An Coimisiún um Rialáil Fóntas
Commission for Regulation of Utilities

Irish Water Performance Assessment Framework

2019 Implementation Update

Information Paper

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Summary

In December 2016 the Commision for Regulation of Utilties (the CRU) published a paper setting out the Performance Assessment Framework for Irish Water (the Framework). The Framework is designed to assess Irish Water's overall performance in delivering defined services to its customers for the money it is allowed to spend by the CRU. The Framework provides for Irish Water reporting on a number of metrics under five categories: customer service, environmental performance, water supply – quality of service, security of water supply and wastewater (sewerage) service.

The Framework is not yet fully in place as Irish Water is not yet providing data to the CRU under all metrics. Irish Water is now reporting in full on twelve of the nineteen metrics set out in the CRU's 2016 decision on the Framework compared to eleven in its 2018 report. In addition, the CRU has yet to set targets for Irish Water's performance under those metrics to support assessment of the utility's performance by the CRU.

During the period to full reporting the CRU requires Irish Water to report on metrics where it can and to report on its progress in collecting data in other areas. To date Irish Water has submitted four reports to the CRU under the Framework. These are published alongside a CRU commentary or implementation report on the CRU's website[1]. This is the CRU's fifth implementation report under the Framework. Irish Water's fifth report under the Framework regarding 2019 is published alongside this report (CRU20104a).

Irish Water reported for the first time on the disposal of drinking water sludge, with none of the drinking water sludge produced reported as disposed of in an unsatisfactory manner. Irish Water will fully report under this metric by providing data on wastewater sludge in 2023.

Irish Water also reported for the first time in this report on the number of properties experiencing an unplanned interruption to supply. For this metric, Irish Water provided the number of properties experiencing an unplanned interruption to supply from Q3 2019 to Q2 2020 as full-year 2019 was not available. To achieve a similar performance to water companies in neighbouring jurisdictions during a similar timeframe, Irish Water would have to reduce the number of properties experiencing an unplanned interruption for greater than 12 hours by a factor of 200; from over 400,000 to just over 2,000.

[1] https://www.cru.ie/document_group/irish-water-performance-assessment/

Performance under the customer service metrics remained broadly in line with previous performance, with the exception of two ease of telephone contact metrics (speed of telephone response and call abandonment rate) where performance improved in 2019 relative to 2018.

The number of agglomerations subject to the Urban Waste Water Treatment Directive (UWWTD) increased from 169 in 2018 to 172 in 2019, as did the number of those agglomerations compliant – from 148 in 2018 to 153 in 2019. However, the 19 non-compliant agglomerations represent 56% of the agglomeration population equivalent that fall under the UWWTD. The population equivalent served by non-compliant agglomerations under the Directive has remained largely constant since reporting began in 2015. This is largely attributed to the non-compliance of the Ringsend Wastewater Treatment Plant, which treats almost half of Ireland's urban wastewater (44%).

Performance under three of the drinking water quality parameters (microbiological, chemical and *E. coli*) have remained broadly constant since 2014. Compliance with the trihalomethane parameter has shown improvement year on year since 2015. Compliance with the lead parameter declined slightly in 2019. Improvements in compliance with the trihalomethane and lead parameters remains a priority for the Environmental Protection Agency (the EPA) in its capacity as drinking water regulator.

Even with good performance across drinking water quality parameters, it was necessary to issue boil water notices and water restrictions during 2019 due to a variety of issues such as the identification of treatment deficiencies, monitoring results failures and adverse weather impacts. The number of people that were subject to a boil water notice increased substantially in 2019. This increase was driven by two large-scale incidents resulting in two boil water notices at the Leixlip Water Treatment Plant in October and November 2019, which serves about 600,000 people, leading to the total number of people affected by a supply on a boil water notice in 2019 to exceed 1.3 million. The CRU engages with Irish Water and the EPA regarding incidents such as Leixlip to consider lessons learned and actions arising. Boil water notices and water restrictions highlight the importance of appropriate asset maintenance and operational practices and of measures to protect drinking water sources such as Drinking Water Safety Plans.

Irish Water has not yet reported in full on security of water supply or sewerage service metrics. In place of an estimate of the amount of water being lost to leaks, Irish Water continues to provide an 'unaccounted-for-water' figure. The reduction in the amount of unaccounted-for-water from 2018 to 2019 arises from a combination of factors. Firstly, re-categorisation of data has resulted in a reduction in this figure. For example, an estimate of the water used by Irish Water in its own buildings and treatment plants has been is now included in non-domestic demand figures and estimates of the water used by fire services, other unbilled use and water used at connections

that are not recorded on Irish Water's system have been removed from unaccounted-for-water and are now reported as unrecorded use. Data improvements arising from Irish Water's new leakage management system and Irish Water's leakage reduction activities during the year are other factors here.

Earlier this year, the CRU published a consultation paper regarding its review of Irish Water's Performance Assessment Framework. This review assesses the metrics in the Framework to ensure they remain relevant in reflecting key services areas for customers and stakeholders. The CRU has also proposed targets for each of the metrics in this consultation for the period 2020-2024[2]. The consultation closed on November 17th. The CRU's subsequent decision, due in the first quarter of 2021, will fully establish the Framework.

Irish Water will report to the CRU in late 2021 on its 2020 performance under the revised Framework. The CRU will assess this submission and publish its first report under the revised Framework in the fourth quarter of 2021.

Public Impact Statement

This paper provides an overview of Irish Water's performance to the end of 2019 on a number of metrics under five categories: customer service, environmental performance, water supply – quality of service, security of water supply and wastewater (sewerage) service. This paper is published to support openness, transparency and accountability.

Publishing this report helps to keep the public, and other key stakeholders, informed of Irish Water's performance. Publicly reporting on delivery provides Irish Water with a reputational incentive to deliver the outputs and outcomes expected of it. It also promotes openness and transparency regarding the activities of Irish Water and of the CRU. Monitoring also supports the CRU in making evidence-based decisions in the interest of customers.

[2] Irish Water's third revenue control period (RC3) is from 2020-2024 (CRU/19/091).

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1. Introduction

1.1 Performance Reporting

1.1.1 The CRU's Role

The CRU sets the money that Irish Water can spend in an upcoming period, termed a 'revenue control period', on defined outputs and outcomes for its customers and then looks back to see if it was spent efficiently and effectively. This includes the money that Irish Water needs to efficiently abstract, treat and distribute water and to collect and treat wastewater and return it safely to the environment. The revenue that the CRU allows also enables Irish Water to carry out sampling and monitoring of the water it provides and the wastewater it treats. It allows Irish Water to respond to incidents, to provide an appropriate level of customer service and to fund necessary capital investments.

During each revenue control period, the CRU monitors Irish Water's performance and delivery. This includes monitoring Irish Water's compliance with the CRU's Customer Handbooks, monitoring Irish Water's delivery of its Investment Plan and assessing Irish Water's performance against the metrics set out under the Performance Assessment Framework. The CRU reports on Irish Water's delivery and performance based on the findings of its monitoring activities.

1.1.2 The Performance Assessment Framework

The CRU published its decision on the Performance Assessment Framework that would apply to Irish Water in November 2016. The Framework provides a structured and clear basis for the CRU to assess Irish Water's performance for its customers, supporting due oversight of the utility and evidence-based decisions by the CRU. The publication of reports under the Framework incentivises Irish Water to improve its performance and service delivery for its customers and allows customers and other stakeholders of the utility to monitor that performance.

The Framework provides for the CRU's assessment of Irish Water's performance across five categories: customer service, environmental performance, quality of water supply, security of water supply and wastewater (sewerage) service (see Table 1 below on page 4). Here, the categories and metrics should be reflective of outputs and outcomes, including standards of service, that the CRU requires Irish Water to deliver for its customers for the money it allows it to spend on capital investments and on the day to day running of the utility. The CRU's monitoring of Irish Water's progression and delivery of the Investment Plan, including associated outputs

and outcomes, and of its compliance with the Domestic and Non-Domestic Customer Handbooks supports the CRU's assessment of the utility's overall performance under the Framework. The CRU keeps the Framework under review in order to ensure that it continues to be fit for purpose.

1.1.3 Implementation to Date

The Framework is not yet fully in place as Irish Water is not yet providing data to the CRU under all of the metrics. In addition, the CRU has yet to set targets for Irish Water's performance under those metrics. In the period prior to CRU target setting and full implementation of the Framework, Irish Water provides updates to the CRU regarding its collection of data to support reporting under the Framework and reports annually on metrics where data is available.

Further to the CRU's publication of its decision on the Framework in November 2016, Irish Water provided its first update on its collection of data in relation to the metrics set out in that decision in 2017. It showed that Irish Water was collecting information for eight of the nineteen metrics and that it was targeting reporting on all metrics by 2022. Irish Water is now reporting in full on twelve of the nineteen metrics set out in the CRU's 2016 decision on the Framework. For the rest of these metrics, Irish Water has stated that it is putting in place systems and collecting data to facilitate reporting.

To date, the CRU has published four reports regarding Irish Water's progress in collecting the necessary data to support reporting on performance to the CRU in this context.[3] These reports also set out data under metrics where available. This is the fifth and last such report under the 2016 Framework, with implementation of a revised Framework, including targets against which to assess performance, next year (see Section 1.1.4 below).

