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Effective public health messaging for adverse weather events

Annex 1: Engagement Insights Report

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1 Introduction

During September and October 2025, we conducted an insight gathering process to understand how organisations and communities across Scotland, particularly those who are vulnerable and at-risk, respond to public health messaging about adverse weather conditions.

Our focus was on extreme heat, cold, floods, and droughts. The aim was to identify effective messaging types and communication methods to convey public health information. We collected valuable insights and stories directly from organisations that support people and communities who have been directly affected by adverse weather, and from members of these communities themselves. These valuable insights explored how people and different communities respond to and engage with messaging, including the power of storytelling, faith-based messages, local networks, and community resilience teams. These perspectives are crucial for developing better public health messaging strategies, ultimately leading to improved health outcomes across Scotland.

Note: During Phase 2 a national alert test went off in Scotland, and it was on participant's minds during workshops and interviews. This information has been captured where relevant.

2 Key findings (across all groups)

The population groups and organisations representing them that we spoke to were:

- Early Years (parents/carers of children under 5)
- Older people over 65
- People with health conditions
- People from ethnic minority communities
- Gypsy Travellers
- Community members from Easterhouse, Glasgow
- Community members from Dumfries and Galloway

2.1 Empowerment through preparedness

Focus on what people *can do*, not what they lack.

- Use positive, action-oriented language: "Here's what you can do to be ready".
- Reinforce that small actions make a difference (e.g. keeping a little extra food, formula, or medication if possible).
- Avoid labels like "vulnerable"; instead, use "everyone can take steps to prepare".

Highlight that preparedness builds confidence and helps families, neighbours, and communities.

2.2 Clarity, simplicity, and calm reassurance

Reduce fear by being factual, straightforward, and calm.

- Explain what authorities and local services are doing: “We have plans in place for transport, schools, and essential services.”
- Use plain English, short sentences, and active verbs.

Emphasise that adverse weather is planned for and manageable with and through your local community connections and networks.

2.3 Hyperlocal relevance and community connection

Make information feel close to home.

- Include details on local resources such as community centres, safe spaces, food banks, and water access points or where these might be found.
- Encourage people to follow local messaging (faith and community groups, local radio, councils).

Reference familiar places or groups to strengthen trust and local identity.

2.4 Practical, low-cost, realistic actions

Acknowledge that not everyone can buy or store large quantities.

- Offer manageable, low-cost ideas: keeping a torch and batteries, writing down emergency numbers, checking on neighbours.
- Be non-judgmental about financial limits or family situations – especially for those parenting alone.
- Focus on the “small steps that help” rather than perfection.

2.5 Everyday impact awareness

Help people anticipate disruption and plan around it.

- Explain likely impacts on public transport, supermarkets, schools, and health appointments.
- Suggest local options that may provide alternatives or ways to plan ahead (e.g. bus diversions, local shops, or school closure updates).

Encourage checking reliable local channels for updates.

2.6 Other ideas to consider that emphasise local networks and connectedness

2.6.1 Understanding local defences and limits – build trust through transparency about local infrastructure

- Explain what local flood defences, gritters, or drainage systems do and their limits.
- “These measures reduce risk, but no system prevents all flooding.”
- Encourage personal and community actions that complement official defences.

2.6.2 Mental health and emotional wellbeing – promote awareness and normalise emotional responses

- Acknowledge that stress, isolation, or worry are normal during severe weather.
- Provide links to trusted third-sector or charity partners (e.g. Mind, SAMH, Samaritans, local or local support networks).
- Encourage staying connected with others and checking in on neighbours.

2.6.3 Trust and partnership – build confidence through trusted voices and collaboration

- Combine messages from local authorities with those from **charities, community leaders, and faith groups**.
- Reinforce that everyone from local councils to community volunteers plays a part.
- Show that people are not alone: help is nearby and coordinated.

3 Key findings – Early Years

Weather events spoken about: Extreme Heat, Cold, Flooding

For this population group we spoke to:

- [Home-Start Edinburgh](#): an organisation supporting parents with young children at home, through a volunteer programme and family groups.
- [One Parent Families Scotland](#): a charity supporting single parent families through providing expert advice, practical support and campaigns.
- [Scottish Infant Feeding Network](#): a national group for NHS Infant Feeding Advisors from 14 different health boards, leading on infant feeding work at a local level in maternity and community.

