

Drainage and Wastewater Management Plan (DWMP)



Strategic context
Outlining the DWMP process



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What is the Drainage and Wastewater Management Plan?

Whether it's coping with the rainwater that falls on our roofs and streets, or the water that we flush down the sewers, the Drainage and Wastewater Management Plan (DWMP) is our opportunity to improve the lives of people, and the environment, in the East of England over the long-term. We will use it to plan for investment in drainage, treatment and sewerage systems. This collaborative and long-term strategic plan will highlight the known and expected future risks to drainage and treatment, and identify the solution strategies to mitigate.

Following the DWMP Framework published in September 2018, plans will be co-created by water companies and stakeholders with any interest in drainage and wastewater management. Unlike the Water Resources Management Plan (WRMP), there is currently no statutory requirement for UK Water and Sewerage Companies (WaSCs) to produce collated and outward facing long-term drainage and wastewater plans. The DWMP will bridge this gap and create a consistent and transparent approach across the UK.

The DWMP is a long-term plan covering 2025-2050, looking at the risks in 2025, 2030, 2035 and 2050. With this broad range of design horizons, we can monitor the predicted change over time on a range of measures as agreed with our stakeholders. It will highlight where we anticipate risk from growth and climate change, as well as the impact of customer behaviours, and demonstrate the need to meet environmental regulations and the inter-relations between ours and stakeholders' assets.

From understanding those risks, we can identify the best value solutions and promote the benefit of a co-created multi-benefit approach for sustaining reliable and affordable levels of service. The DWMP will be a tool to facilitate working in partnership to mitigate risk.

Whilst the DWMP uses the term wastewater, Anglian Water uses the term Water Recycling, this is because we do not believe water can be considered as waste. To remain consistent with the industry, we will retain the term in the title of the DWMP only.

Our long-term strategic view

Our aim, supported by our long-term shareholders and our customers, is to enhance and support the communities we operate in. Every decision we make as a business considers the social and environmental impacts of our activities and we continuously seek new and innovative ways to improve the prosperity of our region over the longer term.

Anglian Water has four ambitions as outlined in our Strategic Direction Statement (SDS) and ten long-term outcomes which underpin what we do. These are the core principles that we focus on as a business and have been developed through extensive engagement to identify what is important to our customers and stakeholders.

Our strategic direction statement ambitions



Make the East of England **resilient to the risks of drought and flooding**



Enable **sustainable economic and housing growth** in the UK's fastest-growing region



Be a **net zero carbon business** by 2030



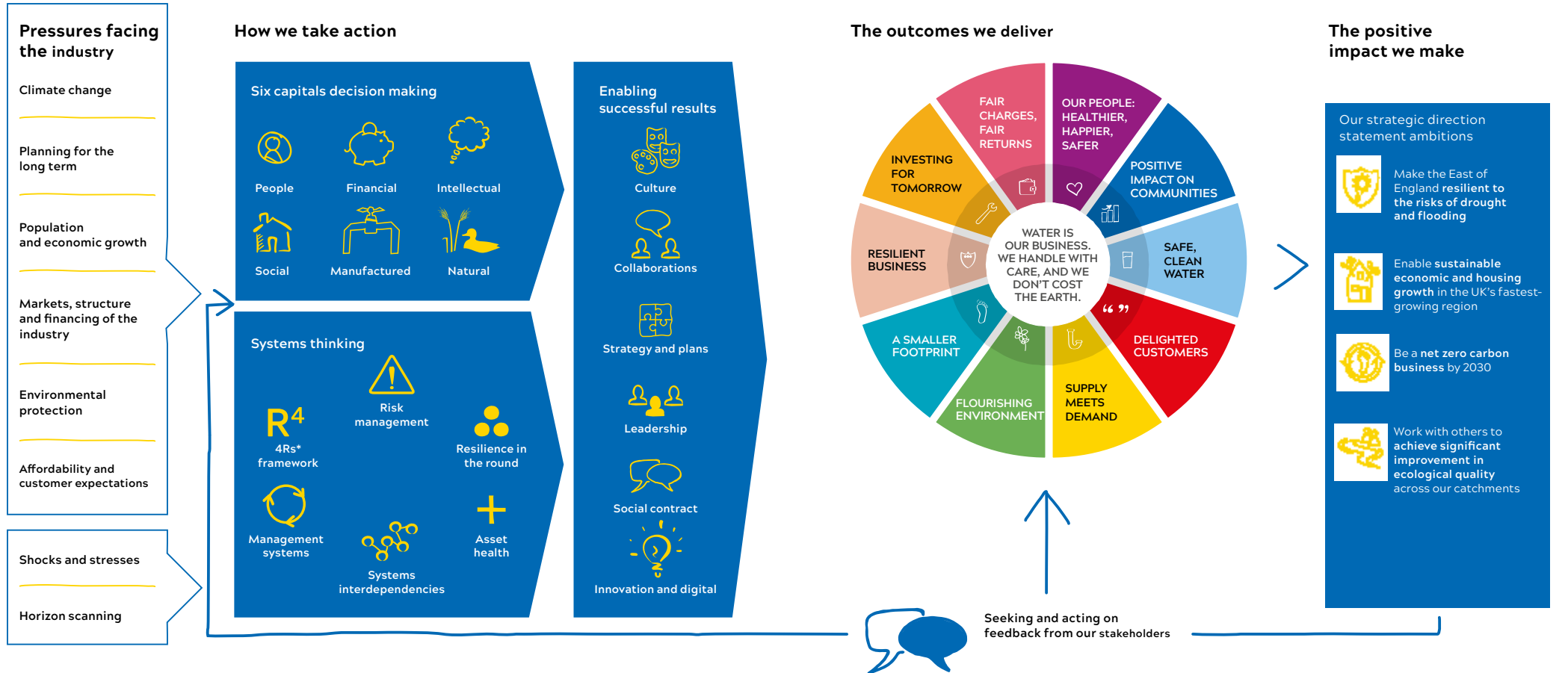
Work with others to **achieve significant improvement in ecological quality** across our catchments

