Uisce Éireann
Irish Water

Water Services Strategic Plan 2050

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Executive Summary

Uisce Éireann, as Ireland's national public water services provider, supplies 1.7 billion litres of drinking water to our customers every day and collects and treats more than 1.2 billion litres of wastewater before we safely return it to the environment.

Providing safe, secure and sustainable water services is vital for our society, supporting public health, supporting the delivery of housing and jobs and protecting our environment and precious water resources.

Our Water Services Strategic Plan 2050

The Water Services Strategic Plan 2050 (WSSP 2050) is our long-term strategic plan which is required to be prepared under the Water Services No. 2 Act 2013. It sets out our objectives and the means by which we aim to achieve them in the context of the significant challenges we are likely to face over the next 25 years. The plan outlines our strategic direction and the actions we will implement to ensure sustainable public water services for Ireland. Once approved, it will replace our existing WSSP from 2015, which covered the period from 2015 to 2040.

The draft WSSP 2050 has been subjected to Strategic Environmental Assessment (SEA) in accordance with the European Union (EU) SEA Directive (2001/42/EC) and Appropriate Assessment (under the EU Habitats Directive) and these documents are also published for review.

Strong partnerships will underpin our approach to planning for the future, with the aim of delivering mutual benefits and value. Through the delivery of our WSSP 2050, we will build on the legacy of our local authority water services heritage, working with our customers, communities, and stakeholders to enhance our shared environment and support social and economic development. We will aim to lead by example and embrace research and innovation, integrating new technologies and sustainable practices to secure safe and reliable water supply into the future while protecting the environment.

OUR PURPOSE

We rise to the challenge of delivering transformative water services that enable communities to thrive.

OUR VISION

A sustainable Ireland where water is respected and protected, for the planet and all the lives it supports.

The challenges we face

We operate in a rapidly changing global environment and we know the coming decades will bring enormous change for the delivery of water and wastewater services. This is why we undertook our foresight study, Vision 2050. This study was delivered in collaboration with a range of stakeholders and came up with a set of desired outcomes for the water sector in Ireland to 2050 and identified challenges and opportunities with the potential to have the greatest impact on delivering water services over that timeframe. The key challenges and how they may impact our water services are outlined in the table below.

Climate Change	Growing population and economy	Environmental and biodiversity crises	Ageing infrastructure	Legislation, regulation and policy	Economic conditions
Climate change projections indicate Ireland will experience drier summers and more intense winters.	Ireland has the third fastest growing population in Europe and our economy is continuing to expand. Our population is expected to reach six million by 2050.	We are experiencing environmental and biodiversity crises and the scale and speed of response may be insufficient to meet long-term EU and national environmental objectives.	The average age of water mains in Ireland is between 65 to 85 years old, compared to 36 years across the European Union.	European policy and legislation significantly influence how we deliver our business, and it is continuously evolving.	Global factors can heavily influence economic conditions, which can in turn impact on the delivery of water services.
How services may be impacted					
We are already experiencing the impacts of climate change. Depending on which future climate change scenario plays out, the impacts on the sustainability of our water sources and on drainage of our cities and towns could be extreme.	Population growth, coupled with economic expansion, will continue to increase the demand on our water resources and existing infrastructure. Additionally, in an adverse climate change scenario, climate-driven migration could place unprecedented pressure on our ability to meet demand for water services.	We are critically dependent on the water environment for our water supplies and to receive our treated wastewater discharges. Further degradation of the water environment could present significant challenges for delivery of water services.	Without major investment in asset renewal and replacement of the existing asset base, asset age will continue to rise with inevitable impact on levels of service.	Changing European policy and legislation drives new requirements and will impact significantly on the services we deliver in the coming decades.	Economic downturns could impact on funding availability with consequent impact on service outcomes and longer reaching impact on supply chain capacity.

Our strategic response

In response to the complex challenges facing the water sector, we have developed strategic objectives and supporting actions that will help us address our most critical needs and ensure that we continue to deliver sustainable water and wastewater services for the long term.

STRATEGIC OBJECTIVE 1
Safe & reliable drinking water

Safe and reliable water supplies are essential to public health and to social and economic progress. We will protect the quality of our water at the source and treat it to a high standard before it is distributed through our extensive network of water mains to households and businesses. Water conservation and leakage reduction will form a key part of our strategy to manage our precious water resources sustainably.

STRATEGIC OBJECTIVE 2
Support our customers, communities & the economy

We will meet our customers' needs through the provision of high quality, reliable water and wastewater services. Our approach will centre on prioritising our customers' needs and engaging our communities so that everyone can play their part in safeguarding our shared resources. We will also work with our policy makers, planning authorities, and our housing and industry stakeholders to support Ireland's economy and the delivery of housing for our growing population.

STRATEGIC OBJECTIVE 3
Protect & restore our environment

Providing safe water services is closely linked with protecting our water environment. We will aim to work collaboratively with other stakeholders to support our national aim of meeting the environmental objectives of the Water Framework Directive. We will also aim to work in partnership with stakeholders to achieve climate resilient drainage for our cities and towns which also protects the water environment. We aim to manage our assets and activities so as to achieve biodiversity net gain, including the promotion of nature-based solutions and catchment measures.

STRATEGIC OBJECTIVE 4
Sustainable services fit for the future

Ensuring sustainable water services is key to securing safe water and a protected environment for future generations. Transforming our water services to be fit for the future will be a huge challenge and will involve us becoming a Net Zero Carbon water utility and maximising resource recovery in line with a circular economy approach. We will also need to optimise how we manage our assets across their full lifecycle. This means making sure that every stage of an asset's life – from design and construction to operation, maintenance and eventual disposal – is handled in the most efficient and effective way, using the most appropriate materials and technologies and maximising value from innovation. All of our work will need to be underpinned by adequate and stable long-term funding.

Safe & reliable drinking water

Strategic Aims

1. Ensuring safe drinking water
2. Delivering reliable water supplies
3. Conserving our precious resources

Support our customers, communities & the economy

Strategic Aims

4. Delivering for customers
5. Engaging with communities
6. Providing for growth

Protect & restore our environment

Strategic Aims

7. Protecting our water environment
8. Playing our part under the Water Framework Directive
9. Contributing to positive biodiversity

Sustainable services fit for the future

Strategic Aims

10. Achieving net zero carbon
11. Adopting circular approaches
12. Managing our assets
13. Gaining value from innovation
14. Securing long-term funding

Our actions

In accordance with Section 33(4) of the Water Services (No. 2) Act, 2013, we have set out the means by which we propose to achieve our strategic objectives. These are presented as 35 key actions. These actions build upon the strong foundations established by our existing Water Services Strategic Plan. For instance, in our WSSP 2050 we have committed to the ongoing implementation and review of our first National Water Resources Plan (NWRP), which was delivered under our existing WSSP.

The NWRP sets out our approach to providing safe, sustainable, secure and reliable water supplies over the next 25 years. Our commitment to the NWRP in our WSSP 2050 includes the application of new technologies and innovative approaches to conserve our water sources. Our WSSP 2050 will undergo regular reviews, every five years, to ensure it remains appropriate. The reviews will allow us to adapt to changing circumstances and evolving needs.

Strategic Objective
1 - Safe and reliable drinking water

STRATEGIC AIM	ACTION
Ensuring safe drinking water	**1.1** Undertake risk assessments across our supplies and implement appropriate measures to manage risk.
	1.2 Conform with the Drinking Water Directive and other legislative requirements relating to drinking water quality.
	1.3 Coordinate integrated catchment management measures and champion nature-based solutions for improving source water quality.
Delivering reliable water supplies	**1.4** Implement and continue to review our National Water Resources Plan, delivering improvements in water supply infrastructure to ensure resilient supplies into the future.
	1.5 Develop contingency plans to improve reliability of our water supplies.
	1.6 Improve operational resilience through preventative measures and developing and implementing improved incident response processes.
Conserving our precious resources	**1.7** Use less water through promoting water conservation to help customers reduce their use.
	1.8 Use less water through developing and implementing an enhanced Water Stewardship Programme.
	1.9 Lose less water through delivering leakage reduction.

Strategic Objective
2 - Support our customers, communities and the economy

STRATEGIC AIM	ACTION
Delivering for customers	**2.1** Understand customer needs and expectations.
	2.2 Enhance customer communications to address our customer expectations and provide real-time information on usage, incidents and water quality.
	2.3 Support our customers to play their part in protecting water as a precious resource and enabling better water services.
Engaging with communities	**2.4** Develop a community education and engagement programme to raise awareness on the value of water and the water services we provide.
	2.5 Continue to develop amenity value in our assets with local communities, where safe and appropriate.
Providing for growth	**2.6** Engage and collaborate with key stakeholders to support national, regional and local planning policy.
	2.7 Engage with housing and industry stakeholders to support delivery of new homes and economic growth.
	2.8 Develop and embed demand analysis capability to inform, forecast and plan for future investment requirements.

Strategic Objective **3 - Protect and restore our environment**

STRATEGIC AIM	ACTION
Protecting our water environment	**3.1** Work with regulators and stakeholders to develop a Wastewater Strategy Framework. **3.2** Develop and implement Integrated Urban Wastewater Management Plans. **3.3** Manage our water service assets and operations to reduce the risk of impacts to water bodies.
Playing our part under the Water Framework Directive	**3.4** Protect and restore water bodies through collaboration. **3.5** Manage wastewater services to achieve regulatory requirements. **3.6** Manage drinking water services to achieve regulatory requirements.
Contributing to positive biodiversity	**3.7** Manage our assets to have biodiversity 'net gain'. **3.8** Champion nature-based solutions and integrated catchment management measures in the delivery of water and wastewater projects..

Strategic Objective **4 - Sustainable services fit for the future**

STRATEGIC AIM	ACTION
Achieving net zero carbon	**4.1** Develop and implement a Net Zero Road Map. **4.2** Work with our supply chain to embed sustainability in the delivery of water and wastewater infrastructure.
Adopting circular approaches	**4.3** Review and implement the National Wastewater Sludge Management Plan. **4.4** Maximise circular economy benefits.
Managing our assets	**4.5** Manage activities on our assets in a coordinated manner across their full lifecycle. **4.6** Ensure risk and value-based decision making across the lifecycle of assets.
Gaining value from innovation	**4.7** Develop a culture of innovation in the water services sector to enable a sustainable future. **4.8** Continue to develop foresight and horizon scanning capability.
Securing long-term funding	**4.9** Quantify and articulate long-term investment needs for our water and wastewater assets. **4.10** Secure multi-annual funding approach.

Our approach to long-term planning

In the context of the future challenges our water sector is likely to face, we recognise that a stronger approach to long-term planning is required to ensure sustainable public water and wastewater services:

- We will work with our customers, communities and stakeholders, aiming to build strong partnerships to deliver better outcomes for Ireland.
- By embracing systems thinking, we will understand the interdependencies within our water environment and across service sectors, leading to beneficial outcomes for all.
- We will anticipate and plan for future scenarios affecting our water service delivery, such as alternative climate change outcomes and population trends, to help us navigate uncertainties and adapt to change.
- Our people are at the heart of our journey to a sustainable water future. We will invest in their health and well-being, commit to training and development, and build a culture of belonging where we all contribute to achieving our common goals.

OUR APPROACH

Collaboration

We collaborate with stakeholders to deliver outcomes for Ireland which could not be achieved while working in isolation.

Systems thinking

We recognise the complexity of the water cycle and aim to take a holistic view in determining optimal solutions for the long term.

Adaptive planning

We plan for the future using an adaptive approach so that we can respond to changing trends and needs.

Building our culture, empowering our people

We harness a safe, diverse and inclusive culture, where our people are empowered and high performing.

Implementing our Plan

The WSSP 2050 outlines a strategic framework for water services, guiding the development of our implementation plans and programmes. These plans collectively form the basis for our regulatory submissions to the CRU, including the Investment Plan. We carry out prioritisation as part of the investment planning process with the aim of ensuring alignment with the priorities of the Government as set out in the Water Services Policy Statement 2024 - 2030.

We will monitor our progress and report our performance against our plans and targets through established regulatory processes that ensure we remain accountable to our customers and stakeholders.

The relationship of this (Tier 1) Water Services Strategic Plan to the (Tier 2) implementation plans, and the future (Tier 3) projects and programmes is illustrated in Figure 1.

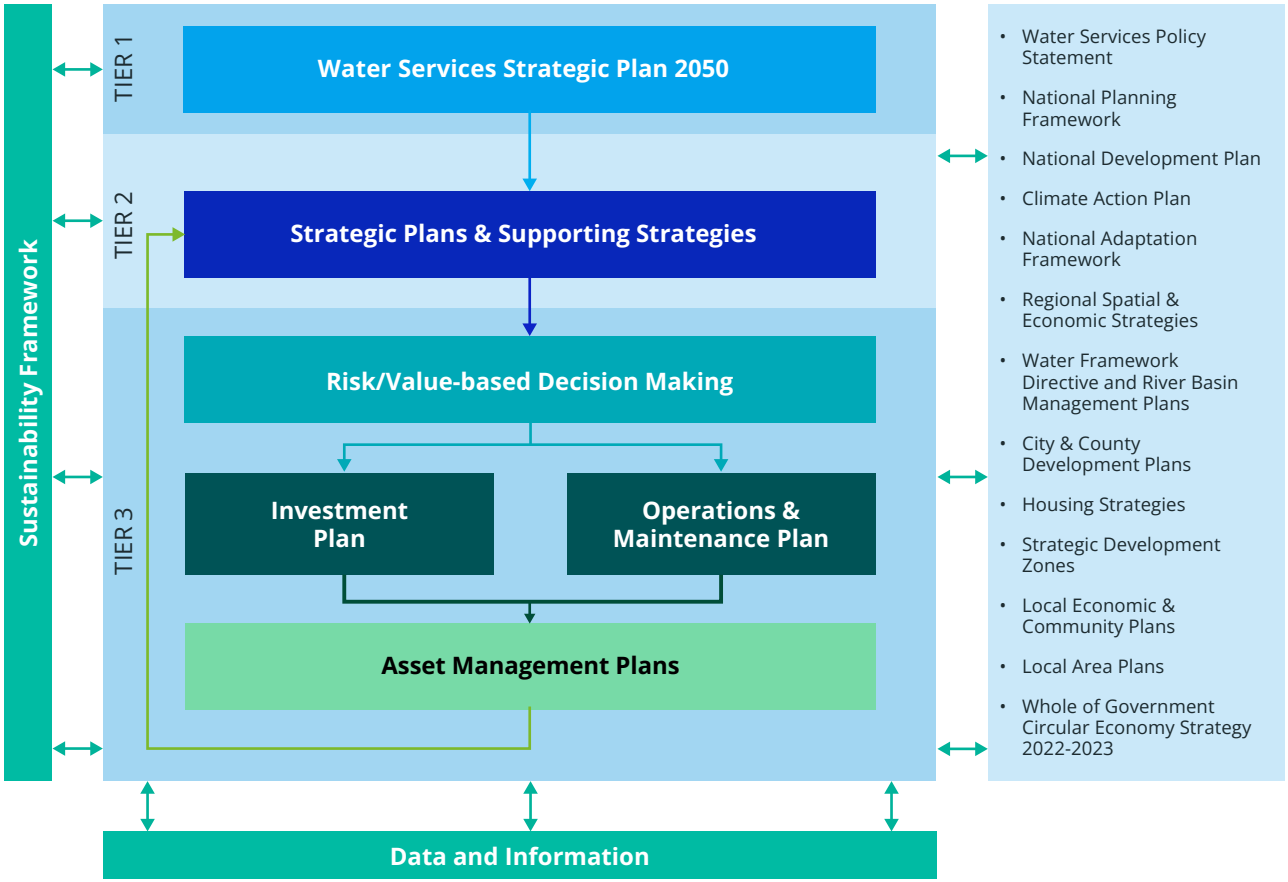


Figure 1 Relationship of this Tier 1 WSSP to Tier 2 Strategic Plans, Supporting Strategies and more detailed implementation plans and their relationship to national and local policies and strategies.

1 | About Uisce Éireann

1.1 Our purpose and vision

Throughout Ireland, communities, businesses, the economy and the environment depend on the delivery of safe, secure and sustainable public water services.

We are proud to take on the responsibility of transforming our water services to enable communities to thrive all over Ireland. We are committed to delivering safe, secure and sustainable water services to our growing population and as a key enabler for investment in Ireland's future. We have a vital job to do and many challenges and opportunities as we look ahead to 2050. Our 25-year strategy, the Water Services Strategic Plan 2050 aims to give us clear direction for the journey ahead.

OUR PURPOSE

We rise to the challenge of delivering transformative water services that enable communities to thrive.

OUR VISION

A sustainable Ireland where water is respected and protected, for the planet and all the lives it supports.

1.2 Our values

Our five values define the character of our organisation, they guide our actions and decisions, and provide a framework for how we communicate with each other, our customers and our stakeholders.

- We deliver for customers and communities
- We work better together
- We do the right thing
- We aim high
- We keep each other safe

1.3 What we do

Our services

We provide safe, secure and sustainable water services for customers and communities across the length and breadth of Ireland. To do this we abstract 1.7 billion litres of raw water from the environment every day and we treat it so that it is safe to drink. To get water to homes and businesses we use a combination of gravity and energy to convey it through 65,000 kilometres of pipes. We also collect over 1.2 billion litres of wastewater from homes and businesses through our 26,000 kilometres of sewers before treating it and returning it to the environment.

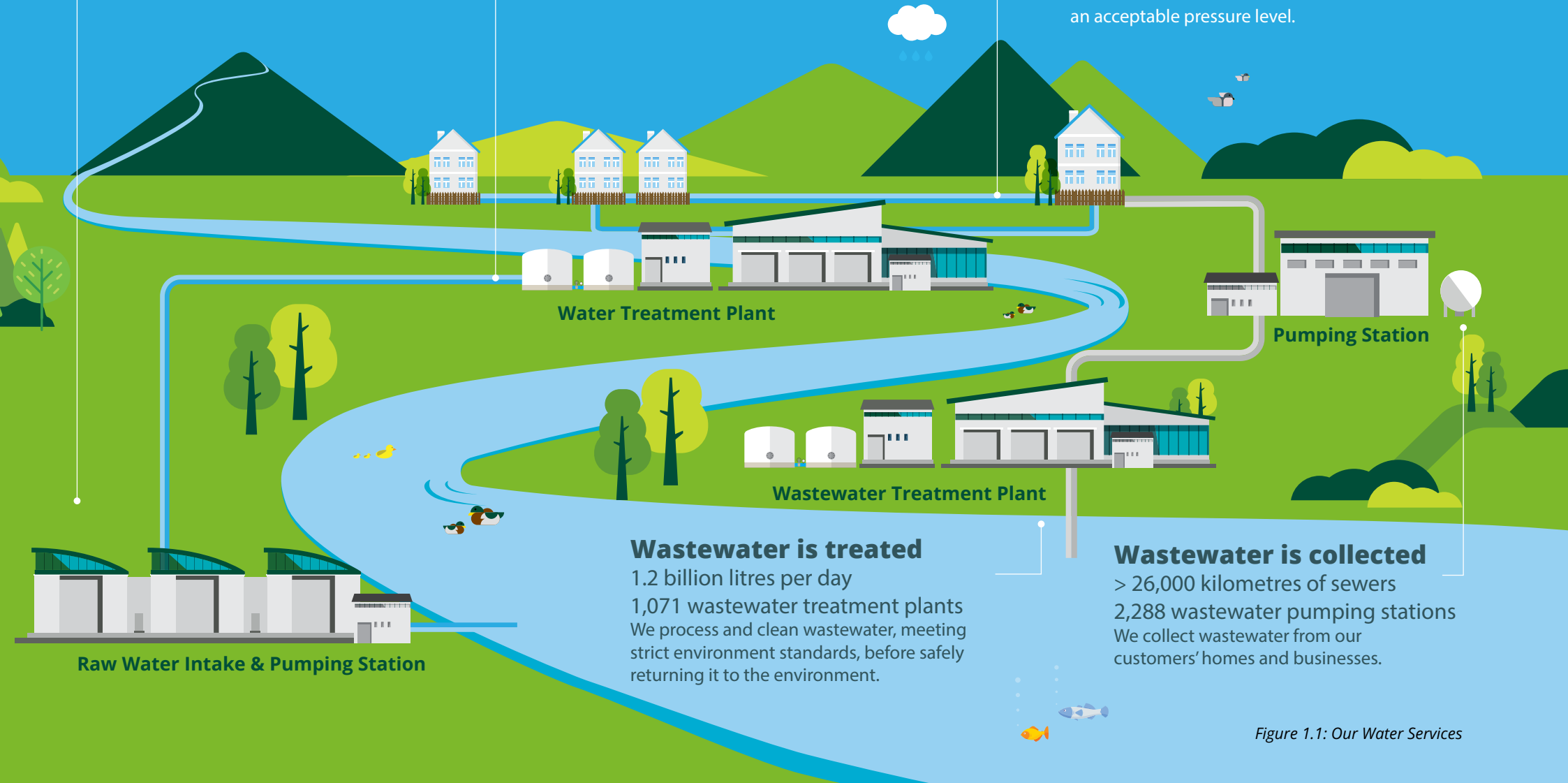
Delivering these vital services daily, which underpin social and economic growth for present and future generations requires the operation, maintenance and upgrading of water and wastewater infrastructure. Our ongoing investments in infrastructure will enhance water quality, improve resilience and protect and restore the environment, ensuring benefits for our customers and communities.

Our Water Services

Water is abstracted
80% from rivers and lakes
20% from groundwater
(>1,000 abstraction sites)

Water is cleaned
1.7 billion litres per day
696 water treatment plants
Our water treatment works treat raw water to the highest standard, making it safe to drink.

Clean water is supplied to customers
> 65,000 kilometres of water mains
1,772 pumping stations
We deliver a continuous supply of clean water to households and businesses at an acceptable pressure level.



Wastewater is treated
1.2 billion litres per day
1,071 wastewater treatment plants
We process and clean wastewater, meeting strict environment standards, before safely returning it to the environment.

Wastewater is collected
> 26,000 kilometres of sewers
2,288 wastewater pumping stations
We collect wastewater from our customers' homes and businesses.

Figure 1.1: Our Water Services

Our policy and regulatory framework

Uisce Éireann is a publicly owned, regulated, State body with responsibility for the provision of public water and wastewater services.

- The **Water Framework Directive (WFD)** is the overarching Directive relating to water policy in the European Union (EU). It aims to protect and restore the water environment so that all water bodies are at 'Good Ecological Status' or better.
- The **Drinking Water Directive** is the EU's main law on drinking water. It concerns the access to, and the quality of water intended for human consumption to protect human health.
- The **Urban Wastewater Treatment Directive (UWWTD)** aims to protect human health and the environment through obligations for collection and treatment of urban wastewater.
- The **Water Services Policy Statement (WSPS)** sets out the priorities of Government regarding the provision of water services during the period specified in the statement[1].
- Economic regulation of public water services is by the CRU who set Uisce Éireann's allowed revenue for each revenue control period, typically 5 years in duration.
- Environmental regulation of public water services is by the EPA who provide Uisce Éireann's wastewater discharge authorisations and who will provide water abstraction authorisations once this regulatory framework is established.
- Water Services Acts 2007 to 2022 which, *inter alia*, set out Uisce Éireann's functions and powers in relation to the delivery of water services.

