

Irish Water

Leakage Reduction Programme

First Fix Leak Repair Scheme

For Domestic Water Customers

Quarterly Report

Q4 2017



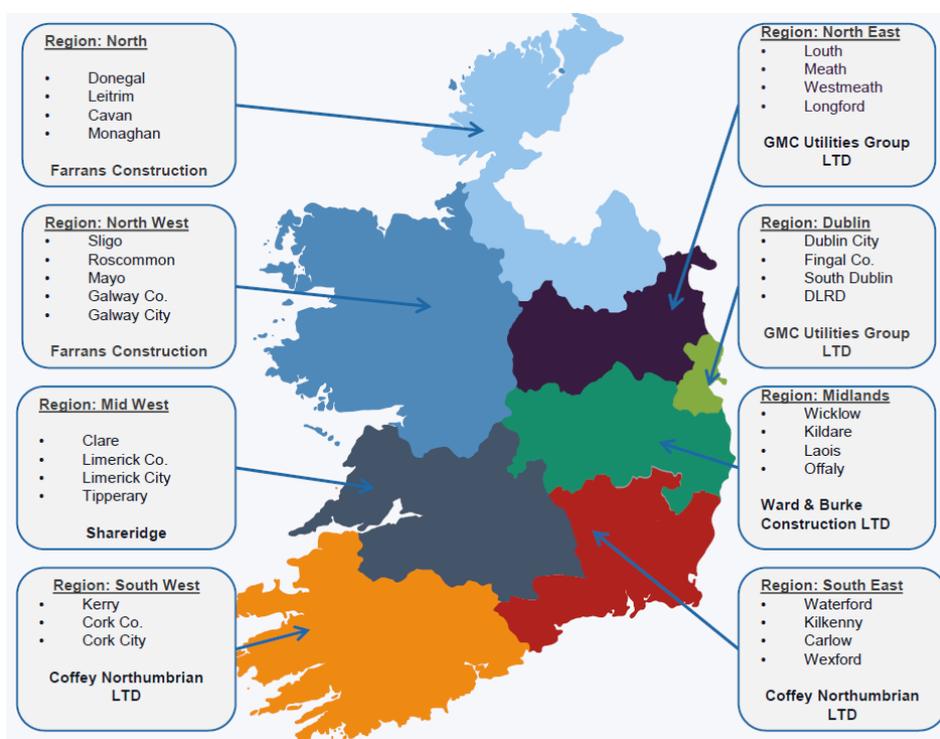
1. Introduction to the Leakage Reduction Programme¹

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.



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.

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

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 115 million litres of water per day have been saved as a result of this scheme to the end of Q4 2017. 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.

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 115 million litres of water per day is being saved as a result of First Fix repairs completed under the Metering Programme and Leakage Reduction Programme.

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 is engaging with the CRU in 2018 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.

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.
- 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

In an attempt to increase performance of the scheme, Irish water pursued the following initiatives:

- In Quarter 4, Irish Water sent 16,444 First Fix letters to properties with a constant flow alarm. These properties were identified by targeting those with usage **in excess of 1000 litres per day**. Targeting customers above this level for the First Fix scheme is an attempt to engage customers in properties that are using between two and three times the national average usage. (383 litres per property per day, CSO 2017)
- The average daily usage of the property and the expected daily usage of 125 litres per person per day were included on the notification letter. This informs the customer of the quantity of excess usage at their property and will encourage the customer to engage with us in order to arrange a leak investigation.
- In order to improve customer engagement, Irish Water has revised the previous CFA notification issued during the metering programme by the inclusion of additional information on the latest CFA letters, to make the communication as informative as possible to customers.

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, letters were sent to customers that appeared on the CFA list starting with the highest users. It was found that 3931 properties that were using more than 5,000 litres per day based on meter readings and were accountable for over 46 million litres of Unaccounted for Water (57%).

Targeting these users first will result in greater savings from fewer repairs and reduce the UFW more effectively. The remaining 57,848 properties using less than 5,000 litres per day accounted for over 35 million litres of Unaccounted for Water (43%). The following table is calculated using information from the CFA list and figures from the CSO report in August 2017 suggesting an average household consumes 383 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	3,931	12,177	47,869,195	1,505,573	46,363,622	57%
Up to 5 000 Litres	57,848	993	57,442,505	22,155,784	35,286,721	43%
Total	61,779	1,705	105,311,699	23,661,357	81,650,342	100%

Table 1: Unaccounted for Water (UFW) summary Q4 2017

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 2017.

7. Quarterly Summary

- **Constant Flow Advice Letters, Customer Response Rates and Engagement Levels**

The total number of constant flow advice letters issued at the end of Q4 2017 was 16,444.

A total of 4,234 customers have engaged with the scheme in Q4 2017, representing 25.7% of the 16,444 constant flow advice letters issued. This number is made up of the following;

3188 Customers requesting a free leak investigation survey

1046 Customer repairs completed from data collected from the meter

- **Leak Investigations**

A total of 3188 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 2250 leak investigations had been undertaken in Q4 2017. The remaining customers that had requested a leak investigation in Q4 2017 either had appointments scheduled or were in the process of having appointments scheduled.

