

# Method Statement: Multi-sector Approach

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# 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 are consulting on these early in the plan preparation process to ensure that our methods are transparent and, as far as possible, reflect the views and requirements of customers and stakeholders.

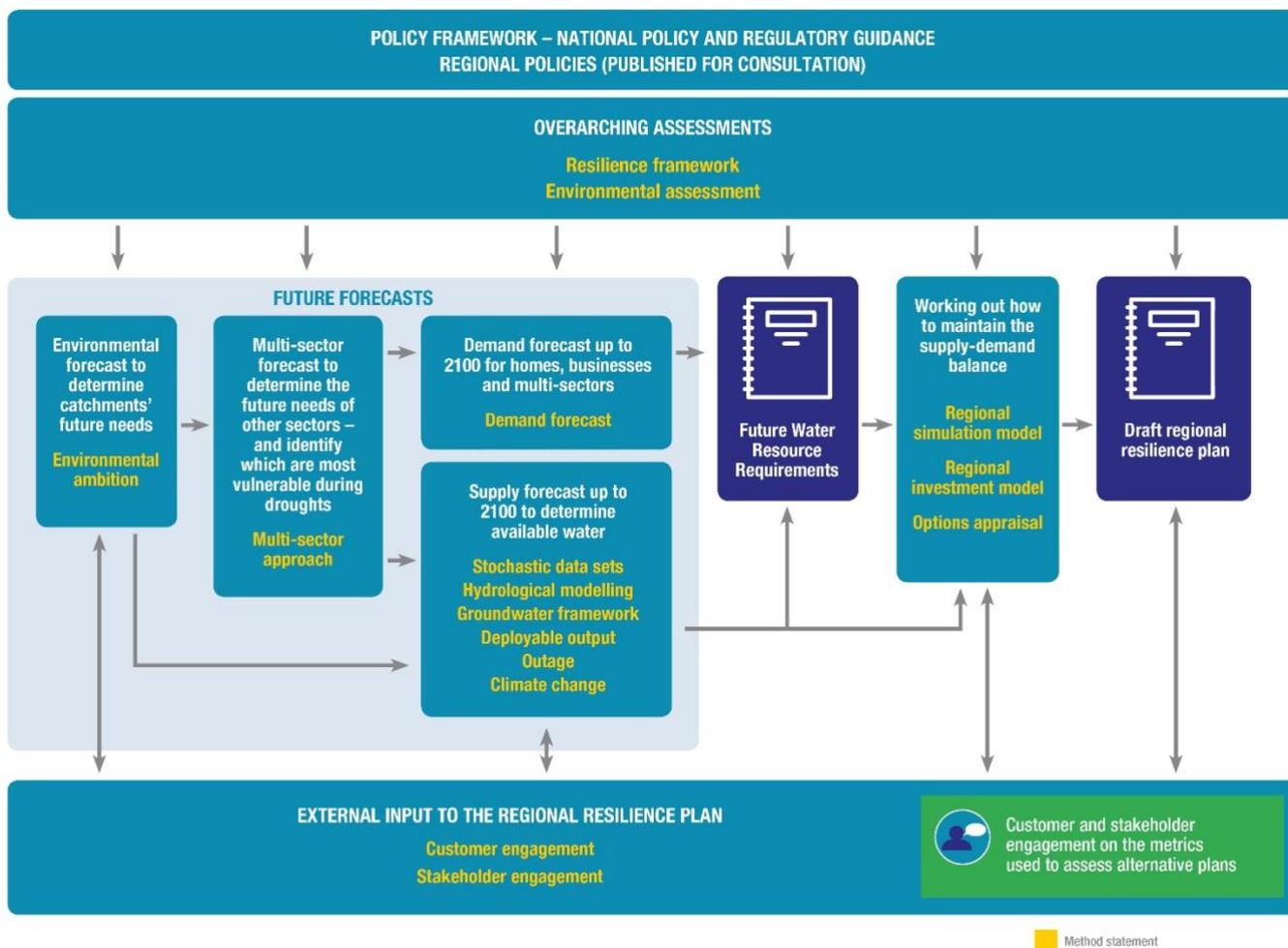
Figure ES1 illustrates how this multi-sector approach method statement will contribute to the preparation process for the regional resilience plan.

