

# Implementation of the Flood Risk Management (Scotland) Act 2009

## Report to the Scottish Parliament

*Laid before the Scottish Parliament by the Scottish Ministers under  
Section 52 of the Flood Risk Management Scotland Act (2009).*

*February 2019*

*SG/2019/10*

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## Ministerial Foreword



This report to Parliament outlines progress made in implementing the Flood Risk Management (Scotland) Act 2009.

The first ever Flood Risk Management Strategies and Local Flood Risk Management Plans were published in 2015 and 2016 respectively. These ensure long-term proactive planning and investment decisions protect the most vulnerable and those areas at greatest risk of flooding across the whole of Scotland. Actions identified are now being implemented across Scotland, whilst the second flood risk management cycle is underway to identify future actions.

The commitment made by the Scottish Government in 2016 to provide £420 million over 10 years gives Local Authorities the certainty they need to deliver actions set out in their Local Flood Risk Management Plans.

But progress is not limited to flood protection schemes and works. Investment and advances have also been made in expanding and improving flood forecasting and warning, flood resilient properties, and in support for the Scottish Flood Forum and community resilience groups.

As part of a recent visit during resilience week I have seen at first-hand how Clackmannanshire Council, the Scottish Flood Forum and responders have worked proactively with communities to tackle flood risk. The application of new technologies like RiverTrack has helped communities to gain a better understanding of their potential flood risks so they can take the necessary action to protect themselves, their property or their business.

We continue to increase our understanding of flood risk in Scotland. Collaborative projects like our Dynamic Coast investigate the resilience of Scotland's coast. The Interreg project *Building with Nature* links us to European partners to further our understanding on natural flood management.

In December 2018 SEPA published the second National Flood Risk Assessment. This gives us the clearest picture yet of flood risk in Scotland, and embeds climate change and a comprehensive range of social, environmental and economic impacts into a single assessment. The scale of the challenge ahead is not to be underestimated. Going forward we must manage this risk, adapt to the changing climate and continue to empower and enable our communities to help themselves.

A handwritten signature in black ink, appearing to read 'R. Cunningham', written in a cursive style.

**Roseanna Cunningham**

## Introduction and Background

Flooding is a natural occurrence which can have devastating consequences on individuals, businesses and communities across Scotland. While flooding cannot be prevented, steps can be taken to reduce the likelihood of a flood event occurring, to minimise its impact and to help those affected by flood events.

This report outlines the progress of work being carried out by a number of partnership organisations throughout Scotland through the implementation of the Flood Risk Management (Scotland) Act 2009 (“the Act”).

The Act creates a framework for coordination and cooperation at a national and local level, and clearly sets out the roles and responsibilities of the key agencies involved in flood risk management, notably the Scottish Environment Protection Agency (SEPA) and responsible authorities such as local authorities and Scottish Water.

The coordination and cooperation of these agencies, alongside work to engage and empower communities at risk of flooding, underpins a sustainable approach to evaluating and managing flood risk across Scotland. This risk based and plan led approach aims to achieve the following 6 outcomes:

- 1. A reduction in the number of people, homes and property at risk of flooding as a result of public funds being invested in actions that protect the most vulnerable and those areas at greatest risk of flooding.**
- 2. Rural and urban landscapes with space to store water and slow down the progress of floods.**
- 3. Sustainable surface water management that decreases burdens on our sewer systems while also delivering reduced flood risk and an improved water environment.**
- 4. Coasts and estuaries managed in a way which aims to reduce flooding, respects the changing nature of the coast and takes into account potential impacts of interventions on flooding and erosion in adjacent areas.**
- 5. A well informed public who understands flood risk and takes actions to protect themselves, their property or their businesses.**
- 6. Flood management actions being undertaken that will stand the test of time and be adaptable to future changes in the climate.**

## Debate: Working in Partnership to Reduce Flood Risk Across Scotland

A [debate](#) entitled *Working in Partnership to Reduce Flood Risk across Scotland* was held in the Scottish Parliament in November 2017. It was an opportunity for Parliament to recognise that the efforts to reduce flood risk are a vital part of our adaptation to a changing climate. The debate also acknowledged that the development and ongoing delivery of the Flood Risk Management Strategies and Local Action Plans are the

result of successful partnership work between Scottish Government, SEPA, Scottish Water, local authorities and other partners.

### **Storm Desmond and Storm Frank, December 2015**

Whilst there have been many flooding events over the last couple of years the winter of 2015/16 saw record flooding in many places, notably during Storm Desmond (5-6 Dec 2015) and Storm Frank (30 December 2015).

The scale of flooding that occurred in December 2015 and January 2016 was exceptional in terms of intensity and the fact it was so widespread. December 2015 was the wettest on record in Scotland and the wettest calendar month overall in the UK since records began in 1910.

Out of a total of 408 SEPA river gauging stations nationally, at least 50 measured record levels in December-January. Totals at many gauges for the first 7 days of January were up to 350% of the long-term average for the whole of the month.

In 1 month alone, between early December 2015 and early January 2016, SEPA issued a total of 942 Flood Alerts and Warnings to communities at risk, including the first Severe Flood Warnings ever issued by the Floodline direct warning service. Over the same period, SEPA's Floodline website received over 700,000 "hits", with a peak of 135,000 on 30 December during Storm Frank.

During that period local councils, emergency services and other responders worked tirelessly to minimise the impact on communities, ensure the safety of people and help local areas recover.

In light of the exceptional circumstances the Scottish Government provided over £16m emergency funding in response to the flooding.

The support package provided in January 2016 was a response to the exceptional events at the time and it is not anticipated that it would be an automatic response to any future flooding events.

## 1. UNDERSTANDING FLOOD RISK

Flood risk is a measure of the likelihood that a flood event will happen and of its potential adverse consequences. The long-term aim of the Scottish Government and its partners is to reduce this risk.

Robust and reliable information on the causes and consequences of flooding are needed to promote well-informed decisions on how to tackle flood risk.

There have been a number of advances and improvements in our knowledge of flood risk and vulnerability including:

- Flood mapping
- National flood risk assessment
- Flood forecasting and warning
- Social vulnerability
- Climate change

### 1.1 National Flood Maps

SEPA's continuous improvement programme for Scotland's flood maps include the following advances:

- Flood map method development
- Science improvements
- Improved survey data
- Flood modelling improvements
- Map updates

There have been seven published river map updates since December 2015 at locations across Scotland ranging from Golspie in Sutherland to Crosshouse in Ayrshire.

A programme of topographic survey data has collected several hundred kilometres of survey information in river corridors and in the coastal zone to support of ongoing flood map development projects.

A complete remapping of the flood risk at Scotland's coast is underway and will feed into the Flood Risk Management (FRM) Strategies in 2021. When these are complete Scotland will, for the first time, have a comprehensive picture of flood risk at our coast that includes inundation from waves and overtopping in addition to the "still water" levels currently represented on the flood maps.

SEPA's flood maps received praise in a [European Commission report](#). The online map view, presented on the SEPA website was included in the *good practices adopted* section.

### 1.2 Flood Forecasting and Warning

There are currently 289 flood warning areas across Scotland, where vulnerable communities benefit from SEPA's local early warning service.

The Scottish Government has invested significantly in improving, and supporting the continued development of Scotland's flood warning service. This includes funding to help SEPA and the Met Office operate a [Scottish Flood Forecasting Service](#). This

service ensures flood forecasting and warning information is made available to the public and emergency responders throughout Scotland. For example,

- A daily Flood Guidance Statement is issued to over 500 emergency responders. This provides shared understanding of current and forthcoming flood risk levels and locations, and advance notice of potential flooding situations to aid planning and coordination of appropriate emergency response.
- [Floodline's](#) direct warning service is available to members of the public and sends an alert to subscribers when their postcode is at risk of flooding. The number of registrations to Floodline has continued to increase and now exceeds 28,000 customers; however many more benefit from the service through accessing regional Flood Alerts and local Warnings online and through social media.
- The [Flood Warning Development Framework \(2017-2021\)](#) sets out plans to enhance the coverage and delivery of flood warning, including 14 new flood warning schemes that have been strategically identified, and prioritised, as part of the first round of flood risk management strategies.

