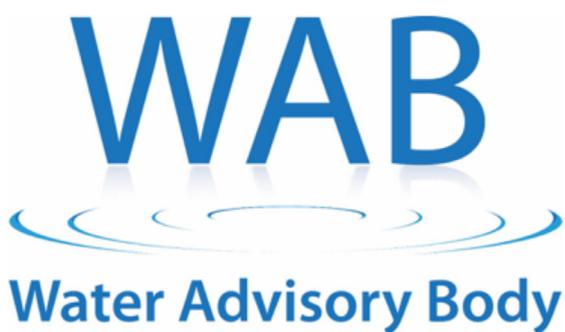




# Quarterly Report No. 2 of 2020

# 2



SEPTEMBER 2020

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# Foreword

The Water Advisory Body was formally established in June 2018. This is our third quarterly report.



Paul McGowan  
*Chairperson*

We consider it important to provide a balanced perspective on Irish Waters' performance and to "call it as we see it". As we approach the first anniversary of our first report, we take the opportunity to reflect on key themes emerging around Irish Waters' performance and to consider some recommendations to both the Minister and the Oireachtas, in line with our statutory functions. We also take the opportunity to reflect on the impact of Covid-19 and the recent drought.

## Covid-19 Pandemic

All of us have experienced a significant impact on our lives as a result of the Covid-19 pandemic. The Water Advisory Body is conscious that water is an essential service. Throughout the recent months Irish Water has maintained water supplies and the operation of wastewater treatment plants. Irish Water established a Crisis Management Team and put in place a variety of measures to safeguard its operations and ensure continuity of service to water and wastewater customers. These actions included restricted access to sites and a review of all programmes of work involving face-to-face interactions with customers. The WAB welcomes these actions.

From our discussions with Irish Water, the WAB notes that the operational response required to manage the system throughout the current pandemic has put pressure on Irish Water's costs. While the impacts on operational performance have been limited there will clearly be a financial impact. We also note the regrettable delay to some important developments including the introduction of a new system of charging for Non-Domestic customers and the Excess Usage Charge for domestic customers.

Of particular concern to the WAB are the delays arising to Irish Water's capex programme. With many projects suspended as a result of the onset of the pandemic, the concern would be that this will have a knock-on impact on Irish Water's delivery timescales and the costs associated with such delays.

While such delays and certain costs may be unavoidable, the WAB notes that this will directly impact on Irish Water's performance in terms of delivering projects to protect water quality and to deliver adequate and compliant treatment of wastewater at many locations across the country. In addition to the direct cost of such disruption and delay, it is also likely that Irish Water's revenues (specifically from the non-domestic sector) will have reduced during the pandemic and potentially into the future.

By their own estimation the financial impact to Irish Water's capital programme will exceed €110m in 2020. While the WAB is not in a position to comment directly on the detail, we are concerned that adequate financial remedies are identified to allow Irish Water to deliver its capital programme and improve the overall compliance of the water and wastewater systems; this will largely be a matter for government.

At the same time, the onus will be on Irish Water to ensure it manages its capital programme to minimise the impacts to cost and timing noted above. The WAB also notes the role of both the Environmental Protection Agency and the Commission for Regulation of Utilities in monitoring and reporting on Irish Water's performance through this period.

## Drought

During the Covid-19 crisis Ireland also experienced a prolonged spell of dry weather. At the same time Irish Water experienced increases in residential water consumption; partly due to the necessary response at household and business levels to Covid-19. Ultimately, this required the imposition of a Hosepipe Ban between 9th June to 8th July 2020.

The WAB is very supportive of Irish Water's conservation efforts, including the hosepipe ban, and each individual's role in conserving water and avoiding its unnecessary use. This will ensure we can all benefit from a secure water supply.

The WAB noted, particularly, the need for sustained periods of rainfall to ensure depleted water storage can be brought back to adequate levels. It is particularly difficult to sustain a water conservation message during this period; nevertheless we acknowledge it is necessary and the WAB encourages Irish Water to clearly and continually communicate with customers on the need for water conservation and the rationale for hosepipe bans as the need for them arises.

## Key Themes

From our observations of the key performance indicators and our meetings with Irish Water, the Department and others, a number of key themes are emerging that are worth noting.

The WAB is conscious that Irish Water's status as a single public utility, separate from Eirvia/Gas Networks Ireland, is under consideration. At the same time Irish Water's programme of work to bring all of its activities and functions together as a single organisation (known as the Water Industry Operating Framework) is not yet concluded. The Body would note that Irish Water's performance in delivery of its business plan, including delivery of a significant and sustained programme of capital investment, and its capacity to be fully accountable for its performance, will benefit from clear and early resolution of both these matters.

Delivery of complex and large capital programmes requires good planning. We note that Irish Water is required to implement the recent findings from the Scottish Water International review of its capital planning process.

We agree with the Commission for Regulation of Utilities' recent recommendations on this matter as published in its Decision on Irish Water's revenues for the 2020-2024 control period <sup>1</sup>. These recommendations cover 12 key areas of Irish Water's internal investment planning processes, and we will return to this topic in more detail in our next report.

Some key areas have emerged as being critically important in terms of Irish Water demonstrating clear progress to address known deficiencies in the water and waste water systems, but also to demonstrate to the EU, the Oireachtas and the public that concrete progress is being made to address these deficiencies.

Of key concern to the Body are:

- ▶ The need for Irish Water to address non-compliance of wastewater treatment systems with EU directives. This sits alongside the need to address capacity issues in certain parts of the wastewater system; [notably the Ringsend Wastewater treatment plant].
- ▶ Leakage is a key metric that Irish Water must address consistently and progressively. This is important to demonstrate to the public that concrete actions are being taken to address the serious capacity issues in the provision of water. By addressing leakage it is the Body's view that the public will have more confidence in the need for the investment required to address critical water supply capacity issues, particularly in the eastern/Dublin region. All of this work needs to be linked to effective and clear communication around the continuous need for water conservation, regardless of when the sun shines. The concurrent impact of Covid-19 and the recent drought have given a stark reminder of Ireland's water capacity challenges.
- ▶ Finally, while there is a clear need for Irish Water to demonstrate it is delivering outputs and outcomes that benefit customers, the environment and society, it is also clear that it requires significant and sustained financing to deliver its capital investment programme. The Body is aware that events such as Covid-19 and other uncertainties create financial impacts. Unlike other utilities such as ESB Networks or Gas Networks Ireland, Irish Water largely depends on exchequer financing for the funding of its operations and capital investment programme. The certainty and year-to-year flexibility of that funding will have a significant impact on the delivery of these desired outcomes.

The Water Advisory Body will continue its work to advise on transparency and accountability of Irish Water and to report on the performance of Irish Water on the implementation of its business plan.



**Paul McGowan**

*Chairperson of the Water Advisory Body*

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<sup>1</sup> Commission for Regulation of Utilities - Update to Irish Water's Revenue Control 3 (RC3.5) - Irish Water's Updated Capital Investment Plan - Published 4 August 2020

# Executive Summary

This is the third quarterly report published by the Water Advisory Body in relation to its function of reviewing the implementation by Irish Water of its Strategic Funding Plan.

The Water Advisory Body was established on 1 June 2018. The purpose of the Water Advisory Body (the WAB) is to advise the Minister on measures needed to improve the transparency and accountability of Irish Water; and to report on a quarterly basis to an Oireachtas Committee on the performance by Irish Water in the implementation of its Strategic Funding Plan.

A set of performance indicators has been selected to represent the activity of Irish Water in relation to the performance of its functions. Data in respect of these indicators is collated and published as part of the quarterly reports of the WAB in order to provide objective information on performance. This information is relevant to Irish Water itself, to track its own performance over time, but also to further inform both the Minister for Housing, Planning and Local Government and the Oireachtas on the performance of Irish Water.

The information published within this report is accurate as of 30 June 2020. The detailed findings of this report are set out in section 2 and key events in section 3.”

The following findings from the report are of note:

- ▶ **Leakage** - Leakage needs to be a focus for Irish Water in the future. Irish Water acknowledges that leakage from its “water supply networks is at unacceptable levels and well above international norms”. The volume of ‘unaccounted for water’ is high and has risen steadily over the period 2016 – 2018. The reduction in “unaccounted for water” from 2018 to 2019 is a result of a combination of Irish Water being better able to categorise water use and Irish Water’s leakage reduction activities during the year. The figure for 2019 gives a better indication of the amount of water that is lost to leaks. With the roll out of its leakage management system, Irish Water will continue to refine and improve how it is estimating and reporting water losses resulting from leaks on its network.
- ▶ **First Fix Scheme** - As of Quarter 2 2019 Irish Water had completed approximately 15,000 leak repairs and customers had completed approximately 43,000 leak repairs in total. Irish Water estimates that the scheme has saved nearly 150 million litres of water per day up to the end of Quarter 2 2019. Irish Water has been approved additional funding for the First Fix Scheme over the upcoming revenue control period, from 2020 to 2024. This performance indicator shows a continued and disappointing drop-off in the number of leak repairs completed under the scheme since mid-2016. This coincides with the suspension and eventual abolition of domestic water charges. The introduction of Excess Usage Charges (expected to be introduced in 2021 – a delay due to Covid-19) will encourage customers to avail of the Scheme and it is expected that higher numbers of leak repairs will be achieved in the future.

- ▶ **Remedial Action List (Water)** - Irish Water has an action plan in place to remediate the drinking water supplies that are currently included on the Remedial Action List. Future WAB reports will monitor the progress of Irish Water in meeting the targets they have set to remediate those 53 water supplies through the quarterly updates of the Remedial Action List. The WAB will also monitor the number of new drinking water supplies that are put on to the list in any quarter.
- ▶ **Priority Urban Area List (Wastewater)** - It is the Environmental Protection Agency's view that it is not acceptable that
  - the pace at which Irish Water is fixing the legacy of deficiencies in Ireland's waste water treatment infrastructure is not sufficient and there are repeated delays in providing treatment for many areas.
  - 19 large towns and cities did not meet European Union standards set to protect the environment.
  - 33 towns and villages will continue discharging raw sewage after 2021 because they will still not have a waste water treatment plant.
  - 23 agglomerations do not have corrective action plans needed to help meet our Water Framework Directive obligations.
- ▶ **Lead service connections replaced** - Under normal circumstances the WAB expects to see the continued replacement of lead services as set out in Irish Water's Lead in Drinking Water Mitigation Plan.<sup>2</sup>
- ▶ **Mains replacement rate (for water mains)** - In 2018 and 2019, Irish Water's mains replacement rate has increased. Irish Water replaced or rehabilitated 407km of water mains in 2018 and 333km in 2019. Combined this represents 1.2% of Irish Water's network. The average replacement rate was 155 years in 2018 and 189 years in 2019. This is a substantial increase compared with the rate of once every 301 years in 2017.
- ▶ **Overall compliance with microbiological indicators for drinking water** - Generally speaking microbiological compliance remains very high. In general, the WAB notes that compliance with the microbiological standards is high as illustrated in Figure 11, which shows that compliance has remained over 99% in the period 2014 - 2019. Results for 2019 show that 99.91% of samples complied with the standard for E.coli.
- ▶ **Boil Water Notices** - The number of people on boil water notices at the end of each quarter, has decreased during 2020. However, this does not reflect the full picture. Over the last six quarters, the vast majority of those on boil water notices were affected for more than 30 days.

The WAB notes with concern the trends for long term boil water notices highlighted by the Environmental Protection Agency and will continue to monitor Irish Water's progress in ensuring that boil water notices remain in place for as short a time period as is feasible.

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2 <https://www.water.ie/docs/Lead-in-Drinking-Water-Mitigation-Plan.pdf>

- ▶ **Compliance of Urban Waste Water Treatment (UWWT)** - Plants with Environmental Protection Agency discharge licences - Overall, compliance is very low but there has been an increase in the percentage of urban areas meeting their licence standards. Over half of the 75% non-compliance can be attributed to one waste water treatment plant - the plant at Ringsend, Dublin. Dealing with the non-compliance issues at this plant has the potential to result in a significant improvement in the overall compliance rate. While the quality of the treated waste water will improve as the upgrade works at Ringsend proceed, is not expected to start meeting the required standards until the end of 2022 at the earliest. The WAB is concerned that Irish Water has repeatedly extended the timeframe to provide treatment for many of the towns and villages that receive no waste water treatment and that 33 areas will continue discharging untreated waste water after 2021.
- ▶ **Ease of Contact** - This KPI has not been updated in this Report.
- ▶ **Irish Water Customer Complaints Management** - This KPI has not been updated in this Report.

# Part 1

## Introduction

The Water Advisory Body (the WAB) is established under statute. The WAB consists of five members:



Paul McGowan  
*Chairperson*



Martin Sisk



Miriam McDonald



Tom Collins



Michelle Minihan

### Improving the transparency and accountability of Irish Water

Our overall function is to advise the Minister on the measures needed to improve the transparency and accountability of Irish Water for the purpose of increasing the confidence of members of the public in Irish Water. The WAB's functions are set out in the Water Services Act 2017.

Irish Water's Strategic Funding Plan is a public document and available on Irish Water's website [www.water.ie](http://www.water.ie). Every three months the WAB prepares a report on Irish Water.

