

Cork County Development Plan Review

Water Services

Background Document No. 7

Planning Policy Unit
Cork County Council
12th March 2020

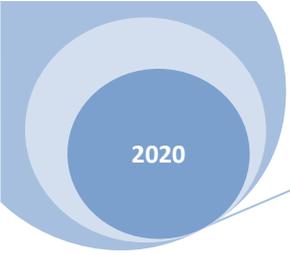
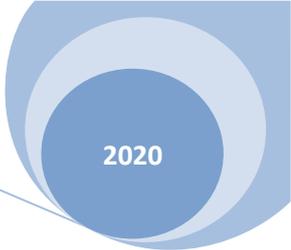


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1 Introduction

1.1 Water Quality

1.1.1 Water is a fundamental building block of life and therefore the quality of the water we use in our daily lives is of huge significance to, not only our physical wellbeing but also our economic wellbeing. The water services infrastructure on which we depend is an important component in limiting any adverse effects of human activity on the environment but also provides the clean water on which we depend. Before considering the water services infrastructure picture, it is worth considering the baseline environment in relation to water quality.

1.1.2 Under the EU Water Framework Directive Ireland is obliged to produce a River Basin Management Plan (RBMP) and the current plan covers the period 2018-2021. The plan details a series of actions to protect and improve water quality and achieve good ecological status in all our waterbodies by 2027.

1.1.3 The most recent data on the existing water quality in County Cork for the period 2013-2018 (published in 2019) shows that the majority of our river and coastal water bodies have achieved good or high status, while our lakes and transitional waters have significantly higher percentages of poor status water bodies.

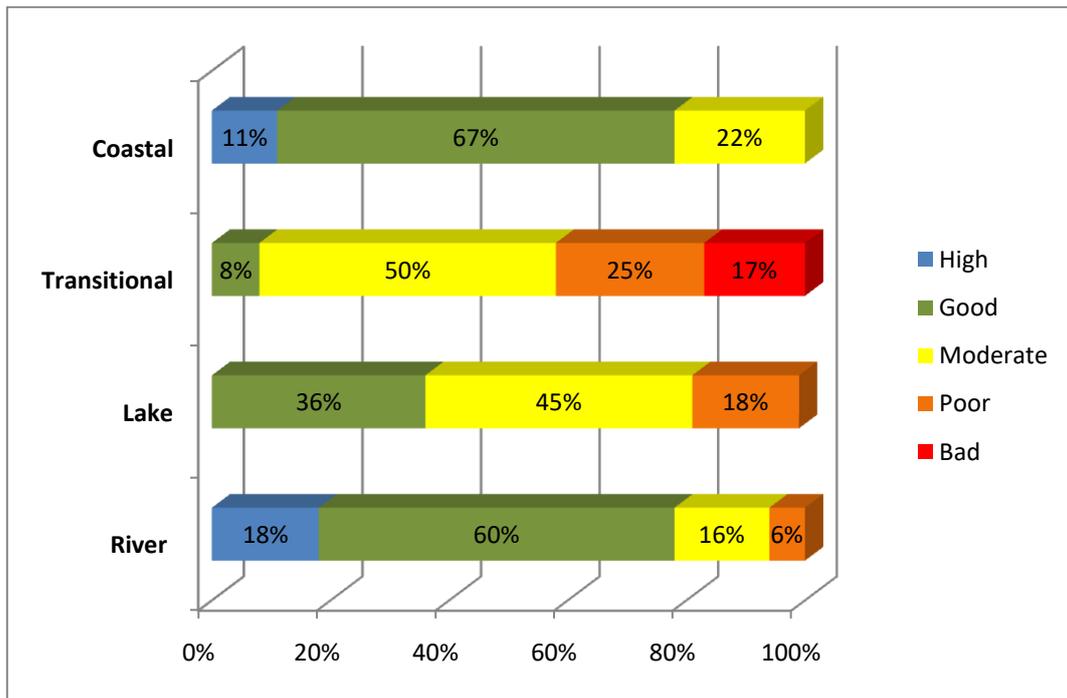
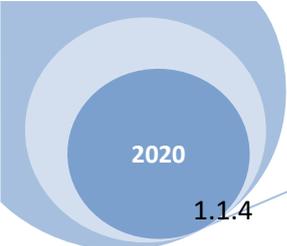


Fig. 1 Water Quality Status in Cork County for the period 2013-2018

Source: EPA – Catchments.ie website



1.1.4 Water quality data back to 2007 (See Fig. 2 overleaf) shows a worrying trend up to 2015, with deterioration in the number of waterbodies achieving good status and corresponding increases in the number of moderate and poor ranked waterbodies. An improvement can be seen for the period 2013-2018 with a notable increase in the percentage of good quality surface waters. Unfortunately the percentage of high status water surface waters has decreased by 6% to the lowest level on record since 2007. There is clearly considerable room for improvement and investment in water services infrastructure will contribute to reversing this decline.

Time Period	High	Good	Moderate	Poor	Bad
2007-2009	22%	59%	14%	5%	1%
2010-2012	23%	54%	16%	6%	0%
2010-2015	22%	51%	17%	10%	0%
2013-2018	16%	57%	19%	7%	1%

Fig. 2 Water Quality Status for all Surface Waters in Cork County - Trend 2007-2018

Source: EPA – Catchments.ie website, 2019

1.2 Background

- 1.2.1 The Planning and Development Act 2000, as amended, seeks to integrate the development plan process and water management through the requirement for Development Plans to have regard to the water services strategic plan for the area and to support the protection and enhancement of water quality, and compliance with environmental standards and objectives regarding water quality.
- 1.2.2 The Draft Guidelines on Water Services (published January 2018) emphasise the importance of Planning Authorities ascertaining the current position with regard to water services when preparing a plan. The Guidelines (page 9) indicate that “the quantum, location and distribution of new development must have regard to the capacity of public water services and make efficient use of, and maximise the capacity of, existing and planned water services infrastructure.”
- 1.2.3 The guidelines further indicate that where *“the provision or upgrade of water services infrastructure is a critical determinant for development in a plan area, the planning authority should seek to establish, in consultation with Irish Water, the key delivery requirements and whether the capacity constraints are likely to be addressed within the life time of the plan.It is recommended that, in preparing plans, Planning Authorities clearly identify the phasing of development to the provision of appropriate water services infrastructure”*.
- 1.2.4 This report aims to give a general account of the status of water services infrastructure within Cork County, including drinking water supply and waste water treatment, highlighting which settlements have water services capacity and those where services are absent or require further investment.

- 1.2.5 This report has been informed by data collected through the 4 separate workshops held by the Planning Policy Unit with Water Services senior management and operational staff across the four engineering zones within Cork County in April/May 2019. In addition, separate meetings were held with Irish Water and senior management to discuss strategic issues in particular with regard to the larger growth centres as identified in the National Planning Framework and the Draft Regional Spatial and Economic Strategy for the Southern Region and also environmentally sensitive areas.

2 Irish Water - Overview

- 2.1.1 Irish Water (IW) assumed responsibility for water services in 2014 and has developed a seven-year Business Plan for the period 2015 to 2021. The plan outlines the status of the water services infrastructure across the country and identifies a number of investment priorities for the organisation including upgrading drinking water treatment plants to avoid drinking water contamination (boil water notices / excessive levels of lead etc) and reducing leakage in the drinking water supply network to 38% nationally by 2021 (at 49% nationally in 2015); completing repairs to the sewer network, provision of new Wastewater Treatment Plants (WWTPs) to bring raw discharges to an end by 2021 and providing additional capacity in the drinking water and sewer networks etc. The organisation also seeks to deliver €1.1bn in efficiencies and cost savings, and invest €5.5bn in infrastructure.
- 2.1.2 The business plan notes that *“the repair and upgrading of our water treatment plants, wastewater treatment plants, water network and sewer network will require a multi-billion euro investment programme over many years. There will not be sufficient funding available in the shorter term to deliver everything that is needed. In implementing the capital investment programme, Irish Water will prioritise investment decisions to ensure that it utilises available capital most effectively by making investments that deliver the biggest impact while maximising value-for-money”*.
- 2.1.3 In 2015, Irish Water published the Water Services Strategic Plan, a 25 year Plan which includes a list of 44 settlements discharging untreated effluent, 24 of which were in the Region and 6 of which were located in Cork County. A number of these settlements are now provided with wastewater treatment, and Irish Water is aiming to deliver the upgrades to the remaining settlements by the end of 2021. Achieving the necessary compliance with the Urban Waste Water Treatment (UWWT) Directive is currently the focus of Irish Water’s investment in wastewater infrastructure and is likely to continue to be the investment driver in the medium-term. All such interventions will incorporate an appropriate growth provision. An update on the 6 locations is provided as follows:
- Ballycotton – Listed on Irish Water Investment Plans¹– New wastewater treatment plant (WWTP) to be provided with additional treatment. This project is currently in design and pre-planning stage. It is envisaged that planning, design and construction will take approximately 2 to 3 years and will be undertaken between 2019 and 2021 (subject to statutory approvals). The duration of construction is expected to be 20 months. It is anticipated that the construction works will commence in Summer 2020.
 - Castletownbere – WWTP upgrade underway, and networks project includes provision of new sewers, pumping stations and rising mains. At detailed design stage. No further IW plans for network extension or upgrades.

¹ Irish Water Investment Plans refers to the 2017-2021 Investment Plan and Draft Irish Water Investment Plan 2020-2024.

- Castletownshend – Listed on Irish Water Investment Plans – New WWTP to be provided with additional treatment. This project is currently in design and pre-planning stage.
- Ringaskiddy – Connection now completed to Cork Lower Harbour Sewerage Scheme through the new WWTP at Shanbally (connection completed July 2019), this now provides adequate sewerage capacity for the area.
- Timoleague/Courtmacsherry - new WWTP to ensure that wastewater discharging to Argideen River meets appropriate discharge standards – project due for completion by end of 2019.
- Whitegate/Aghada – New wastewater treatment plant - This project is currently in design and pre-planning stage.

2.1.4 Irish Water is preparing for the future by developing a National Water Resources Plan (NWRP). This strategic plan for water services will outline how it is intended to move towards a sustainable, secure and reliable public drinking water supply over the next 25 years, whilst safeguarding the environment. The NWRP will outline how Irish Water intends to maintain the balance between our supply from water sources around the country and demand for drinking water over the short, medium and long-term. This will allow them to prepare for the future and ensure that they can provide enough safe, clean drinking water to facilitate the social and economic growth of our country. A statutory public consultation will be launched in 2020 seeking feedback on the draft National Water Resources Plan and associated draft SEA Environmental Report and draft Natura Impact Statement. The NWRP Full Options Assessment (FOA) process for the Cork water resource zones will be commencing in early 2020.

