



TRINITY
MCQUEEN

Waste water and the wider societal impacts

Prepared for Scottish water

April 2018

Contents

1 Objectives and approach

Background to the research – slide 3

2 Method

Who we engaged and the methods used – slide 6

3 Research and findings

Domestic those more vulnerable – slide 13

4 Research and findings

Business customers – slide 54

5 Key take-outs & Recommendations

Priorities, key insights and recommendations – slide 63



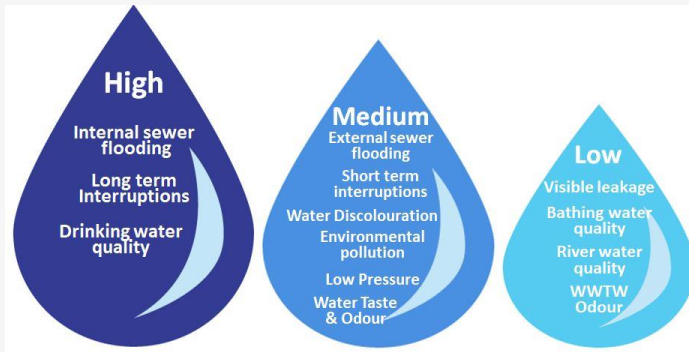
Objectives for research

- / The Scottish Government sets the policy framework for Scottish Water through its five strategic objectives. These objectives set the focus for SR21 and the water and sewerage charges that emerge from the process
- / The SR21 process follows SR15, which determined Scottish Water's priorities, and charging levels, for the period 2015-21
- / This research is based on insight gathered at stage 1 and moves the programme forward to stage 2 to investigate the specific topic of waste water
- / The research will build upon the stage 1 project, using the findings and customer impact ratings from the research to explore themes relating to waste water, both from an individual impact perspective and in terms of wider societal impact



Phase One Summary

- / In Phase One of Scottish Water's engage21 research process, a large scale and in-depth quantitative study was conducted to understand a prioritisation for future investment based on total customer impact.



- / Phase One identified that the service issue which causes the most customer impact is internal sewer flooding.
- / For Phase Two, Scottish Water felt that as well as exploring this topic, aspects of external flooding, BWQ and RWQ should be expanded further, to understand exactly what this impact means for individuals, communities and Scotland as a whole.



Research is required to understand the impact of waste water with a focus on it's societal impact



Waste Water Flooding

- How should SW prioritise investment between locations?
- Should SW only focus on long term solutions?
- How long is acceptable to remove a flood risk?
- What are customer expectations of SW maintaining sewers?
- What is the impact on the wider society?

Environmental Pollution Incidents

- Whether customers accept some EPIs will happen
- Should SW target the prevention of EPIs in certain areas?
- What impact do different EPIs have on the wider society/community?

Bathing Water Quality

- Understand whether water quality is a deciding factor when choosing where to visit for recreational purposes
- What impact does bathing water quality have on the wider society/community?

River Water Quality


- Are customers aware of improvements SW has made to improve river water quality?
- The impact of river water quality on the wider community/society

We presented respondents with a variety of scenarios to tease out reactions to the themes

Detail on our approach

- When consulting with customers on issues relating to future investment in service areas, we often present respondents with scenarios to prompt their thinking and aid a qualitative ranking
- Scottish Water worked with their internal Waste Water experts to devise a set of different possible events that could affect customers or their communities
- Scenarios were designed to be stretching, and in some cases contained extreme examples, that would force customers to imagine the impact and associated consequences for their lives



A scenic landscape of a Scottish valley. In the foreground, a calm river reflects the surrounding landscape. The middle ground shows rolling hills and mountains covered in green and brown vegetation. The background features more distant mountains under a blue sky with scattered white clouds. A large, dark blue, semi-transparent geometric shape, resembling a stylized 'A' or a large triangle, is overlaid on the left and center of the image. Inside this shape, white text is displayed.

As part of this research we engaged a wide variety of participants through different methodologies to understand the impact of Waste Water in Scotland



Fieldwork methodology

An in depth research programme blending four different types of qualitative research methods



CUSTOMER WORKSHOPS

6 x 90 minute workshops with customers



INTERCEPTS

2 x ½ day 'at a beach and along a river bank' intercepts



TELEDEPTHS

10 x 40 min telephone interviews with vulnerable customers



TELEDEPTHS

10 x 20 min telephone interviews with businesses

Who we engaged



BUSINESS DEPTHS

To capture the views of non-household customers, and understand the potential impacts of waste water on different businesses



INTERCEPTS

To capture in the moment feedback from those who frequently visit the beach and rivers in Scotland



VULNERABLE DEPTHS

To capture the views of those 'seldom heard' to understand how and why priorities vary across different groups



Interviews were conducted with a range of businesses and with those living with different vulnerabilities



Vulnerable depths	Location	Age	Vulnerability
1	Urban	75	Elderly
2	Urban	76	Elderly
3	Rural	76	Elderly
4	Urban	34	Disability
5	Rural	51	Disability
6	Rural	57	Remote
7	Rural	34	Remote
8	Urban	25	Low SEG
9	Rural	45	Low SEG
10	Rural	69	Low SEG

Business depths	Location	Property type
1	Small business	Blind manufacturer
2	Small business	Furniture repairs & retail
3	Small business	Hairdresser
4	Medium business	Artists studio
5	Large business	Galvanisers
6	Medium business	Retail
7	Medium business	Restaurateur
8	Small business	Framers
9	Large business	Events venue
10	Medium business	Hospitality bar

Workshops were conducted with older and younger customer groups living in urban and rural communities



EDINBURGH

Location	Age	Gender
Urban	18	Female
Urban	18	Female
Urban	18	Female
Urban	17	Male
Urban	16	Male
Urban	17	Male
Urban	47	Male
Urban	35	Female
Urban	48	Female
Urban	50	Male
Urban	51	Male
Urban	44	Female

INVERNESS

Location	Age	Gender
Rural	35	Female
Rural	44	Female
Rural	38	Female
Rural	46	Male
Rural	40	Male
Rural	35	Male
Rural	62	Female
Rural	57	Male
Rural	59	Male
Rural	64	Female
Rural	63	Male
Rural	65	Female

ABERDEEN

Location	Age	Gender
Rural	34	Female
Rural	33	Male
Rural	27	Male
Rural	20	Female
Rural	22	Female
Rural	21	Female
Urban	65	Female
Urban	65	Male
Urban	58	Male
Urban	65	Female
Urban	64	Male
Urban	57	Male

Throughout this document this key will be used to highlight different customer groups



**Customer
workshops**

**Businesses
owners**

**Vulnerable
customers**

Intercepts

A scenic landscape featuring rolling hills and mountains under a cloudy sky. In the foreground, a calm lake reflects the surrounding scenery. A dark blue, semi-transparent geometric shape, resembling a large triangle or trapezoid, is overlaid on the left and center of the image. Inside this shape, the text is displayed in white.