The Water industry has planned for the potential requirements of industry, which are connected to their supply systems, based upon a range of economic and growth forecasts for the region. With the introduction of the broader multi-sector group into the regional plan an enhancement to the current approach is required.

The enhancements will look at what additional resource requirement might be required for the future, what potential options there are and how the plan could improve the resilience within the region.

This method statement sets out our intended approach of how we will incorporate the key multi-sector into our regional plan.

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



# 1 Introduction

## Background

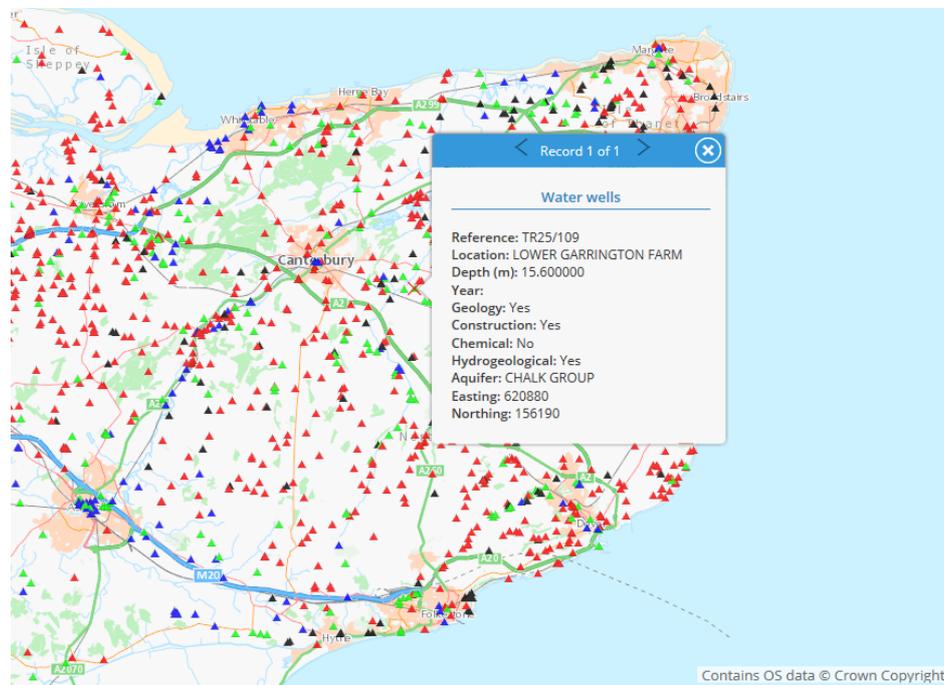
- 1.1 The Water Resources in the South East of England (WRSE) is one of five regional groups developing a multi-sector based plan which will be consulted at the beginning of 2022. This regional plan will be different from our previous plan in so much that it will now consider a broader set of requirements for water; a more diverse range of solutions which could benefit other sectors, the environment as well as the water companies; and an improved understanding of how resilient some of the sectors are to events now and based on the preferred plan.
- 1.2 This overall approach was set out in our [Regional Multi-Sector Resilience](#) document in September 2019, which we launched at our stakeholder event. In between the event and now we have continued to develop the methodologies and approaches and the purpose of this report is to set out our proposed multi-sector approach which will be used for the development of the next regional plan.
- 1.3 In this report the multi-sector group are defined as the industries which have a licence, or an equivalent legal permission, to abstract water from the environment in order to support their manufacturing or specific activity requirements.