2.1.5 General initiatives and priorities to enhance water supply will include:

1. Water supply projects in the region as part of Irish Water's current Capital Investment Plan, and current Networks and Capital Programme portfolio;
2. Investment in projects under leakage reduction programmes in all counties through Service Level Agreements between Irish Water and Local Authorities;
3. Water conservation campaign;
4. Protect the source of public and group scheme water supplies by the inclusion of Groundwater Source Protection Plans in Development Plans and the provisions of future plans to be developed for Drinking Water Protection Areas identified under the WFD;
5. Strategic water services through Irish Water's NWRP to move towards a sustainable, secure and reliable public drinking water supply over the next 25 years, whilst safeguarding our environment.

As the national provider of public water services, Irish Water has a key role in the development of an area, be it regional or local, and the delivery of spatial planning and economic policy and objectives.

3 National and Regional Policy

Planning is critically important to the management of water resources. The planning system both directly and indirectly influences effective water management. This includes water service provision.

3.1 National Planning Framework

- 3.1.1 The National Planning Framework's (NPF) National Strategic Outcome No. 9 focuses on Sustainable Management of Water, Waste and other Environmental resources. Water Quality is then expanded upon under National Policy Objective 63 as follows:

National Policy Objective 63

Ensure the efficient and sustainable use and development of water resources and water services infrastructure in order to manage and conserve water resources in a manner that supports a healthy society, economic development requirements and a cleaner environment.

- 3.1.2 Investment in water services infrastructure is critical to the implementation of the National Development Plan (NDP). Sustainable Management of Water and other Environmental Resources will in part be achieved through investment in water services, under the National Development Plan 2018-2027. The current Water Services Strategic Plan by Irish Water is being updated in light of the policies in the National Planning Framework to address the requirements of future development, while also addressing environmental requirements such as obligations under the EU Water Framework Directive-mandated River Basin Management Plans. Therefore, while much of the investment to date by Irish Water has been compliance focused, it is recognised that investment for growth is now required if NPF targets are to be achieved.
- 3.1.3 Many smaller towns and villages do not benefit from public water service networks, either in terms of water supply or wastewater treatment. While the Water Services Strategic Plan is beginning a new plan-led and collaborative investment approach, to support sustainable growth in rural towns and villages, Irish Water are developing proposals for a Small Towns and Villages Programme intended to provide water and wastewater growth capacity in smaller settlement which would not otherwise be provided for in its Investment Plan to 2024.
- 3.1.4 In order to ensure that sufficient lands are available to accommodate the projected growth in population within the County, Appendix 3 of the NPF outlines a methodology for a tiered approach to land zoning as follows:
- Tier 1 lands are to be comprised of 'Serviced Zoned Lands' i.e. lands that are able to connect to existing development services, i.e. road and footpath access including public lighting, foul sewer drainage, surface water drainage and water supply, for

which there is service capacity available, and can therefore accommodate new development.

- Tier 2 lands are comprised of sites that are not currently sufficiently serviced to support new development but have potential to become fully serviced within the life of the plan i.e. the lands are currently constrained due to the need to deliver some or all development services required to support new development, i.e. road or footpath access including lighting, foul sewer drainage, surface water drainage, water supply and/or additional service capacity.

3.1.5 Appendix 3 states ‘This infrastructural assessment must be aligned with the approved infrastructural investment programme(s) of the relevant delivery agency(ies), for example, Irish Water, or be based on a written commitment by the relevant delivery agency to provide the identified infrastructure within a specified timescale (i.e. within the lifetime of the plan). The planning authority may also commit to the delivery of the required and identified infrastructure in its own infrastructural investment programme (i.e. Budgeted Capital Programme) in order to support certain lands for zoning’.

3.1.6 To ensure compliance with the above requirements the Planning Policy Unit has carried out an assessment of the capacity of water services for each settlement in the County. A Capacity Register has been completed and a Housing Land Availability Study (HLAS) is now currently under way to look at each of the main settlements’ zoned site’s infrastructural requirements. This will inform zoning decisions as part of the upcoming review of the County Development Plan.

3.2 Draft Regional Spatial and Economic Strategy for the Southern Region

3.2.1 One of the key priorities for the region is to ensure that the settlement strategy of each County Development Plan has regard to the capacity of existing public water services, to ensure that investment is targeted to enable growth and that growth is phased such that planned water services infrastructure is delivered timely for infrastructure led sustainable growth patterns.

3.2.2 Based on national population growth targets (listed in Appendix 1 of the RSES) and input from the RSES, Irish Water has identified the need to review the projects on the draft investment plan to take account of increased growth rates. Necessary upgrades will be identified in Irish Water’s 2020-2024 Investment Plan and subsequent investment plans (these are subject to available funding and Irish Water’s additional obligations in addressing environmental drivers and constraints). The draft list of planned projects (November 2018) for Cork County is outlined in Appendix 4 of this document. A finalised Investment Plan list is expected later in 2019, and this may involve changes to projects listed.

3.2.3 The RSES contains a range of Regional Policy Objectives which support the delivery of water services in the county. In particular Objective RPO206 seeks to support Irish Water and the relevant Local Authorities in the region to eliminate untreated discharges from settlements in the short-term, while planning strategically for the long-term in tandem with Project Ireland 2040 and in increasing compliance with the requirements of the Urban Waste Water Treatment Directive.

3.3 Other Issues

3.3.1 Climate Change Considerations

Climate change will also have significant effects on the availability of water sources and on the capacity of water bodies to assimilate wastewater discharges through lower water levels in rivers and lakes in longer and drier summer periods but also through the impact of extreme weather events such as flooding on water services infrastructure. The impact of climate change on the water cycle and the resultant impact on water services therefore needs to be considered as part of the CDP review and more specifically at a settlement level where issues with water supply (abstraction) and assimilative capacity may occur.

It is vital that our settlements are made more resilient as the effects of climate change are already being felt in our communities. A particularly relevant example of the impact of climate change on water supply was seen in the summer of 2018, during a period of drought, when water supplies dried up in some areas of West Cork and water had to be tankered from Inniscarra to the town of Clonakilty. The occurrence of these extreme weather events is likely to increase further in the future and therefore contingency plans will have to be put in place which should include leakage reduction, customer water conservation and possible new sources for supply.

3.3.2 Abstraction Licensing Legislation

The EU Water Framework Directive requires Ireland to have a system in place for the registration and control of the abstraction of water. A commitment to introduce legislation in this area was included in the “River Basin Management Plan 2018 – 2021” which was published in April 2018.

The European Union (Water Policy) (Abstractions Registration) Regulations 2018 (S.I. 261 of 2018) made under the European Communities Act 1972, has established a register of abstractions to be managed by the EPA which came into effect on 16 July 2018.

The Government recently approved the General Scheme of a Water Environment (Abstractions) Bill 2018 (July 2018) which will repeal the Water Supplies Act 1942 and part of the Local Government (Sanitary Services) Act 1964 and replace them with a new stand-alone piece of primary legislation governing the abstraction of water. This Bill proposes a three-tiered registration and licensing system for the abstraction of water, with the EPA responsible for establishing and maintaining a database of registrations and for licensing.

1. At the lowest tier, all abstractors will need to abide by a set of general binding rules relating to water conservation and public health issues. Abstractors of 25 cubic metres or more per day will be required to register with the EPA. Thereafter, only those abstracting very large quantities of water will be required to apply to the EPA for a licence;
2. Abstractors of 2,000 cubic metres or more will automatically be required to apply for a licence;
3. and those abstracting 250 cubic metres or more in specific areas, where the EPA deems the abstractions to be of potential significance, will also be required to apply for a licence. It is estimated that around 6% of water bodies in Ireland are potentially at environmental risk due to abstraction pressures.

The Bill is expected to be signed into law later this year (2019). The Act will have an effect on all future abstractions in relation to public water supply, requiring registration over 25 cubic metres and licensing over 2,000 cubic metres or 250 cubic metres depending on the sensitivity of the water body.

The changes in licensing legislation will be taken into account by Irish Water as part of the National Water Resources Plan.

3.3.3 Emission Limit Values (ELVs) - A National Issue

In many instances, the Emission Limit Value standards set by the EPA when licensing treatment plants are significantly higher than the requirements of the Urban Waste Water Directive (UWWD). Some of these ELV standards cannot consistently be achieved even by relatively modern plants without significant upgrades.. This is a national issue not unique to Cork but it occurs in several locations across the County including key locations such as Carrigrennan and Charleville.

For example, even though there is a planned upgrade on the Irish Water Investment Plan for the Charleville WWTP to provide capacity, the upgrade will only achieve compliance with the Urban Waste Water Directive but will fall short of the ELV licence standards set by the EPA for some parameters.

With regard to the Emission Limit Values and the Carrigrennan Plant, according to the Annual Environmental Report (AER) (2017 – issued on 3rd April 2018. Note: 2018 AER imminently expected) the WWTP was non-compliant with the ELV's set in the wastewater discharge licence issued by the EPA. There were 40 samples non-compliant with the ELVs in relation to Total P (mg/l) and Total N (mg/l). The non-compliance is due to the WWTP not being designed for nutrient removal. The EPA have identified that the limiting nutrient in the receiving waters is total phosphorus. It is expected that the ELV for total nitrogen will be amended in the licence. Discussions are ongoing between IW and EPA in this regard. ELVs contribute to the receiving water achieving the environmental quality standards set in the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended), which are aimed at providing a high degree of protection to the receiving water body.

In assessing the capacity of a WWTP to cater for future development where an ELV issue pertains, the assessment has been based on the hydraulic and organic loadings of the treatment plant on the assumption that the ELV issue will be resolved in an approach that will be determined/ agreed at a national level between Irish Water and the EPA.

4 Summary of Water Supply and Waste Water Infrastructure for Cork County

PLEASE NOTE: The status of both Water Supply and Wastewater is constantly evolving through various programmes e.g. find and fix, rationalisation programmes, reservoir construction, infrastructure improvements and upgrades at wastewater treatment plants etc. The status given in each of the tables below is therefore a snapshot in time as of September 2019. The Draft County Development Plan will be updated as appropriate as new information becomes available during drafting.

4.1 Water Supply

- 4.1.1 In comparison to other Counties, Cork benefits from having significant natural resources with substantial water abstraction infrastructure already in place. The hydroelectric dam on the River Lee at Inniscarra, provides Cork City and the rest of Metropolitan Cork with more than adequate potable water supply to meet projected future needs. Through committed Irish Water improvement works, this plant alone can be expanded to cater for an additional 220,000 persons.
- 4.1.2 Irish Water has committed to reducing water leakage and the replacement of lead services nationally as part of its mandate to ensure that communities have clean safe drinking water. The current UFW (unaccounted for water)/leakage in Cork County is at 43% (on average), this is a marked improvement from the previous plan period which recorded leakage at 49%. Further improvements are planned to meet Irish Water's Business Plan which has a national target figure of 38% by 2021.
- 4.1.3 A significant upgrade and replacement of water mains in Mallow, Kinsale, Laharan Cross to Abbeys Well, Glantane to Lombardstown, Macroom and Doneraile have also been completed.
- 4.1.4 The provision of a high quality and secure water supply is one of the key objectives of Irish Water. Coupled with this is our national requirement to adhere to the EU Water Framework Directive which seeks to protect aquatic ecology and habitats, drinking water resources and bathing water. Failure to comply with this Directive will and has, resulted in significant fines being levied on National Government. In the long term, paying penalties is not sustainable and the cost to public health and wellbeing from having contaminated watercourses and estuaries would be substantial.

