expanded to include the wider environmental considerations identified by HRA, WFD, and SEA assessments. This helped to embed environmental considerations into the options assessment process from the outset.
- 2.1.21 Once the feasible list of options was identified following the initial screening exercise, environmental considerations remained central to the subsequent stages of options assessment. The Economics of Balancing Supply and Demand (EBSA) approach requires water companies to assess the capital, operating and environmental and social costs and benefits of the feasible options to enable a least-cost programme to balancing supply and demand to be determined.

¹⁰ Environment Agency and Natural Resources Wales (2018) *Water Resources Planning Guideline: Interim Update*. Available at: <https://cdn.naturalresources.wales/media/686174/interim-wrpg-update-july18-final-changes-highlighted.pdf> [Accessed August 2018].

¹¹ UKWIR (2016) WRMP 2019 Methods – Risk Based Planning. Report ref: 16/WR/02/11

Welsh Water initially took a standard EBSD approach and then tested the WRMP against various criteria to ensure that the preferred solution represents the most sustainable, resilient and best value plan. The key principles of Welsh Water's decision making process were:

- Conduct detailed customer and stakeholder engagement to understand their views and preferences for options.
- Undertake a detailed options appraisal process, including SEA/HRA and WFD Assessment, to generate a set of costed, feasible supply side and demand side options.
- Utilise the UKWIR Industry Standard EBSD methodology to generate the 'least cost' plan.
- Review against Welsh Government objectives as set out in the Environment (Wales) Act 2016, Water Strategy for Wales and the Well-being and Future Generations Act 2015.
- Ensure options are aligned with Welsh Water's PR19 priorities, 2050 vision and Biodiversity Plan.

2.1.22 In this regard, the selection and refinement of options has fully taken into account the findings of the SEA, HRA and WFD Assessment. These environmental assessments have together considered the likely economic, social and environmental effects of proposed water management options and identified the ways in which adverse effects could be minimised and positive effects enhanced. Further information in respect of the influence of the SEA on the development of the WRMP is provided in **Section 3** of this report.

2.1.23 In line with WRMP guidance and Welsh Government policy set out in the Environment (Wales) Act 2016, Welsh Water has additionally sought to integrate the ecosystem approach as far as possible within its options appraisal process to ensure that the WRMP fully considers any potential environmental effects. An Ecosystem Services (ESS) Assessment was undertaken as part of the WRMP's development and comprised a quantitative and qualitative assessment of:

- the ESS present within the zone of influence of each WRMP feasible supply option (baseline at 2017);
- how the ESS present may change within the timeframe of the assessment (by 2050) in the absence of the WRMP option – the future baseline;
- how the ESS may change after the implementation of the WRMP feasible supply option (in relation to the future baseline).

2.1.24 Each option was also assessed against the key relevant Welsh government legislative and policy objectives identified in the Welsh Government's Guiding Principles for Water Resources Planning. The review of the options comprised a qualitative assessment showing the extent to which options are consistent with these legislative aims and policy objectives against a graded scale. All of the feasible options were shown to be compliant with both the Environment (Wales) Act 2016 and the Wellbeing of Future Generations Act 2015. The review demonstrated that many of the options are fully aligned to the policy goals. However, some options are less compatible with some specific policy objectives, notably the Natural Resources Policy and the implied carbon policy objectives in the WRMP (Wales) Direction 2016.

Consultation and Engagement

2.1.25 Welsh Water has undertaken extensive stakeholder and customer engagement during the preparation of the WRMP. This has included ongoing engagement with the statutory SEA consultation bodies and in particular, Welsh Water has liaised closely with NRW and the EA to ensure that the WRMP complies with the requirements of the Habitats Directive and WFD.

- 2.1.26 To provide further environmental scrutiny of the WRMP, Welsh Water has consulted its Independent Environment Advisory Panel (IEAP) to seek views on the development of the plan and its outputs. The IEAP has been established to support Welsh Water to: (i) maximise the value of its investment programme for customers and the environment; and (ii) to secure a safe and sustainable future for Wales' environment.

2.2 Environmental Considerations in the Strategic Environmental Assessment

- 2.2.1 To provide the context for the SEA, and in compliance with the SEA Directive, the relevant aspects of the current state of the environment and its evolution without the WRMP were considered at the outset of the SEA process, along with the environmental characteristics likely to be significantly affected by the plan. This information was contained in the SEA Scoping Report and subsequently updated as part of the Environmental Report.
- 2.2.2 The key environmental, social and economic issues identified in Welsh Water's operational area and subsequently reflected in the assessment of WRMP options are summarised in **Table 2.1**.

Table 2.1 Summary of Key Issues

Topic Area	Key Economic, Social and Environmental Issues
Biodiversity	<ul style="list-style-type: none"> • The need to protect and enhance sites designated for nature conservation; • The need to protect and enhance non-designated sites; • The need to continue to increase and improve the condition of priority habitats and habitats of priority species, and restore populations of these species and other specially protected species; • The need to prevent the spread/introduction of invasive non-native species; • The need to maintain/enhance ecological connectivity; • The need to sustainably manage biodiversity assets, taking into account the effects of climate change; • The need to recognise the key role that green infrastructure plays in supporting (<i>inter alia</i>) biodiversity, landscape, wellbeing and climate change resilience; • The need to protect and enhance the green infrastructure network; • The need to continue monitoring biodiversity and ecological indicators; and • The need to work within environmental limits and capacities.
Geology Land use and Soils	<ul style="list-style-type: none"> • The need to protect, maintain and enhance geomorphological functions and services; • The need to influence how land is managed, promoting sustainable patterns of land use; • The need to conserve and enhance soil quality and function (including carbon sequestration); • The need to protect and avoid damage to Wales' geodiversity and conserve and enhance sites designated for geological interest; and • The need to manage impacts on soil resources, including control of pollution and remediation of contaminated land.
Water	<ul style="list-style-type: none"> • The need to maintain and improve water quality; • The need to maintain seasonal flows in groundwater and surface water; • The need to ensure that the continued risk of flooding is reduced or where this is not possible, mitigated effectively; • The need to restore sustainable and appropriate abstraction levels and water flow/levels in Wales' waters across the full range of regimes from low to high conditions; • The potential effects of climate change and the need to build climate change resilience into the water environment and water management; and • The need to prevent the deterioration of Water Framework Directive (WFD) waterbodies, achieve protected area objectives and achieve water body status objectives
Air quality and climate	<ul style="list-style-type: none"> • The need to minimise emissions of pollutant gases and particulates and enhance air quality; • The need to reduce the need to travel and promote sustainable modes of transport;

Topic Area	Key Economic, Social and Environmental Issues
	<ul style="list-style-type: none"> • The need to reduce greenhouse gas emissions arising from implementation of the WRMP; • The need to take into account, and where possible adapt to, the potential effects of climate change; and • The need to increase environmental resilience to the effects of climate change.
Human Environment	<ul style="list-style-type: none"> • The need to ensure that water resource requirements of people and visitors can be met at all times, in a sustainable way; • The need to ensure that water resources remain affordable; • The need to ensure that the WRMP measures do not adversely affect the health and well-being of any member of the community; • The need to ensure that vulnerable people are not affected by implementation of the WRMP measures; • The need to ensure that the WRMP measures do not have an adverse economic impact; • The need to avoid disruption through effects on the transport network; and • The need to ensure resilience of water supply/treatment infrastructure against climate change effects.
Material Assets and Resource Use	<ul style="list-style-type: none"> • The need to promote water efficiency measures (including metering); • The need to ensure that leakage is managed at a sustainable economic level; • The need to maintain the balance between supply and demand for water; • The need to reduce energy consumption; • The need to ensure the sustainable and efficient use of resources such as construction materials; and • The need to minimise waste arisings, promote reuse, recovery and recycling and minimise the impact of wastes on the environment and communities.
Cultural Heritage	<ul style="list-style-type: none"> • The need to conserve and enhance the historic significance of buildings, monuments, features, sites, places, areas and landscapes of archaeological and cultural heritage interest, and their settings; • The need to promote access to Wales' cultural heritage sites within Welsh Water's ownership where possible and safe to do so; and • The need to avoid damage to important wetland areas with potential for paleoenvironmental deposits.
Landscape and Seascape	<ul style="list-style-type: none"> • The need to conserve and enhance landscape and seascape character, taking into account the effects of climate change; • The need to ensure the special qualities of designated landscapes are protected; and • The need to minimise any adverse impacts upon landscape and seascape that may result from measures in the WRMP.

2.2.3 The issues listed above were reflected in the objectives and guide questions that collectively comprised the framework used to assess the WRMP (see **Table 2.2**). In addition, the well-being goals of the 'Well-being of Future Generations (Wales) Act 2015' were fully reflected in the framework to help ensure alignment with national policy and legislation on sustainability. Additionally, those objectives that are directly related to the objective for the sustainable management of natural resources (SMNR), established in the 'Environment (Wales) Act 2016', were highlighted.

Table 2.2 Assessment Framework for the WRMP

Topic Area	SEA Objective	Guide Questions	Welsh Government Well-being Goal(s)	Relevant to the Objective for SMNR?	SEA Directive Topic(s)
Biodiversity	1. To protect and enhance biodiversity, key habitats and species ecological functions, capacity and habitat connectivity	<i>Will the option protect and enhance where possible the most important sites for nature conservation (e.g. internationally or nationally designated conservation sites such as SACs, SPAs, Ramsar and SSSIs)?</i>	A prosperous Wales A resilient Wales A healthier Wales A globally responsible Wales	Yes	Biodiversity, Flora and Fauna
		<i>Will the option protect and enhance non-designated sites and local biodiversity?</i>			
		<i>Will the option provide opportunities for new habitat creation or restoration and/or link existing habitats?</i>			
		<i>Will the option lead to a change in the ecological quality of habitats due to changes in groundwater/river water quality and/or quantity?</i>			
		<i>Will the option protect, and enhance where appropriate, coastal and marine habitats and species?</i>			
		<i>Will the option prevent the spread/introduction of invasive non-native species?</i>			
		<i>Will the option maintain and enhance the green infrastructure network and the biodiversity it supports?</i>			
		<i>Will the option contribute to the restoration of species that are currently not achieving management objectives?</i>			
		<i>Will the option maintain and enhance ecosystem resilience?</i>			
Geology and Soils	2. To ensure the appropriate and efficient use of land and protect and enhance soil quality and geodiversity.	<i>Will additional land be required for the development or implementation of the option or will the option require below ground works leading to land sterilisation?</i>	A prosperous Wales A resilient Wales A globally responsible Wales	Yes	Soils, Material Assets
		<i>Will the option utilise previously developed land?</i>			
		<i>Will the option protect and enhance protected sites designated for their geological interest (GCR sites, SSSI and RIGS) and features of wider geodiversity interest?</i>			

Topic Area	SEA Objective	Guide Questions	Welsh Government Well-being Goal(s)	Relevant to the Objective for SMNR?	SEA Directive Topic(s)
		Will the option minimise the loss of best and most versatile agricultural land?			
		Will the option minimise conflict with existing land use patterns?			
		Will the option minimise land contamination?			
Water – Quantity	3. To protect and enhance surface and ground water levels and flows and ensure sustainable water resource management.	Will the option minimise the demand for water resources?	A prosperous Wales	Yes	Water, Biodiversity, Flora, Fauna
		Will the option result in changes to river flows?	A resilient Wales		
		Will the option result in changes to groundwater levels?	A healthier Wales		
		Will the option support the achievement of environmental objectives set out in River Basin Management Plans?	A healthier Wales		
Water – Quality	4. To protect and enhance the quality of surface and groundwater resources and the ecological status of water bodies.	Will the option protect and improve surface, groundwater, estuarine and coastal water quality?	A prosperous Wales	Yes	Water, Biodiversity, Flora, Fauna
		Will the option prevent the deterioration of Water Framework Directive (WFD) waterbody status (or potential)?	A resilient Wales		
		Will the option support the achievement of protected area objectives?	A healthier Wales		
		Will the option support the achievement of environmental objectives set out in River Basin Management Plans?	A healthier Wales		
		Will the option ensure a new activity or new physical modification does not prevent the future achievement of good status for a water body?	A healthier Wales		
Water – Flood Risk	5. To reduce the risk of flooding, promote the use of sustainable drainage and identify opportunities for collaborative working with	Will the option have the potential to cause or exacerbate flooding in the catchment area now or in the future?	A prosperous Wales	Yes	Human health, Climatic Factors
		Will the option have the potential to help alleviate flooding in the catchment area now or in the future?	A resilient Wales		

