



**London Borough of Hackney
Scrutiny Committee: 4 March 2019
Briefing following burst water main on Lea Bridge
Road/Waterworks Lane 02/10/18 - 03/10/18**

Background:

A 42" trunk main on Waterworks Lane burst causing flooding and traffic disruption on Lea Bridge Road in the very late evening of 02 October. Customer water supplies for the wider area were maintained by using strategic water transfers, but significant water loss occurred locally until the main was isolated. (The main was thought to be a 36" main, but on excavation the damage was on a 42" section of main. The main on Lea Bridge Road is 36" and runs into a 42" on Waterworks Lane).

The main took sixteen hours to isolate, and during this time flats at Paradise Park suffered flooding and property damage. This included the loss of water supply and damage to the flats mains power distribution board. Our loss adjusters and customer representatives supported and rehomed those impacted customers who requested rehousing, giving priority to vulnerable customers.

The flood water reached the River Lea, but no significant pollution impact occurred. There was damage to the river wall. With agreement from the Environment Agency we will repair the river wall.

The Department for Environment, Food and Rural Affairs, Ofwat, the Environment Agency, the Greater London Authority, London Resilience Forum, Hackney Council, Hackney ward Councillors and the Member of Parliament were all updated and engaged throughout this incident.

Update since Scrutiny on 21 November 2018.

Burst repair was completed on 26 November 2018 and the road fully opened to traffic on 28 November 2018.

Lifts and car park at the flats on Paradise Park to be fully functional early to mid-March 2019.

Nursery up and running after Christmas following extended working hours.

Work on supermarket continuous as the supermarket remained open until after the New Year which is the cause of delay with their repairs.

Insurance drop-ins carried out on 17 and 19 December 2018 to facilitate queries from residents and businesses.

Most of the complaints currently are about the lifts and the lack of car parking. There are ongoing negotiations to secure extra parking.

Lifts

Power outages in the flats are now finished. The outages were controlled with the times of proposed outages published which enabled residents plan ahead.

Residents who are physically unable to use the stairs are still in alternative accommodation.

67 claims outstanding currently, some still being directly managed on an hourly basis by the adjusters.

Parking

As of week 21 – 25 January 2019

The Thames Water Work Welfare unit was relocated and repositioned away from the local school by Morrison Utilities at the request of residents.

The security team ceased parking in Millfields to help alleviate the problem with damage to the park.

Week of 4 -10 February 2019

Hackney Council closed Millfields Park as a parking option for residents.

The loss adjusters emailed the managing agent and residents' association On 8 Feb 2019, at 17:30 setting out the steps being taken to assist with parking.

The following was sent to residents

If you are a resident and a user of the underground car park, please provide the following information and Thames Water will liaise with the London Borough of Hackney to provide you with a temporary parking permit for the surrounding roads free of charge. This permit will cover parking in certain resident bays and on the hardstanding in Millfields Park South. When these permits are distributed normal parking enforcement will resume, so I would encourage you to apply promptly. Any data you provide will be shared only with the London Borough of Hackney for the purposes of arranging your parking permit.

These permits will not allow you to park on the grassed area adjacent to Lea Bridge Road - cars parked there are subject to enforcement action and are likely to receive Penalty Charge Notices (PCNs).

Please provide the following information for your free permit to be set up:

Registered keeper's name:

Registered keeper's address:

Your email address:

Vehicle Registration Mark:

Make / Model of vehicle:

Colour of vehicle:

Please return this data to: parking.permits@hackney.gov.uk *or*

London Borough of Hackney,

Parking Permits Tea [136-142 Lower Clapton Road](#)

Hackney, London, E5 0QD

Please note that these parking permits are 'virtual' which means that you will not receive a physically printed permit. Your vehicle will be registered on the Council's parking database and when Civil Enforcement Officers are checking vehicles it will show as having permission to park in the area and will not receive a PCN. Once you have provided your details above you will receive a confirmation email from the Council confirming your permit has been set up.

Goodwill payments

All residents directly affected by the burst have received a letter from Thames Water outlining the procedure for receipt of goodwill payment. Most goodwill payments have now been paid. Those that have not responded to Thames Water's request for information have been contacted again.

Learnings

Improved flood defence response. Communications between departments were ineffective leading to delays to flood defence deployment. Upon arrival, the flood vehicle pumps were not capable of dealing with the volume of flood water. By the afternoon, the first of 30 externally resourced overland pumps and associated hoses arrived on site. The communication lessons have been shared throughout the response teams to avoid reoccurrence going forward.

