Uisce Éireann
Irish Water

Report: January 2026

Draft Cork Wastewater Strategy
(Cork Metropolitan Area)

Non Technical Summary

Tionscadal Éireann
Project Ireland
2040

6 CLEAN WATER AND SANITATION

Safeguarding our water for our future

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GLOSSARY

Glossary	
Agglomeration	An area where the population, combined or not with economic activities, is sufficiently concentrated for urban wastewater to be collected and conducted to one or more urban wastewater treatment plants or to one or more final discharge points.
Appropriate Assessment (AA)	An assessment of the potential adverse effects of a plan or project (in combination with other plans or projects) on Special Areas of Conservation (SAC) and Special Protection Areas (SPAs). These sites are protected by National and European Law
Asset	Infrastructure (e.g. buildings, treatment plants) and equipment (e.g. pumps, screens, treatment units, disinfection systems and control panels) controlled and operated by Uisce Éireann to deliver water and wastewater services. We divide these into Below Ground Assets such as pipework and valves and Above Ground Assets such as treatment plants.
Biodiversity	The variety of all living things.
Emission Limit Value (ELV)	The maximum allowable level of a pollutant in a wastewater discharge
Network	The interconnection of pipes and pumping stations used for the collection of wastewater.
Organic Design Capacity	The highest daily organic load at which the Treatment Plant can effectively treat the incoming wastewater
Organic Load	Refers to the biological pollutants in wastewater
Population Equivalent (PE)	A way to measure the amount of wastewater that needs to be treated, including both domestic sewage and industrial wastewater. One PE is the amount of wastewater produced by one person in a day.
Storm Water Overflow (SWO)	A controlled discharge point in the wastewater network that releases excess rainwater and untreated sewage to prevent sewer flooding during rainfall events.
Wastewater Treatment Plant Discharge	Treated effluent from a wastewater treatment plant which is returned to the water environment. This is usually from a pipe and outflow structure into a river or the sea.

LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations	
CMA	Cork Metropolitan Area
CWS	Cork Wastewater Strategy
ELV	Emission Limit Value
MCA	Multi Criteria Assessment
NIS	Natura Impact Statement
PE	Population Equivalent
PS	Pumping Station
SEA	Strategic Environmental Assessment
SuDS	Sustainable Drainage Systems
UÉ	Uisce Éireann
UWWTD	Urban Wastewater Treatment Directive
WwPS	Wastewater Pumping Station
WwTP	Wastewater Treatment Plant

1. A Vision for Sustainable Wastewater Management and Strategic Long Term Outcomes

1.1. The Need for a Wastewater Strategy for the Cork Metropolitan Area

Uisce Éireann, as Ireland's national public water services provider, supplies 1.7 billion litres of drinking water to our customers every day and collects and treats more than 1.2 billion litres of wastewater before we safely return it to the environment. Providing safe, secure and sustainable water services is vital for our society, supporting public health, supporting the delivery of housing and jobs and protecting our environment and precious water resources.

The Draft Cork Wastewater Strategy (CWS) is a comprehensive plan developed by Uisce Éireann to address the wastewater needs of the Cork Metropolitan Area, up to 2080. The study area contains over 25 towns and villages in addition to the urban centre of Cork City and comprises of 26 wastewater treatment plants.

The draft strategy aims to:

- Protect public health
- Safeguard the environment
- Facilitate population and economic growth in the region

The Cork Metropolitan Area, shown in Figure 1-1 below, covers 820km² with a population of approximately 310,000. The National Planning Framework 2040 anticipates significant growth in the area, with projections indicating a 50-60% population increase by 2040. It is important for the wastewater infrastructure of the Cork Metropolitan Area to develop in line with these forecasts.

Figure 1-1: Cork Wastewater Strategy Study Area

The principal aim of the Cork Wastewater Strategy is to assess wastewater treatment and network infrastructure in the Cork Metropolitan Area to identify what future investment will be required in the medium and long term.

The strategy identifies sustainable wastewater management and treatment strategies and proposes Recommended Approaches to implement for the planning horizons of 2030, 2055 and 2080. The Strategy identifies a timeline for initiation of projects by considering the individual catchment needs and any interactions with other agglomerations within the CMA. When a project is designated to be initiated by 2055, for example, it does not necessarily mean the project will commence in that year. Instead, it indicates that the necessary steps to initiate the project will be undertaken in the years between 2030 – 2055. Each recommendation set out in this Strategy will be considered in detail and prioritised based on need, feasibility, environmental requirements and available funding. Its inclusion in the Strategy does not guarantee that it will be progressed or delivered. Rather, it indicates that the recommendation merits further examination as part of Uisce Éireann's future planning and investment cycles, where decisions on implementation will be made in line with organisational priorities and regulatory obligations.

To achieve these goals, the CWS is developed on a clear, step-by-step process that follows national and international best practices. It includes:

- Assessing current wastewater infrastructure to identify areas requiring improvement.
- Projecting future wastewater needs for the Cork Metropolitan Area for 2030, 2055, and 2080.

- Modelling the wastewater network to understand how the wastewater system performs.
- Identifying and assessing potential solutions to develop a series of recommendations.
- Assessing potential environmental impacts of the recommendations and ensuring their compliance to statutory obligations.

The development of the strategy is informed by engagement from local authorities, environmental experts, and the public. The result is a long-term strategy to guide sustainable wastewater investment in the Cork Metropolitan Area through to 2080. The strategy roadmap for the development of the CWS is summarised in Figure 1-2 below.

Figure 1-2: CWS Roadmap

1.2. What's Included in the Cork Wastewater Strategy?

The Draft Cork Wastewater Strategy assesses the existing wastewater treatment and network infrastructure in the Cork Metropolitan Area—which currently comprises 26 wastewater treatment plants, 193 pumping stations, 225 storm water overflows, and 1,300 km of wastewater network— to determine the investments needed to support sustainable growth, climate resilience, and environmental protection through to 2080. It evaluates and assesses a number of feasible solutions in order to identify a **Recommended Approach** to improve treatment capacity, drainage, and network performance, with projects prioritised across three planning horizons: short-term (2030), medium-term (2055), and long-term (2080).

The strategy is subject to Strategic Environmental Assessment (SEA) in accordance with the European Union (EU) SEA Directive (2001/42/EC). Strategic Environmental Assessment is a process that integrates environmental considerations into the preparation and adoption of plans and programmes, with a view to promoting sustainable development. It identifies and evaluates likely significant effects of the CWS and identifies potential mitigation measures, in accordance with the requirements of the EU SEA Directive and associated Irish regulations. Furthermore, the CWS is subject to an Appropriate Assessment (under the EU Habitats Directive). A Natura Impact Statement forms part of the strategy and assesses whether the strategy could significantly affect Natura 2000 sites, protected habitats and species under the EU Habitats and Birds Directives.

Further studies and assessments are carried out for the development of the CWS including hydraulic modelling and wastewater network assessment, evaluation of existing wastewater treatment plants, flow and load projections, network modelling, water quality modelling, and optioneering and solutions development. These components work together to deliver the CWS.

The CWS sets the context for future project implementation, with more detailed assessments to be conducted at the project level as specific initiatives move forward. While the CWS provides a framework for wastewater management in the Cork Metropolitan Area, it is important to note its limitations and scope. The strategy does not identify specific local interventions, and detailed design work has not been conducted for recommended solutions. Additionally, a full economic analysis for each initiative will be required.

2. Strategic Challenges

The Cork Wastewater Strategy (CWS) highlights the challenges for wastewater collection and treatment within the Cork Metropolitan Area and explains how UÉ plan to address them.

2.1. Fostering Economic Growth

Cork is expected to grow significantly in the coming decades. The CWS uses population and development forecasts to plan wastewater services that can handle this growth. It includes a safety margin to account for uncertainties and aligns with national and regional plans to ensure infrastructure keeps pace with housing, commercial, and industrial expansion.

Our projections show that the Cork Metropolitan Area will produce wastewater from an equivalent of 443,900 people in 2030 rising to 819,300 people by 2080 an increase of approximately 85%, which demonstrates the pressure existing wastewater infrastructure will be placed under and the need for upgrades to the WwTPs and networks to facilitate this growth. This projection includes wastewater loads arising from industrial, institutional and commercial sources as well as residential.

2.2. Protecting the Environment

Strategy recommendations are designed to enhance environmental protection, minimise risks, and promote sustainable operations. The strategy identifies and addresses potential environmental risks and impacts associated with wastewater management. The strategy has been developed to comply with environmental legislation and assessments have been undertaken to ensure that recommendations of the strategy safeguard the environment.

2.3. Alignment with National, Regional and Uisce Éireann Strategies

The CWS aligns with a diverse range of national, regional, and UÉ strategies and initiatives, as well as broader infrastructure plans for the study area. This alignment ensures that wastewater management infrastructure is integrated within broader planning efforts to support economic growth and environmental sustainability. Key policies and plans considered include but not limited to the National Planning Framework, Regional Spatial and Economic Strategy for the Southern Region, Cork Metropolitan Area Strategic Plan, Cork City and County Development Plans, National Biodiversity Action Plan, Climate Action Plan, and Uisce Éireann's Water Services Strategic Plan 2050.

2.4. Managing Risks

The strategy identifies key risks such as climate change, aging infrastructure, and changing regulations. It includes plans to upgrade old systems, adapt to extreme weather, and stay ahead of legal requirements. This helps ensure reliable and safe wastewater services for the future.