1.1.4 Review and Full Implementation

In August 2020, the CRU published a decision regarding the amount of money that Irish Water can spend on defined outcomes, outputs and standards of service for its customers in the period 2020 to 2024 as part of the third Irish Water revenue control process ('RC3').[4] This includes spend on capital investments (capital expenditure), non-network investments such as IT systems and spend on the day to day running of the organisation (operational expenditure).

[3] Reports can be found here: https://www.cru.ie/document_group/irish-water-performance-assessment/
[4] CRU19148 Irish Water Revenue Control Revenue Control 3 (2020-2024) Decision Paper & CRU20085 CRU Update to Irish Water Revenue Control 3 (RC3.5): Irish Water's Updated Capital Investment Plan

It is important that the Framework remains relevant in the context of the CRU's RC3 decision and that it has a continued focus on key areas of service delivery for customers and other stakeholders. Subsequent to that revenue control decison, the CRU published a consultation paper on its proposals on the continued appropriateness of the metrics within the Framework, and on any potential new metrics, to allow Irish Water and the CRU to understand the areas its stakeholders consider most important in return for the CRU approved revenues.[5] This will allow the CRU to appropriately reflect any key performance indicators for the period 2020 to 2024 arising from the third revenue control process in the revised Framework.

In addition, the CRU is also consulting on the associated, proposed targets for the Framework metrics which will be used to assess Irish Water's overall performance in delivering water and wastewater services to its customers during the period 2020 to 2024. This is to take account of relevant RC3 targets, the approved capital Investment Plan for the period, operational expenditure impacts, requirements under the Customer Handbooks and the need for any other targets in the context of any new and/or revised Framework metrics.

The CRU will issue a decision on the above matters early in 2021. Later in 2021, Irish Water will report to the CRU regarding its 2020 performance under the revised Framework. The CRU will assess this submission and publish its report regarding Irish Water's 2020 performance in the fourth quarter of 2021.

Figure 1 - Performance Assessment Implementation

[5] CRU20119 Irish Water Performance Assessment 2020-2024: Metric Review and Target Setting

1.1.5 The Fifth Performance Assessment Implementation Report

Irish Water is currently reporting in full on twelve of the nineteen metrics set out in the CRU's 2016 decision on the Framework. For the rest of these metrics, Irish Water has stated that it is putting in place systems and collecting data to facilitate reporting. An update of these metrics is provided in Section 2 of this paper.

Table 1 - Data Reporting by Irish Water under the 2016 Performance Assessment Framework

Category	Metric	Data Reporting
Customer Service	Response to billing contacts	✓
	Response to complaints	✓
	Billing of metered customers	✓
	Ease of telephone contact – Call abandonment rate	✓
	Ease of telephone contact – Customer call-back survey	✓
	Ease of telephone contact – Speed of telephone response	✓
	Ease of telephone contact – First call resolution	✓
Environmental Performance	Pollution incidents relating to wastewater	✓
	Sludge disposal – drinking water and wastewater sludge	✓ (Drinking Water) 2023 (Wastewater)
	Wastewater agglomerations meeting treatment requirements	✓
Water Supply – Quality of Service	Properties subject to unplanned interruptions	✓
	Water quality	✓
	Water supplies on Boil Water Notices and Water Restrictions	✓
Security of Water Supply	Leakage	2021
	Security of supply – Absolute performance	2021
	Security of supply – Performance against target	2021
Sewerage Service	Sewer incidents (overload)	2021
	Sewer incidents (other causes)	2021
	Sewer incidents (at risk)	2021

1.1.6 Related Documents

- CRU20140 Irish Water Performance Assessment Report No. 5 – November 2020
- CRU20119 Irish Water Performance Assessment Framework Review Consultation Paper
- CER16308 Irish Water Performance Assessment: Framework of Reporting Metrics
- CER17257a Irish Water Performance Assessment: CER Commentary on Irish Water Report
- CER17257b Irish Water Performance Assessment Report – Q2 2017
- CRU18034 Irish Water Performance Assessment Report – February 2018
- CRU18035 Irish Water Performance Assessment: CRU Commentary – February 2018
- CRU19026 Irish Water Capital Investment Plan 2017-2021 Monitoring Report No. 2
- CRU19090 Irish Water Performance Assessment Report No. 3 – November 2018
- CRU19089 Irish Water Performance Assessment 2017 Implementation Update – June 2019
- CRU19146a Irish Water Performance Assessment Report No. 4 – November 2019
- CRU19146 Irish Water Performance Assessment 2018 Implementation Update – December 2020
- EPA, 2020. Drinking Water Report for Public Supplies 2019
- EPA, 2020. Urban Waste Water Treatment in 2019

Information on the CRU's role can be found on the CRU's website at www.cru.ie**.**

2. Irish Water's Reported Performance in 2019

This section provides a summary overview of the information reported by Irish Water in its fifth report to the CRU under the 2016 Performance Assessment Framework. It should be noted that the CRU has not yet set targets for performance here and hence no formal assessment of performance by the CRU is provided. In cases where Irish Water is reporting under a metric, this information is presented. In cases where Irish Water is not yet providing data regarding a metric, an update on the timelines for provision of this data to the CRU is provided.

2.1 Customer Service

Irish Water reported on all seven Customer Service metrics for the first time in its fourth report to the CRU under the Framework.[6] These metrics monitor Irish Water's performance relating to customer contacts, billing, and complaints.

2.1.1 Response to billing contacts

Billing contacts refers to any communication from a customer related to a bill, credit and collections, payments, or meter readings. This metric only represents billing contacts from non-domestic (business) customers at present, as domestic customers (households) currently do not receive bills from Irish Water. In its consultation paper on the review of the Performance Assessment Framework, the CRU has proposed extending this metric to include domestic customers as Excess Use Charges come into effect.

Irish Water answered and closed out 94.99% of billing-related contacts in 2019, compared to 96.09% in 2018.

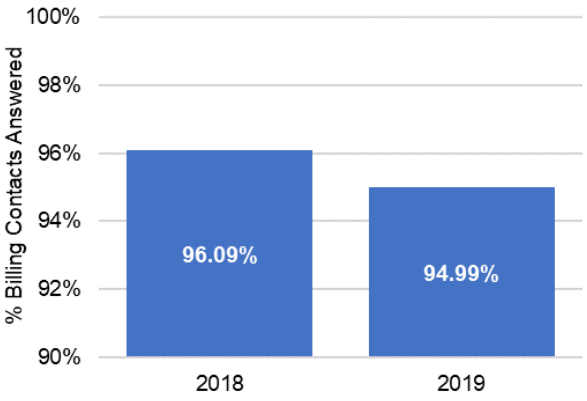

Figure 2 - Response to Billing Contacts

[6] For the metrics reported for the first time in 2018, Irish Water provided a breakdown of performance by quarter and the CRU previously referred to an annual average for performance in this year. Therefore, figures for 2018 vary slightly between this information paper and the Performance Assessment Framework Review consultation paper for *Response to Billing Contacts, Response to Complaints* and *Billing of Metered Customers*.

2.1.2 Response to complaints

Irish Water's response to complaints is measured in two ways:

a) The number of complaints responded to within five days, with either a resolution or an outline plan of the proposed resolution; and,

b) The number of complaints to which a final decision is issued in two months.

Note that for complaints responded to within five days, data in 2018 is provided from Q2-Q4 only. For complaints responded to within two months, data in 2018 is provided for the full year.

In 2019, Irish Water responded to 97.83% of domestic and 97.54% of non-domestic complaints within five working days, with either a resolution or an outline plan of the proposed resolution (See Figure 3 below). This is an overall increase on the percentage of complaints responded to within five days in 2018.

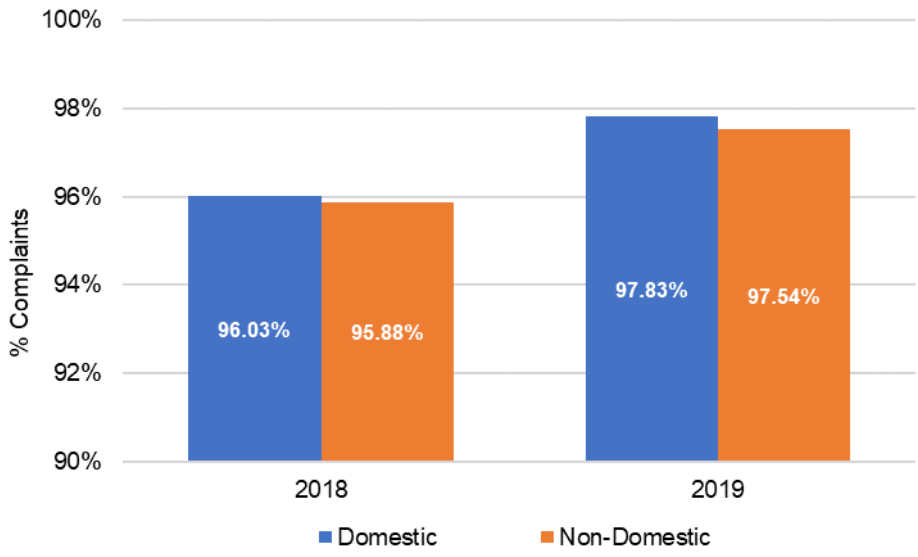

Figure 3 - Response to Complaints 5 Working Days

Irish Water issued a final decision within two months to 96.75% of domestic and 92.7% of non-domestic customers in 2019 (see Figure 4 below). Irish Water has attributed the lower performance among non-domestic customers to a number of complex complaints generated by an increase in Irish Water's revenue collections activity in 2019.