London Borough of Hackney Scrutiny Committee: 21 November 2018 Briefing following burst water main on Lea Bridge Road/Waterworks Lane 02/10/18 - 03/10/18

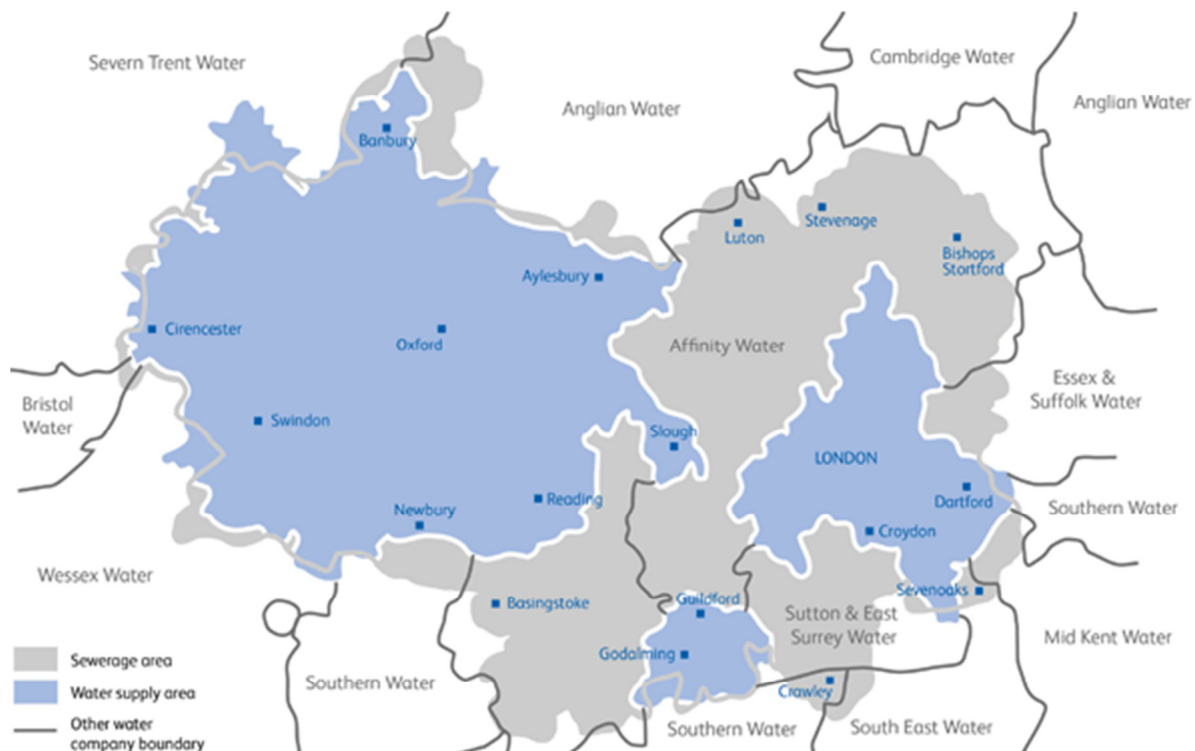
Introduction:

Thames Water Utilities Limited is the UK's largest water and wastewater services company.

Every day, we supply around 2,600 million litres of tap water to 10 million customers across London and the Thames Valley, along more than 31,000 km of water pipes from 97 Water Treatment Works. We also remove and treat more than 4 billion litres of sewage for 15 million customers along 100,000 km of sewage pipes to 351 Sewage Treatment Works.

Thames Water is regulated by the Water Services Regulation Authority (Ofwat). Ofwat is the economic regulator of the water and sewerage industry in England and Wales. Ofwat acts independently from the Government and aims to ensure consumers receive value for money. Ofwat establishes the limit on how much individual water companies can charge their customers, and aims to protect the standard of service customers receive from their supplier.

Map of Area Supplied by Thames Water Utilities Limited:



Burst water main on Lea Bridge Road/Waterworks Lane: 02/10/2018 - 03/10/18

Outline:

A 42" trunk main on Waterworks Lane burst causing flooding and traffic disruption on Lea Bridge Road in the very late evening of 02 October. Customer water supplies for the wider area were maintained by using strategic water transfers, but significant water loss occurred locally until the main was isolated. (The main was thought to be a 36" main, but on excavation the damage was on a 42" section of main. The main on Lea Bridge Road is 36" and runs into a 42" on Waterworks Lane).

