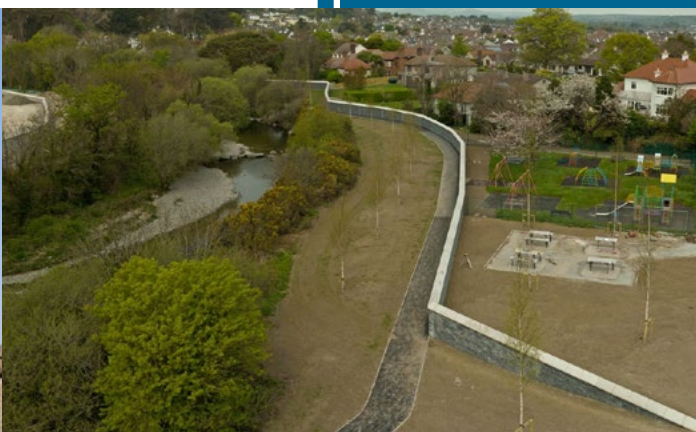


7th Annual Report on
Sustainable Water
A Long-Term Water Strategy
for Northern Ireland (2015 – 2040)



Department for
Infrastructure

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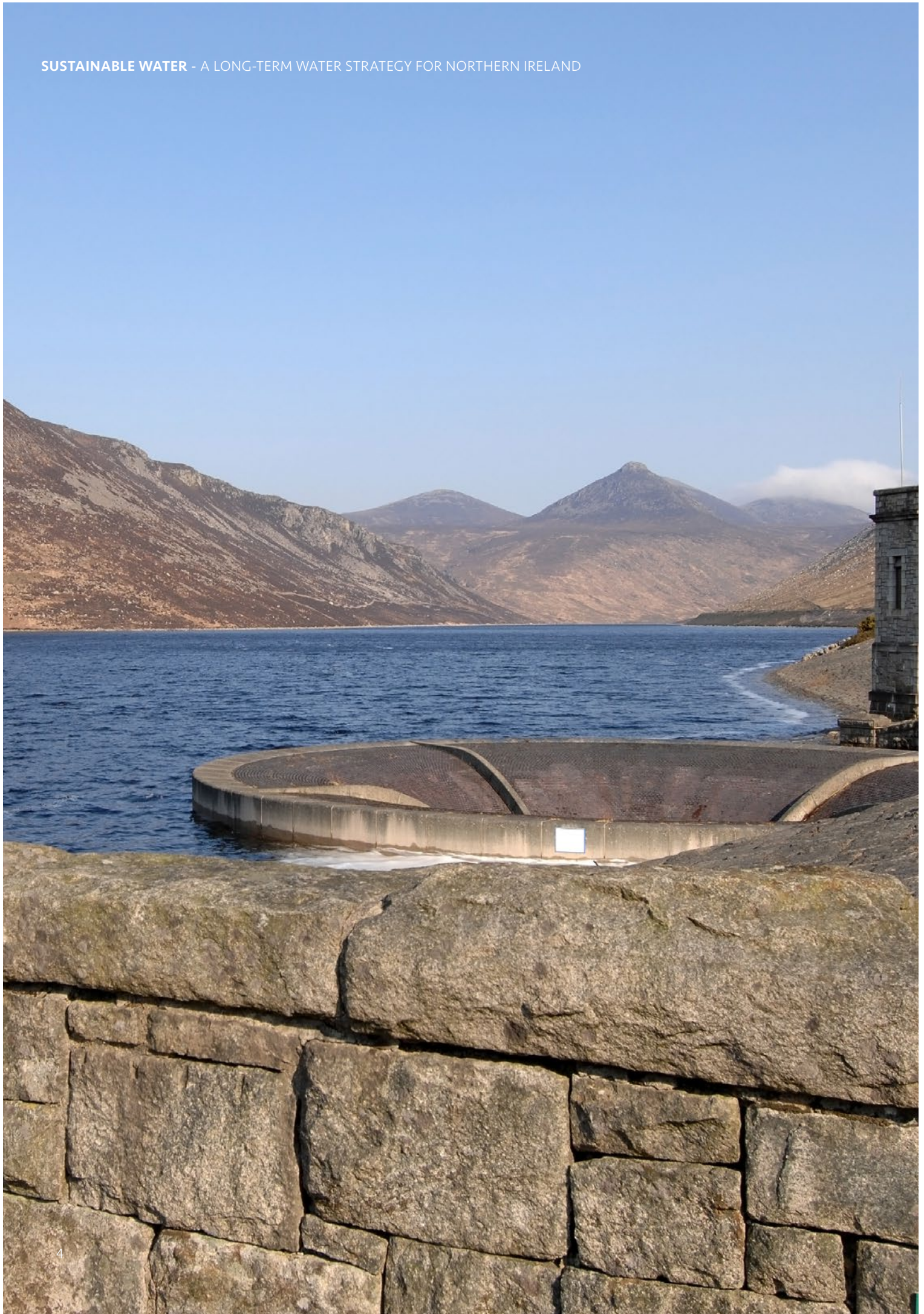
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JANUARY 2024

