



Submission To Department of Housing Local Government and Heritage on the Water Quality and Water Service Infrastructure Climate Change Sectoral Adaptation Plan

30th July 2025

Introduction to the Water Forum

The Water Forum (An Fóram Uisce), established on a statutory basis in June 2018 in accordance with the Water Services Act 2017, facilitates national stakeholder input to water policy development in Ireland. The Forum has advisory functions to the Minister for Housing, Local Government and Heritage, the Water Policy Advisory Committee, Uisce Éireann and the Commission for Regulation of Utilities. The Forum consists of 27 members including representatives from a wide range of organisations with direct connection to water. We provide an opportunity for stakeholders to debate and analyse a range of issues, including the implementation of the Water Framework Directive and Ireland's River Basin Management Plan. The Water Forum's vision is for clean and healthy waters, supporting biodiversity, community wellbeing and economic sustainability. One of the roles of the Forum is to analyse water issues related to climate change and to develop appropriate policy advice.

The Forum welcomes the opportunity to engage with the Department of Housing, Local Government and Heritage (DHLGH) on the Water Quality and Water Services Infrastructure Climate Change Sectoral Action Plan.

Background to the Climate Change Sectoral Adaptation Plan for Water Quality and Water Service Infrastructure

Under Ireland's statutory National Adaptation Framework (NAF) seven Government Departments are statutorily required to prepare Climate Change Sectoral Adaptation Plans (SAPs), covering 13 priority policy areas. The Water Quality and Water Services Infrastructure Climate Change Sectoral Adaptation Plan has been developed in line with the Sectoral Guidelines 2024, and details the risks posed by climate change for the water quality and water services infrastructure sectors.

The vision for the Sectoral Adaptation Plan for Water Quality and Water Services Infrastructure (WQWSI SAP) is to *"Provide a resilient and sustainable water management system that protects and improves freshwater quality, adheres to regulatory standards, delivers safe and reliable water while creating a strong resilient water infrastructure."* It presents 3 Goals each with their own objectives. The vision, goals and objectives for the WQWSI SAP will be achieved through the implementation of the 59 actions that have been identified for the sector.

Goals	Objectives
Goal 1: Good Governance and Collaboration	1.1 Enhance resilience of the water sector through effective multi-stakeholder engagement
	1.2 Monitor and share data and information to increase resilience and promote adaptation
	1.3 Establish mechanisms to report on progress in adaptation implementation
Goal 2: Protect and Enhance Waterbodies	2.1 Protect and enhance aquatic ecosystems, while preventing further deterioration
	2.2 Protect, improve and restore freshwater quality and quantity
Goal 3: Secure, Resilient and Adaptable Water Services	3.1 Enhance water treatment infrastructure to improve resilience
	3.2 Ensure wastewater management and wastewater services are delivered in a safe and reliable manner

Figure 4.1: WQWSI Sector SAP Goals and Objectives

Background to the Forum’s Submission

The Forum has previously commissioned a number of research reports which have been used to draw recommendations for this consultation:

- Climate Change Impacts on Ireland’s Water Resources, McGrath et al., 2023. [Policy-Brief-Climate-Change-Impacts-Summary.pdf](#)
- Addressing Projected Climate Change Risk to Water Quality in Ireland, McKeown et al., 2023. [Addressing Projected Climate Change Risk to Water Quality in Ireland](#)
- Projected Climate Change in Ireland and Associated Risk to Water Quantity; a Review of National Policies, Governance and Plans for Future Proofing Ireland’s Water Supply, O’Loughlin & Mozafai, 2023. [Projected-climate-change-in-Ireland-and-associated-risk-to-water-quantity_final.pdf](#)
- A Framework for Improving Domestic Water Conservation in Ireland, Cotterill & Melville-Shreeve, 2022. [A-Framework-for-Improving-Domestic-Water-Conservation-Report.pdf](#)
- The Value of Water Conservation - A Cost Benefit Analysis of Setting Water-use Targets at Building Scale to Promote Sustainable Water Management in Ireland, Gallagher & Gill, 2025. [Water-Forum-CBA-Report-28.03.25.pdf](#)

