

Summer 2022

Regional Water Resources Plan: North West

Strategic Environmental Assessment Scoping Report



Tionscadal Éireann
Project Ireland
2040

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 applicable policy.

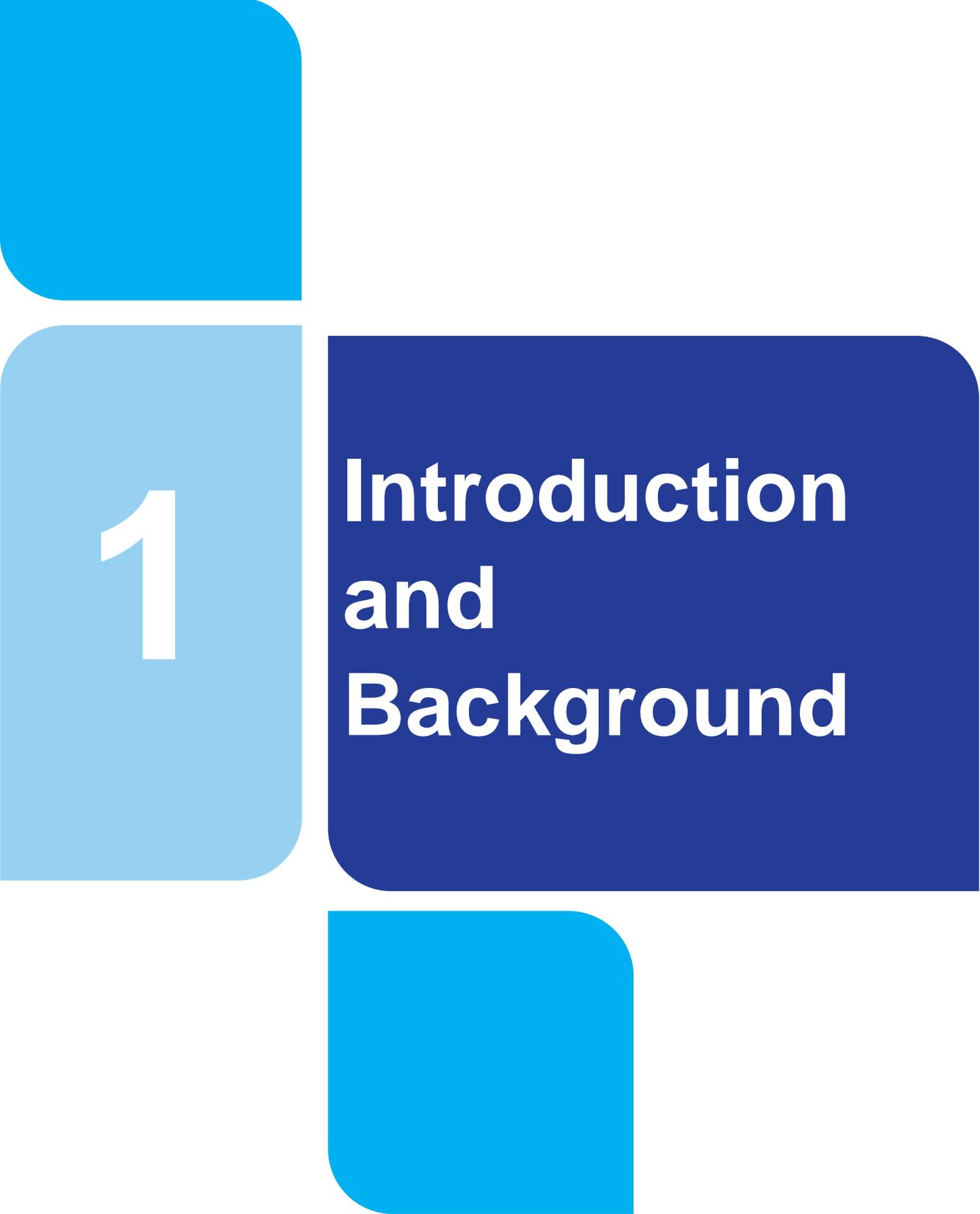
Baseline data included in the draft RWRP-NW has been incorporated from numerous sources including but not limited to; National Planning Framework, Central Statistics Office, Regional Spatial and Economic Strategies, Local Authority data sets, Regional Assembly data sets and Irish Water data sets. Data sources will be detailed in the relevant sections of the draft RWRP-NW. 2019 was selected as the base year to align with the planning period (2019-2025) of the NWRP.

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1

Introduction and Background

This Section includes:

- An introduction to the need for the National Water Resources Plan (NWRP), and the plan for delivery of the NWRP
- An introduction to the North West (NW) region that this Regional Plan covers
- Background to the Strategic Environmental Assessment (SEA) process and how it is integrated with delivery of the Regional Plan and the NWRP

Scoping question: Do you have any suggestions that you would like Irish Water to consider in the preparation of the North West Regional Plan?

1 Introduction and Background

1.1 Introduction

On the 1st of January 2014, through the Water Services Act (No. 1) 2013 (as amended 2017), Irish Water assumed statutory responsibility for the provision of public water services and management of water and wastewater investment. Irish Water's role is to provide public water and wastewater services throughout the country. They are the custodian with the responsibility to manage the precious water resources and, with Local Authority partners, secure it for future generations. It is their responsibility 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 support Ireland's social and economic growth in a sustainable manner through appropriate investment in water services and protect the environment in all their activities.

Effective water services, including the delivery of a sustainable and reliable clean water supply and safe disposal of wastewater, are essential for a modern country. Being able to understand and estimate how much water is required, where it is required, and the variability of requirements over the course of the year or over time, is essential to plan appropriately for the future of the public water supply.

1.2 Background to the National Water Resources Plan (NWRP)

1.2.1 Water Resource Planning

A Water Resources Plan is a strategic plan used to identify deficiencies and need across a water supply and to develop plan level capital and operational solutions to address these issues.

Irish Water's National Water Resources Plan (NWRP) will be the first resources plan for the public water supply in the Republic of Ireland. It will allow Irish Water to integrate Government Policy, Legislation and external factors that have the potential to impact their water supplies into the planning and operation of their existing and future supply asset base.

The objective of the NWRP is to manage customer and communities' needs while meeting their requirements over the short, medium and long term by ensuring safe, secure, sustainable and reliable water supplies. The NWRP will:

- Enable Irish Water to address needs across their water supplies in the most effective way over time through the regulated investment cycles proposed as part of the NWRP;
- Ensure that there is a transparent framework to develop the most appropriate projects/programmes to meet statutory obligations in relation to water supply; and
- Provide a framework to track outcomes, allowing interventions to be prioritised to bring the water supply up to the required standards in the shortest possible timeframe.

Water Resources Plans are reviewed on a cyclical basis to take account of new information, data, policies and laws and are usually updated every 5 years. Irish Water knows things will change over the next 25 years so within the NWRP, Irish Water has considered a range of possible futures, some more challenging than others. This approach is called adaptive planning, and means Irish Water is ready and flexible whatever the future holds.

A glossary of technical terms used is included at the end of the document.

1.2.2 Delivery of the NWRP

Due to the scale of the NWRP, which covers an entire country, it will be delivered in two stages:

- **Phase 1: Framework Plan:** a description of the options assessment methodology Irish Water propose to use for water resource planning, and assessment of need across Irish Water asset base in terms of quality, quantity, reliability and sustainability; and
- **Phase 2: Regional Water Resource Plans (RWRPs)** for the four regional group areas shown in Figure 1.1 below. The Regional Plans apply the options assessment methodology presented in the Framework Plan 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 RWRPs are referred to as follows:

- 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 Resources Plan: Eastern and Midlands (Group Area 4).

Phase 1 of the NWRP is now complete. The Framework Plan and accompanying SEA Environmental Report and Natura Impact Statement (NIS) were adopted in May 2021 following a period of public consultation and update. These documents are available to view on our website at the following location: www.water.ie/nwrp.

The regional groups reflect Irish Water's operational regions and water supply boundaries, with modifications to account for river catchments, as delineated by the EPA in the RBMP. For the purposes of preparing the RWRPs, each regional area has been subdivided into Study Areas (SAs) to assist in the identification of both need and solutions, with all of the SAs to be considered holistically in each RWRP. The SA boundaries comprise clusters of WRZs and are based on Water Framework Directive (WFD) catchments and WRZ location and type (urban and rural). This enables a coordinated approach to developing solutions to meet water quantity and quality deficits and facilitates consideration of WFD impacts.

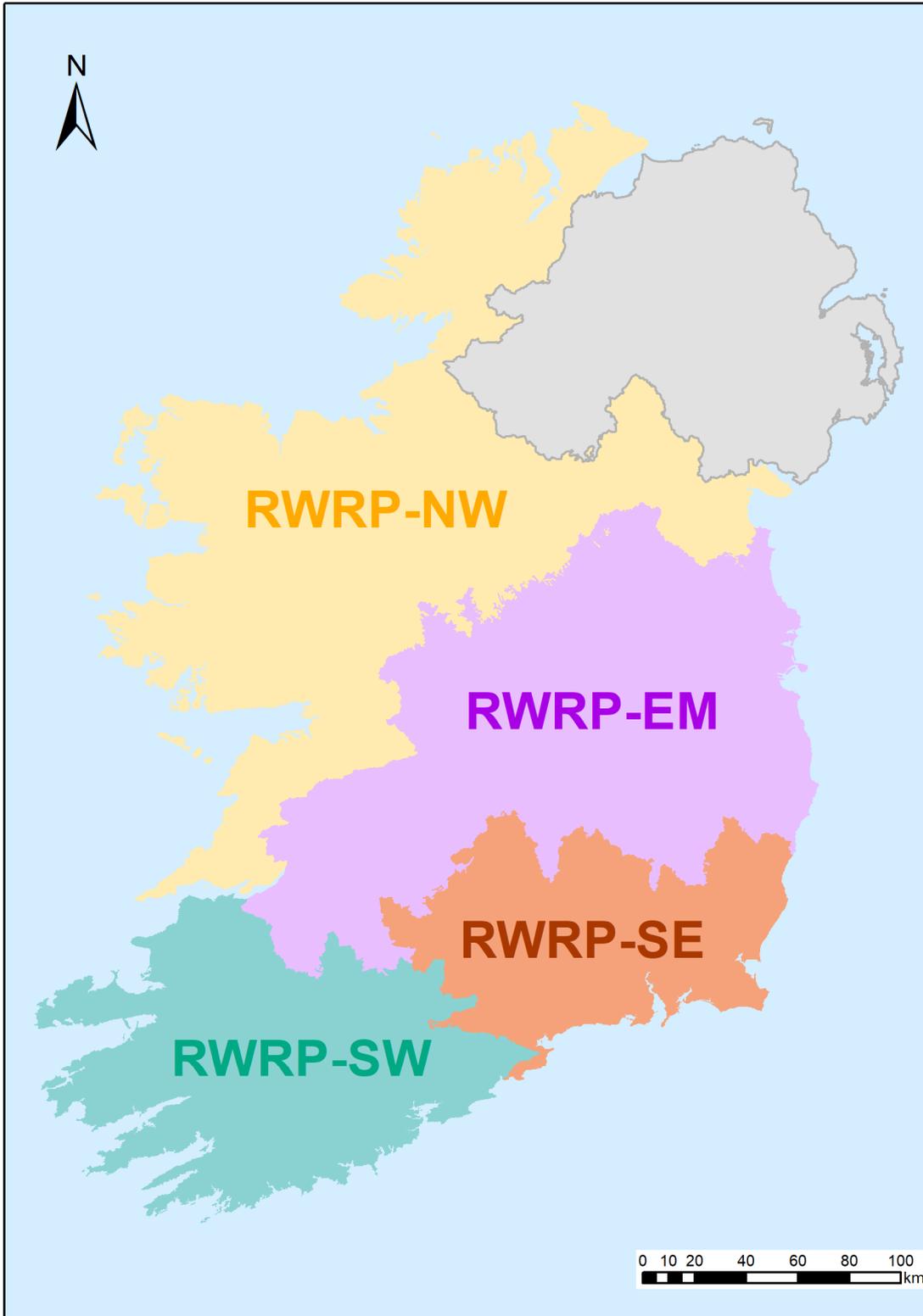


Figure 1.1 Regional Group Areas for roll-out of Phase 2 of the NWRP

1.2.3 Draft Regional Plan: North West (draft RWRP-NW)

This document is the SEA Scoping Report for the draft Regional Water Resources Plan: North West (draft RWRP-NW). The NW region is further subdivided into seven Study Areas based on Water Framework Directive (WFD) catchment and Water Resource Zone (WRZ) boundaries within the region, as shown in Figure 1.2.

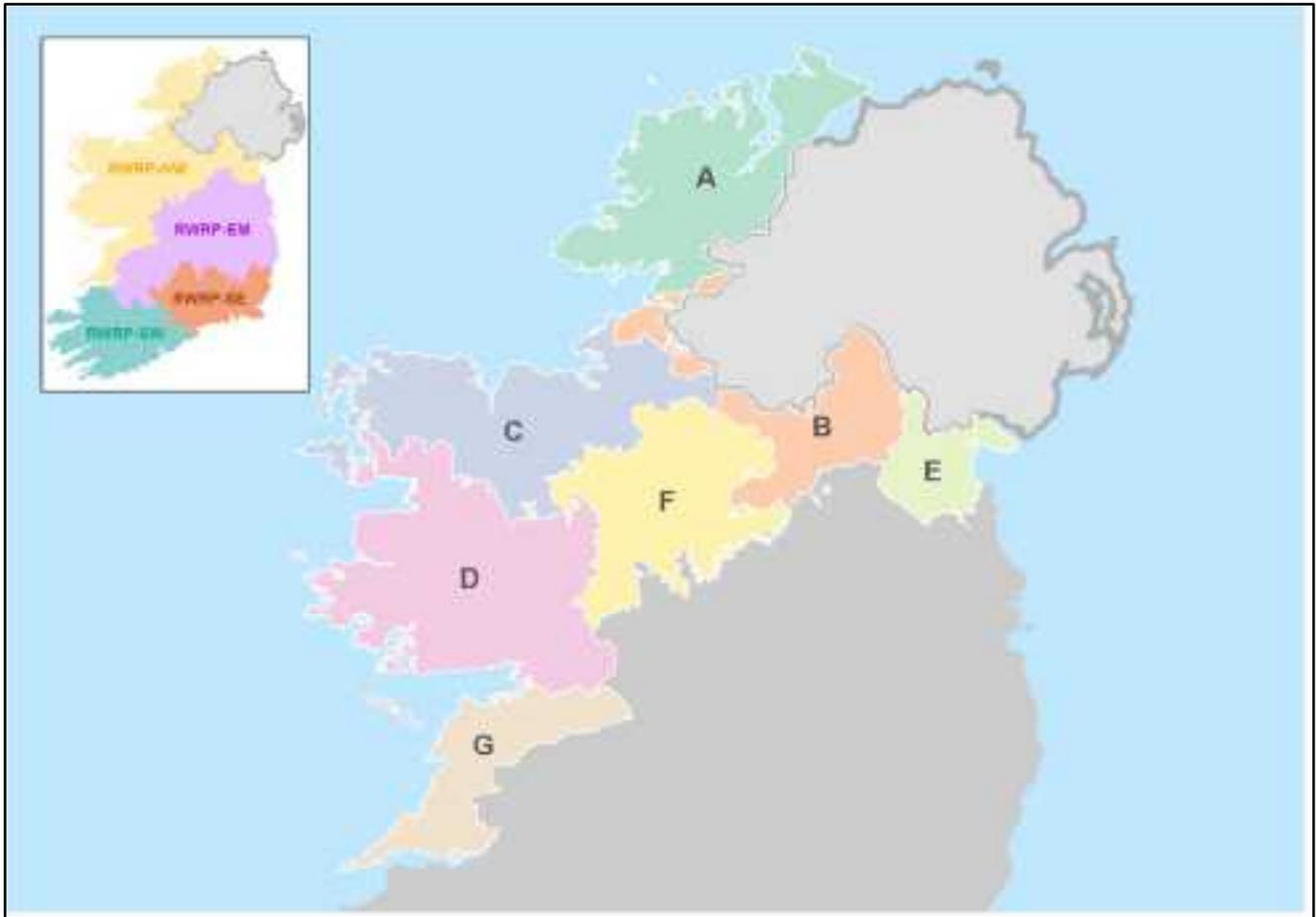


Figure 1.2. Draft RWRP-NW Study Areas

An overview of the seven NW Study Areas is provided in Table 1.1.

Table 1.1 Overview of draft RWRP-NW Study Areas

Study Area	Description
SAA Donegal	SAA total area is approximately 4,632 km ² and lies within the Donegal County. The principal settlement (with a population of over 10,000) within SAA is Letterkenny (CSO, 2016).
SAB Cavan and Monaghan	SAB total area is approximately 2,788 km ² and lies within the counties of Cavan, Monaghan, Leitrim, Longford, Donegal, Sligo. The principal settlement (with a population of over 10,000) within SAB is Cavan (CSO, 2016).
SAC Mayo and Sligo	SAC total area is approximately 5,147 km ² and lies within the counties of Mayo, Sligo, Leitrim, Cavan, Roscommon. The principal settlement (with a population of over 10,000) within SAC are Sligo, Castlebar and Ballina (CSO, 2016).
SAD Galway and Mayo	SAD total area is approximately 6,704 km ² and lies within the counties of Galway, Mayo, Roscommon and Galway City. The principal settlement (with a population of over 10,000) within SAD are Galway city and suburbs, and Castlebar (CSO, 2016).
SAE Louth	SAE total area is approximately 1,261 km ² and lies within the counties of Louth, Monaghan, Meath and Cavan. The principal settlement (with a population of over 10,000) within SAE are Drogheda and Dundalk (CSO, 2016).

Study Area	Description
SAF Roscommon and Leitrim	SAF total area is approximately 3,990 km ² and lies within the counties of Roscommon, Leitrim, Longford, Galway, Sligo, Cavan, Mayo and Westmeath*. The principal settlement (with a population of over 10,000) within SAF is Longford (CSO, 2016).
SAG Clare	SAG total area is approximately 2,389 km ² and lies within the counties of Clare and Galway. There are no principal settlements with a population of over 10,000 within SAG. The largest settlements (with population of over 2,000) within SAG are Gort and Kilrush (CSO, 2016).

*Westmeath county intersects with SAF over less than 0.5 km²

1.2.4 Scope of the Draft Regional Plan

The aim of the draft RWRP–NW is to allow Irish Water to maintain a balance between supply and demand. A supply demand balance forecast will enable the identification of any current or predicted water supply deficits from each WRZ. Using this information, a list of potential option types to address that deficit has been developed, as detailed in Table 1.2 below. The RWRP-NW methodology will assess the WRZ and the sources within them to identify options that could provide a sustainable, reliable source of water into the future.

Table 1.2 Option types

RWRP category	RWRP sub-category	Summary
Lose Less		
Leakage Reduction		<p>Reducing leakage from the network is a priority for Irish Water. This can involve a range of measures for actively detecting and repairing leaks such as the installation of meters to better identify customer leakage activity and advanced monitoring tools and techniques to better identify leaks.</p> <p>Leakage reduction will focus on targeted replacement of ageing pipes, pressure management to minimise fluctuations and excessive pressures providing more constant pressures to Irish Water customers whilst reducing bursts and the application of different leak repair approaches to minimise cost and disruption.</p>
Use Less		
Water Efficiency	Education & Awareness	Environmental awareness/education campaigns and partnerships and distribution of educational materials to raise awareness of water shortages and encourage water conservation and efficiency.
	Water Efficiency Measures	Use of water efficient products and processes in new and refurbished housing developments and working with building standards to ensure that water efficiency

RWRP category	RWRP sub-category	Summary
		<p>measures are included in standards regulations as mandatory. Encouraging take up of water efficiency measures by domestic and non-domestic customers such as more efficient appliances, repair of leaking toilets, use of water audits.</p> <p>Actively pursue business customers and industry for partnerships that involve water efficiency goals.</p> <p>Investigate how to use water within Irish Water's existing assets more efficiently through improved treatment processes and recycling of effluent water for appropriate uses.</p>
	Recycling and Reuse	<p>The recycling of treated wastewater or grey water provides a critical supplementary water source for non-potable activities therefore alleviating stress on primary water sources. Grey water refers to the water used in baths, sinks, washing machines, and other kitchen appliances. In periods of drought, when potable water is in short supply, grey water can be a potential alternative water source for activities such as agricultural and landscape irrigation, industrial process, and toilet flushing.</p>
	Metering	<p>Domestic water metering can build a better understanding of water use and network pressures to improve water efficiency and therefore water security and identify leaks.</p> <p>Water meters with advanced analytics to undertake flow balances across the network can allow Irish Water to gain a better understanding of the whole network from the abstraction point to the customers</p>
Supply Smarter – resource supply options ¹		
Surface Water	Surface Water Abstraction	<p>Increasing the abstraction at an existing river or lake source or developing a new river or lake source from which water can be sustainably abstracted. These options would be subject to an abstraction licence.</p>
Groundwater	Groundwater Abstraction	<p>Increasing the abstraction at an existing groundwater source or developing a new groundwater source from</p>

¹ It is important to note that these option types are not necessarily alternatives to each other; in the majority of the WRZs a combination of options will be selected as the preferred / recommended approach. For example, surface water and groundwater abstractions can be used in combination, this is called conjunctive use and involves the storing of surface water in groundwater basin in wet years and withdrawing it from the basin in dry years. Additionally, most new or increased abstractions will involve upgrades to or construction of new WTPs and new or upgraded transfers.

RWRP category	RWRP sub-category	Summary
		which water can be sustainably abstracted. These options would be subject to an abstraction licence.
	Aquifer Storage Recovery	Storage of treated or raw water in suitable aquifers. During times of plentiful water supply, excess water withdrawn from a river, lake or another groundwater source is injected and stored within an aquifer. This supplementary stored water can be extracted from the aquifer during periods of dry weather and/or increased demand when the primary supply sources are running low. This requires aquifers with suitable characteristics to be available as the risks of losses can be high.
Reservoirs	Storage Reservoirs	Provision of storage reservoirs which can be filled with untreated water abstracted during high flow conditions from surface waters to be drawn on during low flow periods or to provide additional resilience during droughts as a back-up supply source.
Catchment Management	Catchment management for ground or surface water sources	Activities such as agriculture, forestry, industry and waste management all have an impact on the retention of water in the catchment and the quality of the water within rivers and loughs. Pollutants in the water can lead to ecological deterioration, increased flood risk and can also create issues for water treatment. There may be scope for changes to land management through working in partnership with landowners, farmers and regulators to develop agreements and share information and resources to provide long term improvements with wide benefits including water suitable for supply from surface of groundwaters.
Effluent Reuse	Effluent Reuse	Recycling of wastewater effluent from treatment plants can produce a new supply source from wastewater which is otherwise discharged to rivers or the sea. This involves treating wastewater to a sufficiently high standard to meet supply standards relevant for the intended use for example for agricultural/horticulture/industry/water supply or for release to rivers to maintain flows.
Desalination	Desalination: Coastal or Brackish	This involves the process of removing salt and other minerals from seawater or brackish water ² river estuaries to make it suitable for human consumption and/or

² Brackish water is water that has more salt than freshwater, but not as much as seawater that is generally found in estuaries.

RWRP category	RWRP sub-category	Summary
		industrial use. The level of treatment required is related to the salt concentration of the water.
Water Transfers	Transfers	Water transfer is the physical movement of water from one area to another usually via pipelines, although other means such as canals or aqueducts can be used. These generally refer to the transfer of treated water and can vary considerably in scale in terms of size and length from local transfers from one WRZ to another, to regional transfers and inter-utility transfers (from Northern Ireland Water) ³ .
	Tankering	Delivery of treated water to customers via road tanker to alleviate temporary short-term water shortages in certain localised situations.
Network Improvements	Network Improvements (general)	Network improvement involves works such as upgrade, replacement or operational improvements. They are undertaken to facilitate better water distribution and avoid network limitations. Therefore, strategic network reinforcement improving connections between different sources and customer supply can significantly improve security and resilience.
	Service Reservoir Expansion	Service reservoirs store treated water. They are used to balance out the steady supply of treated water they receive from WTPs and the fluctuating variations in customer demand during a 24-hour period. They can also be used to store a backup supply in low flow events but for a limited period of time.
Water Treatment Plants	WTP Expansion/Rationalisation	Expansion of existing WTPs to facilitate the treatment of a higher volume of water. This option would be considered in-combination with an increase of a surface water or ground water abstraction or the provision of a new surface water or ground water source. Expansion of existing WTPs may be carried out as part of a rationalisation process which involves the merging of WTPs. Rationalisation is carried out to reduce water supply costs, take a malfunctioning WTP out of service or to cease abstraction from an unsustainable source.
	WTP Process Losses	For every litre of untreated water extracted from a source and fed through a water treatment plant to the supply distribution network, a small fraction of the water will be

³ No inter-utility transfers have been identified for the EM region

RWRP category	RWRP sub-category	Summary
		lost from the system as a result of the treatment losses. Generally, WTPs are designed to recover, treat and recycle as much of the waste stream as economically feasible. However, there can be opportunities to improve efficiency through the upgrading and installation of more complex treatment processes to reduce these process losses and therefore increase the water available for use (WAFU).

1.3 Strategic Environmental Assessment

1.3.1 Legislative Requirement

Council Directive 2001/42/EC of the European Parliament and of the Council of 27th June 2001 on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) established the statutory requirement for SEA as part of the development of certain plans and programmes. The Directive is applicable to the Framework Plan and the Regional Plans of the NWRP.

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).

In accordance with the overall objective of the SEA Directive as set out in Article 1, a SEA is required to:

“Provide for a high level of protection to the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development...”

According to Article 2 of the Directive, "plans and programmes" means plans and programmes, including those co-financed by the European Community, as well as any modifications to them:

- Which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government; and
- Which are required by legislative, regulatory or administrative provisions.

Under Article 3(2), an environmental assessment:

“...shall be carried out for all plans and programmes, (a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC⁴ .”

⁴ Replaced by 2011/92/EU as amended by 2014/52/EU

1.3.2 SEA Process

The purpose of SEA is to enable plan-making authorities such as Irish Water to incorporate environmental considerations into decision-making at an early stage and in an integrated way throughout the plan-making process. The SEA process is undertaken in four stages. The progress against each stage of the SEA process for the draft RWRP-NW Regional Plan is summarised in Table 1.3. The SEA process for Phase 1 of the NWRP, the Framework Plan, has already been completed.