3.1 What they'd like to see from messaging

Messaging should:

- Be informative but action-oriented to help reduce fear, conveying that authorities know what happens in adverse weather, are prepared, and listing what individuals can do – "**this is what you can do to be prepared**".
- Include information on the impact of extreme weather on daily essentials like public transport (knowing that buses often stop running), supermarkets, and school closures.
- Suggest people keep "a little bit" extra in stock, for example baby formula, if they can afford to.
- Use clear, simple, non-judgmental language. It should acknowledge challenges of many parenting alone, and provide low-cost, practical actions that feel manageable.
- Include hyperlocal information on where people can access water and safe spaces.

3.2 Challenges with adverse weather messaging

Adverse weather events are particularly dangerous for infants and young children under 5, due to their inability to regulate body temperature, and developing immune systems. A fluctuation in temperature or water supply access can have drastic effects, and parents and carers of children under 5 need to be prepared to make sure their children are safe.

3.2.1 Gap between message and action

"There's a difference between hearing that messaging and **being able to do anything about it.**" – One Parent Families Scotland representative

Organisations that work with parents and carers of infants and young children told us that messaging about adverse weather is heard, but parents find it difficult to act on, especially in the case of single parents. One Parent Families Scotland shared examples of logistical challenges such as finding childcare to leave the house for necessary preparations, for example, parents with a pay-as-you-go electricity meter must leave the house, to pay for or top up their meter to access power, which can be difficult during adverse weather conditions. Cost is also a barrier. Families already struggling financially don't have the budget to stock up on essentials in preparation for adverse weather. Keeping warm in cold weather is expensive, especially in energy-inefficient housing and running fans or installing air conditioning for rising temperatures also poses a cost barrier for low-income families. They also talked about messaging which does not inspire action, for example, some messaging described putting "baby items" in grab bags for emergencies, but did not specify what these items were, like nappies and bottles. Because the messaging was not detailed enough, it did not appear to inspire action.

3.2.2 Need for localised and actionable support

From the early years organisations we spoke to, they indicated there was a "gulf" between national adverse weather information and what local community support looks like on the

ground. As a result of their experience, it was difficult to take action if parents do not know what support or resources are available, like safe spaces at local community centres.

They indicated that hyperlocal advice is crucial in many adverse weather situations. For example, when flooding impacts buildings, the response is local, so parents need to know where to go for help and what the appropriate local authority phone line is.

3.2.3 Not trusting or responding to messaging

The national adverse weather messaging is sometimes inaccurate in Scotland, for example what was predicted to be a major snowstorm ends up being a "snow drizzle". When predictions aren't accurate it can lead to people not trusting weather warnings or their magnitude the next time a weather event is predicted to arrive.

3.3 Specific concerns for young children and infants

Early years organisations explained some specific needs that affect their population group.

3.3.1 Formula Feeding and Water Safety

Messaging should be improved around safe formula preparation in challenging situations like power outages, lack of clean water, and lack of refrigeration or sterilisation. Information on how to sterilise bottles without electricity (e.g., using boiling water) needs to be considered. Parents may not know that they do not have to stick to one brand of first-stage formula if supply chains are affected. For example, safe preparation of formula is a key issue for this population during adverse weather events. Bottled water provided during water supply issues (due to drought or flooding) may not be suitable for infants if it is too high in sodium and potassium. Power outages prevent sterilisation, safe preparation and storage of breast milk for women who rely on pumping and refrigeration.

3.3.2 Extreme Heat

In Scotland, heat in even the low 20s can affect populations, not just "extreme heat" of over 30 degrees. In extreme heat, there is a recurring question every summer within the health sector on whether to give babies extra water alongside breastmilk or formula. Messaging should emphasise that breastfed babies under six months old should not be given extra water, but formula-fed babies can have very small amounts.

3.4 Public health messaging channels and effectiveness

3.4.1 Effective channels at a national, regional and local level

In Dumfries and Galloway the **Grow Well app** through Healthzone is used locally to send out health alerts; it has a high uptake and is a trusted source of information for parents. The app has been used for messaging around storms, and there is potential to use it for more adverse weather events. The organisations we spoke to use **Parent Club** (a Scottish Government initiative) as a reliable source of information to share with families and use social media like Facebook to share information and communicate with parents – but they

are unsure how effective it is. One organisation noted the "Edinburgh Minute" community news board often shares weather warnings in Edinburgh.