The main took sixteen hours to isolate, and during this time flats at Paradise Park suffered flooding and property damage. This included the loss of water supply and damage to the flats mains power distribution board. Our loss adjusters and customer representatives supported and rehomed those impacted customers who requested rehousing, giving priority to vulnerable customers.

The flood water reached the River Lea, but no significant pollution impact occurred. There was damage to the river wall. With agreement from the Environment Agency we will repair the river wall.

The Department for Environment, Food and Rural Affairs, Ofwat, the Environment Agency, the Greater London Authority, London Resilience Forum, Hackney Council, Hackney ward Councillors and the Member of Parliament were all updated and engaged throughout this incident.

Cold water supply

22 pallets of bottle water were delivered and distributed on the evening of the 3 October and continued the morning of the 4 October. Plumbers attended on the 4 October to provide a temporary supply. This consisted of a tanker and overland riders which supplied the whole building until the pumps in the plant room could be made operational. Cold water supplies were returned to the lower floor flats, however, due to damaged pumps hot water supplies were not restored. All temporary water supplies were removed and flats were permanently back in supply on the 9 October.

Heating, hot water and electricity

On the 6 October UKPN raised concerns about the electrics on site and stated they may need to be turned off from the main switchboard. Loss adjusters and specialist contractors lead the recovery of power by disconnecting the flats from the mains supply and running them on generators. Due to the boiler system being damaged small portable heaters were provided to residents. On the 12 October every flat had hot water, a temporary boiler solution was installed and commissioned, restoring all central heating. Electrical supplies were permanently restored on 19 October. Remedial work at the flats is ongoing.

Loss adjusters and customer representatives remained on site throughout.

The burst main was repaired and recharged on 2 November. To achieve double isolation of the main without impacting customer supplies, line stops needed to be installed to achieve the isolation. This technique meant that the work was carried out with no significant impact on customer water supplies. An extension of permit has been granted until 16 November to complete the re-instatement and re-open Waterworks Lane

Timeline of response:

02/10/18-(22:41)	A job was raised reporting pollution into the Lea River (wastewater) coming up through the road and flooding an area outside of the Princess of Wales pub.
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02/10/18 (23.45)	Waste teams quickly mobilised and were on-route and called the customer who had reported the incident, with an expected arrival time of 25 minutes.
02/10/18 (00.47)	Team arrived on site and identified a clean water main burst. The Fire Brigade were already on site.
02/10/18 (23.35)	A customer called our contact centre to report flooding of the building and car park at Paradise Park.
02/10/18 (23.56)	Customer called again to advise flooding was extensive and advising there is an electrical sub-station in the basement car park area. Customer was advised by call agent to call the Fire Brigade.
03/10/18 (00.04)	Job was despatched and our first engineer arrived at approximately 00.46. A total of six Network Engineers were mobilised and attended site.
03/10/18 (02.10)	Two tankers were ordered to assist with pumping out water from properties.
03/10/18 (06.09)	Our incident manager contacted Alistair Place from LB Hackney and updated him on the flooding situation.
03/10/18 (06.32)	Environment Agency were notified: River impact - EA aware, Chlorine at 0 at 350m/s, no fish in distress, turbidity is good. Defra, Hackney Council, GLA, Ofwat, Local Resilience Forums were updated.
03/10/18	Flood vehicle was mobilised and loss adjusters, customer representatives and Flood Call notified to attend site.
03/10/18 (11.37)	Fire Brigade asked to return to site to assist with high powered pumps and diverting of flood water. Flood plan agreed with Fire Brigade.
03/10/18 (13.00)	Burst dammed with sand bags so the flow entered the river – working with the Fire Brigade, Hackney Council and Environment Agency. Standing water pumped into our sewer network, using six pumps.

Network complications and actions taken: 03/10/18

1.1	Network technicians began looking at the site conditions and identifying the valves required to make a decision on the best course of action to isolate main with minimal disruption.
1.2	Previous records held show that one of the valves needed for isolation was a large valve that was inaccessible and the NMC (Network Management Control) began looking at shutting the main off as far as the Olympic Park as a contingency plan to keep customers in supply.
1.3	36 inch butterfly valve was in a concrete lined cover that could not be lifted by hand. A JCB was requested to assist in accessing the valve.
1.4	To access valves, we required vehicular access to Hackney Marshes via Mandeville Street and Cow Bridge. Hackney Council contacted to get keycode for padlocks.
1.5	Repair and maintenance gangs assisted with JCB and an external company HVL (specialists in valve repair and maintenance) were brought in to make the valve workable. A total of four valves were required to isolate main and stop flooding.

