

DWMP24 Strategic Context

**Drainage and Wastewater
Management Plans**

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YorkshireWater

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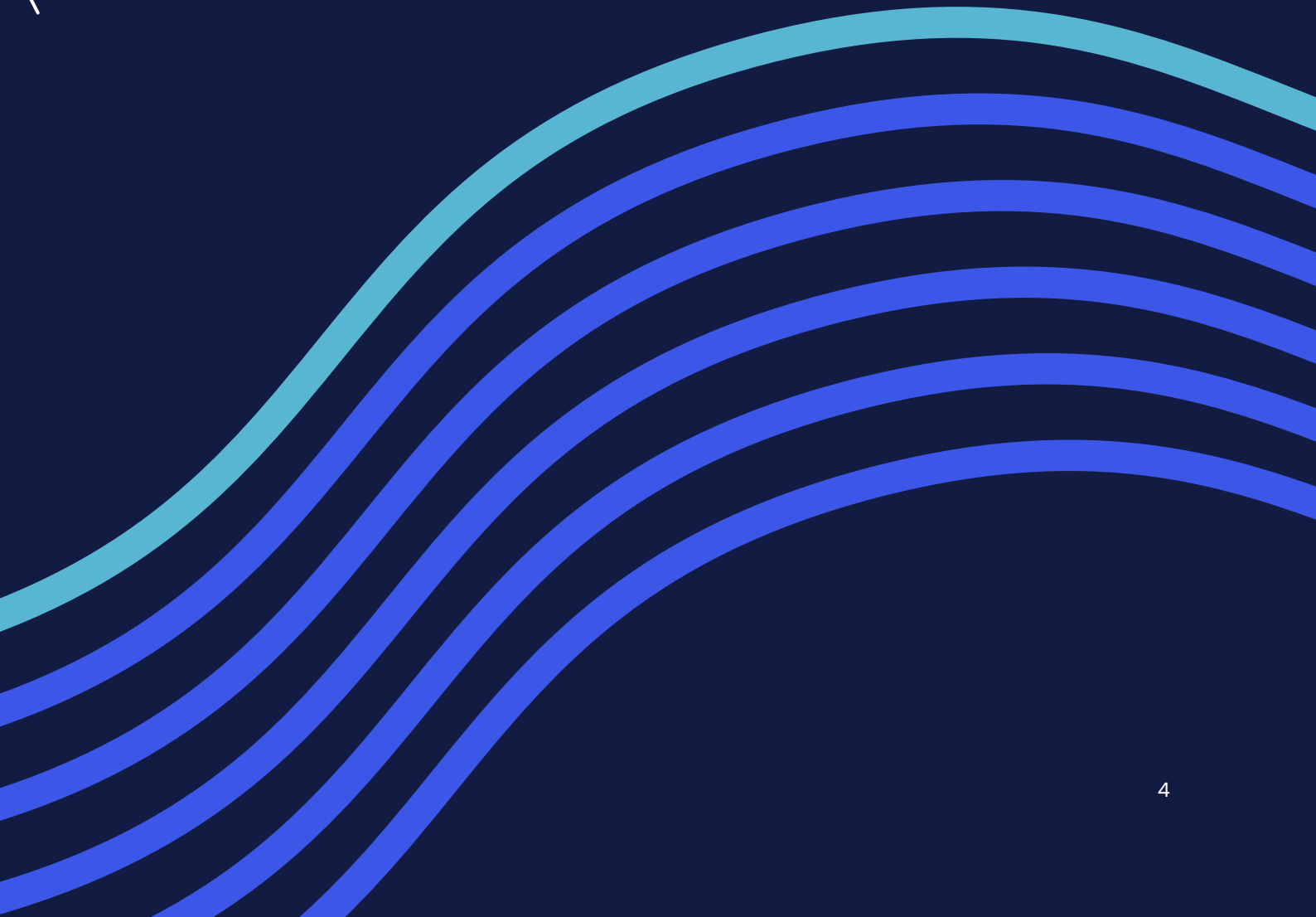
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1. Introduction



Introduction

We're proud to play water's role in making Yorkshire a brilliant place to be – now and always. Today, every day and forever it's our job to make sure that everyone in Yorkshire has the water they need for their busy lives.

And, when they've used it, it's our job to take it away and return it safely back to Yorkshire's environment. Water is one of life's most basic essentials and we care deeply about taking care of it in the right way for everyone, all of the time.

But how we do that really matters; the resources we use and recycle, the way we look after land, our broader support to local communities and the partnerships we develop, will make a massive difference to getting it right for Yorkshire's people and places.

