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## **National Flood Risk Assessment (NFRA)**

### **What is the NFRA?**

First published in December 2011, the 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.

### **Why have you updated the NFRA?**

A key requirement of the Flood Risk Management (Scotland) Act 2009 is that SEPA must review and update the NFRA every 6 years. Since reaching the end of the first Flood Risk Management planning cycle, we have worked closely with key stakeholders to review and update the NFRA as part of preparations for the second planning cycle.

Our understanding of flood risk is constantly developing and improving. It is not a static field of work and therefore periodic review and update is essential to ensure we effectively support flood risk management in Scotland.

### **How many properties are currently at risk from flooding in Scotland?**

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.

### **Why are the properties at risk figures in this NFRA so much higher than the previous one?**

Mainly because there have been major advances in how properties at risk have been identified, not because the physical risk has changed. 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.

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.

## What are the major advances in how properties are identified in this NFRA?

Improvements are based on:

- The property dataset and method of assessment have been developed to better reflect the flood risk to sites made up of separate buildings.
- Previously, properties were represented by a point at the centre of a building. The point had to be within the flood extent to be counted which meant not all buildings were identified in 2011. Now entire building footprints are used.
- Through improved Ordnance Survey (OS) mapping data, we have a better understanding of the types of properties at risk. Previously, we understood that there was a property at risk. Now we have a much better understanding of what that property is and therefore the type of potential impacts.
- Better receptor data reliability and availability. Receptors are things that could be affected by flooding and include people and homes, business, transport, agriculture, cultural and environmental heritage.

## What changes have occurred due to feedback from the public consultation?

In taking account of the views received SEPA has amended one of the Potentially Vulnerable Areas that we consulted on and identified two additional Potentially Vulnerable Areas. The new areas identified are Kirkmichael (South Ayrshire Council) and Beaully (The Highland Council) while the Potentially Vulnerable Area being amended is Baleshare (Outer Hebrides).

SEPA has already undertaken a number of actions based on information and responses provided during the consultation, such as discussing these with relevant local authorities. We will continue to engage with our stakeholders and ensure working together is central to improving flood risk management in Scotland. Information provided on local flooding and other issues will be discussed with local authorities as appropriate. No changes have been made to the Local Plan District proposals or the Statement on Consultation Arrangements as a result of feedback received.

## Where can I view the consultation outcome report?

You can view the consultation outcome report on the SEPA website:

[https://www.sepa.org.uk/media/375826/frm-in-scotland-pva-2018\\_consultation-outcome-report.pdf](https://www.sepa.org.uk/media/375826/frm-in-scotland-pva-2018_consultation-outcome-report.pdf)

## Is the data from the NFRA available to insurance companies?

The NFRA is publicly accessible from the SEPA website. Insurance companies will be able to view this information. However, the NFRA is a high level tool and **must not** be used to interpret flood risk to individual properties or locations. Terms and conditions governing the use of the NFRA stipulate that the information must not be used for commercial, business, professional or other income generating activity. The publication of the NFRA will not affect insurance premiums. SEPA has worked closely with the insurance industry to raise awareness of how the information in the NFRA should be used.

## **Potentially Vulnerable Areas (PVAs)**

### **What is a PVA?**

Potentially Vulnerable Areas (PVAs) are where significant flood risk exists now or is likely to occur in the future. Identifying PVAs is a vital part of protecting people, properties, businesses, communities, infrastructure and the environment from flooding. PVAs help us and our partners understand the potential impacts of flooding and prioritise where work could benefit the most.

Based on the NFRA, SEPA has identified areas where the potential impact of flooding is most significant. Identifying the PVAs will inform Scotland's Flood Risk Management (FRM) Strategies and Plans and become the focus of FRM actions, helping responsible authorities to work with communities to prioritise investment and reduce the impacts from flooding.

For each PVA identified:

- We will produce flood hazard and flood risk maps for the area;
- We, in consultation, will set objectives and identify actions to address flood risk;
- Local Flood Risk Management Plans will be produced by lead local authorities; and
- Scottish Water will undertake an assessment of the risk of flooding from the sewerage system.

### **How many PVAs are identified in the 2018 NFRA?**

There are 235 PVAs identified by the 2018 NFRA.

### **How does this compare to the 2011 NFRA and FRM Strategies?**

Around 90% of Scotland's flood risk is contained within Potentially Vulnerable Areas – this has been the case since the first National Flood Risk Assessment in 2011. There were 243 PVAs identified by the 2011 NFRA and 254 by the FRM Strategies. The changes do not mean we have identified fewer places as being at significant flood risk, just that PVAs vary in size and there have been some changes to the way they have been grouped together. As our understanding of the type and spread of that risk improves, the PVAs have been revised to reflect this knowledge.

### **Why are there changes to the PVAs?**

New PVAs have been added due to an improved understanding of risk, or because of future risk due to climate change. Some have been proposed for de-designation where our more recent data shows less risk than the 2011 NFRA. There have been boundary adjustments to some PVAs to better represent the distribution of risk within them. Many PVAs remain unchanged, but our understanding of the risk within them will be improved. Public and partner feedback has led to some alterations to our original proposals to amend and include new PVAs.

### **Why is my property in a PVA when I don't flood?**

Not all properties within a PVA will be affected by flooding. Similarly, there will be homes and businesses outside PVAs which are at risk of flooding. We use a catchment approach to setting the boundaries of the PVAs. This means that we look

across whole river systems and coastal areas and use these natural boundaries, rather than using local authority or other borders that have no connection to flood waters.