3. A Collaborative Strategy with Community & Stakeholder Engagement

3.1. Introduction

Public consultation is a key element in ensuring members of the public and all interested parties have the chance to be part of the development of the CWS. The CWS development process emphasises the importance of public consultation and stakeholder engagement. This collaborative approach ensures transparency, inclusivity, and the incorporation of diverse perspectives in shaping the future of wastewater management in the Cork Metropolitan Area.

3.2. Insights from Public Consultation 1

Public Consultation 1, conducted in Summer 2024, gathered valuable insights from stakeholders, focusing on critical areas such as water quality preservation, environmental protection measures, and the impacts of climate change on wastewater management. With seventeen submissions received, the consultation covered a wide range of topics including infrastructure needs, population growth considerations, environmental safeguards, and legislative compliance.

In response to the feedback received, the draft strategy has been developed to address stakeholder priorities and enhance the robustness of wastewater management systems. This adaptive approach demonstrates UÉ's commitment to incorporating community input into its planning process.

3.3. Public Consultation 2 and Future Steps

A second round of public consultation will be undertaken for eight weeks from January 2026. We will host an in-person event and a webinar during the consultation period. This phase provides an opportunity for stakeholders to review and comment on the draft CWS, the Strategic Environment Assessment Report, and the Natura Impact Statement. Statutory stakeholders and relevant government departments will be actively engaged throughout this process.

The final Cork Wastewater Strategy is set to be published in Summer 2026. Recognising the dynamic nature of environmental and urban development challenges, UÉ has committed to conducting periodic reviews of the CWS every five years. This approach will ensure that the strategy remains relevant, effective, and adaptable to changing circumstances in the short, medium, and long term.

4. Approach Methodology

The draft Cork Wastewater Strategy is developed on a clear, step-by-step process that follows national and international best practices. It includes:

Key Components of the Strategy

- Assessment of Current Infrastructure - Evaluating existing wastewater networks, pumping stations, and treatment plants to identify areas requiring improvement.
- Population Projections - Understanding how population changes will impact wastewater infrastructure is crucial. The strategy looks at local and regional development plans to project future populations and land usage through 2030, 2055, and 2080.
- Estimating Future Wastewater Flows - Based on population projections and studies of existing wastewater flows undertaken, the strategy estimates the amount of wastewater that will need to be collected and treated in each settlement through the years 2030, 2055, and 2080.
- Advanced Modelling Techniques - The strategy employs both hydraulic and water quality modelling. These models take into account factors like climate change for future scenarios:
    - Hydraulic modelling helps identify the necessary capacity for the wastewater network and forecasts future requirements.
    - Water quality modelling assesses how existing and future wastewater discharges will impact the receiving waters.
- Environmental Considerations - Assessing environmental impacts and making sure all plans meet legal requirements.
- Developing and Evaluating Solutions - The core of the strategy involves identifying and evaluating potential approaches to address wastewater management issues in the Cork Metropolitan Area. The goal is to determine the best strategic wastewater drainage and treatment solutions for the entire study area. This is achieved in the Optioneering and Strategy Development process, to identify the most effective drainage and treatment solutions for Cork Metropolitan Area across three key planning horizons: 2030 (short-term), 2055 (medium-term), and 2080 (long-term) by identifying and evaluating several feasible approaches and determining the optimum approach to be implemented.

  The Cork Wastewater Strategy identifies 11 sub catchments within the Cork Metropolitan Area, as shown in Figure 4-1 below and further discussed in Section 10. This allows us to take a more targeted approach, enabling us to plan effectively and address the specific needs, pressures, and challenges unique to each sub-catchment.

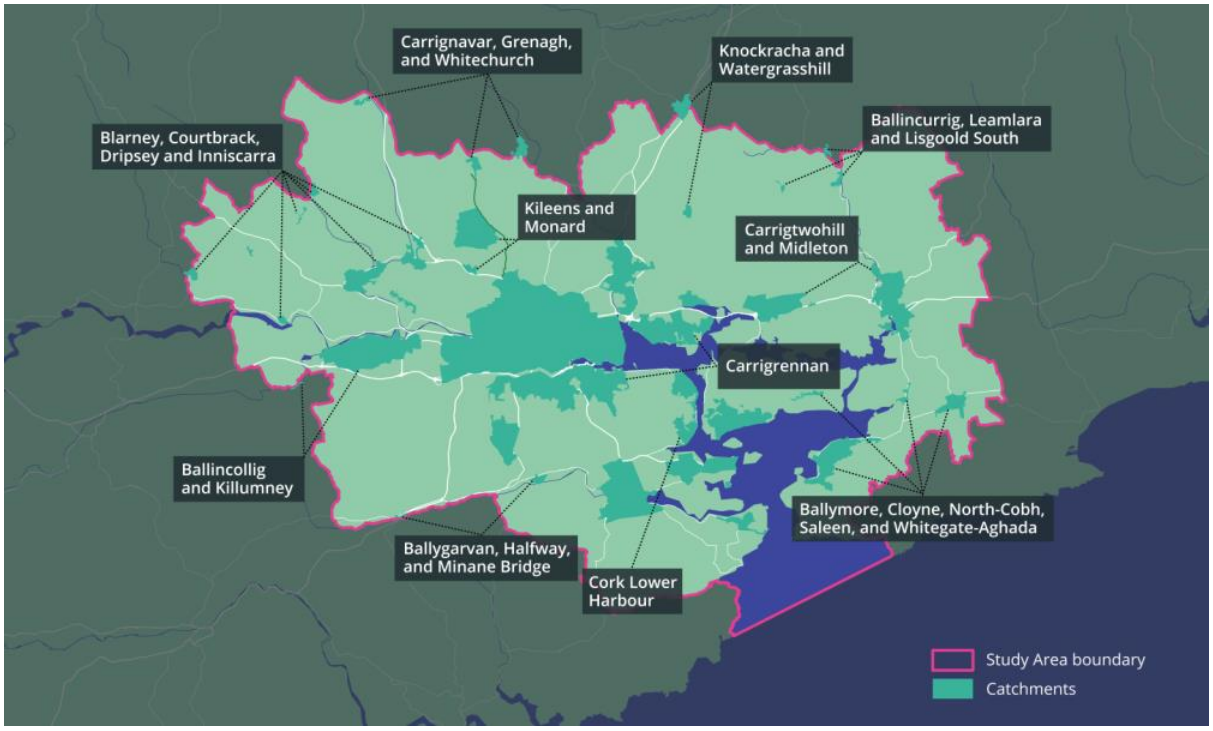

Figure 4-1: Sub Catchments within the Cork Metropolitan Area

Following this, we examine how the 26 Wastewater Treatment Plants across the area operate within their respective sub-catchments. This analysis focuses on identifying opportunities for optimisation.

- Stakeholder Engagement - The strategy development process includes engagement with various stakeholders, including local authorities, industry experts, environmental authorities, and the public. This helps gather insights and align the strategy with broader community needs.

This rigorous approach led to the identification of the **Recommended Approach** — a strategic framework that integrates the most suitable solutions for the Cork Metropolitan Area as a whole. It outlines preferred measures to enhance treatment capacity, drainage efficiency, and overall network performance. The final product of this process is the Cork Wastewater Strategy document. This document outlines:

- The **Recommended Approach** for meeting the Cork Metropolitan Area's future wastewater needs
- Necessary investments for implementing the strategy
- Suggested implementation plan to align with projected growth and increased wastewater flows

5. Current Infrastructure Performance

5.1. Existing Wastewater Infrastructure

The Cork Metropolitan Area is served by an extensive wastewater infrastructure that caters to over 25 towns and villages, including Cork City. This system comprises a mix of separated and combined sewerage networks, encompassing 26 wastewater treatment plants, 193 pumping stations, 225 storm water overflows, and 1,300 km of pipeline. UÉ is committed to continuously improving this vital infrastructure to meet the growing needs of the region while protecting the environment. UÉ has evaluated the existing wastewater infrastructure in the study area, informed by the findings from various studies and assessments conducted to date. These studies evaluate the capacity, condition, and performance of the current wastewater treatment plants, sewerage networks, and associated facilities serving the Cork Metropolitan Area. This allows us to gain an understanding of what actions are required to develop a sustainable wastewater management and treatment system into the future.

5.2. Receiving Water Environment

The Cork Metropolitan Area's water environment is complex and ecologically significant, with large river catchments including Glashaboy, Owenboy, Owencurra, and Lee. These rivers ultimately flow into Cork Harbour, creating a diverse aquatic ecosystem. Cork Harbour itself is full of valuable estuarine, coastal, and marine habitats, many of which are protected under various designations such as Special Areas of Conservation and Special Protection Areas. The area also contains designated shellfish waters, highlighting the importance of maintaining water quality for both ecological and economic reasons. Understanding the water environment of the area allows us to assess any environmental impacts the development of the strategy may have.

5.3. Wastewater Treatment Plant Performance

To ensure the effectiveness of the wastewater treatment system, Uisce Éireann has assessed the wastewater treatment plants in the Cork Metropolitan Area. This evaluation focused on current capacities, treatment processes, compliance with discharge licenses and EU directives, as well as operational issues and future upgrade plans. A detailed analysis of each wastewater treatment plant provides insights into specific challenges and planned improvements, serving as a roadmap for future enhancements.

A review of the wastewater treatment plants within the Study Area has identified a number of projects that may need to be initiated in the 2030 strategy horizon subject to Uisce Éireann's investment planning cycles where decisions are made in line with regulatory obligations, national priorities and funding availability in order to maintain compliance and capacity at a number of wastewater treatment plants. The project details are subject to annual review in terms of both capacity and compliance.

