Uisce Éireann
Irish Water

Report: May 2026

Draft Galway Wastewater Strategy

Strategic Environmental Assessment: Environmental Report Non-Technical Summary

Tionscadal Éireann
Project Ireland
2040

6 CLEAN WATER AND SANITATION

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1. Introduction and Background

This Non-Technical Summary (NTS) provides an accessible overview of the Strategic Environmental Assessment (SEA) Environmental Report for the draft Galway Wastewater Strategy (GWS)[1]. It summarises the key elements of the full report, including:

- The background, purpose, vision and objectives of the draft GWS
- The legal requirements for SEA and Appropriate Assessment (AA)
- The development of the draft GWS (i.e., approach, timescales, consultation etc.)
- A summary of the environmental baseline and the key issues influencing the Strategy
- The SEA Topics and Strategic Environmental Objectives (SEOs)
- The assessment of interventions and options
- The mitigation measures, monitoring plan, and next steps

This summary has been prepared on behalf of Uisce Éireann (UÉ) in accordance with the requirements of the Strategic Environmental Assessment (SEA) Directive (2001/42/EC)[2]. In Ireland, the SEA Directive is transposed into law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004), as amended. These Regulations set out the procedures for SEA screening, the preparation of Environmental Reports, consultation, decision-making, and monitoring. The European Union (Land Use Planning – Strategic Environmental Assessment) Regulations 2025 (S.I. No. 456 of 2025) further update and modernise the SEA framework as it applies specifically to land-use planning and development, strengthening procedures, public participation, and the integration of environmental considerations into planning decisions.

The SEA Directive requires that the likely significant environmental effects of plans and programmes are identified and assessed during their preparation, that reasonable alternatives are examined, and that statutory environmental authorities and the public are consulted prior to decision-making. SEA screening for the GWS confirmed that these requirements apply and that a full SEA is required.

UÉ is Ireland's national water utility; responsible for providing safe, reliable drinking water, and for collecting, treating, and safely returning wastewater to the environment. The utility is regulated by the Commission for Regulation of Utilities (CRU), which oversees customer interests and funding, and by the Environmental Protection Agency (EPA), which sets and enforces standards for drinking water quality and wastewater discharges. The Water Services Strategic Plan (WSSP) 2050[3] sets out UÉ's long-term vision, objectives and how they are to be achieved over the next 25 years, which aims to protect and restore our environment through the sustainable management of water services infrastructure.

[1] Uisce Éireann. 2023. Draft Galway Wastewater Strategy (GMA, Athenry, and Moycullen). Available at: Draft Galway Wastewater Strategy. Accessed: March 2026.
[2] Rialtas na hÉireann. 2025. Strategic Environmental Assessment (SEA). Available at: Strategic Environmental Assessment (SEA). Accessed: February 2026.
[3] Uisce Éireann, July 2025. Water Services Strategic Plan 2050. Available at: Water Services Strategic Plan 2050. Accessed March 2026.

1.1 Draft Galway Wastewater Strategy

Delivering sustainable and resilient wastewater infrastructure requires a long-term, strategic planning approach. The draft Galway Wastewater Strategy (GWS) identifies sustainable solutions to support projected growth in the Galway Metropolitan Area (GMA) and surrounding towns, including Athenry and Moycullen (**Figure 1-1**). The study area includes four wastewater treatment plants (WWTPs): Mutton Island, Athenry, Moycullen and Claregalway. Mutton Island WWTP serves the GMA and is the largest facility in the region. There are >50 wastewater pumping stations and 29 stormwater overflows (SWOs) across the four WWTP agglomerations in the draft GWS study area, with the majority located in the GMA.

Rapid population and economic growth, combined with climate change pressures such as increased runoff and sea level rise, are expected to place increasing demands on wastewater networks, treatment capacity and receiving waters over the next 50 years. The draft GWS assesses existing infrastructure, identifies current and future capacity constraints, and outlines potential upgrades or new infrastructure to support sustainable development, service resilience and environmental protection. The strategy aligns with relevant statutory requirements, including the Water Framework Directive (WFD) and the recast Urban Wastewater Treatment Directive (rUWWTD), and adopts a planning horizon to 2080.

Figure 1-1: Draft GWS Study Area (outlined by dashed black line), which includes Moycullen and Athenry. Dashed blue line outlines the Galway Metropolitan Area (GMA).

2. Development of the Draft Galway Wastewater Strategy

2.1 Aims and Objectives

The draft GWS aims to support customers, communities, and the wider economy; protect and enhance the natural environment; and deliver resilient, future-ready wastewater services. The following key aims have been developed for the draft GWS:

1. **Comply with Legislation -** Develop a sustainable wastewater strategy for the GWS study area which achieves compliance with current European and National legislation.
2. **Meet Growth Demands –** Identify ways of meeting the current and future growth demands of the GWS study area, considering Development Plans, the National Planning Framework (NPF), Regional Spatial and Economic Strategy (RSES), and anticipated development up to 2080.
3. **Safeguard the environment and protect public health –** Adopt a strategy which protects and enhances the environment and public health, consistent with UÉ Water Services Strategic Plan (WSSP) and the Government of Ireland Water Services Policy Statement (WSPS).
4. **Adapt to Climate Change –** Ensure the strategy is resilient to the likely effects from climate change.
5. **Adaptable -** Develop an adaptable strategy that can respond to different future scenarios, ensuring that the strategy remains effective in the long-term.
6. **Develop a delivery timeline** – Produce a prioritised delivery timeline that translates the draft GWS recommendations into clearly timed, actionable projects with measurable outcomes.

2.2 Strategic Challenges

The draft GWS aims to address the following strategic challenges:

Growing Population and Economy: Ireland has the third fastest growing population in Europe, and our economy is continuing to expand. Greater Galway is not only a major regional metropolitan hub but is also identified as a key driver of Ireland's economic, environmental, and social development under the National Planning Framework (NPF[4]) and the Regional Spatial and Economic Strategy (RSES[5]) 2020-2032. The draft GWS has been aligned with these planning frameworks, and with local development plans for Galway City and County. The draft GWS has explored growth pressures by modelling future wastewater generation across multiple growth scenarios, extending to 2080.

Climate change: Climate Change impacts include wetter winters, more intense rainfall events, increased storm surges, rising sea levels, changes in river flows, as well as drier summers, warmer temperatures, and periods of drought. The Mutton Island (Galway City) agglomeration is prone to tidal influence due to its location on the coast. Rising sea levels affect coastal infrastructure and can lead to increased flood risks at WwTPs.

[4] Rialtas na hÉireann. 2018. Project Ireland 2040. National Planning Framework. Available at: Project-Ireland-2040-NPF.pdf. Accessed January 2026.

[5] Northern and Western Regional Assembly, 2020. Regional spatial and economic strategy 2020-2032. Available at: REGIONAL SPATIAL AND ECONOMIC STRATEGY 2020-2032. Accessed January 2026.

Legislation and Policy: European policy and legislation significantly influence how UÉ operate, and they are continuously evolving. In the development of a regional strategy which will span decades, it must be recognised that legislation and regulation will change over time.

The Environment and Biodiversity: Ireland is significant environmental and biodiversity challenges, and the scale and speed of response may be insufficient to meet long-term EU and national environmental objectives. UÉ's biodiversity action plan (BAP) outlines its commitment to protecting and enhancing biodiversity across its operations. The BAP closely aligns with Ireland's Climate Action Plan by promoting nature-based solutions that simultaneously support biodiversity conservation and climate resilience. The draft GWS seeks to integrate biodiversity considerations into water and wastewater infrastructure management, promote nature-based solutions, and minimise environmental impacts.

Economic conditions: Economic conditions can in turn impact on the delivery of water services. For examples, economic downturn can limit the availability of funding for critical infrastructure projects and maintenance needs. Additionally, international or national events can have knock-on implications on supply chains and energy costs. This can impact the availability of materials, products and chemicals. Adaptive planning principles underpin the GWS implementation plan, ensuring it remains flexible to deal with risks such as funding constraints and geopolitical uncertainty.

2.3 Methodology

The draft GWS approach comprises a structured process designed to guide the development of sustainable, evidence-based wastewater solutions. This process, illustrated below (**Table 2-1**) provides a clear and methodical framework for assessing current and future needs, identifying challenges and opportunities, and prioritising investment decisions that support long-term service resilience and environmental protection.

The Strategy will be delivered in three phases:

- The **short-term phase (2026 – 2040)** focuses on planning and early delivery
- The **medium-term phase (2040–2055)** continues construction and addresses growing needs. The Drainage Area Plan (DAP) covers part of this period (2029–2048) and will be aligned with these phases
- The **long-term phase (2055–2080)** ensures the system remains resilient into the future

Table 2-1: Overview of draft GWS Stages and their Purpose

Methodology Stage	Purpose
Baseline Risk Assessment	• Assesses how each agglomeration is currently performing, using 2025 data • Performance issues are scored (Red/Amber/Green) to identify the most important problems • This system-wide view helps find the root causes of issues across networks and treatment plants
Testing Future Needs	• Uses modelling to predict how growth and climate change will affect networks and treatment plants up to 2080 • Performance is assessed at key future points (2040, 2055, 2080) using the same risk scoring to compare how risks change over time
Root Cause Analysis	• Examines the risks in more detail to determine the true underlying causes • These causes then form the "needs list" for the next stage
Optioneering	• Starts with an open list of all possible solutions • Options are then screened based on feasibility and ability to resolve risks • Workshops support collaborative decision-making
Strategic Option Selection (MCDA)	• Strategic options are evaluated using Multicriteria Decision Analysis (MCDA) to compare complex choices • Two strategic options were identified to move forward • Feasible options for each agglomeration are aligned with future planning horizons for flexibility
Shortlist of Feasible Strategies	• The refined shortlist is assessed for deliverability, long-term alignment, and compatibility with the existing system • Each option also undergoes environmental assessment (SEA and AA) to ensure regulatory and sustainability compliance

3. Consultation

Consultation is a key element of preparing the draft GWS, ensuring members of the public, local and regional stakeholders, and the statutory environmental authorities can contribute to and influence the development of the draft GWS. Environmental, social and infrastructural perspectives are gathered through workshops, meetings and feedback sessions, and these views inform decision making and the draft GWS. While UÉ prepares and delivers the draft GWS, its long-term success depends on continued participation from the public, local authorities, regulators and community organisations. This collaboration has strengthened the strategy's evidence base and ensured that proposed actions align with development plans, environmental goals and regulatory requirements. UÉ is committed to delivering an accessible, meaningful, and accountable consultation (**Figure 3-1**) and engagement process and will clearly communicate the purpose of the strategy, how it is developed, and how people can participate at each stage[6]. The consultation approach includes two key phases:

- **Public Consultation 1** – an eight-week consultation on the scope of the assessment; and
- **Public Consultation 2** – an eight-week consultation on the draft GWS and associated environmental reports.

A dedicated webpage[7] on the UÉ website provides an overview of the draft GWS, and associated reports.

Figure 3-1: GWS Consultation Roadmap

[6] Uisce Eireann. 2024. Galway Wastewater Strategy (Galway Metropolitan Area, Athenry, and Moycullen) – Leaflet. Available at: Draft GWS Leaflet. Accessed: February 2026.
[7] Uisce Éireann. 2023. Draft Galway Wastewater Strategy. Available at: Draft GWS - Webpage. Accessed: March 2026.

3.1 Scoping Report Consultation

The first stage of consultation took place over eight weeks (26th September to 20th November 2024). During this period, the SEA Scoping Report[8], Issues Paper and AA Screening Report[9] were published to gather views on the proposed scope of the SEA, identify key issues to be addressed, and allow for opinions and perspectives to be shared.

The Scoping Report presents the scope, baseline, environmental issues and general SEA methodology for review. Feedback was invited from the public, community organisations, local authorities, environmental authorities and other stakeholders.

