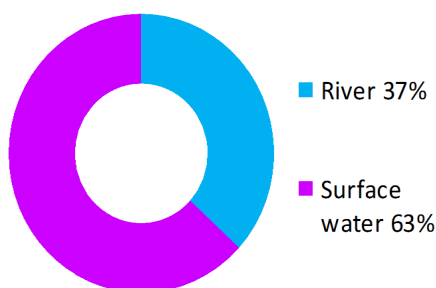


Aviemore and Boat of Garten (Potentially Vulnerable Area 05/11)

Local Plan District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Summary of flooding impacts



At risk of flooding

- 70 residential properties
- 30 non-residential properties
- £180,000 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.

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

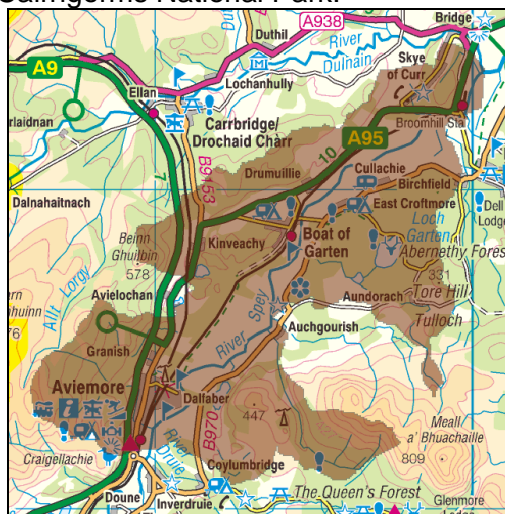
Actions

Aviemore and Boat of Garten (Potentially Vulnerable Area 05/11)

Local Planning District	Local authority	Main catchment
Findhorn, Nairn and Speyside	The Highland Council	River Spey

Background

This Potentially Vulnerable Area covers Aviemore, Boat of Garten and the surrounding area (shown below). It is approximately 94km² and is within the Cairngorms National Park.



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The A95, A9, B970 and B9153 roads pass through the area and the main watercourse is the River Spey.

There are approximately 70 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £180,000 with the majority caused by surface water flooding.

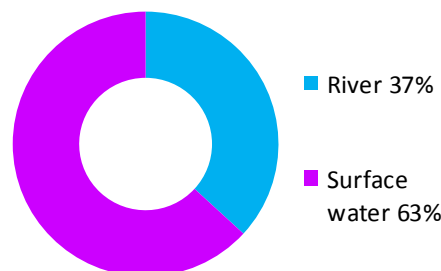


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

There are areas of surface water flood risk located across Aviemore. River flood risk mostly affects agricultural land adjacent to the River Spey but also impacts on small parts of built-up areas in Aviemore including from the Aviemore Burn.

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.

Roads potentially affected by flooding include the A95, A9, B970 and B9153. The Inverness to Perth railway line and the historic Strathspey railway line are at risk of flooding in several locations.

Two designated cultural heritage sites and small areas of environmental importance are also shown to be at risk within this area. These include Special Areas of Conservation, Special Protection Areas, and Sites of Special Scientific Interest at Abernethy, Kinveachy Forest, Glenmore Forest, and the Cairngorms National Park.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages 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 2,400)	20	70	100
Non-residential properties (total 490)	10	30	30
People	40	160	220
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 60 locations Rail at 20 locations	Roads at 80 locations Rail at 30 locations	Roads at 90 locations Rail at 30 locations
Environmental designated areas (km ²)	4	4	4
Designated cultural heritage sites	2	2	2
Agricultural land (km ²)	5	7	7

