



Flood Risk Management Plans

Summary of the Consultation Responses



Flood risk management plans

Consultation outcome report

PUBLIC

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Foreword

Scotland is facing a climate emergency. Increased flooding brings an increased risk of devastation to people's lives and livelihoods. The risk is so big that we can't remove it entirely and we need to adapt and to prioritise. So, Scotland's Flood Risk Management Plans are the first part of a new cycle of effort to make sure the work is planned, prioritised and co-ordinated to tackle flooding in the communities where it affects us the most. The plans are based on scientific data, historical information and local knowledge of the risks and impacts that flooding can bring, alongside our understanding of the impacts of climate change. The work gets increasingly detailed through each cycle as we move from information to strategy to detailed design and delivery. At the moment we are at the broad strategic level but that will change as the cycle unfolds over the next year or so.

SEPA is committed to doing everything within its remit to help those at risk of flooding. That remit is to work at a strategic scale to coordinate and plan, and to provide information and advice to those who need it most. Action on the ground is determined in collaboration with many other organisations, and crucially, with communities and businesses. SEPA has no powers to directly take action on the ground, or to compel others to take action on flooding. That means SEPA can't do its job without buy-in. It means we needed to consult on the plans we have developed and it means your views need to be taken into account. It means we all have a role to play.

So, I'm hugely grateful for all comments we received for our consultation on the Flood Risk Management Plans. We have had more responses than ever before. Even in the difficult circumstances of a pandemic, it's clear people care deeply about the successful management of flood risk in our communities. I really appreciate the time taken to provide valuable information to help us make the plans effective in tackling the terrible impacts of flooding in Scotland. All the responses received have been considered. In this consultation digest we describe how we have taken them into account and explained our response to specific issues raised.

With the permission of individual respondents, we have already shared responses with partner organisations to ensure valuable information provided is directed to where it can most effectively be used. Now with the consultation complete and the plans

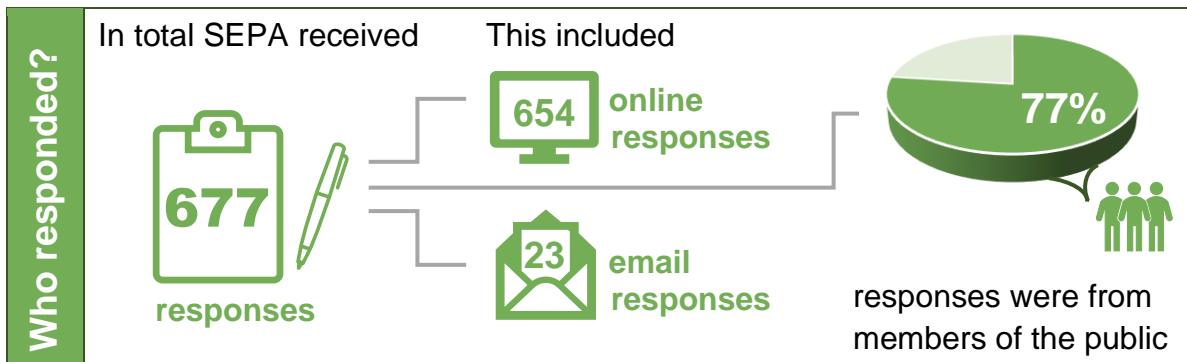
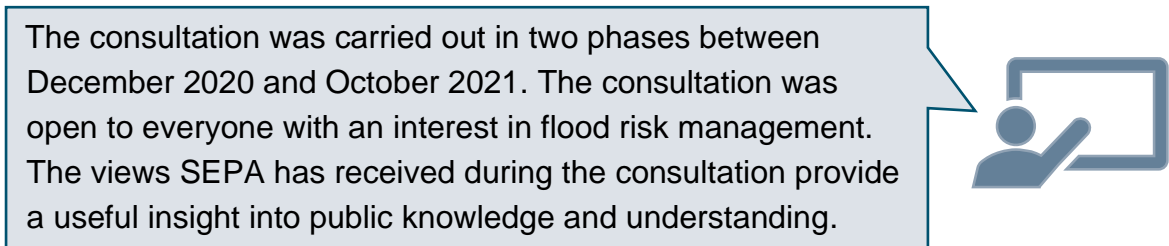
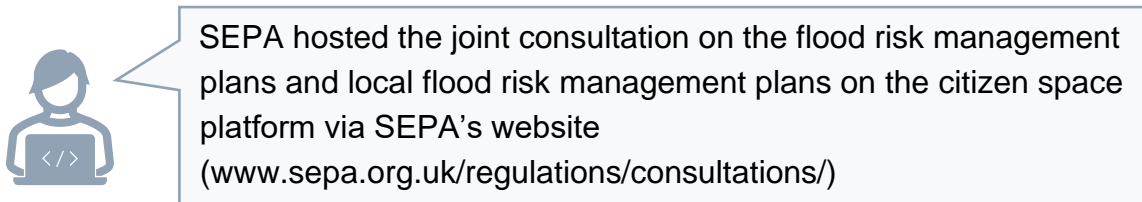
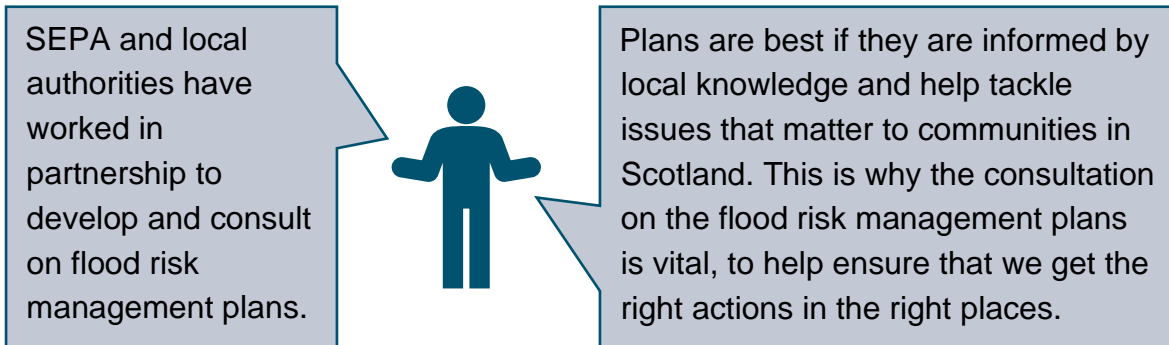
published, the flood risk management authorities are committed to delivering the actions laid out in the plans, to help Scotland's people and places become more resilient to flooding now and in the future.