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Executive Summary

1. In March 2016, the Executive's Sustainable Water – A Long-Term Water Strategy for Northern Ireland was published. It sets out a common vision for a sustainable water sector. An Implementation Action Plan was agreed by all the relevant stakeholders and the Department for Infrastructure (DfI) is responsible for managing its implementation. This is the seventh Annual Report on the implementation of the Strategy.
2. The Implementation Action Plan originally contained over 200 actions, which were categorised as short-term (2015-21), medium-term (2021-2027) and long-term (2027-40). To date, 41 actions have been completed (35 short-term, 5 medium-term and 1 medium/long-term), whilst a large number of the remaining actions, are transitioning to business as usual.
3. Key achievements this period include:
 - i. NI Water has completed a proof of concept trial in respect of odour control, which has identified significant energy saving benefits and plans are in place to roll this out further in Price Control 21 (2021-2027);
 - ii. NI Water completed a Hydrogen and Oxygen Demonstrator project, which established the benefits of electrolysis and oxygen in the wastewater process;
 - iii. At Derg water treatment works (WTW), NI Water completed the construction of a new first stage clarification process, to improve the production and resilience of the plant, with commissioning being completed over the following year;
 - iv. NI Water has developed its climate change strategy to inform its journey to net zero. This focuses on mitigating NI Water's contribution to climate change and adapting to the associated risks;
 - v. The Shared Waters Enhancement & Loughs Legacy (SWELL) project, which focused on the construction of new wastewater treatment works (WwTW) and upgrades to sewerage networks on both sides of the border to address wastewater pollution in Carlingford Lough and Lough Foyle, is now complete. The project exceeded the output and result indicators defined by the Special European Union Programmes Body (SEUPB); and

vi. DfI Rivers Directorate completed Flood Alleviation Schemes (FAS) which provided enhanced protection to nearly 600 properties including the completion of the Shimna FAS in Newcastle which was identified as a Significant Flood Risk Area in the first cycle of the Flood Risk Management Plans and which suffered significant flooding in 2020; and

vii. In November 2022, a tidal surge threatened Belfast City Centre and DfI Rivers Directorate worked closely with other partners to strategically manage the Lagan Weir and Lagan basin, to create additional capacity for flood waters and help protect Belfast City Centre. DfI Rivers Directorate also helped to provide additional protection against this tidal surge by assisting in a coordinated multi-Agency approach, which placed almost 10,000 sandbags at a number of vulnerable locations along the riverbanks.

4. A number of key challenges exist as we continue to progress the Strategy:

- **Funding** - Full implementation of the Strategy will require significant financial investment over the 25-year period of the Strategy. The increasing pressure on the availability of funding is likely to have an impact on key stakeholders' ability to deliver

the objectives of the Strategy. Stakeholders therefore may need to prioritise the actions they can deliver.

- **Increased Water Consumption** - Increased periods of prolonged hot dry weather are likely to lead to more demand surges. Typically demand increases by 20% in extreme heat scenarios.
- **Climate Change** - The Climate Change Act and the need for key Strategy delivery partners to prepare climate change action plans, may have an impact on how Strategy actions are progressed.
- **Water Quality** - Water catchments continue to be impacted by a wide range of pressures including urban development, industry, agriculture, abstraction, forestry and chemicals.
- **Future Agricultural Policy** - The Strategy may need to flex to align with the shape and nature of future agricultural support and agri-environment schemes. The Executive's Sustainable Water - A Long-Term Water Strategy sets out a common vision for a sustainable water sector.

**The Executive's Sustainable Water
– A Long-Term Water Strategy
sets out a common vision for a
sustainable water sector.**



Introduction

5. This is the seventh Annual Report on the Executive's Sustainable Water - A Long-Term Water Strategy. The Strategy focuses on Economic Development & Growth, Affordability, Environmental Improvement & Compliance, Flood Risk Management and Sustainable Service Delivery.
 - iii. to achieve the environmental requirements of the Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 in a sustainable manner; and
 - iv. to provide sustainable water and sewerage services that meet customers' needs.
6. The Strategy focuses on four high-level aims to cover the key water needs within a catchment:
 - i. to provide high quality sustainable supplies of drinking water to households, industry and agriculture;
 - ii. to manage flood risk and drainage in a sustainable manner;
7. This document reports progress for 2022/23 against each high-level aim.

Drinking Water Supply and Demand



PROVIDING HIGH QUALITY, SUSTAINABLE SUPPLIES OF DRINKING WATER TO HOUSEHOLDS, INDUSTRY AND AGRICULTURE

DW AIM 1:

Manage Drinking Water Quality Risks in a Sustainable Manner from Source to Tap

8. The following work is being taken forward to achieve this aim:
 - i. NI Water's passive sampling projects are ongoing to monitor acidic herbicides in Carmoney, Glenhordial and Ballinrees sub-catchments, to identify specific areas of concern which will be targeted for further mitigation measures. In addition, peatland restoration works are progressing at Lough Bradan catchment;
 - ii. The High Mournes Management Plan has been agreed, which seeks to help protect and improve raw water quality by addressing grazing issues, erosion control, riparian planting, invasive species control, recreation/access, wildfire requirements and other land management improvements; and
 - iii. the Drinking Water Inspectorate (DWI) continues to work with NI Water to ensure that it reviews the mitigations identified within all the risk assessments of the Drinking Water Safety Plans and supports the prioritisation of investment to manage the drinking water quality risks identified.
9. NI Water continues to deliver its programme of lead pipe replacement as set out in its PC21 (2021-27) plan. This includes lead pipe replacements in response to customer requests and/or following an exceedance of the lead standard for samples taken as part of its routine sampling programme as well as the pro-active lead replacement programme. In addition, NI Water is involved in a current research project on the Chemistry of Lead with Water UK.
10. NI Water continues to use social media to highlight the risks posed by lead to specific postcodes in high risk areas.