3.2 Scoping Report Consultation Feedback

The eight-week consultation on the SEA Scoping Report resulted in 14 submissions which have been broadly summarised into 11 main themes:

- Legislative Compliance and interactions with Plans, Programmes, and Policies
- Study Area boundary
- Planning for future development and growth
- Status of existing UÉ infrastructure
- Timeline, resources, and development
- Mutton Island WWTP
- The quality and protection of surface and groundwaters
- Archaeological and cultural heritage
- Monitoring and reporting
- Data sources and knowledge gaps
- Consultation and communication

Feedback highlighted the need for strong alignment with national and EU policy, integration of SEA and AA requirements, and clear mitigation and monitoring measures. Concerns regarding the capacity to meet future growth, the study area boundary, and the need for both short-term and long-term infrastructure solutions (e.g., existing network constraints, SWOs, climate-related risks, and pressures on Mutton Island WWTP), were raised. Respondents also emphasised the importance of safeguarding water quality, improving climate resilience, addressing data gaps and maintaining ongoing engagement with regulatory bodies, local authorities and community groups.

3.3 Draft GWS, SEA Report and NIS Consultation

The second stage of consultation focuses on the draft GWS, the SEA Environmental Report and the Natura Impact Statement (NIS) and is scheduled to take place during Stage 4 of the GWS consultation roadmap (Figure 3-1). UÉ will issue a series of consultation questions to guide submissions and encourage participation. It will publish a 'Consultation Report' summarising feedback received and outlining how it has informed the final Strategy and SEA Statement.

[8] Uisce Éireann. 2024. Draft GWS – Strategic Environmental Assessment: Scoping Report. Available at: GWS SEA Scoping Report 2024. Accessed: March 2026.
[9] Uisce Éireann. 2024. Draft Galway Wastewater Strategy -Appropriate Assessment Screening Report. Available at: Draft GWS - Appropriate Assessment Screening Report. Accessed: March 2026.

Through this open and collaborative approach, UÉ aims to deliver a wastewater strategy that supports the study area's long-term growth while enhancing environmental protection, system performance, and public health.

As per the 2025 SEA Regulations (S.I. 456 of 2025), the following SEA statutory environmental authorities will be notified and invited to make a submission on any aspect of the draft GWS and associated environmental assessments:

- Environmental Protection Agency
- Minister for Housing, Local Government and Heritage
- Minister for Climate, Energy and the Environment
- Minister for Agriculture, Food, & the Marine

Looking ahead, continued collaboration will be essential as the draft GWS progresses toward implementation. UÉ will continue to work closely with local authorities, public sector partners and community groups to develop integrated initiatives that enhance system resilience. This includes the promotion of nature-based solutions, rainwater harvesting and Sustainable Drainage Systems (SuDS), which will support more effective surface water management, reduce pressure on sewer networks, and mitigate fluvial flooding risks where public sewerage systems may otherwise become overwhelmed.

4. Review of Polices, Plans and Programmes

Under the SEA Directive, environmental assessments must identify the key environmental protection objectives that apply to a plan or programme and show how these have been considered during its preparation. To meet this requirement, a review was carried out of relevant international, national, regional, and local plans, policies, and legislation. This sets the context for the SEA and the draft GWS, identifying wider environmental protection objectives, and examines how the draft GWS may be influenced by or contribute to the aims, objectives, and targets of these documents. This review was completed in two stages:

- A comprehensive overview of all relevant legislation and plans
- A focused review identifying how these documents shape the scope of the SEA, including baseline topics and Strategic Environmental Objectives

The plans and policies most relevant to the draft GWS are outlined in **Table 4-1**.

Table 4-1: Relevant Legislation, Polices and Plans and their influence on the Draft GWS

Source	Context	Influence on Draft GWS
Water Environment		
Water Framework Directive (WFD)[10]	• Aims to protect and improve all waterbodies; prevent water quality deterioration • Member states to achieve "*Good Status*" in all water bodies by 2027	Ensure wastewater discharges do not negatively affect water quality; support the objectives of the WFD
Water Action Plan 2024 (WAP24) – Ireland's River Basin Management Plan (RBMP)[11]	• National mechanism for implementing the WFD • Identifies areas where water quality needs improvement	Investment and upgrades prioritised where wastewater contributes to poor water status
Urban Wastewater Treatment Directive (UWWTD) and recast Urban Wastewater Treatment Directive (rUWWTD) [12]	• Sets and strengthens collection/ treatment requirements and standards • Influences treatment levels, timelines, investment priorities, and long-term wastewater planning	Determines treatment levels, compliance timelines, agglomeration boundaries and long-term upgrade needs

[10] Department of Housing, Local Government, and Heritage (DHLGH). 2025. Water Framework Directive (WFD). Available at: Water Framework Directive. Accessed: March 2026.
[11] Department of Housing, Local Government, and Heritage (DHLGH). 2025. Water Action Plan (WAP) 2024 - River Basin Management Plan 2022 – 2027. Available at: WAP24 River Basin Management Plan 2022 - 2027. Accessed: March 2026.
[12]Department of Housing, Local Government, and Heritage (DHLGH). 2020. Urban Wastewater Treatment Directive (UWWTD). Available at: Urban Waste Water Treatment Directive. Accessed: March 2026.

Source	Context	Influence on Draft GWS
Floods Directive[13] and Catchment Flood Risk Assessment & Management Programme (CFRAM)	• National Flood Risk Assessment Programme • Requires flood assessments/ management planning to protect communities, the environment, and infrastructure	Wastewater infrastructure designed to be flood-resilient and not exacerbate flood risk
National Marine Planning Framework (NMPF)[14]	• Marine spatial planning framework; guides sustainable use of Ireland's marine area • Includes specific policies on water quality, wastewater discharges, and coastal infrastructure	Coastal and estuarine discharges aligned with marine water quality policies
Water Quality & Water Services Infrastructure Climate Change Sectoral Adaptation Plan 2025[15]	Aims to protect waterbodies and ensure resilient water services	Improve capacity and catchment management
Water Services Policy Statement (WSPS) 2024–2030[16]	Government priorities for water services delivery	Align with national priorities for compliance, resilience, and growth
Climate Change		
Climate Action and Low Carbon Development (Amendment) Act 2021[17]	• Commits Ireland to achieving a climate-neutral economy by 2050 • Introduces national carbon budgets and sectoral emissions maximum	Support climate mitigation by improving energy efficiency and reducing emissions from wastewater treatment
Climate Action Plan 2025 (CAP25)[18]	• Sets annual actions to deliver emission reductions • Sets out Ireland's pathway to a climate neutral economy	Support low-carbon technologies, renewable energy use and efficiency measures

[13] Office of Public Works (OPW). 2025. EU Floods Directive. Available at: EU Floods Directive. Accessed: March 2026.
[14] Department of Climate, Energy and the Environment (DCEE). 2024. National Marine Planning Framework (NMPF). Available at: National Marine Planning Framework. Accessed: March 2026.
[15] Department of Housing, Planning and Local Government (DHLGH). 2019. Water Quality and Water Services Infrastructure Climate Change Sectoral Adaptation Plan *(Prepared Under the National Adaption Framework).* Available at: Water Quality & Water Services Infrastructure - Climate Chane SAP|NAF. Accessed: March 2026.
[16] Uisce Éireann (UÉ). 2024. Water Services Policy Statement (WSPS) 2024 – 2030. Available at: UÉ WSPS 2024 - 2030. Accessed: March 2026.
[17] Department of Climate, Energy and the Environment (DCEE). 2024. Climate Action and Low Carbon Development (Amendment) Bill 2021. Available at: Climate Action and Low Carbon Development (Amendment) Bill 2021. Accessed: March 2026.
[18] Department of Climate, Energy and the Environment (DCEE). 2025. Climate Action Plan 2025 (CAP25). Available at: Climate Action Plan 2025. Accessed: March 2026.

Source	Context	Influence on Draft GWS
National Adaptation Framework[19] and Sectoral Adaptation Planning[20]	• Sets out how Ireland will adapt to climate change • Identifies risks such as flooding, drought, and extreme weather	Ensure wastewater systems remain resilient to climate pressures
Galway City and County Climate Action Plans 2024–2029[21,22]	Local climate resilience and mitigation measures	Wastewater upgrades support local flood resilience, SuDS and adaptation priorities
Sectoral Planning Guidelines for Climate Change Adaptation 2024	Shapes how public bodies plan for climate impact	Draft GWS prepared in line with guidance
Local Climate Adaptation Strategies[23, 24]	Local CAPs that identify local climate risks and adaptation measures	Guide/ consider local priorities (e.g., where wastewater infrastructure may be vulnerable
Biodiversity		
4th National Biodiversity Action Plan 2023-2030[25]	• Aims to protect, restore, and enhance biodiversity nationwide • National Biodiversity Strategy/ sets national biodiversity targets	Account for biodiversity impacts; support nature-positive outcomes where possible; mitigate impacts
EU's Nature Restoration Plan (NRP)[26]	First EU-wide restoration law; sets binding targets to restore degraded ecosystems	Wastewater planning must not hinder ecological restoration

[19] Department of Climate, Energy and the Environment (DCEE). 2024. National Adaption Framework (NAF). Available at: National Adaptation Framework (NAF). Accessed: March 2026
[20] Rialtas na hÉireann. 2026. Sectoral Adaption Planning. Available at: Sectoral Adaptation Planning. Accessed: March 2026
[21] Galway City Council. 2024. Galway City Council Climate Action Plan 2024 – 2029. Available at: GCC LACAP 2024 - 2029. Accessed: March 2026.
[22] Galway County Council. 2024. Galway County Council Climate Action Plan 2024 – 2029. Available at: Galway County Council Local Authority Climate Action Plan (LACAP) 2024-2029. Accessed: March 2026.
[23] Galway City Council. 2019. GCC Climate Adaption Strategy 2019 – 2024. Available at: Climate Adaptation or Galway City Council Adaptation Strategy 2019-2024. Accessed: March 2026.
[24] Galway County Council. 2024. Galway County Council Climate Action Plan 2024 – 2029. Available at: Galway County Council Local Authority Climate Action Plan (LACAP) 2024-2029. Accessed: March 2026.
[25] Department of Housing, Local Government and Heritage (DHLGH). 2026. Ireland's 4th National Biodiversity Action Plan 2023 – 203 (NBAP). Available at: Ireland's 4th National Biodiversity Action Plan 2023–2030 or 4th National Biodiversity Action Plan. Accessed: March 2026.
[26] European Union. 2025. Nature Restoration Regulation Reference. Available at: Nature Restoration Regulation Reference Portal. Accessed: March 2026.

Source	Context	Influence on Draft GWS
Galway County Heritage and Biodiversity Plan 2024–2030[27] and Galway City Biodiversity Action Plan 2025–2030[28]	• Guide Local Heritage and Biodiversity Protection • Identify local habitats, species, and landscapes	Inform site selection, mitigation measures and project design
EU Soil Strategy[29] and Soil Monitoring Law [30]	• EU framework for sustainable soil management and monitoring • Aims to restore degraded soils and achieve healthy soils by 2050	Apply sustainable land/ soil management practices
Circular Economy		
Circular Economy and Miscellaneous Provisions Act 2022[31]	Supports Ireland's transition to a circular economy, reducing waste and increasing resource efficiency	Consider sludge reuse, energy recovery and material efficiency
Planning and Development		
The Planning and Development Acts 2000 and 2024[32]	Statutory planning and development framework	Align with this framework (i.e., environmental assessment, development consent, and land-use compatibility)
National Planning Framework – Project Ireland 2040[33]	• National spatial and population growth strategy • Sets out the long-term development vision for Ireland	Ensure wastewater infrastructure supports planned growth while protecting the environment
National Development Plan 2021-2030[34]	Provides the national investment programme, including funding for water and wastewater infrastructure	Supports the upgrades needed for compliance, growth, and

[27] Galway Country County (GCC). 2025. Galway County Heritage and Biodiversity Plan 2024-2030. Available at: Galway County Heritage Biodiversity Plan 2024 - 2030. Accessed: March 2026.
[28] Galway City Council. 2025. Galway City Biodiversity Action plan (GCBAP) 2025 – 2030. Available at: Galway City Council Biodiversity Action Plan 2025-2030. Accessed: March 2026.
[29]European Commission. 2021. EU Soil Strategy for 2030. Available at: EU Soil Strategy for 2030. Accessed: March 2026.
[30] European Union. 2025. Soil Monitoring Law – Soil Monitoring and Resilience. Available at: Available at Soil Monitoring Law - Environment - European Commission. Accessed: March 2026.
[31] Rialtas na hÉireann. 2022. Circular Economy and Miscellaneous Provisions Act 2022. Available at: Circular Economy and Misc. Provisions Act 2022. Accessed: March 2026.
[32] Rialtas na hÉireann. 2024. Planning and Development Act 2024. Available at: Planning and Development Act 2024. Accessed: March 2026.
[33] Rialtas na hÉireann. 2018. Project Ireland 2024 - National Planning Framework (NPF). Available at: Project Ireland 2024 - National Planning Framework NPF. Accessed: February 2026.
[34] Department of Public Expenditure and Reform (DPER). 2021. National Development Plan (NDP) 2021-2030. Available at: National Development Plan 2021 - 2030. Accessed: March 2026.

