



# Method Statement: Environmental Ambition November 2022



Title	Method Statement: Environmental Ambition
Last updated	November 2022
Version	Draft Regional Plan version
History of Changes made to this version	Amendments following the emerging regional plan consultation to update the methodology, results and next steps ahead of the publication of the draft regional plan.
Author	Sarah Green
Approved by	Meyrick Gough
WRSE Director Approval	Meyrick Gough

# Email: contact@wrse.org.uk

For the full library of WRSE Method Statements, please visit wrse.org.uk/library.

A consultation on the WRSE Method Statements was undertaken in Autumn 2020 – the consultation details can be viewed on the WRSE engagement HQ platform at <u>https://wrse.uk.engagementhq.com/method-statements.</u>



# Table of Contents

EXECUTIVE SUMMARY	1
1 ENVIRONMENTAL AMBITION	3
2 ENVIRONMENTAL AMBITION SCENARIOS	4
Overview Integration with regulatory requirements. <i>Current requirements</i> <i>Future requirements</i> Approach to developing scenarios	4 5 5 6
3 WRSE INVESTMENT MODELLING	14
4 STAKEHOLDER ENGAGEMENT	14
Regulatory Engagement Approach to environmental option development	15 15
5 SUMMARY AND NEXT STEPS	17
Method Statement Updates Development of WRSE's Environmental Ambition	19 19
APPENDIX 1: WATER RESOURCE NATIONAL FRAMEWORK APPROACH	20
Water Resources National Framework approach Common Standards Monitoring Guidance (CSMG) Water Framework Directive (WFD)	20 23 23



# **Executive Summary**

Water Resources South East (WRSE) is developing a multi-sector, regional resilience plan to secure water supplies for the South East until 2100.

We have prepared method statements setting out the processes and procedures we will follow when preparing all the technical elements for our regional resilience plan. We have consulted on these to ensure that our methods are transparent and as far as possible, reflect the views and requirements of customers and stakeholders.

Figure ES1 illustrates how this environmental ambition method statement will contribute to the preparation process for the regional resilience plan.

Environmental ambition is a term that was introduced through the <u>Environment Agency's</u> <u>Water Resources National Framework document</u>, published in March 2020. The term refers to the consideration of actions to build environmental resilience to future challenges, such as drought, flooding, raw water quality decline, climate change, impact from invasive non-native species, land use change, and impacts from run off. This information is important to understand to ensure we can leave the environment in a better place for future generations.

The current regulatory guidance on environmental ambition or "environmental destination" is evolving as regulators, water companies and stakeholders iteratively work through the challenges faced. Due to the changing nature of how environmental ambition is represented in the regional plan, this method statement gives an overview of the current approach and outlines the proposed next steps.

Understanding how much water can be abstracted from the environment in a sustainable way, now and in the future, is crucial when developing a regional plan. In the past the



regional plan has taken account of the supply and demand forecasts, but not the longerterm needs of the environment.

This method statement outlines how sustainability reductions have been calculated and incorporated into the regional plan. The Environment Agency has recently completed a longer-term environmental water needs assessment as part of the Water Resources National Framework, and this work has established potential licence reductions which are outlined in this Method Statement.

Figure ES1: Overview of the method statements and their role in the development of the WRSE regional resilience plan





# 1 Environmental Ambition

- 1.1 Planning for the future water requirements of the region requires an understanding of the issues and challenges that the region faces today and those that it could face in the near and long-term future. This understanding helps improve the decisions around what are the best set of options to develop now and in the future. There are many competing pressures on a range of environmental objectives, surface water sources and groundwater sources. The development of environmental ambition aims to set out a path to secure environmental resilience, enable all activities to thrive, and secure future water supplies for all uses.
- 1.2 Historic planning approaches have always included forecasts for demand and supply. The future requirements of the environment were constrained to those outcomes defined through the Water Industry National Environment Programme (WINEP). This resulted in the requirements for the environment being restricted to an anticipated set of activities over the next 5 to 15 years. This process meant that the future, longer-term impacts to the environment and, therefore, the resilience of the environment, were never fully represented in plans. Working alongside the Environment Agency, WRSE is developing a longer-term forecast for the environment, setting out our 'environmental ambition' for the region.
- 1.3 The development of the region's environmental ambition combines the knowledge and understanding of the existing pressures across the 32 catchments in the South East of England from assessment methods and the river basin management plans, coupled with the knowledge of the companies and stakeholders to develop a series of potentially shared solutions. WRSE has worked and continues to work alongside the Environment Agency and other regulators and stakeholders to develop and test the environmental ambition scenarios discussed in this method statement. This shared understanding will help to ensure a more resilient environment for the future.
- 1.4 The development of our environmental ambition will align with Government policies including the Defra 25-year environment plan, as well as the Environment Bill and Agriculture Bill. These are likely to significantly change the environmental regulatory framework that has been worked to in the past, particularly relating to resilience of the environment to provide clean and plentiful water, biodiversity net gain and carbon neutrality as well as working to improve wellbeing, recreation, and heritage.
- 1.5 This method statement sets out the development of WRSE's approach to environmental ambition undertaken to date, and the steps we will continue to take to develop our environmental ambition for the region.
- 1.6 The development of a regional environmental ambition will require different activities in the short-term and compared to the medium- and long-term depending on how the climate and landscapes change in the region over time. The implementation profiles of abstraction reductions within catchments will be continually reviewed over the coming years to incorporate collaborative catchment prioritisation work with regulators and stakeholders, as well as the outcomes from future regulation and policy changes, WINEP investigations and the adaptive regional planning approach.



