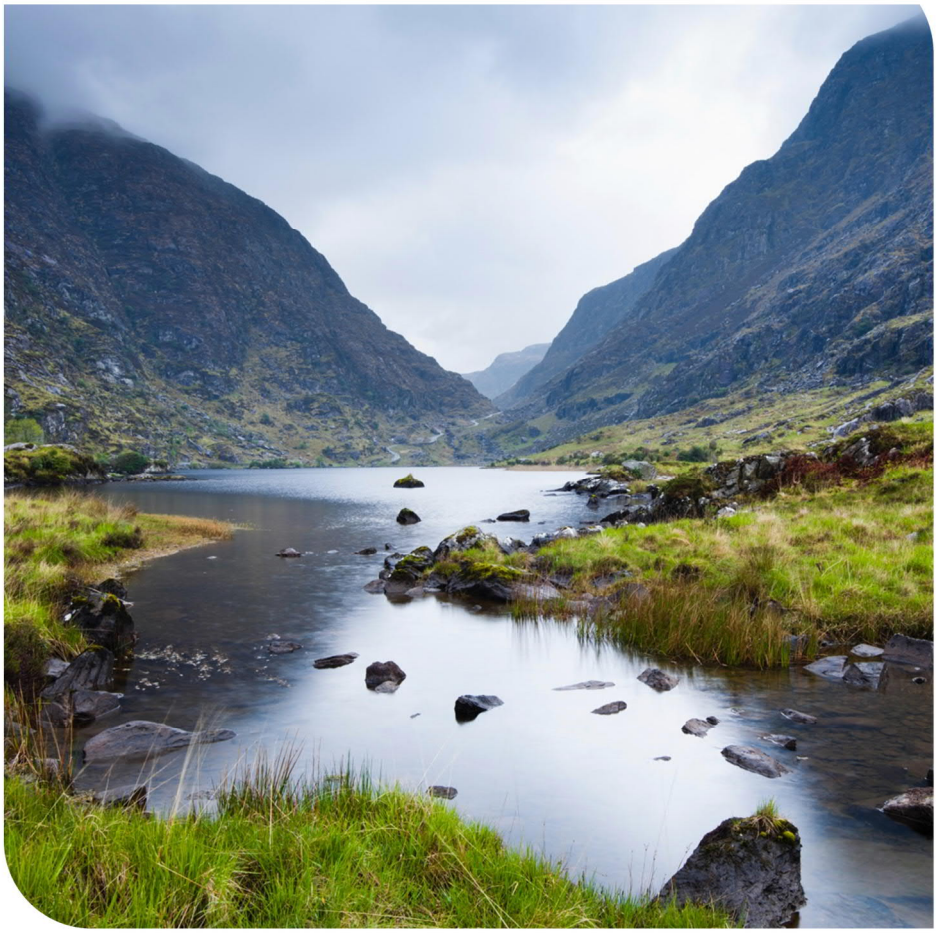
Winter 2020

UISCE ÉIREANN : IRISH WATER

National Water Resources Plan – Draft Framework Plan

Non-Technical Summary

Irish Water's 25 Year Plan for Our Water Assets



Tionscadal Éireann
Project Ireland
2040

Table of Contents

1. National Water Resources Plan

1.1 Introduction

This is the Non-Technical Summary (NTS) of the National Water Resources Plan (NWRP) - draft Framework Plan (or NWRP draft Framework Plan). The purpose of this document is to provide a summary of the content and to signpost key areas of the NWRP draft Framework Plan, in order to assist readers to navigate the plan and to engage in this statutory consultation.

Throughout the document you will see key signposts, which will point you to where you can find further information within the documents provided. It also gives some guidance to help readers understand the NWRP draft Framework Plan and sample questions for consideration when providing feedback as part of this consultation phase.

In order to support the reader, the key concepts used in Water Resource Planning are outlined in Section 1.8 of this document We have included a full glossary of terms in the draft Framework Plan.

The complete set of documents we have out as part of this consultation process are:

- The NWRP draft Framework Plan (and this NTS);
- Appendices A to N which include the supporting information for the draft Framework Plan;
- Case Study Area 5. An illustrative case study to help show how the methodology contained in the NWRP draft Framework Plan is applied (this case study is for illustrative purposes only and not part of the overall consultation);
- The Strategic Environmental Assessment Environmental (SEA) Report (which also has its own Non-Technical Summary); and
- The NWRP draft Framework Plan Natura Impact Statement (NIS).

1.2 Who we are?

On the 1st January 2014, through the Water Services Act (No. 1) 2013, 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. It is our responsibility 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 provides drinking water to approximately 87% of the population, delivering water through 65,000km of pipelines. The existing public water supply was built gradually over 150 years, often responding to local needs by developing nearby water supplies.

As a result, we have a fragmented supply system that consists of 749 individual Water Treatment Plants (WTPs) providing water into 539 areas known as Water Resource Zones[1] (WRZs). Due to historic underinvestment, the treatment facilities, pumps and watermain networks within these WRZs are in poor

[1] (WRZs are areas in which the need for water can only be met by water resources within the zone, unless new pipelines, pumping stations or treatment plants are built to link it with another WRZ.)

condition compared to standards in most European countries. The issues with our current supplies can result in intermittent Boil Water Notices to our customers and interruptions to supply. Population growth, aging of our water supply infrastructure and climate change will worsen this situation over time if nothing is done.

Over the past six years, Irish Water has made positive progress in improving water services to our customers, by developing policies and strategies for our water supplies and investing in water services.

Between January 2014 and December 2019 Irish Water invested €3.9 billion in public water and wastewater infrastructure, with a further projected spend of circa €5bn by 2024. Key outcomes from this investment include:

- Lifting of Boil Water Notices for approximately 80,000 customers since 2014
- Upgrading over 250 Water Treatment Plants through our National Disinfection Programme
- Replacing over 30,000 lead service pipes under our National Lead Programme
- Reducing leakage within our distribution networks from 49% to 42%

However, over 50% of our supplies are still not as secure or as reliable as we would like them to be. We will need to transform the public water supply over time to meet the challenges of historic underinvestment, aging of our infrastructure and underperformance.

1.3 What is a Water Resources Plan?

Irish Water is developing its first National Water Resources Plan (NWRP). The NWRP is the 25-year strategic plan for our water supplies that will allow us to move towards a safe, secure, reliable and sustainable drinking water supply for all our customers, whilst safeguarding the natural environment.

The preparation of the NWRP provides an opportunity to plan for delivery of water services at a national level. It allows us to review all our supplies in a consistent way and to develop a clear approach to resolve any issues that we find. This in turn will allow us to prioritise investment in water services over the short, medium and long term.

The NWRP will set out how we can balance the amount of drinking water we can supply with the demand for water that is needed by customers and communities. It also sets out how we take a risk-based approach to ensuring the quality, reliability and sustainability of our supplies. This means that instead of reacting to incidents that occur in the public water supply, such as contamination of supplies or water outages, we proactively work to identify the reasons for such incidents and to prevent them from happening in the first place.

Where we identify issues with our supplies, we assess potential Options to resolve these issues. This allows us to understand the extent of the problems across all our supplies nationally, from the smallest to the largest.

This public consultation concerns Phase 1 of the NWRP – the NWRP Framework Plan. Another consultation will concern Phase 2 – the Regional Water Resources Plans. More details about these phases are set out in Section 1.6 below.

1.4 Why do we need a plan?

The safety and security of our water supplies depend on many factors, including:

- The condition of our water supply infrastructure such as treatment plants and distribution networks;
- The ability of our supplies to perform in all weather conditions, including extreme weather events;
- Developing consistent standards and target levels of service across all our supplies;
- Developing an appropriate risk-based approach to managing our supplies;

- The protection of natural water bodies from which we abstract water, such as rivers, lakes and groundwater sources;
- Legislation on water quality and the natural environment; and
- Sufficient investment in and transformation of our supplies.

Our existing infrastructure is in relatively poor condition at present, and we also face future challenges to water supplies, including:

- **A growing population:** The country's population is expected to increase by c1.2 million people over the next 25 years, which will increase the demand for water services.
- **Changes in land use and emerging contaminants:** Changes in the way we use land and contamination of our water supplies from chemical and organic compounds has the potential to impact the effectiveness of our existing treatment plants and increase the difficulty and costs associated with providing safe drinking water.
- **Climate Change:** Ireland is well known for its rain, so it's easy to assume there's plenty of water available. However, despite Ireland's relatively high average rainfall, it is unevenly distributed throughout the country, with more in the west than the east. Changing weather patterns may reduce available supplies and increase the frequency of drought and extreme weather conditions, which in turn impact water availability.
- **An environment in need:** We need to ensure that during the transformation of our water services we strive to protect the health of rivers and wildlife by not polluting water sources or abstracting too much water.
- **Changing environmental legislation:** New legislation and regulations on water abstraction are being developed with the aim of protecting and improving the environment within Ireland's rivers, lakes and groundwater.
- **Changing Drinking Water Legislation:** The European Union's recast Drinking Water Regulations will require all water services authorities and utilities across Europe to take a risk-based approach to managing water supplies. This will involve proactive ways of managing risk and will require increased protection of our water sources, improved treatment and better water distribution networks. Irish Water is in the process of adopting the World Health Organisation's Drinking Water Safety Plan (DWSP) approach to managing risk. Although this approach is central to our NWRP, it will take time to complete DWSPs for all our supplies. Protecting our water supplies will require the engagement and cooperation of many stakeholders.
- **Improving Levels of Service (LoS):** A Level of Service is a way of measuring the performance of a water supply, measured in the number of unwanted supply interruptions in a specified period of years. At present, over half of our water supplies cannot provide a sufficient Level of Service to our customers. Many water treatment plants abstract water from vulnerable small water sources and our distribution networks operate as isolated systems which are not interconnected. This means that our customers experience interruptions to their supplies or are subjected to precautionary Boil Water Notices more frequently than they should. In order to prevent the LoS from getting worse as our infrastructure ages, we need to transform our water supplies and how we find solutions to solve these issues.

Where we can address these challenges as part of our plan, we will ensure that future infrastructure development is proportionate to identified need and that the investments we make are sustainable, reliable and resilient, with a focus on the community.

Through our plan we will strive to;

- Ensure that we can provide all our customers with consistent and improved water services. That wherever you are in the country, when you turn on your tap you will have a safe, secure, sustainable and reliable water supply.

- Ensure that Ireland's water supplies will have the capacity to support current and future growth and encourage investment. This will be critical for the sustained development of business and the economy in Ireland. It is envisaged that delivery of the plan will bring economic benefits to the whole country, supporting growth in the regions, by supporting improved standards of service, job creation and quality of life.
- Ensure that we will improve the security of our existing supplies and consider changes in land use and emerging pollutants that can end up in those water supplies. We will achieve this through sustainable methods such as catchment management and improvements to our treatment and distribution infrastructure.
- Better understand the changes in patterns of rainfall and temperature, and account for these when developing forecasts for water availability and demand patterns. Irish Water will improve the resilience of our water supplies, allowing us to manage climate change impacts.
- Improving the sustainability and resilience of our supplies through the development of secure water sources and improved connectivity of our networks.

