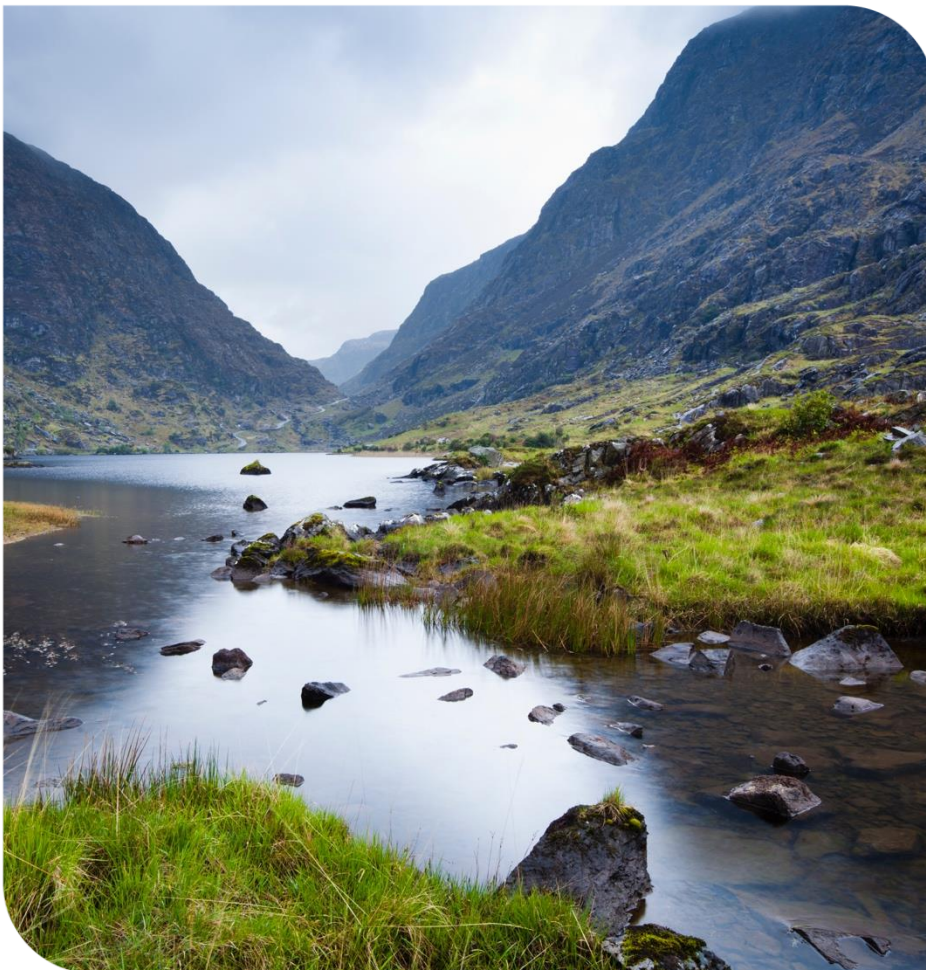


National Water Resources Plan - Draft Framework Plan

**Strategic Environmental Assessment:
Environmental Report
Non-Technical Summary**



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Data Disclaimer:

This document uses best available data at time of writing. Some sources may have been updated in the interim period. As data relating to population forecasts and trends are based on information gathered before the Covid 19 Pandemic, monitoring and feedback will be used to capture any updates. The National Water Resources Plan will also align to relevant updates in the National Planning Framework.

Non-Technical Summary

This is the Non-Technical Summary for the Strategic Environmental Assessment (SEA) of Irish Water's National Water Resources Plan – draft Framework Plan. This summary is provided with the SEA Environmental Report, as part of meeting the requirements for SEA, as set out in European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004) as amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I. No. 200 of 2011).

1 Introduction and Background

Irish Water is Ireland's national water utility, responsible for providing public water and wastewater services throughout the country. Irish Water's mission is to ensure that all their customers receive a safe and secure supply of drinking water and have their wastewater collected, appropriately treated and returned to the environment. Irish Water will protect the environment in all their activities and support Ireland's social and economic growth in a sustainable manner through appropriate investment in water services.

Irish Water provides drinking water to approximately 80% of the population, delivering water through 65,000km of pipelines. Their supply systems have developed in piecemeal fashion over 150 years, often responding to local development using surface and groundwater sources and limited in terms of quantity and quality variation. The result is a fragmented system with 749 individual WTPs supplying into 539 areas known as water resource zones (WRZs). At present, over 50% of water supplies do not provide a sufficient level of service. Population growth and climate change will worsen this situation over time if nothing is done.

A water supply system that is more reliable, poses less risk of boil water notices, and reduces potential damage to our environment is needed. Meeting these objectives will involve carefully maintaining and improving existing and new assets, with appropriate investment over time. This process is called water resources planning.

Irish Water is preparing the National Water Resources Plan (NWRP), outlining how they will move towards an environmentally sustainable, safe, secure and reliable drinking water supply for everyone over the next 25-years whilst safeguarding our environment. Water resource plans are typically reviewed every five years.

"The objective of the National Water Resources Plan is to secure a safe, sustainable and reliable drinking water supply for everyone."

1.1 Water Resource Planning

The NWRP aims to ensure that water resources are used in an efficient and sustainable way over the long term, giving due consideration to short term operational issues that may occur.

The NWRP will cover the entire country, this is a large spatial area than would be considered by most water resources plans and, as a result, it is being delivered in two phases:

Phase 1 is the Framework Plan and will include:

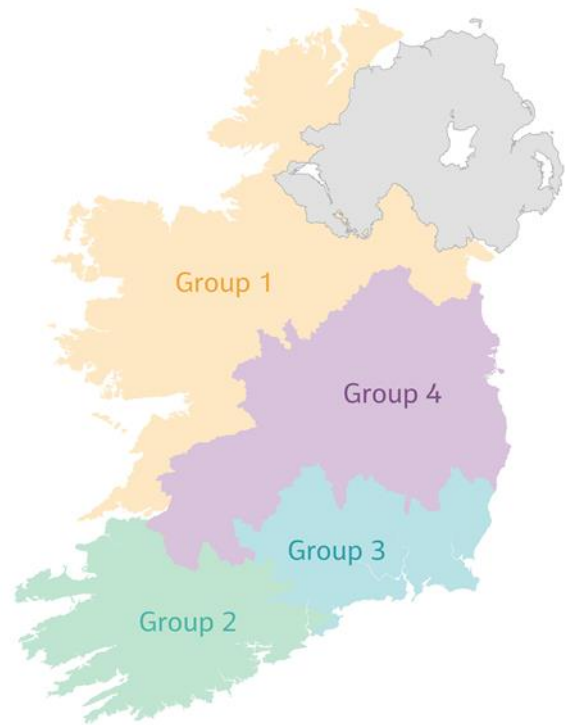
- A description of the methodology Irish Water propose to use for Water Resources Planning:
 - How Irish Water assess quantity need through the Supply Demand Balance;
 - How Irish Water assess quality and reliability need through the Barrier Assessment;

- How Irish Water address Sustainability by ensuring that all new options for water supply are based on conservative approaches to protect water sources;
- Irish Water Options Assessment Process; and
- Irish Water Preferred Approach Development Process.
- An assessment of Need across Irish Water’s asset base in terms of Quality, Quantity, Reliability and Sustainability for all of their supplies nationally.

The draft Framework Plan is subject to SEA and AA.

Phase 2 will involve identifying Preferred Approaches to address the Need identified in the Framework Plan. In order to manage the delivery of Phase 2, Irish Water will split the public water supply into the four regional groupings shown in Figure NTS-1 and bring forward the following Phase 2 Regional Water Resources Plans.

- Regional Water Resources Plan: North West (Group Area 1);
- Regional Water Resources Plan: South West (Group Area 2);
- Regional Water Resources Plan: South East (Group Area 3); and
- Regional Water Resource Plan: Eastern and Midlands (Group Area 4)



These groupings reflect Irish Water’s operational regions, with modifications to account for river catchments; as delineated by the Environmental Protection Agency (EPA) in the River Basin Management Plan.

The Regional Water Resources Plans (RWRP) or also known as the Regional Plans will apply the Options Assessment Methodology to the national water supply and develop a programme of preferred short, medium and long term solutions, and/or groups of solutions, to address identified needs for each area of the supply network. The Regional Plans will each be subject to a separate SEA and AA process.

Figure NTS-1 Regional Group Areas for roll-out of Phase 2 of the NWRP

Figure NTS-2 summarises the component parts of the NWRP and how these interact.