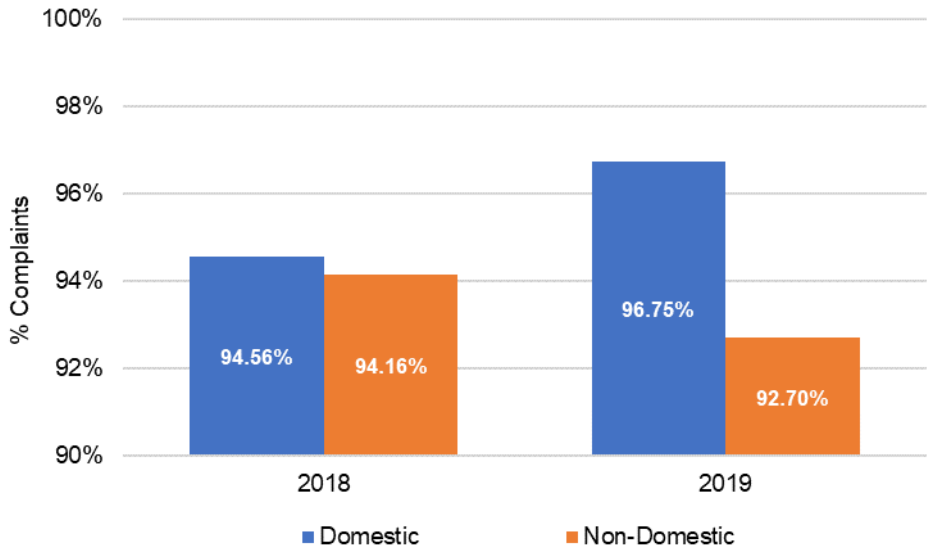

Figure 4 - Response to Complaints 2 Months[7]

2.1.3 Billing of metered customers

This metric monitors the number of bills issued based on a meter reading as a percentage of bills issued to metered accounts. As with *2.1.1 Response to Billing Contacts*, this metric refers only to non-domestic customers at present, as domestic customers currently do not receive bills from Irish Water.

In 2019, 70% of the bills issued by Irish Water to metered accounts were based on a meter reading.

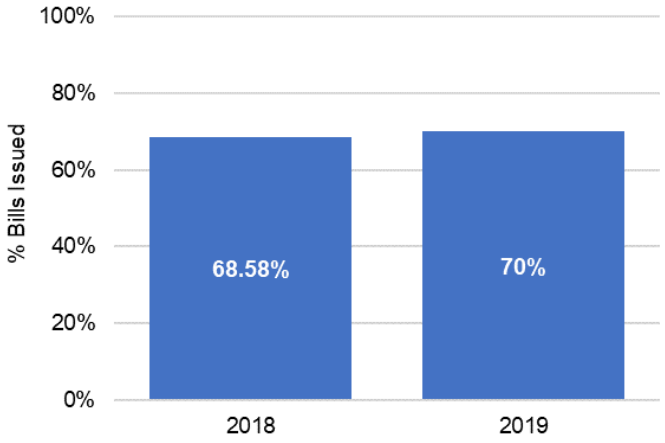

Figure 5 - Billing of Metered Customers

2.1.4 Ease of telephone contact – Call abandonment rate

Irish Water received 401,721 calls in 2019, compared to 613,624 calls in 2018. The rate of calls abandoned reduced from 6% in 2018 to 3% in 2019. In its submission, Irish Water states this is line with industry best practice of 5%, a figure taken from the UK Contact Centre Decision-

[7] In its Performance Assessment Framework Review Consultation Paper, the CRU inverted the 2019 data figures for domestic and non-domestic customers in relation to response to complaints issued a final decision within two months. This has been rectified here.

Makers' Guide 2017-18 (15th edition). The CRU notes the reported industry median of 4% and mean of 5.3% in the UK in this report.

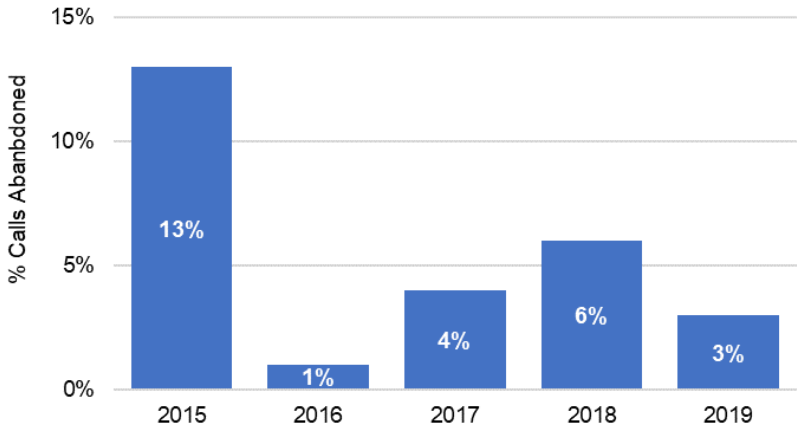

Figure 6 - Call Abandonment Rate

2.1.5 Ease of telephone contact: Call handling survey

Customer satisfaction with Irish Water is determined via a survey of customers who have contacted Irish Water via telephone during the year. This is presented as a customer satisfaction (CSAT) score. The CSAT scores are based on surveyed customers who rated as satisfied (7-10) on a ten-point scale.

Irish Water received a CSAT score of 73% in 2019. The highest CSAT score Irish Water has received to date is 77% in 2017, and the lowest was 64% in 2015.

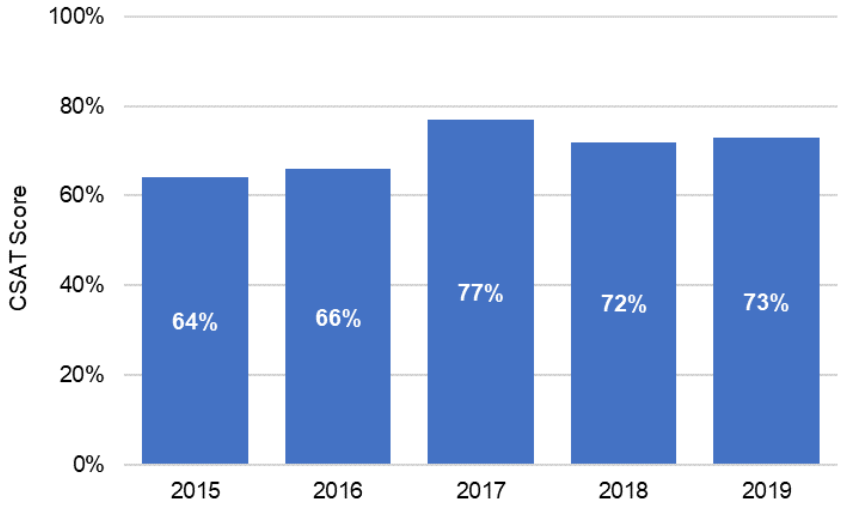

Figure 7 - Customer Satisfaction Score

2.1.6 Ease of telephone contact – Speed of telephone response

Two metrics referred to as Telephone Service Factors (TSFs) are used to monitor Irish Water's performance here. TSF1 is a measure of the percentage of calls in the queue to speak to an agent that are answered within 20 seconds. TSF2 is a measure of service in the Interactive Voice Recognition (IVR) system. It calculates the percentage of total calls that were either dealt with by the IVR system or progressed to the queue and answered within 20 seconds by an agent.

Irish Water scored 82% for TSF1 and 71% for TSF2 in 2019, an increase on both scores in 2018.

In its consultation paper on the review of the Performance Assessment Framework, the CRU proposes to discontinue the TSF2 metric as it is potentially confusing and does not fully represent Irish Water's performance here.[8]

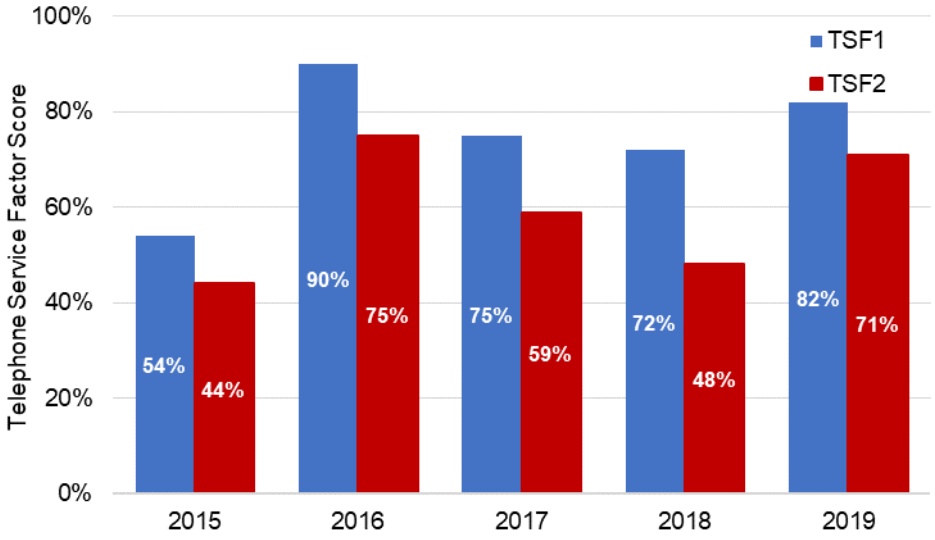

Figure 8 - Speed of Telephone Response

2.1.7 Ease of telephone contact – First call resolution

This metric, previously called '*First Contact Referral*', is a measure of Irish Water's ability to deal with a contact on the first call without Irish Water having to call the customer back. Follow-up calls from the customer to Irish Water within 30 days of the initial call result in the first call being treated as 'unresolved' under this metric.

