

# LIVING WITH FLOODING

An action plan for delivering property flood resilience in Scotland.



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# Foreword

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**Flooding is devastating for those affected – from the initial emotional shock of having possessions or stock destroyed, to the financial strain of leaving your home or closing your business, often for many months. The impact on the wider community can last for months, and in some cases years, after the event itself.**

“We must be both more creative and more pragmatic in our approach to adapting to the increased threat that climate change will bring.”

Over 280,000 properties are currently estimated to be at risk of flooding in Scotland. The Scottish Government is committed to managing flood risk and we make at least £42m available each year for a range of actions to help lower flood risk for communities. Thousands of properties will benefit from these actions but there will be many which don't and it is important that we work together to ensure that we can make our properties more resilient to flooding. Even minor adaptations can help reduce flood damage and potentially the amount of time spent in temporary accommodation.

Of course, where possible, we should avoid new development in areas at significant risk from flooding. However for existing properties at flood risk, we must be both more creative and more pragmatic in our approach to adapting to the increased threat that climate change will bring.

A commitment to address property flood resilience was included in the 2018 Programme for Government because I know it can make a difference for people who live with the fear of flooding every time it rains.

This action plan is welcome. It recommends steps which are required to make sure homes and businesses are more resilient. This includes undertaking research to better understand how properties can benefit from flood resilience measures. It recognises that property owners need to know where to get good advice and stresses the importance of professionals who understand flood risk and property construction having the best possible information.

I would like to thank all the members of the Property Flood Resilience Delivery Group for giving their time and sharing their expertise to ensure that in Scotland we do have an action plan.

We now have a window of opportunity to change the way we think about protecting property from flooding. Greater resilience means less damage.



**Roseanna Cunningham**  
Cabinet Secretary for Environment,  
Climate Change and Land Reform

# Introduction

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**Flooding cannot be prevented. In Scotland an estimated 284,000 homes and premises are at risk of flooding; with an additional 110,000 properties at risk by the 2080s<sup>1</sup>. Scotland needs to accept and address this risk. Whilst there has been action to help alleviate the effects of flooding through measures such as alerts, flood schemes and sustainable urban drainage schemes (SuDs), in Scotland the responsibility for protecting property from flooding rests with the owner. It is important therefore that householders and commercial occupiers know how to protect their property to limit physical damage to buildings and lessen the longer-term emotional impacts of being flooded. Communities, property owners and occupiers need to be aware of their flood risk and what action they can take to manage that risk.**

Property Flood Resilience (PFR) measures are designed to make property more resilient to the physical impacts and people to the emotional impacts of flooding. They either help prevent water entering a building, for example, by installing a flood guard across a doorway or they limit the damage to the property if the water enters, for example, by water-proofing the brickwork or replacing carpets with flooring that can be retained after the flood event. These measures make the clean up as easy as possible and allow people to return to their homes and re-open businesses as quickly as possible.

The Property Flood Resilience Delivery Group (PFRDG) brings together a range of stakeholders to work together to ensure that Scotland is better prepared for flood events. The PFRDG developed this Action Plan to help raise awareness of the benefits of PFR and encourage property owners, the construction and insurance industries and the general public to implement PFR measures.

This Action Plan is a requirement of the Programme for Government in Scotland 2018-19<sup>2</sup>. The plan has three main objectives:

- **Building a better evidence base** – through research and case studies determine the uptake of, the successes, the obstacles to uptake and cost benefits of PFR;
- **Influencing policy and providing clear guidance** – provide clear, consistent information and guidance on PFR used by industry and property owners or occupiers and
- **Recognising and supporting positive change** – encourage more PFR measures during renovations or re-instatement by promoting the economic and social benefits of flood resilience.

The Action Plan will be reviewed in June 2021. All published research and reports will be freely available on the [Scottish Flood Forum](#) website.