The transformation of our water supplies will take time and investment over many decades. However, by understanding the current issues and future challenges across all of our supplies in a uniform way, we can prioritise delivery of solutions and ensure that we minimise, or where possible avoid any environmental impact in the delivery of our plan.

The NWRP also allows for full transparency and public participation in our plan for water services, through statutory and non-statutory public consultations, and stakeholder feedback.

For more information on the key challenges we face, see section 1.6 of the draft Framework Plan.

For more information on the consultation undertaken to date, this phase of consultation and future consultation phases, please see Section 9 and Appendix A of the draft Framework Plan.

For more information on this and future consultation opportunities see Section 5 below.

1.5 How our Plan is designed to incorporate Policy

The context for the NWRP is grounded in legislation and Government policy for water services, growth and economic development, protection of the environment and climate change adaptation.

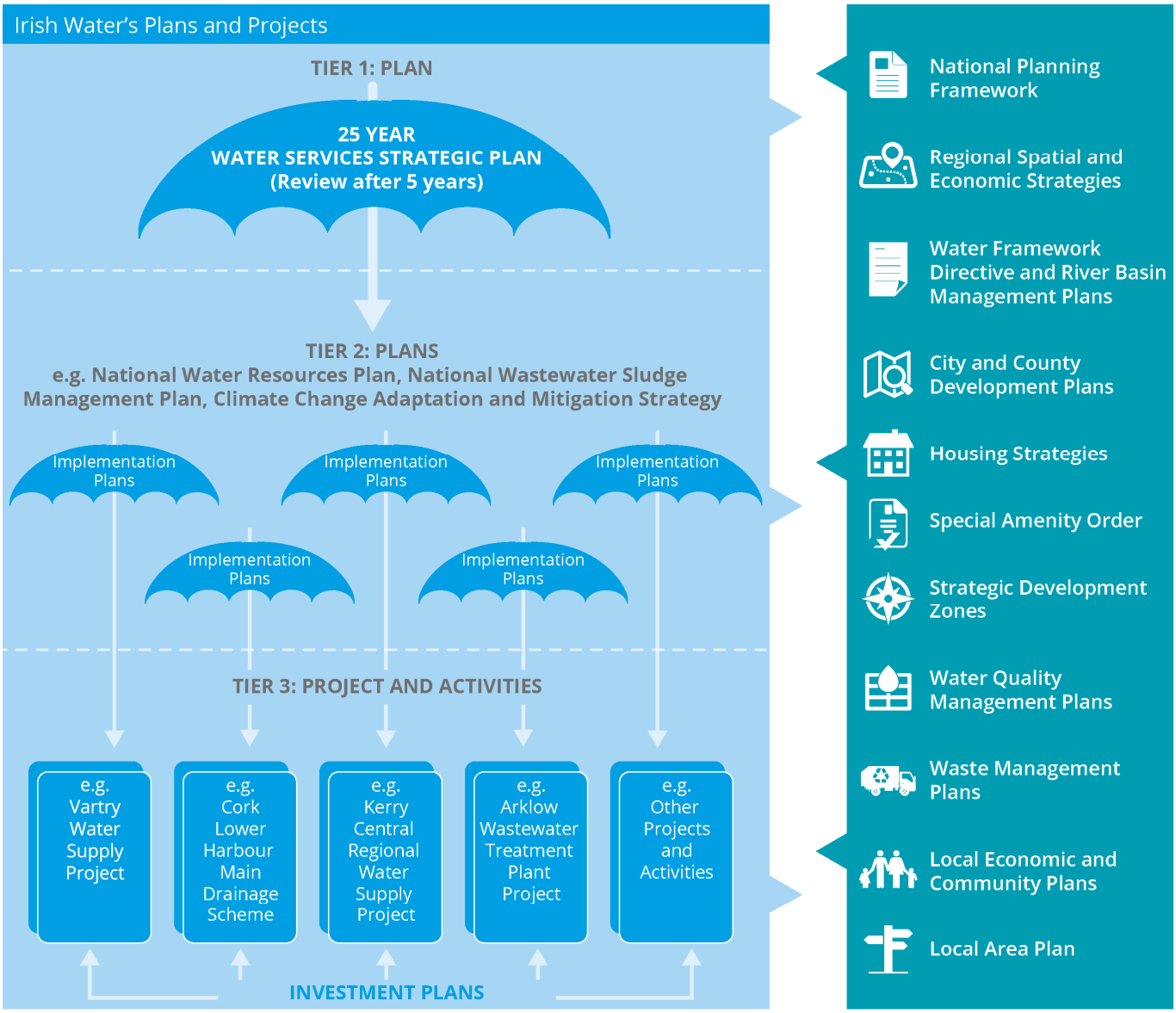
We operate under an economic regulatory regime which requires us to operate efficiently, having regard to whole life cost of water supplies. We must develop a strategic plan for our water supply infrastructure that provides a clear and transparent roadmap for how we operate, maintain, reinforce, develop and invest in our asset base aligned to national policy that ensures the best outcomes for water users.

The key policies feeding into our NWRP are:

- Water Services Policy Statement (WSPS);
- Project Ireland 2040 – National Planning Framework (NPF);
- Water Framework Directive (WFD) & River Basin Management Plan (RBMP) for Ireland;
- National Adaptation Plan (NAP) & Adaptation Plan for Water Quality and Water Services Infrastructure; and
- Recast Drinking Water Directive (DWD).

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. In Figure 1.1, we show the NWRP will be the means by which we directly align government policy with our strategic plans for water services.



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 1.1 How Irish Water incorporates Government Policy into Strategic Planning.

For further information on the context of the NWRP please see Section 1.8 of the draft Framework Plan.

Do you have any comments on the plans and policies we have considered in our draft Framework plan?

1.6 How we are delivering our Plan

Water Resource Plans are standard practice for utility companies in other jurisdictions, and guidelines for Water Resources Plans are often required by law to be set by environmental and economic regulators. As there are no Ireland specific guidelines at present, the starting point for our plan is based on tried and tested methodologies and guidelines commissioned by EU and applied across Europe, with modifications to account for specific issues with our water supplies.

As this is the first resources plan developed in the state, we have split our Plan into two Phases.

Phase 1 – The National Water Resources Plan – Framework Plan

The purpose of the Framework Plan is for Irish Water to establish an appropriate set of guidelines, key resources planning parameters and methodologies to develop Preferred Approaches (solutions to need), that are suitable for the public water supply in Ireland, considering:

- Dispersed population
- Examine how our water infrastructure is performing now (Baseline Performance)
- Large number of isolated Water Supplies
- Availability of data

As set out above, environmental and economic regulators are required by law to set the guidelines and standards for Water Resources Plans in other jurisidictions. In Ireland, there is no legislation governing Water Resources Plans. Irish Water has had to take on that role so that it can appropriately plan its activities.

The development of the Framework Plan allows us to ensure that the guidelines and standards that we will set for ourselves have been subject to stakeholder consultation, and are agreed in advance of the development of the Regional Water Resources Plans (RWRPs). The Framework Plan will also establish the Supply Demand Balance for each WRZ. Through the Regional Water Resources Plans we will then proceed to develop the approachs to transforming our water supplies over the next 25 years.

Phase 2 - Four Regional Water Resources Plans

Phase 2 of the National Water Resources Plan consists of four individual Regional Water Resources Plans covering:

- The North West Region (Group Area 1)
- The South West Region (Group Area 2)
- The South East Region (Group Area 3)
- The Eastern and Midlands Region (Group Area 4)

Each of these Regional Plans summarises the needs for each Water Resources Zone in terms of quality, quantity, reliability and sustainability and applies the methodology developed in the Framework Plan to each water supply. This allows for the development of plan-level Preferred Approaches (solutions to identified need) for each supply.

Each individual Regional Water Resource Plan will be subject to its own separate Strategic Environmental Assessment and Appropriate Assessment Process. Figure 1.2 summarises this approach.

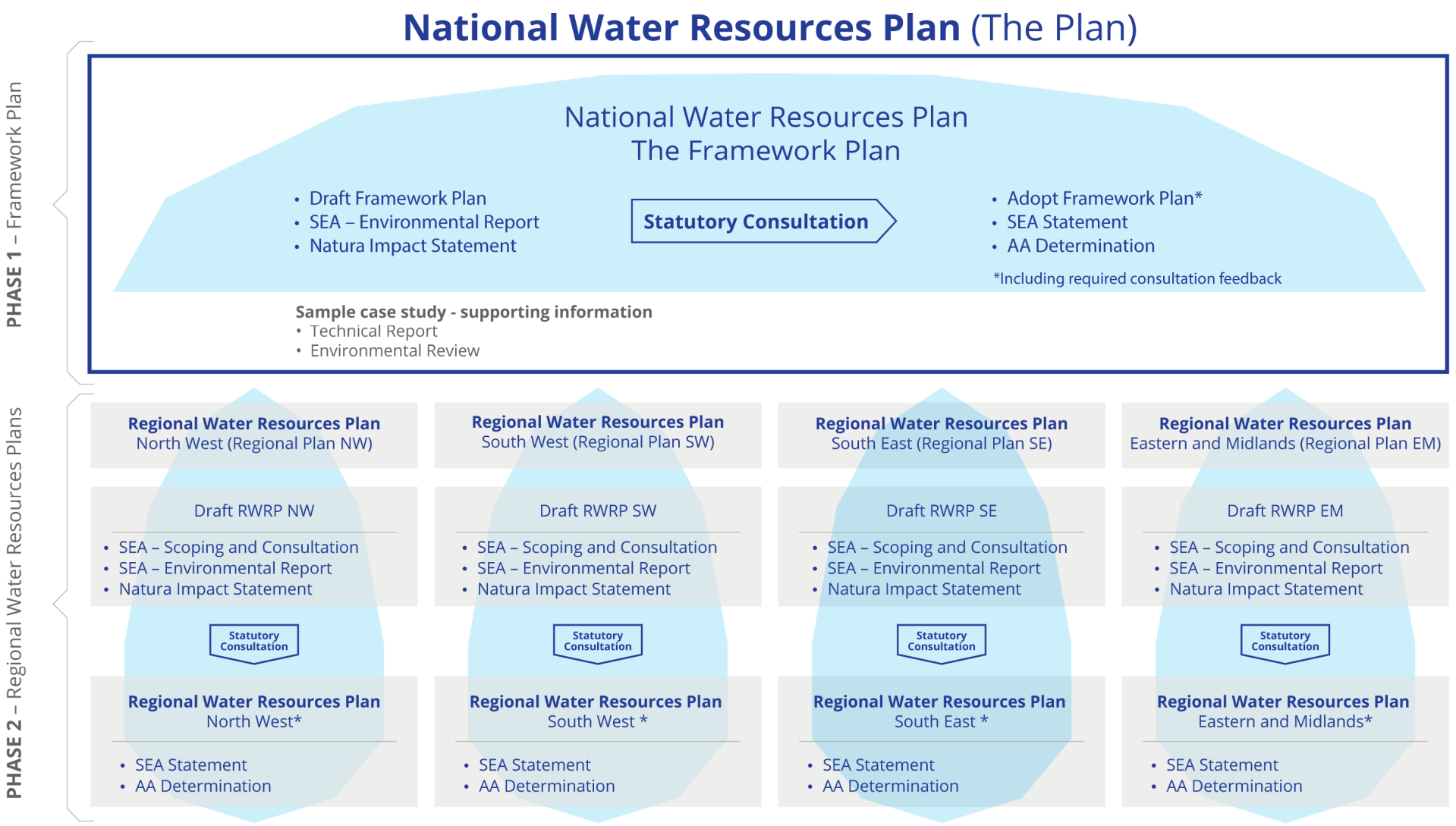


Figure 1.2 Component Parts of National Water Resources Plan

Further information on this can be found in section of 1.9 of the NWRP draft Framework Plan.

