Our final plan

Our Drainage and Wastewater Management Plan 2025-2050

Technical Appendices
Appendix O – What Base Buys

May 2023

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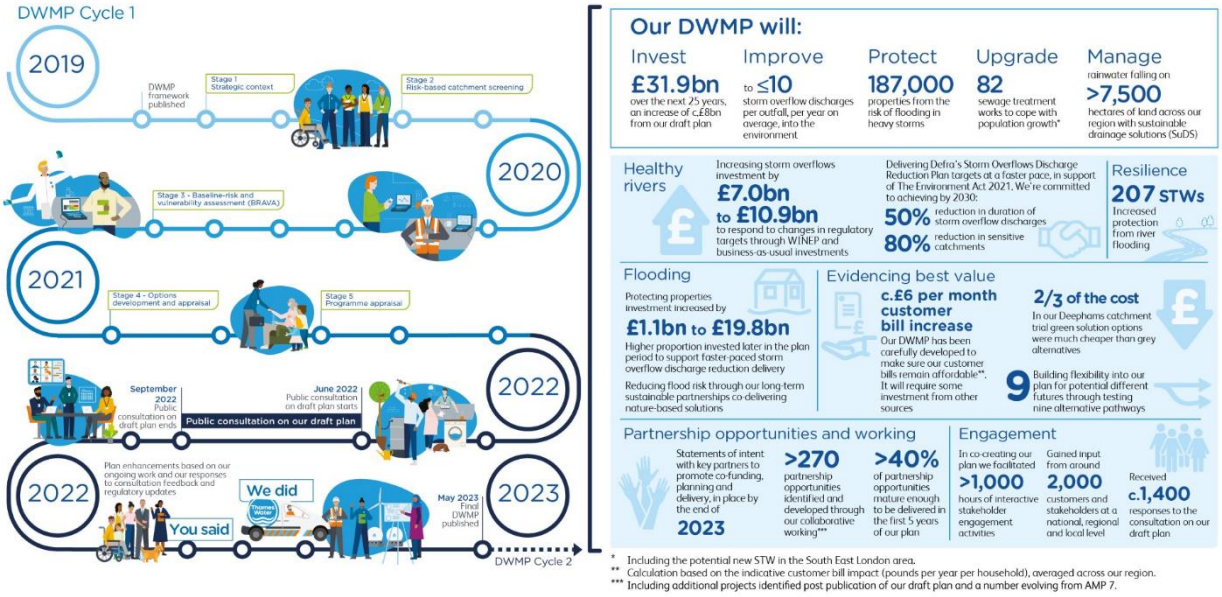
Preface

We're proud to present our first Drainage and Wastewater Management Plan (DWMP) and encouraged by the level of positive feedback we've received. Over the last four years, we've engaged and worked collaboratively with around 2,000 of our customers and stakeholders, to deepen our shared understanding and develop new ways to manage drainage and wastewater across our region. We illustrate our DWMP Cycle 1 and its headlines below.



We've progressed and enhanced our DWMP since we published it for public consultation in June 2022. We were pleased to receive lots of positive comments and support on the quality and ambition of our draft plan as well as useful ideas for making our final DWMP even stronger.

We've updated our draft plan based on our ongoing DWMP work, regulatory updates and our responses to the consultation feedback wherever possible*. Our updates include providing more detail where you felt it was needed and creating new appendices to answer technical queries. For more details on how we've progressed our final plan and responded to the consultation feedback, please see our Non-technical summary and You said, We did Technical appendix.

* Some public consultation feedback didn't require further action or wasn't relevant to the DWMP process. Other feedback was relevant to future DWMP planning cycles and will be used to inform this work.

Progress signposts

We want to make it easy for you to see what's changed. You can spot all the places we've updated our draft plan with our 'progress signposts' which we've used across our final DWMP documents.

For documents newly created for the fDWMP, we've provided a progress summary table upfront, to demonstrate what type of information the document provides.

Progress summary table

The progress signposts summary table for the chapters in this document is outlined below. We've used orange cells to indicate where our draft plan has been updated with progress.

Progress signposts summary: Appendix O – What Base Buys	Progress updated	More detail or new content	Number(s) updated	Delivery timeframe updated	Informing DWMP cycle 2
2 Background					
3 Defining Base and Enhancement					
4 Forecast performance					
5 Prioritising flooding investment					
6 Base and enhancement allocation in final DWMP data tables					

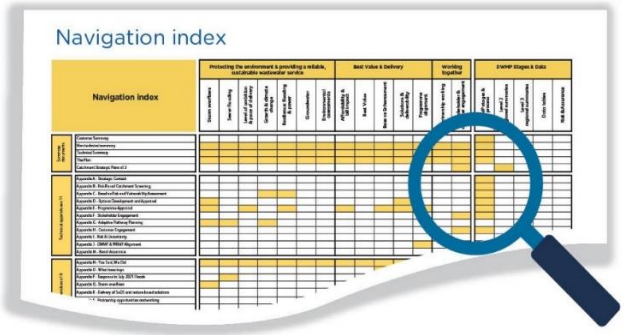
Key DWMP content

This document specifically includes the following key DWMP content:

- Best Value and Delivery:
  - Base vs Enhancement

Navigating our documents

To help you navigate around our final DWMP document suite and find where key DWMP content features, we've placed a Navigation index at the back of this document.