# 2 Environmental Ambition scenarios

## Overview

- 2.1 The purpose of this Environmental Ambition Method Statement is to outline the approach undertaken to develop the environmental ambition scenarios which will be used to derive an adaptive regional plan which can encompass a range of possible futures.
- 2.2 Due to increasing future sustainability reductions, the levels of environmental protection are likely to be much greater than current levels. This enables us to move towards planning for proactive protection rather than retrospective remediation of our vulnerable water ecologies, which includes over 41% of the world's chalk streams.
- 2.3 Our approach is a step change to how environmental ambition has been incorporated in regional planning historically, and the adopted approach has been developed in collaboration with water companies and regulators, with consultation with stakeholders and customers.
- 2.4 Our approach will allow us to target existing and future environmental issues and identify potential opportunities and schemes to deliver water resource and water quality benefits in the future. These opportunities can be put forward to the water companies and other sectors to help improve the resilience of the environment under the modelled future scenarios in the regional plan.

## Integration with regulatory requirements

- 2.5 The historic water company approach to protecting the environment has been focused on what improvements are required in the next 5 to 15 years to deliver the improvements set out in the Water Industry National Environment Programme (WINEP). Typically, this programme delivers schemes and seeks to investigate potential issues which might then feed into the next round of water company business plans.
- 2.6 The WINEP investigations drive more detailed local studies being undertaken which provide a forum to discuss the current pressures; collect relevant data; create a better understanding of how the system works; and the reasons for environmental failures and then agree a set of actions to be implemented.
- 2.7 Whilst the WINEP provides the actions required in the short-term to be compliant with environmental legislation, the process does not lend itself to considering a more collective longer-term approach as the approach doesn't account for potential landscape changes or the impact climate change might have on the availability of water in the future. For this reason, there is a need to use other approaches to provide the additional information required.



### Current requirements

- 2.8 The protection of our current habitats is set out in European and UK legislation. The water industry along with the regulators have been investigating and implementing catchment and source based solutions through WINEP for several decades.
- 2.9 Typically these investigations focus on source abstraction investigations and potential reductions. Following the Water Framework Directive (WFD) a number of other issues, beyond just flows, were identified that prevent some water bodies reaching good ecological status. Therefore, a number of broader catchment-based schemes have been implemented by other sectors and the water industry to tackle water quality issues, invasive species, river restoration as well as licence reductions.
- 2.10 These investigations and solutions continue to be delivered through the WINEP process. Historic investigations also serve as a good source of evidence for previous investigations. Therefore, the environmental process will seek to integrate the immediate issues that need to be addressed in the catchment with the potential future issues of the region.

### Future requirements

- 2.11 The proposed approach to define the longer-term requirements of the catchments, by our environmental regulators, is to use flow indicators (Appendix 1).
- 2.12 We propose to determine the future, longer term, requirements of the environment through our current understanding of the catchment processes, evidence collated, local knowledge obtained from the catchment workshops, the environmental assessment tool, resilience criteria, landscape changes, water quality trends and potential future flow targets. As these different data streams are uncertain, we will generate a number of potential future environmental requirements by creating a number of environmental scenarios.
- 2.13 These are highly uncertain, therefore, WRSE will choose scenarios that provide boundaries between what we currently know we need to protect and what might be required under more extreme scenarios. We will examine the future environmental scenarios set out by our regulators as well as those developed by water companies on the basis of local investigations.
- 2.14 Flow indicators do not address the quality aspects within a catchment. Therefore, where there are long term trends on water quality parameters such as nitrate, phosphates, pesticides, etc we will use this information to predict what quality aspects might influence the catchments in each of the scenarios and therefore what catchment solutions might be available to address or arrest these longer-term trends.
- 2.15 Our environmental assessment approach is set out in Method Statement 1329 WRSE Environmental Assessments, which describes how we intend to use the approach to help assess the overall regional resilience plan.