Do you have any comments on our approach to the development of the draft Framework Plan?

1.7 Key Concepts in Water Resources Planning

In England, Wales and Northern Ireland, water utilities and water service providers have a statutory obligation to produce Water Resources Plans every five years. In Scotland, where water supplies are publicly owned and operated, water resources planning is not a statutory requirement. However, it is recognised as best practice and plans are also developed and published every five years.

Water Resources Planning in the UK has evolved significantly since the first plans were developed in the 1990s. Comprehensive guidelines have been prepared by water utility regulators. A significant body of peer reviewed research has also been conducted by the UK Water Industry Research, of which Irish Water is a Member. This provides a solid platform of research and experience for Irish Water to begin to develop its first NWRP.

However, when considering guidelines from other jurisdictions, we must account for the stage of development of Irish Water and the public water supply in Ireland. Our asset base is in poor condition compared to other European countries, and our data and business intelligence systems have not yet matured sufficiently to facilitate the full integrated resources planning.

In addition, although our asset base and approach to supplying water is similar to the UK, the public water supply in Ireland includes a large number of small remote supplies due to our dispersed low-density population. As it is difficult to move small volumes of water over large distances without compromising water quality, finding solutions to address supply need in these remote areas can be difficult.

To account for these issues, we have had to adapt long established water resources planning methodologies to account for our particular starting point. This has included the use of surrogate data from other jurisdictions, until our data and intelligence systems have matured and become more established. We must also consider alternative ways to reinforce and provide resilience to small remote supplies, including careful operational incident response such as site-specific enhanced plant and network management, drought and critical period plans.

Whilst we will use established best practice methodologies to inform our decision-making approach, we will further develop approaches and improve processes as we continue on our journey of data gathering and improvement in data quality. The models developed under the NWRP draft Framework Plan for each region will be regularly updated with both input data and output results to support planning.

The key concepts that we have used to develop the draft Framework Plan are as follows:

- Water Resource Zones (WRZs)
- Weather Event Planning Scenarios
- Levels of Service (LoS)
- The Supply Demand Balance (SDB)

For further information key concepts see Chapter 2 of the draft Framework Plan, Appendix B - Planning Scenarios, Appendix C - Supply and Appendix D - Level of Service

Water Resource Zones: WRZs are the management units at which Water Resource Planning is undertaken. WRZs represent an area where the supply and demand are largely self-contained. Effectively, a water resource zone is a stand-alone water supply, with its own sources, water treatment plants, reservoirs and distribution networks, serving a population such as a small village, town, or city. The Public Water Supply in Ireland consists of 539 water resource zones.

Weather Event Planning Scenarios: As access to a good quality uninterrupted water supply is essential for public health, we must ensure that we can provide a continuous supply of water to all of our customers in all weather conditions.

However, certain weather events such as drought, storms and winter snowfall events can have a significant impact on our supplies.

Drought Events (extended periods of low rainfall): Drought events have a twofold impact on our supplies. They reduce the amount of water available in our water sources (rivers, lakes and streams), and increase the demand for water across our supplies.

Storm Events: Storm events can result in heavy rainfall, which results in run-off from land and drains. This impacts the raw water quality in our water sources and can increase the risk of contamination of our supplies. Storm events can also test the reliability of our supplies, with high winds disrupting power supply to our more remote and isolated sites.

Although Ireland has a temperate climate its proximity to the Atlantic Gulf Stream means that extreme weather conditions are not common. As global temperatures continue to rise, Ireland may experience more frequent extreme weather events, such as droughts and storms. Irish Water must plan for these events, developing a resilient water supply system to limit impacts of extreme events on their customers. Table 1 outlines the four Weather Event Planning Scenarios we consider in this draft Framework Plan.

Table 1.1 - Weather Event Planning Scenarios considered in the draft Framework Plan.

Scenario	Scenario Description and Weather Type	Feels like
NYAA	Normal Year Annual Average: The normal year scenario describes the demand and supply available to Irish Water in a typically average weather year	
DYAA	Dry Year Annual Average: The dry year scenario is when there is low rainfall but no constraints on demand. Demands are based on the average daily demands experienced over the year under “dry” year weather conditions. Demands would be higher than in normal years	
DYCP	Dry Year Critical Period: This occurs within the dry year, generally a few weeks during the summer where demands can be significantly above the annual average	
WCP	Winter Critical Period – The WCP generally occurs as a result of Freeze–Thaw incidents such as Storm Emma in 2018. High demands during these periods are driven by an increase in leaks from burst of pipes as a result of the very low temperatures	

For more information on Weather Event Planning Scenarios, see section 2 and Appendix B of the draft Framework Plan.

Level of Service (LoS)

This refers to the reliability of the supply that customers and communities can expect. It is usually expressed as the number of interruptions that can be expected within a certain time period. For example, 1 in 50 would mean that a customer could expect to experience a water outage or severe limitations to your water supply, on average, once in every 50 years.

The current Levels of Service in our supplies are low compared to most European countries. In addition, standards across our supplies varies significantly. Some customers and communities experience very low Levels of Service with frequent interruptions to supply, whilst others receive a more reasonable service with few interruptions.

Due this large variation in reliability across our supplies, in this NWRP draft Framework Plan we have set an initial target of a minimum 1 in 50 for the entire public network. As it will take many years and significant investment to improve our supplies, we have set this as an achievable target for the first iteration of our Plan, until our data and understanding of our water supplies improve.

By comparison in the UK, current best practice is to provide a 1 in 100-year LoS. These targets will be reviewed as part of each five-year update to our NWRP.

It is also important to note that a 1 in 50-year level of service relates to large scale interruptions to supply and when we achieve this LoS, our customers and communities may still experience some infrequent water restrictions to non-essential usage, such as Water Conservation Orders during drought periods. We will aim to ensure that frequency of non-essential use restrictions is limited to once in every ten years, within our first plan. Again, this is a baseline target, and we will review this as part of the five-year review cycle of the NWRP.

Due to the current conditions of the public water supply network, Irish Water also needs to consider the maintenance requirements, as the standard of our networks and our treated water storage can also cause interruptions to water supply to customers and communities.

For more information on Level of Service (LoS) see Section 2.3.3 of the Draft Framework Plan, Appendix D Level of Service. For information on the impact of drought on the LoS, see Appendix E Drought Planning.

Do you have any comments on the Level of Service we plan to achieve within the draft Framework Plan and how we have considered the potential impact of drought?

Supply Demand Balance

The Supply Demand Balance (SDB) is the difference between the water Irish Water has available in our supplies compared to the demand for water under each Weather Event Planning Scenario.

In terms of supply availability, the SDB considers water availability in the natural environment, current abstractions, water treatment capacity, process losses, trunk main constraints, and required allowances to ensure continuity of supply during planned and unplanned events.

In terms of demand, the SDB considers the volumes of water consumed by domestic and non-domestic customers, how this varies over the course of a year and uncertainties in our estimates. As the water our customers receive travels through extensive watermain networks before it reaches their taps, our demand estimates also consider the efficiency of our networks and losses through the distribution networks. The components of the SDB are shown in Figure 1.3.

A deficit in the SDB means that the demand for water is higher than the available supply. In the event of an identified deficit, Irish Water considers what actions could be taken in response, for example, reduce future demand, increase supply or a combination of both.

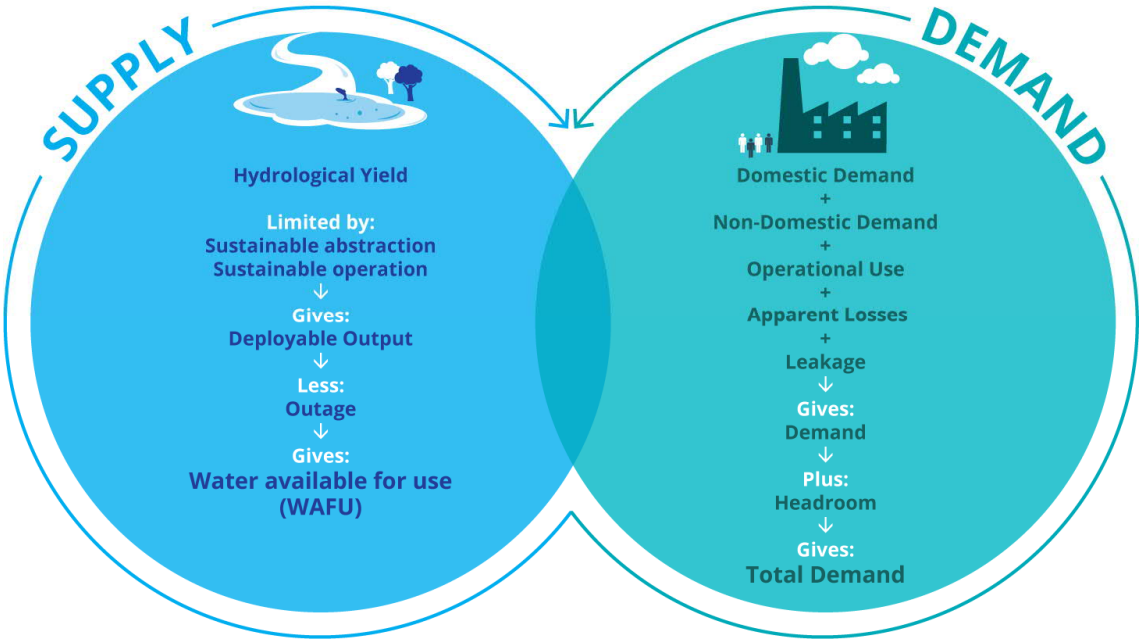


Figure 1.3 - Components of the Supply and Demand Balance

For more information on how we calculate the Supply and Demand Balance (the water we have and the water we need), see Sections 3, 4 and 5 of the draft Framework Plan We also include a full assessment of our supplies in Appendix C and summary of the Supply and Demand information for each of our 539 Water Resource Zones in Appendix L of the NWRP draft Framework Plan.