The 5.4 million people who live in Yorkshire and the millions of people who visit each year rely on our services for their basic health needs and lifestyles. 140,000 businesses use our water to provide goods and services that support the economy, not just of Yorkshire, but the whole of the UK.

Yorkshire faces significant future pressures such as population growth and climate change. In order to mitigate the impacts of these pressures on our drainage and wastewater services we are developing a long-term collaborative plan, the Drainage & Wastewater Management Plan (DWMP), which will help us to maintain a robust and resilient drainage and wastewater system for our customers, communities and environment into the future.

This strategic context document sets out the objectives for our first DWMP. It explains the drivers and benefits of a long-term plan and the performance measures we are assessing. **It sets out how we intend to work with a wide range of stakeholders to ensure that we play our role in making Yorkshire a brilliant place to be – now and always.**

The DWMP will provide Yorkshire Water with the opportunity to:

- **Develop an optimised plan encompassing the next 25 years and beyond** to meet the requirements of our long-term ambitions of reducing sewer flooding and protecting and enhancing the environment; by considering the operation and impact of our wastewater treatment works and storm overflows.
- **Facilitate greater collaboration and partnership working with Stakeholders** such as Lead Local Flood Authorities (LLFAs) and the Environment Agency (EA) to ensure targeted investment which benefits our environment and local communities more effectively.
- **Understand customer and stakeholder expectations and requirements** and how we will work to meet these expectations – particularly around priority areas associated with sewer flooding, sewage escapes, storm overflows and protecting the environment.
- **Align with strategies and regulations set out by Government and the EA** to achieve a common set of objectives and goals.
- **Develop and implement future innovations and technologies** through the use of technology and adoption of Sustainable Drainage Systems (SuDS) and green/blue infrastructure wherever possible, providing best value and overall benefits for communities, customers and the environment over the long term.
- **Develop a plan which considers a wide range of options**, balancing the needs of customers and communities today and for the future.

2. What is a Drainage & Wastewater Management Plan (DWMP)?



What is a Drainage and Wastewater Management Plan (DWMP)?

A DWMP is a new strategic planning framework. It is a collaborative long-term strategic plan highlighting the needs and requirements of drainage, wastewater and environmental water quality for the next 25 years and beyond.

The DWMP framework was published in late 2018 and ensures that plans are co-created by water companies and stakeholders with an interest in integrated catchment management. As such, DWMPs will facilitate an increased level of partnership working across relevant stakeholders such as Lead Local Flood Authorities (LLFAs) and the Environment Agency (EA) in order to support and develop long-term plans for drainage, flooding and protection of the environment. The DWMP is currently a non-statutory framework for its first 5-year cycle. DWMPs are due to become statutory in Spring 2023.

The DWMP is underpinned by the need for consistency, transparency and collaborative approaches to long-term planning across the industry.

Our DWMP will identify changes in level of risk to the core services we provide across a range of time horizons. By exploring different time horizons, we will identify and anticipate risks arising from climate change and population growth and the effects these may have on the levels of service we provide.

What will be included in our plan?

We collect and treat around 1 billion litres of wastewater, from homes and businesses, and rainwater, that goes into our 52,000km of sewers every day. To do this we operate 607 wastewater treatment sites, and c2000 wastewater pumping stations to safely collect, and treat wastewater and rainwater before returning it safely back to the environment.

The DWMP will consider all aspects of our wastewater networks (foul, combined and surface water), our Wastewater Treatment Works (WwTW), the interconnecting drainage systems from other Risk Management Authorities (RMAs), such as local authorities and the EA and how these impact our environment, including discharges to rivers, streams and other waterbodies.

3. Yorkshire Water



Our population



Our research tells us that there will be many more people in Yorkshire as we move into the future. The population has increased sharply over the last 35 years and is expected to keep growing. Yorkshire households are predicted to increase by 30% by 2033, with a third of that growth coming from an increase in single person households.

Housing growth is key to supporting the economic development plans of local authorities in Yorkshire, and they've told us it's vital that our network is able to support their plans to allow the region to reach its economic potential.

This means we will need to meet the needs of more people in the future. We also need to meet the demands of this growing population without increasing our impact on the environment and without impacting on people who are struggling to pay their bill. To do this we need to find new ways of managing increasing demand for wastewater services.

Through previous customer research we understand that customers have the following short-term priorities:

- We are expected to prevent sewage escapes damaging homes and the environment
- They want us to help prevent flooding
- We will work to reduce our impact on the environment

Our customers have told us that their longer term priorities are:

- Ensuring appropriate plans are in place to service a growing population and cope with climate change
- Focus on flood management and flood defences

By modelling and predicting the impact that population increase and climate change will have on our wastewater services, we can better prepare for the future and ensure we meet our customer's expectations and priorities.