Our business model

Creating value for our communities

We support and promote the wellbeing of communities through our sustainable business model. It is structured to create long-term value for customers, employees, investors, business partners and the wider community.

Our purpose is to bring environmental and social prosperity to our region through our commitment to Love Every Drop. Our business model is structured to create long-term value for customers, employees, investors, business partners and the wider community.



Global drivers for change – United Nations Sustainable Development Goals



* The 4Rs of Resilience refers to Resistance, Reliability, Redundancy and Response & Recovery.

The DWMP will support our company vision for a fully integrated water and water recycling system that provides reliable, affordable and sustainable levels of service for customers and businesses, while fully protecting the environment and maintaining a working system into the future. We want this system to be resilient to the effects of growth, climate change and severe drought; to minimise our water and carbon footprints; to enhance biodiversity and to increase the resilience of natural systems in our region, upon which we depend. Our climate-related goals are to mitigate our emissions and become a net zero carbon business by 2030 and to adapt so that we are fit for four degrees - that is, so that our

services are resilient if global temperatures rise by 4°C in the coming years. As well as aligning to our outcomes for our customers and the environment, the goals of the DWMP also align with our Strategic Direction Statement, embed the six capitals into our decision making and will inform our PR24 Business Plan.

Our board has committed to using six capitals thinking. First introduced in 2015 as a concept, this framework is now becoming formalised to be business as usual during AMP7 and to be integrated into strategic planning. They will be a key part of the thought process throughout the DWMP programme.

