

Irish Water

Leakage Reduction Programme

First Fix Leak Repair Scheme

For Domestic Water Customers

Quarterly Report

Q4 2019



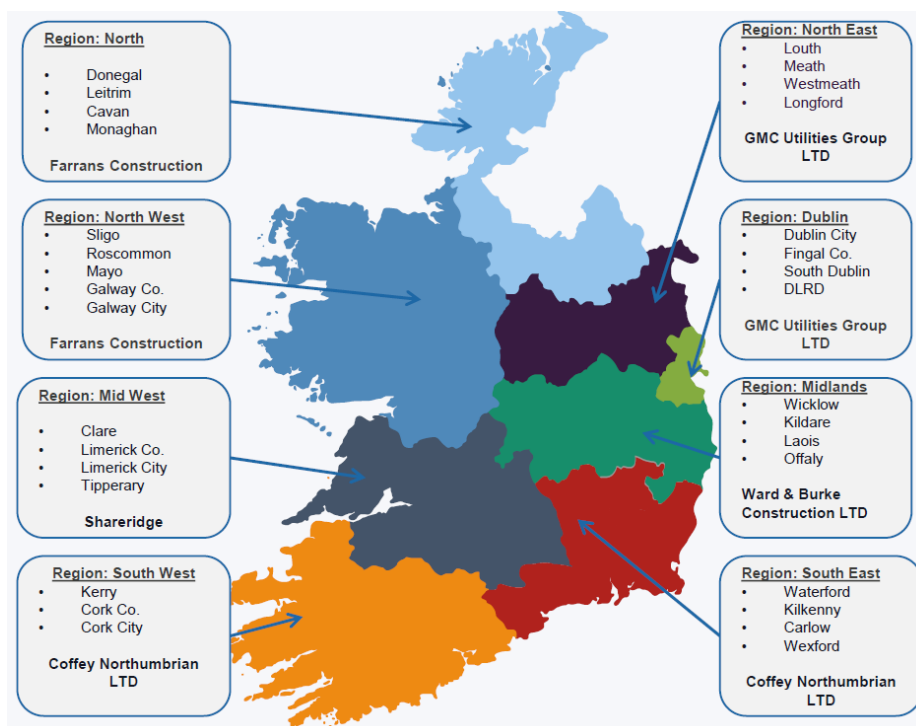
1. Introduction to the Leakage Reduction Programme¹

Water is one of our most valuable resources. Clean potable water is expensive to produce and distribute and one of Irish Water’s key priorities is to reduce the level of water wasted through leakage. Irish Water produces 1.7 billion litres of treated water every day. Some 600 million litres (35%) per day is utilised by domestic households; 300 million litres (18%) per day is provided to non-domestic operation and the remaining 800 million litres (47%) is lost through leaking pipes. Almost half of the clean water we produce is lost through leakages.

In October 2015, Irish Water announced a €5.5 billion investment to improve drinking water quality and wastewater infrastructure up to 2021. This plan will see the investment in water conservation and network improvement initiatives double to €512m in the period 2017 to 2021 through the implementation of a targeted programme of works, called the *Leakage Reduction Programme*.

The overall aim of these works is to reduce leakage on a national scale to economically sustainable levels, leading to improved water network performance and reliability. The Leakage Reduction Programme and associated works will ensure a clean, safe and reliable public water supply now and into the future to support our growing population and economy.

For this programme, Irish Water has sub-divided the country into eight regions and is working in partnership with local authorities and regional contractors to plan and complete activities. Details of the Leakage Reduction Programme regions and contractors can be seen below.



The scope of the works included in the Leakage Reduction Programme (LRP) includes undertaking improvements under the following seven principal work streams;

¹ Following the completion of the Metering Programme in Q1 2017, the First Fix Leak Repair scheme moved to become part of the wider national Leakage Reduction Programme.

1. DMA (District Metering Area) Establishment

This involves the identification of groups of premises and the installation of a district meter to monitor water usage. This identifies works needed within the DMA to ensure efficient operations.

2. Find & Fix

The Find & Fix scheme involves leak detection crews undertaking surveys using sounding equipment to locate leaks on pavements and other public areas. If a public side leak is identified, Irish Water will carry out the necessary repairs.

3. First Fix Free

The First Fix Free scheme offers free leak investigations and free repairs for qualifying properties where a constant flow of water is found on the external water supply pipe. Irish Water estimates that over 154 million litres of water per day have been saved as a result of this scheme to the end of Q4 2019. Further information on the First Fix Free scheme can be found at <https://www.water.ie/water-supply/first-fix/>.