Source	Context	Influence on Draft GWS
		environmental protection in Galway
Regional Spatial and Economic Strategy (RSES)[35]	• Regional development and infrastructure plan • Translates national planning into regional priorities (e.g., population/ economic targets, infrastructure requirements, and environmental considerations)	Ensure wastewater capacity aligns with these regional development objectives
Galway City Development Plan 2023–2029[36] and Galway County Development Plan 2022–2028[37]	County and City planning, development, land-use, and growth plan	
Other Local Strategic Plans (MASP — Metropolitan Area Strategic Plan[38]; LECP — Local Economic and Community Plan[39])	• Set local land-use policies • Shape development priorities and economic strategies	Informs spatial distribution and forecasting of wastewater demand
Uisce Éireann		
Sustainability Framework[40]	• Commits UÉ to net-zero carbon by 2040 • Embeds circular-economy principles and is supported by ISO 50001 certification	Align with these climate-mitigation/ energy-efficiency goals when identifying long-term wastewater solutions
Water Services Strategic Plan 2050 (WSSP)[41]	• UÉ's long-term strategic plan • Sets out objectives, strategic direction, and the actions that UÉ	Align with the long-term vision for resilient, sustainable, and

[35] Rialtas na hÉireann. 2020. Northern & Western Regional Assembly - Regional Spatial and Economic Strategy. Available at: Regional Spatial and Economic Strategy 2020-2032. Accessed: March 2026.
[36] Galway City Council. 2026. Galway City Development Plan 2023 – 2029. Available at: Galway City Development Plan 2023-2029. Accessed: March 2026.
[37] Galway County Council. 2022. Adopted Galway County Development Plan 2022- 2028. Available at: Adopted Galway County Development Plan 2022-2028. Accessed: March 2026.
[38] Galway County Council. 2022. Metropolitan Area Strategic Plan (MASP). Available at: GCC MASP Vol. 2. Accessed: March 2026.
[39] Galway County Council. 2024. Local Economic and Community Plan - Framework Plan 2024–2029. Available at: LECP Framework Plan 2024 - 2029. Accessed: March 2026.
[40] Uisce Éireann (UÉ). 2026. Strategies, plans and projects. Available at: Strategies, plans and projects. Accessed: March 2026.
[41] Uisce Éireann (UÉ). 2025. Water Services Strategic Plan 2050. Available at: WSSP 2050 . Accessed: March 2026.

Source	Context	Influence on Draft GWS
	aim to implement to ensure sustainability	climate-adaptive wastewater infrastructure
Strategic Funding Plan 2025-2029[42]	Outlines the opportunities for UÉ to identify priority investments	Supports the draft GWS by outlining funding priorities for upgrades, maintenance, and climate-resilient projects
Biodiversity Action Plan[43]	• Outlines actions to conserve and enhance biodiversity across UÉs sites and operations • Includes measures such as no-net-loss principles, Nature-Based Solutions (NBS), Invasive Alien Species (IAS) management, and application of the All-Ireland Pollinator Plan (AIPP)	Consider biodiversity protection in the planning and design of wastewater infrastructure
National Wastewater Sludge Management Plan[44] [45]	• Provides a national strategy for the sustainable management, transport, reuse and disposal of wastewater sludge • Responds to projected increases in sludge volumes and supports climate-action and circular-economy objectives	Ensure proposed wastewater solutions incorporate sustainable sludge-management approaches in line with the updated national plan

[42] Uisce Éireann (UÉ). 2025. Strategic Funding Plan (2025 – 2029). Available at: UÉ Strategic Funding Plan 2025 - 2029. Accessed: March 2026.
[43] Uisce Eireann (UÉ). 2021. Irish Water's Biodiversity Action Plan. Available at: UÉ Biodiversity Action Plan (BAP). Accessed: March 2026.
[44] Uisce Éireann (UÉ), 2016. National Wastewater Sludge Management Plan. Available at: Wastewater Sludge Management Plan. Accessed: March 2026.
[45] The National Bioresources Strategy will replace the National Wastewater Sludge Management Plan. Draft NBS UÉ presentation

5. Environmental Baseline Review

5.1 Introduction

The draft GWS study area covers the GMA, Athenry, and Moycullen (**Figure 1-1**)[46], with wider zones of influence (ZOI; '*potential impact pathways*') where GWS activities could affect European designated sites or WFD water bodies, also considered. The Strategy spans 2025–2080, reflecting long term- infrastructure needs and the need to plan for climate resilience.

This section provides an overview of the current conditions of the environment within the area covered by the draft GWS, including:

- A description of the environment in the area at present
- A concise overview of likely future environmental trends and the key issues, pressures, and opportunities that will guide the SEA assessment and objectives.

The GWS will shape how UÉ delivers wastewater services across the Greater Galway Area. Several activities are considered to identify the types of impacts that could give rise to significant environmental effects, including:

- Designing, constructing, operating and upgrading WWTPs and pipelines
- Managing treated and untreated wastewater discharges
- Handling and processing wastewater sludge
- Operating the wider wastewater network
- Supporting environmental initiatives

To support a clear understanding of environmental impacts, the environmental baseline topics discussed include the following, with their associated future trends outlined in **Table 5-1**.

- Water Environment (W1)
- Population, Economy, Tourism and Recreation, and Human Health (P1)
- Climate Change (C1)
- Biodiversity (B1)
- Material Assets (M1)
- Landscape, Townscape and Seascape (L1)
- Cultural Heritage – Archaeological and Architectural (H1)
- Geology and Soils (G1)
- Air Quality (A1)
- Noise and Vibration (N1)

A wide range of publicly available sources of information are used as a basis for identifying the baseline environment including, web-based searches, published reports and Geographic Information Systems (GIS) mapped data.

[46] Uisce Éireann. 2023. Galway Wastewater Strategy – Study Area. Available at: GWS Study Area - Map . Accessed: February 2026.

5.2 Environmental Trends in Ireland

The assessment considers the EPA's *State of the Environment Report 2024*[47], which identifies the main national environmental challenges relevant to the draft GWS:

Water: Around 197 Irish waterbodies are affected by pollution from urban wastewater. Strong compliance, clear governance, a focus on resilient infrastructure, and adaptive management are key to improving water quality.

Climate: Ireland is already experiencing the impacts of climate change, and current adaptation progress is too slow and fragmented. More coordinated and integrated adaptation measures are necessary to build resilience and deliver wider environmental benefits.

Nature and Biodiversity: Many natural and semi-natural habitats are in 'poor condition'. Reversing these trends will require stronger action across all levels of government, ensuring that protection, restoration/conservation measures, and the practical steps needed to safeguard ecosystems, are fully embedded in planning, policy and sustainable development.

Circular Economy: There is clear scope to improve resource recovery in wastewater, given the recent material circularity rate of just 2% in 2020.

Links to the UN Sustainable Development Goals (SDG)[48]**:** These challenges relate directly to improving water quality and sanitation (SDG 6), addressing climate impacts (SDG 13), protecting marine environments (SDG 14), and conserving nature on land (SDG 15). Aligning the Strategy with these goals will help ensure future ecosystem/ environment management keeps pace with national and international commitments and future population pressures.

5.3 Water Environment

The draft GWS Study Area spans three catchments (Corrib, Galway Bay North, and Galway Bay Southeast) and includes various surface waters that support drinking water, wildlife, fisheries and recreation. Water quality in the study area is mixed (**Figure 5-1**). Nationally, just under half of Ireland's surface waters are not as healthy as they should be, with the ecological status of rivers, lakes, estuaries, and canals currently in decline. Common pressures on river and lake waterbodies are:

- Urban and domestic wastewater
- Urban and agricultural run
- Altered channels or flows
- Invasive species

In contrast, coastal waters and groundwaters have improved slightly in recent years. Within the draft GWS Study Area, coastal and transitional waters including Galway Bay and nearby estuaries are mostly in good to high condition, with no significant pressures identified, although Corrib Estuary is currently under review for pressures that may place it at risk of not achieving good

[47] Environmental Protection Agency. 2024. Ireland's State of the Environment Report 2024. Available at: Ireland's State of the Environment Report 2024 (EPA). Accessed: March 2026.
[48] Tailte Éireann. 2026. Ireland's Sustainable Development Goals (SDG) Data Hub. Available at: Irelands Hub for Sustainable Development Goals. Accessed: January 2026.

status. The Corrib River is designated as a salmonid waterbody, meaning its water quality must be maintained at a high standard to support Atlantic salmon and trout.

Much of the groundwater in the draft GWS Study area is karst (i.e., permeable layers of rock, sand, and gravel). Most groundwater is in good condition and not considered at risk, but the extensive karst geology makes the area highly vulnerable to contamination due to rapid underground flow. Two groundwater bodies are currently in poor status due to pressures from waste and industrial facilities.

All groundwater bodies within the draft GWS Study Area, Corrib_020 river waterbody, and Corrib Lower Lake waterbody are Drinking Water Protected Areas designated under Article 7 of the WFD.

Flooding is becoming more frequent and unpredictable, and this trend is expected to worsen with climate change. Flood events can damage homes, businesses and transport routes, disrupt water and wastewater services, overwhelm drains and sewers, and increase polluted runoff into rivers and lakes. Galway City, Oranmore, Claregalway and Athenry are priority areas for further flood-risk assessment and targeted flood-management measures.

