



**DRAINAGE &
WASTEWATER
MANAGEMENT PLAN**

Dwr Cymru Welsh Water

Introduction to the Drainage and Wastewater Management Plan

Strategic Context



IN PARTNERSHIP WITH

rps

ATKINS
Member of the SNC-Lavalin Group

wsp

Glossary of Acronyms

EA	Environment Agency
DWMP	Drainage Wastewater Management Plan
FCERM	Flood and Coastal Erosion Risk Management
FRMP	Flood Risk Management Plan
CCG	Customer Challenge Group
CCW	Consumer Council for Water
LLFAs	Lead Local Flood Authorities
NRW	National Resources Wales
OECD	The Organisation for Economic Co-operation and Development
RBMP	River Basin Management Plan
RMA	Risk Management Authorities
SDP	Sustainable Drainage Plans
SuDs	Sustainable Urban Drainage
SWMP	Surface Water Management Plan
WaSCs	Water and Sewerage Companies
NEP	National Environmental Programme
WRMP	Water Resources Management Plan
WwTW	Wastewater Treatment Works
RBMD	River Basin Management District Catchment



Drainage and Wastewater Management Plan (DWMP)

The DWMP is a shared vision for the future of environmental water quality and the management of drainage and wastewater. Ultimately, it is a plan to achieve the best outcome for the environment we operate in and for the end user of these systems – our customers.



The DWMP is a customer-driven plan that will set out how we intend to manage future challenges brought about by **population growth, urban creep¹ and climate change.**



It will set out how we intend to **extend, improve and maintain drainage and wastewater systems** across Wales.



It plans for the **long-term**, setting out targets that are appropriate to the risks we face, but for a minimum period of **25 years** that covers both England and Wales.



It is a best practice approach built on processes already established such as **Water Resources Management Plans** and **Sustainable Drainage Plans.**



It demonstrates **greater transparency, robustness and line of sight** to investment decisions that affect our customers.



Developing this plan will help us work towards our **Welsh Water 2050 vision to “earn the trust of our customers everyday”** and to achieve our mission of becoming **“a truly world-class, resilient and sustainable service for the benefit of future generations”.**

We will work with a range of stakeholders that have a part to play in shaping the direction of the DWMP. This involves meaningful collaboration and partnership with other Risk Management Authorities (RMA) such as Local Authorities, Highway Authorities, Local Planning Authorities, Natural Resources Wales and the Environment Agency. We will also work with interest groups such as the North Wales Wildlife Trust and the Royal Society for the Protection of Birds and others. To ensure the voice of our customers are kept at the heart of the DWMP process, we will work with Customer Challenge Groups, which include organisations such as the Consumer Council for Water (CCW). We will also undertake extensive customer research to determine their awareness, expectations and support around DWMP management options and more broadly, wastewater services.

This document is the first in a series of non-technical summaries which will encompass all the outputs from the DWMP planning process. It is aimed at partners and organisations external to Welsh Water (or the Company) that plan and manage infrastructure, flood risk and the water environment. It provides a contextual overview of the DWMP principles, the benefits of working together, the key drivers of change, and the strategic planning objectives we aim to achieve to improve our environmental management of the water cycle for all. The planning objectives will be introduced in subsequent documents where we will cover the action plans in more detail and identify areas for collaboration with our key stakeholders. More information about the development and production of the plan will be provided in due course as these develop.

¹ Urban creep is the development of green areas in and around towns and cities which reduce the area of permeable ground.



Why do we need a plan?

Decisions made by water and sewerage companies today can affect our customers and the environment for generations.

Currently, the approach to long-term planning varies between water and sewerage companies (WaSCs), resulting in a lack of consistency and transparency across the UK wastewater sector.

We already undertake long-term planning of our wastewater services from our five-yearly business plans through our Sustainable Drainage Plans (SDPs). However, unlike our counterparts in the Water Services part of the business (the Water Resources Management Plans), neither SDPs nor DWMPs are statutory requirements. So, like other WaSCs, we have previously adopted the approach that works best for customers and the conditions that apply in our operating area², making it difficult for those outside of our respective businesses to compare and consider plans from across the UK.

If the water industry is to meet future pressures such as urban creep, climate and population change, there is a need for greater transparency, consistency and a clear 'line of sight' in the industry's planning for a robust and resilient drainage and wastewater service. The DWMP will be developed with the aim to bridge this gap for the customers we serve and the environment we are committed to protect.

The DWMP will be re-assessed every five years to feed into to the Company's price review cycle, and in advance of the submission of business plans to allow time for customer and stakeholder engagement on the plan. More information about the framework within which DWMPs are developed, can be found in the Water UK 21st Century Drainage Programme³.

Although the DWMP is not currently a statutory obligation, it is included within the Environment Bill 2019-21, which once granted royal assent, will be made a statutory requirement at the first opportunity.



² For example ground water flooding is a significant issue of concern in some parts of the south east of England but not in Wales. ³ Water UK DWMP Framework - https://www.water.org.uk/wp-content/uploads/2020/01/Water_UK_DWMP_Framework_Report_Main_September-2019.pdf



