

Briefing note

1. Context

Our Water Resources Management Plan is a comprehensive statement of future water supply and demand together with the strategy to maintain reliable supplies of safe clean drinking water to customers throughout our region. We published our current plan in March 2015. You can find a copy at: corporate.unitedutilities.com/waterresourcesplan.

We're carrying out pre-consultation on our next Water Resources Management Plan. Pre-consultation lets regulators and stakeholders (those with an interest in our work) comment on how we should develop our next plan, and the priorities that we should tackle.

We are starting the process early, and making it as wide as possible to get the most value. This will also allow enough time to fully consider responses in developing the plan. Building a Water Resources Management Plan is a complicated, step-by-step process. By getting your opinions early it really helps us to shape the plan as we move towards publishing it.

We would be pleased to receive any comments you have by **30 November 2016**. Please send them to water.resources@uuplc.co.uk using the phrase 'WRMP19 pre-consultation' in the subject line.

Thank you for your contribution to developing the best possible plan for the future of water resources in the North West.

2. Purpose of this briefing note

We've identified what we think will be the main themes for the next water resources plan, and these are shown over the page. They have been covered by national studies and policy work, and are consistent with themes raised by customers and stakeholders in the North West.

Bringing all these themes together in one plan is challenging, and could make the plan really complicated. Our proposed planning process is designed to allow us to work with customers and stakeholders in order to develop a best-value plan for all those with an interest.

This short note aims to explain the themes and our approach to including them in the plan, which we have structured around the same headings as the Defra Guiding Principles (see note 1). We hope that this will promote discussion and informed responses to the pre-consultation.

Note 1 Defra 'Guiding principles for water resources planning', May 2016



Water resources plan pre-consultation

Briefing note

National themes and influences for our next plan

Water exports – A national study (see note 2) has shown the North West as a potential donor region to transfer water to areas of the country with severe water shortage in future.

We will need to explore this further in our plans, and make sure that the North West is both protected and benefits from any future water transfers.

Managing demand and leakage (see note 3) – Government policy, as outlined in the guiding principles, states that companies should choose demand-side options as part of the preferred programme wherever it is reasonably likely that the benefits will outweigh the costs.

There is also a desire to see a downward trend (generally reducing over time) in leakage over time. We will need to explore this in our plan.

Resilience (see note 4) – The planning guidelines (see note 5) and guiding principles put a strong emphasis on resilience, linked to government policy (see note 6). Ofwat also has a new duty in terms of resilience and has worked with an independent task and finish group (see note 7) to put this in place effectively.

Our next plan will use new methods and further incorporate appropriate parts of our wider business resilience planning in developing the Water Resources Management Plan.

Water Framework Directive (WFD) – The Environment Agency is carrying out a review of waterbodies currently seen as ‘at risk of deterioration in future’, along with new guidance on how this should be assessed in Water Resources Management Plans (see note 5).

We need to make sure that our plan does not result in the deterioration of these waterbodies and that our plan supports WFD objectives.

New methods and guidelines – There are new regulatory planning guidelines (see note 5) and guiding principles to take account of in our next plan. There are also revised industry methods (see note 8) that we need to consider, which will help us meet the aims set by regulators.

Levels of service – In our last plan we committed to explore further the potential to reduce the frequency of drought permits (powers to take more water from the environment during drought).

However, in “Enabling resilience in the water sector” (see note 6) Defra set out plans to consider the case for a direction to set levels of service across the water industry. This may also affect the way we develop our plans.

Water Resources Management Plan 2019

Note 2 Water UK - Water resources long-term planning framework - <http://www.water.org.uk/news-water-uk/latest-news/research-shows-more-action-needed-protect-against-growing-drought-risk>

Note 3 Leakage is the loss of water through holes and cracks in water mains and seepages from water network fittings for example, hydrants, valves.

Note 4 In this context, resilience is the ability of our water supply system to be able to cope with shocks or stresses, and recover from them.