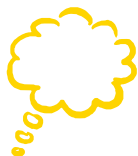
Six capitals



People



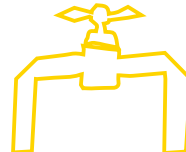
Financial



Intellectual



Social



Manufactured

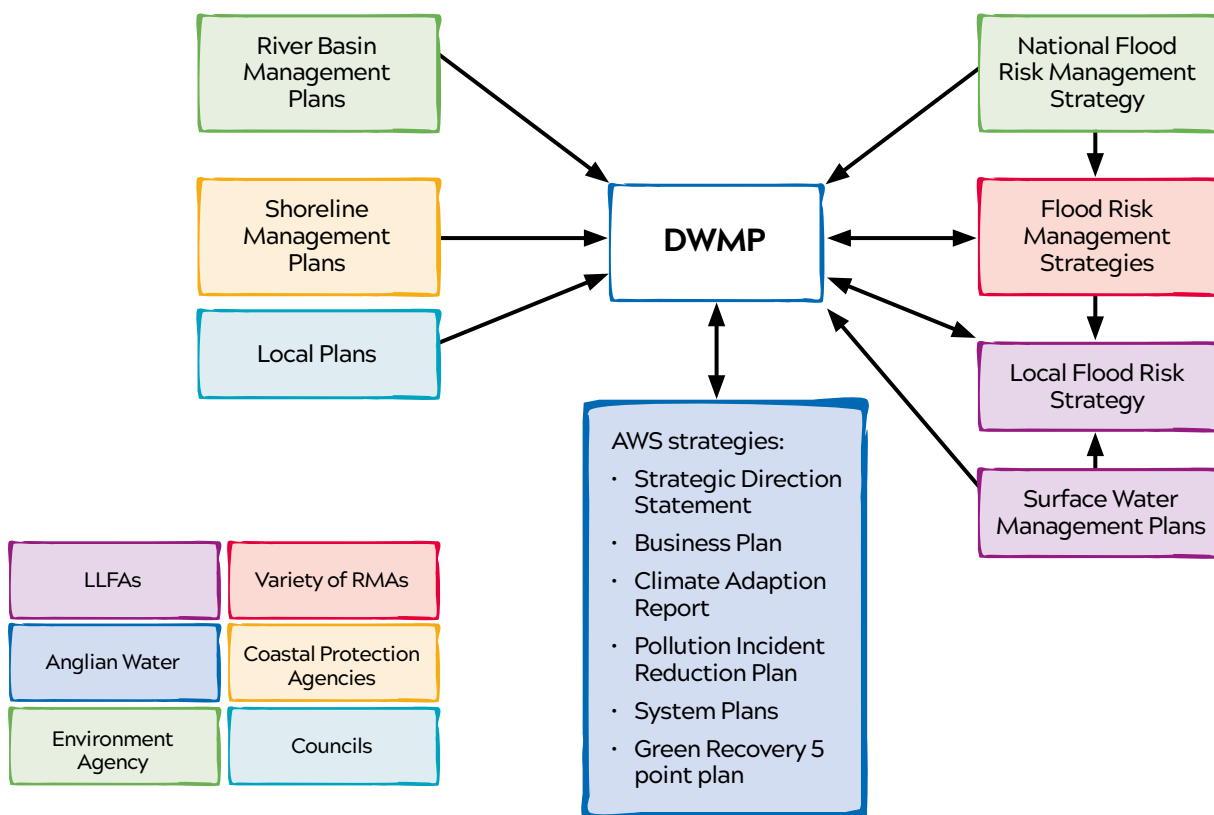


Natural

Relationship with other strategies

There are many strategies and long-term plans that are produced to gain an understanding of future risk. The following illustration demonstrates how the

DWMP fits into this. It is by no means an exhaustive list of all strategies, but an indication of the various approaches.



Through stakeholder collaboration, the DWMP aims to use the key strategic goals and aims from a variety of strategic plans. This approach will help us when identifying the correct strategy options for both Level 2 and Level 3 catchments. The outputs

from the DWMP will then feed into some of these plans. Continued discussions, between stakeholders creating these strategic plans, will strengthen the linkages and create a combined vision and joint strategies for the future.

Water Recycling strategy

Water companies are obliged by law to produce a long-term strategy every five years to demonstrate the sufficient supply of water availability over the next 25 years. This is called the Water Resources Management Plan (WRMP) and Anglian Water published their last one in 2019. There is currently no equivalent obligation for a long-term strategy in water recycling.

At Anglian Water we realised that water recycling is just as important, and in September 2018 we published our Water Recycling Long-Term Plan

(WRLTP) for managing growth risk. We initiated this journey to bridge the gap in long-term planning whilst we were waiting for the Drainage and Wastewater Management Plan (DWMP) Framework to be published in September 2018.

The WRLTP provided an excellent baseline for our internal understanding of risk. The DWMP will enhance this and consider a wider range of future risks and priorities.



In September 2018 we published our first Water Recycling Long-Term Plan (WRLTP)

- Outlines investment strategies to support sustainable growth: £479M in AMP7 and £1.2billion to 2045.
- Industry leading.
- Framed by our Strategic Direction Statement, our 25 year forward vision for the region and supports our AMP7 Business Plan.
- Complements our Water Resources Management Plan (WRMP).
- Prepared in collaboration with our partners and customers; requires working in partnership to deliver solutions effectively.



This is our first Drainage and Wastewater Management Plan (DWMP)

- Encompasses all drivers and investment, that contribute to water recycling outcomes.
- Developed by the Water UK 21st Century Drainage Programme. Involved all WaSCs, supported by key regulators.
- Expected to become statutory, like the WRMP.
- Opportunity to integrate external stakeholder needs and long-term aspirations into our intervention proposals from 2025 onwards.
- Driven by the same factors that led us to develop our WRLTP - it's a natural next step for us.

Whilst the DWMP supports our company vision, additionally through strong engagement and collaboration the DWMP will also support the long-term aims and goals of our stakeholders. Discussions with stakeholders have highlighted several benefits and aims from producing a co-created long-term plan. These include:

- Being more efficient in time, cost, resource and knowledge.
- Providing better outcomes for everyone by being collaborative.
- Providing better solutions which consider flooding, water quality, biodiversity and the environment.

- Challenging how we can all better serve the public, perhaps utilising innovation to do so.
- Agreeing a theme around improving our collective understanding with an opportunity to make a real and lasting change by building up stronger relationships.

At one of our stakeholder events, one of our stakeholders answered the question on potential benefits of the DWMP by saying **“What can’t we achieve?”** and another with simply **“Anything”**.

