

Water Environment Background Evidence Paper for the Island Planning Strategy

Purpose of this Background Paper

This background paper sets out the water environment issues associated with development resulting from the Island Planning Strategy. Having identified the issues, recommendations are made for improving the effects the Plan is likely to have on the water environment. This paper concludes with a series of actions either directly for the Plan itself, or through the relevant supporting environmental assessments.

When discussing the water environment in the context of this paper the meaning 'water environment' should be taken in its broadest sense, both in terms of geography and spatial planning and the range of inter-related water issues. This is because the Island is currently dependent for a significant part of its drinking water supply from the mainland (via a sub-Solent water main) although Southern Water are planning to make it more self-sufficient in the future. The fact that the Island is not currently self-sufficient highlights issues around water quality, resource and treatment of wastewater.

Context of the Water Environment – Setting the scene

Water is a resource that is essential to all life. Without sufficient quantities ecosystems become stressed. This has both direct and indirect impacts, for example through the availability of water in our homes, or impacts on habitats, open spaces for recreation, landscapes and food production. When the availability of fresh water is reduced this can exacerbate associated environmental issues such as pollution and water quality.

Society's approach to water needs to change rapidly to keep pace with the reality of the resource. Too often water has been viewed as a limitless product at the end of a tap, when in fact the amount of freshwater we have available is limited and our demand has a direct impact on the environment generally and particularly vulnerable habitats such as chalk streams and rivers. The lack of consciousness in our use of water has to stop. If nothing else our continued unsustainable behaviour will result in an increasing financial burden to society as the cost to provide drinking water and deal with wastewater increases due to more processing required as a consequence of a reducing resource.

Challenges faced by the Water Environment

With the changes in climate being experienced both globally and regionally, the amount of water available in the South East River Basin is becoming more stressed. Shorter, more intense periods of rainfall¹ make it more difficult for aquifers to recharge and increase the likelihood of water quality issues in rivers and streams. Longer periods of dry weather combined with increased temperatures contribute to putting further demands on water supply.

The requirement for regeneration and the provision of new homes to meet the Island's needs will put additional demands on water. It is therefore common sense to take measures now to ensure new development does not contribute negatively to the availability of water, or more widely the

¹ River Basin Management Plan South East River Basin District, Annex H: Adapting to climate change, December 2009

habitats, species and our local environment that also rely on this resource. Our lives, homes and businesses depend upon what we do now to ensure we don't leave where we live in a worse state. The current River Basin Management Plan for the South East (updated December 2015) identifies the following as significant water management issues (see Appendix 1 for full description of each issue) for the area;

- *Physical modifications* - affecting 43% of water bodies in the SE river basin district
- *Pollution from waste water* – affecting 40% of water bodies in the SE river basin district
- *Pollution from towns, cities and transport* - affecting 9% of water bodies in the SE river basin district
- *Changes to the natural flow and level of water* - affecting 7% of water bodies in the SEs river basin district
- *Negative effects of invasive non-native species* - affecting 2% of water bodies in the SE river basin district
- *Pollution from rural areas* - affecting 30% of water bodies in the SE river basin district

Taking into account the above when considering the Island, i.e. a mainly rural county where the predominant land use (in area) is agriculture and the primary method of disposal of the Island's wastewater is by long-sea outfall, via the Island's main wastewater treatment works, to the open sea; this does highlight the limited role land use planning has in contributing to the water issues and resolving them. Appendix 2 provides a graphical representation of the sources of nitrogen into the Solent. In terms of the Island the primary sources are '*Rural Diffuse*' and '*Coastal background*', with the contribution made by '*Urban Diffuse*' being one of the smallest sections by a significant margin. However, planning can and should make a positive contribution particularly in relation to consumption.

The Island magnifies the consumption issues for the South East region. We already consume more than currently available, with current estimates for the import of freshwater from the mainland as up to 30% of total supply. By importing water we are exporting the costs on the environment to those rivers where the water is being taken from before being exported to the Island.

Existing Island Plan Approach

Water is a scarce, finite resource is not a new issue. The core strategy recognised the need for new development to be more efficient with adopted policy DM1 *Sustainable Build Criteria for New Development* requiring proposals to demonstrate how they would conserve water resources by implementing measures to restrict predicted internal potable water consumption to no more than 105 litres per person per day (l/p/p/d) and sustainable supply measures for external non-potable water consumption by providing a system to collect rain water for non-drinking uses.