Do you have any suggestions that you would like us to consider as part of how we assess supply/demand balance?

1.8 How do we consider the environment?

Protecting the natural environment is at the heart of the NWRP. We consider the potential impacts of our plan throughout all stages of its development and strive to avoid impacts where possible or provide mitigation measures where we cannot.

The NWRP is subject to Strategic Environmental Assessment (SEA) as outlined in the European Union (EU) SEA Directive (2001/42/EC) and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No 435/2004)and Appropriate Assessment (AA) (under the EU Habitats Directive and European Communities (Birds and Natural Habitats) Regulations 2011 (SI No 477/2011). SEA and AA are being carried out in parallel with the development of the NWRP. This ensures that we evaluate environmental impacts likely to arise from the plan, both positive and negative, and outline the appropriate prevention and alleviation measures.

SEA screening was conducted in August 2017 by Irish Water and we determined that SEA of the NWRP was required in accordance with Directive 2001/42/EC.

The development of the NWRP commenced in 2017 and involved:

- Identifying best practices that could be applied to water resource planning in Ireland;

- Identifying all issues related to water supply including, quality, quantity, leakage, reliability and sustainability;
- Developing a robust methodology to identify and prioritise programmes of work to address the identified need; and
- Early stakeholder engagement and consultation with key stakeholders.

Irish Water developed:

- A SEA Scoping Report outlining the scope of the NWRP Methodology and SEA;
- The baseline environment for the plan; and
- A proposed framework of SEA objectives to inform the strategic assessment.

The first round of public consultation to inform the approach for the SEA and AA processes, took place from 9 November to 22 December 2017. We requested feedback on the SEA Scoping Report and invited comments and suggestions to be considered at this stage.

For further information on how we assess sustainability in our methodology, please see Section 8.2.4 of the NWRP draft Framework Plan. The set of documents for consultation includes the SEA Environmental Report and NIS which consider how environmental impacts are addressed in the methodology.

Do you have any comments on our Strategic Environmental Assessment (SEA) Environmental Report and Natura Impact Statement (NIS) and how we have considered the environment in the NWRP draft Framework Plan?

1.9 What is in the draft Framework Plan?

Phase 1 includes the development of the NWRP draft Framework Plan, including the following:

- The proposed methodology Irish Water will use to in our NWRP to identify need across the public water supply, including:
    - How we will assess the current available water supply and forecast changes to this over the next 25 years;
    - How we will assess current demand for water and forecast how this may change over the next 25 years;
    - How we will develop forecasts of supply compared to demand to identify quantity needs across our supplies and develop for each WRZ;
    - How Irish Water will identify quality and reliability needs through the Barrier Assessment for all of our supplies; and
    - How Irish Water will assess potential environmental sustainability issues with our current supplies;
- The proposed methodology Irish Water will use in our NWRP to assess Options to resolve need identified in the Supply-Demand Balance and the Barrier Assessment through investment and improved operation of our supplies, including:
    - A transparent step by step approach to identify Feasible Options to address the identified needs (the types of Options such as new Water Treatment Plants or improvements to our networks that we could use to resolve problems with our supplies);
    - How we will assess the Feasible Options to develop a range of policy driven approaches (how we identify the best Options that align us to our strategic objectives); and

- How we will develop a Preferred Approach for each supply or combination of supplies (how we identify the most likely best solution).

- An assessment of Need across the 539 individual water supplies in terms of Quality, Quantity, Reliability and Sustainability.

Do you have any comments on the steps outlined above?

In order to illustrate how the NWRP methodology is applied to our water supplies, we have prepared a Case Study from a sample study area to accompany the Phase 1 consultation documentation. This has been provided in order to demonstrate the implementation of the methodology being consulted on. As the area within the Case Study is a component part of the Regional Water Resources Plan – Eastern and Midlands Area (Group Area 4), it is not being consulted upon as part of Phase 1 and is for illustrative purposes only. Stakeholders can refer to it to support their submissions and observations on the methodology but will not be able to influence the options for the Case Study area until a later stage of the NWRP process.

After the NWRP Framework Plan has been revised in light of this publication and adopted, the options in the Case Study will be reviewed in light of the final methodology and published for consultation with all of the other options in the draft Eastern and Midlands Area Regional Water Resources Plan. Stakeholders can at that stage make submissions and observations on the options. Water will consider those submissions and observations and, where appropriate, will revise the Eastern and Midlands Area Regional Water Resources Plan to take account of them before adopting it.

2. Water Resources Planning- How do we know what we need?

Our water resources planning process involves identifying current need and across our supplies over the 25 years of our plan, and then developing solutions this need. The process is summarised in Figure 2.1.

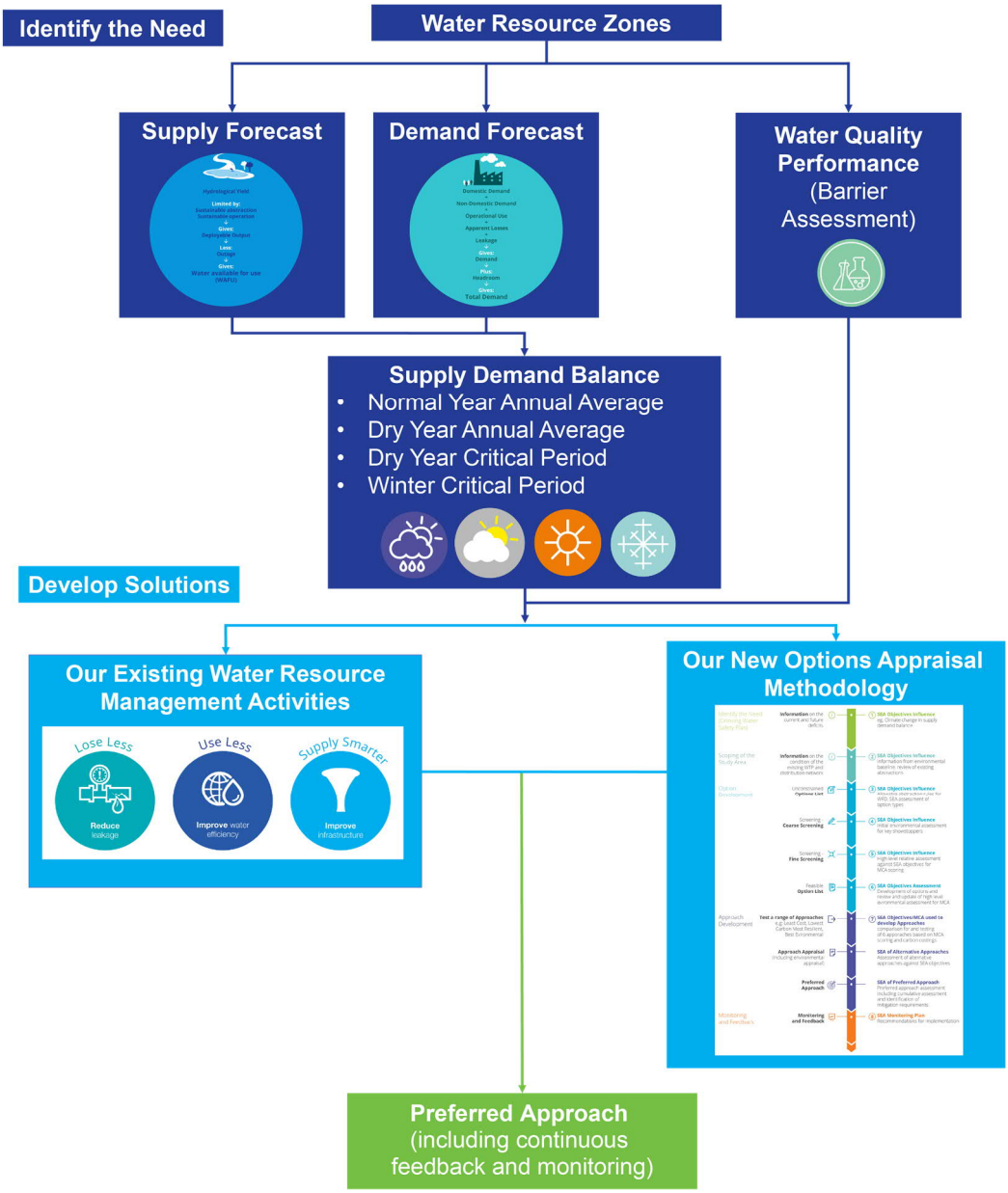


Figure 2.1 - Our NWRP Options Process

2.1 Supplies – How we estimate water availability now and into the future

The first step in the process is to develop an estimate of water availability in our existing supplies and to forecast how this might change over time.

To plan for future water availability, Irish Water must determine the amount of water that we can currently supply to our customers and then forecast how this might change over the next 25 years. The amount of water we can currently supply depends on a number of factors including:

- The quantity of “raw water” we can safely abstract from the natural environment, when considering the Level of Service, we strive to achieve;

- The amount of this water we can convert to drinking water using our existing treatment facilities; and
- How much of this treated drinking water we can send into our distribution systems via our bulk distribution networks (trunk mains).

By considering all of these factors we can identify the constraints in our water supply systems. In some cases, we may have an abundance of natural raw water; however, we are constrained by the capacity of our current treatment facilities. Conversely, in other areas, we may have appropriate treatment capacity, but our existing natural supplies are at risk, particularly during drought conditions.

Our treatment processes can also come under pressure when raw water quality deteriorates following storm events. In order to ensure that water customers receive safe and secure supplies, we must also consider reliability and risk to supply in our assessments. This is because no water sources, treatment facilities and bulk distribution networks can operate at 100% capacity all of the time.

When we account for availability, capacity in production, capacity in transfer mains, reliability and risk within our existing supplies, we call the amount of water we have available to supply our customers Water Available for Use (WAFU). Figure 2.2 shows the WAFU calculation process.

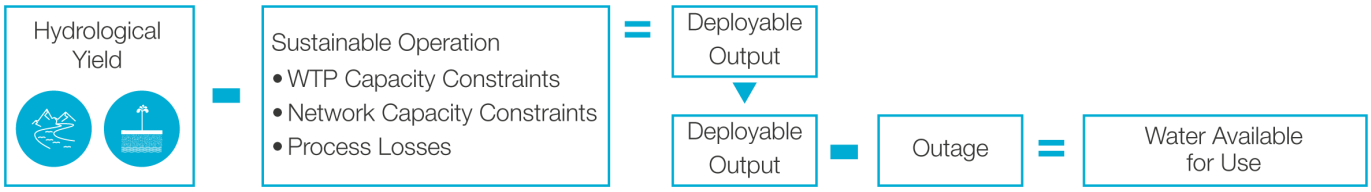


Figure 2.2 - How we calculate Hydrological Yield

We also must understand how these supplies might perform over time and how the current water availability might reduce due to climate change or environmental restrictions on the amount of water we can abstract from the natural environment.

