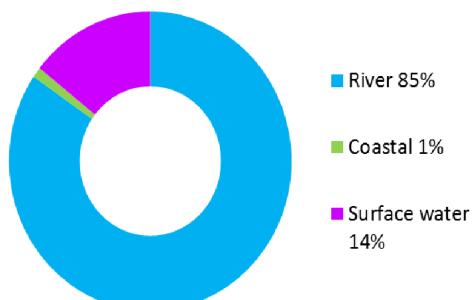


Nairn East and Auldearn (Potentially Vulnerable Area 05/08)

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

Summary of flooding impacts



At risk of flooding

- 80 residential properties
- 30 non-residential properties
- £230,000 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.

Objectives

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.

Actions

Summary of actions to manage flooding

The actions below have been selected to manage flood risk.

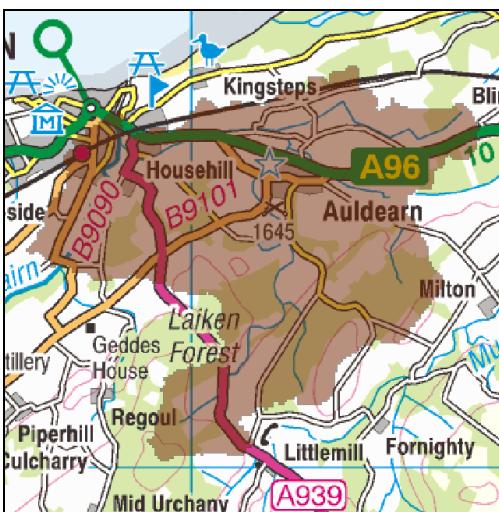
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response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

Nairn East and Auldearn (Potentially Vulnerable Area 05/08)

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

Background

This Potentially Vulnerable Area covers the south eastern section of Nairn as well as Auldearn and surrounding rural areas (shown below). It is approximately 33km².



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The A96, A939 and B9090 and B9101 all pass through the area. The main watercourse is the River Nairn.

There are approximately 80 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £230,000 with the majority caused by river flooding.

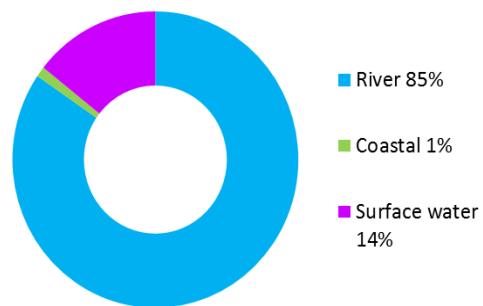


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Flooding from the River Nairn affects the Church Road and Howford Road areas of Nairn and Househill. The Auldearn Burn also contributes to flood risk in Nairn, Auldearn and Newmill. Surface water flood risk is concentrated on agricultural land, however there are further localised areas of surface water flood risk across Nairn and in Househill and Auldearn.

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 A96, A939 and B9090 and B9101. The Inverness to Aberdeen railway line is also at risk of flooding at several locations. Six designated cultural heritage sites are 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 residential properties followed by damages to non-residential properties and roads. 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 1,700)	20	80	110
Non-residential properties (total 210)	20	30	40
People	50	180	240
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 70 locations Rail at 10 locations	Roads at 110 locations Rail at 10 locations	Roads at 120 locations Rail at 10 locations
Environmental designated areas (km²)	0	0	0
Designated cultural heritage sites	5	6	6
Agricultural land (km²)	1	2	2