WSSP legislative context

A detailed overview of the legislative context of the WSSP document is presented in Appendix A including the requirements of the European Union (EU) SEA Directive (2001/42/EC) and Appropriate Assessment (under the Birds Directive (Council Directive 2009/147/EC) and the Habitats Directive (Council Directive 92/43/EEC)) as well as the Water Services (No. 2) Act 2013. Appendix B sets out in detail how Strategic Environmental Assessment and Appropriate Assessment has influenced the development of our WSSP as well as the statutory consultation process.

1.4 Our history and heritage

Building on our water services heritage

We are fortunate to have a great heritage of water services in Ireland. This is all about the people who have delivered water services in times past. We have national heroes who delivered major schemes in the 1800s which were transformational for public health, particularly for the urban poor. These included Sir John Gray who was a driving force behind the Vartry Water Scheme for Dublin, and Sir John Benson whose vision for Cork Water Supply laid the foundation for a thriving city. In more recent times we have unsung local heroes such as local authority caretakers across Ireland who applied ingenuity to keep water services running in the face of tough challenges and underinvestment. We are grateful to all who have gone before us in delivering water services and who have given us this heritage to build on.

In 2013, the transformation of water services in Ireland started as Uisce Éireann was established and a 12 year service level agreement was put in place with the local authorities for delivery of water services. The transformation is now being completed between 2023 and 2026 as Uisce Éireann will assume full responsibility for water services. As one of the few national scale water utilities in Europe this gives us exciting opportunities in taking water services forward and becoming leaders at an international level.

[1] *The Water Services Policy Statement 2024 – 2030 was published in February 2024.*

While doing this, we see continuity with those who have gone before us, particularly in relation to the values that we share of public service, protecting public health and the environment and supporting communities and people.

Two notable projects which we have completed in our first ten years are major upgrades to the Vartry Water Supply Scheme and the Lee Road Water Treatment Plant. While these assets provided valuable service to Dublin and Cork since the 1800s, they were long overdue in getting modern upgrades. These works have now been completed, providing safe drinking water to 200,000 people in South Dublin / North Wicklow and to 125,000 people in Cork City every day.

Our connection to water

Our future and the future of water are inextricably linked. It's not just about infrastructure; it's about awareness and respect.

As we step into this new era, we honour the values of public service, health protection, environmental stewardship, and community support. Our journey builds upon the legacy left by those who paved the way. Together with these foundations and our work with our customers and communities, we can safeguard this precious resource for generations to come.

1.5 Progress since 2014

Since the establishment of Uisce Éireann 10 years ago, we have made significant improvements in the standards of service we deliver to our customers and businesses.

We have upgraded or constructed **167** wastewater treatment plants.

Water capacity and resilience has been improved by constructing or upgrading a total of **79** water treatment plants.

We are on track to eliminate the majority of raw sewage discharges by the end of 2025.

We started implementing the **1st** National Water Resources Plan (NWRP) for Ireland. The NWRP sets out how we will balance the supply and demand for drinking water over the short, medium and long term. The NWRP Framework was adopted in 2021 and our four regional plans were adopted during 2022 and 2023.

Uisce Éireann have delivered a range of service improvements across the country:

- The national leakage rate has dropped from **46%** to **38%.**
- Our National Operations Management Centre based in Dublin is now operational **24/7**, monitoring over 966 alarms in our top 92 largest water treatment plants.
- A total of **2,575** km of new or rehabilitated watermain has been laid.
- The quality of drinking water from public supplies remains very high, with over **99.7%** of samples compliant with bacterial and chemical limits.

2 | The Challenges we face to 2050

We operate in a rapidly changing global environment. We know that our operating environment in the coming decades will bring enormous challenges for the delivery of water services.

In preparation for the development of this 25 year strategy (WSSP 2050), in 2021-2022 we undertook a foresight study (Vision 2050) through collaboration with key stakeholders from across the water sector. This study set out desired outcomes for the water sector in Ireland to 2050 and identified challenges & opportunities (issues) with the potential to have the greatest impact on delivering water services from now to 2050.

Using the feedback from stakeholders and outputs from Vision 2050 we identified what we considered would be the most important issues likely to significantly affect Uisce Éireann over the period to 2050. We included these in our WSSP 2050 Issues Paper and consulted on these during 2023 to help us define the key challenges that we should consider in developing WSSP 2050; further details are provided in Appendix B. A summary of the key challenges that we face are included in the following sections.

Although presented as separate challenges, we recognise that our long-term challenges are complex and interconnected. As climate change intensifies, it impacts water availability and quality, while population and economic growth increase demand on water resources and infrastructure. These pressures also affect the environment and biodiversity. To understand how these factors influence one another and to develop holistic solutions, systems thinking is central to our approach. Section 8 outlines our strategy to address these interconnected challenges.

Climate Change

Climate change will likely present an extreme challenge to the provision of water services between now and 2050. As global temperatures continue to rise, extreme climate conditions will become more common.

More intense rainfall and storm events will increase flooding risk and power interruptions affecting operational resilience. These events will impact on our infrastructure potentially causing more frequent sewer flooding and pollution incidents impacting the public and the environment. Additionally, climate change has the potential to degrade water quality by increasing the frequency of algal blooms, sedimentation, and contamination from runoff. Rising water temperatures and altered flow patterns may also reduce the natural dilution and dispersion processes that help water bodies manage pollutants. These challenges will need collaboration from all stakeholders in order to secure best achievable outcomes.

Notwithstanding increased intense rainfall events, it is anticipated that on the whole rainfall will decrease in summer months.

Less rainfall in the summer months due to hotter and drier weather will lower water levels in lakes, rivers and groundwater systems and therefore could impact on water availability. Climate change could also influence society in a number of ways, such as through population migration and changing food production. This could have a significant impact on the services that we need to provide, as limited water resources must be shared across sectors with increasing demand, including households, industry, and agriculture, while also protecting and enhancing our water ecosystems. Without action, our customers could be faced with longer and more frequent water restrictions.

We are committed to taking the necessary steps to plan for mitigating the impacts of climate change and incorporating resilience into future water and wastewater plans.

Population and Economic Growth

Population growth is a key driver of the future demand for water services and will lead to increased demand for water services in certain areas.

While Ireland has the third fastest growing population in Europe and its population is expected to reach six million by 2050, climate driven migration could result in this figure being significantly exceeded. This growth coupled with economic expansion will require new and upgraded infrastructure to support development. It will also necessitate an integrated water management approach that optimises our existing infrastructure and explores efficient resource use with enhanced water recovery. Expanding and more densely populated urban centres will also generate more stormwater runoff due to larger impermeable surfaces, presenting challenges to our wastewater infrastructure and water environment.

We will need to work with our planning authorities to understand how our cities and towns are changing and to ensure the sustainable development of water services infrastructure that can meet the needs of our growing population while protecting our scarce and vulnerable resources.

If the increased demand is not matched by supply our customers may face an increased risk of interruptions to supply.

Environment and Biodiversity Crises

In recent years, it has become increasingly apparent that many species are being lost at an unprecedented rate.

This is happening at national, European and global levels. In 2019, with many countries failing to meet targets set to reduce biodiversity loss, the Irish Government declared a 'biodiversity emergency', prompting an increased focus across all sectors in developing actions to protect biodiversity.

As of 2019, around 85% of Ireland's protected habitats and 30% of protected species are at risk[2]. Despite progress in some areas, the EPA believes that the scale and speed of improvements being made are insufficient to meet long-term EU and national objectives for water quality, air quality, nature protection and emissions reduction.

[2] *https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf*

Biodiversity loss in Ireland is being driven by, inter alia, things like population growth and economic expansion leading to resource exploitation, land use change, urban runoff and discharges of insufficiently treated wastewater to our rivers.

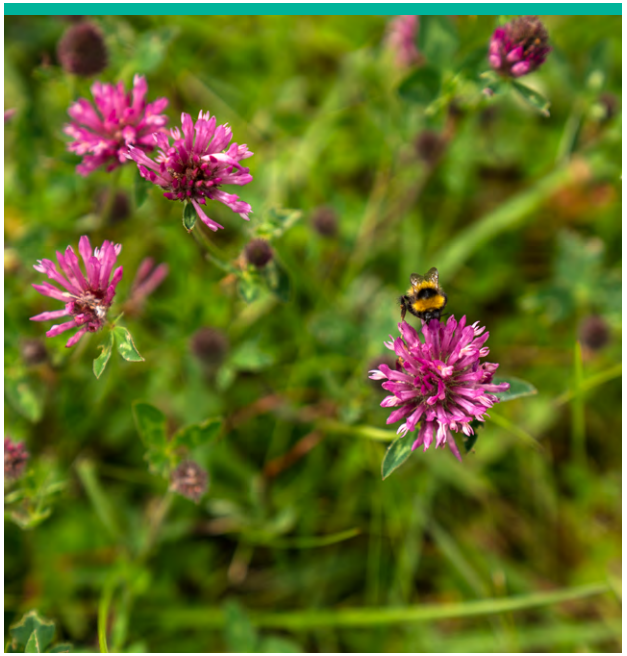
These factors not only impact our environment, but also reduce the quality of our source and receiving waters, for example if a water body is impacted by other pressures, this can reduce the available assimilation capacity and can increase the cost of wastewater treatment. As concentrations of pollutants increase and new contaminants emerge, the demands on our water and wastewater treatment processes will increase.

Ageing Infrastructure

Our existing water and wastewater infrastructure is ageing and our assets need significant maintenance or replacement so that we can continue to deliver our services to an appropriate level. The approach to maintaining and replacing assets over the last number of decades will not meet future challenges particularly in the context of climate change. For example, the average age of water mains in Ireland is between 65 and 85 years old, compared to 36 years across the European Union. We are currently replacing less than 0.5% of our water mains annually and less than 0.1% of our sewers annually; therefore, at this rate it would take over 200 years to replace our water network and over 1000 years to replace our sewers. For our water mains, this would need to increase to at least 1% for performance to standstill.

If we do not find new ways of delivering water and wastewater services through new integrated solutions such as blue green infrastructure that harness and/or mimic natural processes, and new approaches to delivering solutions in partnership with multiple stakeholders, that deliver wider benefits to society then service performance will deteriorate significantly by 2050. In planning for the future, we need to implement adaptable solutions that can meet our immediate and longer-term challenges.

Legislation, Regulation and Policy



Changes in European and Irish legislation and regulation will significantly influence how we deliver our services. While we welcome new improved legislation and regulatory approaches that support environmental and sustainability objectives; they will drive new expectations and requirements, and these are likely to have wide ranging effects on almost all aspects of water services in Ireland. Both new and existing regulations will require significant investments in advanced treatment technologies, increasing the challenges associated with water service provision.

The scale of the challenge to adapt will be significant. Addressing this challenge will require a systems thinking mindset to understand how different objectives and solutions interact and influence each other. For example, our contribution to meeting the Climate Action Plan 2024 objective to reduce greenhouse gas emissions by 51% by 2030, will need us to reduce the energy consumption at our treatment plants. At the same time, increased regulation from the recast EU Urban Wastewater Treatment Directive will impose new requirements on wastewater treatment, to be implemented over time.

More stringent treatment requirements will in turn increase the energy consumption of treatment plants. To achieve the objectives under both climate change policy and environmental legislation, we will need to consider solutions such as catchment scale measures to reduce the need for energy intensive drinking water and wastewater treatment. Innovation to improve processes and technologies will also be needed to optimise efficiency. Collaboration and coordination across organisations and sectors will be equally important to achieve multiple policy and regulatory objectives.

Economic Conditions

Global factors such as war and pandemics can heavily influence economic conditions which can in turn impact on the delivery of water services.

While service delivery continues regardless of economic conditions, investment in our capital infrastructure usually reduces during downturns and is often increased during periods of economic growth. Increased investment provides the financial stability necessary for strategic, forward-looking planning. This enables us to plan for growth and explore innovative solutions that can deliver wider benefits for our customers, communities, and the environment.

Conversely, periods of economic downturn can limit the availability of funding for critical infrastructure projects and maintenance needs. This can delay essential projects progressing, which ultimately leads to deferred improvements in service for customers and communities. Additionally, economic downturns can force us to prioritise immediate operational needs with less focus on meeting future challenges.

3 | Our Strategic Objectives at a Glance

Our existing Water Services Strategic Plan was published in 2015 and covered the 25-year period 2015-2040 and included 6 Strategic Objectives.

Now, almost 10 years on and having considered the possible long-term future scenarios and challenges that are likely to emerge taking account of the global megatrends through our Vision 2050 study, we have developed four strategic objectives to address the key challenges affecting the delivery of water services from now to 2050.

Under each strategic objective, we have identified strategic aims and key actions that will help us to address our most critical challenges, and to ensure that we continue to deliver water services for the long term. These objectives and aims align with the Water Services (No.2) Act, 2013 and outline the direction of travel and steps that we will take over the next 5-10 years to deliver on our long-term objectives. The Strategic Environmental Assessment and Appropriate Assessment have been integral in developing objectives, aims and actions that ensure protection of the environment.

The challenges we face in the delivery of water services to 2050 are complex and cross-cutting, creating interdependencies that require integrated strategies. For example, under climate change pressures, we must manage water supply for a growing population while maintaining a healthy ecosystem. Enhanced water conservation and efficiency measures can reduce demand and waste, leaving more water available to support our aquatic ecosystems. Protecting and restoring natural water sources will help improve supply resilience and support ecosystem health.

Changes in wastewater management are also essential. This includes upgrading existing infrastructure to handle increased volumes of wastewater due to extreme weather events and population growth,and implementing advanced treatment technologies to help remove a broader range of pollutants. Sustainable urban planning practices, such as sustainable drainage solutions (SUDs) and rainwater harvesting, can reduce the burden on wastewater treatment plants by managing stormwater at its source and improving biodiversity outcomes.

Our strategic objectives and our strategic aims (Figure 3.1) are interconnected, and the actions we have identified often support the delivery of multiple strategic objectives. Our delivery approach, described in Section 8, encompasses collaboration and systems thinking, recognising that coordinated efforts across disciplines, sectors and regions are essential to meeting our long-term challenges.

Safe & reliable drinking water

We ensure the quality of our water supplies are safe, and we deliver a water service that customers, communities, and the broader economy can rely on.

- **Strategic Aim 1** Ensuring safe drinking water
- **Strategic Aim 2** Delivering reliable water supplies
- **Strategic Aim 3** Conserving our precious resources

Support our customers, communities & the economy

We strive to provide an excellent service to our customers, and work with our stakeholders to deliver aligned priorities and support sustainable growth.

- **Strategic Aim 4** Delivering for customers
- **Strategic Aim 5** Engaging with communities
- **Strategic Aim 6** Providing for growth

Protect & restore our environment

We deliver a reliable water and wastewater service that protects the environment, and we support a healthy environment by enhancing habitats and ecosystems.

- **Strategic Aim 7** Protecting our water environment
- **Strategic Aim 8** Playing our part under the Water Framework Directive
- **Strategic Aim 9** Contributing to positive biodiversity

Sustainable services fit for the future

We make decisions for the long term which enable us to adapt and ensure our assets remain resilient.

- **Strategic Aim 10** Achieving net zero carbon
- **Strategic Aim 11** Adopting circular approaches
- **Strategic Aim 12** Managing our assets
- **Strategic Aim 13** Gaining value from innovation
- **Strategic Aim 14** Securing long-term funding

Figure 3.1 Strategic objectives and strategic aims

We ensure the quality of our water supplies are safe and we deliver a water service that customers, communities, and the broader economy can rely on.

4 | Strategic Objective 1: Safe and Reliable Drinking Water

STRATEGIC OBJECTIVE 1
Safe & reliable drinking water

We ensure the quality of our water supplies are safe, and we deliver a water service that customers, communities, and the broader economy can rely on.

4.1 Introduction

The provision of a sustainable and dependable safe water supply is fundamental for a modern country. We are therefore committed to ensuring the quality of our water supplies are safe for use, and to delivering a water service that customers, communities, and the broader economy can rely on. These outcomes will enable our communities to thrive and support the delivery of new housing and jobs. In December 2023, we completed our first National Water Resources Plan (NWRP) for Ireland. Our NWRP sets out how we will balance the supply and demand for drinking water over the short, medium and long term. It outlines our approach to providing a safe, sustainable, secure and reliable water supply to our customers for the next 25 years. This approach embraces three pillars: Lose Less, Use Less and Supply Smarter. Together, these pillars will enable us to optimise our capital and operational interventions to achieve the best outcomes and react to emerging issues. Over the period to 2050, we know that issues such as climate change, population growth and changes in catchments will present difficult challenges that we must manage effectively to continue to supply safe and reliable drinking water. Population growth will increase the demand for water supplies and need for development of new sources. Climate change will increase the frequency and duration of droughts, reducing the availability of our supplies. It will also increase the risk of flooding due to more intense rainfall events.

We will ensure all our customers have access to safe and reliable drinking water by proactively managing the quality of drinking water from source to tap, improving the sustainability and resilience of our water supplies and conserving our precious resources.

In the period to **2050**, subject to economic and technical feasibility, we aim to:

- Ensure safe drinking water for our customers with no long-term boil water notices in place.
- Achieve resilient water supplies, supporting the economy.
- Reduce leakage to European norms to be set under the Drinking Water Directive.

4.2 STRATEGIC AIM 1: Ensuring safe drinking water

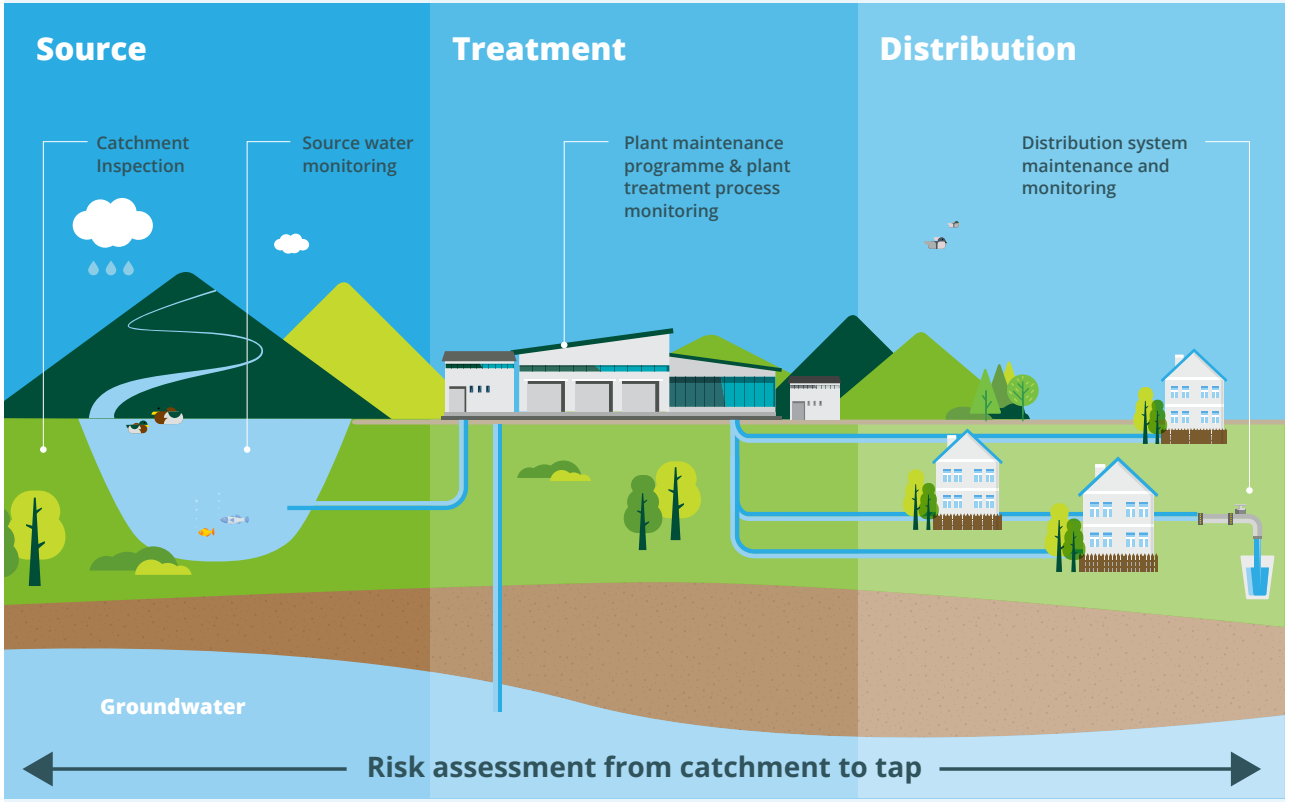
We will manage the safety and quality of drinking water from source to tap to protect human health.

Managing risks

Action 1.1: Undertake risk assessments across our supplies and implement appropriate measures to manage risk.

To proactively manage the safety and quality of drinking water, we will undertake comprehensive risk assessments across our supplies from source to tap. We will do this by developing and implementing Drinking Water Safety Plans (DWSPs) and adhering to the European Union Drinking Water Regulations 2023 (see Action 1.2). These assessments will inform the catchment-based, organisational, operational, maintenance and capital interventions that will mitigate these risks. We will prioritise resolving the "at risk" supplies listed on the EPA's Remedial Action List (RAL) and continue addressing new risks identified by the DWSPs and other risk assessments to improve drinking water resilience across our supplies.

Case Study - Drinking Water Safety Plans



Drinking Water Safety Plans (DWSP) provide a comprehensive risk assessment and risk management approach to ensure the quality and safety of drinking water. The approach was developed by the World Health Organisation and is incorporated in the Drinking Water Directive. It represents best practice for the risk assessment of water supplies.

The plans encompass all risks that may affect the water supply, from the "source to the consumer tap". This includes risks to our catchment sources, the treatment and the distribution system. They involve identifying potential hazards, assessing their likelihood and severity, implementing operational preventative measures, monitoring the performance of the system and taking corrective actions when needed.

Furthermore, we will manage our infrastructure throughout its entire lifecycle, ensuring it is well maintained and resilient to risks. Through the delivery of asset management plans, we will monitor the condition of our assets, perform planned maintenance, and address potential issues before they affect our ability to provide safe drinking water quality (see Action 4.5).

To understand risks to raw drinking water quality, we will assess catchment-based activities using the source-pathway-receptor approach and existing environmental data. This will involve tracing the source of any contaminant, the route it travels to the waterbody, and analysing the quality of the receiving water. Implementing a source water quality monitoring programme will be key to managing these risks. This understanding will help prioritise and target measures to address the risks, supporting our objective to protect and restore the environment by improving water quality.