4. Mains Renewal including Shared & Backyard Services

Water mains renewal works usually include the replacement or renewal of ageing public water mains to improve water quality and supply. As our water pipes are underground, we need to dig down to inspect the pipes and carry out any necessary repairs or replacements.

A shared service connection means that two or more properties are fed by a single water pipe. These connections pipes are often made of iron or lead and prone to leaks.

In some older properties water connections may be installed to the back of the property and run through customer's back gardens. These connections are prone to leaks and can cause reduced levels of service and poor water pressure.

5. Lead Services

Lead in drinking water is a recognised health concern. We will be investigating the pipes that connect individual properties to the public water mains and replacing any lead pipes with new plastic pipes.

6. Non-Domestic Metering

Irish Water is replacing old non-domestic meters installed by the Local Authorities with new meters that have Automatic Meter Reading technology. The new meters allow for more accurate and timely billing for customers and better identification of leakage on non-domestic customer sites.

7. Pressure Management

Pressure management works are required to improve the quality and security of water supply to customers. The aim of these works is to reduce leakage within the mains network and to ensure a consistent supply of water to all customers. Too much pressure in the network can result in burst pipes and leakage. This can then result in a low water supply pressure for customers at the tap.

2. Overview of First Fix Free Scheme

In May 2014 the Government announced funding of €51m for a scheme to address water leakage on pipework within customer properties under a “First Fix” scheme². Following a public consultation in August 2015 the Commission for Regulation of Utilities (CRU) approved Irish Water’s proposed First Fix Leak Repair Scheme. The First Fix Leak Repair scheme was mobilised under the national Domestic Metering Programme. In its RC3 determination³ the CRU outlines its ongoing support for the First Fix Leak Repair scheme. Irish Water’s Investment Plan 2020 to 2024, which was submitted to the CRU⁴ as part of the RC3 consultation process, contained a requirement for €39m capex for the First Fix Scheme work programme from 2020-2024.

Under the First Fix Leak Repair scheme, Irish Water assists customers by notifying them where suspected leakage is occurring within the boundary of their property. Leaks which are identified on the external supply pipe serving a property are offered a free leak repair. The First Fix Leak Repair scheme does not apply to leaks within a dwelling.

Utilising meter read data to identify the most significant leaks has proven key to operating the First Fix Leak Repair scheme efficiently. Prior to the introduction of the First Fix Leak Repair scheme, leakage programmes had been based around time-consuming and labour-intensive sampling of areas in order to seek to detect anomalies on pipework. The Irish Water domestic metering programme has provided both the platform and the technology-based solution to address this challenge. Data obtained from meter reading information highlights unusual water usage patterns and allows Irish Water to isolate the source of leaks to a particular property, thereby reducing the time required for leak investigation.

Given the need to prioritise water conservation, Irish Water prioritises repairs under the First Fix Leak Repair scheme by size, based on the volume of water lost. A constant flow of water, (that is 6 litres per hour over a 48-hour period), will trigger a constant flow alarm (CFA) on the meter, indicating a potential leak. The largest leaks wasting the most water are priorities to be fixed first.

It is estimated that over 154 million litres of water per day has been saved as a result of First Fix repairs completed under the Metering Programme and Leakage Reduction Programme between Q2 2015 and Q4 2019.

3. How to avail of the scheme

Customers can avail of the scheme, once they are aware of a leak on their property. The CFA alarm is triggered where a constant flow of water to the property is identified (6 litres per hour over a 48-hour period). When a CFA alarm is recorded, customers are issued with a letter from Irish Water, indicating a potential leak on their property.

Customers with a visible leak on their property can also contact Irish Water to avail of a free leak investigation. Following the findings of the Joint Oireachtas Committee in 2017, Irish Water has engaged with the CRU to assess how the benefits of the First Fix policy can be further applied to leaks on the customer side of unmetered properties.

² As outlined in section 8 of this report, IW is currently working within this original revenue allowance.

³ Published on 5 December 2019 and available at www.cru.ie

⁴ Published by the CRU on 31 July 2019 and available at www.cru.ie

4. Initiatives to increase Customer Engagement Levels

Following the completion of the First Fix Scheme under the Metering Programme in February 2017, Irish Water analysed engagement levels in order to establish initiatives to improve the First Fix process and increase productivity.

The First Fix scheme is relying on the following in order to achieve water reduction:

- The First Fix letter reaching its desired destination to inform the customer of the possible leak;
- The customer engaging with Irish Water in order to arrange a leak investigation, and
- The customer returning the signed waiver allowing Irish Water to repair the leak on their property.