11. In 2022, DWI continued to engage with NI Water to effectively regulate drinking water quality. DWI assessed 48 Drinking Water Quality Events of which four were categorised as “Serious” and 24 as “Significant”. Overall public drinking water quality for 2022 remained high with 99.91% compliance.

When required, enforcement action is taken by DWI, and in 2022, four enforcement notices were in place. These were in relation to pesticide contraventions at Derg WTW: pesticide, taste and odour contraventions at Ballinrees WTW; and aluminum contraventions at Drumaroad WTW.

12. In June 2023, NI Water completed the construction of a £12 million project to introduce a new treatment process at Derg WTW. Commissioning of this new plant will continue for a number of months.
13. DWI undertakes an annual monitoring programme of private water supplies, and in 2022, there were almost 12,000 tests carried out, with 99.02% of these tests compliant with drinking water standards at these supplies. The Service Level Agreement (SLA) continues to operate between councils and DWI. A review of the terms of the SLA, due by the end of 2023, will be facilitated through the

Drinking Water Working Group. In addition, three training sessions focusing on sample collection competency were delivered to council staff in June and November 2022 and February 2023. A total of 46 council staff attended this training, either for the first time or for refresher training.

Risk Assessment training has been put on hold whilst the on-line risk assessment tool has been developed in collaboration with Digital Services Division. The updated system allows for a clearer linkage between risks and mitigations and is comparable to other UK regulators.

DW Aim 2:

Meet the Water Demand Needs of Society, the Economy and the Environment

14. NI Water has developed its next Water Resource & Supply Resilience Plan, with consultation planned for early 2024.
15. During 2022/23, NI Water’s education team delivered 210 educational school visits and virtual talks on key water efficiency messages to primary schools. In addition, NI Water also attended 63 other education events during 2022/23.

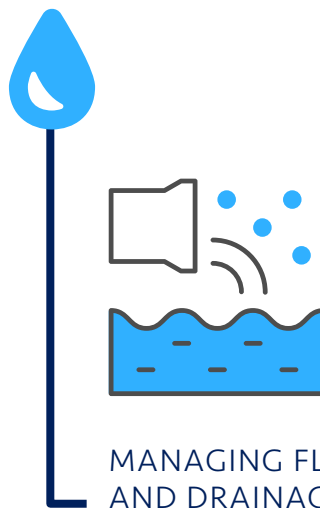
DW Aim 3:

Resource Efficient Drinking Water Treatment and Supply Chains

16. In 2022/23, NI Water implemented a number of energy efficiency projects across its water assets, primarily focusing on pump optimisation and control. In the PC21 period to date, NI Water has invested c.£3.2m in pump optimisation and control improvement work and this will help deliver energy benefits of c.£970k for the company whilst also improving resilience at these sites. This will help to unlock significant energy and carbon savings, reducing operating costs and providing a better value service to customers.
17. As part of the pump optimisation programme, work to upgrade pumps is progressing at Moyola WTW, Derg WTW, Seagahan WTW, Ballygomartin WPS, North Road WPS and River Bann Raw Water Pumping Station (RWPS). In addition, NI Water's borehole at Moneymore went live in the summer of 2022, which is a sustainable water source for NI Water's central supply zone and will reduce energy consumption for water supplied to the Moneymore area.
18. A wide range of sustainable projects have been undertaken by the Sustainable Catchment Area Management Practice (SCAMP) team with multiple benefits and objectives, including the completion of four weed-wiping projects.



Flood Risk Management and Drainage



MANAGING FLOOD RISK AND DRAINAGE IN A SUSTAINABLE MANNER

19. One of the key aims of the Strategy is to manage flood risk and drainage in a sustainable manner.
20. The Department for Infrastructure is the competent authority for implementing the Floods Directive in Northern Ireland, in partnership with other statutory bodies and departments, including NI Water, local councils and DAERA.
21. Initial preparatory work to facilitate a third cycle of the Floods Directive process commenced during 22/23.
22. The final progress report on the first cycle FRMP was produced in May 2022. The first annual progress report for the second cycle FRMP was completed in November 2023.

FRMD Aim 1:

Delivering Sustainable Flood Resilient Development

23. Land-use planning is key to managing flood risk and drainage issues. Dfl is working closely with council planning departments to enable them to make informed decisions in relation to flood risk policies that should be included in their new Local Development Plans (LDPs) and Development Management issues.
24. The Stormwater Management Group (SMG) is a multi-agency group jointly chaired by Dfl and NIEA. Its focus is to encourage the use of sustainable drainage systems (SuDS) as the preferred means of dealing with surface water and to identify the legislative and resourcing provisions necessary. The group is exploring various options for approval and adoption/maintenance of soft SuDS assets to encourage their uptake among developers.