Collaboration with public agencies and catchment stakeholders is key to protecting and improving our drinking water sources. Working together ensures that all potential sources of contamination are addressed and effective strategies for water protection are developed. We will engage in partnerships to develop and implement catchment management solutions, sharing the responsibility for enhancing the safety and quality of our drinking water. We actively collaborate with a diverse range of stakeholders including landowners, industry groups, agricultural, forestry and environmental sectors, and public agencies to promote source protection and raise awareness of the value of water.

By undertaking risk assessments and implementing appropriate measures, where possible, we are not only meeting regulatory requirements but also demonstrating our commitment to proactive and comprehensive management of risks associated with drinking water. This approach ensures a resilient and responsive system, safeguarding the well-being of the communities we serve.

Meeting Drinking Water Directive and other legislative requirements

Action 1.2: Conform with the Drinking Water Directive and other legislative requirements relating to drinking water quality.

Ensuring that we comply with the Drinking Water Directive and other legislative requirements is fundamental in our commitment to managing the safety and quality of our drinking water supplies. Compliance with the requirements of the Drinking Water Directive is a priority for Uisce Éireann in line with Government policy, as set out in the Water Services Policy Statement 2024 - 2030, including closing out existing infringement proceedings.

Case Study - Improvement in safety and quality at Leixlip Water Treatment Plant

We have invested almost €20 million to upgrade Leixlip Water Treatment Plant to reduce the risk of any future boil water notices and safeguard drinking water to 620,000 people in the Greater Dublin Area (GDA). The plant is the second largest water treatment plant in Ireland, supplying approximately 30% of the GDA, and is critical to supporting economic growth across the city.

The existing water treatment system at the plant had suffered due to limited investment. These upgrades have modernised the existing facilities and improved the quality, reliability and resilience of the water supply serving the Greater Dublin Area. The works on site commenced in June 2018 and included upgrading the filtration system, installing a new ultraviolet disinfection process, and upgrading the existing disinfection system. These upgrades have significantly improved the drinking water quality for consumers in the Greater Dublin Area, while also reducing the risk of any future boil water notices.

Following on from these significant works, a further programme of upgrade works will continue at the Leixlip Water Treatment Plant over the coming years to ensure the continued supply of safe drinking water to the Greater Dublin Area.

In line with the Drinking Water Directive's emphasis on a risk-based approach, we will develop our monitoring programmes to extend beyond compliance aspects. They will incorporate an operational monitoring programme designed to provide real-time data on operational performance and water quality issues. The programme will be tailored to the outcomes of hazard identification and risk assessments within the supply system undertaken as part of the Drinking Water Safety Plans (see Action 1.1). Their purpose will both support the identification of risks and validate the effectiveness of control measures at every stage — from source to consumer tap.

In our commitment to safe drinking water, we aim to go beyond compliance by developing procedures to investigate and evaluate contaminants of emerging concern which can be present in raw water sources. These contaminants can include endocrine-disrupting compounds, pharmaceuticals and microplastics. We will refer to the Directive's watch list to keep up to date on new knowledge about the relevance of emerging compounds to human health and the most appropriate monitoring approaches, and we will assess the risk of watch list substances to our water supplies. Additionally, we will continue to evaluate and address risks related to lead in the distribution system and address non-compliance with known contaminants such as trihalomethanes (THMs), pesticides and manganese.

Champion source protection measures

Action 1.3: Coordinate integrated catchment management measures and champion nature-based solutions for improving source water quality.

Source protection is the linchpin for helping to ensure clean drinking water and to allow movement away from complex, costly and unsustainable end-of-pipe solutions for deteriorating sources. Through our DWSP approach we will assess catchment risks to raw water quality, so that we can identify and prioritise measures to protect the source in all relevant drinking water catchments and ensure that investments do not only focus on treatment facilities (see Action 1.1). Some mitigation measures will be within our control and others may need to be implemented by third parties.

Where possible and appropriate, we will integrate catchment management and nature-based solutions into our infrastructure planning. These approaches provide multiple benefits for biodiversity and climate change, and they have the potential to provide more sustainable water and wastewater solutions (see Action 3.8). By improving the quality of water entering our water treatment works, we can also reduce the complexity of the treatment process that is required.

Case Study - Reduction of pesticides found in source waters

In 2021, we published the Interim Pesticide Strategy for progressively reducing the risk of pesticide contamination to our drinking water sources which is being achieved by working collaboratively with the National Pesticide and Drinking Water Action Group (NPDWAG) stakeholders. In 2023 we reported a 58% decrease in the number of pesticide exceedances at a national level when compared to the baseline period of 2016/2017.

The Newport supply is a leading example of how a community can protect its water sources from pollution. Since 2016, sporadic exceedances of the drinking water standard for pesticides were observed in the Newport public water supply which is supplied with source water from the Newport River. A NPDWAG Catchment Focus Group was set up to tackle the issues locally. Actions undertaken by the NPDWAG in 2022 and 2023 in the Newport catchment include raising awareness of the issue at a local level through media. The Agricultural Sustainability Support and Advisory Programme (ASSAP) also provided advice to farmers on best practice pesticide application and storage.

Since establishing the Catchment Focus Group for Newport, there has been a significant decrease in pesticide concentrations with no exceedances of the drinking water standard reported in 2023. The collective effort of catchment stakeholders and the local community has helped to improve the quality of the Newport River and is also supporting biodiversity and ecosystem health.

In adhering to the principle of "control the source in preference to end-of-pipe solutions," our proactive approach not only aligns with regulatory directives but also underscores our commitment to sustainable, nature-based solutions that secure the quality and integrity of the drinking water we provide to our communities and provides added benefits for general water quality, aquatic habitats and aquatic biodiversity.

We are looking to expand on pioneering projects already carried out and we are committed to trialling further innovative and proven nature-based solutions e.g., riparian native woodland planting or targeted buffer zones, to address water quantity, quality and resilience needs. We will prioritise nature-based solutions where appropriate and will conduct a pilot study employing a catchment management approach for source protection that encompasses nature-based solutions. An effective communication and education campaign will be important to supporting the delivery of source protection measures. We will expand our existing campaign and aim to increase the understanding of how communities can help to protect and improve source water quality. This will support our objective to raise awareness within communities on the value of water (see Action 2.4).

4.3 STRATEGIC AIM 2: Delivering reliable water supplies

We will improve our assets and sources to ensure our supplies are robust enough to meet our customers' needs at the target level of service.

National Water Resources Plan

Action 1.4: Implement and continue to review our NWRP, delivering improvements in water supply infrastructure to ensure resilient supplies into the future.

The implementation and continuous review of our National Water Resources Plan (NWRP) is a pivotal action for improving water supply infrastructure to ensure resilient water services. Completed in December 2023, the NWRP represents Ireland's first long-term plan to secure safe, sustainable and reliable drinking water supply for our customers for the next 25 years.

The Supply Demand Balance (SDB) assessments developed for the NWRP aim to ensure that water shortages due to low water availability occur no more than once every fifty years across all of our water supplies These assessments identified that a significant number of water supplies currently fall below the 1 in 50 year 'Level of Service' (LoS) objective. However, customers in these areas should not expect a major disruption to supply; although, they may experience some water use restrictions, limitations on new connections, and water conservation orders.

We will continue to update the SDB with new data on climate change, water availability and information on water demand (see Action 2.8). The SDB will be used to identify existing supplies failing to meet the 1 in 50 year LoS target and to prioritise future investment. It will also ensure new projects are planned to meet growth while maintaining our LoS target.

We will continue to improve our understanding of risks to water quantity, water quality and sustainability by conducting studies on water availability and researching climate change impacts. These assessments will also inform our Drinking Water Safety Plans, which address hazards related to supply (see Action 1.1). In keeping with the overarching principle of the NWRP 'supply smarter pillar', our approach extends beyond infrastructure improvements to include the development of new sustainable water sources and interconnection of supplies. This not only ensures the reliability and resilience of our water supplies but also aligns with our commitment to environmental stewardship (see Action 3.3).

Case Study: Water Supply Project - Eastern and Midlands Region

Water Supply Project

Eastern and Midlands Region

Uisce Éireann Irish Water

The need

OVER-RELIANCE ON SINGLE SOURCE 85% of the water supply to **1.7 MILLION PEOPLE** comes from the Liffey

No resilience in the water supply as the largest treatment plants operate at **100%** capacity

Resilience & sustainability **ISSUES** in the water supplies across the Eastern and Midlands region

Very large abstraction from relatively small river Liffey, so vulnerable to **CLIMATE CHANGE**

Water supply is struggling to meet demand today, **THIS WILL GET WORSE**

- Population, economic growth demand for housing
- Impact of climate change

Leakage reduction to reach **BELOW 20% BY 2030** in Dublin, Kildare, Wicklow & Meath but leakage reduction and demand management is not enough

The solution

A NEW SECURE SUSTAINABLE water supply from a new Shannon source

A NEW WATER SUPPLY 'SPINE' across the country with provision for offtakes in Tipperary, Offaly and Westmeath

Addresses **CRITICAL SUPPLY ISSUES** in Dublin, Meath, Kildare and Wicklow

Reinforce supplies in **36** Zones across the Region across Tipperary, Westmeath, Offaly and Longford

The benefits

IMPROVED URBAN LEVELS OF SERVICE

for water users across the GDA and 36 water resource zones in the East and Midlands

MEET THE WATER SUPPLY DEMANDS of population, housing and economic growth

Provision for offtakes to supply communities and industry in **TIPPERARY, OFFALY AND WESTMEATH** along the route

Capacity to create a sustainable climate change resilient water supply for up to **50% OF THE POPULATION**

The Water Supply Project has been identified in the National Planning Framework as a 'National Strategic Outcome' and is also listed as one of the key 'Strategic Investment Priorities' of the National Development Plan.

The Water Supply Project Eastern and Midlands Region forms a key part of our long-term strategy to increase water supply resilience and levels of service in the region by creating a major new source of water to meet water supply demands of up to 50% of the State's population to 2050 and beyond. It will enable us to meet the challenges of climate change by diversifying our water supplies. It will provide the greater area of Dublin, Meath, Kildare and Wicklow with a resilient, safe, secure water supply. Crucially it will also have capacity to serve communities along the route in Tipperary, Offaly and Westmeath. In addition, it also means 17 supplies currently serving Dublin can be redirected back to Louth, Meath, Kildare, Carlow and Wicklow, which will support balanced regional development. The interconnection of supplies will provide improved security of supply to homes and businesses and reduce the vulnerability to drought events and enables us to move away from providing supply from sources which currently struggle to provide the volumes required during dry weather events.

Contingency plans

Action 1.5: Develop contingency plans to improve reliability of our water supplies.

The development of contingency plans is important to enhance the reliability of our water supplies, particularly in light of vulnerabilities to extreme weather events. Meeting our target level of service (LoS), as outlined under Action 1.4, is currently challenging during drought conditions.

Climate change studies indicate the increasing likelihood of extreme weather events, including more frequent droughts and floods in the future. Recognising this, we will proactively plan for these events by identifying vulnerable sources and infrastructure so that we can develop responses that prepare us for extreme climate conditions. These responses will encompass alternative operational management strategies aimed at prolonging supplies (during drought) and arranging temporary supplies from nearby sources (in the event of supply shortfalls due to drought or asset outages resulting from events such as intense storms that may result in flooding or power outages).

The number of supplies which experience challenges during dry weather conditions has increased over the past ten years. As part of the NWRP (see Action 1.4) the supplies at risk during dry weather events were identified and we are currently in the process of developing drought plans for these supplies with a target completion date of 2030. These drought plans will provide a transparent framework of the measures to be taken with the objective of reducing the impact on customers and the environment. The drought plans will provide triggers for various measures including water conservation campaigns, development of temporary new sources and tankering from other supplies. The objective of the plans is to mitigate the impact of dry weather events and drought not only on our customers, but also on our aquatic ecosystems. Drought plans will be developed for all vulnerable supplies on a prioritised basis.

We also develop contingency plans to address various scenarios such as winter weather impacts that can lead to pipe bursts (due to freeze-thaw events), water quality contamination resulting from intense storms, and power outages. Our approach to contingency planning will ensure that we are well-prepared to respond effectively to a range of challenges, ultimately enhancing the reliability and resilience of our water supplies in the face of evolving climate conditions.

Uisce Éireann is a responsible authority under the EU Floods Directive for Artificial Water Bearing Infrastructure. We are committed to completing a preliminary risk assessment of floods arising from our infrastructure/operations. We are also committed to a review of flood/extreme weather risk to existing assets.

Improving operational resilience

Action 1.6: Improve operational resilience through preventative measures and developing and implementing improved incident response processes.

Improving operational resilience is essential to avoid disruption to our customers' water supplies. We plan to minimise disruption due to asset operational failure (outages) through a combination of asset design and operational plans and by implementing enhanced incident response processes. At the design stage we will assess the spare capacity that is required to reduce the risk of potential outages and incorporate back-up components that can provide an operational buffer. Additionally, we will develop our asset management plans to include planned maintenance measures and drive continual improvement by undertaking network analysis to establish the root cause of failures.

Continuing to develop our real-time data and monitoring capability, facilitated by advanced telemetry systems, will play a critical part in enhancing operational capability, predicting failures and responding to outages so that their impact is minimised. In delivering on our Supporting Our Customers strategic objective we will communicate outages in real-time and provide regular updates on restoring services (see Action 2.2).

Cyber security has an essential role in maintaining operational resilience. Control systems manage critical technical processes in the water treatment and distribution process. These systems can be susceptible to cyber attacks.

Case Study - Deploying the new UÉ enterprise telemetry system

Telemetry systems are a way of monitoring and controlling our assets remotely.

They use sensors, computers, and communication devices such as radio transmitters, to continuously collect and send data from different locations. For example, a telemetry system can measure the water level in a reservoir, the pressure in a pipe, the volume of water supplied to customers, or the quality of water. The data can be used to adjust the flow of water, detect leaks, or alert operators to any problems.

Our new National Telemetry System will support monitoring of all treatment plants, pumping stations, reservoirs and key operational points across our assets. This will improve our access to reliable data on asset performance across the country. We will transition over 2,400 existing telemetry outstations onto the new national system that can capture and record data more effectively and in the same way at all of our sites. Our National Telemetry System will manage the critical data necessary to enhance customer service and protect public health and the environment.

We will continue to improve cyber security across operational systems and ensure compliance with the NIS2 Directive on measures for a high common level of cyber security across the Union. This includes technology upgrades, procurement of new security tools and employee training programmes to meet the directive's requirements.

Our commitment to operational resilience also extends to meeting security guidelines outlined in the Strategic Emergency Management (SEM) National Structures and Framework document and its associated Annexes. Recognising physical security risks, especially in remote or unsecure areas, we will implement measures to safeguard assets against potential physical attacks that could disrupt critical systems.

4.4 STRATEGIC AIM 3: Conserving our precious resources

We will take pressure off our resources through leakage reduction and helping our customers to conserve water.

Water conservation measures

Action 1.7: Use less water through promoting water conservation to help customers reduce their use.

Water conservation is key to maintaining and managing the sustainability of our water resources. It can provide benefits for the environment, other water users and water service provision.

Reducing the volume of water we need to take from our water sources supports ecosystem health, takes pressure off infrastructure, reduces carbon emissions and improves climate resilience. The “Use Less” pillar of our National Water Resources Plan is our commitment to promote water conservation among our customers and support the wider business measures to manage sustainable levels of water supply.

Our existing water conservation programmes, such as Water Stewardship, First Fix Free and Green Schools, demonstrate our enduring commitment to the responsible use of treated drinking water. These initiatives are supported by our integrated multi-channel approach including stakeholder and media engagement to support information to customers. However, our research shows that half of the general public admit to wasting water and a decreasing portion classify themselves as ‘active or diligent’ with regards to conserving water. We recognise that we need to further encourage a change in attitude and behaviour in relation to water conservation.

To successfully raise public awareness of the value of water resources and the benefits of water services for our customers, communities, environment and economy, a sustained investment in high-profile communications activity through a multi-channel approach combined with stakeholder and media engagement is required (see Action 2.3). Furthermore, we seek to build upon our existing water conservation programmes and introduce new programmes, leveraging the latest innovation and research, where we identify the greatest opportunity to reduce wastage and customer side leakage to conserve the use of treated drinking water.

We are developing a Water Conservation Strategy that incorporates our existing water conservation activities and additional initiatives and provides a framework to promote water conservation and manage demand across all customer groups and types of water usage.

Our Water Conservation Strategy will build on our Demand Analysis capability to better understand our demand profile (see Action 2.8) and will establish a methodology to tactically deploy the most suitable water conservation measures in given circumstances that will have the greatest impact. We will continue to invest in technology, including modern metering and meter reading systems, to provide the data to our customers that will support a sustainable approach to water conservation. We will continue to explore opportunities for Rainwater Harvesting and the Circular Use of Water (see Action 4.4), complementary to nature-based solutions for stormwater management (see Action 3.8).

We will engage with other stakeholders active in the area of water conservation and seek to collaborate to achieve shared objectives. In this regard, we welcome the national water conservation working group which is to be established under Objective 3 of the Water Services Policy Statement 2024 to 2030 and we will participate in the work of this group. We will also continue to explore other opportunities with industry and communities to promote the connection of water efficient homes and businesses to our distribution network.

Case Study - Water Stewardship Programme

Irish businesses use around 510 million litres of water every day. Measures that support businesses to use less water can make a real difference to reduce the volume of water we need to abstract from our environment and treat to produce safe drinking water.

Our Water Stewardship Programme helps businesses to identify water waste on site or upgrading to low water use devices such as dual flush toilets and faucet aerators that can be attached to taps to reduce water flow without affecting the water pressure. We have successfully trained over 700 stewards to empower water-dependent businesses. One notable example is our partnership with the Health Service Executive (HSE) which identifies areas for improvement and implements water conservation measures in hospitals. As a result, the HSE has developed a best practice guide for Irish Healthcare Facilities, increasing water efficiency.

Implementing an enhanced Water Stewardship Programme

Action 1.8: Use less water through developing and implementing an enhanced Water Stewardship Programme.

The Water Stewardship Programme has been a flagship of water conservation activity for Uisce Éireann in partnership with the business community, and we recognise the opportunity to build upon the programme as one of the key measures in our Water Conservation Strategy.

The Water Stewardship Programme was initially focussed on the largest non-domestic water users, where the top one per cent can account for more than one third of all water supplied to non-domestic customers. We have recognised that there are opportunities to build on this model and develop variations on the programme that will address new cohorts of customer groups.

We will continue to work with our industry partners to develop metrics that demonstrate the achievements of the Water Stewardship Programme and provide data to inform continual improvement. We will also support the training and awareness aspects of water stewardship, with communications materials and events.

In support of the Water Stewardship Programme, and complementary to other demand management initiatives, we will explore technologies for rainwater harvesting and greywater recycling. We will work with research partners and stakeholders to develop pilot projects to explore these solutions and to advance policy in this area.

We will deliver the enhanced Water Stewardship Programme, in combination with other water conservation activities, to provide for future growth and sustainable use of treated drinking water.

Delivering leakage reduction

Action 1.9: Lose less water through delivering leakage reduction.

The “Lose Less” pillar of the National Water Resources Plan is a fundamental strategy in our commitment to ensuring the long-term sustainability of our water supplies. We must balance the increasing demand for water with the protection and restoration of our water environment. With an extensive distribution network encompassing 65,000km of water mains, addressing leakage is critical to securing a reliable and sustainable water supply. We are committed to catering for increased growth requirements by prioritising an ambitious programme to reduce leakage. This includes efforts to reduce leakage in rural communities, supporting the National Planning Framework (NPF) which advocates for strengthened rural areas. Reporting on leakage to the European Commission under the recast Drinking Water Directive will be a key driver for reducing leakage levels across the distribution networks.

The “Lose Less” pillar involves actions geared toward improving our understanding of leakage, implementing measures to reduce it, and deploying tools to detect and fix leaks. The National Leakage Reduction Programme, a key initiative aligned with the National Water Resources Plan (NWRP), includes measures such as pressure management, active leakage control and the ‘First Fix Free’ initiative which addresses leaks within the boundaries of domestic properties. To enhance leakage management, the programme also involves establishing District Meter Areas (DMAs), so that we can measure the flow into small areas to monitor unusual flows and detect leaks. The programme also includes replacing old meters and installing new meters to help us better understand the flow and distribution of water in our networks. Innovation plays a pivotal role in cost effective leakage reduction, and our Leakage Management System (LMS) introduced in 2018 facilitates uniform assessment of leakage trends across our network.

Ongoing efforts involve embedding and calibrating the system and exploring emerging acoustic technologies and intelligence systems for optimised active leakage control activities. We will continue to explore innovative ways to reduce our leakage.

Case Study - Leakage Reduction Programme

Uisce Éireann’s National Leakage Reduction Programme is addressing the pressing concern of water loss due to leaks in Ireland’s underground water network.

Leaks can be difficult to find because they happen in the vast and complex network of pipes below ground. Many of these pipes are now old and damaged and need to be repaired or replaced to improve our water quality and supply. Despite these challenges, we are making progress. In 2018 the rate of leakage nationally was 46%; by the end of 2023 it was 38%. Since the commencement of the Leakage Reduction Programme, we have invested approximately €1.2 billion to the end of 2023 and we have an ambition to invest a further €250 million every year up to the end of 2030 to achieve a national leakage rate of 25% by the end of 2030.

We strive to provide an excellent service to our customers, and work with our stakeholders to deliver aligned priorities and support sustainable growth.

5 | Strategic Objective 2: Support our Customers, Communities and the Economy

STRATEGIC OBJECTIVE 2
Support our customers, communities & the economy

We strive to provide an excellent service to our customers, and work with our stakeholders to deliver aligned priorities and support sustainable growth.

5.1 Introduction

Since the publication of the first WSSP in 2015, we have made significant progress in supporting our customers, communities and the economy. Our approach is all about putting customers first – every step we take is with their needs in mind. We also strive to engage with communities and highlight that communities can help us achieve our shared goals through community initiatives and responsible use of water and wastewater services.

As the population of Ireland grows, the demand for water services will increase. Provision of water services infrastructure capacity in the right place, at the right time, is critical to enable delivery of housing and economic growth. We are committed to supporting Government housing targets and national, regional and local spatial planning policy, in this regard. This includes a commitment to supporting regionally balanced economic and social development.

To support our customers, communities and the economy we have defined a set of strategic aims and actions to guide us.

In the period to **2050**, subject to economic and technical feasibility, we aim to:

- Provide a real-time digital service for our customers which meets their expectations.
- Support the Government's annual housing targets through plan-led development.

5.2 STRATEGIC AIM 4: Delivering for customers

We will put our customers at the heart of what we do and deliver on their needs.

Understand customer expectations

Action 2.1: Understand customer needs and expectations.

We aim to provide our customers with water services which meet their needs and their expectations. To do this we need to continue to build a long-term, trusted relationship with our customers. We want our engagement with customers not to be only focussed on when things go wrong but to be positive interactions on a day-to-day basis.

We will evolve our approach to customer research to go beyond tracking satisfaction and focus on understanding expectations. This includes developing research programmes on customer expectations and water conservation.