Digital-only distribution is often a necessity, as NHS Dumfries and Galloway and other organisations do not print leaflets or posters due to their high cost. As a result, there is a lack of easy-to-read, physical posters that could be placed in community centres or GP practices. Digital resources, such as the NHS Inform pages on summer health and keeping safe in hot weather, are appreciated for being short, using bullet points, and not overwhelming the reader, offering main headlines and links to more information.

4 Key findings – Health/age

Weather events spoken about: Extreme Heat, Cold, Flooding

For this population group we spoke to:

- [Adaptations Team, Scottish Government](#): a government team providing advice and support to help the public sector, businesses and communities in Scotland be prepared and resilient to the effects of climate change.
- [Scottish Fire and Rescue Service](#): National fire service in Scotland.
- [Asthma and Lung UK](#): a charity focusing on respiratory health in adults and children across the UK.
- [British Red Cross](#): Global humanitarian network supporting emergency responses after disasters.
- [Age Scotland](#): a national charity supporting older people in Scotland.

4.1 What they'd like to see from messaging

Messaging should:

- **Emphasise empowerment** and action rather than labelling the recipient as "**vulnerable**", as being labelled as vulnerable can be a turn-off and negatively affect the message's reception. Empowering messaging through language is more likely to inspire positive action.
- Include information about awareness on mental health and wellbeing during adverse weather and include links to charity or third sector partners that are more trusted than government or statutory bodies.
- Be **hyperlocal**, detailing what support is available locally for preparedness and during an emergency response. This could include encouraging people to look for local messaging through community groups.
- Explain what defences are available and what they do to enhance risk perception, for example "this is why local flood defences help but may not prevent a flood".

4.2 Challenges with adverse weather messaging

Older adults, particularly those over 75 and those with health conditions, face more severe impacts from extreme weather, often due to factors like poor housing, low income, and social isolation. They are also particularly at risk because many do not see themselves as vulnerable, and don't plan accordingly.

People of all ages with health conditions are also a key affected group in adverse weather, as weather can worsen health conditions. People with lung conditions are aware of the symptoms triggered by cold weather – 68% of UK respondents to Asthma + Lung UK's Life with a Lung Condition Survey said that cold weather is a trigger and that 65% are affected by changes in the weather (over 10,000 responses).

"When one sees national advice on something, one assumes, OK, that's for the people who are at risk. It's not me. ... In polling, we found about 1/3 of older people saying, 'I don't consider myself particularly vulnerable to heat waves'." – British Red Cross representative

4.2.1 Gaps in Systemic Preparedness

The organisations we spoke to referenced particular weather events in this discussion, including Storm Ellen. Following a severe weather event like Storm Ellen, the national helpline for older people was inundated with calls. Many of these callers, who were on the Priority Service Register, had expectations of support (in the form of visits or calls) from utility companies or local authorities that were not met. The sheer scale of the demand faced by utility companies like Scottish Power Energy Network was enormous, yet many local authorities were unprepared. They often hadn't designated warm spaces or coordinated with providers, resulting in disjointed communication and public confusion. The shift to digital landlines is also a concern for older people who rely on traditional home telephones, as they can be stuck and unable to contact utility companies or local authorities if the line goes down during an adverse weather event. For individuals living in motor homes or caravans within large community settings, they face systemic failure as they may not be eligible for the Priority Service Register or receive other household funding, leaving them vulnerable during a weather crisis.

4.2.2 False Sense of Security

Members of the public, including those in the Scottish community of Brecon, a place that was brought up during the workshop, were generally aware of the flood risk in their area due to receiving flood alerts. However, this knowledge rarely seemed to translate into actual preparedness. This could be a result of alerts being so frequent that recipients became desensitised. In the case of Brecon, existing infrastructure like a flood wall led to a dangerous assumption that people were now safe, causing them to ignore alerts.

Generic national advice is often met with "optimism bias", where people assume the warning is for "the people who are at risk, it's not me". This highlights the need for messaging to more clearly articulate the risks to everyone.

4.2.3 Need for localised and actionable support

A consistent finding across the British Red Cross's research (UK-wide, including Scotland) was that participants did not recognise national preparedness advice for floods from agencies like SEPA. People generally knew a flood was coming but asked "what am I supposed to do about it". Participants seemed not to know their local evacuation plan (where to go or what help to expect) in the event of a flood. This lack of knowledge contributes to a sense of powerlessness and is linked to worse mental health outcomes.

