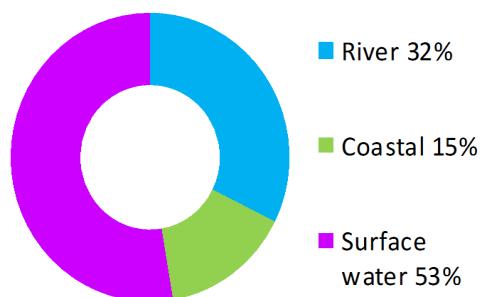


## Peterhead (Potentially Vulnerable Area 06/08)

Local Plan District	Local authority	Main catchment
North East	Aberdeenshire Council	Buchan coastal

### Summary of flooding impacts



### At risk of flooding

- 40 residential properties
- 80 non-residential properties
- £580,000 Annual Average Damages

(damages by flood source shown left)

Summary of flooding impacts

### Summary of objectives to manage flooding

Objectives have been set by SEPA and agreed with flood risk management authorities. These are the aims for managing local flood risk. The objectives have been grouped in three main ways: by reducing risk, avoiding increasing risk or accepting risk by maintaining current levels of management.

Many organisations, such as Scottish Water and energy companies, actively maintain and manage their own assets including their risk from flooding. Where known, these actions are described here. Scottish Natural Heritage and Historic Environment Scotland work with site owners to manage flooding where appropriate at designated environmental and/or cultural heritage sites. These actions are not detailed further in the Flood Risk Management Strategies.

Objectives

### Summary of actions to manage flooding

The actions below have been selected to manage flood risk.

<i>Flood protection scheme/works</i>	<i>Natural flood management works</i>	<b>New flood warning</b>	<i>Community flood action groups</i>	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<b>Flood protection study</b>	<i>Natural flood management study</i>	<i>Maintain flood warning</i>	<b>Awareness raising</b>	<b>Surface water plan/study</b>	<b>Emergency plans/response</b>
<i>Maintain flood protection scheme</i>	<b>Strategic mapping and modelling</b>	<b>Flood forecasting</b>	<b>Self help</b>	<b>Maintenance</b>	<b>Planning policies</b>

Actions

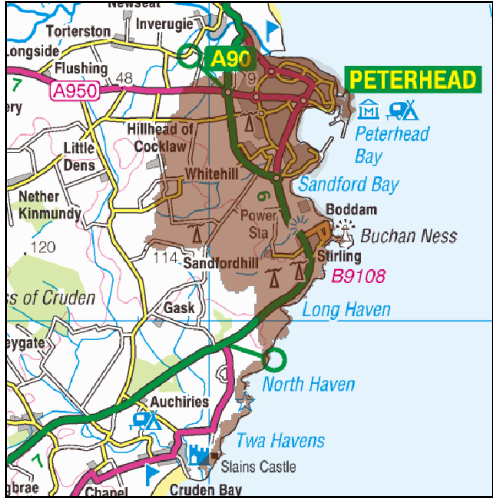
# Peterhead (Potentially Vulnerable Area 06/08)

Local Plan District	Local authority	Main catchment
North East	Aberdeenshire Council	Buchan coastal

## Background

This Potentially Vulnerable Area includes Peterhead, Stirling and Boddam. It is approximately 28km<sup>2</sup>.

The A90, A950, and A982 pass through the area.

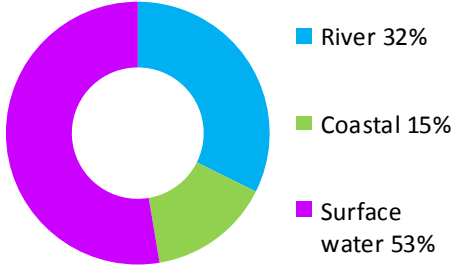


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The main river in the area is the River Ugie.

There are approximately 40 residential and 80 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £580,000 with the majority attributed to surface water flooding.



**Figure 1:** Annual Average Damages by flood source

## Summary of flooding impacts

Parts of the area, for example Roanheads, are vulnerable to coastal flooding from wave overtopping. Flooding from wave action is not fully represented in the general assessment of flood risk in this area and both the number of properties at risk and the damages from coastal flooding are likely to be underestimated. Wave overtopping has been taken into account in the setting of objectives and actions.

River flooding is associated with the Ugie and its tributary, the Collie Burn, as well as from the Millbank Burn. There are widespread areas of surface water flood risk notably affecting the A90 at Stirling village and Boddam.

The risk of flooding to people and property, as well as to community facilities, utilities, the transport network, designated sites and agricultural land is summarised in Table 1.