Introduction

This technical appendix addresses consultation feedback received from Ofwat regarding, *"how asset management and optimisation (base expenditure activities) can address some risks, such as, providing additional hydraulic capacity headroom in the system, as part of a hierarchy of options, before recommending enhancement schemes."*[1] It is written as a technical response intended for an audience familiar with Price Reviews.

To address the feedback on the role of base expenditure, this document:

- Defines the meaning of base and enhancement in the context of the DWMP
- Lists base and enhancement activities and shows how we prioritise these activities to create a balanced plan
- Shows the impact of base and enhancement expenditure on forecast performance
- Provides an overview of the impact that base activities could have on DWMP requirements

This document predominantly focuses on what base buys for sewer flooding on our wastewater network. This is where there is the biggest opportunity for performance improvements from base expenditure in the DWMP. This document reflects our current thinking, and this is subject to change as more detail on PR24 cost models is published.

[1] Ofwat's consultation response on the Thames Water draft drainage and wastewater management plan 2022, 30 September 2022 (unpublished)

1 Our Drainage and Wastewater Management Plan (DWMP)

Our DWMP vision

1.1 Working in partnership to co-create a 25-year plan for drainage and wastewater that sustainably benefits communities and the natural environment in our region.

Our DWMP aim

1.2 To identify future catchment risks to our drainage and wastewater treatment systems and develop sustainable, efficient solutions to address them.

What we're trying to achieve

1.3 Protection of our environment, looking after the health of our rivers (aiming for zero harm from storm overflow discharges), being resilient to the risks of sewer flooding and generating wider benefits to the communities we serve. DWMP outcomes for:

- Customers and communities – fair charges, improved health and wellbeing, increased amenity, and a resilient service
- Drainage and wastewater services – reduce sewer flooding and achieve 100% Sewage Treatment Works (STW) compliance
- The environment – increase biodiversity, zero harm from storm overflow discharges, environmental net gain

Description of the plan

1.4 A DWMP is a long-term costed plan that is focused on partnership working, which sets out the future risks and pressures for our drainage and wastewater systems. It identifies the actions that are required to make sure we can continue delivering our services reliably and sustainably, while also achieving positive outcomes for our customers, communities, and environment.

1.5 Our long-term, collaborative plan aims to ensure a resilient and sustainable wastewater service for the next 25 years and beyond.

Framework

1.6 This is the first time we've produced a long-term plan for our wastewater business. Based on the national DWMP framework[2] that was developed jointly by regulators and industry bodies including Ofwat, Defra, the Environment Agency, Water UK, Welsh Government, Natural Resources Wales, Consumer Council for Water, Association of Directors of Environment, Economy, Planning and Transport and Blueprint for Water, the DWMP creates a roadmap for how we adapt our wastewater service to cope with future challenges.

[2] https://www.water.org.uk/policy-topics/managing-sewage-and-drainage/drainage-and-wastewater-management-plans/

2 Background

2.1 In a typical year, hydraulic incapacity is the cause of 15% of flooding incidents, known as *hydraulic flooding*. The remaining incidents are predominantly due to blockages but also include a range of other causes including equipment failure. These are known as *other causes flooding*.

2.2 Hydraulic flooding performance is firstly managed through maintenance activities (including silt removal) that ensure our sewers are free flowing and through optimisation of existing capacity in our network with flow control devices.

2.3 Once these are implemented and further hydraulic flooding occurs, we managed it through enhancement activities to increase the effective capacity of the assets. This is done either by increasing storage capacity or reducing / attenuating flow into our network. The various maintenance activities are funded by base expenditure allocations from industry cost models.

2.4 Management of other cause flooding performance is conducted via maintenance activities, such as blockage cleaning and sewer rehabilitation. Interventions are targeted at areas with a history of other cause failures (including blockage or flooding hotspots) or high consequence of failures.

2.5 Prior to AMP7, enhancement expenditure has funded the engineering solutions addressing capacity deficits. For AMP7 itself, investment has focussed on improving flooding from blockages as this marginal cost is lower than that to reduce hydraulic flooding.

2.6 The DWMP sets out investment required on hydraulic flooding, to address capacity issues due to growth and climate change. The two key questions are:

- How much can maintenance spend address DWMP requirements?
- How will DWMP investment be funded at PR24?