Co-collaboration of the DWMP is an important part of the process, and has the potential to realise the following benefits:

- Enable growth (in the best/most advantageous locations).
- Reduce flood risk from all drivers.
- Deliver more joint schemes through partnership working.
- Reduced pollutions and improved water quality.
- Increase green infrastructure and natural capital solutions.
- A greater focus on surface water management partnerships.
- Joint adaptation to a changing climate.
- Co-creation of solutions.
- More innovation.
- Solutions which consider the value across all six capitals to drive the solution with the greatest value.
- A clear link between local plans and water company forecasts.
- A potential vehicle to support land allocation and develop strategic local plans.
- Alignment with other strategic plans, for example the River Basin Management Plan (RBMP) and Surface Water Management Plans (SWMP).
- A joint understanding of future land requirements.
- Maintenance and potential improvement of Water Framework Directive (WFD) status.
- Protection of important protected areas and designated sites.

There are also secondary benefits which we can expect to get out of co-creation which will be just as important, such as the improvement to wildlife habitat, improvement to air quality, urban heat island effect, noise pollution, traffic speeds etc. and an increase to health and wellbeing.

The DWMP is one of the strategic plans looking at the long-term risk and it is important to work together to combine the outputs from other strategic plans. Using this information, we can consider the source of the flow and the pathways we can use to manage it appropriately. Bringing all the strategic plans together will provide a full understanding of the multiple benefits we may release.

As well as multiple strategic plans, many of our stakeholders will be working across two water companies, and water companies themselves have

some cross-border connections. The DWMP aims to bring all these stakeholders together to get common visions where possible.

DWMP vision

To create a fully co-created 25 year strategic plan that considers everyone’s risks, concerns and plausible solutions. A plan that works for everyone.

DWMP overview

The DWMP framework follows a clear five step process which culminates in the identification of risk and the appropriate solution to mitigate this. The key focus on co-creation is to ensure there is not a water company bias approach.

1. Strategic Context

This document forms the first step in the process. Which includes outlining the background to the DWMP, identifying the key concerns of the stakeholders, and establishing the method of tracking the level of risk.

2. Risk Based Catchment Screening (RBCS)

Initially an Anglian Water exercise, this identifies which of the ~1,100 water recycling catchments are triggered to go through the DWMP process based on a prescribed process using historic data. This list is then shared with stakeholders for comment. Any catchments previously excluded can be brought in at this point if required.

3. Baseline Risk and Vulnerability Assessment (BRAVA)

A collaborative exercise to identify the level of risk in each water recycling catchment and how complicated it may be to mitigate. A variety of future design horizons are considered to understand the progression of risk over time.

4. Options Development and Appraisal (ODA)

Where joint opportunities are possible, a collaborative exercise will identify the potential solutions to address the risk. Where joint opportunities are not possible, Anglian Water will identify their appropriate solution. This stage will consider all traditional solutions as well as more innovative and less common ones.

5. Programme Appraisal

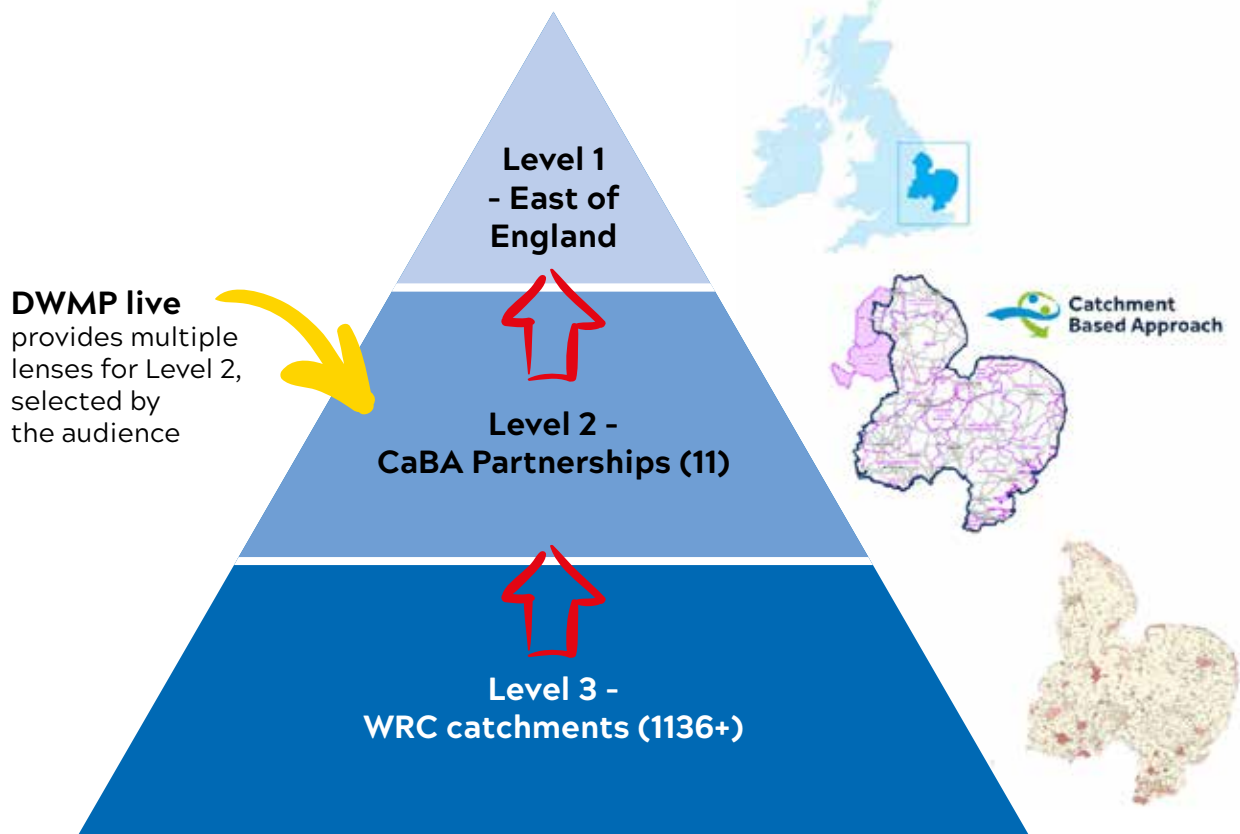
Taking a regional view, the programme will have to balance the cost and risk of current and future customers, ensuring services are provided for both. We must reconcile the need to keep bills affordable with the need to plan for future challenges, whilst meeting the expectations of our customers as understood through extensive customer engagement.