This report sets out the WAB's view on how Irish Water is performing against its own Strategic Funding Plan. Each report is prepared for the Oireachtas and is published on the WAB's website - [www.wateradvisorybody.ie](http://www.wateradvisorybody.ie).

## Performance Indicators in this Report

The WAB has chosen a set of performance indicators. In this report, we explain each indicator and why it is important. It is important to the WAB, in choosing performance indicators, that they are a useful reflector of performance and that they can be used to monitor Irish Water's performance. The WAB will keep these performance indicators under review to make sure that they remain relevant and continue to be good measures of performance.

There are some areas of interest to the WAB where data are not available. These include cost reduction and efficiency improvements, procurement, remuneration and staffing policies of Irish Water.

The absence of data will require the WAB to take a different approach to measuring performance in the following areas.

## Cost reduction and efficiency improvements

In relation to measuring cost reduction and efficiency improvements, the WAB will use the Commission for Regulation of Utilities' Revenue Control 3 Decision on Irish Water to inform discussion on how indicators in these areas might be developed. The original Decision was published by the Commission for Regulation of Utilities in December 2019. The WAB notes that the Commission for Regulation of Utilities provided Irish Water an opportunity to submit an updated submission to it, to support the requested level of capital expenditure. The Commission for Regulation of Utilities has since reviewed Irish Water's updated submission and in August 2020 published a final decision on the full Capital Expenditure Allowance for Irish Water for the period 2020-2024. This will be covered separately in a future WAB Quarterly report.

## Irish Water procurement, remuneration and staffing policies

In relation to procurement, remuneration and staffing policies the Water Advisory Body proposes that Irish Water commissions an independent audit on these policy areas, reporting directly to the WAB.

The first of these reports will cover procurement policies and procedures. Irish Water will carry out an audit/review of its procurement procedures in two stages, and in line with the scope provided by the WAB. The WAB expects completion of stage 1 of this review in 2020.

## TECHNICAL NOTE

**THE LEGISLATIVE BASIS FOR THE WATER ADVISORY BODY**

The Water Advisory Body (the WAB) is an independent statutory body established under Part 7 of the Water Services Act 2017. The WAB was formally established on 1 June 2018. The Act provides for a 5-member board with a member appointed from each of three specific organisations (the Commission for Regulation of Utilities, the Environmental Protection Agency and An Fóram Uisce) and two members appointed through the Public Appointments Service process. The Water Advisory Body held its first meeting on 13 July 2018.

Part 7 of the Act also outlines the function and reporting arrangements for the WAB. The substantive functions of WAB set out in the 2017 Act are:

- a) To advise the Minister on the measures needed to improve the transparency and accountability of Irish Water for the purpose of increasing the confidence of members of the public in Irish Water.
- b) To furnish, on a quarterly basis, a report to the Committee on the performance by Irish Water in the implementation of its Strategic Funding Plan with particular regard to the following:
  - a. Infrastructure delivery and leakage reductions;
  - b. Cost reduction and efficiency improvements;
  - c. Improvements in water quality, including the elimination of boil water notices;
  - d. Procurement, remuneration and staffing policies;
  - e. Responsiveness to the needs of communities and enterprise.

The WAB is also required to provide an annual report to the Minister on the performance of the WAB's functions during the period since its establishment.

# Part 2

## Key Performance Indicators

The WAB has selected eleven performance indicators, each measuring the performance of Irish Water under a different heading.

These headings are –

- ▶ infrastructure delivery and leakage reductions (6 indicators);
- ▶ improvements in water quality (3 indicators); and
- ▶ the responsiveness of Irish Water to the needs of communities and enterprise (2 indicators).

For each indicator chosen, the WAB has included a brief explanation, the reason why the indicator is important and recent data and commentary as to how Irish Water is performing in relation to the indicator. Where available, the targets that Irish Water is working to in relation to each indicator are also set out.

The WAB will continue to refine indicators to ensure they remain a useful measure of the performance of Irish Water.

In relation to procurement, remuneration and staffing policies the WAB proposes that Irish Water commission an independent audit on those policy areas. The independent body commissioned to undertake the audit will report directly to the WAB. Following an assessment of the audit by the WAB, performance indicators for these areas will be developed where practical. A review of Irish Water's procurement policies is now underway in two stages. This review will also encompass the findings of the Scottish Water International review of Irish Water's capital planning process; as noted earlier.

As already mentioned, the WAB will use the Commission for Regulation of Utilities' Revenue Control decision (of August 2020) on Irish Water to facilitate and inform discussion on how indicators might be developed to measure cost reduction and efficiency improvements in Irish Water.

## 2.1 Infrastructure Delivery and Leakage Reductions Indicators

This Performance Indicator is based on information valid up to December 2019

### 2.1.1 Performance Indicator 1 - Leakage

**Figure 1**

Annual Average Daily Water Demand (millions of litres or Megalitres of water per day)



#### Brief Explanation

The technical definition of leakage or “Real Water Losses” is set out in the technical note below. Leakage, or Real Water Losses, is the loss of drinking water on the public side of the water supply network and is measured in millions of litres per day.

In place of reporting on leakage, for 2015 to 2018 Irish Water has been providing a figure for ‘Unaccounted for water’. ‘Unaccounted for water’ is calculated as the difference between the volume of water supplied into the water supply network and the volume of water that is delivered to customers’ premises.

In arriving at this number, Irish Water provided an estimate of the water demanded by domestic and non-domestic customers (this includes water lost to leaks on the customer’s property) and an estimate of the water it uses on its network to clean and flush its watermains (“Operational Use”). Irish Water had categorised the remainder of the water that is put into the network as ‘unaccounted-for-water’.

The ‘unaccounted for water’ numbers for 2015 to 2018 includes:

- ▶ Unbilled water including;
  - Other water used by Irish Water.
  - Water used by fire services and other unbilled use.
- ▶ Apparent losses;
  - Water used at connections not recorded on Irish Water’s system.
  - Under-recorded use by homes and businesses because of, for example, broken water meters and data handling errors.
- ▶ Real Losses on the public network from leaks and overflows, commonly referred to as network leakage.<sup>3</sup>

Irish Water recently implemented a leakage management system in line with international best practice. As a result, for 2019, Irish Water has made some improvements to how it is reporting water losses. Within the ‘Unbilled water’ portion of ‘unaccounted for water’ Irish Water now has an estimate for “Other water used by Irish Water” (such as water use at its treatment plants) and reassigned this water use to the “Non-Domestic Demand” figure. Irish Water has also estimated ‘water used by fire services and other unbilled use’ and reassigned this use to “Unrecorded Connections”. Within the ‘Apparent losses’ portion of ‘unaccounted for water’, Irish Water has provided and separately identified an estimate for ‘water used at connections not recorded on Irish Water’s system’ (“Unrecorded Connections”), thereby reducing the ‘Apparent losses’ portion of ‘unaccounted for water’. Further, Irish Water has also estimated a value for ‘under-recorded use by customers homes and businesses because of, for example, broken water meters and data handling errors’ and included this under-recorded use at homes and businesses in the domestic and non-domestic demand figures respectively.

Separately identifying and reassigning these water demand use categories in this way has the effect of increasing the domestic and non-domestic demand figures (although other factors, such as demand growth, impacts these figures) and lowering the ‘unaccounted for water’ figure thereby providing a better estimate of “Real losses”, the amount of water that is lost to leaks on Irish Water’s system.

A further breakdown of the water demand use categories in line with the definition set out in the Technical Note below will be provided in future reports.

It should be noted that the leakage calculation does not include water lost due to leaks that occur on the customer’s premises. Where this occurs, Irish Water provides a First Fix Scheme to assist and encourage domestic customers to fix leaks that occur on their property. The First Fix Scheme is included as a separate performance indicator in this section.

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3 **Source:** Irish Water Capital Investment Plan 2017 to 2021 – Monitoring Report No. 3

## Why we focus on this Performance Indicator

Reducing the level of real water losses ensures that water sources are conserved and that revenue is not spent on treating large quantities of drinking water that is ultimately lost and not used by customers. The WAB will use the leakage metric to measure the performance of Irish Water in ensuring water delivered through its distribution network is not lost to customers.

Figure 1 shows the annual volume of ‘unaccounted for water’ in millions of litres of water per day in Ireland from 2015 to 2019. These volumes of ‘unaccounted for water’ represent a significant proportion of the average daily water demand.

## Commentary

Irish Water’s Strategic Funding Plan 2019-2024, states “It is estimated that, nationally, approximately 45% of treated water is lost due to leakage”. The volume of ‘unaccounted for water’ is high and has risen steadily over the period 2016 – 2018. “Unaccounted for water” on the public network, has risen from 732 megalitres per day in 2016 to 781 megalitres per day in 2018.

The reduction in “unaccounted for water” from 2018 to 2019 is a result of a combination of Irish Water being better able to categorise water use and Irish Water’s leakage reduction activities during the year.

While there are still improvements to be made in how Irish Water is reporting, the figure for 2019 gives a better indication of the amount of water that is lost to leaks. With the roll out of its leakage management system, Irish Water will continue to refine and improve how it is estimating and reporting water losses resulting from leaks on its network.

Leakage needs to be a focus for Irish Water in the future. Irish Water acknowledges that leakage from its “water supply networks is at unacceptable levels and well above international norms”<sup>4</sup>.

The WAB looks forward to Irish Water making its full leakage metric available for assessment for 2020 onwards.

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4 **Source:** Water Services Strategic Plan (WSSP) - A Plan for the Future of Water Services.

TECHNICAL NOTE

**LEAKAGE**

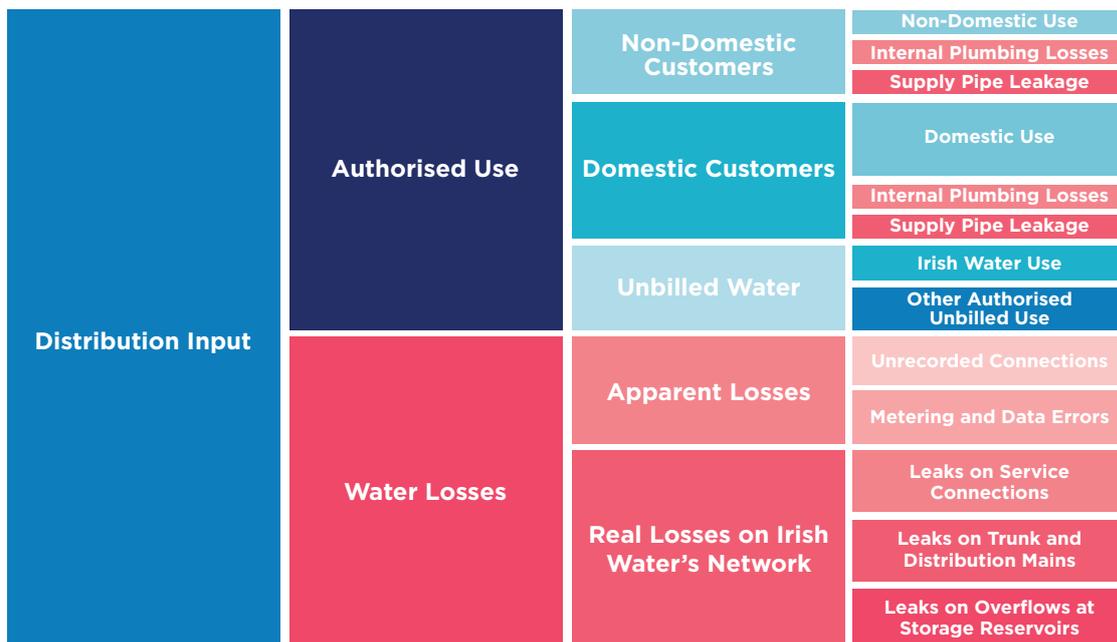
Figure 2 illustrates the water balance and captures how the total volume of water entering into the network ('distribution input') is apportioned between 'authorised use' (across domestic, non-domestic and unbilled water use) and 'water losses' (which is subdivided into 'apparent losses' and 'real losses').

Real losses on Irish Water's network, commonly referred to as leakage, includes leaks on trunk mains and distribution pipes, leaks on service connections and leaks and overflows at storage reservoirs. There are two approaches to determining leakage on the public network. The first looks at a top down water balance where the water entering the network is assigned to water losses and water use based on metering information and well-reasoned estimates.

In addition to this, water losses should be estimated using a bottom-up approach by monitoring demand at a time when customer use is low which is typically at night. During a period of low, predictable customer use, flow into District Metered Areas is monitored for a continuous period of at least one hour. This flow is then allocated between public network losses, customer supply pipe losses and customer use and then converted from hour to day with an adjustment made for variations in pressure between day and night. Estimates of losses on trunk mains and service reservoirs are then added to the calculated District Metered Area losses to provide an estimate of total losses on the public network.

A final leakage number can then be reported by reconciling differences in the top-down and bottom-up approach to leakage estimation and applying robust statistical analysis in line with best international practice.