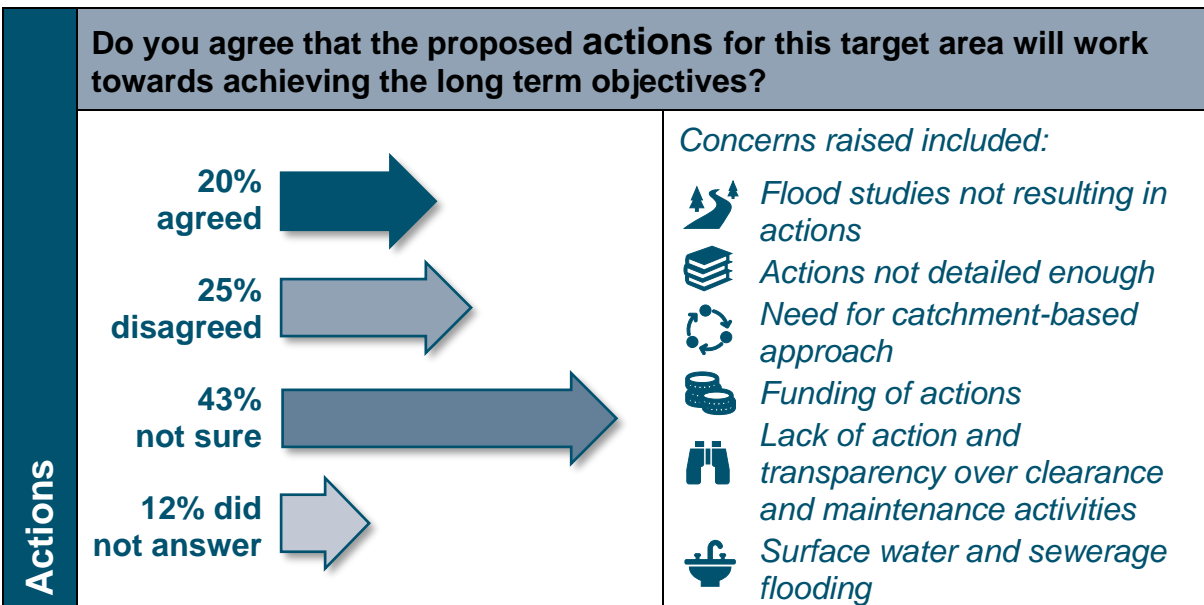
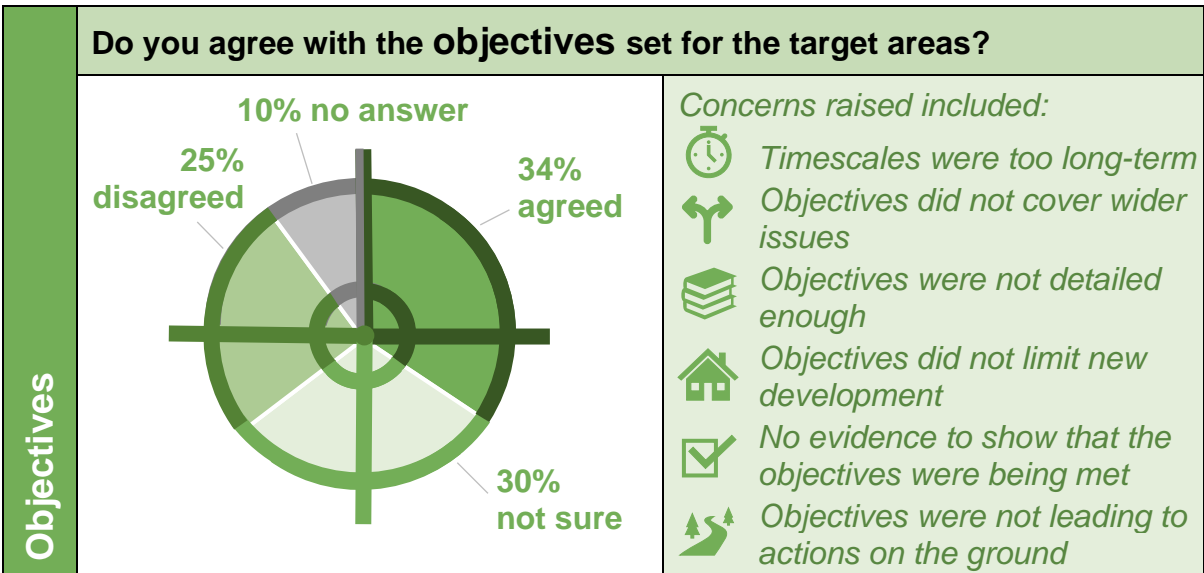
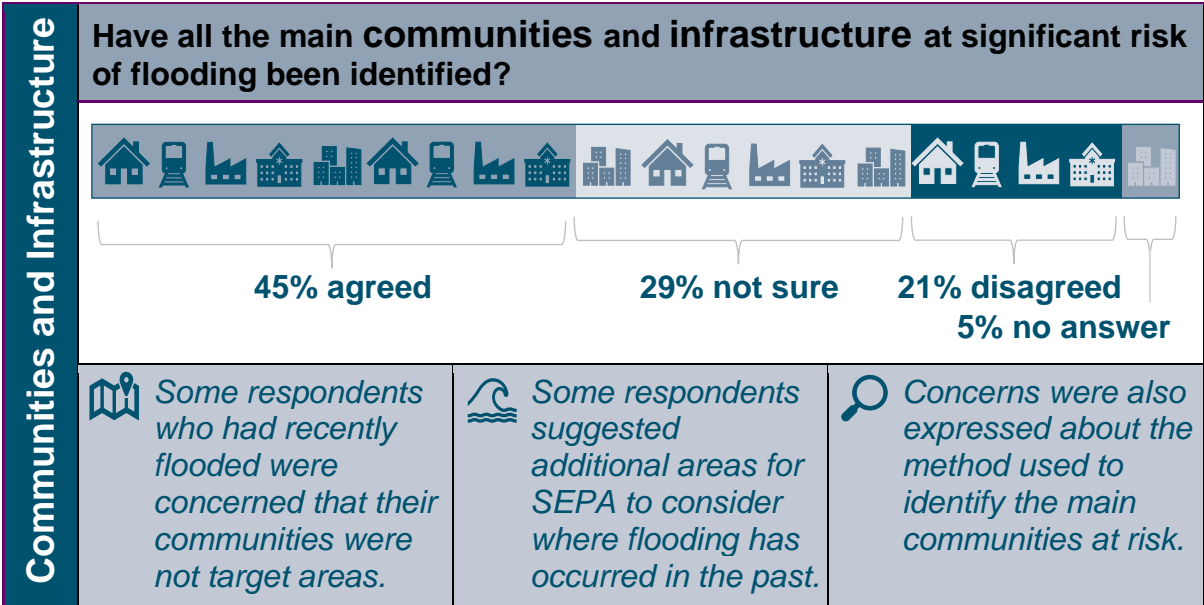
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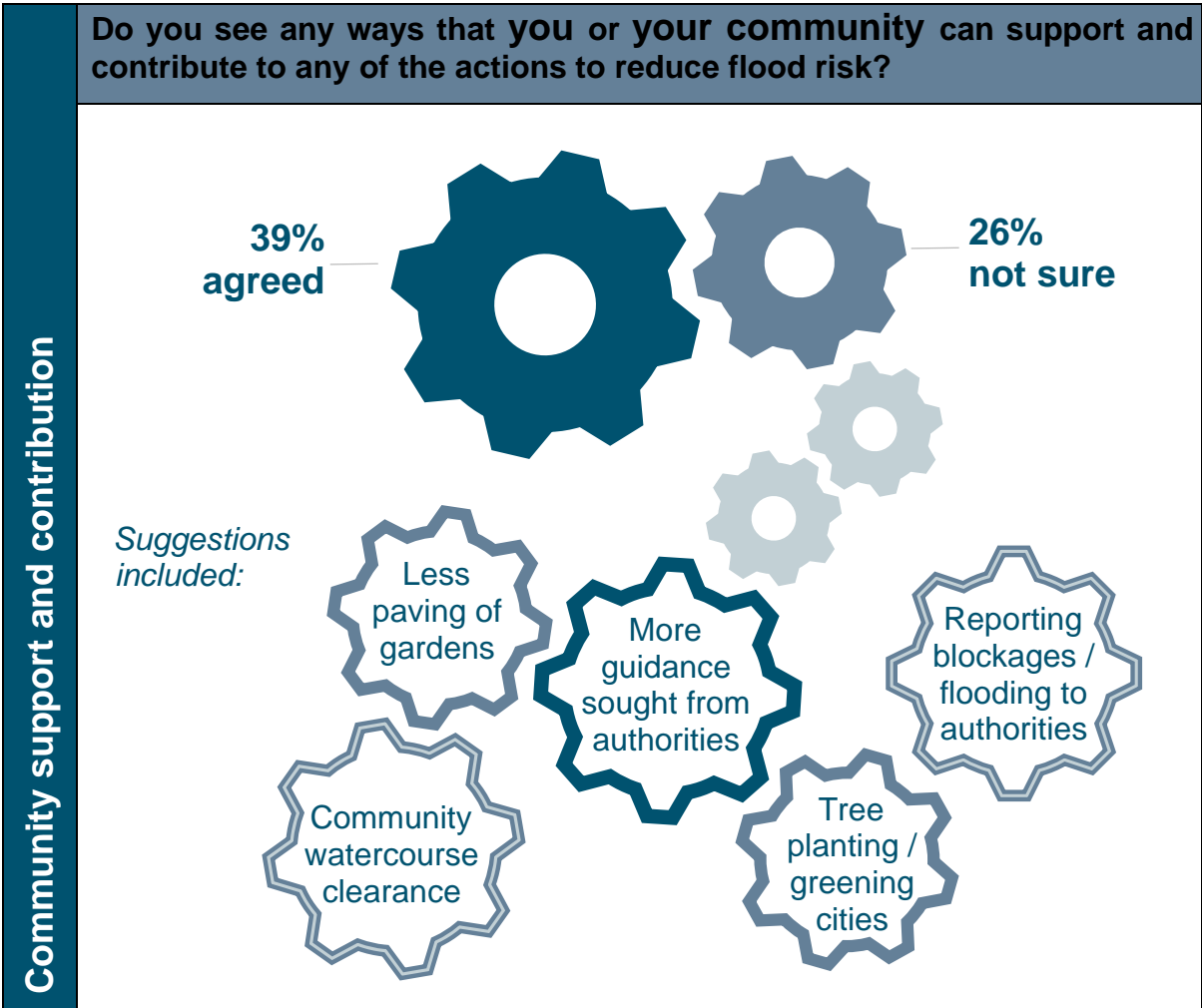
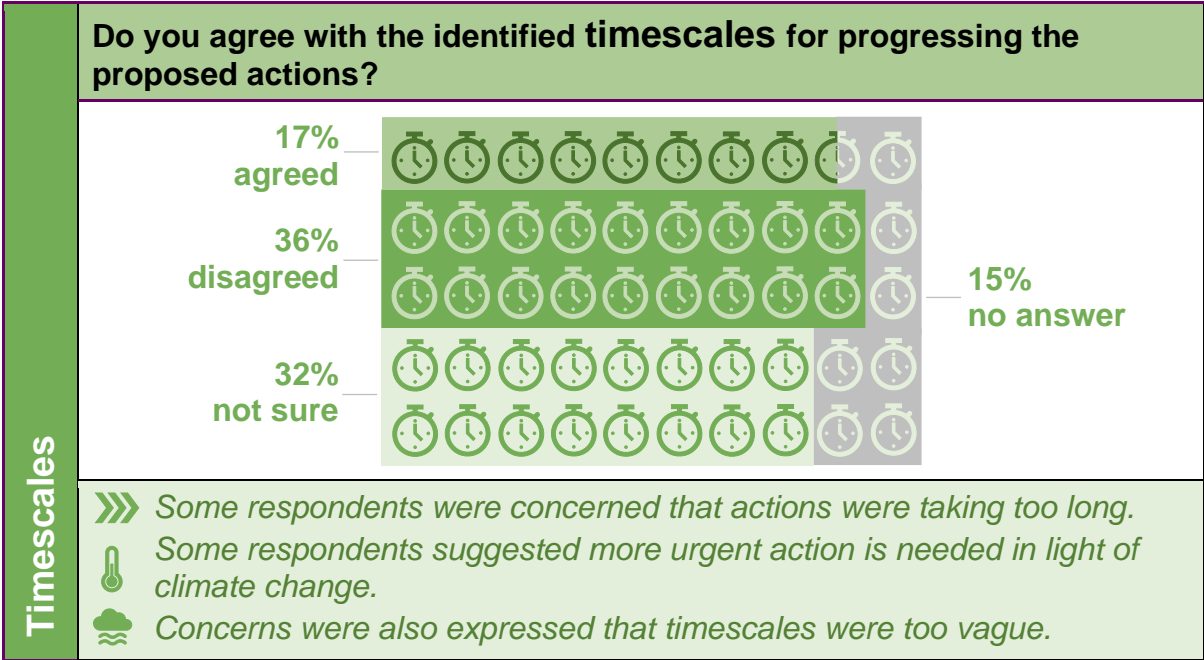
Head of Hydrology & Flooding

SEPA

1. Executive summary







SEPA has reviewed the feedback received. Some feedback resulted in changes made to the final flood risk management plans and these are summarised in the table below.



Some respondents raised issues relating to more general flooding themes; these are discussed in more detail in Section 6 of this document.

Many responders raised issues related to activities which are the responsibility of other organisations, or to the content of the upcoming local flood risk management plans. Working within safe data sharing practices, SEPA have passed the feedback to other responsible authorities to consider and act on.

Summary of changes made to the plans following the consultation

1. Further actions were added to manage flood risk in several target areas.
2. Additional Local Plan District actions were added.
3. Some actions were removed from the flood risk management plans at the request of local authorities responsible for their delivery due to completion in the time between consultation and publication.
4. Further information was included on how climate change was assessed in the preparation of the plans.
5. Further information was included on how potentially vulnerable areas were identified, and when they will be reviewed again.
6. Information was included on the progress made in implementing actions and working towards objectives in the 2015 strategies.
7. A target area boundary was amended based on new information provided.
8. A description of the importance of community actions, recognising the work that communities do to manage flooding was included, along with further information on where support is available to help people reduce their own flood risk.
9. A description of the catchment-based approach SEPA has taken, and the role it plays in delivering flood risk management actions was provided.
10. The link between flood risk management plans and land use planning was clarified.
11. Habitats Regulations Appraisal statements were added to each relevant action.
12. Some other changes were made to the way information is presented to try to make it clearer e.g., on the timing of actions being carried out.
13. Further information was provided on the uncertainty associated with funding of flood risk management actions.

2. Introduction

It is estimated that there are 284,000 homes, businesses and services at risk of flooding in Scotland. Under a high emissions scenario climate change is projected to increase this number by an estimated 110,000 to around 400,000 during the 2080s. The flood risk management plans and local flood risk management plans work together to set the short to long term objectives and establish how actions will be delivered to manage the devastating impact of flooding. The plans embed information on flood risk and climate change to establish the actions required now to adapt to increasing future risk and ensure Scotland is resilient to flooding. They are driven by the best available data on flooding including scientific modelling as well as historical flood information and local knowledge.

SEPA and local authorities have worked in partnership to develop and refine these plans, which are updated every 6 years. Plans are best if they are informed by local knowledge and help tackle issues that matter to communities in Scotland. This is why the consultation on the flood risk management plans is vital, to help ensure that we get the right actions in the right places.