## 2 Multi-sector approach

- 2.1 To develop a regional assessment of the future water requirements it is important to understand how much water is required for the public water supply system and the other sectors over the planning period and how much water will be available from the environment to support these requirements. The difference between the requirements and the availability provides an indication of the scale of the challenge in the future.
- 2.2 Just like the water industry, several other industries in the South East of England abstract water from the Environment. The [National Framework](#) set out the volumes of water that were currently abstracted through a number, but not all, of these abstractions. It has been assumed that the current abstraction rates that have been reported through the abstraction returns represent the current requirements of the industries. However, these abstractions do not represent all the abstractions in a catchment. Industries such as the canal and rivers trust and trickle irrigators, also abstract water from the environment but due to their current set of exemptions they were not included in the National Framework Assessment report. Therefore, the volumes of water reported in the National Framework underestimate the potential amount of water, outside public water supply, that is abstracted daily and the potential need for water in the future.
- 2.3 The future requirements of water for the other sectors is dependent on how much they currently use; an estimate of growth for the sectors and the amount of water that would be available to them during the extreme drought events from their own sources.
- 2.4 Building on the work of the National Framework we propose to update the forecasts by working with the key sectors and using information from the non-household demand forecast to better understand the range of potential requirements for each sector in the region. In this context we will focus on the key industries outlined in the National Framework report along with the Canal and Rivers Trust; trickle irrigators; abstractors for the purpose of maintaining an environmental habitat (E.g. Wetlands). During our work with the multi-sector group other sectors might be considered and incorporated into the assessment for the regional plan.
- 2.5 The current requirements of the multi-sector group will be based on abstraction returns and the voluntary returns of those who are currently exempt abstractions. Some of these abstractors exempt from licencing will be brought under the abstraction licence regime in the future, this includes sectors such as the canal and rivers trust and trickle irrigation.
- 2.6 The anticipated growth rates of these sectors will be aligned, where possible, with the non-household growth forecast methodology used by public water suppliers. Where these forecasts do not exist then additional expert advice through the multi-sector group will be used.

- 2.7 Through the process above and by working with the multi-sector group we will be able to generate a series of future requirements for the key sectors in the region.
- 2.8 Typically, these other sectors' availability of water during the extreme drought events will be assessed through a vulnerability assessment using the river flow and groundwater levels based on the stochastic sequences. If the water available for the individual sources is insufficient to meet the current and or future requirements of the sector then an assessment of the shortfall between the requirement and the availability will be undertaken and recorded as the net additional water required for the sector. This net additional water requirement for the sector will be recorded and aggregated with the net requirements for other sectors and assigned to the appropriate water resource zone.
- 2.9 The requirements of each water resource zones will be taken into the investment model which will be used to help determine a suitable portfolio of options, including multi-sector options, that will meet the requirements of the sectors but also improve the overall resilience of the environment and non-public water supply sector.
- 2.10 The potential growth in demand is one side of the overall assessment approach. The other part is to understand the potential availability of water from their own abstractions. For surface water abstractions we propose to use the hydrological flow records generated through the [WRSE hydrological modelling method statement](#).
- 2.11 For groundwater we will have to undertake a screening exercise using a combination of well data, abstraction licence database and estimates of groundwater levels. Figure 1 shows an extract of the [BGS geoindex](#). This database provides the coordinates, geology and depth information.
- 2.12 The process we will therefore follow is to:
- Correlate the BGS water wells layer with the with the licence data.
  - Estimate the depth to water by reference to topographical data and regional GW model outputs for dry years (which should be readily available) and a simple GIS processing exercise
  - Use any scaling from aquifer block indicator boreholes or from distributed regional groundwater modelling to estimate depth to water in severe/extreme drought and determine those where water level goes below the base or some fixed proportion of the well
  - Identify those wells at most risk of losing yield.

Figure 1: BGS geoindex



- 2.13 Between the assessment of the multi-sector future needs and the potential availability of water from their own sources we will define a range of future requirements. The final step in this part of the process before we consider potential multi-sector options (see the [WRSE options appraisal method statement](#)) is to understand what level of resilience each sector wants to achieve. This is an important step for each of the sectors as there will potentially be a cost associated with improving resilience. We also recognise that this will likely be an iterative process as we share the costs of achieving different levels of resilience so the sector in question can make an informed choice.
- 2.14 The combination of steps and the iterative discussion will allow us to agree and include a final set of multi-sector requirements into the plan. Initially we will associate these additional requirements with an appropriate water resource zone to allow the investment model to select appropriate multi-sector solutions. However, we recognise that some sector solutions might be accounted for at a catchment level. If this is the case, then we shall take account of the solution within the catchment portfolio of options and check that the influences of any changes in abstraction rates or patterns are considered in the catchment hydrology for the regional simulation model.