From the 2250 completed leak investigations, 821 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 non-qualifying leaks are broken down as follows:

- 1) A total of 618 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 63 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 456 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 292 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 2017 Irish Water had completed 286 free leak repairs under the First Fix Leak Repair scheme. The remaining 535 customers to whom Irish Water offered a free leak repair either had a repair scheduled or had yet to accept the leak repair offer.

- **Customer Repairs**

From the data collected through meter reading we know that 1,046 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 2.48 million litres of water per day achieved in Q4 2017 from contractor repairs and a further 3.34 million litres from customer repairs.

2017	Irish Water First Fix Repair		Customer Repairs		2017 Total: Q1-Q4	
Quarter	Repairs #	Savings (ML/Day)	Repairs #	Savings (ML/Day)	Total Repairs	Total Savings (ML/Day)
1	420	2.25	475	0.65	895	2.9
2	233	0.96	4,774	5.95	5,007	6.91
3	435	2.08	1,062	2.85	1,497	4.93
4	286	2.48	1,046	3.34	1,332	5.82
Total	1,374	7.77	7,357	12.79	8,731	20.56

Table 2: Estimated water savings from the First Fix Scheme and Customer Repairs for Q1-Q4 2017.

Since commencement of the First Fix Scheme, total cumulative water savings are estimated at 115.6 ML per day. A cumulative estimated total of 53.47 million litres per day has been saved through First Fix repairs and a further estimated 62.13 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 2017 (end of December 2017) is €22,350,442 consisting of €10,446,167 for leak investigations, €8,194,555 for repairs and €3,709,720 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 2018, to the CRU in Q4 2018.

Table 1: Project Summary

1	Number of Continuous Flow Alarms Detected	Total	Q4 2017	
			61,779	
2	Number of Customer Notifications Issued	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	1011	
		North West	2412	
		South East	709	
		South West	3530	
		Dublin	2239	
		North East	1522	
		Midlands	2622	
		Midwest	2399	
		Grand Total	16444	
A total number of 16,444 constant flow advice letters were issued in Q4. Irish Water will continue to send letters in Q1 2018				
3	Customer Responses requesting a Free Leak Investigation	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	121	
		North West	345	
		South East	161	
		South West	806	
		Dublin	665	
		North East	271	
		Midlands	447	
		Midwest	372	
		Grand Total	3188	
3188 customers requested a First Fix Free Leak Investigation				
4	Leak Investigations Completed	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	97	
		North West	257	
		South East	63	
		South West	393	
		Dublin	638	
		North East	278	
		Midlands	310	
		Midwest	214	
		Grand Total	2250	
2250 Leak Investigations were carried out in Q4 by WNP contractors.				

4a	Leak Repairs Created	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	28	10,733
		North West	89	
		South East	39	
		South West	203	
		Dublin	215	
		North East	75	
		Midlands	102	
		Midwest	70	
		Grand Total	821	
5	Leak Repairs Completed	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	14	8,818
		North West	55	
		South East	9	
		South West	67	
		Dublin	58	
		North East	13	
		Midlands	52	
		Midwest	18	
		Grand Total	286	
286 confirmed Leak Repairs carried out in Q4				
6	Estimated Water Savings from First Fix Repairs (Litres/day)	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	74,436	53.47 ML
		North West	476,104	
		South East	53,794	
		South West	519,649	
		Dublin	528,164	
		North East	125,546	
		Midlands	528,375	
		Midwest	170,721	
		Grand Total	2,476,788	
It is estimated that 2.48ML of water was saved in Q4 as a result of Repairs carried out by the contractor. This brings the total incremental Water Savings to 53.47 ML from contractor repairs and an overall saving of 115.6 ML per day.				

7	Customer Repairs Completed	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	49	
		North West	153	
		South East	50	
		South West	256	
		Dublin	142	
		North East	148	
		Midlands	89	
		Midwest	159	
		Grand Total	1,046	
Customer repairs represent the repairs carried out by the customer after receiving a First Fix Free letter from Irish Water. 1,046 customers repaired leaks in Q4.				
8	Estimated Savings from Customer Repairs (Litres/day)	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	174,648	
		North West	508,762	
		South East	296,341	
		South West	886,744	
		Dublin	320,231	
		North East	422,603	
		Midlands	179,457	
		Midwest	551,564	
		Grand Total	3,340,350	
It is estimated that 3.34ML of water was saved in Q4 as a result of Repairs carried out by the customer. This brings the total cumulative Water Savings to 62.13ML from customer repairs and an overall saving of 115.6 ML per day				
9	Known Properties Without an Operational ISV	Period	Q4 2017	Cumulative FF Scheme Total
		Region		
		North	13	
		North West	62	
		South East	2	
		South West	9	
		Dublin	184	
		North East	69	
		Midlands	55	
		Midwest	1	
		Grand Total	395	
A total of 395 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 2017	Cumulative FF Scheme Total
			63	763
63 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 2017.

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 month is expected to increase in the next report as more confirmed readings are collected.