The following initiatives have been implemented:

First Fix Letter

Due to the scheduled issuing of Household Water Conservation (HWC) scheme notification letters (in Q3 and Q4 2019) IW decided to pause, pending review, issuing FF letters. This decision was taken to avoid potential customer confusion caused by receipt of multiple correspondences over a short period. We did, however, continue with the Cold Calling activities in Q3 and Q4 2019 to aid engagement in the programme and FF letters began issuing again in Q1 2020.

Waiver Return Process

Under the metering programme, waivers were posted to customers that qualified for a leak repair following the investigation. The customer was required to sign the waiver and post it back to Irish Water. It was found that there was a delay in customers returning the waivers and in some cases the waiver was not returned.

Under the leakage reduction programme this process has been amended to increase the return of the signed waivers:

- Upon completion of the Leak Investigation, the crew issue the waiver to the customer and answer any questions the customer may have. If the customer is willing to sign the waiver at the time, the crew will return the signed waiver to Irish Water and a repair can be scheduled. They will also leave a copy of the waiver with the customer for their own reference.
- If the customer is not willing to sign the waiver at this time, the crew will issue the waiver and a pre-paid envelope to the customer in the hope the customer will sign the waiver and post it back to Irish Water.

Irish Water is also encouraging our contractors to be pro-active and contact customers that have received a first fix letter but have not engaged with the scheme.

5. First Fix Update

In the period of the transition of the First Fix Leak Repair scheme from the Metering Programme to the LRP, there was a temporary postponement on the issuance of CFA notifications from the end of Q4 2016 until the end of Q2 2017. This was to facilitate procurement competition for the LRP. During this period, Irish Water and its interim contractor continued to engage with Customers reporting possible leaks and carried out investigations to assess qualification and repair. Irish Water recommenced the issuance of CFA notifications under the LRP upon contractor mobilisation in August 2017.

In Q4 2019, significant usage that appeared on the CFA list and had usage in excess of 1,000 litres per day was identified. When contacting customers, IW start with the highest users (defined as those with usage in excess of 5,000 litres per day). It was found that 2,443 properties were using more than 5,000 litres per day based on meter readings and were accountable for over 27 million litres per day of Unaccounted for Water (55%).

Targeting these users first will result in greater savings from fewer repairs and reduce the UFW more effectively. The remaining 14,547 properties using less than 5,000 litres per day but greater than 1,000 litres per day accounted for over 20 million litres per day of Unaccounted for Water (45%). The following table is calculated using information from the CFA list and figures calculated by the CRU ([CRU/17/339](#)) suggesting an average household consumes 342 litres of water per day.

Item	QTY of Leaks	Average usage (Litres)	Total Usage (Litres)	Expected Usage (Litres)	UFW (Litres)	% of UFW
>5 000 Litres	2,443	11,512	28,125,540	835,506	27,290,034	55%
1,000 - 5 000 Litres	14,547	1,869	27,196,880	4,975,074	22,221,806	45%
Total	16,990	3,256	55,322,420	5,810,580	49,511,840	100%

Table 1: Unaccounted for Water (UFW) summary Q4 2019

6. Reporting on the scheme

In April 2015, the CRU consulted on Irish Water's proposed First Fix Leak Repair Scheme for Domestic Water Customers and received eight responses. The CRU's decision on the policy, issued on 5 August 2015, was based on a review of the eight submissions received during the consultation period. Among its recommendations, the CRU expects Irish Water to strongly promote the scheme in order to increase customer awareness of the scheme and to encourage customers to engage with Irish Water on the scheme.

The CRU is monitoring the ongoing implementation of the scheme to ensure that the costs allowed are efficiently incurred and that benefits are achieved for customers. In line with the CRU Decision CER/15/178, Irish Water is to report on a quarterly basis on the progress of the First Fix Leak Repair scheme, the following section outlines the progress of the scheme to the end of Q4 2019.

7. Quarterly Summary

- **Customer Response Rates and Engagement Levels**

A total of 1,469 customers have engaged with the scheme in Q4 2019. This number is made up of the following;

1,366 Customers requesting a free leak investigation survey

103 Customer repairs completed from data collected from the meter

- **Leak Investigations**

A total of 1,366 investigations were requested, which include repeat visits where customers installed an Internal Stop Valve (ISV) after an initial leak investigation visit.

Irish Water contacts customers within 10 business days to arrange a convenient time for an appointment to carry out the free leak investigation at a property. A total of 1,152 leak investigations were undertaken in Q4 2019. This figure includes some investigations that were requested in Q3 2019; similarly, some investigations requested in Q4 2019 will be carried out in Q1 2020. To ensure yearly budget allowance was adhered to, it was necessary to take steps to reduce the monthly expenditure over Q3 & Q4 to keep within the budget and this has resulted in lower investigation outputs being achieved.