Purpose of this document

This document provides an analysis of responses to SEPA and local authority consultation on flood risk management plans.

The purpose of this document is to:

- Describe how SEPA carried out the consultation and who SEPA consulted with.
- Provide a summary of responses to the flood risk management plans consultation.
- Explain the actions SEPA is taking, including adjustments made to the plans, because of the consultation.
- Identify the next steps.

How did we consult?

The COVID-19 pandemic fundamentally changed how society was able to function. It meant collaborative flood risk management had to switch from face-to-face to virtual, and throughout this time there was a real commitment from all parties to ensure the partnership approach which underpins flood risk management in Scotland was preserved. Despite the many challenges, every effort was made by SEPA and responsible authorities to prepare the consultation data together. SEPA hosted the joint consultation on the flood risk management plans and local flood risk management plans on the citizen space platform via SEPA's website (<https://www.sepa.org.uk/regulations/consultations/>).

A key concern was the timing of the consultation within the COVID-19 pandemic, and the capacity of SEPA, stakeholders and the public, to engage. This led to the consultation being delivered in two phases:

Phase one opened in December 2020 and included a summary of flooding in the Local Plan Districts, a description of the potentially vulnerable areas and the identified local target areas.

Phase two opened for responses on 30th July 2021 and closed on 31st October 2021. Phase two built on the information provided in phase one, and additionally included:

- A description of the communities at risk of flooding (referred to as 'target areas'), the current understanding of flood risk in these communities and the proposed objectives and actions to manage flood risk. Each action type was explained and accompanied with a local description. Coordination arrangements were specified.
- Where relevant, opportunities for joint working were provided including areas with opportunities for delivering river basin management planning objectives.
- Information and questions on the Strategic Environmental Assessment carried out for the flood risk management plans.
- Several focused consultation questions were also included in Phase 2, and the opportunity for longer responses.

How was the consultation promoted?

The communications campaign for the consultation aimed to encourage anyone with an interest in flooding to have their say on how flood risk is managed across Scotland.

Communication activities included:

- A public notice in the Edinburgh Gazette and The Herald.
- Social media posts on Facebook, Twitter, LinkedIn and Instagram.
- A national targeted, paid social media campaign on Facebook, Twitter and Instagram.

An animation and graphics were created to promote the consultation. These were shared with all responsible authorities in advance of the consultation and were regularly publicised via social media. The consultation was picked up by many local media outlets including local newspapers.

SEPA staff supported several national events aimed at raising awareness of the consultation and discussing any concerns. Demonstrations of the consultation platform were provided to ensure that stakeholders were able to navigate the content and answer the consultation questions.

Local authority flooding teams were provided with briefing packs with access to draft article templates and social media messages which they could use to promote the consultation within their own organisation and local area. Many local authorities used their network of community councils to promote the consultation.

Hard copies of the documents and consultation questions were also available on request.

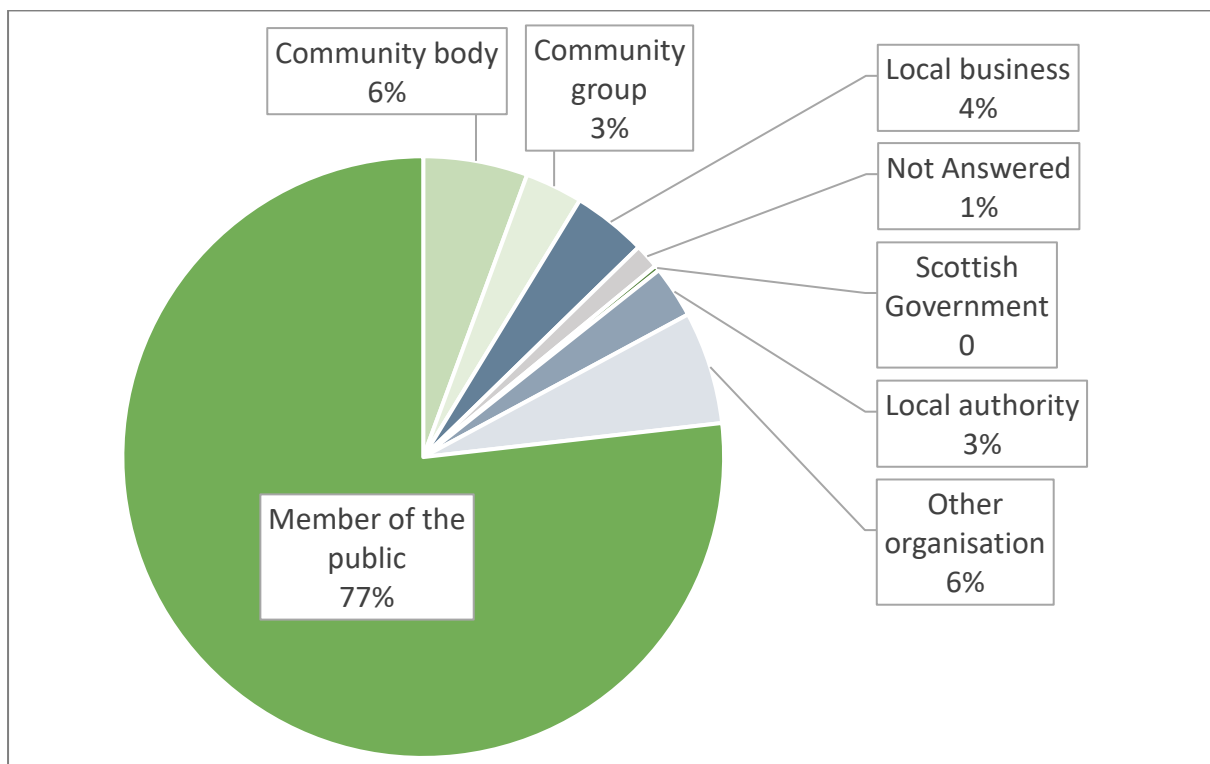
3. Who responded to the consultation?

In total SEPA received 677 responses. These included 654 online responses via the consultation platform citizen space, and 23 e-mail responses received via SEPA's consultation mailbox. SEPA is grateful to individuals and organisations for considering the proposals and providing feedback. Responses varied from detailed comments on actions proposed in target areas to general comments on flooding and flood risk management.

Many of the aspects raised relate to the underlying requirements of the Flood Risk Management (Scotland) 2009 Act, to activities which are the responsibility of other organisations, or to the content of the local flood risk management plans. Working within safe data sharing practices, SEPA will ensure the feedback received is passed to other responsible authorities to consider and act on.

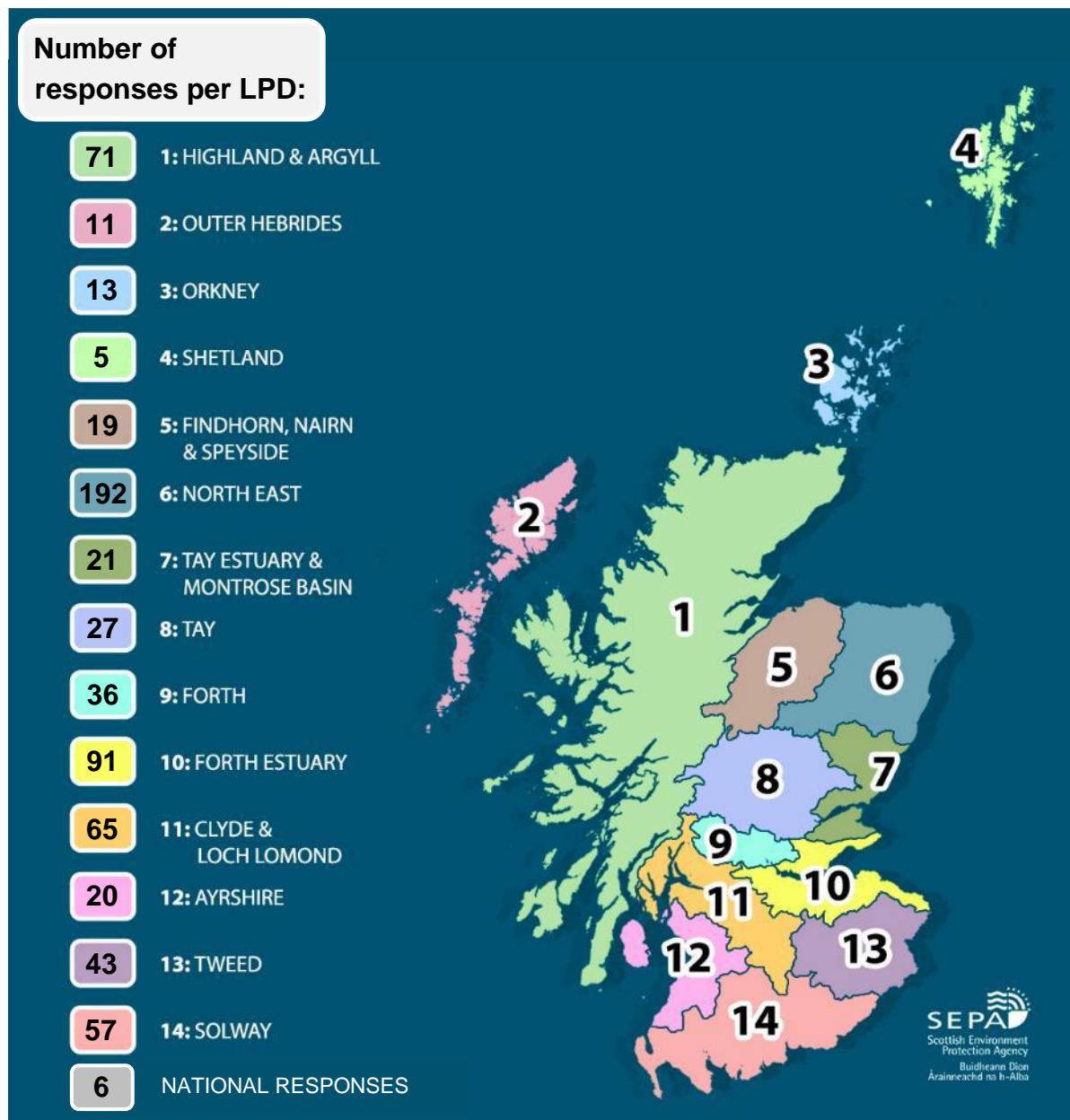
Types of responders

Compared to the first consultation on the flood risk management strategies in 2014, there has been a welcome three-fold increase in the number of responses. Most of the responses (520) were from the public. This reflects increased public awareness of flooding and flood risk management and the increasing risk due to climate change.