These services, and the new developments and improvements that underpin them, are critical elements of SEPA's role in warning and informing responders and the public of flood risk, and the need to take action to prepare for flooding.

New flood warning schemes have been delivered for:

- Loch Lomond and River Leven
- River Garnock
- Upper Nith
- River Esk
- River Cree
- Orkneys Islands coastal
- Aberdeen, Aberdeenshire and Angus Coast
- Solway Coastal
- Airth
- Alloa

The forecasting and warning systems are in constant development to expand and improve the service.

### 1.3 UKCP18

In 2018, the Met Office Hadley Centre Climate Programme published an update to the UK Climate Projections 2009 (UKCP09). [UK Climate Projections 2018 \(UKCP18\)](#) are the most up to date assessment of how the UK climate might change throughout the 21<sup>st</sup> century. These projections will be incorporated at appropriate points in future flood risk management planning cycles.

## 1.4 Understanding the Social Impacts of Flooding

In 2016 the Scottish Government commissioned a 3 year research project through CREW (Centre of Expertise for Waters) to better understand the long term impacts of flooding for individuals, their families and communities. This will help us understand what types of support and advice people and communities need at different stages of a long-term recovery. The University of Aberdeen and the James Hutton Institute are conducting the study which involves surveys and repeated face to face interviews in 3 consecutive years with residents in Ballater and Garioch who were affected by the widespread flooding in the winter of 2015/16.

The study started in 2017 with a household survey, a business survey and in-depth interviews. A [short report](#) summarising Year 1 activities and key findings was published by CREW in early 2018

Year one surveys and interviews importantly confirmed that two thirds of respondents from flooded homes were unable to return to their own homes for more than six months after the flooding. Also more than half of the respondents who used temporary accommodation stayed in more than one place whilst out of their own homes and the number of temporary places used increased with the length of time respondents were unable to return to their own home. In some cases residents moved 5 times. Respondents were asked about the impacts the event had on their physical health and 60% reported a deterioration in physical health.

A final report will be available in early 2020.

## **2. UNDERSTANDING AND WORKING WITH CATCHMENTS AND COASTS**

### **2.1 Background**

Actions that affect one part of a river, coast or estuary can have consequences elsewhere. This means that flood management actions are most effective when they are planned and coordinated within catchments and along coasts in a way that is uninhibited by administrative boundaries.

Adopting a catchment approach to flood risk management requires an appreciation of catchment and coastal processes, and an understanding of how best to manage the sources and pathways of flood water. This includes looking at how the timing, magnitude and duration of a flood can be managed, e.g. by creating, restoring and enhancing natural features and characteristics of the landscape, including wetlands, woodlands, vegetation, functional flood plains, saltmarshes, beaches and dunes.

### **2.2 Flooding and Land-Use Planning**

Scotland applies a precautionary approach to managing flood risk.

SEPA is a statutory consultee in the land-use planning process and provide advice, evidence and support to help planning authorities meet their statutory FRM and land-use planning duties through appropriate development. This ensures that core flood risk management principles such as avoidance are carried through into sustainable place making and included at the heart of land-use planning decision making process.

The Scottish Government and SEPA have commissioned [ClimateXChange](#) to undertake research in 2019 to help understand the causes and impacts of piecemeal floodplain loss in Scotland.

As part of the Scottish Government's commitment to inclusive economic growth we all want to see a flexible, responsive planning system that is best placed to serve the needs of our communities. The current Planning Bill is part of a package of reforms responding to the Independent Review of the planning system which reported in May 2016. Following on from the Planning Bill we will be moving to refresh the National Planning Framework and Scottish Planning Policy. This has the potential to radically simplify the planning system. It will mean that policies do not need to be repeated over and over again in plans throughout Scotland.

### **2.3 Dynamic Coast – Scotland's National Coastal Change Assessment**

One-fifth of our coastline (over 400kms) is 'soft' and therefore susceptible to erosion. Rising sea levels, increased coastal erosion and erosion-enhanced flooding will progressively impact Scotland's soft coastlines, its assets and communities. At present 'natural defences' such as beaches and dunes protect £13bn of assets, some of these are eroding and £400m assets will be threatened by 2050, if erosion continue.

To better understand how our coastline is changing and how that might increase flood risk to coastal communities, the Scottish Government set up the Dynamic Coast project through CREW to identify our 'soft' coastline and assess coastal change. The research was carried out by the University of Glasgow and managed by SNH.

In 2017 Roseanna Cunningham, the Cabinet Secretary for Environment, Climate Change and Land Reform, launched phase 1 of [Dynamic Coast project](#) which identified the assets at risk along our coastline if recent erosion rates continue.

As coastal erosion and flooding are interlinked they must be considered jointly. SEPA has used outputs from the Dynamic Coast project to inform the second National Flood Risk Assessment published in December 2018.



The Scottish Government is working with partners and stakeholders to plan, mitigate and adapt in advance of greater impacts along the coast. This requires cross sector and integrated adaptation and mitigation planning.

Phase 2 of Dynamic Coast, started in early 2018 and will assess the impacts of climate change and sea level rise on erosion rates. Focussing on sites, including Montrose, Tiree and St Andrews, the Dynamic Coast team will work with local stakeholders to develop adaptation plans.

## 2.4 Natural Flood Management

The Scottish Government, SEPA, local authorities and other partners continue to work together to deliver natural flood management (NFM) in Scotland.

SEPA's NFM opportunity maps have been used to identify over 100 actions with an NFM component in the 2015 FRM Strategies and 2016-22 Local FRM Plans. This includes proposals for four NFM schemes and a further 10 engineered schemes that will include an NFM element. In addition local authorities will carry out 23 studies with a sole focus on NFM and a further 69 engineered scheme studies that will include options for NFM during this period.

### 2.4.1 Scottish Government Rural Payments [Agri-Environment Climate \(AEC\) Scheme](#)

This promotes land management practices which protect and enhance Scotland's environment, improve water quality, manage flood risk and mitigate and adapt to climate change. The Scheme now compensates land managers for implementing measures on their land that can help increase storage of flood waters. This includes capital items and management options such as embankment removal. At the end of 2018 the first AEC scheme payment for embankment removal capital works on the River Nith was agreed.

### 2.4.2 SEPA Natural Flood Management Handbook

In December 2015 SEPA launched the [Natural Flood Management Handbook](#). The handbook details how NFM can contribute, as part of a suite of measures, to help

reduce the impact of frequent flooding on a smaller scale. It also provides practitioners with valuable information on how best to implement NFM measures.

### **2.4.3 Natural Flood Management Network**

Scottish Government, SEPA and James Hutton Institute worked together to develop the [NFM Network Scotland and to](#) launch it in 2018. This is the first ever dedicated online resource on NFM that aims to bring together practitioners, researchers and communities from around the world to share knowledge and best practice. The network provides information on relevant news and events, Scottish case studies, and NFM resources.

### **2.5 EU Interreg North Sea Region Building with Nature project**

The Scottish Government, Tweed Forum and SEPA, are partners in the [EU Interreg Building with Nature project](#) which aims to demonstrate how measures that work with natural processes can manage flood and coastal erosion risks whilst enhancing ecosystem services.