Topic Area	SEA Objective	Guide Questions	Welsh Government Well-being Goal(s)	Relevant to the Objective for SMNR?	SEA Directive Topic(s)
	other risk management authorities.	<p><i>Will the option be at risk of flooding now or in the future?</i></p> <p><i>Will the option help to minimise flood risk by maintaining and improving the green infrastructure network?</i></p> <p><i>Will the option promote the use of sustainable drainage systems?</i></p> <p><i>Will the option promote opportunities for collaborative working with other risk management authorities?</i></p> <p><i>Will the option affect the risk of flooding to people and/or property?</i></p> <p><i>Will the option help to mitigate/reduce the risk of flooding to people and/or property?</i></p>	<p>A healthier Wales</p> <p>A Wales of cohesive communities</p> <p>A globally responsible Wales</p>		
Climate Change	6. To limit the causes and potential consequences of climate change and to adapt to future changes.	<p><i>Will the option reduce or minimise greenhouse gas emissions?</i></p> <p><i>Will the option have new infrastructure that is energy efficient or make use of renewable energy sources?</i></p> <p><i>Will the option reduce vulnerability to the effects of climate change by appropriate adaptation?</i></p> <p><i>Will the option increase environmental resilience to the effects of climate change including to impacts on flood risk and water quality?</i></p> <p><i>Will coastal erosion have consequences on the operation of this option now or in the future, taking account of expected climate change sea level rise?</i></p>	<p>A prosperous Wales</p> <p>A resilient Wales</p> <p>A healthier Wales</p> <p>A Wales of cohesive communities</p> <p>A globally responsible Wales</p>	Yes	Climatic Factors.
Human Environment - Health	7. To ensure the protection and enhancement of human health.	<p><i>Will the option ensure the continuity of a safe and secure drinking water supply?</i></p> <p><i>Will the option impact on physical health and mental well-being by affecting opportunities for informal outdoor recreation?</i></p> <p><i>Will the option maintain surface water and bathing water quality within statutory standards?</i></p>	<p>A prosperous Wales</p> <p>A globally responsible Wales</p>	Yes	Population, Human Health.

Topic Area	SEA Objective	Guide Questions	Welsh Government Well-being Goal(s)	Relevant to the Objective for SMNR?	SEA Directive Topic(s)
		<i>Will the option adversely affect human health by resulting in increased nuisance and disruption (e.g. as a result of increased noise levels)?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option maintain and improve public access to, and enjoyment of, green and blue infrastructure and in doing so help promote healthy lifestyles?</i>	A resilient Wales A healthier Wales A more equal Wales		
Human Environment -Social and Economic Well-Being	8. To maintain and enhance the economic and social well-being of the local community.	<i>Will the option ensure sufficient infrastructure is in place for predicted population increases?</i>	A prosperous Wales A globally responsible Wales A resilient Wales	Yes	Population, Human Health, Material Assets.
		<i>Will the option ensure sufficient infrastructure is in place to sustain a seasonal influx of tourists?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option help to meet the employment needs of local people?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option ensure that an affordable supply of water is maintained and vulnerable customers protected?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option improve access to local services and facilities (e.g. sport and recreation)?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option contribute to sustaining and growing the local and regional economy?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option avoid disruption through effects on the transport network?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option be resilient to future changes in resources (both financial and human)?</i>	A resilient Wales A healthier Wales A more equal Wales		
		<i>Will the option improve opportunities for social interaction and community cohesion?</i>	A resilient Wales A healthier Wales A more equal Wales		
Material Assets and Resource Use - Water Resources	9. To ensure the sustainable and efficient use of water resources.	<i>Will the option lead to reduced leakage from the supply network?</i>	A prosperous Wales A resilient Wales A globally responsible Wales	Yes	Water, Material Assets.
		<i>Will the option improve efficiency in water consumption?</i>	A resilient Wales A globally responsible Wales		

Topic Area	SEA Objective	Guide Questions	Welsh Government Well-being Goal(s)	Relevant to the Objective for SMNR?	SEA Directive Topic(s)
Material Assets and Resource Use – Waste and Resource Use	10. To promote the efficient use of resources.	<i>Will the option seek to minimise the demand for raw materials?</i>	A prosperous Wales A resilient Wales A globally responsible Wales	Yes	
		<i>Will the option promote the re-use and recycling of waste materials and reduce the proportion of waste sent to landfill?</i>			
		<i>Will the option encourage the use of sustainable design and materials?</i>			
		<i>Will the option reduce or minimise energy use?</i>			
Cultural Heritage	11. To conserve and enhance the cultural, historic and industrial heritage resource.	<i>Will the option conserve or enhance the historic environment, including heritage assets such as historic buildings, conservation areas, features, places and spaces, and their settings</i>	A prosperous Wales A Wales of vibrant culture and thriving Welsh language	Yes	Cultural Heritage
		<i>Will the option avoid or minimise damage to archaeologically important sites?</i>			
		<i>Will the option avoid damage to important wetland areas with potential for paleoenvironmental deposits?</i>			
		<i>Will the option affect public access to, or enjoyment of, features of cultural heritage?</i>			
		<i>Will the option protect or enhance Welsh language and culture?</i>			
Landscape	12. To conserve and enhance landscape character.	<i>Will the option avoid adverse effects on, and enhance where possible, the special qualities of protected/designated landscapes (including woodlands) such as National Parks or AONBs?</i>	A resilient Wales A Wales of cohesive communities A healthier Wales A prosperous Wales	Yes	Landscape
		<i>Will the option protect and enhance landscape character, townscape, seascape and green infrastructure?</i>			
		<i>Will the option affect public access to existing landscape features?</i>			
		<i>Will the option minimise adverse visual impacts?</i>			

- 2.2.4 The effects of the WRMP were assessed in two stages. The first stage comprised a high level assessment of all feasible options (including supply-side, demand management and leakage reduction options) against the 12 SEA assessment objectives. A more detailed assessment was then undertaken of the preferred options. This assessment considered:
- the nature of the potential effect (what is expected to happen);
 - the timing and duration of the potential effect (e.g. short, medium or long term);
 - the geographic scale of the potential effect (e.g. local, regional, national);
 - the location of the potential effect (e.g. whether it affects rural or urban communities, or those in particular parts of the supply area);
 - the potential effect on vulnerable communities or sensitive habitats;
 - the reasons for whether the effect is considered significant;
 - the reasons for any uncertainty, where this is identified; and
 - the potential to avoid, minimise, reduce, mitigate or compensate for the identified effect(s) with evidence (where available).
- 2.2.5 Additionally, informed by the assessment of the preferred options against the SEA objectives, a judgement was made regarding whether, and the extent to which, the WRMP would support or detract from the achievement of each of the well-being goals for Wales and the objective for SMNR.

3. How the Findings of the Environmental Report Have Been Taken into Account

3.1 Overview

- 3.1.1 The SEA Environmental Report and WRMP have been developed in tandem. **Table 3.1** details key stages of the SEA and its relationship with the development of the WRMP.

Table 3.1 Key Stages in the Development of the Environmental Report and its Relationship with the WRMP

Strategic Environmental Assessment	WRMP	Relationship
Scoping		
<p>The scoping stage of the SEA identified other relevant plans, programmes and environmental protection objectives which could be affected by, or which could affect, the WRMP.</p> <p>The scoping stage also characterised the relevant aspects of the current state of the environment and its evolution without the WRMP.</p>	<p>The WRMP used the plans and programmes identified to ensure that it was fully in compliance with local, national and international policy and legislation.</p> <p>Baseline information supported early optioneering.</p>	<p>The links between the other relevant plans, programmes, policies and strategies that were applicable to the WRMP and its Environmental Report were outlined. These included plans and programmes at an international, European or national level covering a variety of topics.</p> <p>Information on environmental issues helped determine constraints on the suitability of certain options.</p> <p>The SEA objectives ensured that the full range of social, economic and environmental issues was considered in the WRMP's development.</p>
Assessment		
<p>Testing the plan or programme objectives against the SEA objectives</p>	<p>The Environment Report and the WRMP were developed together.</p>	<p>The Environmental Report and option appraisals were jointly used to derive the WRMP.</p>
<p>The SEA assessed feasible options comprising 13 supply-side options, 41 demand management options and nine leakage reduction options.</p>	<p>The WRMP considered unconstrained water management options within the deficit zones. The unconstrained list of water management options was screened using a set of criteria resulting in a shortlist of 63 feasible options that were taken forward for further assessment in the deficit zones.</p>	<p>The SEA objectives were used to help inform and refine option screening criteria and initial commentary was provided in respect of the potential environmental effects of the feasible options.</p>
<p>The SEA assessed feasible options comprising 13 supply-side options, 41 demand management options and nine leakage reduction options.</p>	<p>The capital, operating and social and environmental costs of the feasible options were assessed and their environmental effects, taking into account the findings of the SEA, WFD Assessment,</p>	<p>The feasible options were subject to a range of assessments including SEA as well as assessment of environmental and social costs and benefits. The findings of the SEA helped to identify the preferred options.</p>

Strategic Environmental Assessment	WRMP	Relationship
	HRA and Ecosystem Services Assessment, were considered. Along with ongoing discussion with stakeholders, this information was used to identify potential preferred options. A total of three preferred options were identified to address the supply demand deficit.	
The SEA included an enhanced assessment of the preferred options.	Consultation was undertaken on the WRMP to incorporate the opinions of stakeholders and customers on economic, customer and financial aspects of the WRMP. The long and short term risks of each option were also taken into account.	The findings of the detailed assessment supported the selection of the preferred options and rejection of alternatives (the feasible options). The findings of the detailed assessment included mitigation measures that were incorporated into the WRMP.
Reporting		
The key findings of the Environmental Report are presented along with Welsh Water's response in Table 3.2 below. The extent to which the findings have informed the final WRMP is detailed in Section 5 of this Post Adoption Statement.		
Consultation		
Responses to consultation on the Environmental Report are presented along with the Welsh Water's responses in Section 4 and Appendix B . The extent to which the consultation has informed the final WRMP is detailed in Section 5 of this Post Adoption Statement.		
Monitoring		
Proposals for monitoring identified in Section 6 of this Post Adoption Statement will be implemented by Welsh Water.		

3.2 Key Findings of the SEA

- 3.2.1 As demonstrated in **Table 3.1** above, the SEA process has played an important role in the development of the WRMP. The key findings of the Environmental Report are summarised in **Table 3.2** together with Welsh Water's response.