Note 5 Environment Agency / Natural Resources Wales ‘Final Water Resources Planning Guideline’, May 2016

Note 6 Defra ‘Creating a great place for living - Enabling resilience in the water sector’, March 2016 -

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504681/resilience-water-sector.pdf

Note 7 Ofwat – ‘Towards resilience: how we will embed resilience in our work’, December 2015 - <http://www.ofwat.gov.uk/publication/towards-resilience/>

Note 8 In particular the two linked UK Water Industry Research (UKWIR) ‘Decision making process’ and ‘Risk based planning’ methodologies

Briefing note

3. 'Government policy'

We recognise the role our plan will play in making sure there are secure, reliable, safe, clean, sustainable and affordable supplies of water, and that we must effectively manage the risks and uncertainties of the future. Government policy, for example, in the Defra document 'Creating a great place for living - Enabling resilience in the water sector' further reinforces expectations in this area.

There's a range of legal requirements for water resources plans, and we'll make sure that we can show how we have met these. For example, it is essential that any proposals continue to meet drinking-water quality standards and that customers continue to receive a wholesome, safe supply of water.

We understand the importance of our plan in making sure there is an adequate supply of water for future economic growth. We are already gathering information from local authorities to make sure the plan can meet future growth needs and will, as far as possible, use the regular channels we have with these organisations to involve them to develop our plan. Through this pre-consultation we would like to hear from local authorities on whether there are other ways of carrying out joint planning that could be useful.

The extreme flood events of late 2015 in the North West serve as a reminder of the potential challenges of weather and climate, among other hazards (a hazard is a situation that poses a level of threat to water supplies), which our plan may need to deal with. We recognise the serious consequences a failure of water supply would have on customers, and the economy. Over the page, we explain how we are planning to examine resilience (note 9) and explore every option as part of developing the best-value long-term plan.

To set the best plan for our customers, serving the needs of the North West, we need to really understand the views of customers, stakeholders and regulators. We will continue involvement and collaboration after pre-consultation. For example, we will create a technical stakeholder group and a programme of customer research to support the development of our plan. If you would like to join the technical group, please email us at water.resources@uuplc.co.uk. We will hold a full public consultation on a draft plan in 2018. After consultation, we will revise our plan guided by what people have said.

We've already held customer focus groups to help inform the plan, and also to inform how to most effectively get customers involved in later, more complicated stages of the process. We plan to go beyond traditional 'willingness to pay' (see note 10) type approaches, and look at 'choice experiments' that allow us to better explore trade-offs between different types of plan. We're involving Your Voice (a group of customer and stakeholder representatives) on our proposed approaches as these emerge.

We will use independent experts to provide technical assurance (this is a process to make sure that the plan is effective). After public consultation, we'll ask our company board for assurance on our Water Resources Management Plan in summer 2018. We will then send the plan to the Secretary of State for final approval.

4. 'Take a long term, strategic approach to protecting and enhancing resilient water supplies'

In our last plan we developed a long-term strategic solution to deal with the environmental needs in West Cumbria. By March 2022 customers in West Cumbria will be supplied from Thirlmere Reservoir and so they