Setting the context

When encountering a waste water incident, customers are unlikely to contact Scottish Water

Scottish Water have a role to play in partnership with other organisations, but the role is not always clear



- Customers have a good awareness of Scottish Water in relation to domestic water, and perceive Scottish Water to be doing 'a great job!'
- However, customers default to contacting the local authority or SEPA in an emergency water situation
- Taking care of the environment, economy, and the community is felt to be a shared responsibility between different organisations, businesses and communities



A scenic landscape of rolling hills and a lake, with a dark blue semi-transparent overlay containing text. The hills are covered in golden-brown grass and some snow, and the lake reflects the sky and the surrounding landscape. The text is white and centered on the overlay.

Customer understanding of waste water

Customers understand what waste water is and appreciate the wider impact on the community and Scotland

Understanding of waste water and it's potential impact is strong



WASTE WATER HAS THE POTENTIAL TO IMPACT :

MYSELF

- × Individuals and their families
- × Homes and gardens

COMMUNITY

- × Immediate and wider communities
- × Buildings, roads and infrastructure

SCOTLAND

- × Tourism and the economy
- × Ecosystems – the link between wildlife, the environment and humans

It's the treatment of water that falls from the sky and the way that this water is managed
-Female, low SEG

Waste water isn't just sewage it is also rain water, any water that we don't use. As a business we produce a lot of waste water because of processes
- Large Business

It's all the water from your toilet, sink, drainage.. Then it's the handling of this and how it's managed and taken away to be processed
-Female, pre-family



In this qualitative exploration, customers told us that river water quality poses the biggest threat to the wider community and Scotland overall,

Scenarios by level of impact on the wider community and Scotland overall

RIVER WATER QUALITY

- Impact could be wider spread along river network
- Recreational activities would have to stop
- Wildlife could be impacted

EPI

- Biggest impact on Scotland if it was to happen
- Wildlife could be impacted
- Economy could be impacted

WASTE WATER FLOODING

- Localised impacts
- Internal seen as more severe than external due to cost implications and inconvenience

BATHING WATER

- Businesses could be impacted if tourism was disrupted
- Health risks would deter visitors



River water quality

The impact of waste water on river water quality poses an issue for the wider community and Scotland due to the flow and connectivity of the river network

The impact on river water quality has the greatest perceived effect due to the connectivity across Scotland

- // This type of waste water incident has the potential to spread in a short amount of time and affect a wider area
- // Rivers are areas that are used for many purposes e.g. leisure, business, tourism, social gathering, exercise etc.
- // Customers see a joint responsibility for both the community and Local Authorities to look after the river bank, with Scottish water and SEPA looking after the river itself
- // Customers are unaware of improvements Scottish Water have made



*Rivers link everything – if the water quality of the river is bad it could go in to the lochs, lakes, sea, dams And even the whiskey burns
– male, family*

The health of rivers is integral to Scotland and can impact communities locally and nationally

IMPACT ON COMMUNITY



Is a key meeting point for various members of the community who would no longer visit



Health of the local ecosystem could be affected and could impact local businesses that depend on it



River based hobbies would no longer be able to take place



Hobbies and activities that rely on the river provide jobs and volunteering opportunities



Reduce the number of people coming to the area for bird and wildlife watching



Tourism – people visits the rivers for activities – rowing, walking, cycling



Used as a stop off to other places e.g. Inverness stop off to the highlands, which would have a commercial effect on business



Fishing and angling could be cut back for the stretch of river that is affected

CALL OUT

Intercepts finding: The river is a flat walking place for the elderly or those less mobile. It's a place to go and get out of the house. Without it some members of the community could become isolated

River water quality: Reactions

It's somewhere free for me to take the kids to play during the summer. This would mean I couldn't take them out as much

-Male, Lower SEG

I wouldn't be able to get exercise as there are no other flat areas for me to walk around

- Female, Elderly

This would be terrible, this could really damage the local wildlife to a point where they can't recover

- Female living with disability

Use Scots have great pride in our environment and this is our main pull for tourists, if goes unattended it could impact how people think of Scotland

- Male, Elderly

Rivers are used for everything by everyone, this would really damage the sense of community

-Male, Post family

Impacts on river based recreation affects both individuals and the wider community

SCENARIO

There is now smelly sewage and debris in an area of river that is normally used for recreational purposes e.g. fishing and boating

There is very visible debris and pollution, and smells on an area of river where local communities use the river for walking, fishing and boating

MYSELF/MY COMMUNITY

INITIAL CONCERNS

- Smells from the river make it unpleasant to be around
- Activities will stop for fear of illness
- Affects the health of wildlife
- Fear of children and pets becoming ill from playing in or near the river
- Elderly and those less mobile would have less places to visit

DEVELOPMENT OVER TIME

- It could prevent the elderly and those less mobile from getting regular exercise
- It lowers house prices that look onto the river and then local area if continued
- Reduces tourism in the area and putting financial strain on the local businesses
- Irreversible damage to river wildlife

Maintain pipes to prevent sewage leaks and educate businesses who have the potential impact RWQ e.g. forestry and farming

I would definitely stop coming down to the river if it started to smell. You associate bad smell with getting sick." – female, pre-family

When the impact on river water quality affects wildlife populations, there needs to be accountability

SCENARIO

SCOTLAND

There is sewage and debris that has affect populations of birds and fish, on an area of the river that has public access, is not visible to the public or used for recreational purpose

INITIAL CONCERNS

- This could be damaging local ecosystems including oceans, lakes, lochs, beaches, drinking water, farm animals etc.
- Prevent fishing in the area for fear of becoming ill from the fish
- Local community would stop going to the local river to socialise / exercise etc

DEVELOPMENT OVER TIME

- If goes untreated waste water could impact more than the local water quality and travel further downstream affecting more communities
- Could impact tourism if scale was larger than localised

I come down to the river whenever the weather is fair, it's an excuse to get out in to nature feel like you're exercising - Male, family

The source needs to be identified and responsibility apportioned to prevent reoccurrence. Use clear and simple communication for those affected to inform on actions to take e.g. signs saying don't go in the river etc

Priority should not be dependant on visibility, river water quality in less accessible areas can travel further

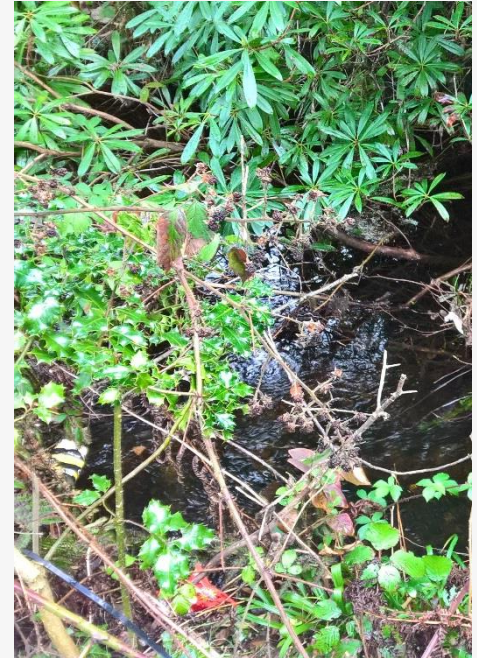
RESIDENTS LIVING NEAR A RIVER

- Residents want all parts of the river to be maintained as there will be a knock on effect