Table 3.2 Key Findings of the Environmental Report

No.	Key Environmental Report Findings	Response
1	Capital investment associated with the Final WRMP19 would generate supply chain benefits, employment opportunities and increased spend in the local economy by contractors and construction workers. The local economies in Pembrokeshire and Tywyn Aberdyfi are both expected to experience benefits, with significant expenditure associated with Option PEM024b	The findings of the assessment are noted. Reflecting the mitigation and enhancements identified in the Environmental Report, Welsh Water will seek, where possible, to enhance positive effects on the local economy and communities through: <ul style="list-style-type: none"> utilising local labour; and

No.	Key Environmental Report Findings	Response
	<p>anticipated. Overall, a significant positive effect has been identified in respect of economic and social well-being (SEA Objective 8), albeit with a mixed minor negative effect expected due to highways disruption and diversions to recreational users on the National Cycle Network associated with the implementation of Option TYA004.</p>	<ul style="list-style-type: none"> • appointing local contractors/sub-contractors and utilising locally sourced materials. <p>In order to minimise potential disruption to local highways networks during construction, Welsh Water will undertake a Transport Assessment at the project stage (where appropriate) to support the identification of mitigation measures which may include, for example, avoiding works and HGV movements during peak traffic periods.</p>
2	<p>Construction of the preferred options would result in significant adverse effects against three of the eleven objectives within the SEA Assessment Framework.</p> <p>Significant negative effects have been identified in respect of flood risk (SEA Objective 5), as construction activity associated with Options PEM024b and TYA004 would take place within Flood Zones 2 and 3. However, project level mitigation, informed by a Flood Consequence Assessment, would be likely to manage adverse effects in this regard.</p> <p>The Draft WRMP would give rise to the emission of greenhouse gases resulting from embodied carbon in addition to plant operation and vehicle movements. This has been assessed as having a significant negative effect on climate change (SEA Objective 6). Using the scale of carbon emissions as a proxy for resource use, a significant negative effect would also be expected on waste and resources (SEA Objective 10).</p> <p>Construction associated with the preferred options may cause adverse landscape and visual impacts (SEA Objective 12) which could affect the special qualities of Snowdonia National Park and Pembrokeshire Coast National Park as well as local landscape character and the visual amenity of proximate residential and recreational receptors. For Options TYA004 and TYA009, these effects have been assessed as significant and, additionally, in combination landscape effects may arise if the construction of these options takes place at the same time (due to the close proximity of the schemes to one another). However, it is likely that effects in this regard could be managed at the project level through the implementation of appropriate mitigation such as screening (informed by appropriate landscape and visual assessment).</p>	<p>The findings of the assessment are noted.</p> <p>Welsh Water will undertake appropriate project-level flood risk assessment to identify any detailed avoidance or mitigation measures that could be employed.</p> <p>Measures to reduce greenhouse gas emissions and resource use during construction will be considered including, for example, the use of low emission plant, reused/recycled materials during construction and minimisation of waste.</p> <p>Where possible, Welsh Water will seek to reduce the landscape and visual impacts associated with the construction of the preferred options through the implementation of mitigation (e.g. screening). Landscape and visual impacts will be fully considered and assessed at the project stage whilst landscape and visual impact would be a key consideration in the determination (by the relevant local planning authority) of any planning application(s) related to the schemes under the relevant Town and Country Planning regulations. Should residual construction-related landscape and visual impacts prove to be unacceptable, then alternative locations for above ground infrastructure may need to be considered.</p>
3	<p>Minor negative effects have been identified in respect of biodiversity (SEA Objective 1), geology and soils (SEA Objective 2), water quality (SEA Objective 4), human health (SEA Objective 7) and cultural heritage (SEA Objective 11). This reflects construction-related impacts including land take and emissions to air and noise.</p>	<p>The findings of the assessment are noted.</p> <p>These effects would occur as a result of most construction programmes and are largely temporary. The effects of most of these elements can be reduced through effective mitigation. These issues would also be considered further at the project stage as part of the Environmental Impact Assessment (EIA) process (as required).</p>
4	<p>Implementation of the Final WRMP19 would help to ensure the continuity of potable water supplies, supporting population and economic growth. In combination, this would give rise to positive effects on</p>	<p>The findings of the assessment are noted.</p>

No.	Key Environmental Report Findings	Response
	human health (SEA Objective 7) and economic and social well-being (SEA Objective 8). The operation of	
5	Mixed minor positive and negative effects have been identified in respect of water quantity (SEA Objective 3). This reflects the expectation that operation of Option PEM024b would reduce the pressure on abstraction from the Afon Cleddau during times of low flows but also the potential for abstraction associated with Option TYA004 to have an adverse impact on the hydrological regime of the Afon Dysynni. It should be noted that Options TYA004 and TYA009a will both affect the Afon Dysynni and in-combination effects on SEA Objective 3 are therefore possible. However, the two options would not operate concurrently and the 2015 Meirionnydd Catchment Abstraction Management Strategy (CAMS) states that water is available for abstraction without restrictions within the Afon Dysynni.	The findings of the assessment are noted.
6	Mixed minor positive and negative effects have been identified in respect of climate change (SEA Objective 6). The improved storage position in Llys y Fran reservoir associated with Option PEM024b has the potential to reduce vulnerability to the effects of climate change (drought), generating a positive effect on this objective. However, the release of greenhouse gases associated with all of the preferred options has been assessed as a having an overall minor negative effect on climate change.	The findings of the SEA are noted. Reflecting the mitigation measures identified in the Environmental Report, Welsh Water will consider measures to reduce emissions associated with the operation of the preferred options including: <ul style="list-style-type: none"> • use of low energy equipment; • use of energy efficient materials and building techniques; and • incorporation of renewable energy and low carbon technologies.
7	A significant negative effect has been identified with respect to flood risk (SEA Objective 5). This is because new above ground infrastructure would be sited in Flood Zones 2 and 3 under Options PEM024b and TYA004. However, project level mitigation, informed by a FCA, would be likely to manage adverse effects in this regard.	The findings of the SEA are noted. Welsh Water will seek to implement appropriate mitigation measures to address flood risk during operation (e.g. bunding and locating power and electrical equipment above flood level where possible). Flood risk will also be fully considered at the project stage and it would be expected that any proposal would be subject to flood risk assessment. Flood risk would be a key consideration in the determination (by the relevant local planning authority) of any planning application(s) related to the schemes under the relevant Town and Country Planning regulations.
8	Minor negative effects have been identified in respect of waste and resources (SEA Objective 10) due to combined energy use across the options.	The findings of the SEA are noted. As set out above, Welsh Water will consider measures to reduce energy and resource use associated with the operation of the preferred options.
9	Implementation of the Final WRMP may give rise to minor negative effects on landscape (SEA Objective 12) as Options TYA004 and TYA009a would result in the development of new aboveground infrastructure in Snowdonia National Park (SEA Objective 12) (although as the new infrastructure for these options would be	The findings of the SEA are noted. Welsh Water will seek to reduce the landscape and visual impacts associated with the operation of the preferred options through the implementation of mitigation (e.g. screening). Landscape and visual impacts will also be fully considered and assessed at the project stage whilst landscape and visual

No.	Key Environmental Report Findings	Response
	situated approximately 4km apart, significant in combination landscape effects are not anticipated).	impact would be a key consideration in the determination (by the relevant local planning authority) of any planning application(s) related to the schemes under the relevant Town and Country Planning regulations. Should residual operation-related landscape and visual impacts prove to be unacceptable, then alternative locations for above ground infrastructure may need to be considered.
10	<p>In some cases, there is an opportunity to reduce some of the potential negative impacts identified in the assessment. The detail of this mitigation needs to be considered during the planning phases of each of the individual component schemes within the preferred options.</p> <p>Specific mitigation measures identified include:</p> <ul style="list-style-type: none"> • construction measures that need to be incorporated into scheme design and or planning to avoid or mitigate potential effects; for example, to allow ecological investigation schemes, protected species surveys and mitigation to be appropriately scheduled and to provide sufficient time for consultations with NRW; or to avoid effects on the setting of nearby listed buildings through scheme siting and design; • minimising the visual effects of erecting new buildings in National Parks by designing the buildings to be in-keeping with the local landscape (e.g. housing in a field barn) or through screening (e.g. tree or hedge planting); • flood attenuation measures such as designing pumping stations and other essential infrastructure which are at risk of flooding with removable electric parts, wiring above possible water levels, flood proof barriers to doors; • the avoidance of road closures during periods of peak tourist influx in summer months; • measures to reduce greenhouse gas emissions/energy usage during construction including, for example, the use of low emission/low energy plant; • opportunities to utilise reused/recycled materials during construction (including excavated spoil and topsoil) where appropriate; • a detailed project level HRA/EIA would be required to consider these in more detail but at the very least a detailed Construction Environmental Management Plan would be required setting out detailed method statements as to how risks would be minimised. 	<p>The findings of the SEA are noted.</p> <p>Welsh Water will give full consideration to the mitigation measures identified in the Environmental Report at the project stage alongside any recommendations made in the project specific environmental assessment.</p>

4. How the Opinions Expressed in Response to the Consultation have been taken into Account in Preparing the Final Plan

4.1 Overview

4.1.1 Consultation has been an integral part of the SEA of Welsh Water's WRMP. This has included the following main activities:

- consultation with the statutory SEA bodies on the scope of the SEA; and
- formal public consultation on the Environmental Report.

4.1.2 Consultation on the WMRP has included:

- Ongoing discussion with the Customer Challenge Group, who help to direct Welsh Water in both engaging with customers and to challenge the robustness of the planning processes and responses to customer preferences. It includes a number of stakeholders who work within the water sector, such as NRW and CCWater, and those who are independent such as Citizen Advice and Cardiff University.
- "Have Your Say" (HYS) Consultation which involved nearly 20,000 customers from a wide range of demographic groups and locations using a variety of consultation methods (including innovative online methods such as a bilingual Welsh and English chatbot).
- Qualitative and quantitative stated preference surveys including Computer Aided Telephone Interviews (CATI) that provided an understanding of customers' views on the various types of options available to maintain and improve the supply demand balance.
- Pre-consultation commencing in 2016 with regulators, Government, neighbouring companies and key stakeholders such as the Consumer Council for Water, Natural Resources Wales, the Environment Agency and Ofwat to ask those organisations what they expected from the WRMP and to highlight any issues that emerged during the previous planning period;
- Informal consultation on approaches to the WRMP with the Independent Environment Advisory Panel (IEAP), comprising government and non-governmental organisations. A presentation to the IEAP on the draft WRMP outputs was made on 23 October 2017 with feedback and broad support provided.
- Formal consultation on the Draft WRMP (alongside which the SEA Environmental Report was published); and
- Publication of Statement of Response, outlining how the comments received on the Draft WRMP have been taken into account in the development of the Final WRMP.

4.1.3 A summary of the outcomes of the consultation on the SEA and Draft WRMP are provided in the sections that follow.

4.2 SEA Consultation

SEA Scoping Consultation

4.2.1 The first stage of the SEA was the production of a Scoping Report. This reviewed plans and programmes that could affect the WRMP or be affected by it, outlined baseline information for the plan area and set out the proposed framework for assessing potential environmental effects. The SEA Scoping Report was issued for consultation to the SEA statutory consultees for Wales (the Welsh Government, Cadw and NRW) and for England (the Environment Agency, Historic England and Natural England). They were consulted on the scope and level of detail to be included in the Environmental Report for a six week period ending 21st April 2017.

4.2.2 In support of the consultation, a meeting attended by Natural Resource Wales was also held on 5th April 2017. The purpose of this meeting was to seek initial feedback on the content of the SEA Scoping Report.

4.2.3 Responses were received to the consultation from the following organisations:

- Natural Resources Wales;
- Welsh Government; and
- Cadw.

4.2.4 Responses broadly welcomed the proposed scope of the SEA, with comments providing:

- Suggestions for additional plans and programmes and baseline information. These were largely accepted and included in the updated contextual information presented in Sections 2 and 3 of the Environmental Report.
- Suggested amendments to the SEA Objectives and guide questions that comprise the SEA framework. These were also largely accepted and included, for example:
 - ▶ adding reference to ecosystem resilience within the guide question for the SEA Objective 1 (Biodiversity);
 - ▶ including opportunities for social interaction and community cohesion under the guide questions for SEA Objective 7 (Social and Economic Well-Being); and
 - ▶ extending the SEA Objective (Flood Risk) to include opportunities to promote the use of sustainable drainage and for collaborative working.

4.2.5 Detailed responses to the consultation on the Scoping Report are included in **Appendix B** to this report.

Public Consultation on the Environmental Report

4.2.6 The Environmental Report documented the findings of the assessment of feasible options, the preferred options and alternatives, outlining where any likely significant effects were identified and proposing, where appropriate, mitigation measures. This too was subject to consultation alongside the Draft WRMP for 12 weeks from 16th March to 8th June 2018.

4.2.7 The Environmental Report indicated that Welsh Water welcomed, in particular, views on:

- Whether the Environmental Report had correctly identified the likely significant effects of the Draft WRMP?

- Whether conclusions of the Environmental Report and the recommendations concerning the mitigation and enhancement of significant effects were agreed with?
 - Whether the proposed arrangements for monitoring the significant effects of the implementation of the WRMP were agreed with?
- 4.2.8 Responses were received from two organisations, NRW and the EA. Details of the comments and how they have been addressed are set out in **Appendix B**.