We will engage with diverse groups of customers, both domestic and non-domestic, across various demographics and regions to understand their preferences and expectations. We will work with stakeholders to improve engagement with customer representative groups. We will embed the insight we gain through this approach into our business planning and operational decisions. This means using customer feedback to shape our long-term goals, investment strategies and daily operations, leading to better service delivery and customer satisfaction.

Case Study: Voice of the Customer programme

To best serve our customers and understand their needs and preferences, we have a Voice of the Customer programme in place, where we survey customers each month through phone and SMS to get their feedback on their interaction with us.

This information is used to assist us in mapping out the process our customer goes through in order to get their query resolved, where various stakeholders across our business come together to discuss challenges our customers are facing and to come up with solutions and initiatives to improve their experience with us.

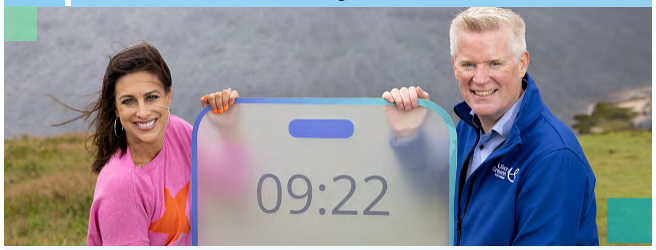
Enhance customer communications

Action 2.2: Enhance customer communications to address our customer expectations and provide real-time information on usage, incidents and water quality.

We will enhance customer communications to address our customer expectations and provide relevant, accurate and timely information on our water services, including planned works, incidents and water quality. We will listen to our customer feedback and insights and aim to deliver a seamless and integrated multi-channel service.

It is vital for us to enhance our communications with our customers so that they are informed about the services that we provide and to ensure that we are delivering on their expectations while meeting our commitment outlined in our Customer Charter. We will foster openness and clarity around these services including provision of comprehensive information to customers to meet the requirements of, inter alia, the Drinking Water Directive and the recast Urban Wastewater Treatment Directive, when implemented. We will focus on areas such as planned works, maintenance, upgrades and infrastructure projects, which will help our customers to anticipate any disruptions to their water service and allow them to plan accordingly to minimise inconvenience. During unplanned Incidents, such as water outages, or water quality concerns we will keep customers informed about the situation, the impact and the steps we are taking to resolve the incidents.

Case Study:
National Text Notification Service



Our National Text Notification Service for customers is now live. This is a key milestone, as it will be the first time that customers at all 1.6 million properties using our services can sign up for Service Notifications.

All customers can now receive notifications for planned or unplanned outages over 4 hours, Boil Water Notices (BWN), and Do Not Consume events (DNC). Signing up is simple with just an eircode and mobile number. Feedback from our customers was captured as part of the communication strategy of this new service. Overall, the feedback was hugely positive.

A nationwide media campaign commenced in August 2024 to encourage the public to opt in for the service and so far, it has been a great success. The new text notification service tool gives us all a new platform to continue to build trust with our customers and in our communities, enabling us to showcase that we "Do the right thing" by communicating with our customers confidently, clearly and in a timely manner.

We will develop fully integrated systems that empowers us to work smarter and faster, through a modern, interactive and seamless interface that provides a single view of the customer. This should enable customers to engage with us via multiple channels in an integrated way e.g., phone, website, email, social channels, self service capabilities.

We will further develop our digital self-service platform which will offer customers a seamless experience across key interaction with us, such as for example new connections and around water outages. This should empower customers with information when they need it. By providing transparent and proactive communication, we will continue to build trust and public confidence in our services and enhance customer satisfaction.

Supporting customers to play their part

Action 2.3: Support our customers to play their part in protecting water as a precious resource and enabling better water services.

Our aim is to raise public awareness of the value of water resources and the benefits they deliver for the environment, communities and the economy. This would be supported by the development of an integrated multi-channel approach covering key channels, including TV, radio, digital and outdoor, combined with stakeholder engagement and media outreach.

Customers can make a real difference by taking actions to reduce their water usage and to protect wastewater assets and receiving waters by not pouring, flushing or putting any liquids, chemicals or items down sinks, toilets, and sewers that can damage the environment. By empowering customers with real-time information and self-serve options, we will allow our customers to be better informed and equipped to make more informed decisions. We will provide the technology to assist customers to do this. This will enhance customer understanding of their water usage patterns to enable them to take proactive measures to manage their consumption more effectively. More information relating to water conservation is included under Action 1.7.

Regarding wastewater, we aim to embed a broader understanding of the wastewater process with our customers and communities, including the need for new and sustainable solutions to wastewater management. It is important to gain public support and understanding for this infrastructure which often attracts initial negativity or planning objections. Research shows that there continues to be a need to remind customers of the impact of poor wastewater behaviour, with a third of customers admitting to flushing more than the three P's (Paper, Poo and Pee) down the toilet. Therefore, we aim to increase understanding of wastewater end-to-end process and households' role in reducing inappropriate use, which causes pollution and blockages as well as increased operational costs.

5.3 STRATEGIC AIM 5: Engaging with communities

We will engage with communities at a local level to realise the value from our shared water resources.

Value of water

Action 2.4: Develop a community education and engagement programme to raise awareness on the value of water and the water services we provide.

Uisce Éireann operates in many communities across the country. As custodians of Ireland's water services, we are committed to delivering a safe and secure water supply for our customers and to protecting and enhancing our environment by treating water and wastewater to the required high standards. We understand that we share guardianship of Ireland's precious water resources alongside our customers and communities. We aim to ensure our customers and communities have a greater understanding and awareness of the value of water and the processes involved in safely delivering water and discharging treated wastewater back into the environment. To this end, we are committed to maintaining our community engagement, education activities and programmes and building on them.

Uisce Éireann has been committed to supporting the education and engagement of primary and secondary school students in water conservation and efficiency throughout Ireland and has sponsored the Water Theme in the Green Schools Programme (see Action 1.7). We are committed to continuing the success of these programmes and to building on their success by examining what other sectors we can engage with. This will enhance peoples' understanding of the value of water and water services and highlight how everyone can contribute to protecting our water supplies and the environment. We have an ambition to educate 1 million people on the value of water by 2030.

We are responsible for developing a large number of water services infrastructure projects amounting to an annual investment in excess of €1 billion. This amount is being spent across the country to future proof the effective management of water and wastewater assets, supporting the environment, communities and the economy. We will build our engagement programmes with communities on our projects at assessment, preplanning, planning, construction and completion stages of projects.

Engagement will involve many methods of liaising and building relationships with communities, elected representatives and our customers. This will include workshops, information events (virtually or in person) as well as direct communication with project teams via email and phone. It will support community water-based initiatives, building relationships and partnerships with community groups.

Case Study - Green Schools

We are a proud long-time sponsor of An Taisce's Green-Schools Water Theme.

Green-Schools is Ireland's leading environmental management programme and a great example of work in teaching others about the environment and taking care of our water resources. We have reached out to more than 630,000 students by hosting workshops, events, and tours of our water treatment facilities. These efforts have led to saving more than 2.6 billion litres of water. This is the same as filling 1,040 Olympic size swimming pools.

Students complete water surveys to find ways to reduce water use, and schools also get on board and install devices like water butts to collect rainwater for outdoor use. This means that less tap water is used for activities such as garden watering. The Green-Schools programme not only saves water but also teaches children about the value of water.

Case Study - Dunhill Wetlands amenity value

The Dunhill Integrated Constructed Wetland in Co. Waterford is an example of sustainable wastewater management that benefits both the community and the environment.

The wetlands play an important role in treating all wastewater from Dunhill village. The original wetland was built in 2000 by Waterford City & County Council, where the site had two treatment ponds. This wetland was expanded in 2012, increasing the number of wastewater treatment ponds to five, which gave the wetland extra capacity to treat more wastewater produced by a growing population. We have since carried out further work at the site to create a space that the community can enjoy. This includes landscaping and improvements in site access, including pathways and fencing. We have also created new educational features such as informational signage; and we have worked with the local community to install a glass viewing box into the side of the Anne River that provides a great opportunity to see aquatic plants, macroinvertebrates and fish.

Additionally, engagement will occur through environmental community initiatives and via traditional means such as advertising and media updates. We would also utilise the communications channels we currently have to engage with a wider demographic on our social media channels and by building a profile across all social media platforms.

Develop amenity value

Action 2.5: Continue to develop amenity value in our assets with local communities, where safe and appropriate.

We own and manage over 6,000 sites around the country as part of our water treatment and distribution, and wastewater collection and treatment assets. As these are operational sites with safety hazards, we must generally keep the sites secure with no public access. However, some of our asset types can be suitable for providing local amenity use such as walking trails and angling. We have over 50 impounding reservoirs and a small number of constructed wetlands nationally, and some of these already provide such local amenity value.

While we would not be considered a large public land management organisation in the context of the Government's National Outdoor Recreation Strategy 2023-2027, we are supportive of the strategy and will look to play our part wherever we can at a local level. Enabling access to quality green and blue spaces can have multiple benefits for local communities including mental and physical health and wellbeing and quality of life. It can also help to raise environmental awareness and the need for us all to see value in nature. In managing our land portfolio, we will seek opportunities to explore how we can collaborate with local stakeholders to develop amenity value in suitable Uisce Éireann assets, where this can be done safely and without compromising our core function of delivering quality water and wastewater services.

5.4 STRATEGIC AIM 6: Providing for growth

We will manage the availability of capacity to support housing and the economy in line with national policy.

Support planning policy

Action 2.6: Engage and collaborate with key stakeholders to support national, regional and local planning policy.

The National Planning Framework (NPF), which is currently under review, highlights that sustainable water resources "underpin our environmental and economic well-being into the future". We will support the NPF (and its subsidiary plans e.g., Regional Spatial Economic Strategies, County Development Plans), which target more balanced regional growth and development, subject to technical and funding constraints. We welcome coordinated rural settlement investment and will continue to work with local authorities in delivering programmes in the longer term. We will invest in infrastructure that facilitates well-planned social and economic growth that is based on principles of environmental sustainability and enhanced liveability. This aligns with our dedication to safeguarding water resources for the benefit of our communities.

Our commitment involves designing infrastructure with foresight, ensuring that it not only meets the current needs but also provides enough headroom to support future growth. This principle is embedded in our National Water Resources Plan (NWRP) and will be fundamental to our approach for developing wastewater and drainage plans.

As a statutory consultee, we will actively engage with national, regional and local planning authorities, recognising the importance of aligning our investments with planning policy. We will also collaborate with other public infrastructure providers to develop a shared national perspective on growth projections.

We will advocate for prioritising growth areas that have available infrastructure and environmental capacities. By seeking to influence planning policies, we aim to ensure that planned growth areas are strategically located, considering the capacity of water services to meet demands, emphasizing the need for sustainable water abstractions and reducing the impact of discharges on the environment (see Action 3.3).

Engage with housing and industry stakeholders

Action 2.7: Engage with housing and industry stakeholders to support delivery of new homes and economic growth.

We engage with housing and industry stakeholders to provide water and wastewater services to support economic growth and the delivery of housing nationally. We are fully committed to playing our part in supporting socio-economic growth by developing and prioritising the delivery of key water service infrastructure and connections.

We follow a plan-led growth approach through engagement with planning authorities in the development of statutory plans such as the National Planning Framework, Regional Spatial Economic Strategies, City and County Development Plans and Local Area Plans. Our participation in the statutory planning processes through consultation on national, county, regional and strategic plans, allows us to determine key areas for investment in the medium to long term to support the delivery of new homes and economic growth, as well as encourage the appropriate development of lands serviced by existing water infrastructure. We will continue to engage collaboratively with housing and industry stakeholders, to identify their needs and provide support subject to economic and technical feasibility and the provisions of the Connection Charging Policy. This will enable us to understand trends, housing and industry demands and identify areas of growth.

We support the delivery of housing and socio-economic growth through our business processes from a development's planning stage to connection delivery. We work closely with developers and other stakeholders to streamline processes, provide technical guidance, and facilitate efficient water and wastewater service connections for development. Early engagement with housing and industry stakeholders allows us to plan potential asset upgrades that may be required to support development.

We are determined to keep pace with housing and industry demand by providing the necessary connections to water services infrastructure.

Case Study - Greater Dublin Drainage Project

Greater Dublin Drainage

Supporting sustainable growth

Uisce Éireann Irish Water

The need

GROWING POPULATION: The population of the Greater Dublin Area is projected to increase by approximately **20%** by 2050

More frequent and intense storms under **climate change** will increase the volume of water that drains into our wastewater network

ECONOMIC GROWTH: Dublin's economy is continuing to expand, with projections indicating a sustained upward trajectory to 2050

New requirements of the recast **Urban Wastewater Treatment Directive**, such as enhanced treatment in our larger treatment plants.

The solution

A new regional wastewater treatment plant addressing capacity issues within the Greater Dublin Area

A new orbital sewer collecting wastewater from regional sewers in Fingal and Dublin

Sustainable treatment of wastewater sludge to produce a biosolid which can be used as fertiliser

A long sea outfall pipe to transport treated wastewater to the Irish Sea, safely returning water to the environment

The benefits

Alleviate pressure within the existing wastewater network in greater Dublin, increasing the development potential of the entire region to 2050 and beyond

Enabling housing and development in key areas, including north Dublin and south Fingal

PROTECTING PUBLIC HEALTH AND SAFEGUARDING OUR ENVIRONMENT: Volume of wastewater projected to increase by **+50%** over the next 30 years

Climate change resilient regional wastewater treatment for the GDA

Meet the requirements of the recast Urban Wastewater Treatment Directive (UWWTD) obligations and play our part in meeting the Water Framework Directive (WFD) objectives

The Greater Dublin Drainage (GDD) project is a strategic investment in the region's wastewater infrastructure. It will provide a new wastewater treatment facility and associated infrastructure to serve the growing needs of north Dublin and parts of Kildare and Meath.

The project will help to protect the environment and public health by ensuring that the wastewater produced in the region is treated to the required high standards before being discharged to the Irish Sea. The project will also support the economic and social development of the region by providing adequate wastewater capacity for current and future populations. Once operational, the GDD will have the capacity to provide wastewater treatment for the equivalent of half a million people living and working in this area.

The treatment plant will use advanced technologies to treat the wastewater and turn the solid waste into a nutrient-rich material called biosolids, which can be used as fertiliser for agriculture. The treatment process will also generate biogas, which will be used as a renewable energy source on site.

Develop demand analysis capability

Action 2.8: Develop and embed demand analysis capability to inform, forecast and plan for future investment requirements.

Continuing to develop and embed demand analysis capability is important to improve our understanding of historical and current demand and to inform likely future demand. We will undertake a pilot demand analysis study initially, and thereafter, develop and embed our capability to ensure we can effectively monitor and act upon changes in demand trends. Improving our understanding of current demand will also inform our water conservation activities under Action 1.7. Projecting future demand, which will involve modelling a range of future scenarios, will form a key part of our strategic investment planning.

Population projections are a key input to estimating future water demands and wastewater flows. An understanding of national, regional and local population changes and demographics is necessary to plan for infrastructure development across many sectors. Besides water services, this includes urban planning, transportation services and energy provision. To ensure alignment across sectors, we will seek to collaborate with other infrastructure development stakeholders to create shared projection models to identify where and when investment is required.

Improving our understanding of how customers use water is also important to project future trends in water usage and demand. We will continue to improve data on customer use (Action 2.2), and other demand components such as system losses and operational uses. We will continue to build confidence in our data through adopting best practice and standardised approaches.

With robust data underpinning demand analysis and projections, we will ensure our investment is well-timed. It will also allow us to consider modular design and phased development, where feasible. Our investment plans will be focussed on sizing long-term infrastructure to keep pace with growth.

We deliver a reliable water and wastewater service that protects the environment, and **we support a healthy environment by enhancing habitats and ecosystems.**

6 | Strategic Objective 3: Protect and Restore our Environment

STRATEGIC OBJECTIVE 3
Protect & restore our environment

We deliver a reliable water and wastewater service that protects the environment, and we support a healthy environment by enhancing habitats and ecosystems.

6.1 Introduction

Protecting and restoring the environment is critical to providing safe water services and safeguarding human health and biodiversity. An effective wastewater management system is also essential to safeguarding the environment and public health. It is our responsibility to ensure that when abstracting water from water bodies, we leave enough water to support the needs of the natural environment and other water users. We must also ensure that when returning treated wastewater to the water environment we do so in accordance with our Wastewater Discharge Authorisations and without compromising the achievement of Water Framework Directive objectives for those water bodies.

We have made significant progress in our contribution to protecting and restoring the environment through improvements to existing, and development of new, infrastructure.

The provision of water and wastewater services that not only avoid damaging, but also enhance, the environment is vital to safeguard the well-being of current and future generations. There are many ways to achieve this goal, such as investing in advanced wastewater treatment, or by working with others in integrated catchment management initiatives. This collaborative approach can reduce the requirement for water treatment and at the same time support biodiversity, recreational activities and tourism.

We have been proactive in this regard, developing various strategies with specific objectives. For instance, the Biodiversity Action Plan (2021) looks at how to conserve, enhance and work with the natural environment. It ensures that biodiversity is valued and is an integral factor in decision-making processes across the business.

In the period to **2050**, subject to economic and technical feasibility, we aim to:

- Ensure that our water and wastewater services will achieve our obligations under the Water Framework Directive.
- Play a strong part to support Ireland's national objective to achieve the Water Framework Directive environmental objectives.
- Manage our assets and activities to have biodiversity net gain.

6.2 STRATEGIC AIM 7: Protecting our water environment

We will play our part in protecting and restoring our water environment.

Wastewater Strategy Framework

Action 3.1: Work with regulators and stakeholders to develop a Wastewater Strategy Framework.

We are developing a National Wastewater Strategy Framework under which we will capture the multifaceted aspects of managing our wastewater assets. That includes wastewater treatment plants, collection networks and pumping stations, overflows and other infrastructure associated with the collection, treatment and return of treated wastewater to the environment. The framework will provide an understanding of strategic needs and drivers, allowing us clear sight of current and future population needs, environmental priorities, asset risks and service resilience. Having an overview of wastewater asset investment needs is essential for a water utility to plan sustainably for the long term. It is also important that longer term implications of investments are understood, in respect of financial and resource commitments. A key challenge will be addressing the needs of the wastewater networks. Integrated Urban Wastewater Management Plans (refer to Action 3.2) will form a component of the framework.

The framework will underpin plans and provide strategies that aim at:

- positive, collaborative engagement with regulators and stakeholders to accelerate achievement of environmental objectives;
- anticipating future environmental and growth needs with timely and appropriately phased delivery;
- appropriate risk assessment and management to reduce stress on assets and ensure resilience and good levels of service;
- meeting the requirements of the recast Urban Wastewater Treatment Directive, such as enhanced tertiary and quaternary treatment in our larger plants and Integrated Urban Wastewater Management Plans;
- playing our part in delivering Water Framework Directive objectives by meeting compliance with our Wastewater Discharge Authorisations; and
- adaptive planning that allows scenario testing, considering the whole asset lifecycle and ensures that future needs can be met efficiently, effectively and sustainably through capital or operational activities.

The framework (documents and processes) will set out approaches and methodologies to develop drainage and wastewater management plans on appropriate spatial scales, such as region, agglomeration, city, town, hydrological or drainage area catchment. Plans will have regard for long-term sustainability and whole life value,

maximising value from our wastewater assets, incorporating climate adaptation and mitigation, service resilience, biodiversity enhancement and wider societal benefits.

Wastewater source control will form a key part of the wastewater strategy framework. This will aim to ensure good regulation of trade effluent discharging to sewer and that industrial micropollutants are more appropriately treated at source, rather than at end-of-pipe in the Uisce Éireann wastewater treatment plant. It will also aim to promote an optimal balance between industry providing their own wastewater treatment and treatment in Uisce Éireann treatment plants.

Integrated Urban Wastewater Management Plans

Action 3.2: Develop and implement Integrated Urban Wastewater Management Plans.

The drainage of our cities and towns is a shared responsibility with Uisce Éireann being responsible for the public wastewater network (including combined sewers) and the local authorities being responsible for the public storm water network and overall management of flood risk. There can be interactions between these networks and water bodies, particularly in the larger agglomerations, with complexity involved in understanding how the existing system operates hydraulically and in planning to meet future performance requirements.

The new recast Urban Wastewater Treatment Directive (UWWTD) introduces a requirement for the preparation of Integrated Urban Wastewater Management Plans initially for the larger cities and subsequently for smaller agglomerations based on risk. We see this as a very positive opportunity for collaboration between Uisce Éireann and local authorities to consider the full urban water cycle, with shared aims of:

- reducing the pollution load from Storm Water Overflows (from the combined sewer network) and from Urban Run-off (from the storm sewer network);
- developing capacity for growth; and
- ultimately making our cities and towns climate resilient from a drainage perspective.

We propose to develop strategic partnerships, working with local authorities in the coming years, initially focussing on the cities, so that we can meet the deadlines in the recast UWWTD for having Integrated Urban Wastewater Management Plans in place. We will need to develop new approaches and new capabilities for this so that environmental benefits and climate resilience can be delivered without entailing excessive costs, including:

- preventative measures (source separation and nature-based sustainable urban drainage) (see Action 3.8);
- measures to better manage and optimise existing infrastructure (see Actions 3.5 and 3.6);
- additional mitigation including adaptation of existing or creation of new infrastructure with a priority to green infrastructure to support biodiversity (see Action 3.7); and
- use of innovation and smart network control (see Actions 3.5, 3.6 and 4.7).

Managing risk to the water environment

Action 3.3: Manage our water service assets and operations to reduce the risk of impacts to water bodies

Managing our abstractions to ensure they are sustainable and comply with abstraction licensing requirements is important to reduce the impact of our operations on water bodies. The solutions developed as part of our National Water Resources Plan (NWRP) considered the potential impact of both existing and new abstractions on water ecosystems.

Case Study - Sustainable Urban Drainage solutions

Our combined sewers, carry both surface water runoff and wastewater. During heavy rainfall events, increased surface water inflows to our network can cause storm water overflows (SWOs) to spill, leading to the discharge of untreated wastewater to the environment.

With the growing challenges posed by urbanisation and climate change, we are working with local authority stakeholders to adopt innovative solutions to manage increased surface water runoff such as Sustainable Urban Drainage Systems (SuDS). These systems use natural features such as green roofs, permeable pavements, rain gardens, and constructed wetlands to intercept, store, and slowly release rainwater, reducing surface water runoff and minimising the risk of SWOs discharging into the environment. This not only reduces the burden on our infrastructure but also enhances urban resilience to flooding and improves water quality by filtering out pollutants.

Where possible, we identified solutions that enable us to reduce or eliminate potentially unsustainable abstractions. In our five-early review of the NWRP, we will continue to seek alternative water sources, improve water use efficiency, and reduce leakage to minimise the risk of abstraction impacts on water bodies.

We will also manage our water service assets and operations to mitigate the potential pollution threats to water bodies. This involves conducting risk assessments, implementing preventative measures, and enhancing contingency plans and incident response processes. Our approach aims to improve the resilience of our operations and protect the environment.