Key issues

- 4.1.5 The following are some of the key issues facing Cork County in terms of potable water supply:
- Protection of existing sources (sustainable and environmentally friendly abstraction).
 - Completion of trunk mains to ensure a security of supply.

- Continued investment in water abstraction infrastructure.
- Development of new sources such as bored wells.
- Continuation of the lead services replacement scheme.
- Treated water storage - Options in relation to providing treated water storage (reservoirs) in various locations (Bandon, Kinsale, Carrigtwohill, Mallow etc.) will be considered, along with many other options, as part of the full options assessment (FOA) part of the National Water Resource Plan (NWRP) which will be kicking off for the Cork water resource zones (WRZ) in early 2020. One output of the NWRP FOA process will be a prioritised list of treated water storage needs for all WRZs in County Cork.
- Continuation of rehabilitation schemes to minimise leakage. Charleville and Carrigaline are both examples where reductions from 70% to 55% in UFW were achieved in 2018/2019.

4.2 Waste Water

- 4.2.1 The Lower Harbour Main Drainage Scheme estimated to cost in the region of €97m represents a significant investment in the Cork Area and will see the separation of storm and foul for the lower harbour towns of Cobh, Carrigaline, Ringaskiddy, Passage West, Monkstown and Crosshaven. The construction of a state of the art treatment facility at Shanbally (65,000PE) has already been completed and is now taking raw effluent from the towns of Carrigaline and Ringaskiddy. It is worth noting that the Shanbally Plant uses a significant advancement in technology (The Nereda Process - advanced nutrient removal technology - Aerobic Granular Sludge (AGS)) resulting in capacity increases as well as extensive nitrogen removal. The Nereda treatment process will consistently produce high quality treated wastewater which can be safely discharged into sensitive environments.
- 4.2.2 The same technology has been used to upgrade the Clonakilty Waste Water Treatment Plant (20,500PE) and the Carrigtohill WWTP (30,000PE). In a similar light a number of smaller schemes throughout the county have either been completed, e.g. Riverstick WWTP (1,000PE), or are in the process of being designed for construction.

Key Issues

- 4.2.3 The following are some of the key issues facing Cork County in terms of waste water:
- Although the majority of the plants in operation meet the Urban Waste Water Treatment Directive (UWWTD) they do not meet the Emission Limit Values (ELVs) limits set by the Environmental Protection Agency (EPA) who set a higher standard to achieve. For example, one of the key issues affecting the future development of the Cork Metropolitan Area is the ELV limit set for Carrigrennan and the lack of tertiary treatment provided. A number of options are available to address this, including an outfall to the outer harbour (estimated to be 9km in length and costing in the region

of €130m). A cost benefit analysis of this option compared to the provision of on-site tertiary treatment (€30m to treat a ceiling population level that still outfalls to the SAC), or the use of emerging technologies such as AGS as proposed for the upgrade of the Ringsend WWTP in Dublin, would need to be undertaken, influenced by the future needs of the Cork Metropolitan Area in terms of targeted population growth. Similar operational compliance issues apply in Midleton, Dunmanway, Charleville and Mitchelstown.

- Continued investment by Irish Water is required to maintain the numerous minor plants serving villages and some towns throughout the County.
- Another major issue faced in relation to wastewater is ensuring the assimilative capacity of receiving water courses is not impacted by discharge or run off. This has particularly serious implications for watercourses and estuarine areas designated under the Habitats Directive and Birds Directive where sensitive species require high quality water e.g. Fresh Water Pearl Mussel on the River Allow, tributary of the River Blackwater.

4.3 Surface Water

4.3.1 While generally surface water drainage is the responsibility of the Roads Department of Cork County Council, historically within towns and villages surface water has been drained to combined sewers which are in the charge of Irish Water. In Ireland, most urban areas are drained by combined sewer systems, which convey wastewater and stormwater in a single pipe. During heavier or intense rainfall the capacity of combined sewers may be exceeded, leading to untreated discharges to receiving waters via storm water overflows. Irish Water has responsibility for all combined sewers.

Key Issues

- 4.3.2 The following are some of the key issues facing Cork in terms of surface water:
- Issues with capacity at waste water treatment plants, surcharges experienced after heavy rainfall and similarly, drought conditions can give rise to problems with the assimilative capacity of water bodies and recharge issues for water sources. It is important that proposals be advanced that outline the strategic approach being taken in relation to surface water management and that where necessary and feasible, options to separate the surface water system from the foul water system are considered.
 - In addition, Sustainable Drainage Systems (SuDS) can play a role in reducing and managing runoff to surface water drainage systems as well as improving water quality and contributing to local amenity. This is something that can also be considered in the context of the provision of wider green infrastructure.

4.4 Water Services Infrastructure

4.4.1 Cork County has a large settlement network. The Local Area Plans adopted in 2017 identified 326 locations as settlements including Towns, Key Villages, Villages, Village Nuclei,

Other Locations and seven West Cork Islands. The recent alteration to the Cork City administrative boundary has resulted in 18 settlements moving to the City area and so this report focuses on the remaining 308 settlements – including the West Cork Islands.

- 4.4.2 Irish Water provide a public drinking water supply in 249 of these settlements (81%) and manage waste water treatment infrastructure in 133 settlements (43%).
- 4.4.3 In some settlements, the waste water treatment infrastructure may comprise a sewer network only; discharging to the sea i.e. there is no treatment plant.
- 4.4.4 In some cases, not all development within a settlement will be connected to Irish Water Infrastructure. Developments not connected to Irish Water infrastructure, either inside or outside a settlement, will generally have a well and/ or a proprietary wastewater treatment plant / septic tank. In some coastal areas individual properties may discharge directly to the sea (via sewer only).
- 4.4.5 A summary of the level of water services provision across the settlement network is outlined in Table 4.1 below. Public drinking water and waste water treatment have been provided in every existing Main Settlement and Key Village. While a high proportion of settlements at the lower end of the settlement network have access to public drinking water, only 54% of Villages, 7% of Village Nuclei and 9% of Other Locations have waste water treatment facilities.

Table 4.1 Irish Water Infrastructure

Cork County Settlement Network	Total No	IW Drinking Water Infrastructure		IW Wastewater Infrastructure	
		Yes	No	Yes	No
Main Settlements	26*	25	1**	25	1**
Key Villages	45	45	0	45	0
Villages	96	87	9	52	44
Village Nuclei	88	55	33	6	82
Other Location	53	37	16	5	48
Total	308	249	59	133	175

*Includes Little Island, Ringaskiddy, and Monard. ** Monard

- 4.4.6 While Irish Water may have infrastructure in a settlement, the status of the infrastructure can vary considerably in terms of its age, condition, level of treatment provided, capacity available, compliance standard of the discharge etc. The implications of the draft Guidelines on Water Services on the appropriateness of allocating growth to settlements with no services, inadequate services and no prospect of ever having adequate services will need to be examined in the CDP review process.
- 4.4.7 Data collected by the PPU in 2015 assessed the status of the water services infrastructure (drinking water and waste water treatment) in each settlement. The study identified the settlements where IW infrastructure was available, and the ability of the infrastructure to

cater for the level of housing growth envisaged by the Local Area Plans. The study focused on the capacity of the WWTP / water supply source.

- 4.4.8 While not reflected in the classification system detailed below, the Local Area Plans acknowledge that, in terms of waste water, while there may be capacity in a WWTP to cater for additional development, there may be additional issues of water quality impacts and / or licence compliance that need to be addressed in order to accommodate further growth. Similarly, in terms of drinking water, any proposal to increase abstraction levels in areas where water levels are important from a habitat protection perspective, would first require Habitat Directive Assessment.
- 4.4.9 The results of the 2015 assessment have been updated significantly in 2019 to take account of new information available in relation to Irish Water's Investment Plan and also as a result of the aforementioned meetings with Senior Management within the Water Services Department of Cork County Council and targeted workshops with the relevant area staff.
- 4.4.10 The results were classified on the basis of a simple traffic light system as per Table 4.2.

Table 4.2: Water Services Key
Irish Water Services in place with broadly adequate existing water services capacity.
Future Capacity subject to implementation of Irish Water Investment Plan (IWIP) during Plan period.
Irish Water Services in place with limited water services capacity.
No existing Irish Water services or no capacity in current services.

Waste Water Treatment

- 4.4.11 The results of the assessment for waste water treatment are shown in Table 4.3 below.

Table 4.3: Status of Waste Water Treatment Systems within Cork County		
Category	No of settlements	Growth allocation: No of housing units.
No. of settlements with WWTP capacity.	45	13,403
No. of settlements which will have capacity within Plan period (on IWIPs)	49*	21,295
No. of settlements with some spare capacity but which require upgrades to WWTP to accommodate all growth	16	2,719
No. of settlements with overloaded WWTP or where significant upgrade or new WWTP required	26	1,435
No. of settlements where <u>no existing WWT</u> infrastructure	172	1,530
Total	308	40,382

*includes Monard

4.4.12 The data can be further broken down by Municipal District as shown below:

Table 4.4: Provisional Summary of MD with sufficient WWTP capacity to cater for growth currently			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline *	4/15	3,357
2	Bandon Kinsale	2/40	864
3	Macroom	6/51	184
4	Cobh	5/19	4,214
5	East Cork	4/32	2,238
6	Fermoy	7/29	360
7	Kanturk Mallow	13/51	485
8	West Cork	4/71	1,701
	Total	45/308	13,403

* Delivery of Lower Harbour scheme complete in Carrigaline and ongoing in Passage West.

Table 4.5: Provisional Summary of MD – Settlements proposed for upgrade during Plan Period			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	1/15	45
2	Bandon Kinsale	4/40	1,270
3	Macroom	7/51	956
4	Cobh*	2/19	3,505
5	East Cork**	9/32	6,130
6	Fermoy	10/29	2,407
7	Kanturk Mallow	10/51	6,120
8	West Cork	6/71	862
	Total	49/308	21,295

*includes Monard

**Includes Midleton - IW are proposing some capital upgrade works at Midleton, possibly to bring PE capacity from 15000 to 20000, to be confirmed.