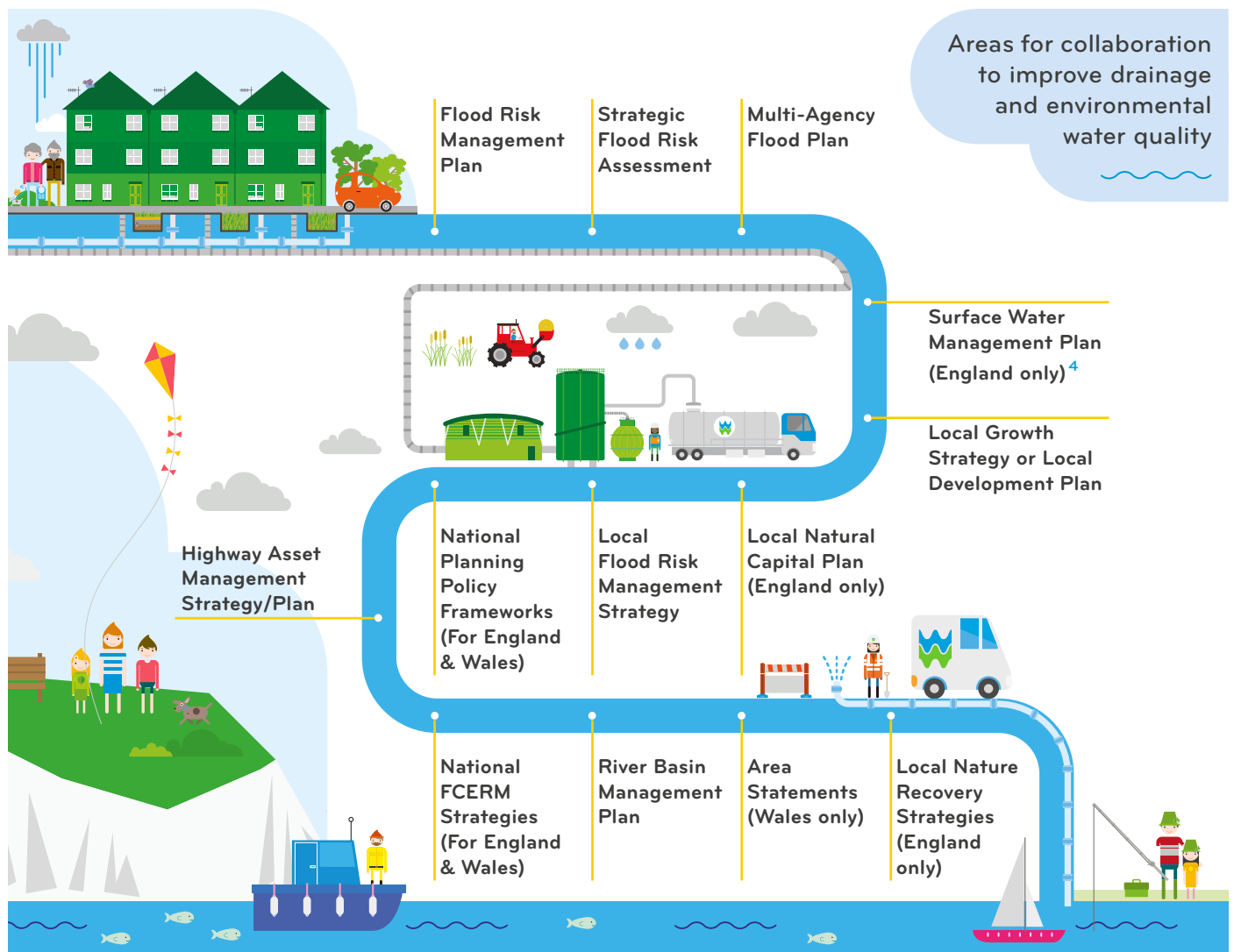
Working together towards a common goal

DWMPs will only fully realise their potential in delivering a robust and resilient drainage and wastewater service we aspire towards, by working in partnership with key stakeholders at both strategic and local levels.

Areas for collaboration can range from opportunities to help raise awareness with shared customers and stakeholders, to the introduction of sustainable drainage or natural flood management measures to slow the movement of storm water.

In other areas, there can be the implementation of measures that improve the quality of our rivers and coastal waters. This could be from the alignment of place-based planning or green/blue space objectives to improve the resilience of communities.

By working in synergy with our key stakeholders, interest groups and our customers, the DWMPs will complement and integrate with other existing plans and strategies that manage drainage and environmental water quality.



⁴ Welsh Water operating area covers both Wales and England and as such, England-only plans are included.



Outcomes that can be achieved by participating in the DWMP process



Cross-Organisational Working

- Opportunity to share ideas and shape plans
- Understand the needs and constraints of others
- Consistent platform to share and discuss at participant-specific forums and industry groups.



Knowledge Sharing

- Access to expertise and resource
- Efficient scheme delivery using the best placed resources.



Tackling Emerging Threats and Seizing Opportunities Together

- Integrating regional, sub-regional and local adaptation plans to offset future trends that will affect us all
- Maximise the value of their (and our) investment through jointly funded and mutually beneficial schemes (unlock funding)
- Removal of emerging environmental threats such as micro plastics (e.g. toothpaste) and the requirement of informing customers about the environmental harm.



Putting Customers First

- Provide best value to the economy and society
- Consistent messaging to each of our customers
- Transparency and line of sight to customers and other stakeholders, where previously the outputs of long-term drainage planning have not been visible.



Alignment of Management Plans

- Development of common goals and objectives
- Consistent output allowing stakeholders to make objective comparisons at a national scale.



What will be included in the plan?

The DWMP will consider wastewater networks (foul, combined and surface), interconnecting drainage systems from others assets, Wastewater Treatment Works, and the impact on the waters we discharge to including rivers, streams and other water courses, estuarial and coastal waters.

The Water UK DWMP Framework defines drainage within DWMPs as -



The total water company network served by a wastewater treatment works (WwTW), and interaction points with non-water company drainage systems⁵. Drainage also includes water company surface water assets not draining to a WwTW⁶.



⁵ Non-water company drainage systems are public drainage system (known as surface water drainage) and highway drainage. ⁶ Surface water assets that do not drain to a WwTW drain to rivers and beaches instead.



What benefits will the plan bring?

In conjunction with existing planning tools and the other initiatives from the Water UK 21st Century Drainage Programme, we will adopt the DWMP in order to achieve:

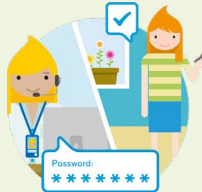


Agile plans that can respond to rapid changes such as **climate change and population growth**

A culture of **partnership working and co-creation** of solutions that will benefit the economy, society and environment over the long-term



Better investment **decisions** made by unlocking combined funding sources



Transparency and consistency in planning approach to the production of DWMPs

Greater confidence for customers, regulators and stakeholders through the creation of a '**line of sight**' from identification of risks to the investment decisions taken to address them



Supports the development of plans for economic growth and resilient communities across Wales



A platform for **effective engagement** with customers and stakeholders



A **collective view** of the current and future challenges and actions needed to respond to them



What planning areas will they cover?

Our DWMP will Consist of three levels:

Level 1 - Company Operational Level

An operational area which consolidates the more localised mapping in levels 2 and 3 in a published strategic report for our whole operational area. Our high-level plan will show how we address the challenges we have identified and how we will achieve our long-term wastewater and drainage aims.