The lack of robust evidence for NFM measures means that uptake across the North Sea Region is limited. Belgium, Denmark, Germany, Netherlands, Norway, Scotland, and Sweden have therefore come together through Interreg to develop and share a common transnational evidence base to justify investing in building with nature solutions.

The four year project, in which the Scottish Government has a lead role, involves seven coastal and five catchment sites, including the Eddleston Water.

Between 2016-2020, Scotland will receive up to 400,000 € for the Eddleston Water project;

Scotland has hosted a number of meetings and site visits since the project started. Most notably, Dundee played host to all the project partners in September 2018. This [event](#) included field trips to the Eddleston Water project, Montrose Bay and St Andrews beach.



### 2.5.1 The Eddleston Water Project

The Eddleston Water project started in 2010 and aims to reduce flood risk and restore the river for the benefit of the local community and wildlife. The project is a partnership initiative led by the [Tweed Forum](#), with support from Scottish Government, SEPA, and the Scottish Borders Council. Monitoring is provided by the University of Dundee and the British Geological Survey.

Working with land managers on 17 separate farms the Tweed Forum has been able to introduce subtle changes to current land management practices in order to slow water flow from the hills, create floodwater storage areas and reconnect the river with its floodplain. This includes creating over 200 ha of riparian woodland, planting almost 300,000 native trees, re-meandering 2.2 km of river, removing 2.9 km of flood embankments, installing 116 'high flow restrictors'.

The Eddleston catchment is comprehensively monitored so that the effect of restoration measures can be fully understood. This monitoring programme consists of a hydrometric network (which will measure water as it enters and flows through the catchment), groundwater monitoring, water quality measurements as well as ecological and geomorphological surveys. The detailed monitoring programme is funded by the Scottish Government. An in-depth project progress report from 2016 is available [here](#).

After winning the UK River Prize in 2016 the Tweed Forum were Thies International River Prize Finalists in 2017. Alongside a wide field of initiatives, the Tweed Forum was recognised international best practice from catchments across the world, in river restoration and natural flood management.



### **2.5.2 Integrating Natural Flood Management**

In addition to flood risk mitigation, NFM frequently delivers many other benefits. In recognition of this, opportunities to integrate NFM delivery with other drivers have also been examined. Analysis of Scotland's National Forest Estate (NFE), for example, identifies where forestry management may influence flood risk. This information informs NFM delivery on the NFE as well as more sympathetic forestry management that better takes account of potential impacts on flood risk areas.

Opportunities to integrate NFM with river basin management planning have also continued with many local authorities jointly examining RBMP and NFM opportunities when undertaking their flood studies.

### **3. AN INTEGRATED APPROACH TO FLOOD RISK MANAGEMENT**

#### **3.1 Background**

Flood risk management is the process of assessing, organising and implementing actions to deal with flood risk. The main outcome of the flood risk management planning process should be a set of sustainable actions being taken to reduce overall flood risk across Scotland.

Multiple organisations are involved in managing flood risk. It is therefore essential that an integrated approach, that balances national consistency and strategic decisions with local knowledge and accountability, is adopted.

#### **3.2 National Flood Risk Assessment**

First published in December 2011, the National Flood Risk Assessment (NFRA) has provided Scotland with the knowledge and tools to assess the causes and consequences of river, coastal and surface water flooding, taking into account the effects of climate change. It considers the potential impact of flooding on human health, economic activity, the environment and cultural heritage and is based on the most up to date data available.

A key requirement of the Flood Risk Management (Scotland) Act 2009 is that SEPA must review and update the NFRA by December 2018 and then every 6 years.

Since reaching the end of the first Flood Risk Management planning cycle, SEPA have worked closely with key stakeholders to review and update the NFRA as part of preparations for the second planning cycle.

We now understand that there are around 284,000 homes, businesses and services across Scotland at risk of flooding from rivers, surface water and the sea. That is more than twice as many that were identified in the 2011 NFRA and 2015 Flood Risk Management Strategies. The reason for this increase is that there have been major advances in how properties at risk have been identified, not because the physical risk has changed.

Scientific knowledge and understanding of flood risk is constantly evolving. Better data and access to improved mapping and modelling has advanced our understanding of the location of properties at risk. This means that we have been able to identify more properties at risk which were previously unknown to us.

#### **3.3 Flood Risk Management Planning**

For the purposes of Flood Risk Management Planning, Scotland is divided up into 14 [Local Plan Districts](#) (LPD), with a lead local authority assigned to each. For each LPD a flood risk management strategy and a local flood risk management plan have been published.

[Flood Risk Management Strategies](#), prepared by SEPA, in collaboration with relevant responsible authorities set out a long-term vision for the overall reduction of flood risk. They contain a summary of flood risk in each Local Plan District together with information on catchment characteristics and a summary of objectives and measures for Potentially Vulnerable Areas.

[Local Flood Risk Management Plans](#) are developed by lead local authorities and take these objectives and set out what actions will be taken and how they will be funded.

Scotland's first Flood Risk Management Planning Cycle successfully concluded in December 2017.

### **3.3.1 Public Consultation**

SEPA and the lead local authorities jointly consulted on the draft Flood Risk Management Strategies and draft Local Flood Risk Management Plans over a 6 month period from December 2014.

222 responses to the consultation were received. The majority of responses (71%) were from individuals. The remaining responses came from:

- Interest and community groups (including non-government organisations and charitable organisations) (15%),
- Responsible Authorities designated under the FRM Act 2009 (7%),
- Businesses (4%),
- Other public bodies (3%), and
- Consultancy (<0.5%).

Views expressed in the consultation were taken into account when preparing the final Flood Risk Management Strategies ("FRM Strategies") and Local Flood Risk Management Plans.

### **3.3.2 Publication of FRM Strategies and Local Flood Risk Management Plans**

14 [Flood Risk Management Strategies](#) and [Local Plans](#) were published in December 2015 and June 2016 respectively. These take our knowledge and understanding of flooding and turn it into a set of actions that are planned, prioritised and co-ordinated to tackle flooding in the areas where it affects us the most. Having an agreed understanding of flood risk and a set of national actions has been powerful for all flood risk management delivery partners and stakeholders.

The second planning cycle is currently underway and will build on the lessons learned from the first cycle.

## **3.4 Progress on Actions in Cycle One**

Local authorities continue to progress the actions identified in the first cycle of flood risk management strategies and local flood risk management plans. These actions range from helping to raise awareness, encouraging property owners to take action to help themselves, to flood warning schemes and flood protection works.

Since 2015 a number of flood protection schemes have been completed. These include schemes at Selkirk, Elgin, Brechin and Almondbank. A number of the 42 schemes on the prioritised list of schemes set out in the Flood Risk Management Strategies have also been completed including those at Huntly, Newmills, the Dundee Waterfront, the Water of Leith and Kirkwall. A number of others are making good progress and have been confirmed by the relevant Councils with construction work either due to be completed or started during 2019.

The 14 Lead local authorities will publish interim reports setting out progress by June 2019 as required by the Act.

## **4. SURFACE WATER MANAGEMENT**

### **4.1 Background**

Urbanisation has altered the natural drainage process. Rain falls everywhere so all features of our urban landscape, by design or otherwise, influence surface water run-off and flooding. Surface water flooding is often a complex interaction of many sources of flooding, including flooding from piped systems when their capacity is exceeded, small urban watercourses and direct inundation from surface water run-off.

It is widely recognised that sustainable surface water management ensures that above and below ground parts of the drainage system can work in concert to deliver benefits for flood risk management, people, the water environment and biodiversity, while also making our urban areas more adaptable to future changes and more resilient to climate change.

### **4.2 Surface Water Management**

The Flood Risk Management (Scotland) Act 2009 has driven significant improvement in the understanding of surface water flood risk and management of surface water flooding in Scotland.

