

Strategic Context



Our emerging Drainage and Wastewater Management Plan

Strategic Context

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Introduction

Our Drainage and Wastewater Management Plan (DWMP), due to be published in March 2023, will set out our long-term vision for ensuring a reliable and resilient drainage and wastewater service.

Drainage and wastewater systems collect wastewater from homes or businesses and remove contaminants before safely returning water to the environment. They also play an important role in collecting stormwater and preventing homes and businesses from flooding.

South West Water owns and operates a complex system of c. 19,000km of sewer and 653 wastewater treatment works, providing wastewater services to 1.7 million people across the region. How drainage and wastewater systems develop and respond to pressures from population and climate change will affect the environment, communities and businesses throughout the South West and the many visitors to our region.

We have established business planning processes which have long helped us to address the challenges and demands placed on the region's water and wastewater systems. However, in order to continue to meet future pressures – such as changes in weather patterns and population growth – we need to move towards a more resilient and adaptive planning framework of drainage and wastewater services. We are evolving our processes and engaging with customers and stakeholders on what matters most and how best to meet their needs.

This document explains the strategic context for our drainage and wastewater management plans (DWMP). We set out an overview of our DWMP framework and process, our vision for 2050, the key strategic challenges, our planning objectives, and how we would like our customers and stakeholders to get involved in the process.

We hope you find this document interesting and we look forward to working with customers and stakeholders to gain feedback on the key strategic issues, so that our DWMP reflects what matters to communities across our region.

Our network is
c.19,000km
– equivalent from
here to Australia

653
wastewater
treatment works

What is a DWMP?

Background

A DWMP follows a nationally agreed framework (developed by the 21st Century Drainage Programme) to ensure our drainage and wastewater systems continue to deliver for our customers, support the local economy, and improve environmental water quality.

Our DWMP will cover the period from 2025 to 2050. This will be the first time the industry has set out long-term plans for wastewater and drainage services, which allow us to consider the full range of risks over a longer timeframe and adopt appropriate strategies to mitigate those risks through updating our infrastructure and changing the way it is operated.

Why do we need a plan?

Decisions we make today will impact on the service we provide to our customers and the environment for many years to come. It is important to get these decisions right, making the most of how we work in partnership with others and being more transparent about the process.

We want to provide a better understanding of the nature of current and future risks and how these impact upon our investment decisions linked to how we will provide long-term benefits across society and the environment. This in turn ensures we can balance future investment, bills and outcomes for our customers and the communities we serve.

Customer and stakeholder role in shaping the plan

A cornerstone of a DWMP is collaboration between water companies and key stakeholders. This partnership is essential for developing and delivering an innovative and successful plan which meets future challenges.

We will work in partnership with a range of stakeholders that have responsibilities relating to drainage, flooding and protection of the environment. Working with them and our customers we will shape and co-create a plan which takes account of future pressures and provides better value solutions for our customers and protects the environment in a more sustainable way.

Stakeholders and customers that we wish to engage with:

- Customers and communities
- Environment Agency
- Lead local flood authorities
- Local planning authorities and developers
- Our Upstream Thinking catchment partners
- Highway authorities
- Other interested parties – anyone else that shares our passion for water!

Through working together, we expect to deliver much greater benefits than if we all work individually.

21st Century Drainage Programme

Over 40 organisations from across the UK including water companies, government and policymakers, local authorities, charities, and community groups have come together to develop the 21st Century Drainage Programme.

The 21st Century Drainage Programme aims to facilitate consistent long-term planning for drainage and wastewater services. It has developed a set of tools that provides a common framework for identifying, assessing and evaluating drainage and wastewater risks and investment solutions.

Why co-create our plans?