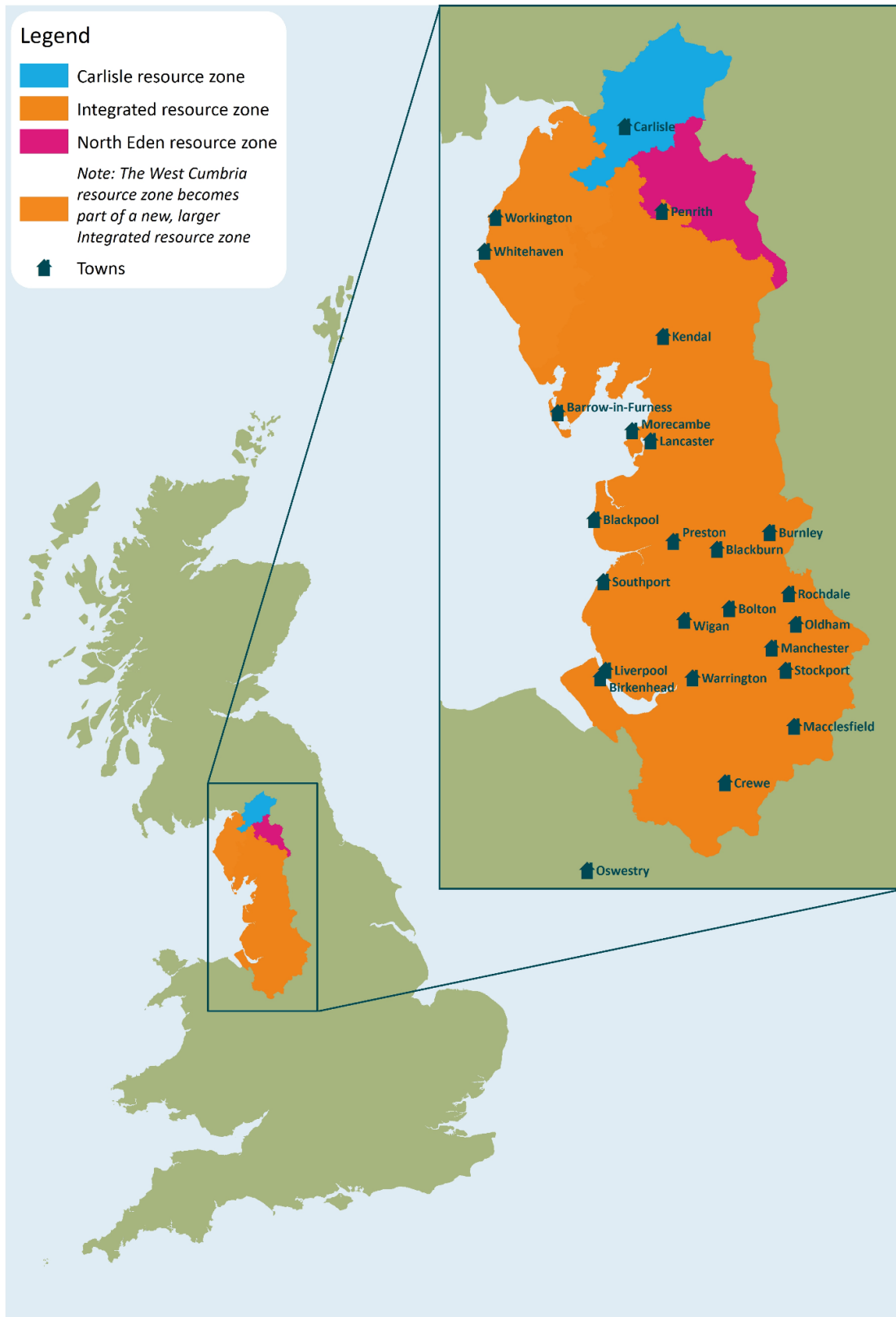
Note 9 In this context, resilience is the ability of our water supply system to be able to cope with shocks or stresses, and recover from them.

Note 10 Willingness to pay (WTP) is the maximum amount of money a person or group would be willing to pay, sacrifice or exchange in order to avoid worse levels of service, or see improvements in service. Customer surveys can be completed to find a value for this.

Briefing note

become part of our large integrated water resource zone. A water resource zone is the largest area across which water resources can be shared.

As a result, we plan to build our next plan around the three water resource zones that will exist from 2022, as shown in the figure below: the Integrated resource zone; the Carlisle resource zone; and the North Eden resource zone.



Briefing note

4.1 Developing the best-value plan

We understand the importance of developing a plan that represents the best-value to customers in the long term, balanced against affordability. Customers value a range of things, for example environmental improvement, resilience, and so on. As a result, the best-value plan isn't necessarily the lowest-cost way to balance supply and demand in the short-term. But it's also important to recognise that our customers live in some of the most deprived neighbourhoods in the country. It is our responsibility to provide them with a service that meets their needs at a price that they can afford. So, any departure from the lowest-cost solution must have evidence to support it and be supported by customers and stakeholders, and be affordable.

The questions for our next plan are arguably even more complicated than in previous planning rounds, for example can we export water from our region at the same time as improving resilience? Over time, planning methods have improved, recognising that a simple supply-demand balance doesn't always show the full picture. For this reason, we will use new planning methods developed by UK Water Industry Research. These will support more traditional methods, and make sure our methods are towards the forefront of the industry. These methods will help us answer the strategic questions we must deal with in the plan. They will allow us to do the following.