The first National Flood Risk Assessment in 2011 (NFRA) was the first time national maps of surface water flood hazard and risk were available for Scotland.

In 2015 the first FRM Strategies set out a clear framework for the management of surface water flood risk; they require local authorities to lead on the development and implementation of surface water management plans in those areas with the greatest risk of surface water flooding.

The FRM Strategies identified 113 towns and cities that require a surface water management plan (SWMP).

The Strategies found that surface water flooding accounts for 23% of annual flood damages in Scotland.

SEPA, Scottish Water (and other responsible authorities) are working in partnership with local authorities to support the production of the SWMP's.

### **4.3 Integrated Catchment Studies**

Scottish Water is leading on a number of Integrated Catchment Studies in partnership with 20 local authorities across Scotland. These studies aim to create a detailed understanding of the above and below ground drainage systems – combined sewer network, culverted and open watercourses, surface water sewers for example. The aim to understand the interactions of the drainage network and identify the sources and mechanisms of flooding in these urban areas. These studies were commissioned in two batches and are currently at varying stages of development.

Five of these studies will begin the Optioneering phase of work in early 2019 which will identify the most sustainable solutions for managing flood risk in areas which have been identified as joint priority needs areas for Scottish Water and the local authorities.

Twelve studies are continuing through the model build and verification stages. These will then be taken forward to undertake a catchment flooding assessment which will identify the sources, mechanisms and impacts of flooding. It is expected that a number of these studies will continue to the Optioneering phase when these stages have been completed.

#### **4.4 Section 16 Assessment of Flood Risk from the Sewer Systems**

Scottish Water is progressing on schedule with the program to undertake modelling to assessment of flood risk from the sewers systems across 201 catchments by the end of the first FRM cycle (2021). As of December 2018, 97 assessments have been completed. All other S16 assessments are on programme for completion within the FRM cycle. On completion the outputs are provided to SEPA for use in the NFRA2 and continued development of the pluvial mapping and the appropriate local authorities as part of their Surface Water Management Planning Process.

#### **4.5 Programme for Government Commitments**

The Programme for Government 2018/19 makes a specific commitment in relation to surface water management. It highlights the need for cooperation to develop approaches to drainage which will

- reduce the burden on the sewerage network
- reduce the need for costly new infrastructure
- reduce flood risk.

It sets out the ambition to take steps to join the international trend towards Blue-Green cities, which will have multiple benefits for the environment and leisure and outdoors activity.

## **5. SELECTING AND IMPLEMENTING SUSTAINABLE ACTIONS**

### **5.1 Background**

The main output of the flood risk management planning process is a set of sustainable actions being taken to reduce overall flood risk across Scotland.

The flood risk management strategies and local flood risk management plans incorporate a wide spectrum of actions, ranging from national policies to flood protection schemes to awareness raising activities. Options are identified and considered within a structured appraisal process. This ensures that options are considered in a consistent way, with alternative options properly considered and investment decisions are justified. Sustainable solutions are likely to be a combination of actions.

In 2016 the Scottish Government published revised [Appraisal Guidance](#). The document provides guidance for SEPA and the responsible authorities on the economic, social and environmental aspects of options appraisal for actions promoted under the Flood Risk Management (Scotland) Act 2009. It identifies methods for identifying and assessing positive and negative impacts and recommends a decision framework, based on the principles of sustainable flood risk management and consistent with the HM Treasury Green Book and the Scottish Government guidance on appraisal and evaluation, part of the Scottish Public Finance Manual.

### **5.2 Appraisal and Prioritisation for Cycle Two**

SEPA are currently progressing plans for the development of the 2021 FRM Strategies. The Scottish Government and local authorities are working with SEPA to develop an appraisal and prioritisation method that accommodates the opportunities, ambitions, and challenges presented by the second cycle. This work will continue throughout 2019.

### **5.3 Decision Making in a Changing Climate**

The Scottish Government and SEPA have commissioned research through ClimateXChange to understand how climate projections can be better incorporated into economic appraisals for flood risk management measures in Scotland. This will help to achieve a managed adaptive approach in the actions taken to manage flood risk.

### **5.4 Funding**

Since 2008, the Scottish Government has made available funding of £42 million per year (via the Capital settlement) to enable Local Authorities to deliver appropriate flood protection measures.

In 2016 agreement was reached between Scottish Ministers and COSLA on a new strategic funding plan for flood protection schemes. The agreement guarantees that the level of flooding capital grant within the local government settlement is set at a minimum of £42m per annum, for ten years. This gives local authorities the certainty they need to deliver the actions set out in their Local Flood Risk Management Plans to help protect individuals, business and communities from the danger of flooding.

The funding will help to deliver 40 new flood protection schemes and works.

It has been agreed that from 2016/17 onwards flooding capital grant should be allocated on the basis of a hybrid model whereby 80% of the grant is allocated to large scale projects and distributed according to the prioritisation of flooding schemes set out in the 14 Flood Risk Management Strategies published in December 2015.

20% is allocated to all 32 councils to contribute to the other elements contained in the Strategies.

Local authorities are also free to allocate additional resources to flooding from within the overall funding provided to them by the Scottish Government and from within their own resources

## 6. ENGAGING WITH THE PUBLIC

Public awareness, participation and community engagement are essential components of sustainable flood risk management. Public participation can not only raise awareness of flood risk, it can also inform decisions and contribute to the successful implementation of actions and ensure that the public know what actions they can take themselves.

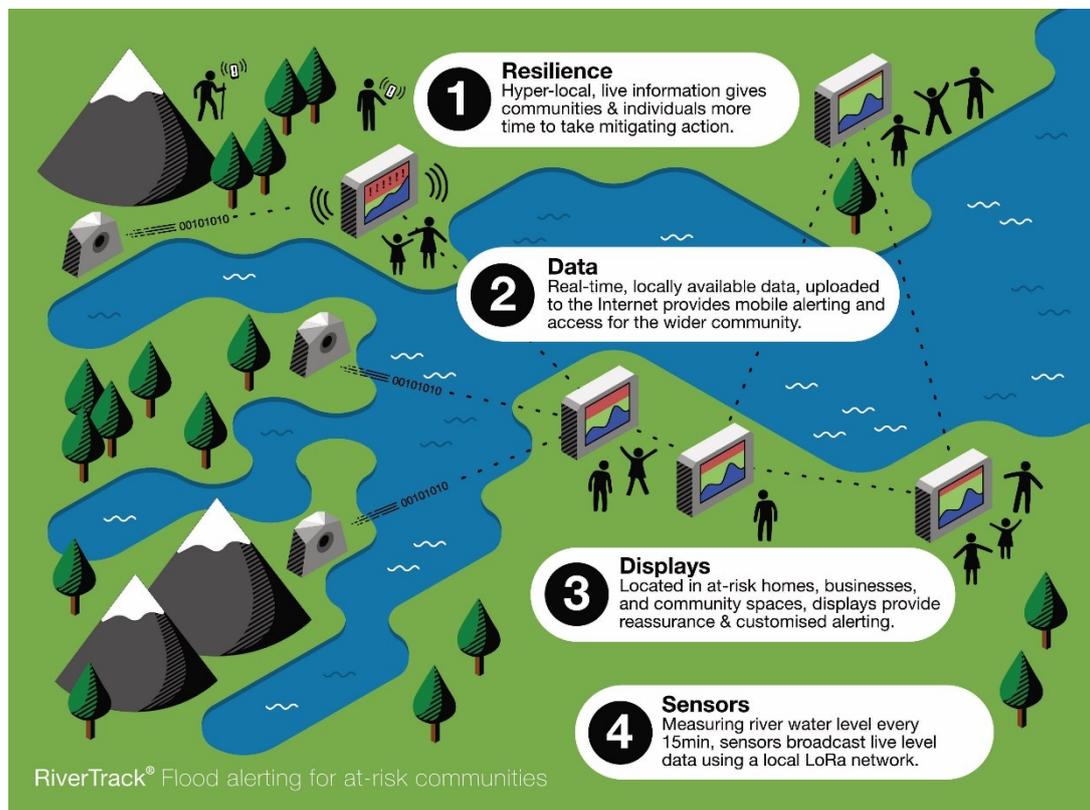
Land and property owners are primarily responsible for protecting their properties from flooding. Individuals, businesses and communities can play an important local role in flood management by acting as their own first line of defence against flooding. These actions can play an important role in complementing and supporting the work undertaken by SEPA and the responsible authorities.