The Forum has also published the “A Framework for Land and Landscape Management – Protecting and Enhancing our Environment”, which recommends a catchment -based approach to environmental management, identifying actions that have multiple benefits across the whole environment. [TWF-FILLM-Report-Feb21-v9WEB.pdf](#)

Water Forum Recommendations to the draft Climate Change Sectoral Adaptation Plan for Water Quality and Water Service Infrastructure

Additional Risks:

Following review of Section 2.2 *Current Climate Impact and Consequences* and Section 3 *Priority Impact Assessment*, the Forum presents 4 additional risks below which should be considered and included in the assessment. These were highlighted by McKeown et al., 2023 in a review of climate change impacts on water quality in Ireland.

Water Forum Recommendations – Priority Impact Assessment

- Increased lake water temperatures will alter thermal stratification patterns (lake mixing) resulting in major physical, chemical, and ecological effects in freshwater lakes and thus impacting on water quality, including an acceleration of lake deoxygenation with subsequent effects on nutrient mineralisation and phosphorus release from hypoxic and/or anoxic lake sediments.
- Increasing temperatures and stratification will exacerbate effects of eutrophication and increased frequencies of cyanobacterial blooms. Some cyanobacteria produce cyanotoxins, which threaten the safe use of water for drinking and recreational activities. Cyanobacterial blooms can also reduce dissolved oxygen, reduce light penetration and increase the pH of water.
- Increased contamination and mobilisation of nutrients associated with high-intensity precipitation events and flooding should also be included for groundwater in karst regions.
- Atmospheric wet deposition of nutrients, particularly nitrogen and ammonium should be included as a pollutant source in surface waters.

Goal 1: Good Governance and Collaboration

Objective 1.1 Enhance resilience of the water sector through effective multi-stakeholder engagement

The Forum supports the need for effective multi-stakeholder engagement and collaboration due to the cross-cutting nature of climate change and its impacts across the various sectors.

Water Forum Recommendations - Objective 1.1

1. The Forum recommends that a new action is added to Objective 1.1 (Goal 1) which identifies the role of the newly established DHLGH National Water Conservation Working Group in relation to increasing water resilience. This working group has been established to advise the Minister for Housing Local Government and Heritage on a future strategy for water conservation and prioritisation of resources during periods of water stress. The working group has a wide representation including the CCMA, DHLGH Water Division, DHLGH Building Standards Authority, EPA, Uisce Éireann, An Fóram Uisce, NFGWS and DECC.
2. The Forum recommends that a new action is added in relation to the cross-sectoral collaboration that is required to address the cascading risks between climate change, water and public health. This should include the need to review and assess the potential worsening conditions of contamination of drinking water with pathogens due to increased flood or high rainfall events, particularly in private wells.

3. The Forum recommends that education and awareness should play a crucial role in addressing water-climate-related issues and climate change adaptation in Ireland and the following actions should be included as part of public participation actions within Objective 1.1 of Goal 1 (Good Governance and Collaboration):
 - a. Public awareness campaigns (television, radio, social and print media) should be launched targeting the general public about water and climate related issues. These campaigns should highlight success stories and inspire individual action.
 - b. Education should focus on the bottom up understanding of water, from the processes that underpin treatment and supply, to the energy and resources required to produce drinking water. This education is necessary to educate people on the value of protecting and conserving water.
 - c. Water-climate topics should be incorporated into school curricula at all levels to raise awareness among students and promote a deeper understanding of water-related challenges and solutions.

Objective 1.3 Establish mechanisms to report on progress in adaptation implementation

There is no information presented in the draft Climate Change Sectoral Adaptation Plan on how the plan will be monitored, tracked and assessed for impact.