- Define metrics (measures) that represent important benefits for customers and use them in our appraisal of different options to choose the best plan. We expect that these metrics would include resilience and environmental performance as a minimum. Through the pre-consultation and beyond, we will explore the specifics further.
- Assess how different plans would cope with a wide range of future uncertainties. We have developed an approach that allows us to explore a much wider range of scenarios and uncertainties than in previous plans. This is important when considering other levels of service or the potential for exporting water, for example, where decisions may have longer-term implications.
- Explore the performance of alternative plans beyond the minimum 25-year planning horizon (the length of time the plan will cover), looking out up to 60 years ahead. We will consider climate change, for example, using the 2080's climate scenarios.
- Develop a plan that recognises that the future is uncertain. This will allow for us to build in potential pathways in the plan so we can adapt to future change based on certain triggers. It will give us a more effective plan than just one based on a single view of the future, and is consistent with recommendations within a recent national water resources planning project (see note 11).

4.2 Resilience

It's clear that resilience will be an important theme in the plan. We will include resilience in our plan by doing the following.

- Using sophisticated 'stochastic weather' (see note 12) to simulate droughts more severe than seen in history. This will allow us to assess the resilience of our plan and consider whether to improve our resilience to extreme droughts.
 - In previous plans, we have tested our system against the worst drought in history, which we currently believe to be around a 1 in 100-year event (1% chance in any given year) accounting for possible future effects of climate change.

Note 11 Water UK - Water resources long-term planning framework - <http://www.water.org.uk/news-water-uk/latest-news/research-shows-more-action-needed-protect-against-growing-drought-risk>

Note 12 A method to create alternative weather patterns that are realistic, but have not been recorded historically.

Briefing note

- For the next plan we will assess more severe droughts, for example, we could assess a 1 in 200-year event (twice as unlikely as currently assessed) or 1 in 500-year event (five times as unlikely).
- Consider whether options to meet water resources needs can also improve resilience to hazards other than drought.
- Assess how our water supplies will cope with a range of other hazards such as flooding, freeze-thaw, contamination, asset failure or loss (for example a pump breaking down), and power failure. We will use the most appropriate tools available to us for each hazard, consider options to improve resilience and decide which ones are appropriate to be considered in the Water Resources Management Plan.

We're already involving customers in some of these complicated and challenging themes in focus-group research to allow us to work out the best way to develop our plan and choose the right level of risk to plan for.

5. 'Consider every option to meet future public water supply needs'

There's lots of different ways we could meet future water supply needs, either by reducing demand, developing new sources of water or moving water between different areas. Similarly, we could carry out the work ourselves, or other organisations or individuals might complete this on our behalf, working with us, or have other ideas for us to consider. We have started work to identify a full range of options.

- We have developed a process to involve other businesses, organisations or individuals (by issuing a 'Prior Information Notice') to identify as many possible third-party options (those identified outside the company) as possible, both within and outside our supply area.
- We are using Amec Foster Wheeler Environment & Infrastructure UK Limited to independently work on the screening of all options and to check that we have fully considered every realistic option.

We will make sure that our plan assesses all options on an equal basis, no matter whether these are our options or third-party options, new sources, transfers or reductions in demand.

As we said above, we'll make sure that we include the environment, drinking-water quality and resilience when considering our options, and that the views of customers and stakeholders inform the choices we make.

For the next plan, we may be in a position where there is no requirement to invest in new options to meet the needs of the North West, certainly in the short term. However, we recognise that other areas of the country face possibly more severe water resources challenges, and have recently taken part in a Water UK project (see note 13) exploring resilience and long-term solutions at a national level.

This study identifies the North West as a potential donor area. To allow the transfer of water, it is likely that new supply and demand options would be needed. We will explore fully the potential to export water to other areas of the country. In particular, we are currently already working with Thames Water on the potential use of Lake Vyrnwy to support the transfer of water between the River Severn and the River Thames. Such a transfer would only happen when their supply area is at risk of drought. During periods when we are exporting water, this loss of supply would be offset by using existing sources and new options

Note 13 Water UK - Water resources long-term planning framework - <http://www.water.org.uk/news-water-uk/latest-news/research-shows-more-action-needed-protect-against-growing-drought-risk>

Briefing note

in the North West. We will make sure that this proposal, and any future ones, fully considers the effects on our own customers, stakeholders and the environment.

