

turquoise

# Scottish Water

SR21 CUSTOMER ENGAGEMENT PHASE 2 -

THE REMOVAL OF LEAD IN WATER

REPORT JULY 2018



Full colour Thinking from Turquoise for Scottish Water

## Table of Contents

<b>Scottish Water .....</b>	<b>0</b>
<b>Background to the project.....</b>	<b>3</b>
<b>Objectives.....</b>	<b>4</b>
<b>Methodology.....</b>	<b>5</b>
Pre-workshop depth interviews with plumbers .....	5
Vox-pop film .....	7
Pre-workshop online homework exercise.....	7
Co-creation workshops .....	8
Post-workshop web community .....	9
Document structure .....	9
<b>Executive Summary .....</b>	<b>10</b>
Part One – Plumbers .....	10
Part Two - Customers.....	10
<b>Part One - Plumber Depths.....</b>	<b>13</b>
<b>Plumber Tele-depths.....</b>	<b>14</b>
Overall approach for plumber tele-depths .....	14
Objectives.....	14
Background to the plumbers.....	15
Relationship with Scottish Water .....	16
Plumbers attitudes to lead pipes .....	17
The process of lead pipe removal .....	18
Customer reactions to lead pipes .....	19
Scottish Water’s communication about lead pipes .....	21
Conclusions from the five plumber tele-depths .....	22
Summary and recommendations .....	23
<b>Part Two – Scottish Water Customers.....</b>	<b>24</b>
<b>Perceptions of Scottish Water .....</b>	<b>25</b>
Knowledge of what Scottish Water do on their customers’ behalf.....	25
Overall satisfaction with Scottish Water .....	26
<b>Awareness and knowledge of lead .....</b>	<b>27</b>
Awareness and knowledge of lead pipes .....	27
Awareness of the health risks associated with lead .....	27
Barriers to act with regards to lead.....	29
Water quality standards .....	30
Knowledge of pipework responsibility.....	31
Differences in perception and awareness of lead by audience .....	32
<b>The core motivations and messages for removing lead pipes .....</b>	<b>33</b>
<b>Co-creation exercise one .....</b>	<b>33</b>
Core motivations for lead pipe removal .....	33
The underpinning messages.....	34

How/if to enforce the removal of lead .....	34
The role of the ‘Home Buyers’ report .....	35
Roles of the different parties with regards to lead pipe removal.....	35
Differences in motivations and supporting messages by audience.....	36
<b><i>How lead pipe removal should be funded.....</i></b>	<b>37</b>
<b>Co-creation exercise two .....</b>	<b>37</b>
Funding Options .....	37
Post workshop web community and funding .....	39
Differences in how lead removal should be funded by audience.....	41
<b><i>The ideal process for lead pipe removal.....</i></b>	<b>42</b>
<b>Co-creation exercise three .....</b>	<b>42</b>
The process of lead removal .....	42
Timelines for lead pipe removal.....	43
Post workshop web-community and the process.....	43
<b><i>Is there an appetite for removing lead in water?.....</i></b>	<b>45</b>
Differences in the process and the appetite for lead removal by audience.....	46
<b><i>Communication about lead in water .....</i></b>	<b>47</b>
<b><i>Conclusions .....</i></b>	<b>48</b>
<b><i>Recommendations .....</i></b>	<b>50</b>
<b><i>Appendix 1 – Pre-workshop homework exercise .....</i></b>	<b>51</b>
Task 1 - Questionnaire.....	51
Task 2 - Video .....	52
<b><i>Appendix 2 – Co-creation Topic Guide .....</i></b>	<b>53</b>
<b>Scottish Water Removal of Lead Co-creation Topic Guide May 2018 V1A .....</b>	<b>53</b>
Section 1 - Introduction.....	53
Section 2 – Background .....	53
Section 3 – Knowledge of lead pipes.....	53
Section 4 – Co-creation Exercise 1 .....	56
Section 5 – Co-creation Exercise 2 .....	57
Section 6 – Co-creation Exercise 3 .....	58
Section 7 – Current SW Communication.....	59
Section 8 – Summary.....	60
Stimulus C – Part 1 .....	62
Stimulus C – Part 2 .....	63
<b><i>Appendix 3 – Post workshop web community.....</i></b>	<b>37</b>
Post Workshop - Web Community Outline V1A .....	37

## Background to the project

Scottish Water (SW) is undertaking an extensive Customer Engagement Programme (CEP) as part of the Strategic Review of Charges (SR21), which covers the period of 2021 to 2027.

Phase Two of this programme comprises a number of deep dives into key priority areas. In addition, in 2028 there will be a new Drinking Water Directive that will reduce the permissible levels of lead present in mains water from 10µg/l to 5µg/l. As a result, it is important for Scottish Water to understand how it can work with customers, to motivate them and to encourage them to replace lead pipes within their curtilage, as well as any lead pipes remaining in the network.

Currently, Scottish Water has to dose mains water to mitigate the effect of any lead that is present. This would not be known to the majority of customers. Equally, while lead pipes became illegal in new builds from 1969 onwards, there are some 70,000 connections, typically in older properties, that may still have lead pipes. Again, most customers are likely to be unaware of this unless they have had some remedial or building works carried out. Added to this is perhaps the lack of customer understanding of the harmful health effects of lead being present in the water system.

Research was required to explore and understand customer views on how best to approach the removal of lead from the network. To this end, the research needed to focus on the 'outcomes' i.e. how to facilitate this removal.

The core findings from this research are outlined on the following pages.

## Objectives

The overriding research goal of the study is to understand customers views on how best to approach the removal of lead from the network.

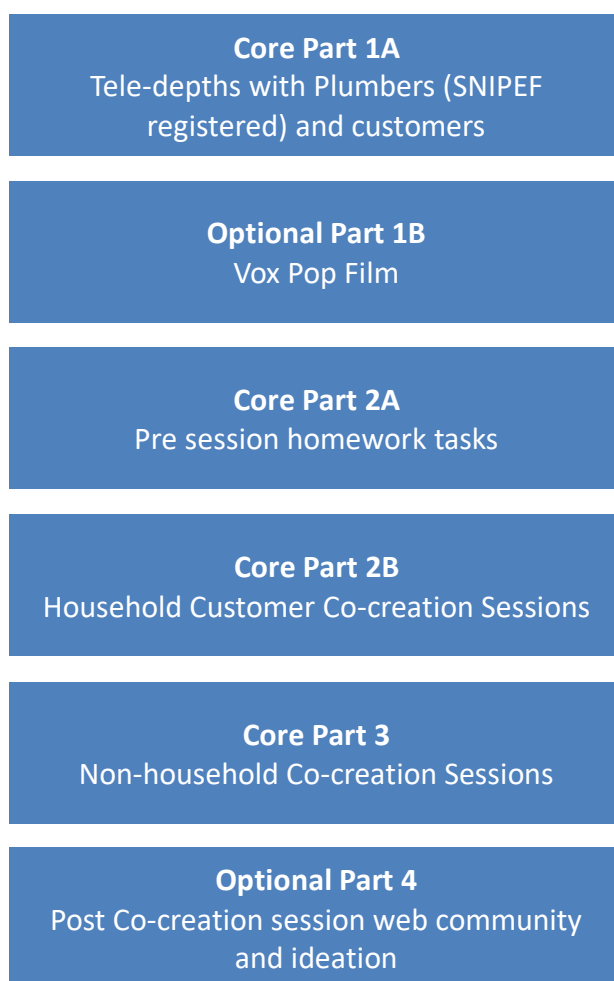
The specific research objectives are...

- To identify the level of awareness of the issue of lead piping, associated fittings and any associated health risks.
- To find out if customers have any knowledge of whether their own property has lead pipes.
- To explore the acceptability of additives being used to counteract any lead presence and whether their use should be minimised.
- To evaluate customer knowledge of drinking water regulations and requirements.
- To verify how customer's view the accountability of the three elements of the network: private, in gardens and Scottish Water public pipes.
- To establish how customers feel the removal of lead pipes and fittings should be enforced (e.g. legislative, identified in home reports) and the information required in support of this.
- To examine the current lead replacement policy and how this needs to change to eradicate lead across Scotland.
  - What would the process need to look like?
- To probe what level of priority the removal of lead should have, whether there should be any financial support and where this support should come from.
- To probe what customers and property owners need to support the removal of lead pipes and fittings.

## Methodology

A qualitative methodology was adopted as the main approach, using a series of co-creation workshops with domestic and business customers. The role of the workshops was for Scottish Water to work with its customers to understand how the removal of lead from water could best be achieved.

These workshops were supported by a number of other approaches, each designed to add insight to the overall project. A schematic outline of all of these approaches can be seen below:



### *Pre-workshop depth interviews with plumbers*

Five tele-depths were conducted with SNIPEF registered plumbers prior to the workshops. These depths were designed to explore plumber perceptions of lead pipes as well as their own customer views on lead. The findings from these depth interviews have been detailed in a separate report. However, the key conclusions and recommendations from these interviews can be seen below:

## Conclusions

- The five tele-depths with plumbers are not a robust investigation but do provide some useful insights as to how plumbers feel about lead pipes and how their customers feel about them.
- Lead pipes are a ‘forgotten subject’. They are no longer a hot topic. There is little about it in the trade press. Currently, interest is in renewables.
- Typically, lead replacement jobs are fairly infrequent. On average, plumbers we spoke to are replacing lead pipes once or twice a month, so from a dozen to twenty a year, if that.
- Thus, it is not a salient issue currently but plumbers strongly believe it would be a good idea for Scottish Water to raise awareness with customers, giving them the tools, via social media, You Tube, Twitter and Facebook via a quick film to show customers how to find and identify lead pipes, e.g. scratch the surface with a coin – it is easy/soft to scratch and does it reveal grey/silver?
- Raising salience is consonant with the current zeitgeist that we want to be healthier and are more aware of what pollutants surround us. The current concern is plastic but there is sense that customers want to get rid of all harmful substances. This would be compounded if customers were aware that Scottish Water has to dose mains water to mitigate the effect of any lead that is present.
- On a positive note, it could bring more work to plumbers, which they obviously welcome although some see this work as specialist, requiring a ‘mole’ or specialist equipment.
- Key reason for replacement is health, as that it a compelling reason and the secondary reason is catching up with today’s technology, having pipes that are fit for purpose that won’t leak, silt up or cause low pressure.
- Customers could be scared and shocked into replacing their pipes with visuals of silted up pipes that no one would want to drink out of. This would be a ‘stick’ approach given that there is no ‘carrot’ in the form of grants nowadays.

## Summary and Recommendations

- Plumbers believed that there is a low level of awareness of lead pipes amongst customers.
  - Typically, customers do not know what type of pipes they have in their properties (or where their stop cock is);
  - Or how to identify them.
- There was some awareness that lead pipes were hazardous to health, but older customers found it easy to ignore this as they had lived in the same house for years with no apparent ill effects and the cost and disruption was too big a barrier to have the work completed.

- There was no awareness amongst customers that Scottish Water were minimising lead through additives.
- Overall, there was a sense that Scottish Water should raise awareness given that it was a health risk.
  - For some lead pipes were the ‘last frontier’ and clearly needed replacing.
  - The question was who was going to pay for it because customers were reluctant in many cases to spend money or they clearly couldn’t afford it and there were no more grants available.
  - It was felt that Scottish Water or the Government needs to take the initiative on this as plumbers felt that they could advise but obviously had no power to enforce regulations or guidelines. If it was mandatory or a legal requirement then householders would have to replace them.
- Could the SNIPEF plumbers be persuaded to work with Scottish Water to notify them of where and when they come across lead pipes?
- Do all home buyer reports indicate where there is a presence of lead pipes? If yes, getting messages into the home buyer reports would be advisable.