Table 1.3 Stages of SEA

Stage	Purpose and requirements	Progress to date / current status
Stage 1: Screening	Prior to starting the SEA process, a plan or programme undergoes “screening” to determine whether it requires SEA.	SEA Screening Statement – Irish Water (as the responsible authority) determined that SEA was required for the NWRP when screening was carried out in August 2017. A SEA screening statement for the Regional Plan NW is provided in Appendix C.
Stage 2: Scoping	Consideration of the context and objectives of the SEA provides information on baseline data, identifies relevant environmental issues and trends, and defines the parameters of the scope of the SEA for the purpose of consultation.	SEA Scoping Report – the SEA Scoping Report sets the geographical and temporal scope of the draft Regional Plan and SEA, the baseline environment and a proposed framework of SEA objectives and methodology to inform the Stage 3 assessment.
Stage 3: Identification, Prediction, Evaluation and Mitigation of Potential Effects	Within the context and parameters identified at the scoping stage. Identification and evaluation of likely significant effects of the draft Regional Plan is carried out, including consideration of alternatives and determination of measures to mitigate and monitor potential residual effects.	Environmental Report (SEA of the draft Regional Plan)
Stage 4: Consultation, Revision and Post-Adoption	Consultation with statutory consultees and the public. This may require changes to the draft Regional Plan and SEA Environmental Report in light of responses. Implementation of the monitoring programme.	Stage 4: Consultation, Revision and Post-Adoption

Current Stage in the SEA Process

1.3.3 Appropriate Assessment

In addition to compliance with the SEA Directive, the preparation and implementation of the NWRP must meet the provisions of the Habitats Directive (92/43/EEC). The Habitats Directive has been transposed into Irish law by the Planning and Development Act, 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) (as amended 2015 S.I. No. 355/2015). The Habitats Directive requires that if a plan, policy or programme is likely to have a significant effect on one or more European sites (that is, a Special Area of Conservation (SAC) or Special Protection Area (SPA), also referred to as “Natura 2000” Network), either alone or in combination with other schemes, plans or projects, then it must be subject to Appropriate Assessment (AA).

The NWRP therefore falls under the governing legislation of the European Communities (Birds and Natural Habitats) Regulations 2011 (Habitats Regulations 2011) (as amended 2015 S.I. No. 355/2015); and as a “competent authority”, Irish Water must ensure that their NWRP meets these requirements. The Stage 1 (screening) assessment has concluded that it cannot be excluded, on the basis of objective scientific information following screening that the draft RWRP-NW, individually or in combination with other plans or projects, will have a significant effect on one or more European sites. Accordingly, a full Stage 2 Appropriate Assessment will be required in accordance with the Habitats Regulations 2011.

1.3.4 Integration between SEA (and AA) and the draft Regional Plan and the Framework Plan

The options development process which Irish Water propose to use to develop the Preferred Approach for all Regional Plans is described within the Framework Plan and was subject to a separate SEA process and finalised in May 2021. The options assessment methodology is outlined briefly below, with further detail available within the Framework Plan and the SEA Statement which accompanies the Framework Plan which can both be found at: www.water.ie/nwrp

There are eight key stages to the options assessment methodology which is applied:

- 1) Identifying need - based on Supply Demand Balance 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 (including environmental and social costs and benefits) and scoring assessment update.
- 7) Approach appraisal – comparison and assessment of combinations of options identified to meet the predicted supply demand deficit at WRZ, Study Area and Regional Group area level using Multi-Criteria Analysis (MCA) to determine the preferred approach. Approaches tested will include:
 - Least Cost;
 - Best Appropriate Assessment (Best AA);

- Quickest Delivery;
- Best Environmental;
- Most Resilient; and
- Lowest Carbon.

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.

Figure 1.3 illustrates how SEA influences each stage of the options development process and options assessment methodology outlined above, and Figure 1.4 shows how the SEA and AA reporting will align with each other and with development of the draft RWRP-NW.

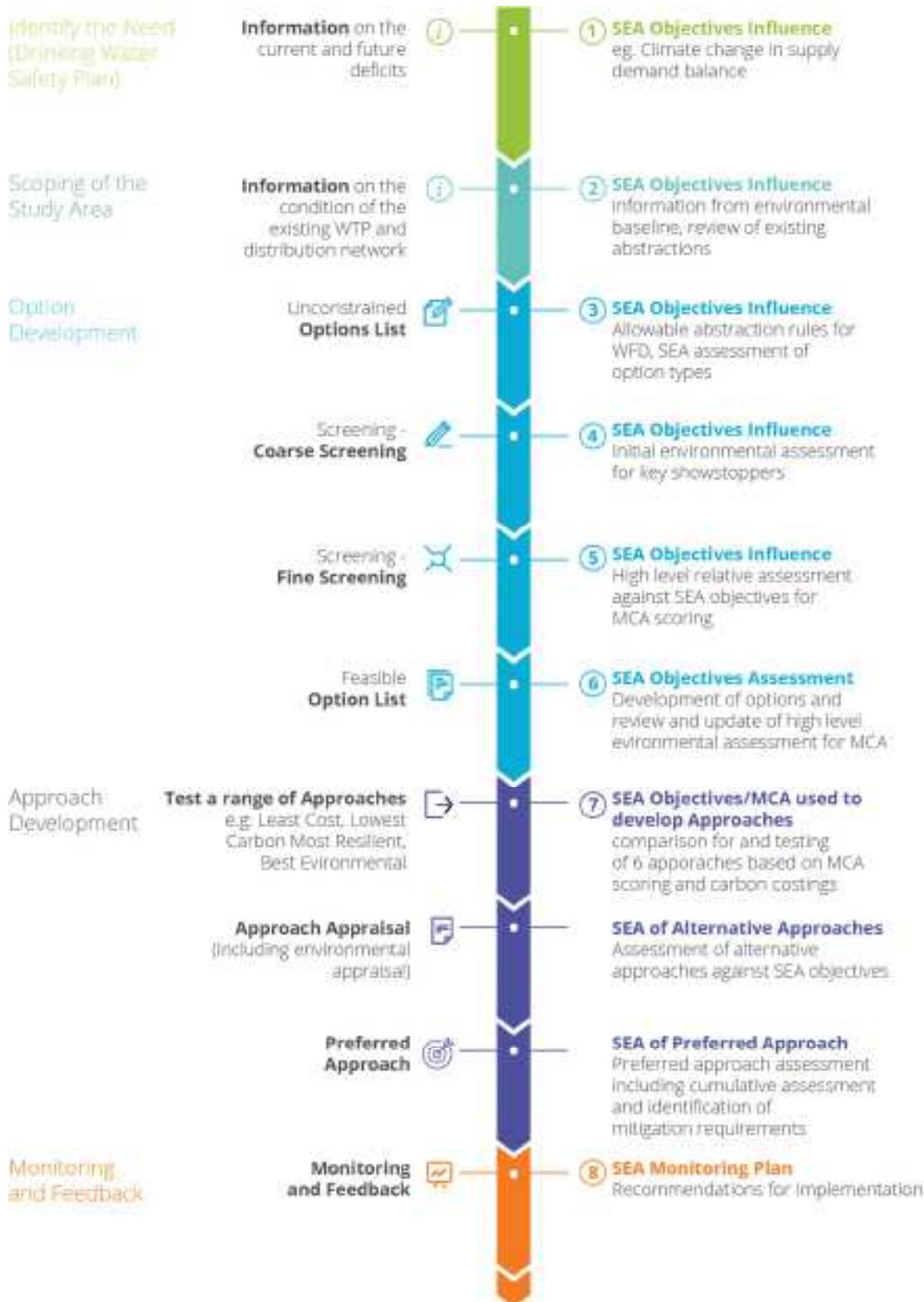


Figure 1.3 SEA influence on draft RWRP-NW development

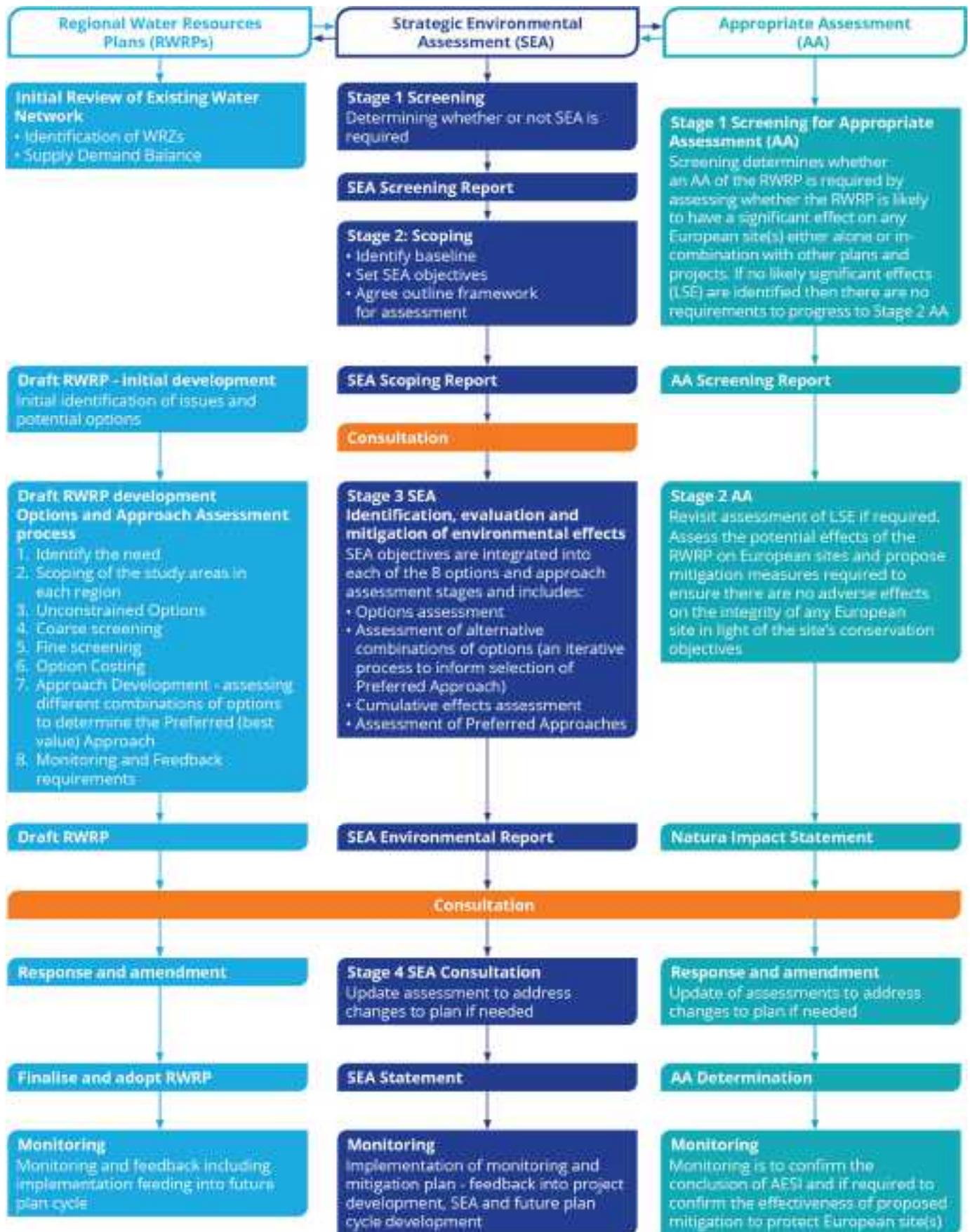


Figure 1.4 Integration between SEA and AA processes and development of the draft RWRP-NW

1.4 Consultation

In line with Article 9 (5) of the SEA Regulations (S.I. No. 435 of 2004), this SEA Scoping Report will be issued to the following statutory Environmental Authorities:

- The Environmental Protection Agency (EPA);
- Department of Housing, Local Government and Heritage (DHLGH);
- The Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (DTCAGSM)- Development Applications Unit (DAU);
- The Department of Agriculture, Food and the Marine (DAFM);
- Department of the Environment, Climate and Communications (DECC); and
- for transboundary consultation, the Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA).

This SEA Scoping Report 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 the **29th June 2022**:

By post:

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

By email:

nwrp@water.ie

The following key questions have been prepared to guide consultees and stakeholders in making a submission on this SEA Scoping Report and are repeated under the relevant Sections.

Scoping questions:

- Do you have any suggestions that you would like Irish Water to consider in the preparation of the draft RWRP-NW and SEA?
- Irish Water has reviewed plans, policies and programmes relevant to draft RWRP-NW and SEA in Chapter 2 and Appendix B. Are there any others that should be considered?
- Do you have any comment on the current baseline environment conditions and future trends set out in Chapter 3 and summarised in Section 3.11?
- Do you have any comment on the SEA objectives that are set out in Table 4.1?
- How would you like Irish Water to communicate with you as the development of the draft Regional Plan and SEA progress?

All submissions made on the SEA Scoping Report will be reviewed and relevant feedback incorporated into the SEA Environmental Report and draft RWRP-NW as appropriate. The issues raised, and the response will be summarised in the SEA Environmental Report. No potential for transboundary effects has been identified (see Section 4.2.1 for further detail).



2

Review of Relevant Plans, Policies and Programmes

2 Review of Relevant Plans, Policies and Programmes

This Section provides a summary of the plans, policies and programmes that have been identified as potentially important in development of the baseline environment and SEA objectives for the SEA of the draft RWRP-NW.

Scoping question: Irish Water has reviewed plans, policies and programmes relevant to the draft RWRP-NW in Chapter 2 and Appendix B. Are there any others that should be considered?

The SEA Directive states in Article 5(1) of Annex 1 that the environmental assessment must identify “*the environmental protection objectives, established at International, European Union or national level, which are relevant to the plan or programme, or modification to the plan or programme, and the way those objectives and any environmental considerations have been taken into account during its preparation*”.

In accordance with this requirement, the relationship with the relevant policy, plan programme and legislative framework was explored in order to inform the scope of the SEA and to provide a focus for identifying the baseline environment and development of the SEA objective. The considered plans, programmes and policies are relevant to developing a transparent assessment of the likely environmental effects. Consideration of the plans, programmes and policies allows for an application of a more structured and informed SEA.

A comprehensive review of relevant national and regional level policies, plans, programmes and legislative framework of relevance to water resource planning, including related Irish Water plans and strategies, has been undertaken and consulted upon within SEA Environmental Report for the Framework Plan available at www.water.ie/nwrp. The identified documents will also be directly relevant to the draft RWRP-NW and are provided in Appendix B (Section B.1). Key influences identified at the national level which also apply to the RWRP-NW include:

- UN Sustainable Development Goals (SDGs);
- EU WFD (Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy);
- EU Drinking Water Directive (Directive 2020/2184 of the European Parliament and of the Council on the quality of water intended for human consumption (recast));
- River Basin Management Plan 2018-2021;
- Draft River Basin Management Plan for Ireland 2022-2027;
- Climate Action and Low Carbon Development Act 2015 (as amended 2021);
- Climate Action Plan 2021 (CAP);
- General Scheme on Water Environment (Abstractions) Bill 2018 (heads of Bill 2020);
- Waste Action Plan for a Circular Economy (updated 2021)
- National Planning Framework – Project Ireland 2040;
- National Adaptation Framework Sectoral Adaptation Planning;
- Regional Spatial and Economic Strategy (RSES) for the Eastern and Midlands Region, RSES for the Southern Region and RSES for the Northern and Western Regional Assembly; and

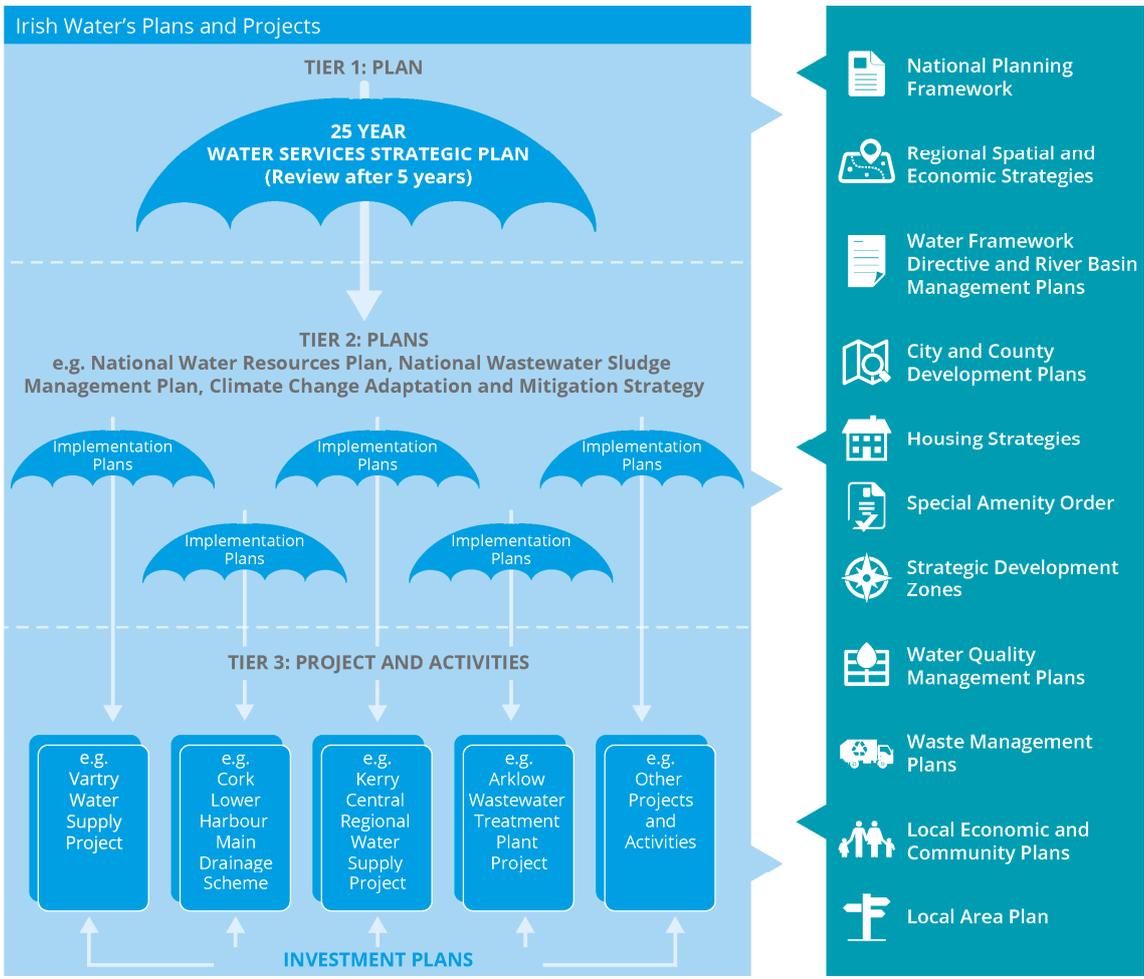
- Related Irish Water plans and strategies including the Water Services Strategic Plan (Tier 1 plan), National Wastewater Sludge Management Plan, Lead in Drinking Water Mitigation Plan, Sustainable Energy Strategy - Climate Change Mitigation and Adaptation Strategy, Leakage Reduction Programme and National Disinfection Programme.

A focussed list of additional local level plans policies and strategies relevant to RWRP- NW specifically is provided in Section B.2 of Appendix B. Regional and local level plans likely to be key for the purposes of the SEA for the draft RWRP-NW fall under four main groups as follows:

- County Development Plans, Local Area Plans and Town Development Plans - Planning Authorities are legally required to make County and City Development Plans which sets an agenda for development to make adequate provision for the scale of population growth projected;
- County Heritage Plans and County Biodiversity Action Plans – these plans help ensure targets for species and habitat conservation in the National Biodiversity and Heritage Plans are effective at a local level;
- County Climate Change Adaptation Strategies and Climate Action Plans – these strategies and plans establish future climate risks at a local level and propose actions to adapt to currently observed and future climatic changes;
- County Landscape Character Assessments – these assessments classify and describe the landscape in a county; and
- Regional Waste Management Plans.

Other relevant plans, policies and strategies considered and listed within Appendix B include Conservation Plans, Renewable Energy Strategies, Community Biodiversity Action Plans and Noise Action Plans.

These plans and policies have been taken into account in the development of the SEA objectives as described in the Framework Plan and RWRP-NW SEA Scoping Report and in the assessment criteria used to assess the options and alternatives considered in the development of the draft RWRP-NW. Figure 2.1 identifies how the NWRP relates to the key national, regional and local level plans, policies and strategies identified above.



It should be noted that the listing of the documents on the right of the graphic is not intended to show a hierarchy of plans or an alignment of the plans with the Irish Water Tier 1, Tier 2 and Tier 3 plans/ projects.

Figure 2.1 Interaction between the Planning System and Irish Water's Plans and Programs



3

Baseline Environment

3 Baseline Environment

This Section sets the proposed geographical and temporal scope of the SEA for the RWRP-NW, and provides environmental baseline information on key environmental topics including:

- Population, Economy, Tourism and Recreation, and Human Health;
- Water Environment;
- Biodiversity, Flora and Fauna;
- Material Assets;
- Landscape and Visual Amenity;
- Air Quality and Noise;
- Climate Change;
- Cultural Heritage;
- Geology and Soils.

Scoping question: Do you have any comment on the current baseline environment conditions and future trends set out in this chapter and summarised in Sections 3.1-3.11?

3.1 Scope of the assessment

3.1.1 SEA geographical scope

As this stage of the assessment the core baseline area for the SEA of the draft RWRP-NW is the area covered by the seven Study Areas which comprise the NW Region (see Figure 3.1) and sites designated for nature conservation that are hydrologically connected to waterbodies in the core baseline area (see also Section 3.5 of the RWRP-NW Screening for AA which is provided at www.water.ie/nwrp). The assessment process undertaken for the SEA and AA (see Section 4.2) during evolution of the Plan will consider the potential for linkages of this type, and where necessary, the geographic scope of the core baseline area will be extended accordingly.



Figure 3.1 Water Supply Zones and Key Settlements in the North West region

3.1.2 Transboundary Effects

The draft RWRP–NW covers the Irish Water’s operational area for the North West which has a long border with Northern Ireland (see Figure 1.1). There is potential for transboundary effects on the basis of proximity of the border with Northern Ireland, shared WFD catchment units, waterbodies and other pathways for effects. Therefore, transboundary effects are scoped in for the RWRP-NW and will be considered further as part of assessing the proposals for the draft RWRP-NW.

3.1.3 SEA temporal scope

The proposed temporal scope for the SEA is the 25-year period that is covered by the Framework Plan and draft RWRP-NW.

3.2 High level environmental trends in the North West region and across Ireland

The EPA's State of the Environment Report (EPA, 2020) provides:

- An assessment of the overall quality of Ireland's environment;
- An outline of the pressures being placed on this environment; and
- The key actions that can address these pressures.

The following areas identified as challenges to address across Ireland within this report are particularly pertinent to development of the RWRP- NW:

- **Climate:** high greenhouse gas (GHG) emissions continue, and the scale and pace of GHG reductions must accelerate to meet the 2021 Climate Action Plan targets;
- **Water:** deteriorating water quality trends over the last 20 years, particularly for rivers; and
- **Nature:** deteriorating protected habitat trends, with 85% of EU protected habitats having unfavourable status. Trends for EU protected species are mixed, however freshwater species are most at risk and some freshwater species are under threat.

Waste and the circular economy and air quality are also areas where further action is needed to meet long term objectives and targets. Further detail regarding the baseline environment for each of the topic areas is provided in this section.

The three key challenges of relevance to the RWRP-NW are directly linked to the following UN Sustainable Development Goals (SDG):

- **SDG 13 Climate Action:** Take urgent action to combat climate change and its impacts;
- **SDG 14 Life Below Water:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development; and
- **SDG 15 Life On Land:** Protect and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Significant population increase is anticipated over the coming two decades, which is an important consideration for water demand, and subsequently for the water environment and compliance with the WFD Directive and SDG 14. Section 4.2 of the NWRP Framework Plan (available at www.water.ie/nwrp) sets out the projected demand in this region over the next 25 years versus existing supply, taking into account where reductions in abstraction volumes are known to be required for sustainability reasons. The COVID-19 pandemic impacted household water demand patterns due to people staying at home during lockdown. The long term changes in demand patterns are not yet known but with the possibility of flexible/remote ways of working continuing into the future, there is a potential for change in where the demand is located which will be required to be taken into account by Irish Water to improve demand forecasting.

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

3.3.1 Population

The North West Region falls within the Northern and Western Regional Assembly and Southern Regional Assembly and in a small extent within the Eastern and Midland Region. In total there are three

Regional Assemblies which are parts of the regional tier of government in Ireland (Government of Ireland, 2020). Table 3.1 provides an overview of the population of the study areas (SAs) within the RWRP-NW region and the projected increases in population between 2019 and 2044. For the NWRP and Regional Plans, Irish Water have taken 2019 as the baseline population for their supply demand balance (SDB) forecasting. This is extrapolated from the 2016 Census data and growth projections used by Irish Water are based on best available data from the National Planning Framework (NPF) and Regional Spatial and Economic Strategies (RSEs). In addition, the ongoing work between the Regional Assemblies and the local authorities over the course of the development of the Local Authority County/City Development Plans is recognised by Irish Water and will be incorporated into the demand forecasts, once finalised.

The forecast population used in our demand forecasts for WRZs at our regional planning Study Area level is shown in Table 2.2.

Each SA is divided into several (Water Resource Zones) WRZs, and the average percentage population increase during the Plan period anticipated across WRZs within each SA is also shown in Table 3.1.

Table 3.1 Overview of the Population within the RWRP-NW Area

Study Area	Total population served 2019 (CSO, 2016 and IW 2019 population projections)	Population change 2019-2044 (%)
A	149,598	20.4
B	58,272	19.9
C	96,788	23.9
D	228,609	30.7
E	84,053	29.2
F	85,573	22.1
G	29,804	19.9
draft RWRP-NW Area Total	732,696	25.2

The overall predicted/estimated regional population growth from the SDB forecast is an increase of 25.2% over the period from 2019 to 2044. All SAs in the region have a projected growth rate that exceeds the 12% national rate observed in the 10-year period from 2006 to 2016. SAD (Galway and Mayo) has the highest projected growth rate at 30.7%, which is driven by the Galway City forecast growth of 46.5% by 2044.

3.3.2 Economy and Employment

Study areas or parts of SAs located within the North West region fall within the Border, West, Mid-West, Midlands and Mid-East of the Nomenclature of Territorial Units for Statistics 3 (NUTS 3) Regions. Border, West, Mid-West and Midlands regions had a household disposable income per person in 2016 that was below the average for Ireland (CSO, 2020a). Mid-East region had a household disposable income per person in 2016 that was on a par with the average for Ireland (CSO, 2020a).

Within the core baseline area, unemployment rates in Q4 2019 were lowest in the Border region (3.9%) and highest in the Mid-East region (4.9%) (see Table 3.2). Unemployment data for Q4 2020 shows a different pattern, with highest rates of unemployment seen in the Mid-West and Midlands regions and lowest in the West region. A decrease in unemployment rates can be seen in the West region, with remaining four regions experiencing an average of 27% increase in the unemployment rates. Whilst the economic impact of COVID-19 has affected some employment sectors (for example tourism, hospitality, retail) more than others, it is uncertain how this trend might play out in the coming years.

Table 3.2 Unemployment Rates in Q4 2019 and Q4 2020

Region ¹	Unemployment rate Q4 2019 (%) (CSO, 2019)	Unemployment rate Q4 2020 (%) (CSO, 2020b)
Border	3.9	4.2
West	4.0	3.6
Mid-West	4.9	7.2
Midland	4.5	6.0
Mid-East	4.3	5.1

¹ See Figure 3.8 (Appendix A) for study area boundaries in relation to regions. Majority of the North West Region lies within the Border and West NUTS 3 Regions of Ireland.