Throughout the whole process we must consider the uncertainty of future scenarios and ensure our long-term strategies can be adaptive to change; monitoring this through the key planning objective indicators as agreed in this strategic context.

This long-term view enables us to identify solutions that are least likely to result in wasted investment. When these solutions are tested against a range of future scenarios, they are the ones that are most resilient to change. These solutions will be phased according to our confidence of the need for investment and include opportunities to reduce the risk to the services we provide for customers in the long term.

This will be an on-going process and strategies will be reviewed as we monitor changing pressures.

The results of the DWMP will be presented at three geographical areas. Level 2 will be presented at a Catchment Based Approach (aligned with and supporting River Basin Management Catchments) for national reporting. We envisage an online platform tool which will allow users to select the geographical area most suited for them, this could be at water recycling catchment level, CaBA, county boundary or others.



Planning objectives

The DWMP framework outlines that the level of risks should be assessed using agreed planning objectives. Planning objectives are the identifiers which trigger when a risk needs investigating further and directs the solution that may be required. They are used in the BRAVA stage of the DWMP to understand the level of risk a catchment holds, and how complicated it might be to mitigate that risk.

Planning objectives are expected to reflect the company and stakeholder strategic goals, and are used to drive the direction of the strategies. They are key to ensuring that we continually drive for betterment in our catchments and, for Anglian Water, to meeting our four SDS ambitions and ten outcomes.

Some of these reflect our performance commitments which provide significant

contributions to the achievement of outcomes outlined in the section above. Other performance commitments relate to risks that our stakeholders see as highly important.

The Planning objectives outlined below:

- have customer and/or stakeholder support,
- are clear and understandable,
- have performance thresholds that can be modelled and measured,
- are consistent with Ofwat performance commitments,
- contribute to long-term water recycling strategies.

Theme	Planning Objective	Business Plan Outcome	Goals
What group does this fit in?	What are we measuring?	How does it track back to AWS business plan?	What are we ultimately trying to achieve across the region?
Escape from sewers	Risk of sewer flooding in a 1 in 50 storm	Resilient business	Resilient to the risks of flooding
	Storm overflow performance	Flourishing environment	
	External sewer flooding risk	Investing for tomorrow	Enable sustainable economic and housing growth
	Internal sewer flooding risk	Delighted customers	
	Pollutions risk	Flourishing environment	Be a carbon neutral business by 2050
	Sewer collapses	Investing for tomorrow	
WRC compliance	DWF compliance	Investing for tomorrow	Work with others to achieve significant improvement in ecological quality
	Quality compliance	Investing for tomorrow	
Environment and Wellbeing	Access to amenity areas	Delighted customers	
	Green infrastructure	Flourishing environment	

Planning objective definitions:

Risk of Sewer Flooding in a 1 in 50 Storm

1 in 50 design storm event, which equates to a 2% probability of the rainfall event occurring in any given year.

Storm Overflow Performance

The number of spills from Storm Overflows (SOs).

External Sewer Flooding Risk

The number of outside areas within a boundary curtilage flooded by water from our sewers.

Internal Sewer Flooding Risk

The number of properties flooded internally by water from our sewers.

Pollutions Risk

Number of pollution incidents classed as Category 1-3 by the Environment Agency.