The Environment



Our rivers and beaches are cleaner than they have been for 50 years. Yorkshire's rivers are now supporting delicate ecosystems that have recovered as the water quality has improved. Our wastewater treatment works treat wastewater to higher standards than ever before. This has supported the recovery of our rivers, with iconic species like salmon starting to return to the Rivers Don, Rother and Aire.

However, we are not complacent and we aim to build on the recovery of our rivers and beaches and tackle key issues such as storm overflows and our impact on river water quality. We will do this by working in partnership to create rivers and catchments that are healthier and provide wider benefits for our customers. This will support the delivery of the Government's aspiration to become the first generation to leave the environment in a better state than we found it in and deliver on new statutory requirements set out in the Environment Act 2021.

We are seeing a combination of factors, from urbanisation to climate change, frequently testing the design and capacity of our wastewater systems.

At the same time, increased awareness of the importance of the natural environment is driving an important debate on what society sees as acceptable – for example the operation of storm overflows acting as “pressure release valves” on our combined sewer systems, where a dilute mixture of wastewater and rainwater is spilled into our rivers and the sea in wet weather conditions.

We also know that our customers and the environment can play a key role in how we, as a region, make ourselves more resilient to wide scale flooding. We will continue to play our part in enhancing the region's resilience, by managing the landscape differently to slow the flow of rainwater across our land and help store floodwater.

Yorkshire has experienced repeated wide scale flooding, notably in 2007, 2011, 2012, 2015, 2019 and 2020. We continue to work in partnership with local agencies to understand the effect our sewer network has on flooding and to reduce its impact. We know that there is still more to do.

Our DWMP will help us understand the scale of climate change and the effects this may have across Yorkshire. Our DWMP considers the latest guidance, scientific understanding, and modelling techniques to identify what risks we may face in the near future. By working now to develop effective partnership and cost effective solutions we will be able to minimise the disruption caused by flooding and protect our environmental water quality.