The results from the tele-depths with plumbers broadly support the findings from the workshops detailed in this report.

### *Vox-pop film*

At the beginning of the project Turquoise made a film, exploring Scottish Water customers spontaneous perceptions of lead in water. The approach was designed to highlight the knowledge and perceptions of the wider Scottish Water customer base with regards to lead in water.

Scottish Water customers were interviewed and filmed on the streets of Edinburgh and edited in to a sequence of video ‘sound bites’. The film was used within the co-creation sessions to highlight wider views of lead to attendees at the workshops.

The views expressed within the film were largely found to represent the views of those customers attending the sessions. A link to the Turquoise Vox Pop film can be seen below:

<https://youtu.be/mcyUad7bkWA>

### *Pre-workshop online homework exercise*

Prior to the co-creation exercise a pre-workshop online homework exercise was undertaken; this used the homework platform of the Turquoise web-community software. This was designed to understand the level of knowledge about lead pipes prior to respondents attending the co-creation exercise.



Respondents were asked to complete two tasks. Task One was a short online questionnaire and Task Two as a short video. The homework task outline can be seen in Appendix 1 of this document.

The full results from the homework exercise can be viewed by clicking on the link below and choosing either Task 1 or Task 2.

### [Open the Community](#)

Summaries from Task 1 have been included within the Perception of SW and Knowledge and awareness of Lead sections of this report.

In total, 49 respondents completed the pre-workshop homework – 39 domestic and 10 business customers. This represented a completion rate of 92%.

### *Co-creation workshops*

In total, seven co-creation workshops were conducted, five with domestic customers and two with micro, small and medium businesses, as follows:

No.	Date	Location	Audience	Number of respondents
1	Mon 11/06/18	Glasgow, Paisley	Pre-family	8
2	Tue 12/06/18	Glasgow, Govan	BAME / Vulnerable	8
3	Wed 13/06/18	Edinburgh, South Queensferry	State Pensioners	8
4	Thu 14/06/18	Whitburn	Empty Nester	8
5	Mon 18/06/18	Falkirk	SME	8
6	Tue 19/06/18	Edinburgh (Viewing Facility)	Family	8
7	Thu 21/06/18	Dundee	SME	5

Each workshop was asked to work on three co-creation exercises, as follows:

Task 1 – The core motivations and messages for removing lead pipes

Task 2 – How lead pipe removal should be funded

Task 3 – The ideal process for lead pipe removal

To undertake the co-creation exercises, each workshop was split into two teams typically with four respondents in each; one workshop had teams of, two and three respectively.

Respondents stayed in the same teams as designed for the first co-creation exercise and likewise for the third co-creation exercise.

Each team also had one additional Scottish Water person present as one of the team – Scottish water personnel were from the water service strategy team and customer experience. The SW personnel were not there to lead the team but to work with them as a part of that team, to arrive at solutions. They were also there to answer any technical questions that respondents asked.

The bulk of the following document highlights the findings from the seven-co-creation workshops. A copy of the topic guide used in the co-creation workshops can be seen in Appendix 2 of this document.

### *Post-workshop web community*

The post-workshop web community was used to double check that the outputs of the workshops was a fair representation of customer views.

The full results from the post-workshop web community exercise can be viewed by clicking on the link below:

[Open the community](#)

The post-workshop web community outline can be seen in Appendix 3 of this report.

### *Document structure*

The following document has been split into two parts:

1. Part One – Plumber Tele-depths
2. Part Two – Scottish Water Customers

## Executive Summary

### *Part One – Plumbers*

The small number of plumber tele-depth interviews conducted prior to the customer research have reinforced the findings from the customer research. The key reasons for lead pipe replacement are:

- Householders, typically young families, moving to an older property and wanting to undertake fairly largescale renovation/up-dating.
- Coming across lead pipes when fitting a new boiler or bathroom.
- When there is a leak (caused by lead pipes).
- Low water pressure is explored, and lead pipes are the reason (silting up and leaks).

Similarly, the key barriers to the removal of lead in the minds of plumbers, are:

- Inertia – customers have lived many years in the same house to a ripe old age with no problems so why bother? 'If it ain't broke, don't fix it'.
- Cost which for some is prohibitive.
- Communal pipes, often in a tenement, so although a customer can replace them in their property, the pipe into the property can't be replaced so is there any point?
- Disruption as often pipes in older properties, are boxed in.
- There's no law against having lead pipes.

Plumbers, in the main, would welcome a focus on the removal of lead as this would most likely result in more work for themselves.

### *Part Two - Customers*

Customers are generally very positive about the quality of the water they receive in Scotland and equally positive towards Scottish Water.

Most customers are not aware and surprised to find out, that Scottish Water is a publicly owned business. Customers are generally more positive when they understand this, previously thinking that Scottish Water is simply there to make profits. As such we strongly believe this is currently a missed opportunity for Scottish Water and something that should be made more of.

Very few customers are aware of lead still being present in the system and are generally surprised to find out, it still is.

The vast majority of customers have a vague awareness that ‘lead is not good for you’ but only a very small minority are aware of the real side effects.

When probed, most customers believe that it is the health risks associated with lead in water, especially for children and pregnant women, that will make customers act. The majority of customers do not want lead to be present. However, there is a small minority who do not believe the medical evidence and believe the cost of removal as a waste of money. These people tend to be older and have lived in their properties for a number of years without any obvious effects, even if they believe lead is present.

Customers are not aware of the water quality standards but assume that Scottish Water is ‘doing something’. Equally, there is very limited awareness of pipework responsibility.

The six core motivations that will make people act with regards to lead removal, are:

1. The health risks associated with lead pipes.
2. Reducing the impact of the costs associated with lead removal.
3. Pro-active testing of the pipes/water in properties by Scottish Water.
4. Legislation to ensure that removal happens.
5. The effect on property values if lead removal is not undertaken.
6. The possible scrap value of the lead being put towards the cost of removal.

There is a general feeling that lead removal will not happen unless there is legislation to enforce it. However, some customers do not want government legislation and the choice to remove, to be left to customers. These customers would like to see a time limit set for customers to act, with penalties invoked if there is no action.

Most customers would like to see the presence/no presence of lead identified in a home buyers report.

The majority of customers see SW’s main role as being to advertise/communicate about lead pipes and the associated health risks. In addition to this, SW is to supervise the work and to source contractors – customers want an approved list of contractors/plumbers. There is also an expectation that SW will sign off the work to say it has been completed to the required standard.

The key role for the customer is to act upon the information they are provided with (or not, depending on legislation) about lead/health risks.

With regards how lead removal would be funded, grants for those with lead pipes were preferred by more people (1<sup>st</sup> choice), followed by increasing the water element of the council tax bill for everyone (2<sup>nd</sup> choice) in Scotland and not just those with lead pipes. However, if means testing was required to assess who was eligible for a grant, then the majority felt that increasing the water element of the council tax bill, would be simpler and cheaper, for as long as it takes to remove all lead.

Those who don’t have lead pipes (the majority) *generally* do not want to have to pay for those customers who do have lead pipes (the minority). This raises the spectre of social responsibility and fairness in terms of how removal will be funded.

Customers generally felt it should be possible for SW to deliver and collect a home testing kit to all/targeted households to identify the presence of lead.

In terms of the process for the removal of lead, customers identified six key stages:

1. Stage 1 - A targeted awareness campaign by SW.
2. Stage 2A – Send/deliver home testing kits.
3. Stage 2B – SW do pro-active testing of pipes in areas with high pre-1970's housing.
4. Stage 3A – Confirm lead present and SW provide a list of approved contractors.
5. Stage 3B – If no lead, no action required but the property is added to a lead-free register.
6. Stage 4 – Customers decide if they wish to proceed.
7. Stage 5 – Customers liaise with contractors.
8. Stage 6 – SW verify the work was carried out, the property is now lead free and the property is added to the lead-free register.

Customers believe that SW and customers should work towards 2028/2030 as an ideal point by which lead removal should be achieved.

On the basis of the seven workshops, the majority of customers do not want to have lead pipes present. To this extent they would support SW in the removal of lead from water.

However, there is a small group who are not convinced by either by the medical evidence, the real numbers affected by lead poisoning, or the costs involved in its removal. Given this was a qualitative exercise the numbers who feel like this is unknown (albeit they appear a minority).

Customers perceive that the use of communication about lead still being present in water, is key. All workshops talk about communication being a critical first stage in the process of raising awareness of lead in water for the wider population. This was seen to be SW's responsibility.

## Part One - Plumber Depths

## Plumber Tele-depths

### *Overall approach for plumber tele-depths*

- Turquoise conducted five tele depth interviews.
- The depths were conducted with SNIPEF plumbers from small (one man band) to medium plumbing companies.
- Cities included Inverness, Aberdeen, Glasgow and Edinburgh.
- They were conducted on the 31st May and 1<sup>st</sup> June 2018.
- Each depth was of 30 to 40 minutes duration.

### *Objectives*

- To explore attitudes towards lead pipes.
- To evaluate relationship with and attitudes towards Scottish Water.
- To understand the process with which lead pipes are 'discovered'.
- To explore the customer experience from the plumbers' perspective.
- Evaluate plumbers' awareness of Scottish Water's communication about lead pipes.

### *Background to the plumbers*

There was a mix of plumbers in the sample who worked for themselves and family run firms with up to 6 plumbers. Many had many years' of experience as a plumber from 20 to 50 years. Some started out as gas fitters.

Motivations for being a plumber, included:

- Variation in work.
- Problem solving, challenging in a good way.
- Each job calls for a different solution.
- Customer satisfaction.
- Not being stuck in an office.

I wouldn't want to be stuck in an office – that would be so mundane.

Frustrations/difficulties involved in being a plumber, included:

- Complicated contractual issues where no one takes responsibility.
- Hard, physical work which gets harder as you get older.
- When working for self time consuming as spend evenings invoicing, etc.
- Chasing payments, non payment of invoices.

How it has changed over the years? For the better/the worse?

- Leaps in technology have made fitting joints easier.
- But there is more bureaucracy, with complicated contracts, and the job has become more technical.



### *Relationship with Scottish Water*

Plumbers were generally positive towards Scottish Water. Their working relationship with Scottish Water was described as good, especially at a local level. Typically, they come across Scottish Water for:

- Site/installation inspections.
- Help in finding valves, turning off a stop cock.
- Clearing sewage in a shared sewer.

A minority report disputes and frustrations when installations are not passed but it is not the plumbers' fault but the fault of the designer.

There was little or no direct contact from Scottish Water in regard to the removal lead pipes only indirect contact once job had been finished to connect to stop cock.

Many plumbers felt that widespread replacement of lead pipes is a thing of the past i.e. typically in the 1980s when there were grants of up to 90% available in some councils e.g. Glasgow.

### *Plumbers attitudes to lead pipes*

The unanimous response from plumbers is that lead pipes should be removed at the earliest opportunity. There are three key reasons:

- Health hazard i.e. lead poisoning, especially dangerous to children and babies (although plumbers are hazy on the details).
- Lead pipes have come to the end of their life and are prone to leaks and low pressure.
  - If they repair the leak, the chances are that the pipe is weak and will leak somewhere else within a short period of time.
- They tend to fill up with silt.

Lead pipe replacement jobs generally take place as a result of:

- Householders, typically young families, moving to an older property and wanting to undertake fairly largescale renovation/up dating.
- Coming across lead pipes when fitting a new boiler or bathroom.
- When there is a leak (caused by lead pipes).
- Low water pressure is explored and lead pipes are the reason (silting up and leaks).