Sewer Collapses

Number of sewer collapses.

Dry Weather Flow (DWF) Compliance

Percentage of measured DWF vs permitted DWF.

WRC Quality Compliance

Compliance with the environmental obligations outlined as the sanitary standards in the permit.

Access to Amenity Areas

Amenity score per catchment based on green space use.

Green Infrastructure

Amount of green infrastructure within a catchment

Alongside the Planning Objectives outlined above, the DWMP also asks us to review our assets in all catchments for their resilience against a range of measures.

All suggestions made during the consultation have been considered and the Planning Objectives have been updated where possible. We strongly feel that the DWMP has the potential to cover a huge range of topics, however we must be mindful that this will take a few iterations to evolve. For the first DWMP we may have a smaller level of planning objectives but we shall focus on getting the approach into business as usual. As we move forward we can use this first DWMP to identify where we want to explore further for the following 'Cycle 2 DWMP'. Just some of the possible planning, goals and outcomes we could consider for the future are:

- Planning Objectives driven and managed by stakeholders, e.g. flood defences
- Drought scenarios and water re-use
- A more holistic view on Natural Capital
- A greater focus on net gains for biodiversity
- Link between groundwater and water recycling

Catchment 1

	2025	2030	2035	2050
Risk of sewer flooding in a 1 in 50 storm	Not significant	Not significant	Not significant	Very significant
Storm overflow performance	Not significant	Not significant	Not significant	Moderately significant
External sewer flooding risk	Not significant	Not significant	Not significant	Not significant
Internal sewer flooding risk	Not significant	Not significant	Not significant	Moderately significant
Pollutions risk	Not significant	Not significant	Not significant	Not significant
Sewer collapses	Not significant	Moderately significant	Very significant	Very significant
DWF compliance	Not significant	Very significant	Very significant	Very significant
Quality compliance	Not significant	Not significant	Not significant	Not significant
Access to amenity areas	Not significant	Not significant	Not significant	Not significant
Green infrastructure	Not significant	Not significant	Not significant	Not significant

This would indicate that the main risks in this catchment are in Anglian Water's Water Recycling Centre assets. In the short-term there is low risk to the network capacity, and there are no Environment and Wellbeing risks identified.

Measuring risk

Planning Objectives are used in the BRAVA stage to understand the future risk in a catchment. Other risks can also be considered when you look at the complexity of solving those issues.

Not all Planning Objectives will be considered in each catchment, as it will depend on the triggers identified from the previous RBCS stage and any issues which are highlighted through stakeholder engagement.

Future scenarios are modelled against each Planning Objective which is then scored in a band (Not significant; Moderately significant; Very significant) depending on the risk when compared to threshold levels. These threshold levels differ between the short and long-term assessment. We will accept a greater risk in the long term than we would in the short term. The threshold levels are yet to be confirmed for all planning objectives. Examples:

Catchment 2

	2025	2030	2035	2050
Risk of sewer flooding in a 1 in 50 storm	Not significant	Not significant	Moderately significant	Moderately significant
Storm overflow performance	Moderately significant	Moderately significant	Very significant	Very significant
External sewer flooding risk	Not significant	Not significant	Moderately significant	Very significant
Internal sewer flooding risk	Not significant	Not significant	Moderately significant	Moderately significant
Pollutions risk	Not significant	Not significant	Not significant	Not significant
Sewer collapses	Not significant	Not significant	Not significant	Not significant
DWF compliance	Not significant	Not significant	Not significant	Not significant
Quality compliance	Not significant	Not significant	Not significant	Not significant
Access to amenity areas	Not significant	Moderately significant	Moderately significant	Very significant
Green infrastructure	Moderately significant	Moderately significant	Moderately significant	Moderately significant

Whilst the Water Recycling Centre appears to be low risk, the sewerage network capacity is already holding a level of risk and the thresholds will be breached in the medium-long term. Additionally, there are medium risks in Environment and Wellbeing.

The solution strategy would point us towards investigating where we can work together with our stakeholders to gain joint benefits.

Catchment 3

	2025	2030	2035	2050
Risk of sewer flooding in a 1 in 50 storm	Not significant	Not significant	Not significant	Not significant
Storm overflow performance	Not significant	Not significant	Not significant	Not significant
External sewer flooding risk	Not significant	Not significant	Not significant	Not significant
Internal sewer flooding risk	Not significant	Not significant	Not significant	Not significant
Pollutions risk	Not significant	Not significant	Not significant	Not significant
Sewer collapses	Not significant	Not significant	Not significant	Not significant
DWF compliance	Not significant	Not significant	Not significant	Not significant
Quality compliance	Not significant	Not significant	Not significant	Not significant
Access to amenity areas	Moderately significant	Moderately significant	Moderately significant	Very significant
Green infrastructure	Not significant	Moderately significant	Moderately significant	Very significant

In this catchment Anglian Water does not have any identified risk from our assets in the short or long-term. However, there is a risk to Environment and Wellbeing.