Table 4.6: Provisional Summary of MD where <u>some</u> WWTP capacity available -but upgrades required			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	1	286
2	Bandon Kinsale	1	86
3	Macroom	2	331
4	Cobh	0	0
5	East Cork	0	0
6	Fermoy	0	0
7	Kanturk Mallow	6	283
8	West Cork	6	1,733
	Total	16	2,719

	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	0	0
2	Bandon Kinsale	4	330
3	Macroom	2	45
4	Cobh	2	100
5	East Cork	2	35
6	Fermoy	0	0
7	Kanturk Mallow	4	194
8	West Cork*	12	731
	Total	26	1,435

* Includes Dunmanway where capacity available in plant but issue exists with outfall.

	MD	No of settlements	LAP Scale of growth housing units	Other locations
1	Carrigaline	3	52	5
2	Bandon Kinsale	21	486	9
3	Macroom	29	326	5
4	Cobh	3	35	7
5	East Cork	9	49	8
6	Fermoy	12	53	0
7	Kanturk Mallow	17	150	1
8	West Cork	30	379	13
	Total	124	1,530	48

Water Supply

4.4.13 The results for Water Supply are shown in Table 9 below.

Category	No of settlements	Growth allocation: No of housing units.
No. of settlements with Drinking water capacity.	95	7,827
No. of settlements which will have capacity within Plan period (on IWIPs)	13	6,296
No. of settlements where some capacity available but upgrade to WS or new source is required	85	19,688
No. of settlements with no spare capacity / in need of significant upgrade or new source	58	4,482
No. of settlements with <u>no existing</u> public Drinking Water Supply	57	2,089
Total	308	40,382

4.4.14 This can be further detailed by Municipal District as follows:

Table 4.10: Provisional Summary of MD with sufficient Drinking Water capacity			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	6/14	2,487
2	Bandon Kinsale	11/41	690
3	Macroom	13/51	410
4	Cobh	10/19	513
5	East Cork	4/32	215
6	Fermoy	18/29	1,599
7	Kanturk Mallow	24/51	1,677
8	West Cork	9/71	236
	Total	95/308	7,827

Table 4.11: Provisional Summary of MD – Settlements proposed for upgrade during Plan Period			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	0	0
2	Bandon Kinsale	1/40	150
3	Macroom	1/51	50
4	Cobh	1	50
5	East Cork*	1/32	5,255
6	Fermoy	1/29	50
7	Kanturk Mallow	0	0
8	West Cork	8/51	741
	Total	13/308	6,296

*Midleton - IW Investment Plan 2020-2024 - Midleton WSS - Network and Storage

Table 4.12: Provisional Summary of MD with some drinking water capacity available but upgrades required			
	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	3	1,211
2	Bandon Kinsale	6	1,751
3	Macroom	14	1,094
4	Cobh	6	5,559
5	East Cork	10	2,603
6	Fermoy	4	63
7	Kanturk Mallow	22	5,385
8	West Cork	20	2,022
	Total	85	19,688

Table 4.13: Provisional Summary of MD limited or no spare drinking water capacity

	MD	No of settlements	LAP Scale of growth housing units
1	Carrigaline	3	42
2	Bandon Kinsale	10	377
3	Macroom	3	125
4	Cobh	0	0
5	East Cork	11	365
6	Fermoy*	3	1,095
7	Kanturk Mallow	2	155
8	West Cork	27	2,323
	Total	58	4482

*Includes Mitchelstown

Table 4.14: Provisional Summary of MD with no public Drinking Water Supply

	MD	No of settlements	LAP Scale of growth housing units	Other locations
1	Carrigaline	0	0	2
2	Bandon Kinsale	6	68	7
3	Macroom	17	163	3
4	Cobh*	2	1,732	0
5	East Cork	4	14	2
6	Fermoy	3	13	0
7	Kanturk Mallow	3	15	0
8	West Cork	6	84	2
	Total	41	2,089	16

*includes Monard with 1727 units

4.4.15 Key issues arising are:

- There are large numbers of settlements at the lower end of the settlement network that have no water services infrastructure (no drinking water and no WWT) – 7 Villages, 34 Village nuclei and 14 Other Locations.
- Many settlements which have no existing waste water treatment facilities have significant housing allocations, yet no reasonable prospect of being able to deliver the quantum of housing proposed.
- Many of the areas requiring investment in water services have relatively low levels of planned growth (limited housing return for the scale of investment needed).
- Some of the smaller settlements with water services capacity have low levels of housing planned in them.
- The West Cork MD, followed by Macroom MD, have the highest numbers of settlements without waste water treatment infrastructure. (West Cork = 43/71 and Macroom = 34/51).
- The West Cork MD has the least capacity in terms of public drinking water across its settlement network.

4.5 Water Services Analysis by Municipal District

4.5.1 This section provides an overview of the status of each settlement within each Municipal district in accordance with the legend included in section 3:

Water Services Key	Irish Water Services in place with broadly adequate existing water services capacity.
	Future Capacity subject to implementation of Irish Water Investment Plan during Plan period.
	Irish Water Services in place with limited water services capacity.
	No existing Irish Water services or no capacity in current services.

Carrigaline MD

4.5.2 The Carrigaline MD has the least number of settlements within the county at 14 (9 plus 5 Other Locations). Provision has been made in the LAP for an additional 3,750 additional dwellings. It's two main settlements have capacity available to accommodate growth with waste water capacity available through the recently commissioned Lower Harbour Scheme and water supply capacity available, though upgrades are required for trunk mains and storage in Passage West to ensure adequate supply for the plan period.

4.5.3 Crosshaven village (but not the wider Bay area) has now been connected to the Lower Harbour Sewerage scheme, but drinking water capacity issues remain.

Carrigaline Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Carrigaline	-	2422	Available	The new lower harbour WWTP under construction.
Passage West	-	925	Upgrades required including to trunk main and storage.	The new lower harbour WWTP under construction.
Ringaskiddy	-	-	Available	The new lower harbour WWTP under construction.
Total Main Towns		3347		
Key Villages				

Crosshaven and Bays	1801	286	Upgrades required	Crosshaven village now served by Lwr Harbour SS since Dec 2016 however no provision in Bays area.
Total Key Villages		286		
Villages				
Ballygarvan	178	45	Available	IW Investment Plan 2020-2024 - Ballygarvan WWTP
Halfway	111	10	Available	Available
Minane Bridge	58	20	Upgrades required	Upgrades required
Waterfall	89	22	Upgrades required	None
Total Villages		97		
Village Nuclei				
Fivemilebridge	31	10	Available	None
Total Village Nuclei		10		
Overall Total		3750		
Other Locations				
Curraghbinny	-	-	Network upgrades required.	None
Gogganshill	-	-	None	None
Killeady	-	-	Available	None
Robert's Cove	-	-	Upgrades required.	None
Tracton	-	-	None	None

Bandon Kinsale MD

- 4.5.4 There are 41 Settlements within the Bandon Kinsale MD and provision has been made for an additional 3,036 dwelling units. Only one settlement, Riverstick has immediate sufficient water and waste water treatment capacity to accommodate planned development amounting to 150 units.
- 4.5.5 Bandon town requires upgrades to its water supply and WWTP facilities. Irish Water's Investment Plan makes provision for upgrading the WWT plant and network. The Investment Plan does not reference improvements to the water supply but the LAP indicates that plans are in place to rehabilitate water mains to improve water pressure, capacity and reduce leakage for some areas of the town but there are no plans in place to address issues in the north of the town (possible need for a reservoir etc.)
- 4.5.6 Kinsale has capacity in its WWTP though some network extensions will be required. The drinking water supply comes from Inishannon and there is ample capacity however additional storage is required to service sites in Kinsale and a new reservoir will be required.
- 4.5.7 In terms of the smaller settlements:
- 31 of the 41 settlements in the MD have no existing WWT facilities.
 - Only one of the six Key Villages – Riverstick - has available drinking water and WWTP capacity.
 - 4 of the Villages require significant investment in both WWT facilities and drinking water.

- Seven Villages and all fourteen Village Nuclei, with a housing allocation of 486 new houses, have no existing waste water treatment facilities. Eight of them have no drinking water supply.
- Ballinhassig currently has no Waste Water treatment facilities and Irish Water’s Investment Plan does not provide for investment in this village. It is unlikely therefore that the 70 houses allocated to this village will be realised.
- Nine of the 10 designated “other locations” have no WWT facilities.
- Fifteen designated Villages /Village Nuclei and other Locations have neither public water / or waste water treatment facilities.

Bandon Kinsale Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Bandon	6640	892	Upgrades required including possible new reservoir.	IW Investment Plan 2020-2024 – network and WWTP upgrades.
Kinsale	4893	714	Upgrade required including possible reservoir.	Available, though network extensions will be required.
Total Main Towns		1606		
Key Villages				
Ballinspittle	121	100	Network issues.	Upgrades and new WWTP required.
Belgooly	273	150	Rationalisation underway which will yield capacity.	Upgrades and new WWTP required.
Courtmacsherry	417	155	Subject to discussion with IW but not on the Investment Plan.	Provision of new WWTP and sewer network underway.
Inishannon	315	150	New reservoir imminent.	Upgrade of WWTP on IW investment Plan 2020-2024.
Riverstick	249	150	Available	New WWTP completed.
Timoleague	167	73	Commitment from IW in July 2018 however is not on the IW Investment Plan.	Provision of new WWTP and sewer network underway.
Total Key Villages		778		
Villages				
Ballinadee	8	34	Available	None
Ballinhassig	25	70	Available	No WWTP available
Butlerstown	31	15	New source and treatment required.	None
Clogagh	10	7	None	None
Crossbarry	116	75	Available; upgrading on mains may be required.	None
Kilbrittain	82	86	Available	ELV issues relating to the WWTP.
Newcestown	24	15	Available	None

Bandon Kinsale Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Old Chapel	112	80	Upgrade required due to volume and pressure issues.	Upgrading and extension of sewers required.
Ring	21	10	New source and treatment required.	None
Total Villages		392		
Village Nuclei				
Aghyohil	31	20	Private group scheme and possible capacity issues.	None
Ballinacurra/ Brinny	11	5	None	None
Ballyfeard	5	10	None	None
Ballyheada	21	20	Available – mains extension required.	None
Crossmahon	25	23	None	None
Dunderrow	60	67	Available	None
Farnivane	6	5	None	None
Gaggan	28	25	Network capacity issue.	None
Garrettstown/ Garrylucas	-	20	Available	None
Knockavilla/ Old Chapel Cross	-	5	None	None
Lislevane	14	5	None	None
Nohoval	27	39	Capacity issues with bored well.	None
Tinkers Cross	10	13	None	None
Upton	7	3	Available	None
Total Village Nuclei		260		
Overall Total		3036		
Other Locations				
Ballinglanna	-	-	Upgrades required	None
Ballymartle	-	-	None	None
Barrells Cross	-	-	None	None
Browns mills	-	-	Network capacity issues.	None
Gurrans	-	-	None	None
Jagoe's Mill	-	-	None	None
Kilcolman	-	-	None	None
Kilmacsimon Quay	-	-	Network issues.	Private sewer network and WWTP only.
Oysterhaven	-	-	None	None
Sandy Cove	-	-	None	None

Macroom MD

4.5.8 There are 51 settlements within the Macroom MD and provision is made for an additional 1,842 dwelling units.

- 28 of the 51 settlements in the MD have no existing WWT facilities.

