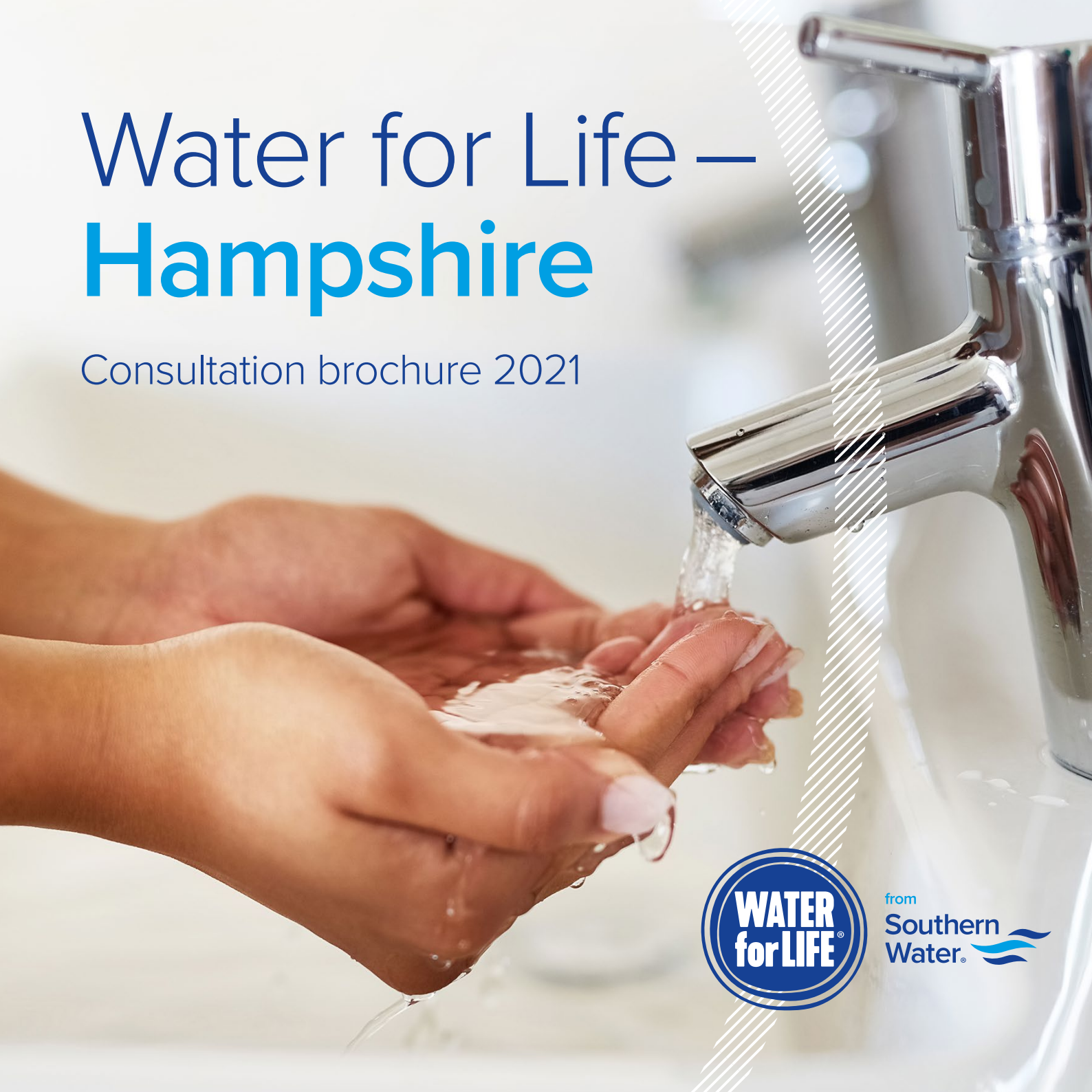
Water for Life – **Hampshire**

Consultation brochure 2021



from Southern Water

Contents

Foreword from Ian McAulay, our CEO

Thank you for taking the time to engage with our Water for Life – Hampshire programme.

It's our response to the combined impacts of population growth and climate change and will help keep the county's taps and rivers running for us and future generations.

In our consultation documents you'll see how we plan to transform the way we source, treat and supply water across Hampshire and the Isle of Wight over the next decade. You'll also see the opportunities for you to contribute your views to help us shape our plans.

Water is a precious, and increasingly scarce, resource for people and wildlife. It's essential that we strike the right balance between protecting the environment and maintaining supplies for customers.

In Hampshire, that balance means taking less water from the sensitive chalk stream habitats of the Test and Itchen rivers and more from sustainable, resilient sources instead.

People need water and it's our duty to supply it, but as custodians of the environment it's also our responsibility to do so in a way that protects the natural world and also enhances it where possible.

We are one of the best performing water companies for leakage, but our plans include going even further and reducing leakage by 15% by 2025, 40% by 2040 and 50% by 2050. We are also improving water efficiency by helping people reduce their use to below 100 litres a day.

We are also creating a new network of water mains across Hampshire to increase resilience.

Investigating and delivering new sustainable, resilient sources of water comes at a cost. Treatment techniques such as desalination and water recycling are already used to great effect elsewhere in the world and are capable of providing an almost limitless supply of water.

They are expensive to build and run, compared with traditional abstractions, but if you consider the environmental and natural capital evaluations, these technologies allow us to do more than just take from the environment – they allow us to give something back.

This ethos of added value, of environmental net gain, is central to the vision and commitment we have outlined in Water for Life – Hampshire.

It's our promise to work with regulators, customers, environmental groups, local authorities, industry, landowners and others to create a resilient water future for the South East. But more importantly, it is about performing our duties in a way that benefits people and our planet and I welcome you in joining us on this journey.

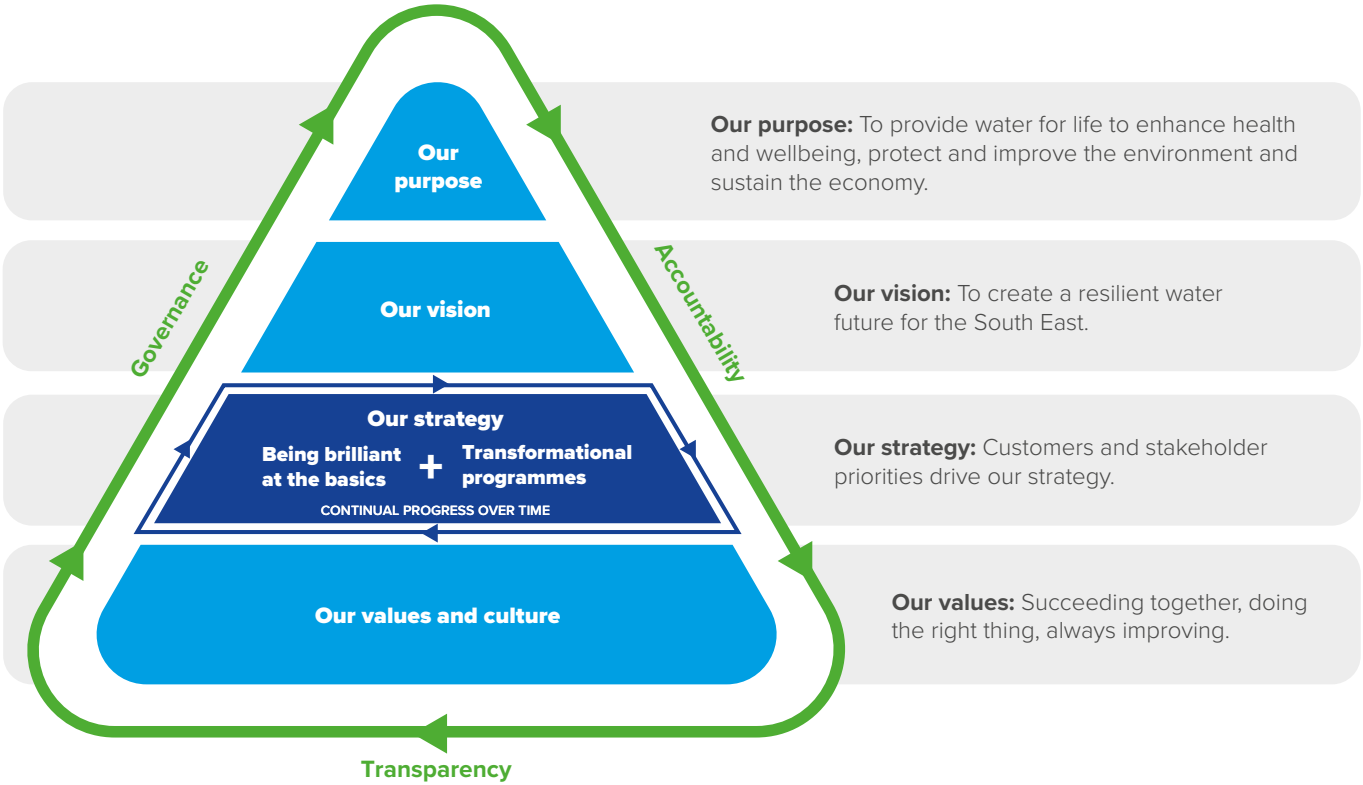
About Southern Water

Southern Water supplies water and wastewater services to over four million customers in the South East.

Our operations cover Hampshire, Kent, Isle of Wight and East and West Sussex, traversing over 700 miles of coastline, national parks, forests and Areas of Outstanding Natural Beauty.


Dartford
Gravesend
Chatham
Gillingham
Isle of Sheppey
Herne Bay
Ramsgate
SUTTON & EAST SURREY WATER
Sevenoaks
Maidstone
Faversham
Canterbury
Deal
Tonbridge
SOUTH EAST WATER
KENT
Ashford
Dover
Tunbridge Wells
Folkestone
Crawley
Weir Wood
Bewl Water
AFFINITY WATER
EAST SUSSEX
Haywards Heath
New Romney
Darwell
Burgess Hill
SOUTH EAST WATER
Powdermill
Lydd
Hastings
Lewes
Bexhill
Hove
Brighton
Eastbourne
Water supply and wastewater treatment areas
Wastewater treatment areas only
Water supply only areas
Designated bathing waters
Reservoirs

About Southern Water



Our vision, values and purpose

As a water undertaker, we must meet our statutory duties to prepare and maintain a Water Resources Management Plan (WRMP) under section 37A of the Water Industry Act 1991. Our WRMP must set out how we will manage and develop water resources to meet our supply obligation for at least the next 25 years, and it must be renewed at least every five years.

Our WRMP 2019 sets out our Preferred Strategy to meet supply obligations (see: southernwater.co.uk/our-story/water-resources-planning/water-resources-management-plan-2020-70) and we are using all best endeavours to deliver on this strategy for our Western Area in Hampshire. Delivering new water resource infrastructure in Hampshire is part of the Preferred Strategy.

Our Business Plan 2020–25 underpins our approach (see: southernwater.co.uk/our-story/our-plans-2020-25/our-business-plan-2020-25).

About Southern Water

Protecting the environment

The environment is at the heart of everything we do and we recognise that, as a water company, we are reliant on the natural environment to deliver our essential services to our customers.