Water Recommendation – Objective 1.3:

4. The Climate Change Sectoral Adaptation Plan for Water Quality and Water Services should include targets, metrics and key performance indicators for all actions to ensure transparency and accountability in adaptation planning. These should be added as additional columns within the action table.

Goal 2: Protect and Enhance Waterbodies

Objective 2.1: Protect and enhance aquatic ecosystems, while preventing further deterioration.

The Forum acknowledges that many of the actions in Objective 2.1 are the ongoing and proposed actions for the 3rd Water Action Plan. The Forum notes however that these are not presented in the context of climate change adaptation.

Water Recommendation – Objective 2.1

5. The Forum recommends that a new action is added where the catchment management plans, being developed and piloted for the 3rd Water Action Plan, will be aligned with the needs for climate change adaptation. This is to ensure that as these plans develop and evolve, they are not only dealing with the current pressures and water quality challenges, but they are also looking at future challenges that will be accelerated by climate change.

Objective 2.2: Protect, improve and restore freshwater quality and quantity

A catchment connects water and nature from source to sea, linking upland areas, rivers, wetlands, groundwater, and coastal systems. Climate change is disrupting the natural flow in these dynamic systems, intensifying the water cycle and amplifying risks, which will vary regionally and between different catchments. There are 46 catchments in Ireland and each will respond somewhat differently to climate change.

Water Forum Recommendations – Objective 2.2

6. Integrated catchment management should be central to decision making around climate adaptation in Ireland. The catchment should be used as the management unit for climate adaptation planning to take account of spatial variability in projections in storms, flooding and drought, and the impacts they have on water quality and water services. This approach should be reflected in the Sectoral Adaptation for Water and Water Services.
7. Drought management plans should be developed for each of the 46 catchments in Ireland (where data allows) – this should be a new action in the final SAP.
8. Flood management plans should be developed for each of the 46 catchments. This should be a new action in the final SAP.

Goal 3: Secure, Resilient and Adaptable Water Services

Objective 3.1: Enhance water treatment infrastructure to improve resilience

Recommendations – Objective 3.1

The Forum supports the Objective 3.1 to enhance water treatment infrastructure to improve resilience. However, despite the draft plan outlining the impacts of extreme weather events on drinking water quality, there are no actions presented to address these challenges for infrastructure.

9. The Forum recommends that a new action is added to Objective 3.1 – to review and assess infrastructure requirements at water treatment plants under future climate change scenarios, in particular to identify additional treatment requirements which may be required to adapt to changing source water quality and potential treatment requirements. Staff at operating water treatment plants will also need to be trained to identify and respond to changing source water quality. For example, Ireland already has the highest reported trihalomethanes (THM) exceedances in potable water across the European Union, which could worsen with increased temperatures and drying of organic rich soils expected with climate change.
10. The Forum recommends that a new action is added to Objective 3.1 that nature-based solutions should be considered as a drinking water source protection measure as a climate adaptation tool to mitigate the impacts of climate change on drinking source water quality.
11. The Forum recommends that an action is added to Objective 3.1 for the development and planning for interconnected supplies and new sustainable water sources. This should be given focus, particularly for water supplies in the Eastern and Midlands Region where there is already limited capacity and resilience.

There is a notable gap in climate change adaptation measures in relation to drinking water sources from group water schemes (representing ~6% of the population) and private wells (representing ~10% of the population). In its position on Rural Water in 2023¹, the Water Forum recommended that every group water scheme should be planning for future impacts from climate change, including changes to water availability, water abstraction pressures during drought periods, changes to raw water quality and treatment requirements (e.g. THMs, Manganese). The Forum recommends that the National Federation of Group Water Schemes and the Local Authorities continue to engage with the schemes to ensure that each scheme is preparing for climate change adaptation.

12. The Forum recommends that Objective 3.1 is strengthened with an action that Group Water Schemes will be supported by the DHLGH, the National Federation of Group Water Schemes

¹ [AFU-Position-on-Group-Water-Schemes-FINAL.pdf](#)

and Local Authorities to assess and plan for future impacts of climate change on each group water scheme.