## Approach to developing scenarios

- 2.16 Just as we take account of future population growth, the development of environmental ambition scenarios allows us to take account of the future requirements of the environment; allowing for a more robust regional plan to be constructed. This is a step change in approach from previous plans.
- 2.17 Our approach has sought to integrate the existing, well established process, with other indicators to provide a better longer-term view of the potential requirements of the environment. We have sought to blend these approaches to generate plausible future scenarios and ensure our environment is well protected in the future.
- The environmental ambition scenarios used in the WRSE investment modelling have evolved during the 2.18 production of the draft regional plan, as set out in the figure below. Further detail on the scenarios and rationale behind the evolution is in the following sub-sections.

### Figure 1: WRSE approach to the development of environmental ambition scenarios



Combine: Balances a greater environmental protection for protected areas, SSSI rivers and wetlands and principal salmon and chalk rivers with a view that good status (as defined under the Water Framework Directive) cannot be achieved everywhere in a shifting climate. Hence, adopts the Enhance ASB with a lower recovery to the EFI in some heavily modified waterbodies.

scenario best aligns with the BAU+ environmental ambition.

All environmental ambition scenarios in the draft regional plan take the proposed licence capping reductions into account.



### National Framework Scenarios

- 2.19 The Environment Agency completed a longer-term environmental water needs assessment as part of the Water Resources National Framework, establishing the potential licence reductions required by 2050 to meet the Environmental Flow Indicators (EFI) so that a good ecological status is achieved or maintained. The EFI is defined by an Abstraction Sensitivity Band (ASB) allocated to each waterbody. Four scenarios were initially analysed:
  - Business as usual (BAU)
  - Enhance
  - Adapt
  - Combine.
- 2.20 In all the scenarios, flow balance evolves as a proportion of natural flows as these are changed by the impacts of climate change.
- 2.21 In addition to the business as usual (BAU) scenario, a BAU+ scenario was developed for the South East, which incorporated waterbodies where it was previously deemed that abstraction reductions were uneconomic, i.e. they would require significant investment.
- 2.22 The descriptions of all five National Framework scenarios are in Figure 2 below.

### Figure 2: National Framework environmental ambition scenarios



**Business as usual (BAU):** The same percentage of natural flows for the environment that currently applies continues for the future. Uneconomic waterbodies, where reducing abstraction would imply a significant investment, were initially discarded. However, an additional scenario (**BAU+**) including them has been subsequently incorporated.

**Enhance:** A greater environmental protection for protected areas and Sites of Special Scientific Interest (SSSI) rivers and wetlands, principal salmon and chalk rivers is achieved by applying the most restrictive Abstraction Sensitivity Band (ASB).

Adapt: Same ASB as BAU but a recovery to a lower standard in some heavily modified waterbodies is assumed.

**Combine:** Balances a greater environmental protection for protected areas, SSSI rivers and wetlands and principal salmon and chalk rivers with a view that good status (as defined under the Water Framework Directive) cannot be achieved everywhere in a shifting climate. Hence, adopts the Enhance ASB with a lower recovery to the EFI in some heavily modified waterbodies.



- 2.23 To calculate the deficits for each waterbody in 2050 under each of the five scenarios the Environment Agency utilised their bespoke spreadsheet, the Waterbody Abstraction tool. This tool calculated the water balance at the outlet of each waterbody for four flow regimes (Q30 – High flow, Q50 – Medium flow, Q70 – Medium/Low flow and Q95 – Low flow). The process we have undertaken to use this tool is detailed in the WRSE technical note "WRSE Environmental ambition – Sustainability reductions" which is available on the WRSE website in our document library.
- 2.24 The data extracted from the Waterbody abstraction tool was transferred to a new spreadsheet designed to automatically derive the required sustainability reductions in 2050 in all waterbodies within the WRSE region. The development of the logic underpinning this tool focused upon minimising the abstraction loss and hence the impact on deployable output (DO).
- 2.25 The range of environmental ambition scenarios has been used in the WRSE investment modelling to forecast how much additional water may be needed to replace unsustainable abstraction beyond 2025 excluding those already included in the WINEP programmes.
- 2.26 The WRSE investment model requires deployable output (DO) values for different time horizons and scenarios for each water resource zone (WRZ) and return periods, both for average and peak period (please refer to Method Statement 1318 WRSE Best Value Planning for more details). The Environment Agency methodology used to develop the environmental ambition scenarios can only provide an estimated reduction of average abstraction derived from the calculated licence reduction and the future predicted abstraction.
- 2.27 Estimating the final impact of the modelled sustainability reductions on DO would require system simulation, with licences for each public water supply (PWS) source modified. Likewise, the assessment undertaken following the Environment Agency approach relies on the accuracy of the prediction of future river flows as well as abstraction rates.