It is envisaged that climate change will impact on our supplies and that even when considering additional capacity being delivered over the next three years that supply will reduce over time.

For more information on how we understand our public water supplies, please see Section 3 of the draft Framework Plan.

We welcome your feedback on how we calculate the supply of water availability within our draft Framework Plan.

2.2 Demand – How we estimate demand for water now and into the future

To plan for future water demand, Irish Water must understand the current demand for water, and then forecast how this might change over the next 25 years (Figure 4.1).The term ‘demand’ refers to the amount of water we need to input into our distribution networks at water treatment plants to ensure that we can meet our customer’s water requirements in homes and businesses at the boundaries of our networks.

Our water distribution networks are extensive, for example the distribution network for Clonakilty in County Cork contains approximately 450 kilometres of water mains (approximately the distance between Cork and Letterkenny). As our water supplies travel through large networks before they reach our customers, the network performance or leakage needs to be considered in our demand calculations. Figure 2.3 shows the components that make up demand. The components are assessed separately as

they each involve different patterns of use and are subject to different drivers for change over the next 25 years.

Figure 2.3 - How we calculate demand

We also must understand how the demand for water will change over time, as our population increases, our economy grows, and we reduce leakage across our networks.

For more information on how each component parts of demand are calculated, see Section 4 of the draft Framework Plan.

We welcome your feedback on how we calculate the demand for water.

2.3 Water Quality and Reliability

We must consider water quality and reliability as well as quantity when assessing the water need and allow for improvements to our water supplies in the short and medium term. Therefore, asset performance and reliability needs must be considered within the NWRP Framework Plan.

Irish Water has a statutory obligation to produce safe drinking water that complies with regulatory standards set out in the European Union (Drinking Water) Regulations 2014 (the Drinking Water Regulations), and this is overseen by the Environmental Protection Agency. Irish Water has put in place the necessary structures to support sampling, testing and reporting from source to tap and puts in place the necessary actions should a risk to the safety of a supply be identified from our monitoring programmes.

In general, our supplies show good compliance with the Regulations, achieving between 99.1 and 99.9% compliance with the Drinking Water Regulations in 2019. Most compliance trends have improved over time from 2014 to 2019.

We are now going further to ensure that public water supplies are also secure and reliable. This requires us to identify and appropriately manage risk to our water supplies. Risk is the possibility of an adverse event occurring (e.g. *Cryptosporidium* contamination of the source, failure of a dosing pump) that could impact on our ability to provide safe water. Risk cannot be eliminated, but by quantifying, categorising, and managing risk, we are taking a proactive approach to ensuring that our supplies are safe, secure, sustainable and reliable. Our risk management approach is based on the World Health Organisation's Drinking Water Safety Plan (DWSP).

The DWSP approach involves assessing a comprehensive range of hazardous events that could potentially occur in a drinking water supply from source to tap. These assessments are then used to inform the required operational, maintenance, or investments that will manage / mitigate the likelihood of these hazardous events from occurring. These hazard assessments from the DWSPs are converted into 'identified need' within the draft Framework Plan.

As part of the NWRP draft Framework Plan we have assessed the capability of our current water supply assets (water treatments plants and water supply network), to deal with existing and future potential risks. This is called a Barrier Assessment.

A Barrier Assessment allows us to understand the likely quality and reliability need and assess the additional improvements and infrastructure required that will allow us to meet the standards that we have set for ourselves.

It should be noted that a “quality need” identified through the Barrier Assessment is not an indicator that Irish Water has failed or is failing to comply with the Drinking Water Regulations. Rather, it is an assessment of the need to invest in areas of our asset base (human and structural), to ensure that we can address potential risks or emerging risks to our water supplies.

For more information on Quality, Barrier Assessments and how we comply with Water Quality Risk and monitor risk to water quality, please see section 5 of the draft NWRP Framework Plan.

We also include a full assessment of our supplies in Appendix C and a full explanation of Irish Water’s approach to achieving Safe and Secure Drinking Water in Appendix J.

2.4 What are the key issues – summary of overall need and national challenges

In chapters 1 to 9 of the draft Framework Plan that we look at key challenges and opportunities facing the public water supply in terms of quantity, quality, sustainability and reliability (or Level of Service).

When we assess our existing supplies against these performance drivers using a 1 in 50 Level of Service, we have identified issues across many of our existing Water Resource Zones.

- Over 50% of our Water Resource Zones do not meet a 1 in 50-year Level of Service, during normal conditions, due to source or infrastructure issues
- 66% of supplies do not meet this Level of Service during drought conditions
- Over 50% of our supplies may not comply with guideline standards that will be used in the forthcoming Abstraction regulations. The purpose of these Regulations will be to ensure that Ireland's regulation of abstractions complies with the Water Framework Directive.

Although the majority of the water we supply is compliant with the standards set out in the Drinking Water Regulations, many of our treatment facilities do not have the correct processes in place to adhere to the risk reduction standards we have set for ourselves within the NWRP.

For more information on the summary of the needs of our supplies nationally, see Section 6 of the draft Framework Plan.

2.5 Developing Solutions - Irish Water’s Approach

Irish Water faces significant challenges in terms of the quantity, quality, reliability and sustainability of the public supplies across the country.

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

- Irish Water cannot continue to abstract more and more water from sensitive sources to meet ever increasing demand. Where feasible they must cater for increased growth requirements in the first

instance by driving an aggressive leakage reduction programme combined with strong promotion of water conservation measures in homes and businesses; and

- Irish Water fully adhere to the World Health Organisation (WHO) principle that the starting point for good clean drinking water is source protection, rather than relying on ever more complex and costly treatment for sources that are deteriorating due to inadequate protection. Irish Water will achieve this by developing and implementing Water Safety Plans across all their supplies.

In developing the appropriate solutions, we can take in a sustainable manner to address the needs identified, Irish Water have classified the range of available solutions into three pillars; lose less, use less and supply smarter.

For more information on the potential solutions identified to address the supply and demand imbalances, see Section 1.5.1 of the draft Framework Plan.

- **Lose Less** – reducing water lost through leakage and improving the efficiency of Irish Water's distribution networks;
- **Use Less** – reducing water use through efficiency measures; and
- **Supply Smarter** – improving the quality, resilience and security of Irish Water supply through infrastructure improvements, operational improvements and development of new sustainable sources of Water.

Figure 2.4 – Three Pillars to address the key challenges to the draft Framework Plan

Together these pillars will enable Irish Water to optimise our capital and operational solutions to achieve the best outcomes and react to emerging issues.

For more information on the three pillars, see Section 7 of the draft Framework Plan.

2.6 Developing Solutions – New Options Assessment Methodology

As part of the Needs Assessment, we have identified that a significant number of water resource zones, do not meet the draft standards that we have set for ourselves in the NWRP draft Framework Plan. Although we manage to supply fully compliant water to the majority of our customers in normal conditions, our supplies in some areas are vulnerable, and do not provide an appropriate level of service, particularly during adverse weather conditions such as storms and dry periods. These issues manifest as interruption to supply and precautionary Boil Water Notices to customers.

The purpose of the Options Assessment methodology is to allow us to understand the issues and develop solutions to improve all of our water supplies, allowing us to move towards a safe, secure,

reliable and sustainable public water supply over time. Our proposed Options Assessment methodology is based around the following five criteria:

Resilience: ensuring that Options have enough capacity to allow for minimal disruption to our customers when operational issues occur, and that our supplies are adaptable to change over time and provide an acceptable Level of Service;

Deliverability and Flexibility: It is important that the Options we choose to address a need can be implemented or constructed safely within required timeframes and are flexible to allow for future adaptation as water availability or demand changes. Deliverability considers the practicality of building or implementing an Option or Options and flexibility considers how adaptable an option will be to future changes in demand and the environment.

Progressibility: Within resource planning, it is important that the Options proposed to address the needs identified, satisfy strategic, national and local planning objectives. This criterion helps us to compare all of the Options against each other to understand the differences, and how progressible the Options may be. The purpose is not to eliminate Options, but to give maximum consideration to the potential challenges that might be met, should they be progressed. This also allows us to take account of delivery timeframes and complex planning.

Sustainability (Environmental & Social impacts): The sustainability criteria are based on the objectives defined for the Strategic Environmental Assessment (SEA). Appropriate Assessment (AA) is also integrated into the environmental assessment process. Aligning with the SEA allows the environmental assessment to be central to the Options Assessment and eventual selection of the Preferred Approaches. This ensures that Options which have a likely unacceptable environmental and social impact. In particular, options are only taken forward after coarse screening if it can be determined that they will not adversely affect any European site or site designated under national law for environmental conservation.

Cost: When comparing the costs of different Options at a Plan level, it is important that all costs are considered. Costs include the total investment costs and environmental and social impact costs. During the Options Assessment process, no option will be discounted on the basis of cost alone at the initial screening stages. This ensures that due consideration is given to all viable options under the selection criteria. This means the least cost Option will not necessarily be chosen.

2.7 Our Process for Assessing Options and developing a preferred approach

Within the NWRP we aim to consider all of the possible Options to resolve the needs we have associated with each of our supplies. This allows us to ensure that we select the best approaches to transform our supplies. It allows us to find sustainable sources, to understand how we might use combinations of sources or connectivity between our supplies that would improve resilience. The process also allows us to fully incorporate environmental considerations as at the earliest stages of our plan.

The proposed Options Assessment Methodology we have developed as part of the NWRP draft Framework Plan involves:

- Identifying all possible solutions for each area or Water Resource Zone (WRZ) using the Options Assessment;
- Screening out Options that are not feasible;
- Developing outline designs for the Feasible Options; and
- Through multi criteria analysis (MCA) and cost analysis (This cost analysis includes environmental, social and carbon costings),

- Developing Feasible Options and Preferred Approaches for each area or WRZ in the short, medium and long term.

The methodology is an eight-step process, as set out in Figure 2.5.