2.7 This Technical Appendix principally focuses on the first question. Our DWMP data tables for May 2023 publication assume enhancement funding to meet most of DWMP requirements.

3 Defining Base and Enhancement

Ofwat definitions

3.1 Ofwat's final methodology for PR24[3] states that all expenditure is categorised as either base or enhancement.

3.2 Ofwat defines **Base expenditure** as '*routine, year-on-year, expenditure which companies incur in the normal running of their business - to provide a base level of good service to customers and the environment. It includes expenditure to maintain the long-term capability of assets, as well as expenditure to improve efficiency.*'[4]

3.3 Furthermore, they define **Enhancement expenditure** as *'generally where there is a permanent increase or step change in the current level of service to a new 'base' level and/or the provision to new customers of the current service. Enhancement funding can be for environmental improvements that are required to meet new legal obligations, improving service quality and resilience, and providing new solutions for water provision in drought conditions.'*[5]

3.4 Additionally, the PR24 final methodology provides specific expenditure guidance to accommodate growth, and to reduce the risk of sewer flooding. It states that, currently (subject to change before the final determination), Ofwat intends to include and exclude the following costs from models.

Include	Exclude
Network reinforcement	Specific developer services
Reducing risk of sewer flooding enhancement expenditure	Growth at wastewater treatment works

Table 3-1: Included and excluded costs from Ofwat final PR24 methodology

Current thinking on allocations

3.5 Based on Ofwat's guidance above, we have categorised wastewater activities as either base or enhancement, as shown in the Table 3-2. This may change subject to further PR24 guidance.

Activity group	Example activities	Base	Enhancement
Asset maintenance (Ensuring assets function to design standards)	Cleaning blockages	✓	
Asset and operational optimisation	Holding back flows within existing network	✓	
Asset improvement (Beyond design standards)	Sealing sewers and manholes to prevent infiltration		✓
Building new assets to increase capacity	Storage or attenuation tanks, sustainable drainage schemes		✓

[3] https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_main_document.pdf
[4] Ofwat (2022), Creating tomorrow, together: Our final methodology for PR24
[5] Ofwat (2022), Creating tomorrow, together: Our final methodology for PR24

Activity group	Example activities	Base	Enhancement
SPS/STW Flood Resilience (resilience to overland flows)	Protecting our sites from river flooding		✓
SPS/STW Power Resilience			✓

Table 3-2: Wastewater activities categorised as base and enhancement funding

3.6 '*Building new assets to increase capacity*' is enhancement expenditure, however a limited allowance for these activities is also included within the scope of Ofwat's modelled base costs.

4 Forecast performance (from DWMP tables)

Flooding incidents (AMP8 common PC)

4.1 Figure 4-1 forecasts annual flooding incidents for two scenarios:

- If current levels of investment are maintained, and
- With expected levels of investment, including enhancement, as set out in our DWMP.

4.2 Other cause and hydraulic failures are shown separately. The forecast for hydraulic flooding shows one year out of every five having very high numbers of flooding incidents. This is in line with historical performance, where we have extreme weather events once an AMP.