The solution strategy would point us towards investigating where we can work together with our stakeholders even if as a water company we may not see a benefit. This could mean that

a stakeholder provides and/or leads on the solution with or without Anglian Water support. Stakeholders could use the DWMP optioneering framework to identify potential solutions or this piece of work could be taken on by the stakeholder themselves. The optioneering decision can still be included as part of the final DWMP.

Working together

Anglian Water wants everyone involved in wastewater and drainage to have an opportunity to shape the DWMP. Working together we can ensure the outcome is more than just a water company long-term plan. One that truly provides the best holistic view of the risks and issues, with agreements on solutions and mitigation to benefit all.

There are several stages throughout the process where Anglian Water will ask for stakeholder input:

- Following the Risk Based Catchment Screening (RBCS) stage there will be a list of water recycling catchments passing through to Baseline Risk and Vulnerability Assessment (BRAVA). At this point there will be opportunity to review the list and highlight if there are any additional risks which need to go through the process.
- Following, or alongside, a review of the RBCS, there will be the opportunity to identify risks in each water recycling catchment which are

outside of Anglian Water's knowledge and/or remit. The data required will need to be in a prescribed format to ensure consistency throughout the region and across all organisations.

- Once all risks have been identified and the complexities understood, there is opportunity to discuss potential viable solutions in the Options Development and Appraisal (ODA) phase.
- The draft DWMP will be published and open as a consultation, where Anglian Water will welcome comment on the draft plan.

We want to ensure that we have the best view of the risks from both a social and environmental aspect, and so there may be more than one person or team in the same organisation involved. The level of support you can provide is entirely up to you, but we hope you fully embrace the opportunity where possible.

Stakeholder views

The response to the consultation and the on-going engagement with stakeholders indicate a real commitment to taking this journey together.

Anglian Water is keen to ensure that the collaborative ethos of the DWMP is fully embraced. Following consultation in April the Strategic Context has been updated to incorporate comments and a new focus where possible. Where it has not been possible to get into the text, some of the comments have been addressed in this section.

We need clarity of what is meant by ‘sustainable growth’.

For the purpose of the DWMP sustainable growth is following Brundtland’s definition, as guided by the UN sustainable development goals (SDGs) - “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

We need clarity on the overall responsibility for the plan, it should lie with one organisation as otherwise there is likely to be a diffusion and confusion of responsibilities.

It is the responsibility of the water company to produce a DWMP. Stakeholder support and involvement is strongly encouraged throughout to appropriately understand solutions following a correct understanding of multiple risks and benefits. Whilst there is currently no legal obligation for a DWMP to be produced, or on anyone to support the DWMP, it is hoped that the benefits identified promote involvement.

Should Wellbeing (health) feature as a standalone theme on its own and more prominently as a goal and throughout the strategy?

We agree that wellbeing is a really important goal for a long-term strategy to consider. Planning objectives need to meet three measures 1. Measurable, 2. Forecastable and 3. Possible to influence. We struggled to separate this out as an individual ‘health’ target that could meet these three measures. We feel that the Green Infrastructure, and Amenity Value score is a good start on assessing wellbeing, and would like to develop this measure during DWMP Cycle 2 if stakeholders are keen to progress.

Should Rural development/economic regeneration - creating jobs and markets for products harvested from water treatment and flood attenuation wetlands be a planning objective?

As per the wellbeing health comment above, this would be challenging to make into a planning objective that meets the three measures. We agree this is a fantastic goal for the DWMP to aim for but the current planning objectives may only achieve this as a secondary benefit. We would like to consider developing this measure during DWMP Cycle 2.

Net gain should be considered as an alternative to green infrastructure or amenity value.

Net gain was considered as a separate planning objective, however we feel that we will be in a better place to do this for DWMP Cycle 2 following more extensive work on our Six Capitals.

Local flooding can be caused by water not entering the sewers quickly enough, is this captured?

Our modelling of risk assumes that all water enters the sewerage system and predicts a spill when the sewer cannot cope with the volume. It is important that we work together with other risk management authorities to reduce local flooding risks. Sharing modelling and understanding where possible.

Is it possible to include data sets outside of Anglian Water’s remit?

Yes and we encourage sharing of this data to increase our collective understanding of future requirements.

“Additionally below are some quotes from stakeholders which demonstrate how powerful the DWMP can be and how we need to be mindful of what is already available.”

“A co-ordinated approach means that there will be a shared vision for the future that all authorities, businesses, utilities and partnerships alike will be collectively working towards, increasing the likelihood of realising the goals.”

“A focus on sustainable solutions with multiple benefits should be delivered through partnership working throughout the entire planning and delivery process.”

