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Planning Context

1.1 Introduction

Water is part of our everyday lives. It is essential to everything we do. Ireland's existing public water supply was built gradually over the last 150 years, often responding to local needs by developing nearby small water supplies. As a result, we have a fragmented supply system. In addition to this, as a result of historic underinvestment, many of Irish Water's treatment facilities, pumps and water main networks within these supplies are in poor condition compared to standards in most European countries. The poor condition of many of our current water supplies means that some of our customers receive a low Level of Service (LoS) resulting in the issuing of intermittent Boil Water Notices or other interruptions. If no action is taken, population growth, continued aging of our water supply infrastructure and climate change will lead to further deterioration in this situation over time. To improve the Levels of Service we provide to our customers we must plan ahead. Irish Water's first National Water Resources Plan (NWRP) outlines how we can do this. The NWRP is a 25-year strategy (2019 to 2044) which will identify how we will provide a safe, sustainable, secure and reliable water supply to our customers for now and into the future while safeguarding the environment.

The **LoS** refers to the Reliability of the supply that our customers can expect to receive and is expressed as a frequency or return period of supply failure. A 1 in 50 LoS means that customers would only expect to experience a supply failure, on average, once every 50 years, or there would be a 2% chance of experiencing a supply failure in any given year.

The first Phase in the development of the NWRP was the preparation of the NWRP - Framework Plan (the Framework Plan), which was adopted in May 2021 following Strategic Environmental Assessment (SEA), Appropriate Assessment (AA) and extensive public consultation. The Framework Plan and supporting documentation are available at <https://www.water.ie/projects/strategic-plans/national-water-resources/>.

Phase 2 of the NWRP involves the production of four (4) Regional Water Resources Plans that will assess Need and propose a Preferred Approach for each of the 539 water supplies that make up the national public water supply.

The first NWRP will comprise of the Framework Plan and four (4) Regional Water Resources Plans which together will be treated as a unified Plan. The relevant regional groupings will have no ongoing application in future cycles.

This document, the Regional Water Resources Plan Eastern and Midlands (RWRP-EM) is the first of the four (4) Regional Plans. This region was progressed first given its ageing infrastructure, dense population and criticality of Need. The RWRP-EM describes baseline issues with the existing water supplies, in terms of Quality, Quantity, Reliability and Sustainability. It also assesses factors that will influence our water supplies into the future, including, growth and economic development, changing legislation and climate change.

The RWRP-EM considers the opportunities for our water supplies, and the Preferred Approach or solutions for each supply, using the methodology set out in the Framework Plan. The objective of the RWRP-EM is to enable secure safe, reliable and sustainable drinking water supplies in the Eastern and Midlands Region for the next 25 years.

1.2 Who We Are

Irish Water assumed statutory responsibility for the provision of public water services and management of water and wastewater investment for Ireland on the 1st January 2014.

Its' role is to ensure that all our customers and communities receive a safe and secure supply of drinking water and have their wastewater collected, appropriately treated and returned to the environment. We support Ireland's social and economic growth in a sustainable manner through appropriate investment in water services and strive to protect the environment in all our activities.

Irish Water is regulated by the following:

- The economic regulator, the Commission for Regulation of Utilities (CRU), who is charged with protecting the interests of the customer. The CRU also approves appropriate funding to enable Irish Water to deliver the required services to specified standards in an efficient manner.
- The environmental regulator, the Environmental Protection Agency (EPA), who sets standards and enforces compliance with EU and National Legislation for drinking water supply and wastewater discharge to water bodies. The EPA liaises with the Health Service Executive in matters of public health.

All projects developed by Irish Water are subject to the planning and regulatory processes.

1.3 Water Supply in the Eastern and Midlands Region

There are 201 Water Treatment Plants (WTPs) in the Eastern and Midlands Region, which collectively serve 2.48 million people or 60% of the population of Ireland, via approximately 19,000 kilometres of distribution network. The size of these WTPs varies, with the largest two (2) in the region producing on average 49% of the water supplied and the remaining producing on average about 51% or 381.5 Ml/d of the total supply.

The WTPs feed water into supply areas known as Water Resources Zones (WRZs). Each WRZ is an independent water supply system serving a region, city, town or village and is governed by topography or the extent of the water distribution network in an area. Within a WRZ most customers receive the same Level of Service (LoS), measured as a probability of interruption to services (for example one interruption to the supply in 50 years).