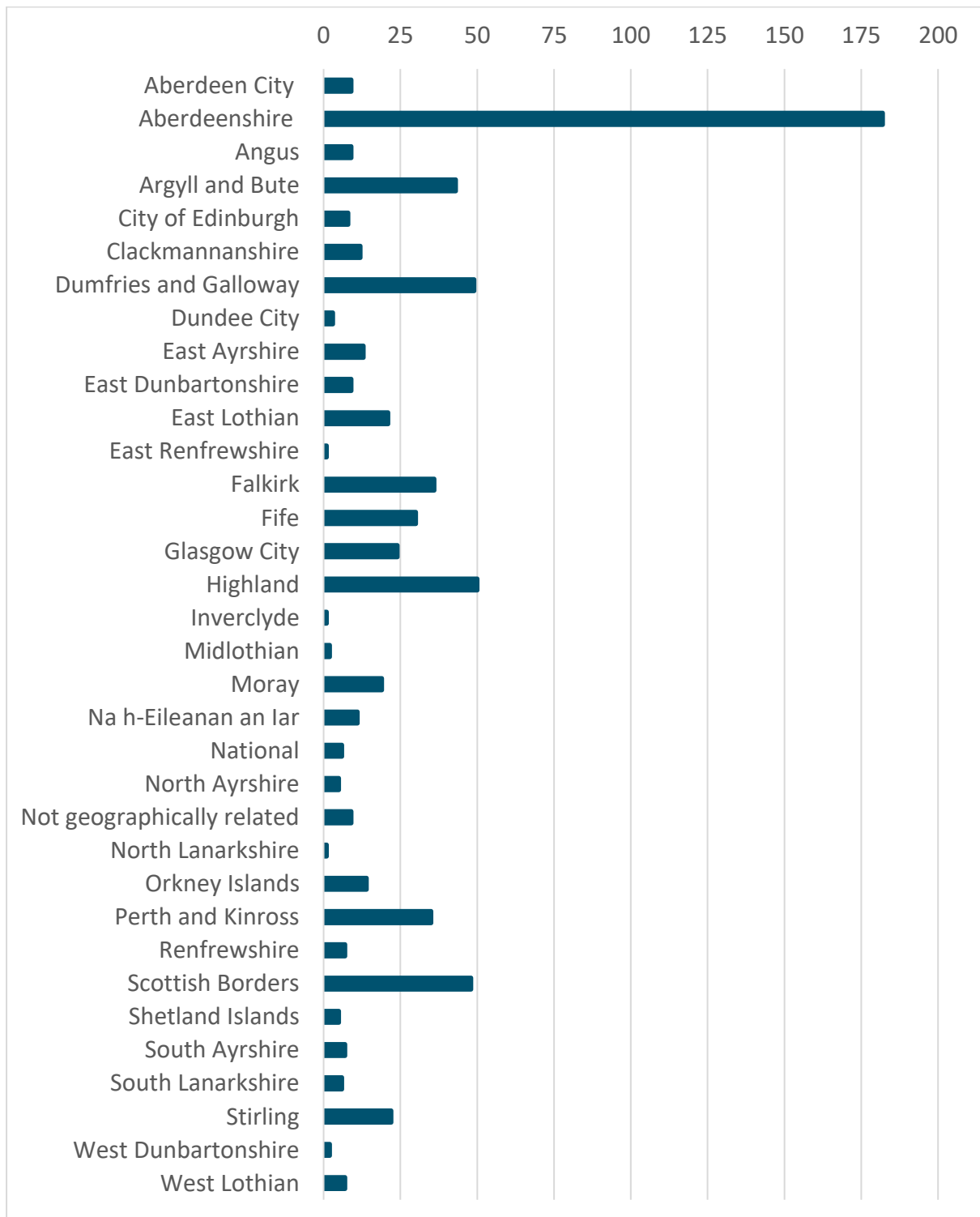
Responses per Local Plan District

The highest number of responses (192) were received for the North East Local Plan District. This includes a large number of responses from the Stonehaven Flood Action Group (110). This was followed by Forth Estuary (91) and Highland & Argyll (71) Local Plan Districts.



Responses per local authority

The highest number of responses were received for Aberdeenshire Council (182), followed by the Highland Council (50) and Dumfries and Galloway Council (49). Again, within Aberdeenshire this includes a large number of responses from the Stonehaven Flood Action Group (110).



Responses per target area

The table below shows the 10 target areas or communities which attracted the most responses. 121 were received for Stonehaven, 37 for areas currently not identified as target areas and 17 responses were received for both the Musselburgh and Ballater target areas. The 37 responses regarding locations which are not currently a target area were geographically dispersed around the country, and not clustered.

Target area (community)	Number of responses
Stonehaven (target area 419)	121
Communities not currently a target area	37
Musselburgh (target area 304)	17
Ballater (target area 414)	17
Stirling (target area 258)	13
Kirkcaldy (target area 240)	10
Dumfries (target area 39)	10
Perth (target area 253)	10
Glasgow west end (target area 50)	9
Polmont, Redding and Westquarter (target area 308)	9

Responses from Stonehaven

As noted above, Stonehaven attracted considerably more responses than any other area of Scotland. 121 responses were received, with 110 identical responses from the members of the Stonehaven Flood Action Group. The high number of responses clearly indicates the strength of engagement in the community and the views provided have been considered with respect to the actions proposed for Stonehaven, and will be shared with the local authority. SEPA has adjusted the figures in the following sections to reflect the community response rather than the total number of respondents, to allow a more consistent picture nationally. This does not detract from the full consideration that will be given to the detail of all responses from all areas.

4. Analysis of responses to consultation questions

This section of the consultation report looks at the responses to the specific questions. A breakdown of responses for each question is given. A brief SEPA response to themes raised relating to each question is provided, with more detail on all the key topics given in **Section 6**.

Consultation questions

In the consultation we asked the following questions:

- Do you agree that we have identified the main communities and infrastructure that required flood risk management objectives and actions within the Local Plan District?
- Do you agree with the proposed package of objectives for this target area?
- Do you agree that the proposed actions for this target area will work towards achieving the long term objectives?
- Do you agree with the identified timescales for progressing the proposed actions?
- Do you see any ways that you or your community can support and contribute to any of the actions set out in the draft FRMP to reduce the flood risk?

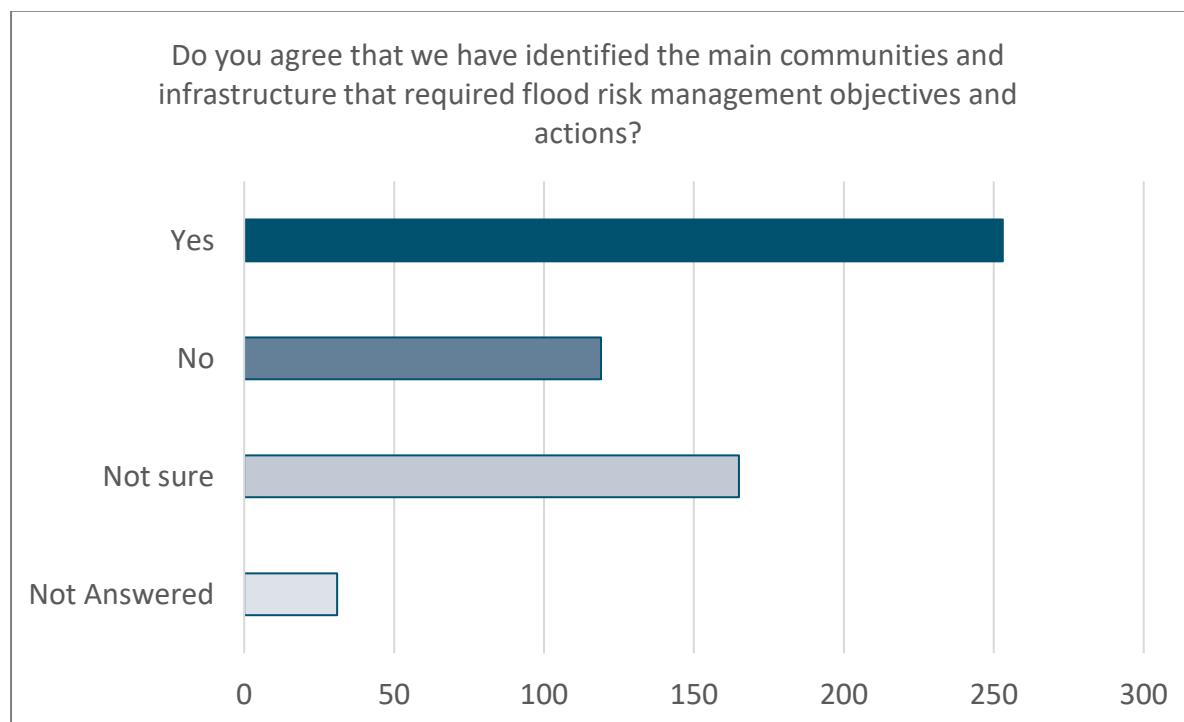
4.1 Communities and infrastructure at risk of flooding

Consultation question:

Do you agree that we have identified the main communities and infrastructure that required flood risk management objectives and actions within the Local Plan District?

Summary

In the consultation SEPA asked whether all the main communities and infrastructure at significant risk of flooding had been identified as target areas. 45% of the respondents agreed that the main communities and infrastructure were identified and 29% stated they were not sure. 21% of respondents felt that some communities or infrastructure were omitted from the process.



What you said

Concerns were expressed about the method used to identify main communities at risk. Some respondents who recently flooded felt left out of the process as in some instances their communities were not identified as target areas. Some respondents suggested additional communities for SEPA to consider where flooding occurs or has occurred in the past. Communities mentioned frequently include Kinghorn, Maddiston and Burntisland.

A number of respondents raised issues relating to more general flooding themes, particularly the impact of new developments on surface water runoff and wider concerns over drainage capacities. There were also concerns about the impact of climate change, flood defence design and maintenance and the need for natural flood management and whole catchment approaches.

What we did

SEPA carried out a public consultation on the Potentially Vulnerable Areas in 2018. As a result of the consultation, two new PVAs were identified: Kirkmichael (South Ayrshire Council) and Beaully (The Highland Council), and one PVA was amended: North Uist PVA (Comhairle nan Eilean Siar) was amended to include Baleshare.

As a result of the consultation on the flood risk management plans and local flood risk management plans in 2021, a number of changes were made. These are outlined in **Section 7** of this document.

Communities and infrastructure at risk were identified using a combination of scientific data, historical flood information and local knowledge. Over 90% of homes and businesses at risk in Scotland are within PVAs and SEPA has worked closely with local authorities and Scottish Water to ensure that communities with nationally significant flood risk are identified as part of this process. PVA and target area designations are reviewed every 6 years; information received as part of this consultation will be checked and considered when reviewing PVAs in 2024. **Section 6** gives more detailed information on how we identified communities and infrastructure at risk. Just because a community is not identified as a target area does not mean that no flood risk management actions take place. Section 2.2 of the flood risk management plans provides a list of actions that take place across all of Scotland, including areas outside PVAs.

Section 6 contains SEPA's response to the wider themes raised as part of this consultation. This includes SEPA's response on **new developments, drainage and sewer flooding, climate change, flood defence maintenance, natural flood management and whole catchment approaches**.