We are proud to play a leading role as a custodian of the environment and we are working hard to ensure that protecting and enhancing the natural world remains central to all our decision making. We know that investing in more natural and sustainable solutions can deliver wider benefits for wildlife, customers and communities. These include reducing flood risk, reducing our carbon footprint, improving biodiversity and improving health and wellbeing through access to nature.

Over the next five years we plan to invest around £800 million in our environment programme. This will help us improve nearly 400km of our region's rivers and many of its bathing waters. We're working with a range of partners to ensure that we're doing the right thing now and for future generations.

We, and other water companies in the UK, have also committed to become carbon neutral by 2030. This promise was made under the industry body Water UK's Net Zero commitment and is part of our planning and solution development for Water for Life – Hampshire.

"We put the environment at the heart of our business because we, and our customers, want to protect and enhance the natural world around us. Our climate is changing and it's vitally important that we take the right decisions now to ensure that in the future our children and grandchildren can enjoy both a fantastic environment and a clean and plentiful water supply."

Toby Willison, Director of Environment and Corporate Affairs

Chalk stream

About Water for Life – Hampshire

The challenge we face

Hampshire faces water shortages. New water sources are necessary to keep local taps and rivers flowing today and in the future. Our Water for Life – Hampshire programme will create greater resilience, especially during dry weather and drought.

Our world is changing – the twin pressures of more extreme weather events and a growing population are stretching our finite natural resources, including water. This challenge is felt strongly in the water-stressed South East where the population continues to grow.

In Hampshire, a key challenge we face is ensuring protection of the environment while maintaining and improving the water supply. This follows new rules over how much water we can take from the county's two main rivers – the Test and Itchen. We have entered into an agreement with the Environment Agency, committing to implement the changes it has made to our abstraction licences – rules governing how much water we can take from the environment to supply to the public – by 2027 in order to ensure the rivers are further protected. Reductions to our abstractions mean we now have a shortfall of about 190 million litres of water a day in south Hampshire during a 1-in-200-year drought event, putting the population at risk of water shortage when the weather is dry. Further licence changes are expected which, during a drought, could lead to the loss of more water required to supply Hampshire and the Isle of Wight.

This means we need to find new sources of water in order to protect these sensitive habitats. The Test and Itchen are among the finest examples of chalk streams in the world – rare ecosystems that support an abundance of wildlife such as salmon, trout, crayfish and dragonflies. However, they also supply water to more than 700,000 people across Hampshire and the Isle of Wight. A new balance must be struck in order to keep these rivers and customers' taps flowing – especially during a drought.

In the short term, drought orders and drought permits can be employed where necessary to maintain supplies during periods of drought, however longer term solutions are needed to make up the shortfall.

Our current plan for making up the shortfall is set out in our final Water Resources Management Plan 2019 (WRMP19) and includes building our "Base Case".

We refer to the "Base Case" throughout this consultation. It describes the current preferred solution, as outlined in WRMP19, to install a 75 Ml/d (million litres per day) desalination plant with direct input into our network at Testwood Water Supply Works. This was selected following extensive consultation with customers and stakeholders as part of WRMP19, which was then approved by the Secretary of State for Environment, Food and Rural Affairs.

The site outlined in our WRMP is at Fawley, on land to the west of the former power plant and to the south of our Ashlett Creek Wastewater Treatment Works.

We have a legal obligation to explore all options to deliver the Base Case, but we also have an obligation to investigate back-up alternative options under WRMP19, and our regulators have asked us to investigate these alternatives as back-ups to desalination in case it proves undeliverable.

Accordingly, this document outlines our proposal for the Base Case and also provides information on the alternative options we are investigating in parallel, should the Base Case not be deliverable.

About Water for Life – Hampshire

The challenge we face

"Water for Life – Hampshire is our commitment to provide more resilient, sustainable water supplies that protect the environment while catering for a growing population. This wide-ranging programme will reduce reliance on Hampshire's chalk rivers and help protect the wildlife that lives in and around them. The result will be a resilient supply of water for customers and the environment, whatever the weather."

Mark Wintringham, Head of Delivery

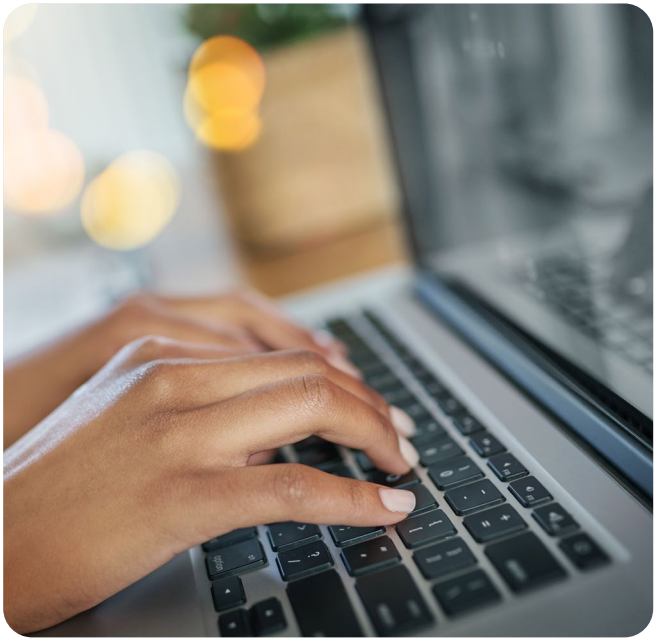
Lower Test © Jon Milliken

About this consultation

Welcoming your views

The purpose and intent of our consultation exercise is to consult on our Base Case as presented in the WRMP19 Preferred Strategy, which we are obliged to make all best endeavours to deliver. As required by WRMP and the RAPID Gated process, we are also considering alternative options in the event that the Base Case should prove not to be deliverable.

At this stage, we are not consulting on a 'choice' between the Base Case and the alternative solutions, as this strategy was already the subject of consultation in WRMP19. However, comments in relation to the Base Case and our alternatives are welcomed to help us to develop the Base Case and the alternatives. Should the Base Case not be deliverable, we will undertake further consultation on our alternative solutions.



We are seeking views on the following elements of the Base Case, where we are considering options for the most appropriate form of development to include as part of the project:

- Options for abstracting water from the Solent
- Information on the desalination plant infrastructure and the ways we are considering managing the cleaned wastewater (brine) removed from the seawater
- The alignment of the underground pipeline, to connect drinking water produced by the project, to our network

The wider aims of this consultation are to:

- Inform impacted and interested stakeholders and customers about the development of the Water for Life – Hampshire programme
- Gather feedback from stakeholders and the community on elements of the Base Case to help inform the development and design of our proposals
- Gather feedback from stakeholders and the community on alternative solutions, should the Base Case not be deliverable
- Identify key issues and concerns about the impacts and effects of our proposals and identify potential ways to help mitigate them

About this consultation

Welcoming your views

In light of COVID-19, we are taking a digital-first (online) approach to consultation and making use of technology to bring the scheme to life for customers and stakeholders. This is embodied by the Virtual Engage platform provided by our supplier Arup, which allows people to navigate a virtual consultation room and browse information boards, watch films and leave feedback – just as they would be able to in a physical drop-in session. This virtual room is available on our website - via the link in the box to the right.

We will provide one copy of the consultation brochure and feedback form, free of charge, to those unable to access them via the internet. These, and large print files, can be obtained by writing to us.

In preparation for this consultation, we have engaged with local authorities to help us identify hard to reach groups. We are contacting these groups individually to seek their advice on the best way of raising awareness and consulting with their members.

We will also explore more traditional methods of consultation as part of future rounds of consultation on the project (e.g. face-to-face meetings and events), when it is safe to do so.

In our initial engagement with each of the county's local authorities, we have asked for their support in helping us improve the reach of our digital communications. As a result, the consultation links have been shared via numerous newsletters, mailing lists and social media channels. A similar request was also made to other organisations and individual stakeholders to share via their networks. We are immensely grateful for this support.

This brochure provides information on the proposed elements of the Base Case, information on how consultation will be used to develop the Base Case further, and how to share your views. We would encourage you to read this brochure, attend the online consultation event and provide your thoughts by completing a feedback form.

The easiest way for you to send us your feedback is to complete the online feedback form. To request a printed copy of the form and this brochure please write to:

WATER FOR LIFE – HAMPSHIRE, PO BOX 5215

The address must be written in capital letters and you do not need a stamp.

If you have any further questions or would like to find out more, visit our web pages or contact us by email.

Website:
www.southernwater.co.uk/water-for-life-hampshire

Email:
WFLH@southernwater.co.uk

Your feedback is important to help us shape a solution for ensuring future water supply in Hampshire. We will consider all the comments we receive and use them to help us develop our proposals further.

This is your opportunity to give your views and the information we receive will help us develop our proposals.

The story so far

The needs case

Environmental and external pressures are driving the need for Water for Life – Hampshire. However, the immediacy of the challenge comes from the need to meet the expected future supply deficit after the planned changes to our abstraction licences. Additionally, drought permits and drought orders will also be less available during drought conditions after 2027. Drought permits and orders allow water companies to maintain public supplies by taking water beyond their abstraction licence limits.

For the past three years (2018–2020) we have needed to prepare applications for a drought permit on the River Test in accordance with our legal agreement with the Environment Agency. However, although a drought permit was granted in 2019, we have not needed to actually implement one, as subsequent rainfall raised the river levels meaning reliance on a drought permit was no longer required.

To offset the potential environmental impact of drought permits and drought orders, we have embarked on a £9.5 million suite of environmental monitoring and improvement projects that are being developed and delivered by local environmental organisations. This work is being funded and delivered regardless of whether a drought order or permit is implemented.

Activities already under way include:

- Monitoring of wildlife including fish, breeding birds and Southern Damselfly
- Working with Bristol Zoo to breed White Clawed Crayfish for wild release
- Restoring rivers to more natural states by removing man-made barriers and clearing areas of non-native invasive vegetation such as Himalayan Balsam

In the legal agreement with the Environment Agency (made under Section 20 of the Water Industry Act) we committed to using “all best endeavours” to implement the long term scheme for alternative water resources set out in our final WRMP19, which is called the ‘Preferred Strategy’. We have set out in our WRMP19 when each element of the Preferred Strategy will be delivered by. The largest element of it, which is a 75 Ml/d desalination plant will be delivered in 2027, with other elements later than this. This is because the phased reductions to our abstraction licences will mean that a large part of our deficit will need to be met by 2027. The proposed desalination plant will be capable of taking sea water from the Solent, treating it and pumping it via a new underground pipe to our Testwood Water Supply Works where it will be sent into the supply network.

White-clawed crayfish © Ben Rushbrook

The story so far

Introducing our Base Case

We refer to the "Base Case" throughout this consultation – it describes the current preferred solution, as outlined in WRMP19, to install a 75 Ml/d desalination plant at Fawley with direct input into our network at Testwood Water Supply Works.

This was selected following extensive consultation with customers and stakeholders as part of WRMP19, which was then approved by the Secretary of State for Environment, Food and Rural Affairs.

The site outlined in our WRMP is at Fawley, on land to the west of the former power plant and to the south of our Ashlett Creek Wastewater Treatment Works.

The desalination plant will take water from the Solent via an inlet. The water will be treated at the plant before it is pumped up to our Testwood Water Supply Works, where it will join the supply network. The brine (salty water) produced as part of the desalination process will be released back into the Solent via an outfall, the location of which is currently being developed.