### Company scenarios

- 2.28 Water companies reviewed the data for the BAU+ and Enhance scenarios in conjunction with WRSE and the Environment Agency, and using their local knowledge and existing operational data, introduced two further scenarios the Alternative and Central scenarios.
- 2.29 Developing the Alternative and Central scenarios involved each water company assessing the delivery profiles and individual source sustainability reductions of the initial environmental ambition scenarios and delivery profiles for each of their WRZs. This step is shows in Figure 3 below.



### Figure 3: Company environmental ambition scenarios



Based on their knowledge of the catchments, with regards the potential ecological benefit of sustainability reductions and their affordability assumptions, companies developed two further scenarios to complement the existing five scenarios: **Central** and **Alternative**. These environmental ambition forecasts were developed in liaison with local EA teams.

In addition, companies applied the licence reductions estimated for the EA scenarios to obtain the DO impact for some of their groundwater sources.

### The emerging regional plan

2.30 For the emerging regional plan, a range of environmental ambition scenarios were incorporated into the adaptive planning approach. All seven scenarios were considered, but the Enhance, BAU+, Central and Alternative scenarios were used in the investment modelling for the emerging regional plan to provide the most appropriate range of future environmental ambitions. This step is shown in Figure 4 below.

### Figure 4: Emerging regional plan approach



Four of the seven defined scenarios were used in the WRSE investment modelling for the emerging regional plan, to represent the range of potential future environmental ambitions: **BAU+**, **Enhance, Central** and **Alternative**.

2.31 The Environment Agency has reviewed the BAU+ and Enhance environmental ambition scenarios used in the emerging regional plan. Their conclusions showed that if these reductions were implemented then WRSE would meet the EFI challenge across the South East catchments for the BAU+ and Enhance scenarios. This demonstrates that WRSE's interpretation of the Environment Agency's environmental destination targets have been validated at a regional level. More work is required to continue to validate the environmental ambition scenario forecasts against the Environment Agency data and tools.



### The draft regional plan

- 2.32 Although WRSE has considered seven environmental ambition scenarios in total (BAU, BAU+, Enhance, Adapt, Combine, Central and Alternative), only four scenarios were used as part of the investment modelling for the emerging regional plan, as these best represented the range of environmental ambition for the region:
  - BAU+
  - Enhance
  - Central
  - Alternative
  - 2.33 At a regional level, the BAU+ and Enhance scenarios provide the most challenging forecasts, with the Alternative scenario generally providing the least challenging forecast, however the proposed DO reductions for these scenarios varied across companies and between WRZs. For example, in some WRZs, the Enhance scenario had the greatest levels of abstraction reduction, whereas in other WRZs the Alternative scenario had the greatest reductions.
  - 2.34 As BAU+ is referenced in the Water Resources Planning Guidance as the minimum level of environmental ambition, this scenario has been used as the reference scenario.
  - 2.35 To provide relative consistency between all the WRZs, the reductions in the Enhance, Central and Alterative scenarios were mapped across to Low, Medium and High, to provide a clearer picture of environmental ambition across the region. This mapping is shown in Table 1 below.

WRZ	High	Medium	Low	
AZ1	Enhance	Central	Alternative	
AZ2	Enhance	Central	Alternative	
AZ3	Enhance	Central	Alternative	
AZ4	Enhance	Central	Alternative	
AZ5	Enhance	Central	Alternative	
AZ6	Enhance	Central	Alternative	
A77	Enhance	Central	Alternative	
GUI	Enhance	Central	Alternative	
HA7	Alternative	Central	Enhance	
HEN	Enhance	Central	Alternative	
нк7		Central	Enhance	
HR7	Alternative	Contral	Enhanco	
	Altornativo	Control	Enhance	
ПЭЕ	Alternative	Central	Ennance	

Table 1: Mapping of Enhance, Central and Alternative environmental ambition scenarios across to High, Medium and Low for each of the 37 WRZs



WRZ	High	Medium	Low	
HSW	Alternative	Central	Enhance	
HWZ	Alternative	Central	Enhance	
IOW	Alternative	Enhance	Central	
KME	Central	Alternative	Enhance	
KMW	Alternative	Enhance	Central	
KTZ	Alternative	Enhance	Central	
KVZ	Alternative	Central	Enhance	
LON	Enhance	Alternative	Central	
PRT	Enhance	Central	Alternative	
RZ1	Enhance	Central	Alternative	
RZ2	Central	Enhance	Alternative	
RZ3	Enhance	Central	Alternative	
RZ4	Central	Enhance	Alternative	
RZ5	Enhance	Central	Alternative	
RZ6	Enhance	Central	Alternative	
RZ7	Enhance	Central	Alternative	
RZ8	Enhance	Central	Alternative	
SBZ	Enhance	Alternative	Central	
SES	Enhance	Central	Alternative	
SHZ	Enhance	Central	Alternative	
SNZ	Enhance	Alternative	Central	
SWA	Enhance	Central	Alternative	
SWX	Enhance	Central	Alternative	
SWZ	Enhance	Alternative	Central	

- 2.36 The impacts of this mapping have resulted in a much better spread of reductions across the High, Medium and Low scenarios compared to the scenarios used in the emerging regional plan. In addition, the impacts of the proposed licence capping reductions to water company licences has also been included in the High, Medium and Low scenarios used in the investment modelling for the draft regional plan.
- 2.37 The approach for the draft regional plan is shown in Figure 5 below.