Conducting risk assessments helps us identify potential pollution sources and evaluate their impact on the environment, including risks associated with chemical storage and handling. We will strengthen our preventative measures through our asset maintenance programmes and regular training for staff on chemical handling procedures and emergency response actions. Regular site inspections and equipment checks are a key part of our strategy to manage our water service assets and operations to reduce risks to the environment.

Our established Incident Management Framework and overarching Crises Response Plan are designed to handle incidents such as pollution events. The associated Operational Incident Management Procedure describes our approach to identify and manage operational incidents occurring at our water service sites and/or related activities. Site level or localised incident management response plans are also used when dealing with the "on the ground" incident response. We continuously review and update our incident response plans based on new information, incidents, and regulatory changes. We will also develop our asset and water quality monitoring programmes and data management systems to help identify pollution threats and support a timely response.

We are continuing to assess our Water Treatment Plants (WTPs) to determine the potential risk of residual discharges to receiving water bodies. These assessments aim to inform monitoring to verify risk and guide interventions. As part of the next iteration of the National Water Resources Plan, we will update our residuals strategy to incorporate monitoring outcomes. We will work towards developing and implementing measures to enhance the management of water treatment plant residuals, reducing the potential impact of discharges on receiving water bodies. Our revised residuals strategy will provide guidance on the preferred sustainable and circular economy options for WTP residuals (see Action 4.4), ensuring that investment in new infrastructure is the most cost-effective over the asset's lifespan, while also protecting the environment.

6.3 STRATEGIC AIM 8: Playing our part under the Water Framework Directive

We will work with others to progressively deliver on Water Framework Directive (WFD) objectives.

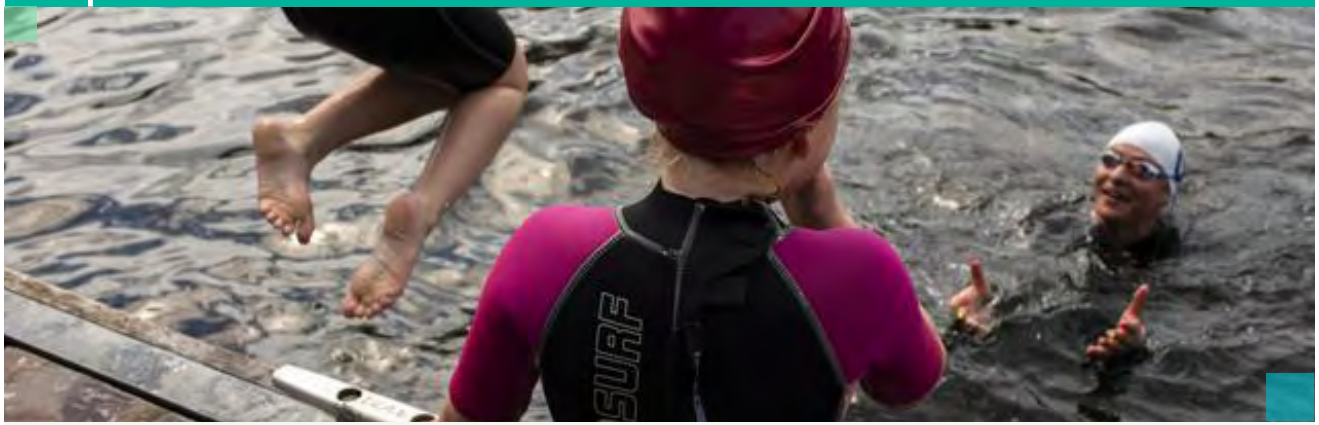
Protect and restore water bodies

Action 3.4: Protect and restore water bodies through collaboration.

We have made steady progress in reducing the impact of urban wastewater on receiving water bodies. The number of water bodies where urban wastewater is a significant pressure has reduced from 291 in the second cycle River Basin Management Plan to 197 in the third cycle Plan. We are committed to addressing significant urban wastewater pressures as quickly as is technically and economically feasible.

However, besides urban wastewater there are multiple other pressures impacting on our water bodies. It remains a big challenge for Ireland to ultimately achieve the environmental objectives in the WFD, addressing significant pressures and getting all our water bodies to good or high status.

Case Study - Dublin Bay forecasting system



Uisce Éireann is a key stakeholder in the quality of Designated Bathing Waters in Dublin Bay and is a member of the Dublin Bay Bathing Water Taskforce along with the Department of Housing Local Government and Heritage (DHLGH), Dublin City Council (DCC), Dun Laoghaire – Rathdown County Council (DLRCC) and Fingal County Council (FCC).

One particular challenge facing local authority beach managers is the management of Designated Bathing Waters when faced with an adverse rainfall forecast. In response to bathing water quality concerns we led the development of an inter-agency Bathing Water Forecasting System for Dublin Bay. The purpose of the system is to provide local authority beach managers with automated daily predictions of water quality at 5 designated bathing waters in Dublin Bay. The system is driven by Met Éireann's HARMONIE weather forecast model. The development of the forecasting system involved significant collaboration between the funding partners (Uisce Éireann, DCC and DRLCC) as well as external engagement and data-sharing with Met Éireann and the UCD Acclimatize project team.

The system is now in operation and will undergo validation during the 2024 bathing season before use in 2025. Ultimately the system will provide local authorities with a better understanding of impacts from rivers and Uisce Éireann discharges and support local authority decision making in relation to beach management (including guidance to bathers regarding water quality).

We believe that a collaborative approach is the best way to achieve the WFD environmental objectives for Ireland in the most cost-effective way possible as the causes and the solutions to protecting and restoring our water catchments are not within the grasp of any one sector. We are committed to coordination and collaboration through the WFD governance and implementation structures. We would advocate open sharing of data on all the pressures impacting on water bodies, together with the development of shared catchment models (building on tools already developed by the EPA) which could establish the most cost-effective combination of measures to meet water body objectives. These models would also be able to demonstrate and justify the small number of cases where achieving WFD environmental objectives would be disproportionately costly. In Uisce Éireann we are continuing to develop our catchment modelling capability and so we are ready and willing to collaborate with other stakeholders on such an approach to meet Ireland's obligations under the WFD.

Manage wastewater services

Action 3.5: Manage wastewater services to achieve regulatory requirements

Our regulatory obligations for wastewater collection and treatment are set by the EPA in our Wastewater Discharge Authorisations for each agglomeration. These obligations include compliance with the Urban Wastewater Treatment Directive (UWWTD), which is a basic measure under the Water Framework Directive as well as higher treatment standards which can be required to achieve the WFD environmental objectives. Full compliance with the requirements of the Urban Wastewater Treatment Directive is a priority for Uisce Éireann in line with Government policy, as set out in the Water Services Policy Statement 2024 - 2030, including closing out existing infringement proceedings. Further priorities are to improve compliance at sites on the EPA's Priority Areas List (PAL) and to address urban wastewater significant pressures under the River Basin Management Plan.

When Uisce Éireann was established in 2013, we started with a significant wastewater compliance challenge with only 39% of the connected population equivalent served by wastewater treatment plants compliant with the UWWTD. We have made steady progress in tackling this and based on current projections we expect 97% of the connected population equivalent to be served by compliant wastewater treatment plants by the end of 2025. As UWWTD is a basic measure under the WFD, we have prioritised achieving compliance with this basic measure ahead of supplementary measures. However, when we upgrade a wastewater treatment plant to achieve UWWTD requirements we also carry out any additional works necessary to fully comply with our Wastewater Discharge Authorisations, which can include higher treatment standards to achieve WFD environmental objectives, as well as providing capacity for growth.

We will implement our actions under the River Basin Management Plan to prioritise works and address all the significant urban wastewater pressures identified in the Plan.

Case Study - Rush Town Wastewater Collection Scheme

Before the establishment of Uisce Éireann in 2014, the town of Rush had no wastewater treatment. Since then, we have invested €9.7 million in the Rush Town Wastewater Collection Scheme to improve the environmental health of nearby bathing waters.

The project included a new wastewater network (sewers and pumping stations) to collect and transfer wastewater to the treatment plant in Portrane. The new pipes and pumping stations will cater for population growth and also take pressure off the local network, making the wastewater system more reliable. This initiative has put an end to the discharge of untreated wastewater into the sea. In 2022, Rush South Beach was awarded Blue Flag status, recognising the improved water quality following the delivery of the scheme.

This includes collaborating with stakeholders to develop and implement a monitoring programme to understand the water quality risks from our assets to bathing waters and shellfish waters. We will also work with our industry customers to enhance treatment at the source (see Action 3.1), improving the quality of trade effluent discharging to sewers and reducing the need for end-of-pipe wastewater treatment. We are committed to working with stakeholders to find sustainable solutions that minimise our impacts.

We will also implement remote asset management and predictive systems using real-time monitoring to help manage operations and ensure a planned asset maintenance programme that will reduce the occurrence of overflows from our networks and improve environmental outcomes.

In 2024, the European Parliament and Council adopted the recast Urban Wastewater Treatment Directive which imposes significant new obligations to be delivered by various deadlines over the coming decades.

We are committed to managing our wastewater assets to achieve full regulatory compliance with the current Urban Wastewater Treatment Directive, the recast directive when required and our Wastewater Discharge Authorisations. However, the scale of capital investment needed to address all the known needs within the wastewater asset base, including new obligations, is substantial and will take multiple investment periods to address. This investment need includes a very significant component which is capital maintenance and capital replacement just to maintain the current asset performance level.

Manage water services

Action 3.6: Manage drinking water services to achieve regulatory requirements.

In December 2022, the Government published the Water Environment (Abstractions and Associated Impoundment) Act (the "Abstraction Act"). The Abstraction Act commenced on the 28th August 2024 and the supporting regulations came into operation on 29th August 2024. Under the new regime, we will be required to apply to the EPA for licences for abstractions above certain thresholds. This is a requirement for both new and existing abstractions. This will be a significant body of work for the organisation. As part of the licensing process, the EPA will set in-stream flow requirements necessary to support healthy ecosystems. We will have to manage our abstractions, so they are sustainable and meet the requirements of licence conditions. Compliance with our abstraction licence conditions will require significant investment and will ensure that, over time, we will comply with our obligations under the Water Framework Directive.

As part of the NWRP, a desk top risk assessment of existing abstractions has been completed. This assessment has allowed us to identify abstractions that we may need to move away from over time. We will continue to update these risk assessments with new information on available yields and the impacts of climate change on our sources. We are committed to a programme of data collection at our key sources to develop a better understanding of the natural hydrology and the impact of our abstractions on the environment. The output from this assessment will help us prioritise where alternative sources may be needed and identify new sustainable sources to meet our customers' needs while maintaining healthy ecosystems.

Additionally, as part of our abstraction assessments, we are identifying impounding structures which support abstractions, but which are potential barriers to the movement of aquatic species. To address this issue, we are developing a Fish Pass Programme in consultation with Inland Fisheries Ireland (IFI). This programme aims to improve local hydromorphological conditions, through creating or improving fish passes at these impounding structures.

6.4 STRATEGIC AIM 9: Contributing to positive biodiversity

We will manage our assets to have biodiversity net gain.

Ensure Biodiversity 'Net Gain'

Action 3.7: Manage our assets to have biodiversity 'net gain'.

Protection of the ecosystems in which we live and work is fundamental to our business. We manage infrastructure that is located within a range of habitats and our infrastructure often interacts directly with freshwater, estuarine, marine and terrestrial habitats through the abstraction of drinking water or the discharge of treated wastewater.

It has become very apparent in recent decades that many species of flora and fauna are being lost at an unprecedented rate, at national, European and global level. In 2019, with many countries failing to meet targets set to reduce biodiversity loss, the Irish Government declared a 'biodiversity emergency', prompting an increased focus across all sectors in developing actions to protect biodiversity.

In response, we developed its Biodiversity Action Plan (BAP), which was launched in 2021. The BAP details the specific objectives and actions to be taken by Uisce Éireann to address this biodiversity emergency, but it also ensures that biodiversity is valued and is an integral factor in decision-making processes across the business. We are implementing actions from the BAP to better manage our existing assets and ensure that biodiversity is enhanced across our sites and within the surrounding landscapes. We are identifying sites within our ownership suitable for native woodland and implementing appropriate tree planting schemes, and we have committed to planting 250,000 trees by 2030.

We are also committed to ensuring that biodiversity "net gain" is achieved across our infrastructure projects by 2030 and that the natural environment is in a measurably better state than it was beforehand. This commitment, along with related activities, will be incorporated into our next Biodiversity Action Plan, which will consider Ireland's 4th Biodiversity Action Plan 2023-2030 and the European Nature Restoration Law.

Our actions are strengthened, and deliver greater biodiversity benefit, when we work with stakeholders to align and communicate our approaches. We will, therefore, proactively seek to engage with all relevant stakeholders in the further development and implementation of biodiversity actions.

Case Study - Lough Guitane riparian woodland

We are working in partnership with the Forest Service to create a riparian woodland at the Lough Guitane Water Treatment Plant site.

Riparian woodland is a unique type of woodland that grows alongside rivers and lakes. The woodland enhances biodiversity by providing a home for a wide variety of plants and animals and by providing a food source for pollinators such as bumblebees and butterflies. Pollinators play an important role in supporting healthy ecosystems by pollinating crops and flowers, which in turn, provide food for other wildlife.

At the Lough Guitane site, we have already planted 18,800 native trees and have plans to plant another 15,000 native trees as part of the second phase of the project.

Benefits from our Biodiversity Action Plan

Nature-based solutions and catchment management measures

Action 3.8: Champion nature-based solutions and integrated catchment management measures in the delivery of water and wastewater projects.

Nature-based solutions utilise nature and healthy ecosystem processes to deliver more sustainable solutions for society. Employing nature-based solutions helps protect, restore and enhance water quality; improves climate resilience; increases biodiversity and has significant potential to deliver more sustainable water and wastewater solutions for Uisce Éireann.

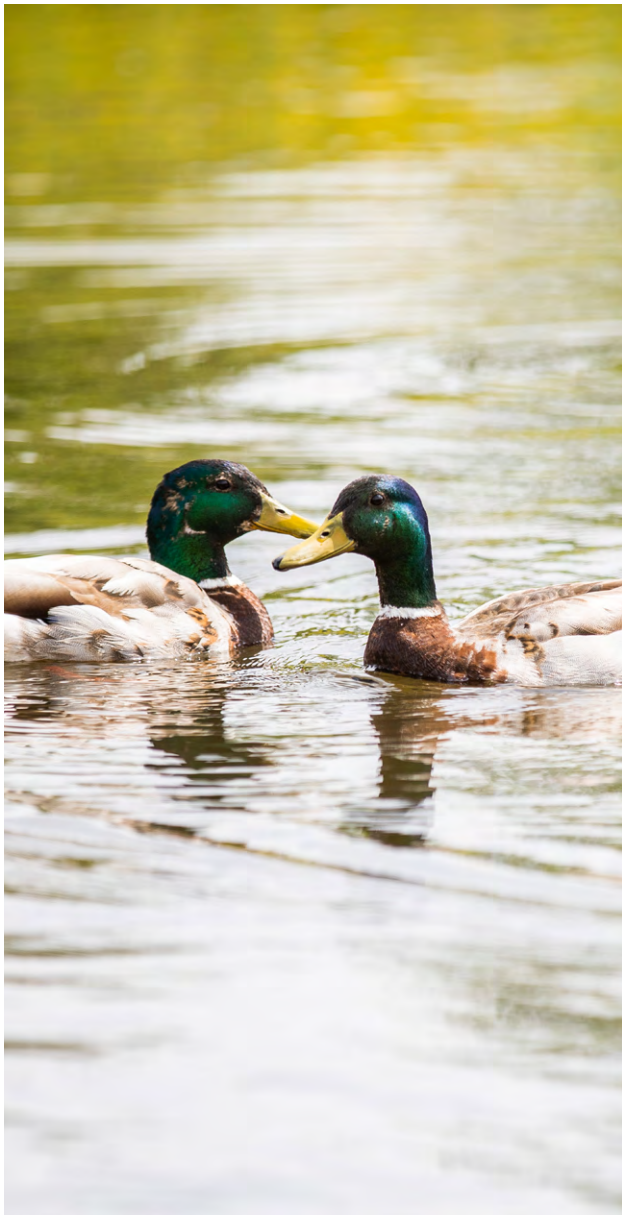
We will encourage and promote the identification of opportunities for the incorporation of integrated constructed wetlands, sludge drying reed beds, and other nature-based solutions into water and wastewater treatment sites. We will collaborate with external stakeholders, landowners and community groups to explore such opportunities with potential to incorporate recreational access, where safe and appropriate to do so. Catchment management activities, such as planting riparian woodland within our water supply catchments and working with communities and other stakeholders, are equally supported and discussed in further detail under Action 1.3.

We will collaborate with external stakeholders, landowners and community groups on wider catchment management-based initiatives aimed at protecting source water. Working with communities will be key to finding opportunities for catchment management and nature-based solutions and ensuring their delivery on the ground. This will support our objective to deliver safe and reliable drinking water and is integrated into our drinking water safety plan approach (see Action 1.1). Aside from providing source water protection or wastewater treatment solutions, nature-based solutions have many additional benefits, including a reduction in energy usage, carbon sequestration, biodiversity benefits, and amenity use for local communities This aligns to the River Basin Management Plan goal to deliver integrated, multiple co-benefits for water, biodiversity and climate, wherever possible.

Case Study - Sludge Drying Reed Beds

In partnership with Carlow County Council, we have successfully completed an €800,000 pilot programme to install innovative sludge drying reed beds (SDRB) at five Co. Carlow wastewater plants.

These eco-friendly projects in Clonegal, Fenagh, Ballon Myshall, and Raheendoran use natural processes for treating wastewater sludge. The SDRB system offers a nature-based solution for treating wastewater sludge. The reed beds increase biological activity that helps to absorb nutrients like nitrogen and phosphorous from the wastewater. The natural drying system also reduces energy use, greenhouse gas emissions and costs, compared with traditional methods. Additionally, the reed beds help to support biodiversity by creating a valuable habitat for birds, insects and other animals.



We make decisions for the long term which enable us to **adapt and ensure our assets remain resilient.**

7 | Strategic Objective 4: Sustainable Services Fit for the Future

STRATEGIC OBJECTIVE 4
Sustainable services fit for the future

We make decisions for the long term which enable us to adapt and ensure our services remain resilient.

7.1 Introduction

Given the scale of the challenges that we will face in the medium to long term, it is vital that we now transform our assets and how we work to become sustainable and fit for the future. This transformation will be challenging and will involve us becoming a net zero carbon utility, as well as maximising resource recovery in line with a circular economy approach. To be sustainable we will need to develop our asset lifecycle management and long-term planning capabilities so that we can maximise the social, economic and environmental value we deliver from our assets now and into the future. In developing our sustainability as set out under this strategic objective, we aim to contribute to Ireland's climate resilience and leave our water resources and water services on a better footing for future generations than we have today.

All four strategic objectives as set out in this Water Services Strategic Plan will make a significant contribution to the UN Sustainable Development Goals in Ireland, particularly SDG 6: Ensure availability and sustainable management of water and sanitation for all. Out of the 17 SDGs, 10 are directly related to the strategic objectives in our WSSP2050.

In the period to **2050**, subject to economic and technical feasibility, we aim to:

- Become a Net Zero Carbon water utility.
- Have maximised resource recovery in line with a circular economy approach.
- Have made a significant contribution to Ireland's climate resilience.

7.2 STRATEGIC AIM 10: Achieving net zero carbon

We will progressively work towards achieving net zero carbon services.

Net Zero Road Map

Action 4.1: Develop and implement a Net Zero Road Map.

We are developing a Net Zero Roadmap to support us in delivering on our ambition of achieving Net Zero by 2040. The roadmap will include initiatives such as energy efficiency, planned asset maintenance programmes on high energy consuming assets, renewable energy generation, greenhouse gas reductions including process emissions management, nature-based solutions (see Actions 1.3 and 3.8) and supply chain collaboration (see Action 4.2).

We recognise that partnerships, collaboration and stakeholder engagement will be central to achieving our goals. Net zero cannot be achieved by Uisce Éireann alone and it is only by working together to build the relationships, capacity and skills required to meet this ambitious target, that we will be able to develop actionable goals. To enable us to achieve these targets within the ambitious timeline outlined we will need to adopt a collaborative approach, developing partnerships both internally within our own organisation and externally with our supply chain and stakeholders.

We will:

- Empower our people through a clear top-down company strategic direction, to focus on activities which will deliver net zero emissions.
- Collaborate with our extensive supply chain to develop solutions, share our learnings and deliver projects that are sustainable, cost-effective and mutually beneficial (see Action 4.2).
- Work with our customers and communities to help us achieve net zero emissions through active engagement e.g., on leakage reporting and through awareness campaigns such as our How to Conserve Water campaign (see Action 2.2).

We acknowledge that we are at an early stage of our decarbonisation journey, but we are fully committed to understanding, analysing, and prioritising our carbon reduction opportunities.

Embed sustainability with our supply chain

Action 4.2: Work with our supply chain to embed sustainability in the delivery of water and wastewater infrastructure.

We are committed to collaborating with our extensive supply chain to transition to a climate resilient, biodiversity rich and climate neutral economy. Our Supplier Sustainability Charter which was published in 2024 outlines our commitment to sustainability across our supply chain and supports our overarching Sustainability Framework.

To meet our ambition of Net Zero by 2040, we will encourage innovation within the supply chain, and continue to build collaborative partnerships to assess value and performance through whole life cycle costing methodologies. We are committed to clear and transparent communication with our suppliers clearly stating our objectives, expectations and the importance of their role in achieving Net Zero.

We will work with our suppliers to support them through guidance on sustainable practices, such as energy efficiency measures and carbon reduction initiatives. We will explore sustainability incentives to leverage clients, contractors and suppliers who have a mutual interest in building the skills and knowledge to deliver a sustainable future, shared resources and best practices. We are a founding partner of the newly established Irish branch of the Supply Chain Sustainability School. We are proud to be part of this school which is a collaboration between clients, contractors and suppliers who have a mutual interest in building the skills and knowledge to deliver a sustainable future.

Case Study - Business Working Responsibly Certification

Uisce Éireann has proudly attained the Business Working Responsible (BWR) certification, Ireland's leading standard for sustainability.

This achievement represents a significant milestone in our organisation's journey to become a leader in sustainable business practices.

The BWR standard evaluates our commitment to responsible business practices across social, economic, environmental, and governance processes. The accreditation process involved two assessments:

1. ***Preliminary Assessment:*** *Conducted by Business in the Community Ireland (BITC), this initial assessment provided a review of our sustainability practices.*
2. ***Registration Assessment:*** *The National Standards Authority of Ireland (NSAI) performed an in-depth audit, scrutinizing our processes against 15 sustainability indicators.*

The feedback from both BITC and NSAI was overwhelmingly positive. Achieving the certification reflects our commitment to responsible business practices and sets the foundation for our future sustainability initiatives.

Case Study - Supplier Sustainability Charter

We are committed to embedding sustainability across our supply chain, recognising its important role in achieving the organisation's overall sustainability goals

Our Supplier Sustainability Charter underpins this commitment by providing a framework for our capital and operational suppliers to work together towards a more sustainable future.