Table 1: Summary of flooding impacts¹

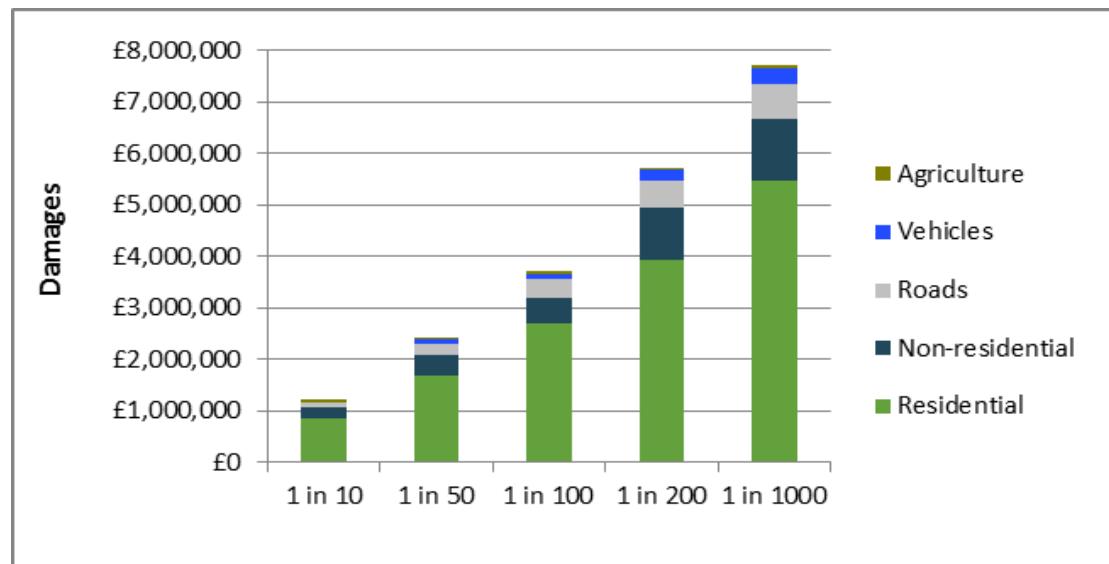


Figure 2: Damages by flood likelihood

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

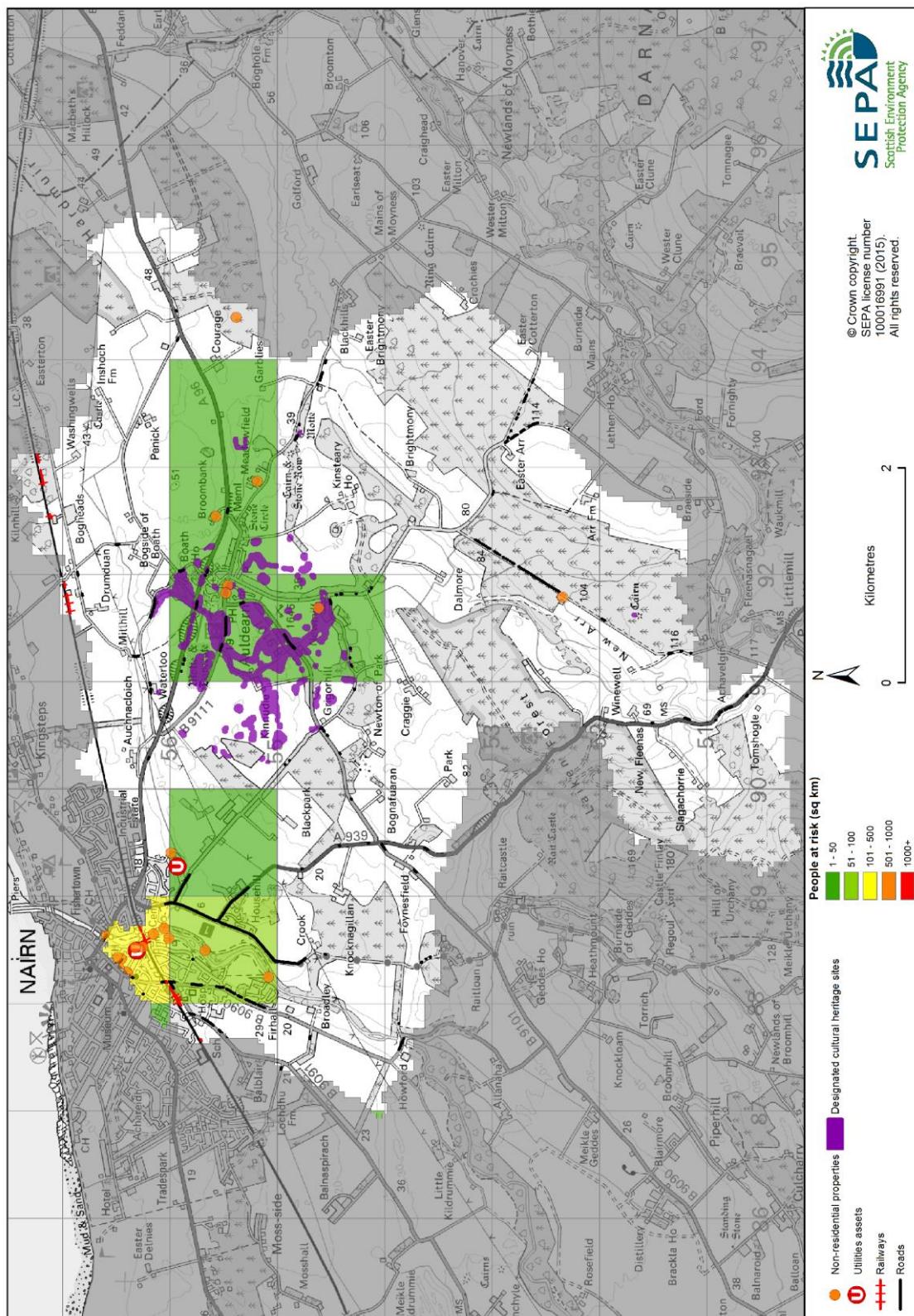


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood was in 1782, when one half of the bridge in Nairn was washed away. There were major floods on the River Nairn in 1820, 1825, 1829 (The Great Muckle Spate), 1865, 1874, 1877, 1914, 1915, 1937 and 1993. The Firhall Suspension Bridge and the Jubilee Bridge both collapsed and properties were affected during the July 1956 flood on the River Nairn.