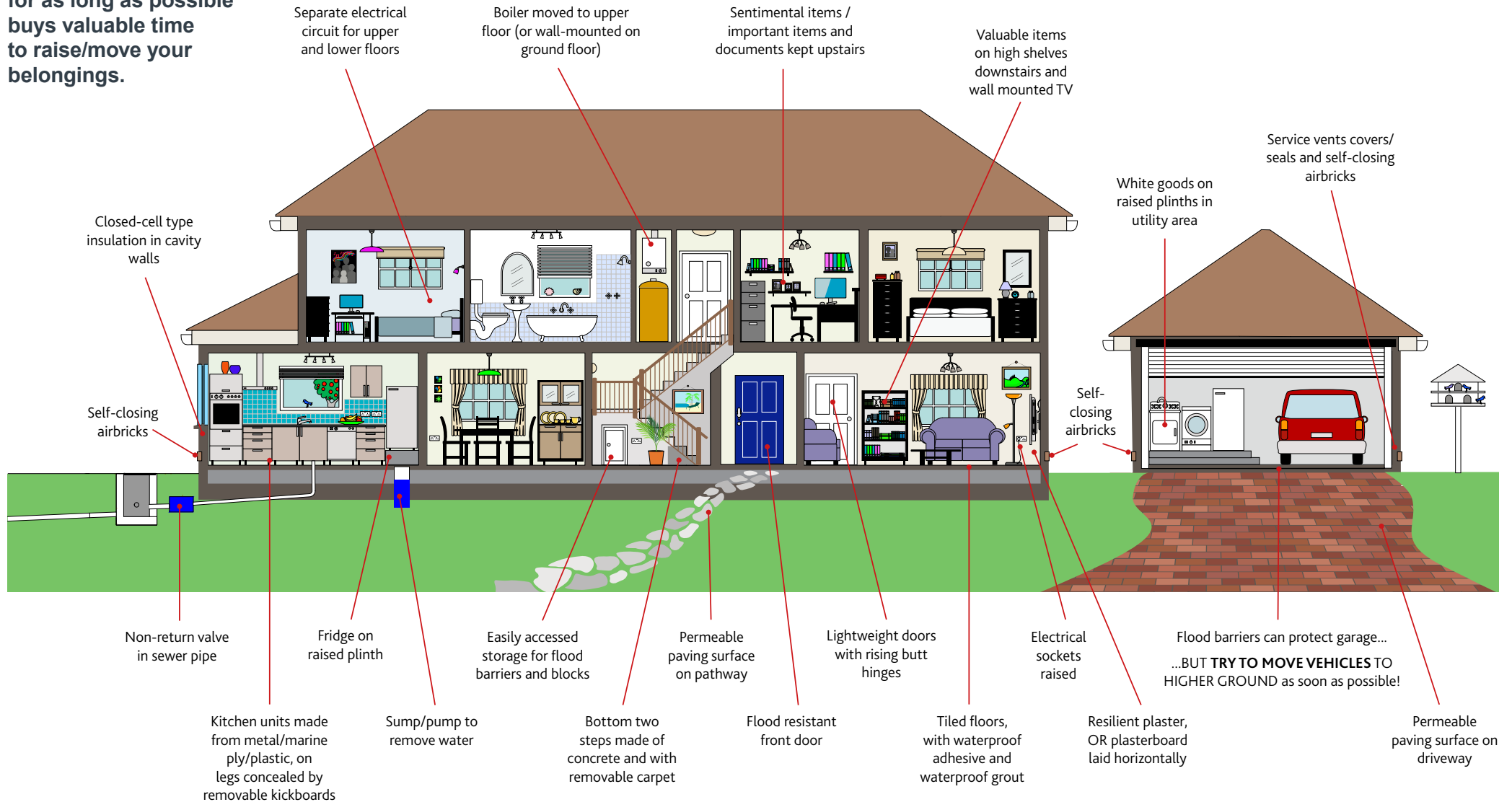
## **Flood Risk Management in Scotland**

In Scotland it is the owner's responsibility to protect a property from flooding. Scottish Government, the Scottish Environment Protection Agency (SEPA), local authorities, Scottish Water and other bodies work together under the Flood Risk Management (Scotland) Act 2009 to manage flood risk at a national and local level. Together they have prepared Flood Risk Management Strategies and Local Flood Risk Management Plans (LFRMP), which are available on the [SEPA](#) website, for 14 Local Plan Districts.