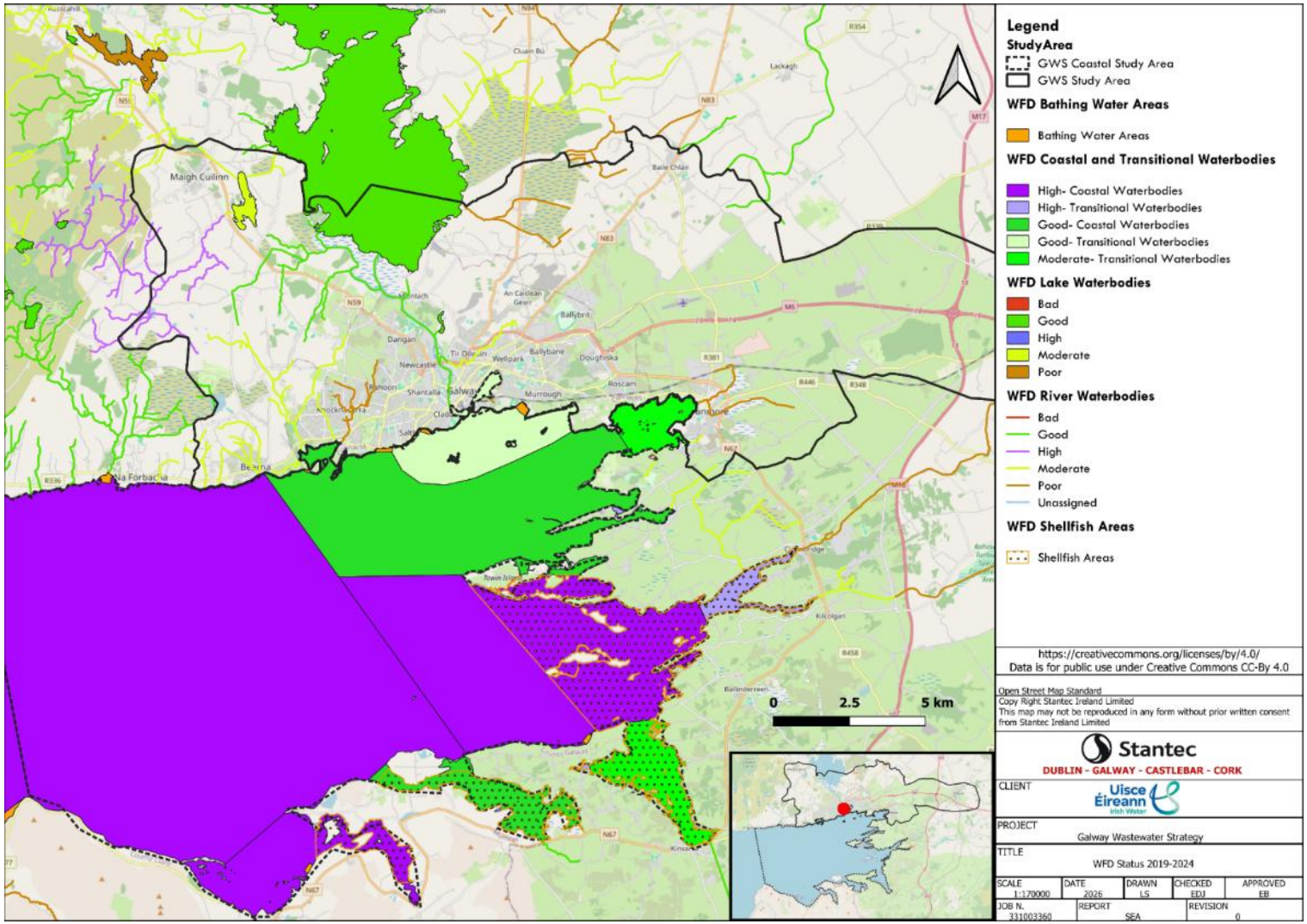

Figure 5-1: Water Framework Directive (WFD) Status (2019-2024) for Surface Waterbodies. Shellfish Areas and Recreational Bathing waters are also shown.

5.4 Population, Economy, Tourism and Recreation, and Human Health

The study area had a population of approximately 102,500 in 2022. Galway County's overall population grew by 8% between 2016 and 2022, with a 23% increase in residents aged 65 and over, reflecting an ageing demographic. Average unemployment in the study area is approximately 6.9%, which is above the national average[49].

Socio-economic conditions within the study area are mixed, ranging from slightly below average to relatively affluent, with some localised pockets of disadvantage[50]. Galway City remains the main economic centre in the region and a key hub along the Atlantic Economic Corridor, while agriculture continues to play an important role in the regional economy.

Tourism is a significant economic driver, with over 2.6 million visitors recorded in 2017[51]. The study area includes numerous scenic viewpoints, coastal and urban panoramic views (e.g. Galway Bay), and recreational waters, including designated bathing waters such as Silverstrand Beach.

Human health indicators in the study area broadly align with national averages. Approximately 1.6% of residents report poor health, and life expectancy in the Western region is slightly above the national figure.

5.5 Climate Change

Climate change is already affecting Ireland[52], and national policies emphasise the need to reduce emissions and adapt to increasing climate related- risks, particularly for coastal communities and critical infrastructure.

Over the past century, changes to climate[53, 54] include:

- A national temperature increase of approximately 0.8°C
- Fewer frost days and a longer growing season
- Higher annual rainfall
- Longer dry spells and more frequent summer drought conditions
- Sea temperatures more than 1°C warmer and increased ocean acidity
- Sea level rise of 2–3 mm per year

[49] Central Statistics Office (CSO). 2023. Census of Population 2022 Profile 7 - Employment, Occupations and Commuting - Map 3.2 Unemployment rates by town, 2022. Available at: Unemployment Rates by Town 2022. Accessed: March 2026.
[50] Tailte Éireann. 2026. Pobal HP Deprivation Indices. Available at: Pobal HP Deprivation Indices. Accessed: March 2024
[51] Galway County Council, 2020. Galway Tourism Strategy 2020-2025. Available at: Galway Tourism Strategy 2020-2025. Accessed June 2024.
[52] Dwyer, N.2013. The Status of Ireland's Climate. Environmental Protection Agency (EPA). Available at: Status of Ireland's Climate 2012. Accessed: March 2026.
[53] Department of Housing, Local Government, and Heritage (DHLGH). 2025. Built & Archaeological Heritage – Climate Change Sectoral Adaption Plan. Available at: Climate Change Sectoral Adaption Plan. Accessed: March 2026.
[54] Galway City Council, 2024. Galway City Council Local Authority Action Plan 2024-2029. Available at: GCC LCAP 2024 - 2029. Accessed: February 2026.

5.6 Biodiversity

Ireland's biodiversity is under significant pressure and according to Ireland's 4th National Biodiversity Action Plan (BAP)[55], the main drivers of biodiversity loss include:

- Intensive agricultural and forestry practices
- Overfishing
- Invasive Species
- Changes in land use (i.e., residential, agricultural, and commercial development)
- Over-exploitation of resources (i.e., peatland loss)

National assessments show that 90% of Ireland's protected habitats are in unfavourable condition[56], with many continuing to decline, in contrast most protected species are stable or improving. The draft GWS study area contains or connects to several important Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (**Figure 5-2**). The study area includes a wide range of terrestrial, freshwater, coastal and marine habitats, as well as urban green spaces that contribute to ecological connectivity and biodiversity. Several invasive alien species (IAS) are present, posing risks to native habitats and requiring prevention, early detection and management under national legislation.

5.7 Material Assets

Land uses within the study area are varied (e.g. peatlands, forestry, and urban growth areas) and are closely linked to the area's material assets. The region is served by major road and rail connections, as well as the Port of Galway. Wastewater services are provided through a network of treatment plants and pumping stations, some of which currently experience capacity or compliance constraints. National policy is increasingly focused on a circular economy approach, emphasising reduced resource consumption and increased recovery.

Material assets considered in this assessment include:

- **Land use (natural assets):** resources such as agricultural land, peatlands, and forestry.
- **Built assets:** including public open spaces and buildings; schools; healthcare facilities; residential and social infrastructure such as housing; and key infrastructural networks (electricity, gas, and transport), with particular emphasis on water supply and wastewater infrastructure and management.
- **Waste management**: an important aspect of resource management and a key component of the circular economy.

5.8 Landscape, Townscape, and Seascape

The landscape within the study area is shaped by a combination of natural factors (e.g. geology) and human influences (e.g. land use), resulting in distinct landscape character areas. Landscape character refers to the recognisable pattern of elements that makes one landscape different from

[55]Department of Housing, Planning and Local Government (DHPLG). 2024. Ireland's 4th National Biodiversity Action Plan 2023-2030. Available at: 4th National Biodiversity Action Plan (NBAP). Accessed January 2026.
[56] National Parks and Wildlife Service (NPWS). 2025. The Status of EU Protected Habitats and Species in Ireland. Available at: Status of Habitats and Species in Ireland NPWS. Accessed: March 2026.

another. These areas can also act as ecological corridors, supporting habitat connectivity, but are highly vulnerable to linear infrastructure development. The study area also includes important seascape areas (i.e. landscapes defined by the interaction of land and sea), including Atlantic Galway Bay, which is particularly sensitive due to its contrasting coastlines (Connemara to the north and the Burren to the south) and extensive long-distance views. Artificial lighting may affect night-time landscape quality, visibility, and wildlife behaviour. Rural Connemara retains naturally dark skies and has potential for future dark-sky designation.

5.9 Cultural Heritage – Archaeological and Architectural

Cultural heritage within the study area is extensive and diverse, reflecting long-term human settlement and historic development. It includes many recorded archaeological sites and monuments, protected architectural structures, designated Architectural Conservation Areas (ACAs), and wider sensitive archaeological zones, particularly within Galway City. These assets encompass remains ranging from prehistoric monuments and medieval structures to historic streetscapes and townscapes of architectural and cultural significance.

The study area also contains important underwater archaeological heritage, where discoveries such as prehistoric dug-out canoes and Viking-period artefacts highlight the area's rich maritime and freshwater heritage. Collectively, these cultural heritage assets contribute significantly to local identity, historical continuity, and sense of place, and represent key constraints and considerations for planning and development within the study area.

5.10 Geology and Soils

The study area contains a mix of geological features, including limestone, granite, peat and alluvial soils, and several important County Geological Sites such as Lough Corrib and the Gortgar drumlins. Soil types vary from urban made ground in Galway City to peatlands in the west and karst limestone in the east, influencing drainage, groundwater vulnerability and land-use suitability. Peatlands in the wider region provide valuable ecosystem services, including carbon storage and flood regulation. Some brownfield sites in the area may also have localised soil contamination due to past activities, and the construction of wastewater infrastructure may disturb soils or geological features further, but can be managed through good design, soil management plans and adherence to environmental standards.

5.11 Air Quality

Air pollution is a major environmental risk to human health and arises from a wide range of sources including traffic, domestic fuel use, industry and agriculture. While air quality within the study area is generally good and complies with current EU air quality standards, air pollution remains a significant national concern. Ireland continues to record relatively high greenhouse gas emissions, and fine particulate matter remains a key pollutant associated with adverse health effects.

Monitoring data indicate that exceedances of regulatory thresholds in the study area are rare, with only isolated breaches recorded in recent years. The water services sector typically has a limited influence on ambient air quality; however, wastewater treatment facilities can occasionally give

rise to localised odour nuisances, particularly under unfavourable meteorological conditions. Ongoing compliance with EU and national air quality legislation is required, alongside the identification and implementation of measures to minimise emissions and potential nuisance impacts where feasible.

5.12 Noise and Vibration

Environmental noise (i.e. unwanted or harmful outdoor sound) can affect human health and overall quality of life. Noise mapping indicates elevated noise levels, above recommended thresholds, in proximity to major transport corridors. Construction activities and wastewater operations may also generate temporary and intermittent noise or vibration.