5.4. Capital Investment in the Cork Metropolitan Area

UÉ is actively working on enhancing the Cork Metropolitan Area's wastewater infrastructure, alongside the Cork Wastewater Strategy. Local critical infrastructure projects have been and

continue to be completed across the Cork Metropolitan Area. Critical projects and programmes to address wastewater infrastructure issues are ongoing and are not impacted or delayed by the delivery of the CWS. These projects include network, wastewater/pumping station upgrades, maintenance works and capital works. These works allow for future growth and development, reduction in asset and service risk, and the reduction of flooding.

6. Future Performance

The Cork Metropolitan Area wastewater network faces numerous challenges that will shape future investment and planning decisions. UÉ recognises the complexity of these long-term issues and is committed to addressing them through the delivery of the Cork Wastewater Strategy. The following challenges are considered in the development of the **Recommended Approach**.

- Population and economic growth in the Cork Metropolitan Area are driving increased demand for wastewater services, necessitating greater treatment capacities and enhanced network resilience. This expansion requires new and upgraded infrastructure, as well as an integrated management approach to optimise existing systems.
- Climate change poses significant challenges to the Cork Metropolitan Area's wastewater infrastructure, particularly through increased rainfall, flooding risks, and sea level rise. Temperature increases also present challenges, promoting algal blooms and bacterial growth in receiving waters. These climate-related factors collectively threaten the efficiency and resilience of the Cork Metropolitan Area's wastewater systems, necessitating adaptive strategies.
- The Cork Metropolitan Area wastewater infrastructure faces significant compliance challenges. A number of wastewater treatment plants struggle to meet their licence conditions, while wastewater networks suffer from infiltration and inflow problems. More stringent EU wastewater and environmental regulations require continuous upgrades to meet discharge standards and prevent ecological damage.
- Wastewater treatment capacity is a pressing issue, with several plants operating at or near design capacity. This problem is exacerbated by projected population growth and economic development, potentially leading to environmental compliance risks and hindering future development. Seasonal variations and wet weather events further strain the system, causing bypasses or combined sewer overflows during high rainfall periods.
- The rapid urban growth and industrial development in the Cork Metropolitan Area have strained the existing wastewater infrastructure, leading to increased discharge of wastewater into local water bodies. This growth has also impacted the drainage regime of the area, exacerbating ongoing issues with nutrients, organic matter, and potentially harmful contaminants in sensitive aquatic ecosystems. The combined sewer system in parts of Cork city is particularly vulnerable during heavy rainfall, causing storm water overflows that discharge untreated wastewater diluted with storm water into receiving waters.
- Ageing infrastructure presents another significant challenge, with many assets requiring significant maintenance or replacement to ensure continued service delivery. UÉ recognises the need for new, integrated, and innovative approaches to delivering solutions. Without proactive intervention, service performance is projected to deteriorate significantly by 2080.

- Energy efficiency is a key focus for UÉ, with ambitious targets set for reducing CO_2 emissions and improving energy efficiency. These goals require an overhaul of current energy practices in wastewater infrastructure, including implementing energy-efficient designs and optimising all processes from pumping and aeration to sludge treatment.
- Evolving legislation, regulation, and policy will have a significant impact on the delivery of wastewater services. While UÉ welcomes improvements that support environmental and sustainability objectives, these changes will require future investment. The recast Urban Wastewater Treatment Directive will introduce stricter wastewater treatment requirements, which will likely increase the level of investment required and associated energy demand at these facilities Balancing competing demands, such as reducing energy consumption while meeting stricter treatment requirements, will necessitate innovative solutions and cross-sector collaboration.
- Economic conditions can significantly impact wastewater services delivery, particularly in terms of capital infrastructure investment. A stable, forward-thinking investment approach is crucial for ensuring the resilience and sustainability of water services, irrespective of economic fluctuations.
- Operational considerations are critical for effective management of wastewater infrastructure. UÉ is focusing on optimising pumping stations, developing and adhering to standard operating procedures, reducing stormwater overflow spill volumes, and enhancing network monitoring and automation. These efforts aim to improve operational efficiency, reduce environmental impact, and ensure compliance with regulatory standards.
- Environmental and social considerations are fundamental to the CWS. Key areas of focus include maintaining water quality standards, protecting ecosystems by reducing nutrient loads and pollutants, and safeguarding public health.

7. Network Modelling Methodology

The Cork Wastewater Strategy includes the development of a strategic drainage model for the Cork Metropolitan Area to assess current and future performance of the wastewater network. This model serves as a crucial planning tool for infrastructure development and investment decisions.

The modelling process involves:

- Assessing current network capacity and risks
- Developing strategic solutions for future needs taking into consideration population growth and effects of climate change
- Evaluating various upgrade options
- Making recommendations for system improvements

Key outcomes of the modelling process consist of defining necessary network upgrades at locations where potential weaknesses have been identified, proposing improvements to storm water overflows in order to limit discharge of untreated wastewater to waterbodies, and optimising wastewater storage within the network. The proposals resulting from this modelling exercise are included within the **Recommended Approach** for the Cork Metropolitan Area. Further details of the Network Modelling are included in **Section 8 of the Draft Cork Wastewater Strategy Document.**

8. Water Quality Modelling

As part of the development of the Draft Cork Wastewater Strategy, Uisce Éireann undertook a water quality impact assessment of Cork's four principal river waterbodies (Glashaboy, Owenboy, Owencurra, and the multi-branch Lee system) and the marine waterbodies that make up the natural Cork Harbour system (including Lee and Owenacurra Estuaries, Lough Mahon, North Channel and Cork Harbour). These studies include consideration of the Water Framework Directive Objectives for each waterbody, designated protected areas and conservation objectives of protected habitats.

The findings of this assessment were used to propose treatment standards at each of the wastewater treatment plants and to prioritise investments in upgrades to protect water quality through to the 2080 strategy horizon.

The results of the model found that several freshwater locations, due to a mix of natural processes and human activities, already exceed environmental quality standards for various pollutants, which means that some wastewater treatment plants may require lower discharge loads by 2080 to maintain water quality.

The assessment finds that relocating wastewater treatment plants outfalls in areas with stringent discharge limits to more favourable discharge locations can reduce environmental impact without requiring additional treatment and as part of the assessment various different discharge locations for wastewater treatment plants were examined.

The findings of this study are considered in the Optioneering phase in developing a **Recommended Approach** to address Cork Metropolitan Area wastewater infrastructure needs. Further details of the Water Quality Modelling are included in **Section 9 of the Draft Cork Wastewater Strategy Document.**

9. Optioneering and Solution Development

Uisce Éireann conducted an Optioneering process to identify and rank the most effective drainage and wastewater treatment solutions for Cork Metropolitan Area across three key planning horizons: 2030 (short-term), 2055 (medium-term), and 2080 (long-term). Full details of the Optioneering Process can be found in the Optioneering and Solutions Development Report.

The Optioneering Process followed a structured five-stage methodology as detailed below.

9.1. Stage 1 - Identify the Need

The first stage consists of identifying what wastewater needs the Cork Metropolitan Area requires to ensure future population and economic growth, looking at three key areas: treatment capacity, network capacity, and environmental standards. This forms a clear picture of the challenges we're facing now and in the future.

9.2. Stage 2 – Long List of Unconstrained Options

The second stage of the Optioneering and Solution Development process is to identify all potential solutions, regardless of cost, environmental or social implications. A comprehensive list of all possible solutions is created and called an Unconstrained List of Options. This approach allows us to consider innovative ideas alongside more traditional solutions. The full list of wastewater treatment plant and network Unconstrained Options are summarised in Table 9-1 and Table 9-2. Note, wastewater load transfer refers to wastewater that is preliminary treated (screened) and transferred to an alternative wastewater treatment plant.

Table 9-1: WwTP Unconstrained List of Options

Option	Description
A0 – Do Nothing	Counterfactual used for screening exercise(s)
A1 - Minimal Upgrade – Process Optimisation	Capital Maintenance/Refurbishment of Assets; Alternative Operation Pattern; Identifying Optimisation Solutions
Option A2 - Reuse Existing Plant and Upgrade (Existing Discharge)	Capacity Upgrade; Additional Treatment Requirements/Alternative Technologies
Option A3 - Reuse Existing Plant and Upgrade (Alternative Discharge)	Capacity Upgrade; Additional Treatment Requirements; Final Effluent Discharge Route to New Outfall
Option A4 – New Treatment Process/Plant Upgrade on Existing Site	Full Capacity Upgrade on Existing Site (where existing assets lifecycle exceeded and requires replacement); May include Additional Treatment Requirements/Alternative Technologies; Existing or New Discharge Location to be identified
Option A5- New Greenfield Site	New WwTP on a new Greenfield Site; May include Additional Treatment Requirements/Alternative Technologies; Existing or New Discharge Location to be identified

Option A6 –Wastewater Load Transfer Solution	Considers the transfer of wastewater from existing site only i.e. does not include network diversion

Table 9-2: Networks Unconstrained List of Options

Option	Description
1 – Do Nothing	Counterfactual used for screening exercise(s)
2 – Storm Separation	Separating combined sewer systems into separate pipes for wastewater and rainwater, aiming to improve water management and reduce pollution risks
3 – Sustainable Drainage Systems (SuDS)	Managing runoff to minimise the impacts on the network and local watercourse
4 – Infiltration/Tide Separation	Separating soil store infiltration and tidal ingress from the combined and foul network
5 – Conveyance/Network Capacity	Upgrade existing network to increase capacity within the network
6 – System Optimisation	Optimise the existing network and ancillaries with robust arrangements such as pump controls
7 – Flow Transfer	Utilise capacity by connecting and transferring flow between catchments and sub catchments
8 – Online Storage	Upsizing existing network /asset to retain flow back in network and reduce downstream impact
9 – Offline Storage	Additional storage volume proposed to temporarily retain flows, allowing for controlled discharge back into the network via gravity, with a limited discharge rate or pump return mechanism

9.3. Stage 3 – Coarse Screening of Long List of Options

The next stage involves Uisce Éireann undertaking a screening process with the goal to remove any clearly unfeasible options. All options undergo screening against technical and environmental criteria with unfeasible options being removed and feasible options advancing to Stage 4 for further evaluation. The screening process evaluated 714 distinct options across the three strategy horizons for the Wastewater Treatment Plants. In total, 237 options successfully pass the coarse screening stage and progress to fine screening.