While thousands of properties at risk of flooding will benefit from formal flood schemes included in the LFRMPs, thousands more will not and even those covered by a scheme will still have a remaining risk from overtopping or other sources of flooding. These properties could benefit from PFR measures which can reduce the impacts of flooding.

# Combined resistance and resilience measures

keeping water out for as long as possible buys valuable time to raise/move your belongings.



## What is Property Flood Resilience?

Property Flood Resilience (PFR) helps to make buildings more resilient to the physical impacts of flooding and to lessen the emotional impacts for people. Properties will usually require a package of measures, some of which prevent water entering the property (resistance measures) and others that minimise the impact should water enter the house (resilience measures), speeding up the recovery process. In this action plan PFR covers both types of measure. Examples include:

- flood doors
- flood barriers
- air brick covers
- pointing or waterproofing brickwork
- installing non-return valves
- moving vulnerable features, such as sockets, above floor level
- Replacing carpets with flooring that does not need to be replaced after a flood,
- Using materials for kitchen cupboards that are less likely to need replaced after a flood.

“ Flooding will become more frequent in future and some properties will flood repeatedly.”

In some circumstances it is better to let water in. For floods over 60cm depth, or of prolonged duration, attempting to keep the water out can cause serious structural damage because of the different water pressures either side of the walls. It is important that property owners understand both the benefits and limitations of PFR to help them decide the best way to protect their property.

## Why do we need an Action Plan?

Flooding will become more frequent in future and some properties will flood repeatedly. Take up of PFR is very low in Scotland because people are often unaware of the products and materials that can limit flood damage, or they consider a flood event as a ‘one off’. Action is needed to ensure that owners and occupiers have reliable information about how they can limit flood damage to their homes and businesses.

PFR is however a new industry and it is difficult to find relevant and reliable information about how to make a property more resilient, whether it is an existing building or a new building at risk from flooding. Also, people need reliable information about the different flood products on the market that can help stop flood water entering a property.

The Framework for delivering property flood resilience in Scotland<sup>3</sup>, published in December 2018, recommended that the PFRDG was set up to promote PFR in Scotland. The PFRDG includes representatives (full list available in Appendix A) from Scottish Government, the insurance industry, The Scottish Flood Forum, SEPA, local authorities and private sector companies.

Flood Re was launched in 2016 to promote the availability and affordability of flood insurance for eligible homes across the UK. The scheme will end in 2039 and Flood Re is also managing over that time the transition to an affordable market for household flood insurance where prices reflect the risks of flooding. PFR measures have a vital role to play in homes at risk of flooding.

The PFRDG recommends that we use this opportunity to ensure that people have the best information to make their property more resilient to flooding. The PFRDG has identified key areas to develop and has produced this two-year Action Plan. Some of the objectives will complete within two years but others will encourage and inform change over a longer term. A review of the work of the group will take place in June 2021. The PFRDG will work collaboratively and with wider industries and sectors to deliver the aim and objectives of the action plan and encourage PFR.

# Aims, Objectives and Actions

The overall aim of the action plan is to improve the flood resilience of Scotland's properties. To do this the PFRDG recommends building a better evidence base and providing clear guidance to support positive changes. The diagram below summarises the actions identified by the PFRDG.

## Working collaboratively with projects and organisations across Scotland and UK.

### Objectives

#### Building a better evidence base

Through research and case studies, determine the uptake of, the successes, the obstacles to uptake and cost benefits of PFR.

#### Influencing policy and providing clear guidance

Provide clear, consistent information and guidance on PFR used by industry and property owners or occupiers.