However, such impacts are generally localised and short-term. Therefore, **noise is considered unlikely to give rise to significant effects and is scoped out of further assessment.**

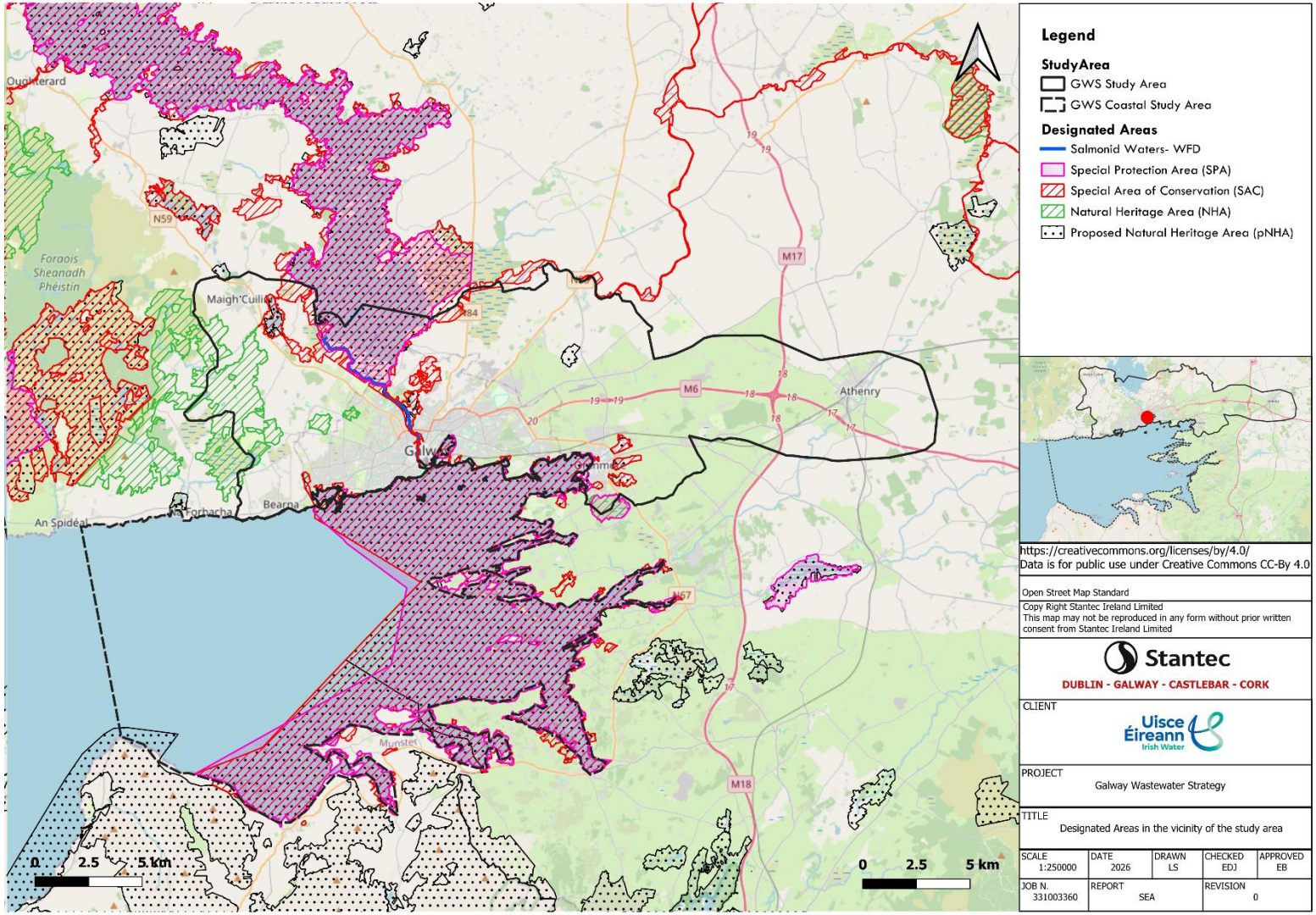

Figure 5-2: European Designated Sites (SACs and SPAs) within the vicinity of the draft GWS Study Area, together with Natural Heritage Areas (NHAs), Proposed Natural Heritage Areas (pNHAs), and salmonid waters

5.13 Future Trends

Table 5-1: Future Environmental trends and their implications for the Draft GWS

Future Trends	Implications for the Draft GWS
Water Environment	
• Enhanced focus on protection and restoration of surface and ground water quality • Greater legislative requirements for improved monitoring, data, SuDS and NBS • Rising pressures from flooding, erosion and sea-level rise	• Protect and restore water quality • Reduce SWO spills • Separate clean surface water from foul systems where feasible • Support catchment-based management and NBS • Upgrade wastewater infrastructure for pollution reduction and improved resilience • Consider flooding, erosion, and sea-level rise throughout design
Population, Economy, Tourism, and Human Health	
• Increased focus on human health • Growth in tourism, recreation and amenities • Population growth increasing demand on housing, services and infrastructure • Population growth leading to geographical expansion of serviced lands	• Align wastewater planning with compact growth/ land-use policies • Protect bathing waters and community amenities • Support human health and wellbeing through the provision of green spaces • Ensure capacity to meet growing demand for housing, services and infrastructure
Climate Change	
• Increasing requirements to integrate climate resilience into planning and construction • Rising risks of flooding, erosion, contamination and drought; greater coastal flooding risk from sea-level rise and storms	• Integrate climate adaptation into wastewater planning • Improve drainage (e.g., SuDS) and treatment system resilience • Plan for increased and more unpredictable inland and coastal flooding
Biodiversity	
• Policy-led drive for habitat restoration and ecological resilience • Greater emphasis on aquatic connectivity • Increasing pressures from climate and land-use change	• Deliver environmental improvements through wastewater upgrades • Incorporate biodiversity protection and enhancement

Future Trends	Implications for the Draft GWS
• Ongoing risk from IAS	• Avoid impacts on habitats and ecological networks • Apply strict controls to prevent the spread of IAS and to eliminate from sites with GWS infrastructure
Material Assets	
• Ireland's continued transition towards a circular economy • Population growth increasing demand on housing, services and infrastructure	• Support and sustain rural communities • Expand wastewater reuse in agriculture and industry • Embed circular economy principles in asset planning and operation • Focus on reuse, resource recovery, and efficiency
Landscape, Townscape, and Seascape	
• Enhanced protection of valued landscapes and seascapes • Long-term pressures expected (i.e., land-use changes)	• Manage and minimise visual impacts from wastewater infrastructure • Balance landscape/ seascape protection with necessary change • Integrate landscape protection with biodiversity and water quality enhancement • Achieve net positive landscape outcomes where possible
Cultural Heritage – Archaeological and Architectural	
• Enhanced legislative requirements for the protection of cultural, archaeological, and architectural heritage • Ongoing vulnerability of settings and unknown buried remains	• Protect heritage through careful site selection, design, and construction • Avoid damage or disturbance to known and unknown cultural assets • Record and enhance archaeological knowledge, documentation and public access
Geology and Soils	
• Greater policy focus on soil protection and data • Rising risks of erosion, nutrient imbalance and carbon loss	• Minimise land take and soil disturbance • Apply robust soil-management and erosion controls • Carefully manage sludge spreading

Future Trends	Implications for the Draft GWS
• Continued vulnerability of peatlands, karst, and sensitive soils to pollution	• Protect and restore carbon-rich soils where feasible
Air Quality	
• Increased emphasis on protection of air quality and human health links (e.g., WHO/ EU Targets) • Investment in walking and cycling infrastructure	• Control construction/ operational-related dust, odour, or pollutant emissions • Manage odour from treatment facilities and sludge activities • Promote good practice in sludge storage and land spreading
Noise and Vibration	
• Movement towards EU-wide exposure limit values • Links environmental noise to significant public health impacts • Potential for road traffic noise to become an increasingly significant contributor	• Control construction-related impacts (e.g., noise/ vibration etc.) • Use of best practice to minimise disturbance • Noise and vibration impacts are localised **Scoped out of further SEA Assessment**

6. SEA Methodology

A Strategic Environmental Assessment (SEA) was undertaken alongside preparation of the draft Galway Wastewater Strategy to ensure that environmental considerations were integrated into decision making from an early stage. The scope and focus of the SEA were informed by existing environmental conditions within the study area, likely future environmental trends, and relevant European, national, regional and local legislation, plans and programmes. The SEA process should influence and subsequently improve the draft GWS. The SEA ensures environmental considerations are built into the plan from the outset; assessing potential effects, comparing reasonable alternatives, and identifying measures to avoid or reduce impacts. The SEA process is undertaken in four stages as per **Table 6-1**. Consultation as part of the SEA process is outlined in Section 3 above.

Table 6-1: Stages of SEA Assessment

Stage	Purpose and Requirements	Output
Screening	• Determine if a SEA is required	SEA Screening Statement
Scoping	• Identify baseline data • Set the Strategic Environmental Objectives (SEOs) • Define the scope, focus, and limits of both the draft GWS and the SEA	SEA Scoping Report
Assessment	• Assess the likely environmental effects • Evaluate reasonable alternatives • Identify appropriate mitigation and monitoring measures	Strategic Environmental Assessment Report
Consultation and Adoption Current Stage	• Carry out public consultation • Update the draft GWS and SEA as required in response to submissions • Prepare the final SEA Statement	SEA Statement (with monitoring programme)

6.1 SEA Strategic Environmental Objectives

During the SEA scoping stage, Strategic Environmental Objectives (SEOs) were developed to guide the assessment and were informed by the review of relevant plans, policies and programmes (**Section 0**) and environmental baseline review (**Section 0**). The SEOs reflect key environmental sensitivities and policy requirements within the study area and provide a consistent framework for assessing the draft Strategy, its reasonable alternatives, and a 'Do Nothing' scenario. They were used to identify potential environmental risks and benefits, support comparison of options, and

highlight where mitigation or refinement was required. **Table 6-2** lists the SEA Topics and their SEO(s), and **Table 6-3** outlines the interrelationships amongst the SEOs.

Table 6-2: Strategic Environmental Objectives for the draft GWS

SEA Topic	Strategic Environmental Objective (SEO)
Water Environment (W1)	• Protect and improve surface, groundwater, and coastal water quality by preventing wastewater pollution. • Support the enhancement and restoration of local rivers, lakes, estuaries, and coastal waters.
Population, Economy, Tourism and Recreation, and Human Health (P1)	• Protect human health and wellbeing while enabling sustainable economic and population growth. • Avoid adverse effects on recreation, tourism, and community amenities, and enhance facilities where possible. • Protect freshwater and marine fisheries, including designated shellfish waters.
Climate Change (C1)	• Adhere to UÉ's Sustainability Framework, which aligns with national and EU climate and sustainability objectives • Reduce greenhouse gas emissions from wastewater services through energy efficiency, water conservation, reuse, and NBS. • Reduce flood risk through improved surface water management and sustainable drainage and natural solutions. • Improve the climate resilience of wastewater infrastructure to future pressures and extreme weather.
Biodiversity (B1)	• Protect and enhance terrestrial and aquatic biodiversity and habitat connectivity. • Safeguard European sites and nationally protected habitats and species. • Deliver UÉ BAP commitments, particularly during construction and operation.
Material Assets (M1)	• Minimise resource use and waste generation, including sludge and treatment residuals; apply circular economy principles. • Ensure that sludge application aligns with the National Biosolids Strategy. • Minimise impacts on surrounding infrastructure and assets. • Optimise use of existing wastewater infrastructure through capacity management and targeted upgrades.
Landscape, Townscape and Seascape (L1)	• Protect and enhance designated and valued landscapes, townscapes, seascapes, and visual amenity in the planning and delivery of wastewater services.

SEA Topic	Strategic Environmental Objective (SEO)
Cultural Heritage – Archaeological and Architectural (H1)	• Protect designated cultural heritage assets, architectural sites, and archaeological sites. • Record, add to, and improve knowledge, documentation, and public access to cultural, architectural, and archaeological heritage.
Geology and Soils (G1)	• Protect geology and soils in the GWS Study Area • Contribute towards the appropriate management of soil quality and quantity related to wastewater services.
Air Quality (A1)	• Minimise odour from wastewater facilities through improved design and operation. • Apply best practice construction methods to avoid air quality impacts.
Noise and Vibration (N1)	• Noise and vibration effects are localised and will be addressed through standard controls at project level. **Noise and Vibration (N1) is scoped out of further SEA assessment.**

Table 6-3: Interrelationship amongst SEA Topics

P1	Y							
C1	Y	Y						
B1	Y	Y	Y					
M1	Y	Y	N	N				
L1	Y	Y	Y	Y	Y			
H1	Y	Y	N	N	Y	Y		
G1	Y	Y	N	Y	Y	Y	Y	
A1	N	Y	Y	Y	N	N	N	Y
W1	Y	Y	Y	Y	Y	Y	Y	Y
	W1	**P1**	**C1**	**B1**	**M1**	**L1**	**H1**	**G1**

6.2 Other Environmental Assessments

Under the Habitats and Birds Directives[57,58], any plan or programme that is likely to have a significant effect on one or more European site(s)—either alone or in combination with other plans or projects—must be subject to Appropriate Assessment (AA). European sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated for the protection of habitats and species of European importance.