RESIDENTS NOT NEAR A RIVER

- Initially those that don't live close to a river take the view 'out of sight, out of mind'
- However, when probed, customers recognise that the waste water may flow to other areas too

"Everything is connected and even though it is out of sight it could end up being a problem in the future" – Female, family



Everything in the river system has a knock on effect with anything downstream. Scottish Water need to work in partnership with Local Authorities to combat causes and limit spread

Intercepts on River Ness– summary



People use the river for fishing and boating



"Tourist stop off here on the way to loch Ness and the highlands to watch wildlife and would stop coming"

"Children play in the little lake during summer, we would have to find somewhere else to spend the day for free"



Cafes and restaurants rely on the people using the river for business



"There would be less jobs available so people would have to travel to other towns in search of jobs"



Elderly and those less abled use the river path for gentle exercise socialising

Those living in more rural areas and elderly customers are especially concerned about wildlife

- ✓ **Rivers are home for many species**
Just like all customers, those with vulnerabilities are keen to protect the Scottish wildlife
- ✓ **The ecosystem relies on the rivers**
Fish provide food for birds, and the river is a water source for livestock and wild animals
- ✓ **Transport**
For many areas of Scotland the rivers and estuaries provide ferry transport – especially important for those living in more rural areas



“You see all sorts of birds and fish in the river Clyde” – Male, remote area living with a disability

Insights and recommendations : River water quality

The impact on river water quality has the greatest **perceived** effect due to the connectivity across Scotland



Promote clearly the steps that have already been taken to improve river water quality

The health of rivers is integral to Scotland and can impact communities locally and nationally



Working in partnership with organisations as soon as incident occurs to prevent spread and reassure customers be clearly communicating actions that have been taken with a realistic timeline through accessible channels

Impacts on river based recreation affects both individuals and the wider community



Maintain pipes to prevent sewage leaks and educate businesses who have the potential impact RWQ e.g. forestry and farming

When the impact on river water quality affects wildlife populations, there needs to be accountability



The source needs to be identified and responsibility apportioned to prevent reoccurrence.
Use clear and simple communication for those affected to inform on actions to take e.g. signs saying don't go in the river etc

Priority should not be dependant on visibility, river water quality in less accessible areas can travel further



Everything in the river system has a knock on effect with anything downstream. Scottish Water need to work in partnership with Local Authorities to combat causes and limit spread

A scenic landscape featuring rolling hills and mountains under a cloudy sky. In the foreground, a calm lake reflects the surrounding scenery. A dark blue, semi-transparent geometric shape is overlaid on the left side of the image, containing white text.

Environmental pollution incidents

EPI's are acknowledged to be less likely to happen, but the impact could be the most severe

EPIs have the potential for the widest societal, environmental and economic impact

EPI RISK IF NOT QUICKLY CONTAINED:

- /// Risk to human health – some worry about fatality
- /// Health/population of wildlife e.g. sealife, fish and birds
- /// Impact on important economic industries e.g. salmon fishing, mussel beds, wildlife, tourism
- /// Considered to be less containable, therefore posing a wider risk to other communities e.g. those downstream

Empower customers by increasing and promoting opportunities for reporting EPI incidents



This would harm all manner of things, people, animals, farmers, plants, water... Everything

- *Male, family*

A serious EPI incident could have a permanent effect on communities and Scotland as a whole

IMPACT ON COMMUNITY



Concerns around potential illnesses and smells that can spread through contaminated water



Any damage to local wildlife spots impacts on community moral



Closed business such as shops have a direct impact on the owner and create inconvenience for customers



Fears around contaminants spreading to other communities

IMPACT ON SCOTLAND



Felt to have a larger societal impact the longer it goes on (multiple communities affected)



Potential for pollutants to pass from the environment, along the food chain to produce that we farm and eat



If salmon farms, mussel beds, whisky burns, or wildlife was hit it would impact exports & tourism



Depending on the scale/damage, media coverage could deter both locals and tourists from visiting



Damage to soil and farming – this could take a while to recover from

EPI: Reactions



There would be issues with smells, kids getting close – if it's near to you, you would worry about what is actually in the water

-Female, family

I would feel disappointed and I think so would anybody else. I'd worry about the smell and who had ownership of the issue

- Male, Low SEG

We get people from all over coming to this area for the otters and seals and birds – I'd worry it could harm them in some way

- Female, Elderly

The duration would be the key thing – you would just need it sorted as soon as possible

-Male, pre-family

An EPI that disrupts daily life such as work, shopping and travel is considered worst for individuals

MYSELF

SCENARIO

There has been an environmental pollution incident on a water course or river that runs through your local city centre

INITIAL CONCERNS

- Small businesses may have to close, impacting the owner and those that rely on their service
- The livelihood of services e.g. taxi drivers, could be affected with reduced demand on services
- Rural communities are likely to be cut off from amenities (e.g. travel to city centre stopped)
- hospitals and their staff could see a surge due to concern about becoming ill

DEVELOPMENT OVER TIME

- Could lower house prices and desirability of the area and push people and business out of the area
- Put strain on the services involved in rectifying waste flooding incidents

This would be a struggle for anybody who needs to use the city centre
-male, pre-family

Produce and promote a simple 5-step action plan to reassure customers and empower with the knowledge of what to do if an EPI was to occur in their local area

An EPI in a reactional space is most likely to impact older and younger members of the community

SCENARIO

COMMUNITY

You and your community encounter a serious EPI on a local river which has killed fish and left sewage debris on the foliage that borders the river

INITIAL CONCERNS

- Would smell and deter families, dogwalkers and the elderly from using this space
- Could trigger a health hazard to animals e.g. from eating / playing with dead fish
- Concerns that humans could also get sick from dying wildlife

DEVELOPMENT OVER TIME

- It could damage the economy of an area if dependent on the river
- Over time people would be less inclined to let children & pets play in that area
- It could prevent communities being able to meet and engage socially
- It could contaminate other areas downstream

I doubt if you had dogs or young kids or grandkids that you'd really want to be taking them there anymore

-Workshops

In the event on EPI use different communication channels to ensure the message of what to do has the widest possible reach. E.g. radio, social media, email/text and locally placed signed

Scenarios that impact businesses and wildlife can have the greatest economic effect on Scotland as a whole

SCENARIO

SCOTLAND

There has been an EPI near a row of beach cafes popular with tourists and families, meaning business cannot operate as usual until the issue is fixed/ + previous scenario

INITIAL CONCERNS

- Concerns around pollutants moving to other beaches via the tide
- Could destroy wildlife in the waters around the beach and filter into the wider ecosystem
- Could impact the health of kids and pets using the beach

DEVELOPMENT OVER TIME

- Could take away from the community – these are space used by everyone
- Could impact on tourism by not being a safe place to visit
- Could destroy beach café businesses, and jobs