This RWRP-EM will summarise key issues that impact the Quality, Sustainability and Reliability of our existing water supplies, in this region, including:

- Levels of Service
- Treatment Capacity;
- Water Quality;
- Network Performance;
- Abstractions potentially at risk of exceeding sustainable abstraction thresholds and;
- Constrained Funding.

In addition, we also face key challenges over the coming years, which have the potential to exacerbate the current problems in the region, including:

- A growing population;
- A changing climate;
- Changes in land use and emerging contaminants;
- Legislative changes; and
- An Environment in need.

Addressing these challenges as part of the overall NWRP, ensures that future infrastructure development is proportionate to the identified Need and is Sustainable, Reliable and Resilient.

1.4 Development of the National Water Resources Plan

Irish Water's NWRP is the first such plan for the entire public water supply in Ireland.

The NWRP will:

- Enable Irish Water to address Need across our water supplies in the most effective way over time, through the regulated investment cycles;
- Ensure that there is a transparent framework to develop the most appropriate projects/programmes to meet statutory obligations in relation to water supply;
- Provide a framework to track outcomes, allowing interventions to be prioritised in order to bring the water supply up to the required standards in the shortest possible timeframe; and
- Deliver a plan to ensure that all of our customers have access to safe, secure, reliable and sustainable water supplies, wherever they live.

In addition to this we anticipate that the RWRP-EM will achieve the following:

- Facilitate integration of government policy and legislation into our outcomes planning;
- Support balanced regional development, as outlined in the National Planning Framework (NPF) and the supporting Regional Spatial and Economic Strategies (RSEs), by assessing water supply Needs across our growing communities;
- Improve the security of our supplies in terms of both Quality and Quantity;
- Improve the environmental Sustainability of our supplies, and ensure that we can adapt to the impacts of climate change;
- Facilitate improvement in the Reliability of our supplies, resulting in less frequent interruptions to supplies and boil water notices; and
- Allow Irish Water to have a strategic approach to planning our supplies in terms of improving biodiversity and reducing carbon.

The structure of the NWRP is set out in Figure 1.1.

Phase 1 – NWRP-Framework Plan

The NWRP-Framework Plan includes:

- A description of the methodology for Water Resources Planning:
 - How we assess Quantity need through the Supply Demand Balance (SDB)
 - How we assess Quality and Reliability need through the Barrier Assessment
 - How we address sustainability by ensuring that all new options for water supply must be based on conservative approaches to protecting water sources
 - Our Options Assessment Process
 - Our Preferred Approach Development Process
- An assessment of Need across each of our 539 public water supplies nationally in terms of:
 - **Water Quantity** that Irish Water can provide;
 - **Water Quality** that Irish Water can provide; and
 - **Performance and operational efficiency** of Irish Water’s Asset Base.