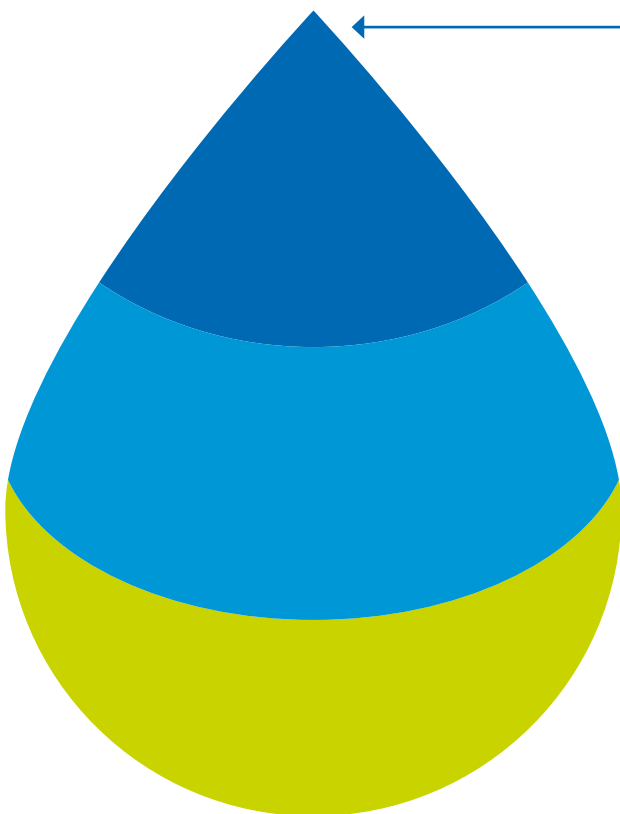
Level 2 - Strategic Planning Unit

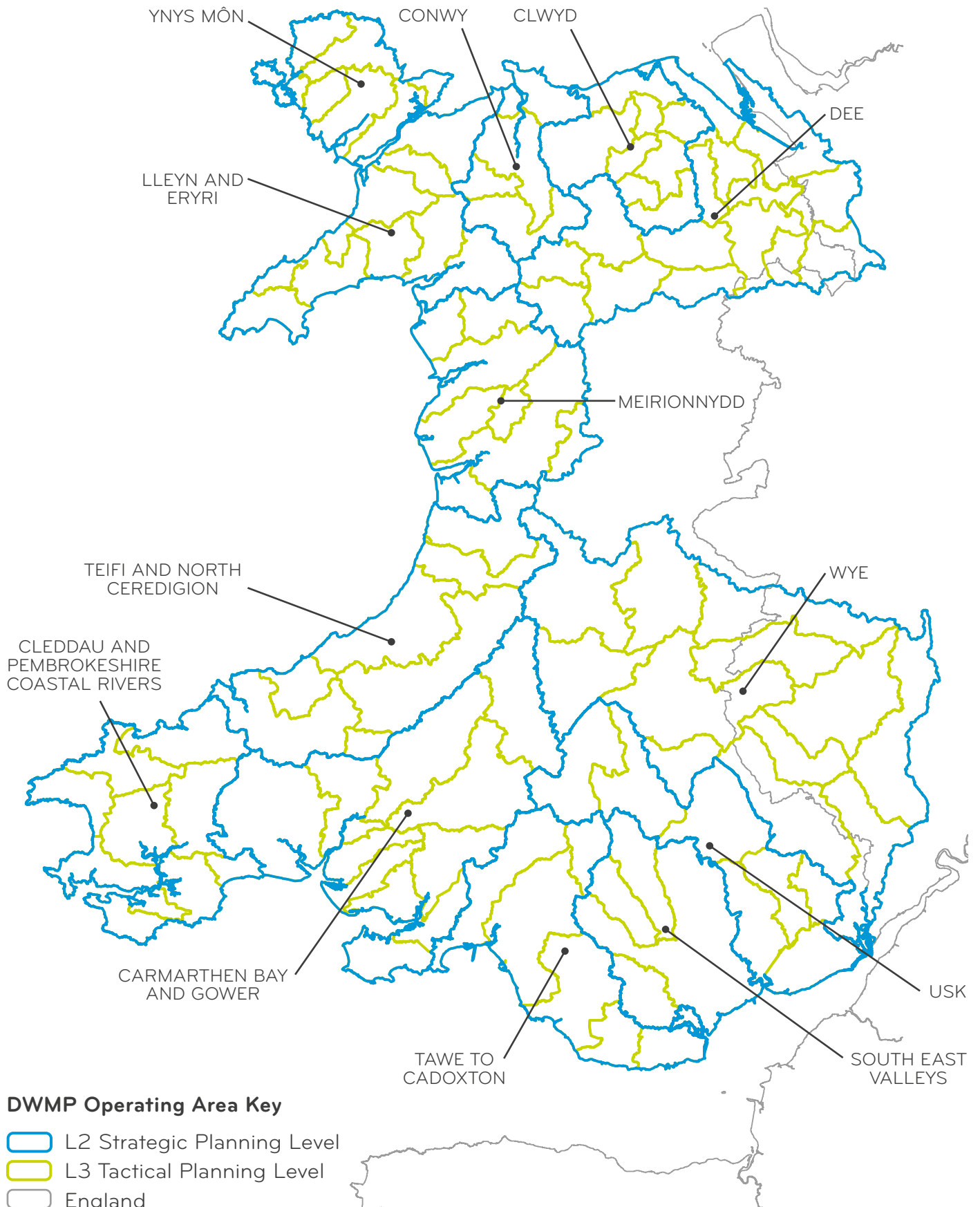
A subdivision of the Company operational area. Originally set at the River Basin Management District Catchment (RBMD) level and revised to take into account drainage from sewers.

This is where we combine the significant risks identified and consult with stakeholders where collaborative opportunities lie to achieve greater benefits for all.

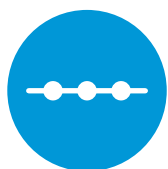
Level 3 - Tactical Planning Unit

A consolidation of WwTW and its catchments joined together by its river drainage system. At this level we undertake a detailed assessment of risks and opportunities. It sets out a long-term plan of interventions needed to meet the needs of the catchment, the communities that live there and our Company's strategic plans.