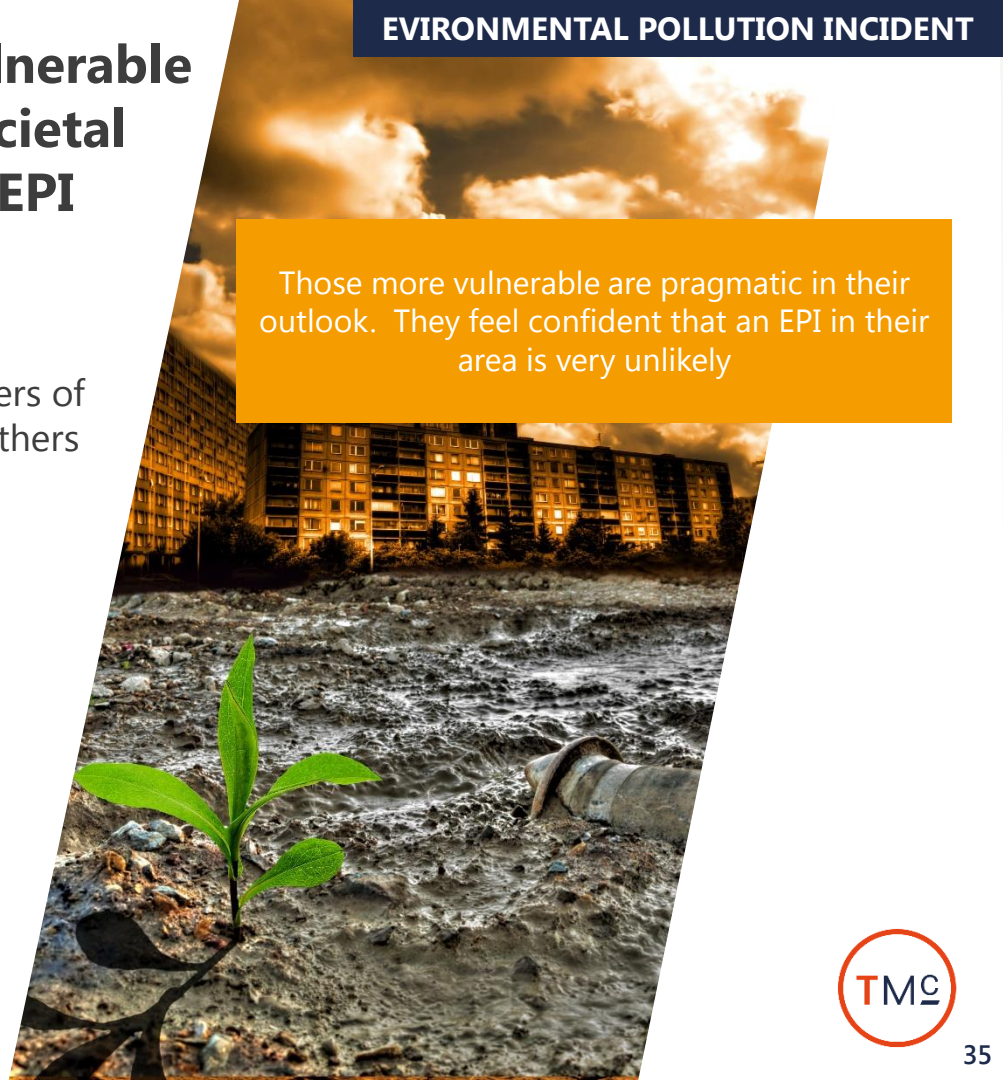
This could wipe out a community of small businesses that are reliant on our tourism industry – and stop people from coming back to the area

-Male, family

Like all customers, those more vulnerable are concerned about the wider societal and environmental impacts of an EPI

Those more vulnerable are pragmatic in their outlook. They feel confident that an EPI in their area is very unlikely

- ✓ **Risk to human health**
First and foremost, more vulnerable members of the community worry about the safety of others
- ✓ **The wildlife population**
Those living in remote areas and elderly customers are particularly concerned with animal and wildlife welfare
- ✓ **Scottish pride**
With a strong sense of pride in Scotland as a country, all customers who are more vulnerable are keen to protect it's good reputation. A serious EPI could risk this



Insights and recommendations : EPI





Waste Water flooding

It's most likely to happen, easiest to visualise and many have experienced a similar incident themselves.

Customers connect with this topic the most

For customers, waste water flooding is the most likely incident to take place in their local area



Waste water flooding is often grouped with other types of flooding, and many feel they are linked. E.g. Heavy rainfall causing blocked pipes to backup and flood local area with sewage



Generally, Waste Water flooding is felt to be a localised issue that affects a contained area rather than the wider community



If my toilet were to flood it would be awful, my house would be ruined and cost a fortune to sort out

- Male Post family

Promote Scottish Water as a key component in looking after the sewage network, flood prevention measures and educating customers to future proof the system

During a waste water flooding incident there is a priority to protect human health & resolve issues quickly



IMPACT ON COMMUNITY



Disruption to travel, preventing people within the community from getting to work



Potential to make pets ill and pass on illness to other animals



Put vulnerable people e.g. the elderly and children at risk of illness and isolation



Prevent businesses from opening and trading with the community, potentially impacting livelihoods



Puts pressure on community to restore damage caused

IMPACT ON SCOTLAND



Potential to lower house prices. If incidents become wider spread or more frequent, could impact on Scottish economy overall



Could place additional strain on emergency services



Frequent waste water flooding incidents could negatively impact perceptions of an area and risk losing visitors and migration to the area

In the event of a large scale waste water flooding incident react quickly and communicate progress to reassure the local community

Waste water flooding: Reactions



This would be the worst – it happened to one of my friends – sounded like a nightmare!

- Female Family

Here I would worry about sanitation, diseases and health risks to residents

-Lower SEG

The most important concern would be how long will it take them to put things right

-Older customer

It would depend on the amount of waste water - it's happened before so I have sandbags in place

- Male Pre family

Scenarios that affect residents and personal belongings has the highest personal impact

SCENARIO

MYSELF

Your street is partially covered in dilute sewage water and toilet paper for a day, you may have to step through this to get to and from your house, this happens every time it rains heavily

INITIAL CONCERNS

- Disrupt transport
- Put the elderly at risk of illness and isolation
- Destroy peoples homes
- Create smells and mess
- Potential for vermin Disrupt shops and essential amenities

DEVELOPMENT OVER TIME

- Potentially lower house prices and the desirability of the area
- Push people and businesses out of the area
- Put strain on the services involved in rectifying the incident

The postman and the binman couldn't come, and the (more vulnerable) would be stuck in their houses until it was all cleared
-Female Family

I'd imagine that if this went on and on you could lose money, and wound up stuck and unable to get out
-Male Post family

Customer want to see Scottish Water focus on preventative measures e.g. education in schools, maintaining the sewerage network, as well as having a strong contingency plan in place when events do occur

Communal facilities that are essential to vulnerable members is the most impactful on the community

SCENARIO

COMMUNITY

A supermarket which is the main one in the area, has begun to flood with dilute sewage and toilet paper. The sewage has entered the front of the store and in to the aisles and spoiled products. It will need decontamination before it can be used again