**Figure 2**  
Components of Water Demand

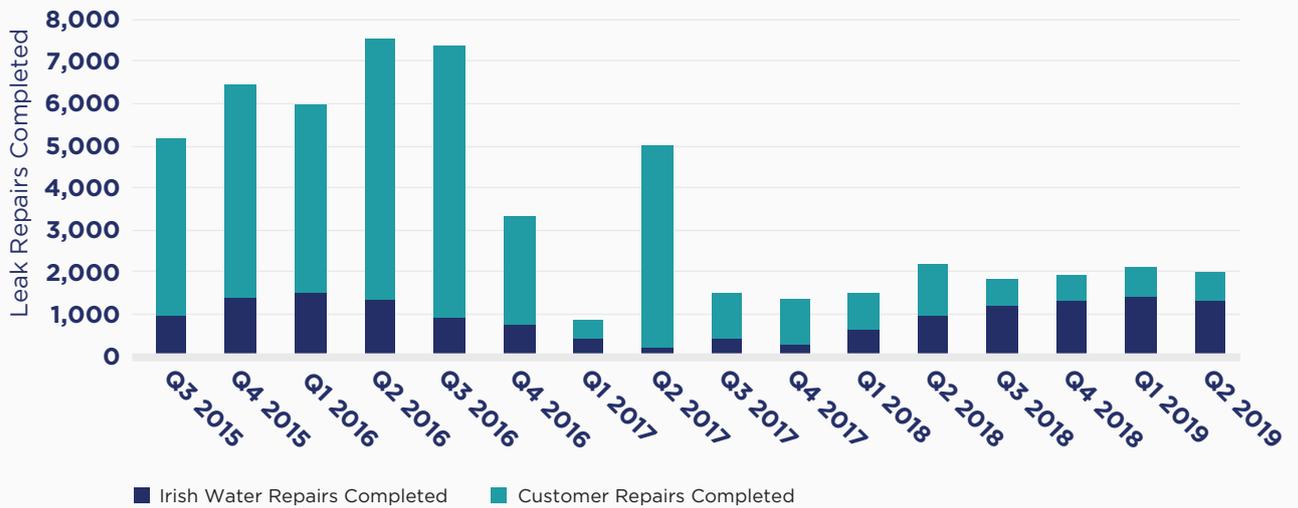


### 2.1.2 Performance Indicator 2 - First Fix Scheme

This Performance Indicator is based on the latest available information valid up to the end of Quarter 2 2019.

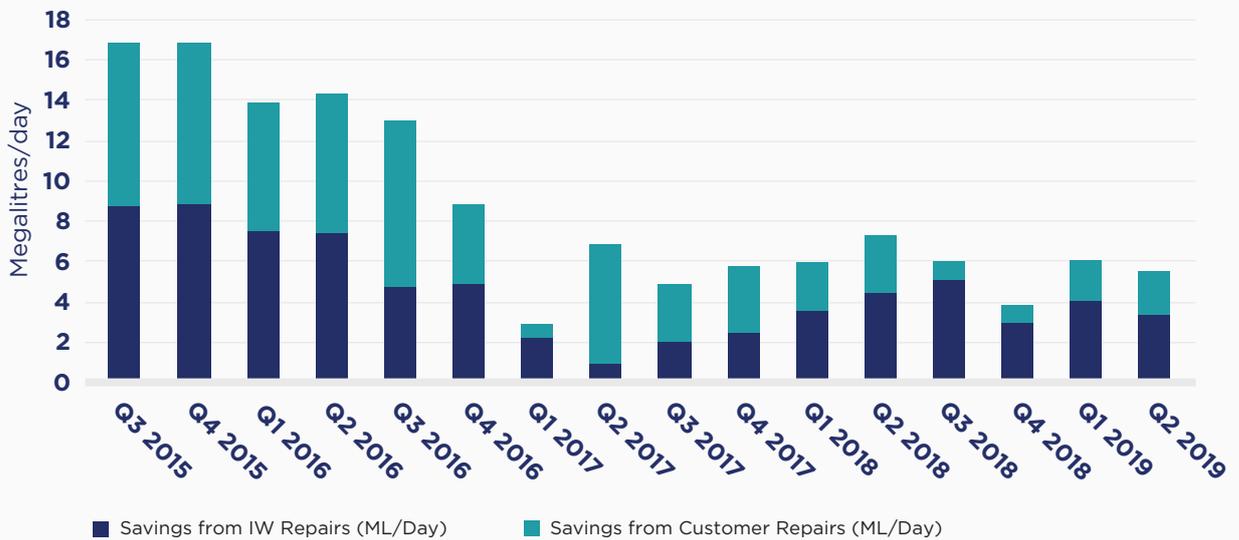
**Figure 3**

Combined total of Irish Water and Customer Leak Repairs completed each Quarter



**Figure 4**

Combined total Savings in Megalitres/day of Irish Water and Customer Leak Repairs completed each quarter



Between the introduction of the First Fix Scheme in 2015 and Quarter 2 2019, the cumulative water savings are estimated by Irish Water to be 150.21 Megalitres/day. A cumulative estimated total of 77.4 Megalitres/day has been saved through repairs carried out by Irish Water and a further estimated 72.81 Megalitres/day of water has been saved through repairs carried out by customers.

## Brief Explanation

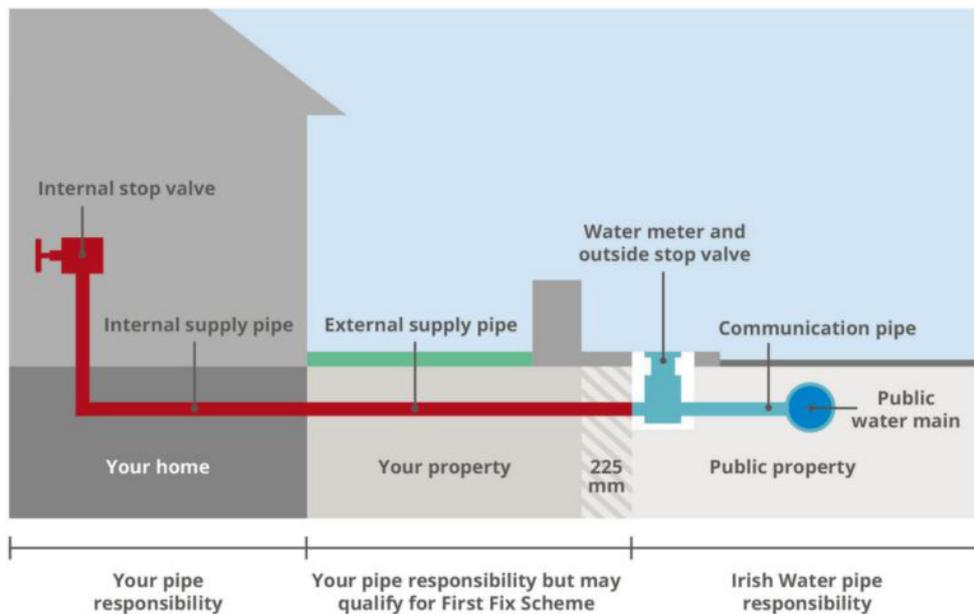
In 2015 Irish Water introduced the First Fix Scheme to tackle leakage on domestic customers' properties.

Under Irish Water's First Fix Scheme, metered domestic customers are notified when Irish Water suspects a leak is occurring within the boundary of their property. A leak alarm notifies Irish Water that there is a constant flow of six or more litres of water per hour for a continuous period of 48 hours or more. Irish Water may then offer domestic customers a free leak investigation and free leak repair for leaks on the external customer supply pipe.

The 'external customers supply pipe' is outside of the customer home but within the boundary of the customer property, as illustrated in Figure 5. Customers are responsible for fixing leaks on pipes located within the customer home ('internal supply pipe').

**Figure 5**

Irish Water's First Fix Scheme - Pipe Responsibility



Irish Water reports key data from the First Fix scheme each quarter. These reports are published on Irish Water's website. It provides information on the number of leak investigations carried out and the number of leak repairs completed. Irish Water also provides information on how many leak investigations identified leaks that didn't qualify for the scheme, the amount of money that Irish Water spends on the scheme and litres of water saved per day through the scheme.

The WAB notes that later this year, the Commission for Regulation of Utilities plans to consult on proposed changes to the First Fix scheme which would expand its scope to make it available to a greater number of customers. As part of this consultation, the Commission for Regulation of Utilities will review the operation of the First Fix scheme to date and assess its effectiveness as a leakage reduction measure over the past six years.

## Why we focus on this Performance Indicator

Reducing drinking water loss through the First Fix Scheme helps to conserve water and can help to reduce the amount of money Irish Water spends on treating and supplying water that is ultimately leaked and not used by customers.

The rate of repairs carried out by Irish Water through the First Fix scheme is an important indicator of the performance of Irish Water in ensuring water delivered through its distribution network is not lost through leakage from the customers' premises.

Figure 3 shows the number of leak repairs per quarter completed by both Irish Water and the customer. The highest number of leak repairs carried out by Irish Water to date were completed in Quarter 2 2016 while the lowest number was completed in Quarter 2 2017. The highest number of leak repairs carried out by customers to date were completed in Quarter 3 2016, while the lowest number was completed in Quarter 1 2017.

Figure 4 shows the total savings in Megalitres/day estimated by Irish Water as a result of both Irish Water and customer leak repairs each quarter. The highest estimated savings in Megalitres/day as a result of leak repairs carried out by Irish Water took place in Quarter 3 2015, while the highest savings in Megalitres/day as a result of leak repairs carried out by customers took place in Quarter 3 2016.

## Commentary

In Quarter 2 2019, a total of 1,984 leak repairs were completed. 1,391 of these repairs were external to the customer property and were carried out by Irish Water, and the remaining 593 leaks were internal to the customer property and repaired by the customer.

As of Quarter 2 2019 Irish Water had completed approximately 15,000 leak repairs and customers had completed approximately 43,000 leak repairs in total. Irish Water estimates that the scheme has saved nearly 150 million litres of water per day up to the end of Quarter 2 2019.

Project expenditure is reported quarterly in arrears. The cumulative total expenditure up to the end of Quarter 2 2019 (end of June 2019) is €41,767,801 consisting of €21,141,406 for leak investigations, €16,288,486 for repairs and €4,337,412 for additional costs<sup>5</sup>. This expenditure is within the original allowed funding amount of €51m for the scheme. Irish Water has been approved additional funding for the First Fix Scheme over the upcoming revenue control period, from 2020 to 2024.

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5 **Source:** Irish Water Leakage Reduction Programme - First Fix Leak Repair Scheme - For Domestic Water Customers - Quarterly Report Q2 2019

Specific targets have not been set for Irish Water in respect of the First Fix Scheme. This is because availing of a leak investigation and possible First Fix requires a good level of customer engagement to meet any target.

This performance indicator has been updated with data for Q1 and Q2 2019. It shows a slight increase in the number of leak repairs completed since the last quarter of 2018 (Q4 2018). However, Figure 3 demonstrates a continued and disappointing drop-off in the number of leak repairs completed under the scheme since mid-2016. This coincides with the suspension and eventual abolition of domestic water charges. Excess Use Charges for domestic households was planned to be introduced in late 2020, however this will be delayed, primarily due to the impact of the Covid-19 pandemic. These charges are now expected to be introduced in 2021, with first bills expected to issue in 2022. It is expected that this will encourage customers to avail of the Scheme and that higher numbers of leak repairs will be achieved in the future. Future WAB reports will continue to monitor the rate of First Fix repairs by Irish Water and customers.

#### TECHNICAL NOTE

### WHY THE FIRST FIX SCHEME IS IMPORTANT

Reducing drinking water loss through the First Fix Scheme helps to:

- ▶ conserve water;
- ▶ reduce the amount of money Irish Water spends on treating and supplying water that is ultimately leaked and not used by customers; and
- ▶ allows Irish Water to manage better risks and uncertainty in supplying drinking water (such as faster demand growth than anticipated when planning and designing water infrastructure).

### 2.1.3 Performance Indicator 3 - Remedial Action List (Water)

This Performance Indicator is based on the latest available information valid up to the end of Quarter 1 2020.

#### Brief Explanation

The Environmental Protection Agency publishes the Remedial Action List. This is a list of public water supplies in need of significant corrective action, usually at the treatment plant. Public water supplies are added to the Remedial Action List for a variety of reasons including ongoing failure to comply with drinking water quality standards or inadequate treatment levels.

#### Why we focus on this Performance Indicator

The number of supplies on the list, and the population that these supplies serve, are important as they indicate the progress of Irish Water in ensuring public drinking water supplies are safe and secure. When Irish Water has demonstrated that the supply is safe and secure, it can be removed from the Remedial Action List.

**Figure 6**

The population served by drinking water supplies included on the Remedial Action List from Quarter 1 2018 to end Quarter 1 2020



#### Commentary

Figure 6 shows the population served by drinking water supplies included on the list from Quarter 1 2018 to end Quarter 1 2020. The figures had been showing a general downward trend in both the number of drinking water supplies on the list and the population that these supplies serve: however, the addition of the Leixlip supply to the Q3 2019 RAL has changed this. The number of supplies on the remedial action list increased by one at the end of Q1 2020, with the population served by these supplies standing at 1,151,472.

Under normal circumstances, the WAB would expect a continual reduction in the number of supplies on the Remedial Action List, with a substantial reduction by 2020.