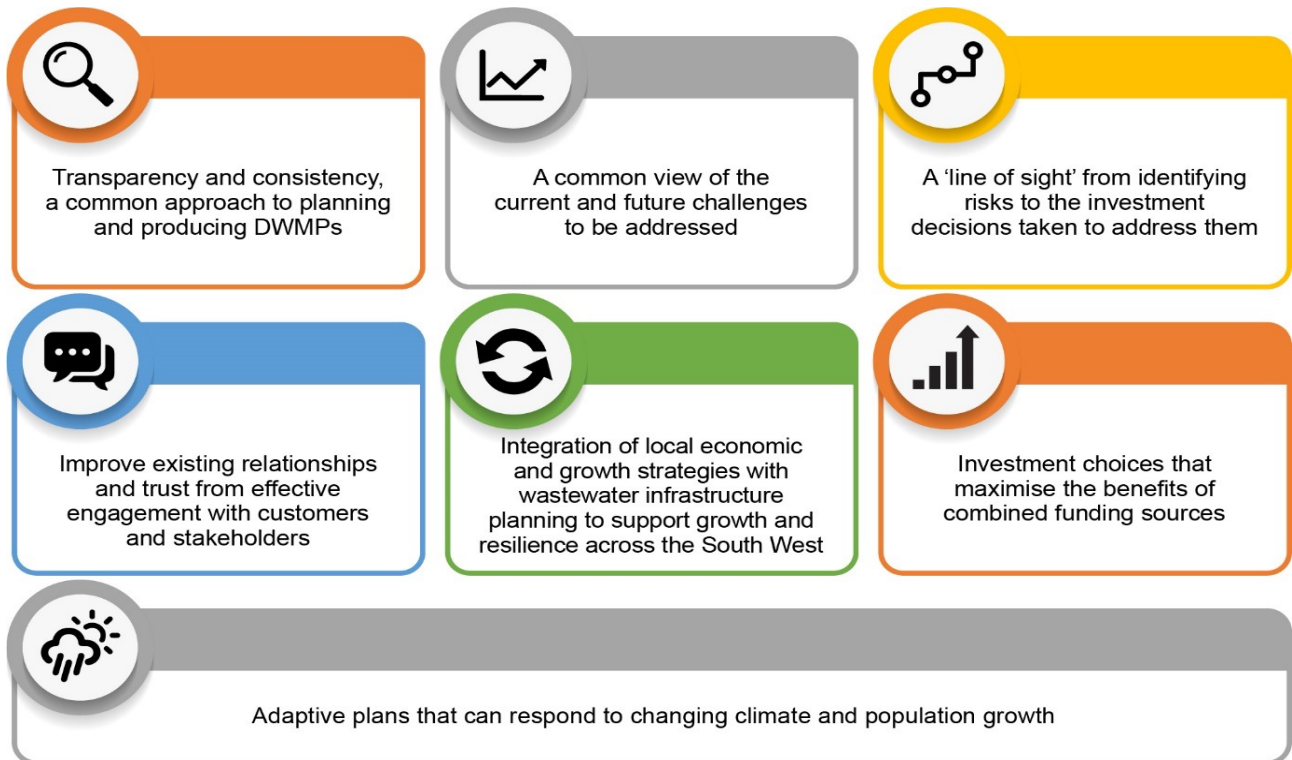
Co-creation puts customers and stakeholders at the heart of planning, ensuring they have a central role in the development of our plans from beginning to end. Through co-creation we combine all our ideas together – and ensure we deliver outcomes that work for everyone.



Benefits

The process of developing our DWMP with stakeholders and customers includes an opportunity to maximise outcomes by co-creating solutions to address the long-term risks that our region faces.

The DWMP will provide:



Key challenges and opportunities

Whether it is from flushing the toilet, running a bath, or doing the washing up, all the water we use needs to be collected, treated and returned to the environment safely. Added to this, we need to manage rainfall that falls on homes and roads.

We already know there are opportunities in this process. Valuable resources in the wastewater are already collected and used for renewable energy or fertilizer products.

In the future there are further challenges to address. **But we think new challenges bring new opportunities.**

Climate change is bringing changes to weather patterns – leading to hot and dry summers, and warmer and wetter winters. We can expect more frequent episodes of intense heavy rainfall to occur with a corresponding risk of more flooding of all kinds, including from sewers.

Investments to either improve sewer capacity or reduce the volume of rainfall runoff entering them will be necessary to maintain good wastewater service. Where there are opportunities to do the latter with blue-green technologies or Sustainable Urban Drainage Systems (SuDS), for example surface water attenuation ponds or swales, we can make communities more liveable and resilient to climate change.

The water industry has committed to achieving **Net Zero carbon** emissions by 2030 – the first sector in the UK to make this commitment.

What is a DWMP? continued

The population in the South West continues to grow – increasing the size of our towns and cities – and with it we see urban creep slowly removing green spaces that have long provided natural drainage.