Population increase and expected economic growth has meant that housing and sustainable urban development have been made a priority for the National Development Programme; therefore, to supply the demand there is the aim to increase housing stock. New dwelling completions for Q3 2020 and Q3 2021 are shown in Table 3.3. There was a drop in new dwelling completions of 13.6% between 2019 and 2020 across Ireland, associated at least partly with COVID-19 restrictions on the construction industry. In the whole of Ireland, there were 7.7% less new dwelling completions in Q3 2021 than the completions in Q3 2020. Overall, the completion of new dwellings in Q3 2021, fell more in rural than urban areas. There was a greater relative drop in rural areas of 16.1% from 1,239 in Q3 2020 to 1,039 in Q3 2021. The number of completions in Q3 2021 in urban areas fell 5.0% to 3,617 in Q3 2021 from 3,806 in Q2 2020.

Regionally, the number of new dwellings completed in the Border region was second lowest in Q3 2020 and third lowest in Q3 2021. The number of new dwellings completed in the West region was the second highest in both Q3 of 2020 and 2021, however still significantly lower than new dwellings completed in the Mid-East. New dwelling completions in the Mid-East represented 50.9% of the completions in Ireland in Q2 2021. The number of dwelling completions in every region apart from the Midland fell between Q3 2020 and Q3 2021. There was a 4% increase in dwelling completions in the Midland Region.

Table 3.3 New Dwellings Completed Q3 of 2020 and 2021

Region ¹	New dwellings completed in Q3 2020 (CSO, 2020d)	New dwellings completed in Q3 2021 (CSO, 2021)
Border	318	257
West	432	382
Mid-West	347	299

Region ¹	New dwellings completed in Q3 2020 (CSO, 2020d)	New dwellings completed in Q3 2021 (CSO, 2021)
Midland	214	223
Mid-East	1,303	1,203

¹ See Figure 3.8 (Appendix A) for study area boundaries in relation to regions. Majority of the North West Region lies within the Border and West NUTS 3 Regions of Ireland.

3.3.3 Tourism and Recreation

Tourism has an important role in the core baseline area, particularly in rural locations, with the National Planning Framework (NPF) stating that tourism is a key aspect of rural job creation now and in the future (Government of Ireland, 2018). The core baseline area encompasses Ireland’s Wild Atlantic Way on its eastern edge and extends into Ireland’s Hidden Heartlands on its Western side, two of Fáilte Ireland’s tourism programmes in the country. Ireland’s Wild Atlantic Way is Ireland’s first long-distance touring route and aims to achieve greater visibility for the west coast of Ireland (Fáilte Ireland, 2020b). Hidden Heartlands is located in the Mid-West, focussing on rural communities (Fáilte Ireland, 2020a).

Key tourist attractions located within the core baseline area are described below (Discover Ireland, n.d):

- The county of Galway City (SA D) is known as ‘The City of the Tribes’ and is a vibrant bohemian city located on the Wild Atlantic Way. The city is known for its historical medieval stone walls.
- The county of Galway (SAs D and G) is known for its coastlines, beaches and lofty mountain peaks including the wilds of Connemara, home to Kylemore Abbey.
- The county of Leitrim (SAs B, C and F) includes the towns Carrick-on-Shannon, Drumshanbo, Ballinamore, Manorhamilton and Dromahair. The county is home to Glencar waterfall, an inspiration to WB Yeats.
- The county of Mayo (SAs C, D and F) contains significant tourist attractions including the Museum of Ireland- Country Life, Céide Fields, Westport House, Foxford Woollen Mills, Michael Davitt Museum and the Jackie Clarke Collection (Mayo County Council, 2019)
- The county of Roscommon (SAs D and F) is known for its lakes, historic towns of Roscommon, Boyle and Castlerea). It is home to Lough Key Forest and Activity Park and Strokestown Park House and Garden.
- The county of Sligo (SAs A, C and F) is known for its scenery and remote islands. It is also the home county of W.B Yeats.
- The county of Cavan (SAs B, C E and F) is known as ‘The Lake County’. It is home to Belturbet and Ballyconnell from which the River Erne and Shannon-Erne Canal can be explored.
- The county of Donegal (SAs A and B) is known as ‘The County of the Gaels’ and is home to the Derryveagh Mountains and Lough Eske. Malin Head is Ireland’s most northerly point and is renowned for its landscape and beaches.
- The county of Monaghan (SAs B and E) is known for its rolling landscape and bountiful lakes. It is home to Glaslough, home to the Castle Leslie Estate, and Clones which hosts a number of festivals including the Flat Lake Festival.
- The county of Longford (SAs B and F) is known as ‘Ancient Longford’. The town of Longford is full of history and has a thriving arts scene.

- The county of Louth (SAE) known as ‘The Wee County’ and is home to medieval Carlingford, Dundalk Bay, Cooley mountains and Clochafarmore’s Standing Stone.
- The county of Meath (SAE) is known for its ancient history and busy towns.
- The county of Clare (SAG) is known for its jaw-dropping coastline carved by the Atlantic including the Cliffs of Moher. It is home to the holiday towns of Kilkee, Lahinch (home to Dough Castle) and Doolin (home to the longest free-hanging stalactite in the Northern Hemisphere).

Ireland’s natural heritage is also recognised as an important tourism asset by the Department of Transport, Tourism and Sport (2019). Key natural heritage and outdoor recreation attractions (Department of Housing, Local Government and Heritage, n.d) within the core baseline area include:

- Study Area A: Glenveagh National Park, Lough Barra Bog Nature Reserve, Pettigo Plateau Nature Reserve, Sliabh Liag Cliffs, Inch Wildfowl Reserve and Silver Strand.
- Study Area B: Cavan Burren Park, Tullydermot Falls, Glangevlin, The Shannon Pot
- Study Area C: Ballygilgan Nature Reserve, Easkey Bog Nature Reserve, Knockmoyle Sheskin Nature Reserve, Céide Fields, Ballycroy National Park and Lough Cullin.
- Study Area D: Oldhead Wood Nature Reserve, Derryclare Nature Reserve, Leam West Bog Nature Reserve, Connemara National Park, Lough Corrib and Lough Mask.
- Study Area E: Lough An Leagh, Lough Muckno, Senator Bill Fox Memorial Park and Slieve Foy.
- Study Area F: Lough Allen, Lough Key, Termonbarry Harbour and Killykeen Forest Park.
- Study Area G: Cole Park Nature Reserve, Keelhilla (Slieve Carron) Nature Reserve, Ballyteigue Nature Reserve, The Burren National Park and Aillwee Cave.

Rivers, loughs and coastal areas across the core baseline area also all make an important contribution to tourism and recreational opportunities and support important fisheries.

3.3.4 Human Health

Table 3.4 provides well-being indicators for the core baseline area.

Improvements in air quality, access to good quality drinking water and participation in recreation activity can all have a positive influence on health and well-being.

Table 3.4 Well-Being Indicators for the Core Baseline Area

Region ¹	Life expectancy (CSO, 2017b)	Participation in sports, fitness or recreational physical activities (% of persons aged 15+) (CSO, 2020c)	Air quality (EPA, 2020)
Border	Male: 77.0 Female: 81.7	35	Good
West	Male: 77.1 Female: 82.7	56	Good
Mid-West	Male: 76.3 Female: 80.4	52	Good

Region ¹	Life expectancy (CSO, 2017b)	Participation in sports, fitness or recreational physical activities (% of persons aged 15+) (CSO, 2020c)	Air quality (EPA, 2020)
Midland	Male: 77.2 Female: 81.5	47	Good
Mid-East	Male: 77.2 Female: 81.4	49	Good

¹ See Figure 3.8 (Appendix A) for study area boundaries in relation to regions. Majority of the North West Region lies within the Border and West NUTS 3 Regions of Ireland.

Key issues for public health include reliable access to good quality drinking water. Regulated water service providers have to ensure appropriate service standards of supply and be able to endure drought conditions, peak events, and maintenance downtime on their assets. This requires reserve capacity in supplies. At present, the supplies across the RWRP-NW region do not have the reserve capacity to meet these levels of service at all times. Due to the limited historical monitoring of these supplies, particularly in relation to groundwater, this will need to be studied further.

Currently for day to day operations, the majority of WRZs within the RWRP-NW Study Areas suggest a Supply Demand Balance (SDB) deficit (based on a “do minimum” approach) under present and future scenarios (see Table 3.5 for further detail). While sufficient in normal weather conditions, several would fail in drought conditions and these could result in restrictions to customer use.

During the drought in Summer 2018, all of Irish Water’s groundwater supplies were being monitored due to falling groundwater levels and a number of Irish Water’s supplies were impacted in terms of quality or quantity, for example during recent dry periods, particularly the summer of 2018 and 2020, in Study Area E and G when water conservation orders were implemented, a number of the supplies were impacted. Night-time restrictions were also applied for the Ardee / Collon / Drybridge supply in Study Area G and in Study Area G, several groundwater supplies were impacted along with surface water supplies including West Clare, where tankering to Moveen Reservoir has been required and Gort where sandbagging was required at the River Cannahowna source for a number of months. Tankering has also been required in recent years for the Carron supply. Further information for all seven Study Areas on the how the effects of dry periods and drought affected supplies and the environment, will be presented as part of the baseline considered for the SEA Environmental Report.

Poor water quality can be linked to risks to health. In addition, based on desk study Water Treatment Plant (WTP) assessments, a significant number of supplies in every Study Area within the North West Region appear to have significant water quality treatment risks (see Table 3.5), and further work is planned to provide more up to date and reliable assessments. As shown in Table 3.5 a number of supplies within the core baseline area are either on the EPA Remedial Action List (RAL) or are subject to an EPA direction, Irish Water are currently progressing corrective action in relation to many of these supplies in advance of the Regional Plans.

Table 3.5 Water Quality and Supply Risks

Study Area	Current number of WRZs with SBD deficit	Total number of WRZs	Number of Supplies with Confirmed Significant Water Quality Risks	Total number of supplies	Number of Supplies on EPA Direction or RAL
SAA	18	21	23	29	1
SAB	7	22	14	17	2
SAC	14	17	17	19	1
SAD	20	25	16	33	2
SAE	3	9	14	16	1
SAF	9	15	6	18	1
SAG	5	9	7	10	3

3.4 Water Environment

This topic covers water quantity and water quality and includes consideration of hydromorphology, WFD and flood risk from surface waterbodies and groundwater. Groundwater aquifers are discussed in section 3.11.2.

Relative to other European countries, Ireland has twice the EU average of lake coverage (12,000 lakes covering ~2% land area). In the North West Region there are 638 lakes covering 2.6 % of the regions land area (74,014 hectares) with 6 lakes making up ~50% of the area, Lough Corrib (Upper and Lower), Lough Mask, Lough Conn, Lough Allen and Lough Erne (Upper). The larger known rivers within this region include the Shannon, Suck, Erne, Moy, the Clare-Corrib and Inny however, they represent only a fraction of the extensive 33,673 km network currently mapped by the EPA in the North West Region.

Parameters identified to reflect the sensitivity of riverine ecology to changes in flow and water level include geology, gradient and altitude. In the North West Region the dominant river typology is represented by D2 - Granites and other hard rocks; low and high altitudes; low-medium slope, ultra-oligo trophic with cobble, boulder bedrock and/or pebble bed (503 river waterbodies). There are 22 sites which have no BFI/unassigned soils data available. The surface water river systems are shown in Figure 3.2 below.

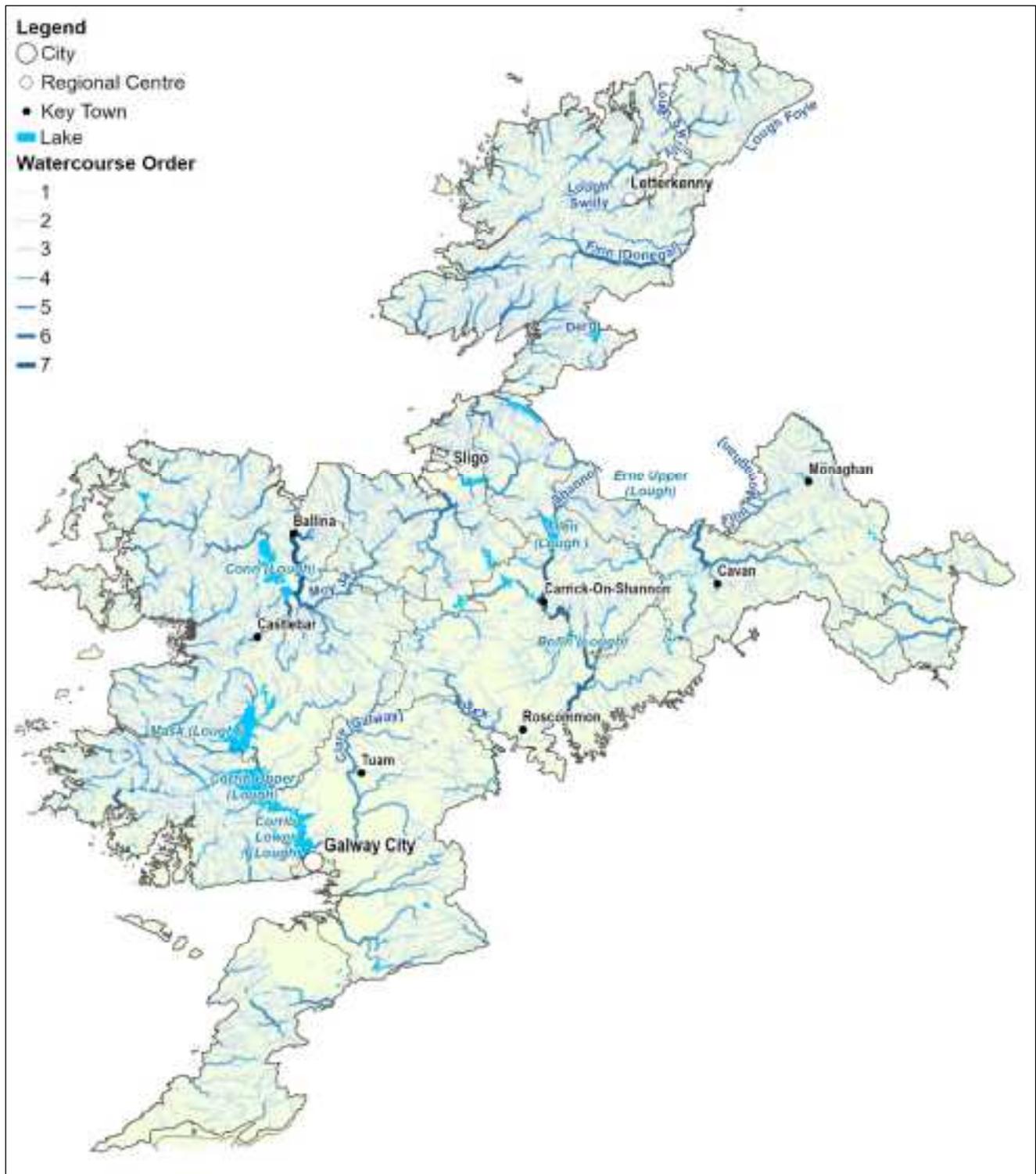


Figure 3.2 Water systems within RWRP-NW

3.4.1 Water Framework Directive

Under the Water Framework Directive (2000/60/EC), Ireland must ensure that all waterbodies achieve 'Good' status by 2027. In addition, under the legislation, any modification to a WFD waterbody should

not lead to deterioration in either the overall status⁵ or any of the quality elements⁶. Figures 3.3 and 3.4 (Appendix A) show the baseline water environment within the core baseline area, including the WFD catchment boundaries and WFD status of rivers, lakes, canals, transitional and coastal waterbodies and groundwater bodies.

Across Ireland there has been a decline in the number of high-status surface waterbodies and increase in the number of surface waterbodies with poor ecological status over the last three WFD assessment cycles (2007-2009 relative to 2013-2018), with declines in ecological status between the last two assessment cycles primarily driven by changes in river waterbody statuses. The most significant pressures on surface water ecological health include nutrient pollution from agriculture, hydromorphological alterations associated with agricultural land drainage and flood protection work and urban wastewater discharges (amongst other causes). The chemical status of surface waterbodies has remained generally good, as has overall groundwater water quality (EPA, 2020).

Failure to meet good chemical status in surface waterbodies is generally linked to elevated concentrations of priority substances such as mercury and polyaromatic hydrocarbons (PAHs), whereas failure to meet status objectives in groundwater bodies is generally associated with historical contamination from industrial sites although nitrogen leaching from agricultural soils is an emerging concern over the last decade. The EPA's State of Environment Report (SOER) 2020 highlights that significant progress is required to meet the legal requirements of the WFD Directive and transposing regulations (European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) as amended).

Water quality is an important consideration in relation to water supply. Whilst public water supplies in Ireland generally show high compliance with microbiological and chemical standards (EPA, 2020), there are a number of supplies within the North West Region on the RAL list (see 3.3.4 for further detail). Key contaminants of concern include trihalomethanes (THM), lead, pesticides (particularly herbicides such as MCPA) and microbial contaminants such as *Cryptosporidium* and *Giardia*.

Irish Water has adopted the Drinking Water Safety Plan approach. It seeks to protect human health by identifying, assessing and managing risks to both water quality and quantity; taking a holistic approach from source (catchment) to tap (consumer). The 'source' component of DWSPs is a key component and understanding the catchment characteristics is important to support the identification, assessment and prioritisation of the risks. Irish Water is developing scientifically robust semi-quantitative methodologies using GIS to risk assess drinking water sources and carry out site-specific Source and Sanitary Surveys. A greater emphasis is being placed on the source-pathway-receptor (SPR) concept for contaminant delivery. The SPR approach requires an understanding of the sources of contaminants and the pathways that contaminants might travel. Contaminants being considered includes Drinking Water Directive regulated parameters such as *Cryptosporidium*, nitrate, ammonia and pesticides etc.

Irish Water is committed to working with public bodies and other stakeholders towards a common goal of the protection of drinking water sources. We have developed an Interim Pesticide Strategy for our drinking water sources (published in 2021). It will serve as an interim strategy whilst pilot projects are

⁵ The ecological status assigned for surface water bodies is determined by the status of the poorest quality element. Overall status of groundwater bodies is assigned based on the combined chemical and quantitative element statuses.

⁶ Surface water body status is assessed based on both ecological status or potential and chemical status. Ecological status includes various quality elements including biological elements, water chemistry and the physical condition of water bodies.

ongoing, and we develop our long-term approach for catchment management for drinking water source protection. The strategy will cover our collaboration with stakeholders in order to assess and manage the risk of pesticides in the catchment, with the DWSP forming a central role. The Interim Pesticide Strategy risk management framework consists of three key pillars with collaboration with stakeholders occurring during all stages of the risk management process.

The recast DWD updates to quality standards for water intended for human consumption, in line with latest recommendations of the World Health Organisation and establishes a watch-list mechanism to allow for the monitoring of substances or compounds of public or scientific concern to health, such as endocrine disruptors, pharmaceuticals and microplastics. Irish Water sit on the DHLGH DWD expert group whose role is to provide advice to the Minister on the appropriate preparations and steps necessary for the successful transposition and implementation of the recast Drinking Water Directive.

Irish Water is involved Project Steering Committees/Groups for various ongoing research projects which focus on contaminants of emerging concern (CECs) and include Microplastics, Phthalates, Pharmaceuticals/Pesticides & Antimicrobial Resistance (EPA & UKWIR funded). Irish Water provides asset data and facilitates sampling of wastewater influent and effluent and raw drinking water. Irish Water also participates in iNAP 2 (2021-2025) meetings, where the main objective is to increase environmental surveillance and monitoring for AMR to identify national levels and understand transmission routes.

Figures 3.3 and 3.4 (Appendix A) shows the locations of 'at risk' waterbodies within the core baseline area. The Department of Housing, Planning and Local Government's (DPHLG, 2018) public consultation document regarding the significant water management issues has been considered by Irish Water. A total of 98 of the Areas for Action identified within River Basin Management Plan 2018-2021 (DPHLG, 2018) fall within the core baseline area.

3.4.2 WFD and Abstractions within the North West Region

In summer 2018, the Government published a General Scheme for the Water Environment (Abstractions) Bill (Abstractions Bill), which proposed alignment of abstraction licencing with the requirements of the Water Framework Directive. The Government approved an amended General Scheme of the Abstractions Bill in September 2020. Irish Water are assessing existing abstractions, and have taken a precautionary approach, based on their current understanding of how proposed abstraction legislation might be applied, as outlined in Appendix G of the Framework Plan. This assessment suggests that certain schemes may be subject to reductions in abstraction.

As the Abstractions Bill is still being developed, Irish Water do not have full visibility of the future regulatory regime. They have therefore not progressed through a theoretical licencing process on a site by site basis and cannot reliably include an estimation of sustainable abstraction within the SDB calculations. Instead, Irish Water use the hydrological yield, water treatment capacity and bulk transfer limitations in their calculation of deployable output. Irish Water also use the sustainable abstraction assessment to assess the sensitivity of the Preferred Approaches (solutions) they develop as part of the NWRP.

Therefore, Irish Water's Framework Plan assumes that existing abstractions can continue on a transitional basis, subject to the registration and/or licencing requirements as outlined in the General Scheme of the Abstractions Bill approved by the Government in September 2020.

For these existing abstractions, further studies will be undertaken in conjunction with the EPA and appropriate stakeholders. Following investigation, if an abstraction is confirmed to be affecting a

waterbody status the SDB will be updated and solutions will be delivered through future cycles of the River Basin Management Plans and/or RWRPs.

In parallel, Irish Water will also consider other hydromorphological impacts, as part of this process.

As the objective of Irish Water’s NWRP is to achieve safe, secure, reliable and sustainable supplies, any new abstractions proposed to be developed by Irish Water as part of their RWRPs will be based on conservative assessments of sustainable abstraction. This will ensure that their water supplies continually improve in terms of environmental sustainability. Irish Water has been an active participant in the characterisation process for the 3rd cycle River Basin Management Plan 2022-2027 and liaised closely with the EPA during the development of the Framework Plan. Therefore, although the proposed Abstractions Bill is still under development and there may be some uncertainty in their calculations of sustainable abstraction, the assessments used as part of the development of the Regional Plan have followed the same principles as those that will likely be used by the regulatory authorities (based on the legislation as currently envisaged).

Irish Water has also assessed surface water abstractions across the core baseline area with respect to potential conflicts with sustainability guidelines and WFD targets, with the sources identified as surface water abstractions which exceed sustainable abstraction thresholds being at potential risk shown in Table 3.6.

Table 3.6 Abstractions potentially At Risk due to Exceedance of Sustainability Guidelines

Water Resource Zone	Abstraction
SAA	
Arranmore Island	Lough Shore
Ballyshannon & Bundoran	Lough Melvin, Lough Unshin, Lough Gorman
Buncrana	Lough Doo
Carrigart-Downings & Cranford	Lough Nambraddan, Lough Nameeltoge, Lough Nacreaght
Creelough Dunfanaghy	Lough Agher, Lough Muckish
Donegal (River Eske)	River Eske
Fanad East	Shannagh Lake
Fanad West	Lough Naglea
Frosses-Inver	Glencoagh Lough, St. Peters Lough
Glenties-Ardara	Lough Anna
Gortahork-Falcarragh	Lough Lagha
Inishowen West & Carndonagh & Culdaff	Lough Fad
Killybegs	Lough Aderry Intake
Letterkenny & Inishowen East & Pollan Dam	Lough Salt, Lough Keel, Lough Greenan, Gort Lough, Lough Columbkille, Lough Fag
Lettermacaward	Lough Derkmore-Impoundment
Lough Mourne	Lough Mourne

Owenteskiny	Lough Nalughraman
Rosses	Lough Keel Intake
SAB	
Ballybay (Lough Egish)	Lough Bawn
Ballyjamesduff RWSS	Nadrageel Lough
Belturbet PWS	River Erne
Cashilard	St. Columbkil Lake
Cavan RWSS	Lough Acanon Dam
Clones	Corconnolly Lake
Cootehill PWS	Coragh Lough
Gowna	Lough Gowna Intake,
Monaghan	Corcaghan Lough, Greagh Lough
Newbliss	Feagh Lough
Pettigo Pub	Aghalough
SAC	
Sligo Town & Environs	Killsellagh Impounding Reservoir, Foxes Den Intake
North Sligo Regional Water Supply	Gortnaleck, Lyle
Lough Easkey Regional Water Supply	Lough Easkey
Lough Talt Regional Water Supply	Lough Talt
Kiltimagh PWS	Kiltimagh River
Foxford	Lough Muck Intake
Erris RWSS	Carramore Lough
Achill	Accorymore Lake Intake
Ballina	Lough Conn
SAD	
Lough Mask & Westport	Lough Mask, Moher lake
Spiddal	Lough Bouliska
Tully-Tullycross	Tully Lough, Diamond Hill Stream
Leenane P.S.	Mountain Stream
Inisboffin P.S.	Lough Fawna
Clonbur PS	Coolin Lough
Clifden	Lough Nambrackeagh
Teeranea_Lettermore P.S.	Lough Illauntrasna

Rosmuc P.S.	Lough Aroolagh
Oughterard	Lough Buffy (Stream)
Lough Corrib (Galway City, Tuam, Loughrea)	Lough Corrib, Lough Rea
SAE	
Ardee/ Collon/ Drybridge	River Dee
Cavanhill & North Louth	River Dee, River Glyde, Barnavare, Carlingford Mountain, River Fane
Inniskeen	River Fane
Drumcondrath	Lough Bracken
SAF	
Longford Central	Lough Forbes
Granard	Lough Kinale
Carrick-on-Shannon	River Shannon
SAG	
Gort	Cannahawna River
Ennistymon	Lickeen Lake
Killadysert PWS	Gortglass Lough
Corofin PWS	Lough Inchiquin
West Clare	Doo Lough

Groundwater abstractions will also need to conform to the proposed new abstraction licencing regime. These abstractions will be assessed in two ways:

- Impacts on the groundwater bodies from which they abstract; and
- Impact of the groundwater abstraction on the base flow in surface waterbodies.

On an interim basis, Irish Water has developed an initial assessment based on the best available information. Over the coming years, Irish Water will work with the environmental regulator, the EPA and the Geological Survey of Ireland (GSI), to develop desktop and site investigation systems to better understand the sustainability of their groundwater sources (informed by data gathered as part of GSI's ongoing GW3D project).

3.4.3 Flood Risk

Flooding is becoming a bigger issue in Ireland [in recent years]; the frequency of flood events has been increasing and, with climate change, is expected to increase further. Increased flooding can cause pressure on drains and sewers and can affect water quality.