At the end of Quarter 1 2020 the Remedial Action List contained 53 water supplies, similar to the end of Q4 2019. One supply was removed and two supplies were added. However, there was an increase in the population served by supplies needing remedial action from 1,128,847 to 1,151,472. Fedamore, Co. Limerick was one of the supplies added to the Remedial Action List at the end of Q1 2020. This supply serves 492 consumers and has been on a Boil Water Notice since 03/12/2019. As of 30th June 2020, this supply remains on a Boil Water Notice. Irish Water plans to develop a new groundwater source to address the issues here and have advised the Environmental Protection Agency that it will be June 2021 before those works are complete and it is likely the Boil Water Notice will remain in place until that time.

Two supplies on the Remedial Action List had category changes at the end of Q1 2020 – Longford Central is no longer on the Remedial Action List for Trihalomethanes, however it remains on the Remedial Action List for elevated pesticides; Glenties-Ardara (Co. Donegal) had the Cryptosporidium category removed, but remains on the Remedial Action List for elevated Trihalomethanes. This reflects some limited progress by Irish Water to address the issues for supplies on the Remedial Action List.

At the end of Q2 2020, Irish Water planned to complete the filter upgrade works at Leixlip Water Treatment Plant by the end of September 2020. The installation of a duty Ultraviolet disinfection unit was expected to be installed on the “old” plant at Leixlip also by end March 2021. A standby Ultraviolet disinfection unit was also expected to be installed on the “old” plant at Leixlip by end March 2021. This means that the installation of both duty and standby ultraviolet units on the “old” plant at Leixlip are now delayed by six months.

The WAB is concerned that the installation of Ultraviolet disinfection at the “old” Leixlip Water Treatment Plant is completed to ensure greater security of supply to the Greater Dublin Area when it has been completed. Future WAB reports will monitor the progress of Irish Water in meeting the targets they have set to remediate those water supplies through the quarterly updates of the Remedial Action List. The WAB will also monitor the number of new drinking water supplies that are put on to the list in any quarter. The WAB expects that COVID-19 restrictions will have some impact on the dates for supplies on the Remedial Action List and will continue to monitor Irish Water’s progress to assess and address these delays in subsequent reports.

TECHNICAL NOTE

## REASONS FOR ADDING A DRINKING WATER SUPPLY TO THE REMEDIAL ACTION LIST

Public water supplies can be added to the Environmental Protection Agency's Remedial Action List for one or more of the following reasons:

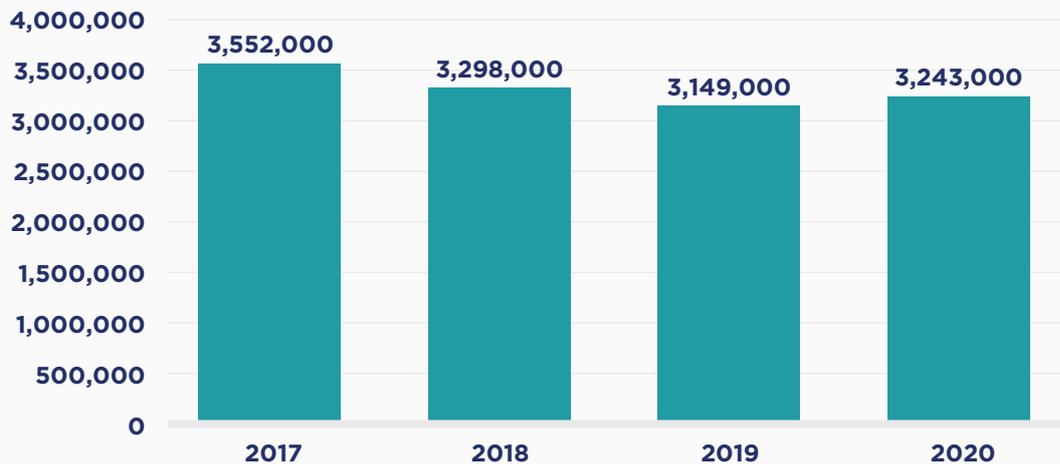
- ▶ Persistent failure to comply with the standards for priority parameters such as E.coli, trihalomethanes, aluminum, pesticides or turbidity;
- ▶ Inadequate treatment of the water supply, for example, where there is no treatment other than chlorination available for a surface water supply;
- ▶ Monitoring results or compliance checks carried out by the Environmental Protection Agency indicate a lack of operational control at the treatment plant; or
- ▶ The Health Service Executive has identified a supply where improvements are required.

## 2.1.4 Performance Indicator 4 - Priority Urban Area List (Wastewater)

Based on information valid up to June 2020.

**Figure 7**

Population equivalent served by priority areas



### Brief Explanation

The Environmental Protection Agency publishes a Priority Urban Area List. This is a list of urban areas that most urgently need improvement in the waste water treatment provided. An urban area can be added to the Priority Urban Area List for a number of reasons including failing to meet EU sewage treatment standards or because waste water is having a harmful effect on water quality in rivers, lakes or coastal waters.

### Why we focus on this Performance Indicator

The number of urban areas on the list is important as it is an indicator of the performance of Irish Water in ensuring that waste water generated within communities is not polluting our water or creating a health risk. When Irish Water has provided an appropriate level of waste water treatment for an urban area, the area can be removed from the list. This is determined by the Environmental Protection Agency.

The number of urban areas on the priority urban area list has reduced from 148 in 2017 to 113 in 2020. Figure 7 shows the population equivalent served by priority areas included on the Priority Urban Area List for 2017 to 2020. The population equivalent served by priority urban areas increased since 2019, reversing some of the downward trend recorded between 2017 and 2019.

Under normal circumstances the WAB expects to see a continued reduction of the population equivalent served by priority areas on the list.

## Why we focus on this Performance Indicator

The number of supplies on the list, and the population that these supplies serve, are important as they indicate the progress of Irish Water in ensuring our waste water receives an appropriate level of treatment to protect our environment and public health. When Irish Water has provided an appropriate level of waste water treatment for an urban area, the area can be removed from the list.

## Commentary

The targets for completion of remedial actions in Priority Urban Areas are reported to the Environmental Protection Agency. Progress is also monitored by the Environmental Protection Agency.

In mid-2020, there were 113 priority areas included on the list which represented a population equivalent of 3,243,000, a reduction of 309,000 from 2017.

It is important to note that this includes in excess of 2 million population equivalent served by the Ringsend treatment plant. Remedial work is underway. When Ringsend is removed from the list, the population equivalent will be reduced significantly.

The inclusion of an urban area on the list means that Irish Water must improve waste water treatment levels in that area. There can, therefore, be a range of actions that Irish Water might need to take to upgrade the treatment being provided to a specific urban area, depending on the reason it was added to the list.

These might include:

- ▶ Infrastructural upgrades to the waste water plant to treat sewage to the required standards;
- ▶ Upgrades to the collection systems to ensure waste water is collected properly;
- ▶ Operational improvements to the plants.

The target dates for the completion of those specific actions are reported to the Environmental Protection Agency which monitors Irish Water's delivery on those targets. Future WAB reports will monitor the progress of Irish Water in reducing the number of agglomerations on the Priority Urban Area List.

Environmental Protection Agency's assessment of the latest priority urban areas update highlights the following:

- ▶ The pace at which Irish Water is fixing the legacy of deficiencies in Ireland's waste water treatment infrastructure is too slow and there are repeated delays in providing treatment for many areas.
- ▶ In 2019 waste water treatment at 19 large towns and cities did not meet European Union standards set to protect the environment.
- ▶ Further delays in providing treatment mean that the number of towns and villages likely to continue discharging raw sewage after 2021 has increased from 13 in the previous report to 33.

- ▶ In 48 of the Priority Urban Areas, waste water is the main significant pressure on waterbodies at risk of not meeting their environmental objectives. In 2017 the Environmental Protection Agency requested Irish Water to prepare corrective action plans setting out when and how it will ensure waste water discharges from these agglomerations do not prevent the receiving waters from meeting their environmental objectives. Irish Water has not identified the corrective actions needed at 23 of these agglomerations which is concerning. Identifying and implementing the corrective actions needed at these areas is essential to help meet our Water Framework Directive obligations.

The Environmental Protection Agency notes that inadequately treated waste water is putting people's health at risk and is having an impact on our rivers, lakes and coastal waters.

The WAB notes with concern that the Environmental Protection Agency has again highlighted the pace at which deficiencies are addressed by Irish Water. Delays in delivering infrastructural works means that the discharge of raw sewage will continue after 2021 in 33 areas compared to 13 previously reported and this is of concern to the WAB.

#### TECHNICAL NOTE

### REASONS FOR AN URBAN AREA BEING INCLUDED ON THE PRIORITY URBAN AREA LIST

The Priority Urban Area list is a list of urban areas that most urgently need improvement in the waste water treatment provided. Improvement in the level of treatment provided to an urban area may be required for various reasons including:

- ▶ it is failing to meet EU sewage treatment standards;
- ▶ it is discharging raw sewage because there is no treatment plant;
- ▶ it is a key pressure on the water quality of rivers or lakes;
- ▶ it is impacting negatively on bathing water;
- ▶ an improvement (i.e. an increase in treatment level) is needed to protect Pearl Mussels.

## 2.1.5 Performance Indicator 5 - Lead service connections replaced

This Performance Metric is based on information valid up to April 2020 including Quarter 2 figures.

**Figure 8**

Total lead connections replaced (cumulative)



### Brief Explanation

Lead is a harmful substance that can be found in drinking water when it dissolves from lead pipework, mains connections and plumbing fittings. While there are no lead water mains in Ireland, there are still some lead pipes remaining in the public network (these connect the water mains to individual houses or groups of houses). The presence of lead pipes or fittings in a property depends mainly on the age of the pipe.

### Why we focus on this Performance Indicator

Where lead is found in drinking water, its consumption is harmful to people. The World Health Organisation re-examined the evidence and changed its advice that lead in drinking water was not considered a health risk unless it reached a certain level. There is no level of lead in drinking water which is now considered to be completely safe and it is best to limit exposure, for all age groups, to lead<sup>6</sup>. Those most sensitive to the neurodevelopmental effects of lead are foetus, infants and children.

<sup>6</sup> <https://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf;jsessionid=9F277B98B3C42FE03A350DF4EBC3AEDE?sequence=1>

## Brief Explanation

Irish Water has an annual target for replacements which, this year, was significantly and substantially reduced from the 2019 target. The target for 2020 was 1,100 replacements, with a target of 13,231 for the entirety of Revenue Control 3 period (2020-2024)<sup>7</sup>. Figure 8 above shows that the rate of progress of lead connection replacements has slowed since the last quarter of 2019 and has plateaued over the last 2 quarters. Irish Water is also examining revising the target for 2020 following COVID 19 restrictions. There were no lead connection replacements during Q2 2020 due to COVID 19 restriction. The small increase from Q1 to Q2 2020 reflects a reporting lag for lead connections replaced between 21st March to 25th June 2020.

Irish Water has encountered difficulties in accessing shared and backyard service replacements, as some homeowners have refused to sign the necessary consent forms for works to be carried out on private property. Irish Water continues to engage with these homeowners to get these consent forms signed.

## Commentary

Where lead is found in drinking water, its consumption is harmful to people.

The “*National Lead Strategy*”<sup>8</sup>, published by the Government in 2015, sets out that lead in drinking water is both the responsibility of water suppliers and property owners. Irish Water, as the water supplier for public water supplies, is therefore responsible for lead pipework in the water distribution network. This is known as public side lead.

The rate of replacement of lead services in the water distribution network is an important indicator of the performance of Irish Water in ensuring water delivered through its distribution network is safe for consumption. As part of its Leakage Reduction Programme, Irish Water is planning to remove all remaining lead pipes from the public water network.

Figure 8 shows the cumulative number of lead connections replaced by Irish Water to date, with detailed replacement figures given for the last ten quarters. This data is compiled by the Environmental Protection Agency on a quarterly basis.

Under normal circumstances the WAB expects to see the continued replacement of lead services in line with Irish Water’s Lead in Drinking Water Mitigation Plan<sup>9</sup>.

7 <https://www.cru.ie/wp-content/uploads/2019/07/CRU19148-Irish-Water-Revenue-Control-3-Decision-Paper.pdf>

8 <https://www.housing.gov.ie/water/water-quality/lead-drinking-water/national-lead-strategyjune-2015>

9 <https://www.water.ie/docs/Lead-in-Drinking-Water-Mitigation-Plan.pdf>

## TECHNICAL NOTE

**ADVERSE HEALTH EFFECTS OF LEAD**

There are many acute and chronic effects of lead exposure. At very high levels of exposure, lead can cause damage to most organs in the body, particularly the kidneys and central nervous and blood systems.

However, studies over the last 30 years have shown that lead can affect health as a result of ongoing exposure to lower levels of lead. In particular, the evidence indicates that chronic exposure to low levels of environmental lead can adversely affect cognitive development in children. Chronic exposure to lead can also cause:

- ▶ renal toxicity;
- ▶ disturbances in cardiac conduction and rhythm and increase in blood pressure;
- ▶ hepatic damage;
- ▶ anaemia and other haematological effects;
- ▶ reproductive and developmental toxicity;
- ▶ gastrointestinal disturbances.