From the 1,152 completed leak investigations, 388 leaks on external supply pipes were identified. Irish Water has offered these customers with leaks on their external supply pipe a free leak repair under the scheme. The remaining 764 non-qualifying leaks are broken down as follows:

- 1) A total of 87 properties surveyed did not have an operational Internal Stop Valve (ISV) and the survey could not be progressed or required a further point of entry dig to establish the leak location. In many of these cases, the ISV was present but not operational. Customers are advised of the need to have a working ISV installed in order for the leak investigation to be completed.
- 2) In addition, a total of 29 properties have been identified through the First Fix process where the property does not qualify or the survey could not progress as it is served through a shared or backyard service.
- 3) The investigations identified 413 internal plumbing and other issues, which come under the remit of the home owner. As with all internal repair and maintenance in a customer's home, if a leak is confirmed internal to the house then it should be repaired by the homeowner.
- 4) The remaining 235 properties were identified as having leaks either on the public side, inaccessible leaks or otherwise out of the scope of the First Fix for Free Scheme.

- **Leak Repairs**

Customers are asked to review the terms and conditions of the leak repair offer and sign the offer documentation after which Irish Water will contact the customer to schedule the leak repair at a suitable time. On receipt of the documentation, Irish Water contacts customers within 10 working days to arrange a convenient time for an appointment to carry out the free leak repair at a property.

During Q4 2019 Irish Water completed 475 free leak repairs under the First Fix Leak Repair scheme. This figure includes some leaks that were detected in Q3 2019 and repaired in Q4 2019; similarly, some leaks detected in Q4 2019 will be repaired in Q1 2020. To ensure yearly budget allowance was adhered to, it was necessary to take steps to reduce the monthly expenditure over Q3 & Q4 to keep within the budget and this has resulted in lower repair outputs being achieved.

- **Customer Repairs**

From the data collected through meter reading we know that 103 customers have repaired leaks on their property themselves after receiving a constant flow advice letter. Irish Water would like to thank all customers who repaired leaks on their property. These repairs have made a significant contribution to national water conservation.

- **Water Savings**

The issuance of constant flow advice letters has targeted the largest leaks first and the result of this can be seen from the estimated incremental savings of 1.45 million litres of water per day achieved in Q4 2019 from contractor repairs and a further 0.5 million litres from customer repairs.

2018	Irish Water First Fix Repair		Customer Repairs		2018 Total: Q1-Q4	
Quarter	Repairs #	Savings (ML/Day)	Repairs #	Savings (ML/Day)	Total Repairs	Total Savings (ML/Day)
1	671	3.61	858	2.36	1,529	5.97
2	982	4.40	1,128	2.91	2,110	7.31
3	1,222	5.14	525	0.84	1,747	5.98
4	1,290	3.11	626	0.74	1,916	3.85
2019					2019 Total: Q1-Q4	
1	1,428	4.21	659	1.83	2,087	6.04
2	1,391	3.46	593	2.00	1,984	5.46
3	917	1.85	198	0.91	1,115	2.76
4	475	1.45	103	0.5	578	1.95
Total	8,376	27.23	4,690	12.09	13,066	39.32

Table 2: Estimated water savings from the First Fix Scheme and Customer Repairs for Q1-Q4 2018 and Q1-Q4 2019.

Since commencement of the First Fix Scheme to the end of 2019, total cumulative water savings are estimated at 154.92 ML per day. A cumulative estimated total of 80.7 million litres per day has been saved through First Fix repairs and a further estimated 74.22 million litres from customer repairs. Savings are calculated from a comparison of meter data collected prior to and after the repair work being undertaken. For customer repairs, the constant flow alert is no longer active, and the meter data shows a supporting drop in water usage over the next two read periods. Finally, we exclude those with less than 1000l/d as it is suspected that below this level usage has been reduced rather than an actual customer leak repair.

8. Project Expenditure

The project expenditure is reported quarterly in arrears. The cumulative total expenditure up to the end of Q4 2019 (end of December 2019) is €44,927,106.92 consisting of €22,870,297.94 for leak investigations, €17,756,813.97 for repairs and €4,299,995.01 for additional costs.

9. Next Steps

Irish Water will continue to implement the First Fix Leak Repair scheme through the LRP and will issue the next quarterly report, for Q1 2020, to the CRU in Q4 2020.