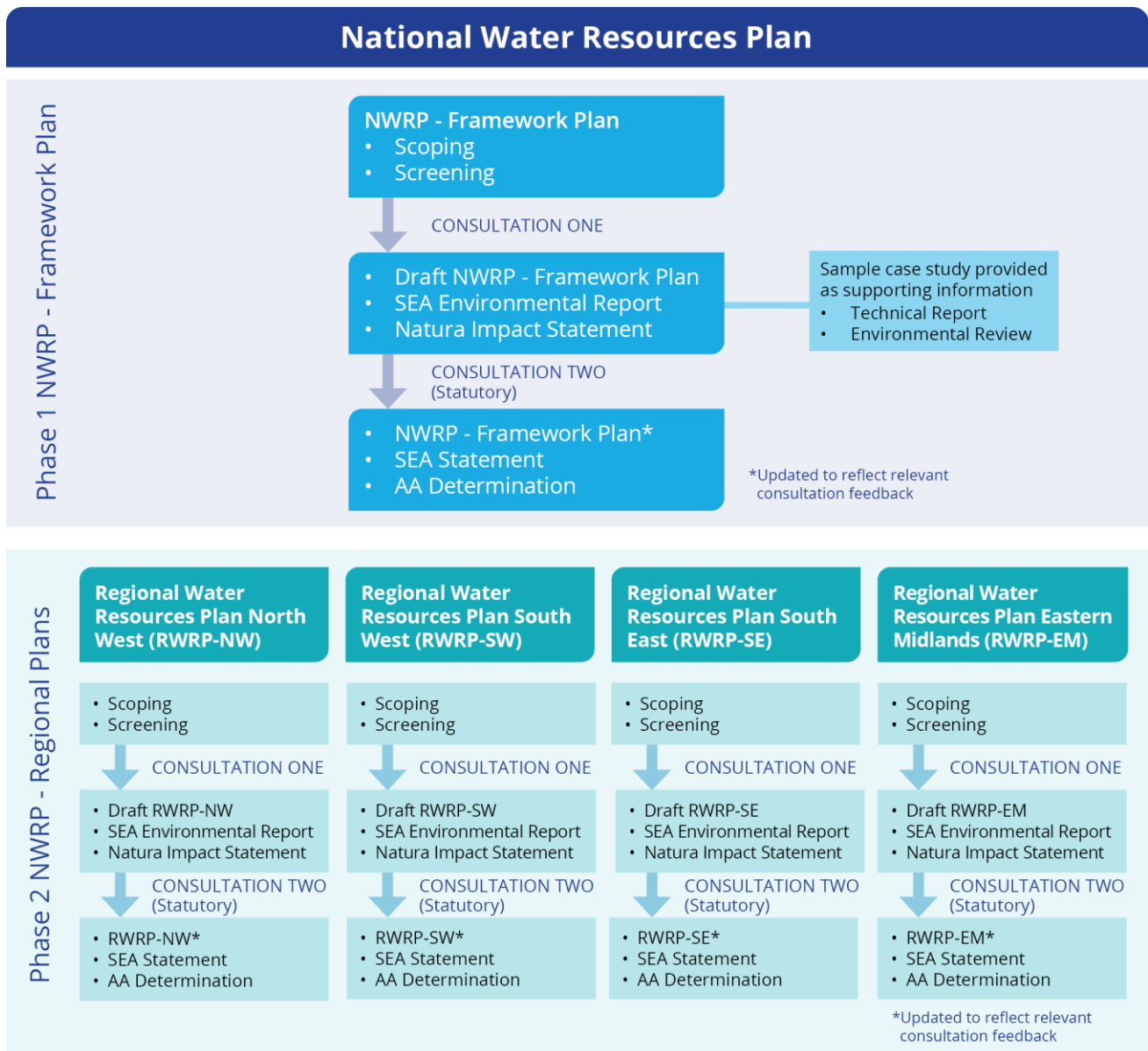


Figure 1.1 Components of the National Water Resources Plan

The Framework Plan and Consultation Two Report is available online at <https://www.water.ie/projects/strategic-plans/national-water-resources/>

The Framework Plan associated SEA Statement, AA Determination and the Consultation Two Report demonstrate, based on submissions made, how environmental considerations have shaped and helped in the development of the RWRPs.

Phase 2 – Four (4) Regional Water Resources Plans

The RWRP-EM is the first of four (4) Regional Plans and will be followed by three (3) further Plans over the next 12-18 months, including:

- Regional Water Resources Plan: North West (RWRP-NW) (Group Area 1)
- Regional Water Resources Plan: South West (RWRP-SW) (Group Area 2)
- Regional Water Resources Plan: South East (RWRP-SE) (Group Area 3)

The four (4) regions are shown in Figure 1.2. The regional boundaries are only relevant for the development of the first NWRP and have been identified as the most appropriate way to allow Irish Water to identify Preferred Approaches (water supply solutions) in an efficient and timely manner. Once the first NWRP has been finalised, while it is comprised of the Framework Plan and four (4) Regional Water Resources Plans, together they will be treated as a unified plan. The relevant regional groupings will have no ongoing application. Where Local Authority areas have been split, Irish Water will engage with the relevant Local Authorities following the finalisation of the RWRPs, on the outcomes for all of the water supplies in their areas.

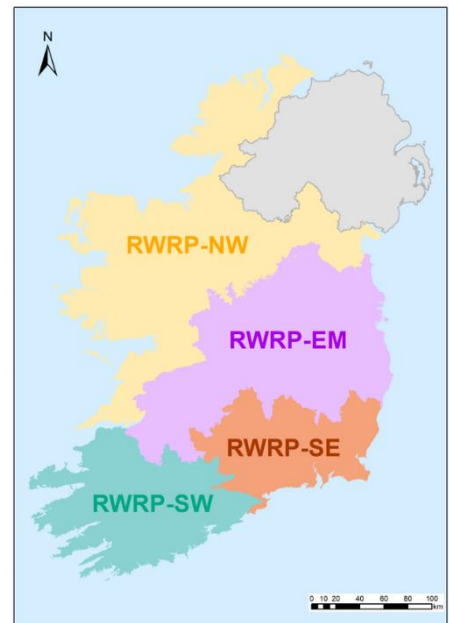


Figure 1.2 Regional Areas of the NWRP

The boundaries of the four (4) regional groups were determined based on the following criteria:

1. **Irish Water Operational Regions (North and West, Eastern and Midlands, and Southern Region):** To allow us to optimize the staffing resources during the roll out of the four (4) RWRPs.
2. **The Water Resource Zone boundaries:** To represent our current supplies. Due to the disproportionate volume of WRZs in the Southern Region, for administration of the roll out process, the area has been split into two (2) groups, South West and South East.
3. **Local Authority boundaries:** This allows us to align the Local Authority Development Plans to our Supply Demand forecasts and to assess the full Options Assessments Process with our colleagues in the Local Authority Water Services Sections. In some cases, it was necessary to split the Local Authority areas to ensure alignment of the water supply delivery area, which can comprise an interconnected network supplying both urban and rural settlements. Where this is the case, we have aligned the overall growth with the RSES and the NPF projections by attributing the different growth rates to the proportion of the supply that is in the urban and rural settlements.
4. **Environmental Impact:** As far as possible, designated water body catchments (or at least sub-catchment areas), as delineated by the EPA under the River Basin Management Plan, have been used. This allows consideration of the WFD.

Each RWRP will identify deficiencies and Need across the water supplies within the region and develop regional plan level solutions to address these issues. The solutions will be identified in Irish Water's planning and investment cycles. Their prioritisation will be based on criticality and risk.

The RWRPs will also be subject to SEA and AA. Each of the four (4) draft RWRPs and associated environmental reports will have their own public consultation phases. These public consultations are intended to take place throughout 2021 and 2022.

Each of the four (4) RWRPs, together with their respective SEA Environmental Reports and Natura Impact Statement will ensure that consideration is given to the cumulative impacts and in-combination effects of the other RWRPs. Adjustments will be made to address those impacts to the fullest extent possible based on all available information.

1.5 RWRP-EM

The RWRP-EM and supporting material consist of the following documents:

- **RWRP-EM**

The RWRP-EM presents an overview of the Eastern and Midlands Region with respect to population, development and the natural environment and identifies specific challenges within the region. It summarises progress to date, the Options considered, and the Preferred Approach identified at WRZ, Study Area (SA) and Regional Scale.

- **Study Area Technical Reports**

As the Eastern and Midlands Region has been divided into nine (9) Study Areas (SAs) (as described in more detail below), a detailed Technical Report is provided for each SA describing the solution types at SA level and providing a summary of the detailed Option and Approach Development Process and resulting outcomes for each SA. The SA Technical Reports are provided as appendices to the RWRP-EM document.

- **SEA Environmental Report (SEA)**

Irish Water has prepared a SEA Environmental Report to identify and evaluate likely significant effects of the RWRP-EM and identify potential mitigation measures, in accordance with the requirements of the European Union SEA Directive and associated Irish regulations (outlined in more detail below)⁷. It considers alternatives to the approach for the RWRP-EM and aims to identify potential interactions with other plans and programmes, including the potential for cumulative effects. The SEA provides the methodology for integrating SEA and AA requirements throughout the development of the RWRP-EM; and provides mitigation and implementation recommendations for the RWRP-EM and a monitoring plan.

- **Environmental Reviews**

The Study Area Environmental Reviews form part of the SEA Environmental Report for the RWRP-EM. The Environmental Review applies the SEA objectives and environmental assessment methodology set out in the Framework Plan. The Environmental Review summarises the environmental assessment undertaken for each Study Area (1-9) within the Eastern and Midlands Region for the Options and Approaches considered and as outlined in the SA Technical Reports.

- **Natura Impact Statement**

A Natura Impact Statement (NIS) has been prepared to support the AA of the RWRP-EM. Screening for AA of the RWRP-EM assessed whether, on the basis of objective scientific information, the RWRP-EM individually or in-combination with other plans or projects, is likely to have a significant effect on a European site. The relevant information to assist in informing the AA determination by Irish Water is documented in this NIS (noting that Irish Water's ultimate AA determination will also take into account wider factors, including feedback received through consultation).

1.6 Scoping and Screening for Eastern and Midlands Region

Consultation on the SEA Scoping Report for the RWRP-EM was held in June and July 2021. The SEA Scoping Report was provided to certain environmental authorities as specified in the SEA Regulations, for the purposes of initial consultation on the scoping of the SEA for the Eastern and Midlands Region.