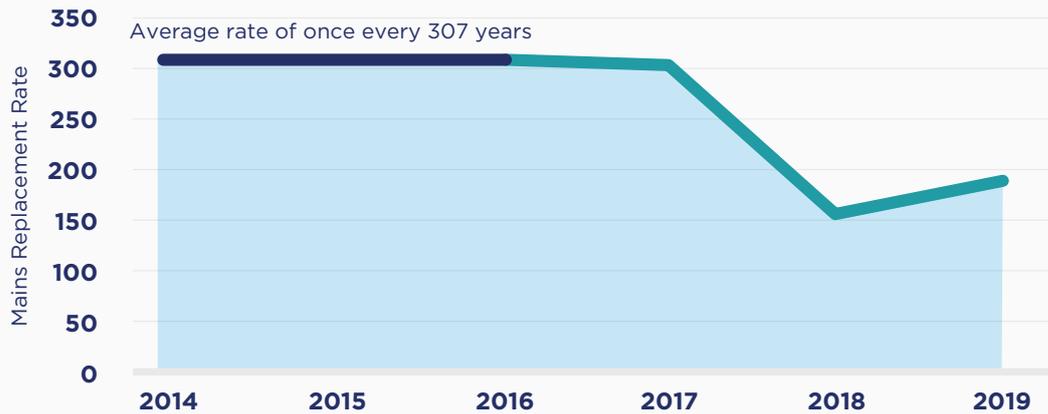
**Source:** Environmental Protection Agency - Health Services Executive Joint Position Paper Lead in Drinking Water; 2013

## 2.1.6 Performance Indicator 6 - Mains replacement rate (for water mains)

This Performance Indicator is based on information valid up to end of 2019.

**Figure 9**

Mains replacement rate 2014 - 2019



### Brief Explanation

Irish Water has approximately 63,000km of water mains distributing treated drinking water around the country. In 2015, Irish Water reported that the average age of the water mains infrastructure in Ireland was estimated at 65 to 85 years, while cast iron mains in some of our cities and towns were estimated to be up to 140 years old.

Given the age profile of the drinking water infrastructure, the mains replacement rate carried out by Irish Water is an important performance indicator. The mains replacement rate is calculated by dividing the length of water mains replaced in a year by the total length of water mains served by Irish Water.

### Why we focus on this Performance Indicator

The maintenance (including replacement) of water mains is important as it supports the provision of a secure, quality supply of treated drinking water to customers. If water mains are not appropriately maintained, Irish Water's customers can experience low water pressure, reduced water quality and water supply interruptions due to pipes bursting. Burst pipes add to the amount of water lost through leakage.

Figure 9 shows Irish Water's mains replacement rate from 2014 to 2019. It has remained at a consistent level for the period 2014 to 2017, but shows a substantial increase over 2018 and 2019.

## Commentary

In 2015, when it published its 7-year Strategic Funding Plan, Irish Water estimated that 49% of the water it produces is lost to leakage from the distribution network due to its age and quality.

Through Irish Water's leakage reduction programmes and analysis of metered information, this estimate has fallen in subsequent years. In 2017, approximately 46% of the average daily water demand was classed as 'unaccounted for water' on the public network.

The "Irish Water Capital Investment Plan 2017 - 2021 Monitoring Report No. 2"<sup>10</sup> noted Irish Water replaced 209km of water mains in 2017. This represents a replacement rate of 0.33% of Irish Water's network and a replacement rate of once every 300 years.

In 2018 and 2019, Irish Water's replacement rate has increased. The "Irish Water Capital Investment Plan 2017 - 2021 Monitoring Report No. 3"<sup>11</sup> reported that Irish Water replaced or rehabilitated 407km of watermains in 2018 and 333km in 2019. Combined this represents 1.2% of Irish Water's network. The average replacement rate was 155 years in 2018 and 189 years in 2019. This is a substantial increase compared with the rate of once every 301 years in 2017.

To place this in context, companies in England and Wales are 'replacing' (mostly by renewal, but some by relining) in the region of 0.1% to 0.4% of their networks annually. The WAB welcomes Irish Water's higher replacement rate of 1.2% across 2018 and 2019, especially given Irish Water's infrastructure is likely to be older and in worse condition on average.

There are no specific targets in place to monitor Irish Water's mains replacement rate. Therefore, future WAB reports will monitor the mains replacement rate to assess if Irish Water has achieved improved performance against this metric over time.

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<sup>10</sup> Irish Water Capital Investment Plan 2017-2021 - Monitoring Report No. 2 published 29 April 2019

<sup>11</sup> Irish Water Capital Investment Plan 2017-2021 - Monitoring Report No. 3 published 10 July 2020

## 2.2 Improvements in Water Quality, including the elimination of Boil water notices

### 2.2.1 Performance Indicator 7 - Overall compliance with microbiological indicators for drinking water

This Performance Indicator is based on information valid up to December 2019.

**Figure 10**

Percentage of Samples complying with the E.coli Standard



#### Brief Explanation

Microbiological indicators measure the level of bacteria in drinking water. These are the most important health indicators of drinking water quality, particularly the presence of E. coli in water. The presence of this bacterium in drinking water is a good indication that a water supply has been contaminated.

#### Why we focus on this Performance Indicator

Irish Water is responsible for the production, distribution and monitoring of drinking water in public water supplies. Where monitoring shows a failure to meet the water quality standards for drinking water in a public water supply, Irish Water is required to take action. When Irish Water notes a microbiological failure it must notify the Environmental Protection Agency and investigate why it happened. It must also consult the Health Services Executive to confirm if the failure might impact the health of any person who drinks the water. This may result in, for example, a boil water notice being issued.

This indicator is important, therefore, as it reflects whether treatment plants managed by Irish Water are operating correctly and that drinking water supplies are safe and secure from bacterial contamination. Under normal circumstances the WAB expects to see a compliance rate of close to 100%.

## Commentary

In general, the WAB notes that compliance with the microbiological standards is high as illustrated in Figure 10, which shows that compliance has remained over 99% in the period 2014 – 2019. The Environmental Protection Agency produces an annual report, which gives an overview of the quality of drinking water in public water supplies. The reports are based on the assessment of monitoring results reported to the Environmental Protection Agency.

During 2019, seven public water supplies showed samples which failed to meet the standards for *E. coli*. One of these failed due to issues at the treatment plant where the disinfection system failed, while issues with sampling or contamination of the consumers' taps were suspected in the remainder. Further information is available in the Environmental Protection Agency's "*Drinking Water Quality in Public Supplies 2019*" report<sup>12</sup>. This is a slight increase from 2018 when six supplies failed the standard for *E. coli*.

Future WAB reports will monitor the success of Irish Water in decreasing the number of public water supplies that do not comply with the *E. coli* standard.

### TECHNICAL NOTE

#### RISKS OF *E. COLI* IN DRINKING WATER

*E. coli* is an indicator organism, the presence of which in drinking water indicates that the supply has become contaminated with human or animal waste or that the disinfection systems is not operating adequately. The presence of *E. coli* in drinking water is an indication that other more harmful micro-organisms may be present and that action is urgently required to identify the cause of the failure and to ensure that treatment is improved to adequately disinfect the water.

**Source:** Environmental Protection Agency Advice Note No. 3 – *E. coli* in Drinking Water

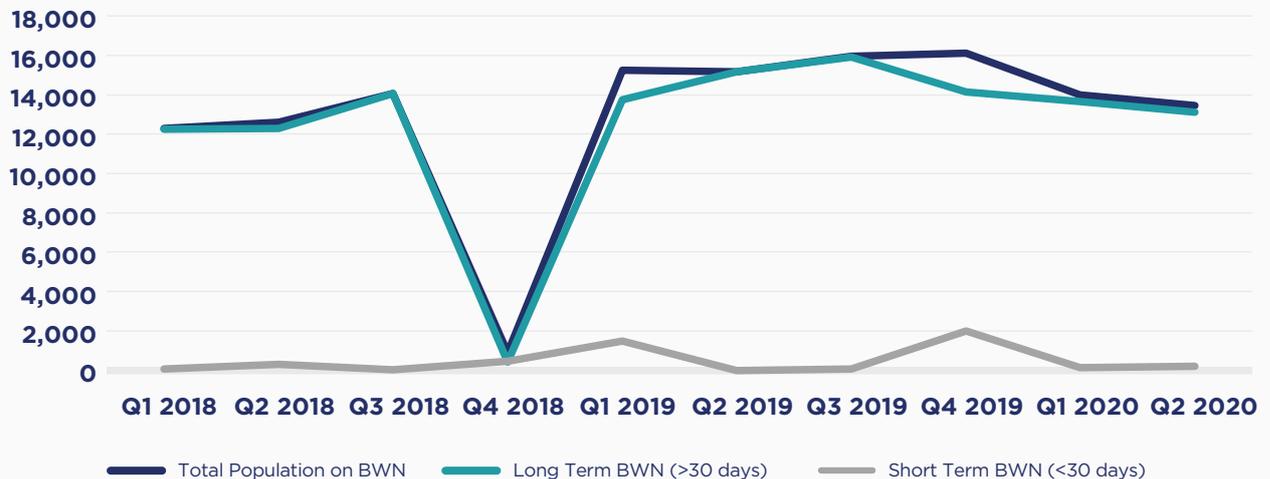
<sup>12</sup> <https://www.epa.ie/pubs/reports/water/drinking/drinkingwaterqualityinpublicsupplies2019.html>

## 2.2.2 Performance Indicator 8 - Boil Water Notices

This Performance Indicator is based on information valid up to June 2020.

**Figure 11**

Boil water notices at the end of each quarter<sup>13</sup>



### Brief Explanation

If a public water supply becomes contaminated with bacteria or a pathogen, a boil water notice may be issued. A boil water notice is a formal notice issued to all households and businesses in an area advising them that drinking water from the public water supply is not safe to drink unless it is boiled and cooled beforehand. Irish Water must notify the Environmental Protection Agency when a failure in water quality is noted. However, Irish Water will usually only issue a boil water notice after consulting with the Health Services Executive, the statutory authority on public health matters, to confirm if the failure might impact on people's health.

### Why we focus on this Performance Indicator

The number of boil water notices issued is an important indicator of drinking water quality and as a measure to protect public health of customers. The number of people affected by boil water notices issued, therefore, is an important indicator as to whether Irish Water is ensuring public drinking water supplies are safe and secure. Figure 11 shows the total population on boil water notices at the end of Quarter 4 2019.

The graph also shows how long those boil water notices have been in place by showing the population on boil water notices for less than thirty days and the population on boil water notices for more than thirty days.

Under normal circumstances the WAB expects that no consumer should be on a long-term Boil Water Notice. Boil water notices should be kept at low levels and for as short a period as possible.

<sup>13</sup> **Source:** Environmental Protection Agency

## Commentary

At the end of Quarter 1 2020, 13,774 people were on boil water notices and at the end of Quarter 2 2020, there was 13,709 people on boil water notices. The number of people on boil water notices at the end of each quarter, has decreased during 2020. However, this does not reflect the full picture. Over the last six quarters, the vast majority of those on boil water notices were affected for more than 30 days. This is, in part, due to the reimposition of a boil water notice on the Lough Talt public water supply in January 2019 following detections of Cryptosporidium and illness in that community. The Lough Talt supply serves 12,566 consumers. The Environmental Protection Agency's annual report on the quality of drinking water in public water supplies for 2019 highlights that during 2019, 59 of the 67 boil water notices issues were in place for longer than 30 days. This means that the solution to fix the problem with the plant could not be addressed quickly and requires significant investment by Irish Water. Irish Water has advised the Environmental Protection Agency that the completion of the new plant at Lough Talt remains on target for completion by the end of 2020, despite some delays related to COVID-19. This new plant will mean a safe and secure supply of drinking water for consumers in Co. Sligo, who have been on a boil water notice since January 2019.

The WAB notes with concern the trends for long term boil water notices highlighted by the Environmental Protection Agency and will continue to monitor Irish Water's progress in ensuring that boil water notices remain in place for as short a time period as is feasible.

When Irish Water took charge of water supplies in 2014 it set a target to eliminate all boil water notices that were in place at that time. This target was achieved and while no specific future targets have been set, Irish Water is working to continue reducing the number of people affected by boil water notices.

### TECHNICAL NOTE

#### REASONS WHY A BOIL WATER NOTICE MIGHT BE ISSUED

The most common reason for issuing a Boil Water Notice would be where routine testing of the drinking water supply has shown the presence of harmful bacteria (such as E. coli), or pathogens such as Cryptosporidium.

- ▶ In some cases a Boil Water Notice may be imposed where there is a risk of contamination but where test results are yet to be confirmed.
- ▶ Boil Water Notices that remain in place for greater than 30 days are classified as long-term notices.

### 2.2.3 Performance Indicator 9 - Compliance of Urban Waste Water Treatment (UWWT); Plants with Environmental Protection Agency discharge licences

This Performance Metric is based on information valid up to end 2019.