4.3 Consultation on the Draft WRMP

4.3.1 The draft WRMP was issued for public consultation for 12 weeks from 16th March to 8th June 2018.

4.3.2 During the consultation process Welsh Water:

- contacted over 120 organisations directly;
- contacted all relevant Members of Parliament and all Welsh Assembly Members;
- publicised the Plan via our Welsh Water Twitter, Facebook and Instagram feeds;
- attended the Welsh Water 2050 launch event at the Senedd in Cardiff Bay;
- utilised the Welsh Water 'Online Community' to explore the Plan in more detail with thirty of our customers.

4.3.3 In total 11 responses were received by Welsh Water. The organisation and the sections of the draft WRMP that they requested changes is summarised in **Table 4.1**.

Table 4.1 Key Findings of the Environmental Report

Consultee	Section and Subject of change
Ofwat	Chapter 2 and 5 : Resilience Chapter 4: Demand Forecast Chapter 6: Trading and transfer clarification Chapter 6: Customer Engagement Chapter 7: Water leakage reduction plans
Natural Resources Wales	Chapter 7: 15% leakage reduction in baseline demand Chapter 6: Pre-consultation feedback Chapter 3: Greenhouse gases
Environment Agency	Chapter 6: Trading and transfer clarification Chapter 7: Achieving 15% leakage reduction Chapter 7: Vowchurch resilience Chapter 4: Demand Forecast - consumption model
Consumer Council for Water	Chapter 6: Water efficiency plans Chapter 7: Water leakage reduction plans Chapter 7: Vowchurch and SEWCUS resilience
Canal and Rivers Trust	No change required
RSPB	Chapter 2 and 5 : Resilience Chapter 3: WFD Chapter 6: Trading and transfer clarification Chapter 6: Water efficiency plans Chapter 7: Water leakage reduction plans

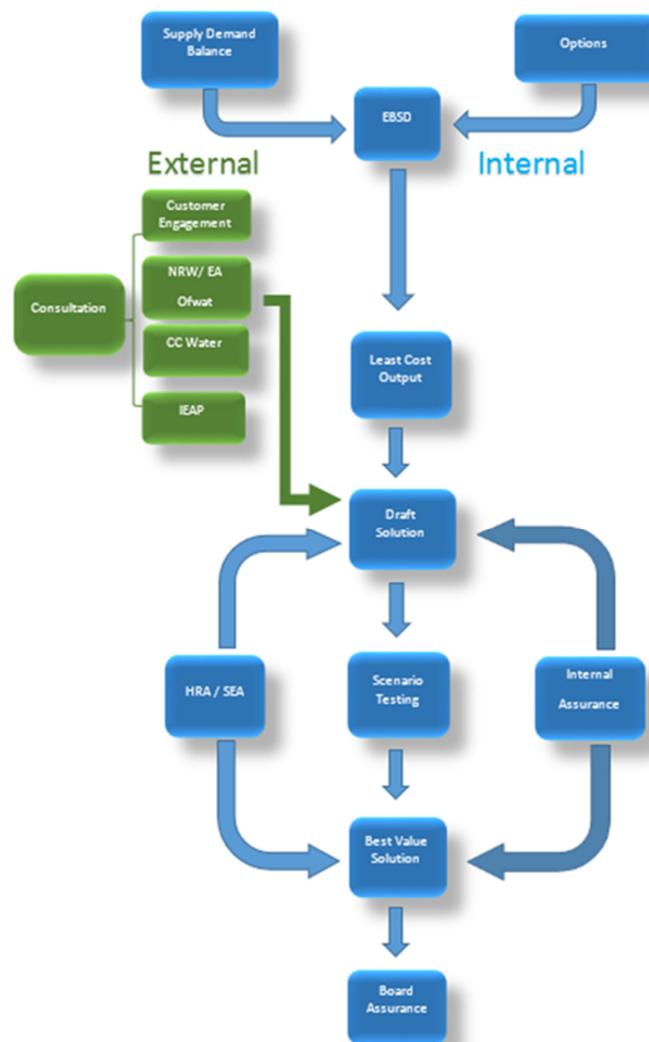
Consultee	Section and Subject of change
Conwy Borough Council	Chapter 6: Water efficiency plans
Pembrokeshire Coast National Park	Chapter 4: Demand Forecast
Waterwise	Chapter 6: Water efficiency plans
Business Customer	Chapter 7: Water leakage
GARD	Chapter 6: Trading and transfer clarification

- 4.3.4 A Statement of Response to the consultation was published along with a Revised Draft WRMP in September 2018.
- 4.3.5 Following a review of the Statement of Response to the consultation and the changes made in the Revised Draft WRMP, on the 8th March 2019 Welsh Government gave Welsh Water direction to publish the Final WRMP.

5. The Reasons for Choosing the WRMP as Adopted, in Light of the Other Reasonable Alternatives Dealt With

5.1.1 Welsh Water's approach to decision making is outlined in **Figure 5.1**. These stages are detailed in Chapter 2 of the Final WRMP.

Figure 5.1 Welsh Water's approach to decision making



5.1.2 To obtain a preferred set of solutions that resolves the supply demand imbalances in the Tywyn Aberdyfi and Pembrokeshire zones, Welsh Water followed a robust process that is compliant with regulatory guidance and best practice to complete a thorough appraisal of the options, taking full account of external and internal engagement. The key principles of Welsh Water's decision making process have been:

- conduct detailed customer and stakeholder engagement to understand their views and preferences for the proposed options;
- undertake a detailed options appraisal process, including SEA/HRA and WFD assessment, to generate a set of costed, feasible supply side and demand side options;
- utilise the UKWIR Industry Standard “Economics of Balancing Supply and Demand” (EBS) methodology to generate the ‘least cost’ plan;
- review against Welsh Government objectives as set out in the Environment (Wales) Act 2016, Water Strategy for Wales and Future Generations Act 2015;
- ensure options are aligned with Welsh Water’s PR19 priorities, the 2050 vision and Biodiversity Plan.

Reasons for the Selection of the Preferred Option

5.1.3 The following text has been provided by Welsh Water and considers the final option for each WRZ in turn.

Tywyn Aberdyfi

5.1.4 The initial least cost assessment identified the new abstraction from the Afon Dysynni as the most cost beneficial scheme that resolves the forecast deficit in Tywyn Aberdyfi. No demand side measures could fully resolve the imbalance given the already low level of leakage. To confirm that this solution is the best value Welsh Water has tested it further against other measures, such as drought risk, climate change and environmental impact; the results of which show:

- it is resilient to climate change;
- it is resilient to more extreme droughts than have experienced been historically;
- it is resilient to potential uncertainties such as future rates of population growth; and
- it has a minimal impact upon the environment.

Pembrokeshire

5.1.5 The initial least cost assessment identified the Canaston Bridge pumping station upgrade as the most cost beneficial scheme that resolves the forecast deficit in Pembrokeshire. No demand side measures could fully resolve the imbalance, though as part of Welsh Water’s overall strategy for Pembrokeshire, water efficiency activity in the zone will be increased and the company will look to pilot further smart metering trials. To confirm that this solution is the best value Welsh Water has tested it further against other measures, such as drought risk, climate change and environmental impact; the results of which show

- it is resilient to climate change;
- it is resilient to more extreme droughts than have been experienced historically;
- it is resilient to potential uncertainties such as catchment hydrology and growth; and
- it does not impact the environment.

Vowchurch Resilience Option

5.1.6 There are limited options to resolve the issue of resilience for the Vowchurch WRZ. Demand management effort such as leakage reduction would not on its own resolve the situation. The

Vowchurch boreholes site was subject to a Restoring Sustainable Abstraction (RSA) study in 2010/11 as required by the Environment Agency through the NEP for AMP 5. To inform the cost benefit element of the study, options appraisal work was completed which investigated alternative sources of supply to the Vowchurch boreholes. The only feasible option identified was to provide a potable supply of water from the neighbouring Hereford WRZ.

- 5.1.7 Given the water supply risks related to poor raw water quality and resilience to drought, Welsh Water will lay a new potable water main between our Hereford and Vowchurch zones, capable of meeting the whole Vowchurch demand from Broomy Hill WTW when needed.
- 5.1.8 Broomy Hill is fed by abstraction from the River Wye and is licensed for a maximum rate of 52 MI/d. The initial resilience assessment of this river source suggests there is no plausible drought severe enough to deplete flows in the River Wye to such an extent that they would be unable to provide 52 MI/d for abstraction at Broomy Hill. Welsh Water are therefore confident that this new supply of water to Vowchurch is fully drought resilient.

6. The Measures Decided Concerning Monitoring

- 6.1.1 The SEA Directive requires the significant environmental effects of implementing a plan to be monitored. Monitoring the effects of the WRMP can help to answer questions such as:
- Were the SEA predictions of effects accurate?
 - Is the WRMP contributing to the achievement of the SEA objectives?
 - Are mitigation measures performing as well as expected?
 - Are there any adverse effects? Are these within acceptable limits, or is remedial action desirable?
- 6.1.2 Welsh Water expect to monitor the effects of the WRMP alongside the other impacts of their operations, and as such, are likely to rely on existing sources of information that are collected either by Welsh Water or by other relevant organisations such as NRW and the Environment Agency. For example, Welsh Water already collects information for its Annual Performance Report that allows customers and stakeholders to review its performance, some of which is presented in a robust Risk and Compliance Statement that is submitted to the Office of Water Services (Ofwat). Welsh Water updates their WRMP and Drought Plan every five and three years respectively and there are a number of statutory controls which must be monitored.
- 6.1.3 Consistent with the proposals of the Environmental Report, potential effects against all the SEA objectives have been included in the monitoring framework, which is set out in **Table 6.1**. Progress on the implementation of the WRMP and identification of any issues arising will be reported in the WRMP Annual Review, which is submitted to Welsh Government every year.

Table 6.1 Indicators for Monitoring Effects

Objective	Indicator	Source of Information	Commentary
1. To protect and enhance biodiversity, key habitats and species ecological functions, capacity and habitat connectivity	Condition of specific protected sites (e.g. SACs, SPAs and Ramsar)	Natural Resources Wales (NRW)	Open communication between NRW and Welsh Water will support the provision of up-to-date information and identification of any potential issues.
	Condition of SSSIs on water industry land holdings	NRW, Welsh Water	Condition assessment of designated land on Welsh Water's landholdings, both area and condition may change.
	Biological monitoring (macroinvertebrates, macrophytes, fisheries, bird surveys)	NRW, Welsh Water, Angling clubs.	Using data sets and comparing them against other monitored information such as levels and flows will assist in identifying whether there are any adverse effects and if mitigation measures are performing as well as expected.
	Number and area of new or restored habitats	Welsh Water	Welsh Water will consider recording the number of

Objective	Indicator	Source of Information	Commentary
			locations and area of habitats created or restored.
2. To ensure the appropriate and efficient use of land and protect and enhance soil quality and geodiversity.	Number/ developed area of water infrastructure built on previously developed land	Welsh Water	Welsh Water will consider recording the number and developed area of new buildings that are built on previously developed land.
	Condition of sites designated for geological interest (e.g. geological SSSIs) on water industry land holdings	Welsh Water	Condition assessment of designated land on Welsh Waters landholdings, both area and condition may change.
3. To protect and enhance surface and ground water levels and flows and ensure sustainable water resource management.	River flow and level characteristics	Welsh Water, NRW	Monitoring can be compared to historic records. Source information will include Environmental Assessment Reports (EARs) and Environmental Monitoring Plans (EMPs) for DCWWs Drought Plan options and information from NRW from RBMPs.
	River flows, river levels, lake and reservoir levels.	Welsh Water, NRW	At sensitive sites, previous studies will be used to inform monitoring and assessment. For example Review of Consents (RoC) documentation and any Drought Plan option EARs and associated EMPs.
	Groundwater levels, recharge characteristics	Welsh Water, NRW	At sensitive sites, previous studies will be used to inform monitoring and assessment. For example, RoC documentation and any Drought Plan option EARs and associated EMPs.
4. To protect and enhance the quality of surface and groundwater resources and the ecological status of water bodies.	Water quality of surface, groundwater, estuarine and coastal waters	Welsh Water, NRW	Monitoring can be compared to historic records. Source information will include Environmental Assessment Reports (EARs) and Environmental Monitoring Plans (EMPs) for DCWWs Drought Plan options and information from NRW from RBMPs. For coastal waters, source information would include the Wales Marine Planning Portal.
5. To reduce the risk of flooding, promote the use of sustainable drainage and identify opportunities for	Number of properties that experience internal flooding from public sewers.	Welsh Water, NRW	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the