9.4. Stage 4 – Fine Screening

The remaining options are then subject to a more detailed evaluation employing a Multi Criteria Assessment (MCA) to evaluate potential benefits and impacts across key criteria. The MCA considers factors such as environmental impact, technical performance and cost along with the wastewater needs of the Cork Metropolitan Area.

Throughout this process, UÉ assess:

- how well each option addresses future needs
- how easy it is to implement,
- its environmental impact and sustainability,
- how it fits with existing systems and future plans, and
- how flexible it is to adapt to changing circumstances.

All shortlisted options that undergo fine screening in this process are assigned a score based on the criteria of the MCA listed below and ranked based on their suitability for implementation as part of the Cork Wastewater Strategy.

- Addressing the Need
- Deliverability
- Risk & Resilience
- Customer and Stakeholder Support
- Environmental & Sustainability
- Cost

9.5. Stage 5 – Final Assessment of Shortlisted Options

The fifth stage of the Optioneering and Solution Development process considers how different options could work together across the 11 identified sub catchments of the Cork Metropolitan Area to optimise the potential performance of the wastewater infrastructure and network. This helps us plan how the wastewater systems can work together and more efficiently within each catchment. The integration of individual options formed a Feasible Approach for a particular sub-catchment of the Cork Metropolitan Area.

The final step was to evaluate our Feasible Approaches for each sub catchment within the Cork Metropolitan Area and develop an overall **Recommended Approach**, as illustrated in Figure 9-1 below.

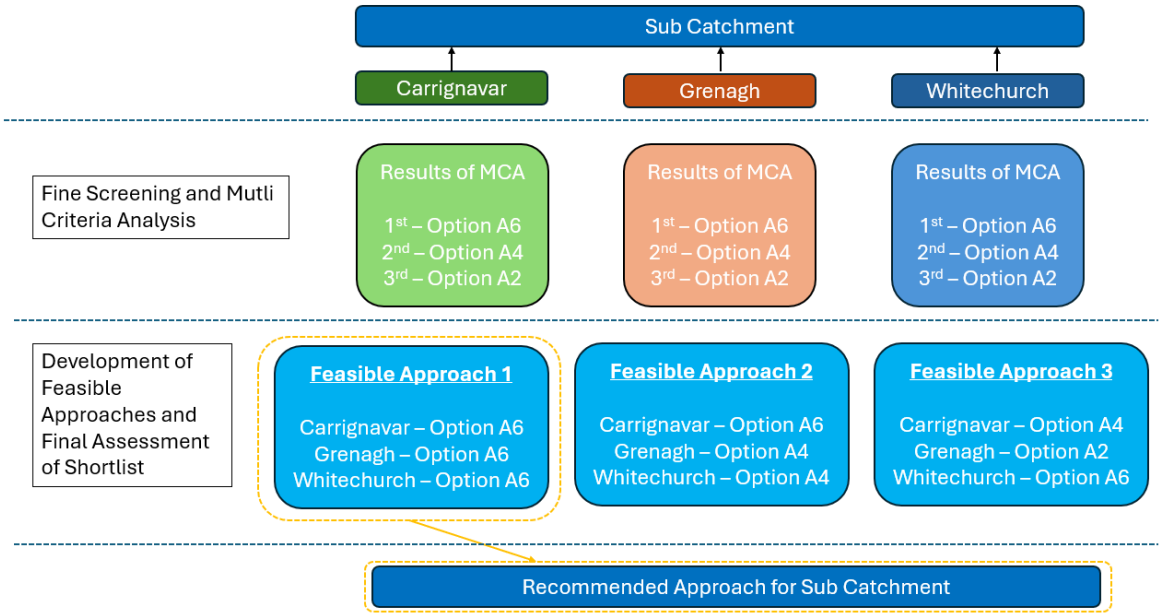

Figure 9-1: Indicative Development of Feasible Approaches and Recommended Approach

10. Results of the Optioneering

10.1. Optioneering Methodology

As discussed in Section 4, for the purpose of the Cork Wastewater Strategy, the Cork Metropolitan Area is divided into smaller sub-catchments, each containing differing numbers of wastewater treatment plants (WwTP) as shown in Table 10-1 below.

Table 10-1: Sub Catchments within the Cork Metropolitan Area

Sub Catchment	Agglomerations
Sub Catchment 1 – Blarney, Courtbrack, Dripsey and Inniscarra	Blarney WwTP
	Courtbrack WwTP
	Dripsey WwTP
	Inniscarra WwTP
Sub Catchment 2 – Kileens and Monard	Kileens WwTP
	Monard
Sub Catchment 3 – Carrignavar, Grenagh and Whitechurch	Carrignavar WwTP
	Grenagh WwTP
	Whitechurch WwTP
Sub Catchment 4 – Knockraha and Watergrasshill	Knockraha WwTP
	Watergrasshill WwTP
Sub Catchment 5 - Carrigrennan	Carrigrennan WwTP
Sub Catchment 6 – Ballygarvan, Halfway and Minane Bridge	Ballygarvan WwTP
	Halfway WwTP
	Minane Bridge (River Valley) WwTP
Sub Catchment 7 – Ballincollig and Killumney	Ballincollig WwTP
	Killumney WwTP
Sub Catchment 8 – Cork Lower Harbour	Cork Lower Harbour WwTP
Sub Catchment 9 – Carrigtwohill and Midleton	Carrigtwohill WwTP
	Midleton WwTP
Sub Catchment 10 – Ballymore, Cloyne, North Cobh, Saleen, and Whitegate-Aghada	Ballymore
	Cloyne WwTP
	North Cobh WwTP
	Saleen WwTP
	Whitegate – Aghada WwTP
	Ballincurrig WwTP

Sub Catchment	Agglomerations
Sub Catchment 11 – Ballincurrig, Leamlara and Lisgoold	Leamlara
	Lisgoold South WwTP
	Lisgoold North WwTP

While each WwTP is evaluated independently, the development of potential options to address the region's wastewater infrastructure needs considers the entire sub-catchment to ensure a holistic approach. The assessment revealed a notable shift in viable options across different time horizons. In the 2030 strategy horizon, short-term solutions, specifically minor upgrade works, passed the screening process. However, these same options proved inadequate when evaluated against the 2080 strategy horizon. This rejection primarily stemmed from concerns regarding the limited design life of existing assets and the necessity for a more sustainable, long-term approach.

Consequently, the 2080 scenario favoured options such as major upgrades and the transfer of wastewater to alternative sites, which demonstrated a higher pass rate in the coarse screening process. This trend underscores the critical importance of considering extended timeframes and the longevity of infrastructure investments in future planning. The analysis highlights the need for adaptive strategies that can meet both immediate needs and long-term sustainability goals in wastewater treatment infrastructure development.

This process results in a total 30 "Feasible Approaches" across 11 sub-catchments.

These Approaches incorporate combinations of the highest-scoring options derived from the Optioneering Phase. Each potential Feasible Approach undergoes analysis and consideration, taking into account the broader context of the Cork Wastewater Strategy. This approach ensures that the final **Recommended Approach** is not only optimal for the individual sub-catchment but also aligns with and supports the overarching objectives of the Cork Wastewater Strategy. **The Feasible Approaches developed resulting from the Optioneering Process for each sub catchment within the** Cork Metropolitan Area **are summarised in Tables 11-2 to 11-12 of the Draft Cork Wastewater Strategy Document**.

In addition to the Feasible Approaches for the Wastewater Treatment Plants in each sub-catchment mentioned earlier, the development of Feasible Approaches for the region also considered potential wastewater network interventions across the Cork Metropolitan Area. These interventions are designed to mitigate the volume and frequency of discharges from Strom Water Overflows and reduce out-of-sewer flooding within the study area. **These are summarised in Table 11-13 of the Draft Cork Wastewater Strategy Document**.

10.2. Environmental Assessment

Environmental protection and sustainability are key factors in developing the Feasible Approaches. The strategy aims to align with national goals for reducing greenhouse gas emissions and improving energy efficiency in wastewater treatment. The assessment process includes environmental impact evaluations and considers factors such as biodiversity, climate resilience, and circular economy principles. **The assessments are set out in the Strategic**

Environmental Assessment (SEA) Environmental Report Appendix 1 and the Natura Impact Statement (NIS) Appendix 2.

The SEA Environment Report and the NIS set out the general mitigation approaches required and specific mitigation or enhancement measures for the plan as a whole or for individual approaches.

The NIS concludes that, based on a plan-level assessment of the draft Strategy, and with implementation of appropriate mitigation for protecting European sites, there will be no adverse effects on the integrity of any European site(s), either alone or in-combination with other plans or projects as a result of progressing **Recommended Approaches** within the draft Strategy.