The feedback obtained was considered and reflected in the RWRP-EM and associated SEA Environmental Report and Natura Impact Statement. The public consultation process on the draft RWRP-EM took place between December 2021 and March 2022, allowing any interested parties to provide feedback on the draft RWRP-EM, including SEA and NIS.

1.7 Study Areas

The Eastern and Midlands Region has been divided into nine (9) Study Areas (SAs), as shown in Figure 1.3. The Study Area boundaries were determined based on factors such as:

- Groundwater body boundaries;
- Surface water sub-catchments;
- Geographical features;
- WRZ boundaries;
- Local Authority functional areas; and
- Appropriate size for an efficient reporting structure.

A detailed Technical Report on each SA provides context on the SA in terms of water Quality, Quantity, supply Reliability, Sustainability and a Needs summary. Each SA Technical Report outlines the solution types identified for the area and applies the Option and Approach Development process, which was adopted in the Framework Plan. At the end of this process, a Preferred Approach is identified to meet the Need in the WRZ, SA and Region. Each Preferred Approach is subject to a sensitivity analysis to help predict how it will perform against future anticipated developments. It will take multiple investment cycles to deliver all of the solutions identified in the NWRP and, in certain circumstances, capital maintenance projects may need to progress in the interim until all of the Preferred Approaches are delivered. These interim solutions will help manage and sustain Ireland's public water supply.

It should be noted that assessments, solutions and Preferred Approaches at this stage are at a plan level. Environmental impacts and costing of projects are further reviewed at project level. No statutory consent or funding consent is conferred by inclusion in the RWRP-EM. Any projects that are progressed following the NWRP will require individual environmental assessments, including Environmental Impact Assessment (as required) and screening for Appropriate Assessment, in support of planning applications (where a project requires planning permission) or in support of licencing applications (for example, for new abstractions). Any such applications will also be subject to public consultation.