Irish Water resolved 92% of domestic, 87% of non-domestic and 77% of operations line calls on the first call in 2019. Previous performance under this metric can be seen in Figure 9 below.

[8] For more information, please see CRU20119 Irish Water Performance Assessment Framework Review Consultation Paper

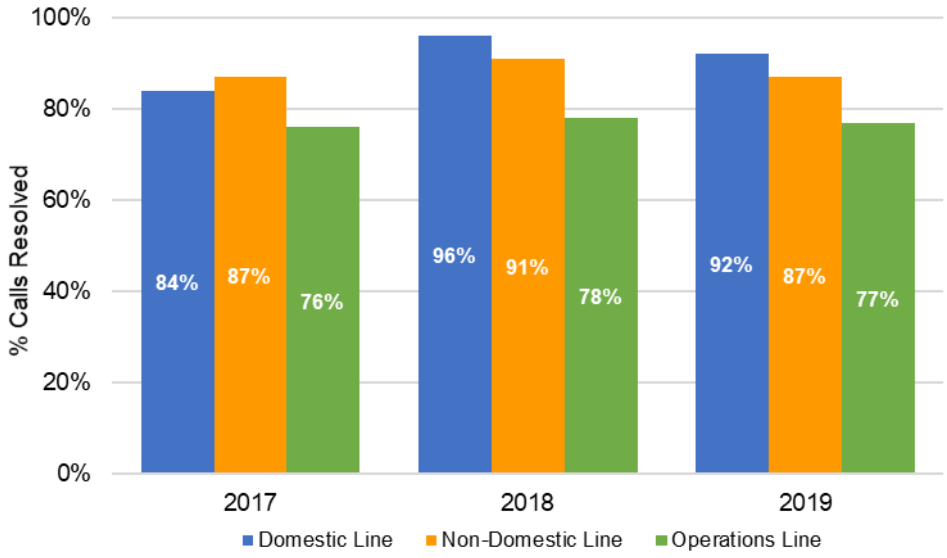

Figure 9 - First Call Resolution

2.2 Environmental Performance

2.2.1 Pollution Incidents Relating to Wastewater

The CRU monitors two metrics relating to pollution incidents. The first looks at the number of pollution incidents resulting from wastewater collection and treatment activities, broken down by category, and the second looks at the number of recurring incidents.

The EPA classifies[9] an incident as:

- any discharge that does not comply with the requirements of a wastewater discharge licence, or;
- any occurrence at a wastewater works with the potential for environmental contamination or requiring an emergency response.

The EPA categorises incidents from 1 (minor) to 5 (catastrophic) depending on the potential impact to the receiving environment and/or human health. There were no Category 3, 4 or 5 pollution incidents reported relating to wastewater in 2019.

745 once-off incidents occurred during 2019. Over 45% of these incidents reported to the EPA were due to the operation, management and maintenance of wastewater treatment plants.

[9] EPA Urban Waste Water Treatment in 2019, Appendix I: Environmental Incidents.

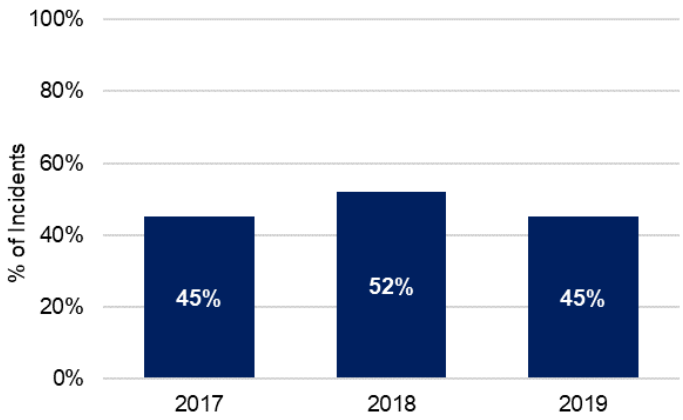

Figure 10 – Once-off Incidents Reported to EPA due to Operation, Management and Maintenance of Wastewater Treatment Plants

The EPA also monitors the number of 'recurring incidents' during the year. These are incidents that are either ongoing or likely to recur until the underlying cause of the incident is resolved. At the end of 2019, there were 224 'recurring incidents', a reduction from 244 at the end of 2018.

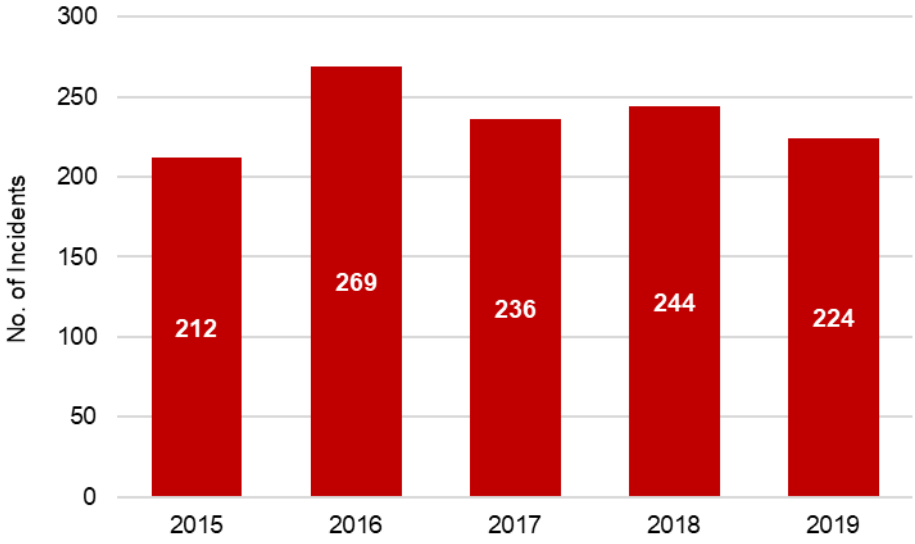

Figure 11 – EPA Recurring Pollution Incidents at Year End

2.2.2 Sludge Disposal

This metric will measure the percentage of drinking water and wastewater sludge that is disposed of in an unsatisfactory manner.

Irish Water has reported on drinking water sludge for the first time in this report. In 2019, 4,337.1 tonnes of drinking water sludge (in total dry solids) were produced. 75% of this was sent to sustainable outlets. Sustainable outlets refer to ways in which the sludge can be recovered and

reused rather than sent directly to landfill for disposal. Drinking water sludge is typically used in manufacturing industries as a sustainable outlet, such as in cement manufacturing where aluminium sludge can displace bauxite as a raw material in cement production. The remaining 25% was sent to landfill capping. Irish Water disposed of 0% of its drinking water sludge in an unsatisfactory manner in 2019.

A breakdown of the percentage total dry solids sent to sustainable outlets and landfill capping per quarter in 2019 is provided in Figure 12 below. The associated amounts in tonnes total dry solids (TDS) is also provided.

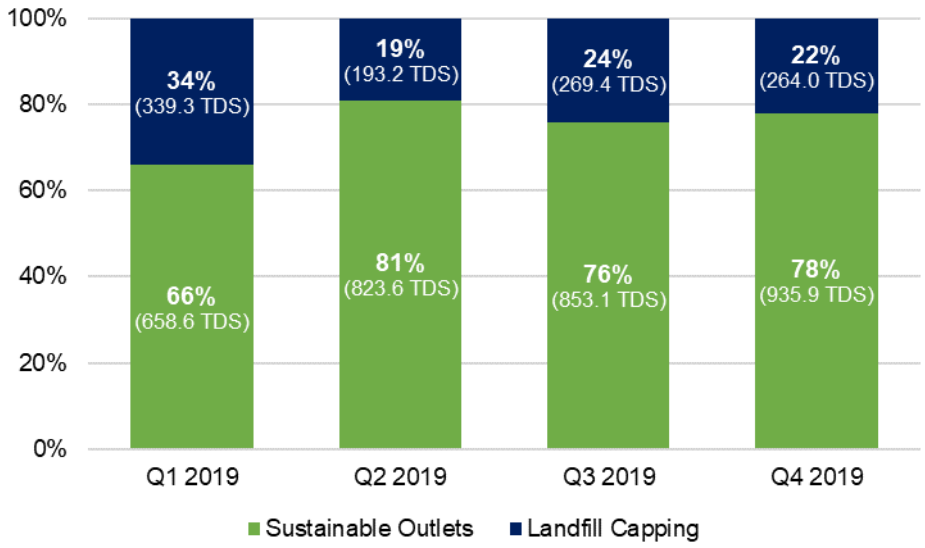

Figure 12 - Drinking Water Sludge

In its fourth submission under the Framework, Irish Water had stated that reporting capability for wastewater sludge would be in place in Q4 2021, with the CRU reporting that Irish Water would report under this metric in 2022 on that basis. Further to engagement on its fifth submission, Irish Water has now clarified that while it is still on track for reporting capability to be in place in Q4 2021, reporting on this metric will now take place in 2023 (with full-year 2022 data).