The Scottish Government, SEPA, local authorities and other partners support a number of initiatives that help to improve community engagement and increase community resilience.

Whilst not specifically highlighted here, local authorities engage with communities through a wide variety of local initiatives, as well as direct engagement as part of delivering the objectives and actions set out in the Local Flood Risk Management Plans.

### 6.1 Community Engagement and Flood Risk Awareness Raising Initiatives

[RiverTrack](#) is a good example of public sector expertise and private sector creativity working together to solve real problems. RiverTrack gives people in flood risk areas a local flood alerting tool. The system uses low-cost sensors to send accurate time sensitive information to individuals about water levels in their local watercourse. It was



developed through [Scottish Government's Digital Directorate CivTech](#) programme.

The project challenge was promoted by SEPA and managed by RAB Consultants.

In 2018 the Scottish Flood Forum (SFF) and SEPA supported community trials of the innovative device. Feedback from the communities are being incorporated into further development of the system, driving improvements to its construction, ease of use and information sharing capability for Scottish communities.

The RiverTrack project won a Horizon H2020 Programme Innovation Award for its innovative solution to community flood alerting and forecasting.

The [Horizon 2020](#) ANYWHERE project is now piloting RiverTrack in campsites in Catalonia.

## 6.2 Community Flooding Volunteers

The Scottish Government continues to financially support [The Conservation Volunteers Scotland](#) (TCVS) who bring a citizen science approach to local community groups to develop activities that help manage flood risk in their area. TCVS is working with Clackmannanshire Council and SFF to deliver the Citizen Science Community River Monitoring Volunteer project.

The project aims to help raise awareness of flood risk in the Council area and to get local communities involved in recording useful information about some of the Foothills Burns. Through the project local communities and volunteers are actively recording data and taking photographs to monitor how sediments can move within burns and how this can influence flood management techniques.

Clackmannanshire Council has helped to develop the project and has selected three Burns for volunteers to monitor sediment chokes and blockages from key vantage points. Volunteers record river levels via photographs and relate this to information from the local Menstrie Weather website to record rainfall levels. TCVS provide training, guidance and support for the volunteers and all the survey materials (laminated maps of monitoring sites, recording sheets, weatherproof clipboards, and pencil).

TCVS is working with the Council and neighbouring Councils to roll out this model to other communities and is exploring options with SEPA and Stirling Council to develop the project with communities in the Strathard/Aberfoyle area.

## 6.3 Promoting Flood Resilient Properties

### 6.3.1 Flood Re and Flood Resilience

[FloodRe](#) is a flood reinsurance scheme that ensures that flood insurance remains affordable to those who need it. Stakeholders from across Scotland have worked with the insurance industry to develop it, including the SFF, to ensure the voices of Scotland's communities at risk of flooding are heard. Flood Re was launched in April 2016 and will be in place until 2039.

Flood Re helps to enable home insurance to remain affordable in areas at risk of flooding, but it also has a role to help manage a transition to prices for home insurance that fully reflect flood risk. Those benefiting from Flood Re need to become more

aware of their flood risk and, if possible, take action to reduce it by making flood resilient property repairs and installing property level protection.

### **6.3.2 Flood Resilient Properties Advisory Group, Framework, and Action Plan**

Property level protection and resilience measures are an essential and cost effective part of a sustainable and proactive approach to flood risk management. However, these measures are not being widely taken up in Scotland even though they can speed up the drying out and cleaning up process after a flood. In some cases it can mean that residents do not need to move out of their homes and businesses can reopen the next day.

With evidence to support the physical and emotional impacts of living in temporary accommodation after an flood event the Scottish Government set up and chaired an advisory group discuss what support home and business owners might need to make their properties flood resilient. Flood Re and the Association of British Insurers are members of the advisory group.

The Flood Resilient Properties Advisory Group produced a [Framework](#) document in December 2018 to promote flood resilience repairs and products and help property owners take action to make their properties more resilient against the impacts of flooding. The Framework recommends that a Delivery Group is set up in 2019 to prepare an action plan to promote and support property flood resilience actions. The Group will be overseen by a Chair from the insurance industry and led by a dedicated Project Manager, employed by the SFF.

Scottish Government continues to work with Defra and the devolved administrations to help residents and business owners take actions to protect their property.

### **6.3.3 CIRIA Flood Resilient Properties Code of Practice**

The Scottish Government is working with partners across the UK to develop a Code of Practice for resilient flood repairs and property level protection. The project will develop guidance documents to provide an integrated and authoritative framework that supports good practice and enables property owners, managers and built environment professionals to competently and confidently specify and delivery property flood resilience. The outputs are being developed with a range of stakeholders including the insurance industry and will help deliver the flood resilient properties action plan.

## **6.4 The Scottish Flood Forum**

The [Scottish Flood Forum](#) (SFF) is an independent Scottish Charity that supports individuals and communities at risk of flooding, including immediate support in the event of flooding as part of its flood recovery programme, and flood resilience and awareness raising.

The Scottish Government has grant funded the SFF since 2009 including £140,000 in 2016/17 and 2017/18 and £157,000 in 2018/19.

### 6.4.1 Flood Recovery

The SFF recovery programme provides an Integrated Recovery Framework in which both the community and authorities work in partnership towards a common goal of rebuilding and reuniting the community. This provides a means of responding to the many complex and social needs within the affected community.

During this reporting period, the SFF has supported communities to recover from the extreme flooding that occurred during the winter of 2015/16. This was especially severe in Aberdeenshire where it took many months for people to get back into their houses, as well as many other smaller scale events.

In addition to these severe events, the SFF has supported many other communities across Scotland during other localised flood events. Further detail is available in Annex A.

“Aberdeenshire Council would like to thank the Scottish Flood Forum for all the support during the response to recent floods and the ongoing support in communities still recovering from flooding. The support is highly valued and appreciated by Aberdeenshire Council”.

Will Munro of Aberdeenshire Council

### 6.4.2 Flood Resilience Vehicle

In 2018, the SFF received grant funding from Scottish and Southern Electricity Networks Resilient Communities Fund for a resilience vehicle. It will provide staff with a place to stay during a major flood where all accommodation is either flooded or being used by displaced flood victims.

It can provide a space to have one to one conversations where a venue for a flood drop-in centre is not yet set up.

It is branded and will help raise awareness of the SFF’s activities for example at community events as well as when on the road. It has already travelled to Orkney in support of the Orkney Flood Warning Scheme (September 2018) and to visit community resilience groups in Tillicoultry Community Fire Station during Resilience Week (November 2018).



### 6.4.3 Flood Resilience and Awareness Raising

In late 2015, the SFF recruited a Community Resilience Manager to develop and support community resilience groups, alongside flood recovery work. 42 established groups are now actively engaged and supported on a regular basis.



Quarterly peer-to-peer networking allows group chairs to come together to share experiences and discuss common issues, as well as hear from SEPA, local authorities and others. Topics discussed include natural flood management, flooding and the planning system, SEPA's PVA consultation among others. Events are well received with requests for additional events (as capacity allows) to be held in other parts of Scotland.