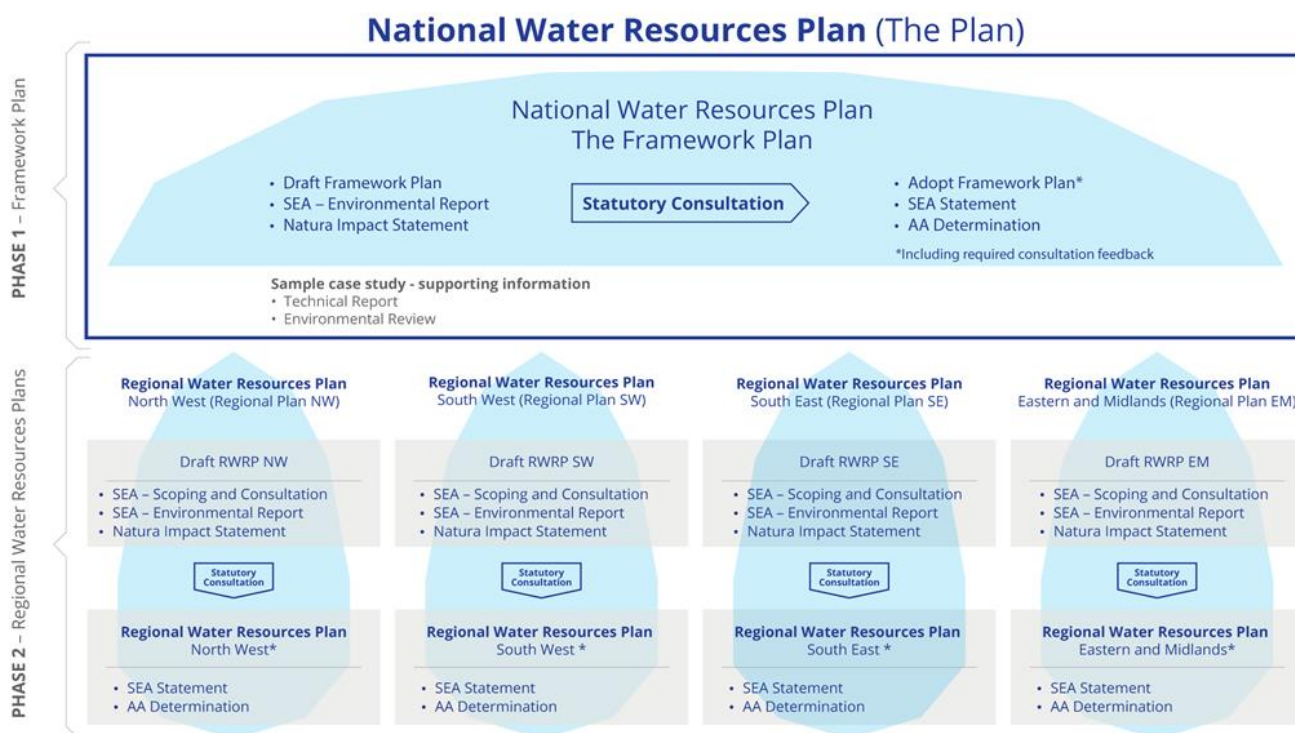


Figure NTS-2 Key elements of the NWRP and the phased consultation

1.2 Strategic Environmental Assessment

A Strategic Environmental Assessment (SEA) is required for the draft Framework Plan under the SEA Directive (2001/42/EC), which requires an assessment of the effects of certain plans and programmes on the environment. The transposing Irish Regulations are the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004) as amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I. No. 200 of 2011). Therefore, as part of preparing the draft Framework Plan, Irish Water is undertaking SEA.

In addition, the preparation and implementation of the draft Framework Plan must meet the provisions of the Habitats Directive (92/43/EEC). The supporting information for the appropriate assessment (AA) has been documented in a Natura Impact Statement (NIS), alongside the SEA Environmental Report. Irish Water will complete AA having regard to the NIS and all submissions and observations received in statutory consultation. These assessments have formed an integral part of the development of the Irish Water's methodology for option and approach assessment and selection.

The objective of the SEA process is to ensure that environmental objectives and sustainability principles are integrated into the preparation of Phase 1 of the Plan; as well as providing an overall assessment of the draft Framework Plan proposals.

The SEA process is undertaken in four stages:

- **Stage 1: Screening** – to determine whether a SEA is required;
- **Stage 2: Scoping** – sets the context, identifying objectives, problems and opportunities, and establishes the environmental baseline;
- **Stage 3: Identification, prediction, evaluation and mitigation of potential effects** – identification and evaluation of likely significant effects of the draft Framework Plan, including consideration of alternatives and determination of measures to mitigate and monitor potential residual effects;

- **Stage 4: Consultation, revision and post adoption** – consultation with statutory consultees and the public. This may require changes to the draft Framework Plan and Environmental Report in light of responses. Implementation of the monitoring programme.

An SEA Statement will be prepared for publication alongside the final adopted Framework Plan to report on how consultation responses and environmental considerations within the SEA process have influenced the Plan.

The focus of the SEA Environmental Report is:

- 1) Assess the high-level approach proposed in the draft Framework Plan of the NWRP; and
- 2) Consider how the SEA environmental protection, enhancement and sustainability objectives can be incorporated into the options assessment methodology for the Regional Plan development. The Regional Plans will be subject to a separate SEA process.

The SEA Environmental Report aims to:

- Identify and evaluate likely significant effects of the draft Framework Plan and identify potential mitigation measures;
- Consider alternatives to the approach for the draft Framework Plan of the NWRP;
- Identify potential interactions with other plans and programmes, including the potential for cumulative effects;
- Provide the methodology for integrating SEA and AA requirements throughout the development of the Regional Plans; and
- Provide mitigation and implementation recommendations for the Regional Plans and a draft monitoring plan which will be developed further through the Regional Plan SEAs.

2 National Water Resources Plan (NWRP) – draft Framework Plan

The draft Framework Plan aims to ensure that water resources are used in an efficient and sustainable way over the long term, giving due consideration to short term operational issues that may occur. The process for selecting options and approaches to meet the Supply Demand Balance (SDB) (see definition in Box 2.1 below) underpinning the plan, takes account of:

- The aims and objectives of the Water Framework Directive (WFD) in promoting the sustainable and efficient use of water resources;
- Future pressures on water resources from the effects of climate change on available resources and water use;
- The cost of providing water; and
- Environmental considerations and constraints.

Irish Water faces significant challenges in terms of the quantity, quality, reliability and sustainability of the public supplies across the country. Primary risks identified in over 50% of Irish Water’s supplies include insufficient water available for supply, water quality/compliance, and insufficient Levels of Service to meet their customers’ requirements.

Irish Water must ensure that their water supplies become more sustainable over time, therefore they need to ensure that solutions to their supply issues consider the broader environment within which they operate.

Supply Demand Balance (SDB) calculations - Is a way of comparing the available resources to supply customers with their projected water needs over time.

Water Resource Zones (WRZ) - are the management units at which resources planning is undertaken, and the SDB is calculated for each WRZ. The draft Framework Plan has identified 539 WRZs in Ireland.

Levels of Service - the reliability of supply that Irish Water customers can expect to receive and is expressed as a frequency or return period of supply failure. For example, if the Levels of Service is stated as 1 in 50, as a customer, you would only ever expect to experience a water outage or severe limitations to your supply, on average, once every 50 years.

Box 2.1: Definition of Supply Demand Balance, Water Resource Zones and Levels of Service

The options assessment process will ensure that Irish Water develop appropriate and sustainable interventions that align with their overarching three pillar approach (see Figure NTS-3) to:

Lose Less: reducing water lost to the system through leakage;

Use Less: reducing water use through efficiency measures; and

Supply Smarter: improving the quality, resilience and security.



Figure NTS-3: Three Pillars to address the key challenges to the draft Framework Plan

3 SEA Approach

SEA screening was conducted in August 2017 and Irish Water (as the responsible authority) determined that SEA of the NWRP was required in accordance with the SEA Directive.

The Scoping Report provided an outline of the NWRP, described the environmental characteristics of the Study Area and presented a review of relevant policies, plans and legislation and an initial understanding of the key environmental issues relating to the NWRP. The environmental topics in the SEA Directive that have been scoped in for the assessment of the Framework Plan are:

- Population, economy, tourism and recreation and human health;
- Water environment;
- Biodiversity (including flora and fauna);
- Geology and soils;
- Climate change;
- Material assets;

- Cultural heritage (including archaeology and architecture);
- Landscape and visual amenity; and
- Interactions between topics.

Irish Water is currently at Stage 3 of the SEA process (Identification, Prediction, Evaluation and Mitigation of Potential Effects), this is the Non-Technical Summary of the SEA Environmental Report which has been completed for the draft Framework Plan. The baseline environment has been considered within broad themes based on the listed environmental topics above. A review of policy and plans has been undertaken for each topic, and from these reviews, issues relevant to the plan and the SEA have been identified. This has informed the development of high-level SEA objectives for each topic area. These SEA objectives provide a framework for the assessment of the potential significant effects of the draft Framework Plan.

The Stage 3 assessment addresses:



CONSULTATION

- SEA Scoping Consultation Summary
- Consultation Process for the SEA and the Draft NWRP Framework



REVIEW OF RELEVANT PLANS, POLICIES AND PROGRAMMES

- EU, National Policy and National and Regional Plans
- Relevant Irish Water plans and programmes
- Key influences for the NWRP and SEA



BASELINE ENVIRONMENT

- Review of baseline environment including key trends and challenges and likely evolution of the baseline
- Key environmental issues relevant to the NWRP and SEA
- Defining the scope of the SEA



SEA ASSESSMENT METHODOLOGY

- SEA assessment of Phase 1 NWRP
- Integrated methodology for SEA assessment of Phase 2 NWRP



ASSESSMENT OF DRAFT FRAMEWORK PLAN (PHASE 1)

- Assessment of the NWRP objectives and generic option types
- Inter-relationship of the NWRP with other plans and programmes



SEA INFLUENCING THE REGIONAL WATER RESOURCE PLANS (PHASE 2)

Outline of methodology covering:

- SEA integrated into options assessment and approach development process
- SEA comparison of alternatives, preferred approach and cumulative assessment



MITIGATION AND MONITORING PLANS

- Recommendations for Phase 2 NWRP and the implementation of the plan
- A draft monitoring plan for the NWRP to track progress against objectives, targets and indicators to be developed further in Phase 2



NEXT STEPS

- Consultation on Phase 1 for the NWRP, SEA, and NIS.
- Outline of the next stages for Phase 2

Figure 3.1 – Environmental Assessment Structure

4 Consultation

Irish Water is committed to undertaking an accessible, meaningful, and accountable consultation and engagement process with stakeholders and members of the public throughout the development of the NWRP.