In its place, until this metric is reported on in full, Irish Water is to provide the tonnes of wastewater sludge produced annually and final disposal/recovery outlets to which it is sent, in line with how Irish Water reports on this to the EPA.

In 2019, 58,630 tonnes of wastewater sludge were produced. The final disposal/recovery outlets and related amounts are outlined in Table 2 below.

Table 2 – Wastewater Sludge Produced in 2019

Total Wastewater Sludge (tonnes dry solids)	Agriculture	Compost	Landfill	Other
58,630	52,139	6,099	115	277

2.2.3 Wastewater Agglomerations Meeting Treatment Requirements

A wastewater agglomeration is an area where the population or economic activities (or both) are sufficiently concentrated for a wastewater works to have been put in place.

This metric consists of two sub-metrics: agglomerations with no wastewater treatment or preliminary treatment only, and agglomerations not compliant with the treatment and effluent quality standards of the Urban Waste Water Treatment Directive (UWWTD)[10]. The objective of the UWWTD is to protect the environment from the adverse effects of urban waste water discharges.

In 2013, there were 50 agglomerations in Ireland discharging untreated wastewater into the environment. Between 2014 and 2019, Irish Water had completed work at a total of fifteen sites to reduce this number to 35.

Irish Water had originally targeted providing treatment at 25 of these agglomerations by the end of 2018 and 44 by the end of 2021. In 2017, it revised this target to deliver wastewater treatment for 15 of the agglomerations by the end of 2019. It has now met that revised target.

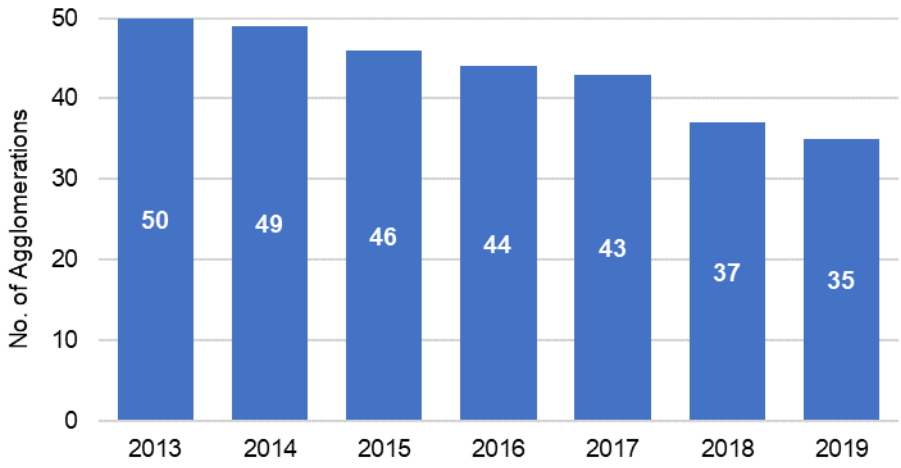

Figure 13 - Agglomerations with no Wastewater Treatment

[10] Council Directive 91/271/EEC

The UWWTD sets requirements for the collection and treatment of wastewater from large urban areas to protect the environment. It also sets quality limits that the treated wastewater must meet depending on the size of the urban area and the type of water body the treated wastewater is discharged to.

The CRU understands from Irish Water that the number of agglomerations subject to the UWWTD varies on an annual basis. There were 172 agglomerations subject to the UWWTD in 2018, an increase on the 169 agglomerations subject to the UWWTD in 2018. Of these, 153 were compliant with the treatment and effluent quality standards of the Directive and 19 agglomerations were non-compliant.

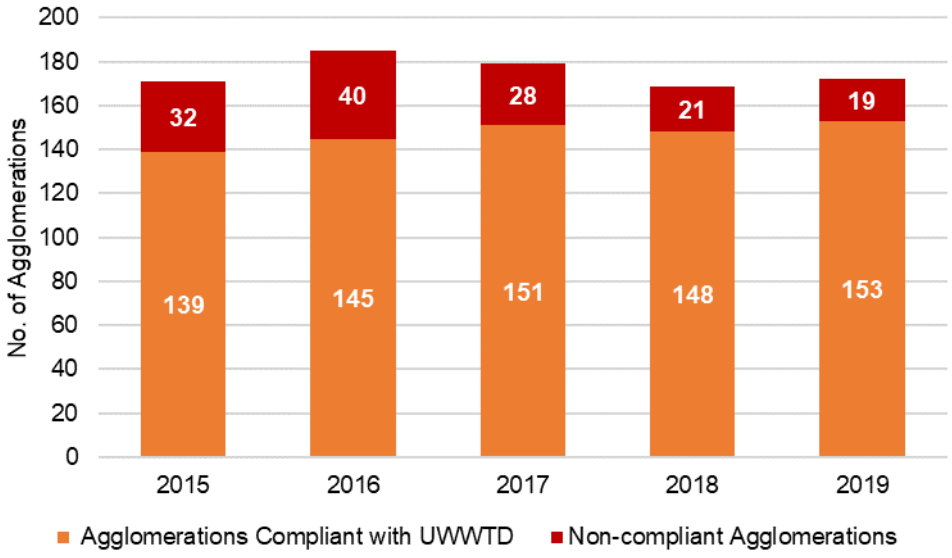

Figure 14 - Agglomerations Compliant with UWWTD

However, these 19 non-compliant agglomerations represent 56% of the agglomeration population equivalent that fall under the UWWTD. This means that urban areas comprising over half of the population covered by the UWWTD were not compliant with the standards in the Directive. This percentage has remained consistent since 2015. This is largely attributed to the non-compliance of the Ringsend Wastewater Treatment Plant in Dublin, which treats almost half of Ireland's urban wastewater (44%).[11]

[11] For further information see EPA Urban Waste Water Treatment in 2019

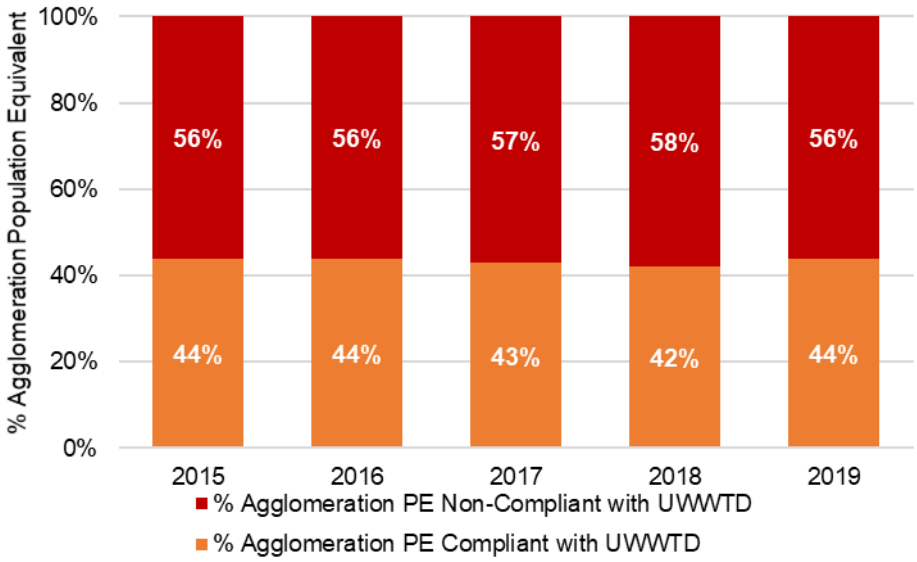

Figure 15 - Percentage Agglomeration Population Equivalent Compliant with UWWTD

2.3 Water Supply – Quality of Service

2.3.1 Properties Subject to Unplanned Interruptions

The CRU monitors the number of properties subject to unplanned interruptions divided into three time-bands: interruptions lasting for greater than 4 hours, greater than 12 hours and greater than 24 hours. Irish Water is not currently in a position to capture the exact number of properties experiencing unplanned interruptions to their supply during each outage. To estimate the number of properties affected, Irish Water takes a description of the area provided by Local Authorities and interpreting the information via GIS[12] mapping.

This is the first time Irish Water has reported on this metric. Full-year 2019 data is not available as reporting capability has only been in place since Q2 2019. Irish Water will report on its first full calendar year of data for 2020 in its sixth report under the Framework in 2021.

In the interim, Irish Water has provided one-year of data from Q3 2019 to Q2 2020. The CRU presents this data in Table 3 below to provide insight on Irish Water's performance here.

[12] Geographic Information Systems

Table 3 - Number of Estimated Properties Experiencing an Unplanned Interruption to Supply

Unplanned Interruption	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Total
>4 Hours	444,271	491,972	306,130	358,908	**1,601,281**
>12 Hours	220,984	74,570	53,105	84,050	**432,709**
>24 Hours	35,043	31,889	35,076	27,281	**129,289**

Given that this is the first time Irish Water has reported under this metric, and targets have not yet been set, it is not possible to formally assess Irish Water's performance or identify trends at present. However, taking performance from July 2019 to June 2020 as an annual average, the CRU has compared Irish Water's performance here to that of Northern Irish Water and Scottish Water within an equivalent timeframe since economic regulation began (i.e. about 6 years since regulation began) for context. As Northern Irish Water and Scottish Water do not monitor the number of unplanned interruptions lasting for greater than 4 hours, only those for greater than 12 and 24 hours have been compared below.