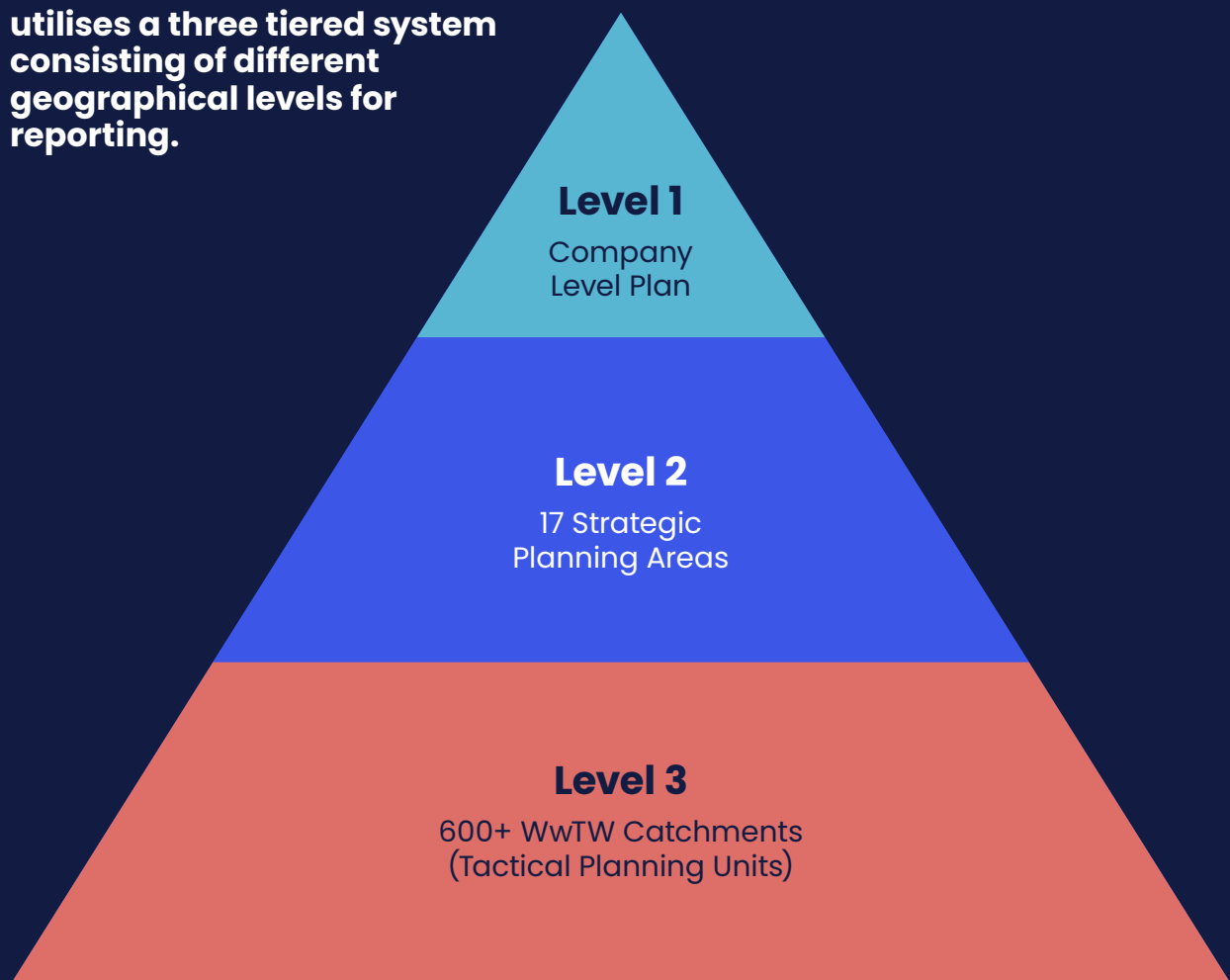
4. Our DWMP Overview

Hierarchy

Effective engagement between Yorkshire Water and our stakeholders is essential when working collaboratively to deliver resilient drainage systems. To ensure there is sufficient understanding we need a reporting structure that can be applied at a company level down to a local scale.

Our reporting structure must consider the need for transparency in planning when it comes to defining current and future levels of service. It must recognise this at a large scale but there also needs to be an acceptable level of granularity to define risks, plan investment and understand the impacts on customers and the environment. To address these requirements our DWMP has three levels to its structure;

The DWMP framework utilises a three tiered system consisting of different geographical levels for reporting.



Level 1

Company Level Plan



We collect and treat about 1 billion litres of wastewater from homes and businesses (and rainwater that goes into the 52,315km of sewers) every day. To do this, we use chemicals to help the treatment process and energy to run the treatment plants and pumps.

The Level 1 plan gives us the ability to understand interventions and investment requirements at a Yorkshire scale over time. This enables us to prioritise our customers needs at a regional level.

Level 1

The overarching plan for Yorkshire. Representing our entire wastewater boundary, Level 1 is our high-level strategic output – our outline approach to maintaining and improving a resilient wastewater system for Yorkshire.

Level 2

Strategic Planning Areas

**Level 2**

We have divided the Yorkshire region into 17 strategic planning areas which closely match the EA's river basins, along with four urban areas. Each strategic planning area consists of several individual catchments aggregated together so that stakeholders and customers can understand our plans at both local and regional levels.