1.6	Lane closure at Lower Clapton Road junction of Downs Road required to access one valve. Police assisted the technicians to ensure this could be carried out quickly and safely..
1.7	Main was fully shut in at 18:15 on 3 October, with no customers' water supplies affected by the isolation of the 42" main.

Customer Impact and Action Taken:

2.1 (03/10/18)	No 'no water calls' at time of burst or in the early hours of 03 October One customer call to report flooding By end of 3 October the number of customer calls – 62 Number of vulnerable persons identified in District Meter Area – 84 1 vulnerable customer with mobility issues Total number of vulnerable Customers affected – 3 Number of persons on dialysis – 0 Number of schools affected – 2 Total number of flats in blocks – 122 Number of flats with occupants still in alternative accommodation (as of 9 November) - 33 Number of domestic properties with internal water ingress – 1 Commercial properties with internal damage – 9 Total number of individual claims received – 93, currently stands at 83 outstanding (as of 9 November) Total numbers of vehicles (including motorbikes) damaged – 26
2.2	Underground car park flooded significantly, cars relocated by loss adjusters.
2.3	No water supply or power to flats due to damage to booster pumps and loss of power from flooding.
2.4	EDF called to attend site to investigate power loss.
2.5	Bottled water requested and delivered to site, corner of Lea Bridge Road and Hillstowe Street.
2.6	Five customer representatives and loss adjusters attended site.
2.7	Ten portable loos deployed to site.
2.8	Local representatives, ward councillors and MP updated as work progressed.
2.9 (04/10/18)	Water supply restored to all flats (temporarily).
2.10	Nine customer representatives on site to support.
2.11	Local representatives, ward councillors and MP updated as work progressed.
2.12 (06/10/18)	Power disconnected from main supply and restored on a temporary basis to the block of flats.
2.13	Six customer representatives sent to site to support.
2.14 (06/10/18)	One vulnerable household relocated and supported, flat requiring repair, work ongoing.

2.15 (09/10/18)	Water restored to all flats from internal mains.
2.16 (12/10/18)	Central heating restored to the flats.
2.17 (19/10/18)	All electric powered by mains.

Communications:

Our social media channels, website and local media outlets were all updated throughout the event. Ward Councillors and the Member of Parliament were kept updated. Our event bus with customer representatives and loss adjusters were on site throughout the week to update and support customers. Our call centre staff were briefed on the incident, so as to be better able to support customers making contact with us. We also made direct contact with vulnerable customers.

Preventative actions and improvement of event response:

Following the Forensic Review of the trunk main failures of 2016/17, Thames Water has engaged in a full review of how we manage our trunk main network, with significant work focussing on how major bursts and flooding incidents are responded to and managed. More information can be found on our website: <https://www.thameswater.co.uk/trunkmainsreview>

Event Response:

Event response times were address within that Strategic Review alongside the “Social media and communication improvement plan”

By improving and streamlining processes, response times have improved from over two hours to our current average response time of one hour and nine minutes; with aims to improve average response times to sub-one hour by 2020.

We have reviewed and improved contact centre practices, media engagement, social media response and event broadcasting.

This has been achieved by increasing the social media team from 12 to 26 staff, including 24hour coverage, with more frequent updates though social media such as twitter and our website.

The Thames Water website also includes an Interactive Map for customers to report incidents.

Enhanced Control Room training has been undertaken to help duty controllers to identify information more effectively from certain data sources during events.

We have implemented a new operational response process to aid duty controllers in identifying the most appropriate response to a major leak. This has included a full refresh of the categorisation of events and processes to include who to contact and how.

New quick response teams have been set up located throughout London and the Thames Valley to respond rapidly to the notification of a potential burst. These teas have also commenced an enhanced programme of checks on our assets required for trunk main isolations in the event of a burst.

The Logistic Management Centre is now capable of deploying flood alleviation measures (pumps, sand bags, flood barriers) to operational incidents.

As part of that Strategic Review we have also compiled a booklet entitled “Putting Things Right” that is now issued to residents and businesses affected in the event of a flooding incident outlining the help available, insurance guidelines and the process to follow.