### Figure 5: Draft regional plan approach



Due to the variation between relative reductions in the scenarios applied by the companies, a mapping exercise was undertaken to map **Enhance**, **Central** and **Alternative** across to consistent **High**, **Medium** and **Low** scenarios for each Water Resource Zone (WRZ).

**BAU+** is the minimum environmental ambition scenario required to be considered by companies in their WRMPs, as stated in the Water Resource Planning Guidance (WRPG). This therefore has been used as a reference scenario for the Draft Regional Plan.

The **High** environmental ambition scenario best aligns with the **BAU+** environmental ambition.

All environmental ambition scenarios in the draft regional plan take the proposed licence capping reductions into account.

2.38 Table 2 below shows the environmental ambition scenario reductions at the company level for the emerging plan BAU+, Enhance, Central and Alternative scenarios and the draft regional plan High Medium and Low scenarios.

Company	BAU+	Enhance	Central	Alternative	Low	Medium	High
Affinity	-285	-309	-192	-133	-	-194	-309
					133		
Portsmouth	-42	-48	-21	-6	-26	-51	-107
South East	-156	-162	-92	-44	-83	-130	-178
Southern	-142	-190	-126	-210	-90	-188	-247
SES	-12	-12	-12	-12	-11	-15	-29
Thames	-486	-482	-56	-62	-91	-183	-417
Total	-	-1204	-499	-466	-	-762	-
	1122				434		1288

### Table 2: Company level variations in environmental ambition scenarios

2.39 Table 2 shows that at the regional level the High environmental ambition scenario best meets the reductions in the BAU+ scenario, and therefore represents the scenario which is compliant with the water resources planning guidance and regulatory expectations.



2.40 The graph in Figure 6 shows the impacts on DO in the High environmental ambition scenario for each water company across key time slices in the draft regional plan.





Method Statement: Environmental Ambition Draft regional plan version November 2022



# 3 Stakeholder engagement

- 3.1 Whilst we have worked closely with stakeholders and regulators to develop the environmental ambition scenarios used for the draft regional plan, we will continue to work collaboratively with our stakeholders and regulators in future to develop plausible environmental forecasts for the region and continue to develop our overall environmental ambition.
- 3.2 To help us with the process we have engaged with stakeholders both on a catchment area basis and at an overall regional basis through our environmental sub-group. Figure 7 sets out these groups and the range of questions we are trying to answer through these groups.



### Figure 7: Range of questions for Stakeholder groups



3.3 As part of catchment workshops held in 2020 and attended by regulators, Blueprint for Water, farmers and land managers, catchment partnerships and other potential parties who can implement solutions, an important consideration in the discussions were the reasons for environmental failure to ensure these can be represented within the environmental assessment objectives.

## **Regulatory Engagement**

- 3.4 WRSE has been engaging with the Environment Agency (EA) since the intention to move towards an environmental ambition approach was put forward in the Environment Agency's Water Resources National Framework document, published in March 2020. WRSE has worked alongside the EA to develop the sustainability reduction profiles needed to achieve the reductions in the BAU+ and Enhance scenarios. We have done this through regular engagement with local and national EA colleagues, water company officials, and broader stakeholders.
- 3.5 WRSE currently engages with the EA using its existing governance and engagement structure.
  - Fortnightly WRSE Programme Management Board (PMB) meetings which include water company and EA representatives. These meetings operate at a strategic level, discussing the development of regional plans and WRMPs.
  - Decisions and actions from PMB meetings cascade down into the WRSE Environmental Ambition Sub-Group, which consists of both PMB members, and regional EA leads. These meetings focus upon the specifics of developing national and company-specific environmental ambition scenarios and their delivery.
  - Decisions and actions from these Environmental Ambition Sub-Group meetings cascade down into meetings between the water companies and their local EA area teams. These meetings discuss technical points involved in the production of scenarios and delivery of environmental ambition at a company level.