Level 3

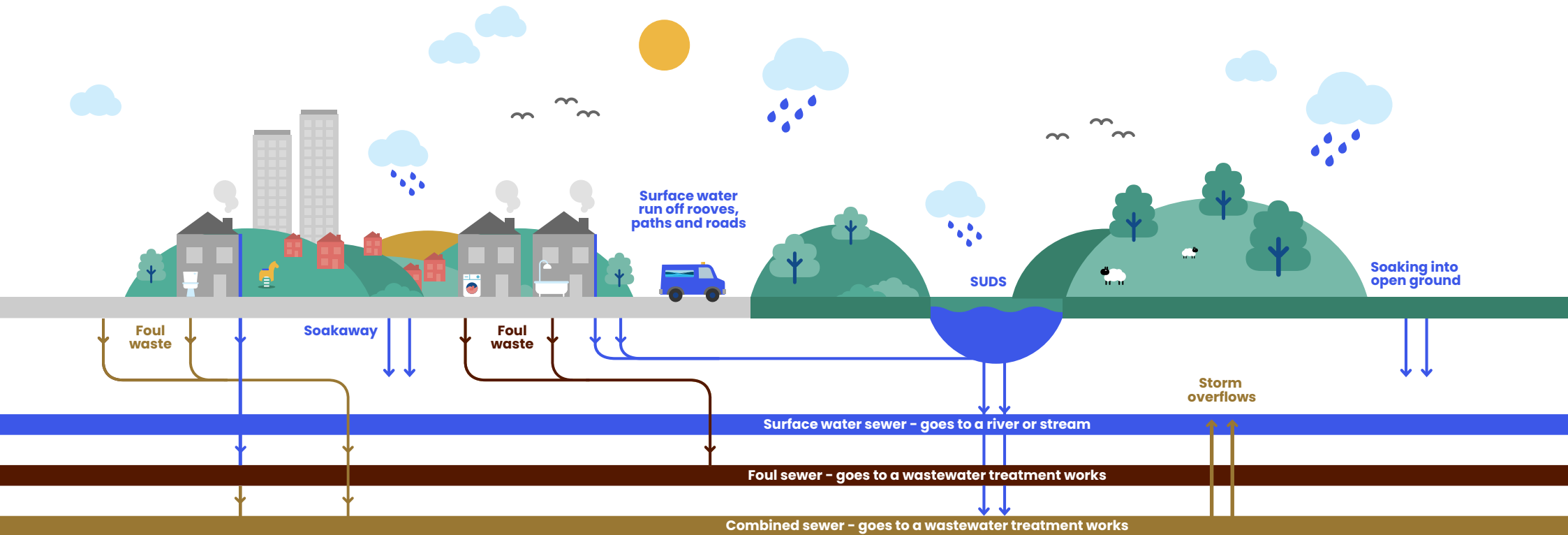
WwTW Catchments

**Level 3**

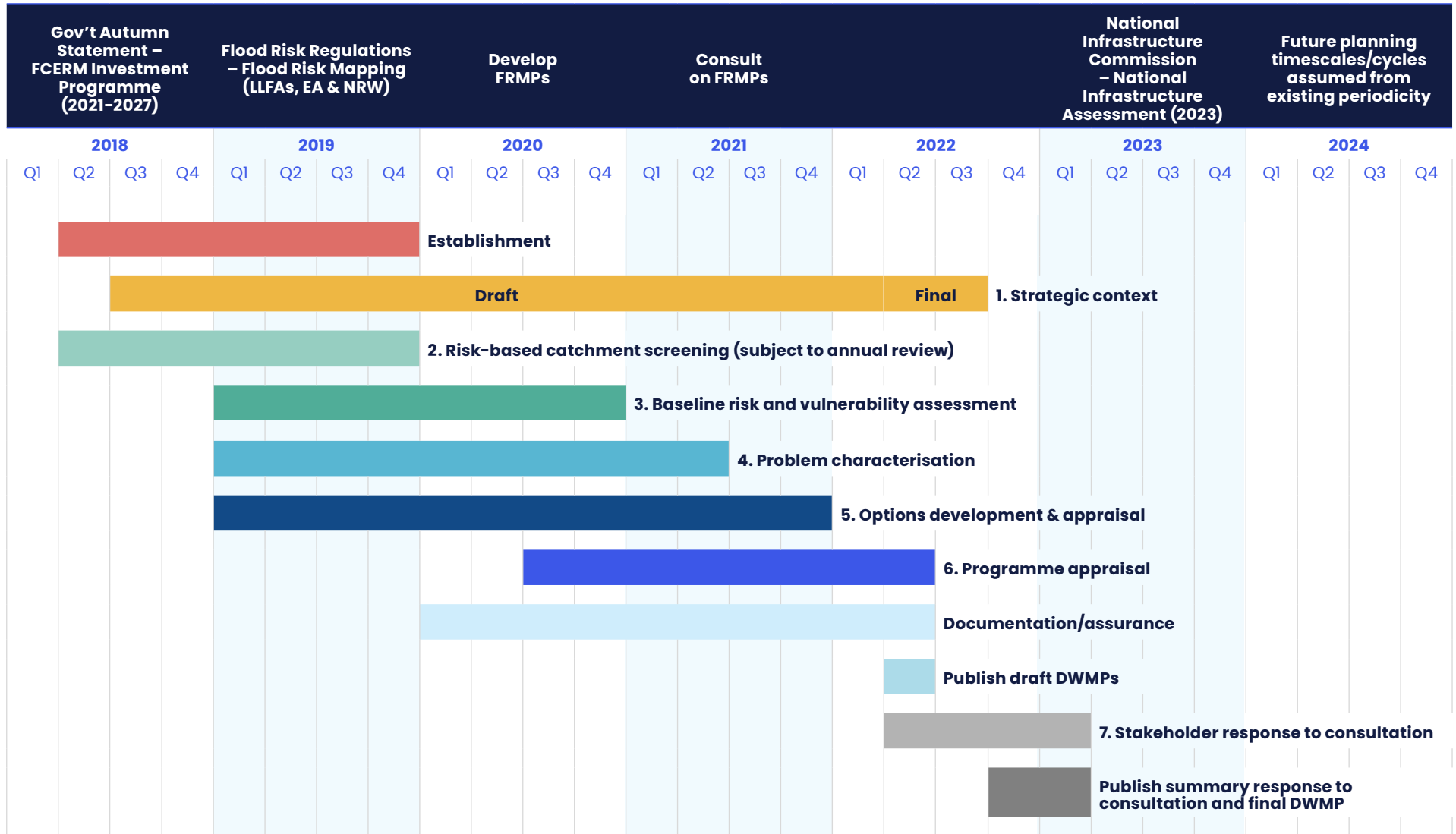
600+ individual Tactical Planning Units, or each of our Wastewater Treatment Works (WwTW) and upstream network catchments. These catchments are defined as the boundary of all properties which are served by one WwTW site or more. It allows stakeholders and customers to identify which local WwTW is serving them and what our plans for maintaining and improving a resilient local system will mean for them.

