

Irish Water

Leakage Reduction Programme

First Fix Leak Repair Scheme

For Domestic Water Customers

Quarterly Report

Q2 2019



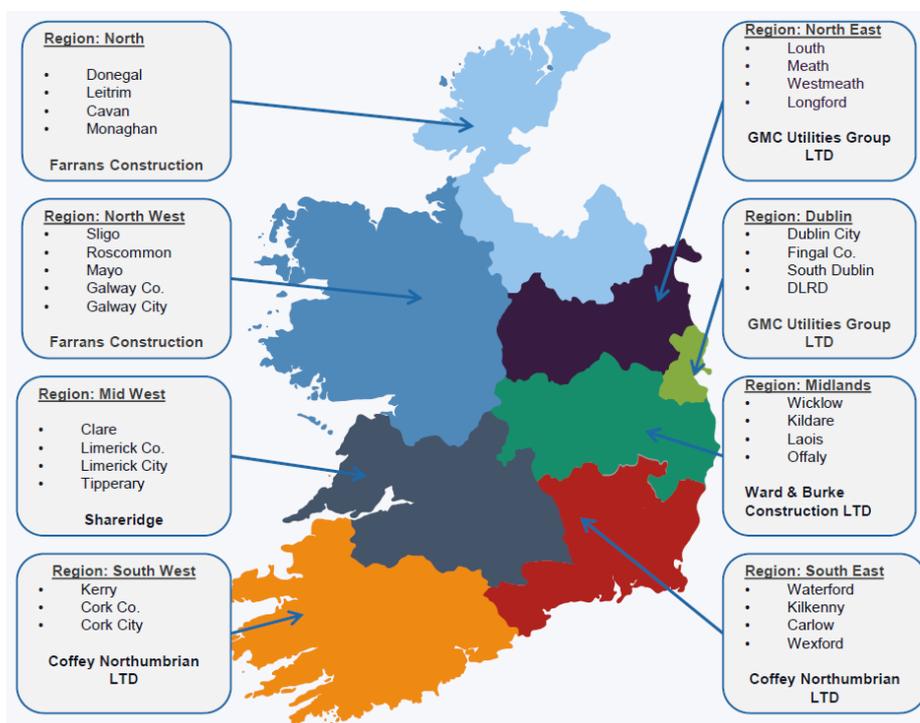
1. Introduction to the Leakage Reduction Programme¹

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.



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 just over 150 million litres of water per day have been saved as a result of this scheme to the end of Q2 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.

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 150 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.

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.

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 order to increase performance of the scheme, Irish Water pursued the following initiatives:

- In Quarter 2 2019, Irish Water sent 2,551 First Fix letters to properties with a constant flow alarm (CFA). Letters were issued to properties with a constant flow alarm plus usage **in excess of 800³ litres per day**. Targeting customers above this level for the First Fix scheme is an attempt to engage customers in properties that are using over twice the national average usage. (342 litres per property per day, as calculated by the CRU ([CRU/17/339](#))).
- The average daily usage of the property and the expected daily usage of 129 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. Both the notification letter and collateral were refreshed as part of this process. During Q2 2019 notification letters were sent to properties newly appearing on the CFA list.

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.

³ The threshold decreased to 800 litres per day in Q2 2019 (from 1,000 litres in Q1 2019) due to relativities in the amount of CFAs in each quarter. This allowed IW to issue more letters in Q2 2019 than if the 1,000 litres per day threshold was retained.

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 Q2 2019, letters were sent to customers that appeared on the CFA list and had usage in excess of 800 litres per day. In issuing letters, IW start with the highest users (defined as those with usage in excess of 5,000 litres per day). It was found that 1,931 properties that were using more than 5,000 litres per day based on meter readings and were accountable for over 22 million litres of Unaccounted for Water (49%).

Targeting these users first will result in greater savings from fewer repairs and reduce the UFW more effectively. The remaining 59,751 properties using less than 5,000 litres per day accounted for nearly 24 million litres of Unaccounted for Water (51%). 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	1,931	11,387	23,190,950	690,402	22,500,548	49%
Up to 5 000 Litres	59,751	742	44,323,670	20,434,842	23,888,828	51%
Total	74,492	12,129	67,514,620	25,476,264	46,389,376	100%

Table 1: Unaccounted for Water (UFW) summary Q2 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 Q2 2019.

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 Q2 2019 was 2,551.

A total of 9,681 customers have engaged with the scheme in Q2 2019. This number is made up of the following;

9,088 Customers requesting a free leak investigation survey

593 Customer repairs completed from data collected from the meter

- **Leak Investigations**

A total of 9,088 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 9,267 leak investigations had been undertaken in Q2 2019. This figure includes some investigations that were requested in Q1 2019; similarly some investigations requested in Q2 2019 were carried out in Q3 2019.