Information will be summarised at each of the levels, where strategic information is shared at the higher levels and localised information at the lower levels.



DWMP drivers

We have mapped the DWMP framework key drivers to the Welsh Water 2050 drivers and we have used this to begin the planning process.

Engagement with our customers and stakeholders during the development of the DWMP will reinforce the need for these drivers, and will shape the next business plan and subsequent long-term plans.



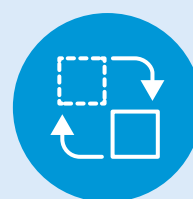
Environmental Challenges

Climate change and population growth will place increasing pressure on ensuring effective drainage and environmental water quality management (e.g. tackling removal of emerging threats such as micro plastics).



Customer Expectations

Changes in customer behaviours (e.g. not flushing wet wipes down the toilet), services provided by competitors, and raised expectations driven by technological advancements will require systems to be adaptable and fit-for-purpose.



Resilient Systems and Services

Anticipating trends and navigating uncertainty will be key to our ability to cope and recover from disruptions, to maintain services for the customers we serve and to protect the environment in which we operate.

The following principles of Welsh Water 2050⁸ are woven into the fabric of the DWMP drivers:

Welsh Water
Customer
Promises

Welsh Government Policy and Context,
with particular alignment to the Well-
being and Future Generations Act

Future
Trends and
Challenges

Welsh Water
Resilience
Framework.

More detail about the principles can be found in the full version of the Welsh Water 2050 Vision.

⁸ Welsh Water 2050 Link -

<https://www.dwrcymru.com/en/Company-Information/Business-Planning/Welsh-Water-2050.aspx>



Welsh Water customer promises

Six customer promises have been developed to respond to changing expectations and priorities in the context of a rapidly transforming environment:



**Safe, clean
water for all**



**Personal
service that's
right for you**



**Safeguard our
environment for
future generations**



**Put things
right if they
go wrong**



**Fair bills for
everyone**



**A better future
for all our
communities**

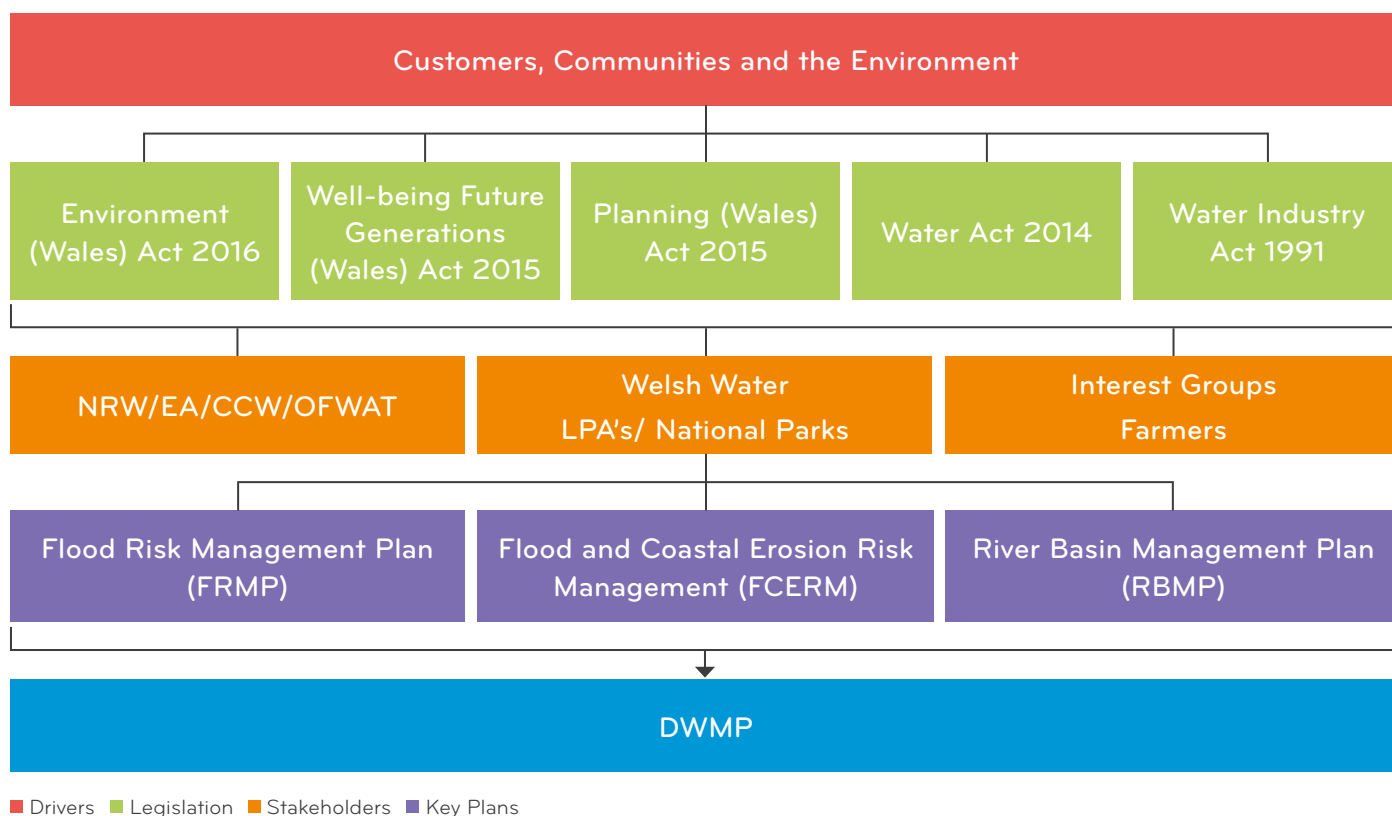
The DWMP will ensure these customer promises are taken into consideration where there are synergies with wastewater, flooding or pollution that could impact our ability to deliver a service that is robust and resilient to future pressures.



Welsh Government policy and context

The DWMP is driven by achieving the best outcomes for our customers, communities and the environment. It is underpinned by the principles contained in the Environment (Wales) Act 2016, Well-being Future Generations (Wales) Act 2015, the Planning (Wales) Act 2015, the Water Act 2014 and Water Industry Act 1991. These Acts in turn help inform the key plans that influence the direction and development of the DWMP.