INITIAL CONCERNS

- Impact people with no car, or people who cannot travel far e.g. people with disabilities
- People would be forced to shop elsewhere. Especially if living rurally -diverting spend away from community
- Immediate commercial impact on retailer

DEVELOPMENT OVER TIME

- Prolonged decontamination work could risk jobs, new employment, insurance, customers and stock
- Could leave a lasting negative impression on the supermarket
- Cause prolonged inconvenience for vulnerable members of community

I think this could be difficult for those who don't drive or people that live in areas where they can't get to another shop easily

- Male Pre family

Customers feel this would be the duty of the store and/or landlord to rectify the damaged caused, but Scottish Water play a roll in regularly maintaining sewage networks in tandem with this to prevent reoccurrence

Waste Water flooding that impacts culture, tourism or heritage is considered most damaging to Scotland overall

SCENARIO

SCOTLAND

A local museum, that pulls in tourists every summer has flooded, the waste water has damaged artefacts displaying local heritage that have been put together by local volunteers. It will take 6 months to restore damage

INITIAL CONCERNS

- Artefacts may be damaged beyond repair and irreplaceable, impacting heritage/culture
- Damage community moral
- Would require a specialist clean up response

DEVELOPMENT OVER TIME

- If prolonged this could damage economic revenue depending on the importance/size of museum
- There could be a knock on effect for other local tourism sites in the area
- Likely to generate negative media attention damaging the reputation of the area

If this happened somewhere like the national museum of Scotland it would be completely devastating – you couldn't put it right

-Male Family

Work with other agencies to reduce impact on local businesses by promoting other tourists hotspots and facilities that are still open for business

Scenarios that flood internally or repeatedly flood are considered high priority investment areas



You can get by without your park or a field but homes and schools and shops are things that everyone needs

- Workshops Post family

INTERNAL V'S EXTERNAL

Internally flooded areas are a bigger priority for customers because:

- /// Difficult to clean and dry
- /// Businesses & residents have to relocate
- /// Places that you **need** e.g. homes, supermarkets, schools

PREVIOUSLY FLOODED V'S AT RISK

Generally, previously flooded areas are a priority because:

- /// These communities don't get a chance to recover
- /// Communities may struggle to insure property

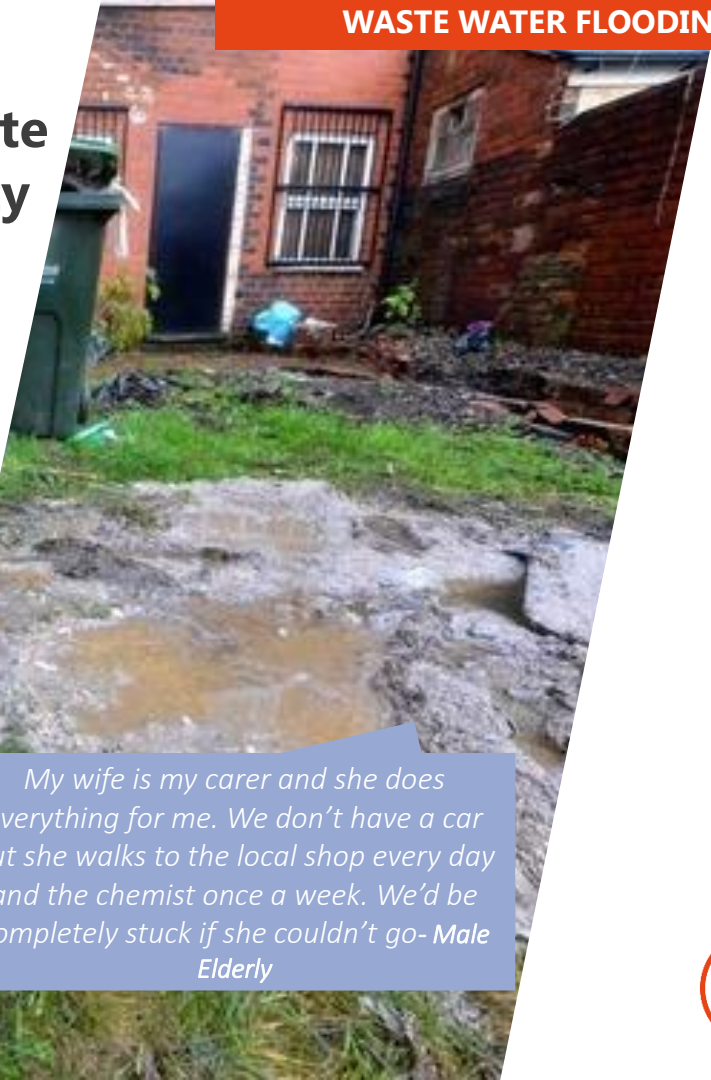
CALL OUT

Edinburgh customers – prioritise 'at risk' areas, as investing in unfixable areas may be a waste of money in the long run

Take learnings from regularly flooded sites and apply these to 'as risk' areas'

Those living with disabilities are most likely to worry about the impact of waste water flooding on their local community

- ✓ **Reluctance to rely on local community**
Those living with disabilities are reluctant to rely on the local community for their everyday needs
- ✓ **Health of those more vulnerable**
By nature, people worry about 'those less fortunate' – eg children, elderly residents and others with disabilities
- ✓ **The local infrastructure is crucial**
Those less mobile rely on local amenities to ensure they remain as independent as possible. Flooding that closes local shops and key amenities could have a detrimental effect on mental and physical wellbeing



My wife is my carer and she does everything for me. We don't have a car but she walks to the local shop every day and the chemist once a week. We'd be completely stuck if she couldn't go- Male Elderly

Insights and recommendations : Waste water flooding

Waste water flooding is the most likely incident to take place in their local area



Promote Scottish Water as a key component in looking after the sewage network, flood prevention measures and educating customers

During a waste water flooding incident there is a priority to protect human health and resolve issues quickly



In the event of a large scale waste water flooding incident react quickly and communicate progress to reassure the local community

Scenarios that affect residents and belongings has the highest personal impact



Scottish Water focus should focus on preventative measures e.g. education in schools, maintaining the sewerage network. As well as having a contingency plan in place

Communal facilities that are essential to vulnerable members is the most impactful on the community



Customers feel this would be the duty of the store and/or landlord to rectify the damaged caused, but Scottish Water play a roll in regularly maintaining sewage networks in tandem with this to prevent reoccurrence

Waste water flooding that impacts culture, tourism or heritage is considered most damaging to Scotland overall



Work with other agencies to reduce impact on local businesses by promoting other tourists hotspots and facilities that are still open for business

Scenarios that flood internally or repeatedly flood are considered high priority investment areas



Take learnings from regularly flooded sites and apply these to 'as risk' areas'



Bathing water quality

The surrounding area being clean and tidy is just as important as the impact of waste water when it comes to bathing water quality

Beaches and lochs are meeting hubs, where water quality and aesthetics are equally important factors