In addition, a sub-group of the SMG is taking part in a pilot scheme whereby work is progressing with developers of private sites, where soft SuDS feature in the development, to help identify possible risks and issues and find solutions and mitigation measures which can be implemented to enable the SuDS proposal to proceed. Learning from these developments will help inform future SuDS policy and guidance.

The Department for Infrastructure also works with local councils on their Local Development Plans to encourage inclusion of SuDs within Plans, particularly referencing the additional benefits of soft SuDS.

FRMD Aim 2:

Managing the Catchment to Reduce Flood Risk

25. DfI and NI Water continue to carry out routine proactive and reactive maintenance, as resources permit, on publicly- managed drainage systems, particularly during periods of intense or prolonged rainfall. Specifically, Rivers Directorate has a rolling programme of annual watercourse and drainage asset inspection.
26. Statutory responsibility for the Reservoirs Act (Northern Ireland) 2015 transferred to the Department for Infrastructure with effect from 2 June 2021. Following consultation on the legislation necessary to commence and implement the Act, a consultation response was published in October 2022. The legislation to fully commence the Reservoirs Act will be subject to the return of the NI Assembly.
27. The Living With Water Programme requires significant investment in our wastewater treatment works and sewerage networks alongside integrated blue/green solutions. Throughout 2022/23, work has continued on the upgrade to Belfast WwTW, and the first iteration of Catchment Delivery Plans (CDPs), which contain a range of potential solutions within each catchment, were approved. Significant environmental and integrated drainage modelling work has been conducted with several ongoing modelling programmes, the outputs of which are being used to help to understand the complex interactions of the wastewater and drainage systems across Belfast. The Living With Water approach is being extended beyond Belfast, and the development of a Strategic Drainage Infrastructure Plan (SDIP) for Derry/Londonderry, similar to the one published for Belfast, commenced in June 2021. 'A Vision for Living with Water in Derry/Londonderry' has been published on the DfI website.

It is a precursor to the SDIP and outlines the approach being taken by the Department to develop the plan for the city. It is envisaged that public consultation on the draft plan will take place in spring / summer 2024 and that the final plan will be published in late 2024 / early 2025.

FRMD Aim 3:

Provide Sustainable Integrated Drainage in Rural and Urban Areas

28. NI Water has set in place a process for removing stormwater and infiltration from the sewer network on a prioritised basis, taking into account large flows at wastewater treatment works and pumping stations during rainfall events. The aim of this is to provide more capacity within networks for growth and also to reduce the risk of flooding.

During 2022/23, NI Water removed 91,898m² of permeable water from the combined sewer system.

FRMD Aim 4:

Improve Flood Resistance and Resilience in High Flood Risk Areas

29. Rivers Directorate spent almost £23m on drainage and flood alleviation schemes in 2022/23, an increase of almost £4m from 2021/22, which protected nearly 600 properties.
30. In 2022/23, Rivers Directorates repaired over 0.99km of designated culverts and 3.158km of fluvial defences. In addition to this, Rivers Directorates also maintained over 299 designated rural open watercourses and 100% of all designated culvert inlet screens. Rivers Directorates also inspected and maintained, as required, 83% of all designated urban open watercourses.
31. The Belfast Tidal Flood Alleviation scheme is currently progressing on site, with construction having commenced in four of the five flood cells and designs have been developed for other locations. Overall scheme completion is currently programmed for summer 2024.

See picture below of the Belfast Tidal Flood Alleviation Scheme (Ormeau Phase 2)

- 32. The Shimna River Flood Alleviation Scheme, in Newcastle County Down, was completed in October 2022. The scheme was designed to reduce flood risk from the Shimna River to 306 properties.

Four further flood alleviation projects identified through the flood risk planning process were completed

on the Flushbridge Stream, Lisburn; Hollywell Burn, Antrim; Newry River, Newry; and the Glenbrook River, East Belfast. A total investment of £7.1m for these projects, will enhance flood protection to 403 properties within Northern Ireland.

- 33. DfI Rivers is progressing flood alleviation projects in Newry, Omagh and Portadown.



FRMD Aim 5:

Extreme Weather Events

34. DfI is the Lead Government Department for the strategic co-ordination of severe weather emergencies. When the Met Office issue warning of a Severe Weather event, DfI engages with other government departments, strategic partners, local councils and emergency services, to play its part in a coordinated Multi-Agency Response.

The Regional Community Resilience Group (RCRG) continues to deliver community resilience work across Northern Ireland, with Rivers Operational Directorate providing strategic leadership in this important area of work to manage flood risk. Community resilience developed under the guidance of Rivers Operations Directorate, is identified as one of the key measures to assist in the management of flood risk.

The Rivers Operations Directorate, which supports the work of the RCRG along with multi-agency partners, helped to establish 7 new local community groups across Northern Ireland in 2022/23, to help them prepare for, and respond to, weather-related emergencies. This brings the total number of local community groups across Northern Ireland to forty. Engagement with these established communities has continued throughout the year and will remain an ongoing process especially during severe weather events, as well as the establishment of new communities in the aftermath of flooding events. The work of the RCRG continues especially around flood warning and informing activities, whilst the River Level Alert network continues to be expanded as necessary.