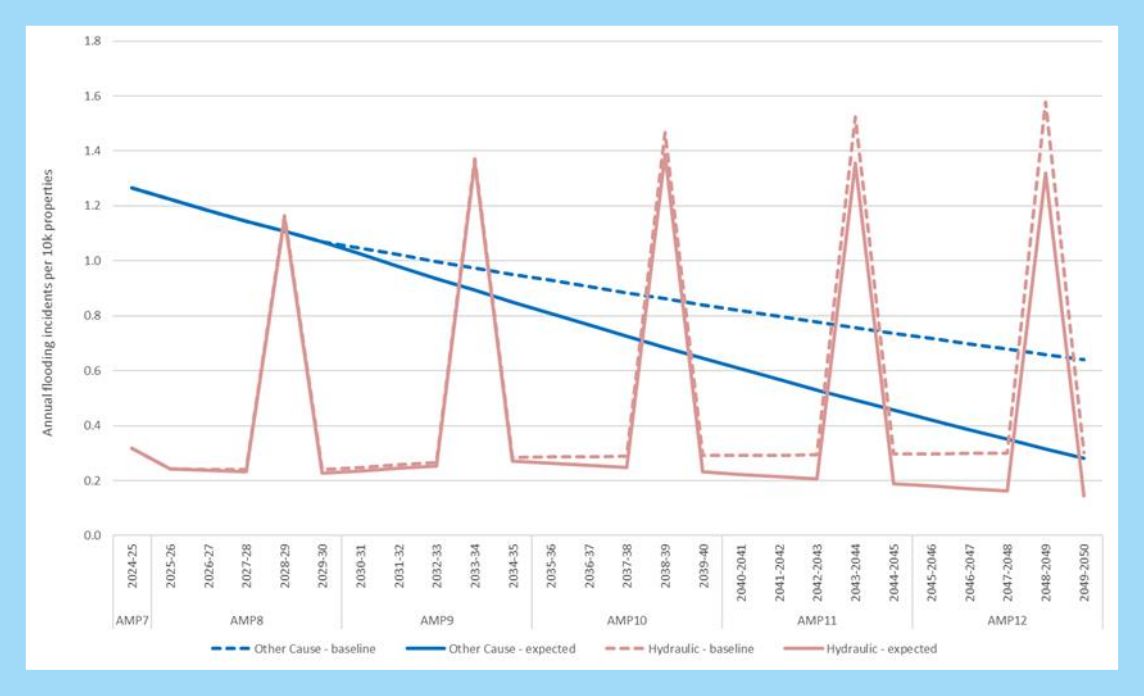


Figure 4-1: Impact of hydraulic and other cause investment on flooding incident performance

4.3 **Hydraulic flooding:** If current levels of expenditure are maintained, hydraulic flooding will increase over time due to the impact of population growth and climate change. With expected additional investment, flooding in typical years will be reduced, but flooding in the most extreme weather years will continue to increase. This is because our capacity improvements are designed to provide protection against storm events with rainfall return periods up to 1 in 50, but not against even more extreme events. All additional investment is enhancement.

4.4 **Other causes flooding:** If current levels of expenditure are maintained, other causes flooding will fall over time. This will come from activities conferring permanent benefits, such as interceptor removal, and through improved targeting and efficiencies of both permanent and temporary interventions from innovation, new technology, as well as data and insight. Performance in 2050 represents the limit to the level of improvement deliverable without additional spend. With expected additional investment, other causes flooding is reduced faster and further. All additional investment is base.

Hydraulic Flood Risk

4.5 Figure 4-2 forecasts the proportion of properties at risk of hydraulic flooding in storms with rainfall return periods up to 1 in 50 years, for current and expected levels of investment in our DWMP.

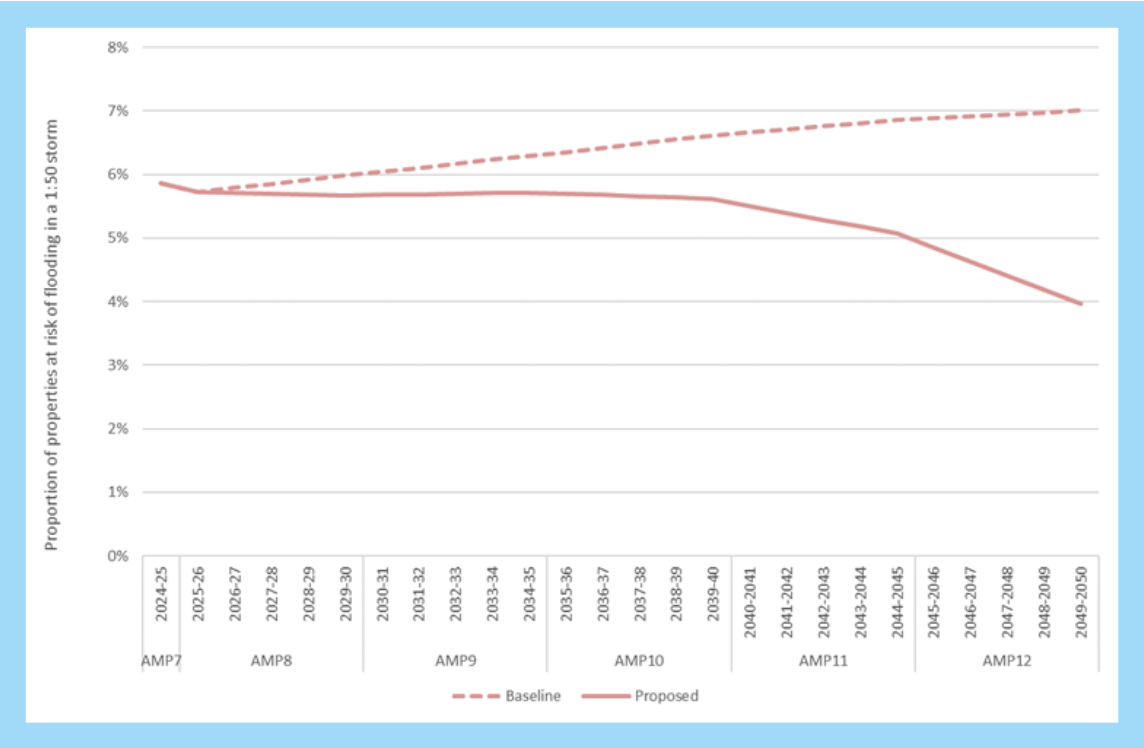


Figure 4-2: Forecast of hydraulic flooding incident performance by year

4.6 The trend in Figure 4-2 is the same as hydraulic performance in typical years in Figure 4-1. If current levels of investment are maintained, the proportion of properties at risk of flooding increases over time, due to the impacts of population growth and climate change. With proposed levels of investment, flood risk is reduced.