Objective	Indicator	Source of Information	Commentary
collaborative working with other risk management authorities.			Annual Performance Report (MOS D3 KPI).
	Installation of sustainable drainage systems and green infrastructure.	Welsh Water	Welsh Water will consider recording the number of sustainable drainage systems and green infrastructure installed.
6. To limit the causes and potential consequences of climate change and to adapt to future changes.	Quantity of greenhouse gas emissions per megalitre of water supplied.	Welsh Water	Welsh Water energy managers can use company data, and guidance from the UKWIR greenhouse gas workbook and BEIS (Department for Business, Energy & Industrial Strategy) conversion factors to derive this information.
	Energy use in the operational phase of water treatment and supply.	Welsh Water	Welsh Water hold and record energy consumption data e.g. via accounts / invoices.
	Renewable energy generated; renewable energy purchased.	Welsh Water	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the Annual Performance Report (MOS C2 KPI). Welsh Water hold and record energy consumption data e.g. via accounts / invoices..
7. To ensure the protection and enhancement of human health.	Compliance with drinking water standards at customers' taps (%).	Welsh Water – drinking water quality report	Welsh Water reports these data to Ofwat as part of the statutory returns process (Annual Performance Report) and to the Drinking Water Inspectorate.
	Compliance with water quality standards under the EC Bathing Waters Directive.	NRW	NRW monitors the compliance of bathing waters and reports this annually.
	Number of Welsh Water sites with public access which provide sporting, recreational and leisure resources and number of visits per year.	Welsh Water	Welsh Water holds information on the number of annual visitors to sites where specific visitor facilities are provided (e.g. Llyn Brenig)
	The percentage of critical assets that are resilient against key risks covering: <ul style="list-style-type: none"> • Security and Emergency Measures Directive (SEMD) risk; • Flood Risk; • Coastal Erosion Risk; • Loss of Power Risk; • Loss of Remote Control ability 	Welsh Water	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the Annual Performance Report (MOS F3 KPI).

Objective	Indicator	Source of Information	Commentary
	<ul style="list-style-type: none"> • Loss of any part of the treatment process; • Loss of water or wastewater supply capacity; or • Loss of access to the asset. 		
8. To maintain and enhance the economic and social well-being of the local community.	Population and projected population change over time (per WRZ)	Welsh Water	Welsh Water reports these data to Ofwat as part of the statutory returns process and as part of the Strategic Business Plan.
	The number of customers benefitting from social tariffs (The measure embraces all social tariffs and means of assistance and includes HelpU, WaterSure Wales, Water Direct, and the Customer Assistance Fund (but not Water Collect))	Welsh Water	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the Annual Performance Report (MOS E2 KPI).
9. To ensure the sustainable and efficient use of water resources.	Leakage	Welsh Water	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the Annual Performance Report (MOS F2 KPI).
	Water saved through demand management / water efficiency measures	Welsh Water	Welsh Water will consider reporting these data.
	Trends in overall per capita consumption.	Welsh Water	Welsh Water report these data to Ofwat as part of the statutory returns process and which is published in the Annual Performance Report (additional non-financial information).
10. To promote the efficient use of resources.	Amount of recycled / reused materials used	Welsh Water (contractors/consultants)	Information on the use of recycled / reused materials will be held by construction managers and accounts (contractors / consultants accounts, waste or procurement records).
	Proportion of waste sent to landfill	Welsh Water (services data)	Information on waste disposal to landfill will be held by Welsh Water.
	Chemicals used in water supply	Welsh Water	Information (quantities, composition) on chemical use will be held in accounts.
11. To conserve and enhance the cultural, historic and industrial heritage resource.	Loss / damage or discovery / protection of cultural, historic and industrial heritage	Welsh Water, Cadw	Cadw's regional field monument wardens monitor the condition of all statutorily

Objective	Indicator	Source of Information	Commentary
	features. Including loss of landscapes of historic interest and natural heritage features (including for example field systems, field boundaries) that contribute to the cultural and historic distinctiveness of Wales		protected monuments on a five-year programme.
12. To conserve and enhance landscape character.	Loss or damage to Special Qualities of Designated Landscapes (DL) arising from new water resource infrastructure, implemented as result of Welsh Water's WRMP19.	Welsh Water	Welsh Water will consider recording the number and developed area of new buildings above ground infrastructure that are built within designated landscape sites.

Appendix A Compliance with SEA Regulations

Table A.1 details the SEA Regulations’ requirements of the Post Adoption Procedures and indicates where relevant information required can be found in this report.

Table A.1 Compliance of this Report with the Requirements of the SEA Regulations

SEA Regulations Requirement	Location in the Post Adoption Statement (where appropriate)
Information as to adoption of plan or programme (SEA regulation 16)	
<p>(1) As soon as reasonably practicable after the adoption of a plan or programme for which an environmental assessment has been carried out under these Regulations, the responsible authority shall -</p> <p>(a) make a copy of the plan or programme and its accompanying environmental report available at its principal office for inspection by the public at all reasonable times and free of charge; and</p> <p>(b) take such steps as it considers appropriate to bring to the attention of the public</p> <ul style="list-style-type: none"> - (i) the title of the plan or programme; - (ii) the date on which it was adopted; - (iii) the address (which may include a website) at which a copy of it and of its accompanying environmental report, and of a statement containing the particulars specified in paragraph (4), may be viewed or from which a copy may be obtained; - (iv) the times at which inspection may be made; and - (v) that inspection may be made free of charge. 	<p>A copy of the WRMP and accompanying reports and documentation is available at: https://www.dwrcymru.com/en/My-Water/Water-Resources/Draft-Water-Resources-Management-Plan-2019.aspx</p> <p>A paper copy of the WRMP, Environmental Report and this Post Adoption Statement are available for public viewing at: Dŵr Cymru Welsh Water Ty Awen Spooner Close Celtic Springs Business Park Newport NP10 8FZ The office is open from 7am until 7pm Monday to Friday</p>
<p>(2) As soon as reasonably practicable after the adoption of a plan or programme -</p> <p>(a) the responsible authority shall inform -</p> <ul style="list-style-type: none"> - (i) the consultation bodies; - (ii) the persons who, in relation to the plan or programme, were public consultees for the purposes of regulation 13; and - (iii) where the responsible authority is not the National Assembly, the National Assembly; and <p>(b) the National Assembly must inform the Secretary of State, of the matters referred to in paragraph (3).</p>	<p>A copy of the WRMP and accompanying reports and documentation is available at: https://www.dwrcymru.com/en/My-Water/Water-Resources/Draft-Water-Resources-Management-Plan-2019.aspx</p> <p>A copy of the SEA is available at: https://www.dwrcymru.com/en/My-Water/Water-Resources/Draft-Water-Resources-Management-Plan-2019.aspx</p> <p>This Post Adoption Statement addresses (iii) and contains particulars specified in paragraph (4) as outlined below.</p>



SEA Regulations Requirement	Location in the Post Adoption Statement (where appropriate)
<p>(3) The matters are -</p> <p>(a) that the plan or programme has been adopted;</p> <p>(b) the date on which it was adopted; and (c) the address (which may include a website) at which a copy of -</p> <ul style="list-style-type: none"> - (i) the plan or programme, as adopted, - (ii) its accompanying environmental report, and . (iii) a statement containing the particulars specified in paragraph (4), may be viewed, or from which a copy may be obtained. 	
<p>(4) The particulars referred to in paragraphs (1)(b)(iii) and (3)(c)(iii) are -</p>	
<p>(a) how environmental considerations have been integrated into the plan or programme;</p>	Section 2
<p>(b) how the environmental report has been taken into account;</p>	Section 3
<p>(c) how opinions expressed in response to -</p> <ul style="list-style-type: none"> - (i) the invitation referred to in regulation 13(2)(d); - (ii) action taken by the responsible authority in accordance with regulation 13(4), <p>- have been taken into account;</p>	Section 4 and Appendix B.
<p>(d) how the results of any consultations entered into under regulation 14(4) have been taken into account;</p>	Not applicable - no transboundary consultation with other EU Member States took place
<p>(e) the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and</p>	Section 5
<p>(f) the measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.</p>	Section 6.
<p>Monitoring of implementation of plans and programmes (SEA regulation 17)</p>	
<p>(1) The responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action.</p>	<p>Monitoring procedures are set out in Section 6.</p> <p>Welsh Water will identify effects and undertake remedial action (as necessary) as the WRMP is implemented.</p>

SEA Regulations Requirement**Location in the Post Adoption Statement (where appropriate)**

(2) The responsible authority's monitoring arrangements may comprise or include arrangements established otherwise than for the express purpose of complying with paragraph (1).

The monitoring procedures set out in Section 6 will complement existing monitoring arrangements where possible.

Appendix B

Consultation Responses

Scoping Consultation

Welsh Water published a SEA Scoping Report as part of the initial stage of the SEA of the Draft WRMP for a consultation period of six weeks ending 21st April 2017.

Responses were received to the consultation from the following organisations:

- Natural Resources Wales;
- Welsh Government;
- Cadw.

A meeting was also held on 5th April 2017 in support of the consultation. All statutory consultees were invited, and Natural Resource Wales was also to attend. The purpose of this meeting was to seek initial feedback on the content of the SEA Scoping Report.

The following tables (B1.1 to B1.3) provide a summary of the comments received from the statutory consultees together with responses and actions taken. These were reflected in the SEA Environmental Report and published as part of the public consultation on the Draft WRMP that ran from the March to June 2018.

Table B1.1 Natural Resources Wales

Consultation Question	Section	Consultee Response	Response/Action
Q1. Do you think that this scoping report sets out sufficient information to establish the context for the SEA of the Draft WRMP in terms of the review of plans and programmes and baseline evidence and analysis? If not, which areas do you think have been missed and where is information on these topics available from?	General	We welcome the information identified as part of the review of relevant plans and programmes and the baseline evidence and analysis. However, we consider that there are some other baseline evidence, plans and programmes relevant to the WRMP and should therefore be considered as part of the review [these are set out below].	Comment noted.
	Section 2: Review of Plans and Programmes	<p>Climate change</p> <p>We recommend that you include reference to the UK Climate Change Risk Assessment (UK CCRA17) evidence report: https://www.theccc.org.uk/publication/climate-change-risk-assessment-ii-updated-projections-for-water-availability-for-the-uk/.</p>	<p>Comment noted. UK CCRA17 is not considered to be a plan or programme in the context of the SEA Directive and Regulations and in consequence, it has not been included in the review of plans and programmes. However, the findings of the report will be used in amending the baseline analysis for water (Section 3.4) and air quality and climate (Section 3.5).</p> <p>Reflecting comments received during the Scoping Report consultation meeting, the Water UK (2016) Water Resources Long Term Planning Framework will also be used to inform revisions to the baseline.</p>
	Section 3: Baseline Analysis	With regard to climate change projections, the projections used should be consistent with the projections used for the main supply forecasts in the company's WRMP (i.e. 2030s projections).	Comment noted. Long term (2080) information from the UKCP09 medium emissions scenario has been used to provide a clear indication of the likely climatic change trends. We note that Defra has commissioned a new set of climate projections for the UK and these will provide information on how the climate of the UK may change over the rest of this century. These new projections (UKCP18), if available, will be used to update the likely evolution of the