Overview of RAPID

The development of the Base Case, and the investigation into alternatives that may be suitable back-up solutions to the Base Case, is being overseen by the new Regulators' Alliance for Progressing Infrastructure Development (RAPID) as part of the new formal gated funding process for the development of strategic water resources options.

RAPID comprises the three water regulators (Ofwat, Environment Agency and Drinking Water Inspectorate) and is advised by Natural England. Its role is to review progress and determine how, and if, the strategic water resources solutions that are being considered should proceed further through the process. It will make recommendations to Ofwat at various stages of the process, known as 'gates'. Ofwat will then release development funding for each solution as it passes through the 'gate' so it can continue to be developed to the next stage of feasibility. The aim is to enable companies to develop solutions on behalf of customers that are construction-ready in 2025 –2030 that protect and enhance the environment and benefit the wider society.

We have earlier gate times than the rest of the water industry because our need for a new water source is earlier than other companies, as a result of our forecasted supply deficit after 2027. We submitted our first set of documents to RAPID in September 2020 and it has since published its full response on its website. A link to this can be found in the Technical Documents section of our Water for Life – Hampshire webpages.

"The desalination infrastructure lies within the Solent and Southampton Water. We're working closely with the Environment Agency, Natural England and others to ensure we take particular care of this sensitive environment."

Nicola Meakins, Enabling Manager

The story so far

Alternatives we're investigating as back-ups

In addition to developing and delivering the Base Case in line with our "all best endeavours" commitment, we are also exploring a range of alternatives as a back-up, in case is the Base Case is not deliverable. Exploring these alternatives is essential in order to ensure customers' supplies are maintained. However, it should be noted that, because of our commitments to use "all best endeavours" to deliver the Base Case, the options for a new water supply are not presented as a straight choice between the Base Case and the alternatives – instead, the alternatives will only be considered for delivery should the Base Case be undeliverable.

We outlined eight potential back-up solutions and submitted them as part of the RAPID process.

They fall under three categories:

- Desalination alternatives
- Water recycling
- Water transfer

The solutions are listed under the following eight configurations:

Desalination alternatives

- Configuration A.2: 61 Ml/d at Ashlett Creek, near Fawley
- Configuration D.1: 40 Ml/d Desal to industrial use, 30 Ml/d Transfer from South West Water, 41 Ml/d Recycling

Water recycling

- Configuration B.2: 61 Ml/d recycled water from Budds Farm Wastewater Treatment Works to the Upper Itchen / Havant Thicket Reservoir
- Configuration B.3: 61 Ml/d recycled water from Budds Farm Wastewater Treatment Works to Otterbourne Water Supply Works
- Configuration B.4: Up to 61 Ml/d recycled water from Budds Farm Wastewater Treatment Works to Otterbourne Water Supply Works via Havant Thicket Reservoir
- Configuration B.5: 75 Ml/d recycled water from combination of Budds Farm Wastewater Treatment Works and Peel Common Wastewater Treatment Works

Also included in this consultation:

- Configuration B.1: 61 Ml/d recycled water from Budds Farm Wastewater Treatment Works to the Lower Itchen

Configuration B.1 is the alternative option included in our WRMP19. However, it is now not being progressed as a potential alternative to the Base Case following Ofwat's decision not to fund further investigations. This is a result of RAPID's recommendation that Natural England and the Environment Agency have concerns about the impact of the recycled water release on the integrity of the River Itchen Special Area of Conservation and the scheme's ability to meet the resource deficit.

These options are described in more detail on pages 24–26.

The story so far

Alternatives we're investigating as back-ups

Water transfer

- Configuration D.2: 75 Ml/d direct raw water transfer from Havant Thicket Reservoir to Otterbourne

These options are described in more detail on page 27.

Also considered but not part of this consultation:

- Configuration C.1: West Country Sources (North) transfers

We submitted a joint proposal with Wessex Water and Bristol Water to RAPID at our accelerated Gate 1 for a regional water transfer scheme called 'West Country North Sources and Transfer'. This scheme is not considered as an alternative to the Base Case as, since our submission to RAPID in September 2020, it has been moved off the earlier gate timetable and is now part of the standard timeline with the rest of the water industry. As such, it would not deliver water supplies to address our forecast deficit by 2027.


Peel Common

"Water recycling is a different, more complex process than traditional water treatment. It involves taking highly treated wastewater and using advanced treatment techniques to clean and purify it to drinking water standards. In essence, all water is already recycled – we're looking at how to harness and speed up that natural process."

Varsha Wylie, Principal Process Engineer

Our proposals

Options for our Base Case

This section of the brochure provides more information on our Base Case solution and the back-up alternative options.

We are considering options for how to best deliver the Base Case, and would welcome your views on how we can further progress components of the scheme so that it is most successful. Components of the Base Case that we are developing, and would welcome your views, on are:

- Options for abstracting water from the Solent
- Information on the desalination plant infrastructure and the ways we are considering managing the cleaned wastewater (brine) removed from the seawater
- The alignment of the underground pipeline, to connect drinking water produced by the project, to our network

Please consider the information presented in this section of the brochure and let us know your thoughts by completing the feedback form.

This section also presents information on our alternative back-up options, which we are preparing plans for in the event that the Base Case is not deliverable. At this stage, we are not consulting on a 'choice' between the Base Case and the alternative solutions, however comments on alternatives will be welcomed and considered in future development of those alternatives. Should the Base Case not be deliverable, we will undertake further consultation on our alternative solutions.

"We're working with international experts on our desalination plans. The technology has the potential to provide a resilient supply for customers by tapping into a vast water resource – the sea. Taking water from the sea would help us to better protect the Test and Itchen ecosystems by reducing our demand on these freshwater sources in times of drought."

Jonny Greenwell, Process Engineer

Water vole © Tom Marshall

Our proposals

A.1: 75 Ml/d Desalination at Fawley (Base Case)

This is the preferred permanent water resources solution as outlined in our Water Resources Management Plan 2019 (WRMP19). It comprises a 75 Ml/d (million litres per day) desalination plant located at Ashlett Creek, near Fawley. The plant will be capable of taking seawater from the Solent, releasing the brine back to the Solent and then transferring drinking water, via a new pipe, to our Testwood Water Supply Works where it will connect into the supply network.

We welcome your views on our Base Case and the components described below.

Our Base Case desalination proposal includes the following key components:

1. Abstraction

Water will be abstracted (taken) from the Solent via an intake structure and pipe. We are currently considering two potential areas for this intake:

- Within the existing deep water dock at the former Fawley power station site (Route 1 abstraction)
- The open water area identified as suitable for abstraction as shown in Figure 1, where there are three possible routes for connection (Routes 2, 3 and 4 abstraction)

The intake will connect to a pumping station, either on the coast via an intake pipe constructed beneath the seabed, as shown in Figure 1, or next to the former Fawley power station. The pumping station location and layout is yet to be defined as it will depend on the abstraction location.

The abstraction will be connected to another pumping station, on land near to the Solent abstraction area shown in Figure 1, or near to the former Fawley power station.

We are considering different ways to stop fish swimming into the intake or debris being drawn into the mouth of the abstraction pipe. These include fully submerged “passive” mesh wire screens which stop fish and debris entering the abstraction pipe and mechanical screens within the abstraction pumping station that would carefully collect any fish and debris and return these back to the sea. The preferred screen type is yet to be determined and will depend on the location of the abstraction.

An underground pipeline will transfer the seawater to the desalination plant for treatment. There are a number of routes being considered for this depending on the abstraction location. Under consideration are:

1. **Route 1:** the former power station inlet, with a short connection to the Ashlett Creek site.
2. **Route 2:** developing the WRMP19 option and using the former power station outlet pipes by re-purposing and extending these to carry the abstraction pipe to the area of deep water (Route 2, in Figure 1).
3. **Route 3:** a shorter route from Ashlett Creek site to land near to Lepe Country Park and extending the pipe to the area of deep water.
4. **Route 4:** a longer route from Ashlett Creek site to land near to Lepe Country Park.

The method of pipeline construction is yet to be determined but we are considering using open excavation techniques (where an excavator digs a trench from the surface to lay a pipe) as well as alternative methods such as tunnelling, directional drilling or pipe-jacking (where pipes are pushed through the ground from a pit without disturbing the surface). The type of method we use will depend on the likely impacts and suitable mitigation measures we can employ.

Our proposals

A.1: 75 Ml/d Desalination at Fawley (Base Case)