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## 3 Multi-sector options

- 3.1 The options workstream will be the central focus for capturing and holding the option set for the investment model. The Water companies have already identified several multi-sector options within their plans and there are also several options which if modified could provide other sectors with a solution. In addition, each of the sectors have identified a range of other potential options and solutions. There are also options which can provide solutions for the environment, sectors and water companies.
- 3.2 All these options that are identified through the multi-sector stakeholder group will be passed through to the options workstream and shared across the other sector groups to get their views and comments on them.
- 3.3 The [WRSE options method statement](#) and the [WRSE environmental ambition method statement](#) set out the process we will follow in collating and screening these options in order to derive a set of options for our investment modelling stage.

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## 4 The multi-sector plan

- 4.1 The investment modelling method statement and the resilience framework set out the process we will follow to derive a regional plan. Along this journey it will be critical to discuss, iterate and assess the benefits different solutions can provide the various sectors and the environment. This iterative, collaborative process will take time which is why we have built into our overall programme several months in 2021 to go through these stages with the specific groups, stakeholders and customers (see the [WRSE stakeholder engagement method statement](#) and [WRSE customer engagement method statements](#)).
- 4.2 The regional multi-sector plan will be consulted on in early 2022. Following this process, we will review the comments and revise the plan appropriately. The plan will set out the portfolio of options that will be required to be delivered over the short, medium and long term and suggest the likely delivery mechanisms, sectors or third parties who could implement the solutions.
- 4.3 During the sensitivity testing stage of the regional plan we will also undertake a number of scenarios to determine what would happen if some parts of the plan are not delivered by third parties or other sectors to identify alternative plans should economic circumstances limit the ability of other sectors to deliver certain parts of the plan.

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## 5 Summary

- 5.1 This method statement sets out our proposed approach for including other sectors into our regional resilience plan. As this is the first time that we have included these sectors into the planning framework there might be some aspects of this approach that have to be enhanced, modified or replaced. If this happens then we will update the method statement.
- 5.2 The approach seeks to establish the future requirements of the sectors, what the potential options could be, and how these will be considered in the regional plan. In addition, given the complexity of some of these solutions it also recognises that some solutions could be integrated into a catchment solution whilst other solutions could be aligned with an infra-structure type solution. Whilst this is increasing the complexity of the problem trying to be solved, the flexibility can be accommodated in the planning framework.
- 5.3 The approach is iterative and collaborative with the multi-sector group, stakeholders and customers. This will be an important step in generating a robust plan. The regional plan will indicate the likely delivery routes of the various solutions including those which the multi-sector group might deliver either by themselves or jointly with other groups.

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## 6 Next steps

- 6.1 We are consulting on this method statement from 1<sup>st</sup> August 2020 to 30<sup>th</sup> October 2020. Details of how you can make comments can be found here – ([consultation website](#)).
- 6.2 We will take into account the comments we receive during this consultation process, in updating the Method Statement. Alongside this, the Environment Agency will shortly be publishing its Water Resource Planning Guidelines (WRPG) on the preparation of regional resilience plans. We may need to update parts of our method statements in response to the WRPG. We have included a checklist in Appendix 1 of this method statement which we will use to check that our proposed methods are in line with guidance where applicable.
- 6.3 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.
- 6.4 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.

# Appendix 1 Checklist of consistency with the Environment Agency WRMP24 Checklist

The Environment Agency published its WRPG on XXXXXX 2020, including the WRMP24 Checklist. The following table identifies the relevant parts of the checklist relating to this Method Statement, and provides WRSE’s assessment of its consistency with the requirements in the Checklist.

No.	Action or approach	Method Statement ref:	WRSE assessment of consistency