5 Prioritising flooding investment

5.1 Our approach to addressing both hydraulic and other causes flooding are set out separately.

Hydraulic flooding

Hierarchy of options

5.2 Before recommending enhancement schemes to increase capacity by either reducing flow or building bigger sewers, we ensure that our assets are appropriately maintained. We also maximise any opportunities for optimising our existing assets and operation, to increase capacity and reduce flood risk. Our hierarchy of options is shown in Figure 5-1.

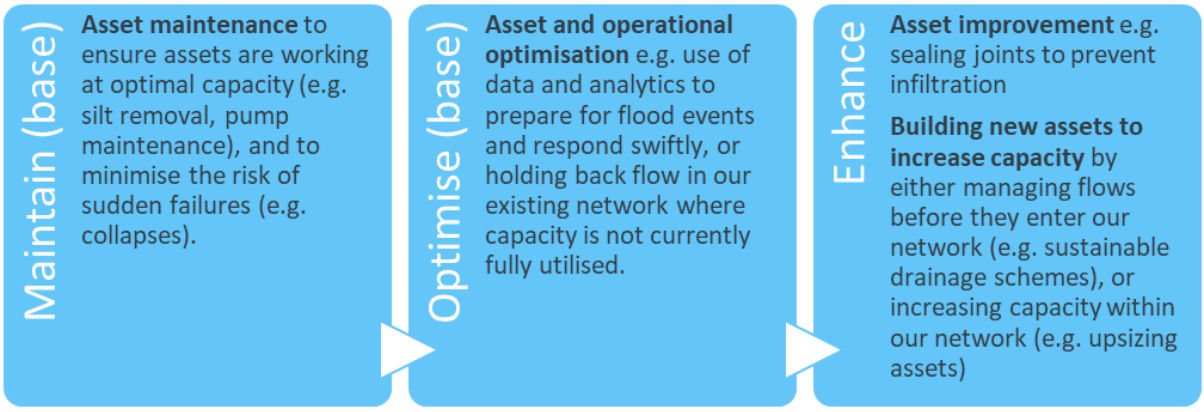


Figure 5-1: Hierarchy of options for hydraulic flooding

Activities

5.3 Key activities to manage hydraulic flood risk are detailed below. Their potential impact on flood risk is indicated by a RAG status, based on how widely they can be applied, and the impact they have when applied. Red = low impact/applicability, Amber = moderate impact/applicability, Green = high impact/applicability.

5.4 **Asset maintenance (base)**

- Maintenance including sewer cleaning to remove silt

- Rehabilitation and replacement. For sewers these activities are treated as base if the physical condition of the sewer meets industry standard criteria for requiring rehabilitation[6]. If not, then these activities are treated as enhancement.

5.5 **Asset and operational optimisation (base)**

- Data and predictive analytics: Hydraulic modelling using short term weather forecasts, and live depth monitor data, used to inform resource plans and interventions including planning cleaning

[6] Sewers in condition grades 4 or 5 are assessed as requiring maintenance, as per the WRc Sewer Rehabilitation Manual.

- Mitigation: This includes temporary assets or designing for exceedance and building assets that channel flow away from properties to designated sacrificial areas which could be parks and playing fields

- Optimising flows by reconfiguring our network, or dynamically controlling flows in our network to fully utilise existing capacity. We have a few trials underway to understand the potential benefit

- Fixing misconnections: Identifying where customers' surface water drains connect into foul sewers, and ensuring customers re-connect to the surface water system. This activity is more applicable for reducing pollution than flooding

5.6 **Asset improvements beyond design standards (enhancement)**

- Enhancing sewers where the physical condition of the sewer does not meet industry standard criteria for requiring maintenance. This may, for example, include sealing joints and fixing minor cracks, to remove unwanted flows like groundwater or river infiltration

5.7 **Building new assets to increase capacity (enhancement)**

- Building sustainable drainage schemes to attenuate surface water flows before they enter our network, or so that surface water can be managed at source and does not need to enter our network

- Building new surface water sewers, to remove surface water flows from the combined network

- Upsizing assets

- Protecting properties for surcharge from a sewer by a non-return valve, or pumped system

What base buys

5.8 Ofwat's base models fund maintenance and optimisation activities. They also include limited allowances for enhancement activities to reduce flood risk, and network reinforcement to accommodate growth, based on historical industry costs.

5.9 Historically this funding has enabled us to maintain performance and tackle our highest emerging hydraulic risks that often are properties that flood repeatedly. However, our DWMP modelling forecasts that additional investment will be needed to manage the impacts of population growth and climate change.