4.3 Public health messaging channels and effectiveness

4.3.1 Effective channels at a national, regional and local level

For this population group, the organisations we spoke to send digital public health messages through social media channels like Facebook and Twitter, as well as physical methods like posters and leaflets, which are highly valued by older people.

"I think older people really **appreciate the paper copies [of Age Scotland's leaflets]**... quite a lot of people are **digitally excluded**, very reluctant with scams and technology." – Age Scotland representative

Large organisations like Scottish Government, Scottish Fire and Rescue Service, and Age Scotland, described that they disseminate messages through their comms teams and share content across partner agencies and membership organisations to relay information across communities

In the case of the Scottish Fire and Rescue Service (SFRS), the organisation issues wildfire warnings across digital channels – which are shared by partner agencies – typically between spring and summer months. Some of the key messaging included in these warnings is around protecting rural communities by not lighting fires (like barbecues or campfires) in the open during hot, dry weather conditions when the wildfire risk is high. SFRS said they get good pick up from traditional media on their messaging, but don't have the research at this stage on which age groups have engaged with this content. SFRS also provides face-to-face safety visits for people through their safety visits, providing an opportunity to deliver specific, practical advice on issues like heating and safety.

"We have local resilience partnerships...**all these comms teams will be communicating with each other and telling each other who's putting out what information.**" – SFRS representative

Organisations we spoke to highlighted that the person who disseminates the public health messaging is also important, not just the message being given. They described that the person giving advice needs to be trusted, and co-produce messages with the communities they're trying to reach – it's not just about what you say, but who says it. The volunteer base supported vaccination programmes seen during Covid-19 were brought up, especially in places where there were lower vaccination rates. The [Community Champions programme](#) was also brought up, as a programme that recruited community leaders like faith leaders to act as ambassadors and be a source of advice to the community.

4.3.2 Barriers

The conversation touched on weather alerts like storm or rain warnings, and organisations spoke about UK government alerts being ignored, with the frequency of alerts leading to desensitisation. They indicated there is a need to convey the sense of risk and probability in messaging, instead of something that later could be deemed incorrect and be seen as a “false alert”.

5 Key findings – Diverse communities

Weather events spoken about: Extreme Heat, Cold

For this population group we spoke to:

- **CEMVO Scotland:** a national intermediary organisation and strategic partner of the Scottish Government Equality Unit, with a network of over 600 ethnic minority voluntary sector organisations throughout Scotland
- **Networking Key Services (NKS):** an established platform for women and their families to collectively address issues of concern to them living in Scottish society. Based in Edinburgh, the organisation primarily aims to support women of Bangladeshi, Indian and Pakistani origin.
- **Article 12:** an organisation that supports young Gypsy Travellers through access to education, engagement rights, and overall support.

5.1 What they’d like to see from messaging

Messaging should:

- **Offer simple practical guidance** if the weather is a certain way, including practical guidance for elderly people on how to get food and shopping done (for example how to contact organisations that can help). This includes the impacts on weather on daily life.
- **Focus on clear community or personal benefits** linked to following messaging, including saving money e.g. by reducing burden during winter through energy savings, or collective group advantages, as people are more likely to embrace a practice when they see the benefit in it.
- **Be translated and produced** in a variety of languages, to overcome language barriers while explaining Scottish weather warning systems.
- **Incorporate icons and other visual messaging** to communicate important information through visuals, for people who may struggle to understand written information.
- **Encourage the use of storytelling** to deliver the message more effectively, for example through faith-based teachings or community gatherings.

5.2 Challenges with adverse weather messaging

Scotland's population is changing steadily to include more ethnic minority populations – including Pakistani, Indian, African, and Chinese communities – and for some, Scottish adverse weather events may be a new experience, making them a vulnerable population group as they may not know what to expect and how to prepare. Scotland is also home to a population of Gypsy Travellers, for whom extreme weather events including extreme cold, heat, and high winds can disproportionately affect their communities due to their lifestyle, leaving them more at-risk. The impact can be made even greater by the fact that many community members live in locations that are two steps out of town (meaning remote or on back roads), making Gypsy Travellers more vulnerable and complicating emergency access for example for ambulances. The shortage of sites and the nomadic lifestyle mean that preparedness constantly changes based on location, and for many on the roadside, it is a form of homelessness.