## Approach to environmental option development

- 3.6 We held a series of catchment workshops in 2020 to capture additional local knowledge to understand any specific issues and the likely cause of the problems. These workshops covered each management catchment area in turn and has allowed us to better understand what the local issues (and possible solutions) are within each of the catchments that we and the other sectors abstract from in the South East. The catchment workshops were held with catchment partnerships and other local stakeholders.
- 3.7 The workshops were also helpful to generate potential ideas for solutions and options which came from discussions on the longer-term issues faced by catchments in the South East. These option workshops were key to enable WRSE to generate further regional and local options please refer to Method Statement 1328 WRSE Options Appraisal for information on the formulation of options within the regional plan.
- 3.8 The options that were identified in the workshops have been collated into sets or portfolios. As noted in Method Statement 1334 WRSE Multi Sector, some of the issues in catchments might require a multi-sector solution. These portfolios have been put forward through the options appraisal process (see Method Statement 1328 WRSE Options Appraisal which outlines the method for assessing these options in terms



of their benefits). The assessments of multi-sector options will also help to define catchment-wide solution sets for consideration in the investment model, against new supply and demand options.

- 3.9 Central to our method for deriving the environmental ambition for the region is to understand the needs of the environment now and in the future, and the way in which we can achieve improvements in the WRSE catchments.
- 3.10 The 2020 catchment workshops were based around the following discussion points:
  - The specific issues that are making catchments less resilient and what can be done to improve this.
  - Map out issues and identify opportunities and schemes to deliver water resource and water quality benefits that can be put forward to the water companies to improve resilience.
  - Working with all catchment stakeholders to identify where these are.
  - Setting out the impact to the environment under the future scenarios and discuss what other interventions might be needed in the future.
- 3.11 Any potential catchment solutions that came out of these workshops have fed into the catchment options workstream (see Method Statement 1328 WRSE Environmental Assessments) to see if they would be feasible and what benefits could be gained through the environmental assessment method and the resilience assessment framework.



# 4 Summary and Next Steps

## Summary

- 4.1 This method statement sets out our proposed approach for defining the environment ambition for the region and how it integrates with other workstreams.
- 4.2 The process follows a simple staged approach of understanding the issues, anticipating the potential needs, setting out the options and setting out solutions which can be considered in the regional plan, as shown in Figure 8.





4.3 We are continuing to work with the Environment Agency and have produced a range of indicative environmental ambition scenarios which we have used to forecast how much water may be needed to replace unsustainable abstraction in the period from 2025 to 2050 and beyond. These scenarios consider the potential impacts of climate change, licence capping, as well as the outputs of previous investigations and assessments including through the WINEP programme.



4.4 This integrated approach allows a robust, resilient regional plan to be developed which takes both current and future water needs into account to ensure the environment in the South East is resilient for the future.

## Next Steps

- 4.5 WRSE will continue to work with its member water companies and the Environment Agency using the existing governance and engagement structure, as set out in section 3, to further develop the region's environmental ambition scenarios.
- 4.6 We will also work closely with the Environment Agency to continue to check and test the environmental ambition scenarios and sustainability reduction targets. The Environment Agency's "waterbody abstraction tool" will be used to independently verify sustainability reductions produced by WRSE and water companies at a water source level. At the time of writing, WRSE is working proactively with the EA to corroborate its work to date.
- 4.7 The environmental ambition scenarios used in the draft regional plan do not currently consider potential impacts of sustainability reductions on non-PWS sources. WRSE will need to consider these impacts further as part of the multi-sector and stakeholder engagement work as the non-PWS abstractions are likely to be impacted by the proposed Environment Agency licence capping policy.
- 4.8 The current analysis is necessarily simplified and conducted with the sole purpose of providing plausible possible futures with which to determine the preferred regional portfolio of options. More detailed investigations are needed before adopting the modelled reductions to confirm their effect on river flows, verify their ecological benefit, and establish their cost-effectiveness through detailed cost benefit analysis work.
- 4.9 WRSE is committed to improving the environment in our region, but we need to agree the pace at which abstraction can be reduced and how we prioritise where reductions should be made. This so that activities and costs can be phased across the planning period and customers' supplies are not put at unnecessary risk. This is essential as some of the new schemes required to replace these water sources will take many years to plan and build. Therefore, decisions on whether we develop these schemes or not must be made soon. WRSE is continuing to engage with regulators and water companies to facilitate these decisions.
- 4.10 WRSE is working with the Environment Agency, Natural England, the Catchment Based Approach (CaBA) chalk stream restoration group and environmental organisations to develop a framework to determine where abstraction reduction should be prioritised in catchments.
- 4.11 The catchment prioritisation framework has developed criteria to score each catchment, based on the following questions:
  - Should WRSE prioritise upper catchments, because headwater ecologies are the most vulnerable and the benefits to flow should improve the whole catchment?
  - Should WRSE prioritise catchments where the impacts on flows are the most severe?
  - Should WRSE prioritise catchments where there is the highest degree of certainty that abstraction reduction will restore flows and deliver environmental improvement?