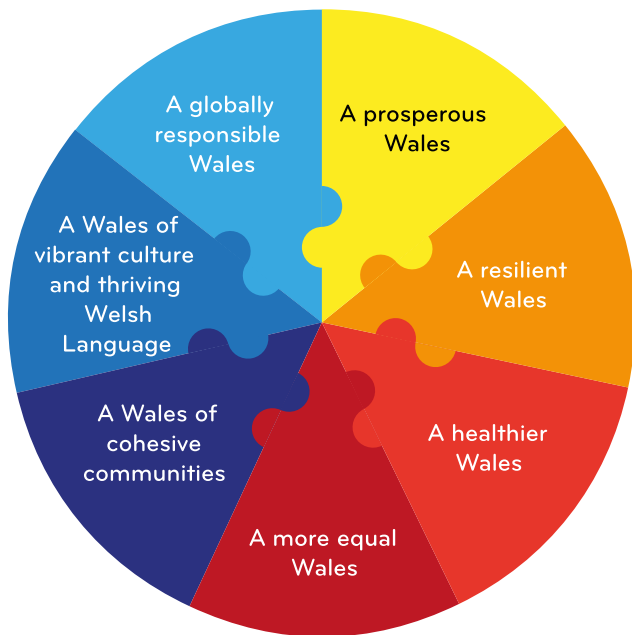
As seen from the illustration below, stakeholders such as Natural Resources Wales, Local Planning Authorities and interest groups have a critical part to play in the process. Through partnership working and information sharing, the DWMP will complement and link with our stakeholders' existing plans that manage drainage and water quality. By doing our part, we will achieve more together.



Welsh Water 2050 contributes to the wider goals of the Well-being of Future Generations (Wales) Act 2015. The Well-being of Future Generations Act places a duty on public bodies in Wales to consider the long-term impact of their decisions and work more cohesively with people, communities, and other public bodies to achieve outcomes.

Although we have reflected this in Welsh Water 2050, we were asked by the Future Generations Commissioner to consider the Future Generations Framework, particularly the seven well-being goals, the well-being assessments and the sustainable development principles (including the 5 ways of working), in the development of the DWMP.

The seven well-being goals and five ways of working from the Well-being of Future Generations (Wales) Act 2015



Furthermore, the DWMP will take into consideration the principles set out in Cymraeg 2050: A million Welsh speakers. This is the Welsh Ministers' action plan for 2019–20, prepared in accordance with Section 78 of the Government of Wales Act 2006. It sets out how they will increase the number of Welsh speakers⁹, increase the use of Welsh and create favourable conditions for the language to thrive. The DWMP will contribute to these wider goals by ensuring all written correspondence to stakeholders and customers are made available in Welsh.

Other key documents which will be considered include the Water Strategy for Wales and the National Infrastructure Commission's Assessment¹⁰ on the risks of drought and flooding.

We will include these goals, objectives and principles where they are applicable to DWMP. At a UK level, we will incorporate objectives that are comparable for the industry. However, we recognise that achieving them will require ongoing collaboration with other organisations, including regulators, local government and customers.

The Five Ways of Working



Integration



Long-term



Collaboration



Involvement

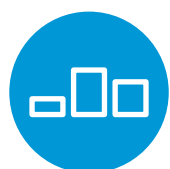


Prevention

⁹ Cymraeg 2050: A Million Welsh Speakers Link -

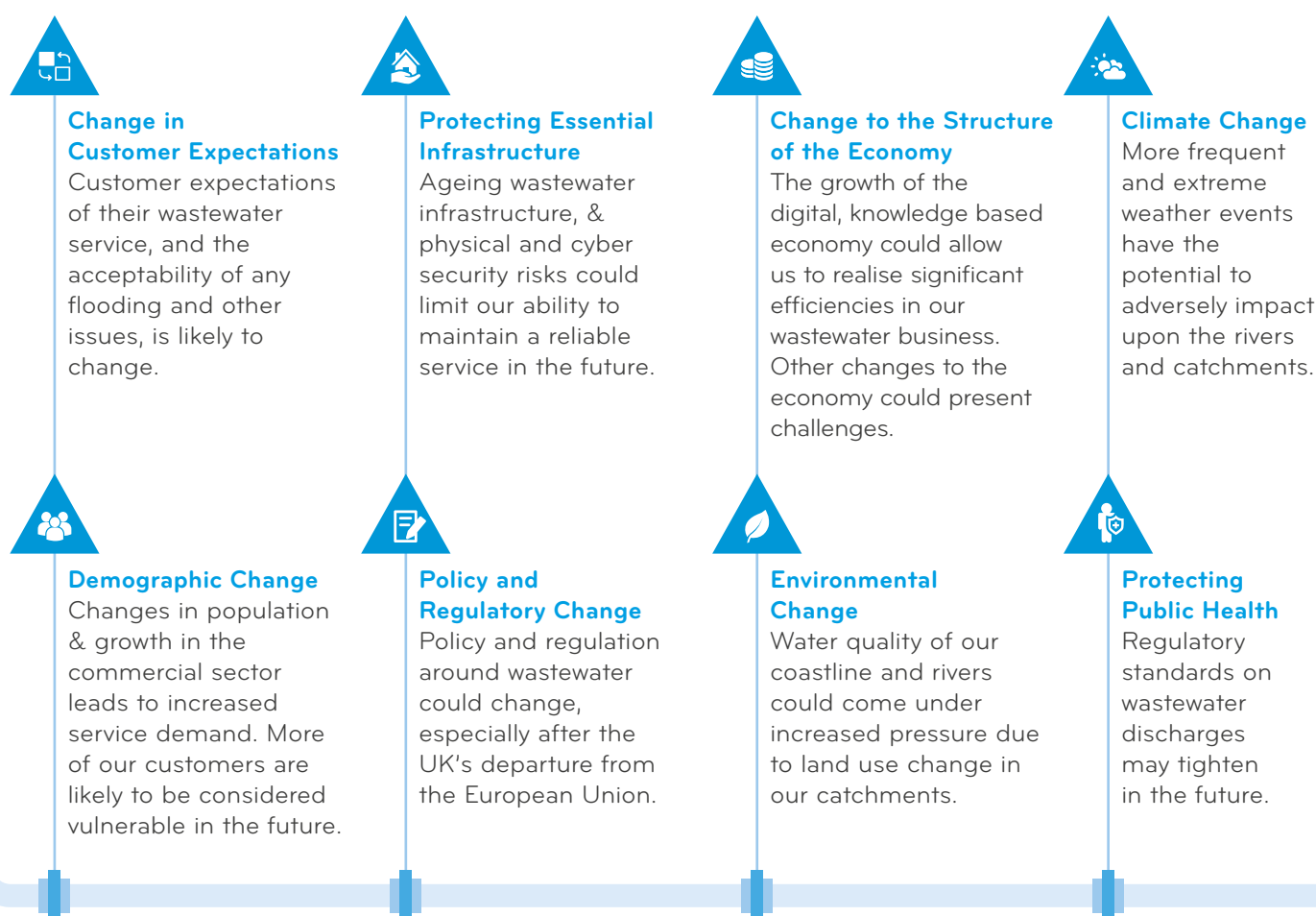
<https://gov.wales/sites/default/files/publications/2019-03/cymraeg-2050-a-million-welsh-speakers-action-plan-2019-20.pdf>