Since the adoption of the core strategy (March 2012) there is increasing pressure on both water companies as suppliers and local authorities as enablers of growth through development, to do more. Some of the primary sources of supply from the mainland to the Island, the Rivers Test and Itchen in Southern Hampshire, have come under increasing scrutiny in terms of their ability to tolerate the amounts being requested to abstract and still function without any significant harm as a nature conservation habitat with the highest levels of protection.

River Itchen, River Test and Candover abstraction licence Public Inquiry

The Public Inquiry was instigated (in March 2018) following Southern Water's challenge to the Environment Agency's proposed variations to a number of abstraction licences in the Western area.

The need for licence changes for more sustainable abstraction was never a principle that was opposed by the water company. Southern Water's concerns were that, particularly during times of drought, the conditions were such that they had the potential to impede the ability for Southern Water to meet their statutory duties to supply public water and that alternative means of securing water supplies were not yet in place.

The Inquiry hearing opened on March 13th 2018. It focused on a proposed operating agreement between Southern Water and the Environment Agency (EA) under Section 20 of the Water Resources Act 1991 ("The s20 Agreement"). The s20 Agreement had been drafted following submissions of evidence to the Inquiry in the preceding weeks and as a result of both parties reaching a better understanding the critical issues presented by the other.

During the course of the Inquiry the s20 Agreement was finalised and an outline package of monitoring, mitigation and Habitats Regulations compensation measures prepared. The s20 Agreement was signed and presented to the Inquiry at its closure on 29th March 2018. The determination of the Secretary of State on the Inquiry is awaited (as at 3rd September 2018). Appendix 3 contains an extract from Southern Water's revised draft Water Resources Management Plan (2019) Statement of Response, summarising the measures as a result of the s20 Agreement.

Developing the right approach for the Island Planning Strategy

In early 2018² the council consulted the statutory consultees on the scope of the environmental assessments (known as the Habitats Regulations Assessment and the Sustainability Appraisal incorporating the requirements of the Strategic Environmental Assessment Directive). The responses received from the Environment Agency (EA) and Natural England (NE) in relation to water are summarised below;

Environment Agency

- Current issue around resilience of water supply should enable higher water efficiency standards in all new development;
- Recognition needs to be given to the importance of protecting the quality of water, in order to meet objectives of the Water Framework Directive as well as helping to resolve some of the potential future issues around wastewater disposal from new development;
- Enable strategic direction to be provided with regard to water resources and water quality;
- Recommend any main rivers within settlements are highlighted as important not only in terms of flood risk but also water quality, biodiversity, recreation and health and wellbeing. They may influence development locations and it is important that any proposed development recognises potential impacts and opportunities on or for the rivers.

Natural England

- The current updated WRMP (Water Resource Management Plan by Southern Water) may not be relied on until the outcome of a public inquiry into abstraction on the River Itchen and Test is determined;
- The current IWMS (Integrated Water Management Strategy by PUSH) cannot be relied on to resolve the existing water quality issues on the Island within the designated sites;
- Any addition of nutrients to the catchment will lead to an adverse effect alone to an already unfavourable state. To enable the allocation of housing, new development will be required to be neutral to be able to conclude no likely significant effect.

² Island Planning Strategy SA/SEA Scoping Report including Draft HRA Background Report, 12th January 2018 – 16th February 2018.

From the existing evidence and responses from EA and NE it is possible to identify three areas in relation to water resources that the IPS should seek to address, being;

1. Water efficiency to minimise increase in demand;
2. Protection and enhancement of watercourses; and,
3. Ensuring sufficient capacity for the treatment of wastewater.

These same areas are highlighted in a Note from CaBA, EA & Water UK³ (updated April 2018) on water and catchment planning.

Recommendations

During the development of this background paper and subsequent to the comments received from both the EA and NE, the Partnership for Urban South Hampshire (PUSH), NE and EA have been jointly working to develop an Integrated Water Management Strategy (IWMS). The purpose of the IWMS is to examine the potential for the PUSH region to accommodate future housing growth without having a detrimental effect upon the water environment (both in terms of water quality and quantity).

The IWMS contains an Action Plan⁴ for how to take forward recommended actions. These actions have been integrated into this Background Paper wherever possible, but in particular points 1 and 2 of the recommendations listed below. These recommendations are derived directly from the consultation responses made by NE and the EA.