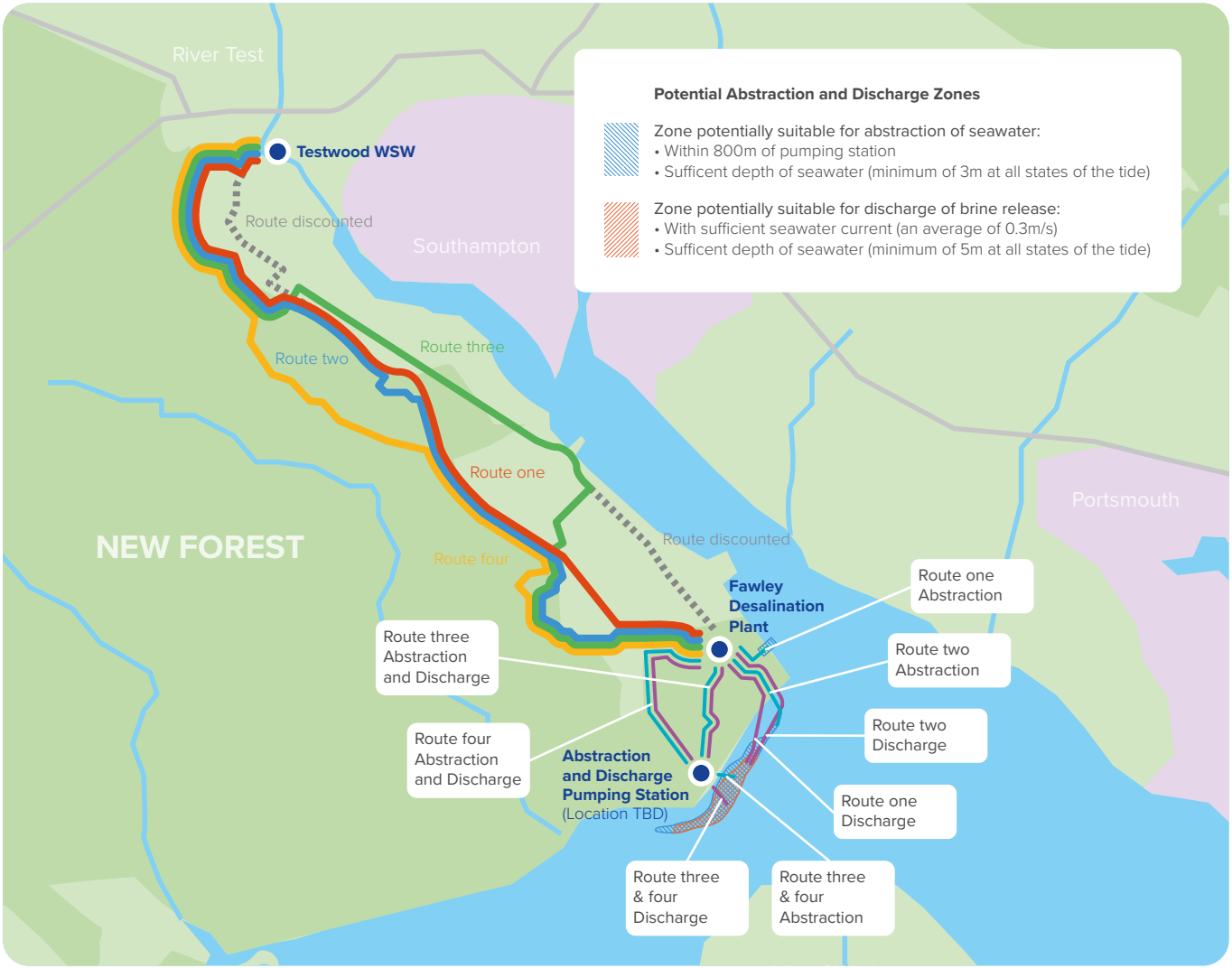


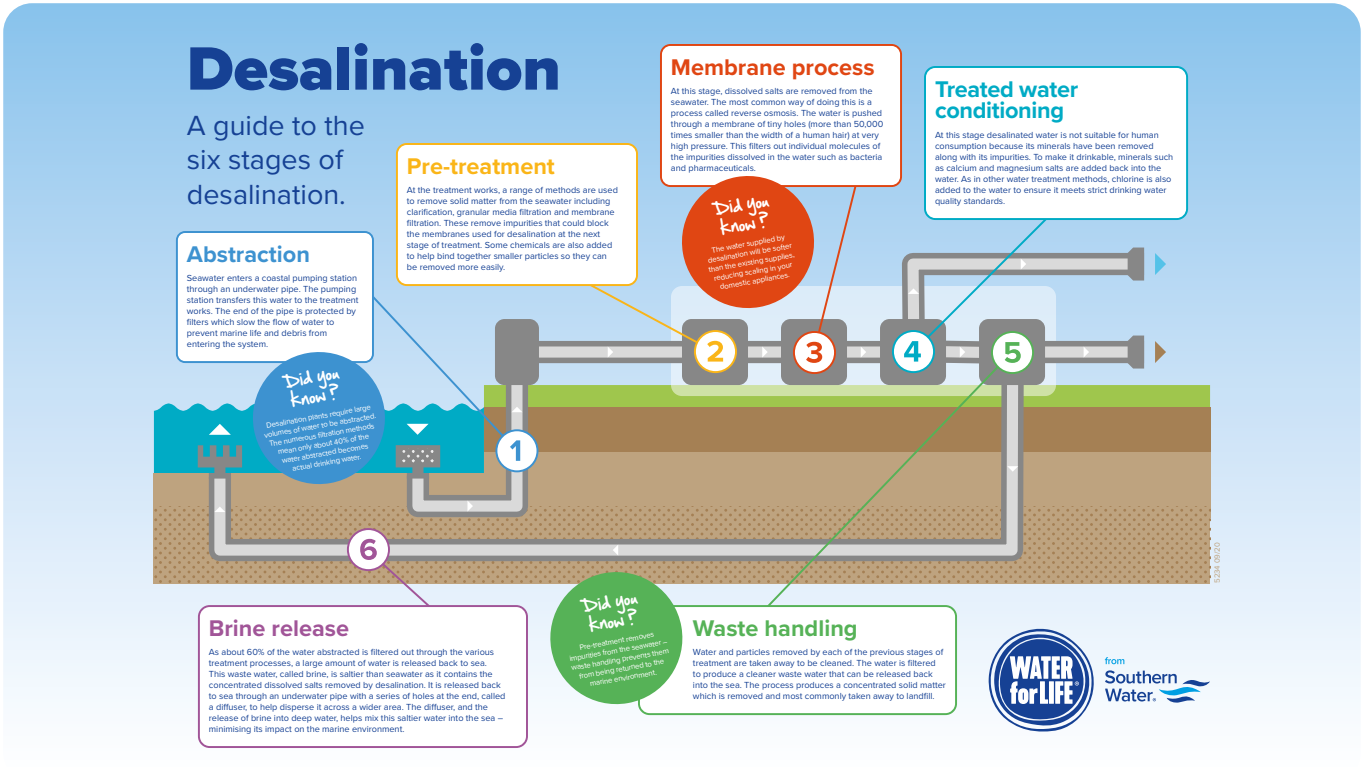
Figure 1: Possible abstraction and release locations, and transfer routes from the desalination plant to Testwood.

Our proposals

A.1: 75 Ml/d Desalination at Fawley (Base Case)

2. Desalination Plant

The desalination plant is the location where several processes are used to treat the seawater, by removing unwanted particles to make the water suitable for drinking. These processes, explained in the diagram below, clean and purify the water to ensure it meets strict drinking water quality standards. A number of large buildings, tanks and associated infrastructure will house the various stages of treatment as well as store the treated drinking water.



Our proposals

A.1: 75 Ml/d Desalination at Fawley (Base Case)

3. Waste disposal

Desalination produces waste products. We propose to dispose of these in different ways, according to their requirements.

- The **solid waste** would be sent to landfill, as the salt content means it cannot be beneficially used on farmland
- The **cleaned wastewater (brine)** would be released back to the Solent

An underground pipeline will transfer the brine back to the sea, via an outfall pipe constructed beneath the seabed. We are considering techniques such as tunnelling and pipe-jacking to install this outfall pipe. At the end of the outfall pipe, a carefully designed structure will release the brine into the identified area of deeper water (see Figure 1) where the tidal movement will help it disperse.

The route options and the release areas in the Solent we are considering are shown in Figure 1 and numbered 1-4.

Alternatives to these preferred options are:

- The solid waste could be combined with the liquid waste and released back to the sea. This would need to consider the sensitive marine environment we are releasing into.
- Evaporating water from the brine to form salt crystals that could then be removed from site and taken away either to landfill or to be used for another purpose such as road-gritting. The UK climate means evaporating the water from the salt naturally is not practicable. A more energy-intensive process would be required to heat the brine to encourage evaporation.

4. Pipeline to transfer to network

The drinking water produced by the desalination plant will be transferred to Southern Water's network via the Testwood Water Supply Works. The underground pipeline required to make this connection will be around 25km long. The pipe will connect to a new water storage tank at Testwood, from where it will join the wider network on the site. A number of proposed corridors have been developed for this pipeline, as shown in Figure 1.

There are four proposed corridors. A combination of these could be used for a preferred corridor:

1. **Route 1:** The original WRMP19 corridor: this route follows the A326, then passes through Totton to Testwood. The top section through residential roads has been discounted as it would not be possible to construct such a large, 80cm diameter, pipeline through the constrained areas between homes and existing strategic services.
2. **Route 2:** This corridor provides an alternative to laying the pipeline all within the A326. Key considerations for this route include existing utility pipes and cables and minimising impact on traffic. The route will cross into adjacent land where possible.
3. **Route 3:** This option explores whether the disused railway line could be used as a corridor for the pipeline. The southern section was discounted as it would not be feasible to pass through the existing oil refinery both in terms of construction and ongoing access and maintenance of the pipe.
4. **Route 4:** This route avoids landfill sites and parts of the A326. It would follow the route of existing oil refinery pipelines and minor roads.

The feasibility of these corridors is still being investigated and developed, alongside this consultation. Further, more detailed, discussions with stakeholders, particularly the Environment Agency and Natural England, and other utility providers in the area are planned to help identify a preferred route.

Our proposals

Alternative water source solutions

We are considering alternative options in the event that the Base Case proves not to be deliverable. Doing so will ensure we have a back-up solution to maintain customers' supplies.

Desalination alternatives

A.2: Desalination 61 Ml/d at Ashlett Creek, near Fawley

This alternative outlines a smaller capacity desalination plant that would use the same site, abstraction and intake location options and release options as the Base Case. The smaller production capacity of 61 Ml/d is being considered based on the results of further computer modelling undertaken since WRMP19. The smaller plant would use less power and have smaller waste streams. Supply and demand computer modelling is still ongoing and is helping us understand how often the desalination plant would be required and the maximum flows during severe and extreme droughts.

D.1: Desalination 40 Ml/d, Transfer from South West Water 30 Ml/d, and Water Recycling 41 Ml/d

This alternative proposal is a combination of an industrial desalination plant, a smaller water recycling plant and diversion of an existing transfer. There is currently a large coastal industrial facility that uses 40 Ml/d of drinking water that could potentially be replaced with desalinated water. The existing supply is provided from two sources, approximately 10 Ml/d from Southern Water and approximately 30 Ml/d from South West Water. An element of this water (15 Ml/d) is further treated by the industrial user to produce 'demineralised' water used in the industrial process.

This proposal would provide:

- A 40 Ml/d desalination plant for the industrial facility on its land and using its existing intake and release locations. In addition, 15 Ml/d of the desalinated water would be further treated by Southern Water to produce 'demineralised' water. These two types of water would be transferred, via separate pipelines, to supply the industrial user.
- The existing 30 Ml/d supply to the industrial facility from South West Water would be redirected to Southern Water's drinking water network. This would remove the need for an additional 20 Ml/d transfer pipeline from South West Water.
- The desalination option would be supplemented by a 41 Ml/d Water Recycling Plant using treated wastewater from Budds Farm Wastewater Treatment Works. This is the same process and pipeline route as proposed for option B.2 as outlined in the following section.

Kingfisher © Andy Ames

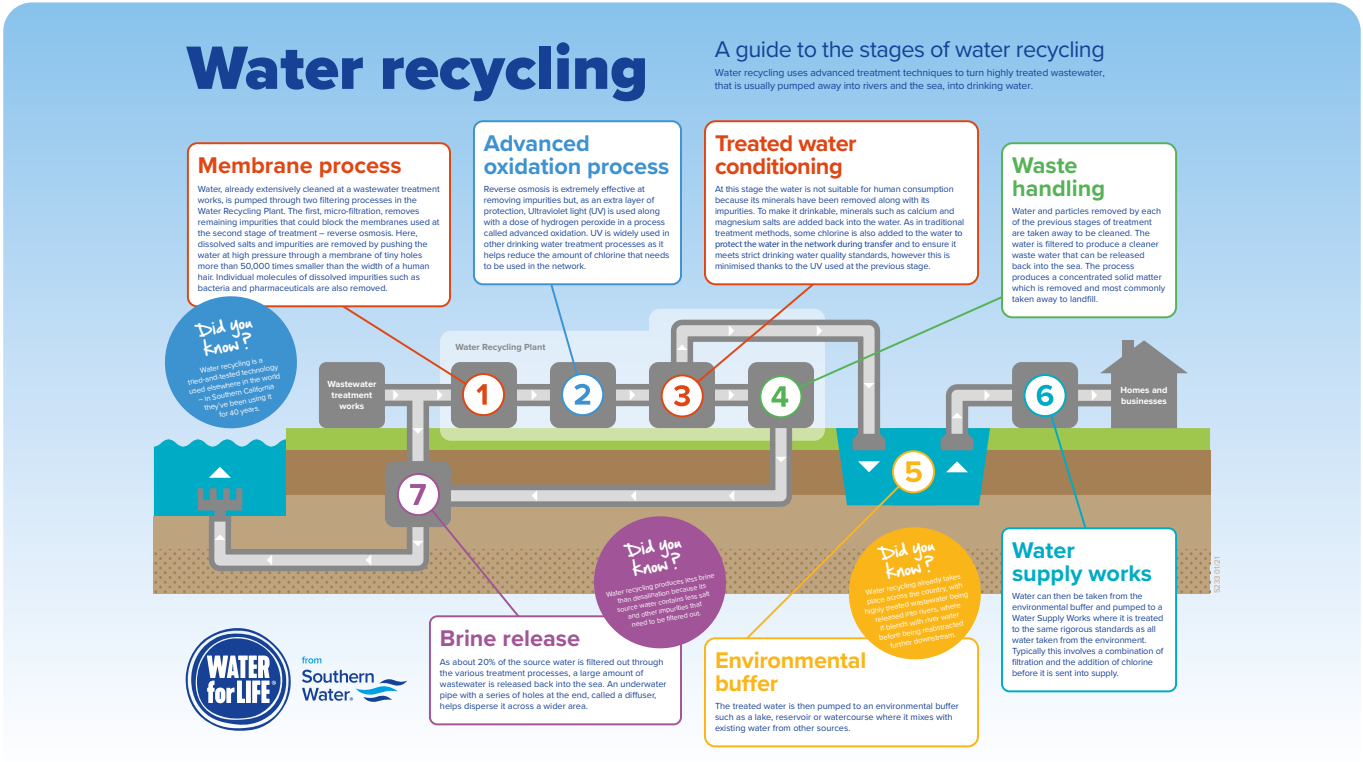
Our proposals

Water recycling

We are exploring ways of recycling our treated wastewater and using it to supplement other sources of drinking water. We call this method water recycling. It speeds up the natural process of water treatment and means we can keep water in our network – reducing the amount we need to take from the environment.