Plumbers are generally not getting calls from customers to remove lead pipes as a standalone, spontaneous request:

- Often older tenements have lead pipes and not all of them can be replaced if they go through communal areas or a number of flats.
- Equally, there is a perception that older customers are less bothered about replacing lead pipes:

If they are 90 years old and have always lived in the same house, they are not going to bother with replacing lead pipes.

Most plumbers that we interviewed, say that they are coming across lead pipes less frequently these days. Previously as there was a 'mass clear out' with the grants in the 1980s.

- In terms of frequency of replacing lead pipes typically plumbers are conducting one or two lead pipe replacement jobs a month, or 12 -24 a year.

### *The process of lead pipe removal*

There does not appear to be a particular process with regard to lead pipe replacement. Often plumbers come across them when they undertake a job. Subsequently they feel it is their duty to tell the customer and advise that the pipes be replaced for health reasons predominantly, and that they have come to the end of their life and will cause leaks and low pressure.

It is rare that a customer will phone a plumber pro-actively to replace lead pipes. This happened back in the 80s when grants were available. ‘Pop up’ plumbers appeared who specialised in lead pipe replacement to capitalise on this niche.

Some plumbers see it as more specialised work as specific equipment is required i.e. a ‘mole’ to avoid digging up driveways and lawns. Some plumbers contract this work out, others have to hire specific equipment which can lead to problems.

Lead pipes are ‘easily’ identified by visual recognition by the plumber:

- Grey
- Soft
- Joints are soldered together
- Sometimes patched
- White dust or ‘poison’ marks on them

Upon further investigation:

- Easy to scratch pipe and see silver/grey
- Heavy

Plumbers believe there is/should be a possibility that a water sample could be taken and sent away for analysis.

### *Customer reactions to lead pipes*

Customers' response on hearing they have lead pipes varies. Many younger customers express mild to moderate concern and agree that pipes should be replaced especially if they have young children

- Customers fear health issues relating to lead, brain damage? Cancer?
  - Lead has been removed from petrol and paint after all!

Some customers are not surprised as they have lead pipes as they were alerted to them in their homebuyers' report, or had suspicions given the age of the house.

Many older customers simply shrug and take little notice of it because if they ignore the problem it 'pretty much goes away'.

Some reluctantly agree that they should be replaced in the interests of avoiding future problems with leaks/low pressure.

Some customers (often with children) are conducting renovations anyway, so it makes sense to up date pipes to prevent future problems such as leaks or low pressure. So it is a combination of up grading and addressing health issues.

Depending on shower or hot water system they want to install, up grading of the pipes may be necessary to increase water pressure if it is a gravity lead system.

However, some customers don't want to do anything about it, because they deem themselves 'fit and healthy' and 'can't be bothered' with the disruption and cost.

- Typically these customers are older and have lived in their properties for several years if not decades.
- These customers argue or insist that they have lived in their property for many years and it has 'never done me any harm'.

The key barriers to lead removal/replacement:

- Inertia – customers have lived many years in the same house to a ripe old age with no problems so why bother? 'If it ain't broke, don't fix it'.
- Cost which for some is prohibitive.
- Communal pipes, often in a tenement, so although a customer can replace them in their property, the pipe into the property can't be replaced so is there any point?
- Disruption as often pipes in older properties, are boxed in.
- There's no law against having lead pipes.

#### **Key insight:**

- Many of the views expressed by the plumbers reflect the findings from the customer research in Part Two of this document – see page 29.

All plumbers advise to replace lead pipes as it is their professional duty to do this.

- 'We are duty bound to tell the customer if something is not right in their system'.

Some plumbers are more 'sticklers' to 'rules' than others.

- Some plumbers will say 'they need to come out, they've reached the end of their life and they are hazardous'.

Other plumbers are more 'easy going' and will say to their customers, 'you have a choice; they need replacing and I strongly advise it, but it is expensive and disruptive so it is up to you'.

Plumbers argue they have no power to insist it is done, nor do they want to look like that they are 'ripping their customers off' or trying to 'drum up work'.

### *Scottish Water's communication about lead pipes*

There is a widespread lack of awareness of Scottish Water's communication of lead pipes replacement.

Many plumbers feel that due to the lack of grants nowadays, that 'most' of the lead pipes have been replaced and there is not much lead pipe replacement work being undertaken, so it is off the agenda.

However, upon reflection, lead pipe replacement can be seen as the 'last frontier' that needs addressing. Scottish Water has updated their mains so it may well be time for customers to do the same.

Typically, the only contact that plumbers have with Scottish Water is when they are having installations checked off.

They rarely visit the SW website and haven't seen or are aware of any advertising, postcards through the door, or leaflets referring to it. Nor are there articles about it in the trade press.

The issue is that there are no longer any grants, therefore it is the responsibility of the customer to replace lead pipes and if there is a lack of money then many customers will be reluctant to get them replaced.

### *Conclusions from the five plumber tele-depths*

The five tele depths are not a robust investigation, but do provide some useful insights as to how plumbers feel about lead pipes and how they believe their customers feel about them.

Lead pipes tend to be regarded as a 'forgotten subject'. They are no longer a hot topic. There is little about it in the trade press. Currently interest is in renewables.

Typically, lead replacement jobs are fairly infrequent. On average, plumbers we spoke to are replacing lead pipes once or twice a month, so from a dozen to twenty a year, if that.

Thus, it is not a salient issue currently but plumbers strongly believe it would be a good idea for Scottish Water to raise awareness with customers, giving them the tools, via social media, You Tube, Twitter and Facebook via a quick film to show customers how to find and identify lead pipes, e.g. scratch the surface with a coin – it is easy/soft to scratch and does it reveal grey/silver?

Raising salience is consonant with the current zeitgeist that we want to be healthier and are more aware of what pollutants surround us. The current concern is plastic but there is sense that customers want to get rid of all harmful substances. This would be compounded if customers were aware that Scottish Water has to dose mains water to mitigate the effect of any lead that is present.

On a positive note, it could bring more work to plumbers, which they obviously welcome, although some see this work as specialist, requiring a 'mole' or specialist equipment.

Key reason for replacement is health, as that is a compelling reason and the secondary reason is catching up with today's technology, having pipes that are fit for purpose that won't leak, silt up or cause low pressure.

Customers could be scared and shocked into replacing their pipes with visuals of silted up pipes that no one would want to drink out of. This would be a 'stick' approach given that there is no 'carrot' in the form of grants nowadays.

### *Summary and recommendations*

Plumbers believed that there is a low level of awareness of lead pipes amongst customers

- Typically customers do not know what type of pipes they have in their properties (or where their stop cock is).
- Or, how to identify them.

There was some awareness that lead pipes were hazardous to health but older customers found it easy to ignore this as they had lived in the same house for years with no apparent ill affects and the cost and disruption was too big a barrier to have the work completed.

There was no awareness amongst customers that Scottish Water were minimising lead through additives.

Overall, there was a sense that Scottish Water should raise awareness given that it was a health risk

- For some lead pipes were the 'last frontier' and clearly needed replacing

The question was who was going to pay for it because customers were reluctant in many cases to spend money or they clearly couldn't afford it and there were no more grants available.

It was felt that Scottish Water or the Government needs to take the initiative on this as plumbers felt that they could advise but obviously had no power to enforce regulations or guidelines. If it was mandatory or a legal requirement then householders would have to replace them.

Could the SNIPEF plumbers be persuaded to work with Scottish Water to notify them of where and when they come across lead pipes?

Do all home buyer reports indicate where there is a presence of lead pipes? If yes, getting messages into the home buyer reports would be advisable.



## Part Two – Scottish Water Customers

## Perceptions of Scottish Water

### *Knowledge of what Scottish Water do on their customers' behalf*

There is no question that customers value the water they receive from Scottish Water. For a number of businesses in particular, it is, unsurprisingly, an important element in their business process (Public Houses, Café's, Guest Houses, Hairdressers, etc.).

We wouldn't be able to function properly without it.

Many customers (especially those who travel abroad) are also thankful for the quality of their drinking water.

I think the quality of the water in Scotland is the best.

I think we are very lucky with the quality of the water.

There are the odd one or two respondents who simply do not like the taste of their water and these will typically purchase bottled water.

However, customer knowledge of what SW actually do on their behalf is limited. Most say that 'SW is responsible for the tap water', but very few mention the waste side, if at all.

There is more mis-understanding of what SW is and does for customers than a solid knowledge base. When asked at a spontaneous level whether SW is a publicly or privately-owned business, most customers tend to assume that SW is, privately owned, *'making profits at the expense of customers'*. Most are 'positively' surprised to find out that it is in fact, publicly owned.

#### Key insight:

Customers are not on the whole aware that SW is a publicly owned business. Most believe that SW is a privately-owned business. Customers are generally more positive towards SW once they understand this.

This is something that we feel is a missed opportunity for SW and something that they should make more of.

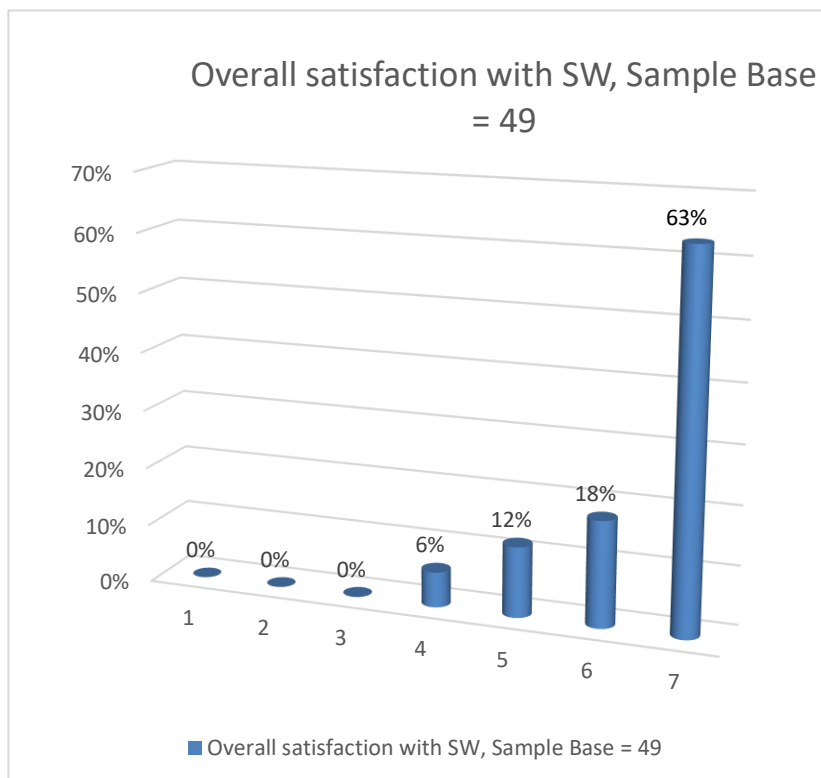
Customers are also uncertain about various aspects of their own properties. Within the online homework exercise conducted prior to the workshops, customers were asked a number of things about their properties. Asked if they knew when their house was built, 51% (25 people) claimed pre-1969, 39% (19 people) post-1969, but 10% (5 people) didn't know when it was built.

Asked if they knew where the stopcock for their property was, some 67% (33 people) claimed to know. The rest either did not know or were uncertain.

Customers were further asked what material the water pipes from the stopcock through to the property and internal pipes, were made out of. 55% (27 people) had no idea, 14% (7 people) thought they were made out of plastic and the rest (31%, or 15 people) thought it was ‘some other material’. This probably reflects the wider community i.e. most don’t know.

### Overall satisfaction with Scottish Water

While customers are less aware of what SW do on their behalf, interestingly they are largely satisfied with SW.



In the homework exercise we asked customers to rate SW on a 7-point scale, where 7 = very good and 1 = very poor.