A common feature of our sewer network are storm overflows. These were designed into older sewer systems, taking away storm water and sewage in the one system. They prevent flooding of homes and gardens by allowing releases into rivers and seas when rainfall generated runoff threatens to overwhelm drainage capacity. Whilst legal and permitted, customers and stakeholders see these as increasingly unacceptable because of the harm they can do to river ecosystems, shellfish waters and bathing waters. We want to reduce or eliminate spills from such storm overflows over time.

We also want to reduce flooding and pollution caused by pressures on the sewer network. Customers have told us that this is hugely important to them. Part of this involves working with customers to understand how we best protect our sewers. Wet wipes and other so-called “flushables” do not break down in the system, can cause blockages and hence flooding and pollution. We need to do more to make our sewer network more reliable, which in part involves ensuring our customers are aware of how their own behaviours can be part of the solution.

We estimate population growth from

1.7 million to 2.0 million
by 2050

Annually, we have up to **10 million visitors** to the region



ENVIRONMENTAL CHALLENGES

Climate change and population growth will place increasing pressures on our infrastructure. New developments can increase the risk of flooding and downstream pollution and more people living in, working in and visiting the South West generate additional wastewater (c.140 litres per person per day)



CUSTOMER EXPECTATIONS

Changes in customer behaviour, e.g. the flushing of non-flushable wipes and sewer disposal of cooking fats, as well as higher expectations driven by technological advancement, will require us to ensure our systems are adaptable and fit for purpose.



RESILIENT SYSTEMS AND SERVICES

Anticipating trends and managing the uncertainty of the timing and magnitude of these challenges is particularly important in enhancing our ability to cope with, and recover from, disruptions, to maintain services for our customers and protect the environment

What is a DWMP? continued

All water and sewerage companies face these key challenges, however, in our region we have some additional considerations such as:

- Our region contains over **150 Bathing Waters** (30% of the total in England) and **24 Shellfish Waters** (17% of the total in England). It is vital for the local economy and tourism industry that we maintain high water quality for these beaches and estuaries and invest in our wastewater treatment and drainage capacity accordingly.
- Affordability is a key concern in our region, with **higher than average bills** (due to the terrain) and **lower than average incomes**. Customers have told us that it is important that we continue to invest at a rate beyond that of the least able to pay, and we have in place a toolkit of support for those who struggle, however the affordability of solutions to address drainage and wastewater challenges is a key consideration.

Responding to these challenges and pressures provides significant opportunities to improve our service and benefit our communities.



150
Bathing
Waters

24
Shellfish
Waters

Case studies

St Joseph's Catholic Primary School

We have been working with St Joseph's Catholic School installing a rainwater harvesting system, and in just seven weeks the school saved 33,600 litres of water.

Smart rainwater management systems for flood alleviation

Faced with the challenge of repeated sewer flooding in Exmouth, a flood-prone town in Devon, South West Water took a first-of-its-kind approach which empowered the local community to help co-create practical solutions using state-of-the-art technology.

Rather than simply investing in additional storage – the traditional approach – the company teamed up with SuDS innovator OTA Water, local homeowners and a school to explore the benefits of using smart rainwater management systems. This provided a unique opportunity for engagement and education, while also empowering customers and harnessing the creative talents of school children to co-design the systems which are now in place and working successfully.

Thirty houses in Philipps Avenue, Orchard Close, Green Close and Bassetts Gardens have had special water butts or underground tanks installed at their homes. We also installed a 15,000 litre tank at the St Joseph's School, Regents Gate to store rainwater collected from the roof. The water is then treated and pumped into the toilet block where it is used to flush the toilets, reducing the school's use of tap water.

Children at the school took part in the project by designing their own rainwater re-use features during special water-themed workshops. The downpipe features now installed outside their classrooms (pictured) were based on pupils' drawings for rainwater re-use.

The school is using around 50% less tap water through the project, while the tank holds back rainwater during storms, which frees up much-needed capacity in the sewerage network.

The aim is to reduce the operation of storm overflows into the sensitive River Exe estuary and flooding and pollution further down the catchment.

The rainwater management system is also 'smart', enabling us to monitor rainwater volumes and control the tank so that it will always provide storm storage capacity. The tank is equipped with an automatic mains refill system, so the toilets will always function even if there's a prolonged dry spell.

Collecting stormwater locally for reuse in garden watering or toilet flushing, which also provides water efficiency benefits and can reduce customers' bills.