"The problem is sometimes the messaging comes out **too late**, especially for these types of groups... it's not the communication that's the problem. **It's the location. It's finding out a few hours beforehand.**" – Article 12 representative

5.2.1 Vulnerable living conditions

An organisation working with the Gypsy Traveller community described how for some, preparing for adverse weather events can be challenging. They shared stories describing the impact of adverse weather, like during the "Beast from the East" storm, where people living on a local authority site were snowed in for four days, unable to get provisions due to the location on remote, cross-drift affected back roads. Caravans aren't well adapted to keep warm in the winter, meaning some people need to run heaters constantly, increasing the risk of carbon monoxide poisoning from gas bottles. This danger can be made worse if an older person can't unfreeze or change a gas bottle during severe winter weather.

In the summer, caravans can act like ovens, heating up with no way to cool down due to their metal reflective surfaces, and the closeness of caravans, creating a build-up of thermal heat. One organisation spoke about a young family with a premature baby, who in a case of extreme heat, had to book a hotel for 10 nights, because they couldn't keep the baby safe in their caravan.

We also heard that weather alerts or health messaging often arrive too late, sometimes only a few hours before the weather event. This may not be enough time for some in the Gypsy Traveller community, especially in large sites, to gather necessary items like fuel, gas, candles, and batteries, or perform essential preparatory actions like flood mitigation, like placing sandbags or digging drainage. Public health messages or alerts, such as those on the standard phone weather app, often say "take action soon" without providing specific, practical steps for preparedness. As a result, the Gypsy Traveller community may not be prepared, and are affected by the adverse weather.

5.2.2 Vulnerable living conditions

Dangerous working conditions

Organisations representing ethnic minority communities also spoke about some unintended consequences for workers that can occur as a result of public health messaging urging people to "stay inside" during extreme weather like severe wind or storms. During this time, those who can stay home order lots of takeout or food deliveries from delivery drivers – many of whom are immigrants and on bikes, who can't afford to stay home and have no choice but to work outside in risky weather conditions.

"When it was the really **extreme wind**, people were recommended to stay inside ... but they ordered lots of takeaway, and that's people **many times on bikes in the extreme wind bringing people food.**" – CEMVO representative

5.2.3 Misunderstanding of perceived risk

We heard from organisations representing ethnic minority groups, that for many of these communities' Scottish weather is new to them, and they have to learn to navigate it. Some communities are climate migrants, having moved from their home countries due to climate change and extreme weather events. For some, Scottish weather is milder than the climate they are accustomed to, which can translate into a false sense of security in adverse weather. This was touched upon with weather warnings, where the frequent use of lower-level warnings (e.g., "yellow" alerts) could lead to desensitisation, with some people only reacting to "amber" or "red" warnings.

In one story shared, a public event on in Edinburgh was cancelled due to gusty winds and rain, with organisers explaining that the cancellation was due to safety concerns like structural damage to marquees. Community members expressed disappointment and believed the council was "fooling" them, as the community felt that type of weather was normal for September in Edinburgh.

A workshop participant from CEMVO shared a personal experience of feeling dizzy and becoming dehydrated in the Scottish heat, noting it's a different heat than she had previously experienced, and it can be dangerous.

Speaking to a representative of Water Safety Scotland, they described how messaging challenges can arise when communicating with people for whom English is not their first language or they come from warmer places, as concepts like "cold water shock" may be completely unfamiliar.

"If it was a person whose English wasn't their first language... to be aware of cold-water shock. **What does that mean to someone?...** If you've not come from that and you've never heard that before, that **means absolutely nothing to you.**" – Water Safety Scotland representative

Negative experiences can lead to fear around adverse weather, with one workshop participant sharing the experience of a friend being very scared of going out after falling during cold, slippery weather two years prior. Another participant recalled a personal and scary experience of falling while pregnant and walking to the GP in bad weather, highlighting the difficulty of accessing essential services like GPs during extreme weather, especially when a person is vulnerable. In the Gypsy Traveller community, older generations

can tend to interpret messages very literally, leading to extreme fear from generalised news warnings.

5.2.4 Inability to understand messaging

We heard from organisations representing both ethnic minority groups and Gypsy Traveller communities, that literacy barriers can be a big challenge to understanding public health messaging. In the case of ethnic minority communities, some members may not understand English or understand new weather concepts. In the case of the current yellow/orange/red weather warning system, this can be confusing for some people as they are unsure whether the colours indicate a good or bad situation.