All the Water Recycling Plants considered as alternatives use highly-treated wastewater from our largest wastewater treatment works at Budds Farm in Havant. The higher outputs of 75 Ml/d use an additional connection to a second site, our Peel Common Wastewater Treatment Works in Gosport. The water would be transferred from Budds Farm via a short underground pipeline to the Water Recycling Plant.

The Water Recycling Plant uses advanced treatment techniques to clean and purify the water, as detailed in the diagram below. These processes would take place inside a number of buildings and tanks.



Our proposals

Water recycling

The waste handling requirements of water recycling are similar to those of desalination. Waste materials are removed to form either solid waste or brine. Roughly 20% of the treated wastewater would be returned to Budds Farm as brine and released out to sea via the site's existing 5.7km outfall pipe. The solid waste would typically be taken away to landfill or possibly combined with the existing solid waste treatment processes at Budds Farm.

The advanced treatment processes at the water recycling plant produce a purified water that can then be transferred on to blend with other sources of water in a water body such as a river, lake or reservoir referred to as an 'environmental buffer'. From there, the water would be transferred to our Otterbourne Water Supply Works for further treatment to ensure it meets strict water quality standards.

An alternate configuration, known as 'direct recycling', would see the recycled water sent directly to Otterbourne Water Supply Works for further treatment without first blending with existing supplies in an environmental buffer. The diagram opposite outlines an 'indirect recycling' process.

We are exploring a number of alternative sizes of water recycling plant, and options for transferring the recycled water to Otterbourne Water Supply Works. These are shown in Figure 2 below.

Figure 2: Overview map of Water Recycling Alternatives.

Our proposals

Water recycling

B.1: 61 Ml/d recycled water from Budds Farm Wastewater Treatment Works to the Lower Itchen

This configuration uses the proposed Water Recycling Plant with a release into the Lower Itchen river, as originally presented in WRMP19, from where the water could be re-abstracted.

It would include:

- Water Recycling Plant capable of producing up to 61 Ml/d of recycled water using treated wastewater from Budds Farm Wastewater Treatment Works.
- A 47km underground pipeline to transfer the recycled water to a release point in the Lower Itchen river.
- An abstraction on the Lower Itchen capable of taking up to 61 Ml/d of water from the river and transferring it via a new pipeline to Otterbourne for further treatment to ensure it meets strict water quality standards.

This is the alternative option included in our WRMP19. However, it is now not being progressed as a potential alternative to the Base Case following Ofwat's decision not to fund further investigations. This is in line with RAPID's recommendation, following concerns raised by Natural England and the Environment Agency about the impact of the recycled water release on the integrity of the River Itchen Special Area of Conservation and the scheme's ability to meet the resource deficit.

B.2: Water Recycling Plant 61 Ml/d to a lake near Otterbourne WSW

This configuration uses the proposed Water Recycling Plant with a release into a new lake, near Otterbourne, followed by further treatment at the water supply works.

It would include:

- Water Recycling Plant capable of producing up to 61 Ml/d of recycled water using treated wastewater from Budds Farm Wastewater Treatment Works.
- A 42km underground pipeline to transfer the recycled water to a purpose-built lake. There are a number of alternative initial corridors being considered, as outlined in Figure 3. The pipeline would release into a new lake, most-likely created on land next to our Otterbourne Water Supply Works, where the water would blend with our current river and groundwater abstractions.
- Abstraction and transfer from the lake to Otterbourne Water Supply Works for further treatment to ensure it meets strict water quality standards.

Our proposals

Water recycling

Figure 3: Initial corridor routes between a possible WRP location and Otterbourne WSW

Our proposals

Water recycling

B.3: Water Recycling Plant 61 Ml/d direct to Otterbourne Water Supply Works

This configuration uses the proposed Water Recycling Plant with a direct connection to Otterbourne Water Supply Works.

It would include:

- Water Recycling Plant capable of producing up to 61 Ml/d of recycled water, using treated wastewater from Budds Farm Wastewater Treatment Works.
- A 42km underground pipeline to transfer recycled water from the Water Recycling Plant to Otterbourne, where it would blend with other river and groundwater abstractions.
- Further treatment at Otterbourne Water Supply Works to ensure the water meets strict water quality standards.

A number of proposed alternative pipeline corridors are being considered as per Figure 3.

B.4: Water Recycling Plant up to 61 Ml/d to Havant Thicket Reservoir and then combined with Configuration D.2

This configuration uses the proposed Water Recycling Plant to supplement the spring-fed water within Havant Thicket Reservoir. Maintaining the water level in this way would increase the amount available for supply. The size of the plant is still being assessed and developed with Portsmouth Water. This configuration is presented in more detail below with the Water Transfer D.2.

Water Recycling Plant 75 Ml/d to a new lake near Otterbourne WSW

This configuration is the same as Alternative B.2, but with a larger Water Recycling Plant and a larger transfer of water (75 Ml/d).

This alternative requires a separate pipeline from our Peel Common Wastewater Treatment Works to carry treated wastewater to the Water Recycling Plant. This would be in addition to the pipeline from Budds Farm to the Water Recycling Plant. Together, these two separate sources of treated wastewater would provide the 75 Ml/d required. The development of the pipeline route between Peel Common and the Water Recycling Plant is in early design stages but would approximately follow the initial, roughly 25km, corridor shown in Figure 3.

Our proposals

Water transfer

Alternative use of the proposed Havant Thicket Reservoir

We are collaborating with Portsmouth Water to develop and fund the proposed new Havant Thicket Reservoir as an additional water source to support the water-stressed South-East. The reservoir will be filled with water from the Bedhampton and Havant Springs during the winter months. This scheme is part of Southern Water and Portsmouth Water's current WRMP but is not a potential alternative to the Base Case.

However, we are also working with Portsmouth Water to jointly explore a potential enhanced use of Havant Thicket Reservoir in the future. The proposal involves an additional transfer of water from the reservoir to our Otterbourne Water Supply Works. The potential of topping up the reservoir with recycled water from the proposed Water Recycling Plant is also being explored.

This configuration would involve transferring 75 Ml/d of water from the proposed new reservoir to our Otterbourne Water Supply Works. The Havant Thicket Reservoir would have a capacity of approximately 8.7 billion litres.

D.2: Water Transfer between Havant Thicket and Otterbourne WSW

This alternative comprises an additional abstraction of water from the proposed Havant Thicket Reservoir. It does not include supplementing the reservoir water with recycled water. A pumping station and pipeline would be required to transfer water from the reservoir to our Otterbourne Water Supply Works for further treatment. This underground pipeline would be about 35km long. The pumping station would comprise a small number of buildings and underground chambers connected to the reservoir by underground pipes. The initial corridors being considered are shown in Figure 4.

Combined Configuration D.2 and B.4: Water Transfer and smaller Water Recycling Plant

This alternative combines configurations D.2 and B.4 to supplement water levels in the proposed Havant Thicket Reservoir with recycled water.

Blending recycled water with the spring water that will naturally fill the reservoir would increase the amount of water available for supply. This would add resilience during a drought and has the potential to further reduce the need to take water from the environment.

This configuration would require a smaller Water Recycling Plant to supplement the reservoir and support the additional transfer of water.

It would include:

- A smaller water recycling plant capable of producing up to 61 Ml/d using treated wastewater from Budds Farm Wastewater Treatment Works.
- An underground pipeline, about 5km long, to transfer water from the Water Recycling Plant to the reservoir.
- A pipeline to transfer water from the reservoir to Otterbourne Water Supply Works, as outlined in Water Transfer Configuration D.2 on this page.

Our proposals

Water recycling

Figure 4: initial corridor routes between the proposed Havant Thicket Reservoir and the Otterbourne Water Supply Works

Environmental context

Our legacy

This section describes the surrounding environmental context for our Base Case, a 75 Ml/d desalination plant at Fawley, including the terrestrial, coastal and marine environment.

The Base Case is located within a sensitive environmental context which we will continue to consider carefully as we shape our proposals. In developing our plans, we need to consider and manage potential impacts to a wide range of environmental receptors.

Should our Base Case not be deliverable, we will need to carefully consider the environmental setting of our back-up solutions which also have the potential to impact a wide range of receptors.

"Hampshire, especially its rivers, coastline and marine environment, is home to a diverse range of wildlife. That's why we have a team of ecologists working alongside the local wildlife and river trusts to make sure that we minimise environmental impact during construction and deliver a lasting legacy of improved conditions for wildlife."

Nicola Catt, Senior Environmental Advisor

Shalfleet

Environmental context

Coastal and marine environment

The proposed seawater intake and outfall lie within the Solent and outer areas of Southampton Water, which are of high biological and nature conservation importance. These waters carry the highest level of environmental protection through national and international nature conservation designations.

These include Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar sites, Sites of Special Scientific Interest (SSSI) and Marine Conservation Zones (MCZs), as shown in the image on the next page. European nature conservation sites in the area are due to be incorporated into a National Site Network following the UK's departure from the EU, but are expected to continue to carry a high level of protection. Numerous Priority Coastal and Marine Habitats and Species and protected coastal landscapes are also present.

The proposed seawater intake and outfall are located within the Solent and Dorset Coast SPA which has been designated for important bird species (common tern, sandwich tern and little tern) that breed and feed in the area. The subsea pipelines may also need to pass through, or near to, the North Solent SSSI and Solent and Southampton Water SPA and Ramsar which support large numbers of breeding seabirds – including gulls and terns in the summer and waterfowl such as geese, ducks and waders in the winter. Large areas of the surrounding coastline are also designated under the Solent Maritime SAC, which is designated for important marine and estuarine habitats and other important features such as salt meadows and mudflats. A number of MCZs are designated in the Solent and wider English Channel, the nearest of which is the Yarmouth to Cowes MCZ located on the north-western coast of the Isle of Wight.