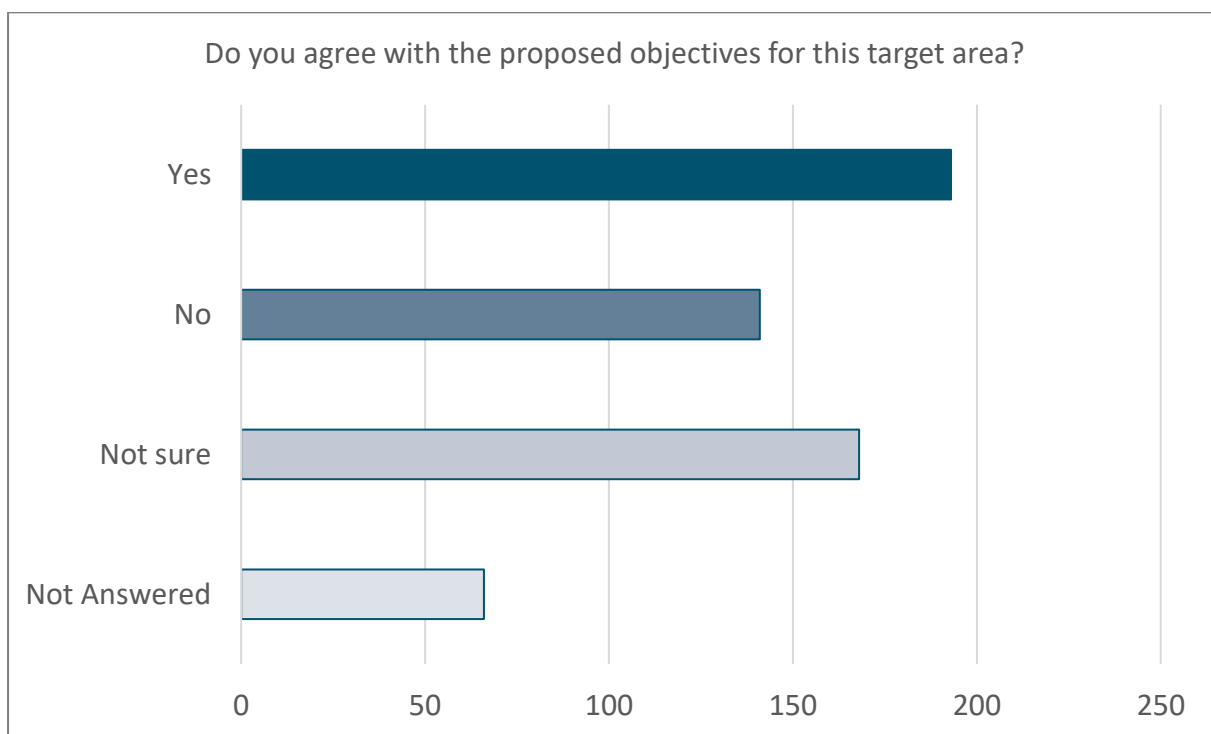
4.2 Objectives to manage flood risk

Consultation question:

Do you agree with the proposed package of objectives for this target area?

Summary

34% of respondents supported the proposals for objectives to manage flood risk in target areas and 30% were not sure. 25% did not agree and 10% did not answer this question.



What you said

The main concerns of those who did not agree with the proposed objectives were that objectives were not detailed enough, timescales were long-term and would not result in immediate action, there was no evidence being provided to show that the objectives were being met by the authorities, and that objectives were not leading to actions on the ground.

Respondents also raised concerns about wider flooding issues and whether these are adequately covered by the objectives. These included the need for natural flood

management, addressing surface water and sewer flooding, limiting new development and community engagement.

What we did

As a result of the consultation a number of changes were made to the flood risk management plans. These are outlined in **Section 7** of this document.

In the flood risk management plans, objectives are high level, aiming to describe the long term aims in a target area. More detailed objectives are set when specific projects are undertaken such as flood studies and flood protection schemes. The information on more detailed timescales for implementing actions to manage flood risk will be specified in the local flood risk management plans due to be published in 2022. Significant progress has been made in flood risk management over the past 6 years towards meeting the objectives of the first flood risk management plan; details are provided in Section 1.2.1 of the final plan. Please see **Section 6** for more detailed information on our approach to setting objectives.

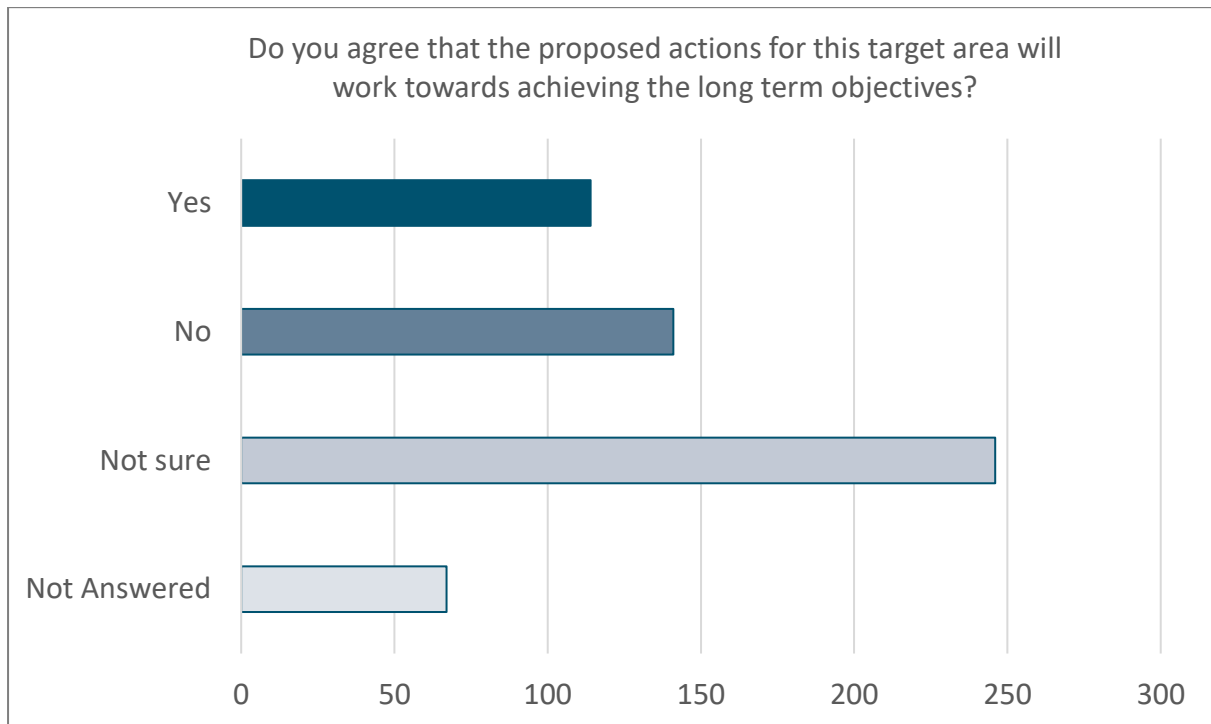
Section 6 contains SEPA's response to the wider themes raised as part of this consultation. This includes SEPA's response on **natural flood management, drainage and sewer flooding, new developments** and **community engagement**.

4.3 Actions to manage flood risk

Consultation question:
 Do you agree that the proposed actions for this target area will work towards achieving the long term objectives?

Summary

43% of respondents were not sure whether the actions would work towards achieving the objectives. 25% of respondents did not agree with the proposed actions to manage flood risk. 20% agreed with the proposed actions and 12% did not answer this question.



What you said

Those who did not agree expressed concerns that flood studies were not resulting in actions on the ground, that actions were not detailed enough and some emphasised the need for a catchment-based approach and natural flood management. Concerns were also raised about funding for actions.

Some respondents questioned what actions would be taken in communities which had not been identified as target areas. Others stressed the need for other actions such as drain clearance being done now, asked for more watercourse clearing and river management and more transparency from the local authority in publicising the maintenance plan for flood defences. Concerns were also expressed that new development is not being controlled and is contributing to increased surface water flooding and that there were no actions to address sewerage flooding.

What we did

As a result of the consultation a number of changes were made to the flood risk management plans. These are outlined in **Section 7** of this document.

Actions in flood risk management plans are described at a strategic level. Local detail, including further information about the actions, timescales, funding and coordination will be provided by local authorities in their local flood risk management plans due to be published in 2022. These plans will also take into account the responses to this consultation. SEPA is working with the Scottish Government, the Convention of Scottish Local Authorities (COSLA) and the local authorities to review the resources available for flood risk management in Scotland. By 2021, 100% of the actions set out in the first flood risk management plan to avoid an increase in flood risk are expected to be complete and 96% of the actions described in the first flood risk management plans to reduce flood risk are expected to be underway or complete. Please see **Section 6** for more detailed information on flood risk management actions.

Section 6 contains SEPA's response to the wider themes raised as part of this consultation. These include SEPA's response on **actions outwith target areas, watercourse maintenance, new developments and drainage and sewer flooding**.

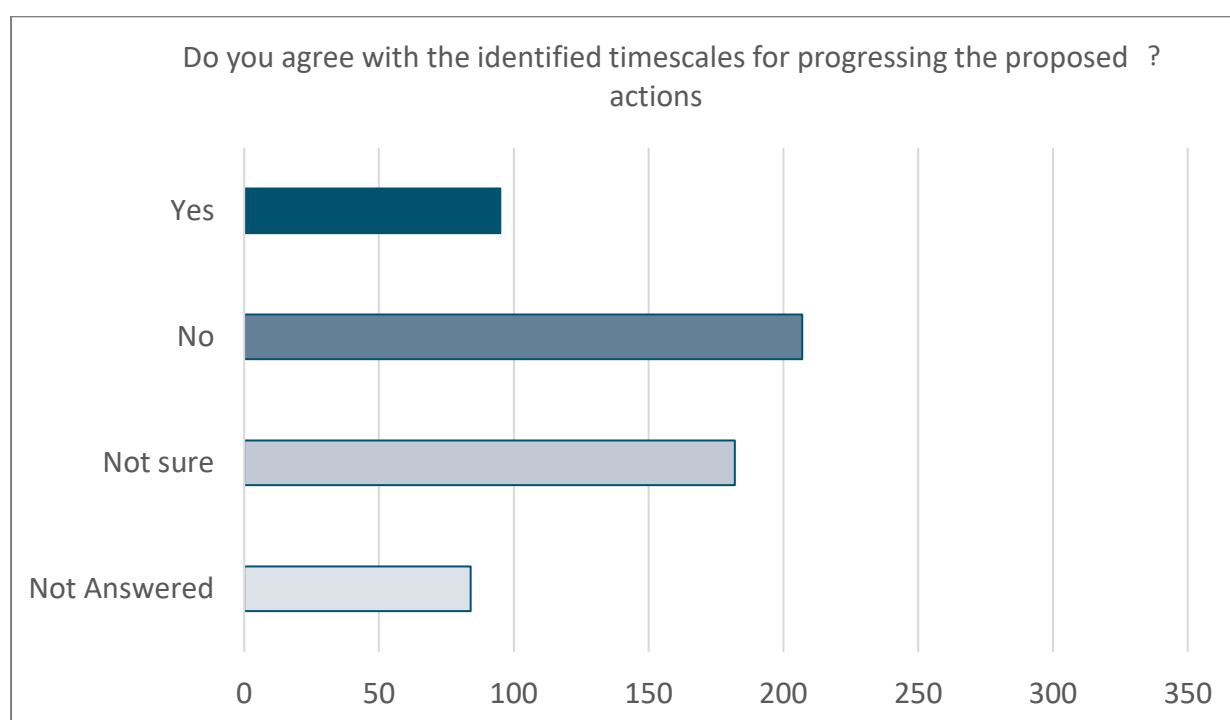
4.4 Timescales for progressing actions

Consultation question:

Do you agree with the identified timescales for progressing the proposed actions?