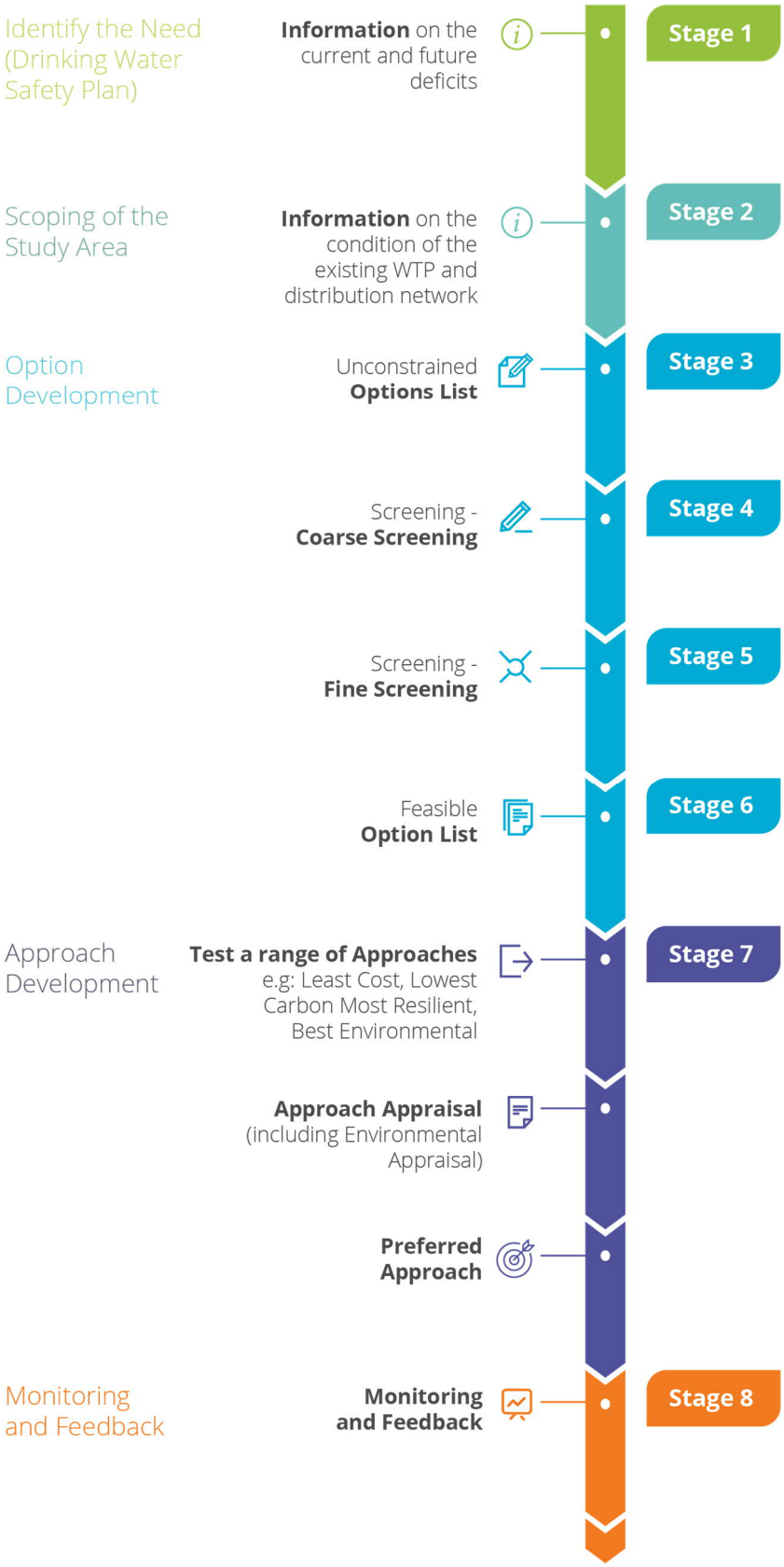


Figure 2.5 - Options Assessment Methodology

Stage 1: Identify the Need

The process starts with the 'need identification' (quantity, quality, reliability and sustainability) for each of the WRZs, as described in Chapters 3 to 6 of the draft Framework Plan The needs for each WRZ will form part of the NWRP Framework Plan. The identification of all these needs provides context for the Options Assessment Methodology and informs the scale of the solutions required. The Options, approaches and Preferred Approach to address those needs will form part of the Regional Water Resources Plans.

Stage 2: Scoping of the Study Area

In order to manage the roll-out of the Options Assessment Methodology and delivery of Phase 2 of the

NWRP (the Regional Water Resources Plans), Irish Water has split the public water supply into the four regional groupings, as shown in Figure 2.6. These regional groups are based on:

- Irish Water's Regional Management Areas;
- Local Authority Boundaries;
- WRZ Boundaries; and
- Water Framework Directive (WFD) Catchment Boundaries.

These regional groups are further subdivided into clusters of WRZs termed Study Areas. Grouping

WRZ into Study Areas means that:

- Options can be developed that address multiple problematic supplies, which prompts us to consider regional solutions to resolve local needs in more than one supply; and
- Broader strategic decisions can be made.

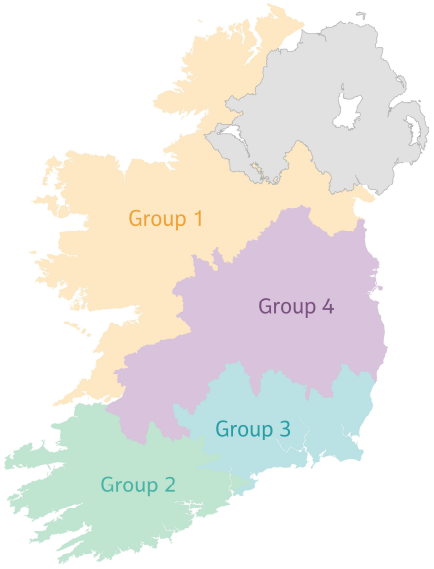


Figure 2.6 – Group Areas

The Study Area boundaries are based on WFD catchments and WRZ locations and types (urban and rural).

For more information on WRZs and Study Areas, see Section 8 of the draft Framework Plan.

Data is compiled for each individual Study Area including but not limited to:

- The Water Quality that can be supplied;
- The Water Quantity that can be supplied;
- The Sustainability of Irish Water sources or infrastructure; and
- The Reliability of Irish Water assets.

A detailed programme of consultation and workshops is then conducted with our Local Authorities partners and stakeholders, to ensure a full and comprehensive understanding of need across the given Study Area, including essential maintenance, refurbishment work or issues with the distribution networks.

At this stage Irish Water also considers the potential environmental impact of our existing abstractions. This allows us to identify sites where we know there are sustainability challenges. This will also allow us to identify situations where we may need to reduce or remove their existing abstractions within the coming years.

Stage 3: Unconstrained Options

The Supply Demand Balance (SDB) and the Barrier Assessment (BA) inform the type and scale of Options that Irish Water must consider.

For each Study Area a specialist team including groundwater professionals (hydrogeologists), surface water professionals (hydrologists) and environmental specialists conduct a desktop assessment of all potential Options or combinations of Options, including rivers, lakes and groundwater sources. Our engineering teams assess upgrades to existing and new infrastructure requirements, and our environmental scientists review the potential for catchment measures. We also conduct Unconstrained Options workshops with our Local Authority partners to ensure that we have incorporated local knowledge on existing and potential supplies.

Whilst options are considered individually, an approach to meet identified need may be provided from a combination of these options. For example, rather than seeking to meet a deficit of 10 million litres per day by increasing abstraction from an existing source by that amount, the Preferred Approach (solution) could achieve the same result increasing an abstraction from an existing source by only 6 million litres per day, but reducing leakage by 3 million litres per day and reducing consumption through demand management measures by 1 million litres per day (aligned with the Three Pillar approach).

An “Unconstrained Options” list is developed. This list contains all of the possible solutions that have been identified, which either fully or partly resolve a water supply deficit, regardless of cost, environmental or social constraints, which are considered at later stages.

The Unconstrained Options list can include solutions at a WRZ, Study Area, Regional Group Area or even National level.

Stage 4: Coarse Screening

Our next stage is the Coarse Screening assessment, where we review the Unconstrained Options list and start to rule out any unfeasible options. By non-viable Options we mean those that have a potentially fundamental impact on the environment that we are unlikely to be able to mitigate. An extreme example of an option that would be environmentally non-viable would be one that would result in the loss of a protected species.

The Coarse Screening assessment uses the criteria listed in Table 2.1, with Options scored against a red, amber or green traffic light system.

Any Option which scores **red** against a question has a fundamental issue that would be difficult to mitigate and is discounted on the basis that it is unlikely to ever be delivered.

An **amber** rating across any of the Coarse Screening criteria does not rule out an Option. However, it indicates that the Option may require mitigation measures and additional environmental assessments should the option be progressed. We can then include outline costs and time for these studies in the outline costs and programmes for such options.

Therefore, the coarse screening allows us to better understand the scope of Options at a plan level, and factor this into plan level costing.

After Coarse Screening, the remaining Options are known as “Constrained Options”, which are carried forward to Stage 5: Fine Screening.

Table 2.1 – Coarse Screening Questions

Criteria	Unconstrained Option Assessment questions		Assessment Score
Resilience	**Q1**	Does the option address the supply-demand problem?	**Yes** / **Maybe** / **No**
Deliverability and Flexibility	**Q2**	Is the option technically feasible?	**Yes** / **Maybe/ No**
	Q3	Can the risks and uncertainties associated with the option be mitigated to avoid failure of the option?	**Yes** / **Maybe / No**
Sustainability (Environmental and Social impacts)	**Q4**	Can the impacts on known high level environmental constraints including at internationally designated sites be avoided? If not is mitigation likely to be possible?	**Yes** / **Maybe / No**

Do you have any comments on our Coarse Screening process?

Stage 5: Fine Screening

Fine Screening involves a more detailed desktop assessment of the Constrained Options, known as a Multi Criteria Assessment (MCA).

A MCA process allows a combination of issues to be considered together and allows us to assess the Options relative to each other. For example, although two Options might be viable, one option might be more cost effective and environmentally acceptable, than the other. The MCA methodology has been tailored to provide a structured and transparent approach to inform the decision-making process and to be as objective as possible in the scoring process. It also allows both monetary and non-monetary objectives to influence decisions.

In total 33 assessment criteria are applied to each option at the Fine Screening stage, using the best publicly available information from specified sources. The MCA scoring is uniformly scored across all options, by a technical panel of specialists, including Civil Engineers (feasibility, progressability criteria), Ecologists and Environmental Scientists (environmental and ecology criteria), Hydrologists and Hydrogeologists (environmental and resilience criteria).

The environmental and ecology questions we use as part of this assessment are directly aligned with the Strategic Environmental Assessment Appropriate Assessment of our plan. This ensures that environmental considerations are at the centre of our Options Assessments Methodology and decision-making process.

Where there are a very large number of Options covering a range of option types, Fine Screening can be used to identify poorly performing Options. These can be removed or placed on a reserve list for future consideration should they be required. Options that have passed through the constrained Options stage might also be removed at Fine Screening if a more detailed assessment shows them to be unsuitable. Any options which are discounted at this stage are recorded on the Rejected Options Register.

Better performing options are taken forward into Stage 6 for further consideration.

Do you have any comments on our Fine Screening process?