The charter is centred around collaboration and ensures that environmental, social, and governance considerations are integrated into procurement practices.

Our suppliers are expected to:

- ***Environment** - Adhere to environmental standards, including reducing carbon impact, promoting renewable energy, and conserving water resources;*
- ***Social** – Treat employees fairly, support workers' rights, and contribute to communities;*
- ***Governance** – Have high integrity standards, eradicate corruption, and whistle-blower procedures;*
- ***Collaboration** – Participate in cross-industry collaborations and innovative proposals to enhance environmental, social, and economic aspects of projects.*

7.3 STRATEGIC AIM 11: Adopting circular approaches

We manage our assets to maximise resource recovery and resource efficiency and minimise waste.

National Wastewater Sludge Management Plan

Action 4.3: Review and implement the National Wastewater Sludge Management Plan.

To support us in embedding circular economy approaches and to support our sustainability objectives, we are reviewing and updating the National Wastewater Sludge Management Plan. In this plan, we will set out how we will aim to continue our commitment to achieve circular economy outlets for wastewater sludge.

In the context of our wastewater services, bioresources refers to the valuable materials that can be recovered from the treatment process such as sludge, which is rich in organic matter and nutrients. The components of sludge can be repurposed and used in various beneficial ways. For example, one common use is as a soil conditioner and fertiliser.

At present, we are treating 100% of wastewater sludge to produce biosolids which is being used in agriculture. Aligned with our commitment to eliminating waste, we are exploring new and innovative ways to use these bioresources.

We are considering advanced technologies and processes to extract even more value from sludge, potentially creating new products or energy sources. For example, we will continue to incorporate anaerobic digestion into the sludge treatment process and use the biogas produced for energy recovery.

To drive operational efficiencies, we are implementing solutions such as Sludge Hub Centres, which will optimise the balance between treatment and transport costs. The new Regional Biosolids Storage Facility, which is being designed to serve Dublin for the next 25 years, is an example of how we will achieve efficiency in the management of the wastewater network over the long term.

Case Study - Ringsend Wastewater Treatment Plant Phosphorous Recovery

We have applied innovation and advanced technology at our largest wastewater treatment plant at Ringsend, to recover phosphorous from wastewater. This is Ireland's first ever facility to recover phosphorous fertiliser from wastewater.

The Ringsend Wastewater Treatment Plant takes 40% of the country's wastewater load and discharges treated wastewater into the Lower Liffey Estuary. The application of this innovative technology applies the principles of the circular economy to create a valuable resource for agriculture and other sectors.

The new facility is part of a €500 million investment to upgrade Ringsend Wastewater Treatment Plant and make it compliant with European standards. The facility can produce over 4,000 tonnes of fertiliser per year and recover 1.3 tonnes of phosphorous per day.

Circular economy design standard

Action 4.4: Maximise circular economy benefits.

We are committed to shifting towards more sustainable and circular practices and are increasingly implementing approaches that extend beyond traditional make-take-dispose linear models.

Our ambition is to embed a circular economy approach where products and materials are part of a continuous cycle rather than reaching a linear end of life disposal point. At the core of our strategy is the development and implementation of a new Circular Economy Design Standard. This standard will cover the entire life cycle of managing our water and wastewater assets, from initial design and procurement through to delivery, storage, handling and end use.

Our Circular Economy Design Standard enshrines this long-term commitment to embed circularity across our business operations. This standard embodies the principles of circular economy including, employing design-out-waste approaches from project inception stage, right through to consideration of material reuse options at project end of life stage. This approach contributes to the need to reverse current global trends of natural resource depletion and is key to reducing our carbon emissions.

Our suppliers will be an important part of embedding a circular economy approach. We will engage with our key suppliers to help us achieve our ambition (see Action 4.2). This approach enables us to magnify the sustainability gain from our circular economy approach across our supply chain.

An example of our circular economy journey is how we are exploring more sustainable, economic and circular economy models for the recovery and reuse of solid residuals from the water treatment process. In parallel, this reduces the existing high energy carbon footprint associated with water sludge dewatering.

7.4 STRATEGIC AIM 12: Managing our assets

We will manage the risk and resilience of our services through best practice asset management.

Managing our assets

Action 4.5: Manage activities on our assets in a coordinated manner across their full lifecycle.

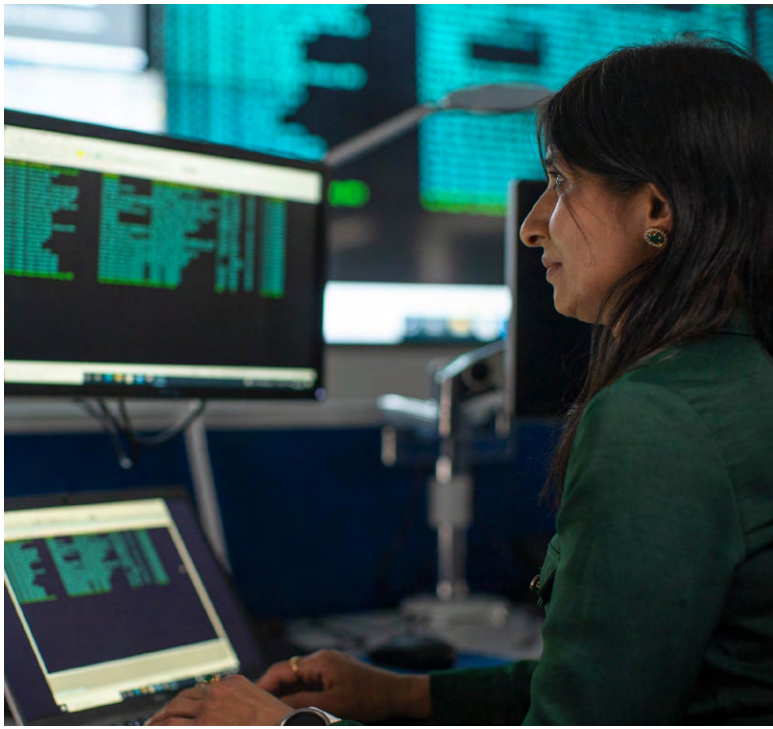
We must manage our assets to meet our customer needs and achieve our objectives, balancing cost, risk & performance. We have been successful to date in managing our assets to provide a service to our customers, but we believe we can be more effective and efficient. While we manage our assets effectively today, we strive to continually improve our processes, systems and information to ensure we maximise the value from our assets. To do this we will apply an ISO 55000 asset management approach to all activities on our assets, which will support the delivery of our strategic objectives.

Asset management is defined as the coordinated activity of an organisation to realise value from assets, which are things that themselves have a value to an organisation. It is however about more than just doing things to assets; it is about using assets to achieve our business objectives. This asset management approach is considered best practice for any organisation that provides a service with assets and will support us in delivering effective, efficient and sustainable water and wastewater services and the objectives of our WSSP 2050.

Becoming an asset management organisation means achieving all the requirements of ISO 55000 including developing the right culture, organisational structure, policies, strategies, plans, processes & information systems required to manage our assets effectively.

We want an asset management System that supports the coordinated delivery of all activities on our assets across their life, with a focus on continual improvement. This system will ensure we consider the whole life of our assets when making decisions regarding investment, operation, maintenance and disposal/reuse of our assets.

Asset data plays a key role in allowing us to increase our maturity as an asset management organisation. High quality data on asset condition and performance, are essential to improving our decision-making capability. For example, with appropriate information we can deliver planned maintenance in a timely manner reducing the need for reactive repairs. Our National Telemetry System (see Action 1.6) will also support our transition to intelligent operations by providing full visibility of our assets and enabling us to respond swiftly to any changes or threats and manage our operations efficiently.



Case Study - Lough Talt Water Treatment Plant

By applying our asset lifecycle management approach, we are continuing to deliver clean and safe water to the communities served by the Lough Talt water supply system. We have put in place an interim treatment solution while we plan for an alternative supply source. An alternative source is required to avoid our abstractions potentially endangering the protected Geyer's whorl snail.

The communities served by the Lough Talt source were required to boil their water following the detection of cryptosporidium in the water supply in January 2019. The existing treatment process was inadequate to address this risk. We installed a new filtration system followed by ultraviolet disinfection which removed the cryptosporidium risk. An advanced new treatment technology, called chloramination, was also installed to prevent harmful chemicals (Trihalomethanes) forming in the distribution pipes. This treatment upgrade meant boil water notices could be removed in November 2020, restoring safe drinking water to approximately 13,000 people in the region.

To ensure the safe operation of this new technology, we coordinated our operational and maintenance activities and put in place extensive monitoring processes. The upgrade has extended the operational life of the existing treatment plant by 10 years.

An integrated asset management system compliant with ISO 55000 is essential to co-ordinate and optimise the diverse and complex activities required to manage our assets. This system will enhance our operational control, allowing us to manage risks and respond to incidents more effectively. By moving from reactive to preventative and predictive operations, we can improve overall performance.

Risk and value-based decision making

Action 4.6: Ensure risk and value-based decision making across the lifecycle of assets.

Asset management plays a key role in helping meet the needs of customers and communities today and into the future. We must balance the competing needs of service quality, economic growth, environmental protection and sustainability while delivering services at the lowest asset lifecycle costs. This is an increasing challenge as our investment needs continue to grow due to ageing infrastructure, policy and legislation requirements, climate change and achieving net zero targets.

Given the scale of our asset base and the requirement for sustained long-term investment; we must continue to prioritise our investment to reduce the most significant risks while maximising the value we deliver to the customer and delivering on the Government's Water Services Policy Statement. We use an approach which focuses on managing asset and service risk, while realising value from our water and wastewater assets.

We have incorporated this approach into our investment planning process which supports decision making that balances:

- better outcomes for customers, communities and the environment;
- safe operations and services for staff and customers;
- legislative compliance;
- whole lifecycle management of the assets; and
- better planning for asset resilience and sustainability.

To continue to maximise the benefit from our investment we are committed to enhancing our investment planning process to ensure that our investment priorities are balanced appropriately. We will continue to develop our risk and value-based decision-making capability including leveraging digital technologies to ensure we make the right investment decisions at the right time.

7.5 STRATEGIC AIM 13: Gaining value from innovation

We will drive research and innovation to deliver value and meet future challenges.

Research and innovation

Action 4.7: Develop a culture of innovation in the water services sector to enable a sustainable future.

We are committed to driving research and innovation activities that enable a sustainable future and are essential to addressing the many challenges set out in WSSP 2050, including climate change and biodiversity loss. Our approach to innovation includes:

- leveraging digital technologies and solutions;
- investment in innovation for long-term goals;
- managing collaborations and knowledge sharing; and
- creating an improved culture of innovation.

Acknowledging the rapid evolution in the innovation and research sector, our long-term objectives emphasise adaptability to accommodate new and emerging technologies and services. We will embrace new technologies and harness innovation to help us manage our assets to increase efficiency, resilience, customer value, and deliver wider environmental outcomes. We will also leverage new digital technologies to help us meet our long-term objectives, but sustainable adoption at scale will need to be accompanied by appropriate investment in data control and cyber security.

We believe that a culture of innovation is vital in achieving a sustainable future and we are committed to contributing to this through active collaboration and knowledge sharing with our stakeholders including research institutions, regulatory bodies, infrastructure providers, and our supply chain. We also recognise the importance of managing our own talent, environment and processes to develop a strong internal culture of innovation.

Case Study - Innovation Fund Projects

The Commission for Regulation of Utilities (CRU) Water Services Innovation Fund has enabled Uisce Éireann to invest in innovative projects designed to deliver benefits for our customers. We have taken this opportunity to explore new technologies and operating arrangements that will help us to deliver safe and reliable water services with improved environmental outcomes.

Our Sludge Treatment Reed Beds pilot is an example of an innovation fund project that has led to low cost and sustainable methods for water treatment. We have also investigated new technologies to monitor trade effluent and leakage reduction and completed research on Climate Sensitive Catchments to help us adapt to climate change. You can find more information on our innovation fund projects on our website: https://www.water.ie/about/research-and-innovation.

We are committed to creating a culture where employees are encouraged to contribute and develop ideas, equipped to collaborate across departments and empowered to deliver value through purpose-led innovation.

Foresight programme

Action 4.8: Continue to develop foresight and horizon scanning capability.

Adopting a foresight and horizon scanning process is essential to facilitate a flexible and adaptive planning approach and support decision making for the long term. This is particularly important in the context of the uncertainty presented by climate change and other global factors affecting policy, population movement, our supply chain and the economy.

We will continue to build on the work done as part of our Vision 2050 project to develop and implement foresight and horizon scanning capability to support our planning processes. This will help us understand how trends affecting the water sector and our service provision are evolving. We are committed to collaboratively reviewing and improving our long-term vision for 2050 with regulators, policy makers, industry leaders, customers and the wider water sector. This collaborative approach will help us ensure that we are delivering value for Ireland and build trust and confidence with customers and communities.

7.6 STRATEGIC AIM 14: Securing long-term funding

We will work with our stakeholders to secure long-term funding for efficient and resilient services.

Long-term investment

Action 4.9: Quantify and articulate long-term investment needs for our water and wastewater assets.

There has been a recognised legacy of underinvestment in water services over many decades and consequent deficiencies in Ireland's water and wastewater assets, compared to other European countries. This has affected our ability to adequately deliver services to our customers and meet environmental requirements, at both national and EU level. Coupled with this, we must also understand the whole-lifecycle capital maintenance and replacement costs related to service provision. This issue is common with all utility providers, who are only now beginning to understand the long-term funding requirements and economics of service provision.

Since 2014, we have been addressing this legacy of underinvestment through sustained capital investment, which we expect to reach circa €9 billion by the end of 2024. This investment has made a big impact, however there is still a significant distance to go, to bring water and wastewater services in line with our European peers and to meet new regulatory and policy requirements.

Given all currently known investment requirements, including the need to maintain our existing assets, reduce risk to service and provide for future growth, we know that significant investment will be required across our water and wastewater treatment plants and associated water and wastewater networks over multiple investment periods.

Based on current funding assumptions to maintain the current levels of investment in the medium and long term (plus additional funding for the Water Supply Project – Eastern and Midlands Region and the Greater Dublin Drainage project), we estimate that it will be into the late 2040s / early 2050s before we can bring all of our wastewater treatment plants into full compliance with their current authorisations. It will take significantly longer for our wastewater networks. Similarly, for water supply, by maintaining this level of investment we should be able to deliver the NWRP preferred solutions for the majority of our customers by 2050; however, we will still be some distance from delivering the preferred solutions for every supply. It is therefore vital that the level of capital investment is ramped up and then at least maintained at a steady level (in real terms) or preferably increased in the period to 2050.

In addition to this, we will need to work collaboratively with our key stakeholders and deliver smarter solutions so that we have resilient water supply and wastewater systems in compliance with our authorisations by 2050. Due to the timescale for project delivery typically being longer than 5 years, as well as delays which can occur for example due to planning, there is a need for us to manage this large capital projects portfolio over multiple investment periods. In order to support this, we are developing our long-term investment planning capability which will include rolling water and wastewater plans over a 10-15 year horizon. This will also support a 25-30 year forward investment view which will underpin our long-term water and wastewater strategies.

In addition to this, based on initial assessments, we estimate that funding requirements to adequately account for whole-lifecycle asset management may cost multiples of the current available funding. We will work with our funding stakeholders over the coming years to investigate the appropriate means to address this.

Multi-annual funding

Action 4.10: Secure multi-annual funding approach.

Uisce Éireann is a regulated utility and our revenue allowance is determined by the CRU for each revenue control period, which is generally 5 years in duration. The key parts of allowed revenue are subvention income, which represents approximately 80% of our income, and is provided by the Exchequer on behalf of domestic customers; non-domestic revenue represents approximately the remaining 20% and is provided by non-domestic customers in line with consumption and approved tariffs.

Case Study: Vision 2050

In partnership with our key stakeholders, we developed our strategic foresight study, Vision 2050. We completed a horizon scan where we imagined the future water sector that we would like to create and outlined a shared vision and desired outcomes for the sector to 2050.

We identified challenges and opportunities, such as climate change, population growth and technology and determined how these may affect our desired outcomes. By exploring trends, we developed three future scenarios: "Sunny Outlook," "Storms Forecast," and "Cloudy with a Chance of Rain," each describing a possible future operating environment. The scenarios help us to understand how we may need to change the way we manage our water services to achieve our desired outcomes under a range of circumstances. We have used these insights to develop the strategic response outlined in our WSSP 2050.

While the CRU sets our revenue allowance over a multi-year period, our subvention income is subject to the Government's annual budgetary process, which is impacted by external macro-economic factors including the level of funding required across other state and semi-state entities.

Our other key funding sources are equity (subject to Government vote), new connections revenue (self-fund new connections capex) and debt (facility provided by the Minister of Finance). We are expected to remain cash neutral each year, matching cash inflows and outflows. We are therefore likely to continue to be unable to access other commercial loan facilities / capital markets funding, placing continued reliance on the Exchequer and maintaining the funding uncertainty which exists from a year-to-year basis. Given that our funding is effectively capped in year, any unexpected over-runs in operational expenditure (e.g., during energy market crisis in 2022) are required to be re-balanced through a curtailment of capital spend, which can impact the curtailment of projects.

Uisce Éireann funding uncertainty, inability to access capital markets and cash neutrality, present challenges in the context of the size and scale of our capital investment programmes and for our supply chain and contractors. In order to build continued confidence in our project pipeline, and in turn for our supply chain to build and maintain their capacity, we would welcome certainty on funding availability on a multi-annual basis. This would also be critical for high value multi-year projects, where Ministerial consents are provided on a phased basis, with no future certainty of funding.

We acknowledge and welcome the cross-entity funding working group including representatives from DHLGH, NewERA, DPENDR, UÉ and CRU. The working group has been established in 2024 and will consider the future funding model of Uisce Éireann with a view to providing multi-year certainty and ensuring it works in sync with the regulatory model.

In the period to 2050 we are likely to experience unprecedented changes, potentially driven by climate change, population growth, environment and biodiversity crises, ageing infrastructure, regulation and policy changes and economic conditions.

8 | Approaches to Meeting Long-Term Challenges

In the period to 2050 we are likely to experience unprecedented changes, potentially driven by climate change, population growth, environment and biodiversity crises, ageing infrastructure, regulation and policy changes, and economic conditions.

In this context, we believe that to deliver on our strategic objectives, we will need to embrace new approaches and ways of working. We will aim to adopt the following approaches in tackling our future challenges, while recognising that this will also need buy-in from our stakeholders in many instances.

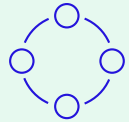
Collaboration

We collaborate with stakeholders to deliver outcomes for Ireland which could not be achieved while working in isolation.

Many of the challenges that we face are very big and beyond the capacity of any one organisation to resolve. Through working collaboratively with key stakeholders, we believe that we can deliver outcomes for Ireland more effectively, efficiently and faster than if we were working in isolation. We advocate for this "Team Ireland" approach wherever it can deliver value for the country.

One example of where collaboration will be needed is for the development and implementation of Integrated Urban Wastewater Management Plans, which will be required under the new recast Urban Wastewater Treatment Directive, as described in Action 3.2. A key enabler for this will be the development of new approaches and methodologies for planning for the combined sewer and storm sewer networks, which will need to be underpinned by new national policy, for example relating to storm water overflows. Development of these new approaches will need effective collaboration between key stakeholders including UÉ, DHLGH, EPA and the local authority sector. This should then enable compliance with the new Directive and achievement of environmental and climate resilience outcomes through a smart approach, as described in Action 3.2, while also not entailing excessive cost.

Systems thinking



We recognise that multiple systems impact the provision of water services and we aim to take a holistic view in determining optimal solutions for the long-term.

We deliver services to our customers through complex systems of water and wastewater assets. Going beyond our assets, we are dependent on wider systems, for example the hydrological and ecological systems of the water environment which provide our raw water sources and receive our treated wastewater discharges. In order for us to determine optimal solutions for water and wastewater services, it is therefore vital that we take a whole system view, rather than dealing only with one set of assets in a blinkered way. A systems thinking approach could also empower collaboration with other stakeholders as sometimes our solutions can deliver multiple benefits, including for other stakeholders' objectives and vice versa.

One example of where we need to adopt a systems thinking approach is in the urban water cycle. Inputs to the urban water cycle include the public water supply and rainwater which falls on the urban catchment.

Outputs from the urban water cycle include the collection and treatment of wastewater, drainage and the conveyance of stormwater and the impact of discharges on receiving water bodies. If we consider our water and wastewater systems, these are connected via our customers, and so we should not plan for these in isolation. For example, if we can get wider adoption of rainwater harvesting, this would not only reduce water demand but would also reduce hydraulic load on the combined sewer and storm sewer networks. In relation to drainage, we typically have a shared responsibility for drainage of urban areas with the local authorities as described in Action 3.2.

With the new requirement for Integrated Urban Wastewater Management Plans, this will require integrated planning for drainage including the combined sewer and storm sewer networks, the urban public realm and built environment and receiving water bodies. As the local authorities implement nature-based sustainable urban drainage (blue green infrastructure) in line with national policy, this will have positive benefits in terms of reducing hydraulic load on the combined sewer and storm sewer networks. Similarly, where Uisce Éireann identify nature-based sustainable urban drainage as a solution for a combined sewer performance issue, this will also have wider benefits for biodiversity, wellbeing and more liveable urban areas.

We will aim to adopt a systems thinking approach, including engagement with our stakeholders where appropriate, into the planning for our assets.

Adaptive planning

We plan for the future using an adaptive approach so that we can respond to changing trends and needs, and achieve sustainable outcomes.

We face some critical uncertainties in the longer term future including, for example, which scenario for climate change plays out and whether in an adverse scenario we could get unprecedented population growth due to climate migration. Adaptive planning is an approach which identifies possible future scenarios, tracks appropriate trend indicators and identifies trigger points in the indicators which would lead us to adapt our plan to the emerging likely scenario.

While much of our planning and investments will be “no or low regret”, i.e., would be beneficial under whichever future scenario plays out, some of our planning will require us to be adaptive. We aim to develop our adaptive planning capability in the short term so that we can best prepare for the critical uncertainties of the longer term future.

Building our culture, empowering our people

We harness a safe, diverse and inclusive culture, where our people are empowered and high-performing.

At Uisce Éireann, each day brings a wide and exciting range of challenges. A diverse and skilled workforce is essential to the services that we deliver and will continue to be essential for navigating the complexities and uncertainties that we will face, such as climate change and increased population growth.

As we rise to the challenge of delivering transformative water services that enable communities to thrive, we recognise the vital importance of investing in our people, and embedding an organisational culture that aligns to our shared values and supports our staff. As we transform to become a fully integrated water utility, we strive to be an employer of choice for water services professionals at all career stages, and from all sections of society. We are managing the careful transition of our skilled and experienced local authority workforce and transforming our ways of working to improve services to our customers and communities. We dedicate ourselves to ensuring that our employees and partners are safe at work, and that we invest in developing our collective capability and leadership skills.