The Floods Directive (2007/60/EC) required member states to develop Flood Risk Management Plans for areas of existing and future potentially significant flood risk. The Floods Directive was transposed into Irish law by the EU (Assessment and Management of Flood Risks) Regulations 2010 and sets out the responsibilities of the Office of Public Works (OPW). The OPW has been implementing the Directive

mainly through the Catchment Flood Risk Assessment and Management (CFRAM) Programme, through which 29 draft Flood Risk Management Plans have been developed. Approximately 300 Areas for Further Assessment have been established along with a range of measures to reduce or manage the flood risk within each catchment. CFRAM mapping for all Areas for Further Assessment is available to view on the CFRAM website (OPW, 2018).

Figure 3.5 (Appendix A) presents areas with high and medium probability of pluvial, fluvial, coastal flooding as well as historical groundwater flooding. There is no probability of groundwater flooding within the North West Region. Historic groundwater and surface water flooding is identified predominantly to the west of the North West Region, with a particular abundance of historic groundwater/surface water flooding in Study Area G. Areas adjacent to Lough Corrib and River Clare, adjacent to River Shannon near Longford and Carrick-on-Shannon as well as many smaller areas within the North West Region are considered to have high probability (10% Annual Exceedance Probability (AEP)) of fluvial flooding. Dundalk Harbour and connected rivers such as Castletown River and Flurry River are considered to have high probability of both coastal and fluvial flooding. High probability of coastal flooding can also be observed in the areas of the southern coast of Galway. As well as considering surface water flooding, there are ongoing efforts to better understand the role of karst groundwater systems in flooding within the Flood Risk topic.

3.4.4 Drought Risk

Drought risk within the core baseline area is discussed in section 3.3.4 and it identifies where specific existing water supply assets are at risk of failure or reduced levels of service during drought conditions.

Drought can cause low-flow conditions and higher water temperatures that lead to reduction of oxygen concentrations in the water. These environmental effects of drought contributed to fish kills seen in the summer of 2018. The fish kills caused by 2018 drought event may have increased the vulnerability of fish to acute pollution events as well as underlying levels of pollution. Environmental pressures caused by drought are less likely to affect resilient waterbodies that are in good ecological health (EPA, 2020). The ecological health of waterbodies can also be negatively impacted by over-abstraction of water which can lead to reduction in river flows and lake levels. Irish Water's active management of some at risk abstractions is needed to avoid negative impacts on waterbodies during drier periods. However, in general outside dry or drought periods, abstractions in Ireland do not put significant environmental pressures on both surface water and groundwater resources (EPA, 2020).

3.5 Biodiversity, Flora and Fauna

3.5.1 Designated Sites

European, national and local designated sites within the core baseline area (North West Region) include 84 Special Protected Areas (SPAs), 218 Special Areas of Conservation (SACs), 17 sites designated as Wetlands of International Importance (Ramsar sites), three national parks, 80 Natural Heritage Areas and numerous nature reserves and proposed Natural Heritage Areas (NPWS, 2019). There are 7 marine SACs and 20 marine SPAs that are not within the core baseline area but are hydrologically linked to it. The location of these sites in relation to the core baseline area is shown in Figures 3.6a, 3.6b and 3.6c (Appendix A).

3.5.2 Habitats

Figure 3.7 (Appendix A) illustrates the distribution of different habitat types across the core baseline area; as reported in the Corine Land Use dataset (EPA, 2018). Agricultural land uses dominate SAB, SAE, SAF and SAG, with SAA, SAC and SAD having a relatively higher degree of woodland land cover and wetland type habitats in comparison to the other study areas. There is also a significantly high number of Commonage Land areas located in the far north and north-west of the core baseline area (EPA, n.d.).

Particularly relevant habitats that depend on water quality and/or quantity are:

- Alkaline fens;
- Bog habitats – Active raised bogs, degraded raised bogs still capable of natural regeneration, *Rhynchosporion* depressions, transition mires and quaking bog habitats;
- Bog woodland;
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*;
- Coastal lagoons;
- Groundwater dependant terrestrial habitats, such as petrifying springs with tufa formation and blanket bogs;
- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.;
- Machairs;
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*);
- Natural dystrophic lakes and ponds;
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation;
- Northern Atlantic wet heaths with *Erica tetralix*;
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*;
- Oligotrophic waters containing very few minerals of sandy plains;
- Turlough ecosystems;
- Watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche–Batrachion* vegetation.

The EPA OSI national land cover map, currently under development, will be considered for further habitats information, once available.

3.5.3 Species

The key species and habitats of concern within the core baseline area (Nelson et al., 2019) include:

- Bat species – Lesser Horseshoe Bat (*Rhinolophus hipposideros*);
- Fish species - Atlantic Salmon (*Salmo salar*), Lamprey species;
- Fresh-water pearl mussel (*Margaritifera margaritifera*);
- Geyer's Whorl Snail (*Vertigo geyeri*);

- Killarney Fern (*Trichomanes speciosum*);
- Marsh Fritillary (*Euphydryas aurinia*);
- Marsh Saxifrage (*Saxifraga hirculus*);
- Narrow-mouthed Whorl Snail (*Vertigo angustior*);
- Otter (*Lutra lutra*);
- Petalwort (*Petalophyllum ralfsii*);
- ‘Qualifying interest’ bird species e.g. merlin (*Falco columbarius*), chough (*Pyrhocorax pyrrhocorax*), hen harrier (*Circus cyaneus*), corncrake (*Crex crex*) and peregrine falcon (*Falco peregrinus*);
- Slender green feather-moss (*Hamatocaulis vernicosus*);
- Slender Naiad (*Najas flexilis*);
- Waterbirds of ‘qualifying interest’ e.g. Bewick's swan (*Cygnus columbianus bewickii*), Brent goose (*Branta bernicla*), whooper swan (*Cygnus cygnus*), Greenland white-fronted goose (*Anser albifrons flavirostris*), Greylag goose (*Anser anser*), Little Tern (*Sterna albifrons*) and winter migratory waders;
- White-clawed Crayfish (*Austropotamobius pallipes*).

The key invasive species to consider (National Biodiversity Data Centre, 2021) for developing options within the SAs include:

Table 3.7 Key invasive species present in the North West Region

Animals	Plants
A colonial sea squirt (<i>Didemnum</i> spp.)	American skunk-cabbage (<i>Lysichiton americanus</i>)
American mink (<i>Mustela/Neovison vison</i>)	Brazilian giant-rhubarb (<i>Gunnera manicata</i>)
Asian river clam (<i>Corbicula fluminea</i>)	Broad-leaved rush (<i>Juncus planifolius</i>)
Brown hare (<i>Lepus europaeus</i>)	Cord-grasses (<i>Spartina</i> spp.)
Brown rat (<i>Rattus norvegicus</i>)	Curly waterweed (<i>Lagarosiphon major</i>)
Canada goose (<i>Branta canadensis</i>)	Dwarf eel-grass (<i>Zostera japonica</i>)
Common carp (<i>Cyprinus carpio</i>)	Fringed water-lily (<i>Nymphoides peltata</i>)
Common toad (<i>Bufo bufo</i>)	Giant hogweed (<i>Heracleum mantegazzianum</i>)
Grey squirrel (<i>Sciurus carolinensis</i>)	Giant knotweed (<i>Fallopia sachalinensis</i>)
Greylag goose (<i>Anser anser</i>)	Giant-rhubarb (<i>Gunnera tinctoria</i>)
Harlequin ladybird (<i>Harmonia axyridis</i>)	Himalayan knotweed (<i>Persicaria wallichii</i>)
Japanese skeleton shrimp (<i>Caprella mutica</i>)	Himalayan/Indian balsam (<i>Impatiens glandulifera</i>)
Muntac deer (<i>Muntiacus reevesi</i>)	Japanese knotweed (<i>Fallopia japonica</i>)
Roach (<i>Rutilus rutilus</i>)	Large-flowered waterweed (<i>Egeria densa</i>)
Ruddy duck (<i>Oxyura jamaicensis</i>)	New Zealand pigmyweed (<i>Crassula helmsii</i>)

Animals	Plants
Siberian chipmunk (<i>Tamias sibiricus</i>)	Parrot's feather (<i>Myriophyllum aquaticum</i>)
Slipper limpet (<i>Crepidula fornicata</i>)	Rhododendron (<i>Rhododendron ponticum</i>)
Stalked/leathery sea squirt (<i>Styela clava</i>)	Salmonberry (<i>Rubus spectabilis</i>)
Wild boar (<i>Sus scrofa</i>)	Sea-buckthorn (<i>Hippophae rhamnoides</i>)
Zebra mussel (<i>Dreissena polymorpha</i>)	Spanish bluebell (<i>Hyacinthoides hispanica</i>)
	Three-cornered leek (<i>Allium triquetrum</i>)
	Wakame (<i>Undaria pinnatifida</i>)
	Water fern (<i>Azolla filiculoides</i>)
	Waterweeds (<i>Elodea</i> spp.)
	Wireweed (<i>Sargassum muticum</i>)

3.6 Material Assets

Material assets are considered to be the natural and built assets (non-cultural assets) required to enable society to function as a place to live and work, in giving them material value. Some of the natural assets within the core baseline area are shown on Figure 3.7 (Appendix A) such as, agricultural land, urban and forest areas.

Built assets include transport and communications infrastructure, and other developed areas, including existing water supply infrastructure. These assets all need to be taken into account in new water resource planning and infrastructure.

Key road, rail and air transport infrastructure within core baseline area are shown in Figure 3.8 (Appendix A). Key water transport infrastructure includes Rossaveal Harbour (SAD) which is the main ferry port for the Aran Islands. There are no 'ports of significance' in the North West Region. Ireland's canals once played a significant role as a transport network; however, the main uses are now for recreational and heritage purposes. There are no canals of regional or national significance within the core baseline area.

Figure 3.8 (Appendix A) also shows locations of WTPs within the core baseline area.

Any new infrastructure considered for the North West Region will need to take existing, planned, land zoning and local development into consideration. At the time of review (March 2022) there were 267 developments in the core baseline area listed on myProjectIreland (2021). These will be examined in further detail for schemes taken forward for Project Level assessment including any additional developments initiated in the intervening period.

Water resources and water quality are also influenced by urban, agricultural and forestry activity within river and groundwater catchments. This can affect the availability and quality of water for supply. Current land use within core baseline area is set out below (EPA, 2018):

- Agriculture – 57.35%;
- Urban – 1.18%;
- Natural habitats – 31.67%;

- Forest – 9.48%;
- Industry – 0.07%; and
- Other – 0.24%.

3.7 Landscape and Visual Amenity

The National Landscape Strategy 2015-2025 is in the process of being implemented and will be Ireland's vehicle for complying with the EU Landscape Convention. Landscape assessment guidance is also available from the local authorities which will be taken into account when identifying landscape character areas and protected areas at the project level in the future.

The value of the landscape in the North West Region is reflected in the baseline data provided in sections 3.3.3 (tourism and recreation), and the designated sites identified in 3.5 (biodiversity, flora and fauna) and 3.10 (cultural heritage).

Key landscape features within the core baseline area include three National Parks. Glenveagh National Park comprises more than 16,000 hectares including mountains, lakes, native oak woodland and waterfalls and is located in the North West of County Donegal. Wild Nephin National Park comprises 15,000 hectares of Atlantic blanket bog and mountains and is located in the North West of Mayo. Connemara National Park comprises 2,000 hectares of mountains, bogs, heaths, grasslands and woodlands, and is located in the west of Galway County.

Landscape Character Areas (LCAs) with high sensitivity in the RWRP-NW area are located to the north and centre of Clare County, west of Galway County, and across the majority of Roscommon County. They include East Connemara Mountains LCA, Tulla Drumlin Farmland LCA, Doonbeg Coastal Plain, Castlerea and Upper Suck Valley and Roscommon Town and Hinterland LCA amongst others (EPA, n.d.). There is limited LCA information available for the northern region of the core baseline area including Donegal County, Sligo County and Mayo County.

There are also several Seascape Character Areas (SCAs) that are not within the core baseline area but are hydrologically linked to it. SCAs are located around the coast in the North West of the core baseline area near counties Donegal and Sligo, and to the east of the core baseline area near Meath County. These SCAs include, but are not limited to, the North Donegal Atlantic Headlands, Loughs and Beaches, Sligo Bay and the Northeastern Irish Sea Islands and beaches.

Further information on landscape character assessments will be provided in the Study Area Environmental Reviews (SAs A, B, C, D, E, F and G).

3.8 Air Quality and Noise

3.8.1 Air Quality

Air quality is monitored and managed using Air Quality Zones and air monitoring sites. The majority of the core baseline area falls within Air Zone D: Rural Ireland with Letterkenny, Sligo and Galway falling within Air Zone C: Other Cities and Large Towns (EPA, n.d.). The air quality index rating of the core baseline area is rated as 'good' (EPA, 2020).

In general, the water industry is not a major contributor to air quality issues, although there is potential for local pollution through Irish Water vehicles, generator plants and drinking water residuals treatment facilities. There is a requirement to comply with air pollution regulations and also identify potential opportunities for reducing emissions.

3.8.2 Noise

The main areas within the core baseline area that experience noise pollution are located along M and N roads as shown in Figure 3.8 (Appendix A). Water infrastructure development is not expected to add significantly to noise pollution. Irish Water acknowledges that construction noise can have adverse effects on terrestrial and marine environments and therefore it will be considered through scheme construction management and design for local receptors and for sensitive receptors in close proximity.

3.9 Climate Change

Ireland's current climate is heavily influenced by the Atlantic Ocean, consequently, Ireland has a milder climate that has less extreme temperature variation compared with other countries at a similar latitude. The hills and mountains, many of which are near the coasts, provide shelter from strong winds and from the direct oceanic influence. Winters tend to be cool and windy, while summers are generally mild and less windy (Met Éireann, 2019).

There are four aims that local authorities are required to include in their climate adaptation strategies (Department of Communications, Climate Action and Environment, 2018), these being:

- 1) **Mainstream Adaptation:** That climate change adaptation is a core consideration and is mainstreamed in all functions and activities across the Local Authority. Ensure that Local Authority is well placed to benefit from economic development opportunities that may emerge through commitment to proactive climate change adaptation and community resilience;
- 2) **Informed decision making:** That effective and informed decision making is based on reliable and robust evidence base of the key impacts, risks and vulnerabilities of the area. This will support long term financial planning, effective management of risks and help to prioritise actions;
- 3) **Building Resilience:** That the needs of vulnerable communities are prioritised and addressed, encourage awareness to reduce and adapt to anticipated impacts of climate change and promote a sustainable and robust action response; and
- 4) **Capitalising on Opportunities:** Projected changes in climate may result in additional benefits and opportunities for the local area and these should be explored and capitalised upon to maximise the use of resources and influence positive behavioural changes.

In addition to these high-level aims, each Local Authority is required to identify the key risks to their area. These are provided in Table 3.8.

Table 3.8 Climate Change Risks Identified by Counties in the Core Baseline Area

County	Key risk areas									
	Flooding (Pluvial, Fluvial, Groundwater or Coastal or Marine)	Extreme Rainfall	Rising Sea Levels and Storm Surges	Storm Frequency and Intensity	Extreme Cold/Heavy Snowfall and Ice	Extreme Heat/Drought Conditions	Bog, Sand, Dune, Gorse or Forest Fires	Coastal Erosion	Wind Speeds	Air Quality or Pollution
Galway City (Galway City Council, 2019)	✓	✓	✓	-	✓	✓	-	✓	✓	✓
Galway County (Galway County Council, 2019)	✓	✓	✓	✓		✓	-	-	-	-
Leitrim (Leitrim County Council, 2019)	✓	✓	✓	✓	✓	✓	✓	-	✓	-
Mayo (Mayo County Council, 2019)	✓	✓	✓	✓		✓	-	✓	-	✓
Roscommon (Roscommon County Council, 2019)	-	✓	-	-	✓	✓	-	-	✓	-
Sligo (Sligo County Council, 2019)	✓	✓	✓	✓	-	✓	-	✓	-	-
Cavan (Cavan County Council, 2019)	-	✓	-	-	✓	✓	-	-	✓	-
Donegal (Donegal County Council, 2019)	✓	✓	✓	✓	-	✓	-	✓	-	-
Monaghan (Monaghan County Council, 2019)	✓	✓	-	✓	✓	✓	✓	-	✓	-
Longford (Longford County Council, 2019)	-	✓	-	-	✓	✓	-	-	✓	-
Louth (Louth County Council, 2019)	✓	✓	✓	✓	✓	✓	✓	-	-	-

County	Key risk areas									
	Flooding (Pluvial, Fluvial, Groundwater or Coastal or Marine)	Extreme Rainfall	Rising Sea Levels and Storm Surges	Storm Frequency and Intensity	Extreme Cold/Heavy Snowfall and Ice	Extreme Heat/Drought Conditions	Bog, Sand, Dune, Gorse or Forest Fires	Coastal Erosion	Wind Speeds	Air Quality or Pollution
Meath (Meath County Council, 2019)	-	✓	✓	✓	-	✓	-	✓	✓	-
Clare (Clare County Council, 2019)	✓	-	-	-	✓	✓	-	✓	-	-

In addition, Ireland has a sectoral climate adaptation plan for the ‘Water Quality and Water Services Infrastructure’ sector. A summary of this report’s findings is included in Table 3.9. Whilst not specifically identified in county level plans, climate change induced risk of water contamination through changes such as increased sediment loads and release of nutrients from catchment soils is a further issue and particularly relevant for approaches that can address these such as through catchment management and nature-based solutions.

Table 3.9 Summary of Key Points from the 'Water Quality and Water Services Infrastructure' Sectoral Climate Change Plan (Department of Housing, Planning and Local Government, 2019b)

Summary	
<ul style="list-style-type: none"> Key Points 	<ul style="list-style-type: none"> Protecting and improving water quality and improving water services infrastructure are major challenges in Ireland Climate change-induced threats will increase the scale of these challenges Risks to water quality and water infrastructure arise from changing rainfall patterns and different annual temperature profiles. The frequency and intensity of storms and sea level rise are also considered
<ul style="list-style-type: none"> The challenges: Water services infrastructure 	<ul style="list-style-type: none"> Increased surface and sewer flooding leading to pollution, water and wastewater service interruptions Reduced availability of water resources Hot weather increasing the demand for water Increased drawdown from reservoirs in the autumn/winter for flood capacity, leading to resource issues Business continuity impacts or interruptions for water services providers
<ul style="list-style-type: none"> Primary adaptive measures 	<ul style="list-style-type: none"> Fully adopt the ‘integrated catchment management’ approach Improve treatment capacity and network functions for water services infrastructure Water resource planning and conservation – on both supply and demand sides Include climate measures in monitoring programmes and research Many of these proposed adaptation actions are already underway through existing and scheduled water sector plans and programmes

Climate change is expected to influence weather conditions such as frequency of droughts and extreme events such as storms and is likely to affect habitats and species, water availability for supply and water demand. Across the core baseline area there are many supplies which do not meet the required levels of reserve capacity. As evidenced in the 2018 drought, there is the potential for these deficits to effect access to water in the future. Supporting environmental resilience to climate change will also be an important consideration for the future with additional benefits for supply resilience.

3.10 Cultural Heritage

There are no UNESCO World Heritage Sites (WHS) within the core baseline area however there are some sites listed on the Tentative List (EPA, n.d.). There are six Irish Landmark Trust sites located within the core baseline area (EPA, n.d.), as well as numerous designated and non-designated cultural heritage assets inventoried in the Record of Monuments and Places, the Sites and Monuments Record

(SMR), the Record of Protected Structures, and the National Inventory of Architectural Heritage (NIAH). In total in the North West Region (within the core baseline area) there are 47,870 sites recorded by the National Monuments Service and 13,187 sites recorded on the NIAH. There are additional 49,111 National Monuments and 13,364 NIAH sites in the coastal and island locations but outside of the core baseline area. Given the number of small sites across the core baseline area, these are best viewed on the Department of Culture, Heritage and the Gaeltacht's (2020) 'Historic Environment Viewer' website. There are also several undesignated heritage assets within the marine area surrounding the North West Region.

There are also potentially unknown, undesignated archaeological and architectural remains, throughout Ireland.

3.11 Geology and Soils

The geology and soils in the environment can impact the quality and quantity of water in the area through differences in drainage, chemical composition, filtration and resultant land use; which can also have a significant impact. The water supply can be heavily impacted by the type of aquifer in the area, as they impact the system's ability to store and transmit groundwater.

3.11.1 Geology

Figure 3.9 (Appendix A) shows the geology of the core baseline area, with particular reference to potential aquifers.

Understanding the geology of our catchments is vital to the provision of clean water. Geology is responsible for shaping mountain ranges, defining river network systems and determining their character, i.e. slope and erosivity. The bedrock geological maps developed by the GSI are the foundation maps upon which groundwater protection and vulnerability maps have been constructed and upon which WFD groundwater bodies and monitoring programmes have been established by the EPA. In general, the topography and its associated geological deposits can be broadly split into topographic highs and lowland valleys. Considering the extent of glaciation during the last ice age the Irish landscape can be considered a glacial one. Bedrock outcrop often prevails in the mountainous areas, while the remainder of Ireland's bedrock is generally overlain by glacial material or glacially influenced materials (river alluvium, peat or coastal deposits).

The oldest geology of the North West Region, and indeed the country, comprising gneisses, schists (pelites and psammites), quartzites, and marbles formed during the Precambrian Period, 2,000 – 541 million years ago (mya). These represent 22% of the geology of the North West Region, consisting of highly complex metamorphic rocks. Most of them originated as sedimentary rocks such as limestones (which became marbles), sandstones (which became quartzites or psammites) and mudstones (which became schists or pelites). Their main occurrence is in the Co. Donegal, northwest Co. Mayo and the Ox Mountains, and in the Maamturk Mountains in Connemara.

The Ordovician and Silurian Periods, when present day northwest and southeast Ireland lay along the margins of separate continental masses and divided roughly along the Shannon Estuary, represents a relatively minor proportion (13%) of the North West Regions' bedrock geology. During the closure of the Iapetus Ocean, the subduction of oceanic crust was responsible for the formation of a volcanic island arc. These volcanic rocks were erupted and intruded into the Silurian marine sedimentary sequences, which include greywackes, mudstones, lavas and tuffs. These can be found in southwest Co. Mayo and form a belt which runs from the Co. Down coast to Co. Longford, known as the Longford-Down inlier.

Granites and other intrusive igneous rocks were intruded in Connemara and Donegal during the Devonian Period (c. 419 - 370 mya). They are all complex bodies and range widely in composition. Abundant minor granitic dykes accompany all the granites. The various granites of Connemara are differentiated on the basis of their mineralogy and by changes in their colour and texture. Pale cream coarsely crystalline pegmatite veins, consisting mainly of quartz, are present. The Devonian Old Red Sandstones (ORS) only form a very minor proportion (2%) of the bedrock in the region, compared to the south, and can be found in north Roscommon and Mayo.

Most of the bedrock geology of the North West Region (48%) falls into the Lower Carboniferous period (350 mya), which consists of a mixture of sandstone, limestone and shale, and these represent the transition from terrestrial to marine depositional conditions. During the transgression of the warm, shallow sea limestones sediments derived from the breakdown and disintegration of calcareous shells of invertebrate animals, were deposited. They are present in the lower lying areas, notably in the Shannon Basin underlying much of east Galway, Mayo and Co. Roscommon and Leitrim. The Upper Carboniferous (325 mya) is represented by 6% of the North West Region, dominated by deep water shales in the lower Namurian sequence, while the upper portions are generally sandstones and siltstones. These occur mainly in West Clare with smaller occurrences in Leitrim.

Important geological and geomorphological sites could be identified for protection as NHAs, however, until designation is confirmed, these sites are classified as Irish Geological Heritage Sites (IGHS). There are over 900 IGHS identified around Ireland, including 266 within the core baseline area/

3.11.2 Groundwater Aquifers

Figure 3.9 (Appendix A) shows gravel and bedrock aquifers within the core baseline area.

The predominant aquifer type of the North West Region, is made up of poorly productive bedrock (62%), followed by karstic (28%), productive fissured (5%) and sand and gravel (0.6%) aquifers. The productivity of the Dinantian (Lower Carboniferous) aquifers depends on the nature and concentration of faults and fissures. Dinantian (early) Sandstones, Shales and Limestones Group comprises a mixture of siltstones, sandstones, mudstones, shales and limestones. Overall, the interbedding will tend to limit vertical permeabilities and groundwater flow systems will be rather localised. Permeability is generally low but may be higher in the sandstone and limestone beds, and substantially higher in certain areas, particularly in Co. Monaghan and Co. Cavan. Zones of higher permeability may be found in the above formations nearer faults and in the upper weathered fractured zone of the top 10-30 m. Groundwater flow in the lesser productive Dinantian Shales and Limestones circulates primarily through fissures as these rocks do not show significant intergranular permeability. These rocks occur primarily in the north and northwest of Ireland, in counties Monaghan, Cavan, Leitrim, Donegal and Sligo, and are predominantly interbedded shales and limestones, with little or no sandstone content. Development will usually be possible in local zones (i.e. along faults, fractures and zones of clean limestone). There are also large swathes of Dinantian (Lower Carboniferous) Impure Limestones which are interleaved with the Pure Bedded Limestones. The limestones are often characterised by the occurrence of chert and shale bands and are generally less productive than the Pure Bedded Limestones.

A number of large granite intrusions cover extensive areas, such as the Donegal Granite (949 km²) and the Galway or Connemara Granite (701 km²). Although fractured, these rocks generally have a low permeability and are poor aquifers. Lastly the Precambrian rocks consist mainly of gneisses, schists (pelites and psammities), quartzites, and marbles and can be found in Co. Donegal, northwest Co. Mayo and the Ox Mountains, and in the Maamturk Mountains in Connemara. The development potential of the

Precambrian rocks is very limited. The marbles may contain some solutionally enhanced permeability zones which could provide a domestic or farm supply or small group scheme.

The karst forms a key regionally important aquifer in some areas, particularly in the Burren, the Gort-Kinvara area, in Co. Roscommon, and the Northwestern Plateau (counties Sligo, Leitrim and Cavan). Limestone dissolution during karstification causes groundwater flow to concentrate along certain pathways/conduits, making it difficult to locate successful wells. Bare rock and thin subsoils are common across much of the area meaning groundwater is vulnerable to pollution, thus creating difficulties when it comes to water supply and pollution prevention. Although recharge is high due to high rainfall coupled with low evapotranspiration and shallow/bare rock there is relatively low storage capacity among the limestones. Aquifer storage is low, and rapid flow-through means that the conduit karst aquifers are typified by erratic and unpredictable groundwater supplies, both from wells and springs. Large springs are characteristic of pure bedded limestones, especially in the West, and indicate a bulk permeability high enough to permit the throughput of substantial quantities of groundwater.