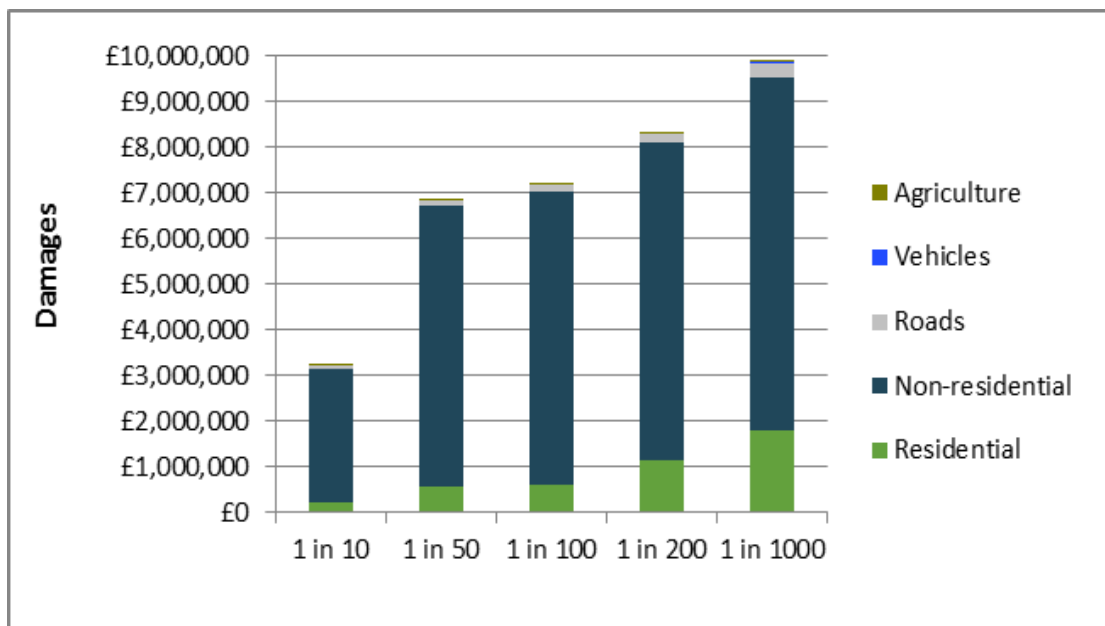
Transport links at risk of flooding include significant lengths of the A90, the A980 and A950. One designated cultural heritage site and small areas of designated environmental sites are also at risk.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to non-residential properties.

The location of the impacts of flooding is shown in Figure 3.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 9,200)	<10	40	50
Non-residential properties (total 1,500)	30	80	90
People	10	80	120
Community facilities	0	<10 Emergency services	<10 Emergency services
Utilities assets	<10	10	20
Transport links (excluding minor roads)	Roads at 70 locations	Roads at 120 locations	Roads at 130 locations
Environmental designated areas (km <sup>2</sup> )	0.4	0.4	0.4
Designated cultural heritage sites	1	1	2
Agricultural land (km <sup>2</sup> )	0.2	0.2	0.3

**Table 1:** Summary of flooding impacts<sup>1</sup>



**Figure 2:** Damages by flood likelihood

<sup>1</sup> Some receptors are counted more than once if flooded from multiple sources