The consultation approach involves a number of key stages in the development of the NWRP, as follows:

- NWRP introduction;

- Consultation one – Strategic Environmental Assessment Scoping Report;
- Consultation two – NWRP – draft Framework Plan and associated environmental reports;
- Consultation on the four draft Regional Water Resources Plans (RWRP) and associated environmental reports.

In October 2017, a dedicated NWRP webpage went live on the Irish Water website at www.water.ie/nwrp, introducing the NWRP and the Consultation Roadmap. The NWRP Consultation Road map, as seen in Figure NTS-4, set out the process in developing the Plan and detailed the two stages where formal consultation would be undertaken in the development of the NWRP.

As well as the launch of the webpage in October 2017, an email informing the environmental authorities and interested parties, introducing the NWRP and highlighting the upcoming consultation on the SEA Scoping Report was issued. This stage of stakeholder engagement introduced the NWRP, outlined the main objectives of the plan and provided details on how to contact the NWRP team.

Following the publication of the SEA Scoping Report for consultation, Irish Water invited environmental authorities to briefings and workshops to further inform them on the NWRP, SEA and AA process. Meetings were held between December 2017 to December 2018, including a briefing to the Irish Water National Stakeholder Forum, Industrial Development Authority and the Commission for the Regulation of Utilities, Water and Energy and a presentation made to the National Water Forum (An Fóram Uisce).

The Phase 1 draft Framework Plan has been prepared and Irish Water is seeking feedback through statutory public consultation this Plan, the SEA Environmental Report (with this Non-Technical Summary) and the NIS. A sample Case Study of the draft Framework Plan methodology, applied to a number of WRZs (including sample environmental review information), is also provided as supporting material. The case study documents are for illustrative purposes only and the options and preferred approaches identified in them do not form part of the consultation during this stage. They are provided so that members of the public can see an example of how the methodology set out in the Framework Plan would be applied in practice. When the Framework Plan has been adopted, Irish Water will apply the final methodology to the area of the case study as part of the relevant Regional Plan and the options and preferred approaches will be consulted on at that stage. The consultation period will run for ten weeks from December 2020. Submissions will not be individually responded to but will be summarised and addressed in a Consultation Report which will be published on www.water.ie/nwrp.



Figure NTS-4: Consultation Roadmap

5 Review of Relevant Plans, Policies and Programmes

A review of, the relationship with the relevant policy, plan, programme and legislative framework was conducted as part of the SEA Scoping Report and has been further refined following consultation. This is an important part of setting the context for the SEA and the Framework Plan. The review process has informed the scope of the SEA, the focus for identifying the baseline environment and the development of the SEA objectives.

6 Baseline Environment

This chapter describes the baseline environment within the Study Area. The baseline is simply the environmental condition in the absence of the proposed plan over a defined period of time and provides a benchmark to assess the likely significant environmental effects.

The Environmental Report outlines the environmental sensitivities and trends that are considered relevant to water resource management at the strategic scale. This is based on a desk review of environmental datasets available from web-based searches, published documents and Geographical Information System based information.

The assessment of the baseline influences the development of the scope of the assessment identifying key relevant issues for the draft Framework Plan and the likely evolution of the baseline without a plan in place.

To establish the likely significant environmental effects¹ of the draft Framework Plan in general, Irish Water must first achieve an understanding of the key environmental issues and considerations.

Table NTS-1 summarises the key environmental issues identified as relevant to each aspect from the draft Framework Plan based on the baseline assessment; the EPA's (2016) State of the Environment Report; review of the relevant plans, policies and programmes; and the consultation undertaken as part of the SEA Scoping Report.



¹ In accordance with Annex I of the SEA Directive, the "effects" to be considered should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Table NTS-1: Summary of the key issues and scope for the Strategic Environmental Assessment

SEA topic	Key Policies Plans and Programmes	Key issues	Scope of the assessment
<p>Population, economy, tourism and recreation, and human health</p>	<ul style="list-style-type: none"> • Ireland 2040: Our Plan, National Planning Framework • National Spatial Strategy for Ireland 2002-2020 (Department of the Environment and Local Government, 2002) • Regional Spatial and Economic Strategies • Healthy Ireland Framework • Food Wise 2025 • Food Harvest 2020 • City and County Development Plans 	<ul style="list-style-type: none"> • Population and economic growth will increase the demand for water within Ireland. • Inward investment in Ireland, industrial growth and growth in the agricultural sector will increase the demand for water within Ireland. • Age structure, household sizes, growth in education and employment in particular business sectors may also influence water requirements within Ireland. • Growth in the tourism industry and the continued number of international tourists coming into the country will influence the demand for water within Ireland, and increasing security of supply of water will aid development of the tourism industry. • The location of important tourist attractions and recreational areas will influence the location of water resource options. • Health risks associated with the inability to provide clean and safe drinking water. • Patterns for settlement and economic growth will influence the demand for water and, in turn, the location of water resource options. • The construction of water resource options may cause temporary disruption to tourist attractions or recreational areas in the form of, for example, disruption to services/utilities and traffic (this will include noise disturbance). • Potential for loss/gain of public amenity as a result of development. 	<p>Scoped in: Population, economy, tourism and recreation, and human health (including temporary construction air quality dust nuisance and noise disturbance²).</p>

² Noise has been scoped out of the assessment, however, construction of NWRP options will likely result in short term noise disturbance during construction. Since these impacts are unlikely to be significant, they will be assessed as an impact to human health in terms of disturbance to local communities rather than under an individual noise heading.

SEA topic	Key Policies Plans and Programmes	Key issues	Scope of the assessment
		<ul style="list-style-type: none"> The construction of water resource options may cause temporary disruption to the local community in the form of, for example, dust, disruption to services/utilities and traffic (this will include temporary noise disturbance during construction). Some water resource options may be associated with loss of public amenity or property value. 	
Water environment	<ul style="list-style-type: none"> WFD (2000/60/EC) RBMP (April 2018) Irish Water - Water Services Strategic Plan 2015 Irish Water - National Wastewater Sludge Management Plan Irish Water - Lead in Drinking Water Mitigation Plan Catchment Flood Risk Management (CFRAM) Programme Flood Risk Management Plans 	<ul style="list-style-type: none"> Potential to affect or impede the WFD objectives from the construction and operation of water resource options. Potential for climate change and the effects of climate change, such as increased flooding and drought, to affect Irish Water's ability to meet water supply. Combined effects on water resources taking account of other non-Irish Water abstractions. 	Scoped in: Surface water quality, groundwater quality, abstraction/discharge issues, and flood risk.
Biodiversity (including flora and fauna)	<ul style="list-style-type: none"> EU Biodiversity Strategy, 2011 The Habitats Directive (92/43/EEC) The Birds Directive (2009/147/EC) Fish Directive (2006/44/EC) European Communities (Birds and Natural Habitats) Regulations 2011 as amended (S.I. No. 477/2011) Other National Biodiversity related regulations National Biodiversity Action Plan County and City Heritage Plans 	<ul style="list-style-type: none"> Potential to affect protected areas, including European sites (Special Areas of Conservation, Special Protection Areas and Ramsar), national sites (Natural Heritage Areas and potential Natural Heritage Area) and other sites of regional or local importance (National Heritage Sites and Wildlife Reserves). Potential for protected sites to pose constraints to planning of water resource options. Potential to impact biodiversity in non-designated areas. Potential to spread invasive species during construction and operation. 	Scoped in: Habitats and species that are water dependent, invasive species, and protected sites.

SEA topic	Key Policies Plans and Programmes	Key issues	Scope of the assessment
Material assets	<ul style="list-style-type: none"> • Infrastructure and Capital Investment Plan 2016-2021 • Waste Management Acts 1996 – 2005 • Forestry Programme 2014-2020 • Regional/County based waste management strategies and mineral plans 	<ul style="list-style-type: none"> • Economic growth and development is likely to increase the demand for water within Ireland, particularly within urban populations. • Strain on existing water services infrastructure to support greater water demand. • Building materials used, their manufacture and management and/or disposal of waste generated from Irish Water’s activities. • Effects of construction of specific plan options on current infrastructure such as road/rail/waterway networks. • Temporary or permanent loss of valuable agricultural land during construction and/or operation of specific options. • Effects of other infrastructure development (not related to the Framework Plan) on water quality in Ireland will present a risk/challenge for Irish Water. • Effects on other water abstractors. 	Scoped in: Material assets such as commercial forests and protected woodland areas, forest parks, valuable agricultural land, and existing infrastructure important for the day-to-day life of an area.
Landscape and visual amenity	<ul style="list-style-type: none"> • National Landscape Strategy for Ireland 2015-2025 • County Landscape Character Assessments 	<ul style="list-style-type: none"> • Potential for permanent infrastructure to impact landscape and visual amenity temporarily during construction or permanently throughout operation. • Potential for water resource options to be constrained by the need to protect the landscape character and local visual amenity. 	Scoped in: Landscape character and quality
Air Quality	<ul style="list-style-type: none"> • Ambient Air Quality Directive (2008/50/EC) • Industrial Emissions Directive (2010/75/EU) 	<ul style="list-style-type: none"> • The Framework Plan is unlikely to have a significant impact on air quality, so this topic area is scoped out of further assessment. 	Scoped out ³ : Air Quality

³ Short-term construction disturbance to local communities in terms of dust and noise will be considered as part of the Population, Economy, Tourism and Recreation and Human Health assessment and in the Biodiversity assessment.