Increasing frequency of extreme weather events further exacerbates pathogen transmission to groundwater, putting groundwater drinking water sources at risk. In the past decade, the notification rate for of Shiga toxin-producing *Escherichia coli* (STEC) has been up to 10 times higher in Ireland than the EU average and is strongly associated with private well water exposure. The Forum has previously highlighted the need for improved supports for private well owners², as contamination risks will amplify under future climate change scenarios.

13. The Forum recommends that a new objective is added to Goal 3 (Secure, resilient and adaptable water services), which focuses on private wells as a drinking water source. Effective communication of private well contamination risks, maintenance needs and improved supports to well owners will be crucial to adapt to the increased risk of well water contamination under future climate change scenarios.

Water Quantity

Despite the draft plan indicating the likelihood of increased temperatures (coinciding with increased water demand) and increased frequency of dry and drought conditions – there are no actions presented in the draft plan to address the need to reduce water demand and increase water efficiency.

14. The Forum recommends that a new objective is added to Goal 3 in relation to the use water conservation initiatives as a tool for climate change adaptation. This new objective should include the following actions:
 - a. The DHLGH to develop a national water conservation strategy, supported by new DHLGH led national water conservation team (reference to Water Forum policy position on Water Conservation, Cotterill, 2022). One of the objectives of this team is to prioritise water resources during times of water stress.
 - b. A commitment for new buildings to be both water and energy efficient (reference to Water Forum policy position on Water Conservation, Gallagher & Gill, 2025)
 - c. An Education and Awareness campaign is required to educate the public on the need to conserve water due to the future threat from climate change. This should include education on the bottom up understanding of water, from the processes that underpin treatment and supply, to the energy and resources required to produce drinking water. This, along with upskilling of plumbers and building contractors in water efficiency technologies and measures, is essential to support the reduction in demand required from both domestic and non-domestic users.
 - d. UE Leakage Programme needs to be supported and accelerated as this will increase resilience in water supply.
 - e. UE Water Stewardship Programme needs to be supported and accelerated, to ensure all non-domestic customers are being advised and encouraged on using water efficiently, particularly in the context of future challenges in climate change.

² [Water-Forum-Position-on-Private-Wells-FINAL.pdf](#)

Despite Sections 2 and 3 of the draft Climate Change Sectoral Adaptation Plan indicating the likelihood of increased temperatures leading to drought conditions, there are no proposed actions for drought management plans.

15. The Forum recommends that a new action is added to Goal 3 that drought management plans need to urgently be developed for Ireland to better adapt to projected increases in drought during summer months. This is in line with requirements set out by the European Commission. These should be developed for every catchment and coordinated nationally due to the spatial variation expected. It is likely this will highlight data gaps for adequate drought management planning, which can then support decision making about how to fill these data gaps. Drought management and supporting legislation is considerably more advanced in the UK and elsewhere in Europe than in Ireland at present.

Objective 3.2 Ensure wastewater management and wastewater services are delivered in a safe and reliable manner

The Forum supports Objective 3.2 and the relevant actions present to address wastewater as pressure on water quality. The Forum is of the view, however, that the plan lacks actions that are specific to dealing with wastewater management and wastewater services under future climate change scenarios.

Water Forum Recommendations - Objective 3.2

16. The Forum recommends that a new action is added to Objective 3.2 to review and assess infrastructure requirements at wastewater treatment plants under future climate change scenarios. Flood management plans should highlight where risks exist to wastewater services and management to prevent pollution of waterbodies due to flooding of assets, disruption of wastewater services and associated public health concerns.
17. The Forum is of the view that having a national strategic overview for urban wastewater is required to align wastewater actions with climate change adaption plans for the sector. This could be included as an action for Uisce Éireann to commit to completing National and Regional wastewater strategies to provide strategic direction to wastewater services in meeting their climate change sectoral adaption goals for wastewater, in addition to meeting EU water and environmental legislation.