Southampton Water and the Solent, which connect with upstream rivers such as the Test and Itchen, also support the passage of migratory fish species such as sea lamprey and Atlantic salmon. The Solent also supports marine mammal species such as the common seal.

The Solent and Southampton Water are also important for coastal and marine users. For example, for fishing, navigation, other commercial uses and recreation.

Sandwich Terns

Environmental context

Coastal and marine environment

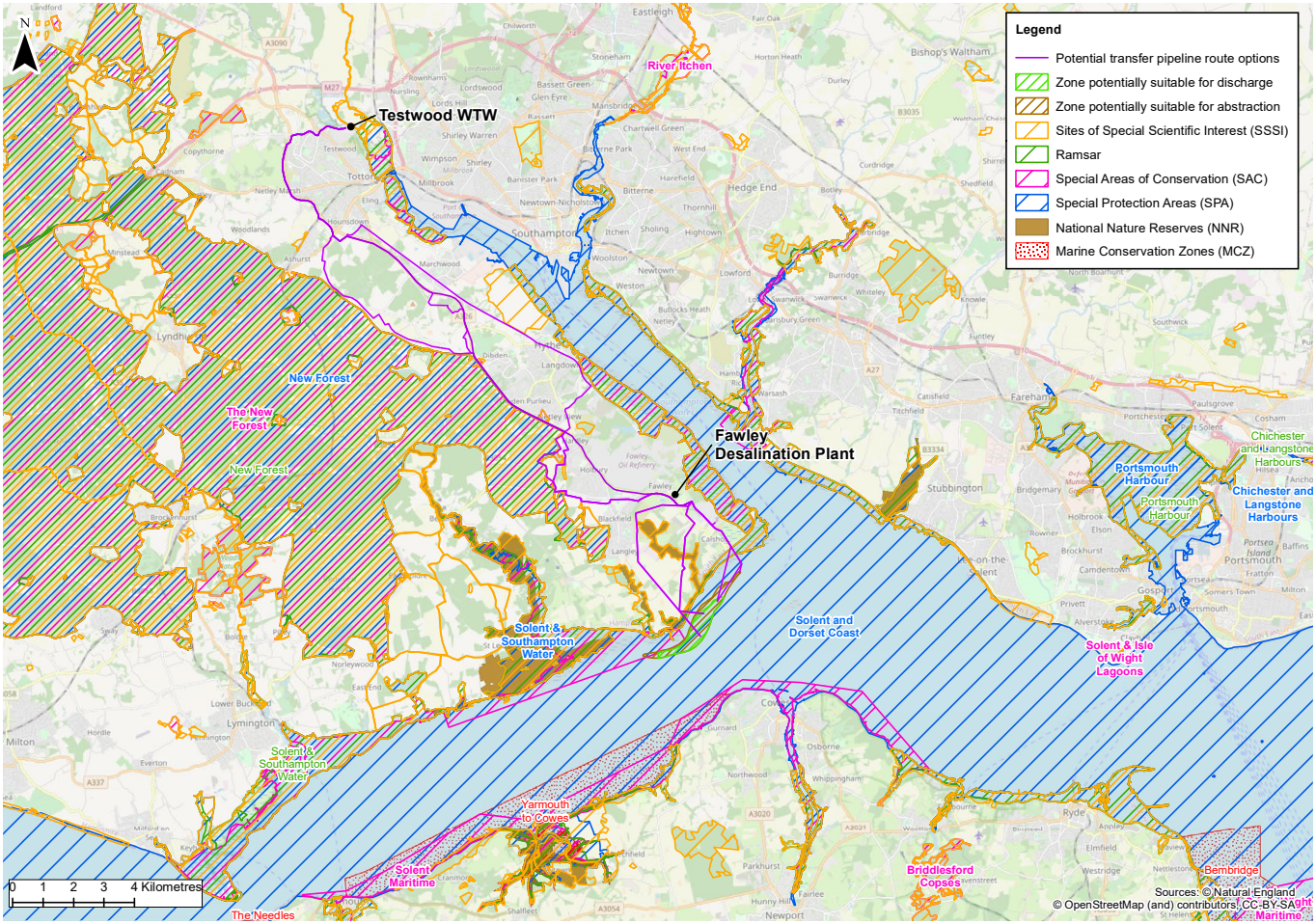


Figure 5: International and national nature conservation designations within the surrounding environment

Environmental context

Terrestrial environment

The terrestrial components of our Base Case, including the desalination plant, its pumping station and transfer pipelines cover a large area with the potential to impact a wide range of receptors.

The location of the desalination plant, as identified in our WRMP, is at Ashlett Creek in Fawley. This is located within the New Forest National Park which carries a high level of protection under national planning policy to ensure the protection of natural beauty, wildlife and cultural heritage.

The transfer pipelines cross large areas of the New Forest District, which include historic buildings and archaeological designations, rivers and green spaces, as well as residential and business communities who could be affected by our proposals.

The large number of nature conservation designations in the coastal and marine environment is also reflected in the terrestrial environment. For example, the transfer pipeline corridors are bordered closely by the New Forest SSSI and SAC, which supports a number of important habitats such as heaths, mires, grassland and woodland habitats.

A number of these habitats and species are sensitive to potential changes in groundwater and surface water flows. A wide range of protected and priority species also known to be present in the surrounding area, including a range of bats, dormice, and other species. A number of locally important wildlife sites are also present.

New Forest heathland

Environmental context

Terrestrial environment

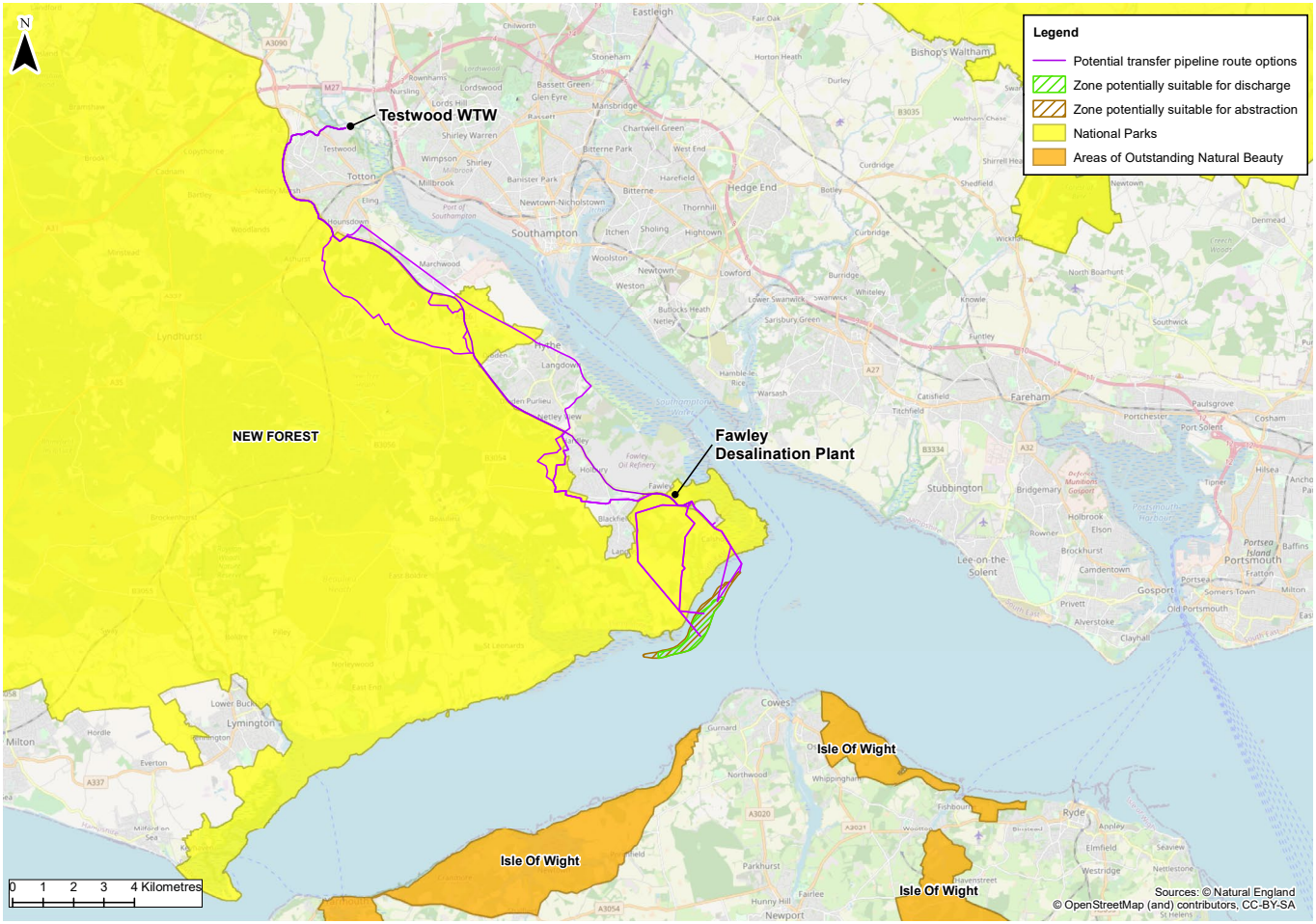


Figure 6: Our proposals are located within a sensitive landscape setting, including the New Forest National Park

What our proposals mean for you

Potential impacts

We recognise that our proposals have the potential to impact local communities and the surrounding environment in a number of ways. Impacts, both beneficial and adverse, may occur during construction and operation and will need to be assessed fully through an Environmental Impact Assessment (EIA) process. Further details on the EIA process are provided on page 36, see 'Environmental effects'.

The following sections provide further information on the construction and operational challenges associated with our proposals and how we will seek to identify and manage impacts.

This section describes the challenges and approaches for our Base Case, however many of these challenges would also apply to our back-up solutions. Should our Base Case not be deliverable, we will further explore the specific impacts of these back-up solutions and undertake further consultation.

Construction

Our construction proposals are still being developed and are at an early stage. However we recognise that construction of our Base Case may cause impacts and disruption to local communities and the surrounding environment. We will explore ways to minimise these impacts as far as possible, through the selection of appropriate construction methodologies, consultation and engagement with local communities, as well as the implementation of other controls or mitigation measures. Mitigation measures will be secured through appropriate planning controls to ensure we deliver the commitments made in our EIA.

We will work with experienced contractors to carefully plan construction activities at all stages of delivery. Below, we have set out some of the approaches we propose to take to address the key construction challenges for this project. We will need to develop detailed construction methodologies to support our application and will consult more on this in the future.

Construction challenges

Traffic management

Traffic management, including road closures may be necessary to enable the excavation and laying of new transfer pipelines to connect the new strategic water source to an appropriate point in the water distribution network. Road closures will be carefully planned in consultation with the relevant local authorities to ensure they are kept to a minimum to reduce the impact on traffic flows and local residents. All traffic management measures will follow the prescribed process and guidance.

We will undertake a construction traffic assessment to consider the traffic which will be generated during the construction phase of the proposed scheme and review the effects on, and measures to minimise, disruption to the local transport network.