Local drainage

This is how our Level 3 catchments operate



Timeline



Process

1. Strategic Context

This document outlines the purpose of the DWMP, our objective for the first DWMP and the needs and drivers we must consider in producing the DWMP.

2. Risk Based Catchment Screening (RBCS)

The first step in creating our DWMP is to assess our 600+ WwTW catchment areas using a series of metrics specified within the DWMP framework. This assessment considers historic performance data, such as flooding incidents over the last 3 years, to identify those catchments which have identified issues today. Those catchments where risks are identified are passed forward into the next stage of the process.

3. Baseline Risk and Vulnerability Assessment (BRAVA)

Catchments with identified issues are subject to extensive modelling and desktop studies to quantify the changing risks over time. At this stage, we assess the impact of climate change and population growth on our network including treatment. This assessment provides an understanding of the point in time at which identified risks reach a threshold that is deemed unacceptable to our customers and stakeholders.

4. Problem Characterisation

Problem characterisation involves taking the risks identified in the BRAVA process and the identified trigger points – the point in time at which the risks result in unacceptable service levels. The risk (or problem) is then ‘characterised’ – problem characterisation is an assessment of the scale of the risk and the impact it may have. A risk complexity assessment is made which will determine the level of optioneering that is likely to be required to develop solutions and mitigations to the risk. At this stage we will identify where risks may be intrinsically linked to issues and risks that may be the responsibility of other authorities and where working in Partnership could prove the most effective approach.

5. Options Development and Appraisal (ODA)

Once we understand the scale of the risks through the Problem Characterisation stage, we can begin to explore the available options and solutions to mitigate them. Through this optioneering phase, we determine those solutions which may be delivered in partnership with others.

6. Programme Appraisal

The programme appraisal stage will allow us to scrutinise our findings and ultimately define preferred options based on “best value”. We will ensure that our prioritised list of interventions balance the impact of cost to our customers and our natural capital approaches.

7. Consultation

Our plans will be shared from June 2022 onwards. This will give customers and stakeholders the opportunity to have their say on our DWMP. Once responses are taken into account our DWMP will be complete and feed into the next five year business plan.

Measuring Risk – Planning Objectives

The DWMP framework outlines the need for risks to be measured against a series of planning objectives. Our planning objectives align with our standard performance commitments, reflecting our strategic drive and ambition. Our planning objectives are as follows:

Theme/Outcome	
We take care of your waste water and protect you and the environment from sewer flooding	Risk of Internal Hydraulic Flooding Risk of External Hydraulic Flooding Risk of 1:50 storm Asset Health
We protect and improve the water environment	Wastewater Treatment Works (WwTW) Quality Compliance Wastewater Treatment Works (WwTW) Flow Compliance Storm Overflow Performance

Planning objective definitions:

Internal Hydraulic Flooding – Risk of properties flooded internally due to hydraulic incapacity of our sewers.

External Hydraulic Flooding – Risk of flooding of property curtilage due to hydraulic incapacity of our sewers.

Risk of 1:50 storm – A measure of wider resilience to extreme events, those properties which are at risk of flooding in a 1 in 50 year storm due to hydraulic incapacity of our sewers.

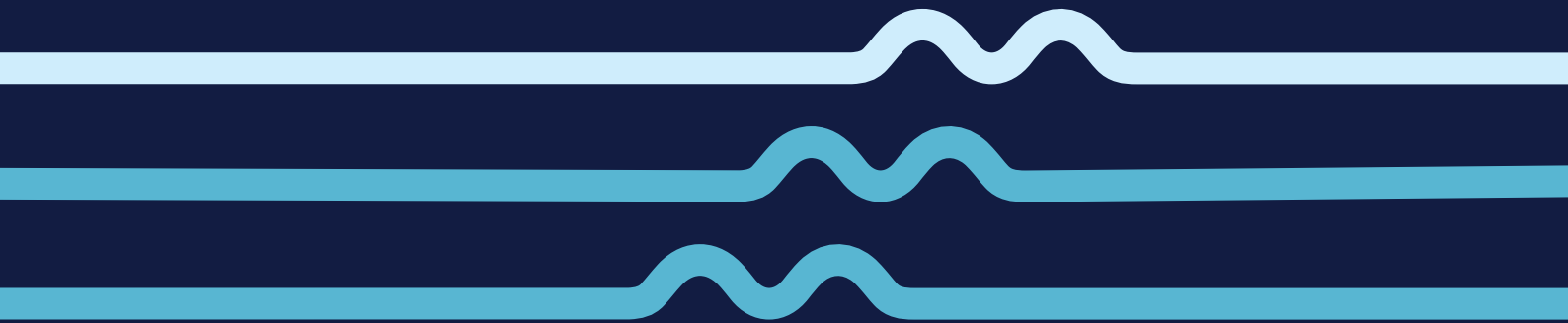
Asset health – A measure of the condition of our sewers such as predicting blockages or collapses along the network.