We work with communities and partners to find innovative and sustainable ways to manage the amount of rainwater entering our sewer network

Classroom downpipe features designed by the school children

The Cloud – It “rains” when it rains

- Fun visual for younger children
- Makes a talking point for class discussions about the weather and the water cycle
- Plant pots with different materials can be placed under the cloud to teach about permeability



Water turbine

- When it rains the turbine is turned, generating electricity
- When you push the button on the side the amount of electricity generated is displayed
- Can be used to teach about physics and hydro-electric power generation



Self-watering green wall

- Rainwater re-use feature
- Water is diverted from the gutter and fills each reservoir in turn. Once each reservoir is full water drips into the next one
- Perennial plants will grow year after year
- Provides an attractive feature and can educate about what makes plants grow



Tipping bucket drooling dinosaur

- The dinosaur ‘drools’ when it’s raining
- Water flows into the tipping bucket
- The school has a dinosaur in the grounds from the Exmouth Dinosaur trail – continues this theme
- The tipping bucket has capacity markings so children can calculate the quantity of water in a rainfall event
- Can be also used to teach about ‘the tipping point’

Plymouth integrated urban drainage model – flooding and pollution


South West Water has been working with the Environment Agency (EA) and Plymouth City Council (PCC) to develop the Integrated Urban Drainage Model (IUDM), designed to abate and better manage flooding and pollutions in Plymouth.

Collaborative solutions were developed in partnership with the other Risk Management Authorities (RMAs), and are listed on the EA's Medium-Term Plan. These include locations such as: Pomphlett Road, Lipson Laira and Fellows Place, the Western Approach to Millbay Strategic Pipe and Longbrook Road, which have suffered from chronic flooding.


The advantage of producing collaborative plans, in catchments with a long history of flooding and pollution, is that we can clearly identify the flooding mechanisms and interactions and develop holistic solutions. This resolves the root cause of the issues where no single Risk Management Authority (RMA) has historically been able to resolve those issues in isolation. We consider that this provides the best solutions for our customers, the environment, local businesses and the company by delivering multiple long-term benefits.

For example, the Ronsdale Close and Pomphlett Road scheme, Plymouth has been delivered using tri-partite funding. The full scheme provides sewer network improvements to remove 13 properties from the sewer flooding at risk register, which were previously non-cost beneficial to resolve and provided increased resilience to the combined sewer network through the generation of increased headroom. The scheme also delivered benefits realised by the project partners (the EA and PCC) of reduced localised surface water flooding, highway flooding and environmental enhancements to the intertidal mud flats. This is an example of how by working together, we can achieve a better outcome for our stakeholders, customers and the environment.


Additionally, we are considering other ways to respond to these challenges such as:



Using treated effluent to augment river habitats and for non-potable use



Co-creating infrastructure to develop our network and contribute to wider flood and pollution resilience in communities



Creating new urban green spaces to capture and control stormwater instead of it entering our sewers. This will support biodiversity and improve local environments