We will develop a Construction Traffic Management Plan describing suitable transport routes for construction related traffic along the highway network and detailed plans to include specific access points off the highway to the individual laydown areas. Mitigation measures may include the exploration of alternative delivery routes such as marine transport to reduce the impact on the highway network where possible.

Other large construction projects planned during the same time in the same area, such as the Fawley Waterside Development, will be carefully considered to ensure construction programmes are aligned. Coordination of the projects will help ensure both are delivered without delays and any potential impacts on residents and businesses in the local area can be minimised.

What our proposals mean for you

Potential impacts

Proximity to residential properties

Full consultation with local residents will take place at key stages of the project to ensure any concerns are carefully considered and reflected in the project plans. The project team is developing a dedicated communications strategy, including involving any contractors working on our behalf to make sure residents are properly engaged and understand the detailed proposals. An environmental management and monitoring plan will be developed to ensure disruption caused by construction activities are minimised. Where sensitive receptors, including residential areas, are identified in the area, specific mitigations including the use of alternative construction methodologies and plant / equipment will be implemented to further reduce impacts. All construction works will be limited to specified working hours wherever possible.

Construction principles

We are committed to minimising the impacts of our proposals through the application of a number of key construction principles.

"We'll be using a range of best-practice techniques to ensure any disruption is kept to a minimum."

Rob Lawless, Senior Project Manager

Examples of the types of principles we will explore include:

- Use of best-practice construction techniques
- Using lean construction techniques such as reducing waste by using "just in time", and closely monitored, deliveries to reduce waste of materials and by maximising the use of recycled materials whilst minimising water and energy consumption
- Maximum use of ultra-low or zero emission plant and vehicles
- Use of the latest technological innovations and alternative approaches to improve safety and reduce the whole life cost of the construction
- Reduce whole life embedded carbon by developing alternative low carbon solutions including new materials and energy efficiency
- Construction works using best-practice management and monitoring techniques leading to high quality value for money construction
- Ensuring that training and skills development are supported, including considering apprenticeships, and ensuring that safety is at the forefront of everybody's thinking when working on the project
- Using off-site manufacturing where possible, so that packages / plant can be fabricated in a controlled environment remote from the construction site in order to reduce onsite construction impacts
- The project will be managed in accordance with the Considerate Constructors Scheme

What our proposals mean for you

Potential impacts

Environmental effects

Given the scale of the Base Case (and, in the event that one of them is taken forward, the back-up solutions), an Environmental Impact Assessment (EIA) will be required to be carried out to consider the likely significant impacts of the proposals.

We are committed to carrying out a comprehensive EIA which will inform our design as part of an iterative process. The purpose of the EIA process is to help identify the possible likely significant environmental effects of the proposals and identify how those impacts can be avoided, reduced or mitigated.

To support the EIA process, an extensive suite of environmental surveys is proposed to ensure we capture sufficient information on existing baseline conditions. We are planning surveys for our Base Case and back-up solutions to ensure we have robust baseline information for all eventualities.

Our EIA will be supported by a wide range of supporting assessments, including consideration of our proposals under the Water Framework Directive, Habitats Regulations and Environmental Net Gain requirements set out in the draft Water Resources NPS. These assessments will be undertaken with the support of experienced scientists, planning consultants and engineers.

The first stage of the EIA process will be preparation of a Scoping Report during 2021, which will set out the proposed scope and content of our EIA. Further information on how we proposed to identify and manage some of the key impacts of our proposals is presented on the following pages.

Managing impacts

One of our key aims is to identify and manage any impacts of our proposals through further surveys and investigations, consultation and engagement, iterative design and robust impact assessments. This will enable us to identify appropriate measures to mitigate impacts.

In line with good practice EIA process, we will follow a ‘hierarchy’ of mitigations whereby we seek to avoid impacts in the first instance. Where impacts cannot be avoided, we will seek to reduce or compensate these as far as practically possible.

In addition to these steps, we are seeking opportunities to incorporate remediation, enhancement and environmental net gain where possible, not just by offsetting but by actually improving the receiving environment.

Our EIA will consider the full range of environmental receptors. The following sections further explore how we are proposing to explore managing impacts across several key environmental receptors.

Damselfly © Dick Hawkes

What our proposals mean for you

Potential impacts

Biodiversity

Our proposals have the potential to affect both designated and non-designated habitats and species. Further work will be undertaken to ensure these are managed appropriately. In particular, we will review our proposals against compliance with the requirements of the Habitats Regulations.

We recognise that development will be required within the sensitive Solent and Dorset Coast Special Protection Area (SPA), combined with potential impacts to habitats and loss of food sources due to abstraction intake and brine waste-stream extending across the West Solent. We will also carefully investigate potential disruption of migratory fish using the Solent and Southampton Water to access spawning sites on upstream chalk rivers, due to the abstraction intake and brine release. Further investigations will be undertaken to support this work through modelling of the brine dispersion, refinement of the location and design of the intake and outfall structures and exploration of possible mitigation measures. Potential impacts in terms of temperature and turbidity will also be carefully considered.

Care will be taken to ensure the buried transfer pipelines do not cause severance of surface and groundwater flows that support a number of key habitats and species in the surrounding area. Where the transfer pipelines cross rivers, we propose to horizontally drill beneath these features to minimise impacts to aquatic habitats and flows.

A number of terrestrial and aquatic habitats in the area are sensitive to air quality changes, for example through nitrogen deposition which can cause disruption to the life cycles of animals and plant life. We will need carefully consider emissions from our proposals (e.g. from HGV vehicles or back-up diesel generators) to ensure these impacts are minimised.

Ecological enhancements and biodiversity net gain opportunities will be explored and developed further as our proposals progress, ensuring any identified opportunities are secured through agreements with statutory bodies, local wildlife organisations and interest groups.

Migrating Salmon

What our proposals mean for you

Potential impacts

Historic environment

The construction and operation of water resources infrastructure has the potential to result in adverse impacts on the historic environment above, at and below the surface.

'Historic environment' refers to those elements of the environment that have formed from, or are present as a result of, the interaction between people and their surroundings throughout the past. It includes 'heritage assets' such as historic buildings, elements of landscapes, parks and gardens and archaeological monuments and remains, which people identify and value as contributing to their shared culture and heritage.

Archaeological and historical context

There are numerous Scheduled Monuments within the surrounding area, including Calshot Castle (a sixteenth century artillery castle), a Scheduled Monument close to Holbury Manor (moated site, fishponds and associated settlement site, 200m west of Holbury Manor), and a Roman road on eastern edge of Beaulieu Heath, 220m north east of Hardley Bridge Ford. Similarly, listed buildings are numerous with a large number at the waterfront in Hythe and in Marchwood. Numerous non-designated heritage assets also exist throughout the area which will also be considered.

The area encompassing the New Forest National Park also has a rich historical past. It was proclaimed a royal forest in 1079 for use as a royal hunting ground and was a naval plantation in the eighteenth century.

The Solent and Southampton Water have also long been recognised as important areas for marine heritage.

Sheltered landing places along the coastline have drawn human populations to the area for millennia and have contributed to the development and prosperity of the region.

There is also the potential for unknown (i.e. undiscovered) archaeology to be present within the terrestrial and marine environment due to the area's rich history.

To further understand the historic environment, we will undertake a number of surveys and investigations including reviews of historic mapping and data, non-intrusive ground-scanning surveys and potentially some excavations at selected locations. Effective ways to promote understanding of the historic environment during development of the project will be identified through the EIA process. This may take the form of talks with local history and archaeology groups or community engagement through local groups and schools.

Landscape

A detailed Landscape and Visual Impact Assessment will be undertaken to identify the impacts of the proposals on landscape and urban character, valued landscapes and views. Landscape and visual effects also include tranquillity effects, which would affect people's enjoyment of the natural environment and recreational facilities. The impacts on the urban, industrial, rural and coastal characters will be considered with valued landscapes such as the New Forest National Park and maritime seascapes will be given particular consideration.

Good design is key to sustainable development and will be embedded within the project development through site layout and measures relative to existing landscape and historical character and setting.

What our proposals mean for you

Potential impacts

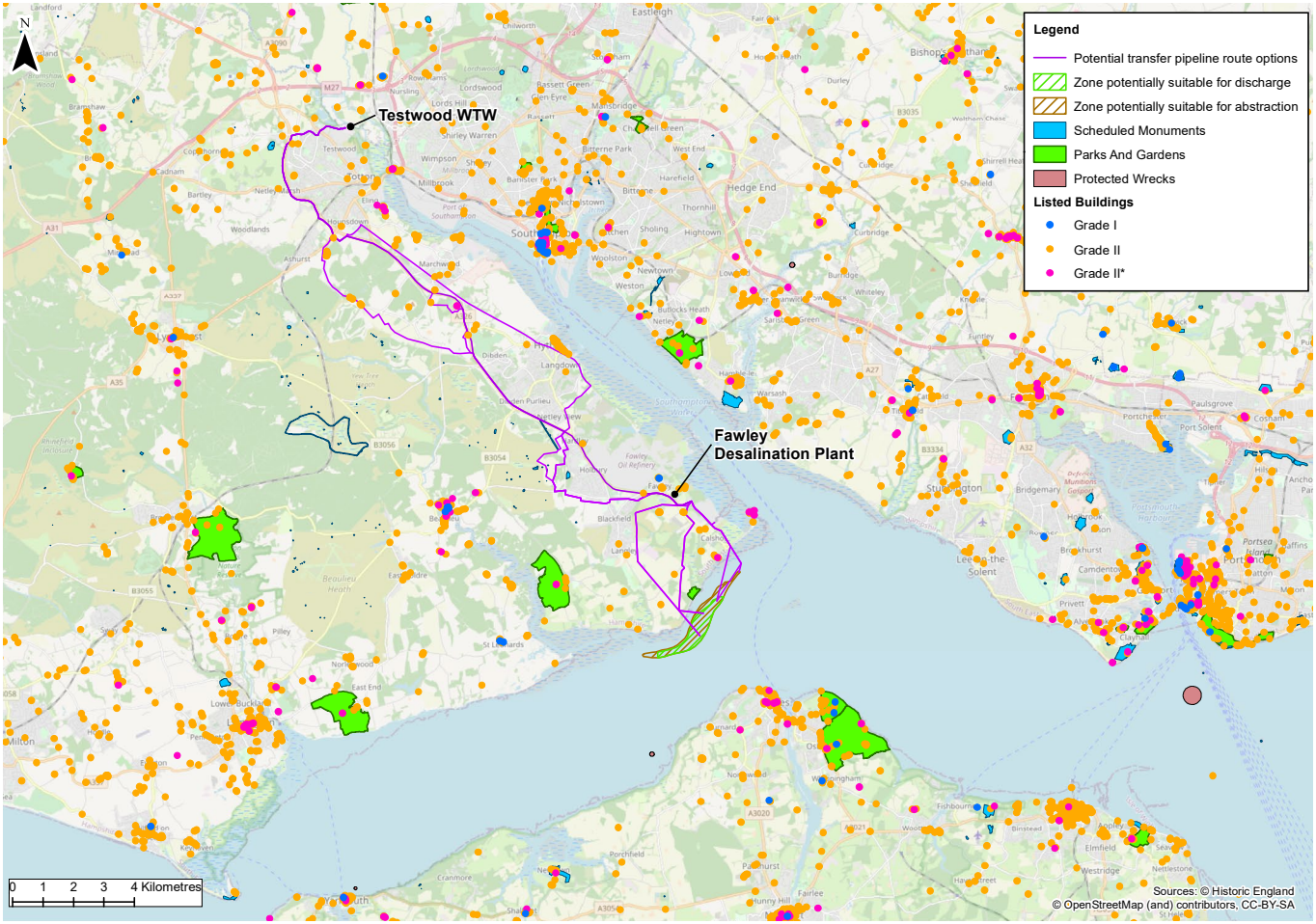


Figure 7: There are number of important heritage features located within the surrounding area

What our proposals mean for you

Potential impacts

Climate change and carbon

Due to the technologies involved, desalination has high energy demands. We are exploring opportunities to reduce energy demands and take into consideration the carbon intensity of the power supply for the desalination plants.