In July 1997, January 2005 and in 2014 properties and roads in Nairn were flooded from the Auldearn Burn.

Objectives to manage flooding in Potentially Vulnerable Area 05/08

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 Nairn East and Auldearn Potentially Vulnerable Area.

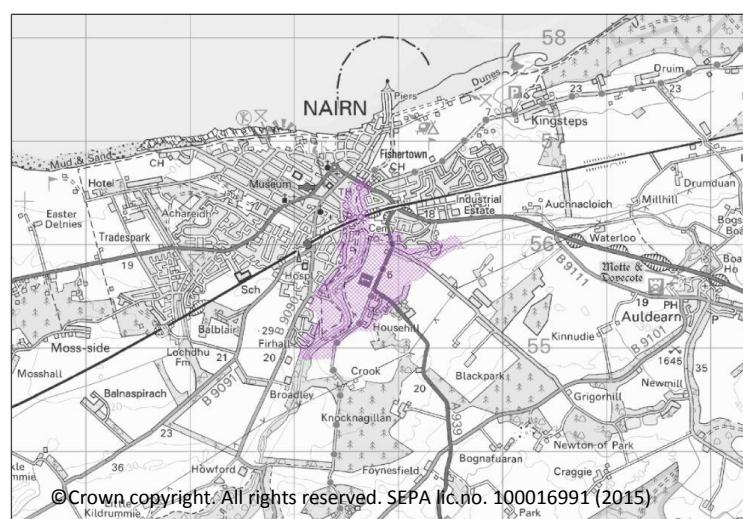
Reduce flood risk in Nairn from the River Nairn and the Auldearn Burn

Indicators:

- 130 people
- £110,000 Annual Average Damages from residential properties

Objective ID: 500801

Target area:



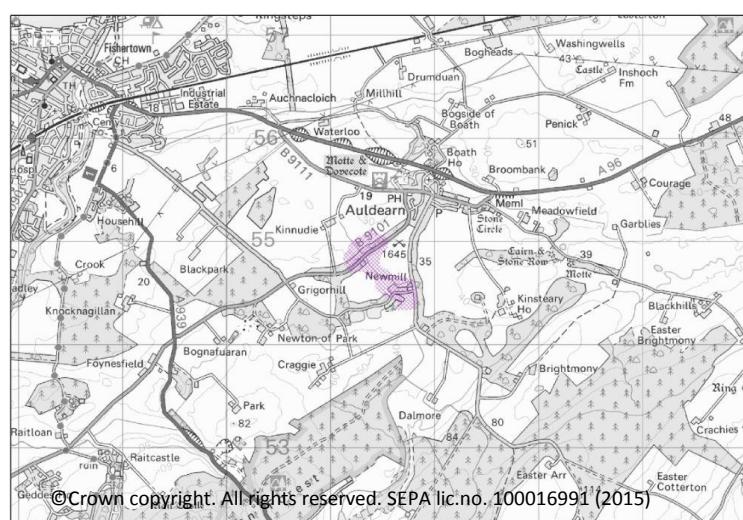
Reduce flood risk to Newmill from the Auldearn Burn