Accordingly, the draft GWS was subject to AA to ensure it does not adversely affect the integrity of any European sites. AA screening[59] concluded that potential effects on European sites could not be ruled out, either individually or cumulatively with other plans and projects. As a result, a full Stage 2 Appropriate Assessment was undertaken. The findings of this assessment are presented in a Natura Impact Statement (NIS), which will inform Uisce Éireann's decision-making process.

The AA examined whether implementation of the draft GWS, alone or in combination with other plans or projects, could adversely affect European sites, while the SEA considered wider environmental effects. Given the close relationship between SEA and AA, an integrated approach was applied in line with best practice. The findings of the AA informed the SEA, particularly in relation to biodiversity and designated site protection, while the SEA also addressed broader biodiversity issues beyond the scope of AA. The AA Screening Statement[60] and Natura Impact Statement (NIS) are provided as standalone documents for public consultation alongside the SEA Environmental Report.

The preparation of the draft GWS has been informed by both the SEA and AA processes. Their findings have supported option selection, guided the identification of sustainable solutions, and ensured that potential environmental effects are identified and addressed through appropriate mitigation, helping to protect and enhance the natural environment.

6.3 Consideration and Assessment of Alternatives

The SEA Directive gives considerable weight to the consideration of alternatives and requires the SEA process to identify and describe 'reasonable alternative' means of achieving the objectives of the draft GWS. As the options assessment applies the TOTEX hierarchy to interventions during coarse screening and evaluates nine options during fine screening, it effectively addresses the requirement to consider reasonable alternatives.

First, a long list of interventions was assessed via a Total Expenditure (TOTEX) hierarchy, prioritising lower-cost, preventative actions before higher-cost infrastructure solutions, as follows:

- **Eliminate:** Preventing issues so no investment is required
- **Collaborate:** Working with communities and other organisations

[57] European Commission – Energy, Climate Change, Environment. n.d. The Birds Directive. Available at: The Birds Directive. Accessed: February 2026.
[58] European Commission – Energy, Climate Change, Environment. n.d. The Habitats Directive. Available at: The Habitats Directive. Accessed: February 2026.
[59] Uisce Éireann. 2024. Draft Galway Wastewater Strategy - Appropriate Assessment Screening Report. Available at: Draft GWS - Appropriate Assessment Screening Report. Accessed: March 2026.
[60] Uisce Éireann. 2024. Draft Galway Wastewater Strategy - Appropriate Assessment Screening Report. Available at: Draft GWS - Appropriate Assessment Screening Report. Accessed: March 2026.

- **Optimise:** Getting more performance from existing systems
- **Enhance:** Improving or strengthening existing infrastructure
- **Build:** Delivering new infrastructure where necessary

This approach ensured that opportunities to maximise existing assets were fully explored prior to advancing new infrastructure solutions. Once non-viable interventions were discounted and the long list of interventions had been reduced, nine options were proposed, and SEA fine screening was undertaken on these nine options. During fine screening, the effects of the draft GWS were assessed as beneficial, adverse, or neutral, and the strength of these effects was indicated by colour and number, as shown in

Table 6-4.

Table 6-4: Assessment criteria for fine screening of the draft GWS.

Major Positive/ Beneficial	7	Plan approach / alternative is likely to make a considerable positive contribution to SEOs or greatly improve likelihood of delivery of positive effects and reduce risk of adverse effects.
Moderate Positive/Beneficial	6	Plan approach / alternative is likely to make a moderate positive contribution to SEOs or greatly improve likelihood of delivery of positive effects and reduce risk of adverse effects
Minor Positive/Beneficial	5	Plan approach / alternative has potential to provide a minor positive contribution to SEOs or improve likelihood of delivery of positive effects and reduce risk of adverse effects.
Neutral/Negligible Risk	4	Plan approach / alternative has negligible of contribution or conflict with SEOs or low risk of effects or uncertainty of effects.
Minor Risk	3	Plan approach / alternative has minor potential to conflict to a greater extent with SEOs or increase risk of adverse effects.
Moderate Adverse Risk	2	Plan approach / alternative has moderate potential to conflict to a greater extent with SEOs or increase risk of adverse effects
Major Adverse Risk	1	Plan approach / alternative has potential to conflict to a greater extent with SEOs or high risk of significant adverse effects.

6.4 Cumulative Effects Assessment

The SEA Directive requires that cumulative effects, which can result from a combination of two or more individual effects on a receptor, are considered throughout the process. Cumulative effects can occur because of plans, programmes, projects and other actions in the past, present and the reasonably foreseeable future. They can result from impacts that may be individually insignificant, but collectively significant. As per EPA guidance, potential cumulative effects have been integrated and considered throughout the SEA, and relevant environmental and social receptors have also been considered throughout.

6.5 Limitations and Assumptions

The SEA is strategic and high level in nature, reflecting the scale, geographic extent and long-term horizon of the draft GWS. The assessment is based on available information, published data sources and professional judgement and is considered appropriate at this stage of strategy

development. Future projects arising from the Strategy will be subject to further feasibility, design and project level environmental assessment, as required by relevant planning, environmental and licensing processes. No statutory consent or funding approval is conferred through the draft Strategy, and environmental effects will continue to be reviewed and refined as implementation progresses.

7. Assessment of the Draft GWS

7.1 Current Performance

The draft GWS has been developed with consideration for current deficiencies and long-term challenges in wastewater services across the draft GWS study area. This has been determined using water quality and network modelling, as well as growth projections. These are important for long-term wastewater planning because they help predict future needs, test different solutions, and avoid costly mistakes. Future climate conditions were drawn from the EPA, Met Éireann's TRANSLATE project, and UK Climate Projections 2018.

The primary challenge facing the study area is accommodating future growth, with the total effluent per person (PE) requiring treatment projected to rise to approximately 383,000 by 2080 - more than double current levels. The region's existing treatment capacity is not sufficient to meet this level of demand. The main service areas—Galway City East, Galway City West, Oranmore and Athenry—are served by the Mutton Island and Athenry WWTPs; both of which are expected to exceed capacity before 2055. Around 82% of future population and industrial growth will occur east of the city, placing major pressure on infrastructure in that area.

The following terminology is used in the next sections:

- **Interventions**: Specific measures taken to address identified needs or risks
- **Options**: Possible choices or combinations of interventions that the draft GWS could adopt
- **Scenarios**: Descriptions of how the future might unfold under certain assumptions, used to test options and interventions.

7.2 'Do-Nothing' Scenario

The 'Do-Nothing' (counterfactual) scenario represents continuation of existing infrastructure and committed development to 2080, without implementation of the draft GWS. While avoiding short-term construction impacts, this scenario results in significant long-term adverse effects, including capacity exceedance, infrastructure deterioration, increased storm overflows, declining water quality, biodiversity impacts, public health risks and regulatory non-compliance.

Indicators of current and emerging risks at the draft GWS Study Area's four WWTPs, as well as capacity limitations in the network and environmental risks, were identified. Flood Risk, Stormwater Overflow (SWO) Environmental Performance, rUWWTD Load Risk, Pollution Risk, WWTP Compliance (Hydraulic capacity), WWTP Quality Compliance (Emission Limit Values (ELVs), and WFD Status were used to establish current system performance.

The 'Do-Nothing' scenario performs poorly against almost all SEA Topics and their Strategic Environmental Objectives, particularly for the water environment, biodiversity, human health and material assets. The assessment of the 'Do Nothing' scenario demonstrates that inaction is not a reasonable alternative and that implementation of the draft GWS is required. Continued operation under the 'Do-Nothing' scenario would increase the likelihood of pollution incidents, deteriorating

water quality, and non-compliance with regulatory standards – adversely affecting biodiversity, water-dependent habitats and designated sites. Ongoing discharges and overflows could give rise to odour nuisance, visual impacts and public health risks, with potential negative effects on local amenity, tourism and the wider economy. The option would also reduce system resilience to climate change, increasing vulnerability to extreme weather events and SWOs.

7.3 Assessment of Interventions

To begin developing the draft GWS, an initial broad long list of potential interventions/possibilities was developed with input from internal stakeholders and technical specialists, capturing a wide range of potential options for the draft GWS Study Area and was then assessed to identify which options were feasible. To support comparison, interventions were grouped using a Total Expenditure (TOTEX) hierarchy, prioritising lower-cost, preventative actions before higher-cost infrastructure solutions.

Primary Coarse Screening was used to reduce the TOTEX long list of possible interventions to those most suited to the wastewater networks and treatment plants in the draft GWS study area. This stage considered future growth projections, modelling outputs, environmental sensitivities and technical constraints. Interventions that were unlikely to operate at the required scale, meet future regulatory standards, or suit site specific conditions were excluded, for example:

- Changes to discharge permits as this is not an environmentally viable solution
- Sustainable treatment streams as this intervention unlikely to achieve the level of treatment needed across the region
- Expansion of existing WWTPs (i.e., Athenry, Moycullen, and Claregalway) due to discharges to sensitive freshwater bodies and increasing difficulty in meeting tighter future standards.

  Primary screening assessed network performance and current and emerging risks at the draft GWS Study Area's four WWTPs, helping to identify which measures would deliver the greatest benefit in each catchment. The assessment concluded that while targeted optimisation can extend asset performance in some areas, a new regional scale wastewater treatment facility supported by selective local upgrades is required to accommodate projected growth. The results of the agglomeration level-assessment are summarised in Table 7-1.

Table 7-1: Assessment of WwTPs and Networks in the draft GWS Study Area

Overall Area Assessment	
Mutton Island WWTP[61]	
Context	• Largest WWTP; serving Galway City, suburbs, Oranmore and Bearna • Combined and separate sewers; catchment split by River Corrib; highest number of SWOs • Without intervention, more than 90% of the growth within the study area is expected to be treated at Mutton Island WWTP.
Capacity	• Designed for 170,000 PE; reach its capacity by 2040 without intervention. • 400m marine outfall; has storm/ emergency overflow
Key Issues	• Limited scope for expansion due to island site • Network performance; several SWOs already at risk; more with climate change • Risks associated with nearby bathing waters; potential regulatory compliance risks
Interventions	• Targeted sewer separation; removal of misconnections • Reduction of tidal ingress/ infiltration • Introduction of smart network controls
Athenry WWTP[62]	
Context	• Combined sewer network • Discharges to the karst River Clarin, a 'poor' status river with pressures from urban wastewater and is 'at Risk' of not achieving good WFD Status
Capacity	• Capacity of 9,500 PE; demand projected to exceed capacity by 2030–2040, rising to over 48,000 PE by 2080
Key Issues	• Main overflow frequently spills, worsening with growth; flooding and overflow increasing • Receiving waterbody has a 'Poor' and 'At Risk' WFD status and flows downstream to transitional waterbody which is part of Clarinbridge / Kinvara Bay shellfish area and EU designated sites. • Nutrient compliance issues; tighter limits by 2039 • Medium network-performance risk with forecast exceedance of ammonia and BOD standards
Interventions	• Decentralisation • Transfer of flows to a regional plant • Removal of storm water misconnections
Claregalway WWTP[63]	

[61] Uisce Éireann. 2024. Athenry WWTP (D0913-01) Annual Environmental Report (AER). Available at: Mutton_Island_Galway WWTP_2024_AER. Accessed: March 2026.
[62] Uisce Éireann. 2024. Athenry WWTP (D0913-01) Annual Environmental Report (AER). Available at: Athenry_2024_AER. Accessed: March 2026.
[63] Uisce Éireann. 2024. Claregalway WWTP (D0543-01) Annual Environmental Report (AER). Available at: Claregalway_2024_AER. Accessed: March 2026.