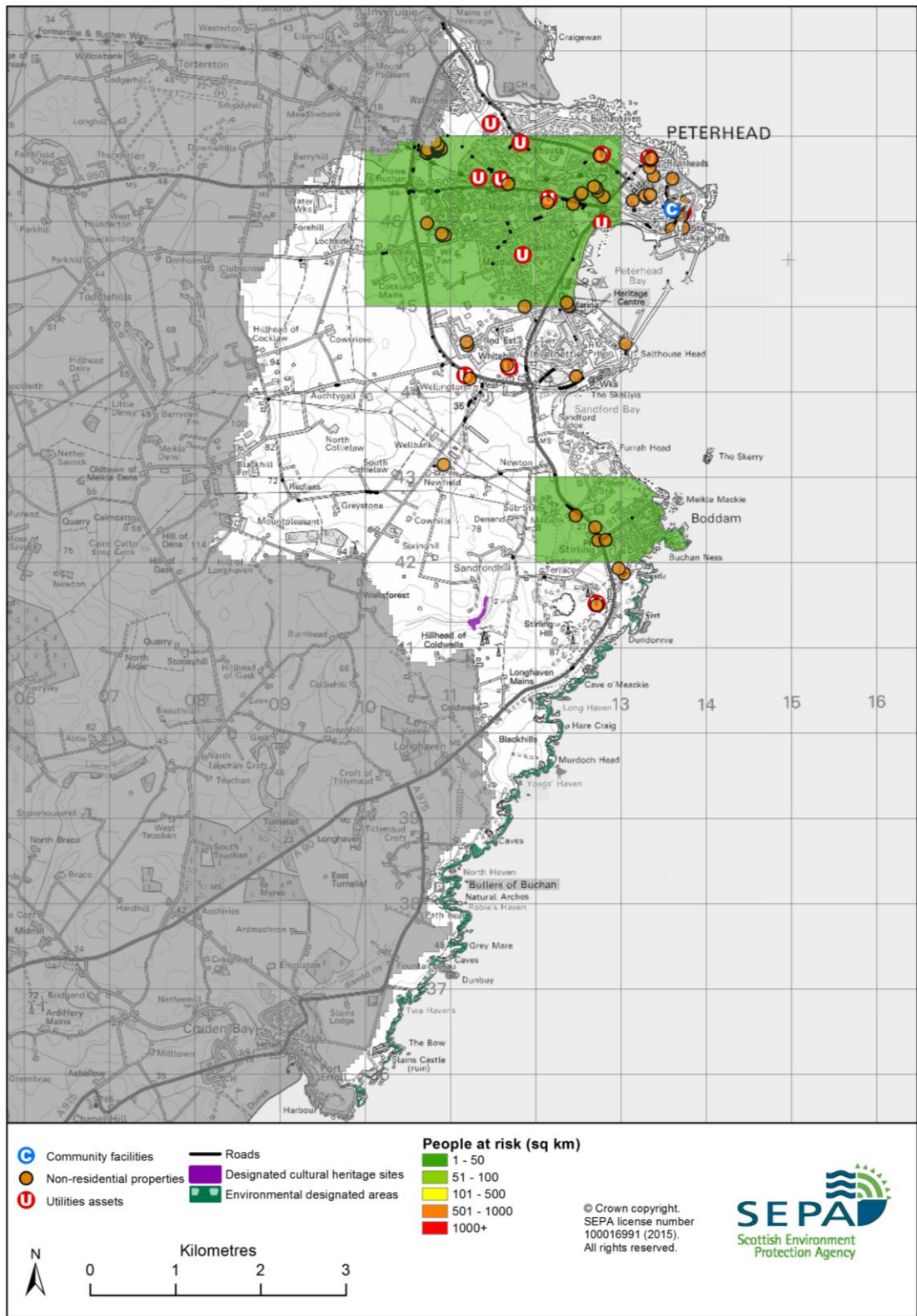


Figure 3: Impacts of flooding

## History of flooding

Peterhead was flooded in 1881 and 1882 by the River Ugie. There have been 15 floods since 2002, with the majority being related to surface water. The areas affected include Wood End House, Upperton Industrial Estate, Howe of Buchan, Lendrum Terrace, Station Road/A90 junction, Queen Street, Mallard Drive, central Peterhead, Braehead Crescent, Balmoor Terrace, Springbank, River View, A90 bypass, A950, Forman Drive, Schivas Road, Petergrange Road, Hawthorn Road, Geary Place and Crossfolds Crescent.

Properties on Catto Drive, Collieburn Crescent, Golf Road, Riverside Drive and York Street experienced surface water flooding in August 2012; several properties were evacuated during this event.

In the 1953 North Sea flood, Peterhead was badly affected with many cottages being washed away. More recently, in December 2012, around 30 people were evacuated from the Roanheads area of the town due to coastal flooding, which was exacerbated by wave overtopping.

## Objectives to manage flooding in Potentially Vulnerable Area 06/08

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Peterhead Potentially Vulnerable Area.

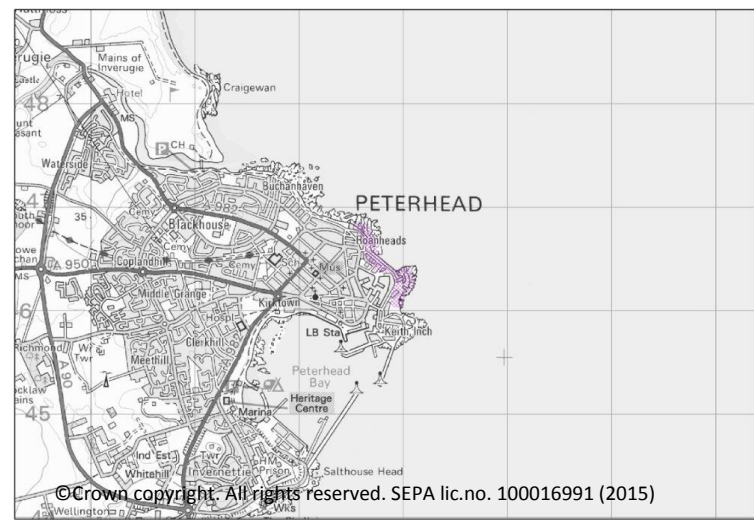
### Reduce risk in Peterhead from coastal flooding