Wastewater Treatment Works (WwTW) Quality Compliance – A measure of our compliance with the sanitary limits set within the environmental discharge permits for each of our wastewater treatment works.

Wastewater Treatment Works (WwTW) Flow Compliance – A measure of our compliance with the dry weather flow limit set within the environmental discharge permit for each of our wastewater treatment works.

Storm Overflow Performance – A measure of how our Storm Overflows operate and the effect this may have on receiving water quality.

5. Delivering in Partnership



Delivering in Partnership

The effects of climate change are felt locally in ways that span different organisations' responsibilities. Flooding is a prominent example of this – with responsibilities for preventing and responding to flooding incidents sitting across water companies, local authorities and the Environment Agency.

Therefore, to deliver a robust and resilient wastewater system into the future we will need to work with a wide range of stakeholders in collaboration to co-create solutions that provide multiple benefits to achieve best value to communities, customers and the environment over the long term.

By working with partners and addressing catchments in a holistic way, we can identify shared opportunities that deliver wider benefits such as carbon reduction, improved water quality and biodiversity and community wellbeing, alongside reduced flood risk. We are already finding new opportunities for working with others through projects such as the Living With Water in Hull and East Yorkshire, and the Connected by Water partnership in South Yorkshire:

Case study

Working in partnership



Social



Natural



Intellectual



Financial



Manufactured

The challenge

Hull and the surrounding area of Haltemprice in East Riding has a unique and challenging drainage system which was overwhelmed in 2007 when over 9,000 properties were flooded predominantly from surface water.

The Pitt Review following the flooding focussed largely on the Hull floods and the findings contributed to the Flood and Water Management Act 2010 and the formation of Lead Local Flood Authorities. Hull still remains the most at-risk city after London from flooding in the UK, so in 2017, Living with Water was formed.



The insight

To tackle this threat and since the floods of 2007, partners, working both independently and in partnership, have invested significantly in the catchment.

Yorkshire Water alone has invested more than £40m on the pumping stations that help to protect the city, including the construction of the new Bransholme surface water pumping station which opened in 2016.

The Local authorities have together invested over £200m into various Flood Alleviations Schemes (FAS) within the catchment and significant investment from the EA into the Humber tidal frontage scheme, completed late 2021.

However, even with this investment, managing water effectively remains a challenge that must be faced to continue to progress towards the vision set out in the City Plan.

Living With Water has delivered various charrettes and visioning sessions to bring together the programme and along with momentum and strict governance, the partnership is moving forward with funding to tackle surface water in a collaborative approach.

The impact

Recognising the maturity and governance of the partnership and the strength in collaborative working, Ofwat awarded the Living with Water Partnership £23m to invest in Hull and Haltemprice for AMP 7.

Working together, the partners are now developing innovative solutions to reduce surface water flood risk in the catchment using a jointly owned, integrated flood model.

Blue green infrastructure as a natural sustainable approach will not only mitigate surface water flood risk but build community resilience, a strategic aim of the partnership with 'co-creation' an objective. Living with Water are working with local communities through detailed engagement events to ensure they meet the needs of local people, as well as contributing to the overall vision for the city.