Learnings:

Speed of Distribution of Bottled and Alternative Water Supplies:

Increase standby capability. Team expanding to ensure 24/7 cover capability. This is in progress and will be completed by April 2019.

Speed of Isolation and Containment:

Currently we check availability of over 50% of our trunk main valves, covering the highest consequence trunk mains in our network.

New learning:

Review methodology to ensure maintenance approach is reliable and effective. Expected completion date December 2018.

Increase the scale of the checking and maintenance programme on our trunk main valves.

Looking for invisible flaws in our water mains:

Between 2015 and 2020 we will invest £240m in improving our trunk mains, and we're now embarking on a new project 'Looking for invisible flaws in our water mains'. This project will further enhance our understanding of our network for 3,200km of trunk mains for the future.

Three-year programme.

Our three-year programme started in 2017, and in that time we'll continue to invest £4.5 million in research and technology trials for trunk mains. We're continuing to inspect the outside of pipes whenever we dig them up to work on them, since this provides useful information about the network as a whole. We're going to build on this experience and our previous research to let us inspect hundreds of metres of pipe at a time without digging up entire roads. To achieve this, we need a method that will work from inside the pipe.

In-pipe scanning technology.

The oil industry has been inspecting pipes from the inside for years, using sophisticated scanners, but we can't just copy them. We need technology that will work on thick cast iron, which is much more difficult for scanners to penetrate than the steel used in oil pipelines. We also need to avoid damaging our pipes or affecting the quality of the water that flows through them. To achieve this we're working with technology companies to test and improve their in-pipe scanners.

Making sense of it all.

Alongside the technology trials, we'll be working with experts from universities and industry on analytical tools to translate this scanning data into insight, to help us invest money where it's needed most.

We've already been working closely with the University of Surrey for a number of years to understand how corrosion affects the strength of cast iron pipes. Further postgraduate research into the corrosion and deterioration of trunk mains is also being funded by this programme.

Our future vision.

Ultimately, by scanning the highest-risk trunk mains, we want to be able to work out which sections really need to be replaced, and which sections are safe to carry on using. Being able to target our investment better will help us avoid replacing pipes needlessly, which will benefit customers and improve efficiencies.

Innovative trial.

In August 2017, we carried out the first ever 'in-situ' trunk main survey in the UK using a pipe scanning technology not previously used with cast iron mains of this size. The 24 inch trunk main was out of service following a burst in Lee High Road in December 2016, providing an opportune test location for this trial. The aim of the trial was to measure the success of this new scanning technology by detecting defects along a 1200m length of the pipe.

For this trial, we manually machined different shaped defects, including holes of various sizes, into a section of the trunk main (which we'd already scheduled to remove and replace after testing was complete). We then cut a special hatch into the main, and lowered a torpedo-shaped scanning device into the pipe. The device used acoustic resonance technology to measure the condition of the trunk main wall – a technique which had never been used before in cast iron mains of this size.

In the end, although the scanner couldn't detect our deliberate test defects, we still learned important lessons from this trial. The scanner was able to travel a significant distance along the pipe, but we now believe that such thick metal trunk main walls (up to 25mm) are beyond the limit of this scanning technology. The scanner's data analytics and hardware are now being further developed by the supplier, and future tests of any modified version will be possible at our new dedicated trunk main testing facility.

Unique testing facilities.

We're building a dedicated facility for testing trunk mains at one of our sites. This will give us a testing ground for a variety of trunk main technologies, including in-pipe scanners, while simulating many of the challenges of the real water network without disrupting traffic or water supplies to customers. We're also collaborating with other water companies to share technology testing, and demonstrate a wider market for new technologies.

Scanning real trunk mains.

Only the most promising in-pipe scanners will get the opportunity to be used in real trunk mains in our network. By 2020 we aim to have identified technology that can be used more routinely. But this will still be expensive work, so we'll need to target our inspections carefully.

In addition to this by the end of AMP6 (2020), 7% of our highest risk trunk mains will be monitored by active monitoring units (Trunk minders and Hydroguard units), with a further 12% covered by other leak detection monitoring points, giving around 19% coverage overall. Our investment plans are to increase this coverage to 25% by 2025.

We have undertaken a major data improvement to our trunk main consequence modelling by incorporating the outputs of a 2D rolling ball flood model across our entire trunk mains network. This provides improved granularity of outputs, giving a better prediction of the impact of a trunk main failure event.