¹⁰ https://www.nic.org.uk/wp-content/uploads/CCS001_CCS0618917350-001_NIC-NIA_Accessible.pdf



Future trends and challenges

The nature of the environment in which we operate presents future uncertainties that are likely to have a significant impact on our service provision. It is essential that we consider the challenges and opportunities presented by these trends so that we can continue to meet our customer promises into the future. These future trends are:



The DWMP will mainly tackle the challenges that are brought about by demographic, climate and environmental change. Changes in climate have meant more frequent, unpredictable and intense rainfall in Wales. When combined with growth and urban creep, the collective impacts creates a surge in unpredictable peaks in demand which puts overwhelming pressure on sewer networks that have fixed capacity. This affect the ability of assets – such as pipes and WwTW – to function effectively. This also leads to more frequent overflows of untreated wastewater into our watercourses, also known as Combined Sewer Overflow (CSO)¹¹.

¹¹ CSOs is a combined sewer system designed to overflow into a river instead of back-up into streets and homes. More information can be found on the definitions page.



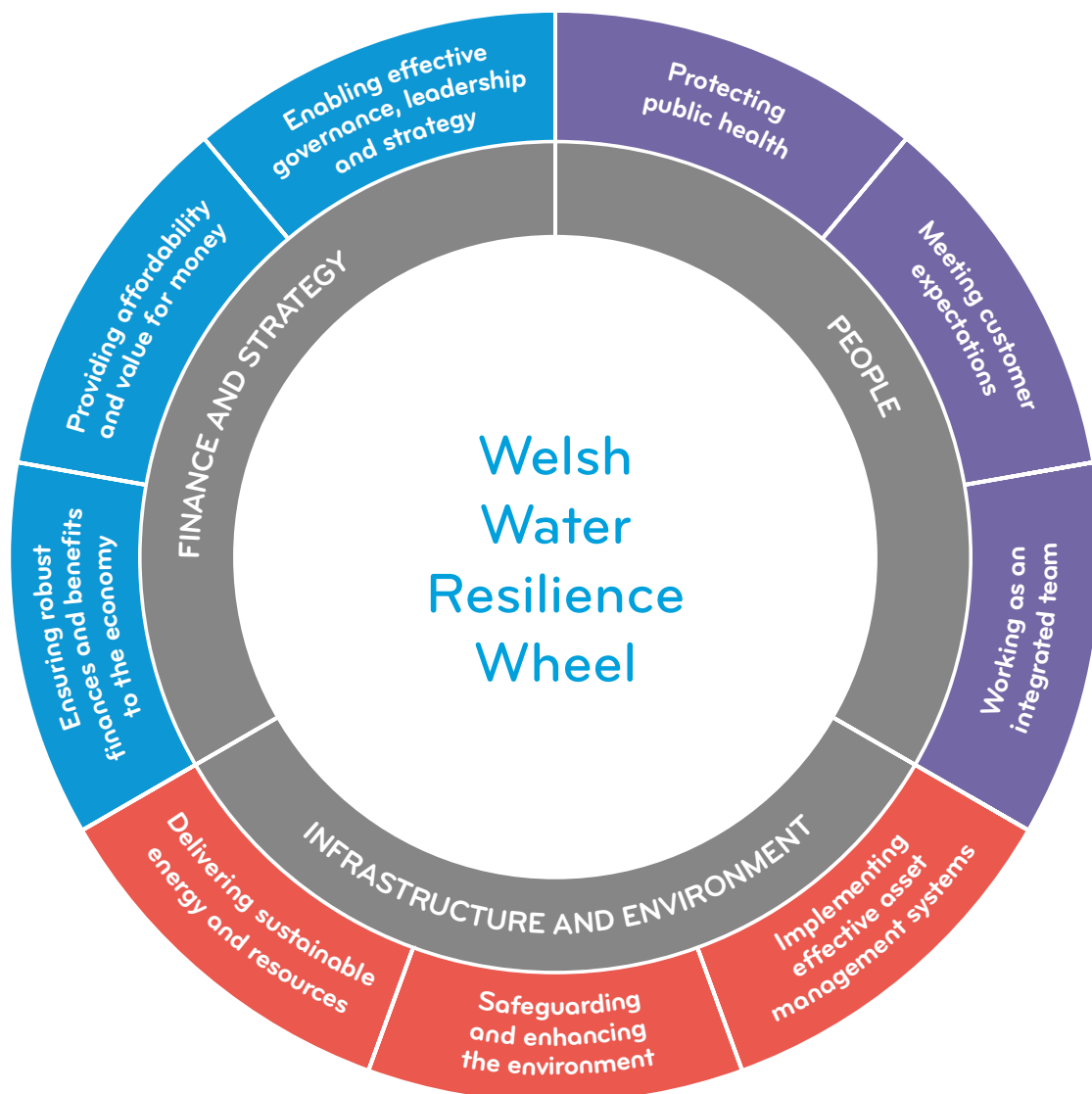
Resilient systems and services

Resilience earns the trust of current and future customers. It encompasses all aspects of our business – from assets, systems, people, governance and culture – so that we are ready to meet the challenges of 2050 and beyond.