The SFF actively work with local authorities to support community engagement in areas at risk of flooding, and ensure that flood risk management actions undertaken by the SFF are recorded against the actions and objectives in the Local FRM plans.

During 2017 the SFF updated its website as its core information sharing and awareness raising tool. As part of this work, a number of infographics were created to help individuals understand what action they should/could take to prepare for, and react to, flood events.

## During The Flood

**The first priority is protecting life: yours and your family's. Always follow guidance from Emergency Services on evacuation.**

In most situations you will be evacuated to a temporary rest centre or you may choose to go to family or friends. If you stay in your home the following will prove helpful. Always follow guidance from Emergency Services on evacuation. Plan to move upstairs in good time. Keep Safe, Keep Warm.

Floodwater may be contaminated, especially by untreated sewage. Contamination remains after the floodwater has gone and can be hazardous unless simple procedures are followed.

Wear rubber boots and gloves in and around the affected property.

Wash all cuts and cover with waterproof plasters. Anyone receiving a puncture wound during flood recovery should have a doctor determine whether a tetanus booster is necessary.

Small children, pregnant women and people with health problems should avoid floodwater and flooded areas until the clean-up is complete.

However, if you do feel unwell or if you accidentally ingest (swallow) mud or contaminated water and you become ill, you should consult your doctor and tell them your house was flooded.

www.scottishfloodforum.org

### REMEMBER:-

Floodwater can damage buildings severely, particularly if it has been flowing quickly, is over 1m deep or has been in a property for a long time. Before entering property that has been flooded, the building should be checked for signs of damage.

If you have to enter floodwater, in all cases move slowly and carefully, make sure you are wearing strong footwear and use a stick to check that you are not about to step into a hole or onto a sharp object.

Be careful when moving any debris that may have been carried onto your property or the surrounding area. Avoid heavy objects (e.g. trees) that may be unstable and could suddenly move and trap or crush you. Do not attempt to move anything yourself that cannot be lifted comfortably.

Be careful when moving in and around property that has been flooded. Standing water and mud can hide holes, damage to structures and sharp objects. This could include uncovered manholes and drains or roads and paths, as well as broken bottles or glass. Be aware of cuts from standing or falling onto hidden hazards and slippery sediment.

Watch out for any fallen power lines and do not approach them – be aware that there is always a potential electric shock hazard.

Turn off the gas supply to appliances that have been flooded (or where their vents/flues may have been affected).

Do not rely on cars or other vehicles to protect you from floodwaters. If driving in floods is unavoidable, do so with extreme caution. 6 inches depth of fast flowing water can sweep a 4+4 vehicle off a road.

Turn off the electricity supply to the property until a qualified electrician or utility company has checked out the electrics. Use extreme caution in dealing with electricity. Ensure that all switches, sockets and appliances are checked prior to use, especially if they have been in contact with floodwater. Once all electrical safety checks have been made, make sure that you use a circuit breaker with any electrical equipment that you may use in, or to clean, or repair your property.

Do not approach any fast flowing water or deep standing water. If you enter even shallow, swiftly flowing water, you risk drowning, regardless of your ability to swim. Shallow standing water can be dangerous for small children.

Do not approach any structure that may be unsafe – seek professional advice.

## 6.5 SEPA: Awareness Raising and Community Engagement

### 6.5.1 Floodline

Since 2011, SEPA has delivered live flooding information direct to the public through [Floodline](#). Registered customers have increased to over 28,000, with around 400 messages issued every year and hundreds of thousands of people accessing information digitally.

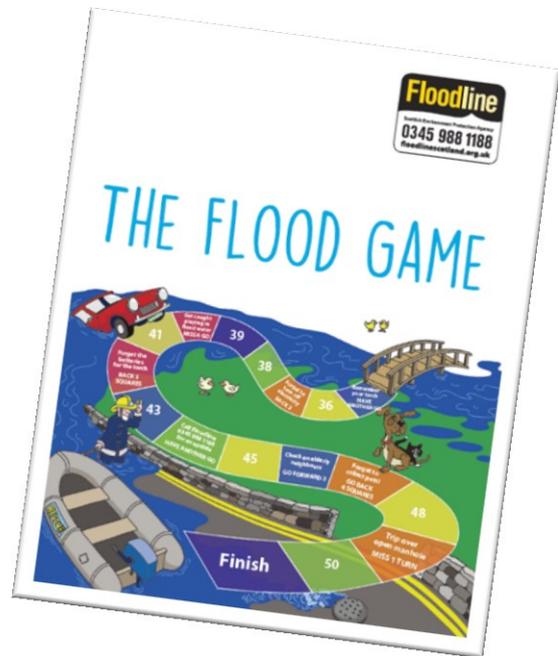
22

In December 2016 an independent research project assessed its effectiveness, with over 1,340 people taking part in an online survey. Their feedback resulted in eight key recommendations which will help drive plans to develop the service and SEPA's products over the coming years.

The majority of customers really valued Floodline and recommended that the Service should continue. Full details of all eight recommendations are included in the project reports available at <http://www.crew.ac.uk/publication/flood-warning-service>.

Floodline Kids was launched to engage children (under 16s) to learn how to be prepared for flooding. The new resources, including a flood game and activity sheets, were supported by a campaign aimed at the education sector, parents and children themselves.

The package of information shared with members of the public through Floodline also includes a new leaflet on flooding and insurance, called, "Flood insurance: A guide for customers in Scotland." It gives people helpful tips on how to be prepared for flooding, and information to help people find suitable flood insurance cover.



#### FLOODLINE

Inform your insurer that you have signed up to Floodline to receive advance notice of flooding. We recommend you sign up even if your property has not been affected by flooding before. Roads and transport links in your area may be affected during a flood making it difficult to reach your family, school and workplace and to access other services.



As well as providing live flooding updates 24 hours a day, 7 days a week, Floodline offers a wide range of information on how to prepare for and cope with the impacts of flooding on your home or business.

#### SEPA'S FLOOD MAPS

- Flood maps for Scotland were published by SEPA in 2014 to support decision making for flood risk management and land use planning and to raise public awareness of flood risk. [www.sepa.org.uk/flooding/flood\\_maps.aspx](http://www.sepa.org.uk/flooding/flood_maps.aspx)
- SEPA's flood maps relate only to Scotland.
- Before accessing the flood maps, users must accept or decline the Terms and Conditions of use.
- They show flood hazard and risk information at area level.
- They do not identify individual properties and how they are, or could be affected by flooding.
- SEPA's flood maps cannot be used for commercial purposes or to set insurance premiums.

#### PREPARING A FLOOD PLAN AND FLOOD KIT

Stay in control of the situation by preparing a flood plan so everyone knows what to do in the event of a flood. View our animation on the Floodline website that describes what to put into your flood kit.