Summary

In terms of the proposed timescales, 36% of respondents did not agree and 32% were not sure of the identified timescales. 17% agreed and 15% did not respond to this question.



What you said

The majority of those who disagreed were concerned that actions were taking too long and that more urgent action is needed in light of climate change and recent flooding. Respondents also commented that timescales were too vague and should be more detailed.

What we did

As a result of the consultation a number of changes were made to the flood risk management plans. These are outlined in **Section 7** of this document.

Care is taken to ensure that actions are focused in the areas where they are needed most and prioritised to ensure Scotland's biggest flood risks are tackled most urgently. It can take time to develop full understanding of flooding problems affecting an area especially where flooding is complex and comes from multiple sources, and to robustly design and implement actions to address flood risk so that public money is spent responsibly. The information on more detailed timescales for implementing actions to manage flood risk will be specified in the implementation part of local flood risk management plan in 2022. Please see **Section 6** for more detailed information on timescales.

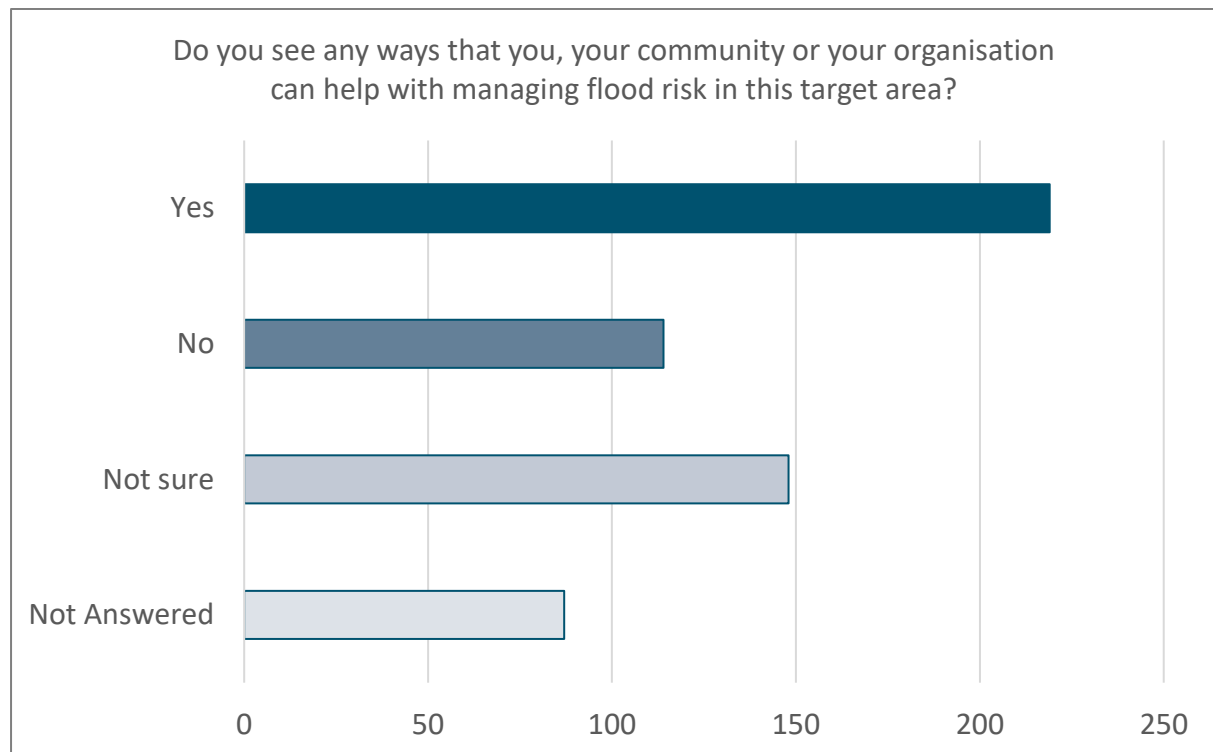
4.5 Partnership working and community/individual actions

Consultation question:

Do you see any ways that you or your community can support and contribute to any of the actions set out in the draft FRMP to reduce the flood risk?

Summary

SEPA also asked whether individuals, communities or organisations were able to help with flood risk management in Scotland. There was a range of responses to this question, with 39% of respondents agreeing that there is something they could do to help manage flood risk and 26% of respondents were not sure that there are things they could do.



What you said

Many responders felt that there was something that communities or individuals can do. Suggestions included less paving of gardens to help attenuate rainwater, authorities developing information to help the public make more informed decisions, community organised clearance of watercourses where it is safe to do so, reporting blockages and flooding to the authorities, planting trees and greening of cities.

Some communities already have emergency plans in place which are activated during floods or have formed flood action groups. Some recently established local flood groups commented that setting up a flood action group has opened discussions with the local authority and in some cases Scottish Water which is very encouraging. Some respondents have already installed property resilience measures.

A number of respondents expressed feeling quite helpless as their issues were difficult to resolve as a community and needed assistance from the authorities. Some respondents felt that it is the responsibility of the authorities to protect them from flooding. Those who were not sure whether there was something they could do asked for more guidance from the authorities.

What we did

As a result of the consultation a number of changes were made to the flood risk management plans. These are outlined in **Section 7** of this document.

This is the first time SEPA has asked a question about community opportunities to contribute to flood risk management and the response is very encouraging. SEPA, together with responsible authorities and other stakeholders will explore these opportunities further and where appropriate will include some of these suggestions in the local flood risk management plans. In recognition of the important and valued work that flood groups and resilient communities carry out, the final flood risk management plans include a description of the importance of community actions and the work that communities do. This information is included in Section 1.3.4 of the final flood risk management plan. SEPA's commitments in the flood risk management plans include continued development of our community engagement and self help activities.

5. Other responses

SEPA received several responses via the consultation mailbox. Most of these responses were from local authorities as well as national organisations, such as the Coal Authority, Scottish Flood Forum, Natural England, Edinburgh Airport and COSLA. Whilst some of these responses did not answer specific questions, they provided important additional information relating to the functions and responsibilities of these organisations. COSLA provided important information on the impact of funding on delivery of the actions, in particular for flood protection schemes. Scottish Flood Forum provided further information on the work of the resilient communities and how important it is to recognise this work in the plans. NatureScot provided feedback on specific target areas and the impacts on biodiversity and designated sites.

The consultation on the Strategic Environmental Assessment (SEA) included several responses where the issues raised were relevant to the flood risk management plans consultation rather than the SEA. These responses were analysed as part of the flood risk management plans consultation.

During the consultation period SEPA also received a small number of submissions from local authorities for additional flood schemes to be included in the prioritisation process. These were recommendations from recently completed flood studies and included proposals for flood schemes/works in Linlithgow, Cairneyhill and Cardenden.

6. SEPA response to issues raised

SEPA received a wide range of views from the public on many aspects of flood risk management. Consultation responses have been analysed to identify key themes. It is really important to understand these common concerns and listen to the views of the public on flood risk management. As a result of the consultation a number of changes were made to the flood risk management plans. These are outlined in **Section 7** of this document.

The section below provides more detail on the subjects that were raised, and SEPA's response to them. The following topics are covered:

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6.1 Concerns over content of the FRM Plans

6.1.1 Identifying the main communities at risk

Potentially vulnerable areas (PVAs) are sections of river or coastal catchment that represent areas of nationally significant flood risk that require a coordinated response to flooding involving multiple agencies. PVAs were identified using a combination of scientific data on flood risk, information about historical floods and local knowledge. SEPA considered the risk to people, properties (including homes, businesses, community facilities and utilities), infrastructure, protected sites and also wider influences including ways in which different communities are particularly vulnerable to flooding, the impact of erosion and climate change.

Within PVAs, communities that are at greatest flood risk were identified as ‘target areas’, again using scientific data, historical flood information and local knowledge. Target areas represent whole communities (not just the portion at flood risk) since flooding can have knock-on impacts on the community as a whole.

Over 90% of homes and businesses at risk in Scotland are within PVAs. SEPA has worked closely with local authorities to ensure that communities with nationally significant flood risk are identified as part of this process. Responsible authorities are aware that flood risk management is not limited to these PVAs. Section 2.2 of the flood risk management plans details actions that take place across Scotland, including areas outwith PVAs. These actions include awareness raising, emergency plans, self help, land use planning, maintenance, flood forecasting and warning, hazard mapping updates and data to support climate resilience.

Designation of PVAs and target areas is an ongoing and cyclical process. PVA and target area designations and any new information is reviewed every 6 years. The

method used to designate PVAs has been amended since 2011 to more explicitly consider and represent remote and rural communities. A wider range of community facilities were also considered, representing the many services and activities which come together to form communities. Information received as part of this consultation will be checked and considered when reviewing the PVAs in 2024.

SEPA consulted publicly on PVAs from 1st May 2018 for a three-month period. This provided an opportunity for members of the public and key partners to provide feedback on the proposed changes to PVAs from the first flood risk management cycle. As a result of the consultation in 2018, SEPA has amended and added new PVAs.

Further information on how SEPA identified communities and infrastructure at risk has been included in Sections 1.2.3 and 1.2.5 of the final flood risk management plans.

6.1.2 Timescales for objectives and actions

In the flood risk management plans, objectives are high level. Where possible, long term objectives are identified and these are reviewed every 6 years to guide the identification of actions to meet those objectives.

Care is taken to ensure that actions are focused in the areas where they are needed most and prioritised to ensure Scotland's biggest flood risks are tackled most urgently. It can take time to develop full understanding of flooding problems affecting an area especially where flooding is complex and comes from multiple sources. Identifying the appropriate flood risk management option is often complex and can lead to major infrastructure projects, and it takes time to robustly design and implement them so that public money is spent responsibly. SEPA is working with the Scottish Government, COSLA and the local authorities to review resources available for flood risk management in Scotland.

Many respondents were concerned over the lack of detail with proposed timescales. The information on more detailed timescales for implementing actions to manage flood risk will be specified in the implementation part of local flood risk management plan in 2022.

Timescales for cycle two actions start from 2022 and SEPA have amended the plans to make it clear that cycle two actions can start anytime from 2022 to 2028.