Detailed environmental assessments will be undertaken as required for individual projects as they progress to implementation. This ensures that each specific project will be evaluated for its environmental impact and feasibility before proceeding

11. Recommended Approach and Implementation of the Strategy

11.1. Recommended Approach

Following the Optioneering Phase, a **Recommended Approach** has been developed to manage wastewater in the Cork Metropolitan Area through 2080. The process begins with conducting a review of the Feasible Approaches for each sub catchment. This process involves assessing all approaches to determine their compatibility with other sub catchments within the Cork Metropolitan Area. This Approach development process is conducted via a combination of workshops supported by a process of ongoing engagement and dialogue between the technical experts, including Engineers, Hydrologists and Hydrogeologists, Ecologists and Environmental Scientists working directly on the development of the **Recommended Approach**. The outcome of this is the identification of **the Recommended Approach** for the Cork Wastewater Strategy that balances the specific needs of individual wastewater treatment plants with the overall requirements of the metropolitan area, resulting in a more integrated and sustainable system.

The **Recommended Approach** outlines preferred measures to enhance treatment capacity, drainage efficiency, and overall network performance. A key feature of the strategy involves decommissioning certain smaller wastewater treatment plants, with wastewater redirected to larger, existing centralised facilities. This approach is driven by the need to enhance operational efficiency, improve environmental outcomes, and strengthen system resilience by consolidating resources and infrastructure.

These solutions will be implemented as projects and prioritised across the three planning horizons.

The Recommended Approach encompasses proposed options for each sub catchment with an overview shown in Figures 11-1 to 11-4 and Table 11-1 below and is **detailed further in Section 12.1 of the Draft Cork Wastewater Strategy Document.**

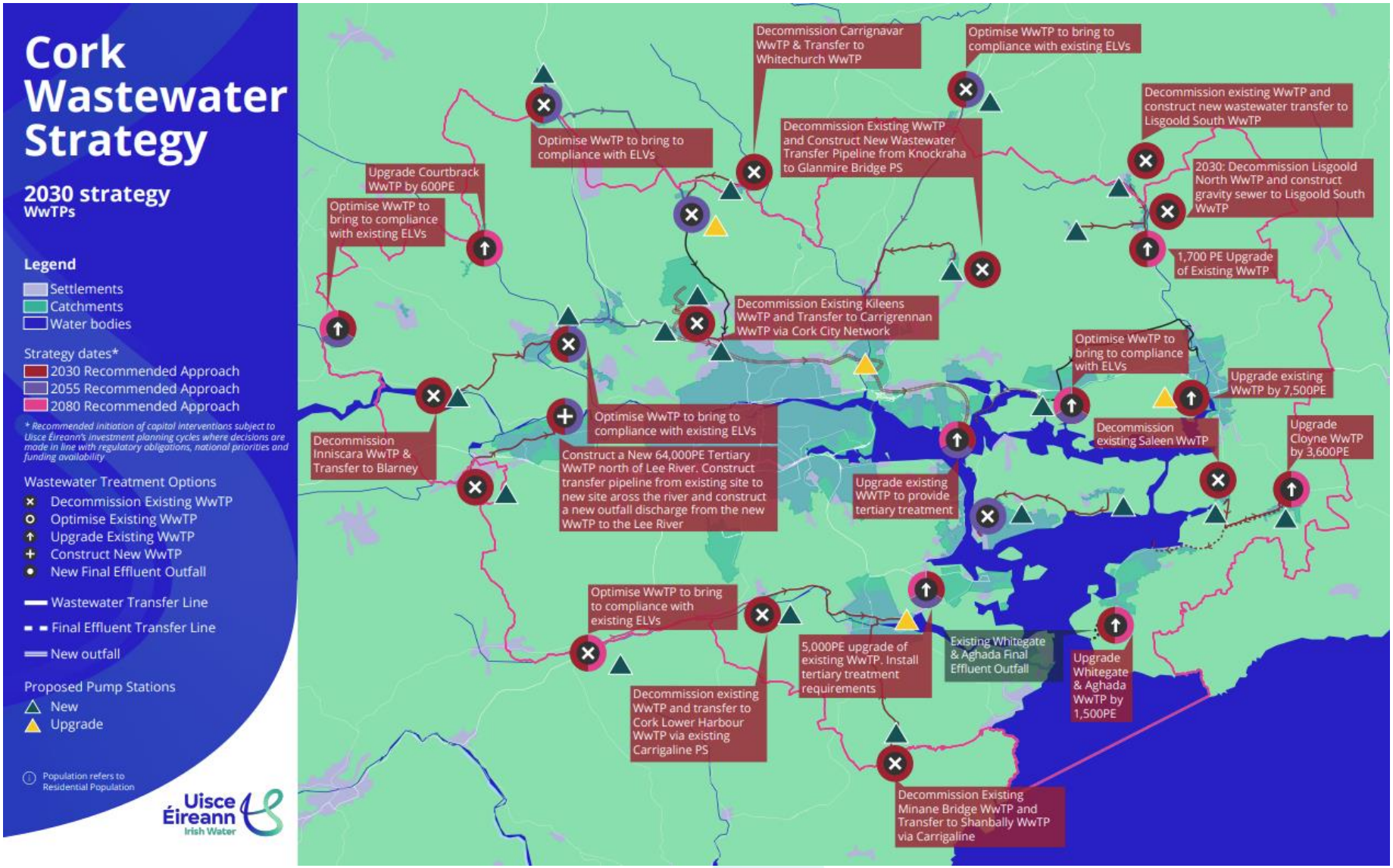

Figure 11-1: Cork Wastewater Strategy Recommended Approach 2030 Overview – WwTP Works

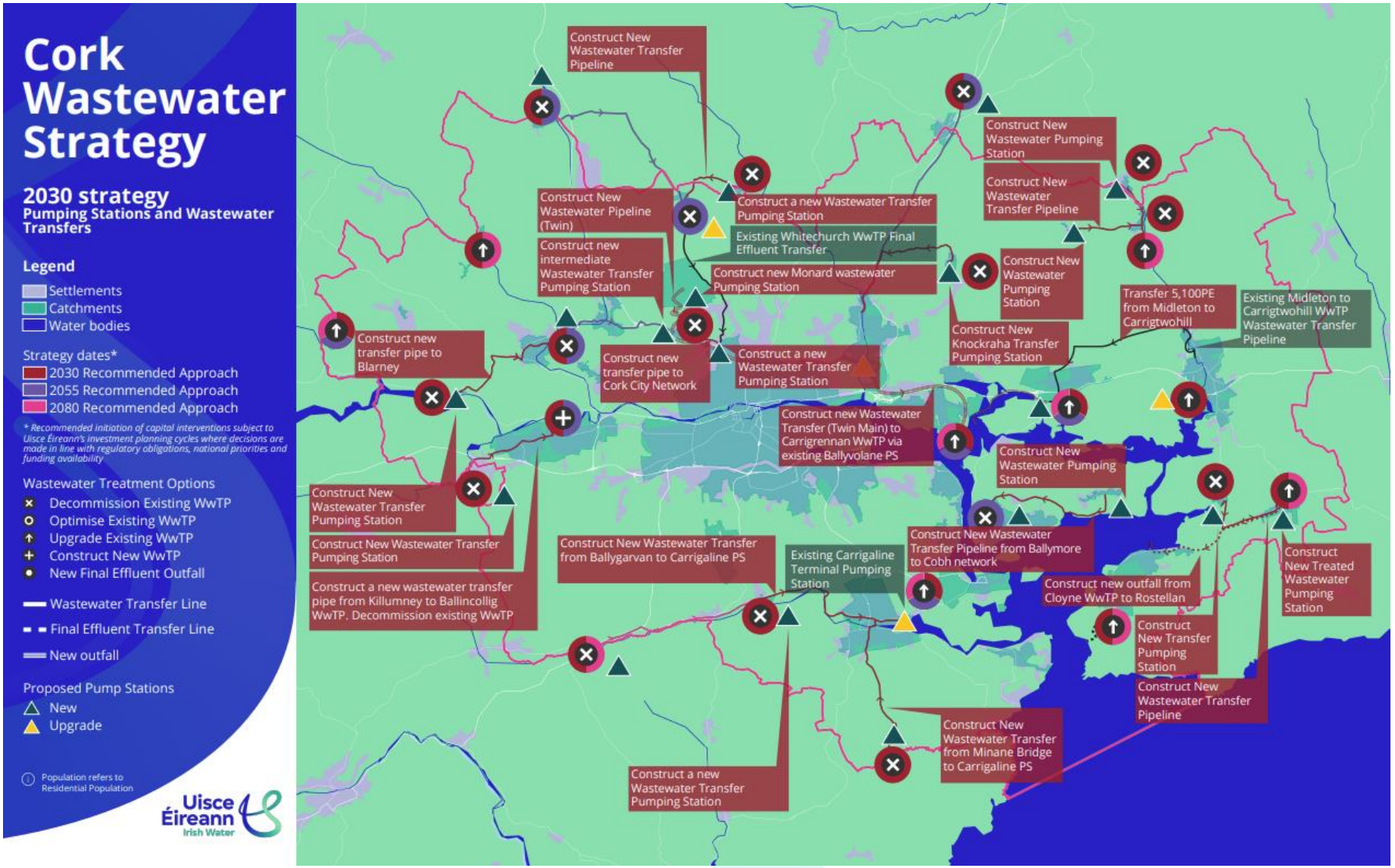

Figure 11-2: Cork Wastewater Strategy Recommended Approach 2030 Overview – Wastewater Transfers

