

Project: Regional Best Value Investment Plan	To: WRSE PMB
Subject: Scoping the environmental appraisal approach as input to the regional best value plan programme appraisal process for the WRMP24	Created by: Chris Lambert
Purpose: For review at PMB meeting on 24 th June	Version, Date: Version 2 2 July

1. Summary

The purpose of this document is to set out at high level the potential environmental assessment requirement that will be needed as input to the development of the regional best value water resources strategy for the South East.

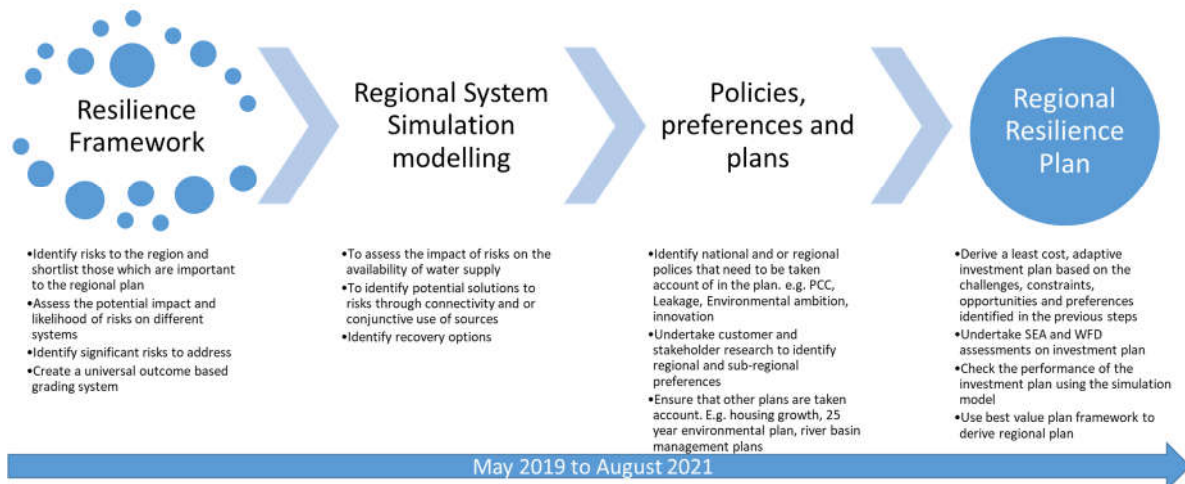
Environmental experts are asked to consider the different approaches and present to the WRSE Programme Management Board (PMB) their understanding of the available techniques and use this to propose a potential methodology that could be used to incorporate a leading edge environmental assessment technique within the WRSE best value plan appraisal process.

The consultant(s) who best demonstrate a comprehensive understanding of available approaches and regulatory requirements at the presentation, and propose development of a flexible, pragmatic environmental assessment technique will be asked to deliver a more detailed proposal for their approach.

The successful candidate will produce a final methodology report for the regional environmental appraisal approach which will then be utilised to help develop the regional best value water resources strategy, as set out in the diagram below.

Overall framework to develop a regional plan

The next regional plan has four key components in its construction



This piece of work is intended to be a short initial piece of work to review and recommend the way forward for the development of a comprehensive environmental assessment technique for input to the WRSE regional investment model. The consultants who demonstrate a comprehensive understanding and propose development of a pragmatic and leading edge environmental assessment technique will be short listed and asked to submit a detailed tender for development and implementation of their approach such that it can be utilised to help develop the regional best value water resources strategy.

2. Introduction

The six companies in the South East of England are seeking to develop a resilient regional water resources plan. These companies supply water to approximately 19 million people across 31 water resource zones which have some, but limited transfer capability, as shown in the figure below.

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The next regional plan being produced as part of the WRMP24 process, will seek to improve the resilience of the South East across multiple sectors by identifying a range of interventions that help the region meet the projected growths whilst improving its overall resilience and delivering environmental improvements.