- // The surrounding area and the quality of the water both have equal importance for visitors
- // These sites are often seen as 'hubs' in the community. Local people meet and interact in areas along the beaches
- // There are lots of activities going on in these spaces e.g. buggy-fit, cycling, rowing, running, dog walking, sports, eating, fishing.
- // Beaches are a key attraction for tourists
- // Customers are unaware of water quality signs or are confused about what they mean



The beaches and lochs in Scotland are absolutely vital for the Scottish economy. Tourism is massive, and people come for our beautiful coastline. Forget St Tropez, Scotland has the most beautiful stretches of golden sand and the tourist come to them year-round

- Mother

Bathing water quality: Reactions

This would be awful, I go to the beach to see people, if I couldn't do this I would get stuck at home all day
- Male Elderly

My dogs go in the water all the time they are bound to get ill if the water quality was poor

- Female Dog walker

This shouldn't happen, the poor animals, there should be measures in place to prevent this from happening

- Female Elderly

I would stop going to the beach, I wouldn't want my kids getting ill

-Male Family

The wildlife population in the area would decline which would reduce tourism in the area

-Female Post family

Finding the source of the problem and identifying who should fix the issue is key

IMPACT ON COMMUNITY



Bad smells and water discoloration can deter visitors from local areas and further afield



Financial strain on smaller business locally who rely on visitors



Could deter workers from the area, which in turn has a negative impact on the housing market



Creates a negative emotional response as a key meeting place



Reduces trust and feeling safe amongst the local community



IMPACT ON SCOTLAND

The coastline is an integral part of why tourists visit Scotland and would greatly impact the perceptions

Tourists will stop visiting Scotland for it's renowned clean beautiful beaches or wildlife watching if these are affected



Work in partnership with other authorities to maintain the whole environment around bathing sites.
Communicate to customers who to contact with different types of issues.

Scenarios where sewage affects water quality has the biggest impact overall

SCENARIO

MYSELF/MY COMMUNITY/SCOTLAND

Your local beach has been designated with 'poor bathing/swimming water quality' due to heavy rainfall a popular beach *could* now lead to stomach upsets. This poor water quality with affect the beach is in a good location with clean and spacious toilet and parking facilities

INITIAL CONCERNS

- The beach is seen as unfit for purpose
- Water activities would have to be halted
- People wouldn't take their kids / dogs for fear of getting ill
- Tourist would not visit beach for fear of getting ill and go to other beaches
- Local businesses would see a financial strain

DEVELOPMENT OVER TIME

- Impact the income of local businesses
- Marine wildlife could potentially become affected
- Sewage impact on water quality could spread to other beaches
- Tourists may stay away from whole area

This would really impact the community and Scotland, tourist come specifically to visit our beautiful clean coasts and would stop coming if there was a slight possibility of getting ill

-Male Post family

"We have signs on our beach but they hard to understand so I never pay attention to them"

-Female Post family

Act quickly if and when these incidents occur.
Make water quality signage easy to see and understand. E.g. traffic light system

However, people would not visit a dirty beach even if the water quality was good



I wouldn't bring my children to a place to a place like that for fear of standing on something like glass

-Female Family

Depending on various factors

Vandalised carpark, toilets etc questions safety

Fear of injury

Don't want to spend time in dirty / untidy areas

Dirty / untidy areas lead to question the water quality and safety of the area

Scottish Water needs to work in partnership with the Local Authorities to maintain amenities and keep the area tidy as well as maintaining water quality

Intercepts at Portobello beach – summary



People meet and socialise by the beach in all seasons



"I come to buggyfit class every week. I wouldn't do that if the beach was dirty and smelly"

"I bring the kids down to the beach to play. It gets them out in the fresh air doing exercise"



The beach cafes are busy from morning to night with locals and tourists



"People rarely swim in the sea but if it was dirty, smelly and polluted it would put you off the area"



The sea quality needs to be adequate year round for dog walkers and wild water swimmers

Families living in financial hardship especially appreciate the coastline and lochs for free and enjoyable activities

✓ Free outdoor space for the family to enjoy


Holidays abroad are unlikely for families struggling day to day. Local beaches and lochs are used for lowcost trips with the children

✓ Children paddle year round

Families worry about the quality of the bathing water. They need to feel confident that the children won't get sick from the water

✓ Beach and facilities

The whole environment needs to be clean, and pose no risk for families visiting – dog fowl free beach and clean toilets



We go to the beaches in Scotland all the time. it's not far away and we can just play in the sand all day, take a picnic. We don't go on holiday. This is our holiday
-Female Post family

Insights and recommendations : Bathing water quality

Finding the source of the problem and identifying who should fix the issue is key



Work in partnership with other authorities to maintain the whole environment around bathing sites. Communicate to customers who to contact with different types of issues.

Sewage affecting water quality has the biggest local and wider societal impact for bathing water quality.



Act quickly with authorities if and when these incidents occur.

There is little awareness of how to gauge bathing water quality



Make water quality signage easy to see and understand. E.g. traffic light system

People would not visit a dirty beach even if the water quality was good



Scottish Water needs to work in partnership with the Local Authorities to maintain amenities and keep the area tidy as well as maintaining water quality

A scenic landscape featuring rolling hills and mountains under a cloudy sky. In the foreground, a calm lake reflects the surrounding scenery. A large, dark blue, semi-transparent geometric shape is overlaid on the left side of the image, containing white text.

Business customers

They are more focussed on self and the local economy and less concerned about environment

Businesses often have similar concerns for waste water as domestic customers, but with added responsibility

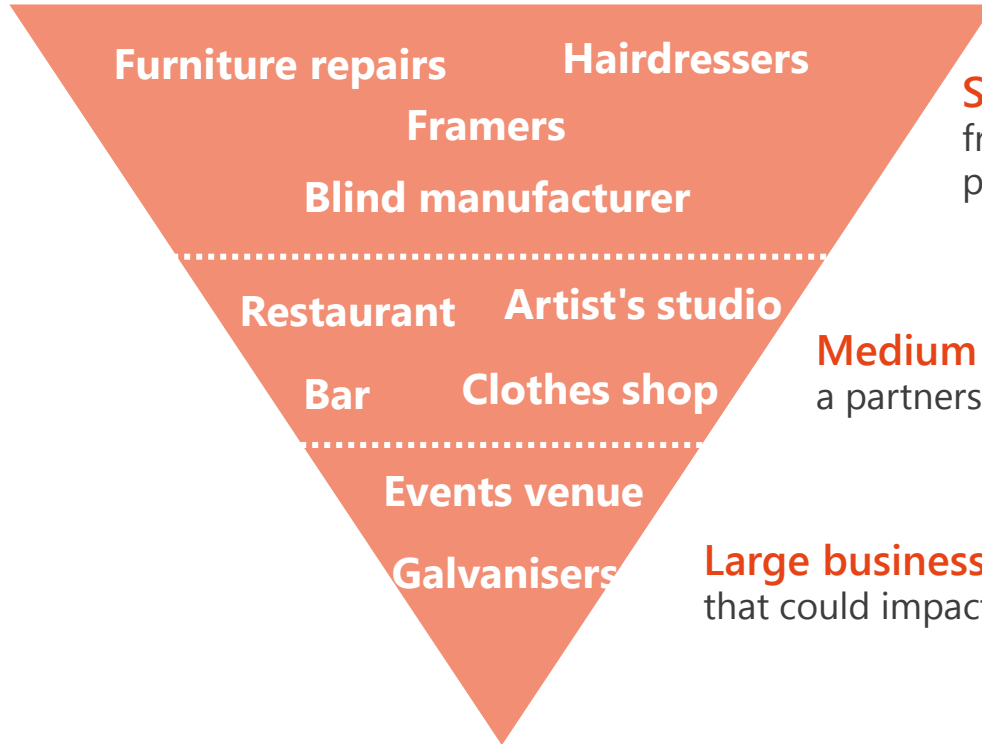


- As part of the business infrastructure - along with Scottish Water, the Local Authority and SEPA - businesses welcome a partnership approach in preventing waste water incidents; the bigger the business, the bigger their role
- All businesses regardless of size consider the impact of a waste water incident on their customers, their staff and their ability to continue trading. Responsibility to operate in a way that prevents incidents is important