1. Water efficiency to minimise increase in demand

In order to deal effectively with the uncertainty around water resources, Local Plans within the Southern Water area must acknowledge the uncertainty around the delivery of water resources over the plan period (given WRMP's not finalised and Public Inquiry on changes to abstraction licences). Including policy requiring development to be built to the higher standard under the Building Regulations (which equates to 110l/head/day including external water use).

2. Protection and enhancement of watercourses

Recommend any main rivers within settlements are highlighted as important not only in terms of flood risk but also water quality, biodiversity, recreation and health and wellbeing. They may influence development locations and it is important that any proposed development recognises potential impacts and opportunities on or for rivers.

3. Ensuring sufficient capacity for the treatment of wastewater

Recognition needs to be given to the importance of protecting the quality of water, in order to meet objectives of the Water Framework Directive as well as helping to resolve some of the potential future issues around waste water disposal from new development. The Environment Agency is the water industry's environmental regulator and define the environmental permits that water companies are required to meet⁵. However wastewater from new development can contribute to a decrease in water quality through surface water run-off. By ensuring on-site management of surface water through appropriate SuDS and proper management of sewerage are key ways in which planning can contribute to water quality through adequate wastewater infrastructure capacity.

³ [Working together to manage our catchments: Updated Note from CaBA, EA & Water UK](#)

⁴ Section 5 Action Plan, from the PUSH Integrated Water Management Study, May 2018

⁵ PUSH wastewater position statement

Conclusions and actions

In addition to the ongoing engagement with both the EA and NE, the council has been working in partnership with Southern Water to ensure synergy between the water company's Water Resource Management Plan and the Island Planning Strategy and deal with any potential conflicts as early as possible. Both organisations recognise the water environment is bigger than either of their respective roles and that so much more can be achieved by working in partnership.

Formal liaison on both organisations plans commenced in April 2018 and has included Southern Water presenting to Isle of Wight Councillors on the progress and direction of their Business, Drought and Water Resources Management Plans, and the issuing of formal representations⁶ supporting Southern Water's Business Plan 2020 – 2025 by the council. The partnership working has led the council to consider a series of projects focussed on the following themes;

- Target 100
- Catchment First
- Drainage 2030
- Plastics / Refill scheme

The council is working to deliver outputs related to each of these themes and in relation to the Island Planning Strategy these have informed evolution of the recommendations above to provide the following actions;

1. Water efficiency to minimise increase in demand

Policy requiring all new development to be built to a minimum water efficiency standard of 100l/head/day.

2. Protection and enhancement of watercourses

Policy to provide protection to and enhancement of the water environment. This will require all watercourses to be recognised for their importance as a water, ecological, and recreational resource. This should be done by identifying boundaries or buffers of minimum distance that should be observed by any new development and implement measures relevant to the particular section of watercourse in terms of enhancement. Proposals that seek to achieve the natural state of the watercourse at that location will be supported. All proposed SuDS should implement the SuDS management train, looking to recreate the natural drainage of the site wherever possible. Proposals should ensure no net increase in surface water run-off, compared with the pre-development rate and, where relevant, reduce run-off rates to below the greenfield run-off rates.

3. Ensuring sufficient capacity for the treatment of wastewater.

Policy requiring all new development to adequately take into account the operation and capacity of wastewater infrastructure. Occupation of new development should be phased to align with the delivery of sewerage infrastructure. New development should demonstrate how they will connect to the existing sewerage network at the nearest point of adequate capacity, as advised by the relevant statutory provider. Where this has been demonstrated as not viable (e.g. network capacity or location) any proposal should then demonstrate how wastewater will be treated so that there are no negative impacts on the environment in general and local water quality in particular. Where a separate permission is required from the Environment Agency this should be applied for simultaneous to the submission of the relevant planning application, with each application

⁶ Correspondence from Wendy Perera, Head of Place Isle of Wight Council to Ian McAulay CEO Southern Water Services Ltd, Re: Southern Water Services Business Plan 2020 – 2025, dated 22nd May 2018.

referencing the other. The council will identify key strategic infrastructure in the treatment of wastewater that new development should not prejudice future operation or expansion.

Appendix 1: Extract from the South East River Basin Management Plan, Updated December 2015

1.4. Significant water management issues

The significant water management issues are the main issues that limit the uses and potential benefits of managing the water environment in the river basin district in a sustainable way. They have been identified based on the results of public consultation and assessments of the pressures caused by people now, in the past, and predicted in the future. Many of these issues arise from current activities that provide a wide range of benefits. It may therefore not be possible or desirable to fully resolve the issues.

