



Solar panels at Moneymore Borehole in County Derry/Londonderry.

**Strategic areas of focus**

Improve at source

Enough water for all

Tasty, clean and safe

Drive down leakage

Always on

**Sustainable development goals**



**Principal threats/opportunities**



Page 76 Read more about principal threats and opportunities.

**Strategic performance indicators**

Water	Unit of measurement	Target 2022/23	Actual 2022/23	Pass/Fail	Target 2023/24
Water quality compliance*	%	99.83	99.91	Pass	99.83
Leakage	MI/d (Million litres/day)	156.00	162.30	Fail	154.00
Reduction in supply interruptions in excess of: **					
• 6 hours	%	0.687	0.145	Pass	0.666
• 12 hours		0.087	0.000		0.084
• 24 hours		0.009	0.000		0.010

\* Calendar year target.

\*\* The >12 hr target is a Final Determination target. The >6hr and >24hr targets feed into the Supply Interruptions Overall Performance Score, which is also a Final Determination target.





This 10-hectare peatland plot along the shores of Lough Bradan Reservoir, County Tyrone, has been restored using the innovative 'cell bunding' technique.

### Improve at source

NI Water is one of the largest landowners in Northern Ireland and our largest land holdings tend to be in upper areas of drinking water catchments where peatbogs and heathland dominate. The peat bogs in our water catchments are amongst nature's superstars, providing a range of eco-system services. They provide a natural form of water purification by naturally filtering water, protect against floods by storing water, help reduce greenhouse gas emissions by removing and storing carbon and provide an important habitat for many species thus enhancing biodiversity. They can only do this effectively if they are not degraded.

#### Peatland resoration at Lough Bradan

Large areas of our peatlands are planted in commercial forestry in agreements dating back decades, which can create problems for both water quality and biodiversity. We have been working closely with Forest Service, Department of Agriculture, Environment and Rural Affairs (DAERA) in our drinking water catchments to negotiate back areas of commercial forestry planted on peat where there might be long-term benefits to water quality. In 2022/23, Forest Service offered to release some areas in Lough Bradan and at

Spelga reservoir catchments, back to NI Water for restoration. It is intended that the conifers on these sites will be felled, and we will then install a range of measures to re-wet and return the land to natural peatland conditions. This rewetting will eventually improve water quality by reducing colour and turbidity fluctuations in the nearby reservoirs as the peatland starts to recover. Over time it will also help enhance biodiversity and sequester carbon.

Pressures arise on our water resources from various sectors with agriculture being one of the major pressures. NI Water continues to engage with the farming community through several channels. We regularly attend DAERA Farm Business Development Group meetings (farming education group meetings), Environmental Farming Group Meetings and other events held by DAERA or The College of Agriculture, Food and Rural Enterprise (CAFRE) for farmers and present on local water treatment, water quality protection and pesticides best practice. We continue as active members of the Water Catchment Partnership to promote the message to always use best practice when using pesticides to protect our drinking water supplies.



Collaborating with the agriculture sector to improve water quality remains a key focus area for NI Water.

The High Mourne Management Plan has been completed and is now being implemented by the High Mourne Working Group to holistically plan and deliver land management activities in our Mourne landholdings. A more sustainable and more suitable grazing contract is being rolled out for the areas we lease to farmers in the region going forward. Following from this there are a range of measures to be addressed to manage the Mourne sustainably, so that the public can enjoy recreation for years to come, as well as being a vital water source for NI Water.

We liaise with The Woodland Trust to improve water quality, offset carbon, mitigate flooding and enhance biodiversity through riparian planting around our Faughan, Burntollet and Gledra river catchments where trees have been planted along watercourses above Caugh Hill and Carmoney water treatment works intakes

to stabilise the banks and prevent erosion from affecting raw water quality. We are also engaging in large-scale tree planting on our landholding. An application has been approved by DAERA Forest Service on our behalf to draw down Forest Expansion Scheme funding to plant more than 90,000 trees in the Annalong Valley within the 2022/23 planting season and areas have been secured around Stoneyford reservoir to plant over 100,000 trees which is important for habitat as well as future water supply provision.

We are exploring a Peace Plus project to build on the success of the Source To Tap INTERREG VA Project and deliver raw water quality improvements in a number of priority catchments. We have plans to undertake further peatland restoration projects in Dungonnell, Lough Bradan and Spelga catchments.



Collaborative work is ongoing in the Mourne Mountains, County Down, to maintain paths and restore natural habitats.