For Gypsy Traveller communities, we heard that many community members cannot read or write. Gypsy Travellers navigate digital devices using visual cues and peer-to-peer learning, such as remembering app icons. They often use the simple, standard weather app that comes loaded on phones, and they rarely press “find out more” to access detailed information.

5.2.5 Cultural beliefs around adverse weather

Organisations working with ethnic minority groups told us that in some cultures, there is a belief that bad weather is due to a “curse” rather than climate change and factors like carbon footprint, cutting trees, or a lack of environmental care. This lack of education or understanding about climate action can be a barrier to conveying public health information or inspiring action.

For Gypsy Travellers, the community has a strong faith-based culture, with a deep belief in omens and signs. This can lead members to prioritise faith and saying “I’m going to trust in the Lord” over taking immediate, practical safety measures in an emergency. Due to strict cultural gender roles, women may not take any emergency action (for example, tying down a caravan) until the men return home, as these actions are deemed “men’s work”. Men may also prioritise other work rather than heed weather warnings, further delaying any action to prepare.

5.3 Public health messaging channels and effectiveness

5.3.1 Effective channels at a national, regional and local level

“[Working with diverse communities] requires extra efforts at disseminating information, and in the past one of the things CEMVO has done with regards to engaging or making inroads to communities is using faith teaching as an entry point, so no matter who, you have a different faith as a way of ensuring that through the faith it’s their values as humans that everyone must show” – CEMVO representative

Organisations representing ethnic minority communities spoke about the importance of religious institutions, like mosques and gurdwara, both for people to find community and hear about public health messaging. Trusted faith and/or community leaders like priests and imams can communicate public health information and values through religious teachings or texts in a community setting, to people of all ages – which is especially important for

older people who may not understand English or have access to technology. These religious institutions have WhatsApp groups as another key form of messaging, used to spread all kinds of information, including public health messaging. Placing informative leaflets or posters (in local languages) in places like mosques and temples, as well as in local libraries and community centres, can also reach people without internet access. Climate action groups also print information around adverse weather out and try to demystify them the best they can for various community groups to encourage action.

In the case of NKS, the organisation runs awareness sessions around changing local behaviours and attitudes around climate. For example, people may know the impacts of flooding in their home country, but may not know the potential impacts now, living in Scotland. In the sessions NKS discuss different incidents to show that these familiar climate events are actually happening in Scotland, in order to increase awareness of adverse weather events and create planned action, including asking participants how they would help someone else, and how they would have enough food.

For those that may not have access to smartphones or who may prefer older technologies, including older generations, community radio stations like AWAZ FM and Jambo Radio are popular and effective channels for reaching ethnic minority communities.

Organisations working with ethnic minority communities also highlighted the use of visual mediums like explainer videos, drama/acting through skits, and films as very powerful tools to convey public health messaging, as visuals are seen to "stick" in the brain more than reading. They said these can be shared in religious institutions and in community WhatsApp groups so that they can be shared more widely.

In terms of who to trust, organisations we spoke to agreed that the NHS is seen as a "trusted brand", and people are more likely to pay attention to a clear, simple, and concise message that has the NHS logo and stamp on it.

For Gypsy Traveller communities, we were told that young people primarily use social media like Facebook and WhatsApp and use voice notes for communication as literacy levels are low. However, voice notes attached to warnings often contain false or exaggerated information, leading to unsafe decisions like encouragement to sunbathe during dangerous heat warnings.

6 Spotlight on: Water Safety Scotland

Water Safety Scotland (WSS) is a national voluntary association of organisations whose primary goal is to understand the risks associated with water in Scotland and collaborate with partners to develop a unified strategy for preventing water-related deaths.

WSS issues messaging for heatwaves, flooding, extreme cold/ice, and high winds around the coast. Their communication strategy involves creating **annual toolkits** with branded assets, pre-written social media posts, press releases and video content, which is then shared with their membership of about 60 organisations. Their messaging includes **explanations for caution** – for example "the water is cold. This is what it does to your body" – and directs users to their website for more detailed educational content, which helps to shorten the

initial message. WSS typically uses advice from the Scottish Government and agencies like SEPA and the Met Office when developing their messaging.

A representative from WSS told us that as a result of Scotland having a warmer summer this year, interest in heatwave messaging on Facebook and Instagram this year was almost double that of average everyday information, coinciding with multi-channel efforts like press releases and interviews.