3. Overview

In accordance with the Water Industry Act 1991 (Sections 37A to 37D), and water resource planning Regulations and Directions, companies must prepare a Water Resource Management Plan (also referred to as the WRMP) not later than the end of the period of five years beginning with the date when the plan was last published. Even though the current plans have not been approved the timetable for the development of the National Framework, and the next set of regional and Company level plans has already been drafted (set out in the table below).

Year	Month	Work area / Activity
2019		Regional planning groups established including involvement of other sectors.
2019		Contribute to national framework, including involvement in modelling group
2019	December	National Framework published including: - Statement of water need - Expected contributions from regions
2020	February	Statement of resource position from each region (surplus/deficit)
		Development of regional plan, including modelling
2021	August	Regions present draft plans and discuss with regulators and other groups to make sure they join up and match
2021	December	Informal consultation of regional plans and pre-consultation of water resource management plans setting out how regional plans will feed in to company plans
2022	August	Publish regional plan
2022	August	Submit draft WRMP to Defra

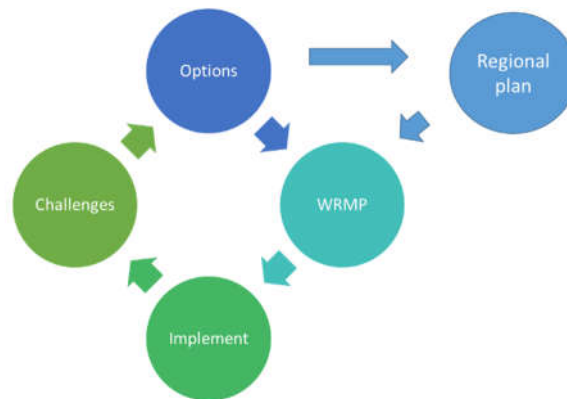
In order to support the delivery of company WRMP24s, the WRSE region proposes to develop an integrated plan, for which work has to begin now. To facilitate the development of this resilient plan a series of enhancements of the current methodologies and processes are required, including a more sophisticated approach to regional environmental assessment that specifically incorporates opportunities for delivery of greater environmental and social value.

4. Approach

Unlike previous plans it will be important for the region to derive a *best value* plan. To derive this plan the starting point is to derive a least cost plan, then progress through strategic programme appraisal to a best value plan as set out in the process diagram below.



The traditional approach the region has adopted in the past is not to derive an adaptive regional plan but rather to derive least cost plans for a variety of scenarios relating to different levels of growth, drought resilience, and water abstraction licence reductions. This means that the regional modelling outputs have been used by water companies in developing their own company plans as shown in the following figure:



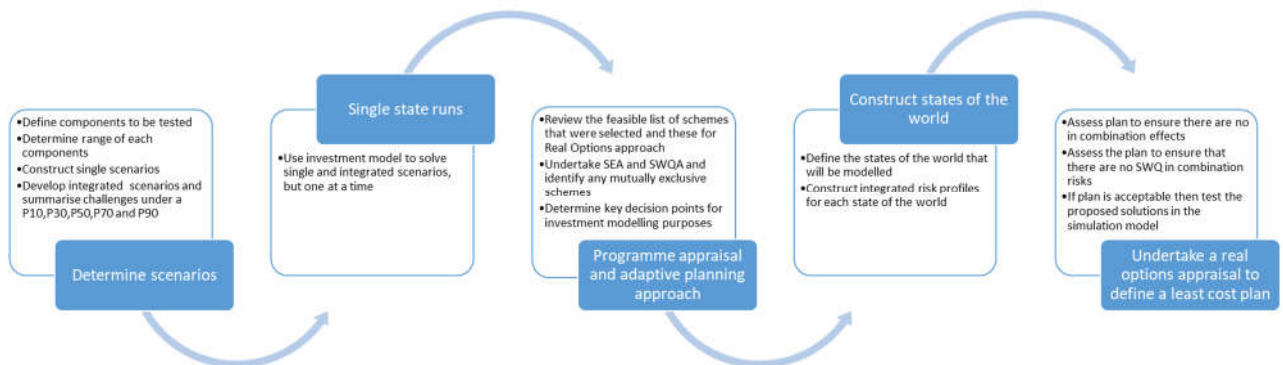
To date, environmental assessment has largely been evaluated through understanding the potential environmental impacts of the individual options and undertaking a regional Strategic Environmental Assessment (SEA) to evaluate the combined and cumulative impacts of the options included within companies individual preferred investment programmes. Whilst this approach provides an insight into the environmental impacts of new infrastructure it makes deriving a cohesive plan very difficult in a region which has a mixture of complexities and uncertainties, as different companies are interested in different scenarios for which least-cost plans have been developed at a regional level. For example, key scenario components for Thames Water are drought protection level and population growth, whereas uncertain sustainability reductions are much more significant for Southern Water. Environmental improvements have previously been considered in a piecemeal, local and often reactive basis, as opposed to evaluating the environmental ambition for the region in totality.