6. 'Protect and enhance our environment, acting collaboratively'

In developing our plan, the environment will be a priority. We will include environmental (and social) costs when considering our options, and a strategic environmental assessment will inform the plan and make sure we adequately reflect the value of the environment in the process.

There are new methods emerging for valuing the environment, which regulators are also keen for us to investigate. As a result, we have started work comparing our existing environmental valuation approach against 'natural capital accounting' guidelines and literature to see how it could inform our next plan. The term 'natural capital' is used to describe the elements of nature that produce value to people. 'Natural capital accounting' is the process of assessing, monitoring and reporting changes to these.

We will work with environmental regulators to develop the Water Industry National Environment Programme (see note 14) and include relevant aspects within our plan. We will also make sure that we fully assess the objectives of the Water Framework Directive (see note 15) in the plan and that we consider the objectives of the River Basin Management Plans. We will make sure that any options considered in our plan will not result in deterioration of the environment under this legislation (specifically defined as 'waterbodies'), and that the plan overall would not result in any deterioration of waterbodies where existing sources may be at risk of doing so. We will work closely with the regulators to make sure that a proportionate and evidence-based approach is taken when looking at any change in an abstraction licence, and to make clear how the environment is being considered in the planning process.

Drought-management options such as drought permits and orders (powers to take more water from the environment during times of drought) have a role to play in maintaining supplies in severe drought, as outlined in our Drought Plan. We recognise that some people are concerned about these measures, and so we will involve these people and consider the role these options should play in making sure our water supplies can cope.

7. 'Promote efficient water use and reduce leakage'

In the North West, the demand for water has been reducing over the last 20 years, and based on our current forecasts this is set to continue. This has been achieved by large reductions in the volume of water leaking from pipes and the reduction in use by customers, in part helped by our promotion of water efficiency.

At the same time the amount of water available to supply customer has reduced, as we have delivered environmental improvements. In many cases, the reduction in leaks and usage has offset the need to develop new water resources to deal with the reduction in supply. Forecasts in our last plan show how future reductions in demand help deal with possible reductions in water availability due to climate change. Because of this, we understand that managing demand plays a crucial role and will make sure that it is considered fully within the options appraisal process when identifying the best-value approach.

Note 14 Formerly known as the National Environment Programme (NEP), this is a document provided by the Environment Agency, which formally states our environmental obligations that we need to account for in our programme of future activity.

Note 15 Environmental legislation enshrined in the UK law.

Briefing note

We also recognise that customers frequently raise leaks as an important issue for them, although in the last plan, further reduction in leakage (note 16) was not supported due to affordability. If it is economical (in other words, reasonably likely that the benefits outweigh the cost) and affordable to do so, we will reduce leaks further, and we are fully reassessing the economic level of leakage taking into account recommendations in a recent review commissioned by the Environment Agency (see note 17). When we consider options, we will make a full assessment of the benefits of further reducing leaks.

We are exploring all options, including using metering and tariffs, and also have asked for options to manage demand in our process to identify options from other businesses, organisations or individuals, as outlined in the previous section. In any case, we will continue to promote water efficiency and the benefits of switching to a meter.

8. Next steps

We would be pleased to receive any comments you have by **30 November 2016**. Please send them to water.resources@uuplc.co.uk using the phrase 'WRMP19 pre-consultation' in the subject line.

If you would like to join our technical stakeholder group, please also email us at water.resources@uuplc.co.uk.

We will take your comments into account as we develop the plan, and then publish a draft for consultation in 2018.

Note 16 Leakage is the loss of water through holes and cracks in water mains and seepages from water network fittings for example, hydrants, valves.

Note 17 Strategic Management Consultants (SMC) / Environment Agency – “Sustainable Economic Level of Leakage (SELL): Prioritisation of the 2012 report recommendations”, March 2015