Environmental Protection and Improvement



PROTECTING AND ENHANCING THE WATER ENVIRONMENT IN A SUSTAINABLE MANNER

EP Aim 1:

Sustainable Environmental Policy and Regulation.

35. A pilot study is ongoing by NI Water in the Clay Lake drinking water catchment, to ascertain the pollutant load and its impact on raw water intake. This approach may be rolled out to other drinking water catchments and could help to inform changes to farming practices which has the ability to lower drinking water treatment cost and also improve water quality across Northern Ireland.

The Shared Waters Enhancement & Loughs Legacy (SWELL) project, which focused on the construction of new wastewater treatment works and upgrades to sewerage networks on both sides of the border to address wastewater pollution in Carlingford Lough and Lough Foyle, has now been completed.

EP Aim 2:

Sustainably Managing the Catchment to Improve Water Quality

36. The Sustainable Catchment Project (SCP) was established by DAERA to address cross cutting water quality issues in the Ballinderry, Dundrum Bay and Upper Bann catchments. The SCP is delivering capital support for a variety of on-farm measures and interventions designed to improve and protect water quality in the prioritised river catchments. The Rivers Trust acts as a facilitator and works at farm level.

These on-farm measures are identified and supported by a bespoke Water Environment Management Plan (WEMP) produced for each farm by Rivers Trust farm advisors. In 2022/23, approximately 90 farms across the three catchments received total funding of £1m to implement water quality improvements. Capital investment of £1.2m is being delivered in 2023-2024 and it is envisaged that the SCP approach can in future be extended to other catchments with water quality issues.

37. DAERA's Environmental Farm Scheme (EFS) aims to deliver specific environmental measures in order to restore, preserve and enhance biodiversity; improve water quality; and foster carbon conservation and sequestration in agriculture. The EFS contains a 'Higher Level', which is aimed at environmentally designated land and priority habitats, and a 'Wider Level' which is aimed at the wider countryside. Water quality measures are largely being delivered through the 'Wider Level' of EFS because it targets more intensively farmed land, where agricultural pressures on water quality are greatest. From January 2023, there are 3631 'Wider Level' agreements and 1362 'Higher Level' agreements, in place.
38. Uptake of water quality measures continues to be popular with 34% of 'Wider Level' agreements in tranche 6 including at least one of the four specific water quality options. In tranche 6, an additional 96k of riparian zones have been created, meaning that after six tranches, some 2,544km of watercourses have been protected by fencing and 309km of riparian zones created. The water quality measures implemented through EFS will help to reduce nutrient inputs and sedimentation arising from farming activities.
39. DAERA Forest Service supported 451 hectares of new grant aided woodland in 2022/23 supplying a wide range of ecosystem services, including flood mitigation. 1,327 hectares of new woodland is estimated to have been planted since Forests for Our Future was launched in March 2020.
- Forest Service continues to review forest management plans and identify further opportunities to create new riparian woodland to enhance water quality and protect aquatic habitats. Conifers planted adjacent to watercourses are removed in the course of harvesting operations in line with Sustainable Wood Production Plans. These areas are converted to water buffers of open ground or broadleaved woodland that is either planted or allowed to regenerate naturally. This riparian woodland is able to intercept surface water flow from areas at risk of contributing to diffuse pollution and have a positive influence on future water quality. During the reporting year 2022/23, an additional riparian woodland area of 5.8ha was created within the Forest Service estate.

EP Aim 3:

Effective and Efficient Wastewater Collection and Treatment

40. DAERA and NIEA are the environmental regulators of the water environment in Northern Ireland, implementing regulatory regimes for both water abstraction and discharges to the environment. NIEA continues to work with both NI Water and industry on improving compliance with Water Order Discharge Consents and Abstraction Impoundment Licenses.
41. In March 2023, DAERA completed its partnership working with DfI, the Department of Health, Queen's University Belfast and NI Water, to deliver a province wide SARS-COV-2 wastewater surveillance programme.

An Environmental Monitoring Hub for Northern Ireland was established at Queen's University, which provided information on SARS- COV-2 wastewater trends across Northern Ireland within 24 hours of sampling and also uses advanced techniques and genome sequencing to detect variants of concern. Testing up to 324 sites, with sampling three times per week, covering approximately 60% of the Northern Ireland population. Funding has not been secured for any future sampling.

42. NIEA continues to implement significant reform of water regulation, working across departments and industry, carrying out a root and branch review of water-related regulatory regimes. Some major advances have been made throughout 2022/23.
- i. **Enabling Development:** Significant engagement has taken place with NI Water on finding solutions to enable development in catchments with constrained networks or wastewater treatment works. NI Water is continuing to develop operating procedures which manage the connection of new development in areas of constraint, seeking out those sustainable solutions which take clean water out of the sewer to reduce the pressure in the system and to create capacity where it would not cause detriment to the environment;
- ii. **Private Sewerage Reform:** NIEA continues to reform the application process applied to private sewerage infrastructure in conjunction with NI Water. Throughout 2022/23, NIEA worked with NI Water to seek solutions for those housing developments which could not connect to a public sewer. Both the discharge consent application process and the NI Water article 161 adoption

application are now aligned to ensure private sewerage infrastructure is designed, constructed and operated in a way which protects both public health and the environment.