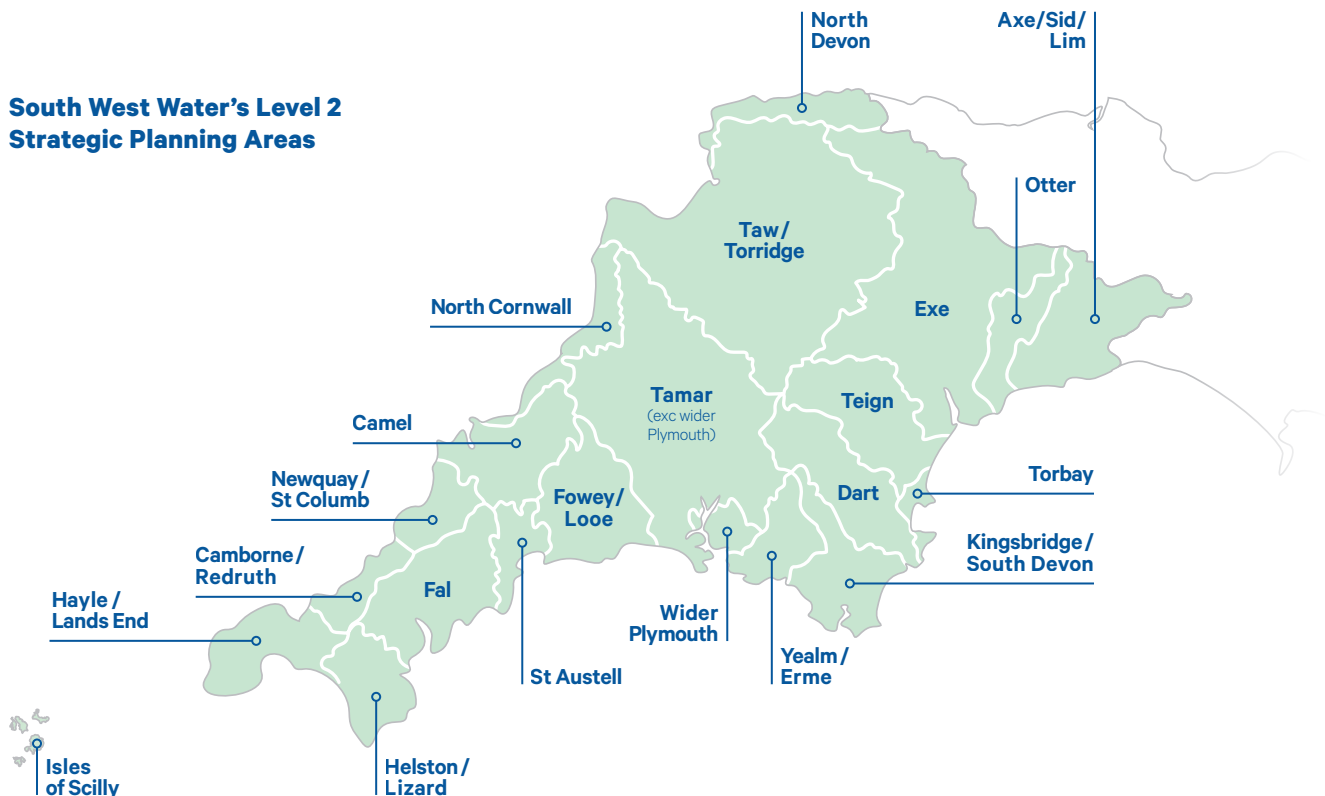
Overview of the DWMP framework and process

The DWMP has three planning levels:



¹ For some engagement activities, the 22 strategic areas may be grouped together where appropriate

South West Water's Level 2 Strategic Planning Areas



Delivering for customers – our vision for 2050

We published the latest version of our future vision in 2017. This set out our vision to 2050 based on discussions and conversations with our stakeholders and customers.

We want the development of the DWMP to be in the context of our wider vision to 2050 – as this sets out our strategic objectives, which include:

- Zero harmful pollution incidents (Category 1 and 2)
- Approaching zero internal and external sewer flooding incidents
- 100% compliance with wastewater treatment works permits
- All bathing waters effected by our wastewater treatment works to meet 'good' or 'excellent' status
- Approaching zero complaints about odour from our wastewater treatment works
- A healthy, good condition sewer network.

Delivering this vision for our customers remains a key priority.

Underpinning our vision to 2050 is a set of performance commitments and outcomes for the period 2020-25.

To ensure we are customer-focussed and transparent we have clear targets and each year we publish our performance against these targets. Ten performance commitments are relevant to the drainage and wastewater service.



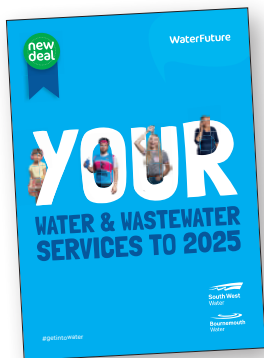
Outcome	Performance Commitment
 <p>Reliable wastewater service Ensuring our customers can rely on us to remove and dispose of wastewater safely and efficiently, and that the likelihood of sewer flooding on customers' property is minimised.</p>	<ul style="list-style-type: none"> • Internal sewer flooding incidents • External sewer flooding incidents • Sewer collapses • Sewer blockages • Wastewater treatment works numeric compliance • Wastewater descriptive works permit compliance • Compliance with sludge standard
 <p>Resilience Making sure our water and wastewater services are resilient to a range of risks and we are able to respond quickly and effectively to extreme events.</p>	<ul style="list-style-type: none"> • Percentage of population at risk from flooding in a 1 in 50-year storm
 <p>Protecting the environment Minimising our impact on the world around us and taking steps to protect and enhance it where possible.</p>	<ul style="list-style-type: none"> • Number of pollution incidents (Categories 1-3)
 <p>Benefiting the community Having a positive long-term effect on people and quality of life in the region.</p>	<ul style="list-style-type: none"> • Bathing water quality

For our 2020-2025 business plan and vision we undertook our largest engagement programme with customers. We continue to listen to customers.