- Only Cloghroe has adequate capacity in both drinking water and WWT (dark green) to accommodate planned growth (192 units) .
- There are 4 Key Villages : all have WWTP or network capacity issues.
- There are 17 villages: 8 Villages have no existing WWTP (provision for 200 houses). 11 villages require investment in drinking water to cater for planned growth.
- There are 23 village nuclei: only 3 have existing WWT infrastructure and only 2 of these have capacity for additional development.
- There are 5 Other Locations – none have WWT facilities and 3 have no public drinking water.

Macroom Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Macroom	-	468	Capacity gains from leakage reduction measures.	Upgrades required to network and WWTP – on IW Investment Plan.
Millstreet	738	177	Available	Upgrading of WWTP required – on IW Investment Plan.
Total Main Towns		645		
Key Villages				
Ballingeary	96	60	Upgrade required.	IW Investment Plan 2017-2021 and 2020-2024 - Ballingeary SS - WWTP & Network Upgrade
Ballymakeery/ Ballyvourney	260	45	Upgrades required	IW Investment Plan 2017-2021 and 2020-2024 – Ballyvourney/ Ballymakeery SS - WWTP & Network Upgrade
Coachford	181	116	Available	Upgrades commenced – on IW Investment Plan.
Killumney/ Ovens	476	251	Network and pumping stations issues.	Network capacity issues.
Total Key Villages		472		
Villages				
Aghabullogue	24	19	Available	Available
Aherla	142	50	On IW Countywide Treated Water Storage programme.	None
Ballydaly	14	5	Available	None
Ballynora	26	15	Available	None
Cloghduv	116	80	Upgrade required	Infiltration issue.
Clondrohid	72	80	Capacity issues	Available
Courtbrack	43	66	None	None
Crookstown	92	40	Inadequate supply	Overcapacity
Dripsey Model Village	141	30	Available	Upgrading commencing – on IW Investment Plan.
Inchigeelagh	93	60	Capacity and storage issues	On IW Investment Plan for

Macroom Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
				upgrading
Kilmichael	6	3	None	None
Kilmurry	54	15	Capacity issues pending upgrade	Council houses serviced only. WWTP and network required.
Kilnamartyra	49	20	Capacity issues	Available
Rylane/ Seiscne	70	40	Major network issues	Available
Stuake/ Donoughmore	11	20	Capacity issues	None
Teerelton	22	16	None	None
Upper Dripsey	36	25	Available	None
Total Villages		584		
Village Nuclei				
Aubane	6	5	None	None
Ballinagree	18	15	Capacity issues	Available
Bealnamorive	7	5	None	None
Berrings	32	16	None – private Group Water scheme only	None
Canovee	-	3	Available	None
Carrigadrohid/ Killinardrish	24	5	Available	None
Carriganimmy	12	5	None	None
Cloghboola	11	5	None	None
Cloghroe	36	10	Available	Available
Coolea	-	5	Capacity issues	Upgrades network and WWTP required.
Farnanes	20	5	None	None
Firmount	8	6	Capacity issues	None
Fornaght	10	9	Capacity issues	None
Johnstown	16	5	Upgrades required	None
Kilbarry	2	3	None	None
Lissarda	14	5	None	None
Lower Dripsey	4	5	Available	None
Matehy	4	4	None	None
New Tipperary	12	5	Capacity issues	None
Reananerree	10	5	None	None
Rusheen	10	5	None	None
Tooms	8	5	None	None
Toon Bridge	19	5	None	None
Total Village Nuclei		141		
Overall Total		1842		
Other Locations				
Bealablath	-	-	None	None
Farran/ Farran Lower	-	-	None	None
Gougane Barra	-	-	None	None
Inniscarra	-	-	Available	None
Srelane Cross	-	-	Available	None

Cobh MD

4.5.9 There are 19 settlements in the MD with a housing allocation of 7,854 units (including Monard).

4.5.10 In terms of housing growth, three of the main settlements in the Cobh MD have capacity in drinking water and WWT to accommodate growth – subject to resolution of compliance issues at Carrigrennan for both Little Island and Glounthaune.

- Monard has been included on the IW IP for 2020-2024 where upgrade of strategic elements of the collection systems to facilitate future are proposed.
- At Key Village both Glounthaune and Watergrasshill have adequate water services capacity to deal with the projected scale of growth of 508 units. Carrignavar is currently under pressure with regard to both water supply and waste water services.
- The village of Knockraha requires a new WWTP. Whitechurch is currently experiencing issues with water supply but has available capacity for WWT subject to compliance issues being resolved at Carrigrennan.
- None of the village nuclei have WWT facilities.
- All of the Other Locations also lack WWT infrastructure, however Fota Island does connect to the Carrigtwohill WWTP.

Cobh Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Carrigtwohill	1980	3656	Supply from Inniscarra will address capacity but additional storage possibly required.	Available Capacity however ELV Issue. IWIP - Upgrades proposed to elements of collection systems to facilitate growth.
Cobh	5509	1778	Upgrades required including cast iron mains with possible switching of supply to Iniscarra.	Lower Harbour Sewerage Scheme under construction.
Little Island	537	0	Available	Available – compliance issues with Carrigrennan.
Monard	87	1727	None	Upgrades proposed to below ground WWT system to connect new development.
Total Main Towns		7161		
Key Villages				
Carrignavar	175	100	Upgrades required	Upgrade to WWTP required – not on IW Investment Plan.
Glounthaune	506	400	Available	Available – compliance issues with Carrigrennan.

Cobh Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Watergrasshill	463	108	Available	Available
Total Key Villages		608		
Villages				
Knockraha	119	25	Upgrades required.	Requires new WWTP.
Whitechurch	207	50	One of two boreholes out of action. IWIP – network extension proposed below ground.	Available – compliance issues with Carrigrennan. IWIP – below ground network extensions proposed.
Total Villages		75		
Village Nuclei				
Ballymore/Walterstown	102	5	None	None
Caherlag	31	5	Available	None
Total Village Nuclei		10		
Overall Total				
		7,854		
Other Locations				
Belvelly	-	-	Water quality issue.	None
Bottlehill	-	-	Available	None
Carrigaloe	-	-	Available	None
Fota Island	-	-	Available	None – existing private sewer connects to Carrigtwohill WWTP.
Haulbowline Island	-	-	Available	None – private sewers only
Marino Point	-	-	Available	None
Spike Island	-	-	Upgrade required.	None
Templemichael	-	-	Available	None – only existing septic tank.

East Cork:

4.5.11 There are 32 settlements in East Cork, with a housing allocation 8,452 units.

- 11 of the 32 settlements have no existing WWT facilities (two settlements do have septic tank systems).
- Midleton is listed on the Irish Water Investment Plan for both Drinking Water Supply and Wastewater and capital upgrade works will provide capacity in this settlement over the Plan period.
- Four settlements have sufficient WWT capacity to cater for planned levels of growth and five additional settlements (Midleton, Castlemartyr, Cloyne, Whitegate/Aghada, and Ballycotton) are listed on the IW investment Plan for planned works.
- Three settlements at Village and Village Nuclei have adequate drinking water infrastructure to cater for planned growth and Killeagh has a planned new reservoir and disinfection project.

- One of the eight villages has no WWT infrastructure (Churchtown South).
- Eight out of ten Village Nuclei have no WWT infrastructure, and six have neither drinking water or WWT.

East Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Midleton	5133	5255	Project to extend City & Harbour truck main ongoing – IW IP.	Capital upgrade works proposed
Youghal	4246	1983	Leakage reduction programme in place	Available
Total Main Towns		7238		
Key Villages				
Castlemartyr	658	235	Limited capacity available.	Limited capacity but on IW IP for completion in 2024.
Cloyne	702	255	Capacity issues and treatment issues	Upgrade of the WWTP is on IW IP.
Killeagh	349	135	New reservoir and disinfection project planned.	Available
Whitegate and Aghada	893	190	Significant upgrades required.	Project to provide WWTP in early stages – on IW IP.
Total Key Villages		815		
Villages				
Ballycotton	303	45	Significant upgrades required.	Project to provide WWTP in early stages – on IW IP.
Ballymacoda	85	25	No spare capacity	New WWTP required to replace septic tank.
Churchtown South	26	15	Capacity issues.	None
Dungourney	48	10	Available	New WWTP required to replace septic tank.
Ladysbridge	232	40	Planned upgrades will provide some capacity.	Available
Mogeely	152	80	Upgrades required.	Available
Saleen	0	50	Limited spare capacity.	Provision of a new WWTP in progress.
Shanagarry/ Garryvoe	358	70	Available	Provision of a new WWTP in progress.
Total Villages		335		
Village Nuclei				
Ballincurrig	-	10	Capacity and storage issues	Project proposed
Ballinrostig	-	5	Upgrades required.	None
Ballintotis	-	5	Upgrades required.	None
Ballymackibbott	-	2	None	None
Clonmult	-	5	None	None
Gortaroo (Gortroe)	-	5	None	None
Inch	-	0	None	None
Leamlara	-	10	None	None

East Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Lisgoold	-	20	Capacity and storage issues	Upgrades planned
Mount Uniacke	-	2	None	None
Total Village Nuclei		64		
Overall Total		8,452		
Other Locations				
Barnabrow/ Ballymaloe	-	-	Available	None
Carriganass	-	-	None	None
Garryvoe Upper	-	-	Watermain inadequate.	None
Gyleen	-	-	Upgrades required.	None
Knockadoon	-	-	No capacity, upgrades required.	None
Redbarn	-	-	None	None
Roche's Point	-	-	Upgrades required	None
Trabolgan	-	-	Upgrades required	None (only private)

Fermoy MD

4.5.12 There are 29 settlements with a housing allocation of 2,820 units.

- 12 of the 29 settlements have no existing WWT facilities.
- Mitchelstown requires investment in WWT and Drinking Water Supply. The Irish Water Investment Plan lists Mitchelstown WWTP for upgrades.
- There are ten Key Villages; three have sufficient capacity in drinking water and WWT with a combined potential scale of development of 270 units to accommodate planned growth. Six other Key villages have WWT projects that have been listed on the Irish Water Investment Plan, when these are completed an additional six Key Villages will have significant capacity for development from both a waste water and water supply side.
- There are nine villages – three have sufficient capacity in drinking water and WWT (40 housing units) and four have no existing WWT infrastructure (18 units).
- None of the eight Village Nuclei have WWT facilities.