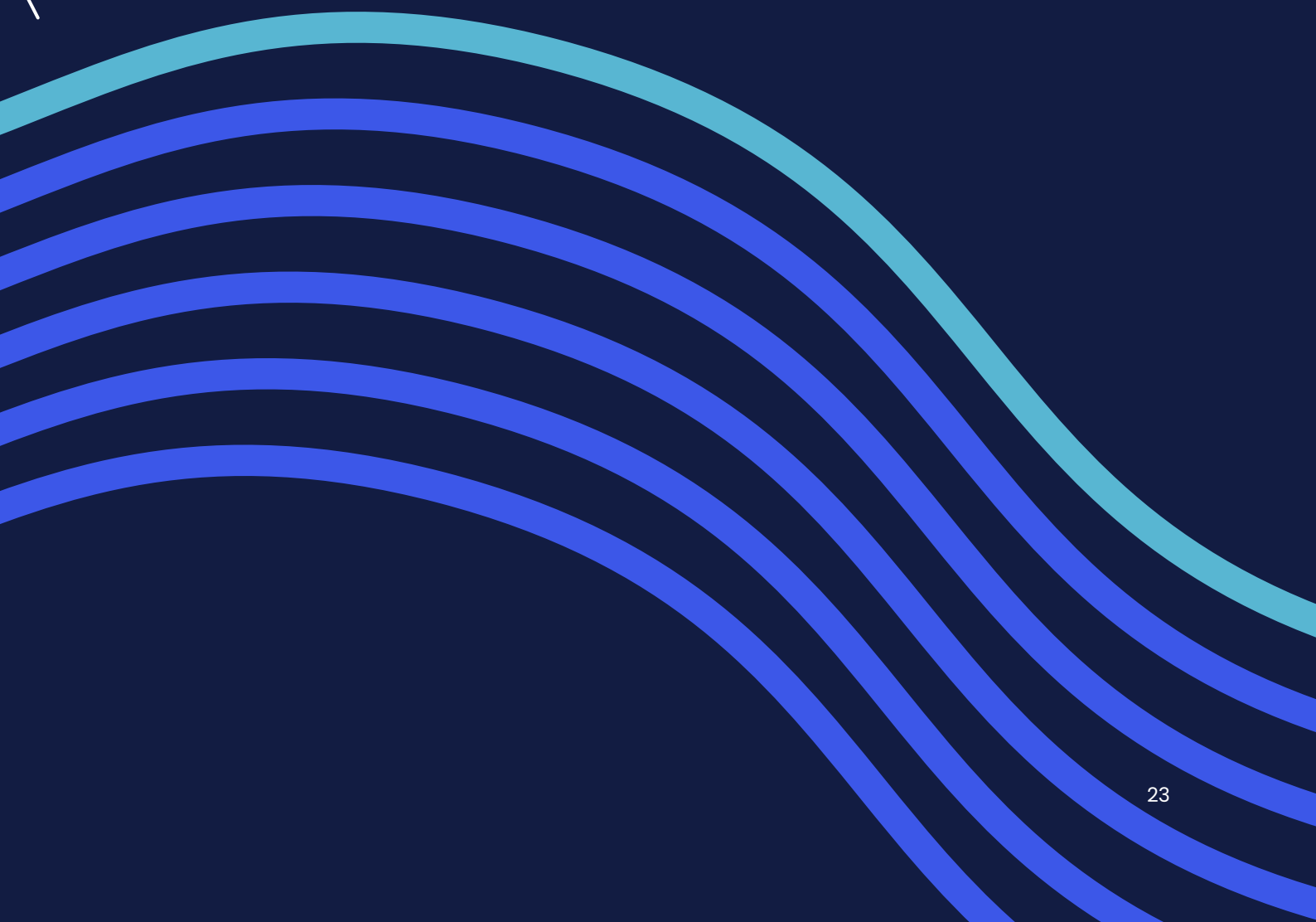
To inform the long-term approach, the partnership is continuing the stakeholder workshops to inform the future masterplan and being one of only five cities around the globe to develop and pilot the City Water Resilience Framework, they are using indicators around the shocks and stresses of water as a metric to that future vision.

Find out more at Livingwithwater.co.uk

The DWMP process will provide an opportunity to build on existing work with our key stakeholders by providing a structure to support collaborative planning and even greater partnership working.

This, combined with other regulatory and policy changes to support partnership working, has the potential to transform the way we respond to climate change and will enable us to deliver greater overall improvements that will benefit the Yorkshire region.

6. Next steps



Next Steps

We will continue to engage with our key stakeholders such as the Environment Agency, Lead Local Flood Authorities as we continue to develop the draft DWMP.

As we develop the plan further through the Options Development and Appraisal stage, we will aim to Identify with key stakeholders where there are opportunities for co-development and co-delivery of solutions, working with partners in a more holistic way at a catchment systems scale over the long term.

Developing the DWMP together will enable us to deliver the greatest value for customers, communities and the environment In Yorkshire and ensure that we make Yorkshire a brilliant place to be – now and always.

We look forward to sharing our first ever draft DWMP with you in summer 2022, and our final version in Spring 2023. The final plan will set out our long term strategic direction for drainage and wastewater and will feed into our PR24 Price Review process, where the first 5 years of the DWMP will be considered amongst our other strategic and customer priorities for 2025-2030. The DWMP will be updated every 5 years.

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