

Irish Water

Leakage Reduction Programme

First Fix Leak Repair Scheme

For Domestic Water Customers

Quarterly Report

Q1 2020



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 approximately 1.7 billion litres of treated water every day. In 2019, 556 million litres per day were utilised by domestic households, 395 million litres per day were utilised by non-domestic customers with approximately 712 million litres per day reported as unaccounted for water (UFW)². To date, IW has reported on UFW which represents the difference between "net production" (the volume of water delivered into IW's network) and "consumption" (the volume of water that can be accounted for by legitimate consumption, metered or not.) The difference includes water losses due to leaks. To enable robust, consistent reporting on Leakage, IW has implemented a new National Leakage Management System (LMS) which is estimated will enable IW to report on national leakage from 2021.

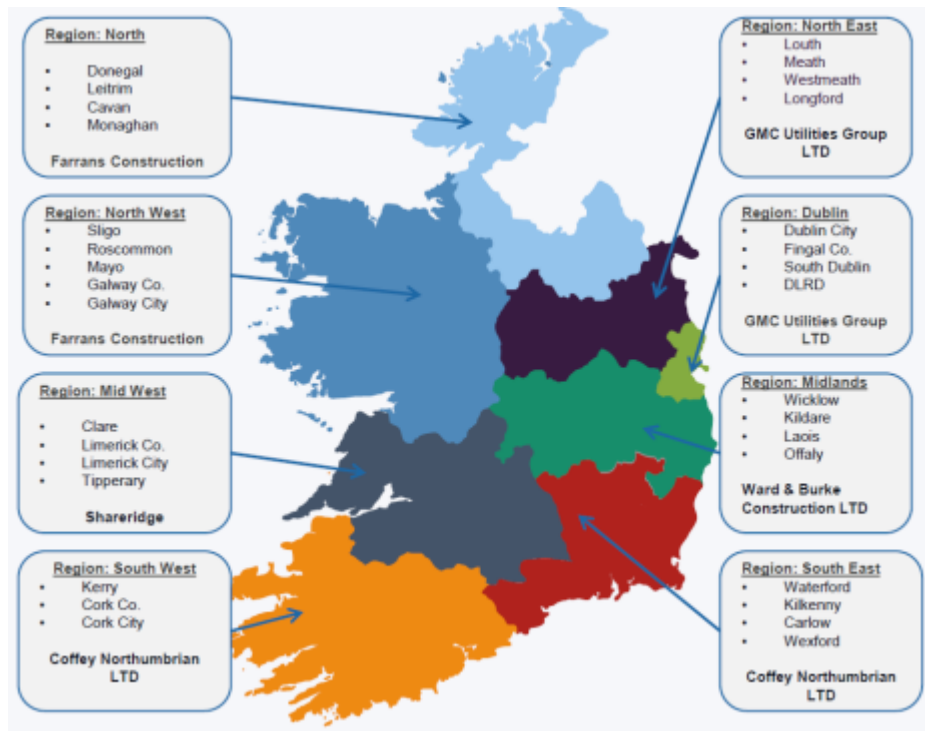
Irish Water is progressing the National Leakage Reduction Programme which targets resources at areas of highest leakage and lowest headroom across water networks. As part of our Investment Plan 2020 to 2024, we plan to spend c.€400m on Leakage Reduction Programmes. We also plan to spend c.€37m on the First Fix Scheme from 2020 to 2024.

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.

² See section 14.2.1 of the CRU's Energy and Water Monitoring Report for 2019 [here](#)



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 156 million litres of water per day have been saved as a result of this scheme to the end of Q1 2020. 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" scheme³. 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 determination⁴ the CRU outlines its ongoing support for the First Fix Leak Repair scheme.⁵

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

³ As outlined in section 8 of this report, IW is currently working within this original revenue allowance.

⁴ Published on 5 December 2019 and available at www.cru.ie

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.

By Q1 2020, it is estimated that over 156 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.