Indicators:

Target area:

- 10 people
- £2,800 Annual Average Damages from residential properties

Objective ID: 600801



Target area	Objective	ID	Indicators within PVA
Peterhead	Reduce risk from surface water flooding in Peterhead	600804	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<ul style="list-style-type: none"> <li>• 40 residential properties</li> <li>• £580,000 Annual Average Damages</li> </ul>
Applies across North East Local Plan District	Reduce overall flood risk	600002	<ul style="list-style-type: none"> <li>• 40 residential properties</li> <li>• £580,000 Annual Average Damages</li> </ul>
Applies across North East Local Plan District	Organisations such as Scottish Water, energy companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/08 there are 40 residential properties at risk and Annual Average Damages of £300,000.



## Actions to manage flooding in Potentially Vulnerable Area 06/08

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Peterhead Potentially Vulnerable Area.

Selected actions					
<i>Flood protection scheme/works</i>	<i>Natural flood management works</i>	<b>New flood warning</b>	<i>Community flood action groups</i>	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<b>Flood protection study</b>	<i>Natural flood management study</i>	<i>Maintain flood warning</i>	<b>Awareness raising</b>	<b>Surface water plan/study</b>	<b>Emergency plans/response</b>
<i>Maintain flood protection scheme</i>	<b>Strategic mapping and modelling</b>	<b>Flood forecasting</b>	<b>Self help</b>	<b>Maintenance</b>	<b>Planning policies</b>

<b>Action (ID):</b>	<b>NEW FLOOD WARNING (6000020010)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	Flood warning is required for communities at risk of coastal flooding along the Aberdeenshire coast from Peterhead to Montrose. A flood forecasting system will be required before the flood warning scheme can be developed.		

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6008010005)</b>		
<b>Objective (ID):</b>	Reduce risk in Peterhead from coastal flooding (600801)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>162 of 168</b>	<b>10 of 12</b>	
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2022-2027</b>
<b>Description:</b>	A flood protection study should be developed to consider the impact from wave overtopping in Peterhead. It should primarily focus on coastal management actions, direct defences, relocation and property level protection, but other actions may also be considered in order to develop the most sustainable range of options. This study is in addition to works in Peterhead harbour area to raise a section of seawall by approximately 0.5 metres planned for late 2015 / early		



	2016.
Potential impacts	
<b>Economic:</b>	The flood protection study should confirm the economic impacts and number of properties at risk. Currently it is estimated that six residential and one non-residential properties are at risk. This estimate is based on local knowledge as the properties are at risk from wave overtopping which could not be assessed in SEPA flood maps. Potential damages avoided of up to £100,000 could be achieved. With further information on the impact of wave overtopping and flood depths, these benefits could change.
<b>Social:</b>	The development of flood protection works following the study would potentially reduce risk to 13 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. The Esplanade would also benefit from reduced risk, improving access to the properties in the Roanheads area. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Opportunities to mitigate any environmental impacts may include design and timing of works. The flood protection study should ensure the actions avoid or minimise the potential loss of natural habitat and do not interfere with coastal processes. It should also ensure the actions have no negative impact on the Roanheads conservation area. The physical condition of the Ugie Estuary to Buchan Ness coastline (water body ID 200131) is identified by river basin management planning to be at less than good status. Future works could improve the condition of the coastline or degrade it. Opportunities to improve the condition of the coastline should be considered by coordinating with river basin management planning.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6008040018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Peterhead (600804)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	The area must be covered by a surface water management plan or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.		

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	Scottish Water will carry out an assessment of flood risk within the highest risk sewer catchments to improve knowledge and understanding of surface water flood risk.		

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p> <p>The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p>		

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>		

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>SEPA and the responsible authorities have a duty to raise public awareness of flood risk. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible. Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.</p>		

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake inspection and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>		

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is co-ordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>		

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. For further information on the application of national planning policies see Annex 2.		