**Figure 12**

Percentage of Population served by compliant Urban Waste Water Treatment plants (by population equivalent)<sup>14</sup>



#### Brief Explanation

The objective of waste water treatment is to collect the waste water generated within communities, remove the polluting material, and then release the treated water safely back into the environment. Without such treatment, the waste water produced would pollute our waters and create a health risk. A waste water discharge licence is required for treatment plants that are discharging from areas with a population equivalent of 500 or more.

#### Why we focus on this Performance Indicator

The percentage of population served by waste water treatment plants that are compliant with their discharge licence is an important indicator of the performance of Irish Water in ensuring that our treatment plants are not polluting our water or creating a health risk. Untreated waste water, commonly referred to as raw sewage, can be contaminated with harmful bacteria and viruses. This can pose a health risk to people who come into contact with contaminated water and can threaten aquatic ecosystems and the amenity value of our waters. Figure 12 shows the percentage of the population served by treatment plants (by population equivalent) that complied with their Environmental Protection Agency Discharge licence. Under normal circumstances the WAB expects to see a continued increase in compliance in this area.

## Commentary

Overall, compliance with the discharge licence is very low but there has been an increase in the percentage of urban areas meeting licence standards - these increased from 38% to 45% in 2019.

The total population equivalent requiring waste water treatment by Irish Water in 2019 was 5,439,000. Similar to 2018, only 25% of the population's (1,318,000) sewage was treated to the required standard in 2019. There was no change in this metric by the end of 2019. The stagnation in compliance is primarily due to increased population in areas served by non-compliant waste water treatment plants.

The two main actions to improve compliance are:

- ▶ Upgrading of the waste water treatment infrastructure.
- ▶ Continuing to improve how plants are operated and maintained.

Of the 75% of the population served by the plants that were not compliant, it is worth noting that over half of that non-compliance can be attributed to one waste water treatment plant - the plant at Ringsend, Dublin. Dealing with the non-compliance issues at this plant has the potential to result in a significant improvement in the overall compliance rate.

The Ringsend plant will be upgraded in two phases:

1. Construction work (begun in 2018) to extend the plant and provide additional treatment capacity for a population equivalent of 400,000. This new extension was due to be completed in 2020 but this has been delayed until 2021 due to the impact of Covid 19.
2. Further work to upgrade the current treatment process and bring the treatment capacity up to 2.4 million is due is due for completion by 2025 but these dates will be impacted by Covid.

The quality of the treated waste water will improve as the upgrade works proceed but is not expected to start meeting the required standards until the end of 2022 at the earliest.

Future WAB reports will monitor the progress of Irish Water in improving the percentage of urban areas that comply with licence standards. The WAB expects that COVID 19 will result in some delays in delivery of projects and infrastructure and will closely monitor those delays over subsequent reports.

## 2.3 Responsiveness to the needs of Communities and Enterprise

This Performance Metric is based on information valid up to end 2018.

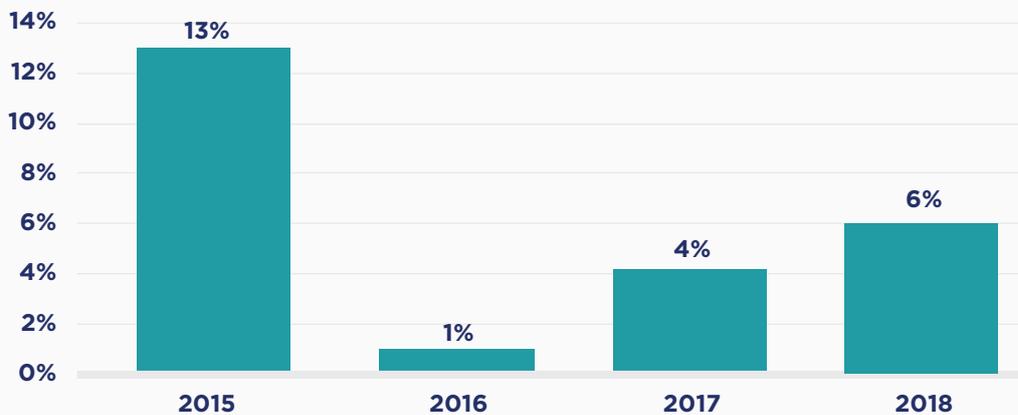
### 2.3.1 Performance Indicator 10 – Ease of Contact

In terms of the Ease of Contact performance indicator, the Commission for Regulation of Utilities has chosen four separate metrics:

The Call Abandonment Rate metric is the percentage of calls that are abandoned while a caller is waiting in the queue to speak to an agent (having been directed through the Interactive Voice Recognition system).

**Figure 13**

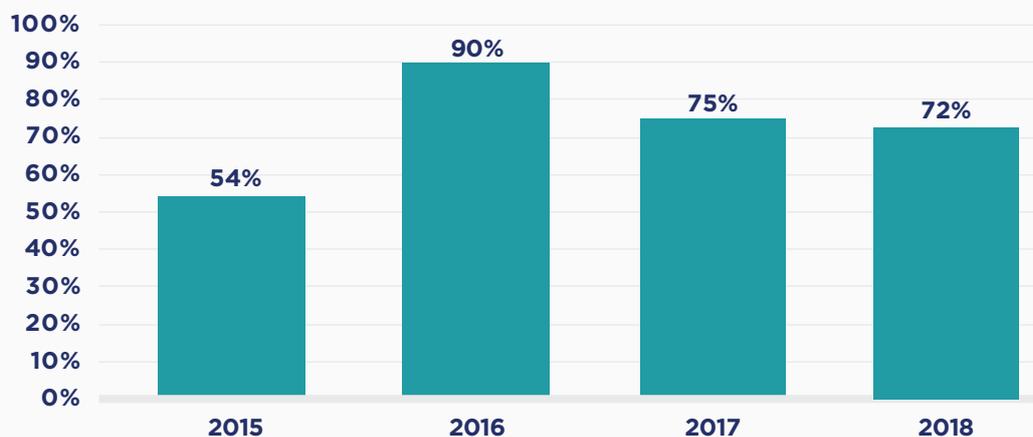
Call Abandonment Rate



The Speed of telephone response by Irish Water is measured by two separate telephone service factors. The first metric, Telephone Service Factor 1 (TSF 1) measures the percentage of calls that enter a queue to speak to an agent which are answered within 20 seconds.

**Figure 14**

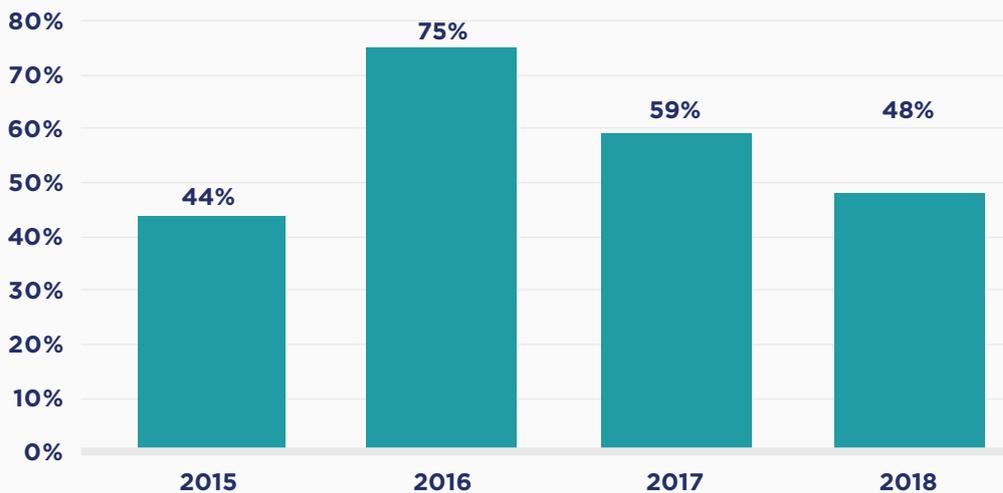
Telephone Service Factor 1: Calls answered by Agent within 20 seconds



The second metric, Telephone Service Factor 2 (TSF 2), measures the number of calls that are dealt with through the Interactive Voice Recognition system as well as the number of calls when placed in a queue to speak to an agent (after going through the Interactive Voice Recognition system) answered by an agent within 20 seconds.

**Figure 15**

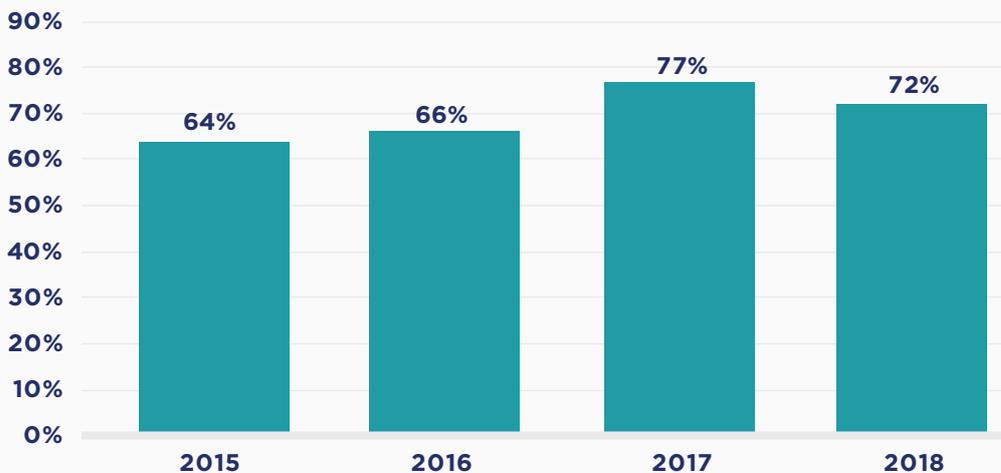
Telephone Service Factor 2: Calls dealt with through Interactive Voice Recognition & calls answered by Agent within 20 seconds



The Customer Satisfaction metric measures customer satisfaction levels of their experience dealing with Irish Water through phone contact. A survey is conducted by an independent research company, where customers rate their satisfaction level on a ten-point scale.

**Figure 16**

Customer Satisfaction Scores



## Brief Explanation

Supplying water for consumption and managing wastewater are Irish Water's core functions. How it interacts with its customers is an important indicator of its overall performance and is important in engendering trust in the organisation. As set out above, there are four parts to this performance indicator. Each part relates to the experience customers receive when contacting Irish Water.

## Why we focus on this Performance Indicator

Irish Water deals with large volumes of customers on a daily basis. Customers usually contact Irish Water when something has gone wrong and are looking for a response. These customer contact indicators reflect the interaction that a customer has with Irish Water and allows an assessment of Irish Water's performance through its contact centre.

## Commentary

There has been no update to this metric since the publication of the last Water Advisory Body Quarterly Report in March 2020, and thus the commentary set out below still applies.

Overall, Customer Satisfaction Scores for the three years to 2017 were on an upward trend, although this score declined in 2018 (Figure 16) disappointingly.

There was also a worsening in speed of telephone response and the abandonment rate in 2018.

- ▶ 48% of calls were either dealt with by the Interactive Voice Recognition System or answered within 20 seconds by an agent, down from 59% in 2017 (Figure 15).
- ▶ 72% of calls in the queuing system to speak to an agent were answered in 20 seconds, down from 75% in 2017 (Figure 14).
- ▶ In 2018, 6% of calls to Irish Water were abandoned while a caller was waiting in the queue to speak to an agent. This is an increase from 4% in 2017 (Figure 13).

For comparison, The UK Contact Centre Decision-Maker's Guide 2018-19 (16th edition) reported an industry median average of 4.4% and mean average of 5.7% for call abandonment rates.

As noted above Irish Water's customer satisfaction scores, increased steadily from 2015 to 2017, from 64% to 77%, however 2018 showed a decline to 72%.

In relation to both Telephone Service Factor 1 and 2 and the Abandonment Rate, it must be stated, that 2018 included increased customer contact with Irish Water due to weather events such as Storm Eleanor in January, Storm Emma in March, and the drought experienced over the summer months. Irish Water's domestic refunds campaign also increased call volumes in January.

Nevertheless, it is disappointing to see a drop-off in Irish Water's performance against all four metrics in 2018. The WAB expects Irish Water to improve its performance against this indicator in the future.

## TECHNICAL NOTE

**COMPONENTS OF EASE OF CONTACT**

There are four components to the ease of telephone contact performance indicator:

- ▶ Ease of telephone contact – call abandonment rate: This indicator is defined as the percentage of calls that are abandoned while a caller is waiting in the queue to speak to a customer service agent, having been directed through the Interactive Voice Recognition system;
- ▶ Ease of telephone contact – customer call-back survey: This indicator is defined as Irish Waters performance in a Customer Survey conducted by an independent research company engaged by Irish Water;
- ▶ Ease of contact – speed of telephone response: This indicator is defined in two parts as follows:
  - a) Telephone Service Factor 1 = Total number of calls answered by an agent within 20 seconds of entering the queue to speak to an agent ÷ total number of calls that enter the queue to speak to an agent.
  - b) Telephone Service Factor 2 = (Total number of calls picked up by the Interactive Voice Recognition system and do not progress to the queue + calls answered by an agent within 20 seconds of entering the queue to speak to an agent) ÷ total number of calls received. For clarity, the total number of calls received by the contact centre comprises the number of calls dealt with in the IVR + the number of calls abandoned in the IVR + the number of calls placed in a queue to speak to an agent.