On 19th April 2021, the CRU published its decision paper on First Fix Scheme Policy (CRU/21/040a)⁶ which extended the eligibility of the scheme. The changes introduced provide access to the scheme to customers that were excluded from the original scope. The main change is that you no longer need a water meter to qualify for the Scheme. This change brings an approximate additional 600,000 customers, or about 40% of Irish Water's customer base, into the scope of the Scheme.

The key changes to the Scheme include:

- Domestic customers with usage above the annual allowance of 213,000 litres will be prioritised for leak investigation;
- Water users will no longer need to be registered with Irish Water;
- Unmetered domestic Irish water customers will now be eligible;
- A customer no longer requires an internal stop valve to be eligible;
- Properties with a Shared Service Connection will now be eligible.

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.

⁶ Available [here](#).

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 1 2020, Irish Water sent 3,400 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 1,000 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, IW improved the information it provided customers on the CFA notification letters (for example, by equating the amount of litres used at the premise to the equivalent average usage by a person). During Q1 2020 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.

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

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 CFA notification letters. This decision was taken to avoid potential customer confusion caused by receipt of multiple correspondences over a short period of time. We did, however, continue with ‘cold calling’ activities in Q3 to aid engagement in the First Fix scheme and CFA notification letters began issuing again in Q1 2020.

In Q1 2020, a significant amount of large leaks were identified. These were properties with usage in excess of 1,000 litres per day, which appeared on the CFA list. When contacting customers, IW start with the largest users (properties with usage in excess of 5,000 litres per day). It was found that 2,719 properties were using more than 5,000 litres per day based on meter readings and were accountable for over 30 million litres of Unaccounted for Water per day (53%).

Targeting these users first will result in greater savings from fewer repairs and reduce the UFW more effectively. The remaining 18,465 properties using less than 5,000 litres per day but greater than 1,000 litres per day accounted for over 27 million litres of Unaccounted for Water per day (47%). 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	2,719	11,546	31,394,890	929,898	30,464,992	53%
1,000 - 5 000 Litres	18,465	1,814	33,492,170	6,315,030	27,177,140	47%
Total	21,184	3,063	64,887,060	7,244,928	57,642,132	100%

Table 1: Unaccounted for Water (UFW) summary Q1 2020

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 Q1 2020.

7. Quarterly Summary

- **Customer Response Rates and Engagement Levels**

A total of 3,197 customers have engaged with the scheme in Q1 2020. This number is made up of the following;

3,050 Customers requesting a free leak investigation survey

147 Customer repairs completed from data collected from the meter

- **Leak Investigations**

A total of 3,050 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 2,197 leak investigations were undertaken in Q1 2020. This figure includes some investigations that were requested in Q4 2019; similarly, some investigations requested in Q1 2020 will be carried out in Q2 2020.

From the 2,197 completed leak investigations, 782 leaks on external supply pipes were identified as qualifying. Irish Water has offered these customers with leaks on their external supply pipe a free leak repair under the scheme. The remaining 1,415 non-qualifying leaks are broken down as follows:

- 1) A total of 129 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 59 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 733 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 494 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 Q1 2020 Irish Water completed 652 free leak repairs under the First Fix Leak Repair scheme. This figure includes some leaks that were detected in Q4 2019 and repaired in Q1 2020; similarly, some leaks detected in Q1 2020 will be repaired in Q2 2020.

- **Customer Repairs**

From the data collected through meter reading we know that 147 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 1.02 million litres of water per day achieved in Q1 2020 from contractor repairs and a further 0.6 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
2020					2020 Total: Q1	
1	652	1.02	147	0.6	799	1.62
Total	9,028	28.25	4,837	12.69	13,865	40.94

Table 2: Estimated water savings from the First Fix Scheme and Customer Repairs for Q1-Q4 2018, Q1-Q4 2019 and Q1 2020.