### **My property floods but I am not in a PVA? What happens to me?**

There will be some people and places outside of proposed PVAs at risk of flooding. Not being included in a PVA does not mean that the risk of flooding is insignificant to the individual or that support will not be provided by flood risk authorities. Flood risk management actions will still be applicable to those people at risk of flooding outside of the PVAs. PVAs are used to identify locations where a partnership approach may be required to resolve widespread and often complex flooding issues. The management of flood risk to address local issues can still be taken forward by local authorities and others in locations outside of PVAs.

### **Why is my area, which has flooded in the past, not been designated within a PVA?**

Not all properties at risk of flooding are captured within PVAs. Information on previous floods has been used to inform the NFRA where they have been reported to local authorities or SEPA and collated from published sources. The presence of a past flood on its own is not sufficient to classify the area as a PVA.

### **Why are some PVAs different from the flood risk areas on SEPA's flood maps?**

SEPA's flood maps provide a picture of the areas likely to be inundated by flooding from rainfall, rivers or the sea. It estimates the extent of river, coastal and surface water flooding. It provides an outline of areas that are estimated to have a 0.1%, 0.5%, 10% or greater chance of flooding each year. The NFRA uses this information and combines it with data on people, economic activity and the environment to determine where the greatest overall impacts occur within Scotland. Therefore the locations highlighted as PVAs and the extent of flood water shown on SEPA's flood maps may vary across the two maps.

## **Climate Change**

### **How does the NFRA take account of climate change?**

Climate change predictions indicate that parts of Scotland may experience wetter winters and more extreme weather events including intense rainfall in summer months. This may lead to an increase in the number of damaging floods. Climate change is also expected to increase sea levels.

The NFRA uses the same climate change scenarios (2080, high emissions) described in the Flood Risk Management Strategies. This is based on the UK Climate Projections 2009 (UKCP09) analysis, which was the most appropriate data until UKCP18 was published.

UK Climate Projections 2018 (UKCP18) has very recently launched however the outputs were not available in time to feed into the 2018 National Flood Risk Assessment. The assessment will be reviewed in light of this new information, which will be incorporated in future updates.

## **What effect is climate change likely to have on the number of properties at risk of flooding?**

Considering flooding from rivers, surface water and the sea, currently 1 in 11 homes and 1 in 7 business and services are at risk of flooding. This is currently projected to increase to 1 in 9 homes and 1 in 6 business and services, considering a 2080s future climate change scenario (based on a UKCP09 High Emissions scenario).

An additional 110,000 homes, businesses and services are projected to become at risk across all sources under that future scenario. The projected count of properties at risk of coastal flooding shows a 90% increase, river flooding shows a 40% increase and surface water a 25% increase. UKCP18 has recently been launched however the outputs were not available in time to feed into the 2018 National Flood Risk Assessment. The assessment will be reviewed in light of this new information, which will be incorporated into future updates.

## **Flood Risk Management Planning**

### **What is a Flood Risk Management Strategy?**

A Flood Risk Management Strategy sets out a long-term vision for the overall reduction of flood risk. It will 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 PVAs.

### **What is a Local Flood Risk Management Plan?**

Local Flood Risk Management Plans will be developed by lead local authorities. SEPA will prepare Flood Risk Management Strategies which will identify the main flood hazards and impacts and set objectives for reducing risk, establishing the best combination of actions to achieve this. Local Flood Risk Management Plans will take these objectives and set out what actions will be taken and how they will be funded.

### **What is a Local Plan District (LPD)?**

LPDs are the geographical areas for which Flood Risk Management Plans will be produced. There are 14 LPDs together covering the whole of Scotland.

### **Does every local authority have an input to the FRM planning process?**

All local authorities have additional responsibilities for flood risk management and are involved in partnership working with other local authorities, SEPA and Scottish Water.

All local authorities will contribute to:

- Producing local FRM plans
- Reducing overall flood risk when exercising their flood risk related functions;
- Achieving objectives set out in Flood Risk Management Strategies;
- Mapping, assessing and maintaining watercourses; and
- Co-ordinating flood-related work with other local authorities.

## **Who are the Responsible Authorities for flood risk management?**

In Scotland, the responsible authorities for flood risk management are: All local authorities, Scottish Water, Forestry Commission Scotland, Loch Lomond and Trossachs National Park and Cairngorms National Park.

## **Roles and responsibilities**

### **Who is responsible for flood risk management?**

We all have a responsibility to manage the risk of flooding and to protect ourselves, our families, property and business. There are many actions we can take to minimise the flood damage to our land and property. SEPA, Scottish Water and local authorities also have a responsibility to do what they can to reduce the overall impacts of floods and ensure that, where possible, the risks are minimised. The Flood Risk Management Act creates a framework for a co-ordinated and sustainable approach to flood risk management which has at its centre, a series of assessments and plans designed to improve our understanding of flooding and target investment in actions where they are most needed.

### **What can members of the public do to reduce flood risk?**

You are the first line of defence against flooding and responsible for protecting yourself, your family, property and/or business. It is important to know what actions you can take to reduce the impact of flooding on yourself and your property. SEPA's Floodline service can help you be prepared for flooding. Floodline can provide free advanced warnings of floods in your area. Please visit the Floodline website or call Floodline on 0345 988 1188 for more information.

You can also:

- Get involved in community organisations and events by joining a local flood group;
- Share your views and opinions by responding to consultations on flood risk management;
- Keep up to date with developments on flood risk management by regularly visiting SEPA and your local authority's website
- Visit the Scottish Flood Forum website for information on areas like property level protection and setting up a community resilience group:  
<https://scottishfloodforum.org/>

### **Where can I get advice on flooding?**

SEPA's website hosts a comprehensive flooding section which gives you advice and information on how to be prepared and take action to manage your own flood risk. There is also information on how Scotland is tackling flooding more powerfully by developing our knowledge of the impacts and sources of flooding and preparing plans to manage it. Your local authority website may also have more local information to help you deal with flooding.