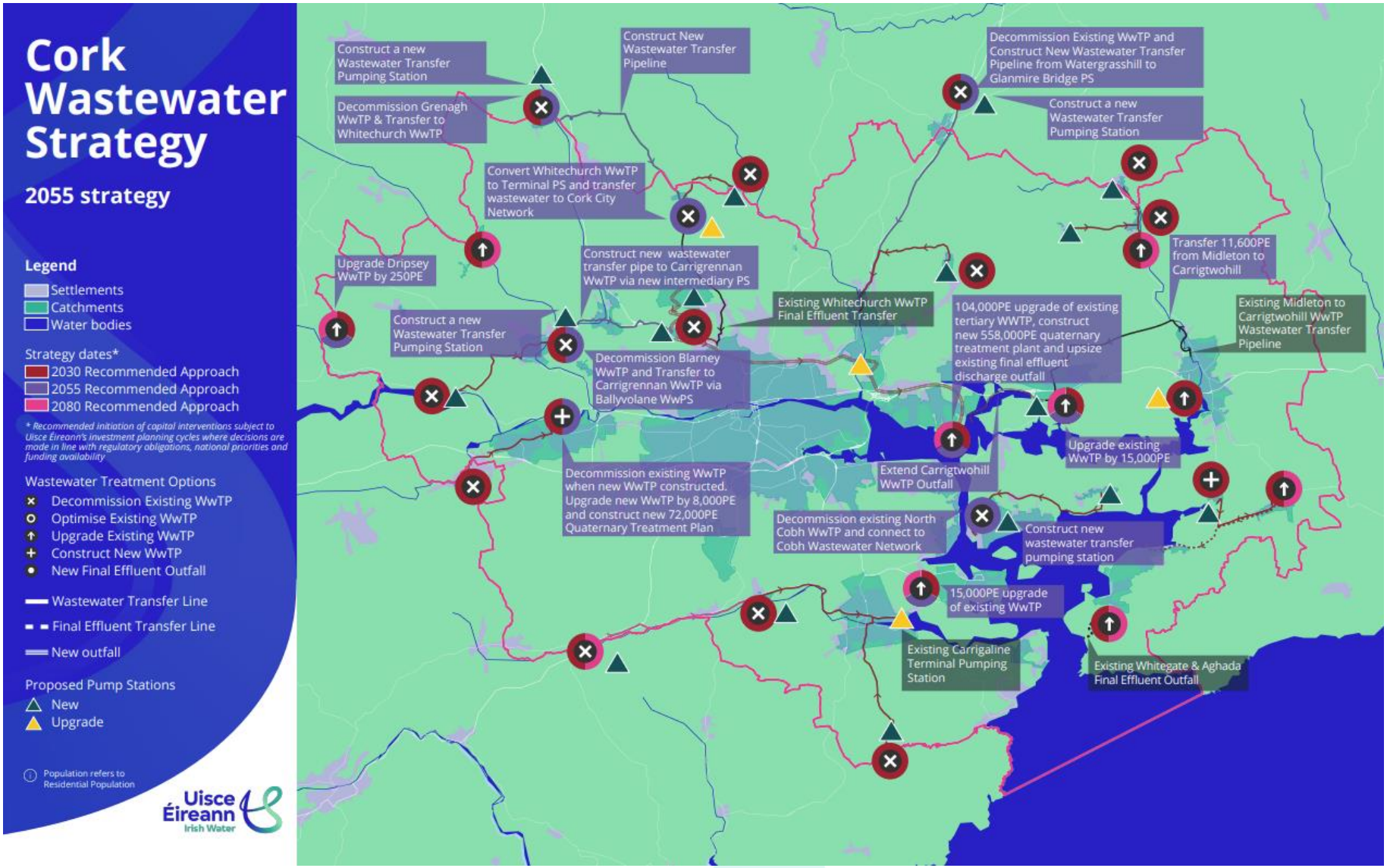

Figure 11-3: Cork Wastewater Strategy Recommended Approach 2055 Overview

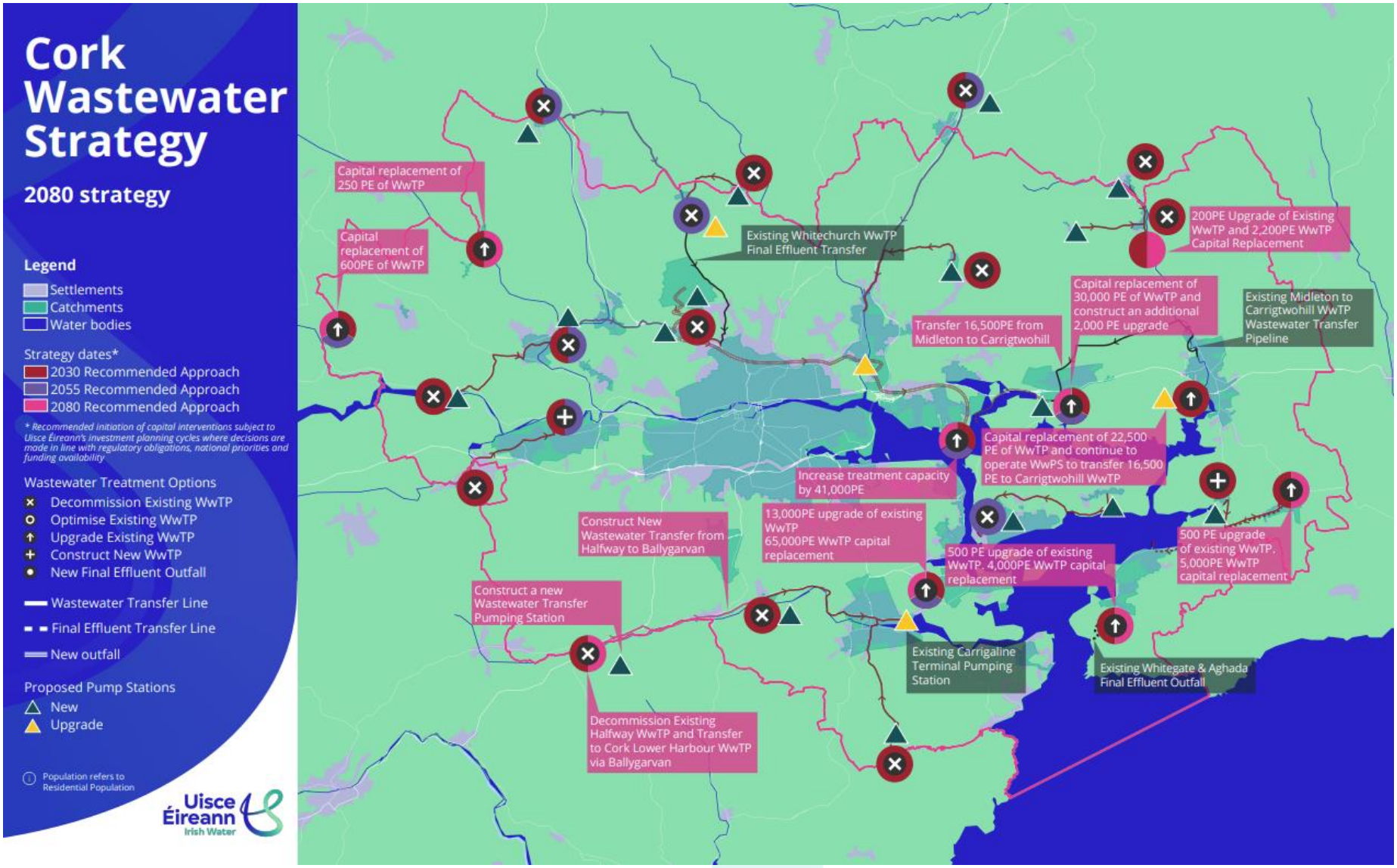

Figure 11-4: Cork Wastewater Strategy Recommended Approach 2080 Overview

Table 11-1: Cork Wastewater Strategy Recommended Approach

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
Sub Catchment 1 – Blarney, Courtbrack, Dripsey and Inniscarra			
Blarney WwTP	• Optimise WwTP to bring to compliance with current ELVs • Utilise existing discharge	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct new wastewater transfer pipe to Carrigrennan WwTP via existing Ballyvolane PS • Decommission existing WwTP.	• Continue to operate WwPS
Inniscarra WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Constructed new wastewater transfer pipe to Blarney WwTP • Decommission existing WwTP	• Continue to operate WwPS	• Continue to operate WwPS
Dripsey WwTP	• Optimise WwTP to bring to compliance with current ELVs • Utilise existing discharge	• Upgrade WWTP to Increase existing design capacity by 250 PE to a new design capacity of 850 PE	• Continue to operate WwTP • Capital replacement of 600PE of existing original capacity of WwTP
Courtbrack WwTP	• Upgrade WwTP to Increase existing design capacity by 600 PE to a new design capacity of 850 PE • Utilise existing discharge	• Continue to operate WwTP	• Continue to operate WwTP • Capital replacement of 250PE of existing original capacity of WwTP
Sub Catchment 2 – Kileens and Monard			
Kileens WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct new wastewater transfer pipe to Cork City Network at Northpoint Business Park • Decommission existing WwTP.	• Continue to operate WwPS	• Continue to operate WwPS