**Successful completion of Source to Tap**



The project's land incentive scheme delivered:

↓  
**234**

Water Environment Management Plans

**€1.16m**

On-farm interventions

**118**  
Farms

Weed-wiping

**146** acres on **73** farms

**76** Pesticide Storage Units

Livestock Exclusion Fencing

**55.69** kilometers on **79** farms

Alternative watering facilities

**63** farms

Clean & Dirty Water separation

**21** farms

Farmer innovation projects

**18** farms

**Enough water for all**

**Planning for the long-term**

The Water Resource and Supply Resilience Plan sets out how NI Water intends to sustainably maintain the balance between supply and demand for water over the long-term, and the operational and management options and activities available to respond to short-term critical events such as droughts and freeze-thaw issues. This has identified a number of water resource zones that are likely to be in deficit in the future and the next stage in plan development is the options assessment to identify the required mitigations to resolve these potential supply/demand issues.

Several new projects and operational interventions were completed in 2022/23, which have improved current supply/demand and resilience issues. These were driven by both the outputs of the last plan and a review into hot weather incidents. This includes among other activities, a new borehole at Moneymore, the construction of two new filters at Clay Lake water treatment works to improve performance and intake improvements at Lough Fea water treatment works.

Further work is continuing including the progression of the strategically important Castor Bay to Ballydougan project, which will facilitate transfer of additional flow from Castor Bay to Ballydougan.

The new Water Resource and Supply Resilience Plan will be published for public consultation in 2023/24, and once finalised, will support the PC27 Business Plan submission.



Aerial view of Moneymore Borehole in County Derry/Londonderry.

**Tankering 10 million litres of water**

Extreme weather, hot or cold, can have a major impact on assets, causing increased leakage within our network and on customer properties. Our changing climate is bringing more frequent and severe weather events such as heavy rainfall, heatwaves and extreme cold. These events can affect the quality and quantity of our water sources, placing pressure on our water treatment works.

The recent freeze/thaw in December 2022 is a reminder that our water system is vulnerable to climate change. This major operation started when the freezing weather changed to a thaw resulting in thousands of burst pipes on the water supply network and customer properties. After nearly a week of intense and focused work to repair bursts, ramp up water production, tanker additional supplies to vulnerable service reservoirs, while making appeals through the media for

help to identify leaks and conserve water, demand moved back to normal levels. As well as a maximum daily water production of 740 million litres of water, we moved almost 10 million litres of water through 550 tanker runs - keeping our customers in supply.



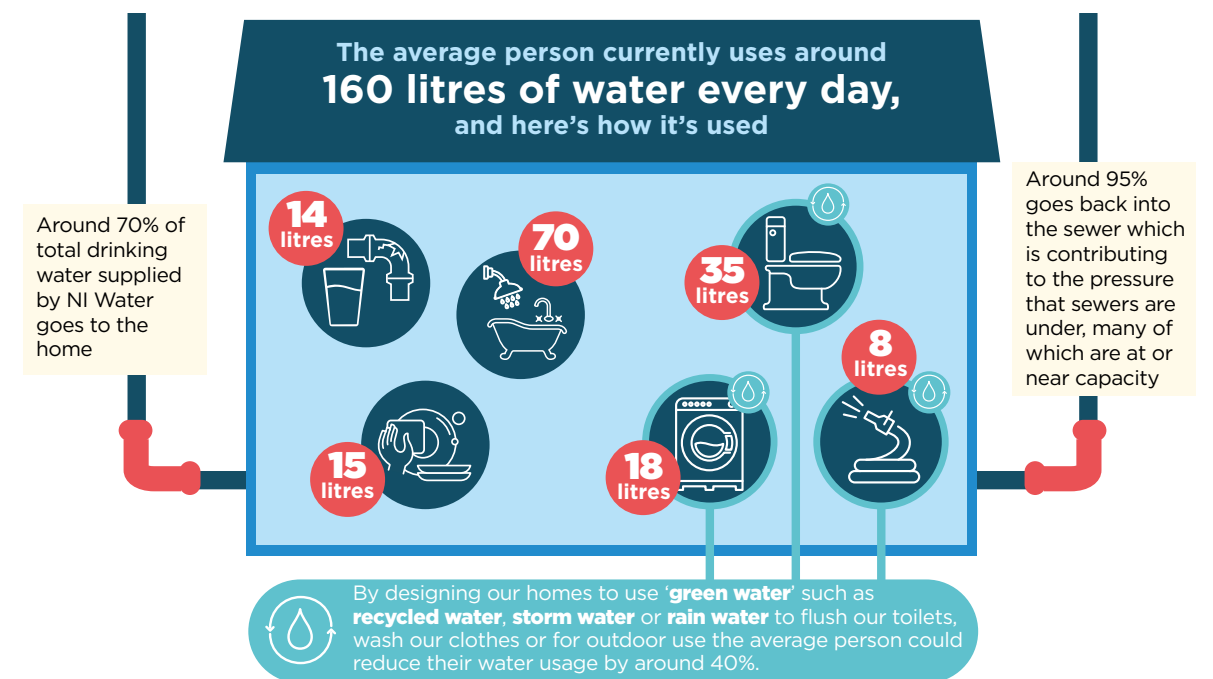
NI Water tanker being filled with treated water before being moved across Northern Ireland.