#### COMMUNITY RESILIENCE

Find out about action groups in your area and how to make your community more resilient to flooding. Visit: [www.ready4scotland.org/my-community](http://www.ready4scotland.org/my-community) and [www.scottishfloodforum.org/flood-groups/](http://www.scottishfloodforum.org/flood-groups/)

#### CONTACTS

Association of British Insurers (ABI): represents the majority of UK insurers and provides information and guidance on various flood insurance issues. Call: 020 7600 3333. Visit: [www.abi.org.uk](http://www.abi.org.uk)

British Insurance Brokers' Association (BIBA): a general insurance intermediary organisation. Their 'find a broker' helpline can help you locate a flood specialist insurance broker. Call: 0870 950 1790. Visit: [www.biba.org.uk](http://www.biba.org.uk)

British Bankers' Association (BBA): the BBA has compiled a list of banks and the help they can offer flood affected householders and businesses. Visit: [www.bba.org.uk/news/bba-voice/0963-2/](http://www.bba.org.uk/news/bba-voice/0963-2/)

Chartered Institute of Loss Adjusters: chartered loss adjusters are independent claims specialists who investigate, negotiate and agree the conclusion of insurance and other claims on behalf of insurers and policyholders. Visit: [www.cila.co.uk](http://www.cila.co.uk)

Royal Institution of Chartered Surveyors (RICS): RICS produce guides on a range of subjects including flooding and can recommend a qualified surveyor in your local area. Call: 0870 333 1600. Visit: [www.rics.org.uk/knowledge/consumer-guides/](http://www.rics.org.uk/knowledge/consumer-guides/)

Scottish Environment Protection Agency (SEPA): the flood warning authority and environmental regulator for Scotland. Understand flood risk in your area by looking at SEPA's online flooding information and flood risk maps. Visit: [www.sepa.org.uk/flooding](http://www.sepa.org.uk/flooding)

Money Advice Service: an independent service set up by the Government to help people manage their money through a free impartial advice service. Visit: [www.moneyadvice.service.gov.uk/en/articles/flood-insurance-getting-the-right-cover](http://www.moneyadvice.service.gov.uk/en/articles/flood-insurance-getting-the-right-cover)

Flood protection products: a directory of commercial organisations that can provide bespoke flood and coastal erosion risk assessments and products has been created by independent charity the National Flood Forum. Visit: [www.bluepages.org.uk](http://www.bluepages.org.uk)

The directory is also promoted by the Scottish Flood Forum (SFF), a Scottish based charitable organisation funded by the Scottish Government. Visit: [www.scottishfloodforum.org](http://www.scottishfloodforum.org)

## Flood insurance

### A GUIDE FOR CUSTOMERS IN SCOTLAND

In Scotland, 1 in 22 of all residential properties and 1 in 13 of all non-residential properties are at risk of flooding from rivers, the sea or heavy rainfall in urban areas. Flooding and its impacts have been well reported over recent years. Some owners or occupiers of properties at risk may find it difficult to obtain flood insurance cover.

This handy guide provides information and further contacts to help you find suitable flood cover that meets your needs.

#### Important note

This guide has been produced by SEPA in conjunction with the Association of British Insurers (ABI) and is for information only. There is no guarantee you will be offered affordable or reduced premiums. If you action the suggestions contained within this guide.



## 6.5.2 Information Sharing Tools

[Report-a-Flood](#) was launched in November 2015. It is an information-sharing tool to report floods that are currently happening, or have happened in the last 24 hours.

It is designed to enable communities and individuals across Scotland help each other be aware of and prepared for flooding, by sharing any knowledge of flooding more widely. Sharing this information should help to reduce the damage and disruption flooding can have on people's lives. It allows them to choose to take alternative travel routes, or make other preparations like signing up to Floodline and making a flood kit. Publishing this information should help to increase public awareness of flood risk and local impacts, as it is sourced primarily from members of the public.

SEPA has worked with its counterparts in the other UK nations to improve how flooding information is carried by the BBC. This resulted in better delivery of online and on-screen flood warning information to the British public.

### **6.5.3 Weather-reactive Campaigns**

SEPA has moved much of its public awareness raising activities to be reactive to forecast potential flooding from snowmelt, coastal storms and heavy rain during this reporting period.

Campaign activations use both radio and digital outputs including significant activity on Facebook and Twitter. Distinct spikes in Floodline registrations and new digital visitors to SEPA's online pages occur around these activations, including in one quarter approximately:

- 1,600,000 impressions (number of times an advert has been delivered to an individual news feed);
- 750,000 listeners reached across radio stations used;
- 5000 page views on the Floodline website;
- 4500 views on the Floodline sign up page on the SEPA website.



### **6.5.4 Flood Warning Public Communications**

Significant flood warning public communications work was delivered, including around new flood warning schemes. Marketing and other communications activities to promote these schemes included:

- Postcards sent to properties within the flood risk areas with details about the Flood Warning scheme and how to register to Floodline.
- Public and partner community information events
- Advertising, media and publicity campaigns
- Digital and social media messaging, including by partners.

### 6.5.5 Community Education

Scottish Government funded SEPA and its partner [Right Lines](#) to develop an interactive play as part of its community engagement programme.

In the play, the audience become the village locals during a flood event. Participants can consider how flooding could impact their community and how they could take steps to prepare.

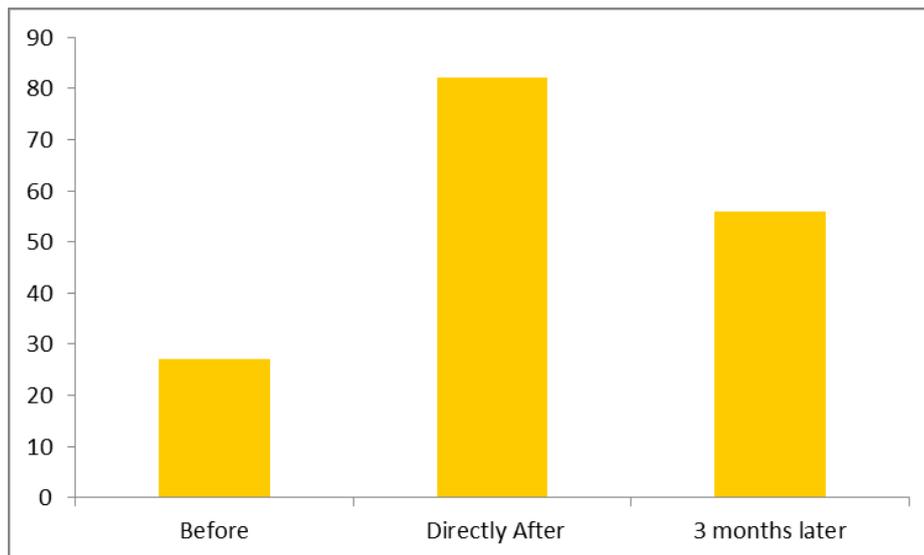
The play won the Innovation category of the Arts & Business Awards in 2017.



### 6.5.6 Community Safety

SEPA's drive to include flooding within community safety means they regularly join forces with the emergency services, local industries and voluntary organisations to help deliver 'Safe' events and education in Perth & Kinross, Tayside, Orkney Islands, Edinburgh & the Lothians, and Highlands & Islands. The events deliver important flood safety and flood preparedness messages through a fun, interactive and informative activity. They now help >10,000 local primary seven pupils per year deal with and avoid a range of hazards including flooding.

The results of an evaluation from a Safe Taysiders (Dundee) event are shown below. The number of young people who could correctly identify the potential sources of flooding and their associated risks, tripled directly after participation, but was still more than double after 3 months. These events play an important role to increase the level of understanding, and retention, of flood awareness information amongst young people.



## **7. DELIVERING RESPONSIBILITIES COLLECTIVELY**

Responsibilities for flood risk management are divided between different organisations. Strong partnerships, founded on common aspirations, are needed to deliver coordinated or joint actions, aligned investment planning and efficient use of resources. Finding new ways to share skills, expertise and services is important to delivering partnership working.

### **7.1 The Scottish Advisory and Information Forum for Flooding**

When the FRM Act came in to force, Scottish Ministers recognised that successful implementation relied upon the designated responsible authorities along with other relevant stakeholders working together to co-ordinate their actions. As a result the Scottish Advisory Implementation Forum for Flooding (SAIFF) was established to support organisations and stakeholders with an interest in flood risk management.