Fermoy Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Fermoy	-	938	Available	DAP being prepared by IW. On IW IP 2020-2024.
Mitchelstown	-	1040	Significant upgrades	Upgrades planned – on IW

Fermoy Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
			required – new source and capacity issues.	IP but also issues with compliance to EPA ELV licence.
Total Main Towns		1978		
Key Villages				
Ballyhooly	199	50	Upgrades required to trunk main and leakage issues.	Upgrades planned – IW IP
Castlelyons/ Bridebridge	210	40	Available	Available – under loaded
Castletownroche	217	54	Available	New WWTP planned – IW IP.
Conna	170	30	Available	Upgrades to WWTP planned – IW IP
Doneraile	411	180	Available	Available
Glanworth	257	50	Upgrades planned	Upgrades planned to WWTP – IW IP.
Glenville	166	100	Rationalisation scheme underway.	Upgrades planned – IW IP
Kildorrery	173	50	New reservoir project underway.	Available
Kilworth	412	50	Upgrades required	Available
Rathcormack	670	120	Upgrades underway	Upgrades on IW IP.
Total Key Villages		724		
Villages				
Ballindangan	10	5	Available	None
Ballynoe	70	20	Available	Available
Bartlemy	34	10	Available	Available
Clondulane	180	20	Available	Upgrades required – on IW IP.
Coolagown	19	5	Available	None
Curraglass	17	3	None	None
Glenahulla	28	5	Available	None
Killavullen	131	5	Upgrades underway.	Upgrades required – on IW IP.
Shanballymore	67	10	Available	Available
Total Villages		83		
Village Nuclei				
Aghern	5	5	None	None
Araglin	7	5	Inadequate main	None
Ballygiblin	2	4	Upgrades required.	None
Curraghalla	6	5	None	None
Grange	28	5	Upgrades required.	None
Kildinan	12	5	Upgrades required.	None
Knockanevin	1	3	Limited capacity	None
Rockmills	14	3	Limited capacity	None
Total Village Nuclei		35		
Overall Total		2820		

Kanturk Mallow MD

4.5.13 There are 51 settlements in the MD with a housing allocation of 7,232 units.

- 16 of the 51 settlements have no existing WWT infrastructure.
- Mallow requires major investment on the water supply side to provide for a new reservoir at Rough Hill and a new trunk main into the town but this does not have funding and the design and planning processes have not even begun.
- Six of the eight key villages require investment in WWT (2 are currently listed on the IWIP), seven require investment in drinking water.
- There are 24 villages –Five have sufficient capacity in both Drinking Water and Waste Water Treatment to cater for planned growth and a further two will have sufficient capacity as they are listed under the IWIP for WWTP upgrades. 6 villages have no public WWT infrastructure. Four locations have some capacity.

Kanturk-Mallow Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Buttevant	533	298	Available	Available
Charleville		804	Available	Upgrades planned – IW IP. ELV Licence issue
Kanturk	1251	141	Available	Upgrades planned – IW IP.
Mallow	5554	4552	New reservoir possibly required.	Upgrades planned – IW IP.
Newmarket	488	155	Available	Project planned – IW IP.
Total Main Towns		5950		
Key Villages				
Ballydesmond	107	53	Available	Limited capacity
Banteer	167	200	Reservoir required.	Upgrades required – IW IP
Boherbue	196	150	Limited capacity	Upgrades required – IW IP
Dromina	124	30	Leakage issues	WWTP overloaded
Grenagh	217	150	At capacity	Upgrades required
Knocknagree	94	30	Leakage issues	Available
Milford	124	30	Leakage issues	Available
Newtownshandrum	137	125	Leakage issues	Upgrades to network and WWTP required.
Total Key Villages		768		
Villages				
Ballyclough	112	20	Available	Upgrades planned - IW IP
Ballyhea	45	30	Leakage issues	None for overall village
Burnfort	24	10	Available	None
Bweeng	177	10	Available	Upgrades planned – IW IP.
Castlemagner	118	30	Leakage issues	None
Cecilstown	41	10	Available	Available
Churchtown	252	25	Leakage issues	Upgrades planned – IW IP
Cullen	47	25	Leakage issues	Available
Derrinagree	20	5	Leakage issues	None
Dromahane	343	63	Upgrades required.	Upgrades planned – IW IP

Kanturk-Mallow Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Freemount	114	20	Available	Infiltration issues
Glantane	59	10	Upgrades in progress	No public sewer
Kilbrin	78	20	Upgrades required	Available
Kilcorney	22	10	Available	Available
Kiskeam	65	24	Upgrades in progress	WWTP overloaded
Liscarroll	122	15	Available	Available
Lismire	30	30	Available	WWTP not taken in charge yet.
Lombardstown	66	10	Available	Project in progress
Lyre	82	10	Available	Outfall issues – not on IW IP
Meelin	36	20	Leakage issues	WWTP capacity issues
New Twopothouse	57	10	Available	Only private WWTP
Rathcoole	80	15	Supply and network issues	WWTP at capacity
Rockchapel	41	15	Available	Available
Tullylease	29	10	Leakage issues	Available
Total Villages		447		
Village Nuclei				
Ballyhass	-	5	Leakage Issues	None
Curraraigue	12	5	None	None
Dromagh/ Dromtariff	20	5	Leakage issues	None
Gortroe	11	5	Available	None
Knockaclarig	1	5	None	None
Laharn Crossroads	-	5	Available	None
Lisgriffin	42	5	Available	None
Mourneabbey	-	5	None	None
Nad	15	2	Available	Available
Old Twopothouse (Hazelwood)	26	5	Available	None
Rathduff	18	5	Supply at capacity	None
Taur	6	5	Leakage issues	None
Total Village Nuclei		57		
Overall Total		7222		
Other Locations				
Dromalour	-	-	Leakage issues	None
Sally's Cross	-	10*	Leakage issues	Available

*Other Location - Sally's Cross – LAP 2017-2023 Objective DB-01 includes a site allocated for low density residential development of up to 10 houses.

West Cork MD

- There are 71 settlements with a housing allocation of 5,406.
- 30 of the 71 Settlements have no existing WWT infrastructure. Of all the MD's, the West Cork MD has the highest number of settlements without WWT facilities.
- Skibbereen is limited to a certain extent by its WWT capacity. Ballydehob is due to be connected to the Skibbereen RWSS which will provide adequate water supply to the Key

Village and an upgrade to the WWTP is listed on the IW IP – therefore the projected scale of development of 39 units should be deliverable within the plan period.

- Only thirteen settlements (including those that are planned for on the IW Investment Plan) have some level of capacity in their WWT infrastructure to cater for additional development within the plan period (2022-2028) (orange or green) – the remainder are at capacity / overloaded.
- 30 of the villages / village nuclei and 5 Other Locations have no existing WWT infrastructure. None of the West Cork islands have WWTPs.
- The West Cork MD has the lowest available capacity in terms of public drinking water. Many Drinking Water Schemes serve multiple locations and are at the limit of their capacity, particularly during the summer. On the other hand, improvements to a supply will have knock on benefits for several locations such as the Skibbereen Regional Water Supply Scheme (RWSS) and the positive impacts that will have on settlements like Schull, Dimoloeague, Leap etc. Eight of the nine key villages require investment in WWT, while a similar number require investment in drinking water. The Skibbereen RWSS will solve water supply issues in 5 of the Key Villages, however it is worth noting that a new reservoir will also be required in Union Hall.
- There are 22 Villages and Village Nuclei – with no sufficient capacity in either Drinking Water or Waste Water Treatment to cater for planned growth. 9 villages have WWTP with no spare capacity, which need replacement / upgrading. 12 villages have no WWT infrastructure.

West Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Main Towns				
Bantry	-	1241	Reservoir planned for 2022.	Upgrades required.
Castletownbere	-	309	Supply at capacity. FWPM & sensitive habitat at extraction point.	Construction of new WWTP to commence in 2020 – IW IP.
Clonakilty	-	1500	Significant capacity and abstraction issues.	Available
Dunmanway	-	273	Leakage issues but Find & Fix programme ongoing.	Outfall issue with FWPM. DAP in preparation. Also infiltration and network issues.
Schull	-	87	Skibb RWSS about to go to construction.	Available
Skibbereen	-	332	Skibb RWSS about to go to construction.	Limited capacity due to infiltration issues.
Total Main Towns		3742		
Key Villages				
Ballineen-	344	195	Available	Upgrades to WWTP and

West Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Enniskeane				network required.
Ballydehob	189	39	Skibb RWSS about to go to construction – IW IP.	Upgrade to WWTP on IW IP.
Baltimore	485	85	Skibb RWSS about to go to construction – IW IP.	Available
Drimoleague	246	137	Skibb RWSS about to go to construction – IW IP.	Upgrades to WWTP and network required.
Durrus	196	100	Upgrades required to source.	Upgrade of WWTP required.
Glengarriff	191	60	Proposal to augment water supply in preparation.	Capacity issues during summer months.
Leap	149	55	Skibb RWSS about to go to construction – IW IP.	New WWTP required.
Rosscarbery	409	91	Significant capacity and abstraction issues.	Project to upgrade SS and WWTP on IW IP.
Union Hall	206	80	Demand to be met through Skibb RWSS. Reservoir will be required.	Upgrades planned – on IW IP.
Total Key Villages		842		
Villages				
Ahakista	52	15	None	None
Allihies	94	35	Major capacity issues	Upgrades to network and new WWTP required.
Ardfield	55	25	Upgrades required.	None
Ardgroom	60	29	Abstraction issues & FWPM.	Available
Ballinascarthy	53	60	Upgrades required.	None
Ballingurteen	20	30	Only private GWSS.	None
Ballylickey	37	23	Upgrades required.	None
Ballynacarriga	-	11	None	None
Cappeen	16	10	Upgrades required.	None
Castletownkenneigh	15	5	Upgrades required.	None
Castletownshend	162	70	Extension and upsizing required.	New WWTP project on IW IP.
Crookhaven	104	40	Upgrades required.	New WWTP and network required.
Drinagh	52	20	Available	None
Eyeries	77	25	Abstraction issues & FWPM.	Upgrade of WWTP and network required.
Glandore	114	50	Upgrades required.	New WWTP required.
Goleen	120	40	Capacity issues.	New WWTP required.
Kealkill	103	60	Upgrades required.	New WWTP required.
Kilcrohane	94	40	Limited capacity and upgrades required.	Upgrade of WWTP required.
Lissavard	39	15	Upgrades required.	None
Rathbarry	24	10	Upgrades required.	None

West Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
(Castlefcreke)				
Reenascreena	10	5	Upgrades required.	None
Rossmore	19	14	None	WWTP required.
Shannonvale	79	40	Upgrades required.	Connection to Clonakilty SS required.
Total Villages		672		
Village Nuclei				
Abbeystrowry	-	6	Skibb RWSS about to go to construction – IW IP.	None
Adrigole	34	15	Upgrades required.	None
Caheragh	27	15	Upgrades required.	None
Church Cross	13	7	Available	None
Connonagh	12	3	Upgrades required.	None
Coomhola	11	13	Upgrades required.	None
Drombeg	8	4	None	None
Dromore	24	12	Limited capacity	None
Kilcoe	11	6	Available	None
Lowertown	10	10	Upgrades required.	None
Lyre	-	8	Limited capacity	None
Murragh	18	3	Available	None
Pearson's Bridge	30	10	At capacity	None
Rathmore	12	5	Available	None
Rossmackowen/ Waterfall	13	10	Supply at capacity. FWPM & sensitive habitat at extraction point.	None
Togher	17	10	None	None
Toormore	23	6	At capacity	None
Urhan	6	7	Supply at capacity. FWPM & sensitive habitat at extraction point.	None
Total Village Nuclei		150		
Overall Total		5406		
Other Locations				
Ardnageehy Beg			Upgrades required.	None
Barleycove			Upgrades required.	None
Darkwood			Upgrades required.	None
Inchydoney			Upgrades required.	Capacity issues at pumping station
Lisbealad			None	None
Ownahinchy			Upgrades required.	Significant upgrades required.
Poundlick			Available	None
Tragumna			Available	Upgrades required.