7 Key findings – Place-based communities – Glasgow

Weather events spoken about: Extreme Heat

For this population group we spoke to:

- **Pavilion Youth Café:** a charity youth organisation based in Easterhouse, Glasgow, providing young people with a safe, welcoming and alcohol- and drug-free environment for local children and young people.

7.1 What they'd like to see from messaging

Messaging should:

- **Leverage storytelling and comms techniques** to relay messaging in a way that young people can relate to.
- **Encourage the use of word-of-mouth channels** like trusted networks and peer-led communication to not only bring awareness but inspire action in young people.
- **Be delivered through materials** that can be woven into learning experiences that local community groups or places that young people engage with can use.

7.2 Challenges with adverse weather messaging

"[Young men] don't see the sun as a threat." – Pavilion representative

The findings shared here focused on experiences of extreme heat in Easterhouse, Glasgow, especially from the experience of working with young teenage boys. From the organisation we spoke to, they said that the young men aged 12-25 that they work with, particularly non-attending school students, tend to ignore formal public health messaging. These young men are uniquely vulnerable during good weather in Scotland due to their tendency to gather in parks and on beaches without proper sun protection or awareness of dehydration. In the case of sun safety, young men often ignore sun safety advice and don't view sunburn as a significant threat. In the summer, there is also a significant concern with young people starting fires.

7.3 Public health messaging channels and effectiveness

A representative from Pavilion said that young men they work with do listen to trusted community organisations that they have regular contact with, especially regarding fire safety and swimming. Informal messaging about safety is especially effective. Young men they work with are more likely to follow safety practices if adults model them, such as

wearing sunscreen or a helmet when cycling. The organisation described an alternative curriculum program in Glasgow that successfully engaged young people who previously caused community disturbances using outdoor activities and electric bike workshops, helping them earn accreditation through SCQF Level 4 and 5 awards.

Water Safety Scotland told us they tailor some of their messaging to specific groups including young men around the dangers of "tombstoning" (jumping or diving from height into water) using peer-led communication. This is especially important as warmer temperatures over 25 degrees correlate with increased numbers of young people in reservoirs and higher fatality rates through drowning.

8 Key findings – Place-based communities – Dumfries and Galloway

Weather events spoken about: Flooding

For this population group we spoke to:

- Local residents
- Business owners
- Community council and community resilience team members

8.1 What they'd like to see from messaging

Messaging should:

- **Be highly practical** and reinforce messaging about staying safe, don't panic and rush out. A community member referenced a fire brigade booklet released in Dumfries and Galloway 10 years ago as the best example of advice on preparing for flooding in homes. The consensus was that targeted, timely, clear, and localized safety information is most effective, particularly when delivered immediately after a flood.
- **Include pre-flood local information** that includes having a safe route, knowing where to go: "what happens to me, where do I go now".
- **Tie messaging with economic consequences**, asking people to be proactive about flood mitigation: "while the water may not come into your house, it damages your community". Include a campaign focusing on **securing important documents and emergency items**.

8.2 Challenges with adverse weather messaging

The findings shared here focused on community experiences of flooding in Dumfries and Galloway. This area is particularly vulnerable to flooding, and some long-term residents living near the water monitor tide times and heights rather than relying on formal messaging, having developed personal thresholds for flood warnings. Some local businesses have adapted very well to flooding and are examples in town of good preparation. However, the weather is becoming more unpredictable, and where there was an expectation of how a

flood will flow, floods are now coming from different directions. Community members used to be able to time the floods in March or October, but this is all changing now and becoming more unpredictable. A particularly severe flood that happened on December 31st 2022 caught many off guard, including those usually prepared for floods, highlighting the unpredictability of flood patterns, especially during a holiday period where an effective response was more difficult.

Community members shared personal stories about their experiences with flooding, with one of the main impacts on residents being the anxiety caused by constantly tracking a river level sensor that gives them a 45-minute warning when a flood is anticipated. In Kirkton, the community resilience team monitors river levels and are a primary point of action when a flood is expected, but predicting the exact timing and severity, especially whether flood banks will break, remains challenging. Community resilience teams are fatigued from constantly monitoring river levels, and there is a desire for individuals to take more personal responsibility for their safety.

8.2.1 Inadequate preparation

Dumfries and Galloway are a Potentially Vulnerable Area (PVA) as defined by SEPA, and should therefore receive at least 12 hours' notice of a flood. However the residents we spoke to said that they are often issued with only a few hours' notice. Residents also told us that council flood preparation plans are often reliant on flood water levels, for example when the water hits a certain level or location then sandbags will be distributed. But residents said that roads can become inaccessible while waiting for a decision on whether to implement measures or not. By the time a decision is made, it is often too late, and some residents can become stranded.