We value the unique skills, knowledge, and outlook that each employee brings. At Uisce Éireann, we have a workplace that supports continuous growth, career progression, training and employee assistance programmes. Delivering sustainable water services to communities nationwide requires roles across a range of disciplines, including engineering, IT, science, communications, operations, construction, finance and accounting. This offers opportunities for professionals, tradespeople at all levels, including graduates, and skilled workers to contribute to their local communities while building rewarding careers. At Uisce Éireann we are committed to making our place of work more diverse, inclusive, and equal and enabling everyone to be their true selves at work. This is supported through our ibelong diversity and inclusion programme. By investing in a culture of diversity and inclusivity and investing in ongoing training we can encourage collaboration and achieve continuous improvement.
We are also committed to ensuring the measures and resources are in place to ensure the safety, health and welfare of our employees and other people who might be affected by our works, including customers, visitors and members of the public. It is our goal that our activities and assets shall not cause harm to anyone.

Through robust planning, strategic alignment, and a commitment to continuous improvement, Uisce Éireann is committed to delivering on the objectives outlined in this document.

9 | Implementation

9.1 How we will deliver our objectives

The WSSP 2050 sets the overarching framework for subsequent more detailed implementation plans. The relationship of this (Tier 1) Water Services Strategic Plan to the (Tier 2) implementation plans, and the future (Tier 3) plans is illustrated in Figure 9.1 with their relationship to national and local policies and strategies included.

Whereas the WSSP sets out our long-term objectives and our strategic direction of travel in order to achieve them, more detail is provided in our Tier 2 plans on how we aim to achieve our objectives. This includes our National Water Resources Plan which assesses present and future water resource needs and identifies solutions to secure resilient water supplies for a 25-year planning period. Our equivalent plan for wastewater will be our National Wastewater Strategy Framework and corresponding plans at agglomeration level. In addition to our Tier 2 plans we have a range of supporting strategies and plans including for example our National Wastewater Sludge Management Plan and our Biodiversity Action Plan. Where required, our strategies and plans will be subjected to Strategic Environmental Assessment and Appropriate Assessment, including public consultation.

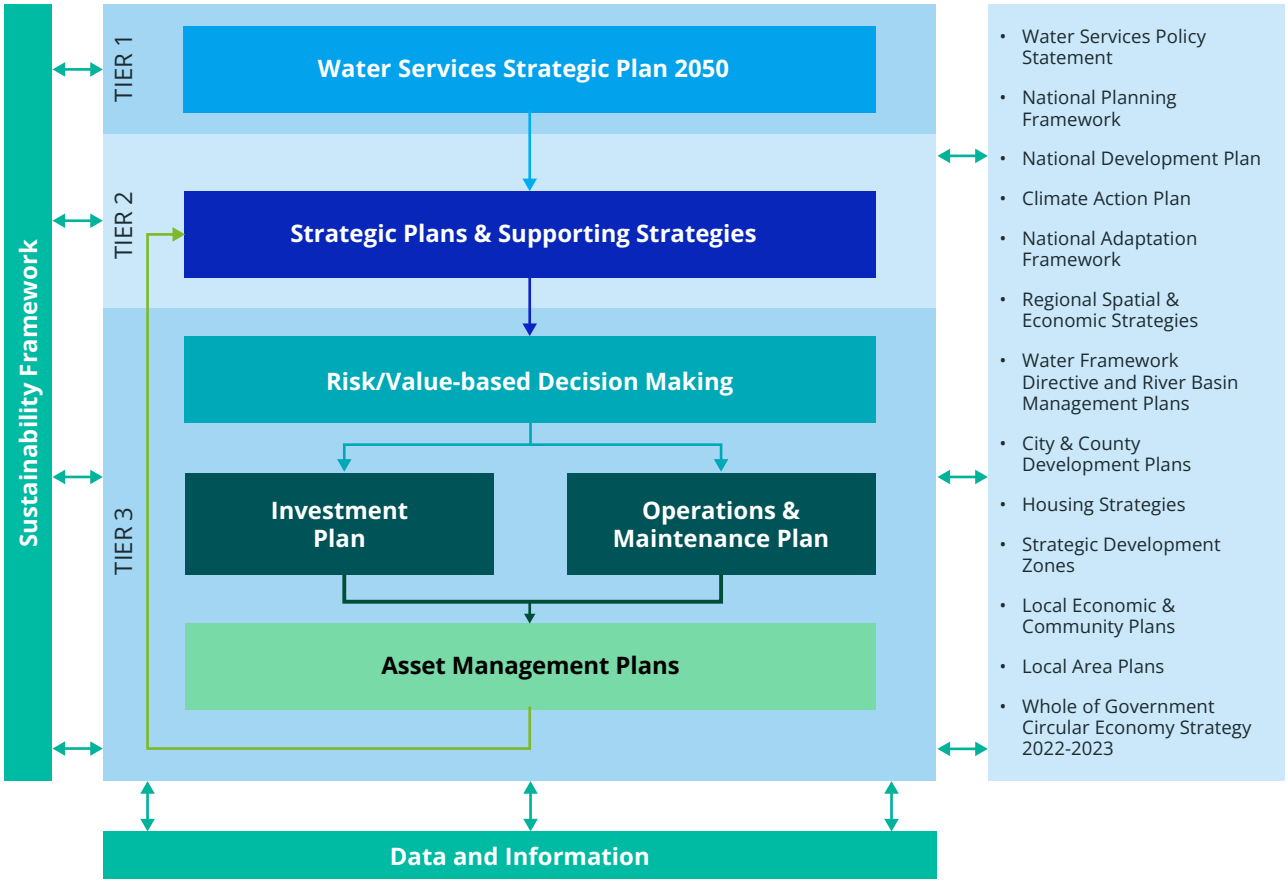


Figure 9.1 Relationship of this Tier 1 WSSP to Tier 2 Strategic Plans, Supporting Strategies and more detailed implementation plans and their relationship to national and local policies and strategies.

The WSSP together with our Tier 2 plans and supporting strategies form the basis for our Tier 3 plans, including capital projects and programmes, that we prepare for each regulatory control period, which is typically 5 years in duration. As the investment needs across the asset base will always exceed the available funding (for the foreseeable future), prioritisation is carried out as part of the investment planning process so as to ensure alignment with the Government's priorities as set out in the Water Services Policy Statement (WSPS).

Under the Water Services Act 2017, the Minister prepares a Water Services Policy Statement which sets out the policy objectives and priorities of the Government regarding the provision of water services for the period specified in the statement. The current WSPS covers the period from 2024 to 2030. Uisce Éireann then prepares a Strategic Funding Plan which sets out the funding envelope that we consider necessary for the following regulatory control period. Following approval of the Strategic Funding Plan by the Minister, we then prepare our regulatory submissions, including the Investment Plan for submission to the CRU. In preparing our Investment Plan we are required to consult with the EPA, the regional assemblies and the local planning authorities. We then finalise the Investment Plan for submission to the CRU and the CRU carry out a public consultation on the plan, prior to setting the allowed revenue for Uisce Éireann.

As part of our commitment to continual improvement, we are developing our asset investment planning capability by moving to an enterprise system based approach which will enable consistency of investment data and needs capture, scenario modelling capability and the ability to effectively respond to changing priorities and challenges. All planned upgrade and maintenance work will also be set out in asset management Plans for each asset so as to enable better coordination in managing the whole asset lifecycle.

9.2 How we will measure progress

Uisce Éireann is subject to rigorous monitoring and measurement to assess our performance and ensure we remain accountable to customers and stakeholders.

The Department of Housing, Local Government and Heritage monitors performance in the water sector generally including Uisce Éireann's performance. Uisce Éireann is regulated by two regulators. The Commission for Regulation of Utilities (CRU) is our economic regulator which oversees our operational expenditure and capital investment. The Environmental Protection Agency (EPA) is our environmental regulator.

As part of the regulatory process we report regularly to the CRU on key metrics across several categories such as Customer Service, Environmental Performance, Water Supply Quality, Security of Water Supply and others.

Also, as part of the regulatory cycle, our proposed Capital Investment Plan is subject to a statutory stakeholder engagement process, undertaken by Uisce Éireann, and a public consultation process undertaken by the CRU. We also report progress on our Capital Investment Plan throughout each regulatory cycle across a range of metrics, which in turn, the CRU publishes reports on in its assessment of our performance.

The EPA acts as the environmental regulator, ensuring our compliance with drinking water and wastewater standards as appropriate. We engage and provide reports to the EPA on a regular basis. The EPA publishes an annual report on "Drinking Water Quality in Public Supplies" and the Remedial Action List which is a register of public water supplies that are in need of corrective action. The EPA also publishes an annual report on "Urban Wastewater Treatment" and a list of the Priority Urban Areas which is a list of priority areas where wastewater treatment and collection must be improved to resolve national environmental priorities.

In addition to regulatory reporting, our performance is documented in our annual report. This report provides insights into the organisation's performance against established metrics. In 2026, this will include the first reporting under the Corporate Sustainability Reporting Directive (EU 2022/2464) ('CSRD'), for the financial year 2025. The CSRD requires companies to provide information on how sustainability matters affect the company and the impact of the company's activities on the environment and people.

9.3 Environmental Mitigation and Monitoring

Environmental assessments of the plan have been conducted as part of the SEA and AA processes. These assessments of the 35 Plan Actions are set out in the assessment tables in section 7 of the SEA Environmental Report and summarised in the SEA statement. The assessments include recommendations for mitigation and enhancement measures for Plan implementation. These are provided in the Environmental Action Plan in Table 9.1 of the SEA Environment Report and in SEA Statement. The WSSP 2050 is committed to including these measures as part of the plan implementation.

A monitoring plan is required under the Strategic Environmental Assessment (SEA) regulations to provide a basis for identifying significant environmental effects during the implementation of specific actions under the WSSP 2050. This is required to review the impacts of the WSSP 2050 predicted by the SEA and to assess whether the recommended mitigation and enhancement measures are adequate to address the identified environmental concerns and also that beneficial outcomes supporting SEA objectives can be achieved.

The Monitoring Plan is provided in Table 9.2 of the SEA Environmental Report and forms part of the SEA statement published with the WSSP 2050.

The SEA monitoring will be integrated into the WSSP 2050's overall monitoring framework to ensure that environmental considerations are evaluated alongside other key performance measures. This process will involve assessing the environmental impacts of the plan's implementation, with a focus on the sustainability of water services and the protection of ecosystems, shellfish, and bathing waters from wastewater discharges. The findings from SEA monitoring will take account of monitoring undertaken for the Tier 2 plans and will contribute to the five-yearly reviews of the WSSP, as well as the annual sustainability reporting obligations under the Corporate Sustainability Reporting Directive (CSRD). This will ensure that the plan remains responsive to environmental legislation and our commitment to environmental protection and climate change mitigation and adaptation.

The WSSP 2050 is a critical document that **outlines the delivery of public water services in Ireland.**

10 | Review and Update

The WSSP 2050 is a critical document that outlines the delivery of public water services in Ireland. It sets the course for safe drinking water provision and environmental protection from wastewater discharges.

The WSSP will undergo regular reviews, at least every five years, as required by legislation. These reviews will allow us to adapt to changing circumstances and evolving needs. Updates to the WSSP will be informed by changes in legislation and government policy related to water services and better information, especially on asset performance, demographics, and climate change.

The challenges outlined in Section 2 of the current plan will likely impact our targets and objectives. These challenges include population growth, climate change effects, and technological advancements. We will continue to monitor these factors and check progress against each action. Regular monitoring of the plan will support an adaptive approach in selecting specific options under each action during implementation of the plan.

The five-yearly assessment will be used to check that progress is being made towards meeting the WSSP 2050 objectives through implementation. If the five-yearly assessment finds that the WSSP 2050 objectives may not be achieved and/or a new approach is needed to meet secure, safe and reliable water and wastewater services for Ireland, actions in the strategy will be updated as needed. When a change to the WSSP 2050 is needed, we will screen and evaluate the change considering likely environmental effects in accordance with Ireland's Regulations on Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA). Consultations with the EPA and government departments are part of this process, as mandated by the relevant EU Directives. If the change is deemed to have a significant environmental impact, a SEA will be conducted. Additionally, an AA will be performed if the change could significantly affect European sites, unless it is essential for site management and 'likely significant effects' can be scientifically ruled out.

The WSSP will continue to capture the strategic objectives necessary for efficient and effective water services. Our commitment remains focused on providing high quality water services while safeguarding the environment.

The WSSP is not static; it evolves alongside Ireland's needs. By regularly updating this plan, we ensure that our water services align with best practice, legal requirements, and the changing landscape.

The SEA process involves assessing the likely significant effects on the **environment of implementing the WSSP 2050 and considering reasonable alternatives for achieving its objectives.**

Appendix A | Legislative Context

We work within the legal context of the Water Services Acts 2007 to 2022. The following are particularly relevant to preparing our WSSP:

Water Services Act (No.2) Act 2013

A WSSP is required to be prepared under the Water Services (No. 2) Act 2013 (as amended) (the Water Services Act).

It must state the objectives of Uisce Éireann over a 25-year horizon and the means by which it proposes to achieve those objectives, including in relation to covering:

- drinking water quality;
- prevention or abatement of risk to human health or environment relating to the provision of water services;
- existing and projected demand for water services.
- existing and planned arrangements for provisions of water services;
- existing and reasonably foreseeable deficiencies in the provision of water services;
- existing and planned water conservation measures; and
- management of the property of Uisce Éireann.

The Water Services Act requires that we consult with the Commission for Regulation of Utilities (CRU), the Environmental Protection Agency (EPA), each local authority and each regional body in advance of preparing a new WSSP. The legislation also states that the WSSP shall be consistent, as far as is practical, with:

- the National Planning Framework;
- regional Planning Guidelines; and
- any river basin management plan in force at the time.

The WSSP must have regard to, *inter alia*, proper planning and sustainable development at a county and local level. It is also subject to the Strategic Environmental Assessment Directive[3] (SEA), the Birds Directive[4] and the Habitats Directive[5].

Strategic Environmental Assessment

The SEA process involves assessing the likely significant effects on the environment of implementing the WSSP 2050 and considering reasonable alternatives for achieving its objectives. Combined and cumulative effects of the WSSP 2050 as a whole and with other plans and programmes are also included as part of the assessment. The first stage in the SEA process is the screening stage, to consider whether SEA is required. As per the SEA Screening Document[6] it was determined that the WSSP 2050 is of a type that falls within the remit of the SEA Directive/ SEA Regulations and requires mandatory SEA. Therefore, the WSSP 2050 was taken forward to SEA Scoping and statutory consultation with the designated environmental authorities.

This stage collates and presents baseline data, identifies relevant environmental issues and defines the scope of the SEA for the purpose of consultation. The SEA Directive is transposed into national law via the European Communities (Environmental Assessment of Certain Plans or Programmes) Regulations, 2004 (as amended) (the SEA Regulations).

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[3] *Council Directive 2001/42/EC*
[4] *Council Directive 2009/147/EC*
[5] *Council Directive 92/43/EEC*
[6] *Appended to the SEA Scoping Report, https://www.water.ie/projects/strategic-plans/water-services-strategic/*

Our national transposing of the SEA Regulations set out specific requirements for consultation with environmental authorities at the scoping stage of the SEA process. The scoping study and associated consultation responses has informed the SEA Environmental Report which is published alongside our draft WSSP 2050. The SEA Environmental Report is prepared in parallel with the draft WSSP 2050.

Appropriate Assessment

In addition to compliance with the SEA Directive, the preparation and implementation of the WSSP 2050 must meet the provisions of the Habitats Directive and Birds Directive. These directives have been transposed into Irish law by the Planning and Development Act, 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) (as amended) (the Habitat Regulations).

The Habitats Regulations requires that if a plan, policy or programme is likely to have a significant effect on one or more European sites (that is, a Special Area of Conservation (SAC) or Special Protection Area (SPA), also referred to as "Natura 2000" Network), either alone or in combination with other schemes, plans or projects, then it must be subject to Appropriate Assessment (AA).

The first step in the AA process is to undertake an AA screening. An AA screening is the preliminary assessment of whether a plan or project, based on scientific information alone or in combination with other plans or projects, is likely to have significant effects on a European site in view of a site's conservation objectives. If the screening determines that this cannot be excluded, then Uisce Éireann must determine that an AA is required.

Given the early stage of development of the WSSP 2050, it was concluded that the potential for likely significant effects on one or more European sites, in view of the sites' conservation objectives, could not be ruled out. At this early stage of the AA process all European sites across Ireland and Northern Ireland are screened in. Therefore, in accordance with Article 6(3) of the Habitats Directive, Stage 2 AA of the WSSP 2050 is required. This is presented in a Natura Impact Statement (NIS) alongside the draft WSSP 2050 to fully inform the AA to be undertaken by Uisce Éireann.

Appendix B | How the SEA and AA Processes have influenced our Draft WSSP

B.1 Public consultation

The WSSP 2050, SEA Environmental Report and AA/NIS have been developed in parallel through an iterative and phased process, with consultation in each phase, as outlined in Table B-1. Figure B-1 shows the interactions between the development of these documents.

Consultation 1

Consultation 1 is on our Issues Paper, SEA Scoping Report and AA Screening Report. This consultation ran for eight weeks from 19 September to 17 November 2023. For this consultation, we engaged with our key statutory and regulatory stakeholders. The Issues Paper summarised the key challenges influencing our organisation and affecting the services we deliver to our customers from now to 2050. The challenges identified in the Issues paper, along with the consultation responses we received from our stakeholders in Consultation 1 helped us to define the long-term objectives we have presented in our draft WSSP 2050.

Section 3.1 and Appendix A of the SEA Environmental Report outlines how the consultation responses on the environmental studies have been considered in the preparation of the environmental report.

	Plans/Reports	Consultation
PHASE 1	**Issues Paper, SEA Scoping Report, AA Screening Report**	Key stakeholder consultation including the environmental authorities specified in the SEA Regulations, the stakeholders referred to in section 33(2) of the Water Services (No. 2) Act, 2013 (as amended) and Northern Ireland environmental authorities. **This consultation has been completed.**
PHASE 2	**Draft WSSP 2050, SEA Environmental Report, Natura Impact Statement**	Public consultation and key and statutory stakeholders.
PHASE 3	**Final WSSP 2050, SEA Statement, Addendum to Natura Impact Statement (if required) and AA Determination**	Plans/Reports updated to address consultation feedback

Table B-1 Work phases and consultations during the development of the WSSP 2050

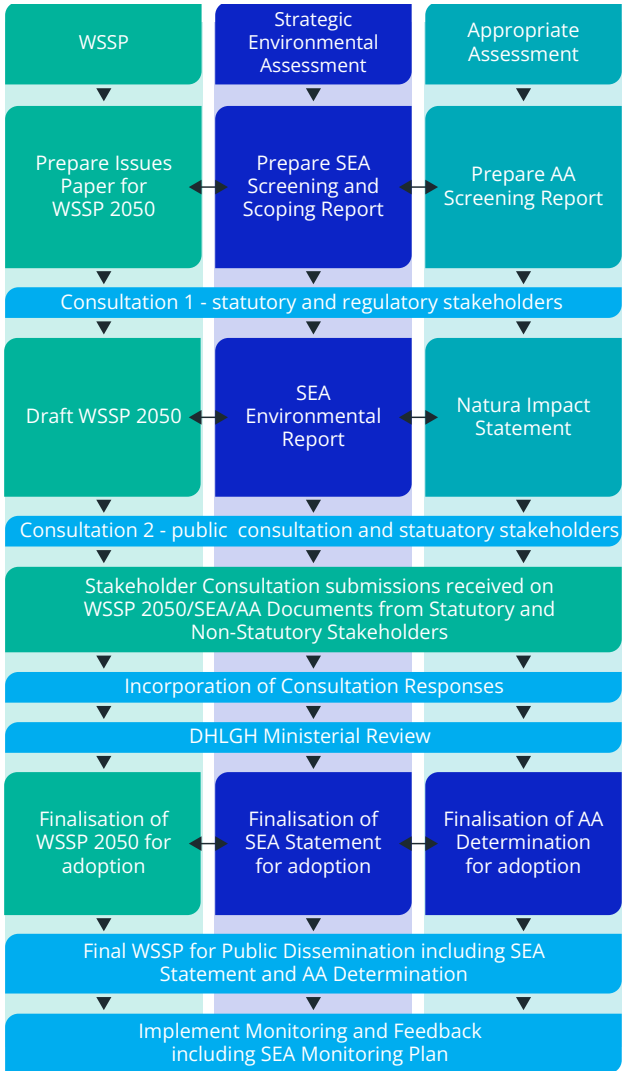

Figure B-1 Development of WSSP 2050 with the Environmental Assessments

Appendix C of this report describes how the consultation responses influenced our draft WSSP.

Consultation 2

In consultation 2 we presented our Draft WSSP 2050 and the associated SEA Environmental Report and NIS. The consultation was held from 21 May 20204 to 29 July 2024. Further details regarding this consultation were provided in our WSSP 2050 Brochure which was published alongside our draft WSSP 2050.

B.2 Development of alternatives

The iterative process we employed to develop and refine our draft WSSP2050 involved a sequence of internal workshops with various departments across the business that will be responsible for implementing the plan. These sessions were instrumental in developing our strategic objectives, aims and the necessary actions to achieve them. Additionally, the SEA requires that reasonable alternatives are explored to identify different ways to deliver a plan's objectives while addressing environmental issues. Our planning team ran further internal workshops with our internal teams and the SEA team to test each proposed action that we developed through our initial workshops, against the following questions:

- **Can we continue** the current 'Business-as-usual (BAU) approach based on existing practice?
- **Can we do less** and still meet our regulatory and legislative requirements?
- **Can we do more**, going beyond the proposed actions to reach targets sooner or go further?
- **Can we do things differently** to meet our objectives? For example, consider approaches adopted by other water companies.

It is recognised that since our existing WSSP was published in 2015, our approaches have evolved due to new legislation, policy shifts and emerging challenges. Initiatives that began after 2015, such as our National Water Resources Plan and other new plans and programmes, have laid the groundwork for the proposed actions in our draft WSSP 2050.

In many cases, the range of alternative actions forms a continuum, extending from minimal intervention to the business-as-usual scenario, which incorporates current practices and could be further enhanced to align with the objectives and aims of the draft WSSP 2050.

We first assessed the alternatives by considering whether they could be reasonable alternatives to meet the plan objectives. The 'do less' option was not taken further as it often represented a backward step from the business-as-usual approach and would not meet the objectives. The more ambitious actions and novel approaches showed promise and helped refine the WSSP 2050 actions through iterative discussions. Some actions were not considered feasible without first implementing and embedding the proposed WSSP 2050 actions, or for other reasons, such as actions reliance on external parties to take forward. However, the process did identify actions that could be re-evaluated in later iterations of the plan.