Stage 6: Feasible Options List – Option Costing

The output of the Fine Screening stage is called the Feasible Options List. A plan-level outline design and estimated cost is developed for each Option on this list. “Whole life” construction and operation costs are based on Irish Water’s Project Costing Template (PCT) to ensure alignment with Irish Water’s investment planning processes.

Further information on how we develop our Option Costings can be found in Section 8 of the draft Framework Plan.

The purpose of the plan-level costing is to allow us to compare the Feasible Options relative to each other. We do not include detailed project level costing for “in-flight projects”. This is to ensure that the NWRP Framework Plan methodology is uniformly applied in the development of the Preferred Approach. We will apply the Preferred Approach methodology to all WRZs with in-flight projects in them, unless there are exceptional circumstances for not doing so.

It should be noted that assessments at this stage are desk-based plan level assessments. Environmental impacts, Appropriate Assessment and costing of projects are further reviewed at project level. Alternatives must also be considered as part of any statutory environmental impact assessment process in the usual way.

We welcome your feedback on how we develop our Feasible Option List.

Stage 7: Approach Development

After Fine Screening the remaining Feasible Options are assessed against a specified number of approaches. An approach is a way of aligning the Feasible Options with the objectives and policies set out in the draft Framework Plan.

For example, there are many ways of driving to a given location (Feasible Options). If you were to put a destination into the SatNav your phone and hit search, it will give you a shortlist of number of different ways to get to the destination (approaches), such as:

- A route that takes you along a motorway. This might be the quickest way, but that route may involve a number of tolls and therefore a higher cost.
- A route that takes you along a national road, which may cost less, but take more time to reach the destination; or
- A route along a regional road, that looks to be more direct, but where you might run the risk of getting stuck behind a tractor, or slow-moving traffic.

If you urgently needed to get to a destination, your Preferred Approach would be the Motorway Route.

The six approaches in our draft Framework Plan are:

1. Least NPV Cost – ensures we are aligned with the Public Spending Code;
2. Best Appropriate Assessment – lowest impact on designated sites, ensures we have always have an option that has no potential to adversely affect the integrity of any European site;
3. Quickest Delivery – can be designed, constructed and delivered in the shortest time, ensures we can address critical risk if there is an urgent need;
4. Best SEA Environmental – lowest potential impact on the environment;
5. Most Resilient – best performance over time, ensures we are aligned with the DHPLG Sectoral Adaptation Plan; and

6. Lowest Carbon – Lowest carbon cost to build and operate, ensures we have a benchmark for our policy of reducing carbon emissions over time.

For each WRZ we then identify which combination of the Feasible Options appears at this stage to be the best approach or "Preferred Approach".

The Approach Development process is conducted through workshops with technical specialists, including Engineers, Ecologists and Environmental Scientists who assess the Feasible Options in the 6 approach categories, relative to each other, using the process set out in Figure 2.7.

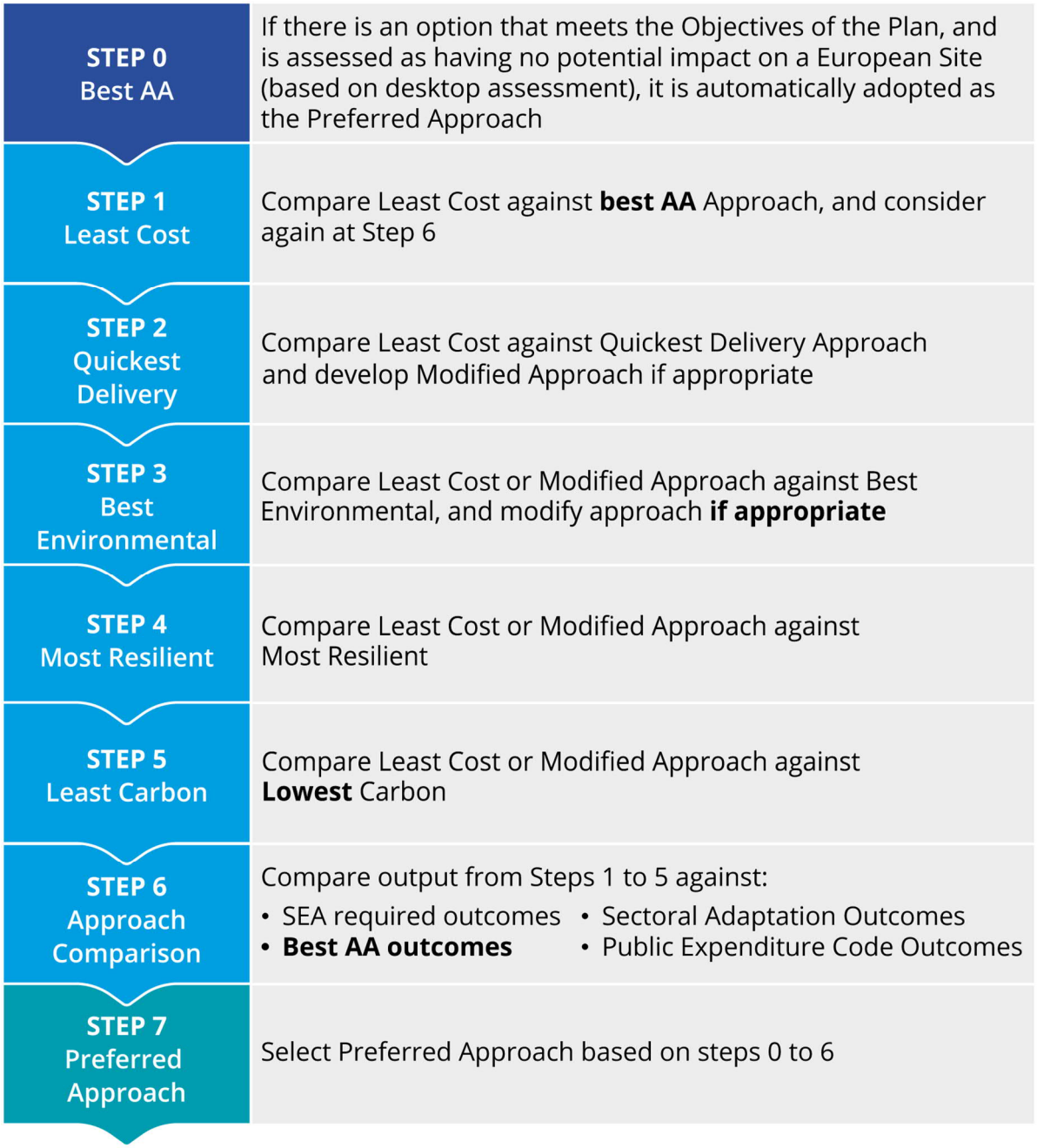


Figure 2.7 – Approach Development Process

It is important to note that drivers for each WRZ are unique to the supplies and the area within which they are located. Therefore, it is essential that we look at each approach through this lens.

The output at the end of this process is the Preferred Approach for the WRZ. When we have identified the Preferred Approach for each individual WRZ level, we then identify any option combinations that could address the needs of more than one WRZ at one. (For example, an option might be to decommission five isolated water treatment serving individual WRZs and replace them with a single

larger treatment plant that serves all five supplies). We repeat steps 0 to 7 for those grouped options. This allows us to understand the full range of improved options for our existing supplies.

When we have assessed the Preferred Approached at a Study Area level, we identify any option combinations that could address the needs of more than one Study Area. We repeat steps 0 to 7 for those grouped options for the entire area of a Regional Water Resource Plan. This again allows us to understand whether there are any options at a Regional Level that could provide a better all-round outcome than those at area WRZ or Study Area level. The SEA and NIS assessment of the Preferred Approaches and their potential cumulative/in combination effects will inform the Study Area and Regional level decision-making process. SEA mitigation and monitoring plans will also be taken into account through the Regional Plan implementation.

The purpose of the reviewing the Preferred Approach across the three spatial scales, allows us to develop a strategic plan for all of our supplies.

Further information on how we develop solutions using our Options Assessment methodology can be found in Section 8 of the draft Framework Plan. A case study of how this may be applied as part of the Regional Water Resources Plans has been provided for illustrative purposes also.

Do you have any feedback on our development assessment approach?

Interim Solutions

Based on the scale of need across all Irish Water's WRZs, it is likely to take numerous investment cycles, before they can address all issues across existing water supplies. Therefore, smaller, localised interventions may be required on an interim basis to secure priority need in existing supplies until the

Preferred Approach can be delivered. For example, although the Preferred Approach for a small WRZ may be to decommission it and connect it to a neighbouring supply, there might be a boil water notice that must be addressed in far less time than it would take to deliver the Preferred Approach. In that case, we might have to provide a temporary upgrade at the existing supply in order to take it off a boil water notice for the duration it takes us to deliver the Preferred Approach.

Any projects considered within the interim approach will only be progressed on the basis of urgent or priority need such as a critical water quality risk and supply reliability issues. The interim measures would usually involve temporary containerised treatment processes that can be moved from site to site as required.

The NWRP does not consider funding availability or statutory consent on any interim solution. If an interim option is deemed necessary, funding approval in addition to all applicable consents would need to be obtained for it to progress.

Stage 8: Monitoring and Feedback into Plan

The public water supply in Ireland is a live asset base and is subject to continuous change. New assets such as water treatment plants, storage reservoirs, trunk and distribution mains are continuously developed and upgraded. Knowledge and data relating to our assets is improving and operational procedures are being standardised.

External factors can also influence the performance of Irish Water's water supplies, including:

- Changes in legislation and policy that impact the way Irish Water operate their asset base or their interface with the natural environment;

- Reductions in water supply availability due to climate disruption and environmental impacts;
- Growth in demand for water for domestic and non-domestic use; and
- Funding availability and requirements to improve LoS to water users.

All of these factors influence need in terms of Quality, Quantity, Sustainability and Reliability, therefore the SDB and Barrier Scores in the NWRP represent a snapshot in time of live metrics.

Similarly, the development of Preferred Approaches as part of the forthcoming Regional Water Resources Plans is influenced by evolving scientific data, understanding, and policy change in relation to the natural environment.

Irish Water must be able to continuously adapt to these changes, which may be minor or material in nature. Therefore, the NWRP draft Framework Plan commits to undertaking continuous monitoring and ensuring that there is a feedback mechanism within the NWRP Framework Plan and Regional Water Resources Plans. The Regional Water Resources Plans will be subject to formal review every five years. However, the continuous monitoring process will ensure that material amendments are assessed for significant impacts on the environment.

The monitoring and feedback process involves:

- Identifying the internal and external factors that may impact the NWRP, mapping the areas of the NWRP that they will influence;
- Updating needs identification by updating the SDB, Drinking Water Safety Plans and Barrier Scores to reflect these changes;
- Assessing the impact of these changes on the NWRP Framework Plan and the Regional Water Resources Plans; and
- Updating the Regional Water Resources Plans where the changes are deemed to be material.