5.10 Based on our RAG summary, silt removal and predictive analytics may be tactical measures impacting on incident prevention. Our DWMP modelling assumes that continuing these activities is necessary to maintain current levels of hydraulic risk, but that risk reduction requires enhancement expenditure. The modelling approach used in BRAVA assumes that sewers are already generally silt free (other than a minimal amount ~20mm or where a specific flow monitor has picked up the need to include some) and that the opportunity for improving performance through increased silt removal is therefore negligible.

Other causes flooding

Hierarchy of options

5.11 As with hydraulic flooding, before recommending enhancement schemes we ensure that our assets are appropriately maintained and look for opportunities to optimise their performance.

Activities

5.12 Key activities to manage other causes flood risk are detailed below. Their potential impact on flood risk is indicated by a RAG status, based on how widely they can be applied, and the impact they have when applied. Red = low impact/applicability, Amber = moderate impact/applicability, Green = high impact/applicability.

5.13 **Asset maintenance (base)**

- Planned and reactive sewer cleaning (e.g., cleaning blockages)
- Interceptor removal
- Rehabilitation and replacement

5.14 **Asset and operational optimisation (base)**

- Monitoring (e.g., sewer monitoring to identify blockages so we can respond before they cause flooding and flooding)
- Customer education (working with food service establishments to install correct grease management, educating household customers in hotspot blockage areas, marketing campaigns to encourage behavioural change)

5.15 **SPS/STW flood resilience (enhancement)**

- Schemes to protect our sites from fluvial and pluvial flooding in low probably high consequence events (e.g., 1 in 100-year storm event).

5.16 **SPS/STW power resilience (enhancement)**

- Schemes to protect our sites from power disturbances or interruptions from the distribution network operators. We have delivered schemes of this nature historically

What base buys

5.17 Maintaining historic levels of base spend will allow us to:

- Deliver limited improvements in performance, by optimising our activities using data and insight
- Continue activities that confer a permanent benefit such as:
    - Removing interceptors; and potentially
    - Long term changes in customer behaviour and regulation (e.g., a ban on plastic wet wipes).

5.18 Improving performance further as shown in Figure 4-1 requires additional investment. This will allow us to accelerate activities that confer a permanent benefit, and to expand interventions that have ongoing running costs including cleaning and sewer depth monitors.

6 Base and enhancement allocation in final DWMP data tables

6.1 Whilst we await further information on cost models, at DWMP final publication we took the simplistic approach with our DWMP data tables; that being, funding of DWMP requirements by enhancement expenditure.

6.2 At PR24 we will revisit this approach. We will account for allowances implicit within Ofwat's base funding, to reduce the risk of sewer flooding, and for network reinforcement to accommodate growth.

Glossary

Term	Description
1 in 30-year storm	A storm that has a 1 in 30 chance (3.33% probability) of being equalled or exceeded in any given year. This does not mean that a 30-year flood will happen regularly every 30 years, or only once in 30 years.
1 in 50-year storm	A storm that has a 1 in 50 chance (2% probability) of being equalled or exceeded in any given year. This does not mean that a 50-year flood will happen regularly every 50 years, or only once in 50 years.
Asset Management Plan (AMP)	A five-year planning cycle used by English and Welsh water industry regulators to set allowable price increases for privately owned water companies and for the assessment of performance indicators such as water quality and customer service.
Baseline Risk And Vulnerability Assessment (BRAVA)	Following Risk Based Catchment Screening (RBCS), more detailed risk assessments on those catchments where we believed there was an adverse risk to performance over time. We modelled their performance to 2020 (baseline), 2030, 2035 and 2050.
Business Plan	Business Plans are produced by water companies every 5 years. They set out their investment programme to ensure delivery of water and wastewater services to customers. These plans are drawn up through consultation with the regulators, stakeholders and customers and submitted to Ofwat for detailed scrutiny and review.
Catchment Strategic Plans (CSPs)	Summary reports to promote system thinking across large wastewater catchments. These provide early sight of our final plans enabling co-authoring opportunities for our stakeholders. Each document outlines the challenges that the catchment will face in the future and the long-term plans to address these issues.
Combined sewer	A sewer designed to receive both wastewater and surface water from domestic and industrial sources to a treatment works in a single pipe.
Customer Challenge Group (CCG)	An independent body that challenges both our current performance and our engagement with customers on building our future plans.
Cycle 1 and Cycle 2 DWMP	Our current DWMP is referred to as Cycle 1, it covers a planning period of 2025-2050. Our next plan will be published in five years' time and is referred to as our Cycle 2 DWMP, it will cover a planning period of 2030-2055.
Department for Environment, Food and Rural Affairs (Defra)	UK government department responsible for safeguarding the natural environment, food and farming industry, and the rural economy.
Drainage and Wastewater Management Plan (DWMP)	A Drainage and Wastewater Management Plan (DWMP) is '*a long-term strategic plan that sets out how wastewater systems, and the drainage networks that impact them, are to be extended, improved and maintained to ensure they are robust and resilient to future pressures*'. The planning period is 25 years, from 2025 to 2050. DWMP is iterated every five years; the first known as 'Cycle 1', published as a final plan in May 2023.
dDWMP	The draft version of the Drainage and Wastewater Management Plan, published in June 2022.
fDWMP	The final version of the Drainage and Wastewater Management Plan, to be published in May 2023.
Dry Weather Flow (DWF)	Dry Weather Flow is the average daily flow to a Sewage Treatment Works (STW) during a period without rain.
Environment Agency (EA)	UK government agency whose principal aim is to protect and enhance the environment in England and Wales.