### 2.3.2 Performance Indicator 11 - Irish Water Customer Complaints management

This metric has not been updated in this report.

**Figure 17**

Response to Complaints within 5 working days



**Figure 18**

Response to Complaints (with Final Decision) within 2 months



## Brief Explanation

Customer complaints handling refers to the rate at which Irish Water resolves complaints that customers have made regarding some aspect of the service they received from Irish Water.

Irish Water has published a complaint handling Code of Practice, for both domestic and non-domestic customers of Irish Water. Irish Water's Code of Practice must comply with the Domestic and Non-Domestic Customer Handbooks, which set out the required levels of customer service and customer protection measures that Irish Water must provide to its customers.

This Code of Practice on complaint handling defines a complaint as “the expression (through various channels, letter, email, phone call, physical claim) of a customer's dissatisfaction and his/her explicit expectation for a response or resolution.”

The Commission for Regulation of Utilities has included a metric in its Performance Assessment Framework on which Irish Water is required to report:

- ▶ the number of complaints responded to within five working days with either a resolution or an outline plan for proposed resolution; and
- ▶ the number of complaints on which a final decision was issued within two months.

## Why we focus on this Performance Indicator

This performance indicator focuses on two components of the code:

- ▶ the number of complaints responded to within five working days with either a resolution or an outline plan for proposed resolution; and
- ▶ the number of complaints on which a final decision was issued within two months.

By monitoring these indicators, the WAB is able to measure Irish Water's performance in responding to complaints it receives. Monitoring this metric will also encourage appropriate response times when customers contact Irish Water with a complaint.

## Commentary

There has been no update to this metric since the publication of the last Water Advisory Body Quarterly Report in March 2020, and thus the commentary set out below still applies.

Irish Water has provided data from Q2 2018 to Q4 2018 (Figure 17) for complaints responded to within five working days, with either a resolution or an outline plan of the proposed resolution. The response to complaints is relatively matched between domestic and non-domestic customers across all quarters. Irish Water's efficiency at responding to complaints within five working days increased after Q2 and maintained a rate of approximately 99% for the second half of the year. Irish Water has demonstrated good performance against this metric and it is close to Irish Water's stated aim in its “Water Services Strategic Plan” to resolve (or have outlined steps taken towards resolving a complaint) 100% of complaints within five working days. The WAB expects this performance to continue in the future.

Complaints for which a final decision is issued within two months are reported on for the entire year 2018 (Figure 18). Again, the percentage of complaints responded to is relatively similar across domestic and non-domestic customers. Irish Water issued a final decision within two months to over 90% of complaints over 2018. Irish Water's annual average under this metric for 2018 was 94.6% for domestic customers and 94.1% for non-domestic customers.

In Irish Water's "Water Services Strategic Plan October 2015", under a heading entitled 'Customer Complaint Handling', Irish Water states that the utility aims to resolve (or have outlined steps taken towards resolving a complaint) 100% of complaints within five working days.

Future WAB reports will continue to monitor Irish Water's performance against this metric.

# Part 3

## Key Events

### 3.1 Commission for Regulation of Utilities' 3rd Capital Investment Monitoring Report

The Commission for Regulation of Utilities' "3rd Capital Investment Monitoring Report" was published in July 2020. This Report provides an overview of Irish Water's progression, delivery and forecast delivery of the Commission for Regulation of Utilities approved 2016 Capital Investment Plan as at the end of 2019.

In 2016 the Commission for Regulation of Utilities approved Irish Water's Investment Plan for the years 2017 to 2021. Last year the Commission for Regulation of Utilities published a monitoring report showing Irish Water's updated forecast delivery of the Investment Plan by the end of 2017, one year into its progression. The report highlighted that Irish Water was forecasting it would need more money and more time to deliver the projects in its Investment Plan. Since then, Irish Water has submitted an update on its progression and delivery of its projects and programmes up to the end of 2019.

#### Overview of Capital Investment 2017 - 2019

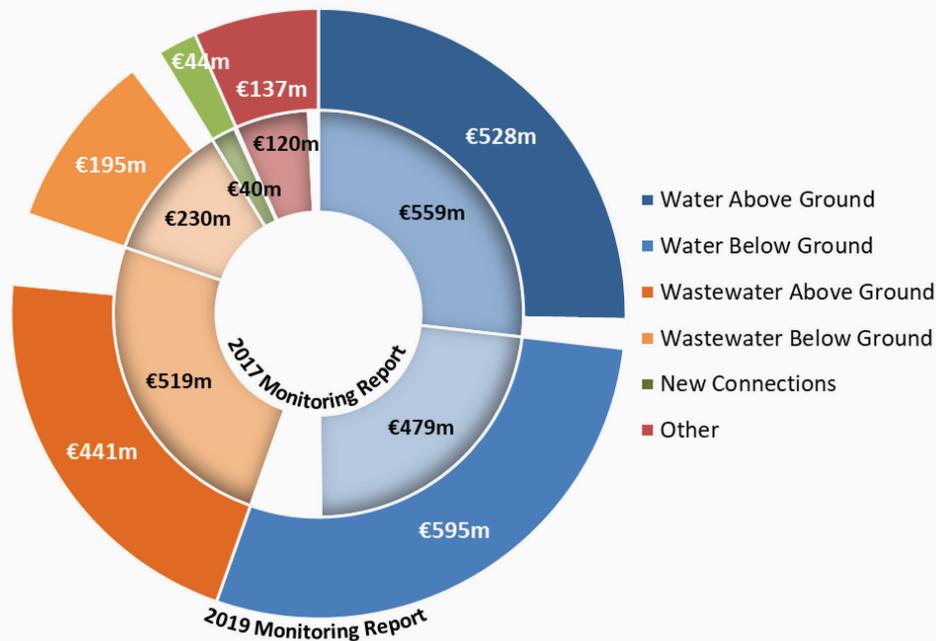
In its 2017 submission, Irish Water had forecast it would spend €1,948m for the three years up to the end of 2019. The 2019 monitoring submission shows that Irish Water has spent €1,939m. Figure 19 below, shows the differences in where that money has been spent<sup>15</sup>.

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15 Irish Water Capital Investment Plan 2017 to 2021- CRU's Monitoring Report No. 3 - July 2020

**Figure 19**

Forecast vs Actual Spend 2017 to 2019



In general, Irish Water has spent less on wastewater treatment plants and sewers and on water supply schemes than it had forecast it would in 2017. There was a significant increased spend on below ground water assets, driven largely by more money being spent on water mains replacement and rehabilitation.

While Irish Water has remained within its overall allowance, it has stretched spend and delivery of projects into the period 2020 and beyond. It is also forecasting an increased spend on a significant portion of its portfolio of projects.

The forecasted costs and delivery of these projects that continue into the CRU Revenue Control 3 period (2020-2024) are part of Irish Water's proposed Investment Plan for 2020 to 2024, which the Commission for Regulation of Utilities has reviewed as part of the Revenue Control 3 process. This process will set the timelines and expenditure to deliver the outputs and outcomes in Irish Water's Investment Plan for the period 2020 to 2024 and will be the basis for future monitoring reports.

### Delivery of outputs and outcomes

The 3rd Capital Investment Monitoring Report focuses on Irish Water's delivery of outputs and outcomes in the period up to the end of 2019 and closes out Irish Water's second revenue control, covering 2017 to 2019.

The Report comments that given the increased costs associated with its portfolio of projects and the funding cap under which it operates, Irish Water has stretched spend and delivery of a significant portion of its portfolio of projects, targeted for delivery in 2017 to 2019, into the period 2020 and beyond.

Irish Water reprioritised its delivery of outputs and outcomes and largely delivered the high-level drinking water quality outputs it had committed to in 2016. However, these outputs were a subset of the deliverables in the Investment Plan with Irish Water spending money on other projects and programmes including those that would deliver outside of the revenue control period and those that had less well-defined outcomes in 2016. There is evidence that Irish Water's under-delivery in the period has resulted in failures to reduce the risks to water supply quality.

As part of its reprioritisation, Irish Water increased spend on its portfolio of national programmes, prioritising delivery of infrastructure relating to drinking water assets, in particular through its disinfection programme and increased spend on mains rehabilitation.

The increased costs and reprioritisation of its Investment Plan has resulted in Irish Water under delivering against the wastewater improvements expected during the second revenue control period with a significant proportion of wastewater projects and programmes not progressing to the extent expected in 2016.

When developing its Investment Plan, the Commission for Regulation of Utilities recognises that Irish Water faced challenges in terms of data and understanding of its asset base. Notwithstanding that, the Commission for Regulation of Utilities notes that there is evidence of optimism bias in both the costing and delivery schedules in the Investment Plan developed by Irish Water in 2016. This optimism bias is also evident in some of the subsequent revisions to the Capital Investment Plan. The Commission for Regulation of Utilities therefore required that Irish Water carry out an external review of its approach to capital investment planning including its approach to costing and prioritising its projects and programmes. This was published alongside the Revenue Control 3 decision in August 2020, which will be subject to a future WAB Quarterly report.

## **Outputs delivered during Revenue Control 2 (2017 - 2019)**

The following outlines a number of the outputs that Irish Water delivered in the Revenue Control 2 period:

- ▶ The number of water supplies on the Environmental Protection Agency's Remedial Action List was reduced from 99 to 52. However, the population served by supplies on the Remedial Action List has more than doubled from 555,689 to 1,128,847 people. In 2017 there were 68 water supplies that had been on the Environmental Protection Agency's Remedial Action List since the end of 2014 and Irish Water had targeted reducing this to 41 by the end of 2018. Irish Water has surpassed this target with 32 supplies on this list at the end of 2018.
- ▶ By the end of 2019 Irish Water had replaced 7,535 'backyard' lead service pipes and 25,106 individual lead service pipes having targeted replacing over 4,000 in each category by the end of 2018.

- ▶ Irish Water accelerated spend on a number of drinking water programmes for the protection of human health during the period. The outputs of these programmes were not well defined in 2016 and did not have targets for delivery associated with them.
  - Irish Water upgraded the Coagulation, Flocculation, Clarification ('CFC') and Filtration processes at 70 sites. These processes help to remove suspended solids, some heavy metals and organics and produces clearer water.
  - Irish Water upgraded the disinfection processes at 235 sites, helping to make the water safe from bacteria and parasites including Cryptosporidium.
- ▶ Irish Water has replaced or rehabilitated 949km of watermains in the last three years.
- ▶ Irish Water has invested in a Leakage Management System that improves its ability to understand its network to help tackle leakage.
- ▶ The average daily volume of 'unaccounted for water' – which includes leakage – on the public network was 711 million litres a day in 2019.
- ▶ Irish Water provided wastewater treatment for nine locations that were previously discharging raw sewage having targeted completing work at nineteen locations in the three-year period 2017 to 2019. At the end of 2019 there were 35 locations continuing to discharge untreated wastewater.

## Major Projects

In 2017, there were six projects within Irish Water's Investment Plan of significant spend and strategic importance that the Commission for Regulation of Utilities requires more detailed updates from Irish Water.

Total forecast spend from 2017 to completion across the six projects is now €2,405m compared with €2,301m in the 2017 monitoring submission, a 4.5% increase.

- ▶ **Ringsend wastewater treatment plant** - The majority of this increased spend is associated with the Ringsend wastewater treatment plant which has seen its forecast costs increase by €89m. This project is required to improve the performance and increase the capacity of Ireland's largest wastewater treatment plant.
- ▶ **The Cork Lower Harbour project**, providing a new wastewater treatment plant and sewer network to provide effective treatment of wastewater produced in areas bordering the harbour, is forecast to be completed on schedule in 2021 with an additional €9m forecast spend. The wastewater treatment plant has been completed and wastewater from Carriagline, Ringaskiddy, Shanbally, Crosshaven, Monkstown, Glenbrook and Passage West is now being collected and discharged to the new treatment plant. This wastewater was previously discharging directly into the Harbour without treatment. Construction has commenced on a new pipeline to cross under the estuary and new sewers to connect Cobh to the wastewater treatment plant.

- ▶ **The Vartry Water Supply Scheme project** includes a new treatment plant, upgrades to the Vartry and Stillorgan reservoirs and replacement of the Vartry tunnel to help to ensure a safe and sustainable water supply in north Wicklow and South Dublin. The project is forecast to be completed on schedule in 2021 with a reduced forecast spend of €6m compared with the 2017 monitoring submission. The new Vartry to Callowhill tunnel was completed in 2019 and construction on the new treatment plant and the Vartry and Stillorgan reservoirs has commenced.
- ▶ **The Greater Dublin Drainage Project**, providing a new regional wastewater treatment facility and the associated infrastructure to serve the growing population of the Dublin area, has had €44m of spend deferred into the period after 2024. It received planning permission in November 2019 and Irish Water is forecasting that construction will begin in 2022.
- ▶ **Regional Biosolids Storage Facility** - As part of Irish Water's proposals for the Ringsend wastewater treatment plant and the Greater Dublin Drainage Project, Irish Water is planning to build a new regional biosolids storage facility. Biosolids are produced as part of the wastewater treatment process and the most common reuse pathway is on agricultural land. However, since biosolids can only be applied during planting season they need to be stored during the rest of the year. Irish Water has completed its site selection process for the new facility and is forecasting that this project will commence construction in 2021.
- ▶ **The Water Supply Project** - Eastern and Midlands Region has had €98m of proposed expenditure deferred into the period after 2024. Irish Water is currently finalising its National Water Resources Plan which will assess supply-demand balances across the country. This will help to inform Irish Water's decision-making relating to the proposed Water Supply Project.