81% of workshop attendees scored a 6 or 7 on this scale (very good or good), this represented 40 of the 49 participants, with 63% (31 people) giving a ‘top box’ score of 7.

No one in the workshops gave SW a negative score (1, 2 or 3).

These results also reflect the broad feelings of customers in other focus groups.

## Awareness and knowledge of lead

### *Awareness and knowledge of lead pipes*

Most customers believe that there are no/very few lead pipes still present in the system. The assumption is that these were eradicated *'quite some time ago'*. As a result, many are surprised to find out that there are still some lead pipes present in the system.

A number are even *'shocked'* and in a few cases, *'annoyed'* to discover that lead pipes were still present.

I thought they had all gone by now.

I thought they had got rid of those back in the sixty's.

There are still lead pipes!?

There is a definite but general perception that lead is *'not good for you'*, leading to *'lead poisoning'*, but unless a respondent had a deeper knowledge (such as a retired plumber) there was a much more limited understanding of what the specific health risks associated with lead pipes, were.

It was only after customers were probed that respondents started talking about the removal of lead from petrol and paint and no longer seeing lead toys – it was not a clear association that lead may not be good for you.

Any heavy metal is bad news.

Isn't it meant to be bad for children in particular?

In terms of how important the presence of lead is to customers (again from the homework exercise), it was interesting to see that it ranked third equal in a list of five areas; on a par with the quality of rivers and seas. These results can be seen in the ranked list below:

*What are the most important areas for SW to focus on?*

1. Sewer flooding in the home – 43% (21 people) ranked 1<sup>st</sup>.
2. Leaking or burst pipes – 25% (12 people) ranked 1<sup>st</sup>.
3. The presence of any lead in the water – 18% (9 people) ranked 1<sup>st</sup>.
4. The quality of rivers and seas – 18% (9 people) ranked 1<sup>st</sup>.
5. Sewer flooding outside the home – 2% (1 person) ranked 1<sup>st</sup>.

### *Awareness of the health risks associated with lead*

At a spontaneous level, most customers believe that the key to getting the wider customer footprint to act with regards to lead pipes, would be to promote the *'health risks'* associated with lead pipes. This was prior to probing customers on specific health risks.

However, within the online homework exercise, we asked customers if there were any *health benefits* to having lead present in the water system. 57% (28 people) say no, but worryingly, 43% (21 people) believe that there might be i.e. most people don't really know. When asked if there were any *health risks* associated with lead, 53% (26 people) believe there are, but 47% (23 people) don't know.

In order to have a more informed discussion of the health risks of lead, customers were shown information detailing the health risks within the workshops. This was NHS information and in line with SW factsheets/DWQR. A brief overview of these can be seen below:

### Stimulus A

*Exposure to lead can be harmful especially to unborn babies and young children. Children absorb more lead than adults due to their growing bones and other organs which lead can become deposited in.*

*The signs and symptoms in young children can include:*

- *irritability and fatigue*
- *loss of appetite and weight loss*
- *abdominal pain*
- *vomiting*
- *constipation*
- *hearing loss*
- *developmental delay and learning difficulties*

*Although children are at increased risk of the effects of lead poisoning, exposure via drinking contaminated water can also result in illness in adults. Even if you are experiencing these symptoms, it does not always mean you have lead poisoning.*

*Symptoms in adults can include:*

- *high blood pressure*
- *abdominal pain*
- *constipation*
- *joint and muscle pain*
- *pain, numbness or tingling of the extremities*
- *headache*
- *miscarriage or premature birth in pregnant women*
- *fatigue*
- *memory loss*

When specifically probed on the above, customers are most concerned about the health risks for children and pregnant women in particular. These are the two areas that feature most in terms of the health risks and which are felt would have the most impact with the wider population.

It really has to be the pregnant women and children effects.

Does it really affect their IQ by that much?

**Key insight:**

The health risks for young children and pregnant women are the key motivators to stimulate a response from the wider population.

However, there is a small but consistent group of individuals who are not convinced by the health risks:

What is the medical evidence to back this up?

I am pretty certain I have lived in a house with lead pipes for the last 20 years and it has done me no harm!

These people tended to believe that the actual number of people who are affected by lead poisoning is too small to worry about. As such the cost of replacing the lead pipes was seen as a complete waste of money.

How many people have actually died from lead poisoning?

Surely the cost of doing this outweighs the numbers affected!?

These people would also want to see an independent body providing this evidence and not SW. Suggestions included the NHS or central Government.

**Key insight:**

There is a small group of people who will be unconvinced of the need to replace lead pipes. These are typically older respondents. Consideration needs to be given as to how these people are dealt with/forced to act.

**Barriers to act with regards to lead**

When customers were probed at a spontaneous level as to what would prevent them from acting if they found they had lead pipes; there are three key factors:

1. (The general lack of knowledge about lead being present).
2. The cost of getting the work done.
3. The upheaval as a result of the work and how long the work might take.

### Water quality standards

Customers assume that SW is doing ‘something’ to mitigate the effect of lead in the water. However, they are distinctly ‘hazy’ on what that ‘something’ might be. In the main, where ‘something’ was mentioned, it tended to be replacing any lead pipes/water mains that were still present.

Only one person from the seven workshops mentioned that SW dose the water to counteract the effects of lead; having previously worked as a plumber.

Customers were read the following explanation of how SW currently mitigate the effect of lead...

*Phosphate is added to the treated water leaving the treatment works to help reduce exposure to lead. The phosphate helps build up a protective layer inside lead pipes both in the distribution network and on the customers’ side within the property.*

While many perceive that SW dosing the water as a positive (accepting this at face value), there are also a significant minority who do not like the idea of any additives being used (at all). These people are anti/fear the idea of additives being used. A number of customers erroneously mention the addition of ‘fluoride’ as part of the treatment process, which has not in fact been added to water.

What are the implications of phosphates being added?

I don't like the idea of stuff being added to our water!

Customers are certainly unaware of the cost of dosing the water and no one mentioned this element of the treatment at a spontaneous level.

### Knowledge of pipework responsibility

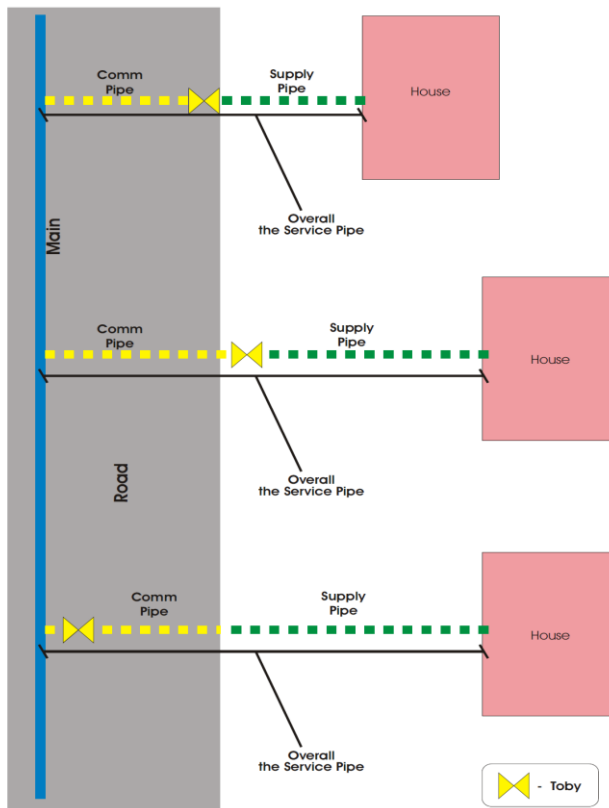
Customers are split on whose responsibility the pipework is. Some homeowners accept that any

pipes in their home, are their responsibility. Much like the roof on the property, the walls and windows.

Others simply assume that the pipes are Scottish Waters responsibility (almost irrespective of where those pipes are).

To aid customer understanding, customers were shown the diagram opposite (the current pipe responsibility – **Stimulus B**), showing customers that the supply pipe, from the stopcock (Toby) through to the pipes in their house, was their overall responsibility (coloured green) and the comm pipe (shaded yellow) was SW's responsibility.

The reality is that very few customers are really aware of whose pipework is whose responsibility.





### *Differences in perception and awareness of lead by audience*

Audience	Perceptions of SW	Awareness of lead & Pipework Responsibility
<b>Pre-family</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Surprised lead is still present. Little knowledge of pipework responsibility.
<b>Family</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Surprised lead is still present. As a group, these customers are more horrified about the possible health side effect of lead for their children. Little knowledge of pipework responsibility.
<b>Empty Nester</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Some more likely to believe lead was eradicated in the 1960's or 1970's. A small minority not convinced of the need to remove or the medical evidence with regards to lead. Little knowledge of pipework responsibility.
<b>BAME/Vulnerable</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Surprised lead is still present. Little knowledge of pipework responsibility.
<b>State Pensioner</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Some more likely to believe lead was eradicated in the 1960's or 1970's. A small minority not convinced of the need to remove or the medical evidence with regards to lead. Little knowledge of pipework responsibility.
<b>SME's</b>	No real differences observed – most are very pleased with the quality of the water. Very few are aware it is a publically owned organisation.	Surprised lead is still present. Believe they have a duty to protect staff and customers from the effects of lead.

## The core motivations and messages for removing lead pipes

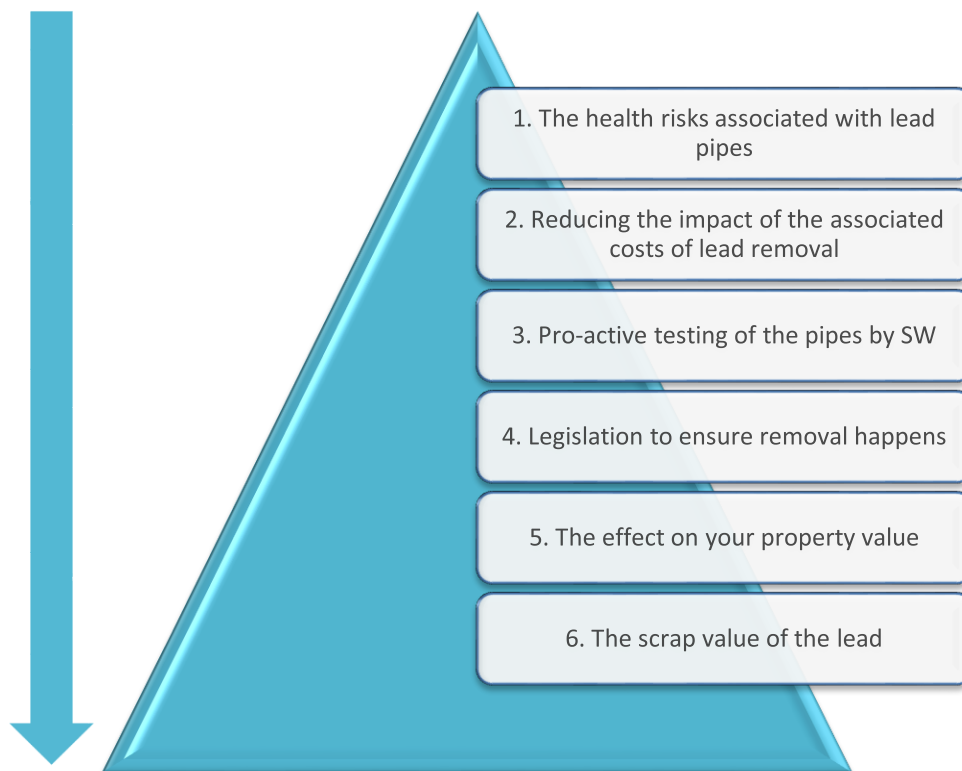
### Co-creation exercise one

In the first co-creation exercise customers were asked to determine the core motivations that would make the wider public act with regards to lead pipes and the under-pinning messages that were required to support each of those.