Reform of operational procedures across the private sewerage application process have been aligned to capture every opportunity to control any risks to the environment and future homeowners;

iii. **NI Water Compliance**

Assessment Reform: NIEA and NI Water continue to work together on the reform of compliance assessment. Continued development of the necessary tools is needed, in particular the design of a new compliance assessment database, to include data relating to flow and priority substances, in addition to the current sanitary parameters; and

iv. **Reform of Consenting**

Methodology: Continued review and development of operational consenting procedures to deliver improvement to water quality. NI Water has submitted the first outcomes of the Integrated Ecosystem Model for the Belfast Lough catchment. The findings provided valuable evidence of the source of the water quality issues and design of the necessary improvements to wastewater

infrastructure to achieve water quality improvements. NIEA has been working on changing the operational procedures to take account of this new evidence which will direct capital investment to those assets which are contributing the most to the water quality issues.

43. NI Water is continuing to install monitors on its combined sewer overflows / emergency overflow sites in PC21 and 83 monitors were installed in 2022/23.

44. NI Water has also focused on Process Improvement work at WwTW sites and has trialled real time control / digital twin technologies at two sites, Omagh WwTW and North Coast WwTW during 2022/23. Both of these trials have been positive to date, in terms of compliance, and energy benefits and further rollout is being considered.

NI Water has received approval from NIEA following an odour control proof of concept trial at the North Coast WwTW. This proved successful, with over £30k per annum of energy benefits being realised and business cases have been approved for further rollout of this approach at Carrickfergus, Ballymena and Whitehouse WwTWs.

EP Aim 4:

Maintain Sustainable Levels of Water in the Environment

45. NIEA works with NI Water on the review of abstraction licences and these reviews are based on sound evidence and strong Habitat Regulation Assessments to protect the environment. An extensive monitoring programme has been put in place by NI Water, guided by NIEA, to gather the appropriate level of evidence required to review abstraction licences. NIEA continues to work with NI Water on the review of abstraction licences ensuring the protection of the environment whilst also meeting the need for drinking water supply.

EP Aim 5:

Improving River and Coastal Water Morphology and Biodiversity

46. In October 2022, the DAERA Minister agreed the final River Basin Management Plan for Northern Ireland, however it cannot be published without Executive approval. The plan identifies key pressures originating from sewage-related and agricultural activities. The Plan also identifies existing and continuing measures, as well as new measures, to address and reduce the impacts of the key pressures affecting our water resources in Northern Ireland.
47. DfI and DAERA established the Coastal Forum as the agreed mechanism through which members, including local councils with a coastline, DfI, DAERA and the National Trust, work in partnership to progress coastal management issues.

In December 2022, a coastal policy workshop was held and two meetings of the Coastal Forum Working Group (CFWG) have taken place (June 2022 and June 2023), to report on the development of research projects and to consider future policy. A demonstration was given of the digital platform, on which the datasets collected in each of these research projects will be located.

DAERA in conjunction with other devolved administrations, the Department for Environment, Food and Rural Affairs (DEFRA) and key water stakeholders, is reviewing the Programme of Measures in the Marine Strategy Part Three. There have been some delays, but DEFRA advises that the revised Programme of Measures is now planned for publication in 2024.

48. DAERA carried out the following in-channel and riparian fisheries habitat improvement works, which included:

- i. River Bush - 200m restoration of nursery habitat in a degraded channel, with associated bank regrading and an addition of c.1000 tonnes of material. Reconnection of high value spawning habitat with nursery habitat, to reduce local bottleneck on juvenile survival. Restoration of five spawning beds, including raking of gravel, removal of weed, and the addition of 150 tonnes of spawning gravel;
- ii. Agivey River - restoration of spawning beds, including the addition of 80 tonnes of spawning gravel;
- iii. Margy River - enhancement of 140m of holding habitat in intertidal zone, including the addition of 200 tonnes of material. Reduction of intertidal/inshore predation of adults and smolts;

- iv. Upper Blackwater - 1.6km of instream nursery habitat and bankside revetment completed. Removal of impassable instream obstruction and introduction of 1860 tonnes of cobble stone;
- v. Upper Ballycassidy River - 500m of instream nursery habitat and bankside revetment completed, 500m of livestock fencing erected and 1025 tonnes of cobble stone introduced; and
- vi. Upper Ballinamallard River - reduction in livestock access to watercourse installation of three mains supplied livestock drinkers.

49. In 2022/23, Loughs Agency carried out over 50 separate habitat and fishery enhancement schemes in all the catchments of the Foyle system, including in the River Finn which flows into the Foyle. Most of these schemes were to address bankside erosion issues which were having a detrimental effect on salmonid spawning and nursery habitats but also affecting water quality in those areas.

The majority of these schemes were carried out using round boulder rock revetment, with some completed using soft engineering techniques, where posts and brash were used to collect sediment from the rivers. Spawning and nursery habitats were also introduced into these rivers by inserting clean gravel and nursery cobble rocks, to form rubble mats to benefit both invertebrate and juvenile salmonid populations.