Table 1: Summary of flooding impacts¹

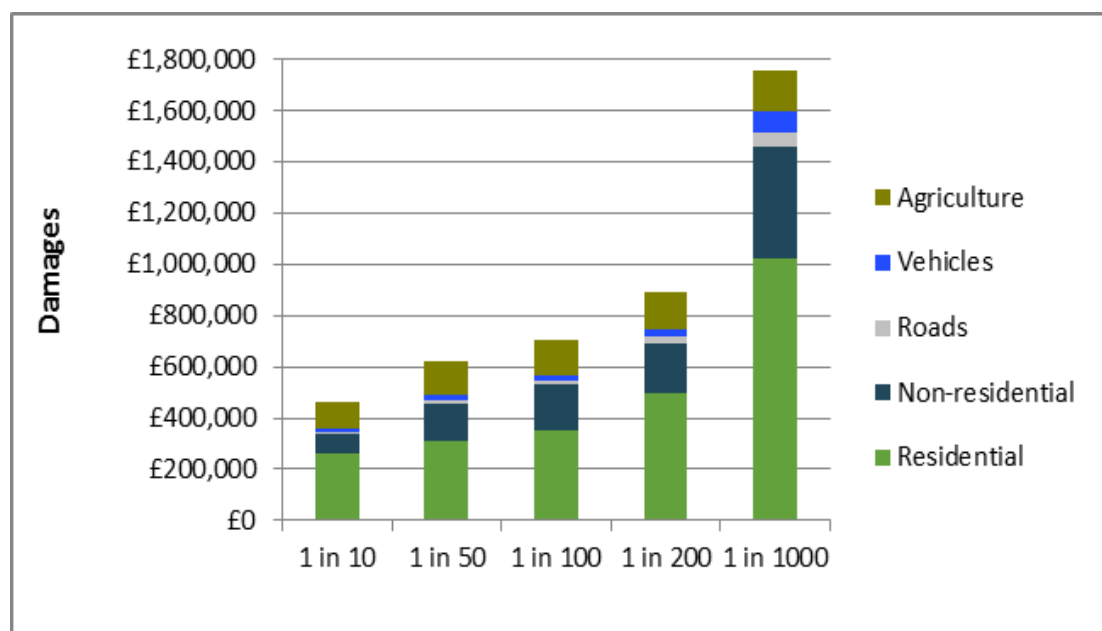


Figure 2: Damages by flood likelihood

¹ Some receptors are counted more than once if flooded from multiple sources

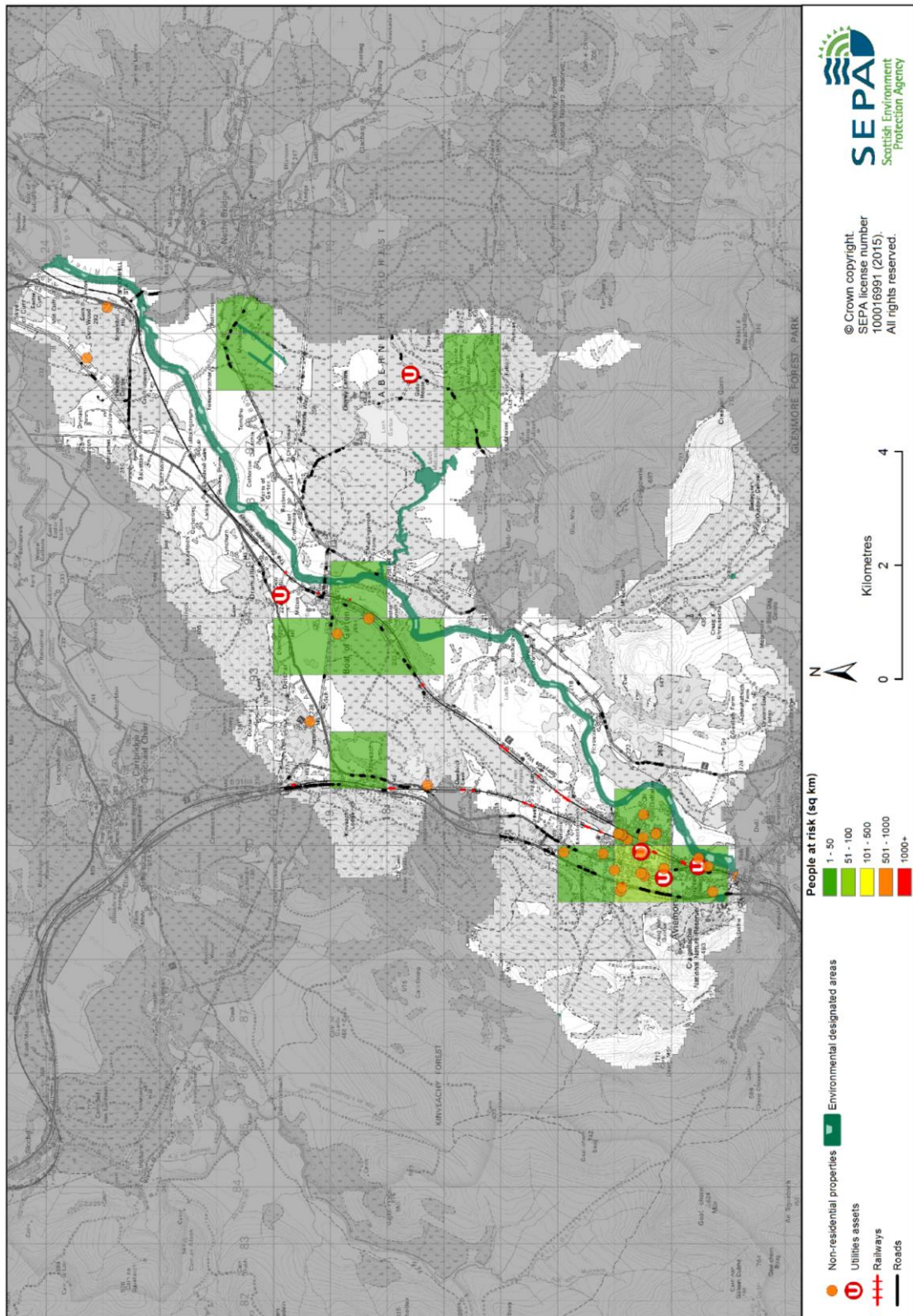


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood was in 1763, when the Ruidh Magaig Burn damaged the road bridge. The River Spey flooded in 1829 (The Great Muckle Spate), 1865, 1868, 1869, 1875, 1887, 1888, 1892, 1894, 1898, 1906, 1973, 1975, 1978, 1979, 1981, 1983, 1984, 1986, 1989, 1990, 1997 and 2006.

Flooding on the Aviemore Burn also occurred in 1990 and at the same time the Spey was in spate. In January 2005 the Aviemore Burn flooded due to an undersized culvert which has subsequently been replaced.

Objectives to manage flooding in Potentially Vulnerable Area 05/11

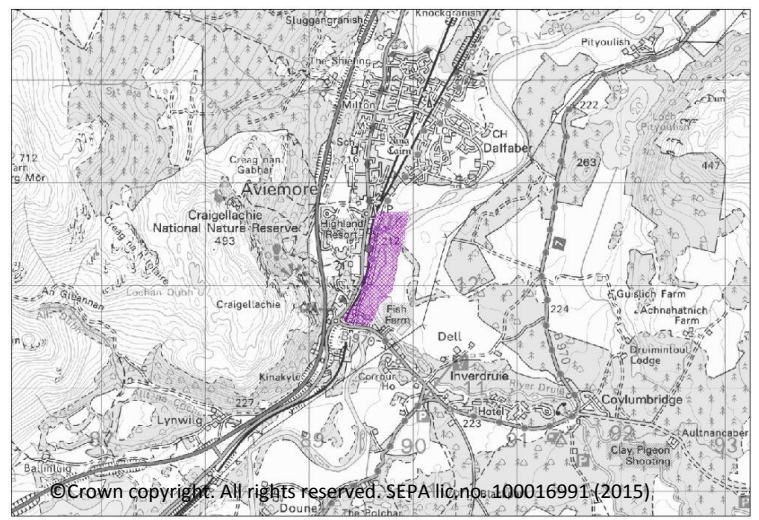
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target 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 Aviemore and Boat of Garten Potentially Vulnerable Area.

Reduce flood risk to Aviemore from the River Spey

Indicators:

- £25,000 Annual Average Damages from residential properties
- £15,000 Annual Average Damages from non-residential properties

Target area:



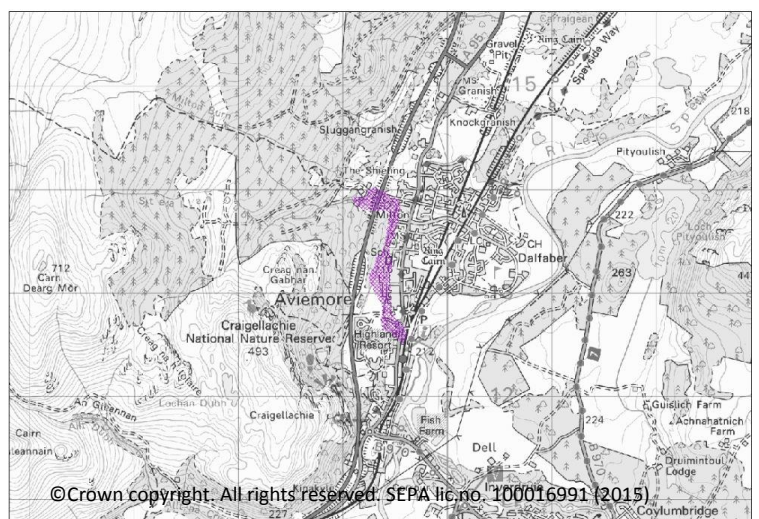
Objective ID: 501101

Reduce flood risk to Aviemore from the Aviemore Burn

Indicators:

- £1,100 Annual Average Damages from residential properties

Target area:



Objective ID: 501102

Target area	Objective	ID	Indicators within PVA
Aviemore and Boat of Garten	Reduce the physical risk, or disruption risk, related to areas of the A9 at risk of flooding	5308	<ul style="list-style-type: none"> • 9 locations on the A9 with a total length of 1.3km
Applies across Findhorn, Nairn and Speyside Local Plan District	Avoid an overall increase in flood risk	500001	<ul style="list-style-type: none"> • 70 residential properties • £180,000 Annual Average Damages
Applies across Findhorn, Nairn and Speyside Local Plan District	Reduce overall flood risk	500002	<ul style="list-style-type: none"> • 70 residential properties • £180,000 Annual Average Damages
Applies across Findhorn, Nairn and Speyside 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.		