SEA topic	Key Policies Plans and Programmes	Key issues	Scope of the assessment
Noise	<ul style="list-style-type: none"> Noise Directive (2002/49/EC) 	<ul style="list-style-type: none"> The Framework Plan is unlikely to cause significant noise pollution, so this topic area is scoped out of further assessment. 	Scoped out ² : Noise
Climate change	<ul style="list-style-type: none"> EU Energy and Climate (2020) Package 2009 The Climate Action and Low Carbon Development Act 2015 National Climate Change Adaptation Framework Ireland's National Policy Position on Climate Action and Low Carbon Development (2014) National Mitigation Plan 	<ul style="list-style-type: none"> Increased pressure on the environment and water resources as a result of increased temperatures and reduction in the availability of water as a result of decrease in rainfall; and increase in the incidence of extreme weather events. Effect on land valuable for climate change adaptation and carbon offsetting; such as peatlands, grasslands and/or forests. Carbon emission from energy use and requirement of energy efficiency. Water quality impacts as a result of increased flooding or droughts. 	Scoped in: Climate change and its effects on the water environment and catchments and carbon cost of options.
Cultural heritage (including archaeological and architectural)	<ul style="list-style-type: none"> Planning and Development Acts National Monuments Act Architectural Heritage and Historic Monuments Act County Heritage Plans 	<ul style="list-style-type: none"> Potential for the construction of options to permanently or temporarily damage archaeological and architectural heritage monuments/sites. Potential for permanent structures to impact the setting of heritage monuments/sites. Water resource options could be constrained by the need to protect the character of areas. Potential to uncover (and/or damage) unknown, undesignated archaeological remains, including underwater archaeology. 	Scoped in: Cultural heritage (including archaeology and architecture).
Geology and soils	<ul style="list-style-type: none"> Planning and Development Acts Action Plan for Rural Development 	<ul style="list-style-type: none"> Potential for water resource options to be constrained by future National Heritage Area/Irish Geological Heritage sites. Potential for impacts on geological resources/soil resources. Potential to impact vulnerable soils or unearth 	Scoped in: Geology, soils, contaminated land, mineral resources and Irish Geological Heritage sites, and geological National Heritage Areas

SEA topic	Key Policies Plans and Programmes	Key issues	Scope of the assessment
		contaminated material.	
Transboundary effects	<ul style="list-style-type: none"> • Planning Act (NI) 2011 • Regional Development Strategy: Building a Better Future, 2035 • Northern Ireland Climate Change Adaptation Programme • The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009 • Water Abstraction and Impoundment (Licensing) (Amendment) Regulations (Northern Ireland) 2007 • The Water Supply (Water Quality) Regulations (NI) 2007, as amended (2015) • NI Water (2014) Our Strategy for NI Water • NI Water (2020) Water Resource and Supply Resilience Plan 	<ul style="list-style-type: none"> • Some of the above effects could be experienced in Northern Ireland. 	Scoped in: Transboundary effects

6.1 Strategic Environmental Assessment topic interactions

In accordance with the SEA Directive, it is a requirement to recognise the interrelationships between environmental topics, as changes to one environmental aspect can directly or indirectly influence others. Table NTS-2 below details the potential interrelationships between SEA topics.

Table NTS-2: Interaction between Strategic Environmental Assessment topics

Water environment								
Biodiversity, (including flora and fauna)								
Material assets								
Landscape and visual amenity								
Air quality and noise *								
Climate change								
Cultural heritage (including architectural and archaeological)								
Geology and soils								
	Population, local economy, tourism and recreation, and human	Water environment	Biodiversity (including flora and fauna)	Material assets	Landscape and visual amenity	Air quality and noise *	Climate change	Cultural heritage (including architectural and archaeological)

*Note air quality and noise are scoped out of this plan level assessment but short term disturbance impacts from noise and air pollution during construction are addressed for receptors in population, recreation and human health and biodiversity topics.

The potential interrelationships between the SEA topics have been considered in relation to the assessment of potential types of options listed in Table NTS-6, which might be identified through the implementation of the Framework Plan to address water supply or water demand.

7 SEA Assessment Methodology

The SEA Environmental Report has considered the Framework Plan in three key ways. These being:

- Assessment of the Framework Plan, including comparison of the Framework Plan against a 'Without Plan' scenario, taking account of the overall approach of the plan proposals for implementation;
- Assessment of potential types of water supply and demand management options which could be used to address supply demand deficits; and
- Recommendations for integrating environmental and sustainability considerations into the actions identified for implementing the Framework Plan in the Regional Plans, including integrating SEA objectives into the options development and assessment methodology.

7.1 Strategic Environmental Assessment objectives

The set of SEA objectives developed at the scoping stage has been refined and finalised following consultation. These have been influenced by the plans, policies and programmes review, the baseline trends and pressures identified, and the scope of the assessment as defined in Table NTS-1.

At least one high-level SEA objective has been assigned to each of the SEA topic areas. The objectives provide the direction of change desired in that environmental area. The SEA objectives are illustrated in Table NTS-3 below.

Table NTS-3: Strategic Environmental Assessment objectives

Strategic Environmental Assessment topic	Strategic Environmental Assessment Objective
Population, economy, tourism and recreation, and human health	Protect and, where possible, contribute to enhancement of human health and wellbeing and to prevent restrictions to recreation and amenity facilities in undertaking water services.
Water environment	Water quality and resources Prevent deterioration of the WFD status of waterbodies, with regard to quality and quantity due to Irish Water's activities and contribute towards the "no deterioration" WFD condition and, where possible, to the improvement of waterbody status for rivers, lakes, transitional and coastal waters and groundwater to meet their WFD objectives.
	Flood risk Protect and, where possible, reduce risk from flooding as a result of Irish Water activities.
Biodiversity	Protect and, where possible, enhance terrestrial, aquatic and soil biodiversity; particularly European sites and protected species in undertaking water services.



Strategic Environmental Assessment topic	Strategic Environmental Assessment Objective
Material assets	Minimise resource use and waste generation from new or upgraded existing water services infrastructure and management of residuals from drinking water treatment - to protect human health and the ecological status of waterbodies. Minimise impacts on other material assets and existing water users.
Landscape and visual amenity	Protect and, where possible, enhance designated landscapes in undertaking water services.
Climate change	Climate change mitigation Minimise contributions to climate change emissions to air (including greenhouse gas emissions) as a result of Irish Water's activities.
	Climate change adaptation Promote the resilience of the environment, water supply and treatment infrastructure to the effects of climate change.
Cultural heritage	Protect and, where possible, enhance cultural heritage resources in undertaking water services.
Geology and soils	Protect soils and geological heritage sites and where possible contribute towards the appropriate management of soil quality and quantity.

These high-level SEA objectives are used as the framework for the assessment of likely significant effects from the draft Framework Plan compared to 'Without Plan' alternatives and also for each of the potential water supply and demand options (construction and operational phases). The potential for mitigation of effects during plan implementation and for the different option types are considered.

7.2 SEA assessment criteria

The draft Framework Plan and the possible solutions based around the main types of water supply and demand investment options have been assessed against the SEA objectives in line with the criteria outlined in Table NTS-4. The assessment criteria were presented in the SEA Scoping Report for public consultation and refined in response to comments provided. Irish Water undertook the assessment taking account of potential standard mitigation which are expected to be part of future development.

Table NTS-4: Strategic Environmental Assessment criteria

Description of Likely Significant Effect	
Likely to have a positive effect	+
Likely to have a negative effect	-
Effects are uncertain or not applicable	? or N/A
Likely to have a neutral effect	0
Likely to have a mixed positive and negative effect	+/-
Likely to have mixed neutral and negative effect	0/-
Likely to have mixed neutral and positive effect	0/+

7.3 Alternative plan assessment

The reason for assessing alternatives to the plan is to determine if the significant adverse effects of the proposed plan can be reduced or avoided. Therefore, the alternatives should be "reasonable". The term reasonable is not defined in the Directive. However, taking into account the EPA guidance, for an alternative to be considered reasonable for the purposes of this SEA, it must meet the objectives of the

NWRP, which is to provide a safe, secure, sustainable and reliable supply of water for the next 25 years. The NWRP must also meet the requirements of the Water Services Act 2013 and be in line with the Water Services Strategic Plan.

The reasons for selecting (a) the alternatives and (b) the preferred plan must be documented, together with a description of how this assessment of alternatives was undertaken. A water resources management plan typically recommends a combination of options which address the supply demand deficit. In water resource management planning, the alternatives assessment considers both alternative individual options and alternative plan recommendations.

Irish Water has considered alternative methodologies for developing the Framework Plan and Regional Plans. They reviewed the resource planning methodologies used in other jurisdictions, including the United Kingdom, France, Italy, Spain, Germany, Australia, New Zealand and the United States, and compared the similarities between other countries to Ireland. As water services provision in the Republic of Ireland is similar to that in the United Kingdom, Irish Water has used the “Final Water Resources Planning Guidelines 2016”, developed by the Environment Agency and Natural Resources Wales in England and Wales as the starting point for their NWRP. However, it must be noted that water resource planning has been undertaken in the UK for nearly 25 years and its processes and methodologies continue to be modified and improved over time. As this is Ireland’s first NWRP, and because it differs in some aspects to the UK situation, the first stage will be to develop a draft Framework Plan.

7.4 Cumulative assessment for the National Water Resources Plan

A cumulative effects assessment for a water resource management plan should include:

- Effects of measures/options proposed within a plan or programme; and
- Effects between the measures/options proposed within the plan or programme and other projects, plans and programmes.

Given the high-level and methodology-based approach of the draft Framework Plan, it is not possible to predict the cumulative effects of the measures/options proposed within the plan or the effects of such options with other projects.