Out of the six water companies in the South East region, three companies use advanced methods for their investment planning requirements (Thames Water, Affinity Water, Southern Water), while the other three use variants of a least cost approach.

Of the three companies who use a more complex method of deriving an investment plan, one company uses an adaptive approach (Affinity Water), one company uses a real options approach (Southern Water), while the remaining company uses a combination of both (Thames Water).

All of the current methods have advantages, ranging from being able to describe a simple causal relationship between investment and scenarios through to being assured that the proposed developments are able to cope with a range of uncertainties in the future. It is believed that these approaches could be joined up to provide a robust process for developing a best value plan for the WRSE region. This approach is set out in the diagram below:

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- 1) Defining a range of scenarios by identifying variable components such as population growth, climate change scenarios, water quality impact, drought protection level and level of uncertain sustainability reduction and agreeing: ranges for each; which should be included as pre-determined forecasts; and which should be modelled using the regional simulation model.
- 2) Completing a simple EBSD approach to eliminate options which are never selected for any scenario and so limit the optimisation space to the remaining 'feasible selected options'.
- 3) Review the EBSD results from the scenarios and apply an adaptive plan technique to determine the key influences and "branch points" for planning
- 4) Combine the scenarios using an integrated risk approach to generate a range of supply demand balances in the future for each year/ AMP of the planning horizon;
- 5) Use real option type approach to determine the best value adaptive plan from the "feasible selected options" for the range of scenarios at suitable branch points in order to determine the options to develop over the short, medium- and long-term futures.

5. Environmental Appraisal

There is a regulatory expectation that the regional water resources groups will utilise the WRMP24 process to develop the environmental ambition for their regions. As discussed above, to date environmental evaluation has predominantly been undertaken through the SEA process, both at the level of individual company plans and through a combined and cumulative assessment undertaken at regional level. The SEA process is an existing planning tool used within the statutory WRMP process which has been used to determine an environmental evaluation for individual water resource options which are then subsequently evaluated as part of a portfolio of investment options through the overall programme appraisal process.

There are a variety of other mechanisms through which environmental objectives are currently evaluated at option level or for potential investment portfolios as part of the strategic planning process, namely;

1. Through the evaluation of individual catchment objectives set out in the EA's River Basin Management Plans and Water Industry National Environment Programme;
2. Through SEA reviews;
3. Through the protection of sites or species designated under European or UK legislation;
4. Through UK Government directions or guidance;
5. Through bio-diversity net gain;
6. Through application of the Water Framework Directive No Deterioration objective, the principle of which can be used to evaluate an option's performance in terms of causing potential deterioration both between classes and within classes;

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7. Through delivery against the objectives set out in the Government's 25 year environment plan;
8. Through assessing an option's performance in terms of the Common Standards Monitoring Guidance for designated sites;
9. By application of the Natural Capital Accounting technique to quantify improvements to the environment associated with particular portfolio of options to enable comparison of performance of different investment programmes.
10. Through application of the requirement for environmental net gain as a pre-requisite for any investment programme.
11. Through monetisation, where practicable, of particular environmental attributes as part of the capex and opex costing process.