- Physical modifications - affecting 43% of water bodies in this river basin district People have made many physical changes to rivers, lakes and estuaries, for example, flood defences and weirs, and changes to the size and shape of natural river channels for land drainage and navigation. These modifications alter natural flow levels, cause excessive build-up of sediment in surface water bodies and the loss of habitats and recreational uses. In many cases the uses and associated physical modifications need to be maintained. In these circumstances it may not be possible to achieve good ecological status.
- Pollution from waste water – affecting 40% of water bodies in this river basin district Waste water, or sewage, can contain large amounts of nutrients (such as phosphorus and nitrates), ammonia, bacteria, harmful chemicals and other damaging substances. Sewage can be the main source of phosphorus and harmful chemicals and of nitrate. It can enter water bodies where sewage treatment technology to remove enough of the phosphorus and harmful chemicals doesn't exist, from leakages from privately owned septic tanks and, in wet weather, storm overflows can discharge untreated sewage having a significant impact on bathing waters. Population growth and changes in rainfall patterns are increasing the pressure on the sewer network.
- Pollution from towns, cities and transport - affecting 9% of water bodies in this river basin district Rainwater draining from roofs, roads and pavements carries pollutants, including grit, bacteria, oils, metals, vehicle emissions, detergent and road salt drains to surface waters, including estuaries and coastal waters. Many homes and workplaces have 'misconnected' drains, meaning that dirty water often enters surface waters and groundwater rather than foul sewer drains.
- Changes to the natural flow and level of water - affecting 7% of water bodies in this river basin district Reduced flow and water levels in rivers and groundwater caused by human activity (such as abstraction) or less rainfall than usual can mean that there is not enough water for people to use and wildlife might not be able to survive. Reduced flow affects the health of fish and exaggerates the impacts of barriers such as weirs. Climate change research shows that by 2050 England can expect significant seasonal variations, with higher winter and lower summer flows, and a reduction in flow overall. In the long term, there will be less water available to abstract for drinking, industry and irrigating crops.
- Negative effects of invasive non-native species - affecting 2% of water bodies in this river basin district Non-native invasive species can have significant economic impacts. The cost of controlling invasive species to make sure that flood defences and the natural environment are not

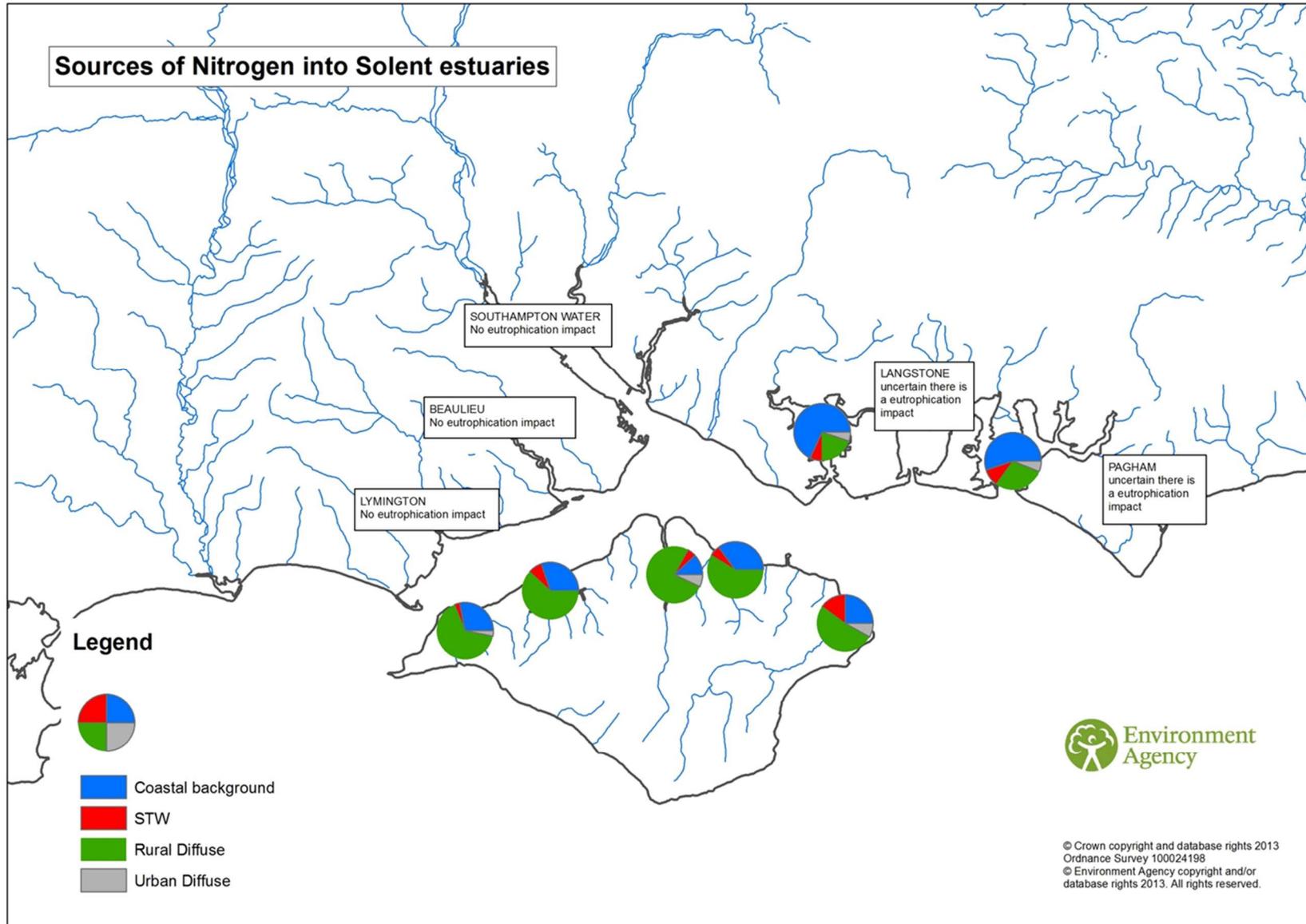
compromised is rising. American signal crayfish are becoming widespread and affect animals such as fish and invertebrates. Other species such as mitten crabs destroy habitats like reed beds and can cause banks to collapse by burrowing into them. Climate change is thought to drive certain species northwards, increasing their frequency and variety in the future and affecting the condition of water bodies.