West Cork Municipal District				
Settlement Name	Existing No of Houses Q1 2015	LAP 2017 Scale of Devt.	Drinking Water Status - August 2019 Assessment	Waste Water Status - August 2019 Assessment
Islands				
Bere Island			None – Private GWSS only	None
Dursey Island			Limited capacity	None
Heir Island			Available	None
Long Island			Limited capacity	None
Oileán Chléire			Capacity issues. IWIP – upgrades to network proposed.	None
Sherkin Island			Upgrades required.	None
Whiddy Island			Quality and capacity issues.	None

5 Other Issues

5.1 Compliance

- 5.1.1 There are currently 75 Certified and 75 Licensed WWTP in Cork County. There is 1 current application under consideration for Licence.
- 5.1.2 In 2017, 24 urban settlements in County Cork were listed by the Environmental Protection Agency where improvements are required to resolve environmental priorities. A list of these settlements has been included in Appendix 1, Table 1.
- 5.1.3 Wastewater services tend to be associated with individual settlements/agglomerations and there are significant service and compliance issues in many existing wastewater systems in Cork. According to the EPA report on Urban Waste Water Treatment in 2017, 5 larger urban areas in Cork are non-compliant with the Urban Waste Water Treatment Directive. Details of these settlements can be found in Appendix 1 Table 2.

5.2 Lead in pipes

- 5.2.1 As part of Irish Water's Leakage Reduction Programme, IW are removing all remaining lead pipes from the public water network and replacing them with plastic (polyethylene) pipes. Lead in drinking water is a property specific issue – testing of domestic water for individual domestic properties is recommended in certain cases where it is suspected that domestic lead piping may still remain in place as part of the plumbing system.

5.3 Boil Notices

- 5.3.1 A Boil Water Notice is a formal notice issued to all properties in an area advising that drinking water from the public mains is not safe to drink unless it is boiled and cooled beforehand. Irish Water will only issue a Boil Water Notice after consulting with the Health Service Executive (HSE), the statutory authority on public health matters.
- 5.3.2 The most recent data on boil notices issued (2017 data) is listed in Appendix 3 - 2 no. Boil notices were issued in 2017 in Milstreet and Minane Bridge (See table 1 of Appendix 3).
- 5.3.3 No boil notices currently exist (June 2019) for Cork County as per Irish Water - Water Supply updates:-<https://www.water.ie/water-supply/supply-and-service-update/?ref=COR029437>

Appendices

Appendix 1

Urban Waste Water Treatment in 2018 – EPA Report 2019 (published November 2019)

(Source:

https://www.epa.ie/pubs/reports/water/wastewater/Urban%20Waste%20Water%20Treatment%20in%202018_Web.pdf)

The tables below contain a summary of the status of urban waste water treatment in Cork County in 2018 (most recently available data) and identify the most important environmental issues that must be addressed. The information is based on the EPA's assessment of monitoring information provided by Irish Water, and the enforcement activities carried out by the EPA.

1. Priority Areas in Cork County

The table below lists the 26 urban areas in County Cork (down from 29 since 2016) where improvements are required to resolve environmental issues.

Table 1 - 26² urban areas where improvements are required to resolve environmental priorities					
	MD	Settlement	LAP scale of Dev.	WWT status DOK 2015	Licensed/ Certified
1.	Carrigaline	Carrigaline	2422	Lower Harbour	Licensed
2.		Passage West	925	Lower Harbour	Construction ongoing
3.	Bandon Kinsale	Crosshaven & Bays	286	No provision in many areas	LHS now serving Crosshaven – Licensed
4.	Macroom	Crookstown	40	ST at limit	Certified
5.		Inchigeelagh	60	None. Private WWTP. Raw discharge to Lee.	Certified
6.	Cobh	Cobh	1778	Lower Harbour	Site investigations ongoing
7.		Ringaskiddy		Lower Harbour	Construction ongoing
8.	East Cork	Ballycotton KV	45	ST overloaded. New WWTP required	Licensed
9.		Midleton	5255	Upgrade needed	Licensed
10.		Whitegate / Aghada	190	None .Lower Harbour Sch.	Licensed discharge
11.		Youghal	1,983	New plant constructed	Licensed
12.	Fermoy	Castletownroche	54	Upgrade needed	Licensed

² Ringaskiddy-Crosshaven-Carrigaline (classified together) and Ringaskiddy Village (classified separately) as per EPA data, however the table has been classified according to the LAP MD settlements hence final number of 26.

	MD	Settlement	LAP scale of Dev.	WWTP status DOK 2015	Licensed/Certified
13.		Fermoy	938	Upgrade needed	Licensed
14.		Mitchelstown	1040	Significant upgrades required – new source and capacity issues.	Licensed
15.	Kanturk Mallow	Boherbue KV	150	WWTP reaching limit	Licensed
16.		Ballydesmond	53	Sewer infiltration issue	Certified
17.		Cecilstown V	10	Available	Certified
18.		Kanturk	141	WWTP at limit	Licensed
19.		Lombardstown	10	ST overloaded	Certified
20.		Mallow	4552	Upgrade required	Licensed
21.		Millstreet	177	WWTP at limit. New one proposed	Licensed
22.	West Cork	Casteltownbere MS	309	NO WWTP	Licensed
23.		Casteltownshend V	70	None. Raw discharge to sea	Licensed
24.		Dunmanway	273	Leakage issues but Find & Fix programme ongoing.	Licensed
25.		Kealkill	60	WWTP at limit. New Plant required	Certified
26.		Timoleague	73	New WWTP required	Licensed

2. Urban Waste Water Treatment Directive non-compliance.

The table below shows the 4 large urban areas in Cork County that failed to meet the EU's legally binding standards for the collection, treatment and discharge of urban waste water in 2017. It is worth noting that 14 large urban areas were listed in 2016, therefore improvements have been made in 9 urban areas. It is also worth noting that in the interim improvements have been made to all settlements below in order to address the previous breach in standards (see details below).

County	Urban area	Failed the secondary treatment requirements	Failed the more stringent treatment requirements
Cork	Dunmanway	x	
Cork	Mitchelstown	x	
Cork	Cobh*		*

Cork	Passage- Monkstown*	*	
Cork	Ringaskiddy- Crosshaven- Carrigaline**		*
Cork	Youghal***	*	*

*work has also recently started on the repair and upgrade of the sewerage network on the south side of Cork Lower Harbour including Carrigaline, Monkstown, Passage West and Ringaskiddy, and work in Cobh has also commenced. On completion of the project all wastewater from Cobh, Passage West, Glenbrook, Monkstown, Carrigaline, Ringaskiddy, Crosshaven and Shanbally will be diverted to the new wastewater treatment plant at Shanbally.

** The effluent discharged from the treatment plant met the effluent quality standards. Irish Water confirmed that in 2018 Ringaskiddy-Crosshaven-Carrigaline did not have more stringent treatment to remove nitrogen. Therefore, these areas did not meet the Directive's requirement for waste water to be subject to more stringent treatment than secondary treatment to remove nutrients.

*** A new WWTP opened in Youghal in 2018, therefore addressing the aforementioned issues.

3. Areas discharging untreated waste water

Nine large urban areas in Cork County are above the Directive's thresholds for the mandatory provision of secondary treatment³ (2 additional areas since 2016, however it is worth noting that new treatment plants have been installed for Ringaskiddy-Crosshaven-Carrigaline and Youghal which has addressed issues in two previously identified areas and also works have commenced on connecting the raw sewage in Cobh for treatment through the Cobh to Monkstown Estuary Crossing for subsequent treatment at Shanbally WWTP), these are as follows:

1. Ballycotton
2. Castletownbere
3. Castletownshend
4. Cobh*
5. Inchigeelagh
6. ~~Passage West / Monkstown~~
7. ~~Ringaskiddy village~~
8. Timoleague
9. Whitegate - Aghada

*Work on the connections from Cobh to Shanbally WWTP is underway. The wastewater will be transferred for treatment via the Cobh to Monkstown Estuary Crossing to Monkstown pumping station, from where it will be pumped to Shanbally Wastewater Treatment Plant for treatment before its safe discharge to the harbour. The works are expected to take approximately two years to complete, expected by 2021.

³ The thresholds are 2,000 p.e. for discharges to freshwater and estuaries and 10,000 p.e. for discharges to coastal waters.

4. Pressures on water bodies

Table 3. below shows 3 areas where waste water discharges are identified as the sole pressure on water bodies at risk of not meeting their environmental objectives.

Urban area	Water body name
Cork City	Lough Mahon
Crookstown	Bride (Lee)_20*
Passage-Monkstown	Lough Mahon

*The number at the end of each river water body name indicates where the water body is located along the main river channel.

5. Protecting Freshwater Pearl Mussels and Shellfish

Improvements to waste water discharges are required at the following 10 areas to protect the **freshwater pearl mussel**. An additional area – Ballydesmond has now been added because a recent assessment found that waste water discharges from Ballydesmond are impacting on nearby freshwater pearl mussel habitats.

1. Ballydesmond
2. Boherbue
3. Castletownroche*
4. Cecilstown*
5. Inchigeelagh
6. Kanturk
7. Kealkill
8. Lombardstown
9. Mallow
10. Millstreet

*Monitoring at these areas is ongoing to help determine if recent improvement works are sufficient to protect freshwater pearl mussel habitats from the adverse effects of waste water discharges.