Context	• Separate foul network • Treats wastewater using preliminary and secondary treatment processes • No SWOs or associated risks
Capacity	• 6,000 PE capacity • Reach limits between 2040 and 2055
Key Issues	• Occasional ammonia issues; phosphorus non-compliance • Partially in floodplain; possible future energy-neutrality requirements • Discharges to section of River Clare which holds a 'Poor' WFD Status and is under review for existing pressures which are causing it to be 'At Risk' of not meeting WFD Objectives. The River Clare drains to Lough Corrib SAC.
Interventions	• Energy-efficiency upgrades • No additional network investment needed in this strategy
Moycullen WWTP[64]	
Context	• Small WWTP; no network SWOs • Discharges to 'moderate' status river which is 'at Risk' of not achieving good WFD status
Capacity	• 4,000 PE capacity; growth of +2,000 PE expected by 2080; WWTP is expected to be able to meet growth up to 2055; potential for expansion • Limited confidence in flow data due to absence of inlet monitoring
Key Issues	• Receiving waterbody cannot reach 'Good' status without upstream improvements • Upgrades needed to handle future hydraulic/ biological loads and manage peak flows • Low overall network risk, though based on low-confidence modelling
Interventions	• Ongoing monitoring • WWTP capacity and sewer capacity upgrades • Addition of underground storage

Considering the expected growth and future treatment needs, the assessment concluded that a new regional WWTP will be required. Three broad indicative areas (i.e., west, north and east) were identified as potential WWTP locations, each paired with a possible marine or freshwater outfall point, resulting in **nine options** for consideration.

Marine outfalls were generally preferred due to improved dilution and reduced environmental sensitivities, with two potential marine outfall locations identified - West Galway Bay (between Furbogh and Bearna) and East Galway Bay (near Roscam Point). Outfall options into rivers were more limited, with only the River Corrib identified as a feasible freshwater outfall.

[64] Uisce Éireann. 2024. Moycullen WWTP (D091-01) Annual Environmental report (AER). Available at: Moycullen_2024_AER. Accessed: March 2026.

7.4 Fine Screening

The fine screening assessment compared nine strategic options against each SEA Topic and its Strategic Environmental Objective(s) (SEO(s)) to identify key strengths, constraints and overall environmental performance. The fine screening assessment is outlined in **Table 7-2**.

Table 7-2: Summary of Fine Screening Assessment

WWTP		Outfall	Fine Screening Outcomes		Score
			Key Strengths	Key Constraints	
West	Broad indicative west WWTP area: • Low flood risk • Extreme groundwater vulnerability • Poor alignment with key growth areas – furthest from growth areas • High energy/material requirements • Raw sewage transfers from east across Corrib River and other rivers in the area to reach WWTP • Very little interaction with designated sites* *Selection of WWTP location using UÉ's required site and route selection process should avoid direct intrusion	**West**	• Shortest marine outfall (c.600m) with good dilution • Quaternary treatment will ensure very high effluent quality before discharge • Limited interaction with designated sites (i.e., EU sites, bathing waters, protected habitats and cultural heritage sites etc.)	• Potential disruptions e.g., tourism, traffic etc. • Pipelines must avoid heritage assets, with sub-surface archaeology likely to be encountered	**40**
		Corrib	• Short outfall length • Quaternary treatment will ensure very high effluent quality before discharge	• Treated effluent discharge to SAC and highly sensitive river system; onwards to EU sites, pNHA, Ramsar site • Potential disruptions e.g., tourism, traffic etc. due to central location • Flood-risk constraints	**33**
		East	• Marine outfall with good dilution • Quaternary treatment will ensure very high effluent quality before discharge	• Long marine outfall (c. 3500m) Increases ecological footprint; high materials/energy requirements; maritime navigation challenges • Direct interaction of outfall with designated sites (EU sites, pNHA, Ramsar site) • Interaction with unrecorded underwater archaeology likely due to long length of outfall	**29**

North	Broad indicative north WWTP area: • Centrally located near growth areas resulting in high operational and energy efficiency • Moderate-to-extreme groundwater vulnerability • High flood-risk • Partially within Lough Corrib SAC and Lough Corrib pNHA* *Selection of WWTP location using UÉ's required site and route selection process should avoid direct intrusion	**West**	• Shortest marine outfall with good dilution • Limited interaction with designated sites (i.e., EU sites, bathing waters, protected habitats and cultural heritage sites etc.) • Quaternary treatment will ensure very high effluent quality before discharge	• Potential disruptions to e.g., tourism, traffic, scenic views/ routes etc. • Pipelines must avoid heritage assets although it is possible there will be fewer interactions with heritage assets compared to other options	**40**
		Corrib	• Most energy efficient option • Short outfall length • Quaternary treatment will ensure very high effluent quality before discharge	• Treated effluent discharge to SAC and highly sensitive river system; onwards to EU sites, pNHA, Ramsar site • High flood risk constraints • Potential disruptions to e.g., tourism, traffic, amenities etc. • Pipelines must avoid heritage assets, with sub-surface archaeology likely to be encountered	**34**
		East	• Marine outfall with good dilution • Quaternary treatment will ensure very high effluent quality before discharge	• Long marine outfall (c.3500m) increases ecological footprint; high materials/energy requirements; maritime navigation challenges • Direct interaction of outfall with designated sites (EU sites, pNHA, Ramsar site) • Likely to encounter unrecorded underwater archaeology due to long length of outfall	**35**

East	Broad indicative east WwTP area: • Low flood risk • Located where 82% of the projected growth is expected to occur; Most efficient of WWTP location options; short raw sewage transfers • Extreme groundwater vulnerability • WWTP achieves furthest physical distance of all options from SACs/ SPAs* • pNHA and geological sites (Two Mile Ditch, Terryland River) located nearby* *Selection of WWTP location using UÉ's required site and route selection process should avoid direct intrusion	**West**	• Shortest marine outfall (c. 600m) with good dilution • Limited interaction with designated sites (i.e., EU sites, bathing waters, protected habitats and cultural heritage sites etc.) • Treated effluent to cross city only once – less pipelines and disruption • Quaternary treatment will ensure very high effluent quality before discharge	• Pipelines must avoid heritage assets, with sub-surface archaeology likely to be encountered • Potential disruptions to e.g., traffic, scenic views/ routes etc.	**39**
		Corrib	• Treated wastewater load would not need to cross the entire city – less pipelines needed • Quaternary treatment will ensure very high effluent quality before discharge	• Treated effluent discharge to SAC and highly sensitive river system; onwards to EU sites, pNHA, Ramsar site • Flood-risk constraints • Potential disruptions to e.g., tourism, traffic etc. • Pipelines must avoid many heritage assets; high risk of impact on existing Cultural Heritage sites; interaction with geological sites	**34**
		East	• No Terryland River crossing • Marine outfall with good dilution • Outfall close to WWTP (minimising environmental impacts, increased efficiency/ reduced energy • Quaternary treatment will ensure very high effluent quality before discharge	• Long outfall (c.3500m) increases ecological footprint; high materials/energy requirements; maritime navigation challenges • Direct interaction of outfall with designated sites (EU Sites, pNHA, Ramsar site) • Likely to encounter unrecorded underwater archaeology due to long outfall	**36**

7.5 Final Screening Outcomes

The fine screening assessment compared nine strategic options against SEA Topics and their Strategic Environmental Objective(s) (SEO(s)) to identify key strengths, constraints and overall environmental performance. Overall findings:

- Options involving marine outfalls generally performed better than river outfalls, particularly for the Water Environment and Biodiversity topics.
- River outfall options (Options 2, 5 and 8) consistently performed less favourably due to the high sensitivity of the River Corrib, downstream transitional waters, and their associated protected sites.
- Option 3 (West WWTP with East Outfall) emerged as the weakest performing option overall, with notable conflicts across multiple SEA topics.

Table 7-3: Outcomes of fine screening

SEA Topic	Strongest Option(s)	Weakest Option(s)	Key Reason for Strongest Option(s)
Water Environment (W1)	Options 1, 4, 7	Options 2, 5, 8	Marine outfalls likely to provide better dilution; river discharge may affect sensitive Corrib system
Population, Economy, Tourism & Human Health (P1)	Options 1, 4	Option 3	Better alignment with growth and fewer community impacts
Climate Change (C1)	Option 9	Options 2, 3, 5, 8	Energy demand, pipeline length and flood exposure
Biodiversity (B1)	Options 1, 4, 7	—	Reduced interaction with designated sites
Material Assets (M1)	All options	—	Infrastructure upgrades improve service efficiency
Landscape, Townscape & Seascape (L1)	Most options	Option 3	Visual and spatial extent of marine and network infrastructure
Cultural Heritage (H1)	—	Option 3 (highest risk)	Pipeline routing and sensitive corridors
Geology & Soils (G1)	Most options	Option 3	Extended pipeline works
Air Quality (A1)	All options (neutral)	—	Effects limited to short-term construction phase

7.6 Final Options Assessment

All nine options achieved broadly similar scores (**Figure 7-1**), except for Option 3, which scored notably lower. This indicated that a range of alternatives could potentially meet the SEA objectives if appropriately designed and mitigated. Excluding Option 3, the remaining options are broadly similar and demonstrate a comparable level of performance. On this basis, Options 1, 2, and 4–9 are considered to deliver significant improvements compared to the 'Do-Nothing' scenario in relation to the SEA Topics and their SEOs for the draft GWS and are therefore suitable for further consideration.

The SEA, which assessed all nine options against the SEA Topics and corresponding SEOs, played an important role in informing the selection of preferred options for the draft GWS. In parallel, all nine options were evaluated through a Multi-Criteria Decision Analysis (MCDA) as part of the optioneering process for the draft GWS. While the SEA and MCDA shared some comparable themes, they applied different assessment criteria. The SEA focused on environmental receptors and compliance with SEOs, whereas the MCDA placed greater emphasis on engineering feasibility, long-term resilience, deliverability, flexibility, and planning and regulatory risk. These differences explain variations in the outcomes of the two assessments.

The MCDA identified Option 9 (east WWTP with east outfall) and Option 7 (east WWTP with west outfall) as preferred options. When these options were assessed through the SEA, they were found to perform satisfactorily across all SEA Topics and to be consistent with the SEOs. Both options incorporate advanced wastewater treatment, which will be required by 2045, and they provide suitable solutions for the safe discharge of treated effluent.

In accordance with SEA requirements, the selection of Option 9 and Option 7 is accompanied by commitments to mitigation, monitoring, and phased implementation. Regulatory oversight by the Commission for Regulation of Utilities and the Environmental Protection Agency will ensure that environmental protections identified through the SEA are embedded throughout delivery and operation of the GWS.

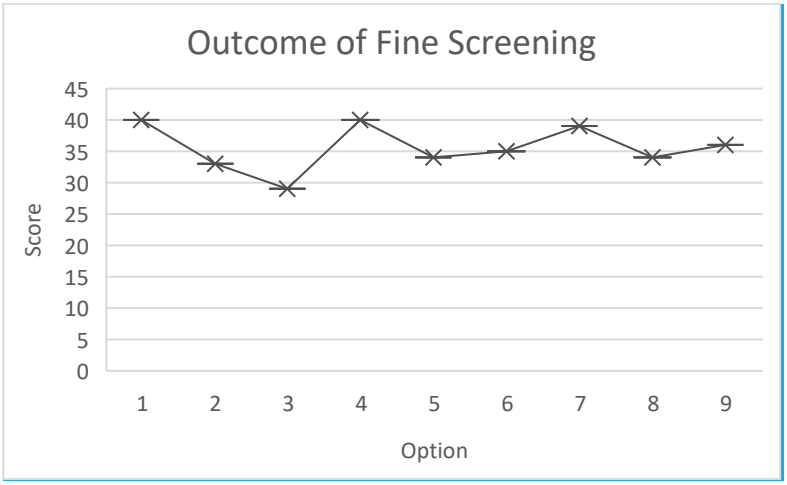

Figure 7-1: Scatterplot showing outcome of fine screening

8. Cumulative Effects Assessment

The SEA Directive requires assessment of cumulative effects, which occur where impacts from multiple actions combine over time and/or space such that individually minor effects may become significant when considered together.

For the draft GWS, the cumulative assessment considers:

- Impacts between measures within the draft GWS (intra-plan effects)
- Impacts between the plan and other plans or projects (inter-plan effects).