Consultation Question	Section	Consultee Response	Response/Action
			baseline as it relates to climate, in the subsequent Environmental Report.
	Section 3: Baseline Analysis	Fluvial Geomorphology We would recommend that you consider any potential changes to 'fluvial geomorphology' (for example sediment loading) from your WRMP options and therefore any potential impacts to WFD status.	Comment noted. Impacts on fluvial geomorphology will be considered during the assessment of WRMP options where appropriate.
	Section 3: Baseline Analysis	Fisheries/Biodiversity We would encourage you to consider more widely issues around salmonid fish spawning and recruitment in tributaries that can be influenced by reservoir releases. Therefore, consider how you may off-set any environmental impact of options relating to dams and reservoirs (e.g. loss of upstream habitats).	Comment noted. Impacts on salmonids will be considered during the assessment of WRMP options where appropriate.
	Section 2: Review of Plans and Programmes	With regard to page 140 of the Scoping Report, you should consider the NERC Act section 41 list in England. With regards to the Welsh sites, you should use the section 7 list of the Environment (Wales) Act 2016. We recommend under page 149 – Environment (Wales) Act that you should make direct reference to s6 Biodiversity Duty and s7 the list of priority habitats and species.	Agreed. The review of plans and programmes presented in Appendix B of the Scoping Report will be updated to reflect this response.
	Section 2: Review of Plans and Programmes	Geological On page 38, it would be helpful to also reference Geodiversity Action Plans (GAPs) as one of the key sources.	Agreed. The review of plans and programmes will be updated to include the UK Geodiversity Action Plan and reference will also be made to Local Geodiversity Actions Plans. Table 2.2 will be amended in response to this comment.
	Section 3: Baseline Analysis	Under Section 3.3, there is reference to 'Carboniferous Peat'. We believe it is not appropriate to include blanket bog under this section. Note with regards to Geoparks, there are only two in Wales i.e. Fforest Fawr and GeoMon. We note that Abberley and Malvern is not in Wales and is no longer a Geopark. The number of geological SSSI is around 300 and 480 individual Geological Conservation Review (GCR) sites. There are around 700 Regionally Important Geological/geomorphological Sites (RIGS) in Wales. More information is available in our 'State of Natural Resources Report (SoNaRR) 2016'.	Agreed. Section 3.3 will be reviewed to reflect this response and SoNaRR.

Consultation Question	Section	Consultee Response	Response/Action
	Section 3: Baseline Analysis	<p>Human impacts</p> <p>With regard to the section on Health (page 71), we recommend that you consider 'Healthy Life Expectancy' also in relation to inequalities – for example those in the most deprived areas have a lower healthy life expectancy. For more information here is a link with all the data: http://www.publichealthwalesobservatory.wales.nhs.uk/measuring-inequalities-2016-overview/.</p>	<p>Agreed. Section 3.6 of the Scoping Report currently states that <i>"Generally, the incidence of fair/poor reported health status is higher in more southerly counties when compared to north wales counties; however, this is likely to reflect the legacy of employment in industries such as mining and steel working in communities, levels of deprivation and demography."</i> Reflecting this comment, additional commentary will be included in this section on healthy life expectancy.</p>
	Section 3: Baseline Analysis	<p>It would be beneficial to see more reference made to Green Infrastructure (GI) opportunities within the SEA. We recognise that GI is mentioned in the Scoping Report, however it does not seem to have been put into context through the document. We recognise that GI should run as a thread through multiple subjects – e.g. in relation to Table 4.2 - it helps biodiversity, soils and geology, flood risk, climate change, human health and wellbeing, landscape, etc. Therefore, you should be more explicit about how the SEA offers opportunity to influence GI introduction.</p>	<p>Agreed. A specific sub-section on green infrastructure will be included in Section 3.2 highlighting the linkages across the baseline topics (to avoid unnecessary duplication). In addition, the following additional key sustainability issues will be listed in Table 3.24 (and the supporting text):</p> <ul style="list-style-type: none"> • The need to recognise the key role that green infrastructure plays in supporting (inter alia) biodiversity, landscape, wellbeing and climate change resilience. • The need to protect and enhance the green infrastructure network. <p>The following additional guide questions/amendments to existing guide questions will be included in the assessment framework:</p> <p>SEA Objective 1</p> <ul style="list-style-type: none"> • Will the option maintain and enhance the green infrastructure network and the biodiversity it supports? <p>SEA Objective 4</p> <ul style="list-style-type: none"> • Will the option help to minimise flood risk by maintaining and improving the green infrastructure network? <p>SEA Objective 6</p> <ul style="list-style-type: none"> • Will the option maintain and improve public access to, and enjoyment of, green and blue infrastructure and in doing so help promote healthy lifestyles?

Consultation Question	Section	Consultee Response	Response/Action
			<p>SEA Objective 11</p> <ul style="list-style-type: none"> Will the option protect and enhance landscape character, townscape, seascape <u>and green infrastructure</u>?
	Section 2: Review of Plans and Programmes	<p>Planning</p> <p>With regard to plans and programmes, it is worth acknowledging the Welsh Government's National Development Framework (NDF). We recognise that it is not expected to be published until March 2020. However, the Welsh Government will be consulting on main issues, options and preferred option, supported by environmental reports and assessments later this year.</p>	<p>Comment noted. The NDF is at an early stage of development, with a call for evidence and projects held from December 2016 to March 2017. At this stage, no documentation is in the public domain. Whilst undoubtedly an important strategic document, the review of plans and programmes refers primarily to adopted plans and programmes and in the absence of such similar information for the NDF, it is premature to include reference to the framework at this stage.</p>
	Section 2: Review of Plans and Programmes	<p>Flood Risk</p> <p>In Table 2.2, the 'Key Objectives and Policy Messages' related to flood risk management is "<i>minimising flood risk and improving flood control infrastructure</i>". The key sources listed is comprehensive and it appears to identify all key legislation, policies, plans and programmes.</p> <p>We acknowledge that reference is made to 'Catchment Flood Management Plans (various) – this should read 'Flood Risk Management Plans'. It's not clear whether by citing the Floods Directive, this is intended to encompass the Flood & Water Management Act, under which there is a responsibility on Lead Local Flood Authorities (LLFAs) to prepare and maintain local level Flood Risk Management Strategies. This is captured for England under Annex B 'Review of Plans and Programmes' as part of the 'Environment Agency (2011) National Flood and Coastal Erosion Risk Management Strategy for England' but has not has been reflected within the SEA for Wales.</p>	<p>Agreed. Reference to Catchment Flood Management Plans will be amended to read Flood Risk Management Plans where appropriate.</p> <p>The Flood and Water Management Act 2010 has been reviewed as part of the Scoping Report but has been omitted from Table 2.1 in error. This will be addressed in the Environmental Report. Additionally, the 2011 National Strategy for Flood and Coastal Erosion Risk Management in Wales will be included.</p>
		<p>Annex B also makes reference to:</p> <ul style="list-style-type: none"> Reservoirs Act 1975. In April 2016 amendments to the Reservoirs Act were introduced for Wales. This may affect DCWW assets in Wales. Environmental Permitting (England and Wales) Regulations 2010. Since April 2016 certain flood risk activities are now regulated under 	<p>Comment noted. The review of plans and programmes will be revised to reflect the amendments to the Reservoirs Act and Environmental Permitting (England and Wales) Regulations 2010.</p>

Consultation Question	Section	Consultee Response	Response/Action
		the Environmental Permitting Regulations (formerly flood defence consents). Flood Risk Activity Permits may be required for DCWW activities/assets. There are slight variations between England and Wales.	
	Section 3: Baseline Analysis	In terms of baseline evidence, there is no mention of the Flood Risk Maps. In Wales, the Flood Maps now also incorporate the Welsh Government's Development Advice Map used for planning purposes. This is hosted by Natural Resources Wales for Wales: https://naturalresources.wales/our-evidence-and-reports/maps/flood-risk-map/?lang=en . In England, relevant information can be found via the following link: https://www.gov.uk/check-flood-risk .	Agreed. Reference to flood risk mapping will be included in Section 3.4.
	Section 3: Baseline Analysis	Landscape Note that DCWW are statutory undertakers who must have regard for the purposes of conserving and enhancing natural beauty in National Parks and Areas of Outstanding Natural Beauty (AONBs). Collectively we call these Designated Landscapes (DLs). We note that the DLs are referenced throughout the Scoping Report and would suggest the addition of reference to the DL's Special Qualities when proposing enhancement to these areas. The Special Qualities are key features of the DL and should be agreed in collaboration with stakeholders.	Agreed. The following additional key sustainability issue will be listed in Table 3.24 (and the supporting text): <ul style="list-style-type: none"> Ensure the special qualities of designated landscapes are protected. The guide question under SEA Objective 11 (Landscape) will be revised as follows: <ul style="list-style-type: none"> Will the option avoid adverse effects on, and enhance where possible, <u>the special qualities of</u> protected/designated landscapes (including woodlands) such as National Parks or AONBs?
	Section 2: Review of Plans and Programmes	In Appendix B35 reference has been made to the Clwydian Range AONB. Please note the full title is now: Clwydian Range and Dee Valley AONB.	Comment noted. Reference to Clwydian Range AONB will be revised to read Clwydian Range and Dee Valley AONB.
Q2. Do you agree with the main economic, social and environmental issues identified are relevant to the SEA of the Draft WRMP? If not, which issues do you think need to be included or excluded?	Section 3: Baseline Analysis	We welcome how you are incorporating your duties in relation to the Environment (Wales) Act and considering the Well-being of Future Generations (Wales) Act within the SEA Scoping. We consider that those main issues identified are relevant to the SEA of the Draft WRMP. However, there are some additional issues relevant to the WRMP that should be considered as part of your review [these are set out below].	Comment noted.

Consultation Question	Section	Consultee Response	Response/Action
	Section 3: Baseline Analysis	We support the list of 'Key Economic, Social and Environmental Issues' for the Air Quality and Climate Change section which encompasses the issues we would expect to be covered by the SEA. In terms of the key sustainability issues relevant to the your Draft WRMP, we recommend that climate change is also referenced in relation to its impacts on biodiversity, the human environment, landscape etc.	Comment noted. Climate change is already captured under biodiversity, water, air quality and climate, the human environment and landscape and townscape. No change.
	Section 3: Baseline Analysis	Under Table NTS.1, Topic Area 'Water' it is stated that there is a need to "ensure the continued risk of flooding is mitigated effectively." This is repeated in Section 3.4 under the heading 'Key Sustainability Issues Relevant to the WRMP'. Ideally the WRMP should also consider how the risk of flooding can be reduced as well as mitigated.	Agreed. The key issue will be amended to read: <ul style="list-style-type: none"> The need to ensure <u>that</u> the continued risk of flooding is <u>reduced or where this is not possible</u>, mitigated effectively.
	Section 3: Baseline Analysis	Under the heading 'Climate' (pages 63-65), increased river and urban flooding has been identified and there are links to increased pressure on the sewerage system. Page 85 also makes reference to climate change and the risks this may pose on the sewer and drainage network. However, it is not clearly identified in the SEA that pressure on the sewerage/drainage system also poses a risk of more frequent localised flooding (as a result of non-capacity).	Agreed. Reference to localised flooding as a result of pressures on the sewerage network will be included in Section 3.7 and Section 3.5.
Q3. Do you agree that the draft objectives for the SEA cover a sufficient range of environmental, social and economic topics to allow an assessment of the draft WRMP? If not, which objectives should be amended and which other objectives do you believe should be included?	Section 4: Approach to the Assessment	We agree with the majority of the draft objectives for the SEA. We recommend that there are some changes that could be incorporated within your framework [these are set out below].	Comment noted.
	Section 4: Approach to the Assessment	We recommend adding to the Wellbeing Goals column that landscape also contributes significantly to a 'Prosperous Wales'. We would also suggest that you remove townscape and add in Green Infrastructure.	Agreed. Reference to a 'Prosperous Wales' will be included against SEA Objective 11 (Landscape).