The Resilience Wheel provides a framework to analyse our current resilience performance and forms the basis for the strategic responses against challenges and trends identified in Welsh Water 2050.

The process used to develop this is based on global resilience best practice set in the context of Welsh Water's operating area, including the legislation and policy of the Welsh Government.

The targets we set within the DWMP will be assessed every five years against this wheel to improve our resilience and make progress towards the Welsh Water 2050 mission statement and vision.



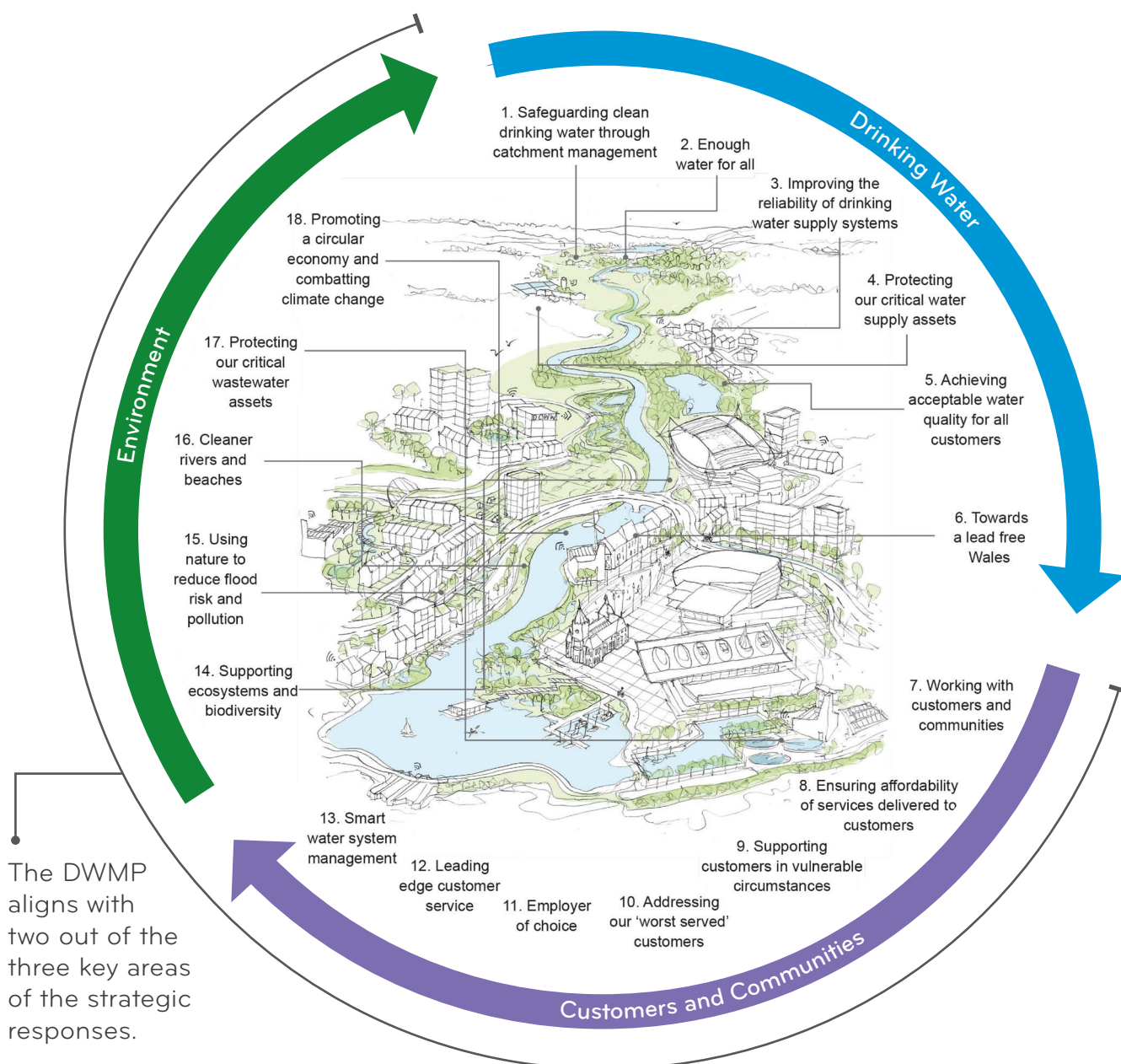


Strategic responses

During the development of Welsh Water 2050, we produced a set of strategic responses (or business direction) to demonstrate how we intend to address the future trends and challenges mentioned in the previous section.

We asked for your views about these strategic responses, and after further refinements from feedback received, we came up with a list

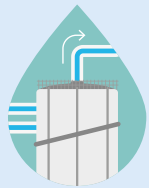
of 18 strategic responses that reflected the views and aspirations of our customers and stakeholders. They were grouped into three key areas: Drinking Water, Customers and Community and Environment. The DWMP aligns with two out of the three key areas namely, Environment and Customers and Communities.





DWMP objectives

From these strategic responses, we have identified three objectives for wastewater management planning which are: **Water Quantity, Water Quality and Resilience**.



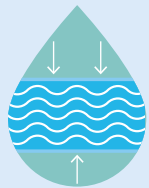
Water Quantity

Reduce the risk of (internal and external) flooding to communities



Water Quality

Management of our water quality, services and the environment



Resilience

Adaptiveness to change while maintaining critical services and protecting the environment



These high-level objectives are underpinned by the National Planning Objectives and by the DWMP action plan detailed in subsequent pages. Together, they will help achieve the Welsh Water Vision and Mission Statement.



Welsh Water Vision

To earn the trust of our customers everyday.

Mission Statement

To become a truly world class, resilient and sustainable water service for the benefit of future generations.

As Welsh Water's operating area covers both Wales and England, we were asked by the Environment Agency to consider the six national planning objectives in the development of the DWMP, these include:

- Internal sewer flooding risk
- Pollution risk
- Risk of sewer flooding in 1 in 50 year storm
- Sewer collapses
- Storm overflow performance
- WwTW compliance

This document provides a contextual overview of the DWMP principles, and it will not seek to explain how we will measure the planning objectives over the next few pages. This will be explained in more detail in subsequent non-technical summaries.