In certain circumstances, monitoring and feedback will identify the need for a variation in the NWRP - Framework Plan or a Regional Water Resources Plan. Where a variation is required, Irish Water will screen the change for SEA and AA in accordance with its legal obligations and where required it will carry out an SEA and/or AA before adopting the variation.

The NWRP draft Framework Plan sets out Irish Water's methodology to find high level solutions to address short, medium and long-term issues. Do you have any feedback on our Options Assessment Methodology or the conclusions of the Supply Demand Balance and Barrier Assessment? We want to hear what you think about these issues and how we look at Options and assess them throughout the process.

3 We need your feedback

Public consultation is a key element in ensuring stakeholders and members of the public have an opportunity to contribute to the development of the NWRP.

This is your opportunity to feed into the process of how we identify the issues in and determine what the opportunities are for the water supply in your area. We are also seeking your feedback on how we will develop Options to address any problems identified.

It is essential for us to find solutions for water supplies in your region for the short, medium and long term.

This is your opportunity to shape this process by feeding into the way we find solutions before applying them to your area.

Once we have developed a robust NWRP Framework Plan this will then allow us to go on and find solutions for the Regional Water Resources Plan for your area.

Although we are not seeking feedback on the options, approaches and Preferred Approaches for addressing those problems at this stage, your feedback will influence the methodology and the SDB and Barrier Assessment we use to identify those options, approaches and Preferred Approaches. You will have the opportunity to give feedback on those issues when we carry out an SEA and AA of the Regional Water Resources Plans and put them out to public consultation. We all have a role to play and now is an opportunity for you to influence the NWRP.

3.1 Public Consultation

A ten-week statutory public consultation seeking feedback on the NWRP draft Framework Plan and associated SEA Environmental Report and Natura Impact Statement (NIS) will run for 10 weeks from Tuesday 8 December 2020.

Irish Water is inviting feedback on the NWRP draft Framework Plan, the SEA Environmental Report and the Natura Impact Statement (NIS). As part of this stage of the public consultation, and for illustrative purposes, we are including a Case Study that will help people understand how the methodology is applied to an area. This is not a full or final plan for this area, as the Regional Water Resources Plans are still to be developed, following the adoption of the NWRP draft Framework Plan in 2021. Accordingly, we are not seeking feedback on the options, approaches or Preferred Approaches identified in the Case Study, but you can refer to Case Study to support any submissions or observations you want to make on the NWRP draft Framework Plan.

In order to help you in making a submission we are inviting feedback on the following consultation questions:

1. Do you have any suggestions that you would like Irish Water to consider as part of the draft Framework Plan?
2. Do you have any suggestions that you would like Irish Water to consider as part of how we have assessed supply/demand balance, water quality, quantity and resilience in the NWRP draft Framework Plan?
3. The NWRP draft Framework Plan sets out Irish Water's methodology to find high level solutions to address short, medium and long-term issues. Do you have any comments on our methodology?

4. Do you have any comments on the Strategic Environmental Assessment (SEA) Environmental Report and associated Natura Impact Statement (NIS) which accompanies the NWRP draft Framework Plan?
5. The project roadmap has been updated. Do you have any comments or feedback on this?
6. How would you like Irish Water to communicate with you as the NWRP progresses?

We have also put consultation points throughout the NTS to help gather feedback and signposting to help the reader find more detailed information from the various documents provided.

If you would like to make a submission, please send it by email or post by Tuesday 16 February 2021.

Email: nwrp@water.ie

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

Freephone: 1800 46 36 76

Submissions will not be individually responded to but will be summarised in a Consultation Report which will be published on www.water.ie/nwrp

All submissions made on the NWRP draft Framework Plan and associated environmental reports will be reviewed and relevant feedback incorporated and documented in the final NWRP Framework Plan and associated SEA Statement and AA determination. How feedback has influenced the final NWRP Framework Plan will also be outlined. Submissions from individuals will be reported anonymously and feedback from organisations will be attributed to them.

View our updated Privacy Notice at www.water.ie/privacy-notice which is in line with the General Data Protection Regulation (GDPR) effective from 25 May 2018.

3.2 Previous Consultation

The first stage of formal consultation was to inform the development of the SEA and NIS (the environmental reports that accompany the NWRP). Consultation One commenced on Thursday 9 November 2017, ran for six weeks with the publication of the SEA Scoping Report (see Figure 1-1), and concluded on Friday 22 December 2017. Members of the public interested parties and environmental authorities were invited to contribute to the development of the NWRP, as part of the SEA and AA process, through public consultation.

In particular, feedback was sought on the SEA Scoping Report and we invited comments and suggestions for consideration when developing the NWRP.

In order to generate awareness of and participation in the consultation, a range of communications tools were used to promote the consultation, including:

- NWRP webpage on the Irish Water website in English and Irish;
- Consultation information leaflet available in English and Irish;
- NWRP infographic;
- Press release to national and local media;
- Newspaper advert;
- Social media; and
- Correspondence and briefings to:
    - Elected representatives;
    - Local authorities;
    - Interested parties; and
    - Media.

There were 17 written submissions received during this consultation, 15 from organisations and two from members of the public. An overview of the feedback in the submissions received is presented in the NWRP Consultation one report. All feedback received was reviewed by the NWRP team, and relevant feedback informed the development of this NWRP. An overview of how feedback has influenced the NWRP is detailed in the accompanying SEA Environmental Report. We are committed to continuously engaging with stakeholders and encourage feedback throughout the development of the NWRP.

As part of the feedback received from different organisations during this first phase of engagement, highlighted the ask for pre-engagement prior to the second phase of consultation to help stakeholders have further opportunities to feed into the process.

For more information on the first consultation phase see Appendix A: Consultation of the NWRP draft Framework and Section 4: Consultation and Appendix C: Summary of Responses, of the SEA Scoping of the Strategic Environment Assessment

3.3 Next steps

Following on from the public consultation on the NWRP draft Framework Plan, there is still some important work to be done before the NWRP Framework Plan is finalised.

The submissions and observations received from public consultation will be taken into consideration, and the NWRP Framework Plan updated.

The final Framework Plan will then be produced, accompanied by a Strategic Environmental Assessment Statement and an Appropriate Assessment Determination.

The SEA statement will outline the issues raised and demonstrate the amendments that were made to the Framework Plan as a result of the consultation. The SEA Statement will outline how environmental considerations have been integrated into the NWRP and how consultation influenced the development of the Framework Plan.

The AA determination will confirm that the NWRP Framework Plan will not, individually or in combination with other plans and projects, have an adverse effect on the integrity of any European site. The Irish Water cannot adopt the NWRP Framework Plan unless and until it achieves this standard.

The final NWRP Framework Plan will be adopted in early 2021, alongside the SEA Statement and AA Determination.

Phase 2 comprises four Regional Water Resources Plans each of which will be subject to Strategic Environmental Assessment and Appropriate Assessment. Each of the four regions will also have their own public consultation phases. These public consultations will take place throughout 2021 (Figure 3.1).

We welcome any feedback or suggestions on how to improve our consultation process.

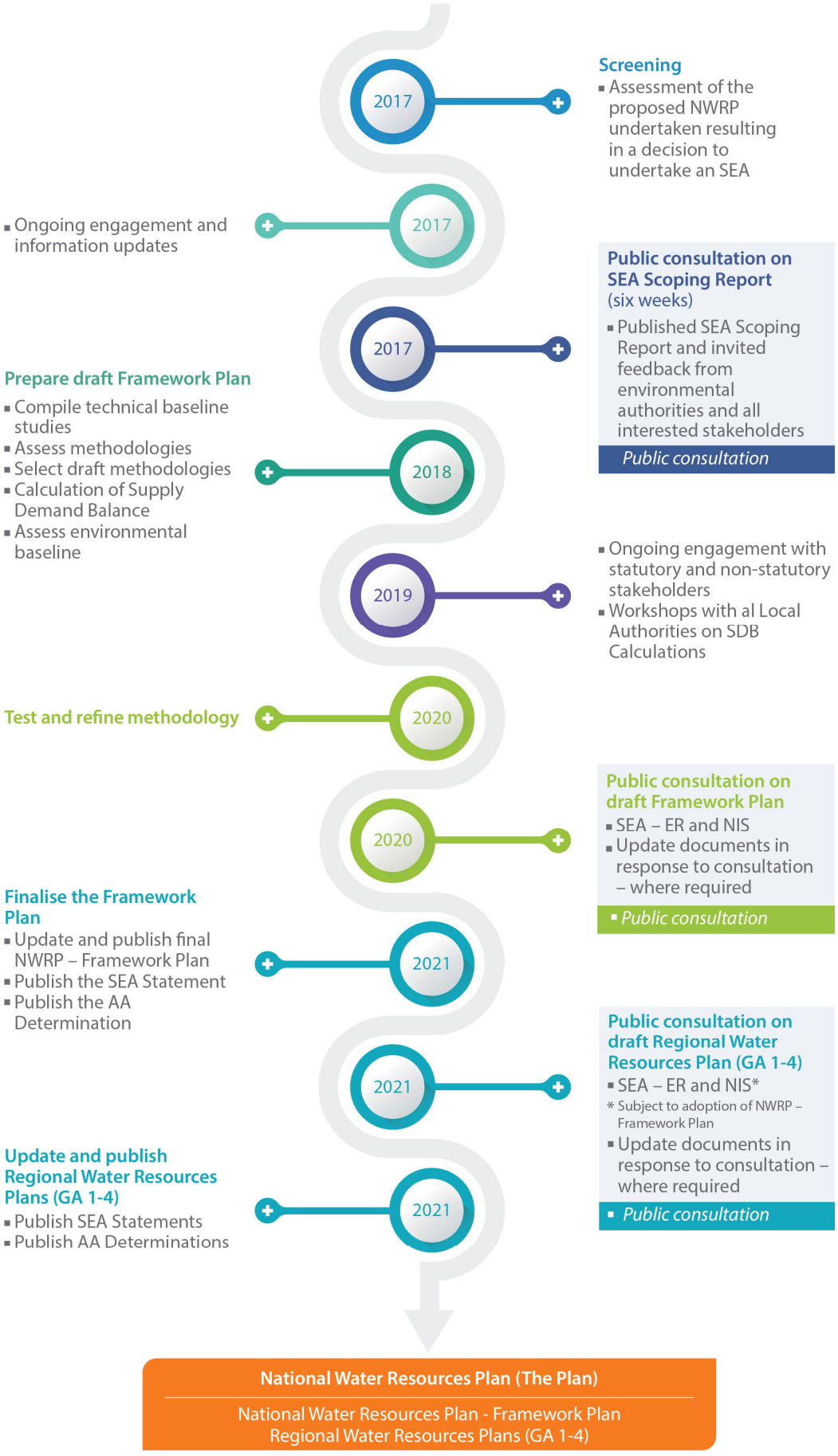


Figure 3.1 - Consultation Roadmap