EA Pollution Categories 1 to 3	Category 1 incidents have a serious, extensive or persistent impact on the environment, people or property. Category 2 incidents have a lesser, yet significant, impact. Category 3 incidents have a minor or minimal impact on the environment, people or property with only a limited or localised effect on water quality. Further Ofwat guidance available here: WatCoPerfEPAmethodology v3-Nov-2017-Final.pdf (ofwat.gov.uk)
Event Duration Monitoring (EDM)	Event duration monitoring (EDM) measures the frequency and duration of storm discharges to the environment from storm overflows.
External hydraulic sewer flooding	External flooding occurs within the curtilage of a property due to hydraulic sewer overload. Further Ofwat guidance available here: Reporting-guidance-sewer-flooding.pdf (ofwat.gov.uk)
Foul sewer	A foul sewer is designed to carry domestic or commercial wastewater to a sewage works for treatment. Typically, it takes wastewater from sources including toilets, baths, showers, kitchen sinks, washing machines and dishwashers from residential and commercial premises.
Grey infrastructure	New sewers, sewer upsizing and attenuation storage to provide additional capacity in the wastewater networks. Also covers new pumping stations, rising mains and/or civil structures at STWs.
Green infrastructure	Sustainable surface water management solutions, including sustainable drainage systems (SuDS), that are designed to mimic naturally draining surfaces. Typically applied to surface water or combined sewerage systems, but can also be applied to land, highway or other forms of surface drainage.
Historic England (HE)	A non-departmental public body of the government whose aim is to protect the historical environment of England by preserving and listing historic buildings, ancient monuments.
Hydraulic overload	Hydraulic overload occurs when a sewer or sewerage system is unable to cope with the receiving flow.
Internal hydraulic sewer flooding	Flooding which enters a building or passes below a suspended floor caused by flow from a sewer. Further Ofwat guidance available here: Reporting-guidance-sewer-flooding.pdf (ofwat.gov.uk)
L2 Area (Strategic Planning Area)	An aggregation of level 3 catchments (tactical planning units) into larger level 2 strategic planning areas. The level 2 strategic planning areas allow us to describe strategic drivers for change (relevant at the level 2 strategic planning area scale) as well as facilitating a more strategic level of planning above the detailed catchment assessments.
L3 Catchment (Tactical Planning Unit)	Geographical area in which a wastewater network drains to a single STW. Stakeholders may be specifically associated with this area. Includes for surface water sewerage that may exist which serves the wastewater geographical area but drains to a water course.
Lead Local Flood Authorities (LLFAs)	LLFAs are Risk Management Authorities as defined by the Flood and Water Management Act 2010. They have statutory duties with respect to flood risk management, investigating flooding and the compilation of surface water management plans.
Long-Term Delivery Strategy (LTDS)	A requirement by Ofwat on water companies, to ensure that short term expenditure meets long term objectives for customers, communities, and the environment. These will be submitted as part of the Price Review.