Legend

- City
- Regional centre
- Key town

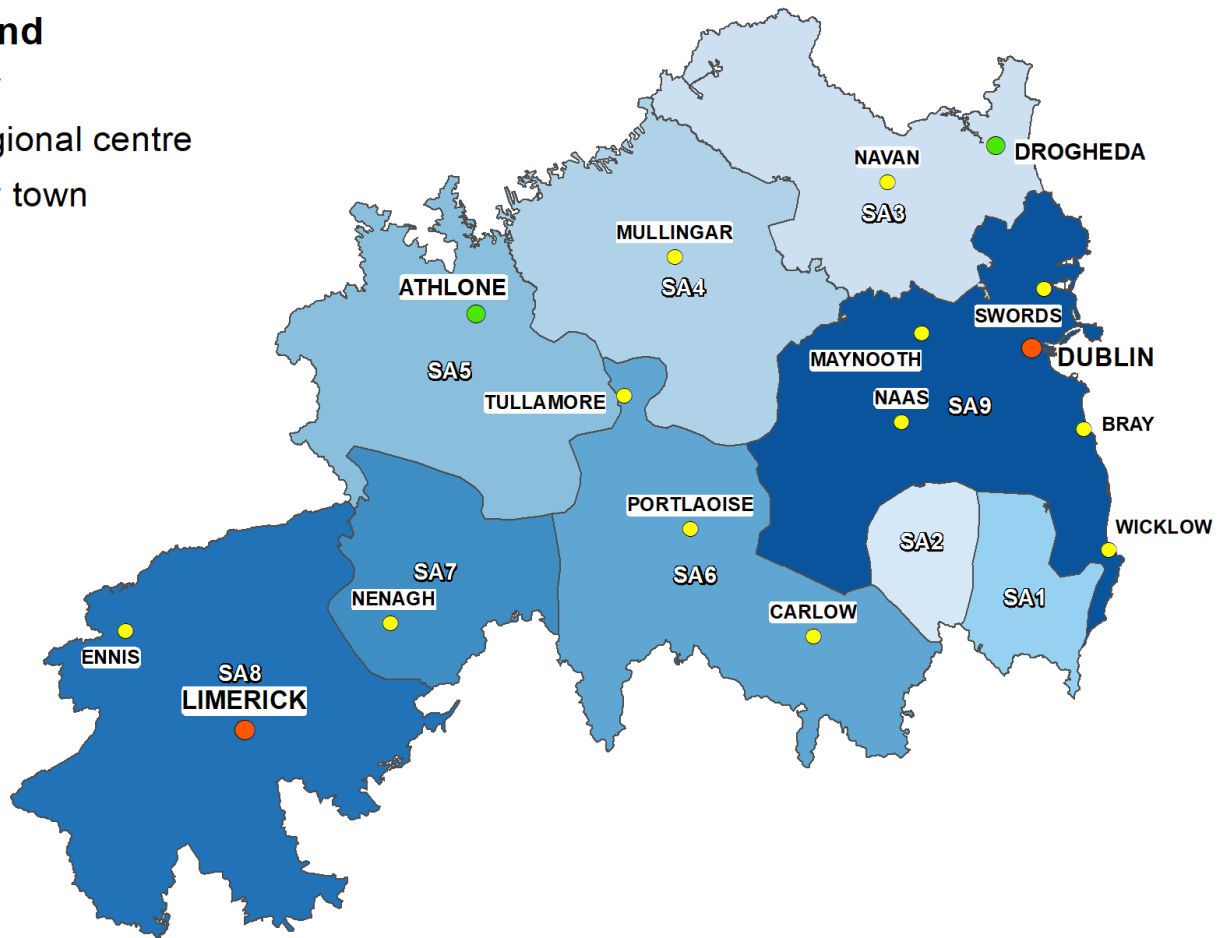


Figure 1.3 Study Areas of the Eastern and Midlands Region

1.8 Overview of RWRP-EM

The RWRP-EM presents an overview of the Options and Preferred Approach Outcome for the Eastern and Midlands Region. It consists of nine (9) individual sections, of which this is the first.

Section 2 explores the context of current and forecast population growth, economic development and tourism and recreation within the Eastern and Midlands Region. The region's natural resources, including surface water and groundwater, are profiled as well as the considerations of WFD ecological status and risk. An overview of the designated sites within the Eastern and Midlands Region is presented. Opportunities for protection, restoration and enhancement are also outlined. Specific challenges for the Eastern and Midlands Region are discussed including rainfall patterns and drought and flood risk. The infrastructure supporting the Eastern and Midlands Region supply is summarised along with a consideration of the impact of climate change on future water availability.

Section 3 of the RWRP-EM explores the specific issues relating to water Quantity and Quality at the regional scale. Supply Demand Balance calculations have been developed for the 134 WRZs within the Eastern and Midlands Region covering the 25-year planning period from 2019 to 2044. Water Quality, supply Reliability and Sustainability are also assessed at regional scale.

Irish Water is committed to continuous improvement to our water supply network. Throughout the development of the Framework Plan and the RWRP-EM we have continued working on a range of existing projects, in-flight projects and identifying additional work required through the scoping process of the RWRP-EM. Each of these projects has aimed to address issues surrounding water Quality and or supply Reliability. **Section 4 and 5** of the RWRP-EM describe ongoing work and solutions to Need for the Eastern and Midlands Region.

Sustainability remains at the core of Irish Water's approach to developing appropriate solutions to meet future water demand. **Section 6** presents our Option Development Process for the Eastern and Midlands Region. Feasible Options for the region are presented here.

A Preferred Approach is the Feasible Option or combination of Feasible Options that provide the optimum solution to address Needs. **Section 7** presents the Preferred Approaches at WRZ and SA level, which are able to meet the water Quality and Quantity needs of the SAs within the Eastern and Midlands Region. We also describe the 'Interim Solutions' we have identified to address the short-term needs within our Region; and test the Sensitivity of the Preferred Approaches to changes in climate change, abstraction limits, leakage targets and growth projections.

The Regional Preferred Approach, which is the optimal combination of Options that resolve the overall deficit in the Eastern and Midlands Region, is presented in **Section 8**.

Section 9 provides an overview of Monitoring and Feedback into the Plan and

Section 10 summarises the overall conclusions of the RWRP-EM.

1.9 Strategic Environmental Assessment and Appropriate Assessment

The RWRP-EM was subject to SEA and AA in accordance with applicable European legislation and associated Irish implementing legislation.

The SEA Directive outlines the requirements for environmental assessments for all plans and programmes prepared by relevant authorities. The SEA Directive was transposed in Ireland under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, SI 435/2004, as amended (the SEA Regulations). The SEA process is integral to the development of the NWRP as a whole, and ensures the environment is considered in our approach. The SEA objectives identified at the scoping stage of the SEA process for the NWRP are used for assessing the beneficial and adverse impacts on the environment at all stages of the Options and Approach Development Process. The Options and Approach Development Process enables the selection of our preferred water resources solutions. The SEA objectives are described fully in the SEA Statement accompanying the Framework Plan.