By Q1 2020, total cumulative water savings are estimated at 156.54 ML per day. A cumulative estimated total of 81.72 million litres per day has been saved through First Fix repairs and a further estimated 74.82 million litres per day saved 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 Q1 2020 (end of March 2020) is €46,192,652 consisting of €23,753,889 for leak investigations, €18,136,716 for repairs and €4,302,047 for additional costs. Note, some costs incurred in a quarter may not be captured until the following quarter's figures.



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 Q2 2020, to the CRU in Q1 2021.

Table 3: Project Summary

1	Number of Continuous Flow Alarms Detected	Total	Q1 2020	
			73,798	
2	Number of Customer Notifications Issued	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	98	
		North West	274	
		South East	299	
		South West	550	
		Dublin	586	
		North East	483	
		Midlands	681	
		Midwest	429	
		Grand Total	3400	
3,400 constant flow advice letters were issued in Q1 2020.				
3	Customer Responses requesting a Free Leak Investigation	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	168	
		North West	281	
		South East	142	
		South West	496	
		Dublin	584	
		North East	405	
		Midlands	246	
		Midwest	728	
		Grand Total	3050	
3,050 customers requested a First Fix Free Leak Investigation				
4	Leak Investigations Completed	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	189	
		North West	240	
		South East	78	
		South West	425	
		Dublin	370	
		North East	201	
		Midlands	173	
		Midwest	521	
		Grand Total	2197	

2,197 Leak Investigations were carried out in Q1 by WNP contractors.

4a	Leak Repairs Created	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	70	21,950
		North West	144	
		South East	50	
		South West	183	
		Dublin	134	
		North East	44	
		Midlands	114	
		Midwest	88	
		Grand Total	827	
827 Leak Repairs were created in Q1 2020				
5	Leak Repairs Completed	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	35	17,846
		North West	88	
		South East	18	
		South West	200	
		Dublin	92	
		North East	24	
		Midlands	127	
		Midwest	68	
		Grand Total	652	
652 confirmed Leak Repairs carried out in Q1				
6	Estimated Water Savings from First Fix Repairs (Litres/day)	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	21,756.18	81.72 ML
		North West	164,786.50	
		South East	46,628.48	
		South West	146,776.48	
		Dublin	373,170.96	
		North East	33,234.79	
		Midlands	218,862.42	
		Midwest	12,752.40	
		Grand Total	1,017,968.21	
It is estimated that 1.02 ML of water was saved in Q1 as a result of repairs carried out by the contractor. This brings the total incremental Water Savings to 81.72 ML from contractor repairs and an overall saving of 156.54 ML per day.				

7	Customer Repairs Completed	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	12	43,468
		North West	51	
		South East	36	
		South West	6	
		Dublin	7	
		North East	27	
		Midlands	1	
		Midwest	7	
		Grand Total	147	
Customer repairs represent the repairs carried out by the customer after receiving a First Fix Free letter from Irish Water. 147 customers repaired leaks in Q1.				
8	Estimated Savings from Customer Repairs (Litres/day)	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	47,455.19	74.82
		North West	204,948.79	
		South East	176,904.86	
		South West	34,478.89	
		Dublin	13,442.81	
		North East	100,353.91	
		Midlands	4,675.79	
		Midwest	13,600.85	
		Grand Total	595,861.09	
It is estimated that 0.6 ML of water was saved in Q1 as a result of Repairs carried out by the customer. This brings the total cumulative Water Savings to 74.82 ML from customer repairs and an overall saving of 156.54 ML per day.				
9	Known Properties Without an Operational ISV	Period	Q1 2020	Cumulative FF Scheme Total
		Region		
		North	23	13,863
		North West	17	
		South East	0	
		South West	1	
		Dublin	64	
		North East	10	
		Midlands	2	
		Midwest	12	
		Grand Total	129	
A total of 129 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	Q1 2020	Cumulative FF Scheme Total
			59	1,830
59 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 Q1 2020.

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.