Misconnections	Misconnections are where either surface water drainage or foul water is connected to the wrong system e.g., surface water to foul only or foul to surface water systems.
Natural capital accounting	The process of calculating the total stocks and flows of natural resources in a given system, either in terms of monetary value or in physical terms.
Natural England (NE)	A non-departmental public body sponsored by the Department for Environment, Food and Rural Affairs to protect the natural environment in England, helping to protect England's nature and landscapes.
Non-governmental organisation (NGO)	An organisation that operates independently of any government, typically one whose purpose is to address a social or political issue.
Options Development and Appraisal (ODA)	A method to focus the level of planning effort, i.e., proportionate to the risks identified, with a view to providing a measure of consistency across the industry.
Ofwat	The regulatory body responsible for economic regulation of the privatised water and wastewater industry in England and Wales.
PR24	Every five years, water companies set out their plans for what they'll deliver and how much they'll charge customers[7]. Their plans over the next five years should include how they will: • Provide a safe and clean water supply • Provide efficient sewerage pumping and treatment services • Control leaks • Install meters • Maintain pipes and sewers • Maintain and improve environmental standards This process is known as the price review, and the next one will be in 2024, when Ofwat will make its final decisions. We call this PR24.
Risk-Based Catchments Screening (RBCS)	A first-pass screening exercise of catchment vulnerability against 17 different risk indicators. To understand which catchments are low risk catchments and those that are likely to be at risk in the future if not supported by our long-term plan.
Risk Management Authorities (RMAs)	Authorities responsible for Flood Risk as defined in the Flood and Water Management At 2010. These include, Lead Local Flood Authorities, Highway Authorities, Local Planning Authorities, Natural England and the Environment Agency.
Sewage Treatment Works (STW)	A sewage treatment works receives and treats wastewater to a standard legally agreed with the Environment Agency, before it is released back into the environment.
Specific, Measurable, Achievable, Relevant, and Time-Bound (SMART)	A framework for setting effective targets.
Storm overflow discharges	Storm overflows are used to manage excess flows, which typically occur as a result of heavy rainfall. Excess flow that may otherwise have caused flooding is released through a designated outfall to a water course, land area or alternative drainage system.
Strategic Environmental Assessment (SEA)	A systematic decision support process to ensure that environmental and other sustainability aspects are considered effectively in policy, plan and programme making.

[7] https://www.ccwater.org.uk/priorities/price-review/

Surface water sewer	A surface water sewer collects rainwater from domestic and commercial roofs, driveways, patios etc to a local watercourse or suitable surface water drainage system.
Sustainable Drainage systems (SuDS)	Drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses. SuDS aim to reduce surface water flooding, improve water quality, and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment.
Thames Regional Flood and Coastal Committee (TRFCC) area	The TRFCC area was established by the Environment Agency under the Flood and Water Management Act 2010 that brings together members representing the Constituent Authority. Featured TRFCCs are listed here on our DWMP portal: Drainage and Wastewater Management Plan (arcgis.com)
Water Industry National Environmental Programme (WINEP)	The framework under which Defra and the EA require environmental improvements to be delivered by water companies. Guidance is released by regulators, which water companies interpret for their geographical area, and resubmit the outputs back to regulators for endorsement.

Navigating our DWMP

We've developed a comprehensive document suite to share our final DWMP. This includes five summary documents that contain increasing levels of detail. To help you to navigate around our document suite and to find key DWMP content, we provide a Navigation index below and on our DWMP webpage. The orange cells refer to where key DWMP content can be found across our final document suite.

Navigation index		Protecting the environment and providing a reliable, sustainable wastewater service							Best value and delivery					Working together		DWMP stages and data				
		Storm overflows	Sewer flooding	Level of ambition & pace of delivery	Growth & climate change	Resilience: flooding & power	Groundwater	Environmental assessments	Affordability & bill impact	Best Value	Base vs Enhancement	Solutions & deliverability	Programme alignment	Partnership working	Stakeholder & customer engagement	DWMP stages & process	Level 2 regional summaries	Level 3 regional summaries	Data tables	Risk & Assurance
Summary documents	Customer summary	■	■											■	■	■				
	Non-technical summary	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
	Technical summary	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
	The Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
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Technical appendices x11	Appendix A - Strategic context												■			■				
	Appendix B - Risk-Based catchment screening															■				
	Appendix C - Baseline risk and Vulnerability assessment				■	■										■				
	Appendix D - Options development and appraisal	■										■				■				
	Appendix E - Programme appraisal	■		■		■			■	■	■	■	■			■				
	Appendix F - Stakeholder engagement														■	■				
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	Appendix H – Customer engagement Part A – Draft DWMP														■	■				
	Appendix I - Risk and uncertainty											■								■
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	Appendix O - What base buys										■									
	Appendix P - Response to July 2021 Floods		■	■	■	■			■			■	■	■	■					
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	Appendix R - Delivery of SuDS and nature-based solutions	■	■	■	■	■			■	■		■	■	■	■					
	Appendix S - Partnership opportunities and working			■								■		■	■					
	Appendix T - Groundwater quality						■													
	Appendix U - Resilience		■		■	■							■	■	■					
	Appendix V – Customer engagement Part B – Consultation Survey Report														■					
Environmental assessments	Appendix K - Strategic environmental assessment (SEA)							■												
	Appendix L - Habitats regulations assessment (HRA)							■												
Portals and data	Customer portal	■	■							■		■		■	■	■	■	■		
	Practitioner portal	■	■											■	■		■	■		
	Data tables			■							■								■	
	Data tables commentary																		■	

We welcome your views on our DWMP. Please share them with us by emailing: DWMP@thameswater.co.uk.

This document reflects our DWMP 2025-2050 as published in May 2023.