The SEA Environmental Report that accompanies the RWRP-EM outlines the likely environmental effects and potential benefits of implementing the Plan. It was subject to public consultation in accordance with the SEA Directive and SEA Regulations. Recommendations from the SEA, following consultation, including the SEA monitoring plan and environmental action plan, were taken forward as part of the implementation of the RWRP-EM.

A screening for Appropriate Assessment has been completed in relation to the RWRP-EM to assess, in view of best scientific knowledge and in view of the conservation objectives of relevant European sites, if the RWRP-EM, individually or in combination with other plans or projects is likely to have a significant effect on any relevant European site(s), i.e. Special Areas of Conservation (SAC) and Special Protection Areas (SPA). A summary of the screening for AA of the draft RWRP-EM concluded that there was potential for Likely Significant Effects (LSEs) therefore AA of the RWRP-EM was required. A Natura Impact Statement (NIS) has been prepared to support the Appropriate Assessment of the RWRP-EM and accompanies this RWRP-EM.

1.10 Summary of Policy

The key policies feeding into our NWRP and Regional Resources Plans are:

- Water Services Policy Statement (WSPS);
- Project Ireland 2040 – National Planning Framework (NPF);
- Regional Spatial and Economic Strategies (RSES);
- Water Framework Directive (WFD) & River Basin Management Plan (RBMP) for Ireland;
- National Adaptation Plan (NAP) & Adaptation Plan for Water Quality and Water Services Infrastructure;
- Recast Drinking Water Directive (DWD);
- Climate Action Plan (CAP); and
- Climate Action and Low Carbon Development Act 2015 (as amended 2021).

Under the Water Services (No. 2) Act 2013, Irish Water is required to prepare a Water Services Strategic Plan (WSSP) setting out the company's objectives for the provision of water services in the Irish State, over a 25-year period. The WSSP identified the need for a National Water Resources Plan to be developed in order to meet its objectives.

Further details on the Policy feeding into the NWRP is outlined in Chapter 1 of the -Framework Plan.

1.11 Stakeholder Engagement and Consultation on the RWRP

Public consultation was a key element in ensuring members of the public and all interested parties had the chance to be part of the development of the NWRP. As noted, the NWRP has been delivered in two distinct Phases, to assist public and stakeholder engagement by allowing the information to be presented in a more manageable format. (as outlined in Figure 1.1). The environmental authorities have been engaged on numerous occasions throughout the development of the RWRP-EM. These are stakeholders who have a key role in shaping or informing the development of the NWRP and RWRPs. Pre-consultation workshops for key statutory stakeholders facilitated by Jacobs and supported by relevant Irish Water personnel as appropriate were a key part of the consultation process on the draft RWRP-EM and associated environmental reports. Targeted consultation with such bodies ensures all available data relevant to the RWRP-EM was gathered as early as possible in the process. In addition, it helped to ensure that concerns and queries that may have been raised were addressed in a timely manner. A consultation roadmap for the RWRP-EM is outlined in Figure 1.4.

1.12 Baseline Data

Baseline data included in the RWRP-EM 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 are detailed in the relevant sections of the RWRP-EM. 2019 was selected as the base year to align with the planning period (2019-2025) of the NWRP.

The public water supply in Ireland is a live asset base and is subject to continuous change. Therefore, numerical figures presented within the RWRP-EM are the best estimates available at the time of publishing and may be subject to change. Data incorporated into the Supply Demand Balance (SDB) comes from Irish Water's internal databases as well as data and assumptions from the above sources which includes the impacts of climate change. Where assumptions or estimates have been included within the SDB Irish Water have taken a conservative approach. While Irish Water is confident that uncertainties associated with assumptions/limited data sets have been addressed appropriately, we recognise that further improvements can be gained by improving the data that is available to us for

modelling. Irish Water have a firm commitment to update the SDB as datasets are updated and more data becomes available to them (see Section 9 for further details).

In addition, we recognise that data relating to population forecasts, economic trends and tourism are based on information gathered before the Covid 19 pandemic. Therefore, trends and patterns may need to be revised as enough data and information is available to understand the long-term impact of the pandemic. Key considerations will be potential changes to demographics in relation to commercial and office settings, changes in hospitality and tourism impacts. Irish Water will incorporate any future changes as outlined in the monitoring and feedback process summarised in chapter 8 of the Framework Plan. One of the benefits of a more interconnected water supply network will be the flexibility to adapt to changing growth patterns.