Five alternative approaches were identified:

- **Alternative 0: Do minimum** for actions where this could meet current legislative requirements.
- **Alternative 1: BAU:** Continue with current approach – involving implementing existing plans and meeting legislative requirements.
- **Alternative 2: WSSP 2050:** Approach proposed in the WSSP 2050 to meet plan objectives – building on the BAU actions (BAU+)
- **Alternative 3: WSSP 2050 +**: Do more, or reach targets quicker than the proposed WSSP 2050 actions.
- **Alternative 4: Different**: Take a different approach to the proposed WSSP 2050.

The alternatives were defined for each action and where no reasonable alternative was identified this was also recorded. The assessment undertaken against the SEA objectives under each of the four WSSP 2050 objectives is summarised in sections 7.2 to 7.6. These include assessment tables for each action against the SEA objectives.

Appendix C | How Consultation One on our Issues Paper influenced our DRAFT WSSP

C.1 Introduction

WSSP 2050 Issues Paper

The Water Services Strategic Plan (WSSP) 2050 is our long-term plan which sets out our objectives for the next 25 years and identifies strategies to achieve these objectives. We published the first WSSP in 2015, which covered the period from 2015 to 2040. Our new WSSP will cover the period from 2025 to 2050. It will ensure the provision of safe and reliable drinking water and the protection of our environment in the context of the most pressing challenges we face today and into the future, including climate change and Ireland's rapidly growing population.

In the initial stage of developing our draft WSSP 2050, we produced an Issues Paper that summarised the opportunities and threats influencing our organisation and affecting the services we deliver to our customers. The issues we identified have informed our strategic objectives and helped us to set the direction we will take to ensure safe and reliable drinking water for our customers, achieve climate resilient drainage for our cities and towns which also protects the water environment and deliver sustainable services to support the health and well-being of our communities.

Consultation on the Issues Paper

Consultation on the Issues Paper took place with key regulatory and statutory stakeholders, and Environmental Authorities.

The purpose of this consultation was to:

- initiate connection with key regulatory and statutory stakeholders on the plan;
- enable stakeholders to give feedback at an early stage of the development of WSSP 2050;
- frame the context for the draft WSSP 2050 consultation and identify potential concerns that need to be addressed in the draft WSSP 2050 and associated environmental reports.

The SEA Scoping Report and AA Screening Report were also provided to all statutory stakeholders in accordance with the consultation requirements of the SEA Regulations and Birds and Habitat Regulations. Although not prescribed under the SEA Regulations, we also included the Commission for Regulation of Utilities (CRU) due to the level of engagement required with our Economic Regulator and An Fóram Uisce (AFU) due to their functions under the Water Services Act 2017.

Consultation ran for eight weeks from 19 September 2023 to the 17 November 2023. This report summarises the responses relevant to the WSSP 2050 Issues Paper only. Specific feedback on the SEA Scoping and AA Screening is addressed separately in the SEA Environmental Report and Natural Impact Assessment that are published with the draft WSSP 2050.

Consultation Questions

The consultation on the Issues Paper covered three main areas:

- Key issues
- Themes for the WSSP 2050
- Approach to long-term planning

To assist stakeholders in making a submission on the Issues Paper consultation, we invited feedback on the following consultation questions across these areas.

Question	Details
1	Do you agree with the key issues we have identified?
2	What other key issues should we consider?
3	Do you agree with the approach for long-term planning we have identified?
4	What other approaches should we consider?
5	What examples of good practice long-term planning could we learn from?
6	Do you agree with our initial thoughts on the themes for the WSSP 2050?
7	What other themes should we consider?
8	How would you like to be involved in developing the WSSP 2050?

Engagement

Environmental Authorities took part in a consultation workshop on Tuesday 17 October 2023. Representatives from the EPA, NPWS, DEARA and Department of Environment Climate and Communications attended the workshop. An online briefing with the CRU took place on Wednesday 18 October 2023.

We sent email notifications to all the relevant stakeholders for this consultation, which included the details of the consultation process and how to provide feedback. The consultation documents were also accessible on https://www.water.ie/projects/strategic-plans/water-services-strategic/ for reference.

C.2 Submission overview

Submissions received

We received nine submissions (listed in Annex 1) in response to the consultation on the Issues Paper. The stakeholder category is summarised in Table 2 1. Some of these submissions also commented on the associated SEA Scoping and AA Screening reports.

Stakeholder Category	Number of submissions
Environmental Authority	3
Local authority	1
Regional Assembly	1
Regulatory/Statutory stakeholder	2
Interested stakeholder	2

Table C-1 Stakeholder representation

Submission summary - WSSP 2050 Issues Paper

This summary is a high-level overview of the main topics from the consultation submissions across the three key areas consulted on. We have set out our response to these topics and where relevant, described how the consultation has influenced the draft WSSP 2050.

Overall, stakeholders agreed with the seven key issues and the four themes presented in the Issues Paper and considered these to be 'comprehensive and relevant to the current situation in Ireland'. There was support for:

- our adaptive planning approach to ensure responses to the challenge of climate change;
- our commitment to a collaborative approach to work with our customers and communities, across sectors and with multiple stakeholders to instil the appreciation for the value of water, encourage behaviour change and deliver wider benefits to society;
- the focus on embedding circular economy principles in the delivery of water services;
- increased investment in smart water solutions and technology;
- commitment to protect and enhance the environment to support our ecosystems and communities and our emphasis on wastewater and stormwater management as part of an Integrated Urban Water Management approach to address the impact of pollution.

The stakeholders highlighted that the following matters were not sufficiently addressed in the Issues Paper:

- the discussion on the climate change key issue does not include sufficient detail on the impact of rising temperatures, reduced precipitation, and sea level rise on water services;
- food security should be considered in the context of climate change, population growth, soil health and water quality;
- drought resilience is an important consideration for current and future water supply development and Uisce Éireann should provide guidance to local authorities on sustainable water use and water conservation.

C.3 Our response

Our response to the key points raised across all submissions are summarised under the following topics:

- **Key Issues:** the seven issues we think will have the most significant influence on Uisce Éireann over the period to 2050;
- **WSSP 2050 Themes:** the four themes presented in the Issues Paper through which the key issues would be addressed and form the basis of the strategic objectives for our Plan;
- **Approach to long-term planning:** the approach we will apply to achieve our objectives in the context of an uncertain future;
- **Legislation and policy:** the legislation and policy that the WSSP should consider;
- **SEA/AA:** how the SEA/AA should inform the WSSP.

Key Issues

Consultation feedback	Our response	Draft WSSP 2050 reference
Stakeholders consider the following issues were not adequately considered in the Issues Paper: • Food security, including fishing and aquaculture • Management of water supply during summer drought periods • Population growth • Transparency and trust	We agree that food security, drought, and population growth are important issues that need to be addressed in the WSSP 2050. In Section 2 of the draft WSSP 2050 we discuss the key challenges that will likely impact water services to 2050. We identify the impacts of climate change, including the increased likelihood of droughts and deterioration in the aquatic environment, threatening our fisheries and food security. Population and economic growth are also identified as a key issue requiring new and upgraded infrastructure and water conservation strategies to reduce the demand on water resources. We recognise our role in protecting and restoring the environment, not only for the benefit of drinking water quality but also for the benefit of biodiversity and food security. Through the actions we have identified to support our Strategic Aim of 'Ensuring Safe Drinking Water' we have committed to working with stakeholders and communities to develop and implement source protection measures that will safeguard water and soil health. This also translates to benefits for the agricultural and fishing industries. Our Strategic Aim to "Protecting our water environment" also addresses the issue of the deteriorating aquatic and marine environment. We have committed to manage our abstractions, so they are sustainable, and manage our wastewater system to reduce the pollution from our combined sewer network and ensure we meet treated wastewater discharge standards to prevent the deterioration of the receiving environment. We acknowledge the impact of drought within the context of the climate change and propose to develop drought plans for all water supply systems under our Strategic Aim of "Delivering reliable water supplies". We acknowledge transparency and trust is important to effectively work with our customers and stakeholders to meet their expectations and protect our shared resources. Collaboration is central to our approach to meeting our long-term challenges. Actions to meet our Strategic Aim on "Delivering for Customers" include providing up-to-date information that is accessible to customers via multiple communication channels and we commit to fostering and clarity around the services we provide including information to customers to meet the Drinking Water Directive and recast Urban Wastewater Treatment Directive and details on planned and unplanned works and projects.	*Section 2:* The challenges we face to 2050 *Section 4.2:* Ensuring safe drinking water *Section 4.3:* Delivering reliable water supplies *Section 5.2:* Delivering for our customers *Section 6.2:* Protecting our water environment
The discussion on the Climate Change key issue does not include sufficient detail of the impact on water services resulting from rising temperatures, reduced precipitation, and sea level rise.	Section 2 of the draft WSSP 2050 describes the challenges we face to 2050. In this section we explain the impact of climate change on our water services. This includes the effect that rising temperatures will have on our infrastructure, operations and receiving waters, the effect of reduced precipitation on water availability and water quality and the effect of sea level rise on flooding risk to assets and salt water intrusion of aquifers.	*Section 2*
Water scarcity, water efficiency and understanding of water sources, treatment and supply should be included as issues within the Awareness and Behaviour key issue.	We have developed actions under the strategic objective, "Supporting our Customers, Communities and the Economy ", which focus on educating and engaging our customers and communities on the value of our shared water resource. Engagement and education also form an important component of our initiatives to create awareness on efficient water usage to achieve our Strategic Aim on "Conserving our precious resources".	*Section 4.4:* Conserving our precious resources *Section 5.2:* Delivering for customers *Section 5.3:* Engaging with communities

WSSP 2050 Themes

Consultation feedback	Our response	Draft WSSP 2050 reference
The strategic and supporting objectives of the WSSP should align with the Water Service Policy Statement (WSPS)	Our WSSP aligns with the Government's vision for water services as stated in the WSPS. Our strategic objectives and are consistent with the objectives and priorities of the policy statement. Our strategy considers the complex and inter-related challenges we face in water service delivery and covers the three main objectives of the policy statement, which are: • Availability and Reliability • Safety and Quality • Sustainability	*Section 3:* Our Strategic Objectives at a Glance.
It is unclear what is meant by the term reliable drinking water.	We have included a Glossary of Terms in the draft WSSP 2050 and explained the term reliable in the context of our Strategic Objective, "Safe and Reliable Drinking Water" under the Strategic Aim: Delivering reliable water supplies.	*Glossary of Terms* and *Section 4.3*
Stakeholders have recommended we improve our data availability and enhance collaboration with infrastructure providers.	One of our approaches to addressing our future challenges is to leverage data and technology across our services to optimise our operations, manage our assets and engage with our customers. Our supporting actions identify how we intend to use data and technology to achieve our objectives and aims. Collaboration also forms a key part of our approach to delivering our water services and is integral to many of the actions across our strategic objectives. For example, our Strategic Aim on "Providing for Growth" is supported by actions involving collaboration with our key stakeholders to support planning policy and housing and industry development. We also propose to work with other infrastructure providers to ensure alignment across sectors and create a shared understanding of infrastructure needs.	*Section 8:* Approaches to meeting long-term challenges and various actions *Section 5.4:* Providing for growth
The WSSP 2050 should consider how the issues relating to drinking water, wastewater and bathing waters identified in EPA priority areas will be addressed. The WSSP 2050 should prioritise investment in urban wastewater treatment to reduce the impact on receiving waters and investment in source protection and drinking supplies at greatest risk.	Our strategic objectives on "Safe and Reliable Drinking Water", and "Protect and Restore the Environment" encompass supporting objectives and actions that address issues relating to drinking water, wastewater and bathing waters. For example, Action 1.1 commits to the development and implementation of Drinking Water Safety Plans to identify and address risks in water supplies and Action 3.5 commits to managing wastewater services to our regulatory obligations including compliance with the Urban Wastewater Treatment Directive and WFD environmental objectives.	*Section 4.2:* Ensuring safe drinking water *Section 6.2:* Protecting our water environment *Section 6.3:* Playing our part under the Water Framework Directive

Approach

Consultation feedback	Our response	Draft WSSP 2050 reference
Stakeholders have welcomed our collaborative approach and emphasised the importance of early engagement and clear communication.	Our Issues Paper explained how collaboration underpins our approach to long-term planning. We recognise the importance of working with our customers, communities, and stakeholders to achieve a sustainable water and wastewater service and to protect our valued environmental resource. Our draft WSSP identifies collaboration as a key part of our approach to support our objectives and to deliver our vision.	*Section 8:* Approaches to meeting long-term challenges Our strategic objective, "Support our customers, communities, and the economy" (*Section 5*) outlines our strategies to support our customers and communities
The Commission for Regulation of Utilities (CRU) has advised we learn from international best practice and collaborate with other infrastructure providers to ensure efficiency for developers and end users.	In our WSSP 2050 we identify collaboration as an important delivery approach to ensure sustainable water and wastewater services. This will include engagement with other infrastructure providers as we plan and deliver new and upgraded services. Our Strategic Aim on "Providing for Growth" is supported by actions involving collaboration with our key stakeholders to support planning policy and housing and industry development. We also propose to work with other infrastructure providers to ensure alignment across sectors and create a shared understanding of infrastructure needs.	*Section 8:* Approaches to meeting long-term challenges *Section 5.4:* Providing for growth

Legislation, policy and regulation and other Key Plans and Programmes

Consultation feedback	Our response	Draft WSSP 2050 reference
The WSSP should be consistent with, as far as practical, the National Planning Framework and other regional and local plans such as the Regional Spatial and Economic Strategies and County Development Plans.	The draft WSSP 2050 outlines our strategic direction to deliver water services at a national level. We have alignedd with the National Planning Framework (NPF), as appropriate, and considered updates during drafting. The NPF and Regional plan and local level plans also inform our tier 2 or tier 3 implementation plans, such as the National Water Resources Plan. Our supporting processes include engagement with the Department of Housing, Local Government and Heritage regarding capacity for new housing developments. Our Strategic Aim on "Providing for growth" is supported by Action 2.6 to "Engage and collaborate with key stakeholders to support national, regional and local planning policy".	*Section 5.4:* Providing for growth
The WSSP should consider the Marine Strategy Framework Directive 2008/56/EC, the Farm to Fork Strategy and the applicable Northern Ireland legislation.	The Strategic Environmental Assessment of our draft WSSP 2050 considered the Marine Strategy Framework Directive 2008/56/EC, the Farm to Fork Strategy and the applicable Northern Ireland legislation in assessing the WSSP. This assessment has informed the development of our strategic objectives, aims and actions.	*SEA report*

SEA and NIS interaction with the WSSP 2050

Consultation feedback	Our response	Draft WSSP 2050 reference
Stakeholders have requested that the WSSP clearly states our commitment to implementing the SEA and AA recommendations.	We have considered the SEA objectives throughout the development of the Plan and incorporated recommendations from both the SEA and AA processes in the actions we have identified to achieve our plan objectives. The outcomes of these processes are reported in the SEA Environmental Report and Natura Impact Statement report that accompanies the draft WSSP.	*SEA Report*

Annex 1: Submissions on the Issues Paper

Stakeholder	Stakeholder Category
Meath County Council (MCC)	Local authority
Eastern and Midlands Regional Assembly (EMRA)	Regional Assembly
Department of Agriculture, Food and Marine (DAFM)	Environment Authority
Bord Iascaigh Mhara (BIM)	Interested Stakeholder
An Fóram Uisce (AFU)	Regulatory
Department of Agriculture, Environment and Rural Affairs – Northern Ireland Environment Agency (DAERA – NIEA)	Environment Authority
Environment Protection Authority (EPA)	Environment Authority
Inland Fisheries Ireland (IFI)	Environment Authority
Commission for Regulation of Utilities (CRU)	Regulatory

Acronyms and Abbreviations

Term	Definition
AA	Appropriate Assessment
BAP	Biodiversity Action Plan
CRU	Commission for Regulation of Utilities
DMA	District Meter Areas
DWSP	Drinking Water Safety Plan
EED	Energy Efficiency Design
EPA	Environmental Protection Agency
EU	European Union
IDA	Industrial Development Authority
LA	Local authority
LMS	Leakage Management System
NBS	Nature-Based Solutions
NIS	Natura Impact Statement
NIS2	Network and Information Security Directive
NPF	National Planning Framework
NWRP	National Water Resources Plan
PO	Post Office

Term	Definition
RSES	Regional Spatial and Economic Strategies
SAC	Special Area of Conservation
SBTi	Science Based Target initiative
SDB	Supply Demand Balance
SEA	Strategic Environmental Assessment
SFP	Strategic Funding Plan
SPA	Special Protection Area
THM	Trihalomethanes
UÉ	Uisce Éireann
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive
WHO	World Health Organisation
WSPS	Water Services Policy Statement
WSSP	Water Services Strategic Plan
WSSP 2015	Water Services Strategic Plan 2015
WSSP 2050	Water Services Strategic Plan 2050
WTP	Water Treatment Plant

Glossary

Glossary Term	Definition
Abstraction	"Abstraction" means the doing of anything whereby water is removed or diverted by mechanical means, pipe, or any engineering structure or works from any part of the water environment, including anything whereby the water is so removed or diverted for the purpose of being transferred to another part of the water environment; [European Union (Water Policy) (Abstractions Registration) Regulations 2018 S.I. No. 261 of 2018].
Amenity	The social value or benefits that people derive from interacting with or being near a place. Amenity can include aesthetic and visual enjoyment, recreational opportunities, tranquillity and escape from urban stress, and cultural and spiritual significance. Amenity is influenced by the quality, quantity, and location of water assets.
Appropriate Assessment	An appropriate assessment is an assessment of the potential adverse effects of a plan or project (in combination with other plans or projects) on Special Areas of Conservation and Special Protection Areas. These sites are protected by National and European Law.
Aquifer	A natural occurring store of underground water formed when rainfall seeps into the ground.
Asset	Item, thing or entity that has potential or actual value to an organization.
Asset lifecycle	Asset lifecycle refers to every stage of an asset's life, from its initial planning to final disposal. This cycle includes assessing the need for the asset, designing and constructing the asset, operating and maintaining the asset and recycling or decommissioning the asset at the end of its useful life.
Biodiversity Net Gain	Biodiversity refers to the variety of living organisms including animals, insects, and plants. Net gain is the process of enhancing the overall biodiversity value.
Bioresource	A bioresource is any organic material, such as wastewater sludge, that can be recovered and repurposed as a source of energy or nutrients in wastewater treatment processes.
Catchment	The area of land where surface water from rainfall converges at a lower elevation, in a river, lake or an estuary. The catchment includes all drainage channels, tributaries (smaller streams) and floodplains.
Catchment management	A process that recognises a catchment as the appropriate unit for understanding and managing land, water and ecosystems.
Circular economy	In a circular economy, the value of products and materials is maintained for as long as possible. Waste and resource use are minimised, and when a product reaches the end of its life, it is used again to create further value.
Climate change	A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.
Customer	"Customer" means, in relation to the provision of water services, the occupier of the premises in respect of which the water services are provided. [Water Services (No.2) Act 2013].
Demand management	Measures taken by water companies and others to manage households and non-household demand for water. Measures include leak management, water efficiency and metering.

Glossary Term	Definition
District Meter Area (DMA)	A defined area of the distribution network that can be isolated by valves and for which the quantities of water entering and leaving can be metered.
Domestic water use	The amount of water consumed by households for various purposes, such as drinking, cooking, washing, gardening, and sanitation.
Emerging contaminants	Substances that are not regulated or monitored in drinking water but may pose a risk to human health or the environment. They include pharmaceuticals, pesticides, industrial chemicals and microplastics.
Habitat	The natural home or environment of a plant or animal.
Integrated water management	Integrated water management is an approach that considers all aspects of the water cycle to achieve the best outcomes for society, environment and economy when planning and delivering services. It also looks at how the water cycle relates to urban development and other land and resource management processes. Integrated water management takes advantage of the connections between these different components and develops solutions that have wider and longer term benefits.
ISO55000	ISO 55000:2014 provides an overview of asset management, its principles and terminology, and the expected benefits from adopting asset management.
Level of Service	The Level of Service is measured as the probability of interruption to services (for example, an interruption to supply in 50 years). For example, if the LoS is stated as 1 in 50, as a consumer, you would only ever expect to experience a water outage or severe limitations to your supply, on average, once every 50 years.
Megalitre (ML)	1 million (1,000,000) litres.
Nature-Based Solutions	Nature-Based Solutions (NBS) are defined as actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits" (UN Environment Assembly, 2022).
Non-domestic water use	The consumption of water for purposes other than household or personal use. It includes water used by industries, agriculture, commerce, public services, and environmental purposes.
Plan-led development	"Plan-led development" in Ireland refers to a strategic approach to development that is guided by long-term plans that ensures growth is well-coordinated and resources are used effectively. These plans include the National Planning Framework (NPF), National Development Plan (NDP) and regional and local plans that detail how specific areas will develop, including housing, transportation, and public services.
Protected site	An area that has been designated as having a special ecological of conservation value under EU legislation such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Natural Heritage Areas (NHA).
Remedial Action List (RAL)	A register of public water supplies with the most serious deficiencies and known to be most at risk, where the EPA is requiring Uisce Éireann to take corrective action to ensure the safety and security of the supplies [EPA].
Residuals	The by-products of the water treatment process that remove suspended solids from raw water or sewage. They can be liquid or solid depending on the source of water and type of treatment.
Sewerage	"Sewerage" is used to describe the pipes or network that convey sewage/wastewater. Uses of the term include "sewerage network", "Sewerage Scheme". While "Wastewater" are the preferred terms, "Sewerage" has been used historically in project names and continues to be used on this basis".
Smart meter	A digital device that records and communicates the amount of water used by a consumer.

Glossary Term	Definition
Smart network	A system that uses data driven technologies to enhance the efficiency and reliability of water distribution, wastewater collection and treatment processes. Some examples are sensors which collect and transmit data from different points in the network and data analytics which provide insights and solutions for water management challenges.
Stakeholder	Person or organisation that can affect, be affected by, or perceive themselves to be affected by a decision or activity.
Storm Water	Water that runs off impervious surfaces like roads and footpaths when it rains, that would have seeped into the ground and been taken up by vegetation before urban development. "Storm water" means run-off rainwater that enters any pipe. [Water Services Act 2007].
Storm Water Overflow	"Storm water overflow" means a structure or device on a sewerage system designed and constructed for the purpose of relieving the system of excess flows that arise as a result of rain water or melting snow in the sewered catchment, the excess flow being discharged to receiving waters.
Trihalomethanes	Trihalomethanes are formed as a by-product predominantly when chlorine is used to disinfect drinking water.
Urban	Densely populated areas that are built up with dwellings, buildings and infrastructure.
Wastewater sludge	Organic by-product of the biological treatment of wastewater comprising a mixture of organic solids and water. Also known as sewage sludge.
Water conservation	The practice of using water efficiently and reducing unnecessary water wastage. It can be achieved by improving water infrastructure (leakage reduction), adopting water-saving technologies, implementing water policies and regulations, and promoting water awareness and education.
Water sector	Any organisation that has a role in water management. For example, water companies, catchment management authorities, local authorities and regulators.
Water Services	Encompasses the management and delivery of both drinking water and wastewater services.

Uisce Éireann
Irish Water

Safeguarding our water for our future

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