Groundwater flow in the productive fissured aquifers largely takes place along fractures and faults. Where extensive faulting occurs, such as in the Monaghan-Clones area, the aquifer permeability is likely to be increased. Additional fracturing may also be associated with the faulting. Where clean limestones are present, dissolution may occur along faults, fractures and bedding planes, widening them and enhancing the permeability. Although lower permeability fine grained shale beds are interbedded in some areas, they can serve as supply routes for large amounts of water due to the interconnectedness caused by the faulting. This is evidenced by the high yields in some of the wells at Monaghan, with the entire scheme capable of supplying upwards of 2 MLD. Similarly, the Kingscourt Sandstone aquifer, mapped as a small band to the southwest of Carrickmacross in counties Cavan, Meath and Monaghan, are capable of supplying significant quantities of water. The Mullantra borehole of the Kingscourt PWS typically supplies 375 - 435 m³/d.

The differing spatial extents and permeabilities of sand/gravel aquifers results in a variable development potential. They act as areas for groundwater filtration owing to the intergranular flow mechanics, which offers good protection against microbial contamination. There are a number of sand and gravel aquifers throughout the region, with the main ones occurring in Co. Mayo. The Moy Sand and Gravel groundwater body acts as a discharge zone for the Killaturly springs and the Charlestown spring. The gravel body, although classified by the GSI as a 'Locally Important Sand and Gravel aquifer', is significant, and provides water to several supply schemes in the region. The sand/gravel deposits, when overlying areas of bedrock aquifers, can improve the overall flow and storage to the aquifer and also protect against pollution. Conversely, groundwater from the bedrock can feed into the gravel under certain conditions. This can be seen at Killaturly groundwater scheme, where groundwater in the limestone discharges into the overlying sand and gravel body, under inferred upward hydraulic gradients.

3.11.3 Soils

Dominant soil types in the north of the core baseline area are peats, podzolics and gleys (EPA, n.d). South-west and eastern parts of the core baseline area is dominated by peats and gleys with patches of peaty podzols and lithosols in the west. Central part of the core baseline area is covered by podzolics, gleys and raised bogs. Small patches of tidal marshes are present on the coastal areas located north-east of Dundalk, south of Galway and some along the west coast of the core baseline area.

3.11.4 Transboundary environment

In relation to the potential for transboundary effects, this will depend on the location and nature of proposed water supply and treatment options. As part of the assessment of option consideration will include identifying impacts related to proximity and through potential pathways. There are eight cross-border catchments which are shared between Northern Ireland and Republic of Ireland and within in these numerous WFD waterbodies including rivers, lakes, coastal and transitional waterbodies and groundwater waterbodies, numbering around 70 cross border waterbodies in total.

In Northern Ireland there are 58 Special Areas of Conservation (SACs), 16 Special Protected Areas (SPAs) and 20 Ramsar sites. Marine Conservation Zones are adopted in Northern Ireland, totalling 55 sites. MCZs adoption in Republic of Ireland is currently at a consultation stage, however marine classifications are included in the current designated sites classifications. The location of the catchments and designated sites in relation to the core baseline area is shown in Figure 3.10.

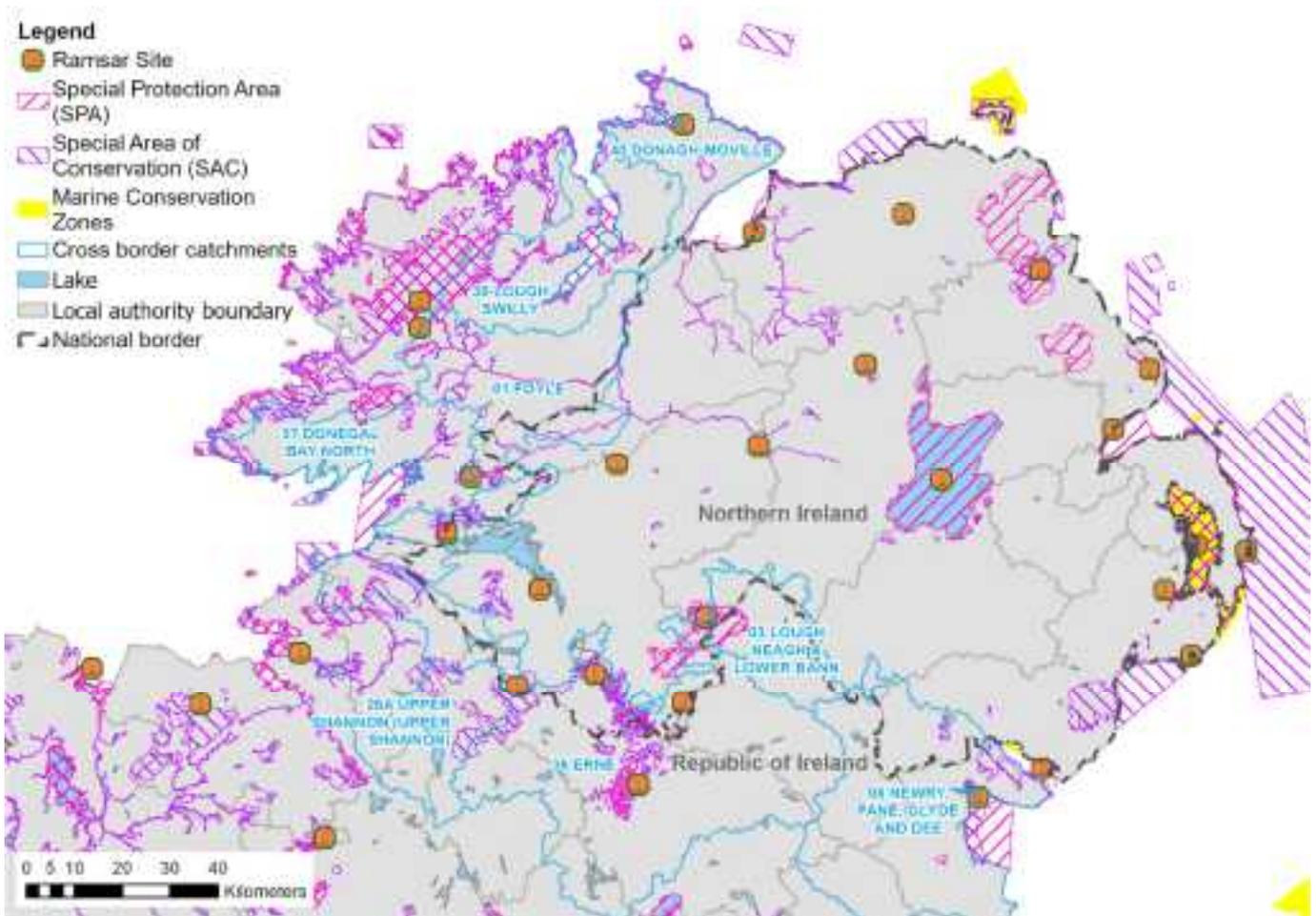


Figure 3.10 Transboundary Environment

Coordination is ongoing between ROI and NI on the development and implementation of the 3rd cycle River Basin Management Plans through various working groups. The National Technical Implementation Group (NTIG) oversees technical implementation of the RBMP at a national level and provides a forum to ensure coordinated actions among all relevant Agencies and other State actors. It also addresses any operational barriers to implementation that may arise.

The Border Region Operational Committee provides a forum to enhance interagency networking, develop relationships and work together to help achieve objectives set out in the river basin

management plans to benefit both the local communities and the environment. North West Water Forum includes the Lough's Agency, Local Authorities Water programme (LAWPRO), Members of the project board of Source to Tap (Interreg project), Inland Fisheries Ireland, Members of the project board of Catchment Care (Interreg project), Teagasc, Coillte and National Parks & Wildlife Service (NPWS). The North South Rivers and Lakes Group is a technical group that covers the detail of freshwater monitoring, classification and reporting in shared water bodies. It includes attendees from EPA, NIEA, AFBI, Loughs Agency and Inland Fisheries Ireland. The key purpose of the group is to ensure proper alignment and consistent reporting for the classification of cross-border water bodies.

There are a number of cross-border projects ongoing which focus on delivering water quality improvements in water bodies on the border. High level themes in the new PEACE PLUS programme recognise the importance of managing water resources properly to ensure that the needs of society, the economy and wildlife are met long-term. This will also help to reduce the costs associated with water pollution and drought. Catchments and their water resources are considered a key environmental and economic asset within the PEACE PLUS Programme area, and deliver significant benefits to society through the ecosystem services that they provide. These include drinking water, wastewater assimilation, angling, tourism and cultural heritage. A number of investment areas have been proposed for inclusion in the draft programme development to include projects and proposals which support the aims and objectives of the 3rd cycle RBMP.

The Northern Ireland Environment Agency's (NIEA) Draft 3rd cycle River Basin Management Plan: For the North Western, Neagh Bann and North Eastern River Basin Districts (2021 – 2027) identifies the main pressures acting on the water environment identified in the in the cross border catchments as related to excess nutrients and runoff. The draft Plan stated that proposed investment priorities are therefore to reduce inputs into the water bodies through nature-based solutions and sustainable catchment solutions. Investment is also identified as being required to address problems with raw water which is fundamental to sustainable catchment management, including facilities for treatment of wastewater and drinking water. A draft Marine Plan for Northern Ireland published in April 2018 sets out aims to achieve good environmental status based on the UK Marine Strategy Regulations indicators aiming for both protection and sustainable use of resources and while these are broader than the more specific status indicators for RBMPs there is crossover both in terms of the objectives and physical area covered by the WFD requirements.

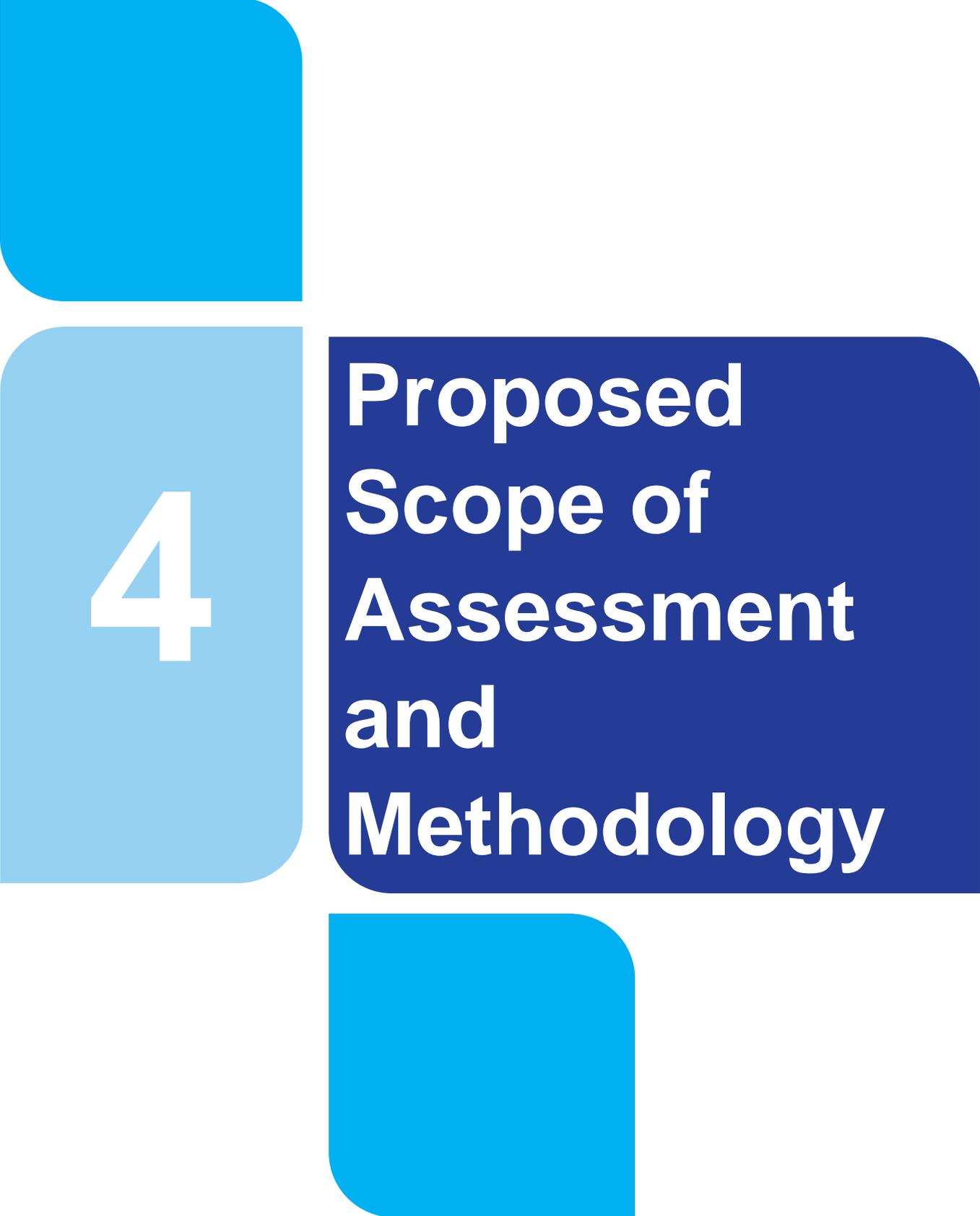
3.12 Baseline Topic Interactions, Issues and Opportunities

3.12.1 Interrelationships between SEA topics

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. Figure 3.11 below indicates the potential interrelationships between SEA topics demonstrating most topics interact to some level in a range in some circumstances. Key interactions are highlighted.

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 health	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)

Figure 3.11 Interrelated SEA topics



4

**Proposed
Scope of
Assessment
and
Methodology**

4 Proposed Scope of Assessment and Methodology

This Section provides the proposed SEA objectives for the draft RWRP-NW, outlines the approach to assessment for Preferred Approach and alternatives as has been formalised through the Framework Plan, and sets the proposed structure of the Environmental Report

Scoping question: Do you have any comment on the scope of assessment set out in Table 4.1?

Scoping question: Do you have any comment on the SEA objectives that are set out in Table 4.2?

4.1 Scope of Assessment

All aspects of the environment will need to be considered as individual schemes are taken forward for further design and implementation but key issues relevant for strategic water planning have been identified for the NW region through a review of relevant plans, policies and programmes as set out in Chapter 2 and of the environmental baseline as set out in Chapter 3. Table 4.1 sets out the key issues and trends identified and provides the proposed scope of assessment for the Environmental Report.

Table 4.1 Scope of assessment

SEA Topic	Issues and opportunities	Scoped into assessment?
Population, Economy, Tourism and Recreation, and Human Health	<p>Issues: increasing population and the increased stress of climate change on water quality and water resources could affect health and well-being.</p> <p>Opportunities: Irish Water will put in place plans to assess water quality and put in place measures to address risks as part of the NWRP.</p> <p>Irish Water has ongoing activities to improve the Supply Demand Balance across the NW region, including, leakage management and water conservation measures.</p> <p>Raising awareness of the importance of water conservation and efficiency measures, and the value of the environment for health and wellbeing, can play an important part in water planning along with valuing water as part of access to environment for recreation.</p>	✓
Water Environment	<p>Issues: The proposed abstraction licensing, aligned to WFD requirements, will require many current abstractions to be licensed and may limit future abstraction or involve significant conditions at associated sites. Across the NW region some of the existing abstractions are potentially unsustainable in the medium term; specifically, during drought periods.</p> <p>Irish Water will need to update their sustainability analysis and impact on their baseline SDB calculations when regulatory assessment for new legislation are undertaken.</p> <p>Opportunities: to take account of identified pressure on the water environment in the selection of solutions for individual Study Areas</p>	✓
Biodiversity, Flora and Fauna	<p>Issues: it is considered especially important to avoid the loss of irreplaceable or rare habitats and increasing pressure on vulnerable</p>	✓

SEA Topic	Issues and opportunities	Scoped into assessment?
	<p>species; potentially through direct land take or indirect such as through increased abstraction pressure</p> <p>Opportunities: for reducing pressure on water dependent habitats and for incorporating habitat enhancement into scheme design and implementation and linking catchment wide improvements to water quality to habitat enhancement measures.</p>	
Material Assets	<p>Issues: WTP assets and network infrastructure requiring improvement or replacement.</p> <p>Opportunities: improvements to support reliability of access to good quality water</p>	✓
Landscape and Visual Amenity	<p>Issues: potential for climate change to affect land use and influencing landscape character, quality and amenity</p> <p>Opportunities: for decommissioning to remove structures, and for links to habitat enhancement contributing to landscape and visual amenity through scheme design also opportunities linked to wider catchment initiatives to improve water quality and retention.</p>	✓
Air Quality and Noise	<p>No specific issues identified for the baseline for the EM region related to the types of options and combinations under consideration for the draft Regional Plan and disturbance related to construction impacts are addressed in terms of receptors within the population and health topic.</p>	x
Climate Change	<p>Issues: Climate change issues regarding sea level rise, flooding, extreme weather events and changes in seasonal weather patterns. Climate change has been taken into account in supply forecasts and additional risks to infrastructure and operations will need to be taken into account in planning for drought and freeze/thaw events and in detailed scheme design and network operation.</p> <p>Opportunities: additional management to minimise impact on supply and the environment, vulnerability to climate change and drought is required.</p>	✓
Cultural Heritage	<p>Issues: known cultural heritage and archaeological assets and potential unknown archaeological assets could be affected by construction works or change to setting or access. Potential for hydrological changes to affect heritage and archaeological assets.</p>	✓
Geology and Soils	<p>Avoidance of designated geological sites and general need minimise loss of valuable soils</p> <p>Opportunities: generally to apply good soil conservation practices and encourage retention of nutrients and carbon in soil resources. Potential to reduce loss of soils and nutrients through catchment wide initiatives to improve water quality and support carbon sequestration.</p>	✓

4.2 Proposed SEA Objectives

Proposed SEA objectives for the draft RWRP-NW are set out in Table 4.2 below. These have been developed taking into account the baseline information and key trends for the core baseline area provided in Section 3 and the review of relevant plans, policies and programmes as summarised in Section 2. At least one SEA objective has been identified against each of the SEA topics discussed in Section 3.

These SEA objectives are used as the framework for the assessment of likely significant effects (LSEs) from the Framework Plan compared to a ‘without plan’ alternative and for each of the potential water supply and demand options (construction and operational phases). The methodology for the assessment was developed in accordance with the following EPA guidance:

- Developing and Assessing Alternatives in Strategic Environmental Assessment (SEA);
- Guidance on SEA Statements and Monitoring;
- Integrating Climatic Factors into Strategic Environmental Assessment in Ireland - A Guidance Note;
- Developing and Assessing Alternatives in Strategic Environmental Assessment (SEA); and
- Good practice guidance on Cumulative Effects Assessment in SEA.
- Guidance on the Authorisation of Direct Discharges to Groundwater⁷
- Guidance on the link between SEA and project level environmental assessment including tiering monitoring plans⁸

Table 4.2 SEA objectives

Strategic Environmental Assessment topic	SEA 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 relating to the provision of water services.
Water environment	<p><u>Water quality and quantity</u></p> <p>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, to restore and improve waterbody status for rivers, lakes, transitional and coastal waters, and groundwater to meet WFD objectives related to the provision of water services.</p>
	<p><u>Flood risk</u></p> <p>Protect and, where possible, reduce risk from flooding as a result of Irish Water’s provision of water services.</p>

⁷ Guidance on the authorisation of direct discharges to groundwater (2014) added in response to a EPA scoping comments although none of the options considered for the South West include groundwater discharges.

⁸ Guidance on ‘The Tiering of Environmental Assessment – The influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment’ (EPA, 2021).

Strategic Environmental Assessment topic	SEA Objective
Biodiversity	Protect and, where possible, enhance terrestrial, aquatic and soil biodiversity; particularly regarding European sites and protected species in providing water services.
Material assets	<p>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.</p> <p>Minimise impacts on other material assets and existing as well as future water abstractions.</p>
Landscape and visual amenity	Protect and, where possible, enhance designated landscapes in relation to the provision of water services.
Climate change	<p><u>Climate change mitigation</u></p> <p>Minimise contributions to climate change emissions to air (including greenhouse gas emissions) as a related to the provision of water services.</p>
	<p><u>Climate change adaptation</u></p> <p>Promote the resilience of the environment, water supply and treatment infrastructure to the effects of climate change.</p>
Cultural heritage	Protect and, where possible, enhance cultural heritage resources related to provision of water services.
Geology and soils	Protect soils and geological heritage sites and, where possible, contribute towards the appropriate management of soil quality and quantity.

**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.

In addition to the topic specific objectives, interrelated aspects are also considered, where there are potential effects across a number of topics as set out in Section 4.3.

4.3 Assessment Approach

A detailed description of the approach to assessment for the draft RWRP-NW, including the assessment of within-plan and inter-plan cumulative effects, is set out in Sections 9.11.2 to 9.11.5 of the SEA Environmental Report for the Framework Plan which can be found at the following weblink:

www.water.ie/nwrp

The eight stage options and approach assessment process is outlined in Figure 1.3. The aim of the process is to understand the requirements and then to identify potential solutions to address these. The SEA objectives and assessment criteria provide a framework for integrating the environmental assessment throughout this process alongside the other criteria taken into account such as feasibility, deliverability, resilience and cost. The stages are also summarised below:

Stages 1 and 2 identify the water supply needs taking account of baseline assessments for both water resource and quality needs and constraints over the plan period including calculation of the supply

demand balance taking account of planned growth and resource supply and considering climate change effects.

Stage 3 Unconstrained options: these are all the potential options to be considered to resolve water quality or quantity requirements. Identification of potential options includes an initial high level consideration of hydrological and hydrogeological constraints and WFD requirements;

Stage 4 Coarse screening involves a high level review of the unconstrained options against a range of criteria including environmental sustainability criteria and rejection of options considered not to be viable likely to result in significant environmental effects on important receptors such as European sites and would be difficult to avoid or mitigate. Information on options and constraints is also collected to inform the next stage;

Stage 5 Fine screening – this stage includes a comparative options assessment and scoring against the environmental objective criteria for each SEA objective. This stage allows further consideration of the options and removal of options considered unfeasible or unlikely to be environmentally acceptable.

Stage 6 Feasible option list – the remaining options are developed further including costing and review of environmental assessment scoring as part of the Multi Criteria Analysis (MCA).

Stage 7 Approach Assessment - After the feasible options for the study area are identified the next step is to assess a range of possible combinations to resolve the supply deficit within each water resource zone (WRZ) and across the study area as a whole. Six approaches are compared which are the combinations rated as the best within the six categories summarised in Table 4.3. This process contributes to assessment of alternatives to meet plan objectives. Consideration of reasonable alternatives is an important part of meeting SEA regulatory requirements. The terminology used to describe options/approaches at each spatial level of the Framework Plan is shown in Table 4.3.

Table 4.3 The Six Study Area approaches

SA Approaches Tested	Description	Policy Driver
Least Cost (LCo)	Lowest Net Present Value (NPV) cost in terms of Capital, Operational, Environmental and Social costs and carbon.	Public Spending Code
Best Appropriate Assessment (Best AA) (BA)	Lowest score against the European Sites (Biodiversity) question. Options scoring -3 are given a high-risk score and better approaches for these options are identified where possible.	Habitats Directive
Quickest Delivery (QD)	Based on an estimate of project lead in time (including typical feasibility, consent and construction durations) as identified at Fine Screening. May be required for urgent Public Health issues.	Statutory Obligations under the Water Supply Act and Drinking Water Regulations
Best Environmental (BE)	Best score across all environmental criteria focusing on sum of negative scores as the key	SEA Directive and Water Framework Directive

SA Approaches Tested	Description	Policy Driver
	indicator and also considering high-risk scores (-3 scores) and long term impacts.	
Most Resilient (MR)	Best resilience score against resilience criteria.	National Adaptation Plan
Lowest Carbon (LC)	Lowest embodied and operational carbon cost.	Sectoral Adaptation Change

These six approaches focus on different plan or environmental objectives. These approaches address environmental objectives (highlighted green above), and these are:

- Best AA;
- Best Environmental; and
- Lowest Carbon approaches.

These are all focused on environmental criteria and are based on the environmental information and scoring undertaken for the MCA.

The approach assessment process is undertaken through structured workshops involving relevant environmental expertise and information on the feasible options; including the environmental assessment against SEA criteria in the MCA and the option costings. This provides stepped testing of the six approaches to identify the best overall options at the WRZ, study area and regional levels (see Figure 4.1).

Stage 8 Monitoring and feedback – will include the implementation of the SEA recommendations for mitigation and monitoring and influencing downstream actions and providing the basis for feedback into future plans and assessments.

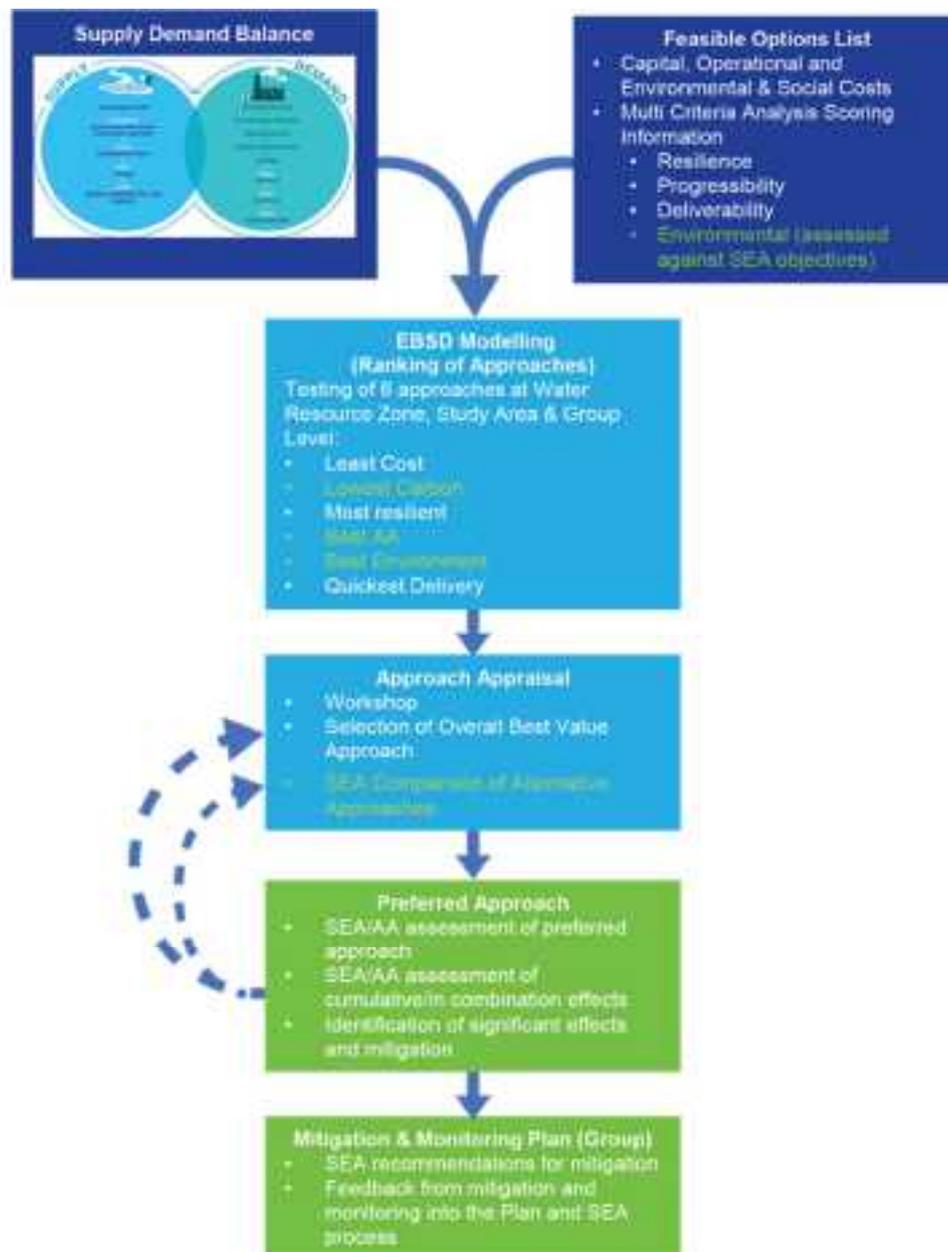


Figure 4.1 Approach Development Process

4.3.1 Environmental Assessment through the option and approach development process

A summary of the key elements of the environmental assessment process is provided below:

- Option level assessment:** all feasible options will be assessed as part of the MCA and scored against the SEA objectives set out in Table 4.2. These are used to inform the selection of options and the approach comparisons.