Consultation Question	Section	Consultee Response	Response/Action
			<p>It is not considered appropriate to remove reference to townscape in the guide questions supporting SEA Objective 11 given the potential for WRMP options to result in changes to townscape character. However, reference to green infrastructure will be included, as follows:</p> <ul style="list-style-type: none"> Will the option protect and enhance landscape character, townscape, seascape and <u>green infrastructure</u>?
	Section 4: Approach to the Assessment	We acknowledge that you included the well-being goals as one of the columns. We recommend that you include a column for the Environment (Wales) Act 2016, particularly in relation to section 6 and 7- i.e. the biodiversity duty (s6) and the list of habitats and species of priority importance for biodiversity (s7).	<p>Comment noted. The following additional guide question will be included under SEA Objective 1 (Biodiversity):</p> <ul style="list-style-type: none"> Will the option maintain and enhance ecosystem resilience?
	Section 4: Approach to the Assessment	Under biodiversity, you should consider whether the WRMP options will contribute to restoration of species that are currently not achieving management objectives. For example, stocks of salmon and trout are in poor condition in most rivers in Wales. Although there are extrinsic factors (e.g. marine climate change affecting marine survival of salmon) there are also constraints in freshwater that arguably include matters related to the DCWW business (flows, nutrients, BOD etc.).	<p>Agreed. The following additional guide question will be included under SEA Objective 1 (Biodiversity):</p> <ul style="list-style-type: none"> Will the option contribute to the restoration of species that are currently not achieving management objectives?
	Section 4: Approach to the Assessment	Under Geology and Soils, we recommend that that you consider <i>"Will the option protect and enhance sites designated for their geological interest (GCR sites, SSSI & RIGS) and features of wider geodiversity interest"</i> .	<p>Agreed. The guide question referred to in this response under SEA Objective 2 (Geology and Soils) will be amended to read:</p> <ul style="list-style-type: none"> Will the option protect and enhance protected sites designated for their geological interest (<u>GCR sites, SSSI and RIGS</u>) and features of wider geodiversity interest?
	Section 4: Approach to the Assessment	To ensure the protection and enhancement of human health, we suggest changing the wording of first guide question to <i>"Will the option impact on physical health and mental well-being by affecting opportunities for informal outdoor recreation?"</i>	<p>Agreed. The guide question referred to in this response under SEA Objective 6 (Health) will be amended to read:</p> <ul style="list-style-type: none"> Will the option <u>impact on physical health and mental well-being by affecting</u> opportunities for <u>informal outdoor recreation</u>?

Consultation Question	Section	Consultee Response	Response/Action
	Section 4: Approach to the Assessment	Under human health, we also recommend adding the following question: - <i>"Will the option affect public access to, or enjoyment of, local green/blue space?"</i>	Agreed. The following additional guide question will be included under SEA Objective 6 (Health): <ul style="list-style-type: none"> Will the option maintain and improve public access to, and enjoyment of, green and blue infrastructure and in doing so help promote healthy lifestyles?
	Section 4: Approach to the Assessment	To maintain and enhance the economic and social well-being of the local community, we recommend adding the following questions: - <i>"Will the option improve opportunities for social interaction and community cohesion?"</i> - <i>"Will the option increase or decrease opportunities for volunteering?"</i>	Comment noted. The following additional guide question will be included under SEA Objective 7 (Social and Economic Well-Being): <ul style="list-style-type: none"> Will the option improve opportunities for social interaction and community cohesion? <p>With regard to the proposed guide question '<i>Will the option increase or decrease opportunities for volunteering</i>', this is likely to be outside the scope of effects that could arise from the WRMP options and in consequence, it has not been included in the assessment framework.</p>
	Section 4: Approach to Assessment	We recognise that the scoping document incorporates all the requirements of a SEA. However, we believe that there is an opportunity to push forward integrated thinking, in line with Sustainable Management of Natural Resources (SMNR) principles. The new legislative framework in Wales provides an opportunity to consolidate consideration of impacts on natural resources with impacts on wellbeing. Therefore, reflecting on the integrating nature of landscape, which represents the interconnection of man's impacts upon and benefits from the natural environment. Ideally you should gather information on the benefits / services of natural resources in a landscape context.	Comment noted. The comment concerns the approach to the assessment and the potential to recognise new opportunities and benefits. Table 4.2 of the Scoping Report maps the relationship between the SEA objectives, the well-being goals and SMNR objectives. The high degree of complementarity indicates that the wider potential benefits can be identified through the framework and which will be reflected in commentary in the subsequent Environmental Report, where appropriate.
	Section 4: Approach to the Assessment	Under landscape, we would recommend adding: - <i>"Will the option enhance the benefits from or services of integrated natural resources?"</i>	Comment noted. As noted above, Table 4.2 of the Scoping Report maps the relationship between the SEA objectives, the well-being goals and SMNR objectives. The high degree of complementarity indicates that the wider potential benefits of natural resources can be identified through the framework and which will be reflected in commentary in the subsequent Environmental Report, where appropriate. No change.

Consultation Question	Section	Consultee Response	Response/Action
	Section 4: Approach to the Assessment	Under 'Water – flood risk', the objective is <i>"To reduce the risk of flooding"</i> . We believe the SEA could go further and have an objective which is to reduce the risk of flooding, promote the use of sustainable drainage and identify opportunities for collaborative working with other risk management authorities.	<p>Agreed. SEA Objective 4 (Flood Risk) will be amended to read:</p> <ul style="list-style-type: none"> To reduce the risk of flooding, <u>promote the use of sustainable drainage and identify opportunities for collaborative working with other risk management authorities.</u> <p>In addition, the following guide questions will be included:</p> <ul style="list-style-type: none"> Will the option promote the use of sustainable drainage systems? Will the option promote opportunities for collaborative working with other risk management authorities?
	Section 4: Approach to the Assessment	Under 'Climate Change' the guide question <i>"Will the option increase environmental resilience to the effects of climate change?"</i> could be expanded to identify impacts on flood risk/water quality.	<p>Agreed. The guide question will be amended to read:</p> <ul style="list-style-type: none"> Will the option increase environmental resilience to the effects of climate change <u>including to impacts on flood risk and water quality?</u>
	Section 4: Approach to the Assessment	<p>The proposed guide questions under 'Human – Environmental Health' and 'Human Environment – Social and Economic Well-Being' could capture the impacts /consequences of flood risk. For example:</p> <p>-<i>"Will the option affect the risk of flooding to people and /or property?"</i></p> <p>-<i>"Will the option help to mitigate/reduce the risk of flooding to people/property?"</i></p>	<p>Comment noted. It is considered that flood risk is captured under SEA Objective 4 and inclusion under SEA Objective 6 (Health) and SEA Objective 7 (Social and Economic Well-Being) would result in unnecessary duplication. However, the following guide questions will be included under SEA Objective 4:</p> <ul style="list-style-type: none"> Will the option affect the risk of flooding to people and /or property? Will the option help to mitigate/reduce the risk of flooding to people/property?

Table B1.1 Welsh Government

Consultation Question	Section	Consultee Response	Response/Action
Q1. Do you think that this scoping report sets out sufficient information to establish the context for the SEA of the Draft WRMP in terms of the review of plans and programmes and baseline evidence and analysis? If not, which areas do you think have been missed and where is information on these topics available from?	General	The Scoping Report is very comprehensive and should lead to a robust assessment/iteration of the WRMP.	Comment noted.
	Section 2: Review of Plans and Programmes	The list of plans and programmes include the English Biodiversity 2020 strategy which is fine for context, but as a devolved matter, the Welsh Government (WG) Nature Recovery Plan 2015 is more relevant. The Nature Recovery Plan and the WG Natural Resource Policy Statement (which is picked up in the list), emphasise the new approach to natural resource management introduced in the 2016 Environment Act Wales.	Agreed. The Nature Recovery Plan for Wales will be included in the review of plans and programmes.
Q3. Do you agree that the draft objectives for the SEA cover a sufficient range of environmental, social and economic topics to allow an assessment of the draft WRMP? If not, which objectives should be amended and which other objectives do you believe should be included?	Section 4: Approach to the Assessment	The new approach significantly includes a more pro-active approach to maintain and enhance the resilience of ecosystems by taking account the following aspects: -diversity between and within ecosystems; -the connections between and within ecosystems; -the scale of ecosystems; -the condition of ecosystems; -the adaptability of ecosystems.	Comment noted. The following additional guide question will be included under SEA Objective 1 (Biodiversity): <ul style="list-style-type: none"> Will the option maintain and enhance ecosystem resilience?
		This approach will be strengthened in the forthcoming Natural Resource Policy. You may wish to consider how this could play into the SEA objectives at this stage.	

Table B1.3 Cadw

Consultation Question	Section	Consultee Response	Response/Action
Q1. Do you think that this scoping report sets out sufficient information to establish the context for the SEA of the Draft WRMP in terms of the review of plans and programmes and baseline evidence and analysis? If not, which areas do you think have been missed and where is information on these topics available from?	Section 3: Baseline Analysis	Our only comment is that the Scoping Report states at page 91 that there are 6 World Heritage Sites in Wales. There are in fact 3 World Heritage Sites, as Caernarfon, Harlech, Beaumaris and Conwy Castles form part of the Castles and Town Walls of King Edward in Gwynedd World Heritage Site.	Agreed. The reference to World Heritage Sites in Section 3.8 will be amended to reflect this response.

Environmental Report Consultation

Dŵr Cymru Welsh Water (Welsh Water) published a Strategic Environmental Assessment (SEA) Environmental Report as part of the public consultation on the Draft Water Resources Management Plan (WRMP) that ran from the 16th March to 8th of June 2018 for 12 weeks.

Responses were received to the consultation from the following organisations:

- Natural Resources Wales; and
- Environment Agency.

The following tables (B1.4 and B1.5) provide a summary of the comments received from the statutory consultees together with responses and actions taken.

Table B1.4 Natural Resources Wales

Consultation Topic	Consultee Response	Response/Action
Option PEM024b: Canaston Bridge - bankside attenuation	In the context of the SEA, our main concern relating to PEM24b is that the new bankside storage reservoir site is likely to be in flood zone C2 of the Development Advice Map (which the company has acknowledged within the SEA). We agree with the company that this would require a Flood Consequences Assessment (FCA) to be undertaken (prepared in accordance with TAN15) and the company would also need to apply for a Flood Risk Activity Permit (FRAP).	<p>Comment noted.</p> <p>The SEA identified that the proposed reservoir site for PEM24b is located within Flood Zone 3 (an area at high risk of flooding, with 1 per cent or greater annual probability of flooding), while the low-lift pumps would be situated within Flood Zone 2 (risk of flooding is up to 0.1 per cent in any given year). In consequence, construction activity may be vulnerable to flooding (depending on the timing of works). Overall, the option was assessed as having a significant negative effect on flood risk (SEA Objective 5). The SEA considered that project level mitigation, informed by a Flood Consequences Assessment (FCA), would be likely to manage adverse effects in this regard.</p> <p>Welsh Water will ensure that the planning and development of the scheme will be in accordance with the requirements of TAN15. Further investigations would be undertaken at the time of scheme design that would confirm the initial analysis presented in the SEA and any appropriate measures necessary.</p>
Option TY004 and TY009a: New abstraction from Afon Dysynni at Pont y Garth (transfer to Pen y Bont water treatment works (WTW) (DO gain 0.44 Ml/d); and Pen-y-Bont WTW Bankside Storage (8Ml)	<p>The SEA acknowledges that for this option, given the location of the proposed pumping station in flood zone 3 (1% flood outline) even with resilience measures in place the pumping station may be at risk of inundation. Whilst the SEA identifies no impact to third parties as a result of construction/operational activities, a FCA must be undertaken (prepared in accordance with TAN15) and will require an application for a FRAP.</p> <p>At this stage, without further detail for these preferred options (in form of site specific FCA) we are unable to advise the determining authority whether the proposal would be compliant with planning policy TAN15.</p>	<p>Comment noted.</p> <p>The SEA identified the proposed pipeline as part of TYA004 would cross extensive areas of Flood Zone 3 (1 per cent or greater annual probability of flooding) and the new pumping station and intake would also be located in Flood Zone 3. In consequence the construction phase of the scheme was identified as having a significant negative effect with respect to flood risk (SEA Objective 5). The SEA considered that project level mitigation, informed by a Flood Consequences Assessment (FCA), would be likely to manage adverse effects in this regard.</p> <p>For TYA009a, the SEA identified that the development site would be situated just outside of Flood Zones 2 and 3 and so works would not be at significant risk of flooding. The adjacent existing WTW which would be connected to the new reservoir is located</p>