- Should WRSE prioritise catchments where people have the most unrestricted access to rivers and streams?
- Should WRSE prioritise catchments where nature will benefit most, even if public access is restricted?
- Should WRSE focus abstraction reductions on a smaller number of catchments but fully address the issues they face?
- Should WRSE focus on a wider range of catchments and partially address their abstraction issues?
- 4.12 Each catchment within the WRSE region has been scored based on the catchment prioritisation criteria to give an overall indication of which catchments should be prioritised, incorporating the EA prioritisation criteria, Natural England's nature recovery list, and discussions with CaBA regarding chalk stream catchments in the South East.
- 4.13 These scores will be reviewed with stakeholders and regulators through a series of workshops planned for late 2022/early 2023. The environmental ambition scenarios for these agreed priority catchments will then be reviewed to understand if the environmental ambition profiles can be accelerated. In addition, any further environmental investigations within the priority catchments will be identified, and taken through into company WINEP programmes, or into catchment options in company business plans for PR24.
- 4.14 These proposed next steps will continue to be delivered by WRSE in collaboration with water companies, stakeholders and regulators, working to deliver the draft regional plan, draft Water Resource Management Plans and beyond.

## Method Statement Updates

- 4.15 An initial version of this document was consulted on between 1st August 2020 to 30th October 2020 and comments received during this time were incorporated into this method statement.
- 4.16 Following the publication of WRSE's emerging regional plan and the subsequent consultation, further changes to our approach have been made. This method statement has been updated to reflect those changes which have been adopted for the draft regional plan, which is due to be published for consultation in November 2022.
- 4.17 If any other relevant guidance notes or policies are issued, then we will review the relevant method statement(s) and see if they need to be updated.
- 4.18 When we have finalised our Method Statement, we will ensure that we explain any changes we have made and publish an updated Method Statement on our website.
- 4.19 We will update our website with relevant information from time to time to ensure that as new information comes forward stakeholders are kept informed.



# Appendix 1: Water Resource National Framework Approach

## Water Resources National Framework approach

The <u>Environment Agency's Water Resources National Framework</u> sets out the expectation that regional plans should seek to pro-actively enhance the environment and increase ambition in this area. The EA has also produced some additional guidance on future environmental ambition.

This document sets out the proposed approach by the regulator in determining how much water would be required in the environment. This assessment is based on a number of requirements and assumptions which include:

- meeting the water requirements of sites specially protected for nature conservation
- restoring sustainable levels of abstraction to freshwater and wetland habitats of principal importance listed under Section 41 of the Natural Environment and Rural Communities Act (2006), particularly chalk rivers and other sites identified as priority habitats for restoration
- restoring river flows to support the recovery of salmonid fish populations
- embedding the principle that new developments should result in net environmental gain including 10% biodiversity net gain the aim is for every plan to have a net positive impact on the local and national environment.

As there are a number of policy decisions that could influence the level of environmental protection required for the future, the guiding principles document categorises these potential futures into four scenarios discussed in chapters 0, Error! Reference source not found., Error! Reference source not found., Error! Reference source not found. and Error! Reference source not found.. The scenarios used in the environmental assessments are based on current estimates of environmental flow indicators (EFIs) and future EFI assessments. Based on these estimates an assessment of how much water has to be left in the environment can be derived for each of the four scenarios. This therefore provides the plan with a potential range of impacts on the supply forecast.



#### **Business as Usual**

- Policy/regulatory approach remains the same
- We continue to protect the same % of Qn for the environment
- Flow and GW balance tests evolve as a proportion of natural flow irrespective of climate change impacts
- Environment adapts to Climate

EFI evolves as a proportion of natural flow irrespective of climate change impacts

- Recover to Complaint
- No deterioration

Groundwater tests evolve around seasonal changes and response to abstraction pressure

- Recover to Good, or on pathway to Good
- No Deterioration

### Maintain the ambition for the environment

- We maintain the same environmental protection as now despite climate change
- Flow and GW balance tests set at current volumes to protect environmental flows from climate change impacts
- Abstractions adapt to Climate change
- Fix EFI at current volumes
- Fix GW allowance based on current volumes
- No Deterioration
- Recover to Complaint

#### **Enhance the environment**

- Greater environmental protection for Protected Area and SSSI rivers and wetlands, principal salmon & chalk rivers
- Apply most sensitive flow constraint as appropriate
- Flow and GW balance tests evolve as a proportion of natural flow irrespective of climate change impacts

#### For Protected Area/SSSIs:

- rCSMG or equivalent
- Recover to Good in GW units linked to these rivers or wetlands