In line with EPA guidance, cumulative effects have been integrated throughout the SEA process and are addressed across all SEA topics.

A precautionary approach has been taken, which assumes all options could be built and operated at the same time within each future time horizon (i.e., 2040, 2055, 2080).

8.1 Intra-Plan

Because each WWTP serves a separate agglomeration, sites are dispersed and unlikely to create significant combined effects, even if constructed simultaneously. The assessment has considered the cumulative effects across all SEA topics to identify those interactions that are likely to generate significant effects. These are likely to be related to:

- **Water Environment**: combined effects of multiple discharges, or cumulative improvements from upgraded treatment influencing WFD status
- **Climate Change**: overall greenhouse gas emissions associated with the strategy, alongside other planned development
- **Biodiversity**: combined habitat loss, disturbance or water quality changes affecting designated and non-designated sites
- **Population, Human Health, Cultural Heritage and Landscape/Seascape**: cumulative disturbance from concurrent construction activities and overlapping impacts on sensitive receptors or assets.

Mitigation measures recommended in **Section** 9 in relation to construction environmental management would address potential combined construction effects.

8.2 Inter-Plan

There is potential for both negative and positive combined and cumulative effects between the draft GWS and plans supporting growth and infrastructure development. There could be negative impacts from construction and land take on biodiversity, landscape, cultural heritage and geology and soils but also positive impacts related to measures to protect the environment and provide sustainable development which the draft GWS options support. The potential negative construction effects identified can be addressed through the standard construction environmental management measures proposed (see **Section** 9).

8.3 Appropriate Assessment (NIS) Summary

As the draft GWS developed, options that sought to improve overall water quality or that avoid effects to European Sites were subject to Multi-Criteria Decision Analysis (MCDA). The options brought forward from the MCDA were Options 7 (East WWTP, West outfall) and 9 (East WWTP, East outfall). Both Option 7 and Option 9 were assessed in an NIS to determine whether they could result in likely significant effects to European Sites.

The NIS identified potential pathways through which the draft GWS could affect European Sites, including:

- Temporary and permanent habitat loss
- Habitat degradation due to changes in water quality, hydrology or hydrogeology
- Changes in air quality
- Spread of Invasive Alien Species
- Disturbance or mortality of qualifying species

The NIS also considered in-combination effects with other relevant plans and programmes. With the avoidance and mitigation measures set out in the NIS, it concluded that no adverse effects on the integrity of any European Site are anticipated at plan level, either alone or in combination. In accordance with the Habitats Directive, projects arising from the draft GWS will still be subject to appropriate project-level assessment, including screening, mitigation or alternative solutions where required.

9. Mitigation and Monitoring

Section 9 outlines how environmental effects associated with implementing the draft GWS will be managed, tracked, and responded to over time. Monitoring ensures that predicted impacts are verified, mitigation measures function effectively, and any unforeseen effects are identified early. It provides a transparent, evidence-based approach to assessing how the Strategy performs against its environmental and sustainability objectives, while supporting adaptive management and continuous improvement. Mitigation measures and a draft Monitoring Plan have been developed as part of this SEA, with the finalised framework to be integrated into the overall monitoring arrangements for the draft GWS following consultation.

9.1 Mitigation

Mitigation measures have been identified to prevent, reduce, or offset significant environmental effects arising from the draft GWS (Table 9-1). Most preferred options involve routine UÉ activities, where established procedures and controls already exist to manage potential impacts. These measures will be applied throughout implementation, with project-level assessments used where required to ensure compliance with statutory environmental obligations.

Table 9-1: Mitigation Measures for SEA Topics and their SEOs

SEA Topic	Recommended Action for Mitigation
General	• Early integration of environmental considerations including cumulative effects and sustainability principles • Follow relevant design standards and good practice to reduce pollution • Consider landscape, biodiversity, cultural heritage and site sensitivity • Engage proactively with regulators and stakeholders
Water Environment (W1)	• Protect water quality through careful siting and appropriate drainage design • Separate foul and surface water systems where practical • Reduce flood risk; prepare flood-risk and integrated drainage plans • Use Sustainable Drainage Systems (SuDS) to manage runoff, reduce flood risk, and manage water sustainably • Align with River Basin Management Plan (RBMP) • Improve, combine, or reduce the number of overflows where beneficial to the environment
Population, Economy Tourism & Recreation, and Human Health (P1)	• Minimise disruption during construction, maintaining safe access and clear communication with local communities

Climate Change (C1)	• Improve energy efficiency and adopt low-carbon design solutions • Incorporate climate resilience measures (e.g., site-specific flood-risk assessments)
Biodiversity (B1)	• Conduct ecological surveys early and implement invasive species management plans if IAS are present • Protect sensitive habitats and apply biodiversity action plan (e.g., UÉ BAP) measures • Use nature-based solutions (NBS) and SuDS to enhance biodiversity and sustainably manage runoff
Material Assets (M1)	• Apply circular-economy principles: optimise material use, reuse assets where possible, and improve efficiency of wastewater infrastructure • Protect critical infrastructure and ensure continuity of essential services
Landscape, Townscape, and Seascape (L1)	• Assess potential visual impacts and restore land after construction; use planting to mitigate visual effects where feasible
Culture and Heritage – Archaeological and Architectural (H1)	• Avoid impacts on archaeological and cultural heritage features; follow established protection standards
Geology and Soils (G1)	• Avoid contaminated or landfill sites where possible • Prioritise brownfield development where feasible and protect soil quality during construction activities
Air Quality (A1)	• Manage pollution risks during construction; implement odour controls and maintain strong health and safety practices

9.2 Monitoring

Monitoring will track the environmental performance of the GWS using targeted Key Performance Indicators supported by regular data collection and reporting. Existing national datasets (EPA, NPWS, local authorities, and UÉ) will be used to avoid duplication and ensure consistent, high-quality information. Monitoring will assess:

- Compliance with water quality and wastewater standards
- Ambient water quality trends, network performance
- SWO activity
- Treatment efficiency
- Annual WWTP environmental performance.

Findings will feed into RBMP cycles, inform periodic reviews and future updates of the GWS, and help determine whether further environmental screening or assessment is needed, ensuring the Strategy remains adaptive, evidence-based, and environmentally responsible.

Table 9-2 summarise the monitoring plans associated with each SEA topic along with the targets and indicators.

In general, all topics have the same underlying objectives, which include:

- Monitoring data for future GWS updates
- Clear and transparent documentation of option assessment and selection
- Build evidence base for next GWS

To ensure the long-term effectiveness of the strategy, progress will be reviewed every six years. As identified in the draft GWS, regular review and update of population projections is recommended with Strategy updates to ensure that these projections are in line as new information comes to light and that any adaptive pathways of the Strategy can be incorporated.

Table 9-2: Monitoring Plan for draft GWS based on Strategic Environmental Objectives (SEOs)

SEO	Indicator	Target
Prevent deterioration and improve water quality	• Effluent monitoring data • WWTP pollutant removal efficiency • Surface, coastal & groundwater status	• Compliance with limits • Reduced pollution • No deterioration in water quality status
Minimise flood risk from wastewater systems	• SWO frequency and duration • Number of properties experiencing internal sewer flooding	• Reduced incidence of sewer flooding • Reduction in SWO events
Support Sustainable Growth (i.e., economic and population)	• WWTP/SWO upgrades • Wastewater capacity improvements	• Infrastructure aligned with growth needs • Minimise community disruption
Protect recreation and amenity areas	• Complaints • Public access disruptions • Beach & shellfish water quality • Beach closures	Compliance with bathing water standards
Climate Change Mitigation	• Carbon emissions (construction & operation) • Use of renewable energy • Energy-efficiency improvements	• Reduce greenhouse gas emissions • Reduced carbon intensity of wastewater services • Improve energy efficiency in wastewater services
Climate Change Adaption	Disruptions caused by flooding or extreme weather	Improve resilience of wastewater services and communities

SEO	Indicator	Target
Protect and enhance biodiversity, safeguard designated sites	• Biodiversity registers • AAs • Implementation of UÉ BAP • IAS controls	• Biodiversity Net Gain • No adverse effects on protected sites
Apply circular-economy principles	• Recycled materials • Landfill waste • Water reuse	• Reduce waste generation • Improved resource efficiency
Optimise existing wastewater assets	Asset utilisation and performance data	Efficient and sustainable asset use
Conserve/ safeguard cultural heritage	• Implementation of heritage protection measures • Compliance with mitigation requirements	Protect recreation areas & heritage sites
Protect and enhance designated and valued landscapes, townscapes and seascapes	Landscape & Visual Impact Assessments for all infrastructure projects requiring planning and consent, where relevant.	Avoid or reduce landscape impacts
Protect soils and geological sites	Impacts on geological sites	Minimise soil erosion & disturbance. Minimise disturbance to County and City Geological Sites.
Promote good soil management	• Soil removal, reuse or remediation • Areas affected by contaminated soils	Protect geological sites
Protect and enhance health and wellbeing by improving wastewater practices to reduce odour	• Dust, noise and odour complaints • Odour monitoring at WWTPs	Minimise air, odour & noise issues

9.3 Adaptive Planning

The draft GWS adopts an adaptive planning approach to respond to changing climate conditions, legislation, technology, and growth. Performance and growth monitoring will guide timely adjustments, ensuring the Strategy remains resilient and environmentally responsible. Adaptive pathways, aligned with the Water Services Strategic Plan, identify decision points and sequence interventions so the Strategy can respond to new information or regulatory changes while remaining coherent.

The draft GWS sets out phased actions to 2080. Early stages will include evaluating the future role of the Mutton Island WWTP and selecting the most suitable site for the new regional WWTP based on technical, environmental and economic criteria.

Ongoing monitoring will confirm whether preferred options remain viable or require reassessment. To ensure long-term benefits, the Strategy must stay flexible and evolve as conditions change. Six-year review cycles will act as strategic checkpoints, keeping the GWS aligned with updated policies, environmental targets and investment priorities.

10.Conclusion

Excluding Option 3, all options perform at a broadly comparable level and deliver significant improvements against the SEOs when compared to the 'Do-Nothing' scenario. All nine options were evaluated through a robust MCDA as part of the optioneering process for the draft GWS. The MCDA results differ slightly from the SEA Environmental Report due to differences in assessment focus. While some MCDA criteria align broadly with the SEOs, others relate to engineering and delivery considerations—such as constructability, long-term resilience, flexibility, and planning or regulatory risk—which are not directly assessed within the SEA framework. The MCDA's preferred options - Option 9 (east WWTP, east outfall) and Option 7 (east WWTP, west outfall) - are considered suitable when assessed against the SEA Topics and their SEOs in the SEA.

The NIS for Option 9 (east WWTP, east outfall) and Option 7 (east WWTP, west outfall) concluded that through incorporating the avoidance and mitigation measures detailed in the NIS, adverse effects on the integrity of European Sites are not anticipated at plan-level, alone or in-combination with other Plans or Projects. The SEA cumulative effects assessment also determined that with mitigation and monitoring measures outlined in Section 10 of the SEA Environmental Report (and summarised in Section 9 of this NTS), adverse combined effects during construction of the GWS are unlikely. The SEA cumulative effects assessment also found that many combined effects involving the operational phase of the GWS will have positive environmental effects.

As per SEA requirements, the Option taken forward must have a specific monitoring plan and mitigation in place. It is recommended that the GWS is implemented in a phased manner, and with regulatory oversight from the Commission for Regulation of Utilities and the EPA.

10.1 Next Steps

The draft GWS, SEA Environmental Report, and NIS are available to view on the Uisce Éireann website at: Draft Galway Wastewater Strategy | Uisce Eireann.

Written submissions or observations can be sent to Uisce Éireann between May and July 2026.

Email: gws@water.ie

Post: Uisce Éireann, Galway Wastewater Strategy, 1 Galway Business Park, Upper Newcastle Road, Dangan, Galway, H91 A3EF

Submissions will be reviewed and relevant feedback incorporated into the final GWS.