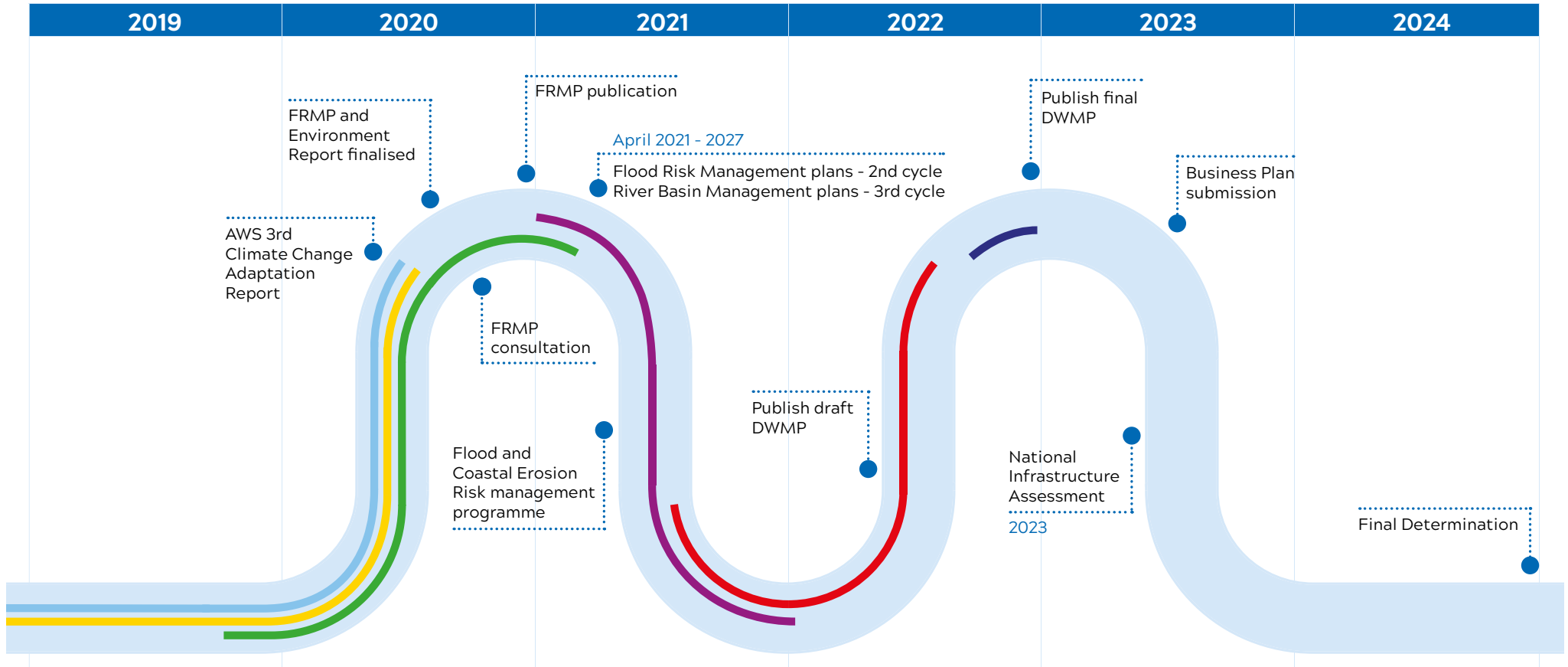
“[co-creation is beneficial] but there is no need to reinvent what has already been created.”

“key will be to achieve water quality, biodiversity and the environment gain through eliminating fugitive discharge to the environment from wastewater systems, and linking the gains demonstrably to increased green infrastructure and natural capital solutions.”

“Working together will make it easier to achieve these goals and coordinate effort.”

DWMP Timeline

- Strategic context 2019 - Q2 2020
- Risk Based Catchment Screening (RBCS) 2019 - Q2 2020
- Baseline Risk and Vulnerability Assessment (BRAVA) Q4 2019 - Q1 2021
- Options Development and Appraisal (ODA) Q1 2020 - Q4 2021
- Programme Appraisal Q2 2021 - Q2 2022
- Consultation Q3 - Q4 2022



WRE
 February 2020 Resource position statement
 August 2021 1st draft
 January 2022 Informal consultation
 August 2022 Publication

Drought plans
 January 2021 Draft submitted
 February 2021 Consultation
 August 2021 Publish statement of response
 January 2022 Publish final

WRMP
 December 2020 WRPG published
 January 2022 Pre consultation
 August 2022 Submit dWRMP
 September 2022 dWRMP consultation

• **DWMP:** Drainage and Wastewater Management Plan • **WRE:** Water Resources East
 • **FRMP:** Flood Risk Management Plan • **WRMP:** Water Resources Management Plan





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