#### Recognising and supporting positive change

Encourage more PFR measures during renovations or re-instatement by promoting the economic and social benefits of flood resilience.

### Actions

Investigate current levels of PFR measures and identify how to help owners make changes to their property to increase flood resilience.

Recognise and promote good resilience practice by exploring case studies and research reports and use these to determine the costs and benefits of PFR

Influence policy makers and practitioners to include PFR in policy and guidance to provide consistent guidance at a national level.

Encourage training of PFR with designers, surveyors, local authorities, insurance professionals and the public.

Develop and deliver communications designed to engage key audiences and deliver the Action Plan.

Identify, learn from and influence programmes of work relating to increasing the uptake of PFR to maximise impact and ensure a joined-up approach





## The PFRDG recommends the following actions and steps to meet the aim of the action plan.

### Action 1: Research

The Group does not have up-to-date information about the effectiveness, uptake or the obstacles to PFR in Scotland. A number of studies have however documented the benefits of PFR and a 2014 report<sup>4</sup> for the Scottish Government showed positive economic benefits for property level flood protection (PLP) in Scotland. A baseline study is an important starting point for the Action Plan.

Investigate current levels of PFR measures and identify how to help owners make changes to their property to increase flood resilience.

The PFRDG recommends the following tasks:

- Establish a baseline of PFR measures in Scotland
- Identify which properties might benefit from PFR
- Explore the reasons why people do not install PFR measures
- Identify what would help encourage owners to make resilient changes to their properties; looking at lessons from Scotland, the UK and internationally, and across other disciplines, for example, energy efficiency.

### Action 2: Recognising resilience

Measuring the benefits of PFR is challenging. The Group needs evidence from case studies and research to show the benefits of PFR and identify how to acknowledge the benefit of measures taken.

Recognise and promote good resilience practice by exploring case studies and research reports and use these to determine the costs and benefits of PFR

The PFRDG recommends the following tasks:

- Input to and share research about resilience measures (installation, process and products) and promote the results with the construction and insurance industries.
- Use case studies to support implementation of the Action Plan
- Determine the costs and benefits of PFR
- Engage with people whose homes or businesses have flooded and assess post flood damage and return-to-occupancy times of those with and without PFR
- Consider the benefits of a database of flood resilient properties to help assess effectiveness of measures.

### Action 3: Influencing and informing policy

Relevant national guidance and policies should refer to PFR. The PFRDG recommends working with organisations to review relevant documents and policies to include or strengthen the guidance given on resistance and resilience measures.

Influence policy makers and practitioners to include PFR in policy and guidance to provide consistent guidance at a national level

The PFRDG recommends the following tasks:

- Investigate and provide evidence that informs changes to the Scottish Building Regulations Technical Handbooks and Scottish Planning Guidance
- Investigate and recommend changes to the Home Report to include information relating to flood risk and PFR and identify what data sources could be used
- Consider how the next Flood Risk Management Strategies should recognise PFR as a flood risk management action
- Identify other strategies and plans that should refer to PFR and work with organisations to recommend changes
- Work to include CIRIA Code of Practice within relevant areas of policy.



#### **Action 4:** **Training**

Suitably trained professionals are needed to increase PFR. The Group will engage with professional bodies to ensure PFR is recognised.

Encourage training of PFR with designers, surveyors, local authorities, insurance professionals and the public.

The PFRDG recommends the following tasks:

- Investigate the current gap in PFR skills, knowledge and capacity and identify what we need to know
- Develop a current and future training plan by:
  - reviewing existing PFR related training courses and
  - investigating future needs and align required training with Higher Education courses.

#### **Action 5:** **Communications and engagement**

To encourage an increase in PFR, clear and consistent messages are required. Stakeholders need consistent information and advice. A communications plan will be developed to help deliver the Action Plan.