### *Core motivations for lead pipe removal*

There are a number of core motivations that customers talk about. These can be seen in the diagram below, which rank these from top to bottom (No 1 being the key motivation).

It was pretty much unanimous across the groups that the ‘health risks’ associated with having lead pipes was the core motivation that would make the wider population act.



### *The underpinning messages*

Having asked workshop attendees to identify the core motivations that would make customers act with regards to lead pipes, they were also asked to identify the messages that would be required to underpin each core motivation.

In the diagram below, the motivations are shown in the left-hand column (Shaded in turquoise) and the under-pinning messages for each motivation are shown against each. The diagram represents a summary from the seven workshops.

Motivations	Under-pinning messages	Under-pinning messages	Under-pinning messages	Under-pinning messages
Health Risks (1)	Pregnant women / cause of premature births.	Impact on Child development/ impact on IQ	Customers do not want scare mongering.	A factual statement of the side effects and issues plus the medical evidence.
Reducing the impact of costs (2)	Grants/funding available.	Should be a time limit for funding availability.	If work carried out in 1 year 100%, in 5 years, 50%, 10 years, 0%.	
Pro-active testing of pipes (3)	SW are testing pipes in targeted areas.	SW advertise the health impacts.	Timescales of when SW will be testing in which areas.	
Legislation (4)	Customers are split on whether it should be enforced by law.	But, many accept it will need to be enforced.	Most felt there should be a set time limit to act, with fines where nothing is done.	
Impact on property values (5)	Reduces the potential sale value of property if lead present.	If work is not done, withhold costs for replacement from the property sale.		
Scrappage value of lead (6)	Can the scrappage value of lead contribute to cost of works.			

### *How/if to enforce the removal of lead*

Respondents in the workshops were split on whether legislation should be used to enforce the removal of lead.

I can't see people doing this without any legislation.

People should be left to decide for themselves.

There is a larger group who do not believe that the removal of lead will happen without the use of legislation to back it up. On the flip side, there is a smaller group who believe that legislation should not be used and that it should be left up to the individual to decide.

Where there is more consistency, is that (with or without legislation) there should be a time limit within which people are required to act to remove the lead. If they fail to act within this period, then there should be fines.

This was linked to the possible grants available for removal such that if people acted within e.g. 12 months, they would get 100% of the grant, if they acted in 2 to 5 years, they would get 50% and 6 to 10 years would get nothing. After 10 years, a fine would be imposed.

### *The role of the 'Home Buyers' report*

While the process above was felt to be the most appropriate, virtually every workshop wanted the presence of lead (or not) to be declared in the 'home buyers report'. This links to the desire for a lead-free register highlighted by respondents, as well as giving buyers a means of negotiating costs with the seller of the property. There was an assumption that this would be part of the process.

### *Roles of the different parties with regards to lead pipe removal*

#### *The role of Scottish Water*

Most customers see SW's main role as being to advertise/communicate about lead pipes and the associated health risks. In addition to this, SW is to supervise the work and to source contractors – customers want an approved list of contractors/plumbers. There is also an expectation that SW will sign off the work to say it has been completed to the required standard.

Customers also expect that SW will replace any lead still found to be present in the water mains and in the communication pipe.

Their final role is to create a database of all properties and areas with lead present and to create a lead-free register for all properties that have had work done, or where no lead was found to be present.

#### *The role of the customer*

The key role for the customer is to act upon the information they are provided with (or not, depending on legislation) about lead/health risks.

From the workshops it would appear that other than liaising with contractors, most customers don't want any other responsibility, preferring to leave the organisation and supervision of any work to SW.

#### *Who should take the lead?*

Across the groups there was a feeling that Central Government should take the primary lead given it was seen as a 'health issue' and to provide the gravitas required. However, it was also expected that SW and Local Authorities (LA's) would also need to play a role.

It was felt the LA's would have up to date lists of housing stock (and ages of properties) whereas SW would be the primary testing body and organise the works.

#### *What is a realistic timescale for lead pipe removal?*

Most customers felt that an ideal target should be to try and achieve the removal of lead by 2028 (or 2030), when the new water quality regulations come into play.

A minority felt this timescale may be too short and suggested trying to achieve the removal in the next 20 to 30 years.

### *Differences in motivations and supporting messages by audience*

Audience	Core motivations	Supporting messages
Pre-family	No real differences observed.	No real differences observed.
Family	No real differences observed.	No real differences observed.
Empty Nester	No real differences observed.	No real differences observed.
BAME/Vulnerable	No real differences observed.	No real differences observed.
State Pensioner	No real differences observed.	No real differences observed.
SME's	Similar motivations but they believe they have a duty to protect both staff and customers from the effects of lead.	No real differences observed.

## How lead pipe removal should be funded

### Co-creation exercise two

The second co-creation exercise was tasked with identifying how the removal of lead could be funded. Respondents were asked to generate a list all the possible funding routes that they could identify, as well as their overall preference.

### Funding Options

A number of funding options were created. Again, the table below summarises the core (consistent) responses from the workshops. There were essentially four main types of funding scheme.

Grants for those with lead pipes were preferred by more people (1<sup>st</sup> choice), followed by increasing the water element of the council tax bill for everyone (2<sup>nd</sup> choice) in Scotland and not just those with lead pipes.

Key Funding Mechanism	Whom is eligible	Caveats	Caveats	Caveats
Grants (1)	Those who have lead pipes. Means tested / based on council tax band.	But Vulnerable and elderly don't want/expect to pay anything.	Grants are preferred but maybe more expensive to administer than increasing the water element of the council tax bill.	
Increase in the water element of the council tax bill (2)	Universal i.e. everyone.	Flat rate for all seen as the simplest and cheapest.	Means testing everyone is seen as expensive.	Everyone pays a certain amount for as long as required/till complete.
Providing a capped charge per property	Universal i.e. everyone.	A fixed rate per property to replace the lead pipes.	Expectations of costs are small e.g. £250 per property.	Customers do not specify how this would be funded.
Loans/payback scheme for private properties	Available to all. Landlords/factors responsible in rented properties.	Interest free over 5 years.	Repaid as part of the water bill.	If Property is sold, then money is taken from sale proceeds.

Amongst the workshop attendees there is a preference for making grants available (to everyone i.e. universal) to get lead pipes removed. There was also a general feeling that these grants should be

'means tested' such that someone in 'a castle' pays proportionately more than someone in a typical terraced house i.e. the better off are not subsidised.

However, it was felt that the costs of administering the means test itself, could be prohibitively expensive and as such most people felt that the simplest and easiest way of funding the removal would be to increase water bills/council tax across the board until all lead pipes have been replaced/until complete.

**Key insight:**

Increasing the water bill/council tax is seen as the simplest and cheapest funding route for as long as is required to complete the work.

If grants or increases in the council tax bill were not feasible, customers tended to fall back on making interest free loans available.

Customers would like SW to set a capped/fixed cost per property, so that customers know the real cost up front and are not '*ripped off by unscrupulous contractors/plumbers*'.

Landlords and Factors would be responsible for paying in blocks of flats and tenements that are rented.

However, the post-workshop web-community has also highlighted the fact that while increasing the council tax is the simplest funding route, there is still the question of who should have to pay.

Those who don't have lead pipes (the majority) *generally* do not want to have to pay for those customers who do have lead pipes (the minority). This raises the spectre of social responsibility and fairness in terms of how removal will be funded. This view was fairly consistent across the post workshop web-community.

**Key insight:**

Care needs to be taken on the positioning of the funding route and who ultimately has final responsibility for paying for the removal of lead.

**Post workshop web community and funding**

The community was used to clarify a number of issues about funding but please note that only 19 respondents completed the clarification.

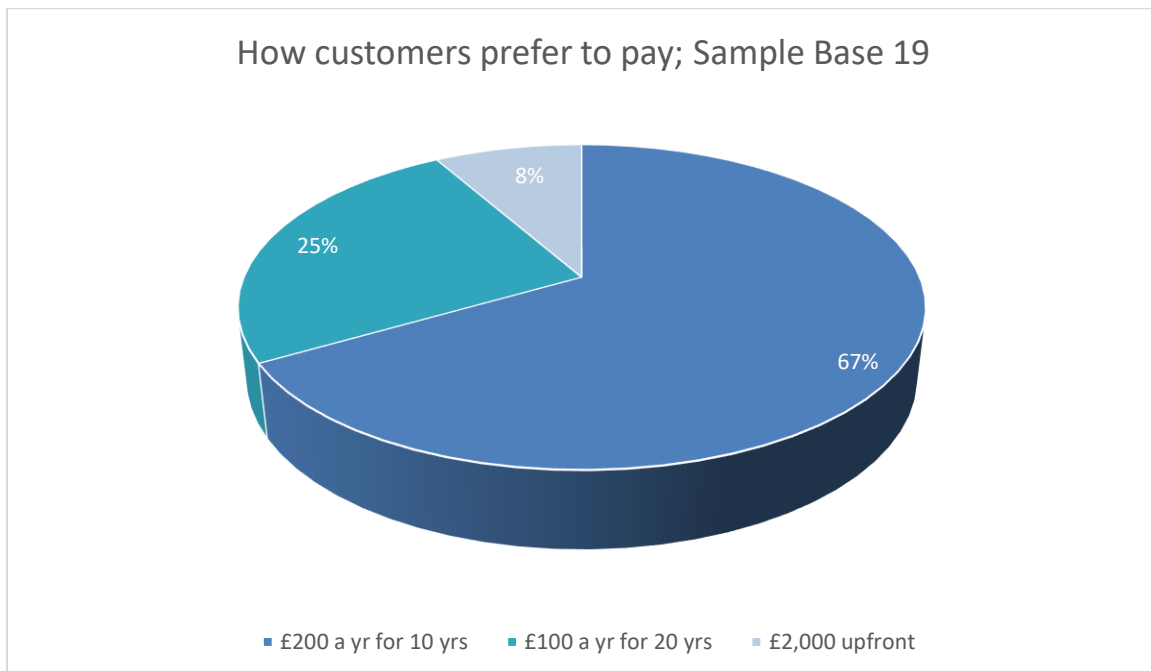
*How to fund if the individual pays*

In the first instance it was explained that if the individual were to pay for removal themselves, the average cost of lead removal, would be around £2,000 per household.

Web-community participants were asked how customers would prefer to pay this amount. Whether they would prefer to pay £2,000 upfront, £100 a year for 20 years, or £200 a year for 10 years. The majority (two thirds) would prefer to pay £200 a year for 10 years.

The results can be seen in the chart below...