From Q3 2019-Q2 2020, 403,709 properties experienced an unplanned interruption for greater than 12 hours. This represents 24% of connected properties, compared to less than 0.15% for Scottish Water and Northern Ireland Water performance. For Irish Water to bring its performance in line with its comparators, it would have to reduce the number of unplanned interruptions to supply lasting more than 12 hours by a factor of 200; from over 400,000 to just over 2,000.

From Q3 2019 to Q2 2020, 129,289 properties experienced an unplanned interruption to supply that lasted greater than 24 hours. For Irish Water to be in line with comparator performance here, less than 170 properties would be impacted by an unplanned interruption with a duration of greater than 24 hours.

2.3.2 Water Quality

Irish Water is responsible for ensuring drinking water meets the quality standards set out in the Drinking Water Regulations, enforced by the EPA. Irish Water submits its water quality results to the EPA, and the EPA audits Irish Water's monitoring to ensure it is fit for purpose. Where there is a water quality failure, the EPA oversees Irish Water's investigation and action. Where there is a failure to meet these standards, or where there is a public health risk, Irish Water must consult with the Health Service Executive (HSE).

The CRU's Performance Assessment Framework includes metrics regarding Irish Water's performance across five drinking water quality metrics:

- overall microbiological compliance and E. coli compliance, and
- overall chemical compliance and lead and trihalomethane compliance.

The EPA's Drinking Water Report for Public Supplies 2019 stated that water quality across the microbiological and chemical parameter categories has remained consistent since Irish Water became responsible for public water supplies in 2014. As reported by both Irish Water and the EPA, microbiological compliance was 99.9% in 2019 and chemical compliance was 99.6%.

Trihalomethanes are formed when organic matter in water reacts with chlorine used in the disinfection process. Figure 14 below shows that there has been a general increasing trend in trihalomethane compliance. Compliance with this metric, as reported by Irish Water and the EPA, was 96.1% in 2019. This is an increase from 95.1% compliance in 2018.

Lead is found in drinking water if it dissolves from lead pipework, fittings and connections. In 2017, Irish Water estimated that there were approximately 180,000 residential properties at risk of lead non-compliance.[13] Of this, 40,000 were backyard lead service connections which loop off the mains and run through backyards serving several houses. The remaining 140,000 were individual lead service connections from water mains which run under the roads.

Compliance with the lead parameter, which is 10 µg/l, fluctuated between 97.8% and 98.9% between 2014 and 2018. In 2019, compliance with the lead parameter was 97.8%. As noted in previous performance assessment reports, variations in the data from year to year can be related to the method of sampling which is on a random basis and, therefore, some difference in compliance figures will be expected.

[13] Irish Water Lead in Drinking Water Mitigation Plan

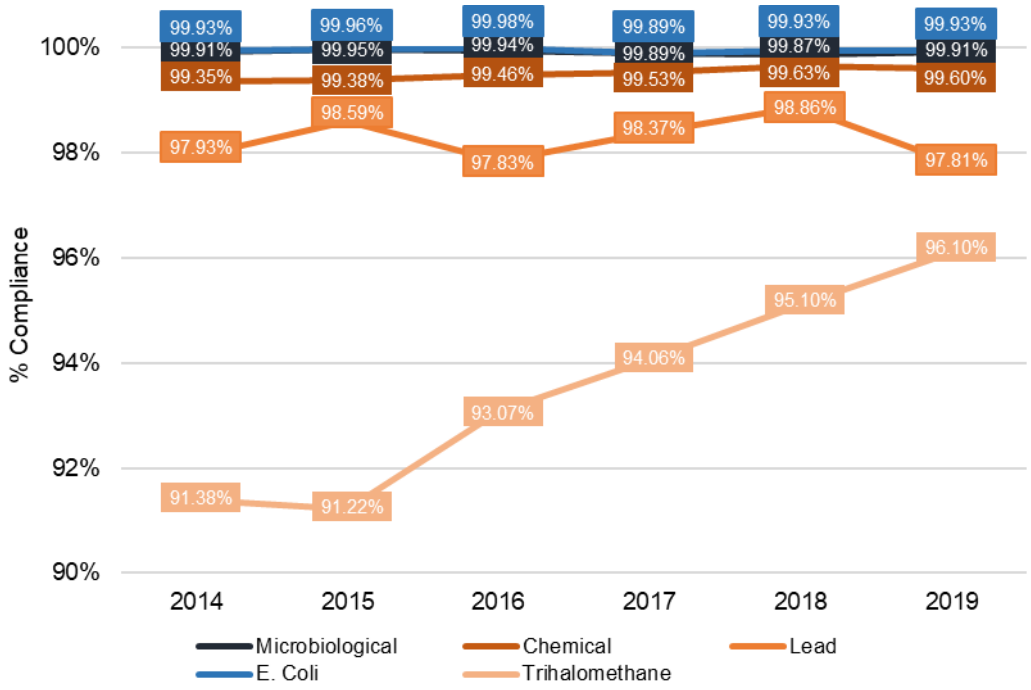

Figure 16 - Drinking Water Quality Metrics – Percentage Compliance

2.3.3 Water Supplies on Boil Water Notices and Water Restrictions

Boil water notices and/or water restrictions are issued by Irish Water in consultation with the HSE when drinking or using water supplied by the utility might endanger people's health.

Monitoring boil water notices is a reflection of Irish Water's service provision and reflects Irish Water's work to remove long-term[14] boil water notices and Irish Water's investment in reducing the risk of new boil water notices being issued.

At the end of 2019, Irish Water reported that there were 16,051 people being served by 19 supplies with a boil water notice in place. This is the second highest population served by a boil water notice at the end of the year since Irish Water first reported on this in 2014 (23,191 people were served by 21 supplies with boil water notices at end 2014). Of these 16,051, 12,576 people are served by the Lough Talt supply which was issued this boil water notice on 11th January 2019.

The total population served by a supply with a boil water notice in place during 2019 was 1.3 million – the greatest number of people served by supplies on a boil water notice during the year since Irish Water first reported on this metric. The 2019 figure is mostly attributed to two large-

[14] The EPA distinguishes between long-term (in place for greater than 30 days) and short-term (in place for less than 30 days) boil water notices.

scale incidents at the Leixlip Water Treatment Plant in October and November 2019, which serves about 600,000 people. The previous greatest number of people served by supplies on a boil water notice during the year was just over 100,000 in 2016.

In order to fully illustrate the population served by boil water notices since end 2014 accurately, 2019 performance is separated into Figure 18 below with 2018 to provide comparison. Performance from 2014 to 2018 is provided in Figure 17 below.

8 of the boil water notices issued in 2019, including the two issued to the Leixlip supply, were short-term notices, i.e. in place for less than 30 days. The remaining 57 boil water notices were long-term notices, i.e. in place for greater than 30 days.

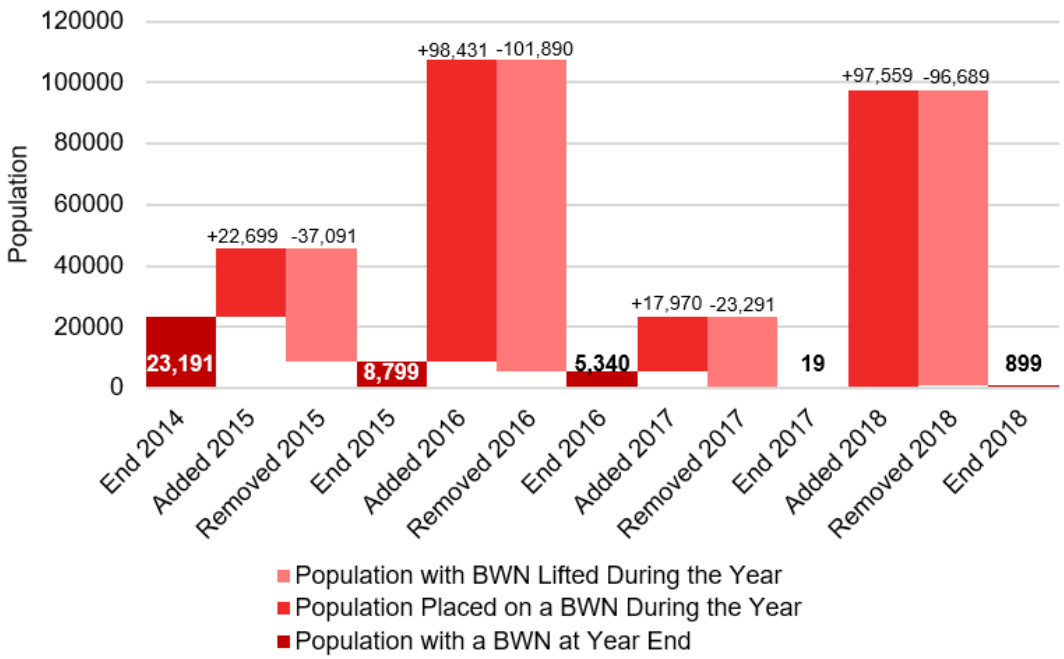

Figure 17 - Population Served by a Supply with a Boil Water Notice in Place End 2014 to End 2018[15]

[15] Irish Water has advised the CRU previously that the numbers presented above differ from those published by the EPA as clarification is required over responsibility for several small supplies. The EPA has included these supplies in its reports, Irish Water has not. The EPA reports that, at the end of 2019, 21 boil water notices were in place affecting 14,632 people.