- Pollution from rural areas - affecting 30% of water bodies in this river basin district Some approaches to land management have increased the amount of soils and sediment that are being washed off the land carrying phosphorus into waters which can cause excessive algae growth called 'eutrophication'. A changing climate means that more intense rainfall is likely to occur, increasing the risk of impacts further. Nitrate from fertilisers has built up in groundwater over decades and will take a long time to reduce. Sedimentation from erosion, forestry practices, saturated and compacted fields and livestock trampling on river banks has affected river ecology by smothering fish spawning grounds. Other impacts include bacteriological contamination from animal faeces and inappropriately stored and applied livestock slurry being washed off the land, pesticides from farming, forestry, golf courses and parks. These contaminants pose a particular threat to bathing waters, shellfish waters and drinking water.

Taking account of climate change

The climate is changing as a result of greenhouse gas emissions caused by human activity. Latest UK climate projections show that temperatures will continue to rise, with increased winter rainfall and more rain falling in intense storms and continuing sea level rise. The impact on river flows, water quality and ecosystems is less clear. Studies to learn more about the effects of climate change on the river basin district are underway. In the meantime, it makes sense to implement measures that are flexible or increase resilience to extreme weather events and future warming.

Appendix 2: Sources of Nitrogen into the Solent Area



Appendix 3: Extract from Southern Water Revised draft Water Resources Management Plan 2019, Statement of Response

The s20 Agreement

The s20 Agreement enables a new, positive way forward for both parties, for public water supplies and for the habitats and ecology of the River Itchen and River Test. We accept the abstraction licences changes. The EA commits to a modified drought permit determination process and the inclusion of force majeure clauses in the proposed new licenses. It also sets out how we can utilise the Drought Permit and Drought Order process to maintain public water supplies pending the implementation of new reliable water supplies to replace the water resources lost by the licence changes. This is therefore a short to medium term solution for the duration of the Section 20 Agreement. It is not a permanent arrangement and is referred to within the s20 agreement as the "interim abstraction scheme". These drought options have been incorporated into this revised draft WRMP.

We also commit to a significant package of environmental monitoring, mitigation and compensation measures associated with the potential Drought Permits and Drought Orders that may be needed over the next ten years or so. It has been agreed that many of these measures will be carried out in advance of (and irrespective of the implementation of) any drought permit or drought order meaning that there is an overall positive benefit to the environment.