SEA option assessment summaries, which will record assessment against SEA objectives using a matrix-based approach, will be provided for all Preferred Approach options for each Study Area and also for any regional level preferred options or alternatives. The nature of effects (temporary short term or long term, permanent), significance of effects and level of certainty in assessment outcomes will be recorded as shown in Table 4.4. The significance of effect is determined in accordance with Table 4.5 and moderated by professional judgement where

required. The assessment takes into account the value/sensitivity of affected receptors, as well as the magnitude of the impacts anticipated.

Table 4.4 Significance of effect and assessment certainty (option level assessments)

Type of effect		Potential significance of effect			
Long term (>15 years)	L	Major beneficial	+++	Major adverse	---
Short term (<5 years)	S	Moderate beneficial	++	Moderate adverse	--
Permanent	P	Minor beneficial	+	Minor adverse	-
Temporary	T	Neutral	0		
Assessment certainty		Low/Medium/High			

Table 4.5 Determination of significance

Magnitude of impact	Baseline value/sensitivity					
	Low		Medium		High	
Major loss or change to receptor(s)	Minor adverse	-	Moderate adverse	--	Major adverse	---
Moderate loss or change to receptor(s)	Minor adverse	-	Moderate adverse	--	Moderate adverse	--
Minor loss or change to receptor(s)	Minor adverse	-	Minor adverse	-	Moderate adverse	--
No impact or impact does not affect	Neutral	0	Neutral	0	Neutral	0
Minor enhancement to receptor(s)	Minor beneficial	+	Minor beneficial	+	Moderate beneficial	++
Moderate enhancement to receptor(s)	Minor beneficial	+	Moderate beneficial	+	Moderate beneficial	++
Major enhancement to receptor(s)	Minor beneficial	+	Moderate beneficial	+	Major beneficial	+++
Value/sensitivity of receptors						
Low value receptors(s) = locally important and/or resilient to losses and substitution and/or limited capacity for enhancement						
Medium value receptor = regionally important and/or with some resilience or capacity to accommodate losses of substitution or enhancement						
High value receptor = nationally important and/or with very limited resilience or potential to accommodate losses or substitution or substantial capacity for enhancement						

- 2) **Study area level assessment:** an assessment of each approach, including the 'Do Minimum' approach, will be prepared for each study area. Differences between the approaches will be explained and justification for the selected Preferred Approach will be set out. Mitigation measures associated with the individual options in the Preferred Approach will be provided.

- 3) **Study area level cumulative effects:** the potential for cumulative effects against the SEA objectives will be considered. This will include ‘within plan’ cumulative effects (i.e. between options or groups of options included within the Preferred Approach) and ‘with other developments’ cumulative effects (i.e with other developments within the study area).
- 4) **Regional level assessment:** an assessment of the potential positive and negative cumulative effects arising from the Preferred Approaches identified for at study area level, as well as any regional level options, will be undertaken. The assessment will be presented in matrix format, with the significance of effect recorded against each SEA objective as per Table 4.6.

Table 4.6 Significance of effects (regional level assessment)

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

- 5) **Regional level cumulative effects** - the SEA Environmental Report for the Framework Plan also refers to a further step which involves assessment of potential cumulative effects associated with either i) inter-regional options (such as transfers between regions) or ii) cumulative effects between Regional/Group Area Preferred Approaches. The draft RWRP-NW is the third Regional Plan to be developed, and therefore the information from the Eastern and Midlands region adjoining the North West region, and the South West region which is in proximity on the west, will be taken into account. However, limited information is likely to be available regarding approaches for the South East region. An inter-regional level assessment will be carried out to the extent possible, based on information currently available regarding approaches for the other regions. As subsequent Regional Plans are developed, the Environmental Report which accompanies them will consider the inter-regional cumulative effects with all preceding Regional Plans including the draft RWRP-NW.

4.3.2 Transboundary environmental assessment

The potential for transboundary effects on the environment in Northern Ireland will be considered at each level from options assessments through to the regional level and cumulative effects assessments taking account of proximity and potential pathways, for example, through proposed options within shared catchments where these could affect cross border waterbodies.

4.3.3 Appropriate Assessment

A Stage 1 (Screening) Assessment for the draft RWRP-NW has been undertaken and is available to view at www.water.ie/nwrp and concludes that a Stage 2 Appropriate Assessment is required. The SEA assessment will be informed by the Appropriate Assessment for the draft RWRP-NW, as illustrated within Figure 1.4 which shows how the SEA and AA processes are integrated with each other and with development of the Plan.

4.4 Structure of the Environmental Report

Table 4.6 sets out the proposed structure for the SEA Environmental Report for the Regional Plan. The Environmental Report will summarise the findings of the SEA assessment at regional level, provide the assessment of regional level cumulative effects and set out the proposed approach for mitigation and monitoring. The main report will be supported by an individual Environmental Review report for each Study Area which will provide detailed baseline context for each Study Area, assessment of the options screening process and feasible approach, assessment of the Preferred Approach and alternatives at Study Area level (including ‘within plan’ and ‘with other development’ cumulative effects) and Study Area specific mitigation and implementation recommendations.

Table 4.7 Draft RWRP-NW SEA Environmental Report Structure

Structure
Chapter 1 - Introduction and Background
Chapter 2 - Overview of North West Region
Chapter 3 - Consultation
Chapter 4 - Review of relevant Plans, Policies and Programmes
Chapter 5 - Overview of draft RWRP-NW Strategic Area – summary of baseline
Chapter 6 - Options and Approach Assessment Methodology
Chapter 7 - Study Area Assessment Summaries
Chapter 8 - Assessment of Alternatives at Regional Level
Chapter 9 - Preferred Approach and Cumulative Regional Level Assessment
Chapter 10 - Mitigation and Monitoring Plans
Chapter 11 - Next Steps
Glossary and Acronyms
References
Appendices (including Environmental Reviews for each Study Area) and Policy and Plan review

4.5 Limitations and Assumptions for the SEA

Given the high level nature of a regional plan will be uncertainties and limitations for the environmental assessment. These are recognised and summarised below:

Limitations include:

- High level nature of the assessment based on preliminary option concepts where locations of sites and routes for infrastructure are not defined and will be subject to further detailed studies and design.
- Yield assessments are based on estimated flows which will require further assessment at project level. Furthermore, at Plan level information on all other non-Irish Water abstractions may not be

available therefore yield assessments undertaken as part of the Plan are based on the best information available to Irish Water.

- The EPA may have relevant information on other significant abstractions in various catchments which would need to be assessed at the project level in relation to in-combination effects. This information may be provided by the EPA when consultation on the Preferred Approaches outlined in the draft RWRP-NW, is undertaken.
- For many of the groundwater abstractions potential impacts from existing abstraction are not known or fully understood, while guidance for allowable abstraction limits from groundwater sources do not currently exist therefore more uncertainty remains around the potential impacts from such options. An initial assessment on the potential cumulative impacts on groundwater bodies from groundwater abstractions proposed as part of the draft RWRP-NW, will be undertaken. The assessment will consider the likely cumulative effects of groundwater abstractions on meeting WFD objectives; In-combination effects on European sites from groundwater abstraction will be considered as part of the SEA and NIS is based solely on the information available at Plan level.

Assumptions include:

- Application of standard and accepted good practice mitigation through design and construction management and these will be outlined in the SEA Environment Report.
- Detailed site assessments will be required at the project level in the future for all options where groundwater abstractions are proposed, to identify and define the ZOC and potential impacts on the ground water.
- Environmental assessments will be required to be undertaken on all options taken forward for feasibility studies and to inform detailed siting and routing and design options and then to meet licensing and consenting requirements as well as commitments for performance and feedback identified through this SEA.

These limitations and uncertainties will be addressed and built into the recommendations for mitigation and monitoring and will feed into the monitoring and feedback process for the implementation of the RWRP-NW.



5

Next Steps

5 Next Steps

The next stage of development of the draft RWRP-NW will be the options development process, including the identification of potential options, coarse and fine screening and completion of the approach appraisal process alongside the environmental assessment as outlined in Section 1.3.4. The draft RWRP-NW Regional Plan, SEA Environmental Report and NIS are currently anticipated to be published for consultation in the Autumn of 2022.

Glossary

Term	Definition
Abstraction	The process of taking water from any source, including rivers and aquifers
Appropriate Assessment (AA)	An assessment required under the Habitats Directive when a plan or project has the potential to affect a European site
Aquifer	A water-bearing rock that groundwater can be extracted from
Baseline condition	The state of the environment in the absence of the NWRP Framework
Catchment	The total area of land that drains into a watercourse
CSO	Central Statistics Office
Cumulative effect	The combined effects from several plans, programmes or policies
Deficit	The amount of water shortage between supply and demand
Environmental Report (SEA Environmental Report)	The SEA report that documents the effects of measures outlined in a plan
EPA	Environmental Protection Agency
Gross Domestic Product (GDP)	Gross Domestic Product is a monetary measure of the market value of all goods and services produced in a period (in this case annually)
GSI	Geological Survey Ireland
IGH	Irish Geological Heritage
Invasive species	Non-native species that out-compete native species to the detriment of an ecosystem
LSEs	Likely Significant Effects
MCA	Multi-Criteria Analysis
Mitigation	The implementation of measures designed to reduce the predicted effects of a plan or project on the environment
National Climate Change Adaptation Framework	National Climate Change Adaptation Framework
National Water Resources Plan (NWRP)	A plan developed by water companies to deliver a long-term provision of water to accommodate the impacts of population growth, drought, their environmental obligations and climate change uncertainty in order to balance supply and demand for water. These are produced cyclically, at least every five years, with a minimum 25-year planning horizon.
NHA	National Heritage Area
Natura Impact Statement (NIS)	The statement prepared following AA of European sites as required under the Habitats Directive, which presents information on the assessment and the process of collating data on a project and its potential significant impacts on European sites.

Term	Definition
NIAH	National Inventory of Architectural Heritage
NPWS	National Parks and Wildlife Service
pNHA	Proposed National Heritage Area
Ramsar site	An international designation for an important wetland site under the Ramsar Convention
River Basin Management Plan (RBMP)	A key element to the WFD, taking an integrated approach to the protection, improvement and sustainable use of the water environment; including all surface water and groundwater bodies
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
Special Area of Conservation (SAC)	An international designation for habitats and/or species under the Habitats Directive
Special Protection Area (SPA)	A site of international importance for birds, designated as required by the Birds Directive
Strategic Environmental Assessment (SEA) Objectives	Methodological measures against which the effects of the NWRP can be tested
Supply Demand Balance (SDB)	The SDB is the deficit or surplus between the supply and demand both now and over the 25-year horizon
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WFD	Water Framework Directive
Water resource management	The management of water sources and demands to minimise any deficit between the two
Water Resource Management Plan	A plan designed to identify water deficits and outline measures that can reduce the deficit
Water Resource Zone (WRZ)	The largest possible zone in which all resources, including external transfers, can be shared and all customers experience a similar risk of supply failure from a resource shortfall
WTP	Water Treatment Plant

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Appendix A Figures

Figure 3.3 Water Context: Groundwater - Overview

Figure 3.4 Water Context: Surface Waterbodies - Overview

Figure 3.5 Water Context: Surface Water and Groundwater Flooding

Figure 3.6a Biodiversity Context: Overview

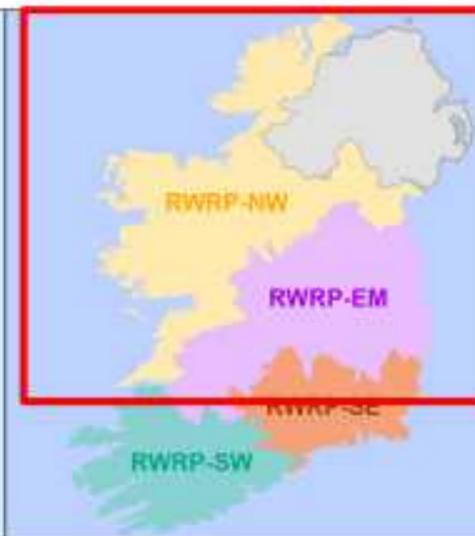
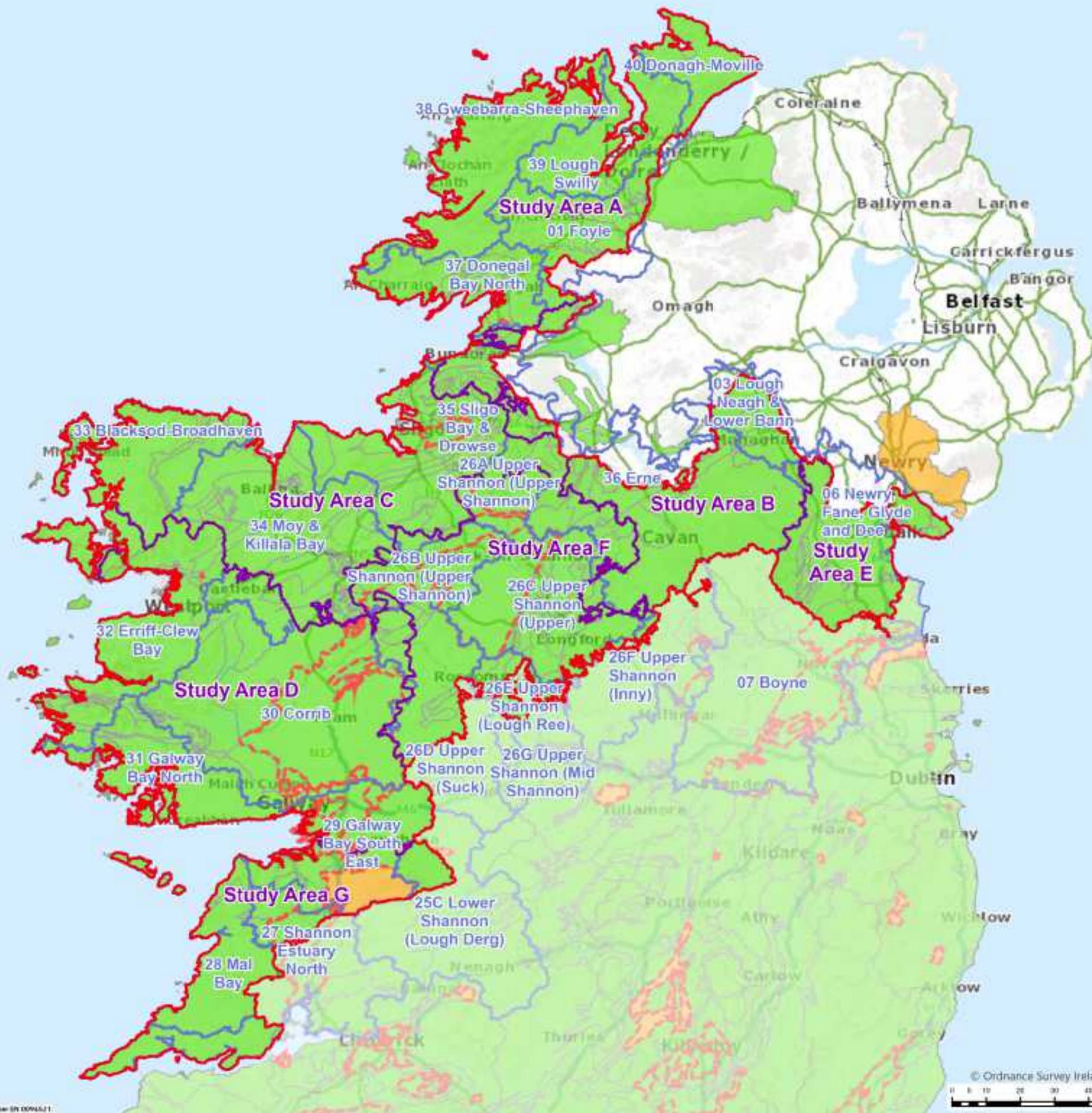
Figure 3.6b Biodiversity Context: Overview

Figure 3.6c Biodiversity Context: Overview

Figure 3.7 Material Assets (Natural Assets) Context - Overview

Figure 3.8 Population, Health and Material Assets (built) Context – Overview

Figure 3.9 Hydrogeology



Legend

- Core baseline area
 - Study area boundary
 - Water Framework Directive (WFD) Catchment
- Ground Waterbody**
Overall Groundwater Status 2013-2018
- Good
 - Poor
- Approved Risk
- At risk

Rev.	Date	Description	Drawn	Checked	Revised	Approved
1	21/03/2022	DRAFT	SME	SLI	RV	TDG



Project: REGIONAL WATER RESOURCES PLAN NORTH WEST

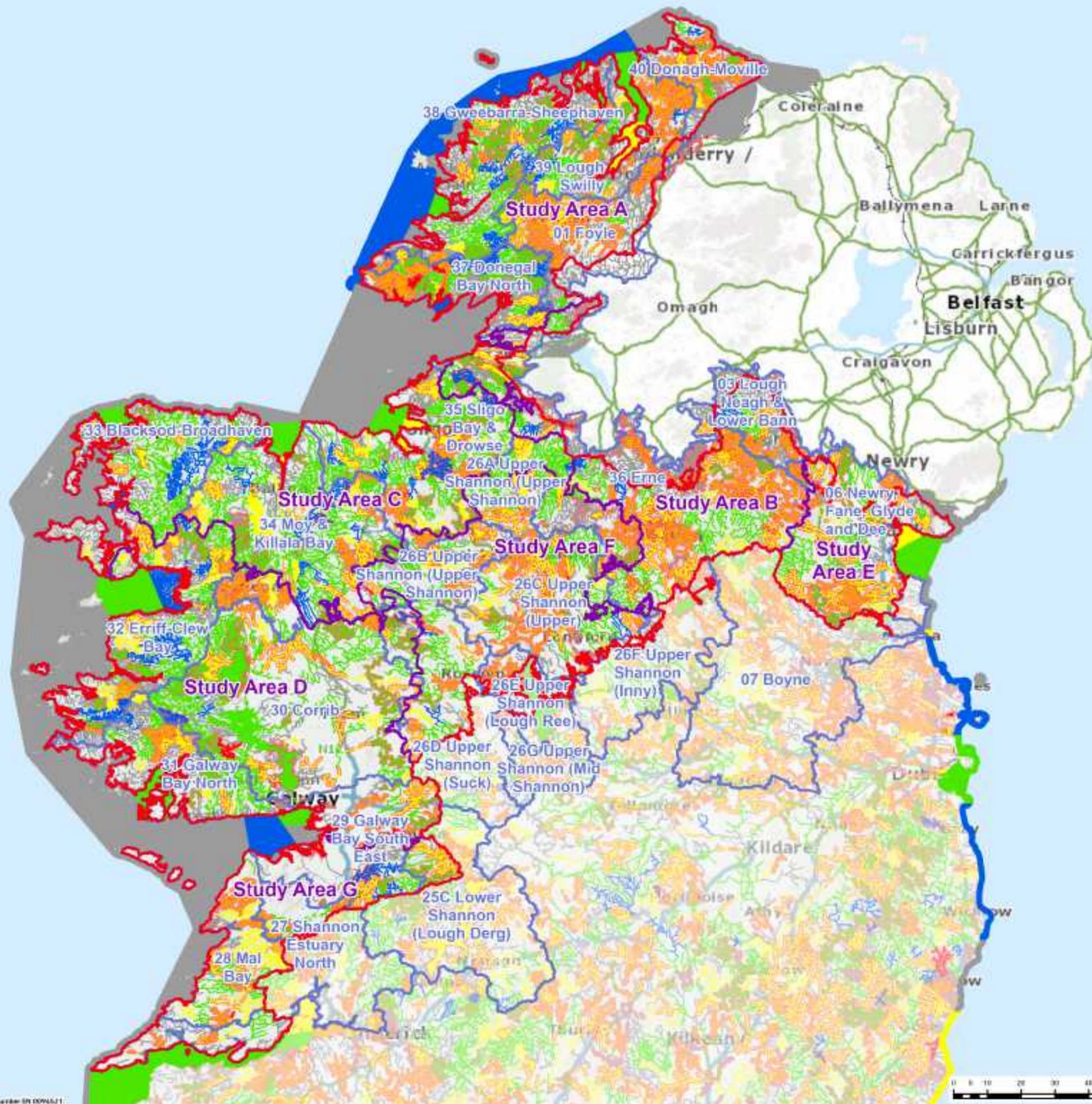
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Drawing Status: DRAFT

Scale (DAI): 1:1,200,000 DO NOT SCALE

Drawing No: FIGURE 3.3





Legend

- Core baseline area
- Study area boundary
- Water Framework Directive (WFD) Catchment

WFD River Waterbody
Ecological Status or Potential, 2013-2018

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

Projection

- At risk

WFD Lake, Transitional or Coastal Waterbody
Ecological Status or Potential, 2013-2018

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

Approved Risk

- At risk

Rev.	Date	01/03/2022	DRAFT	SME	SLI	RV	TDG
			Purpose of revision	Drawn	Checked	Revised	Approved



Project: REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title: WATER CONTEXT: SURFACE WATERBODIES - OVERVIEW

Drawing Status: DRAFT

Scale (DAI): 1:1,200,000 | DO NOT SCALE

Drawing No: FIGURE 3.4

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.



- Legend**
- Core baseline area
 - Study area boundary
 - Pluvial Flooding: 10% Annual Exceedance Probability (AEP)
 - Pluvial Flooding: 1% Annual Exceedance Probability (AEP)
 - Fluvial Flooding: 10% Annual Exceedance Probability (AEP)
 - Fluvial Flooding: 1% Annual Exceedance Probability (AEP)
 - Coastal Flooding: 10% Annual Exceedance Probability (AEP)
 - Coastal Flooding: 1% Annual Exceedance Probability (AEP)
 - Maximum Historic Groundwater Flooding
 - Maximum Historic Groundwater/Surface Water Flooding

Rev.	Date	Final	SMD	SL	DN	TDG
		Prepared by revision	Drawn	Checked	Revised	Approved



Project: REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title: WATER CONTEXT: SURFACE WATER AND GROUNDWATER FLOODING

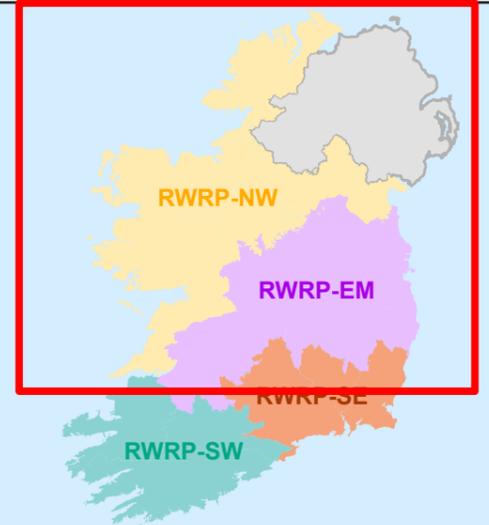
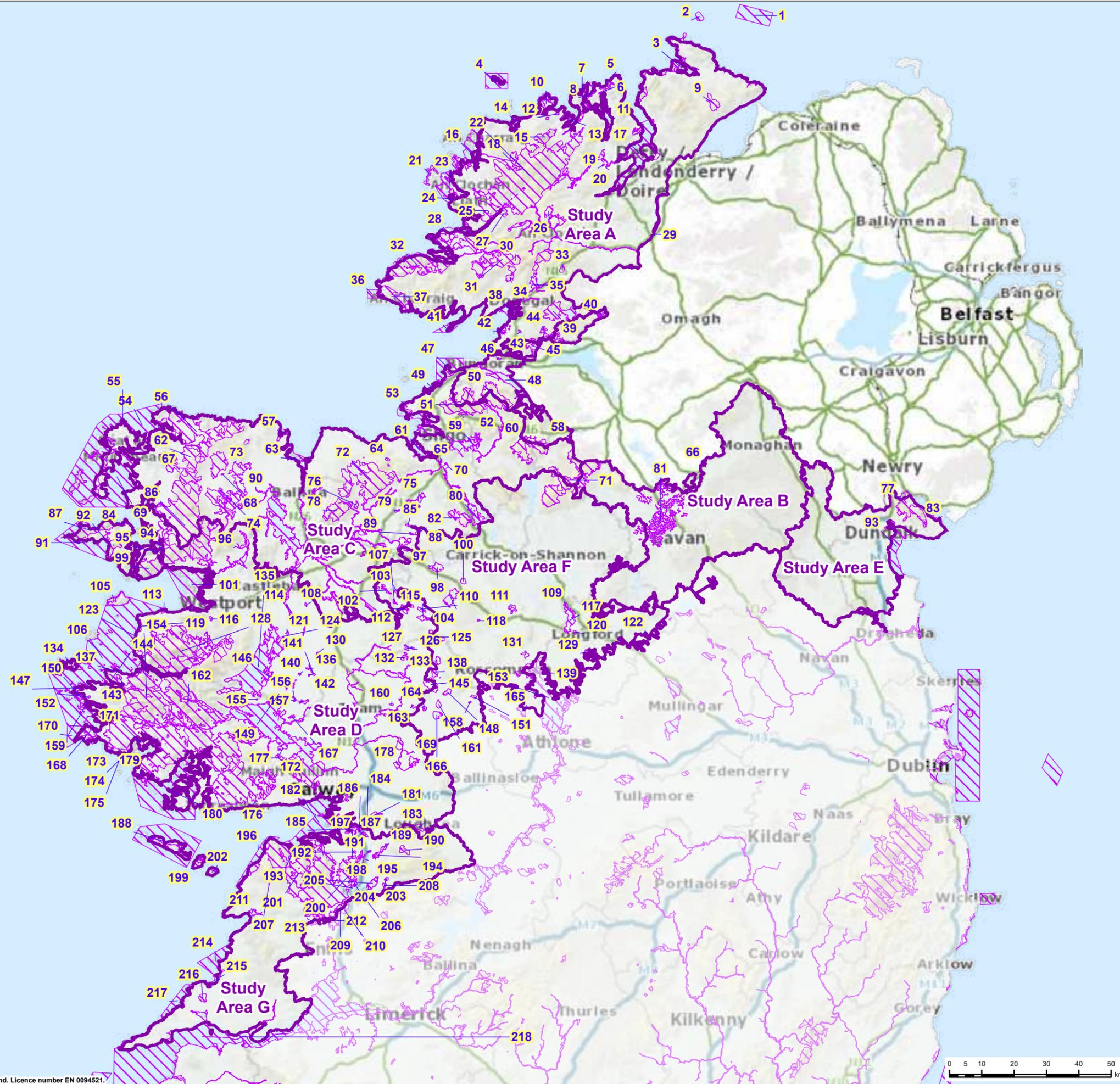
Drawing Status: DRAFT

Scale (GSI): 1:1,200,000 DO NOT SCALE

Drawing No: FIGURE 3.5

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.