6.1.3 Lack of detailed objectives

Concerns were raised about the lack of detailed objectives. Objectives were set using the principles of 'Avoid', 'Prepare' and 'Reduce' flooding. Where further information was required in order to establish a long-term objective, an Improve Understanding objective was set. In the flood risk management plans, these objectives are high level, aiming to provide a direction of travel in a target area. More detailed objectives are set when specific projects are undertaken, for example a flood study or a flood scheme led by the local authorities. Further detail about the objectives is provided in Section 1.2.6 of the final flood risk management plan.

6.1.4 Lack of detailed action descriptions

Respondents also raised concerns over the lack of detailed descriptions of actions. Actions in flood risk management plans are only described at a strategic level and it is not possible to provide detailed descriptions of actions at this early stage of development. Local detail, including further information about the actions, timescales, funding and coordination will be provided by local authorities in their local flood risk management plans due to be published in 2022.

6.2 Concerns over delivery on FRM Plan commitments

6.2.1 How flood management is overseen in Scotland

The responsibilities for flooding are split between a number of bodies, including the Scottish Government, SEPA, local authorities, Scottish Water and individual home owners. Roles and responsibilities are further explained on SEPA website - <https://www.sepa.org.uk/environment/water/flooding/responsibilities-for-flooding/>. Due to multiple agencies being involved in flood risk management in Scotland, the principle of partnership working and knowledge sharing is strongly embedded in legislation.

6.2.2 Partnership working between authorities

Working together is key to delivering flood risk management in Scotland and we will continue to collaborate with partners to improve Scotland's flood risk management plans. This partnership working and engagement is one of the key successes achieved during the first flood risk management cycle (2010-2016) that continues to develop. We appreciate that the flood risk management plan consultation did not specify how authorities will work together to deliver actions to manage flood risk. This information will be included in the local flood risk management plans due to be published in 2022.

6.2.3 Progress made towards objectives and actions in the 2015 strategies

Some respondents were concerned that objectives were not leading to actions on the ground. Significant progress has been made in flood risk management over the past 6 years towards meeting the objectives of the first flood risk management plan. Details are provided in Section 1.2.1 of the final plan.

In summary 84% of the actions set out in the first flood risk management plan were on target for delivery at the time of the mid-cycle report. 12% of the actions were delayed but still progressing and 4% were not making progress. Therefore 96% of actions are completed or underway. A further progress report will be published by December 2022.

Actions proposed in the new flood risk management plans will be monitored for progress, with updates provided in the mid-cycle report (2025) and final report (2028) to allow the public to track completion.

6.2.4 Funding

Concerns were also raised over funding for actions in flood risk management plans. The funding of individual actions will be identified in the local flood risk management plans published later in 2022. Flood protection schemes have traditionally been partly funded by local authorities and partly by the Scottish Government. However, there are various funding routes that are now being used including regeneration grants. Other actions are generally funded by the authority who is responsible for delivering them. Actions need resources and the Convention of Scottish Local Authorities

(COSLA) is working with the Scottish Government, SEPA and the local authorities to review the resources available for flood risk management in Scotland. It is expected that the outcomes of the review will help inform the development of the local flood risk management plans.

6.2.5 Community engagement

All formal flood protection schemes include public consultation led by local authorities. This provides an opportunity for the community to learn about the proposals, provide comments and raise concerns. Other key stakeholders including SEPA are consulted at the same time.

In the development of the flood risk management plans SEPA have carried out two public consultations as well as publishing the results of the National Flood Risk Assessment on our website (www.sepa.org.uk/data-visualisation/nfra2018/). We are encouraged by the range of suggestions received in response to the consultation question on community actions. SEPA, together with responsible authorities and other stakeholders will explore these opportunities further and where appropriate will include some of these suggestions in the local flood risk management plans.

SEPA also engage with the community through community meetings, supporting community groups and education opportunities. We provide information about Floodline, support the development of community flood action plans, and give advice on responsibilities and sources of information.

Further information and signposting can be found on the flooding part of our website www.sepa.org.uk/environment/water/flooding/

In recognition of the important and valued work that flood groups and resilient communities carry out, the final flood risk management plans include a description of the importance of community actions and the work that communities do. This information is included in Section 1.3.4 of the final flood risk management plan.

6.3 Concerns over specific issues

6.3.1 Land use planning and new developments

Many respondents raised concerns about new development being at flood risk and reducing land available to provide natural buffers to flooding, reduced nature and biodiversity and increasing surface water runoff to nearby areas.

Land use planning decisions are one of the most powerful tools available to manage flood risk sustainability. It ensures that new development avoids flood risk areas and does not increase flood risk or move the problem elsewhere. New developments are controlled through national planning policies that aim to restrict development taking place within the floodplain and prevent new properties being exposed to flood risk. These policies also promote natural and engineered flood management approaches and the restoration of natural features. They seek to avoid increased surface water flooding through requirements for sustainable drainage and limiting new impermeable surfaces. Locally determined planning policies may go further to restrict inappropriate development and prevent flood risk. Section 1.4 of the final plan further explains the links between the flood risk management plans and the land use planning process.

SEPA is a key agency in the land use planning process, contributing to the preparation of development plans and acting as an independent advisor to provide flood advice for planning applications. Our flood risk maps and the advice we give encourages the avoidance of flood risk areas. SEPA will continue to object to inappropriate developments proposed for areas of flood risk and to work with planning authorities to ensure that development happens in appropriate locations.

Land use planning is already one of the key actions identified to apply across the whole Local Plan District. Local Plan District wide actions are set out in Section 2 of the final plan. An objective to avoid an increase in flood risk is also included in every target area.

6.3.2 Dredging

Dredging was commonly used to manage rivers in the past, and when flooding happens it is often a subject of intense debate. Dredging is not always effective in reducing flood water levels. It can cause problems such as increased erosion and

higher flood risk downstream and damages plants and animals living in the river. However, a river can be dredged if it is clearly the best way to solve a problem such as flood risk. SEPA will always seek the best long-term solution.

Dredging often doesn't work to reduce flood risk because the volume of water transported during a flood is often more than even a dredged channel can contain. Flood flows often transport a large amount of sediment which quickly refills the dredged area. Often, flood water can be held back by other structures such as bridges and culverts.

Because of the damage dredging causes to the water environment, any river engineering such as dredging must be authorised by SEPA. Anyone considering such works should contact their local SEPA office to ensure they comply with current regulations, and work can only be undertaken when there is evidence that it will be effective and that there is no sustainable alternative. More information, including links to more detailed guidance, is available in a leaflet on our website at www.sepa.org.uk/media/147022/floods_dredging_and_river_changes.pdf

6.3.3 Flood defence maintenance

Local authorities are responsible for maintenance of existing flood protection schemes or works. Some flood defences may be privately owned which will be the responsibility of the owner. Details of maintenance activities for formal flood schemes may be set out by local authorities in the local flood risk management plan.

6.3.4 Clearance and maintenance of watercourses

Concern was expressed by members of the public on clearance and maintenance of their local watercourses especially following floods when woody debris can build up on the banks of rivers. Local authorities have a duty to assess watercourses to find out whether they pose a risk of flooding, and to prepare a schedule to carry out clearance and repair works where that is required to substantially reduce flood risk. Schedules of local works are available from local authorities. In areas where land is privately owned, there are also responsibilities on landowners to manage their land using guidance from SEPA to protect the natural environment. All the responses have been shared with the local authorities.

6.3.5 Management of roads drainage and sewer flooding

The flood management authorities recognise that surface water flooding is a significant problem in Scotland. The risk of surface water flooding is likely to increase in the future as a result of climate change and more intense summer rainfall as experienced over the past couple of years in large parts of Scotland. Road gullies, road drainage and sewers are not designed to take such large volumes of water in such a short period of time. This type of rainfall may become more common in Scotland as the climate changes. This results in drainage systems being overwhelmed which leads to instances of localised flooding.

Conventional urban drainage systems are made up of a complex network of sewer pipes, overflows, gullies, burns and culverts (covered watercourses). Ownership and duties are split between various agencies and landowners. The complex nature of flooding, with many agencies responsible for different aspects of sewer and drainage systems in communities, means that a partnership approach is needed to tackle this serious problem. Indeed, across many areas in Scotland, Drainage Partnerships are being set up between key agencies to tackle this complex problem and come up with solutions.

Roads drainage for public roads is a responsibility of local authorities whilst motorways and major trunk roads are maintained by Transport Scotland. Duties of local authorities to maintain and manage public roads is set out under the Roads (Scotland) Act 1984. In order to do this, roads authorities have powers to drain roads and, if they construct a drain, a duty to maintain it (including sustainable urban drainage systems). The Roads Act sets out a vesting process for new roads that includes road drainage. It also provides powers to protect roads from flooding.

Some respondents were concerned about the lack of objectives to address sewerage flooding. The definition of surface water flooding under the FRM Act does not include flooding solely from a sewerage system. Sewerage flooding is therefore not included in flood risk management plans. Under the Sewerage (Scotland) Act 1968, Scottish Water is responsible for managing flooding solely from a sewerage system (that is, sewerage systems that are designed to manage 'usual' rainfall events, currently interpreted to mean up to the 1:30 year rainfall event). Scottish Water recognise that sewer flooding is part of a complex urban drainage problem and are a partner in

Drainage Partnerships where they have been established and the Flood Risk Management Planning process. Scottish Water also have measures in place to address sewer flooding, further information can be found here

www.scottishwater.co.uk/Your-Home/Your-Waste-Water/Sewer-flooding .

6.3.6 Accuracy of SEPA's flooding data

SEPA's flood risk data is strategic in nature. The flood risk information is derived from SEPA flood maps which are made from a combination of national and local scale models, and so the level of detail and accuracy varies. A nationally applied methodology has been used to produce the flood risk maps for Scotland. The map provides information on the indicative impacts of flooding at the community level. There is an inherent uncertainty in flood modelling as a result of assumptions and simplifications that are required to enable complex natural processes to be reflected through hydraulic modelling software. More information about the data and how we produce the maps is available on SEPA website:

www.sepa.org.uk/media/532833/impacts_of_flooding_summary_v2.pdf.

Flood mapping is a dynamic process and, as we develop and improve our data, methods and techniques, the maps are reviewed and updated. We continue to work with responsible authorities and partner organisations to improve our knowledge, understanding and the representation of flooding across Scotland.

6.3.7 Impacts of SEPA information on insurance

Being in a target area should not affect insurance premiums. Target areas are whole communities and not all properties within a target area will be affected by flooding. Similarly, there will be homes and businesses outside of target areas which are at risk of flooding. Insurance companies use many sources of information to determine cover and premiums and some companies have their own flood maps.

The Flood Re scheme (www.floodre.co.uk) is a joint initiative between the UK Government and insurers, designed to make flood insurance affordable. To find out if your property qualifies, you can use the Flood Re tool found their website

www.floodre.co.uk/can-flood-re-help-me/

6.3.8 SEPA's flood warning service

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. SEPA issues regional flood alerts for river, coastal and surface water flooding and also operates river and coastal flood warning schemes for specific, community level flood warning areas. Further information on SEPA's flood warning service and how to register to receive alerts and warnings can be found at www.sepa.org.uk/environment/water/flooding/floodline/

The Scottish Flood Forecast, a daily publicly available guidance statement looking at flood likelihood over the next 3 days, is due to be launched in Spring 2022. This service will provide additional information to help the public understand the likelihood of flooding affecting their area.