The Commission for Regulation of Utilities recognises that as the projects pass through various stages of project development, for example where planning decisions require refinements to the scope of a project, the cost forecasts may be refined accordingly. These projects tend to be progressed in phases. The forecasts included in the Report represent what Irish Water plans to spend to deliver the six projects in question. These forecasts also form the basis for Irish Water's proposed Capital Investment Plan for the period 2020 to 2024.

The Commission for Regulation of Utilities has reviewed this proposed Investment Plan, to assess the efficiency of the proposed spend, to review Irish Water's approach to investment planning and costing and to understand the outputs and outcomes Irish Water will deliver for this investment. The Commission for Regulation of Utilities published its decision in August 2020, outlining the outputs and outcomes that Irish Water is committed to deliver over the Revenue Control 3 period, and the associated expenditure. This decision will be subject to a future WAB Quarterly report.

The WAB notes that the Commission for Regulation of Utilities will continue to monitor and report on Irish Water's investment plan delivery and will publish annual reports outlining Irish Water's delivery against the agreed outcomes and outputs, included within the Revenue Control 3 decision, during the period 2020 to 2024.

## 3.2 Publication of the Environmental Protection Agency ‘Drinking Water Quality in Public Supplies 2019’ report

Every year the Environmental Protection Agency produces a report on the quality of public drinking water supplies in Ireland. The Environmental Protection Agency ‘Drinking Water Quality in Public Supplies 2019’ report

- ▶ 99.6% of samples comply with chemical parameter limits.
- ▶ 67 boil water notices and eight water restrictions were in place in 2019, affecting more than 700,000 people.
- ▶ 59 of those boil water notices were in place for more than 30 days, meaning they are classed as long-term notices requiring investment in infrastructure to address
- ▶ E. coli bacteria was detected at least once in eight supplies, compared to 12 supplies in 2018.
- ▶ Trihalomethanes limits were exceeded in 46 supplies, compared to 54 in 2018.
- ▶ Pesticides limits were exceeded in 27 supplies, compared to 34 in 2018.
- ▶ 52 supplies were on the Environmental Protection Agency Remedial Action List at the end of 2019 compared to 63 at the end of 2018.

The Environmental Protection Agency noted that the quality of drinking water in public supplies remains high with 99.9% compliance with bacterial limits and 99.6% compliance with chemical limits. The continued high levels of water quality being achieved are positive for consumers. However, increasing uncertainty in Irish Water’s planning and delivery of critical improvements to water treatment plants is making supplies vulnerable to failure, posing a risk to the health of a large portion of the population.

The Environmental Protection Agency noted that at the end of 2019 the Environmental Protection Agency’s Remedial Action List contained 52 supplies with significant issues to be addressed by Irish Water. While this figure is down from 63 supplies in 2018, the population affected by these supplies has doubled in the same period to over 1.1 million. This is mainly due to the addition of the Leixlip water treatment plant to the List - following two boil water notices last year that affected more than 600,000 people. The multiple failures at the Leixlip water treatment plant last year highlighted the serious lack of resilience in our water supplies. The growing uncertainty in Irish Water’s planning and delivery of critical improvements to water treatment plants is undermining confidence in the security of supply of safe drinking water.

The Environmental Protection Agency also noted the delays in completing the national disinfection programme. Disinfection is the most important step in water treatment and makes our water safe by keeping water free of harmful bacteria, viruses and parasites. The Environmental Protection Agency also expressed concern about the significant reduction in work planned by Irish Water to remove lead from supply connections. The only remedy to address this is to remove the lead pipework. The Environmental Protection Agency estimates that the reduced programme for removing lead pipes could take Irish Water up to 60 years to remove all public-side lead connections.

### 3.2.3 Major Projects

Vartry Regional Water Supply Scheme - to provide a new treatment plant, upgrades to the Vartry reservoir and replacement of the Vartry tunnel to help to ensure a safe and sustainable water supply in north Wicklow and South Dublin.

Irish Water is forecasting that this project is to be completed by June 2021, with forecast total costs falling from €154m to €129m. This project has been subject to some short delays due to COVID-19 restrictions. The WAB will continue to monitor Irish Water's progress to assess and address these delays in subsequent reports.

# Part 4

## WAB's Commentary on Key Indications and Conclusions

This Report includes eleven key performance indicators by which the performance of Irish Water can be monitored.

In Table 1 we summarise the WAB's comments on each metric.

**Table 1**

Summary of the WAB's comments on each metric

Number	Indicator	WAB Commentary
1.	Leakage	<p>Leakage needs to be a focus for Irish Water in the future. Irish Water acknowledges that leakage from its “water supply networks is at unacceptable levels and well above international norms”.</p> <p>The volume of ‘unaccounted for water’ is high and has risen steadily over the period 2016 – 2018. The reduction in “unaccounted for water” from 2018 to 2019 is a result of a combination of Irish Water being better able to categorise water use and Irish Water’s leakage reduction activities during the year.</p> <p>The figure for 2019 gives a better indication of the amount of water that is lost to leaks. With the roll out of its leakage management system, Irish Water will continue to refine and improve how it is estimating and reporting water losses resulting from leaks on its network.</p>

Number	Indicator	WAB Commentary
2.	First Fix Scheme	<p>As of Quarter 2 2019 Irish Water had completed approximately 15,000 leak repairs and customers had completed approximately 43,000 leak repairs in total. Irish Water estimates that the scheme has saved nearly 150 million litres of water per day up to the end of Quarter 2 2019.</p> <p>Irish Water has been approved additional funding for the First Fix Scheme over the upcoming revenue control period, from 2020 to 2024.</p> <p>This performance indicator shows a continued and disappointing drop-off in the number of leak repairs completed under the scheme since mid-2016. This coincides with the suspension and eventual abolition of domestic water charges. The introduction of Excess Usage Charges (expected to be introduced in 2021 – a delay due to Covid-19) will encourage customers to avail of the Scheme and it is expected that higher numbers of leak repairs will be achieved in the future.</p>
3.	Remedial Action List (Water)	<p>Irish Water is required to have an action plan in place to remediate the drinking water supplies that are currently included on the Remedial Action List. Future WAB reports will monitor the progress of Irish Water in meeting the targets they have set to remediate those 53 water supplies through the quarterly updates of the Remedial Action List. The WAB will also monitor the number of new drinking water supplies that are put on to the list in any quarter.</p>
4.	Priority Urban Area List (Wastewater)	<p>It is the Environmental Protection Agency's view that it is not acceptable that</p> <ul style="list-style-type: none"> <li>▶ The pace at which Irish Water is fixing the legacy of deficiencies in Ireland's waste water treatment infrastructure is too slow and there are repeated delays in providing treatment for many areas.</li> <li>▶ 19 large towns and cities did not meet European Union standards set to protect the environment</li> <li>▶ 33 towns and villages will continue discharging raw sewage after 2021 because they will still not have a waste water treatment plant.</li> <li>▶ 23 agglomerations do not have corrective action plans needed to help meet our Water Framework Directive obligations.</li> </ul>

Number	Indicator	WAB Commentary
5.	Lead service connections replaced	Under normal circumstances the WAB expects to see the continued replacement of lead services as set out in Irish Water's Lead in Drinking Water Mitigation Plan. <sup>16</sup>
6.	Mains replacement rate (for water mains)	In 2018 and 2019, Irish Water's mains replacement rate has increased. Irish Water replaced or rehabilitated 407km of watermains in 2018 and 333km in 2019. Combined this represents 1.2% of Irish Water's network. The average replacement rate was 155 years in 2018 and 189 years in 2019. This is a substantial increase compared with the rate of once every 301 years in 2017.
7.	Overall compliance with microbiological indicators for drinking water	Overall compliance with microbiological indicators for drinking water - Generally speaking microbiological compliance remains very high. In general, the WAB notes that compliance with the microbiological standards is high as illustrated in Figure 10, which shows that compliance has remained over 99% in the period 2014 - 2019. Results for 2019 show that 99.91% of samples complied with the standard for E.coli.
8.	Boil Water Notices	<p>When Irish Water took charge of water supplies in 2014 it set a target to eliminate all boil water notices that were in place at that time. This target was achieved and while no specific future targets have been set, Irish Water is working to continue reducing the number of people affected by boil water notices. The number of people on boil water notices at the end of each quarter, has decreased during 2020. However, this does not reflect the full picture. Over the last six quarters, the vast majority of those on boil water notices were affected for more than 30 days.</p> <p>The WAB notes with concern the trends for long term boil water notices highlighted by the Environmental Protection Agency and will continue to monitor Irish Water's progress in ensuring that boil water notices remain in place for as short a time period as is feasible.</p>

16 <https://www.water.ie/docs/Lead-in-Drinking-Water-Mitigation-Plan.pdf>

Number	Indicator	WAB Commentary
9.	Compliance of Urban Waste Water Treatment (UWWT); Plants with Environmental Protection Agency discharge licenses	<p>Overall, compliance is very low but there has been an increase in the percentage of urban areas meeting their licence standards.</p> <p>Over half of the 75% non-compliance can be attributed to one waste water treatment plant – the plant at Ringsend, Dublin. Dealing with the non-compliance issues at this plant has the potential to result in a significant improvement in the overall compliance rate.</p> <p>While the quality of the treated waste water will improve as the upgrade works at Ringsend proceed, is not expected to start meeting the required standards until the end of 2022 at the earliest.</p> <p>The WAB is concerned that Irish Water has repeatedly extended the timeframe to provide treatment for many of the towns and villages that receive no waste water treatment and that 33 areas will continue discharging untreated waste water after 2021.</p>
10.	Ease of Contact	This KPI has not been updated in this Report.
11.	Irish Water Customer Complaints management	This KPI has not been updated in this Report.

In this report nine out of 11 metrics have been updated since WAB published its last report (Report 1 of 2020).

Improvements in certain metrics such as mains replacement rate (and its relationship to leakage levels) are noted and welcomed by the WAB. Nevertheless, Irish Water's performance in a number of these metrics are a cause for concern. This is notable in the pace with which wastewater projects are being progressed (Metric 4). This concern over the slippage in timescales is also reflected in our commentary on the Commission for Regulation of Utilities Capex Monitoring Report for the period 2016 to 2019; particularly noting the optimism bias in both the costing and delivery schedules. This is a matter we will return to when we consider Commission for Regulation of Utilities' Revenue Control 3 decision and findings in our next report.

WAB welcomes the fact that Irish Water continues to achieve high levels of compliance with respect to water quality. Nevertheless, we note with concern the Environmental Protection Agency's view that these levels of compliance are vulnerable; again linked to increasing uncertainty in Irish Water's planning and delivery of critical improvements to water treatment plants.

It continues to be the WAB's view that the management and improvement of the drinking and waste water infrastructure and network requires significant and sustained action, particularly in the areas of leakages, mains repairs and waste water treatment.

It remains our view that increasing public confidence in Irish Water is dependent on visible action in these key areas.

# Glossary of Terms

**Agglomeration** - an agglomeration is an urban settlement (village, town or city area) which is connected through a pipe network to a wastewater treatment plant.

**Chlorination** - Water chlorination is the process of adding chlorine or chlorine compounds such as sodium hypochlorite to water. In particular, chlorination is used to prevent the spread of waterborne diseases.

**Cryptosporidium** - A disease-causing protozoon widely found in surface water sources.

**E.Coli** - Coliforms, specifically Escherichia coli (E. coli), are the universal indicator microorganisms of faecal contamination of water. These bacteria, which are of definite faecal origin (human and animal), are excreted in vast numbers and their presence in a water supply is proof that faecal contamination has occurred and is a definite indication that pathogens may be present.

**Pathogen** - Microorganisms that can cause disease in humans, other organisms or animals and plants. They may be bacteria, viruses, or protozoa and are found in sewage, in runoff from animals, farms or rural areas populated with domestic and/or wild animals, and in water.

**Population Equivalent** - in waste-water treatment the population equivalent is a reference that describes the specific load of a wastewater treatment plant.

**Remuneration** - Reward for employment in the form of pay, salary, or wage, including allowances, benefits (such as company car, medical plan, pension plan), bonuses, cash incentives, and monetary value of the noncash incentives.

**Trihalomethanes** - Trihalomethanes are a group of four chemicals formed, along with other disinfection by-products, when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water.

**Trunk Mains** - Trunk water supply pipelines deliver bulk water from one part of the system to another, often aided by pumping. As such, trunk mains are larger in diameter than reticulation mains, are not networked and have fluctuating pressures.

**Turbidity** - Turbidity is a measure of the degree to which the water loses its transparency due to the presence of suspended particulates. The more total suspended solids in the water, the murkier it seems and the higher the turbidity. Turbidity is considered as a good measure of the quality of water.