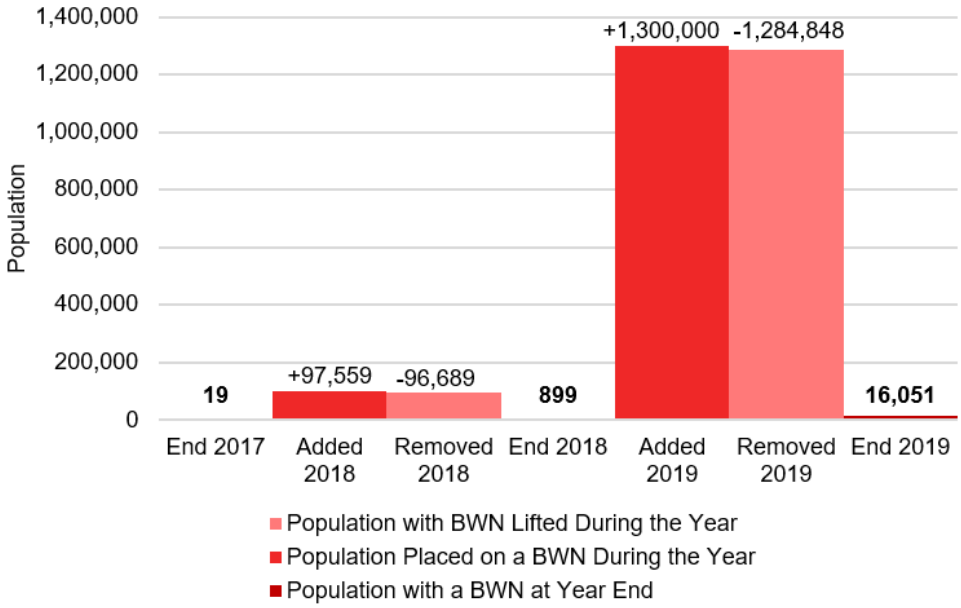

Figure 18 - Population Served by a Supply with a Boil Water Notice in Place End 2017 to End 2019[13]

At the end of 2019, 3,869 people were affected by 4 supplies issued a water restriction. During the year, 4 supplies were issued a water restriction notice, affecting a population of 8,297. A total of 6 notices were rescinded, benefitting a population of 9,442.

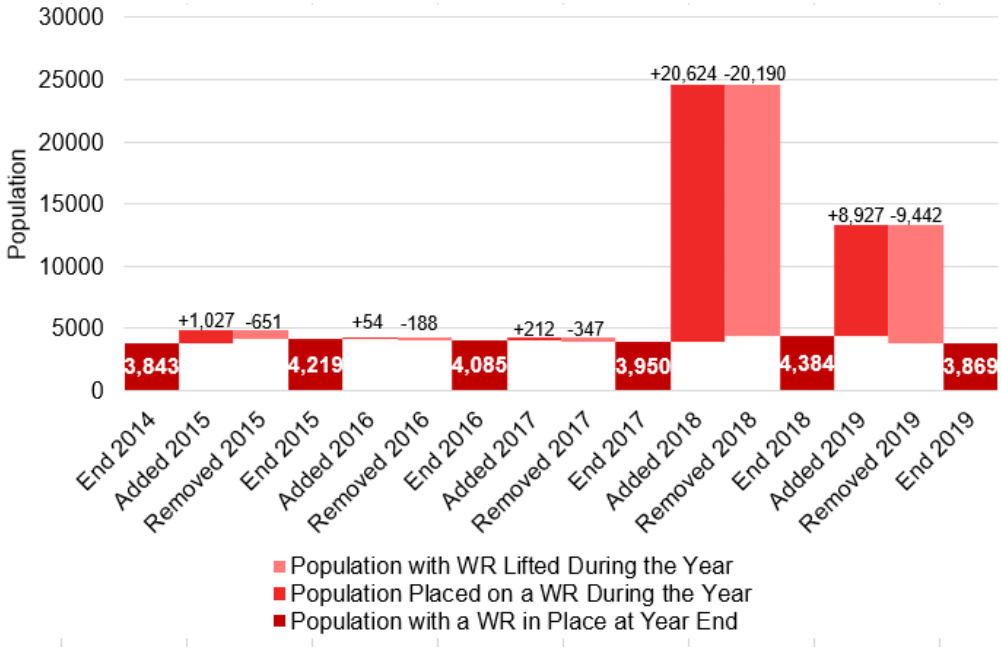

Figure 19 - Population Served by a Supply with a Water Restriction in Place[16]

[16] Irish Water has advised the CRU previously that the numbers presented above differ from those published by the EPA as clarification is required over responsibility for several small supplies. The EPA has included these supplies in its reports, Irish Water has not. Furthermore, Irish Water has included lead issues in its reporting on water restrictions, the EPA has not. The EPA reports that, at the end of 2019, 0 water restrictions were in place.

2.4 Security of Water Supply

2.4.1 Leakage

Irish Water is not yet reporting to the CRU on the amount of water being lost to leaks on either the public network or customer supply pipes. In its previous submission under the Framework, Irish Water had stated that it would report on national leakage under the Framework this year, in its fifth submission, following full implementation of the National Leakage Management System (LMS) in 2019. In its submission, Irish Water has stated that while full implementation of the LMS took place in Q4 2019, Irish Water will report on leakage in 2021 after one full year of data is available for review (i.e. the data for 2020).

To date, Irish Water has been providing the CRU with a figure for 'unaccounted-for-water' on the public network in place of a leakage metric. The unaccounted-for-water reported by Irish Water from 2014-2018 includes:

- Unbilled water including;
    - All water used by Irish Water.
    - Other unbilled use including, for example, water used by fire services.
- Apparent losses;
    - Water used at connections not recorded on Irish Water's system.
    - Under-recorded use by customers because of, for example, broken water meters and data handling errors.
- Real Losses[17] on the public network from leaks and overflows.

For 2019, Irish Water has made some changes to how it is reporting water losses to the CRU. An estimate of the water used by Irish Water in its own buildings and treatment plants has been included in the non-domestic demand figures. An estimate of the water used by fire services, other unbilled use and water used at connections that are not recorded on Irish Water's system have been removed from unaccounted-for-water and are now reported as unrecorded use. Under-recorded use at homes and businesses, resulting from old and broken meters and data errors, has also been removed from unaccounted-for-water and is now included in the domestic and non-domestic demand figures, respectively.

[17] The approach to calculating the amount of water lost to leakage on the public water supply network, also referred to as 'Real Water Losses', is shown in the Appendix. It is measured as an annual average in million litres per day.

The reduction in unaccounted-for-water from 2018 to 2019 is a result of a combination of this recategorization, data improvements arising from Irish Water's new leakage management system 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 unaccounted-for-water figure for 2019 gives a better indication of the amount of water that is lost to leaks on Irish Water's network compared with previous reports.

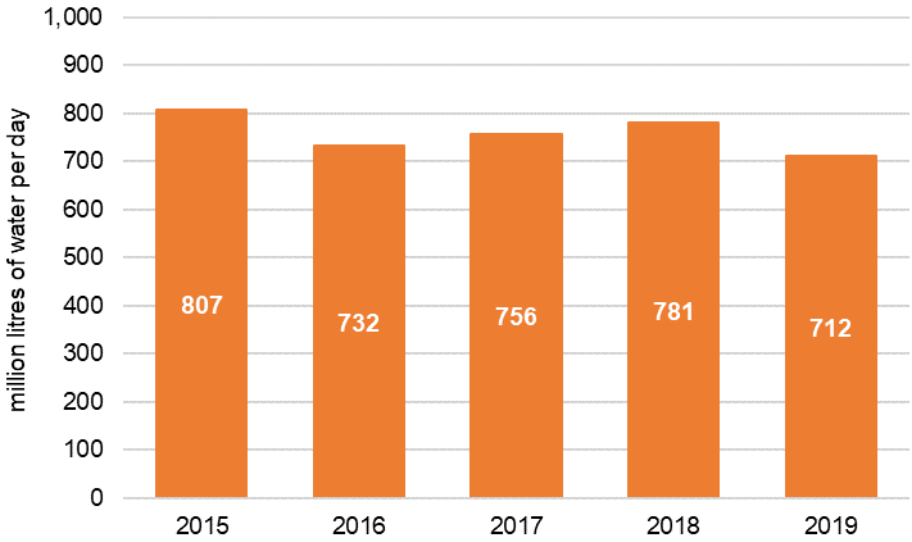

Figure 20 - Unaccounted for Water

2.4.2 Security of Supply

One of Irish Water's roles is to ensure that the water available for use in its water resource zones can meet the demand for water. Demand for water comes from households and non-domestic customers, water used by Irish Water and others including fire services and from water losses on the public and private networks.

Annual average daily water demand fluctuates during the year with peaks during both the winter and the summer, mainly because of an increase in pipe bursts in the winter and from increased customer demand during hot, dry weather in the summer. For the purposes of water resources planning, Irish Water assesses demand during these peak periods so that it can plan to meet the demand for water throughout the entire year.

In addition to the peaks that occur, Irish Water includes an allowance for headroom to account for risk and uncertainty for water resource planning purposes. This provides a buffer to allow for faster growth than had been expected, poor data, shocks to the system and so on.