As such, the cumulative effects assessment provided in this report focuses on identifying possible interrelationships at a strategic level, mainly in terms of identifying areas where there may be potential for combined effects with the implementation of the draft Framework Plan and indicating whether these effects are considered likely to be positive, negative, or mixed positive and negative with respect to the SEA objectives.

Key plans and programmes are considered in terms of how they support the achievement of the SEA objectives and how the Framework Plan could support high-level environmental protection objectives in other plans or programmes.

Cumulative effects assessment has been built into the methodology for the options development and assessment process aimed at finding solutions for supply demand deficits to ensure that combined effects are considered in the selection process. The cumulative effects assessment will include identification of additional mitigation measures to those identified for individual options.

Cumulative effects assessment will be undertaken through the implementation of the options assessment process and SEA undertaken for the Regional Plans. For the Regional Plans, cumulative effect assessments will consider the combined effects from all of the Study Area preferred approaches within the region against environmental objectives during construction and operation phases. The

assessments will take account of the individual Study Area assessments against the SEA objectives. In addition, the Regional Plans will need to consider potential for:

- Inter-regional options such as transfers between regions; and
- Cumulative effects between Regional/Group Area Preferred Approaches proposed in the draft Regional Plans.

8 Assessment of the draft Framework Plan (Phase 1)

Over the next couple of years, Irish Water will be working on collating data from local authorities to enable us to develop options for water resource management in Ireland. At this point, Irish Water have developed a list of potential option types which will be considered further to identify the most resilient, sustainable, deliverable and cost-effective approaches to balance predicted supply and demand over the 25-year planning period.

The SEA therefore assesses the:

- ‘Without Plan’ scenario in terms of the SEA objectives (the ‘With Plan’ scenario will be assessed through SEA of the Regional Plans);
- Potential types of water supply and demand options for investment within the ‘lose less’, ‘use less’ and ‘supply smarter’ categories covering the potential environmental effects, mitigation and enhancement measures and opportunities associated with each potential option type for the construction and operational phase; and
- Analysis of interactions between the plan implementation and other plans and programmes of national/regional significance.



In addition to the above, the SEA process has also influenced the development of a methodology for integrating environmental and sustainability considerations across the Regional Plans, including the development of an option development process which will be used to identify and select options and combined approaches for investment, drought planning and abstraction risk prioritisation. The results from applying this methodology will be reported in the SEA for the Regional Plans.

Alternative plan approaches to maintaining supply and demand in Ireland which have been assessed are:

- **Without Plan:** No implementation of the Framework Plan (continuation of the existing approach); and
- **With Plan:** Based on the high level objectives and provisions in the draft Framework Plan (note that the proposed methodology to identify and assess options and compare and assessment potential approaches meeting plan objectives will be further assessed in the Regional Plans).

The assessment of alternative approaches is summarised in Table NTS-5. The proposed objective led, and methodology-based approach is clearly the preferred high-level approach in terms of providing a framework for water resource planning which can contribute to meeting SEA objectives through the Regional Plans.

Table NTS-5 Assessment of alternative plans

Plan alternative	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
<p>Without the Plan (continuation of the current regime):</p> <ul style="list-style-type: none"> Highly fragmented system which has been developed in a piecemeal manner Approximately 50% of WRZs with a level of service worse than 1 in 50 years Reactive approach (investment needs a proactive approach) to identifying issues - driven by issues in drinking water quality, Drinking Water Safety Plans and/or Remedial Action List, or existing water availability issues or infrastructure adequacy Water resource planning not taking into account different dry year or winter critical scenarios Local level focus to solutions rather than considering inter-zonal, regional or national solutions used in water resource planning No strategic level multi-criteria options assessment process used to incorporate aspects such as resilience, sustainability and progressibility into early level option and Study Area approach decision making. This leaves environmental issues to be addressed at the project level only, through Environmental Impact Assessment and planning consenting. 	-	-	0	+/-	-	0	0	-	0	0

Assessment Justification

The continuation of the current regime could result in negative impacts on human health and wellbeing due to risks to maintaining levels of security of supply and access to water; as well as climate change resilience. Currently, levels of service range between a 1 in 10-year probability of water supply failure to 1 in 50 years, depending on location. Without considering the dry year or winter critical period scenarios the risk of water supply failure is greater.

Projects are likely to be smaller-scale schemes due to the local focus and the absence of strategic level assessment. Water assets will therefore remain stressed, relying on smaller, and in some cases unsustainable sources or unreliable infrastructure, rather than pursuing the potential to develop a more flexible and resilient system using sources sustainably.

Under the 'Without Plan' scenario there is also reduced potential to identify mitigation requirements early on and to influence selection of solutions with reduced environmental impacts and potentially wider benefits.

Plan alternative	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
<p>With the Plan</p> <ul style="list-style-type: none"> Focus on the three pillars of using less, losing less, and supplying smarter using a planned rather than a reactive approach Planning a resilient system with more reliable sources and improved level of service Improving understanding of future risks, including climate change and efficient water use Integrating SDB with other key drivers including ongoing Irish Water projects and plans Increasing routine monitoring and operational planning allowing Irish Water to proactively manage and forecast resourcing and operational trends Developing drought planning involving identifying drought indicators, risk assessment and drought management actions 	+	+/-	0	+/-	+	+/-	+/-	+	0/-	0

Assessment Justification

The draft Framework Plan includes a commitment to work to a 1 in 50 year level of service across all locations and actions in place to achieve this target. The draft Framework Plan will provide the basis for developing an investment programme, providing greater security of supply and a more resilient supply since options will address the SDB over extreme weather planning scenarios.

The process may identify more strategic inter-zonal and regional schemes, which can have both positive and negative potential effects on the water environment, biodiversity and landscape and visual amenity. Therefore, mitigation measures and a monitoring framework shall be developed alongside preferred options and approaches. In the long-term the plan will bring benefits in terms of greater security of water supply to the population, tourism industry and recreational amenity, human health and the economy and will reduce frequency of drought management measures. Additionally, the newer, or upgraded, more reliable assets within the system will result in a system more adaptable to the impacts of climate change.

The SEA of the plan will allow environmental considerations to be embedded into the plan making a process and setting a framework for identifying mitigation and monitoring so that these can be part of decision-making and inform early option design and costing.

8.1 Assessment of option types

The potential investment options for meeting the SDB outlined within the draft Framework Plan have been assessed against the SEA objectives outlined in Table NTS-3 in terms of identifying potential for significant effects using the scoring approach set out in Table NTS-4.

Potential impacts during construction and operation for each option type are provided in Table NTS-6 below.

The SEA options assessment assumes the implementation of standard mitigation measures. In addition to the standard mitigation measures, additional mitigation measures and further study requirements will be identified for each option. Where options require Environmental Impact Assessment and planning permission, mitigation will be identified through this detailed assessment and approval process. For smaller scale development, mitigation would be identified through environmental review and application of good practice guidance.

Table NTS-6: Strategic Environmental Assessment of general option types

Option type sub-category	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
Lose Less										
Leakage Reduction	Construction (short term)									
	-	0	0	-	-	0/-	0	0	-	-
	Operation (long term)									
	+	+	0	0	0	0	+	+	0	0
Use Less										
Education and Awareness	Construction (short term)									
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Operation (long term)									
	+	+	0	0	0	0	+	+	0	0
Water Efficiency	Construction (short term)									
	0/-	0	0	0	0	0	0	0	0	0
	Operation (long term)									
	+/-	+	0	0	0	0	+	+	0	0
Recycling and Re-Use	Construction (short term)									
	0/-	0	0	0	0/-	0	0	+/-	0	0
	Operation (long term)									
	+/-	+	0	0	0	0	+	+	0	0
Metering	Construction (short term)									

Option type sub-category	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
	-	0	0	0	0	0	0	0	0	0
	Operation (long term)									
	+/-	+	0	0	0	0	+	+	0	0
Supply Smarter										
Surface Water										
	Construction (short term)									
Surface Water Abstractions	-	-	0	-	-	0	-	-	-	-
	Operation (long term)									
	+	-	0	-	-	0	-	-	0	0
Groundwater										
	Construction (short term)									
Groundwater Abstraction	-	-	0	-	-	0	-	0	-	-
	Operation (long term)									
	+	-	0	-	0	0	0	0/-	0	0
	Construction (short term)									
Aquifer Storage Recovery	-	-	0	-	-	0	-	-	0	-
	Operation (long term)									
	+/-	+/-	+/-	+/-	0	0	+/-	0	0	0
Reservoirs										
Storage	Construction (short term)									

Option type sub-category	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils	
Reservoirs	-	-	0	-	-	-	-	0	-	-	
	Operation (long term)										
	+	+/-	+/-	+/-	0	-	-	+	-	0	
Catchment Management	Construction (short term)										
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Operation (long term)										
	+	+	+	+	0	0	+	+	0	+	
Effluent Reuse											
Effluent Reuse	Construction (short term)										
	-	-	0	-	0	0	-	0	-	-	
	Operation (long term)										
	+/-	+/-	+/-	+/-	+/-	+/-	-	+	0	0	
Desalination											
Desalination Coastal / Brackish	Construction (short term)										
	-	-	0	-	+/-	-	-	0	-	0	
	Operation (long term)										
	+/-	-	-	-	+/-	-	-	+	0	0	
Water Transfers											
Transfers	Construction (short term)										
	-	-	0	-	-	-	-	0	-	-	

Option type sub-category	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
	Operation (long term)									
	+	0	0	0	0	0	-	+	0	0
Tankering	Construction (short term)									
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Operation (long term)									
	+/-	0	0	0	0	0	-	-	0	0
Other Network Improvements										
Expansion of Service Reservoirs (Bankside)	Construction (short term)									
	0	-	0	-	-	-	-	0	-	-
	Operation (long term)									
	+	0	0	0	+/-	-	+/-	+	0	0
WTP Expansion and Process Losses	Construction (short term)									
	0	0/-	0	0/-	-	0/-	-	0	0/-	0/-
	Operation (long term)									
	+	+/-	0	0	+/-	0	0	+	0	0
General Network Improvements	Construction (short term)									
	-	-	0	-	-	0	0	0	-	-
	Operation (long term)									
	+	+	0	0	0	0	0	+	0	0

8.2 Interaction between the draft Framework Plan and other plans and programmes

The potential areas for interactions between the draft Framework Plan and other plans and programmes which may result in cumulative effects are summarised in Table NTS-7.