As a business that employs staff and also has customers coming into the shop, I can't have waste water leaks that might make people ill. That would be bad for my business
-Medium business

The bigger the business, the more concern the owner has for their role in preventing waste water incidents



Small businesses: with limited resource, support from authorities is expected. Responsibility is perceived to be similar to that of domestic customers

Medium businesses: recognise responsibility but expect a partnership approach with authorities and organisations

Large businesses: responsible for preventing leaks that could impact the local community

Wider societal awareness

Although often primarily concerned with the role of waste water on their own operation, Scottish businesses are also concerned about the impact that waste water problems could have on Scotland as a whole, especially when it comes to the local economy and business infrastructure



Waste water flooding poses the biggest threat to the individual business, but all scenarios have the potential to impact negatively on Scotland as a whole

Scenarios by level of impact on Scottish businesses

WASTE WATER FLOOD

- Businesses may need to close immediately
- Repeat occurrence of internal flooding risks the reputation of the business
- Repeat occurrence of external flooding risks the reputation of the local area

EPI

- Businesses are unlikely to be at fault and so the responsibility shifts to 'The authorities'
- Reoccurrence has the potential to have a negative economical impact on an area

BATHING WATER

- Businesses are very unlikely to have directly caused poor bathing water quality BUT for some businesses it has the potential to impact trading – ie those that rely on tourism

RIVER WATER QUALITY

- Concern is similar to that of domestic customers for use and activities
- Businesses are less concerned about the environmental impacts

Businesses protect their own interests first. Less thought is given to the wider impacts

- ✓ **Identify fault and responsibility**
So that responsibility for rectifying the problem can be quickly apportioned
- ✓ **Limit impact on business operation**
Clean up and decontamination operation put into place to minimise business closure
- ✓ **Prevent reoccurrence**
Businesses look to work collaboratively with Scottish Water and other relevant organisations to plan how to avoid future incidences

I would want to know quickly who was at fault . Have we done something to block the pipes? Is it someone else's fault? Whoever it is needs to put it right and make sure it doesn't happen again
-Small business


The welfare of the local community takes precedence over business trading

- ✓ **Protect staff, customers and community**
Businesses are unlikely to be at fault here, and as such feel they will be insured against loss
- ✓ **Limit impact on business operation**
There's a fear that the business would have to close entirely, with an expectation that SW would work with appropriate partners to minimise this time and keep businesses informed on progress
- ✓ **Prevent reoccurrence**
Businesses would expect Scottish Water and other relevant organisations to have an emergency plan in place for businesses



The Scottish coastline is seen as integral to the economy

- ✓ **Overall low impact to many businesses**
Many Scottish businesses don't rely on the quality of the coastline for their custom
- ✓ **Potential to have major national impact**
Tourism is a significant contributor to the country's economy and so businesses recognise bathing water quality has the potential to significantly impact the economy
- ✓ **Pride and confidence**
For businesses and individuals alike, the Scottish coastline is a matter of national pride that instils confidence in Scotland



*Lots of Scottish businesses depend on the quality of our coastline. Golf courses, hotels, cafes, the businesses that supply the hotels and cafes...
-Large business*

Businesses have low concern with river quality, but recognise their importance

- ✓ **Rivers are less important for business**
Although many recognise the important historical link between rivers and business, their existence now has little impact on many businesses
- ✓ **Out of sight out of mind**
Businesses are increasingly less likely to be located near a river. Only those who rely on rivers for their operation think about the impact of poor water quality
- ✓ **The societal role of rivers**
Businesses recognise the importance of rivers in providing tourism and recreational activity, and such believe that work should focus on parts of the river that are used



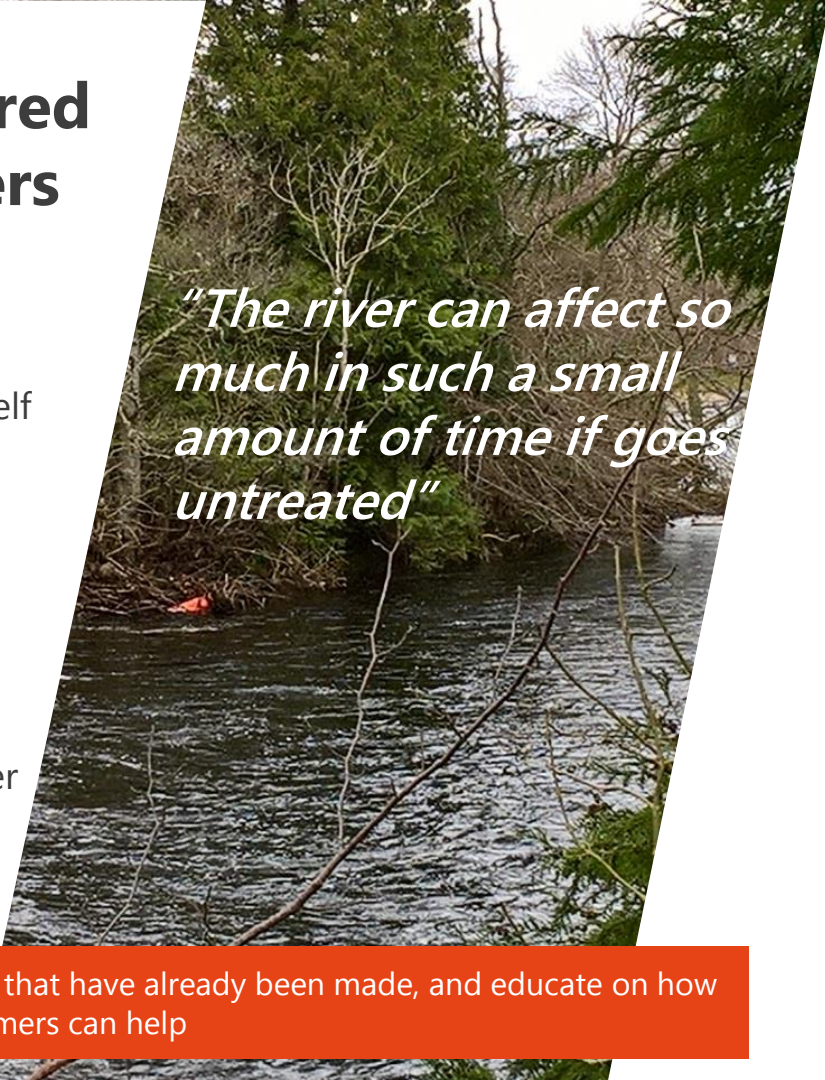


Waste water priorities

EPI's are seen as the most impactful form of Waste Water, if it were to happen. However investment should be prioritised for river water quality as this is most likely