London Borough of Hackney mains replacement:

In the London Borough of Hackney there are 357 km of distribution mains and a further 63km of trunk mains. An analysis of the local network has shown that around two thirds of Hackney's distribution network has been replaced since 2010 with plastic pipes – meaning that Hackney has one of the highest rates of mains renewal of any borough in Thames Water supply area.

The pipe that burst at Waterworks Lane/Lea Bridge Road it is not scheduled for replacement. Following any burst on our trunk mains we carry out a full investigation, including analysis of the damaged section of pipe. If this concludes the rest of the pipe could need relining or replacing then it will be factored in to our investment plans for the future.

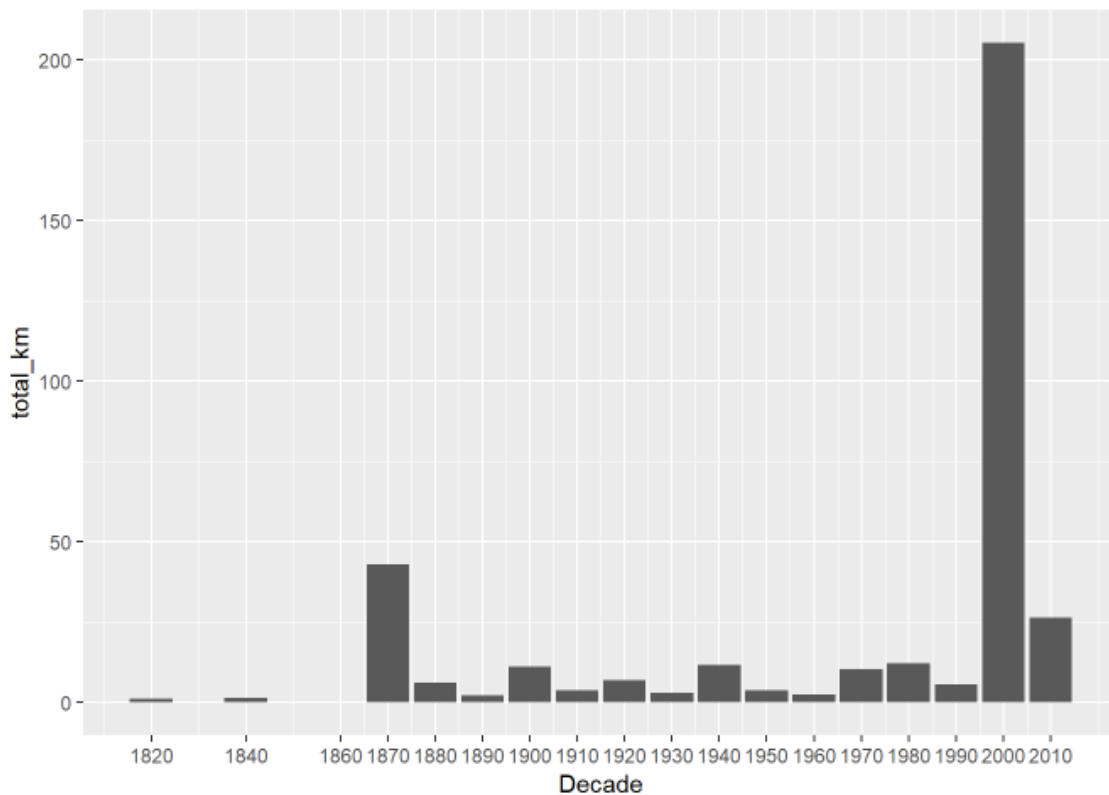
We've not replaced any pipes in the Lea Bridge Road or Waterworks Lane area in recent years. We have fixed ad-hoc leaks as and when they've appeared, but there have been no major mains replacement schemes needed in the area.

When we look at where to focus our investment, we will replace those pipes which are most in need first so this doesn't always mean the oldest are replaced first, as a number of factors cause pipes to deteriorate including the geology of the area. Our business plan for 2020-2025 includes a £11.7bn investment plan, plus an additional £2.1bn to improve the resilience of our water supply systems. This includes replacing 705km of water mains – enough to go round the M25 almost four times.

Length of mains in London Borough of Hackney:

Total distribution mains length: 357 km

Distribution Mains Length by Decade Installed



Trunk Mains Length by Decade Installed