In most of these sites, Loughs Agency planted native broadleaf trees to help provide stability to the banks, to act as another more effective filter against nutrients and run-off. The trees also provide shading for fish refuge and water cooling, as well as increasing the invertebrate biomass, as a result of leaf litter falling into the river, which in turn helps to increase the productivity of juvenile salmonids. Loughs Agency also works with Rivers Trusts and Angling clubs, to help deliver similar schemes in their areas.

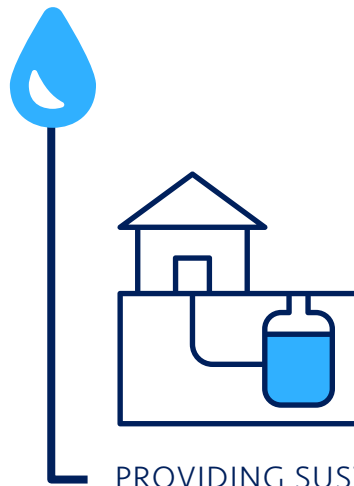
In 2022/23, Loughs Agency also delivered 12 Wet Woods projects in its catchments, which are a series of ponds and meandering swales, below farm premises, to collect and absorb runoff and sediment. In partnership with the Woodland Trust, these areas are heavily planted with native broad leaf trees, which accelerate the absorption of nutrients.

Loughs Agency is also liaising with DfI Rivers to look at habitat enhancement schemes in areas of rivers which would traditionally have been dredged for flood relief measures. In addition, Loughs Agency has already trialled such work in the Glusgagh Burn at Sixmilecross, which is a tributary of the Cloughfin River. This has been very successful, as proven by electrofishing results.

50. DAERA prepared a discussion paper on a new Nature Recovery Strategy and shared this with stakeholders, to develop the thinking for co- design and development of a new Strategy. The Strategy will need to address the 23 international targets that were agreed at the United Nation’s Convention on Biological Diversity (COP 15), which took place in December 2022. It is hoped to launch the new strategy for consultation in early 2024 subject to approval of incoming Ministers or considered under the NI (Executive Formation, etc) Act 2022 as amended.



Water and Sewerage Services



PROVIDING SUSTAINABLE WATER AND SEWERAGE SERVICES THAT MEET CUSTOMERS' NEEDS

WSS Aim 1:

Provide Efficient and Affordable Water and Sewerage Services

51. The water and sewerage services provided by NI Water is overseen and monitored by the Northern Ireland Authority for Utility Regulation, which sets challenging targets for year-on-year efficiency improvements.

In 2022/23, NI Water met or exceeded planned delivery in all, but seven, of the 45 Key Outputs. These are summarised in the following table on next page.

MEASURE	PROGRESS	OUTCOME
<p>DG2 - Properties at risk of low pressure removed from risk register by company action (number on the register)</p>	<p>The DG2 Register Refresh project was completed in July 2022.</p> <p>Consequently, until a new DG2 'baseline' is agreed as part of the PC21 mid-term review, the current PC21 Final Determination targets for properties on the register cannot be achieved. NI Water did however, achieve the 2022/23 target for the number of properties removed from the register through company action.</p>	<ul style="list-style-type: none"> • A further 143 properties were removed from the DG2 register by company action in 2022/23, bring the two year cumulative total (first two years of PC21) to 319 against a target of 292. • There are 1,780 DG2 properties on the register.
<p>Net Promoter Score (NPS)</p>	<p>The NPS targets set in the PC21 draft determination (32 in year 1, rising to 35 by year 6) were realistic and challenging; but the increased target in the final determination (42 in years 1-6) is considered by NI Water to be overly challenging. During 2022/23, NI Water supported the Customer Measures / Satisfaction working group in its reassessment of NPS targets, which will be reflected in the PC21 mid-term review.</p>	<p>In 2022/23, NI Water's NPS score has increased by 4 points to +36, which is well within the good range and compares favorably with other utilities.</p>

MEASURE	PROGRESS	OUTCOME
<p>Impermeable surface water collection area removed</p>	<p>NI Water removed 91,898m² of impermeable surface water collection area in 2022/23, against a target of 364,540m². The PC21 Business Plan indicated that the target for storm water removal was of low confidence and a 'development output' was included in the final determination. Potential projects are at the early stages of feasibility, and ongoing modelling work is key to defining the scope of each scheme.</p>	<p>With the submission of "scope certainty" batch 4 (March 2023) and the capital submission in July, NI Water has provided sufficient detail to enable the Utility Regulator's determination on these schemes as part of the PC21 mid-term review.</p>
<p>Water mains</p>	<p>The cumulative length of Watermains Rehabilitation pipelines completed by NI Water in 2022/23 was 123.33km. This is 20% higher than last year's output but below the average annual PC21 target of 139.7km. This is due to resourcing issues experienced by water mains contractors in 2021/22.</p>	<p>The PC21 Target is 838km, which equates to an average output of 139.667km per year. NI Water has regained pace in 2022/23 but not sufficiently to achieve the cumulative target for the first two years of PC21.</p>