Consultation Topic	Consultee Response	Response/Action
		<p>within Flood Zone 3 (an area at high risk of flooding, with 1% or greater annual probability of flooding), and as a result short distances of excavation works for connecting pipeline would cross this Flood Zone. However, given the very short distances involved, it is expected that works could be timed to avoid periods of flooding, such that any effects related to flood risk are considered negligible. The SEA did not consider it likely that the proposed work would result in increased flooding elsewhere. Overall, the option was assessed as having a neutral effect on flood risk.</p> <p>Welsh Water will ensure that the planning and development of the scheme will be in accordance with the requirements of TAN15. Further investigations would be undertaken at the time of scheme design that would confirm the initial analysis presented in the SEA and any appropriate measures necessary.</p>
Landscape	<p>We are pleased to note that majority of our previous comments provided in the scoping stage of the SEA in relation to Landscape have been reflected in the environment report, including reference to the Special Qualities of Designated Landscapes (DL) and Green Infrastructure considerations. We note that Dŵr Cymru Welsh Water has agreed to include an assessment of the impact of proposals upon Special Qualities of, in this case, two National Parks within the SEA. However, this has not been included in the main body of the report in section 7 or detailed commentary of Appendix D Preferred Options Assessment Matrices. Without setting out the relevant Special Qualities and exploring the likely impacts it is difficult to ascertain whether all of the likely significant effects have been identified.</p> <p>It is also difficult to assess mitigation and enhancement in light of this omission, especially since the detailed commentary of Appendix D also does not address many of the Key Questions set out throughout the Appendix such as public access and enhancement of Special Qualities.</p> <p>We recommend that the SEA sets out the Special Qualities in Appendix D and explore the impacts during construction and operation phases if not earlier in the environment report. It may be helpful to collaborate with the relevant National Park Authorities (NPA) to discuss mitigation and enhancement measures where 'likely significant effects' have been identified</p>	<p>Comment noted.</p> <p>Following NRW scoping stage comments, the SEA was amended to include reference to the Special Qualities of Designated Landscapes (DL) and green infrastructure considerations in the revised sustainability issues (Table 3.24 (and the supporting text). Guide questions under SEA Objective 1 (Biodiversity) and SEA Objective 11 (Landscape) were also amended to include reference to DLs and green infrastructure.</p> <p>In consequence, the SEA does include assessment of these additional features. For example, in Section 6 of the Environmental Report which contains the summary of the SEA of the Preferred Options, the following is stated in terms of TYA004: <i>"All of the proposed works would be located within Snowdonia National Park and the local area has notable landscape features including stone walls, clusters of Scots Pine and the Craig yr Aderyn (Bird's Rock). Construction associated with this option may therefore cause adverse landscape and visual impacts which could affect the special qualities of the National Park as well as the visual amenity of proximate residential and recreational receptors along</i></p>

Consultation Topic	Consultee Response	Response/Action
		<p><i>the pipeline route.</i>" Similar text is included in Appendix D of the Environmental Report which contains the assessment of the option.</p> <p>As noted in Section 6.6 of the Environmental Report, <i>"the preferred options will be subject to project-level environmental assessment ... it is also expected that a landscape and visual impact assessment would be undertaken at the project stage as part of any EIA"</i>.</p> <p>Section 7 of the Environmental Report contained the proposed indicators for monitoring the significant environmental effects of the WRMP. These have been revised to include the following measure 'Loss or damage to Special Qualities of Designated Landscapes (DL) arising from new water resource infrastructure, implemented as result of Welsh Water's WRMP19'.</p> <p>Welsh Water will consult with the relevant bodies, when planning and developing the schemes in the WRMP19 to ensure that the loss or damage to Special Qualities of DL are identified and assessed, and where relevant, that the appropriate mitigation and enhancement measures are discussed.</p>
<p>Climate Change</p>	<p>In terms of the potential effects of the options in relation to climate change the SEA correctly sets out that 'Demand and leakage reductions may in-turn reduce greenhouse gas emissions and energy use associated with reduced treatment and pumping of water and lower energy use from heating water in the home'.</p> <p>The preferred supply side options proposed would result (as set out in the environment report) in significant negative effects on greenhouse gas (GHG) emissions, waste and resource use during operation largely related to the pumping and treatment of water. While the proposed options will provide greater resilience to the water supply network within the Pembrokeshire and Tywyn Aberdyfi resource zones, in terms of climate change the cumulative impacts will be clearly negative for both the construction and operational phases. In the summary table given that two of the preferred options will have negative impacts on GHG emissions, we recommend that the cumulative effects should be summarised as negative '-' rather than '+/-' in relation to the operational phase. There is a need to reduce GHG arising from implementation of the WRMP. Therefore, we acknowledge that the SEA report does refer to Dŵr Cymru Welsh Water's work on reducing GHG emissions and ensuring that high efficiency low energy use pumping should be introduced to minimise operation emissions (and costs). We recommend in the construction phase of implementing</p>	<p>Comment noted.</p> <p>The SEA uses criteria to inform the determination of likely significant effects (Appendix B of the Environmental Report). Against SEA Objective 6 (Climate Change) a significant effect is one that <i>"would result in major or long term increases in greenhouse gas emissions (>1000 tonnes CO₂e) and the option would not increase resilience/decrease vulnerability to climate change effects"</i>. A minor positive effect is one that <i>"would result in a sustained decrease in greenhouse gas emissions (100-999 tonnes CO₂e/a) and would increase resilience/decrease vulnerability to climate change effects"</i>.</p> <p>For construction of the preferred options the SEA notes that <i>"The Draft WRMP would give rise to the emission of greenhouse gases resulting from embodied carbon (in, for example, construction</i></p>

Consultation Topic	Consultee Response	Response/Action
	<p>their preferred options, that the use of a carbon management planning tool such as the Environment Agency's ERIC tool is undertaken. This would ensure that GHG emissions and embedded carbon are minimised. The tool is available here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571707/LIT_7067.pdf. With regards to the monitoring climate change effect (increased GHG emissions), we welcome that this will form part of the company's corporate reporting. Therefore, we have no specific concerns in relation to monitoring climate change effects (GHG emissions).</p>	<p><i>materials) in addition to plant operation and vehicle movements. Together, the construction of the preferred options would generate a total of 1,282 tonnes of carbon dioxide equivalent (tCO₂e) which has been assessed as having a significant negative effect on climate change (SEA Objective 6)."</i></p> <p>For operation of the preferred options, the SEA notes "The improved storage position in Llys y Fran reservoir associated with Option PEM024b has the potential to reduce vulnerability to the effects of climate change (drought), generating a positive effect on this objective. However, the release of greenhouse gases associated with all of the preferred options (a total of 741 tCO₂e) has been assessed as a having an overall minor negative effect on climate change".</p> <p>Taking into account the criteria for significance and the quantification of embodied and operational carbon, it is not proposed to amend the scores as it is considered that they appropriate reflect the range of cumulative effects.</p> <p>Welsh Water will use appropriate tools such as the EA's ERIC and reference to the Inventory of Carbon and Energy (ICE),</p>
Flood risk	<p>We are pleased that the implementation of the draft WRMP seeks to reduce risk of flooding where possible and where it's not, undertake appropriate mitigation to ensure no significant negative impacts. With regards to flood risk, we also note that climate change impacts are taken into consideration and the need to build in resilience.</p> <p>The SEA identifies need for a Flood Consequence Assessment (FCA) to inform appropriate mitigation to manage any adverse impacts from implementing the preferred options. The SEA also notes that a FCA would be undertaken to identify what measures will be required to address flood risks, particularly to the essential infrastructure so that it remains operational.</p> <p>With regards to monitoring, we welcome the proposal to record the number of Sustainable Urban Drainage Systems (SUDs) and Green Infrastructure (GI) installed. We would be interested in this data for future S18 Reporting (as required under the Flood and Water Management Act 2010).</p> <p>Section 7.3 notes that the proposals may need to be licenced by NRW where they involve any abstraction from surface waters or groundwaters. The SEA should also identify that DCWW is classed as a 'protected undertaking' under the Environmental Permitting Regulations 2016 and this legislation should be referenced in the SEA as some activities, may require a Flood Risk Activity Permit from NRW (for example crossing a watercourse). Land drainage consents may also be required under</p>	<p>Comments noted.</p> <p>Reference is made to Environmental Permitting (England and Wales) Regulations 2016 in the review of plans and programmes (Table 2.1 and Appendix B of the Environmental Report).</p> <p>Welsh Water will ensure that all appropriate assessments and consents are gained for the planning and development of the schemes with respect to flood risk.</p>

Consultation Topic	Consultee Response	Response/Action
	the Land Drainage Act 1991. These would be obtained from the relevant Lead Local Flood Authority (LLFA).	
Water Quality	<p>We would like to raise some general comments in relation to 'pollution prevention methods' for during the construction phase of the preferred options. We recommend that the company provides a thorough method statement detailing pollution prevention strategies. This should address the following:</p> <ul style="list-style-type: none"> • Oils from machinery. i.e. all fuel used as part of the works must be stored in a locked and bunded area and spill kits should be made available for any fuel spillages. • Erosion due to access and rutting from vehicles. Wet land is easily churned and destroyed by heavy machinery. Damaged soils lose physical integrity, making them highly vulnerable to run off. Steps should be taken to mitigate soil damage such as using lighter machinery, only working in dryer conditions, or make use of a temporary track. • Sediment catching and preventing it from entering the watercourse, and if it does enter the watercourse how will they mitigate the impact. i.e. spill kits and straw bales and know how they work and how to use them (training staff adequately) <p>Managing runoff is the most important aspect of the method statement and daily checks.</p> <ul style="list-style-type: none"> • Waste generating minimisation efforts and disposal (waste transfer notes, permits, because of duty of care etc). Waste arising will be considered controlled waste and subject to all relevant legislation. • Any restoration they will need to do and how will they do that. • Further advise is provided from GPP5 : http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm_source=website&utm_medium=social&utm_campaign=GPP5%2027112017 • During the construction phase of the proposals, any waste material which is to be removed from the site should be done so via a registered waste carrier. The waste must be taken to a facility which holds an appropriate exemption or environmental permit to accept the specified waste. • Any waste material which is removed from the site should be carried out in accordance with the duty of care requirements. All appropriate paperwork and documentation should be completed by the parties involved. Details of all waste carriers, permitted and exempt sites can be found electronically via the public registers section of our website www.naturalresourceswales.gov.uk or by contacting our customer contact centre on 0300 065 3000. • Any work which is to take place should be done so with pollution prevention in mind. Pollution prevention advice and guidance can be found via this link http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/. • Works and maintenance in or near water should be taken into account and also PPG6, Working at construction and demolition sites: https://www.sepa.org.uk/media/60125/ppg-6-working-at-construction-and-demolition-sites.pdf 	<p>Comments noted.</p> <p>Welsh Water will adopt all appropriate and up to date methods when planning and developing the schemes. This will include reference to relevant guidance, regulator advice and consent, permit and/or licence requirements.</p>

Consultation Topic	Consultee Response	Response/Action
	<ul style="list-style-type: none">• Should any pollution occur during the operational phase that affects Wales, Natural Resources Wales should be notified via the incident hotline – 03000 65 3000.	

Table B1.5 Environment Agency

Consultation Topic	Section	Consultee Response	Response/Action
Demonstrate that the Vowchurch option will improve resilience to a drought	Section 5.30 and 7.10 of the Draft WRMP	<p>The Draft WRMP has identified that the Vowchurch WRZ is not resilient to a 1 in 200 year drought event and as such a resilience option has been developed. The Draft WRMP proposes to lay a main between the Hereford and Vowchurch WRZs to allow some of the Vowchurch demand to be met from Broomy Hill WTW when needed.</p> <p>This option does not appear to have been included in the SEA and we are uncertain of its environmental feasibility.</p>	<p>Comment noted.</p> <p>An assessment of the resilience option for Vowchurch was completed and was included in the SEA of the revised draft WRMP (and in the final Environmental report of the final WRMP).</p>



wood.