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
Monard	• Construct a new Wastewater Transfer Pumping Station at Monard (WwPS) • Construct new wastewater transfer (Twin Main) • Construct new intermediate Wastewater Transfer Pumping Station (WwPS) between Blarney and Ballyvolane PS to take inflows from both Monard and Blarney • Construct new Wastewater Transfer (Twin Main) to Carrigrennan WwTP via existing Ballyvolane PS	• Continue to operate WwPSs	• Continue to operate WwPSs
Sub Catchment 3 – Carrignavar, Grenagh and Whitechurch			
Carrignavar WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Constructed new wastewater transfer pipe from Carrignavar to Whitechurch WwTP • Decommission existing WwTP.	• Continue to operate WwPS	• Continue to operate WwPS
Grenagh WwTP	• Optimise WwTP to bring to compliance with current ELVs • Utilise existing discharge	• Construct a new Wastewater Pumping Station (WwPS) – sized to meet future demand • Constructed new wastewater transfer pipe from Grenagh to Whitechurch WwTP • Decommission existing WwTP.	• Continue to operate WwPS

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
Whitechurch WwTP	• Continue to operate existing WwTP and treated effluent main to Cork City Network	• Construct a terminal Wastewater Pumping Station (WwPS) – sized to meet demand from Grenagh, Carrignavar and Whitechurch • Utilitise existing treated effluent main to Cork City Network • Decommission / convert existing WwTP.	• Continue to operate WwPS
Sub Catchment 4 – Knockraha and Watergrasshill			
Knockraha WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe to from Knockraha to existing Glanmire Bridge PS • Decommission existing WwTP.	• Continue to Operate WwPS	• Continue to Operate WwPS
Watergrasshill WwTP	• Optimise WwTP to bring to compliance with current ELVs • Utilise existing discharge	• Construct a new Wastewater Pumping Station (WwPS) • Construct a new wastewater transfer pipe to from Watergrasshill to existing Glanmire Bridge PS • Decommission existing WwTP	• Continue to Operate WwPS
Sub Catchment 5 - Carrigrennan			
Carrigrennan WwTP	• Upgrade existing WwTP to provide tertiary treatment to bring to compliance with current ELVs and to meet Cork City growth demand and wastewater transfers from Sub Catchments 1, 2, 3 and 4	• Continue to operate WwTP • Provide a 104,000 PE upgrade of the existing tertiary treatment works at WwTP,	• Continue to operate WwTP • Upgrade WwTP to increase design capacity by 41,000 PE • Utilise existing discharge

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
	• Utilise existing discharge	• Construct a new 558,000 PE quaternary treatment plant at the existing WwTP. • Upsize existing final effluent discharge outfall	
Sub Catchment 6 – Ballygarvan, Halfway and Minane Bridge			
Ballygarvan WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct wastewater transfer pipe to Cork Lower Harbour WwTP via existing Carrigaline PS • Decommission existing WwTP.	• Continue to operate WwPS	• Continue to operate WwPS
Halfway WwTP	• Optimise WwTP to bring to compliance with current ELVs • Utilise existing discharge	• Continue to operate WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct wastewater transfer pipe to Cork Lower Harbour WwTP via Ballygarvan WwPS • Decommission WwTP.
Minane Bridge WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct wastewater transfer pipe to Cork Lower Harbour WwTP via existing Carrigaline PS • Decommission existing WwTP.	• Continue to operate WwPS	• Continue to operate WwPS
Sub Catchment 7 – Ballincollig and Killumney			
Ballincollig WwTP	• Construct a New Greenfield WwTP (including tertiary treatment) with	• Decommission Existing WwTP when New Plant Constructed.	• Continue to operate WwTP

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
	design capacity of 64,000 PE north of Lee River. • Construct transfer pipeline from existing Ballincollig site to new site across the Lee River • Construct a new outfall discharge from new WwTP to Lee River	• Upgrade WWTP to Increase existing design capacity by 8,000 PE to a new design capacity of 72,000 PE • Construct a new 72,000 PE quaternary treatment plant at the new greenfield WwTP	
Killumney WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe from Killumney to Ballincollig WwTP • Decommission existing WwTP	• Continue to operate WwPS	• Continue to operate WwPS
Sub Catchment 8 – Cork Lower Harbour (Carrigaline, Cobh, Passage West)			
Cork Lower Harbour WwTP	• Upgrade existing WwTP to Increase existing design capacity by 5,000 PE to a new design capacity of 70,000 PE and to cater for loads from Sub-Catchments 6 and 10 • Upgrade WwTP to provide tertiary treatment to bring plant to compliance with current ELVs for a 70,000 PE design capacity • Utilise existing discharge	• Upgrade WwTP to Increase existing design capacity by 15,000 PE to a new design capacity of 85,000 PE and to cater for loads from Sub-Catchments 6 and 10 • Utilise existing discharge	• Upgrade WwTP to increase existing design capacity by 13,000 PE to a new design capacity of 98,000 PE and to cater for loads from Sub-Catchments 6 and 10 • Provide a 65,000 PE capital replacement of the original WwTP • Utilise existing discharge
Sub Catchment 9 – Carrigtwohill and Midleton			
Carrigtwohill WwTP	• Optimise existing WwTP to bring to compliance with current ELVs	• Upgrade WwTP to increase existing design capacity by 15,000	• Upgrade WwTP to increase existing design capacity by 2,000

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
	• Retain existing load transfer (5,100 PE) from Midleton • Utilise existing discharge	PE to a new design capacity of 45,000 PE • Extend the existing outfall from current location to further south into Lough Mahon	PE to a new design capacity of 47,000 PE • Provide a 30,000 PE capital replacement of the original WwTP
Midleton WwTP	• Upgrade existing WwTP to increase existing design capacity by 7,500 PE to a new design capacity of 22,500 PE • Utilise existing discharge • Continue to operate existing WwPS to transfer 5,100 PE from Midleton to Carrigtwohill WwTP.	• Continue to operate WwTP • Continue to operate existing WwPS to transfer 11,600 PE from Midleton to Carrigtwohill WwTP.	• Provide a 22,500 PE capital replacement of the original WwTP • Continue to operate existing WwPS to transfer 16,500 PE from Midleton to Carrigtwohill WwTP.
Sub Catchment 10 – Ballymore, Cloyne, North Cobh, Saleen, and Whitegate-Aghada			
Cloyne WwTP	• Upgrade existing WwTP to increase existing design capacity by 3,600 PE to a new design capacity of 5,000 PE • Construct a new treated wastewater pipe, pumping station and outfall from Cloyne WwTP to Rostellan.	• Continue to operate WwTP	• Upgrade existing WwTP to increase existing design capacity by 500 PE to a new design capacity of 5,500 PE • Provide a 5,000 PE capital replacement of the original WwTP
Saleen WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe from Saleen to Cloyne WwTP • Decommission existing WwTP	• Continue to operate WwPS	• Continue to operate WwPS

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
Ballymore	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe from Ballymore to existing Cobh collection network	• Continue to operate WwPS	• Continue to operate WwPS
Whitegate - Aghada WwTP	• Upgrade existing WwTP to increase existing design capacity by 1,500 PE to a new design capacity of 4,000 PE	• Continue to operate WwTP	• Upgrade existing WwTP to increase existing design capacity by 500 PE to a new design capacity of 4,500 PE • Provide a 4,000 PE capital replacement of the original WWTP
North Cobh WwTP	• Continue to operate WwTP • Utilise existing discharge	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe from North Cobh to existing Cobh collection network which discharges to Cork Lower Harbour WwTP • Decommission WwTP	• Continue to operate WwPS
Sub Catchment 11 – Ballincurrig, Leamlara and Lisgoold			
Ballincurrig WwTP	• Construct a new Wastewater Transfer Pumping Station (WwPS) • Construct a new wastewater transfer pipe from Ballincurrig to Lisgoold South WwTP • Decommission existing WwTP	• Continue to operate WwPS	• Continue to operate WwPS
Leamlara	• Construct a new Wastewater Transfer Pumping Station (WwPS)	• Continue to operate WwPS	• Continue to operate WwPS

Catchment	2030 Recommended Approach	2055 Recommended Approach	2080 Recommended Approach
	• Construct a new wastewater transfer pipe from Leamlara to Lisgoold South WWTP		
Lisgoold South WwTP	• Construct a new gravity sewer from Lisgoold North WwTP to Lisgoold South WwTP • Decommission existing Lisgoold North WWTP • Upgrade existing Lisgoold South WwTP to Increase existing design capacity by 1,700 PE to a new design capacity of 2,200 PE	• Continue to operate WwTP	• Upgrade existing WwTP to increase existing design capacity by 200 PE to a new design capacity of 2,400 PE • 2,200 capacity WwTP capital replacement

Key aspects of the strategy include:

- **Holistic Approach:** The strategy considers 26 wastewater treatment plants across the Cork Metropolitan Area, looking at how they can work together rather than in isolation. This integrated view allows for more efficient and effective solutions.
- **Centralisation:** A major recommendation is to decommission 16 smaller wastewater treatment plants by 2080, transferring their wastewater to larger, existing centralised facilities like Carrigrennan or Cork Lower Harbour. This approach aims to improve overall treatment efficiency, protect the environment, and manage risks associated with stricter future regulations.
- **Phased Implementation:** The strategy will be implemented in phases over multiple investment cycles, aligning with Uisce Éireann's capital investment planning and regulatory processes. This allows for flexibility and adaptation as needs and technologies evolve.
- **Project-Specific Plans:** While the strategy provides an overall framework, individual projects will require their own detailed plan as necessary. These will include site selection, design, feasibility studies, and necessary approvals, ensuring projects meet specific local needs and conditions.
- **Environmental Considerations**: Projects will undergo environmental assessments, including Appropriate Assessment screening and Environmental Impact Assessment where required. This ensures that environmental protection remains a top priority throughout implementation.
- **Integrated Planning:** The strategy emphasises the importance of coordinating different projects to ensure they work together effectively. For example, upgrading one plant might need to coincide with transferring wastewater from another location.
- **Risk Management**: The plan identifies potential risks, such as capacity constraints, funding challenges, or environmental compliance issues. It outlines mitigation strategies, including phased upgrades, and adaptive environmental management.
- **Collaboration**: The strategy emphasises the need for partnerships with local authorities, environmental agencies, and communities. This collaborative approach aims to address broader water quality issues, promote public awareness, and integrate wastewater management with other environmental initiatives.