River water quality is considered to be the priority for customers

- ✓ **Ecosystems**
Wildlife surrounding and inhabiting the river itself could be greatly affected
- ✓ **Meeting places / activities**
Key meeting place for all types of people and activities
- ✓ **River flow**
Connects all bodies of water and some businesses are reliant on the water from the river



"The river can affect so much in such a small amount of time if goes untreated"

Maintain pipes, promote the improvements that have already been made, and educate on how customers can help

If an EPI happened it would have the greatest impact on Scotland

"This would be awful, but how can you prevent the unpredictable?"

✓ Unpredictable

Customers are aware that these events are hard to predict and are very unlikely to happen

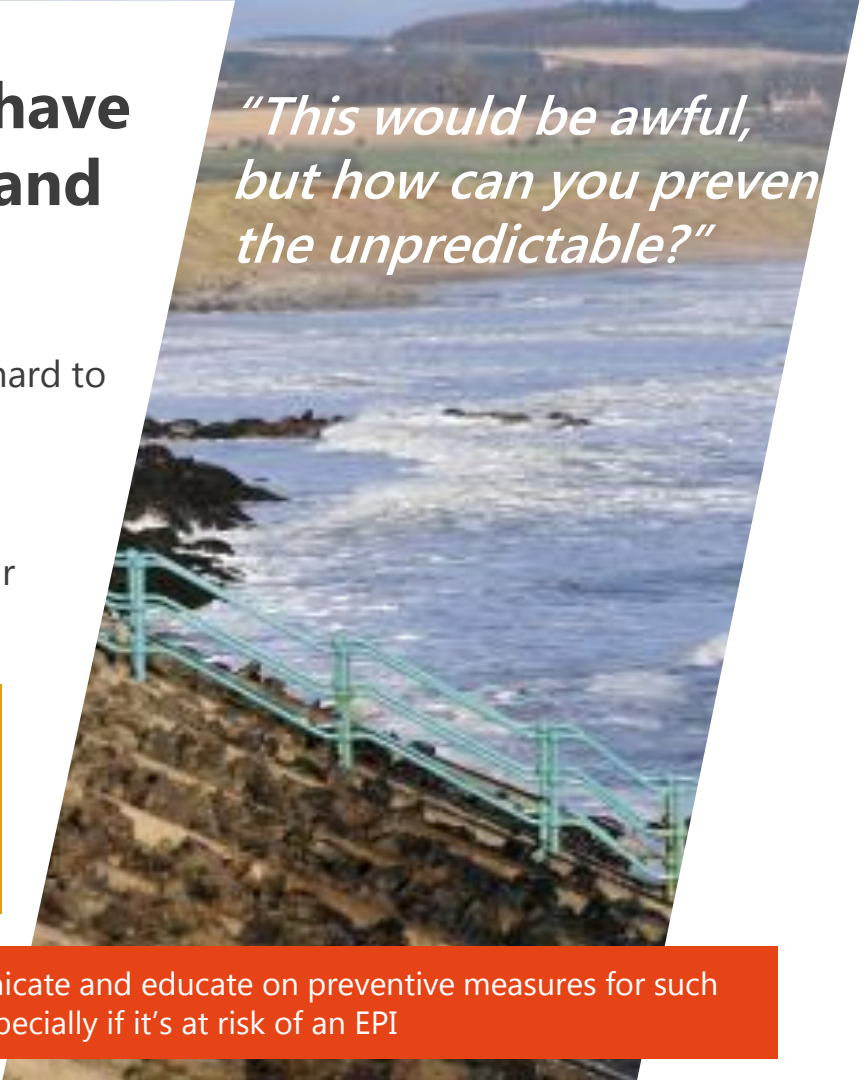
✓ Contingency plans

However it is felt that there should be a contingency plan in place if this was to occur

CALL OUT

Businesses feel that this is a priority, and that pipe maintenance and more knowledge sharing between organisations of how to react in these events is needed

Scottish Water needs to communicate and educate on preventive measures for such events, especially if it's at risk of an EPI



Waste water flooding impacts the individual but wider society less

- ✓ **Personal impact**
This is localised and easily contained
- ✓ **Quick response**
Incidents tend to be dealt with effectively
- ✓ **Less environmental impact**
Due to it being containable and in more residential areas

“This would be horrible for me but I don’t see how it would impact Scotland”

Pipe maintenance and education for customers (do’s and don’ts) is needed to prevent blockages and sewage flooding from occurring



Bathing water quality has to work with surrounding amenities

- ✓ **Meeting places / activities**
Key meeting place for all types of people and activities
- ✓ **Water quality vs surrounding area**
The water quality is just as important as the the aesthetics and beach amenities

“Scotland is known for its clean beaches and beautiful water... let's keep it that way”



Scottish Water need to work in partnership with organisations to maintain pipes and keep beaches clean

Recommendations

A photograph of a beach with plastic waste, including a green bottle cap and white plastic, on a rocky shore. A dark blue semi-transparent overlay covers the left side of the image, containing the text 'Recommendations'.

Customer have realistic expectations of waste water and how it should be managed

General recommendations

- Businesses to use best practice to prevent incidents
- Local Authorities and Environmental agencies to take charge of immediate / short term impact e.g. flood barriers, sandbags etc.

Scottish Water recommendations

- To take charge of pipe maintenance and clearing blockages
- Maintenance of current infrastructure e.g. updating Victorian pipes and providing an accessible timeline
- Making it easy for people to understand water quality levels in different locations
- Share 'best practice' across businesses in dealing with different types of pollutants and how to avoid serious EPI's
- Opportunity to positively report on their role in protecting wider societal impacts of waste water management
- Education to customers of how individuals can prevent waste water incidences from happening

The expectation isn't solely on Scottish Water and is viewed more as a collaborative partnership amongst agencies



BEFORE

Prevention through pipe maintenance which is a focus / priority for Scotland and communities



DURING

Fast action when incidents occur and communicate the actions that are taking place



AFTER

Communicate when incidents are cleared and safe to use again can reassure the public

End of doc contact slide

Jo Brown

✉ j.wbrown@trinitymcqueen.com

☎ 07494848949

Pip Toon

✉ p.toon@trinitymcqueen.com

☎ 07525 811902

Poppy Crow

✉ p.crow@trinitymcqueen.com

☎ +44 (0) 113 451 0000

Trinity McQueen Leeds

Victoria Wharf
4 The Embankment
Sovereign Street
Leeds
LS1 4BA

+44 (0) 113 451 000