Legend

-  Study area boundary
-  Special Area of Conservation (SAC)

Reference Labels Key

xx : SAC Reference Label

0	3/23/2022	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
BIODIVERSITY CONTEXT: OVERVIEW

Drawing Status
DRAFT

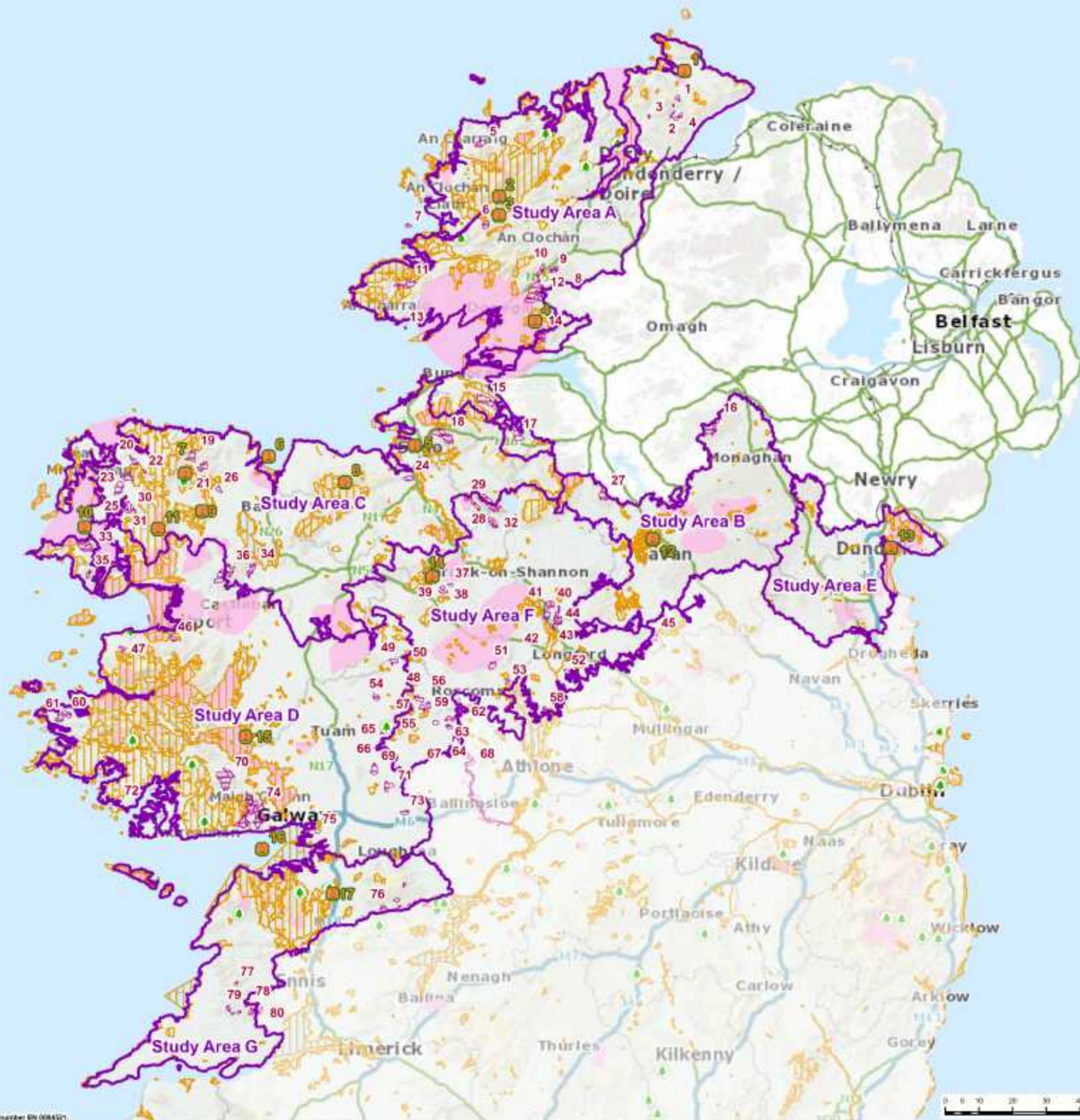
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Drawing No.
FIGURE 3.6a

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Legend

- Study area boundary
- Ramsar Site
- Nature Reserve
- Natural Heritage Area (NHA)
- Proposed Natural Heritage Area (pNHA)
- Geological Heritage Site

Reference Labels Key

- xx** : Ramsar Site Reference Label
- xx** : NHA Reference Label

Rev.	Date	Description	Drawn	Checked	Revised	Approved
01		ISSUED				
		DRAFT				



Project: REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title: BIODIVERSITY CONTEXT: OVERVIEW

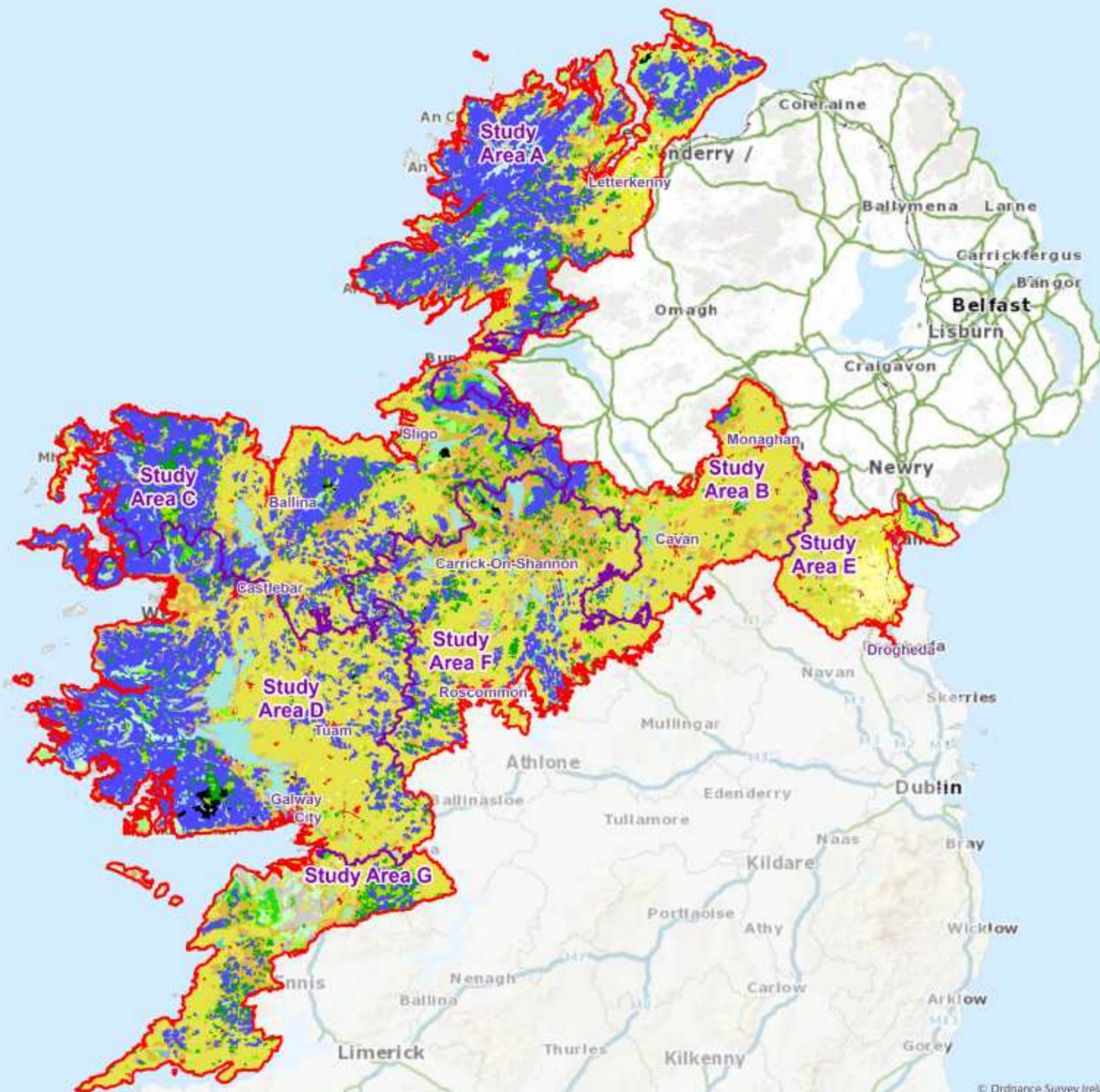
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Scale (GSI): 1:1,200,000 DO NOT SCALE

Drawing No: FIGURE 3.6c

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined in this drawing. Refer to the contract for full terms and conditions.





- Legend**
- Core baseline area
 - Study area boundary
 - 111 Continuous urban fabric
 - 112 Discontinuous urban fabric
 - 121 Industrial or commercial units
 - 122 Road and rail networks
 - 123 Sea ports
 - 124 Airports
 - 131 Mineral extraction sites
 - 132 Dump
 - 141 Green urban sites
 - 142 Sport and leisure facilities
 - 211 Non-irrigated land
 - 231 Pastures
 - 242 Complex cultivation patterns
 - 243 Land principally occupied by agriculture with areas of natural vegetation
 - 311 Broad-leaved forest
 - 312 Coniferous forest
 - 313 Mixed forest
 - 321 Natural grassland
 - 322 Moors and heaths
 - 324 Transitional woodland scrub
 - 331 Beaches dunes sand
 - 332 Bare rocks
 - 333 Sparsely vegetated areas
 - 334 Burnt areas
 - 411 Inland marshes
 - 412 Peat bogs
 - 421 Salt Marshes
 - 423 Intertidal flats
 - 511 Stream courses
 - 512 Water bodies
 - 521 Coastal lagoons
 - 522 Estuaries

Rev	Date	Prepared by	Drawn	Checked	Revised	Approved
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Project: REGIONAL WATER RESOURCES PLAN NORTH WEST

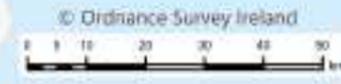
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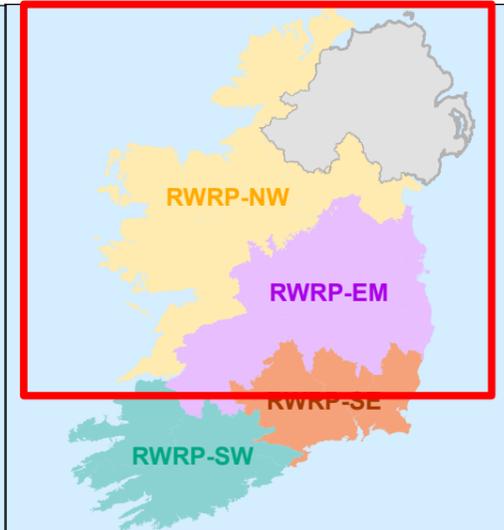
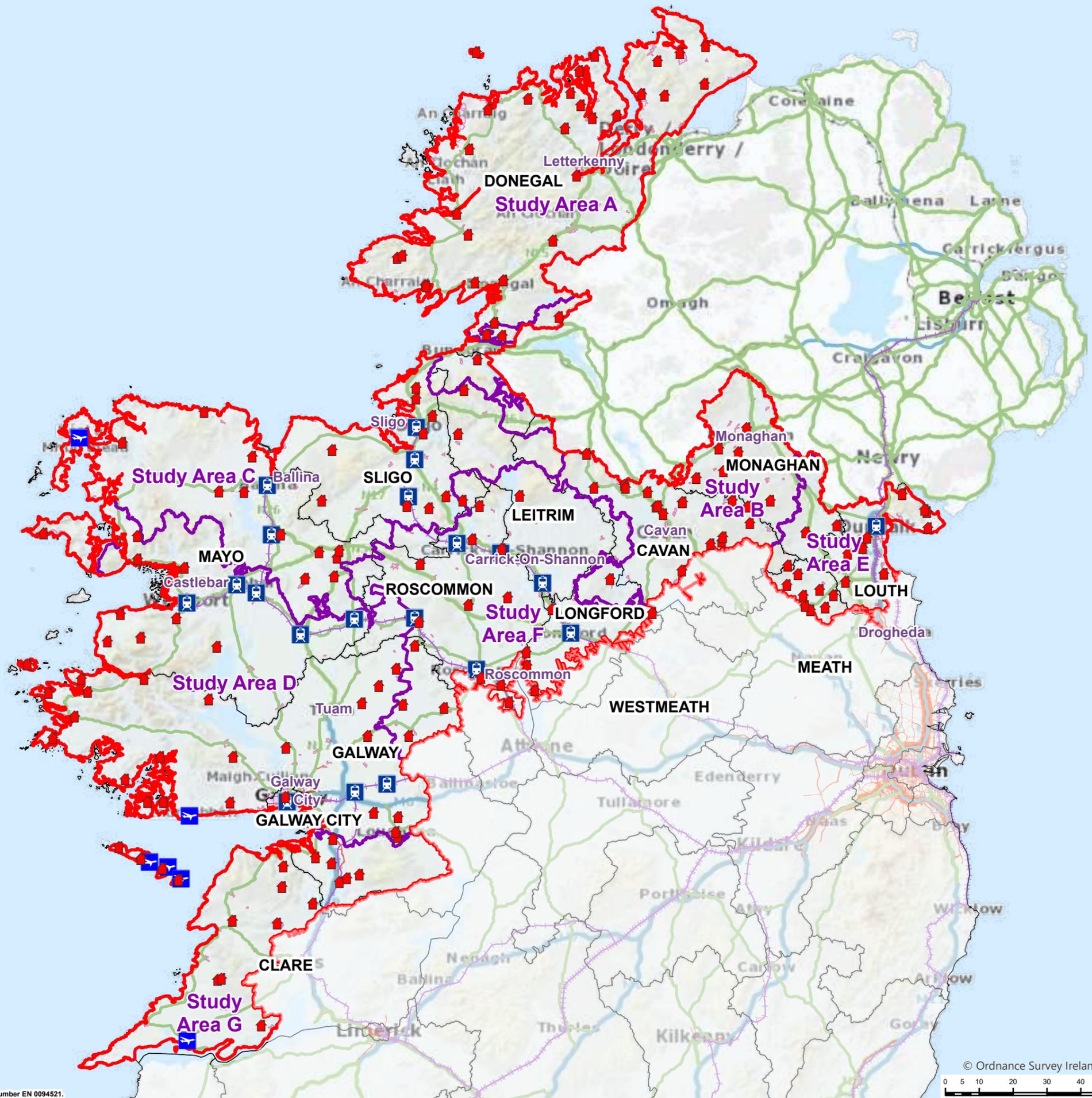
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Scale (A3): 1:1,200,000 DO NOT SCALE

Drawing No: FIGURE 3.7

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Legend

- Water Treatment Plant (WTP)
- Settlement
- Railway Station
- Airport
- Railway
- Core baseline area
- Study area boundary
- Local authority boundary

Road

- Motorway
- National Road

Road Average Day-Evening-Night Noise, Round 3

Decibel (Db) Value

- 55-59
- 60-64
- 65-69
- 70-74
- 75+

0	3/7/2022	DRAFT	SMD	SJ	RV	TOG
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Project
REGIONAL WATER RESOURCES PLAN NORTH WEST

Drawing Title
POPULATION, HEALTH AND MATERIAL ASSETS (BUILT) CONTEXT – OVERVIEW

Drawing Status
DRAFT

Scale @A3
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Filepath
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Drawing No.
FIGURE 3.8

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SACs		SAC name	Label	SAC name	Label	SAC name	Label	SAC name	Label	SAC name	Label	SAC name	Label
SAC name	Label												
Hempton's Turbot Bank SAC	1	Ballyarr Wood SAC	19	Lough Eske and Ardnamona Wood SAC	35	Glenade Lough SAC	52	Cuilcagh - Anierin Uplands SAC	71	Flughany Bog SAC	88	Clooneen Bog SAC	109
Inishtrahull SAC	2	Leannan River SAC	20	Rathlin O'Birne Island SAC	36	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	53	Ox Mountains Bogs SAC	72	Cloonakillina Lough SAC	89	Drumalough Bog SAC	110
North Inishowen Coast SAC	3	Aran Island (Donegal) Cliffs SAC	21	Slieve League SAC	37	Broadhaven Bay SAC	54	Bellacorick Bog Complex SAC	73	River Moy SAC	90	Annaghmore Lough (Roscommon) SAC	111
Tory Island Coast SAC	4	Cloghernagore Bog And Glenveagh National Park SAC	22	Donegal Bay (Murvagh) SAC	38	Erris Head SAC	55	Lough Dahybaun SAC	74	Achill Head SAC	91	Keel Machair/Menaun Cliffs SAC	112
Ballyhoorisky Point To Fanad Head SAC	5	Rutland Island And Sound SAC	23	Dunragh Loughs/Pettigo Plateau SAC	39	Glenamoy Bog Complex SAC	56	Templehouse And Cloonacleigha Loughs SAC	75	Dundalk Bay SAC	93	Oldhead Wood SAC	113
Kindrum Lough SAC	6	Termon Strand SAC	24	Lough Nageage SAC	40	Lackan Saltmarsh and Kilcummin Head SAC	57	Lough Nabrickkeagh Bog SAC	76	Bellacragher Saltmarsh SAC	94	Ballinafad SAC	114
Tranarossan And Melmore Lough SAC	7	Gannivegil Bog SAC	25	St. John's Point SAC	41	Corratirrim SAC	58	Carlingford Mountain SAC	77	Lough Gall Bog SAC	95	Cloonchambers Bog SAC	115
Lough Nagreany Dunes SAC	8	Meentygrannagh Bog SAC	26	Durnesh Lough SAC	42	Lough Gill SAC	59	Lough Hoe Bog SAC	78	Newport River SAC	96	Brackloon Woods SAC	116
Magheradrumman Bog SAC	9	Coolvoy Bog SAC	27	Ballintra SAC	43	Boleybrack Mountain SAC	60	Turloughmore (Sligo) SAC	79	Tullaghanrock Bog SAC	97	Lough Forbes Complex SAC	117
Horn Head And Rinclevan SAC	10	West Of Ardara/Maas Road SAC	28	Tamur Bog SAC	44	Ballysadare Bay SAC	61	Lough Arrow SAC	80	Callow Bog SAC	98	Mullygollan Turlough SAC	118
Mulroy Bay SAC	11	River Finn SAC	29	Lough Golagh And Breesy Hill SAC	45	Slieve Fyagh Bog SAC	62	Lough Oughter And Associated Loughs SAC	81	Corraun Plateau SAC	99	Lough Cahasy, Lough Baun And Roonah Lough SAC	119
Sessiagh Lough SAC	12	Meenaguse Scragh SAC	30	Dunmuckrum Turloughs SAC	46	Killala Bay/Moy Estuary SAC	63	Bricklieve Mountains and Keishcorran SAC	82	Cloonshanville Bog SAC	100	Brown Bog SAC	120
Sheephaven SAC	13	Lough Nillan Bog (Carrickatlieve) SAC	31	Bunduff Lough And Machair/Trawalua/Mullaghmore SAC	47	Knockalongy and Knockachree Cliffs SAC	64	Carlingford Shore SAC	83	Clew Bay Complex SAC	101	Towerhill House SAC	121
Ballyness Bay SAC	14	Slieve Tooley/Tormore Island/Loughros Beg Bay SAC	32	Lough Melvin SAC	48	Union Wood SAC	65	Doogort Machair/Lough Doo SAC	84	Urlaur Lakes SAC	102	Ardagullion Bog SAC	122
Muckish Mountain SAC	15	Croaghonagh Bog SAC	33	Streedagh Point Dunes SAC	49	Kilroosky Lough Cluster SAC	66	Doocastle Turlough SAC	85	Derrinea Bog SAC	103	Cross Lough (Killadoon) SAC	123
Gweedore Bay And Islands SAC	16	Meenaguse/Ardbane Bog SAC	34	Arroo Mountain SAC	50	Carrowmore Lake Complex SAC	67	Owenduff/Nephin Complex SAC	86	Bellanagare Bog SAC	104	Moore Hall (Lough Carra) SAC	124
Lough Swilly SAC	17			Ben Bulben, Gleniff And Glenade Complex SAC	51	Bellacorick Iron Flush SAC	68	Croaghaun/Slieve more SAC	87	Clare Island Cliffs SAC	105	Corliskea/Trien/Cloofelliv Bog SAC	125
Fawnboy Bog/Lough Nacung SAC	18					Mullet/Blacksod Bay Complex SAC	69			West Connacht Coast SAC	106	Coolcam Turlough SAC	126
						Unshin River SAC	70			Errit Lough SAC	107		
										Balla Turlough SAC	108		

SAC name	Label	SAC name	Label	SAC name	Label	SAC name	Label	SAC name	Label	SPAs		SPA name	Label
										SPA name	Label		
Croaghill Turlough SAC	127	Lough Lurgeen Bog/Glenamaddy Turlough SAC	145	Derrinlough (Cloonkeenleanan ode) Bog SAC	163	Galway Bay Complex SAC	182	Coole-Garryland Complex SAC	200	Inishtrahull SPA	1	Lough Derg (Donegal) SPA	22
Mweelrea/Sheeffry /Erriff Complex SAC	128	Clyard Kettle-Holes SAC	146	Shankill West Bog SAC	164	Lough Rea SAC	183	Moneen Mountain SAC	201	Malin Head SPA	2	Pettigo Plateau Nature Reserve SPA	23
Mount Jessop Bog SAC	129	Aughrusbeg Machair And Lake SAC	147	Lough Funshinagh SAC	165	Castletaylor Complex SAC	184	Inisheer Island SAC	202	Trawbreaga Bay SPA	3	Inishduff SPA	24
Carrowkeel Turlough SAC	130	Camderry Bog SAC	148	Carrownagappul Bog SAC	166	Lough Fingall Complex SAC	185	Drummin Wood SAC	203	Tory Island SPA	4	Durnesh Lough SPA	25
Corbo Bog SAC	131	Kildun Souterrain SAC	149	Cloughmoyne SAC	167	Kiltiernan Turlough SAC	186	East Burren Complex SAC	204	Fanad Head SPA	5	Donegal Bay SPA	26
Williamstown Turloughs SAC	132	Omev Island Machair SAC	150	Slyne Head Peninsula SAC	168	Ardrahan Grassland SAC	187	Lough Cutra SAC	205	Horn Head to Fanad Head SPA	7	Inishmurray SPA	27
Kilsallagh Bog SAC	133	Aughrim (Aghrane) Bog SAC	151	Lough Corrib SAC	169	Inishmore Island SAC	188	Termon Lough SAC	206	Inishbofin, Inishdooye and Inishbeg SPA	8	Stags of Broad Haven SPA	28
Inishbofin And Inishshark SAC	134	Barnahallia Lough SAC	152	Slyne Head Islands SAC	170	Peterswell Turlough SAC	189	Ballyteige (Clare) SAC	207	Falcarragh to Meenlaragh SPA	9	Sligo/Leitrim Uplands SPA	29
Lough Carra/Mask Complex SAC	135	Lough Ree SAC	153	Rosroe Bog SAC	171	Sonnagh Bog SAC	190	Gortacarnaun Wood SAC	208	Lough Foyle SPA	10	Ardboline Island and Horse Island SPA	30
Kilglassan/Cahera voostia Turlough Complex SAC	136	The Twelve Bens/Garraun Complex SAC	154	Gortnandarragh Limestone Pavement SAC	172	Ballinduff Turlough SAC	191	Ballyogan Lough SAC	209	West Donegal Islands SPA	11	Ballintemple and Ballygilgan SPA	31
Rusheenduff Lough SAC	137	Ballymaglancy Cave, Cong SAC	155	Murvey Machair SAC	173	Cahermore Turlough SAC	192	Moyree River System SAC	210	Lough Fern SPA	12	Illanmaster SPA	32
Lisnageeragh Bog and Ballinastack Turlough SAC	138	Mocorha Lough SAC	156	Cregduff Lough SAC	174	Ballyvaughan Turlough SAC	193	Inagh River Estuary SAC	211	Lough Swilly SPA	13	Slieve Beagh SPA	33
Fortwilliam Turlough SAC	139	Shrule Turlough SAC	157	Dog's Bay SAC	175	Lough Coy SAC	194	Dromore Woods And Loughs SAC	212	Derryveagh And Glendowan Mountains SPA	14	Drumcliff Bay SPA	34
Skealaghan Turlough SAC	140	Ballygar (Aghrane) Bog SAC	158	Connemara Bog Complex SAC	176	Carrowbaun, Newhall and Ballylee Turloughs SAC	195	Ballycullinan Lake SAC	213	Illancrone and Inishkeeragh SPA	15	Cummeen Strand SPA	35
Greaghans Turlough SAC	141	Kingstown Bay SAC	159	Ross Lake And Woods SAC	177	Black Head-Poulsallagh Complex SAC	196	Carrowmore Point To Spanish Point And Islands SAC	214	Roaninish SPA	16	Aughris Head SPA	36
Ardkill Turlough SAC	142	Levally Lough SAC	160	Monivea Bog SAC	178	Caherglassaun Turlough SAC	197	Carrowmore Dunes SAC	215	Inishkeel SPA	17	Termoncarragh Lake and Annagh Machair SPA	37
Tully Lough SAC	143	Curraghleanagh Bog SAC	161	Lough Nageeron SAC	179	Kiltartan Cave (Coole) SAC	198	Tullaheer Lough And Bog SAC	216	Sheskinmore Lough SPA	18	Ballysadare Bay SPA	38
Tully Mountain SAC	144	Maumturk Mountains SAC	162	Kilkieran Bay And Islands SAC	180	Inishmaan Island SAC	199	Kilkee Reefs SAC	217	West Donegal Coast SPA	19	Killala Bay/Moy Estuary SPA	39
				Rahasane Turlough SAC	181			Lower River Shannon SAC	218	Lough Nillan Bog SPA	20	Inishglora and Inishkeeragh SPA	40
										Rathlin O'Birne Island SPA	21	Mullet Peninsula SPA	41