**Using less drinking water**

By better designing our homes we could reduce the total demand for drinking water by around 25%. Further reductions in demand can be achieved by installing more water efficient appliances in the home and changing our behaviours e.g., shorter showers. By using less, we can lower our

carbon footprint, improve biodiversity, reduce leakage, increase resilience, and ease pressures on our sewerage infrastructure.

Find out more at [www.niwater.com/water-saving/](http://www.niwater.com/water-saving/)



**Pumping £5m into the North West**

We completed a £5m Improvement Scheme at the River Faughan raw water pumping station in Campsie. The project involved the upgrade of the existing River Faughan raw pumping station by replacing ageing assets to ensure a reliable water supply to Carmoney water treatment works, including the replacement of the station's weir gates to provide extra security and resilience.

Head of Water Capital Delivery at NI Water said: "We are delighted to announce the completion of this major water improvement scheme, which will greatly benefit the local water infrastructure and resilience of the water supply for the North West, securing a reliable water supply to Carmoney water treatment works, which supplies water to around 110,000 customers in the North West. This will be particularly important during the winter months and other unplanned events, to provide our customers with an improved, more reliable service."

Deputy Mayor of Derry City and Strabane District Council added: "I was pleased to

have the opportunity to tour the site and witness the improvements first hand. This new multi-million-pound facility is good news for the Council, as it will enhance the water infrastructure and the security of the water supply for customers in the area supplied by Carmoney water treatment works."



Deputy Mayor of Derry City and Strabane District Council and NI Water and Contractor staff at River Faughan raw water pumping station, County Derry/Londonderry.

**Tasty, clean and safe**

Delivery of great tasting, clean and safe drinking water is central to what we do. It underpins the public health and economy of Northern Ireland.

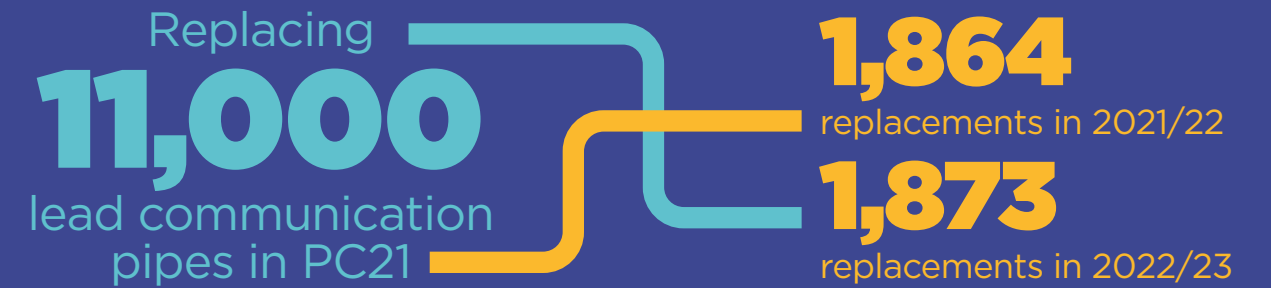
**World class on tap**

The water we supply for domestic use or food production must comply with the standards in the Northern Ireland Water Quality Regulations, which incorporate European Union standards and more stringent UK national standards. The standards are strict and generally include wide safety margins. They cover: bacteria; chemicals such as nitrates and pesticides; metals such as lead; and how water looks and tastes. To make sure that your water supply is clean and safe, we take samples for testing. Sampling and analysis are carried out 365 days per year to ensure that our drinking water is tasty, clean and

safe. Our sampling programme covers raw waters, water at various treatment stages, treated water going into supply from our treatment works, drinking water in the distribution system and at the customer tap. Samples are analysed by our scientists based in laboratories at Belfast and Altnagelvin. Overall drinking water quality compliance in 2022 was 99.91%, above the target of 99.83%. We publish a Drinking Water Quality Report each year, which is available on our website.

We are engaging with the DWI on potential changes to the Drinking Water Directive post Brexit. We have put in place a monitoring programme of sampling and analysis for the potential new parameters to assess the implications of these new requirements, should new drinking water regulations come into force.

**Tackling lead pipes**



The water leaving our water treatment works and in the distribution systems contains only trace amounts of lead. However, where lead has been used for supply pipes between the water main and the kitchen tap or in domestic plumbing, there is a risk of non-compliance at the customers' tap. So even with the removal of all lead pipes within our network there will be a risk to lead compliance from lead pipe remaining within customer properties.