From the 9,267 completed leak investigations, 1,148 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 8,119 non-qualifying leaks are broken down as follows:

- 1) A total of 724 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 188 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 4,201 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 3,006 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 Q2 2019 Irish Water had completed 1,391 free leak repairs under the First Fix Leak Repair scheme. This figure includes some leaks that were detected in Q1 2019 and repaired in Q2 2019; similarly some leaks detected in Q2 2019 were repaired in Q3 2019.

- **Customer Repairs**

From the data collected through meter reading we know that 593 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 3.46 million litres of water per day achieved in Q2 2019 from contractor repairs and a further 2 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-Q2	
1	1,428	4.21	659	1.83	2,087	6.04
2	1,391	3.46	593	2.00	1990	5.46
Total	6,984	23.93	4,389	10.68	11,379	34.61

Table 2: Estimated water savings from the First Fix Scheme and Customer Repairs for Q1-Q4 2018 and Q1-Q2 2019.

Since commencement of the First Fix Scheme, total cumulative water savings are estimated at 150.21 ML per day. A cumulative estimated total of 77.4 million litres per day has been saved through First Fix repairs and a further estimated 72.81 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 Q2 2019 (end of June 2019) is €41,767,801 consisting of €21,141,406 for leak investigations, €16,288,486 for repairs and €4,337,412 for additional costs.

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 Q3 2019, to the CRU in Q2 2020.

Table 3: Project Summary

1	Number of Continuous Flow Alarms Detected	Total	Q2 2019		
			74,779		
2	Number of Customer Notifications Issued	Period	Q2 2019	Cumulative FF Scheme Total	
		Region			
		North	78	174,782	
		North West	291		
		South East	265		
		South West	483		
		Dublin	374		
		North East	362		
		Midlands	411		
		Midwest	287		
		Grand Total	2,551		
A total number of 2,551 constant flow advice letters were issued in Q2.					
3	Customer Responses requesting a Free Leak Investigation	Period	Q2 2019		Cumulative FF Scheme Total
		Region			
		North	351	87,559	
		North West	990		
		South East	1917		
		South West	3019		
		Dublin	1019		
		North East	971		
		Midlands	361		
		Midwest	460		
		Grand Total	9088		
9,088 customers requested a First Fix Free Leak Investigation					
4	Leak Investigations Completed	Period	Q2 2019		Cumulative FF Scheme Total
		Region			
		North	599	82,296	
		North West	1182		
		South East	1511		
		South West	2483		
		Dublin	1551		
		North East	1072		
		Midlands	335		
		Midwest	534		
		Grand Total	9267		
9,267 Leak Investigations were carried out in Q2 by WNP contractors.					

4a	Leak Repairs Created	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	76	19,781
		North West	209	
		South East	195	
		South West	438	
		Dublin	240	
		North East	87	
		Midlands	99	
		Midwest	147	
		Grand Total	1491	
1,491 Leak Repairs were created in Q2 2019				
5	Leak Repairs Completed	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	63	15,802
		North West	177	
		South East	143	
		South West	303	
		Dublin	293	
		North East	98	
		Midlands	120	
		Midwest	194	
		Grand Total	1391	
1,391 confirmed Leak Repairs carried out in Q2				
6	Estimated Water Savings from First Fix Repairs (Litres/day)	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	120,851.73	77.4 ML
		North West	573,182.89	
		South East	247,575.94	
		South West	962,255.23	
		Dublin	488,659.38	
		North East	233,561.02	
		Midlands	417,043.15	
		Midwest	414,659.08	
		Grand Total	3,457,788.42	
It is estimated that 3.46 ML of water was saved in Q2 as a result of repairs carried out by the contractor. This brings the total incremental Water Savings to 77.4 ML from contractor repairs and an overall saving of 150.21 ML per day.				

7	Customer Repairs Completed	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	26	
		North West	65	
		South East	89	
		South West	173	
		Dublin	50	
		North East	134	
		Midlands	31	
		Midwest	25	
		Grand Total	593	
Customer repairs represent the repairs carried out by the customer after receiving a First Fix Free letter from Irish Water. 593 customers repaired leaks in Q2.				
8	Estimated Savings from Customer Repairs (Litres/day)	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	91,471.45	
		North West	202,401.04	
		South East	226,473.33	
		South West	718,474.75	
		Dublin	126,079.68	
		North East	476,249.44	
		Midlands	97,069.18	
		Midwest	60,579.29	
		Grand Total	1,998,798.17	
It is estimated that 2 ML of water was saved in Q2 as a result of Repairs carried out by the customer. This brings the total cumulative Water Savings to 72.81 ML from customer repairs and an overall saving of 150.21 ML per day.				
9	Known Properties Without an Operational ISV	Period	Q2 2019	Cumulative FF Scheme Total
		Region		
		North	178	
		North West	266	
		South East	3	
		South West	16	
		Dublin	169	
		North East	39	
		Midlands	6	
		Midwest	47	
		Grand Total	724	
A total of 724 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	Q2 2019	Cumulative FF Scheme Total
			188	1,640
188 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 Q2 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 month is expected to increase in the next report as more confirmed readings are collected.