SPA name	Label	SPA name	Label	SPA name	Label	NHAs		NHA name	Label	NHA name	Label	NHA name	Label
Carrowmore Lake SPA	42	High Island, Inishshark and Davillaun SPA	62	Mid-Clare Coast SPA	82	NHA name	Label	Glenturk More Bog NHA	22	Rinn River NHA	42	Kilmore Bog NHA	63
Blacksod Bay/Broad Haven SPA	43	Lough Mask SPA	63	River Shannon and River Fergus Estuaries SPA	83	Slieve Snaght Bogs NHA	1	Ederglen Bog NHA	23	Aghnamona Bog NHA	43	Ballygar Bog NHA	64
Inishkea Islands SPA	44	Inishbofin, Omey Island and Turbot Island SPA	64	Loop Head SPA	84	Illies Hill Bog NHA	2	Slieveward Bog NHA	24	Cloonageeher Bog NHA	44	Derrinlough Bog NHA	65
Duvillaun Islands SPA	45	Illannan SPA	65	Ramsar sites		Umrycam Bog NHA	3	Tristia Bog NHA	25	Lough Kinale And Derragh Lough NHA	45	Derrynagran Bog And Esker NHA	66
Lough Arrow SPA	46	Cruagh Island SPA	66	Ramsar name	Label	Camowen River Bog NHA	4	Forrew Bog NHA	26	Lough Greney Bog NHA	46	Castle Ffrench East Bog NHA	67
Carlingford Lough SPA	47	Lough Ree SPA	67	Trawbreaga Bay	1	Corveen Bog NHA	5	Slieve Rushen Bog NHA	27	Lough Greney Bog NHA	46	Suck River Callows NHA	68
Doogort Machair SPA	48	Lough Corrib SPA	68	Lough Barra Bog	2	Meenmore West Bog NHA	6	Corry Mountain Bog NHA	28	Tawnymackan Bog NHA	47	Killaclogher Bog NHA	69
Lough Conn and Lough Cullin SPA	49	River Suck Callows SPA	69	Meenachullion Bog	3	Roaninish NHA	7	Carrane Hill Bog NHA	29	Moorfield Bog/Farm Cottage NHA	48	Oughterard District Bog NHA	70
Owenduff/Nephin Complex SPA	50	Connemara Bog Complex SPA	70	Pettigo Plateau	4	Meenagarranroe Bog NHA	8	Bangor Erris Bog NHA	30	Lough Namucka Bog NHA	49	Lough Tee Bog NHA	71
Lough Oughter SPA	51	Slyne Head To Ardmore Point Islands SPA	71	Cummeen Strand	5	Lough Hill Bog NHA	9	Tullaghan Bay And Bog NHA	31	Bracklagh Bog NHA	50	Carna Heath And Bog NHA	72
Dundalk Bay SPA	52	Cregganna Marsh SPA	72	Killala Bay/Moy Estuary	6	Cashelnavean Bog NHA	10	Kilronan Mountain Bog NHA	32	Derrycanan Bog NHA	51	Raford River Bog NHA	73
Lough Gara SPA	53	Rahasane Turlough SPA	73	Knockmoyle/She skin	7	Crocknamurrin Mountain Bog NHA	11	Doogort East Bog NHA	33	Mount Jessop Bog NHA	52	Moycullen Bogs NHA	74
Bills Rocks SPA	54	Inner Galway Bay SPA	74	Easky Bog	8	Barnesmore Bog NHA	12	Cunnagher More Bog NHA	34	Lisnarrigh Bog NHA	53	Cregganna Marsh NHA	75
Stabannan-Braganstown SPA	55	Lough Rea SPA	75	Owenboy	9	Inishduff NHA	13	Sraheens Bog NHA	35	Slieve Bog NHA	54	Slieve Aughty Bog NHA	76
Bellanagare Bog SPA	56	Lough Rea SPA	75	Blacksod Bay and Broadhaven	10	Lough Fad Bog NHA	14	Croaghmoyle Mountain NHA	36	Keeloges Bog NHA	55	Funshin Bog NHA	56
Clare Island SPA	57	Inishmore SPA	76	Owenduff catchment	11	Aghavoghil Bog NHA	15	Tullaghan Bog (Roscommon) NHA	37	Clooncullaun Bog NHA	57	Slievecallan Mountain Bog NHA	77
Lough Kinale and Derragh Lough SPA	58	Coole-Garryland SPA	77	Lough Oughter	12	Eshbrack Bog NHA	16	Cornaveagh Bog NHA	38	Forthill Bog NHA	58	Lough Naminna Bog NHA	78
Ballykenny-Fisherstown Bog SPA	59	Lough Cutra SPA	78	Dundalk Bay	13	Dough/Thur Mountains NHA	17	Bella Bridge Bog NHA	39	Leaha Bog NHA	59	Cragnashingaun Bogs NHA	79
Cross Lough (Killadoon) SPA	60	Slieve Aughty Mountains SPA	79	Lough Gara	14	Crockauns/Keelogy boy Bogs NHA	18	Cashel Bog (Leitrim) NHA	40	Tooreen Bog NHA	60	Lough Acrow Bogs NHA	80
Lough Carra SPA	61	Cliffs of Moher SPA	80	Lough Corrib	15	Inagh Bog NHA	19	Corracramph Bog NHA	41	Cloon And Laghtanabba Bog NHA	61		
		Coole Lough & Garryland Wood	17	Inner Galway Bay	16	Pollatomish Bog NHA	20			Aughrim Bog NHA	62		

Appendix B Policy, Plan and Programme Review

B.1 National and regional level

Theme	Policies, Plans and Programmes
All aspects	<ol style="list-style-type: none"> 1. EU Sustainability Policy 2. UN Sustainable Development Goals 3. Our Sustainable Future, a Framework for Sustainable Development for Ireland 4. Strategic Environmental Directive (2001/42/EC) 5. European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 S.I. No. 435/2004 (as amended 2011 S.I. No. 200/2011) 6. Planning and Development (Strategic Environmental Assessment) Regulations 2004 S.I. No. 436/2004 (as amended 2011 S.I. No. 201/2011) 7. Environmental Impact Assessment Directive (2014/52/EU) 8. European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 S.I. No. 296/2018 (as amended S.I. No. 646/2018) 9. Environmental Liability Directive (2004/35/EC) 10. European Communities (Environmental Liability) Regulations 2008 S.I. No. 547/2008 (as amended 2015 S.I. No. 293/2015) 11. European Green Deal 12. Water Services Act, 2013 (as amended 2017) 13. Ireland 2040: Our Plan, National Planning Framework 14. Water Services Policy Statement 2018 – 2025 15. National Spatial Strategy for Ireland 2002-2020 (Department of the Environment and Local Government, 2002) 16. Regional Spatial and Economic Strategies 17. Planning and Development Act 2000 (as amended) 18. Planning and Development Regulations 2001 (as amended) 19. Capital Investment Plan 2016-2021 20. Climate Action Plan 2019 (2021 revision due to be published very shortly) 21. Ireland's Environment - An Integrated Assessment 2020
Population, economy, tourism and recreation and human health	<ol style="list-style-type: none"> 23. Aarhus Convention 24. Drinking Water Directive (2020/2184) 25. European Union (Drinking Water) Regulations 2014 S.I. No. 122/2014 (as amended 2017 S.I. No. 464/2017) 26. EPA Drinking Water Advice Note No. 8: Developing Drinking Water Safety Plans (2011) 27. Groundwater Protection Schemes (1999) 28. World Health Organization Guidelines for Drinking Water Quality (4th edition, 2017)

Theme	Policies, Plans and Programmes
	<ul style="list-style-type: none"> 29. Water safety plan manual: step-by-step risk management for drinking-water suppliers (2009) 30. Irish Water - Water Services Strategic Plan 2015 31. Irish Water - National Wastewater Sludge Management Plan 32. Irish Water - Lead in Drinking Water Mitigation Plan 33. Healthy Ireland Framework 2019-2025 34. Draft Agri-Food Strategy 2030 35. Food Vision 2030 36. Food Wise 2025 37. Food Harvest 2020 38. Fáilte Ireland's 10 Year Tourism Strategy 39. Fáilte Ireland Visitor Experience Development Plans 40. EU Tourism Policy 41. National Countryside Recreation Strategy 42. Tourism Policy Statement 43. Tourism Development and Innovation. A Strategy for Investment 2016-2022 44. Tourism Action Plan 2019-2021
Water environment	<ul style="list-style-type: none"> 45. Water Framework Directive (2000/60/EC) 46. European Communities (Water Policy) Regulations 2003 S.I. No. 722/2003 (as amended 2010 S.I. No. 326/2010) 47. European Union (Water Policy) (Abstractions Registration) Regulations 2018 (S.I. No. 261/2018) 48. River Basin Management Plan 2018 - 2021 49. Draft River Basin Management Plan for Ireland 2022-2027 50. General Scheme of the Water Environment (Abstractions) Bill 2020 51. Bathing Water Directive (2006/7/EC) 52. Bathing Water Quality Regulations 2008 S.I. No. 79/2008 (as amended 2016 S.I. No. 163/2016) 53. Floods Directive (2007/60/EC) 54. European Communities (Assessment and Management of Flood Risks) Regulations 2010 S.I. No. 122/2010 55. Nitrates Directive (91/676/EEC and derogation 2018/209) 56. European Union (Good Agricultural Practice for Protection of Waters) Regulations 2014 S.I. No. 31/2014 (as amended 2020 S.I. No. 529/2020) 57. Urban Wastewater Treatment Directive (91/271/EEC as amended 98/15/EEC) 58. Urban Waste Water Treatment Regulations 2001 S.I. No. 254/2001 (as amended 2010 S.I. No. 48/2010) 59. Marine Strategy Framework Directive (2008/56/EC)

Theme	Policies, Plans and Programmes
	<ul style="list-style-type: none"> 60. European Communities (Marine Strategy Framework) Regulations 2011 S.I. No. 249/2011 (as amended 2018 S.I. No. 648/2018) 61. Groundwater Directive (2006/118/EC) 62. European Communities Environmental Objectives (Groundwater) Regulations 2010 S.I. No. 9/2010 (as amended 2016 S.I. No. 366/2016) 63. Catchment Flood Risk Management (CFRAM) Programme 64. Flood Risk Management Plans 65. Draft Fourth Nitrates Action Programme 66. National Marine Planning Framework 67. Maritime Spatial Planning Directive 2014/89/EU 68. Marine and Coastal Access Act 2009
Biodiversity, flora and fauna	<ul style="list-style-type: none"> 69. International and European Council Conventions 70. EU Biodiversity Strategy for 2030 71. The Habitats Directive (92/43/EEC) 72. The Birds Directive (2009/147/EC) 73. European Communities (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011(as amended 2015 S.I. No. 355/2015) 74. Green Infrastructure: Enhancing Europe's Natural Capital Strategy 75. Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing 76. Wildlife Act 1976 (as amended including 2010) 77. Fisheries Consolidation Act, 1959 78. Other National Biodiversity related regulations 79. National Biodiversity Action Plan 2017-2021 80. All-Ireland Pollinator Plan 2021-2025
Material assets	<ul style="list-style-type: none"> 81. Waste Framework Directive (2008/98/EC) 82. Infrastructure and Capital Investment Plan 2016-2021 83. Waste Management Acts 1996 – 2005 84. Ireland 2040: Our Plan, National Planning Framework 85. National Peatland Strategy 86. Forestry Programme 2014-2020 87. Waste Action Plan for a Circular Economy 88. National Hazardous Waste Management Plan 2014-2020 89. Draft National Hazardous Waste Management Plan 2021 – 2027 90. Waste Action Plan for a Circular Economy 2020 (updated September 2021)

Theme	Policies, Plans and Programmes
Landscape and visual amenity	<p>91. European Landscape Convention</p> <p>92. National Landscape Strategy for Ireland 2015-2025</p>
Air quality	<p>93. Ambient Air Quality Directive (2008/50/EC)</p> <p>94. Air Quality Standards Regulations 2011 S.I. No. 180/2011</p> <p>95. Industrial Emissions Directive (2010/75/EU)</p> <p>96. European Union (Industrial Emissions) Regulations 2013 S.I. No. 138/2013</p>
Noise	<p>97. Environmental Noise Directive (2002/49/EC)</p> <p>98. European Communities (Environmental Noise) Regulations 2018 S.I. No. 549/2018</p>
Climate change	<p>99. The Kyoto Protocol</p> <p>100. Paris Agreement 2015</p> <p>101. EU Energy and Climate (2020) Package 2009</p> <p>102. The Climate Action and Low Carbon Development Act 2015</p> <p>103. Climate Action and Low Carbon Development (Amendment) Bill 2021</p> <p>104. National Climate Change Adaptation Framework including the Sectoral Adaptation Plans including the Climate Change Adaptation for the Health Sector 2018-2024</p> <p>105. Ireland's National Policy Position on Climate Action and Low Carbon Development (2014)</p> <p>106. National Mitigation Plan, 2017</p> <p>107. Energy White Paper: Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007-2020</p> <p>108. National Renewable Energy Action Plan (Directive 2018/2001)</p> <p>109. European Union (Renewable Energy) Regulations 2020 S.I. No. 365/2020</p> <p>110. Offshore Renewable Energy Development Plan (2014) and Interim Review (2018)</p> <p>111. Irish Water Sustainable Energy Strategy</p> <p>112. National Climate Action Plan 2021</p> <p>113. European Green Deal</p>
Cultural heritage (archaeological and architectural)	<p>114. EU Conventions on Archaeological, Architectural and Cultural Heritage</p> <p>115. Planning and Development Acts</p> <p>116. Heritage Act 2018</p> <p>117. National Monuments Act 2004 (as amended)</p> <p>118. Architectural Heritage and Historic Monuments Act 1999</p>
Geology and soils	<p>119. Planning and Development Act</p> <p>120. Action Plan for Rural Development</p>
Transboundary	<p>121. Planning Act (NI) 2011</p> <p>122. Regional Development Strategy: Building a Better Future, 2035</p> <p>123. Northern Ireland's Climate Change Adaptation Programme 2019 - 2024</p>

Theme	Policies, Plans and Programmes
	124. The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009
	125. Water Abstraction and Impoundment (Licensing) (Amendment) Regulations (Northern Ireland) 2007
	126. The Water Supply (Water Quality) Regulations (Northern Ireland) 2017
	127. NI Water (2020) Our Strategy 2021-2046
	128. NI Water (2020) Water Resource and Supply Resilience Plan
	129. Fisheries Act (NI) 2016
	130. NI Draft Flood Risk Management Plan 2021-2027
	131. Marine Act (Northern Ireland) 2013
	132. UK Marine Policy Statement
	133. UK Marine Strategy
	134. Draft Marine Plan for Northern Ireland
	135. Draft 3rd cycle River Basin Management Plan: For the North Western, Neagh Bann and North Eastern River Basin Districts (2021 – 2027)

B.2 Local level

Theme	Policies, plans and programmes
All aspects	136. Leitrim County Development Plan 2022-2028 (emerging)
	137. Sligo County Development Plan 2017-2023 (adopted)
	138. Sligo County Development Plan 2023-2029 (emerging)
	139. County Donegal Development Plan 2018-2024 (adopted)
	140. Cavan County Development Plan 2014-2020 (adopted)
	141. Monaghan County Development Plan 2019-2025 (adopted)
	142. Monaghan County Development Plan 2013-2019 (adopted)
	143. County Monaghan Development Plan 2007-2013 (adopted)
	144. Longford County Development Plan 2021-2027 (emerging)
	145. Longford Town Development Plan 2009-2015 (adopted)
	146. Louth Development Plan 2015-2021 (adopted)
	147. Louth County Development Plan 2021-2027 (emerging)
	148. Meath County Development Plan 2020-2026 (adopted)
	149. Westmeath County Development Plan 2021-2027 (adopted)
	150. Westmeath County Development Plan 2014-2020 (adopted)
151. Clare County Development Plan 2017-2023 (adopted)	
152. Clare County Development Plan 2022- 2028 (emerging)	
153. Galway County Development Plan 2015-2021 (adopted)	

Theme	Policies, plans and programmes
	<ul style="list-style-type: none"> 154. Draft Galway County Development Plan 2022-2028 (emerging) 155. Galway City Development Plan 2023-2029 (emerging) 156. Galway City Council Draft Development Plan (adopted) 157. Mayo County Development Plan 2014-2020 (adopted) 158. Draft Mayo County Development Plan 2021-2027 (emerging) 159. Roscommon County Development Plan 2021-2027 (emerging) 160. Roscommon County Development Plan 2014-2020 (adopted) 161. County Donegal Development Plan 2018-2024 (adopted)
Population, economy, tourism and recreation and human health	<ul style="list-style-type: none"> 162. Mayo County Council Corporate Plan 2019-2024 (adopted) 163. County Roscommon Tourism Statement of Strategy and Work Programme 2017-2022 (adopted) 164. County Sligo Tourism Strategy 2018-2023 (adopted) 165. County Cavan Tourism Development Plan 2017-2022 (adopted) 166. Cavan County Council Corporate Plan 2019-2024 (adopted) 167. Donegal County Council Tourism Strategy 2017-2020 (adopted) 168. Donegal County Council Corporate Plan 2020-2024 (adopted) 169. Monaghan County Council Tourism Statement of Strategy and Work Programme 2017-2022 (adopted) 170. Co. Monaghan Tourism Strategy 2015-2020 (adopted) 171. Monaghan County Council Corporate Plan 2020-2024 (adopted) 172. County Longford Tourism Statement of Strategy and Work Programme 2017-2022 (adopted) 173. County Louth Tourism and Heritage Action Plan 2016-2021 (adopted) 174. Westmeath Tourism Strategy 2021-2027 (emerging) 175. Clare County Tourism Strategy 20230 176. A growth strategy for tourism in Leitrim 2015-2021 (adopted)
Biodiversity, flora and fauna	<ul style="list-style-type: none"> 177. County Mayo Biodiversity Action Plan 2010-2015 178. Roscommon Town Community Biodiversity Action Plan 2019-2023 179. Biodiversity Species List for County Donegal May 2009 180. Monaghan Biodiversity and Heritage Strategic Plan 2020-2025 181. Local Biodiversity Action Plan for County Louth 2021-2026 182. County Meath Biodiversity Action Plan 2015-2020 183. County Westmeath Biodiversity Action Plan 2014-2020 184. Clare Biodiversity Action Plan 2017-2023 185. Galway county Heritage and Biodiversity Plan 2017-2022
Material assets	<ul style="list-style-type: none"> 186. Northwest Region Waste Management Group

Theme	Policies, plans and programmes
Landscape and visual amenity	<ul style="list-style-type: none"> 187. Galway County Council Landscape Character Assessment May 2021 188. Landscape Appraisal of County Mayo 189. Landscape Character Assessment of County Roscommon June 2008 190. County Monaghan Landscape Character Assessment August 2008 191. Landscape Character Assessment of County Donegal May 2016 192. Louth County Council Landscape Character Assessment December 2002
Noise	<ul style="list-style-type: none"> 193. Galway County Council Noise Action Plan 2019-2023 194. Leitrim County Council Noise Action Pan 2018-2023 195. Mayo County Council Noise Action Plan 2018-2023 196. Noise Action Plan 2018-2023 Roscommon County Council 197. Sligo County Council Noise Action Plan December 2018 198. Donegal County Council Draft Noise Action Plan 2018-2023 199. Monaghan County Council Noise Action Plan 2018-2023 200. Longford Noise Action Plan 2018-2023 201. Louth County Council Noise Action Plan 2018-2023 202. County Meath Noise Action Plan 2019 203. Westmeath Noise Action Plan 2013-2018 204. Clare County Council Noise Action Plan 2018 205. Clare Local Authorities Noise Action Plan 2013
Climate change	<ul style="list-style-type: none"> 206. Galway City Council Climate Adaptation Strategy 2019 – 2024 207. Galway County Council Draft Climate Adaptation Strategy 2019 - 2024 208. Leitrim County Council Climate Change Adaptation Strategy 2019-2024 209. Mayo County Council Climate Adaptation Strategy September 2009 210. Climate Change Adaptation Strategy for Roscommon County Council September 2009 211. Sligo County Council Climate Adaptation Strategy September 2019 212. Climate Change Adaptation Strategy 2019-2024 213. Donegal County Council Climate Adaptation Strategy September 2019 214. Monaghan County Council Climate Change Adaptation Strategy 2019-2024 215. Climate Change Adaptation Strategy Longford County Council September 2019 216. Louth County Council Climate Change Adaptation Strategy 2019-2024 217. Climate Action Strategy for County Meath February 2018 218. Westmeath County Council Climate Change Adaptation Strategy 2019-2024 219. Clare County Council Climate Change Adaptation Strategy 2019-2024

Theme	Policies, plans and programmes
Cultural heritage (archaeological and architectural)	<ul style="list-style-type: none"> 220. Galway County Heritage and Biodiversity Plan 2017-2022 221. Galway Heritage Plan 2015/2021 222. Leitrim Heritage Plan 2020-2025 223. County Mayo Heritage Plane 2006-2011 224. County Mayo Heritage Plan 2011-2016 225. County Roscommon Heritage Plan 2017-2021 226. County Roscommon Heritage Plan 2012-2016 227. County Sligo Heritage Plan 2016-2020 228. Cavan County Heritage Plan 2006-2011 229. Donegal County Council and Heritage Council Strategy 2018-2022 230. County Donegal Heritage Plan 2014-2019 231. County Monaghan Heritage Plan 2012-2017 232. Monaghan Biodiversity and Heritage Strategic Plan 2020-2025 233. County Longford Heritage Plan 2019-2024 234. County Meath Heritage Plan 2015-2020 235. County Westmeath Heritage Plan 2010-2015 236. County Westmeath Heritage Plan 2018-2023 237. Clare County Heritage Plan 2017-2023

Note: there are no local levels plans specific to the water or geology and soils topic areas. Plans of this nature tend to be regional or national level.

Appendix C SEA Screening Statement

C.1 Legislative Requirements

This report is the Strategic Environmental Assessment (SEA) Screening Assessment for Irish Water's forthcoming Regional National Water Resource Plan, (hereafter referred to as the NWRP or the 'Plan'). The Plan will require a Strategic Environmental Assessment under both the European Directive (2001/42/EC) on the Assessment of Certain Plans and Programmes on the Environment (hereafter referred to as the SEA Directive).

Article 3(2) of the SEA Directive makes SEA mandatory for plans or programmes which;

- are prepared for agriculture, forestry, fisheries, energy, transport, industry, tourism, land use, telecommunications, waste management, or water management; and
- set a framework for future development consents that could require Environmental Impact Assessment; or
- in view of the likely effect on protected sites, have been determined to require an assessment under the Habitats Directive.

Article 2 of the SEA Directive requires SEA is undertaken for '*plans and programmes*', which are

- subject to preparation and/ or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and
- which are required by legislative, regulatory or administrative provisions

Therefore it needs to be determined if the Plan is required by legislative, regulatory or administrative provisions, and if so, whether they are subject to the provisions of the SEA Directive.

In deciding whether a particular plan is likely to have significant environmental effects, regard is given to the criteria set out in Annex II of the SEA Directive. This is reproduced in Schedule 1 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004).

C.2 Competent Authority

A competent authority for the purpose of SEA is defined under S.I. No. 435 of 2004 as *the authority which is, or the authorities which are jointly, responsible for the preparation of a plan or programme, or modification to a plan or programme*. Irish Water is therefore the Competent Authority with respect to this Plan and is obliged to determine whether this could give rise to significant effects on the environment.

C.3 SEA Process

The SEA Process is a 5 stage process as follows:

- Stage 1 – Screening: deciding whether or not SEA is required;
- Stage 2 – Scoping: establishing the spatial and temporal scope of the SEA and a decision-making framework that can be used to evaluate impacts;

- Stage 3 Assessment of potential environmental impacts – within the context and parameters identified at the Scoping Stage, identification and assessment of likely environmental impacts of the options identified in the WRMP is carried out: including consideration of alternatives to the Plan;
- Stage 4 – Consultation: Consultation with statutory consultees and the public. Changes may occur to the draft Plan and Environmental Report in light of this;
- Stage 5 – Monitoring and Implementation: Monitoring Data which will aid in any future review / revision of the SEA.

C.4 Statutory Consultation

Certain designated environmental bodies must be consulted on screening and scoping of the SEA. This SEA Screening Statement is issued to the following Environmental Authorities⁹ with the scoping report:

- The Environmental Protection Agency (EPA);
- Department of Housing, Local Government and Heritage (DHLGH);
- Department of the Environment, Climate and Communications (DECC);
- Department of Agriculture, Food and the Marine (DAFM); and
- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media – Development Applications Unit (DAU).

C.5 Transboundary Consultation

The SEA Screening Statement and Scoping Report are also issued to Northern Ireland’s Department of Agriculture, Environment and Rural Affairs to confirm if transboundary environmental effects are to be considered for the Regional Plan for the North West.

C.6 Regional Plan for the North West (RWRP-NW)

The Water Services Strategic Plan (WSSP), completed in October 2015 as required under Section 33 of the Water Services No. 2 Act of 2013. The WSSP forms the highest tier of asset management plans to be prepared by Irish Water and sets the overarching framework for subsequent detailed ‘Tier 2’ implementation plans including the National Water Resource (Plan NWRP). The NWRP is being provided in two phases: Phase 1 Framework Plan has been completed and adopted; and Phase 2 Regional Water Resources Plans are in progress. The Regional Plan for the North West (RWRP-NW) is part of Phase 2.

The RWRP-NW applies the Options Assessment Methodology presented in the Framework Plan 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 this region of the supply network.

⁹ Governmental changes may require amendments to the exact name convention of these environmental authorities

2. Is the P/P required by legislative, regulatory or administrative provisions?

Yes. The Plan is a regulatory requirement for Irish Water under the Water Services Strategic Plan (WSSP) as detailed in Section 33 of the Water Services Act 2013.

3. Is the sole purpose of the P/P to serve national defence or civil emergency or is it a financial/budget P/P or is it co-financed by the current round of SF/RDF?

No. This does not apply to the proposed Plan.

4. Is the P/P prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecomms, tourism, town and country planning or land use?

Yes. The main function of the Plan is in relation to water resource planning. The plan also includes strategy for the management of sludge from the water treatment plants.

5. Does the P/P provide a framework for development consent for projects listed in the EIA Directive?

Yes. According to the EPA guideline report *Development of SEA methodologies for plans and programmes in Ireland (2003)* a “framework for development consent” occurs:-

“when the P/P would lead to, or give guidance for the consent of development projects. This may be observed as the demarcation of areas zoned for specific types of development, measures which identify circumstances under which development will be encouraged or allowed, criteria which may be applied to decisions on development consent or forward programmes which identify certain types of development to be pursued in a particular sector.”

The Plan will identify a range of options, including types of projects that fall within the categories set out in Annexes I and II to the EIA Directive, for example works for the transfer of water.

6. Will it determine the use of small areas at a local scale only and/or is it a minor modification of a P/P?

No. The Plan is regional covering a large part of the Republic of Ireland and is part of a national plan and is not a modification to an existing Plan.

C.8 Conclusion

Screening Decision

In conclusion on the basis that the provisions of Article 9(1) of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations have been met, the RWRP-NW has been ‘screened in’ as requiring SEA, and therefore the SEA process should move to Stage 2 – Scoping Stage.