By adopting this strategy, Uisce Éireann aims to create a more efficient, environmentally friendly, and future-proof wastewater management system for the Cork Metropolitan Area. This strategy not only addresses infrastructure needs but also positions the Cork Metropolitan Area to meet its wastewater challenges for decades to come, supporting sustainable economic and population growth while protecting valuable water resources.

11.2. Implementation of the Strategy

The **Recommended Approach** of the Cork Wastewater Strategy will be implemented in phases, aligned with Uisce Éireann's capital investment plans and regulatory processes. Due to the complexity and scale, delivery will span multiple investment cycles.

Certain projects within the strategy will require their own detailed planning, including site selection, design, feasibility studies, licensing, and regulatory approvals. These will follow national governance procedures to ensure environmental compliance, cost-effectiveness, and sustainability. Projects will undergo Appropriate Assessment and Environmental Impact Assessment screening as required.

The Cork Wastewater Strategy integrates all design phases from planning to operation, into a cohesive, long-term delivery strategy, ensuring efficient implementation and alignment with the Cork Metropolitan Area's water quality goals.

The SEA Environmental Report Appendix 1 outlines several key strategies for improving wastewater treatment and environmental management. A number of these approaches are listed below with site and project specific measures included in further detail within the SEA Environmental Report Appendix 1:

- Proactive community engagement to raise awareness about impacts of wastewater pollution to encourage appropriate behaviours.
- Collaborative catchment management to address various pollution sources and provide wider environmental benefits.
- Partnerships with local authorities for network improvements and sustainable urban drainage.
- Cooperation with maritime authorities to protect coastal waters.
- Integration of Nature-based Solutions in wastewater treatment plant upgrades including wetlands, reedbed/sludge drying reedbeds.
- Emphasis on circular economy principles, including efficient waste and sludge management, energy efficiency, and renewable energy generation.
- Undertaking surveys and assessments depending on wastewater transfer routes such as ecology, contaminated land, cultural heritage/ archaeological interest
- Application of biodiversity net gain to address any infrastructure project habitat losses

12. Monitoring and Evaluation

Uisce Éireann is committed to continuously monitoring and improving the Cork Wastewater Strategy. UÉ will track key aspects of our wastewater systems, including the quality of treated wastewater, capacity of treatment plants, network performance, energy use, operational reliability, and environmental impacts. This monitoring helps us identify what's working well and areas in which improvements are required.

To ensure the strategy remains effective, the Cork Wastewater Strategy will be reviewed every five years. These reviews allow us to assess how well the strategy is working, consider new technologies or changes in regulations, and adjust our plans based on the CMA's changing needs. UÉ recognise that many factors can affect the Cork Wastewater Strategy, such as new laws, climate change impacts, technological advancements, and changes in funding or economic conditions. UÉ will continually monitor these factors and adapt the strategy as required.

Uisce Éireann is committed to maintaining ongoing dialogue with stakeholders, environmental agencies, and local communities. Their feedback plays a vital role in shaping our approach and ensuring we meet the wastewater needs of the Cork Metropolitan Area. The Cork Wastewater Strategy will be delivered in phases, aligned with Uisce Éireann's capital investment plans and regulatory oversight by the Commission for Regulation of Utilities and Environmental Protection Agency.

Projects advancing from the Cork Wastewater Strategy will undergo individual environmental assessments, potentially including Environmental Impact Assessment and Appropriate Assessment. These assessments support planning and licensing applications, where applicable. All such applications will be subject to public consultation, ensuring transparency and stakeholder engagement throughout the project lifecycle.

By staying vigilant, flexible, and responsive, Uisce Éireann aim to ensure the Cork Wastewater Strategy remains effective and sustainable for the long term. This approach allows us to address current needs while preparing for future challenges, ensuring that the Cork Metropolitan Area's wastewater infrastructure continues to support the region's growth and environmental health.

13. Conclusion

13.1. Strategy Outcomes and Benefits

UÉ has developed the Cork Wastewater Strategy to assess wastewater treatment and network infrastructure and to identify what future investment will be required in the medium and long term, within the Cork Metropolitan Area's while preparing for future population and economic growth and ensuring environmental protection. The strategy takes a holistic view of the Cork Metropolitan Area, allowing for monitoring, evaluation and adaptation as required.

A key feature of the strategy involves decommissioning certain smaller wastewater treatment plants, with wastewater redirected to larger, centralised facilities. This approach is driven by the need to enhance operational efficiency, improve environmental outcomes, and strengthen system resilience by consolidating resources and infrastructure. As such, the **Recommended Approach** for the CWS identified that 16 WwTPs transfer wastewater to larger existing WwTPs, such as Carrigrennan or Cork Lower Harbour for treatment by 2080. This approach, in combination with growing populations necessitates the upgrade of larger Wastewater Treatment Plants such as Carrigrennan and Cork Lower Harbour to ensure sufficient capacity and environmental compliance.

The Cork Wastewater Strategy offers numerous benefits, including:

- Aligning with EU directives and national regulations
- Supporting population and economic growth
- Enhancing environmental protection, particularly for sensitive areas
- Improving treatment capacity and efficiency
- Optimising network performance and reducing risks
- Advancing sustainability goals
- Facilitating resource recovery and circular economy principles

13.2. Next Steps

The selected solutions will be advanced as individual projects and prioritised across the three strategy horizons, each following UÉ's standard project lifecycle. This includes assessments to ensure value for money, environmental compliance, and alignment with long-term goals. Each project will undergo its own environmental assessment as required, which may include Environmental Impact Assessment (EIA) and Appropriate Assessment (AA), ensuring compliance with environmental regulations and alignment with sustainability goals.

By adopting this strategic approach, UÉ aims to create a resilient, efficient, and sustainable wastewater management system that will support the Cork Metropolitan Area's growth and protect its environment for decades to come.

Public Consultation

A public consultation period will take place over eight weeks, beginning in January 2026. During this time, members of the public, stakeholders, and interested parties are invited to review and provide feedback on the Draft Cork Wastewater Strategy and its accompanying Environmental Reports.

You can **view and download** the strategy and reports by visiting: www.water.ie/cws

On our website you can access:

- The Draft Cork Wastewater Strategy - This details the long-term plan developed by Uisce Éireann to guide the sustainable management of wastewater infrastructure in the Cork Metropolitan Area up to 2080.
- Non-Technical Summary of the Draft Cork Wastewater Strategy - This summary provides a clear, accessible overview of the full strategy.
- SEA - Environmental Report - The Strategic Environmental Assessment Environmental Report evaluates the likely environmental effects of implementing the Cork Wastewater Strategy
- Natura Impact Statement - The NIS assesses whether the strategy could significantly affect Natura 2000 sites, protected habitats and species under the EU Habitats and Birds Directives.
- Consultation Survey Feedback Form
- Details of all consultation events and how to register.

We encourage everyone to participate and share their views to help shape the future of wastewater management in Cork.

How to make a submission:

Email: CWS@water.ie

Post: Cork Wastewater Strategy, Uisce Éireann, PO Box 860, South City Delivery Office, Cork City

Feedback Form: Link here.

All stakeholder feedback will be reviewed and considered as we finalise the Cork Wastewater Strategy.

Cork Wastewater Strategy Infrastructure Upgrade

Uisce Éireann Irish Water

The **CORK METROPOLITAN AREA** is a major regional metropolitan area in **COUNTY CORK**

Challenges to wastewater infrastructure

The CMA is facing **CRITICAL CAPACITY** at a number of wastewater treatment plants. The amount of wastewater treated in the CMA is projected to increase by almost **93%** in the period to 2080.

Environmental **PROTECTION**

72% increase **POPULATION GROWTH** and Economic Development

Climate Change **RESILIENCE**

Regulatory **COMPLIANCE**

AGEING Infrastructure

Currently | Proposed Recommend Approach | By 2080

26 Wastewater **PLANTS**

9 Wastewater Plants **UPGRADES**

16 Wastewater Plants **DECOMISSIONED**

1 new Wastewater Treatment Plan in Ballincollig increasing capacity to **72,000PE**

CURRENT Wastewater treated in the CMA is **420,000PE**

INCREASE in Wastewater treated by 2080 **811,600PE**

193 Wastewater **PUMPING STATIONS**

20 new Wastewater **PUMPING STATIONS**

213 Wastewater **PUMPING STATIONS**

Benefits

Increased treatment **CAPACITY & EFFICIENCY**

Supports future **POPULATION GROWTH & ECONOMIC** development

Proactive **PROJECT PLANNING**

Larger **CENTRALISED FACILITIES** and new outfall location to improve environmental outcomes and strengthen system resilience by consolidating resources and infrastructure.

ENHANCED Water Quality