A review of our website and our lead leaflet was undertaken in 2022/23 to improve the information on lead and lead pipe replacements for our customers. A media campaign to highlight the risk for lead pipework in customer properties and to encourage customers to replace lead pipework is planned for 2023/24.

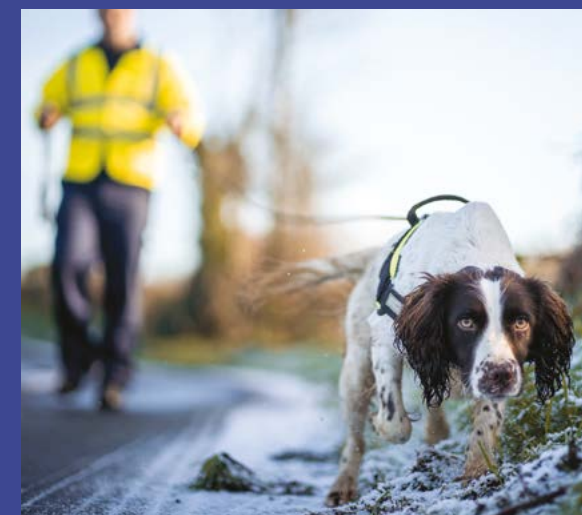
We continue to engage with stakeholders concerning the potential options for consideration in relation to addressing lead in private supply pipes, including the potential for the establishment of a new grant scheme, to enable private customers to access funds for replacement of their private supply pipe. These stakeholder engagements will help inform a submission to the Minister on options to remove lead from customers private supply pipes.

Find out more about reducing the risk of lead at: [www.niwater.com/lead-pipes/](http://www.niwater.com/lead-pipes/)

[https://www.youtube.com/watch?v=9k9FI0\\_FcZE](https://www.youtube.com/watch?v=9k9FI0_FcZE)

**Drive down leakage**

NI Water's leakage teams work around the clock locating and repairing leaks, saving water, a precious resource for hygiene and hydration.



Detecting leaks using a dog.

In 2022/23, we were making good progress with reducing leakage. However, in December 2022 the UK and Ireland experienced a major freeze thaw weather event which had a significant impact upon NI Water's and customer's pipework. This resulted in leakage being 6.3 million litres per day higher than the 2022/23 target of 156 million litres per day.

Our teams work 24/7 using highly skilled leakage detection and repair techniques. A variety of leakage detection methods are used to find leaks whether they are on water mains or within customer properties. Some of these techniques involve using a listening stick, a tried and tested way of detecting a leak as well as other methods such as satellites, ground microphones, acoustic loggers, drones, and dogs. The combination of traditional and new approaches to leakage management should help improve our leakage performance over the remainder of PC21.





Innovative satellite leak detection technology.

**Eye in the sky**

Much of the areas we serve are rural, with pipes located across fields and hills. It can therefore be extremely challenging to locate leaks when they do occur and hence the need to find new innovative ways of finding and addressing leakage. One of the innovative technologies being used to detect leaks is satellite imagery. Potential leaks are detected with the assistance of specialist satellite mounted technology which identifies water spreading from underground pipes. Leakage detection teams are then able to undertake follow-up work to determine if there is a confirmed leak.

If there is a leak on your property, then please get it fixed as just over a quarter of leakage is within the boundary of a customer's property. If you see a leak on the footpath or on the road, you can help by letting us know. You can report it by visiting <https://www.niwater.com/report-a-leak-or-burst-pipe/> or by calling our dedicated Leakline number on 0800 028 2011, open 24 hours a day, every day. Calls are free of charge.



**Always on**

Every week we are repairing bursts that occur on our water network of 27,000 km of water mains. Many of these bursts can result in interruptions to customers' supply or customers experiencing low water pressure.

**Every minute counts**

Our 'every minute counts' ethos helps to focus on ways to improve our performance and explore innovative solutions to minimise the time customers are off supply and keep them in supply with water.

Implementation of our interruptions to supply strategy is delivering real benefits for customers. In 2022/23, we had the best performance in relation to minimising water supply interruptions. We sought to improve our performance by undertaking post interruption reviews to establish key learnings; utilising water tankers in response to interruption to supply events and engagement with internal and external stakeholders. We now use emergency restoration trailers containing specialist equipment such as flexible hoses, pumps, cross-connections to increase our response capability. We have also purchased a new custom-made pumping trailer that has the capability to pump directly into the water network in an interruption scenario. Both types of trailers have been used at events this year, helping to maintain supply to customers.



NI Water's new custom-made pumping trailer.

We have continued to invest in the SMART networks programme to maintain a CALM network and increase visibility on all our water assets. Creating a calmer network reduces transients that can cause bursts and interruptions. We will be improving controls at water base stations and using our new digital tools as well as data analytics through our SMART network to monitor and control our field operations.

Visit <https://www.niwater.com/current-service-updates/>