The main elements of the s20 Agreement have now been incorporated into our revised draft Drought Plan, and are incorporated into the revised draft WRMP, in anticipation of the Secretary of State's approval of the licence changes.

Incorporation in our revised draft Drought Plan

The revised draft Drought Plan has been updated to reflect the commitments we gave in the s20 Agreement, including a significant package of monitoring, mitigation and compensatory measures that we have discussed and agreed with the Environment Agency, Natural England, the Hampshire and Isle of Wight Wildlife Trust, and other environmental partners. These measures will be put in place to ensure that potential effects on the environment arising from our proposed use of the interim abstraction scheme are mitigated, monitored and where appropriate compensated for.

Incorporation in our revised draft WRMP

The revised draft WRMP has also been updated to reflect the commitments we gave in the s20 Agreement. In particular, we agreed to use "all best endeavours" to implement measures to develop alternative water resources. The alternative sources will replace the water that is effectively "lost" through the proposed licence changes, and will also respond to other factors influencing our forecast future supply demand balance.

This revised draft WRMP sets out our preferred strategy and also alternative strategies. Both are intended to be set out in our final WRMP. The alternative strategies are intended to be developed concurrently with the preferred strategy in the first instance. The reason for this is simple. The s20 Agreement interim abstraction scheme will currently only be available until 2030. Ideally, the aim is to have little or no reliance on the interim abstraction scheme past 2027. Sufficient measures therefore need to be capable of delivery within this timeframe to avoid a significant risk to the supply of water to the Western area but there are a number of factors that can influence the timing of the measures becoming fully operational (e.g. planning consent timeframes, third party delivery etc.). To address this uncertainty and to be confident of having measures operational within the timeframe, the need to concurrently progress a number of measures that can "step-in" if needed, is

essential.

The scale of securing alternative supplies following the abstraction changes to existing sources is massive, involving multi-million pound investment in large scale new developments to provide supplies to customers where the new licences will prevent us from abstracting from existing sources. For the most part, the schemes we will need to develop are complex engineering projects, with considerable environmental investigations required in advance of planning and other permissions being able to be secured. Until we have secured those permissions, and built the new schemes, our supplies to customers will remain at risk.

Pursuing a single strategy which has those inherent complexities and hoping that there will no issues during implementation, we believe would be irresponsible given the threat to supply. Progressing alternatives initially in the short term allows us to best use the time where the interim abstraction scheme will operate to adapt to any obstacles or delay and still be confident that a long term solution can be delivered within the timeframe. Once a measure is sufficiently secured (and the risks to delivery therefore significantly less) the need to substantively progress certain alternatives reduces. We will still favour the progression and implementation of the preferred strategies as the best value plans but this allows adaptation. Similarly, once alternative sources of water are built and become operational, the level of reliance on Drought Permits and Drought Orders under the interim abstraction scheme reduces in tandem with the rate the new schemes are able to provide water.

Not all of our proposed new resource developments can be implemented by us alone, as they involve the transfer of water from other water companies through existing or new transfer pipelines. Some of these transfers are reliant on the other water company making improvements to their own sources, or developing new ones. This can also involve significant investigations and applications for consents of their own, increasing the potential risk that they could be delayed. While we will work with those companies to best reduce that prospect, for the purpose of this plan, again we need to act responsibly and anticipate, account for and be ready to respond to any obstacles or delays.

The timings within this revised draft WRMP for the delivery of the schemes that form our preferred strategy for the Western area are our best estimates for delivery at this point in time. They are informed by engineering, environmental and planning assessments, and consideration of the potential risks relating to scheme delivery. There are inherent risks but we hope to have minimised these by our "alternative strategy" approach developed from our real options method. We are confident that we can investigate, promote and build these schemes to the timetable that we have set out in this revised draft WRMP.

We will work closely with the Environment Agency, Natural England, other environmental partners and stakeholders including the relevant local planning authorities through our detailed technical work. We propose to maintain regular liaison and engagement through steering group meetings, and technical working groups relating to each of the individual schemes. Within the s20 Agreement we have also committed to regularly report on progress with the implementation of our preferred strategy and our assessment and promotion of the alternatives. While this is primarily to keep drought permits/orders under review (so as to remain application ready) it will also act as an update on progress so as to reduce the level of reliance on the interim abstraction scheme as early as practicable.

Once published, the WRMP will direct all of Southern Water's resource planning until it is updated again in five years.