Table NTS-7 Study area cumulative effect with other plans and programmes

Plan or programme	Population, economy, tourism and recreation and human health	Water environment (quality and resources)	Water environment (flood risk)	Biodiversity	Material assets	Landscape and visual amenity	Climate change (mitigation)	Climate change (adaptation)	Cultural heritage	Geology and soils
Ireland 2040: Our Plan, National Planning Framework (Government of Ireland, 2018)	+									
National Adaptation Framework: Planning for a Climate Resilient Ireland (2018)		+/-					+/-	+		
RBMP (2018 – 2021) (Department of Housing, Planning, Community and Local Government, 2017)		+/-	+/-					+/-		
Water Services Strategic Plan (WSSP)		+	+					+		
Catchment Flood Risk Management (CFRAM) Programme (2011 onwards)			+/-							
Flood Risk Management Plans (2016)			+/-							
NI Water (2020) Water Resource and Supply Resilience Plan		+/-		+/-						

8.3 SEA Recommendations for implementing the draft Framework Plan

This section identifies recommendations for actions or measures to include with the implementation of the draft Framework Plan to mitigate potential environmental risks and impacts and contribute to achieving SEA and plan objectives. The recommendations address the approach

set out in the draft Framework Plan for identifying the need for water resources and drinking water quality and developing solutions covering current and future actions based around the Three Pillars (Lose Less, Use Less and Supply Smarter). The SEA recommendations (EAP1 – EAP12) are taken forward as part of the Environmental Action Plan (EAP) in Chapter 10 (see Table NTS-8) and their implementation is committed to within the draft Framework Plan.

9 SEA Influencing Regional Water Resources Plans (Phase 2)

SEA objectives and assessment requirements are integrated into the draft Framework Plan proposed methodology to be applied through each of the four Regional Plans:

- Option development and assessment; and
- Approach assessment and preferred approach selection.

SEA requirements are highlighted in the methodology for:

- Assessing reasonable alternatives;
- Cumulative effects assessment;
- Assessment of the proposed preferred plan and identification of mitigation measures; and
- Development of a monitoring plan and feedback.

9.1 Options and approach development methodology

The methodology is based around an option development process which will be rolled out as part of the Regional Plans. For the NWRP methodology, these steps are identified as:

- 1) Identifying need – based on SDB and/or Drinking Water Safety Plan Barrier Assessment;
- 2) Scoping of the Study Area (WRZs) – understanding the Study Area and the existing conditions of assets, supply and demand issues as well as environmental constraints and opportunities;
- 3) Identifying potential options for consideration relevant to the Study Area;
- 4) Coarse screening – assess the unconstrained options and eliminate any that will not be viable;
- 5) Further option definition, information collection and preliminary costing;
- 6) Fine screening – options assessment and scoring against the key criteria with further removal of options identified as unviable and development of feasible options for costing and scoring assessment update;
- 7) Approach assessment – comparison and assessment of combinations of options identified to meet the predicted supply demand deficit to determine the preferred approach; and
- 8) Monitoring and Feedback into Plan – a feedback mechanism to ensure that the Framework



Plan continuously adapts to changes such as, evolving scientific data, understanding, and policy change in relation to the natural environment.

The SEA process will be applied across each of these steps as identified in Figure NTS-5 below.

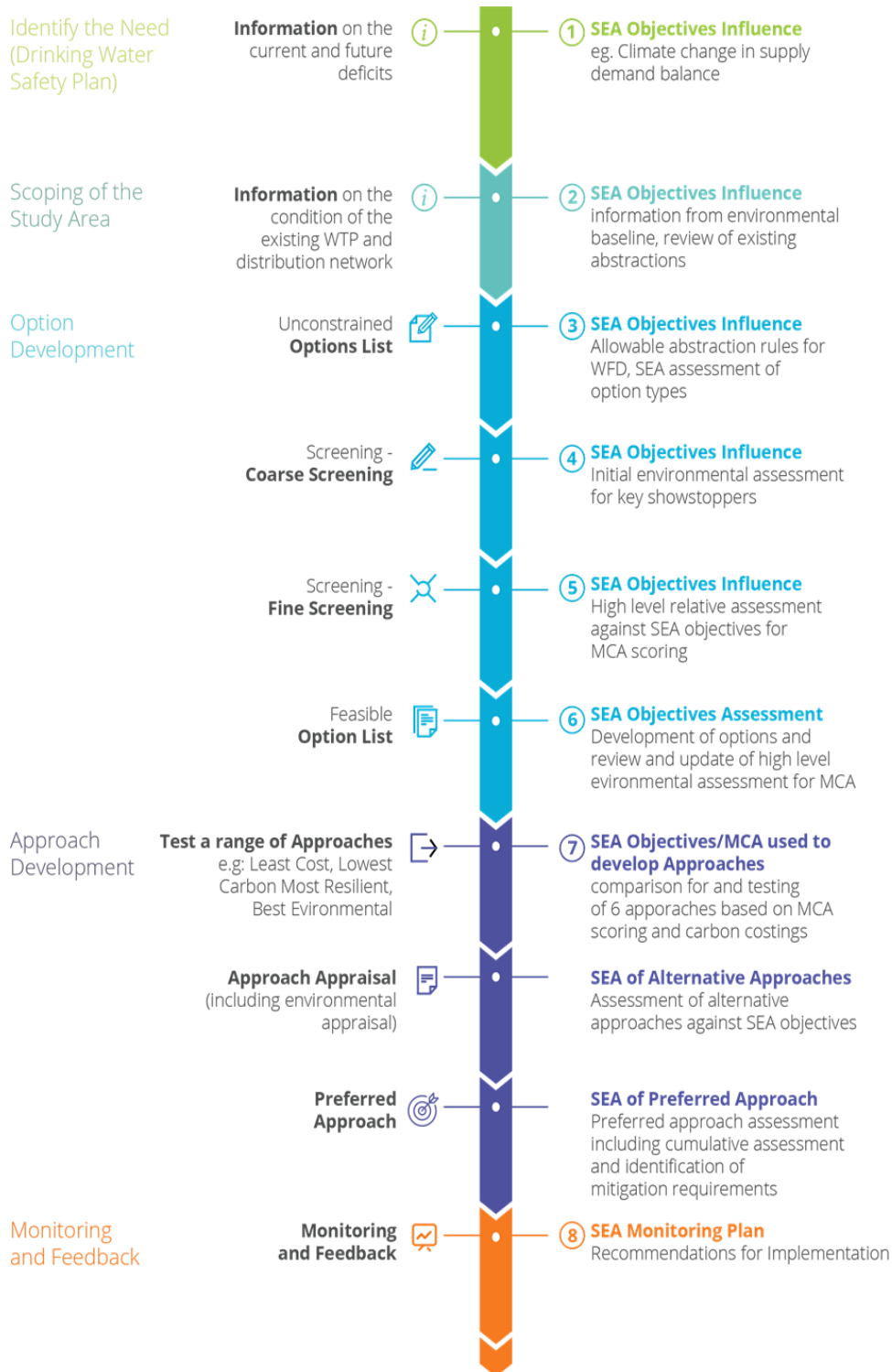


Figure NTS-5: Option and Approach Development Process

9.2 Summary of options and approach assessment and SEA

The methodology is focused on ensuring that Irish Water promote solutions that are resilient, environmentally sustainable, and flexible to the changing environment and demands. It will help

Irish Water to identify the most appropriate individual or combination of options to meet an identified need following their Three Pillar approach to Lose Less, Use Less and Supply Smarter.

The options and approach assessment process incorporates SEA objectives by:

- Pre-option screening application of allowable abstraction rules to new options to meet WFD requirements for good and high status water bodies (Note: these are precautionary rules and, in some cases, available hydrological/hydrogeological studies or appropriate assessment may provide more specific information on the relevant thresholds).
- Screening out of options considered with reasonable certainty as likely to have significant effects on the environment that are considered unlikely to be mitigatable.
- Improving the options by making use of an iterative process which will allow potential significant environmental issues for an option to be identified and the potential to address these to be considered for example through further design and embedded mitigation.
- Process of avoiding high risk European site or WFD options where possible and where not possible, identification of alternative options (these are options to be brought forward if project level studies on preferred options identify that Adverse Effects on Site Integrity cannot be avoided or WFD water body status deterioration is likely, and time limited derogation is not available).
- Comparison of different approaches including three environmentally led approaches, Best AA, Best Environmental and Low Carbon to determine the preferred approach through a structured, transparent and fully recorded process and assessment of the alternative approaches including the three environmental approaches, most resilient, least cost and do minimum, and quickest delivery approaches against SEA objectives.
- Assessment of the selected Preferred Approaches including individual options assessment of the combined options within each approach (cumulative effects assessment and in combination assessment) within each Study Area and within Regional Plan and also with other proposed plans or developments. Feedback and reconsideration is included in the process if needed and the assessment involves identification of mitigation measures to be taken forward addressing individual option mitigation and mitigation for cumulative and in combination effects. This will include as part of the Regional Plans, taking account of the assessment of any inter-regional options and potential cumulative or in combination effects (this will be considered through the preparation of the Regional Plans and addressed sequentially in each of the Regional Plans in turn).