Strategic Responses

Objectives

DWMP Action Plan



Working with Customers and Communities

Water Quality
Water Quantity

Work with customers, villages, towns and cities to co-create holistic solutions, share knowledge, and support initiatives which reduce water use, prevent sewer abuse, and provide wider benefits for communities and the environment. For example, co-creating sustainable solutions to slow down surface water run-off in a greener way and improve catchments that protect customers in **1 in 50 year storm events**.

Contribute to the wider goals of the Future Generations Framework by ensuring all correspondences to stakeholders and customers are made available in Welsh.

Resilience

Help customers and communities take ownership in finding solutions to cope with:

- Hotter and drier summers that lead to less water in rivers
- More frequent and intense storms/rainfalls
- Rising sea levels that put towns and coastlines at risk
- Changes in warm and cold seasons that are harder to predict
- Shifts in weather patterns (i.e. from infrequent storms to regular extreme flooding).



Ensuring Affordability of Services Delivered to Our Customers

Water Quality
Water Quantity
Resilience

Work in partnership with key stakeholders to find innovative, value-for-money solutions to some of our biggest challenges in **wastewater treatment compliance** and services.



Supporting Customers in Vulnerable Circumstances

Water Quality
Water Quantity
Resilience

Work with current and future customers to find solutions that reduce the risk of external **and internal sewer flooding** and help the most vulnerable in our society in the event of sewer flooding at their property.



Improving the Level of Service for Customers

Water Quality
Water Quantity
Resilience

Identify the worst-served customers of the future and putting plans in place so that they do not become worst-served.

Strategic Responses

Objectives

DWMP Action Plan



Smart Water System Management

Water Quality
Water Quantity
Resilience

Implement smarter management systems to predict, mitigate and monitor **risk of pollution** to our watercourses as a result of overflows from our drainage system and WwTW.

Strive towards seamless collaboration with all Risk Management Authorities to identify issues that may have a wider impact on the environment we operate in and implement measures before they result in adverse effects.



Supporting Ecosystems and Biodiversity

Water Quality

Develop conditions where our water environment can thrive by reducing **pollution risk** from surface water runoff and implementing nature-based solutions (e.g. SuDs).

Water Quantity

Reduce flood risk by using sustainable drainage or natural flood management measures to slow the volume and movement of surface water runoff.

Resilience

Embed in decision making process consideration on opportunities and risks on attributes of ecosystem resiliences (the scale, diversity, connection, adaptability and condition of ecosystems). In doing so, delivering solutions that maintain and/or enhance biodiversity and resilience of natural environment.



Using Nature to Reduce Flood Risk and Pollution

Water Quality
Water Quantity

Reduce the risk of external **and internal sewer flooding and sewer collapses** by removing storm water from the foul/combined sewer network entirely, known as RainScape¹². This involves retro-fitting new surface water systems to divert flow away from foul/combined systems and direct it towards local watercourses. It can also include the provision of green infrastructure to slow, treat and return surface water to the natural environment.

Resilience

Work with our key stakeholders to incentivise customers and communities to take ownership of initiatives that prevent **internal flooding**, external flooding and pollution risk (i.e. creating greens spaces to naturally manage surface water run-off).

¹² Link to Rainscape - <https://www.dwrcymru.com/en/My-Wastewater/RainScape.aspx>

Strategic Responses

Objectives

DWMP Action Plan



Cleaner Rivers and Beaches

Water Quality

Better protect the health of our rivers and coastlines by reducing pollution incidents. Implement innovative solutions to pollution modelling, monitoring and management to ensure continued compliance of our assets.

Water Quantity

Engagement with councils to understand flooding and coastal erosion and learn to work together to improve the environment.

Resilience

Manage our networks so that hotter temperatures, rising sea levels, more frequent and intense storms, unpredictable season changes and shifting weather patterns, are taken into consideration.



Protecting Our Critical Wastewater Assets

Water Quality

Water Quantity

Resilience

Improve the ability of our critical wastewater treatment assets to cope with future pressures such as climate and population change and recover from service failures arising from these pressures that could impact our environment. Improvements include physical and technological security measures. Continuous improvement of the critical assets of the future.



Promoting a Circular Economy and Combatting Climate Change

Water Quality

Water Quantity

Maximise resource reuse and contribute to a sustainable wider economy by preparing for rising temperatures in summer, rising sea levels, more frequent and intense storms, unpredictable season changes and shifting weather patterns.

Resilience

Recognising the risks that come with the uncertainty brought about by climate change, while also maximising every opportunity to improve the environment.



Ongoing customer engagement

We are currently working closely with our customers in a series of research groups to determine their awareness, expectations and support around DWMP management options and wastewater services.

The research is developed in collaboration with our Customer Challenge Group, where consumer bodies such as CCW act as a critical friend to Welsh Water. This will help ensure that the DWMP is developed in the best interest of existing customers, and the future generations who will benefit from this plan.

We are currently working with customers to help them understand the historic development of our network and how it impacts the way our drainage network operates today, so that we can start to explore possible solutions to tackle the challenges we face. We will ask customers for their preferences on the options presented and gather views on when they would like to see these implemented.

Our findings so far have suggested that the DWMP objectives align with our customers' expectation of what Welsh Water should strive towards in the long-term, to achieve the best outcome for the communities we serve and the environment we operate in. We will share the results of our customer engagement work as the research evolves and the DWMP process continues.



Ongoing stakeholder engagement

Ongoing engagement will involve collaboration with stakeholders at the operational, strategic and tactical planning levels in the UK and Wales. The DWMP will ultimately reflect the common goals and objectives we share with our key stakeholders at each level. Through our engagement with them to date, we have been asked to consider various frameworks, guidelines, principles and plans as part of the development of the DWMP. We have captured these requests and we will continue to record them as we engage with more stakeholders at varying levels. We will outline how we have taken each recommendation into consideration and provide more details of the outcomes of our engagement with stakeholders as the DWMP process progresses.

Outcomes of engagement

The outcomes of our engagement with customers and stakeholders will be used to influence the development of subsequent stages of the DWMP such as:

- Identifying preferred options to address future challenges in drainage and waste water management

- Timing of improvements
- The need for reviewing the DWMP drivers for the next plan.

The decisions made here will in turn shape the direction of the Company's next business plan.



Dŵr Cymru
Welsh Water



DWMP@dwrcymru.com



www.dwrcymru.com/dwmp