**Chart: How individual customers would prefer to pay; sample base = 19**





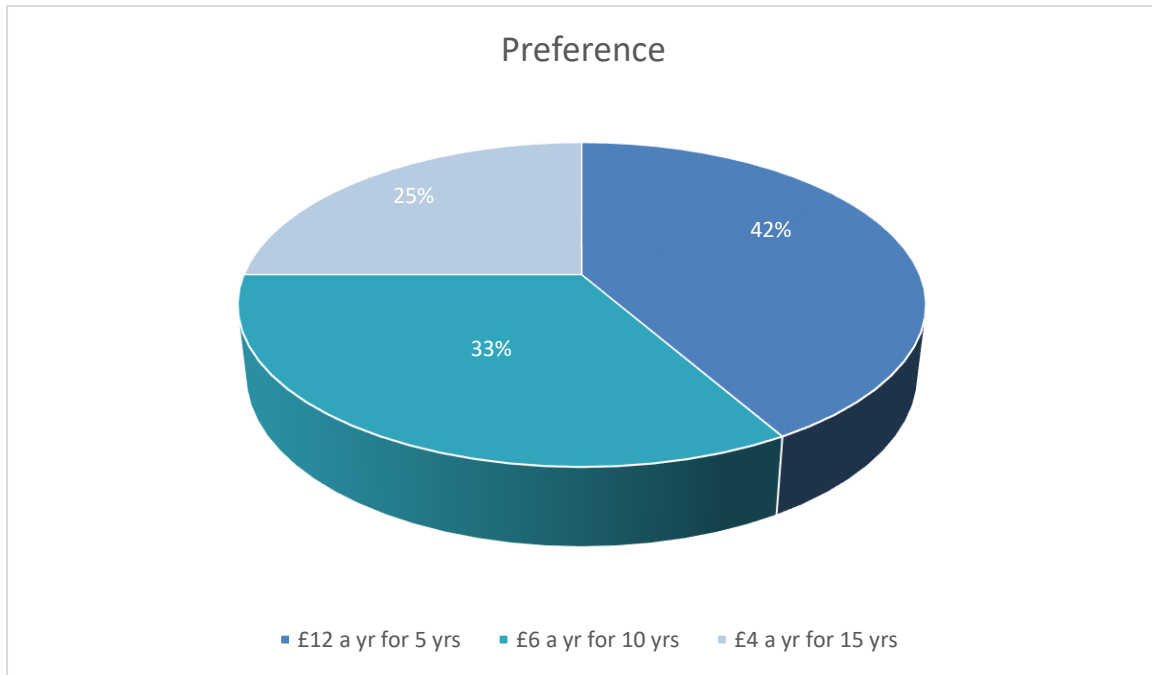
*How to fund the removal if all households in Scotland pay for it*

Customers were then asked, if the cost were to be split across all 2.5 million households, how should customers pay for this.

Most (four in ten) would prefer to pay £12 a year for 5 years i.e. the shortest period.

The full results can again be seen in the chart below...

**Chart: How all bill payers (2.5 million) would prefer to pay; sample base = 19**



*Differences in how lead removal should be funded by audience*

Audience	How lead removal should be funded
Pre-family	No real differences observed.
Family	No real differences observed.
Empty Nester	Generally similar to the other groups. A small minority don't believe lead removal is worth the cost.
BAME/Vulnerable	Don't believe they should have to fund lead removal themselves; more likely to think it should be government funded.
State Pensioner	Don't believe they should have to fund lead removal themselves; more likely to think it should be government funded.
SME's	Unsurprisingly and unlike domestic customers, SME's don't really talk about property values or scrap value. More talk of things like wanting support from large businesses and/or lottery funding. Beyond this, no substantial differences.

## The ideal process for lead pipe removal

### Co-creation exercise three

The final co-creation session (with the same teams as the previous exercises) asked respondents to design a simple process for the removal of lead pipes that could be applied to all households and businesses, from the initial identification of lead pipes being present, through to completion of the task.

### *The process of lead removal*

Summarising the results from the teams in each workshop, customers have broadly identified six key stages to the process of successful lead pipe removal. These can be seen in the left-hand column in the table below, as well as what would happen at each stage.

Stage Number	What happens	What happens	What happens	What happens
Stage 1 – A targeted awareness campaign by SW	Information to be sent out with bills.	Leaflets in areas with houses pre-1970.	Social media and mainstream TV campaign (like the Loo campaign).	Campaign should not scare customers. But provide facts and health risks.
Stage 2A – Send / deliver home testing kits Or 2B below	If feasible SW provide home test kits to households.	Test kits to all those who respond.	If home test kits not feasible then pro-active testing as 2B (below).	
Stage 2B – SW to do pro-active testing of pipes in areas with pre-1970 housing	SW carry out targeted testing in areas (start in areas with pre-1970 housing).	Tell customers what dates SW will be in the area.		
Stage 3A - Confirm Lead Present Or 3B below	SW provide list of approved contractors.	SW Provide estimate of costs / funding options/ capped costs.	Customers want to know prices and expect a choice of 3 contractors from SW.	SW provide details of the impact of work / and any upheaval.
Stage 3B - If no lead, no action	But, still need a Certificate to confirm lead free.	House confirmed on a lead-free register.		
Stage 4 - Customers decide if they wish to	Customers are split on formal legislation.	But there probably needs to be a time limit to	SW/contractor takes responsibility to	Vulnerable customers and State Pensioners

proceed		comply.	supervise the whole process.	believe SW should pay.
Stage 5 - Owners liaise with the contractors	Agree time lines and finalise costs.	Work carried out.	SW to sign off/quality check work.	
Stage 6 - SW verify the work was carried out, property is lead free and provide certificate	The lead-free certificate stays with the property.	The house is confirmed on a lead-free register.	END OF PROCESS	

### *Timelines for lead pipe removal*

Customers expect that SW will target works (for removal) to happen in specific areas at specific times (mapped back to the database of properties outlined above).

However, the most time that would be required, would be in identifying the properties and areas that still have the lead pipes. This is why most customers set 2028 to 2030 as a realistic end date to achieve full removal (see page 36).

Most customers felt that a minimum of 5 days and a maximum of a month may be required to make each property lead free, once work was commenced.

### *Post workshop web-community and the process*

After the workshops we used the post-workshop web-community to explore a number of issues that needed additional clarification. Again, please note the smaller sample base of 19 respondents.

#### *Was the summary of the exercises provided to the community a fair reflection of the workshops?*

The community were provided with summaries (seen in the tables above) of each of the three co-creation exercises. Respondents were unanimous in stating that these represented the views expressed within the workshops.

### *Removal of lead pipes in shared accommodation*

Where the removal of lead is more straightforward in houses/bungalows owned by a single person/couple, it is more complicated where a block of flats, or tenements exist.

We asked people in the community whether they had any experience of these types of properties (flats and tenements) and how work was handled where it was required.

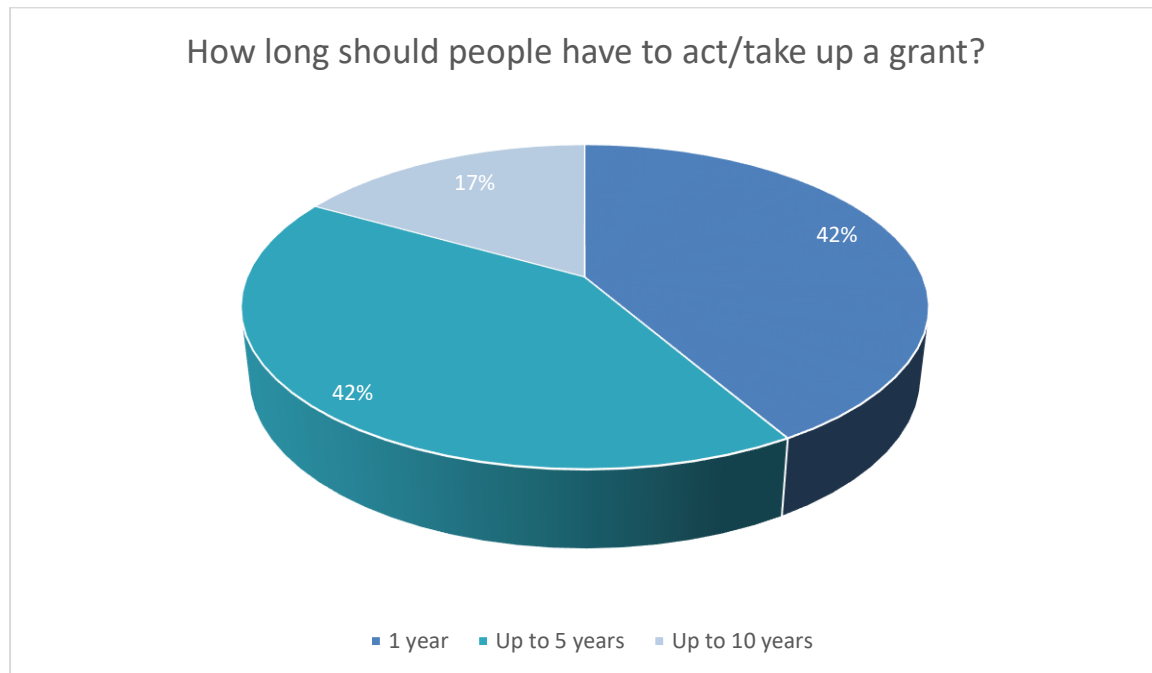
Just under 5 in 10 of the community had experience of this type of accommodation at some point. In the vast majority of cases (8 in 10 of those with experience), it was compulsory for renters to share in costs for any communal work.

*Stopping the dosing of water*

Community respondents were asked if/when the dosing of water should be turned off for those who did not act on lead removal within a set period.

Customers were split on how long they felt that customers should have to act upon lead removal or to get financial assistance. 42% (4 in 10) felt this should be one year, with a further 42% (4 in 10) stating up to five years.

**Chart: How long should people have to act and/or take up a grant; sample base = 19**



Perhaps more interestingly and even knowing that the dosing currently costs around £1m a year, the majority (three quarters), do not believe that dosing should be turned off, even for those who fail to act.

*Ideal format for home testing kits*

Almost three quarters of community respondents believed that taking a test to determine the presence of lead in water, should be mandatory for customers.

In terms of how the test would work, just under half of customers (47%, 8 people), believed that SW should supply bottles for water samples, with instructions on how and when to take a sample and when SW would be back to collect the samples (to be left outside the property for collection).

Others, (26%, 4 people), believed that the test would be more like a home pregnancy type test, or litmus/PH paper (26%, 4 people).

## Is there an appetite for removing lead in water?

On the basis of the seven workshops, the majority of customers do not want to have lead pipes present. To this extent they would support SW in the removal of lead from water.

However, there is a small group who are not convinced by either by the medical evidence, the real numbers affected by lead poisoning, or the costs involved in its removal. Given this was a qualitative exercise the numbers who feel like this is unknown (albeit they appear a minority).

Consideration will need to be given to this group and how/if they should be dealt with i.e. should dosing be turned off for these people if they choose not to act?

While there is an overall appetite for the removal of lead, what is more contentious is who should pay for the removal of these pipes.

In the post workshop web community, we asked customers their overall preference on who should pay. Half the customers would prefer that those who do have lead pipes, should fund the removal themselves.

The other half, believe that the work should be funded either by increasing council tax (two thirds of these people), or through the use of grants (one third of these). When it was explained that grants still had to be paid for, there is an assumption that the funding of grants would come from Government (via taxes).

### Key insight:

There is an appetite to remove lead. But who ultimately pays for it needs consideration.

*Differences in the process and the appetite for lead removal by audience*

Audience	The process for lead removal	Apetite for lead removal?
Pre-family	No real differences observed.	No real differences observed.
Family	No real differences observed.	No real differences observed.
Empty Nester	No real differences observed.	No real differences observed. A small minority not convinced of the need to remove lead.
BAME/Vulnerable	No real differences observed.	No real differences observed. More likely to go along as long as they don't pay.
State Pensioner	No real differences observed.	No real differences observed. More likely to go along as long as they don't pay.
SME's	No real differences observed.	No real differences observed.

## Communication about lead in water

Customers perceive that the use of communication about lead still being present in water, is key. All workshops talk about communication being a critical first stage in the process of raising awareness of lead in water for the wider population.

We had one lady within the workshops who had moved to a new home within the last 12 to 18 months. The house was quite old and had needed some remedial work and during the renovation their plumber had found lead pipes, which they had taken out and replaced – the plumber had pointed out the potential health risks for their children.

However, this was the exception rather than the rule. There were also a couple of other respondents (who undertook DIY) who previously worked in the building trade who had replaced lead pipes, although these instances were more than 20 years ago.