Develop and deliver communications designed to engage key audiences and deliver the Action Plan

The PFRDG recommends the following tasks:

- Identify key audiences and messages
- Promote consistent approaches to PFR by supporting and encouraging the use of the Property Flood Resilience Code of Practice and establish this guidance as the 'industry standard' in PFR.

#### **Action 6:** **Work with Initiatives and Organisations across Scotland, the UK and internationally**

Related, relevant programmes of work and research exist across the UK and it will be important that, where possible, these work together and share learning and produce joint outcomes. In particular, this is the case with the Defra Flood Resilient Properties Working Group where formal links exist with the PFRDG.

Identify, learn from and influence programmes of work relating to increasing the uptake of PFR to maximise impact and ensure a joined-up approach.

The following known programmes will be monitored and co-working developed where possible and appropriate:

- Flood Re Transition Plan
- Defra Flood Resilient Properties Working Group
- EPSRC Water Resilient Cities Programme

New programmes of work will be identified and influenced

# Building property flood resilience in the wider policy context

**This Action Plan is a requirement of the Programme for Government in Scotland 2018-19<sup>2</sup>. It also helps deliver Scottish Government strategic objectives and national outcomes; in particular, the outcome:**

“We live in communities that are inclusive, empowered, resilient and safe.”

The Action Plan also supports the Scottish Government’s Resilient Communities Strategic Framework and Delivery Plan for 2017 – 2021<sup>5</sup> by aiming to create the conditions in which ‘Communities, individuals and organisations harness resources and expertise to help themselves, assess and understand risk, take appropriate measures to prevent, prepare for, respond to and recover from emergencies, in a way that complements the work of the emergency responders.’(p2)

Additionally, the Action Plan will be relevant to the outcomes in the second Scottish Climate Change Adaptation Programme, and it embraces the Scottish Government’s circular economy strategy<sup>6</sup>, encouraging the efficient use and recycling of materials and building methods to reduce waste.

## References

- 1 National Flood Risk Assessment, SEPA, (2018)
- 2 Delivering for Today, Investing for Tomorrow. The Government’s Programme for Scotland 2018-19, The Scottish Government (2018)
- 3 Framework for Delivering Property Flood Resilience in Scotland, Flood Resilient Properties Advisory Group (2018)
- 4 Assessing the Flood Risk Management Benefits of Property Level Protection. JBA Consulting (2014)
- 5 Resilient Communities: Resilience Division’s Strategic Framework and Delivery Plan 2017-21, The Scottish Government (2017)
- 6 Making Things Last: A Circular Economy Strategy for Scotland, The Scottish Government (2016)

# Appendix A

## Property Flood Resilience Delivery Group (PFRDG) Lead Members

**This action plan is a Scottish Government Programme of Government commitment, co-developed by the following organisations who form the Property Flood Resilience Delivery Group. It makes recommendations to promote Property Flood Resilience in Scotland.**

Name (Lead Person)	Organisation
Alastair Ross	Association of British Insurers (ABI)
Anne Marte Bergsens	Edinburgh Centre for Carbon Innovation/ClimateXChange
Audrey Meikle (Project Coordinator)	Scottish Flood Forum
Chris Wilcock	Scottish Water
David Bassett	JBA Consulting
David Faichney	Scottish Environment Protection Agency
David Gibbon	Royal Institute of Chartered Surveyors/GLM Chartered Building Surveyors
David Kelly	BRE
Debi Garft	Scottish Government (Flood Risk Management)
Dermot Kehoe	Flood Re
Ian Chalmers	Scottish Borders Council
James Murray	Glasgow City Council
Karen Donald (Chair)	AXA Insurance
Kirsty MacRae	Scottish Flood Forum
Michelagh O'Neill	Scottish Government (Flood Risk Management)
Pauline White	Zurich Insurance
Peter Farrelly	Sedgwick International Plc
Ralph Throp	Scottish Government (Resilient Communities)
Ray Pickering	RAB Consultants
Thomas Lennon	Scottish Government (Building Standards Division)



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