The 8 stage methodology provides an iterative process allowing testing and consideration of environmental performance against SEA objectives and AA and identification of mitigation requirements at WRZ, Study Area, Regional and inter-Regional level. The assessment provides a systematic and tracked process which can be applied consistently across the four Regional Group areas and will facilitate input from internal and external stakeholders.

10 Mitigation and Monitoring Plans

The SEA has made recommendations for the implementation of the draft Framework Plan, including recommended actions for mitigation within an Environmental Action Plan (EAP) and a draft Monitoring Plan.

10.1 Environmental Action Plan

The EAP set out in Table NTS-8 below, summarises the actions for mitigation and areas of further study identified in this Environmental Report. The EAP provides a basis for tracking recommendations from the SEA during the Framework Plan implementation and Regional Plan development.



Table NTS-8 Environmental Action Plan

Ref no	Recommended Action for Mitigation / Further study	Target	Monitoring
Identifying the need – quantity, quality and reliability			
Quantity – supply demand balance			
Abstractions and supply side yield assessments			
EAP1	EAP1.1 Link investigation on supply risks to environmental resilience and avoiding damage to vulnerable habitats and protected areas; especially European designated sites, and threats to WFD water body objectives.	Environmental issues to be included in risk assessments for supply shortages or drinking water quality issues.	Study Area scoping, risk assessments and prioritisation
Demand side data improvements: planning for future developments			
EAP2	EAP2.1 Reviews of WRZ configuration can consider potential environmental benefits from rationalisation opportunities to improve operational efficiency for waste and energy use and also reduce need for developing new sources.	Optimised WRZs/Study Areas	Study Area scoping, risk assessments and prioritisation
	EAP2.1 Feed information on potential for water efficiency improvements to provide savings into future options identification		
Drinking water quality and reliability			
EAP3	EAP3.1 Understanding causes of water quality issues for drinking water can support catchment management actions. Link clean water element (RC3) on water quality compliance and ongoing programmes on	Drinking water safety plans linked to the	Study Area scoping, risk assessments and

Ref no	Recommended Action for Mitigation / Further study	Target	Monitoring
	improving drinking water quality to potential for long term solutions through to long term catchment management opportunities to reduce pollution in groundwater and surface waters and water treatment issues.	NWRP	prioritisation
	EAP3.2 Link Drinking Water Safety Plans to scoping of Study Areas, prioritisation and options development process including consideration of catchment management opportunities.		
	EAP3.3 Link ongoing projects with the supply demand assessments, scoping area studies and prioritisation for new investment. Consider as part of investment proposals for water treatment works – wider rationalisation opportunities with opportunities to reduce abstraction pressure on stressed sources and potential for improvements to residuals management (see also EAP 11.1)	Existing programmes and projects coordinated with the NWRP	Study Area scoping, risk assessments, prioritisation and application of options development methodology
	EAP3.4 Value environmental and social benefits as well as costs in options development process (using environmental economics tools) to value long term solutions such as catchment management.	CBA and MCA supported by environmental valuation as well as qualitative assessment	Monitoring Plan
Delivering solutions – approach			
Climate change			
EAP4	EAP4.1 Take account of effects of climate change effects on protected areas and WFD objectives as well as water supply.	Environmental resilience as part of the climate change risk assessment informing long-term solutions.	Study Area scoping, risk assessment and prioritisation.
	EAP4.2 Results completed, and ongoing climate change studies should be used to inform future scoping of Study Areas/WRZs and the types of solutions considered and prioritisation for investment.		
	EAP4.3 Long term actions to improve water retention in upper catchments as well as catchment wide water quality initiatives could be considered as responses.		
Lose less: leakage reduction			
EAP5	EAP 5.1 Take forward studies and actions supporting meeting leakage targets and include consideration of relieving pressure on existing deficit areas and abstractions with sustainability issue and drought risks	Develop information to support and improving leakage reduction	Monitoring Plan
Use less: water conservation			
EAP6	EAP6.1 Link to raising awareness on environmental benefits of water conservation.	Improved awareness of benefits of conserving water (day to day and during extreme events)	Awareness campaigns
	EAP6.2 Consider customer research on the water supply and demand management including water efficiency options development along with local community and stakeholder views.		Customer consultation

Ref no	Recommended Action for Mitigation / Further study	Target	Monitoring
	EAP6.3 As data is developed to support understanding on water conservation, develop water conservation /water efficiency options to be considered as part of the Options Assessment Methodology for future plan cycles.		
Supply smarter: capital investment and improved operations			
See EAP3, 4 and 5 in relation to linking ongoing programmes and future water resource planning and EAP10, 11 and 12 on implementing options and approach assessment methodology.			
Drought planning			
Information for assessing drought risks			
EAP7	EAP7.1 Identify the risks from potential drought actions for water sources designated for nature conservation value and supporting protected species - include lessons learned from the 2018 drought.	Drought -sources at risk identified	Drought management
Environmental mitigation of drought measures			
EAP8	EAP8.1 Assess potential impacts of drought restrictions on customers, especially vulnerable groups, to identify both communication requirements and exemptions on restrictions relevant for each management area.	Drought management avoiding causing temporary or long-term impacts on protected habitats and species as well as minimising restrictions to customers	Drought management - environmental review Communication strategy Environmental assessment of sources at risk
	EAP8.2 Develop drought communication planning and identify approaches to avoid impacts on vulnerable water users, for example, through exemptions – plan to provide customers with information early so that voluntary measures can be effective in avoiding the need for additional measures in most cases, and taking forward the approaches from the 2018 summer drought and 2020 spring drought.		
	EAP8.3 Prepare environmental assessments (including AA) for sensitive water sources at risk from drought management actions. These should be available in advance of measures being needed. They should include consultation on the assessments with environmental authorities and identify specific monitoring or mitigation measures.		
Residuals approach			
EAP9	EAP9.1 Include consideration of residuals management in the options development process involving WTPs or rationalisation opportunities	Residuals approach linked to options development process	Monitoring Plan
	EAP9.2 Apply the waste management hierarchy with any solid waste disposal limited to appropriate licensed sites.		
Delivering solutions: options and approach assessment methodology			
Integration of environmental and sustainability considerations			
EAP10	EAP10.1 Study Area scoping to include analysis of environmental baseline issues, risks, constraints and opportunities to inform identification of initial options as providing context for the option development process.	Context for identifying and assessment options is provided	Study Area scoping, risk assessments and prioritisation

Ref no	Recommended Action for Mitigation / Further study	Target	Monitoring
	EAP10. 2 Further development of the environmental and social impact valuation methodology as a tool for the approach assessment process, based on ecosystems services assessment/natural capital assessment principles, can support cost benefit analysis and MCA methodologies and provide quantitative information supporting SEA in the future.	CBA and MCA supported by environmental valuation as well as qualitative assessment	Monitoring Plan
	EAP10.3 Comparison of combinations of options (or approach) should include assessment of cumulative effects for each Study Area (groups of WRZs) and be considered in determining the best value approach. Justification for the approach selected will need to be provided.	Best environmental solutions considered in selection of preferred solutions with mitigation built into design and costing. Opportunities for enhancement to contribute to objectives to be considered	Monitoring plan
Transboundary issues			
EAP11	EAP11.1 Ensure potential for transboundary impacts are considered during options assessment and early consultation is undertaken to inform the assessment process.	Avoid transboundary effects	Monitoring Plan
Delivering sustainable solutions			
	EAP12.1 Link the options development information and SEA mitigation recommendations into the initial studies and designs for selected project level schemes so that assumptions and mitigation recommendations are taken forward.	Future proposed projects to be subject to initial environmental review linking to information from the options development process and to good practice procedures	Monitoring Plan
EAP12	EAP12.2 Development of procedures to integrate good practice approaches for avoiding/mitigating environmental impacts and identifying enhancement opportunities in future scheme design and development.		
	EAP12.3 Ensure environmental mitigation and study requirements are covered in option costing and risk aspects are taken into account in scheme development.		

10.2 Monitoring Plan

The monitoring plan is a requirement under the SEA regulations to provide a basis of identifying significant environmental effects during the implementation of the plan. This provides a basis for reviewing the predicted impacts of the draft Framework Plan, and the adequacy of the mitigation measures recommended so that additional mitigation can be applied if required. Performance against the monitoring plan targets will also inform the next cycle Framework Plan and SEA process.

As the draft Framework Plan does not involve the recommendation of specific investment options, this monitoring plan is intended to track the progress of implementing the SEA recommendations during Regional Plan implementation.

The monitoring plan covers the integration of environmental and sustainability considerations throughout implementation of the draft Framework Plan and the options development methodology. It also provides a framework for future long-term monitoring. In most cases, more detailed baseline collection and project studies will be required to confirm the significance of environmental effects and ensure appropriate mitigation is included as part of the scheme designs.

In certain circumstances, monitoring and feedback will identify the need for a variation of the Framework Plan or a Regional Plan. Where a variation is required, Irish Water will screen the change against SEA and AA requirements in accordance with its legal obligations.

The draft Monitoring Plan is provided in Table NYS-9 and will be updated following consultation on this Environmental Report. It will form part of the SEA statement to be published with the Final Framework Plan.