Most customers simply do not remember ever seeing any communication about lead in water, or any information about lead pipes that may still be present. A small number of older respondents remember their being more 'information and concern back in the seventies'. The only communication that was recalled by a small number in most of the groups was the Ad about, what not to put down the toilet.

This also reinforces the fact that customers are reactive and do not go looking for this information even if it is available – their expectation is that SW would communicate this to customers.



## Conclusions

Customers are on the whole surprised to find that lead pipes still exist today, having assumed they were eradicated many years ago. Many are in fact uncertain as to whether their own properties have lead pipes or not, or how they would establish their presence.

Customers are generally unaware of water quality regulations and requirements.

But, the majority do not want to have lead present in today's world.

Pipework responsibility is generally not known but the majority accept that they are responsible to some degree for 'stuff' in their own property.

While people are generally aware that lead is 'bad for you', there is not a deep understanding of the wider associated health risks.

It is the specific health risks, especially for children and pregnant women, that will be the key motivators for the wider population to act with regards to lead removal.

Leaving aside the general lack of knowledge with regards lead, the barriers to removal are the costs of having the lead removed and any upheaval that happens as a result of any necessary work. To this end, it was felt that there should ideally be some assistance with costs.

However, there is undoubtedly a small group of customers who are not convinced of the medical evidence, or the need to replace the lead pipes and perhaps more importantly, see the cost of replacing the lead pipes as a waste of money. These people are sceptical of the real numbers of people dying as a result of lead pipes, or who are directly affected.

Views on legislation to support the removal are mixed but whether it is enforced in this way or not, most customers support the imposition of a time line within which customers must act or face a fine.

While grants are the preferred route for funding lead removal, it was felt that the cost of means testing all in-scope customers may be prohibitive. As such the simplest and cheapest funding route may be to increase water bills/council tax across the board. However, customers want this ring fenced such that any increase only happens for as long as it is required to complete the removal.

While this is the preferred funding route devised by the workshop respondents, customers are split on who should pay. Some customers would rather that those customers who have lead pipes, should be responsible for the costs of getting rid of them i.e. it is not a cost that the wider population ideally want to share. Others would prefer that the cost is shared across all Scottish households (whether that is by an increase in council tax or making grants available).

Customers have identified six broad stages that form the process that need to be undertaken to successfully achieve the removal of lead. Most do not want to have any responsibility for overseeing the process of lead removal beyond liaising with the relevant contractor.

Customers are on the whole reactive and communication will be a critical part of the process in raising awareness and making people act.

## Recommendations

As highlighted at the beginning of the document, SW do not make enough of the fact that they are a publicly owned business. Customers believe they are private and are much more positive towards them once they know this is the case. SW should consider how to make more of this in future communication with customers.

While all respondents support a campaign to highlight the dangers of lead across Scotland, SW need to consider a targeted advertising campaign to raise awareness in particular in areas with a high penetration of properties that were built pre-1969.

Many customers refer to a recent campaign by SW to stop people putting the wrong stuff down the toilet as a good example of the type of campaign required.

There should be more general information about lead (health risks) provided with the council tax bill as well as a supporting presence/campaign in Social media.

SW will need to consider how to present the medical evidence and the real numbers of people affected by lead poisoning in order to achieve buy-in from all customers.

Customers will want and expect SW to provide an approved list of contractors who are suitable to undertake the removal of lead from their properties, as well as an outline of expected costs. Ideally, customers would prefer that there is a cap to the cost per household.

In an ideal world, most customers do not want any responsibility for the removal process other than liaising with contractors.

Increasing council tax for as long as is required to cover the costs of the removal is the simplest and cheapest option. But, those without lead pipes would prefer that those with, have to pay for it.

SW may wish to quantify the numbers of customers who are sceptical of the medical evidence surrounding the effects of lead.

## Appendix 1 – Pre-workshop homework exercise

### Task 1 - Questionnaire

1. **Have you been recruited as a...?**  
 Domestic/household customer  
 Business/non-household customer
  
2. **Tell us what you think about the quality of the drinking water you receive at home/at your business? Please tell us what you like or don't like.**
  
3. **How would you rate the overall satisfaction with Scottish Water for the clean and waste water services you receive? Please use a 7-point scale where 7 = very good and 1 = very poor.**  
  
 7      6      5      4      3      2      1
  
4. **Thinking about where you live, was your property built before, or after 1969?**  
 Pre 1969  
 After 1969  
 Don't know?
  
5. **Your property is connected to the water main at the stopcock. Do you know exactly where the stopcock is, for your property?**  
 Yes  
 No  
 Don't know
  
6. **Do you know whether the pipes from the stopcock and the internal pipes in your house are made from plastic or another material?**  
 Plastic                      Go to 8  
 Another material              Go to 7  
 Don't know/not sure      Go to 8
  
7. **If another material, what do you believe the material is?**

**8. Which of the following are you most concerned about? Please use a 5-point scale where 5 = very concerned and 1 = not at all concerned**

Sewer flooding inside your home (sewer flooding your bathroom by coming up through the toilet or bath)

Sewer flooding outside your home (sewer flooding from a manhole in the street or in your garden)

The quality of the rivers and seas

Leaking or burst pipes

The presence of any lead in the water system

**9. Do you know whether there are any benefits to having lead present in the water supply?**

Yes                      Go to 10

No                        Go to 11

Don't know          Go to 11

**10. If yes, what are those benefits?**

**11. Do you know if there are any risks to having any lead present in the water supply?**

Yes                        Go to 12

No                        Thank and Close

Don't know          Thank and Close

**12. If yes, what are those risks?**

**Thank and close**

**Task 2 - Video**

**Please take a short video of yourself, on your mobile phone, answering these three questions. Please then upload the video as directed.**

1. Do you know whether your property has any lead pipes?
2. How would you expect to identify or recognise if you had lead pipes?
3. How would you feel if you discovered that you had lead pipes?

## Appendix 2 – Co-creation Topic Guide

### Scottish Water Removal of Lead Co-creation Topic Guide May 2018 V1A

#### Section 1 - Introduction

5 mins

- Introduce Turquoise
- Introduce oneself and objectives of the discussion: set the scene; reason for discussion – that they are here to develop the best possible customer process and help for lead pipe replacement.
- Explain reason for SW representatives - that they are there as representatives of SW, to answer any technical questions and also to work with respondents.
- Explain that being as open and honest as possible is essential, even with SW presence.
- Explain MRS code of conduct and rights to anonymity
- Explain audio recording, video and viewing
- Respondents to introduce themselves – names, hobbies/job role, etc.

#### Section 2 – Background

5 mins

**Ok we would like to speak to you about the water and waste water services you receive...**

- How significant a part of your life is the water that comes out of your taps?

**If not known, it is Scottish Water (publicly owned).**

- Have you had any dealing with Scottish Water?
  - What was the experience like?
- What do customers think about the service that SW currently provides?
- What else do you think SW are responsible for?

#### Section 3 – Knowledge of lead pipes

30 mins

- Ask customers for feedback on the pre-group homework exercise.
  - What did people feel about that?
- Have any of you got/had lead pipes, or storage tanks (used to be more prevalent in older properties)?
  - How did you find out?
  - Do you know how to find out if you have lead pipes?
    - Word of mouth
    - Websites

- plumbers
  - Did you have them replaced?
    - Yes/no?
    - Why/why not?
    - What made you do it/not do it?
- Who thinks they know if they have lead pipes?
  - Why?
- How would you feel if you personally had lead pipes?
  - What is your perception of the quality of drinking water from lead pipes?
  - What about from coffee shops that could potentially have lead pipes?
- How do you feel about the fact that there are still lead pipes in Scotland nowadays?
- Would you be motivated to get them replaced if you discovered them?
  - Yes/no?
  - Why/why not?
- What would motivate you to replace them?
- What do people think about lead pipe removal?
  - Experience and perceptions of the presence of lead pipes.
  - What do they think it would entail?
    - How would they expect to find out?
- Explore perceptions of associated health risks of lead pipes?
  - Spontaneously probe...
    - Are you aware of any health risks?
    - Yes/no?
    - What do they think about that?
- How prevalent do you think lead pipes are in your area/Scotland as a whole?
  - Why?
- What would motivate customers to remove any lead pipes in their home/business?
- How would customers expect to identify if they have lead pipes in their home/business?
- Whose responsibility do they perceive lead pipe removal to be in their home/business?
- Do customers perceive lead pipe removal is a priority for SW, or should be?
- What is the wider community/societal impact of lead pipes in the network and how should this be prioritised?
  - Explain numbers of properties affected are less than the 70,000 or so connections – i.e. an old tenement may have multiple properties connected to one service pipe
    - Probe perceptions

**Show health risk stimulus A... (SW TO PROVIDE)**

- What do they think about that?
- How do they make you feel?
  - Why?
- Which of these would you be most concerned about and would have the most impact on you/your family?
  - Why?
- Would you continue to live with that?
  - Why/why not?
- Explore current awareness and perceptions of water quality regulations/impact of the 2028 directive
- Do customers think that SW currently do anything to counteract the effects of lead in the water?
  - Yes/no?
  - What?
- Explain current dosing of water to mitigate any lead present.

*Read... Phosphate is added to the treated water leaving the treatment works to help reduce exposure to lead. The phosphate helps build up a protective layer inside lead pipes both in the distribution network and on the customers' side within the property.*

- What do they think about that?
  - What do they think about the use of additives generally?
  - What about the use of phosphates?
- Costs
- Implications

**Provide stimulus B – diagram of current responsibility for lead pipes (SW TO PROVIDE)**

- Spontaneous exploration of the current situation?
- Were you aware of this?
- If yes, where did you hear about this?
- Is this easy to understand? Is it clear?
  - Why / Why not?
- Do you think that this is reasonable or, acceptable? Why/why not?
- Who should be responsible for replacing the supply pipe?
  - If SW should be responsible, what does this look like e.g. responsibility for reinstating garden or driveway and associated costs?
- Who should be responsible for replacing the internal pipes?



- What would motivate them to replace any lead pipes present?
  - Why/why not?
- What are the barriers?
  - Probe
    - Costs
    - Disruption
    - What else?
  - Why/why not?
  - How can they be overcome?
  - How could the disruption be overcome?
- What do you think that Scottish Water should be doing about lead pipes?
  - Probe
    - To identify where they are
    - Minimise impact
    - Remove from the public network
    - Provide support and assistance on removal from homes/businesses
  - Why/why not?

#### Section 4 – Co-creation Exercise 1

30 mins

#### Exercise 1 - The motivation and messages for lead pipe removal

Split the group into two teams and supply them with stickers, post it notes, flip chart and marker pens.

- Ask customers to determine the different motivations for wanting to remove lead pipes?
  - i.e. what would make you want to replace lead pipes?
    - Don't only consider the health risks.
    - Think wider
  - Explore each as they identify them
  - Write them up
- For each motivation that you identify, what is the key message that you need to hear/see to motivate you to respond/act?
- Ask respondents to examine which would have the most impact with the wider population and why?
  - Rank them
- Who should take the lead on getting customers on board with lead pipe removal?
  - Which bodies?
    - Scottish Government
    - Local Authorities
    - Drinking Water Quality Regulator

- Health Board
  - Scottish Water
  - Home/business owners
  - Developers and builders
- If Scottish Water was to draw a line and have a commitment in Scotland to have all lead pipes removed. When should that happen by?
  - What is an acceptable timeline for lead pipe removal? Why?
  - What is SW's role?
  - What is the customers role?
  - Given there is a cost for removing how does that impact motivations and how do they overcome those barriers?
    - Customers to pay
    - Grants from general taxation
    - Grants from Scottish Water
    - From to your water charges
  - Feedback to the overall group and reactions

## Section 5 – Co-creation Exercise 2

30 mins

### Exercise 2 - How to fund the removal of lead pipes.

**Working as teams, come up with different funding models/options of how lead pipe removal could be achieved.**

- Consider any funding models that you know of/can think of?
- Please think about who funding is available for (is it everyone, or income threshold)?
- What proportion of the total should customers pay directly?
- What if it were done indirectly, through charges or taxes?
- How does the model work?
- Timelines of each
- List the benefits and drawbacks of each?
- How each funding model fits with the current responsibility/pipe ownership model?