Table 3: Project Summary

1	Number of Continuous Flow Alarms Detected	Total	Q4 2019	
			74,131	
2	Number of Customer Notifications Issued	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	0	
		North West	0	
		South East	0	
		South West	0	
		Dublin	0	
		North East	0	
		Midlands	0	
		Midwest	0	
		Grand Total	0	
No constant flow advice letters were issued in Q4 2019.				
3	Customer Responses requesting a Free Leak Investigation	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	115	
		North West	131	
		South East	7	
		South West	304	
		Dublin	478	
		North East	67	
		Midlands	161	
		Midwest	103	
		Grand Total	1366	
1,366 customers requested a First Fix Free Leak Investigation				
4	Leak Investigations Completed	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	61	
		North West	80	
		South East	8	
		South West	398	
		Dublin	348	
		North East	30	
		Midlands	208	
		Midwest	19	
		Grand Total	1152	
1,152 Leak Investigations were carried out in Q4 by WNP contractors.				

4a	Leak Repairs Created	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	32	
		North West	34	
		South East	8	
		South West	127	
		Dublin	97	
		North East	13	
		Midlands	97	
		Midwest	20	
		Grand Total	428	
21,123				
428 Leak Repairs were created in Q4 2019				
5	Leak Repairs Completed	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	49	
		North West	38	
		South East	4	
		South West	208	
		Dublin	65	
		North East	8	
		Midlands	73	
		Midwest	30	
		Grand Total	475	
17,194				
475 confirmed Leak Repairs carried out in Q4				
6	Estimated Water Savings from First Fix Repairs (Litres/day)	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	125,250.62	
		North West	67,508.42	
		South East	15,867.23	
		South West	487,585.74	
		Dublin	373,904.21	
		North East	80,383.56	
		Midlands	205,897.05	
		Midwest	91,794.97	
		Grand Total	1,448,191.81	
80.7 ML				
It is estimated that 1.45 ML of water was saved in Q4 as a result of repairs carried out by the contractor. This brings the total incremental Water Savings to 80.7 ML from contractor repairs and an overall saving of 154.92 ML per day.				

7	Customer Repairs Completed	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	16	
		North West	14	
		South East	0	
		South West	17	
		Dublin	25	
		North East	5	
		Midlands	24	
		Midwest	2	
		Grand Total	103	
Customer repairs represent the repairs carried out by the customer after receiving a First Fix Free letter from Irish Water. 103 customers repaired leaks in Q4.				
8	Estimated Savings from Customer Repairs (Litres/day)	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	40,292.97	
		North West	77,404.32	
		South East	0	
		South West	63,488.09	
		Dublin	168,065.09	
		North East	39,951.35	
		Midlands	105,074.13	
		Midwest	7864.85	
		Grand Total	502,140.80	
It is estimated that 0.5 ML of water was saved in Q4 as a result of Repairs carried out by the customer. This brings the total cumulative Water Savings to 74.22 ML from customer repairs and an overall saving of 154.92 ML per day.				
9	Known Properties Without an Operational ISV	Period	Q4 2019	Cumulative FF Scheme Total
		Region		
		North	9	
		North West	3	
		South East	0	
		South West	2	
		Dublin	65	
		North East	0	
		Midlands	8	
		Midwest	0	
		Grand Total	87	
A total of 87 properties did not have an Internal Stop Valve and the Leak Investigation could not be progressed.				

10	Number of Non-Qualifying Properties Served Through a Shared or Backyard Pipe	Total	Q4 2019	Cumulative FF Scheme Total
			29	1,771
29 properties were identified as not qualifying for the scheme as they are served through a shared supply or backyard supply.				
11	Counties in Each Region	North	Donegal, Cavan, Monaghan, Leitrim	
		North West	Galway, Galway City, Mayo, Sligo, Roscommon	
		South East	Carlow, Waterford, Waterford City, Kilkenny, Wexford	
		South West	Cork, Cork City, Kerry	
		Dublin	Dublin City, South Dublin, Dun Laoghaire Rathdown, Fingal	
		North East	Longford, Louth, Meath, Westmeath	
		Midlands	Kildare, Offaly, Laois, Wicklow	
		Midwest	Limerick, Clare, Tipperary	

Note: All cumulative totals outlined in table 3 are for the First Fix Scheme from commencement to the end of Q4 2019.

Note: Meter read data is used to confirm that a customer repair has been carried out. Number of customer repairs and estimated savings will be included in the report once two confirmed meter readings are collected after the repair date. As such, the number of customer repairs noted above for each quarter is expected to increase in the next report as more confirmed readings are collected.