#### For principal salmon and chalk rivers:

- ASB3
- Recover to Good in GW bodies underlying chalk rivers



#### Adapt

- Our policy adapts to accept Good cannot be achieved everywhere with a shifting climate
- + Recover to a lower standard in some water bodies
- Flow and GW balance tests evolve as a proportion of natural flow irrespective of climate change impacts

#### Flows

#### Recover to Band 1/2 boundary where WB meets following:

- Water bodies have an alternative, less stringent objective,
- Or,HMWB designated for non WR use

#### Groundwater

• Create new "Moderate" GW category to define recovery objective in some "Poor" GW bodies

In summary, the overall assumptions made in the EA guidance are that it:

- Does not include local intelligence or specialised regional/ catchment scale modelling to identify ecological needs.
- Uses a single approach to model possible climate change impacts on flow rather than a wide range of scenarios to represent uncertainty.
- Assumes abstraction reduction is the only possible solution other changes, such as altering the way reservoir storage is used to address flow issues, are not considered.
- Assumes the WRGIS database is a snapshot in time February 2019 version this may not represent catchments in as much detail as locally specific models and may differ from other models in assumed distribution of abstraction impacts (it includes estimates of some unlicensed activities).
- Assumes waterbodies that were at Good Ecological Status in 2016 will remain at good.
- Assumes that the planned implementation of schemes in WINEP and AMP will enable waterbodies to achieve good by 2027.
- Assumes non-economic waterbodies have been excluded from the baseline.
- Estimates some licence reductions where exact quantities are not available.
- Assumes groundwater abstraction reductions to achieve natural flows will deliver the most environmental improvements and will improve groundwater status.
- Is more complex to model changes to surface water licences so only considered these if:
  - o The licence does not have a flow constraint,
  - o It is not from a reservoir or lake or level dependant catchment,



- It does not have an upstream supported flow.
- Is based on recovery to the EFI (other than in the Adapt scenario).
- Is important! Focus is long term planning.
- Makes broad assumptions on a national scale for the purposes of the national framework.
- Should not supersede local investigations that have used more detailed modelling.

The guiding principles document was issued by the Environment Agency. However, Natural England also has a proposed approach to achieving a sustainable environment in designated areas and this is set out in the <u>Common</u> <u>Standards Monitoring Guidance</u> document(s).

### Common Standards Monitoring Guidance (CSMG)

CSMG sets out a series of water quality and water quantity targets for designated sites. The water quality objectives were adopted by Natural England and the Environment Agency. However, the flow targets have not yet been fully adopted.

The underlying principle of the flow targets set out in the guidance note is that only a certain percentage of the natural flow in the catchment should be abstracted. How much is permissible depends on whether the abstraction is taking place in the tidal reach, lower reaches or in the headwaters of rivers.

Typically, only 5% of the natural resources would be allowed to be abstracted in the headwaters of a catchment and 10% of the natural flows in the lower reaches of a river.

This approach sets out a very different approach on flow targets and what is sustainable in designated rivers. Therefore, it is important to use this approach for abstractions in these areas.

An alternative approach would be to use the Water Framework Directive assessment approach.

### Water Framework Directive (WFD)

The WFD is a European Directive that imposes legal requirements to protect and improve the water environment (including our rivers, coasts, estuaries, lakes, ground waters and canals).

In undertaking a WFD assessment any activity should support the objectives of the local River Basin Management Plan (RBMP) or meet strict sustainability criteria. It is important that any activity does not cause a deterioration to the status of a water body.

The River Basin Management Plans set out the current status of water bodies and the actions required to meet the objectives. Typically the assessments are based on the state of the environment over the last 6 to 18 years (1 to 3 WFD six year cycles).

The WFD sets out an assessment criteria which look at:



- physical habitat the distribution and diversity of habitat including the physical processes that sustain and create new habitat. Physical habitat is essential for fish, macrophytes and invertebrates to live and thrive
- water quality particularly physico-chemical aspects of water quality such as levels of dissolved oxygen, phosphorus and ammonia
- fish and eels
- macrophytes water plants visible to the naked eye, growing in the river
- invertebrates insects, worms, molluscs, crustacea etc living on the riverbed
- diatoms microscopic diatoms (algae) found on rocks and plants
- Invasive non-native species (INNS)

All these approaches will require an understanding of the range of flows (flood and drought) we face today and the likely range we will face in the future. We intend to use the historic flow sequences and the new regional future flow sequences in our assessments using these approaches. We also intend to use the output from our hydrological investigations to estimate the impact of groundwater abstractions on river flows. These studies coupled with potential land use changes across the region and an understanding of the potential impacts of climate change will be used to help assess the future water availability from both surface water bodies and groundwater bodies within the region. It is likely that this work will continue to be refined but it should provide enough understanding to define the range of water availability in the catchments and consequently the range of environmental ambition which we will have to plan for.