Our latest priorities

Since our business plan was developed with customers in 2018, we have continued to track customer priorities. Across our wastewater network our customers tell us their top priorities.

Our customers have told us that their top ten priorities to 2025 are...



Four out of the top five priorities **focus on preventing flooding and improving the water environment**

In addition, our customers increasingly tell us that steps to address climate change are important to them and a high priority.

Under the DWMP framework, planning objectives are set by water companies and used to assess and describe the level of current and future risks. The planning objectives need to reflect the challenges and pressures identified in the previous section and are informed by the performance commitments and outcomes we already have agreed to 2025, which in turn reflect the areas our customers have told us are most important to them.

Planning objectives are used in the risk assessment stage of the DWMP process to assess the level of risk within the level 2 and level 3 planning areas. Not all level 3 planning areas are assessed because some are pre-screened as low risk during the risk based catchment screening process.

Delivering for customers – our vision for 2050 continued

Our Planning Objectives are summarised below along with the planning horizons for which we will be assessing future performance.

Category	Planning Objectives – Measures	Outcome	Current	2025	2035	2050
Flooding	Internal sewer flooding	 Reliable wastewater service	✓			
	Risk of sewers flooding in a 1 in 10 year storm	 Resilience	✓	✓	✓	✓
	Risk of sewers flooding in a 1 in 50 year storm		✓	✓	✓	✓
Pollution	Pollution risk	 Protecting the environment	✓			
	Severe pollution risk		✓			
	Storm overflow performance		✓	✓	✓	✓
	Risk of wastewater treatment works compliance failure	 Reliable wastewater service	✓	✓	✓	✓
Asset Health	Sewer collapse risk	 Reliable wastewater service	✓			

Future performance will be modelled against a number of scenarios for each catchment area and each relevant planning objective to assess the level of current risk. Risk will be assessed as ‘not significant’, ‘moderately significant’, or ‘highly significant’. The threshold levels for each Planning Objective will be developed based on customer and stakeholder input, as part of the co-creation of the plan. We will also be assessing the certainty levels for each of the risk assessments so they can be graded either ‘highly certain’, ‘moderately certain’, or ‘not certain’.

Once these predictions and risk profiles are better understood, long-term objectives can be established for each catchment. Long-term objectives for each area will guide the subsequent Options Development and Appraisal (ODA) stage of the DWMP process which will examine the best way to achieve this goal, taking account of the certainty we have in the level of risk and how well we understand the problem.

Next steps

What we want from customers and stakeholders

As we work through and develop plans to March 2023, we want to know your views so that our DWMP reflects what matters to customers and stakeholders.

We have long-established processes through which we talk with our customers. We understand the issues that matter to them and which we know are important and will impact now, and over the next 25 years, on how we manage wastewater and rainwater in the region. As well as our business as usual processes to understand topics relevant to the DWMP, customer surveys, workshops and focus groups ensure that we understand views and can incorporate into our plans.

It is important that we understand how we manage wastewater and rainwater in the region to meet customer needs. We have an established process through which we talk with our customers about the issues that matter to them and which we know will impact now and over the next 25 years. Our monthly tracking research cover topics relevant to the DWMP, but we also undertake additional customer surveys, workshops and focus groups to ensure we understand views and can incorporate into our plans.

We also engage our stakeholders and delivery partners, and this is important for our DWMP. Workshops across the region with Local Authorities, Lead Local Flood Authorities, and environmental organisations who we already work with to deliver our catchment schemes – such as the Wildlife Trusts and Rivers Trust - provide important perspectives and opportunities to partner together.

As we continue to listen to our customers and stakeholders, we share views and publish them in future consultations.

If you would like to send us your feedback or get involved with the DWMP process, please visit www.southwestwater.co.uk/dwmp

Consulting on the draft DWMP

Our draft DWMP is an important milestone in developing our plan. Published in June 2022, this gives customers and stakeholders the opportunity to share their views with us on both the plan for the Region and the 22 local strategic planning areas which sit beneath it.

The draft plan is a consultation for all with an interest in how water is managed across the South West to take part. As well as an online consultation, we also plan to hold stakeholder workshops during the consultation period which we expect to last from July 2022 to September 2022.

Keep your eye on our website for further details of how you can get involved in the consultation.





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