Table NTS-9 Draft Monitoring Plan

SEA topics	Strategic Environmental Assessment objectives	SEA indicators	SEA targets
All topics	All objectives	<p>Application of the options assessment and approach assessment methodology set out in the draft Framework Plan to integrate environmental, social and sustainability SEA objectives alongside other criteria.</p> <p>Application of methodology for SEA and AA in the comparison and selection of Preferred Approaches for the preparation.</p> <p>Environmental and social valuation methodology developed as a tool to inform the process.</p> <p>Transparent documentation of the options assessment and approach selection process.</p>	Options and approach assessment implemented to identify sustainable solutions that contribute to environmental objectives as well as NWRP objectives (through the Regional Plans)
All topics	All objectives	<p>Environmental assessment, including AA, for designated international and national sites potentially affected by drought measures.</p> <p>Communication plan for drought/freeze-thaw period actions.</p>	Source-specific environmental assessment and mitigation and monitoring measures agreed, avoiding long-term damage on designated sites and associated species from drought measures
All topics	All objectives	Monitoring plan data collection and reporting process implemented (see below for each topic) to provide baseline information for the next Framework Plan and for monitoring Framework Plan	Monitoring plan data compiled for feeding into Stage 8 monitoring and feedback loop.

SEA topics	Strategic Environmental Assessment objectives	SEA indicators	SEA targets
		implementation.	
Population, economy, tourism and recreation, and human health	Protect and reduce risk to human health in undertaking water services	<ul style="list-style-type: none"> • Level of Service • Frequency and duration of drought orders • Number of days/hours when water supply to people is disrupted due to drought, freeze-thaw or other service/infrastructure issues • Duration of works • Number of complaints received relating to construction works • Programmes and projects improving drinking water quality • Awareness raising programmes on water conservation 	<ul style="list-style-type: none"> • Maintained or improved access to reliable and safe drinking water meeting forecast demand • Minimise extent and period of disruption to traffic related to construction • Minimise access restrictions and noise disturbance to people from construction and operation of schemes • Raised public awareness of actions to take for water conservation
	Protect and, where possible, enhance recreation and amenity facilities resulting from Irish Water's activities	<ul style="list-style-type: none"> • Number of public rights of way closures/diversions • Length of paths created compared to loss 	<ul style="list-style-type: none"> • No net loss of important recreational amenity • Generation of new recreational facilities
Water environment	Water quality and resource Prevent deterioration of the WFD status of waterbodies with regard to quality and quantity due to Irish Water's activities, contribute towards the "no deterioration" WFD condition and, where possible, the improvement of waterbody status for rivers, lakes, transitional and coastal waters and groundwater to at least "Good" status	<ul style="list-style-type: none"> • Review of potential for catchment management to improve water quality/retain water • Number of investigations and contributions to catchment management schemes • Consider additional water quality and biological monitoring/data collection in addition to WFD monitoring data where needed • Projects undertaken contributing to water savings • Compliance with Water Services Strategic Plan Strategy Objective to manage water supplies in an efficient and economic manner (WS3). Key indicator – Leakage 	<ul style="list-style-type: none"> • Improved environmental resilience within water resource use catchments • Contribute to the achievement of "No deterioration" in status of waters (WFD objective) • Restoration to "good" status of waters currently at "moderate", "poor" or "bad" status (WFD objective) • Reduced pollution inputs to groundwaters and prevent deterioration (WFD objective) • Achieve sustainable economic level of

SEA topics	Strategic Environmental Assessment objectives	SEA indicators	SEA targets
		<p>expressed as a percentage of treated water put into the distribution system</p>	<p>leakage (SELL) for the Greater Dublin Area as identified in Appendix H of the draft Framework Plan</p> <ul style="list-style-type: none"> • Test all preferred approaches for sensitivity to leakage reduction targets
	<p>Flood risk Maintain and enhance flood risk management</p>	<ul style="list-style-type: none"> • Number of projects where flood risk assessment undertaken, and compensation required, or increase provided 	<ul style="list-style-type: none"> • No net flood plain area lost as a result of the plan, and where possible increase functioning flood plain
<p>Biodiversity, flora and fauna</p>	<p>Protect and, where possible, enhance terrestrial, aquatic and soil biodiversity; particularly European sites and protected species</p>	<ul style="list-style-type: none"> • Identification of existing abstractions or drinking water treatment residuals with risks to international or national designations • For designated nature conservation sites potentially affected by water resource options: <ul style="list-style-type: none"> i. Area of each designated site/type affected and the likely impact ii. Area of site with a recorded change in condition (positive or negative) iii. Plan for enhancement area/length of habitat affected vs restored 	<ul style="list-style-type: none"> • No adverse effects on integrity of European, national or regional level designations and, where feasible, seek to contribute to achieving Favourable Conservation Status • No net loss of priority habitats or habitat connectivity as a result of the works and, where possible, demonstrate habitat enhancement/creation • Reduced invasive species risk
<p>Material assets</p>	<p>Provide new and upgrade existing water services management infrastructure and treatment processes for residuals generated from drinking water treatment to protect human health and the ecological status of waterbodies</p>	<ul style="list-style-type: none"> • Minimise permanent loss of greenfield land, including agricultural, forestry or other land uses • No disruption to strategic infrastructure/services • Waste management plans used on all new schemes • No drinking water treatment residuals sent to landfill • No reduced abstraction to other users from new 	<ul style="list-style-type: none"> • Minimise permanent loss of greenfield land, including agricultural, forestry or other land uses • Minimise material consumption and waste during construction and operation of schemes • Increase investment in existing and new

SEA topics	Strategic Environmental Assessment objectives	SEA indicators	SEA targets
		schemes	<p>water treatment and wastewater management infrastructure</p> <ul style="list-style-type: none"> • Tonnes of residuals reused or recycled
Landscape and visual amenity	Protect and where possible, enhance designated landscapes in undertaking water services	<ul style="list-style-type: none"> • Total working area of pipelines through designated landscapes and non-designated landscapes • Development of protected landscape strategies to guide work in important and valued landscapes • Land use/landscape features re-established for projects over an appropriate period – areas/km successfully restored to meet requirements 	<ul style="list-style-type: none"> • Improvement or no net change in landscape quality through landscape design and mitigation and enhancement
Climate change	Mitigation Minimise contributions to climate change and emissions to air (including greenhouse gas emissions) undertaking water services	<ul style="list-style-type: none"> • Carbon footprint (total tonnes) of construction • Percentage of energy supply from renewable sources or reduced energy use • Carbon footprint (total tonnes) per year, predicted over plan period, lifetime of schemes and carbon intensity of water resource options (tonnes/ML/d) • Operational Carbon Intensity kgsCO₂equic/ML • % improvement in energy efficiency 	<ul style="list-style-type: none"> • Benchmarked reduced carbon emissions from construction • Increased contribution of renewable/low carbon energy sources for existing and new schemes • Minimise the annual carbon emissions from operation • Supported carbon offsetting schemes, including upper catchment schemes linked to biodiversity and water and population wellbeing (recreational) objectives • Improve energy efficiency of water services

SEA topics	Strategic Environmental Assessment objectives	SEA indicators	SEA targets
	<p>Adaptation Contribute to the resilience of the environment to water supply and treatment infrastructure to the effects of climate change</p>	<ul style="list-style-type: none"> • Lost time to flooding • Lost time to power supply interruptions • Improved mix of water resource sources or flexibility of system • Reduced frequency of drought orders requiring change to normal abstractions/compensation releases 	<ul style="list-style-type: none"> • Improved resilience of environment to climate change
Cultural heritage	Protect and, where possible, enhance cultural heritage resources undertaking water services	<ul style="list-style-type: none"> • Number of designated sites or other important archaeological or architectural heritage sites and/or their settings adversely affected by water resource options • Number of schemes where options are rerouted to avoid cultural heritage impacts or length • Number of schemes including improvements to access recording of assets or communication/interpretation of interest features 	<ul style="list-style-type: none"> • No unauthorised physical damage or alteration of the context of cultural heritage features due to Irish Water activities • All schemes developed applying best practice approaches for consultation, desk study and investigation and mitigation for cultural heritage and archaeological interest
Geology and soils	Protect and, where possible, enhance geological heritage sites and avoid conflicts with, and contribute towards, the appropriate management of soil quality and quantity	<ul style="list-style-type: none"> • Area of geological site affected by water resource options • Total area of soil removed or reused on schemes • Area of contaminated land restored, or soils removed 	<ul style="list-style-type: none"> • No loss of statutory and non-statutory geological sites of interest • Minimal disturbance or loss of high-quality land as a result of the Framework Work and minimal net loss of soil resources

11 Next Steps

The draft Framework Plan and accompanying SEA Environmental Report and NIS are available for comment and review during the current consultation period. The process and deadline for submitting observations on the draft Framework Plan, including the SEA, are set out on the Irish Water website.

Following the completion of the consultation period, all comments will be reviewed and considered as part of finalising the Framework Plan. Responses to the consultation comments will be reported in a Consultation Report.

11.1 Further information

For more information, please refer to one or more of the communication channels below:

- NWRP webpage on the Irish Water website in English and Irish;
- Information leaflet available in English and Irish;
- NWRP infographic;
- Press release to national and local media;
- Newspaper advert;
- Hard copies of the draft Framework Plan, environmental reports, Non-technical Summary and consultation leaflet made available at planning counters nationally;
- FAQs;
- Freephone number 1800 46 36 76;
- Social media; and
- Correspondence and briefings to:
 - Elected representatives;
 - Local authorities;
 - Environmental authorities;
 - Interested parties; and
 - Media.

This SEA Environmental Report has been prepared on behalf of Irish Water and is available online at the following website:

<https://www.water.ie/nwrp>

Further information requests and written submissions or observations can be sent to Irish Water:



By post:

National Water Resources Plan,
Irish Water,
PO Box 13216,
Glenageary,
Co. Dublin.

By email:

nwrp@water.ie