We are also looking at ways to reduce carbon by considering climate impacts at construction and during operation. This will be done through the selection of plant, materials and construction techniques. We will also future-proof our designs by ensuring they are resilient to the impacts of climate change.

Noise and vibration

If not managed properly, excessive noise and vibration from our proposals could impact people's quality of life and health, use and enjoyment of green spaces and areas with high landscape quality. Noise can also affect terrestrial and marine biodiversity. Noise and vibration impacts may occur through operation of the desalination plant and associated infrastructure and through construction activity, particularly piling and the movement of machinery and vehicles.

Where possible, we will seek to reduce noise emissions at source through design choices, choice of construction plant, timing of construction activities and screening.

An extensive noise survey will be carried out to ensure the assessment is carried out against a representative baseline. Noise and vibration will be assessed in line with all relevant local and national noise policy and in accordance with the relevant guidance documents and British Standards.

People and communities

Operation of the desalination plant will secure a long-term drinking water supply for local communities in the event of a drought. It will also create job opportunities for local people, particularly during construction. However, construction and operation of our proposals has the potential to cause some disruption to local communities, which we will work hard to keep to a minimum.

The coastal location of the proposed desalination plant, on the edge of the New Forest National Park, and the nature of the surrounding area means that there are several recreational and residential receptors in the surrounding area. These include the Calshot Beach and Lepe Beach which are both designated as bathing beaches. There are Public Rights of Way across Badminston Farm and in the North Solent Nature Reserve where it extends into Dark Water near Blackfield.

Flood risk and drainage

We will consider both the impacts of our proposals on flood risk and drainage, as well as their susceptibility to flood events. We will also consider the impacts of climate change and coastal change. A Flood Risk Assessment (FRA) will accompany our application to assess this fully. Where possible we will explore sustainable drainage systems, such as wetlands and bioswales, to minimise impacts to fluvial, estuarine, or surface water flood risk.

Lepe beach

Next steps

After the consultation

After the consultation ends, we will publish a report summarising the feedback received and our response. From this, the project team will make recommendations for further development of the scheme, including potential mitigation measures in relation to environment, landscape, water quality, climate change and heritage.

As the project progresses, further consultation will take place. We will keep you informed on this and further opportunities for you to be involved.

We have not yet confirmed which consenting route we will progress through for the Base Case. However, we are currently considering whether the best option for delivery would be to seek to bring the project into the Development Consent Order (DCO) regime to consider the project as a whole (including marine licenses and other consents required for the project) or to seek consent via conventional planning applications under the Town and Country Planning Act regime, accompanied by relevant marine licence applications for works in the marine environment. This is subject to further investigation and engagement as our proposals are developed further.

The DCO process involves making an application to the Planning Inspectorate (PINs) under the Planning Act 2008 to seek development consent for the proposals. Under this consenting route, the application would be considered by an appointed Examining Authority with the application eventually being determined by the Secretary of State.

The DCO process seeks to deliver a streamlined route for Nationally Significant Infrastructure Projects and was established to provide a faster and fairer process for both communities and applicants. The process puts emphasis on engagement with communities and stakeholders at the pre-application stage to allow for the opportunity to influence a project at an early stage. The DCO process also allows decisions to be made more quickly when compared to traditional consenting routes, which is particularly important for the tight timescales required by our WRMP19 commitments, as set out in the 'Story so far' section of this document. Given the importance of the desalination plant at Fawley to meeting the region's water supply demands, we consider that it could be considered 'nationally significant'.

Should a DCO be sought, a number of other consents will also be required to ensure compliance with all necessary consenting regimes.

"It's really important that you share your views with us and help us shape our plans. After all – it's your water we're talking about."

Nick Eves, Head of Strategic Customer Insight

Next steps

Share your views

This consultation is your opportunity to express your views on our proposed "Base Case" solution and alternative "back-up" options.

We are seeking views on the following elements of the Base Case:

- Options for abstracting water from the Solent
- Information on the desalination plant infrastructure and the ways we are considering managing the cleaned wastewater (brine) removed from the seawater
- The alignment of the underground pipeline, to connect drinking water produced by the project, to our network

We will listen to your views, publish a consultation report and use this to inform the development of the programme.

Further information on the programme and work to date can be found at the following link:

www.southernwater.co.uk/water-for-life-hampshire

Here you'll find a digital copy of this brochure as part of a virtual exhibition that allows users to virtually move around a 360-degree image of an information event and interact with materials including banners, videos and technical documents, as if you are attending an exhibition.

The easiest way for you to send us your feedback is to complete the online feedback form. To request a printed copy of the form and this brochure please write to:

WATER FOR LIFE – HAMPSHIRE,
PO BOX 5215

The address must be written in capital letters and you do not need a stamp.

If you have any further questions or would like to find out more, visit our web pages or contact us by email at WFLH@southernwater.co.uk.

Your feedback is important to us in shaping a solution for ensuring future water supply in Hampshire. We will consider all the comments we receive and, where appropriate, use them to help us develop our proposals further.

The deadline for submitting responses to the consultation is 16 April 2021.

Glossary

Term, abbreviation or acronym	Definition
1-in-200-year	A severe drought – the return period of a significant drought and is the design drought year in WRMP19
1-in-500-year	An extreme drought
ABE	All best endeavours
AONB	Area of Outstanding Natural Beauty - an area of countryside in England, Wales or Northern Ireland which has been designated for conservation under the Countryside and Rights of Way Act 2000 to protect, conserve and enhance its natural beauty
AOP	Advanced Oxidation Process
Base Case	The preferred strategy in WRMP19. Option A.1 (75Ml/d desalinated water from Fawley to Testwood WSW)
Catchment	The area of region where all water flows to a single point, e.g. for a wastewater catchment, all wastewater flows to a single WTW for treatment
Configuration	The structure of each Option (e.g. technology choice, route to deliver water)
COVID-19	Coronavirus Disease
DCO	Development Consent Order - a DCO is a statutory instrument (law) that grants consent for a Nationally Significant Infrastructure Project under the terms of the Planning Act 2008. A DCO can combine consent to develop, operate and maintain a project, alongside a range of other approvals that would normally have to be obtained separately, such as listed building consent, deemed marine licence and certain environmental consents. A DCO can also contain powers for the compulsory acquisition and temporary possession of land.
Drought Order	Powers granted by the Secretary of State during drought to modify abstraction / discharge arrangements on a temporary basis
Drought Permit	An authorisation granted by the Environment Agency under drought conditions, which allows for abstraction / impoundment outside the schedule of existing licences on a temporary basis
EA	Environment Agency
EIA	Environmental Impact Assessment - the aim of EIA is to protect the environment by ensuring that a relevant authority (local planning authority or Secretary of State) when deciding whether to grant a planning permission or DCO for a project which is likely to have significant effects on the environment does so in the full knowledge of the likely significant effects and takes this into account in the decision making process. EIA also enhances public engagement in the process as consultation on EIA is mandatory.
Fawley Site	The site described in WRMP19
Gated Process	The formal staged process, run by Ofwat, for specific water companies to investigate solutions and for regulators to review progress and determine how, and if, the solutions will progress.

Glossary

Groundwater	Water held underground in the soil or in voids in rock
HRA	Habitats Regulation Assessment - assessment to consider potential effects on designated European sites
MCZ	Marine Conservation Zone
Ml/d	Megalitres (million litres) per day
NE	Natural England
NFNP	New Forest National Park
NPS	National Policy Statement - produced by government under the Planning Act 2008. They comprise the government's objectives for the development of nationally significant infrastructure projects in a particular infrastructure sectors (energy, transport, water, wastewater and waste). There are currently 11 designated NPS, setting out government policy on different types of national infrastructure development. The NPS for water resources is currently in draft form, pending designation by the Government. Applications for DCOs are decided in accordance with the relevant NPS.
NSIP	Nationally Significant Infrastructure Project
Ofwat	Water Services Regulation Authority - The economic regulator of the water sector in England and Wales
Planning Inspectorate (PINS)	TThe Planning Inspectorate deals with planning appeals, national infrastructure planning applications, examinations of local plans and other planning-related and specialist casework in England and Wales.
Preferred Strategy	Final strategy for the Western Area as described in WRMP19 (formerly referred to as Strategy A in draft WRMP19) and is what is required to be delivered by the Section 20 agreement
Programme	All activities included within the scope of WfLH
Project	Specific activities required to deliver one of the options / solutions / schemes
PW	Portsmouth Water
RAPID	Regulatory Alliance for Progressing Infrastructure Development - formed to help accelerate the development of new water infrastructure and design future regulatory frameworks. Made up of the three water regulators: Ofwat, Environment Agency and Drinking Water Inspectorate. It was established with the intention of providing a seamless regulatory interface, working with the industry to promote the development of national water resources infrastructure that is in the best interests of water users and the environment.
Routes	A number of alternative routes have been identified for the pipeline component for the sub-option and configurations.

Glossary

s20	Section 20 - the agreement signed by Southern Water and the Environment Agency during the abstraction licence Inquiry in March 2018 under Section 20 of the Water Resources Act 1991.
SAC	Special Area of Conservation - land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora. Important high-quality conservation sites that will make a significant contribution to conserving the habitats and species identified in Annexes I and II, respectively, of the Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).
SSSI	Site of Special Scientific Interest - an area that is of particular interest to science, most commonly because of its rare plant or animal life.
SPA	Special Protection Area - areas classified in accordance with European Council Directive 2009/147/EC on the conservation of wild birds, known as the Birds Directive. SPAs protect rare and vulnerable birds (as listed on Annex I of the Birds Directive), and regularly occurring migratory species.
SW	Southern Water
T100	Target 100 water efficiency Initiative
WERF	Water Industry Research Foundation
WFD	Water Framework Directive - a framework for the protection of inland surface waters, estuaries, coastal waters and groundwater.
WfLH	Water for Life Hampshire
WRMP, WRMP19, WRMP24	Water Resource Management Plan - statutory plan setting out how water companies will supply healthy, reliable drinking water to homes and businesses for at least the next 25 years. These plans are published at least every five years. The plan published in 2019 is WRMP19 and the next update will be WRMP24 which is intended to be published in 2023.
WRP	Water Recycling Plant - a site whereby wastewater effluent is purified into water that can be reused as a raw water for providing drinking water.
WRSE	Water Resources South East, the regional body relevant for Southern Water's operational area.
WSW	Water Supply Works - A site whereby raw water is taken from the environment, treated and discharged into the distribution network supplying homes, businesses and industry.
WTW	Wastewater Treatment Works - a site where wastewater and sewerage is treated and released back into the environment.

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