Water Safety Scotland also added that a challenge for people can be a lack of clear, finalised guidance given on actions like when someone should call emergency services if they are trapped in floodwater, which can lead to confusion.

Efforts to organise a flood support group after the December 2022 flood noted a lack of volunteers. Only 2 out of 9 community councils were reported as active, and with a high turnover of members, it makes it difficult to maintain effective flood groups and ensure the continuity of resilience teams. While residents are willing to help during emergencies, formal planning and committee participation are difficult to achieve.

8.2.2 Misunderstanding of perceived risk

While many local residents understand flood dynamics and take precautions like checking river levels themselves, tourists and new residents often fail to heed warnings, due to lack of experience or underestimating the risk. Residents we spoke to described people not from the area driving through flooded roads despite clear signage, leading to hazardous situations. Residents also spoke of a need to "denormalise flooding", where concerns were raised about reckless behaviour during floods, especially with young people jumping into flood waters, and people ignoring evacuation orders and risking safety.

Water Safety Scotland highlighted this, emphasising the collective lack of education regarding the coldness of Scottish water, the physiological effects of cold-water shock, and the risk of drowning in a car during flooding as a result of driving through flood water.

One community council member highlighted issues with "crying wolf" warnings, which lead to complacency among residents, especially for yellow warnings from SEPA which cover all of Dumfries and Galloway. These are usually unhelpful because local residents need more specific, localised information for effective action. However when the risk is real, despite efforts to warn people and provide guidance, some residents remain in denial about their risk, even after experiencing near-flooding events. This is especially true for older residents, many of whom refuse to leave flood damaged homes.

“People are fed up to the back teeth with [flood] warnings because they come in and then they phone you and they text you ... and then when it's finished, they wake you up in the morning to tell you it's not [enforced] ... and we never had [the flood risk] in the first place.” – Dumfries and Galloway resident

8.3 Public health messaging channels and effectiveness

8.3.1 Effective channels at a national, regional and local level

Community councils have their own Facebook pages, where community resilience teams send messages out, and use it to mobilise people after the flood for support. Word-of-mouth is also used, especially in smaller communities, but reaching older residents remains a challenge. Community resilience teams have a neighbourhood coordinator, who has a list of older people that they go and help as soon as they know a flood is coming, to either alert them or help set up flood defences for them.

The Scottish Flood Forum website was cited as helpful, as well as information on the council website. The Scottish Flood Forum also gives out a blue bag for valuable possessions such as passports and birth certificates, so they are easily accessible during an emergency. Flood information is also distributed through leaflets in local shops and pubs, targeting newly arrived residents and holiday homeowners who may be unfamiliar with local risks.

Dumfries and Galloway rely on Border Television instead of the Scottish ITV channel (STV), which affects how public health campaigns are received. Community members had not seen specific flooding-related public health messages from Public Health Scotland. SEPA has an interactive flood map, but it is not used by many. SEPA alerts are useful, alerting people in danger zones through a text message warning that includes a heading, alert, link to find out more, and "act now" call to action. A follow up message that says "flood warning not in force anymore" is sent when danger is over.

9 Appendices

Appendix A Methodology

Through this project we engaged with a number of people, places, and organisations, through a series of workshops and semi-structured interviews.

We conducted:

3 organisational workshops (Early Years, Health/Age, Diverse Communities)
 2 place-based workshops (Glasgow Easterhouse, Dumfries and Galloway)
 4 semi-structured interviews

We spoke to:

22 people
 13 organisations
 3 communities
 Organisations list:

- Early Years
 - [Home-Start Edinburgh](#)
- [One Parent Families Scotland](#)
- [Scottish Infant Feeding Network](#)
- Safety
 - [Adaptations Team, Scottish Government](#)
- [Scottish Fire and Rescue Service](#)
- [Water Safety Scotland](#)
- Health/Age
 - [Asthma and Lung UK](#)
- [British Red Cross](#)
- [Age Scotland](#)
- Diverse Communities
 - [CEMVO Scotland](#)
- [Networking Key Services](#)
- [Article 12](#)
- Place-based
 - [Pavillion](#)
 - Community councils in Dumfries and Galloway

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