Actions to manage flooding in Potentially Vulnerable Area 05/11

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 Aviemore and Boat of Garten Potentially Vulnerable Area.

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

Action (ID):	FLOOD PROTECTION SCHEME/WORKS (5308021)		
Objective (ID):	Reduce the physical risk, or disruption risk, related to areas of the A9 at risk of flooding (5308)		
Delivery lead:	Transport Scotland		
Status:	Under development	Indicative delivery:	2022-2027
Description:	Transport Scotland will carry out civil engineering work which will reduce flood risk to identified sections of the A9.		

Action (ID):	FLOOD PROTECTION STUDY (5011010005)		
Objective (ID):	Reduce flood risk to Aviemore from the River Spey (501101)		
Delivery lead:	The Highland Council		
Priority:	National:	Within local authority:	
	120 of 168	12 of 23	
Status:	Not started	Indicative delivery:	2016-2021
Description:	A flood protection study is required to assess direct defences to reduce risk in Aviemore from the River Spey.		
Potential impacts			

Economic:	The flood protection study should confirm the economic impacts and number of properties at risk. Currently it is estimated that eight residential and five non-residential properties are at risk of flooding in this locations, with potential damages avoided of up to £1.2 million.
Social:	An estimated 18 people may benefit from flood protection works. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Flood protection works may also reduce flooding to the railway line and the energy production/electricity utility site, thus benefitting the wider community. Negative impacts through disturbance to the local community during the construction phase should be considered.
Environmental:	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. There is potential for impacts on habitats and ecology. To be in accord with the FRM Strategy, the responsible authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the River Spey Special Area of Conservation. There is potential to impact on the River Spey Site of Special Scientific Interest. The physical condition of the River Spey (water body ID 23097) is identified by river basin management planning to be at less than good status. Future works could improve the condition of the river or degrade it. Opportunities to improve the condition of the river should be considered by coordinating with river basin management planning.

Action (ID):	FLOOD PROTECTION STUDY (5011020005)		
Objective (ID):	Reduce flood risk to Aviemore from the Aviemore Burn (501102)		
Delivery lead:	The Highland Council		
Priority:	National:	Within local authority:	
	156 of 168	22 of 23	
Status:	Not started	Indicative delivery:	2022-2027
Description:	A hydraulic study is to be taken forward to confirm flood risk in Aviemore from the Aviemore Burn and if appropriate investigate options to reduce flood risk. It is thought that flood risk in Aviemore is currently underestimated.		
Potential impacts			
Economic:	The study should confirm the economic impacts and number of properties at risk. Currently it is estimated that two residential and two non-residential properties are at risk of flooding in this location, with potential damages avoided of up to £83,000. However, the history of flooding suggests that the potential benefits are likely to be higher.		
Social:	The study should look to confirm the number of people and other receptors (such as the A9 road) at risk of flooding from the Aviemore Burn. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Negative impacts through disturbance to the local community		

Social:	during the construction phase should be considered.
Environmental:	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. To be in accord with the FRM Strategy, the responsible authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the River Spey Special Area of Conservation, Kinveachy Forest Special Area of Conservation, and Kinveachy Forest Special Protection Area.

Action (ID):	STRATEGIC MAPPING AND MODELLING (5000020019)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	Scottish Water		
Status:	Not started	Indicative delivery:	2016-2021
Description:	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.		

Action (ID):	MAINTAIN FLOOD WARNING (5000020030)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Continue to maintain the 'Aviemore/Dalfaber' and 'Aviemore/Dalfaber to Grantown' flood warning areas which form part of the Spey river flood warning scheme.		

Action (ID):	FLOOD FORECASTING (5000020009)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<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 'Findhorn Nairn Moray and Speyside' flood alert area.</p>		

Action (ID):	SELF HELP (5000020011)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	—		
Status:	Existing	Indicative delivery:	Ongoing
Description:	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.		

Action (ID):	AWARENESS RAISING (5000020013)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	Responsible authorities		
Status:	Existing	Indicative delivery:	Ongoing
Description:	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. 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.		

Action (ID):	MAINTENANCE (5000020007)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	The Highland Council, asset / land managers		
Status:	Existing	Indicative delivery:	Ongoing
Description:	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.		

Action (ID):	EMERGENCY PLANS/RESPONSE (5000020014)		
Objective (ID):	Reduce overall flood risk (500002)		
Delivery lead:	Category 1 and 2 Responders		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<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>		

Action (ID):	PLANNING POLICIES (5000010001)		
Objective (ID):	Avoid an overall increase in flood risk (500001) Reduce overall flood risk (500002)		
Delivery lead:	Planning authority		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<p>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.</p>		