6. Priority collection systems

The Court of Justice of the European Union ruled that the collection systems at 8 areas nationwide were inadequate because they did not ensure that the collected waters were retained and conducted for treatment, 4 of which are in Cork County, shown below:

1. Fermoy
2. Mallow
3. Midelton
4. Ringaskiddy

Appendix 2

Drinking Water

EPA – Historical records of Boil Notices and other contaminants in drinking water supplies etc. can be found in the reports under the following <http://www.epa.ie/pubs/reports/water/drinking/>

1. EPA Report - Focus on Private Water Supplies 2017 -

<https://www.epa.ie/pubs/reports/water/drinking/focusonprivatewatersupplies2017.html>

A private water supply is a supply not served by a public mains supply by Irish Water. The most recent Water Quality and Enforcement Information for Private Water Supplies for County Cork (i.e. 2017) are as follows:

Public Group Schemes		Private Group Schemes		Small Private Supplies		Boil Notices		Directions	Audits
No.	Pop	No.	Pop	No.	Pop	No.	Pop affected	Number Issued	Number
0	0	23	2084	400	2405	34	715	1	10

Source: Appendix 4: Water Quality and Enforcement Information for Private Water Supplies by County/Area in 2017.

2. EPA Report - Drinking Water Report for Public Water Supplies 2017 -

https://www.epa.ie/pubs/reports/water/drinking/EPA%20DW%20Public%20Supplies_web.pdf

Area/County	Supply	Reason for Direction	Issue Date	Status at end of 2018
Cork	Drimoleague	Non-compliance with Trihalomethane standard	05-Jun-15	Date in the Direction has passed. Further enforcement action to be considered in 2019.
Cork	Kealkil	Non-compliance with Trihalomethane standard	05-Jun-15	

Appendix 3

Below is a list of boil notices and water restrictions that were /are the responsibility of either Irish Water or both Irish Water and the property owner to resolve.

Area/ County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Cork	Innishannon	E. coli	BN	75	Part	19/04/2018	01/06/2018
Cork	Tibbotstown	Iron	WR	170	Part	17/08/2018	12/11/2018
Cork	Tibbotstown	Iron	WR	216	Part	16/11/2018	

Below gives an updated list of Irish Water Public Drinking Water Supplies in Cork County on the EPA's Remedial Action List (RAL) for Q4 of 2018.

Original RAL	RAL at end of 2017	Works completed	To be completed in 2018	To be completed in or after 2019	To be completed in or after 2020	No Timeframe for Completion
38	12	2	6	4	0	0

Appendix 4

Draft Irish Water Capital Investment Plan 2020-2024

Please note that these tables contain the draft list as was proposed in November 2018 by Irish Water. The final list following approval from the CRU may differ, finalised list expected late imminently.

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
1.	Ballineen/Enniskean WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
2.	Ballingeary WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
3.	Ballyclough WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
4.	Ballycotton WWTP New Build	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
5.	Ballydehob WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
6.	Ballygarvan WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
7.	Ballyhooley WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
8.	Ballyvourney/Ballymakeera Sewerage Scheme WWTP	Waste Water Above Ground	Cork	Provision for the WWTP to protect the environment and quality of receiving water, and increased capacity.
9.	Bandon WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
10.	Banteer WWTP	Waste Water Above	Cork	Upgrade of WWTP to protect environment and quality of

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
		Ground		receiving waters and facilitate growth
11.	Bantry WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
12.	Boherbue WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
13.	Bweeng WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
14.	Carrignavar WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
15.	Castlemartyr WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
16.	Castletownbere WWTP New Build	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
17.	Castletownroche WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
18.	Castletownsend WWTP	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
19.	Charleville WWTP	Waste Water Above Ground	Cork	Upgrade of the WWTP (Sludge) to protect the environment and quality of receiving water. increase capacity and facilitate future growth.
20.	Churchtown WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
21.	Clondulane WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
22.	Cloyne WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
23.	Coachford WWTP	Waste Water Above Ground	Cork	Provision for the WWTP protect environment and quality of receiving waters, increase capacity and facilitate future growth.
24.	Conna WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
25.	Cork Lower Harbour - WWTP & Pumping Station DBO	Waste Water Above Ground	Cork	The Cork Lower Harbour Main Drainage Project aims to provide enhanced wastewater treatment through the development of a new wastewater treatment plant at Shanbally, Co. Cork. The project is important in terms of protecting the environment and facilitating for a growing population.
26.	Cork Metropolitan Area Drainage Study	Waste Water Above Ground	Cork	Studies and strategy development for the Cork Metro Area.
27.	Courtmacsherry / Timoleague	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
28.	Dripsey WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
29.	Dromhane WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
30.	Fermoy WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
31.	Glanworth WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
32.	Glengarriff Septic Tank	Waste Water Above Ground	Cork	Capacity upgrade to meet at least UWWTD requirements incorporating inlet, storm, primary, secondary or tertiary treatment, and sludge interventions.
33.	Glenville WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
34.	Inchigeelagh WWTP	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
35.	Innishannon Sewerage Scheme (SLI) WWTP Upgrade	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
36.	Kanturk WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
37.				
38.	Killavullen WWTP	Waste Water Above Ground	Cork	Quality upgrade to meet WWDA requirements incorporating inlet, primary, and secondary or tertiary treatment interventions.
39.	Killeens WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
40.	Macroom WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
41.	Mallow WWTP	Waste Water Above Ground	Cork	Upgrade of the Mallow WWTP to protect environment and quality of receiving waters, address the capacity of the WWTP with a particular emphasis on nutrient removal and hydraulic capacity and facilitate future growth .
42.	Midleton WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
43.	Millstreet Sewerage Scheme WWTP	Waste Water Above Ground	Cork	Provision for WWTP to protect environment and quality of receiving waters, decommission end of life infrastructure and facilitate future growth.
44.	Mitchelstown Sewerage Scheme - Network Upgrade and WWTP Inlet works	Waste Water Above Ground	Cork	Upgrade of Network and WWTP Inlet works to protect the environment and quality of receiving water, increase capacity and facilitate future growth.

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
45.	Newmarket WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth.
46.	Rathcormac WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
47.	Riverbank Estate WWTP	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
48.	Rosscarbery/Owenahincha WWTP	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
49.	Saleen Sewerage Scheme Network and WWTP	Waste Water Above Ground	Cork	Provision for WWTP and upgrade of collection system to protect the environment and quality of receiving water, increase capacity and facilitate future growth.
50.	Union Hall Septic Tank	Waste Water Above Ground	Cork	Upgrade of WWTP to protect environment and quality of receiving waters and facilitate growth
51.	Whitegate/Aghada WWTP New Build	Waste Water Above Ground	Cork	Provision for the WWTP to protect environment and quality of receiving waters, increase capacity and facilitate future growth.
52.	Ballyvolane & Monard WW Network	Waste Water Below Ground	Cork	Upgrade of strategic elements of the collection systems to facilitate future growth while ensuring environmental compliance requirements are met.
53.	Bandon Watermain and Sewer Network Upgrade	Waste Water Below Ground	Cork	Upgrade of WWTP and existing network to protect environment, increase capacity and facilitate future growth.
54.	Bantry WW Network	Waste Water Below Ground	Cork	Upgrade of storm water network to protect environment, increase capacity and facilitate future growth.
55.	Carrigtwohill Strategic Network	Waste Water Below Ground	Cork	Upgrade of strategic elements of the collection systems to facilitate future growth while ensuring environmental compliance requirements are met.
56.	Fermoy WW Network	Waste Water Below Ground	Cork	Scope of project to be informed by outcome of DAP. Primary objectives are to focus on storm water overflow compliance

Wastewater				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
				and provide for growth.
57.	Kinsale Outfall Extension	Waste Water Below Ground	Cork	Provision for relocation of the discharge point of the SWO outfall at Gibbons Quay in Kinsale, to below low water mark. As ordered by the Circuit Court.
58.	Mallow Sewerage Scheme Network	Waste Water Below Ground	Cork	Upgrade of existing network to protect environment, increase capacity and facilitate future growth.
59.	Midleton WW Network	Waste Water Below Ground	Cork	Scope of project to be informed by outcome of DAP. Primary objectives is to focus on storm water overflow compliance and provide for growth.
60.	Network Extensions - Wastewater – Midleton	Waste Water Below Ground	Cork	Programme to construct necessary wastewater network extension infrastructure in order to facilitate growth.
61.	Carrigrennan WwTP Upgrade Phase 2	Waste Water Above Ground	Cork	Upgrade to reduce phosphorus and to protect environment and quality of receiving waters.
62.	Cobh Strategic Network	Waste Water Below Ground	Cork	Upgrade of strategic elements of the collection systems to facilitate future growth while ensuring environmental compliance requirements are met.
63.	Network Extensions - Wastewater – Whitechurch	Waste Water Below Ground	Cork	Programme to construct necessary wastewater network extension infrastructure in order to facilitate growth.

Water Supply				
No.	Project Name	Primary Asset Category	Local Authority Area	Project Description
1.	Cape Clear Water Supply Scheme	Water Above Ground	Cork	Upgrade of the WSS to ensure a safe and reliable water supply
2.	Cork City WSS - Upgrade of WTP	Water Above Ground	Cork	Provision of a 40MLD WTP for Cork City and environs to improve DW quality, security of supply and ensure a safe and reliable water supply.
3.	Inniscarra Regional Water Supply Scheme	Water Above Ground	Cork	Works to ensure a safe and reliable water supply.
4.	Midleton Water Supply Scheme - Interconnection to Inniscarra Regional Water Supply Scheme and additional storage	Water Above Ground	Cork	Extension of trunk main at Carrigtwohill to interconnect with Inniscarra/Glashaboy to achieve DW quality and additional storage capacity. The scheme will include all decommission works at Walshtown, Ballincurrag/Lisgoold, Corbally and Clash/Leamleara WTW.
5.	Skibbereen Regional Water Supply Scheme Phase 4 Treatment & Storage & Network	Water Above Ground	Cork	Provision for RWSS, storage and upgrade to address DW quality (reduction in risk of THM Non-Compliance) and ensure a safe and reliable water supply.
6.	Network Extensions - Water - Midleton (Water-Rock)	Water Below Ground	Cork	Programme to construct necessary water network extension infrastructure in order to facilitate growth. The Water Network Extension program aims to increase the reach of IW's mains network across Ireland by focussing on a number of prioritised settlements chosen in collaboration with Local Authorities.
7.	Network Extensions - Water – Whitechurch	Water Below Ground	Cork	Programme to construct necessary water network extension infrastructure in order to facilitate growth. The Water Network Extension program aims to increase the reach of IW's mains network across Ireland by focussing on a number of prioritised settlements chosen in collaboration with Local Authorities.