SAIFF comprises a series of working groups which are known as Task and Finish Groups, each with a specific remit. These groups are convened to help develop specific guidance or to undertake further analysis of important technical issues. The membership of these groups is made up of representatives from the areas of policy and implementation as well as technical experts.

### **7.2 Policy Management Group (PMG)**

The PMG provides oversight and coordination across all working areas. The PMG meets on a quarterly basis and its principal purpose is to give strategic oversight and to provide a co-ordination role in relation to the other SAIFF groups. This involves establishing Task and Finish Groups, monitoring their progress against their objectives, signing off completed work such as guidance documents.

Membership consists of representatives from the Scottish Government, Scottish Water, the Society of Chief Officers of Transportation in Scotland, Heads of Planning Scotland, COSLA, SEPA, and the Chair of the Lead Local Authority Forum.

### **7.3 Lead Local Authority Forum (LLAF)**

The LLAF shares good practice, exchanges information and addresses common issues arising through the work of the Local Partnerships in Scotland. Membership includes Lead Local Authorities, Scottish Water, Scottish Government and SEPA.

### **7.4 Society of Chief Officers of Transportation in Scotland (SCOTS) Flood Risk Group**

The group is open to all 32 Scottish Local Authorities with membership extending to Scottish Government, COSLA, Scottish Water, SEPA, Emergency Resilience and Heads of Planning Scotland (HOPS). The group enables sharing of good practice, development of guidance, partnership working and dissemination of information relating to Flood Risk Management in Scotland.

### **7.5 National Flood Management Advisory Group (NFMAG)**

This brings together a number of key organisations to consider the progress that is being made to implement flood management protocol and strategies.

## 7.6 Co-design and Co-delivery

SEPA have undertaken a number of partnership projects to support consumers, including community engagement and information initiatives, training packages and briefings including

Neighbourhood Watch Scotland	Citizen's Advice Scotland	Association of British Insurers and other Representative Bodies
<ul style="list-style-type: none"><li>• Featuring the Floodline service and flooding advice in Scotland's re-issued Scotland's Community Safety Booklet; and</li><li>• Working with NWS groups in (particularly new) Flood Warning Areas to help improve local engagement and promote community understanding and uptake of the Floodline service.</li></ul>	<ul style="list-style-type: none"><li>• Development of a flooding assistance training package for advisors in Scotland's Citizen Advice Bureaux, to better reach those potentially at greater flooding disadvantage.</li></ul>	<ul style="list-style-type: none"><li>• Briefings for staff. Topics include how commercial organisations can use the SEPA flood maps and other sources of information they can access, like the Scottish Flood Defence Asset Database (SFDAD).</li></ul>

## 7.7 Sharing Best Practice

The Scottish Government continues to fund an annual two day [conference](#) to bring Scotland's flood risk management community. This is a platform to exchange knowledge, share best practice and tools and explore issues common to those with duties in flooding and community engagement.

Scottish stakeholders also regularly organise and attend knowledge sharing events across the UK and beyond. For example, the SFF have forged close links with both the National Flood Forum in England, and the Irish National Flood Forum. The SFF presented at the Irish National Flood Forum's (INFF) conference in November 2017, and provided support for the Irish flooding minister during his visit to Scotland in December 2017.

The SFF arranged a study trip for the INFF in November 2018. The participants learned about the set up and governance of SFF and how it supports communities, to inform INFF's future business plan.

The Tweed Forum has played host to a range of international practitioners, academics and politicians who have visited the Eddleston Water project sites to see the NFM measures and learn about the monitoring. This includes Mr Kevin Moran, Irish Minister of State for the office of Public Works, representatives from the Ukrainian State Emergency Services and staff from the Norwegian Water Resources and Energy Directorate.



Delegates from the European Climate Change Adaptation Conference also visited the Eddleston project as well as partners from the EU Interreg Building with Nature project.

Following the winter floods of 2015/16 the Royal Society of Edinburgh held a [conference](#) that explored the science underpinning flood risk management in Scotland. The conference considered a series of questions including how we can improve flood risk management through a better understanding of climate change and extreme rainfall, how we can make our cities more resilient and how we can improve our flood warnings. Expert speakers gave presentations on topics ranging from extreme rainfall to flood insurance followed by a public event in the evening where a panel of experts debated various flooding issues with the audience.

## 7.8 Joint Training and Exercises

The Scottish Fire & Rescue incident and Police Scotland emergency procedures national training now includes a module delivered by SEPA on flood forecasting and warning

SEPA also participate in many joint training initiatives and exercises, to test and improve information sharing, procedures and activities between flooding responders.

### *Example: Inverness Flooding Exercise and Gates Closure Test*

A three day joint workshop and flooding exercise between SEPA and Highland Council key personnel from community services and emergency planning departments. The exercise culminated in simulating a real time flood event from five days out up to the need for closure of all 12 flood gates.



## Annex A – Communities supported by the Scottish Flood Forum

Table 1: Summary of SFF recovery support 2016 – 2018 (to Sept 18)

	2016	2017	2018 (to Sept)
<b>Recovery Programme for large scale events</b>			
Recovery Surgeries	>324	105	166
PLP exhibitions	>75	13	40
PLP Visits in flooded properties	>688	184	468
<b>Requests for Information</b>			
No of Information Line calls dealt with	>447	192	78
No of enquiry email address dealt with	>141	368	787
<b>Small scale, localised flooding support:</b>			
No of households supported	93	97	86
<b>Emerging Community Resilience Groups*</b>			
#groups in area flooded supported to start	5	11	6
# groups being supported still emerging from recovery		10	20
<b>Mediation requests from:</b>			
Client	13		37
Local Authority		30	15
MSPS	4	4	13

List of communities supported by the Scottish Flood Forum in each year:

### 2016

**Dumfries and Galloway** – Carsphairn, Newton Stewart, Moffat

**Aberdeenshire** – Ballater, Banchory, Aboyne, Kintore, Inverurie, Port Elphinston, Kemnay, Fraserburgh, Methlick, Peterculter and Ellon

**Argyle and Bute** – Campbeltown, Clachan

**Highland** – Wick, Strathpeffer, Tain, Marybank, Tarvie

**East Ayrshire** - Lochranza, Irvine,

**West Dunbartonshire** - Alexandria, Balloch

**Perth and Kinross Council** Dunkeld

**Stirling Council** -Stirling,

**S Lanarkshire** - Lanark,

**E Renfrewshire** – Barrhead

## 2017

**Aberdeenshire** (supported due to ongoing effects of 2015/16 flooding) – Ballater, Banchory, Aboyne, Kemnay, Inverurie, Kemnay

**Moray** – Portknockie, Hopeman

**Highland & Islands** – Dingwall, Strathpeffer, Inverness, Granton-on-Spey, Stornoway, Glendale (Isle of Skye)

**Perth and Kinross** – Bankfoot, Pitlochry area

**Angus** - Carnoustie and area

**North Ayrshire** - Kilwinning

**East Ayrshire** - Kilmarnock

**Dumfries and Galloway** – Carsphairn, Newton Stewart, Moffat

**Scottish Borders Council** - Eyemouth (2), Galashiels

**Edinburgh** (surface water) – Colinton Mains Road, Lanark Road, Balerno

## 2018

**East Dunbartonshire, Glasgow area, Moray, Dumfries and Galloway, Fife, Arran, Aberdeenshire, Stornoway, Orkney, Argyll and Bute and Highlands and Islands.**

## Annex B – Acknowledgements

The Scottish Government would like to thank all those who have provided material to aid completion of this report.



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Any enquiries regarding this publication should be sent to us at  
The Scottish Government  
St Andrew's House  
Edinburgh  
EH1 3DG

ISBN: 978-1-78781-573-5 (web only)

Published by The Scottish Government, February 2019

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA  
PPDAS531366 (02/19)

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