Irish Water can address security of supply issues by, for example, reducing demand through its

leakage reduction programme and water conservation campaigns, by managing its water supplies throughout the year and sharing water across supply zones or by increasing the amount of water it takes from the environment by developing a new supply source.

Irish Water's first National Water Resources Plan will set out how Irish Water intends to provide a safe, secure and reliable water supply over the next 25 years, while considering any impacts on the environment and the impact of climate change, growth and future demand. The National Water Resources Plan identifies any existing and potential shortfalls in meeting water demand under normal and critical weather conditions in all of Irish Water's water resource zones.

In publishing its first draft National Water Resources Plan, Irish Water will consult on the methodology for assessing supply-demand balances and the approach to choosing the interventions to address any identified deficits. The outcome of this consultation could have an impact on which resource zones are considered to be in deficit and on the approach to appraising the options to address any identified need. Once this framework for assessing supply-demand balances and for developing approaches to addressing identified needs has been completed, Irish Water will then apply the methodology and publish four regional water resources plans that identify the preferred approaches to ensuring a secure and sustainable water supply for each water resource zone.

As part of its consultation paper on the review of the Performance Assessment Framework, the CRU is consulting on how it will present Irish Water's performance under this metric. The CRU has also proposed an interim target that the final, first National Water Resources Plan is published by the end of June 2021, and of the subsequent four Regional Water Resource Plans by the end of 2021, to support Irish Water's future reporting under this metric.[18]

2.5 Sewerage Service

Under this category the CRU will monitor the number of properties impacted by events of wastewater entering a building because a sewer is overloaded and the number of properties impacted by events of wastewater entering a building because of a failure of the sewer such as equipment failure, sewer collapse or a sewer blockage. The CRU will also monitor the number of properties at risk of having wastewater enter a building more frequently than once every ten years because of an overloaded sewer.

Reporting capability under this metric has been in place since Q4 2019. Irish Water is to report under this metric for the first time in its next report under the Framework, due in Q3 2021.

[18] For more information, please see CRU20119 Irish Water Performance Assessment Framework Review Consultation Paper

3. Next Steps

The CRU will issue its decision on its review of the Performance Assessment Framework in the first quarter of 2021. This review will decide the metrics and targets against which Irish Water's performance will be monitored against during the 2020-2024 Revenue Control 3 (RC3) period. This will also set target levels of performance for Irish Water to achieve in this period.

Irish Water's submission regarding 2020 performance will be the first submission under the revised Framework. The CRU will assess this submission and publish its first report under the revised Framework in the fourth quarter of 2021.

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Appendix

Leakage Reporting

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.

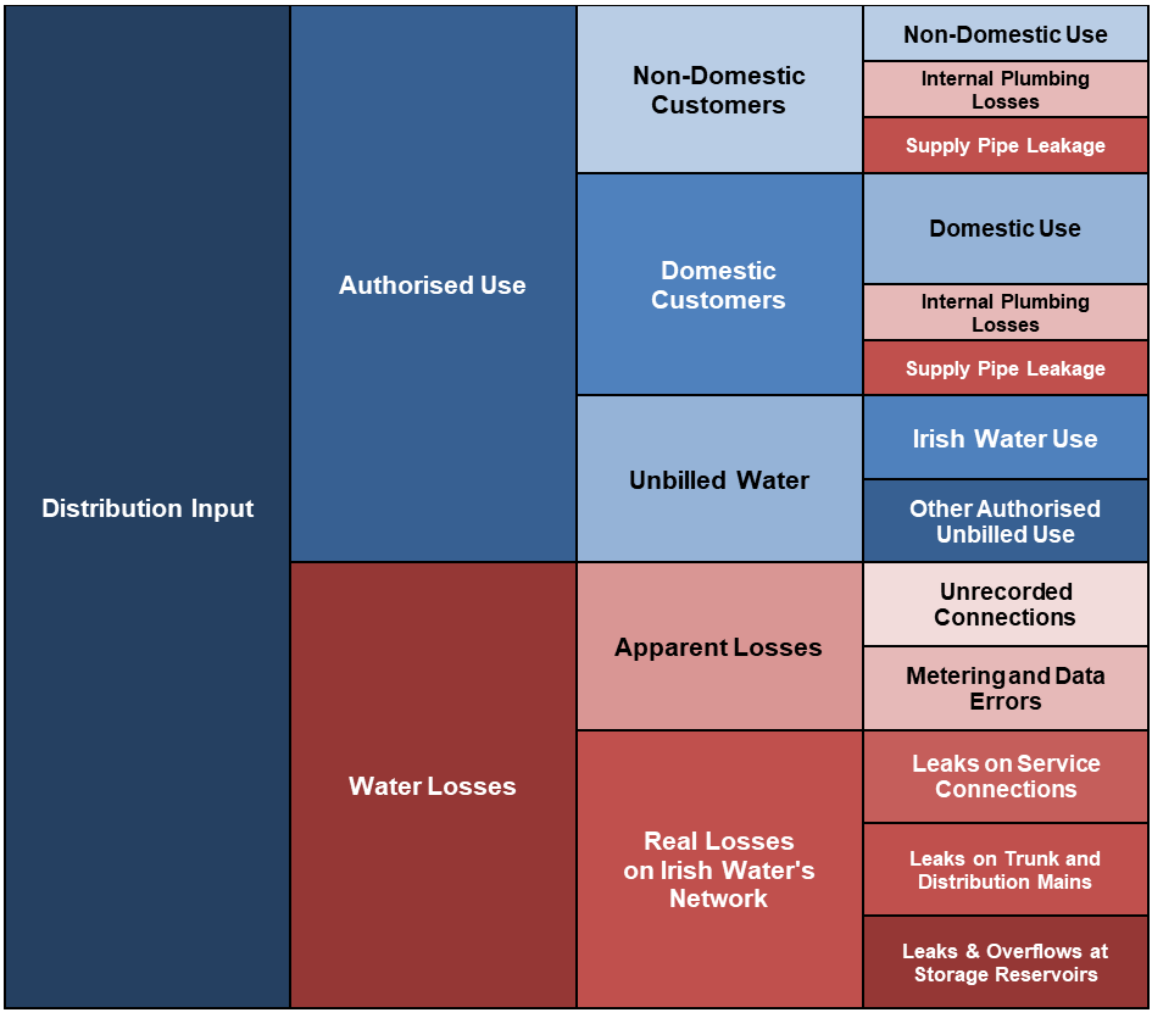

Figure 18 - Components of Water Demand

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 (DMAs) 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 DMA 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.

The CRU has also requested that Irish Water provides an estimate of how much of the water delivered to customer properties is lost to leaks on the private side. Leaks on the private side can occur on the customer supply pipe and in internal plumbing.

Leaks on domestic customer's external customer supply pipe (see Figure 13 below) may qualify for a free repair by Irish Water under the First Fix Free Scheme. Under the scheme Irish Water notifies metered domestic customers when it 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. Savings from the scheme results from a mix of repairs on the customer supply pipe carried out by Irish Water and repairs carried out by customers after being informed by Irish Water that the leak alarm on their meter had been triggered.

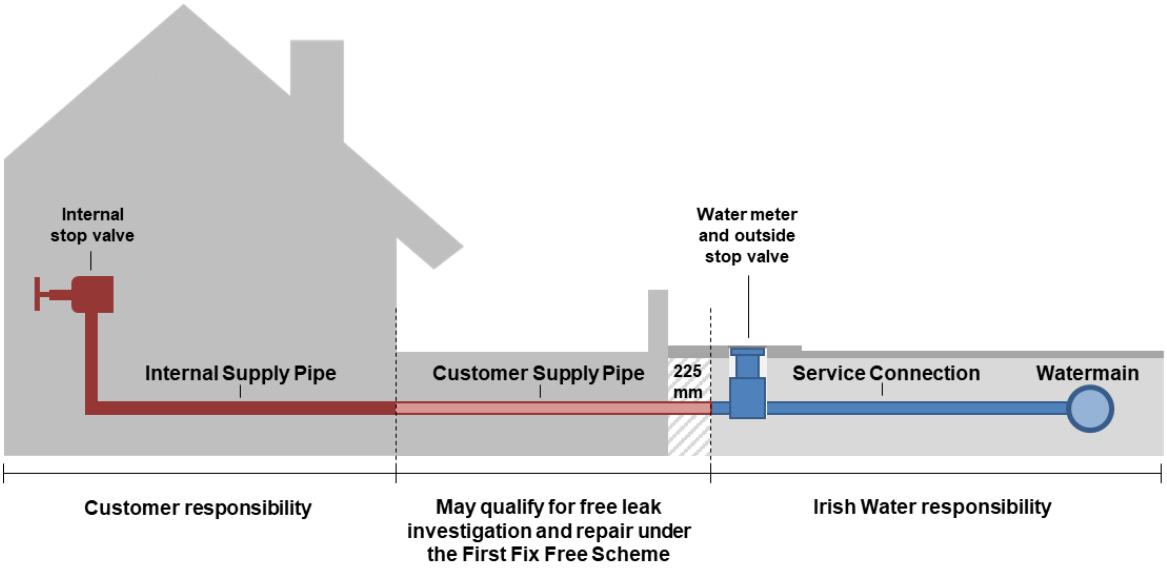

Figure 19 - Pipe Responsibility First Fix Free Scheme