Such approaches are at varying stages of maturity and the successful consultant will need to identify an approach that builds on the established methodologies for which there is a proven track record to use some of the emerging approaches that adopt a wider perspective, while still retaining sufficient robustness to withstand third party scrutiny. It is anticipated that the approach would again be applied at different stages of the programme development process.

Many of the WRSE water companies have used some of these techniques to help evaluate environmental performance when determining their preferred water resources investment programme. However, for WRMP24 there is a requirement to develop a leading edge environmental assessment approach given the potential significant water resources infrastructure that will be required to address the supply demand deficit in the region. The approach will need to be capable of application at a regional level but should also be flexible enough to be implemented at a sub-regional level and at different stages in the development of a company's plan, such that it is able to be applied for both simple and complex planning problems, reflecting the diversity of the water resources problem characterisation across the South East region.

Moreover, the time available to complete the assessment means that, at least in the first iteration, the approach will have to be primarily informed by existing data and the opportunity for further data collection is likely to be limited.

The development of the integrated plan for the South East must be informed through a bespoke environmental assessment approach that identifies both environmental impacts and opportunities. Recent government and regulatory publications have made it clear that companies are expected to maximise the wider social and environmental value delivered through provision of their services and this assessment will need to identify the opportunities afforded in this area through different alternative strategies.

The WRSE PMB is keen to develop an environmental appraisal technique that can be used to help determine the regional best value investment plan for the South East. Being strongly aware of regulatory and stakeholder expectations for such a potentially large investment programme, the techniques used should be leading edge, reflecting government ambition for both the evaluation and delivery of environmental and social value. The technique will also need to be pragmatic and robust to adversarial challenge at a public inquiry as it is highly likely that some of the potential strategic options may be called for examination in public.

6. Timescales

The regulatory timescale for the production of the regional plan is evolving but it is anticipated that the next regional plan will be produced by August 2021. In order to achieve these challenging timescales and leave sufficient time to undertake the investment modelling work, scheme costing and multi-sectorial engagement it will require **all of the investment modelling development work to be completed by 31st July 2020**. i.e. model selection, build, calibration and validation and sign off.

Therefore, the timescale for this aspect of the work, the environmental appraisal approach, is as follows:

- a) Scope of work sent out 3rd July;
- b) Presentations of proposals to WRSE PMB members week commencing 29th July
- c) Tenders received for delivering the environmental appraisal methodology by 30th August;

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- d) Award by 9th September;
- e) Final methodology report by 31st December. This will allow time for the results subsequently generated through the approach to be included within the overall investment model development and programme appraisal process by 31st July 2020.

All bids will be assessed on quality and cost of the bid submission, in a ratio of 70 : 30, respectively. Quality will be assessed on the basis of understanding of the project, the project deliverables and previous experience of working in the area. In your bid you should make a provision to interview the various companies and understand their existing approaches for environmental evaluation, and break down the cost and timeframe required for each element of the overall process.

7. Invitation:

If you are interested in working with the WRSE group on the development of the environmental appraisal approach to help determine the best value water resources strategy for the South East region you are invited to attend a meeting with the WRSE PMB in the week of 29th July where you can discuss your ideas and seek members' views. Please contact Meyrick.gough@wrse.org.uk via email to arrange a time when you would be able to meet with selected members of the PMB.

The consultants who demonstrate a comprehensive understanding and propose development of a pragmatic and leading edge environmental assessment technique will be short listed and asked to submit a detailed proposal for the development of their approach such that it can be utilised to help develop the regional best value water resources strategy.

Short listed consultants should include the following in their detailed proposals:

- 1) a description of the work you are proposing to undertake;
- 2) the staff you will use;
- 3) the cost for the proposed work;
- 4) a timeline for completing the work, with associated contingencies and risk mitigation measures; and a
- 5) quality assurance plan

The final methodology report to WRSE must set out:

- 1) your recommended approach and the reasons for its selection;
- 2) your considered view of a forward work plan to execute the recommended approach, given the timescales that need to be achieved;
- 3) the risks and potential mitigation measures that would have to be put in place when developing the recommended approach.