### Explore SW funding models Stimulus C (if not already covered) (SW TO PROVIDE)

- You apply to local council for a grant, eligibility could be universal or subject to criteria
- Central government pay as part of an overall public health programme for Scotland
- Water supplier Scottish Water would split costs 50/50 with homeowner, or provides a fixed grant per property type
- Plumbers are obliged to complete work at a fixed rate

- What do they know about how cavity wall insulation funding works?
  - Could this work/be appropriate for lead pipes?
  - How?
  - Why/why not?
- What about a local government grant scheme?
  - Could this work/be appropriate for lead pipes?
  - How?
  - Why/why not?
- Probe and what other types of funding might work?
- What proportion of the cost would customers be happy to pay (if anything)?
  - What about vulnerable or disabled customers?
  - What about pensioners?
  - What about families?
  - What about people who are renting privately?
- What would make it palatable to have to pay something?
- If/how should we ensure that lead pipe removal actually happens?
  - Incentive
  - Legally enforced
  - Probe, anything else?

### Section 6 – Co-creation Exercise 3

30 mins

#### Exercise 3 - Designing the process for lead pipe removal to motivate response...

**Working as teams, how would customers expect/ideally want to be able to identify the presence of lead pipes?**

**We need you to develop a process that helps you to identify the presence of lead pipes, then from finding out that you have them through to completion of the work. Think of all the stages and the people that are required.**

**As a team I then want you to brainstorm for ideas to solve any issues. Try to be realistic and work with the Scottish Water representative on your team to find solutions that work for everyone. I want you to highlight the key issues / stages in this customer process.**

**Please write comments on the post it notes at each stage where applicable as to what the key issues/positives are.**

- Who would they expect to identify the presence of lead pipes in the home and in the network?
  - Themselves/SW/other stakeholders?
  - How would they do that?
    - Probe, home buyer reports
    - House survey's
- Once presence of lead pipes is identified, who should source/identify/commission the people to remove it?

- Think about the players in the process
  - Householder, business owner, SW, plumbers
- Who do they want to manage it and how?
- Do they want any involvement?
  - Yes /no?
  - What is their role?
  - What is SW's role?
- How do SW make people aware of this process/scheme?
- What information is needed to support this, when is it needed and where?
- What should happen and where?
- How should this happen?
- What are the timescales?
- What information / support is required at each stage?

**Upon completion of the exercise, each team needs to talk over their findings and present back to the group as a whole, highlighting the issues tackled and their proposed solutions.**

- What are the key touchpoints both good and bad across the process?
- What issues have you tackled?
- Does the other team agree that these are the right ones?
  - Why / Why not?
  - How does the ideal customer process flow now?
  - Where and what are the critical elements?
  - How do you think this will change customer behaviour/make them act?

**Once each team has presented their proposed new customer process with an explanation behind their thinking we need to combine the two.**

- Which elements can be combined from the processes that both teams have developed to create the ideal process?

## Section 7 – Current SW Communication

10 mins

- Have you ever seen any communication from SW/other stakeholders regarding lead pipes?
  - Where have you seen these?
    - Lead pipe Leaflet
    - Website
    - Other, please specify?

**Take each in turn**

- Do any of you recall receiving / seeing something like this?
- What do you think of the way the information is provided to you?
  - Good points / bad points?
- Based on our discussion this evening, does it tell you what you need to know?
  - Why / Why not?
  - What is missing if anything?
  - Is it accessible / easy to understand?
    - Why/why not?
- Probe ease of understanding.
- Does this motivate you to want to replace lead pipes?
  - Yes/no?
  - Why/why not?
- How does what you read impact on how you might feel during the process?
  - What feelings does this literature / material evoke?
  - What does it need to evoke to make you act?
  - How do you want to feel when reading something like this?
    - PROBE: Reassured etc.
    - How would this impact on your experience / satisfaction?
    - What would you do to improve this?
- Where would you expect to find this information?
- What changes or improvements would you make to these?
  - Why is that?
- What about the following bits of information/communication?
  - Leaflet from SW, to send to plumbers outlining the process and recommended action
  - Leaflet from SW, for plumbers to give to customers outlining official advice on the health risks
  - Advisory rate card or limits on what plumbers can charge
  - New regulations requiring plumbers to notify SW any time lead pipes found in a customer's property
  - Obligation to remove any internal lead pipes that are found

### Show the Vox Pop film...

- Generally, what are your views about lead pipes having seen what other customers say about it?
  - How does this fit with what you have come up with?

## Section 8 – Summary

2 - 3 mins

- Having been through tonight's exercise, how would you feel now if you personally had lead pipes?

- What would be the key feedback that you would want Scottish Water to take away from today's discussion?
- General feedback on session, anything they want us to explore that hasn't been considered.

### *Stimulus C – Part 1*

- You apply to local council for a grant, eligibility could be universal or subject to criteria
- Central government pay as part of an overall public health programme for Scotland
- Water supplier Scottish Water would split costs 50/50 with homeowner, or provides a fixed grant per property type
- Plumbers are obliged to complete work at a fixed rate

## Stimulus C – Part 2

Model / idea	Detail
Cavity wall insulation or funded boilers as a model	<p>How it works - <a href="https://www.moneysavingexpert.com/utilities/free-cavity-loft-insulation#freeinsulation">https://www.moneysavingexpert.com/utilities/free-cavity-loft-insulation#freeinsulation</a> – up to £1100 in grants for loft and cavity wall insulation.</p> <p>Free boilers – “You need to have a broken or inefficient boiler that is at least 5 years old. If you've a new-ish, working A- or B- rated boiler, you probably won't qualify. This is decided on a case-by-case basis through a free inspection. The energy companies say it typically takes four to 12 weeks from when you first apply to get the boiler installed”</p> <p>The two above have been funded by through the Government's Energy Company Obligations (ECO) scheme. ECO was launched in 2013 to help make energy saving measures, such as heating and insulation, affordable for householders. It looks like the funding ultimately comes from the energy suppliers - <a href="https://www.ofgem.gov.uk/environmental-programmes/eco/about-eco-scheme">https://www.ofgem.gov.uk/environmental-programmes/eco/about-eco-scheme</a></p>
Local authority grants	<p>There is a general ‘scheme of assistance’ for people adapting homes, including lead removals, local councils use discretion over what / who they fund – more details <a href="#">here</a></p> <p>Quite confusing advice from councils – e.g. Fife council asking homeowners to contact their Building Standards team to arrange water testing, and no mention of funding - <a href="#">here</a>. Edinburgh also tells residents to do water testing through their Scientific Services team for a charge (when SW would do it for free) - <a href="#">here</a></p> <p>Aberdeen (and other councils) offer grants of up to £800 for improvements to private water supplies only, including lead pipes - <a href="#">here</a></p> <p>I haven’t found any local authorities who are offering assistance for lead removals, apart from in private water supplies – I will double check with our team</p>
Setting up a lead supply pipe group through SW Horizons (our commercial arm)	Adopting customers’ pipes and replacing any lead – proposed solution internally, yet to be tested
Free lining of pipes	Yorkshire Water has run a large scale pilot to line customers’ supply pipes for free at the same time as they line their comms pipes.
Smart meters	The government has established an approach to smart meters – i.e. the retailers have been asked to provide and install on request. Perhaps there is a central fund – or retailers have to absorb the costs?
Mains gas supply installation	I think someone said this was supported in the late 1970’s...
Other countries models that we should include as examples in the discussions	<p>– e.g. it looks like Ireland have a funded support programme - <a href="http://www.citizensinformation.ie/en/housing/housing_grants_and_schemes/lead_piping_grant_scheme.html">http://www.citizensinformation.ie/en/housing/housing_grants_and_schemes/lead_piping_grant_scheme.html</a> - government funding for low income homeowners (recompensed after the work has taken place), as well as Irish Water’s scheme – “If you are a customer of Irish Water and you plan to replace the lead pipes within your property’s boundary, you must first apply for Irish Water’s Customer Opt-In Lead Pipe Replacement Scheme. Under this scheme, Irish Water will replace any lead pipes on the public side of your property’s boundary” – basically what we do on the public side, but perhaps a better publicised scheme??</p>



## Appendix 3 – Post workshop web community

### *Post Workshop - Web Community Outline V1A*

The web community will encompass the following suggested activities:

#### **Part A - Questionnaire**

1. Ask respondents their Council Tax band
2. Experience of shared properties – how does this work when getting work done?
  - a. Is it compulsory/voluntary to share costs?
  - b. How is it done?
3. If Scottish Water were to provide a 'home test kit', how do customers see this working (e.g. pregnancy test, litmus/ph paper, provide bottles for samples to customers + collection)?
  - a. Should it be mandatory?
  - b. Why do they want a home test kit rather than SW test?
4. What type of language do customers want SW to use in any communication/ads about lead pipe removal?

#### **Part B - Feedback on the co-creation outcomes...**

1. Motivations and supporting messages
2. Funding routes
3. The process (including relationship of Gvt/plumber/SW)

#### **Part C – Costs and mechanism**

Provide costs estimates for lead pipe removal:

1. If an individual were to pay themselves or a grant was available, the average is around £2k per household
  - a. £2,000 upfront bill
  - b. £200 a year for 10 years
  - c. £100 a year for 20 years
  - d. Which is preferable?
2. If pay across all 2.5m bill payers
  - a. That is £4 a year for everyone for 15 years
  - b. Or, £6 a year for 10 years
  - c. Or, £12 a year for 5 years
  - d. Which is preferable?
3. Which funding route do customers prefer?
  - a. Grants for the work (Which would be funded by an increase in taxation for all)
  - b. Those individuals who have lead pipes, pay for it themselves
  - c. Work is funded by increasing water bills for all SW customers

**Part D – What happens when customers are notified that there is lead in their water**

- How long should a customer have to take action or take up the offer of a grant/financial assistance once they are notified that they have lead in their water?
  - 1 year, 5 years, 10 years
- What about people who are notified that they have lead in their water but don't want to/refuse to have the lead pipes replaced...
  - How should society protect those who don't want to replace lead pipes?
  - Currently SW spends around £1m a year to dose the water with phosphate to mitigate the effect of lead, should the phosphate dosing be turned off?
    - Yes/no
  - If yes, and lead levels rise for these people, is that reasonable?
    - Yes/no
  - If yes, how long should customers who don't want to replace lead pipes have before the phosphate dosing (to mitigate the effects of lead) is turned off; 6 months, a year, 5 years?

Turquoise Thinking Limited, 3 Liberty Court, Roundswell Business Park, Barnstaple, Devon, EX31 3FD  
| 01271 337100 | info@thinkturquoise.com | www.thinkturquoise.com

30

### Years Colourful Experience

Helping clients around the world to think turquoise for 30 years.



### Taking a Holistic Approach

Turning black and white research into full colour understanding.



### Diverse Sector Coverage

Gathering unbeatable experience in every sector imaginable.



### Partnering not Dictating

Connecting on a level you won't experience with any other agency.

---

## CONTACT INFORMATION

---

Mark Harvey | Joint Managing Director | Turquoise Thinking Ltd | [mark@thinkturquoise.com](mailto:mark@thinkturquoise.com) |

t: +44 (0) 1271 337100

m: +44 (0) 7870 21202