MEASURE	PROGRESS	OUTCOME
<p>Unsatisfactory Intermittent Discharges (UID)</p>	<p>As noted in the PC21 Final Determination, a significant number of the drainage area studies that were needed to confirm requirements and define the UID programme were outstanding at that time. It was anticipated that the content of the programme and the priority of outputs would change as a consequence of this work. NI Water continues to engage with NIEA as they complete these drainage area studies and develop solutions for the UID programme, to ensure that the final list of outputs and the profile for delivery is reflective of need and agreed environmental priorities.</p>	<p>With the submission of “scope certainty” batch (March 2023) and the draft PC21 mid-term review capital submission in July 2023, NI Water will have clarity around the revised delivery profile for the UID programme.</p>
<p>Leakage</p>	<p>NI Water achieved total leakage of 163.2 Megalitres per day against a target of 150ML/d. This performance was impacted by both a significant summer event and a winter freeze/thaw. Full recovery from the widespread impact of these recent events will take some time.</p>	<p>Whilst in-month leakage figure was decreasing markedly by the end of 2022/23, this is not reflected in the outturn for the year because reported leakage is based on a 12-month rolling average.</p>

MEASURE	PROGRESS	OUTCOME
Security of Supply Index (SoSI)	In the western supply zone, where there is limited headroom, an increase in deionized water resulted in a small theoretical deficit of 1.23ML/d, giving a SoSI of 99.9951. The SoSI reporting methodology requires this to be rounded down to 99%.	An SoSI of 99% was achieved in 2022/23. The PC21 investment plan includes the Carmoney to Strabane strategic pipeline, which will provide future resilience to this area.

WSS Aim 2:

Provide High Quality Services to All Water and Sewerage Customers

52. NI Water continues to utilise sewer risk modelling and capacity mapping, to complement work on the register of properties at risk of internal (DG5) and external flooding. NI Water removed six properties from the DG5 register in 2022/23.
53. NI Water's Interruption to Supply (ITS) strategy has again been improved by developing its performance with training and engagement, as well as developing its processes through post interruption reviews. Improvements have also been through a new iteration of the IMS system, developing the smart network by installing real time pressure controls at WBS and maintaining supplies to customers through mobile booster trailers. NI Water has again reduced DG3 (properties experiencing interruptions to supply) and lost minutes per property in 2022/23, with DG3 figures of 1310 properties > 6hrs, and lost minutes per property of 6786.
54. Throughout 2022/23, NI Water's education team have continued to increase awareness of the need for water conservation and more environmentally friendly lifestyle choices. Educational campaigns have promoted and prioritised NI Water's key messages such as the Water Cycle, Water for Health, Bag it and Bin it, Fats, Oils and Greases and Water Efficiency. These topics are enhanced by seasonal messaging around topics such as conserving water, winter preparedness, play safe and bogus callers.

WSS Aim 3:

Providing High Quality Customer Service and Customer Information

- 55. In 2022/23, the number of written complaints received by NI Water was 1812, 100% of which were responded to within the target of 10 days. This is NI Water's lowest ever number of written complaints received.
- 56. NI Water's volume of unwanted telephone contacts was also below the 65,200 target for 2022/23, at 57,327. This is NI Water's best ever unwanted telephone contacts performance.
- 57. During 2022/23, NI Water achieved the target of first point of contact resolution by resolving 84% of issues at the first time of contact.
- 58. NI Water's Net Promoter Score (NPS), which is a globally recognised measure of customer advocacy, was measured through daily customer surveys, following an interaction. The NPS score can range from -100 to 100. In 2022/23, NI Water's NPS score was well within the good range at 36, however was below the target of 42 set for PC21.

- 59. NI Water has a number of Strategic Performance Indicators (SPIs) which are linked to the company's overall Strategic Priorities. NI Water has met, or exceeded, planned delivery in all but two (NPS and leakage) of the 11 indicators.

WSS Aim 4:

Provide Resilient and Secure Water and Sewerage Service

- 60. NI Water has developed its next Water Resource & Supply Resilience Plan, with consultation planned for early 2024. This latest plan will have a greater focus on sustainability, biodiversity and carbon.

WSS Aim 5:

Utilises its Estate to Promote Recreation, Biodiversity and Cultural Heritage

61. As part of NI Water's ambition to plant 1 million trees by 2030, almost one quarter of a million trees (224,460) have been planted at the end of August 2023.

62. NI Water continues to maintain the Mourne Wall throughout PC21 at a cost of £2.4m.

63. The Department for Infrastructure, alongside the Department for Housing, Local Government and Heritage (DHLGH) are continuing to work with NI Water and Irish Water on two potential projects under the Special EU Programmes Body (SEUPB) PEACE PLUS Programme. These projects are: (1) SWELL2 and (2) a drinking water quality project, which fall under Theme 5 of the programme, "Supporting a Sustainable Future".

They aim to protect and improve water quality of shared loughs, rivers and lakes, host educational and stakeholder engagement events and engage with farmers on sustainable water management techniques. These funding streams, under Theme 5 of the Programme, are unlikely to be launched until late 2023.



Conclusion

64. This seventh Annual Report on Sustainable Water - A Long-Term Water Strategy sets out the progress stakeholders are making to improve our water environment. Moving forward, the Strategy will need to take account of new and emerging policies/strategies, while ensuring that the actions in the Strategy continue to facilitate wider economic development and decarbonisation objectives.
65. The ever increasing demand on our water supply reinforces the need to manage our water resource as sustainably as possible, so that the needs of future generations can be met.