RWRP Eastern & Midlands Public Consultation Roadmap

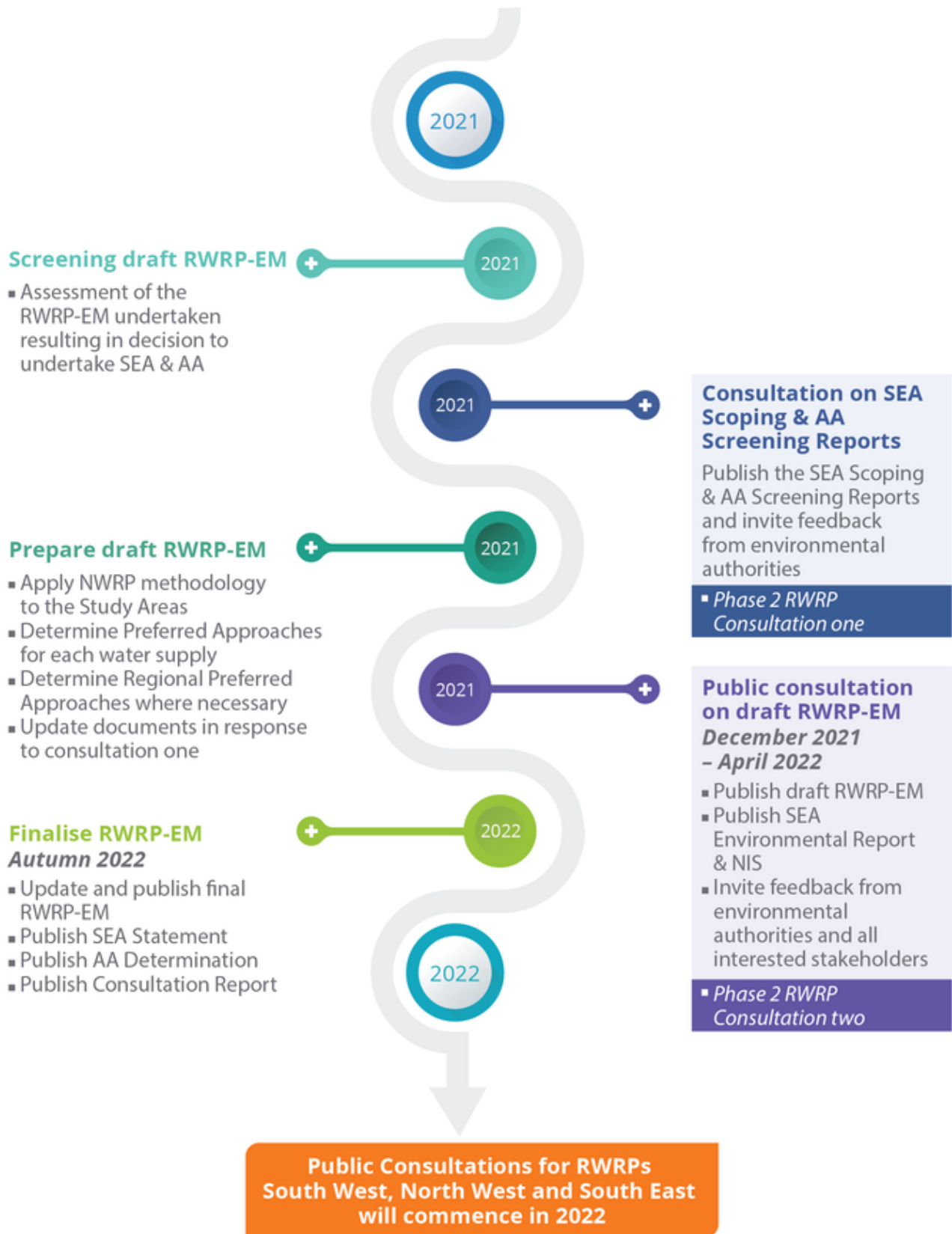


Figure 1.4 Consultation Roadmap for the RWRP-EM

1.13 Summary

In this section of the RWRP-EM we have:

- Introduced the Regional Plan as a key component of the NWRP.
- Outlined the context for the NWRP and its relationship to other Irish Water Strategies, government policy and legislation.
- Outlined specific challenges for Water Supply in Ireland.
- Provided an overview of the development of the NWRP, which is being undertaken across two distinct phases.
- Summarised the structure and focus of the RWRP-EM.
- Provided an overview of the consultation process which has taken place on the RWRP-EM.

1.14 References

1. Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment; transposed in Ireland under SI 435/2004 - European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004