A relevant and accurate flood warning service is extremely important. Flood warning development priorities have been defined through a framework since 2012. The 2017 – 2021 Framework is available on our website (www.sepa.org.uk/media/219818/sepa-flood-warning-development-framework-2017-2021.pdf), with the next one being under development and due to be launched in 2022. This Framework is linked to Scotland's FRM Plans. We take a risk and evidence-based approach to identify areas where existing flood warning schemes require maintenance or updating, as well as identifying areas where the potential for provision of a new scheme should be investigated. We also collaborate with partners, including the Scottish Flood Forum, to deliver new and innovative solutions, where traditional flood warning is unsuitable. This includes community flood alerting, such as RiverTrack. Following flooding events, we work with partners to identify and implement improvements to the flood warning service.

6.4 Concerns over approach

6.4.1 Catchment approach and natural flood management

Many responses called for the use of natural techniques to manage flooding which is encouraging. Working with natural processes to manage the sources and pathways of flood waters is a key component of sustainable flood management. This technique, commonly referred to as natural flood management, can help deliver environmental

benefits and provide resilience to the effects of climate change, whilst also helping to reduce flood risk.

SEPA supports the use of natural flood management measures wherever they are found to be viable, beneficial to the water environment and appropriate for the setting. Where the flooding benefit of natural flood management measures is difficult to quantify, there can be an opportunity to use them in combination with engineered measures to provide flood protection, offset carbon, and enhance the natural environment. Local authorities consider these opportunities for natural flood management as part of their flood studies. The importance of working with natural processes is also embedded within the appraisal mechanisms used to identify and prioritise actions.

Whilst some obstacles to implementing these approaches remain, we are seeing increasing use of these techniques across Scotland. There are several good examples of projects being taken forward across the country including on the Eddleston Water, the Allan Water, and the South Esk. We will continue to work with these and other partners to support delivery of natural flood management. This includes working with Scottish Forestry who have agreed to a new action in the plans to produce guidance on designing and managing forests to reduce flood risk, in collaboration with its UK counterparts.

Concerns were expressed over the lack of information on catchments in the consultation document. Our landscape plays an important role in managing flood risk and consideration of the whole catchment is essential to sustainable flood risk management. This has informed our approach, which is to identify the wider contributing catchments and coastlines for all the areas where actions are targeted and to use this to underpin the selection of all the objectives and actions. A whole catchment / coastline approach will also inform the more detailed analysis of the opportunities in the catchment required for implementation of the actions, for example in the preparation of flood studies. Information on how consideration of the whole catchment informed SEPA's approach is further explained in Section 1.2.7 of the final flood risk management plan.

6.4.2 Impacts of climate change

Many respondents were concerned about whether the actions are urgent enough, and ambitious enough to adapt to the threat of climate change. The level of climate change we need to adapt to depend on how successful we are in reducing greenhouse gas emissions globally, however even under optimistic scenarios, we are already facing increasingly turbulent weather systems, and know that some sea level rise is locked in. SEPA is fully convinced of the need to adapt to the impacts of climate change and will continue to work with all flood risk management stakeholders to increase Scotland's resilience to flood risk.

Climate change is considered when developing flood risk management actions. These include for example flood studies and flood protection schemes carried out by the local authorities, the development of SEPA flood risk information and provision of land use planning advice. We cannot predict the extent of the impacts that may happen in the future, because they depend on climate change as well as other changes such as population or land use change, so we have to plan for a range of futures and a range of impacts. These flood risk management plans include 'adaptation plan' actions for the first time for areas where this is deemed most critical. Adaptation plans will allow us to prepare and plan for different scenarios of future change, putting the most appropriate actions in place for the type of change that eventually occurs. In delivering these actions, local authorities will consider the adaptation actions needed in the community to address future flood risk. It is expected that in future updates to the flood risk management plans, adaptation plans will be proposed for more communities across Scotland.

SEPA's national flood risk assessment (NFRA) (2018) considers the flooding impacts associated with climate change using scenarios based on the UK Climate Projections 2009 (UKCP09) analysis. The methodology for the 2018 NFRA took account of climate change significantly better than the previous NFRA in 2011, and this underpins these updated flood risk management plans.

The next major update to UK climate change understanding was the UK Climate Projections 2018 (UKCP18), published in 2020. SEPA has commenced work to take

these into account in SEPA flood hazard mapping which will help inform future flood risk management activities.

SEPA is also committed to continuing to improve data to support climate resilience by maintaining and developing our hydrometric network, contributing to UK and international data archives, and improving and updating the datasets used for flood frequency analysis. To complement this work SEPA has committed to improve future flood risk management planning which will make the next flood risk management plans more ambitious than ever before to try to meet the demands of climate change.

6.4.3 Design of flood protection solutions

Flood protection schemes are designed and built in Scotland by the local authorities for areas where the need for a scheme has been identified and where the initial investigations by the local authority show this is a feasible and sustainable option. Flood protection schemes are designed by specialist engineering firms using industry standard procedures. Checks are in place to ensure that a flood protection scheme does not move the flooding problem elsewhere. Guidance is in place to support the work of the local authorities and their consultants.

Local authorities carry out public engagement during the scheme design stage. This gives an opportunity for the public to raise all their concerns with the local authority. Further opportunities for unresolved objections are provided during a scheme notification stage.

6.5 Concerns over consultation process

6.5.1 Format of the consultation

Some respondents found it difficult to navigate the consultation information and find the relevant information for their community. We had planned to use a more accessible format, better suited to the large amount of information being presented, but were limited by the impact of a cyber-attack SEPA suffered in December 2020. Where customers contacted us directly, we tried to provide additional information to help them respond to the consultation.

It is important to us that everyone who wishes to make their views heard can readily do so. We will use the feedback we received this time to make improvements to future consultations. Despite the difficulties in navigating the consultation we were pleased to have received 677 responses.

6.5.2 How consultation responses are taken into consideration

There was a significant increase in the number of responses to this consultation, compared with the consultation we ran on the first flood risk management plans six years ago. We hugely welcome the increase in participation as all communities should have access to shaping the future of flood risk management in Scotland. We value the input of local knowledge into the process to identify what the key concerns are. We have reviewed all the responses we have received and have made changes to the plans where relevant. More importantly, responses to the consultation help us and other authorities understand major concerns that communities have in relation to flood management. This can help shape future direction and policies. Where the response related to a specific location or the detail of a proposed action, this information was passed to the local authorities for consideration in local flood risk management plan. It is also worth noting that further local engagement is also provided by the local authorities during development of flood protection schemes and we encourage anyone living in an area with plans for future flood schemes to use those opportunities to highlight their important issues, or the wider benefits that could be secured as the schemes are developed.

7. Adjustments to the plans based on the consultation

SEPA has made a number of adjustments to the flood risk management plans to take the views received during consultation into account.

Following the consultation on Potentially Vulnerable Areas (PVAs) in 2018, two new PVAs were identified (Kirkmichael, South Ayrshire Council, and Beauly, The Highland Council) and one PVA was amended (North Uist PVA amended to include Baleshare, Comhairle nan Eilean Siar).

Following the consultation on the flood risk management plans and local flood risk management plans in 2021 the following adjustments have been made:

1. Further actions were added to manage flood risk to several target areas on request from local authorities

- These new actions were based on submissions from local authorities. Three actions for additional flood schemes/works were added in Linlithgow, Cardenden and Cairneyhill target areas. A small number of actions for new flood studies have also been added.

2. Additional Local Plan District actions were added following feedback from the responsible authorities and internal SEPA consultation

- New action on SEPA to improve data on climate resilience
- New action on SEPA on future flood risk management planning
- New action on Scottish Forestry, in collaboration with its UK counterparts, to produce guidance on designing and managing forests to reduce flood risk.

3. Some actions were removed from the flood risk management plans at the request of local authorities responsible for their delivery

- Actions including flood study actions were removed where they had concluded during the consultation period.

4. Further information on how climate change was assessed was added to the final plans based on feedback received from consultation

- Section 1.2.4 of the final plans explains in more detail how climate change was assessed when developing the plans. This has advanced significantly since the 2015 strategies were published.

5. Further information on how potentially vulnerable areas (PVAs) were identified was added to the final plans based on feedback received from consultation

- Section 1.2.5 of the final plans explains the review process used for the identification of PVAs, including the full public consultation in 2018. PVAs will be reviewed again in 2024.

6. Further information on progress in implementing actions and working towards objectives in the 2015 strategies was added to the final plans based on feedback received from the consultation

- Section 1.2.1 of the final plan provides further information on what progress has been achieved in implementing actions in the 2015 strategies (2015 – 2021).

7. A target area boundary was amended following feedback from the public

- The target area boundary for Lindean was updated showing the relevant area at flood risk.

8. A description of the importance of community actions was added to the final plan, recognising the work that communities do to manage flooding based on feedback from the Scottish Flood Forum and other respondents

- The Local Plan District action on 'self help' was updated to include signposted links to useful resources and sources of help and guidance.
- A paragraph on the importance of community groups and how they are involved in flood risk management is included in Section 1.3.4 of the final plans.

9. A description of the catchment-based approach and the role it plays in delivering flood management actions was provided based on feedback from the consultation

- Section 1.2.7 of the plans explains that a catchment approach is the foundation of flood risk management in Scotland and sets out how catchment wide information informed the development of the plans and will be taken into account when delivering the key actions.

- Section 1.4.1 provides additional information on river basin management planning and the links between the two processes.

10. The link between flood risk management plans and land use planning was clarified following feedback from the public

- Land use planning is already one of the key national actions and is set out in Section 2 of the final plans.
- Section 1.4.2 further explains the links between the flood risk management plans and the land use planning process.

11. Habitat Regulations Assessment (HRA) statements were added to each relevant action

- A small number of actions could have negative impacts on internationally important nature conservation sites. SEPA added statements to these actions to explain how any negative impacts will be avoided. This forms part of the SEPA Habitats Regulations Appraisal, which has been completed in consultation with NatureScot.

12. Other changes were made to the way information is presented to make it clearer

- The descriptions of PVAs and target areas were reviewed to ensure these are up to date.
- The heading for cycle two actions was changed from 'Actions proposed before 2028' to 'Actions proposed to start between 2022 and 2028' to make the timescales clearer.

13. Further information is provided on the uncertainty associated with funding of flood risk management actions

- Following feedback from COSLA, other stakeholders and the public, further information was added in Section 1.5.1 to clarify the impact of funding and the current funding review process on delivery of the flood risk management actions in the plans.

8. Next steps

SEPA received a range of views as part of the flood risk management plans consultation. These views provide a useful insight into public knowledge and understanding of flood risk management and the key concerns that people have.

Working within safe data sharing practices, SEPA have passed the feedback to other responsible authorities to consider and act on and for consideration in the local flood risk management plans. Local flood risk management plans will be published in December 2022.