Indicators:

- 10 people
- £16,000 Annual Average Damages from residential properties

Objective ID: 500802

Target area:



Target area	Objective	ID	Indicators within PVA
Nairn East and Auldearn	Reduce the physical risk, or disruption risk, related to areas of the A96 at risk of flooding	5305	<ul style="list-style-type: none"> • 7 locations of the A96 with a total length of 120m
Applies across Findhorn, Nairn and Speyside Local Plan District	Avoid an overall increase in flood risk	500001	<ul style="list-style-type: none"> • 80 residential properties • £230,000 Annual Average Damages
Applies across Findhorn, Nairn and Speyside Local Plan District	Reduce overall flood risk	500002	<ul style="list-style-type: none"> • 80 residential properties • £230,000 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 05/08

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 Nairn East and Auldearn Potentially Vulnerable Area.

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

Action (ID):	FLOOD PROTECTION SCHEME/WORKS (5305021)		
Objective (ID):	Reduce the physical risk, or disruption risk, related to areas of the A96 at risk of flooding (5305)		
Delivery lead:	Transport Scotland		
Status:	Not started	Indicative delivery:	2028-2033
Description:	Transport Scotland will carry out civil engineering work which will reduce flood risk to identified sections of the A96.		

Action (ID):	FLOOD PROTECTION STUDY (5008010005)		
Objective (ID):	Reduce flood risk in Nairn from the River Nairn and the Auldearn Burn (500801)		
Delivery lead:	The Highland Council		
Priority:	National:		Within local authority:
	86 of 168		6 of 23
Status:	Not started	Indicative delivery:	2016-2021
Description:	The study should include investigation of modification of conveyance, direct defences and natural flood management (river and floodplain restoration and sediment management) to reduce risk from the Auldearn Burn in Nairn. Direct defence should also be considered to reduce flood risk from the River Nairn. Other actions should also be considered to identify the most sustainable options for flood risk management.		

Potential impacts	
Economic:	The study could benefit 57 residential and nine non-residential properties at risk of flooding in this location, with potential damages avoided of up to £3.9 million.
Social:	An estimated 125 people may benefit from flood protection works. The communities which may benefit from flood protection works have a higher than average proportion of vulnerable residents. 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 benefit the railway, roads (A96 and A939) and two energy production/electricity utility sites, thus reducing the impacts of flooding to the wider community. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. 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. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. There is potential for impacts on habitats and ecology. The Nairn conservation area is unlikely to be impacted by any future flood protection works. The Auldearn Burn (water body ID 20307) is identified by river basin management planning to be at less than good status for its physical condition. Future works could improve the condition of the rivers or degrade them. Opportunities to improve the condition of the rivers should be considered by coordinating with river basin management planning.

Action (ID):	FLOOD PROTECTION STUDY (5008020005)		
Objective (ID):	Reduce flood risk to Newmill from the Auldearn Burn (500802)		
Delivery lead:	The Highland Council		
Priority:	National: 152 of 168	Within local authority: 20 of 23	
Status:	Not started	Indicative delivery:	2022-2027
Description:	A flood protection study is required to consider a scheme for Newmill to reduce risk from Auldearn Burn. The study should include investigation of modification of conveyance actions and direct defences. Other actions may also be considered to develop the most sustainable range of options.		

Potential impacts	
Economic:	The study should confirm the economic impacts and number of properties at risk. Currently it is estimated that five residential and one non-residential property are at risk of flooding in this location, with potential damages avoided of up to £550,000.
Social:	The social benefits including to people and to community facilities will be confirmed once the hydraulic study has been carried out. A reduction in flood risk would have a positive benefit to the health and

Social:	wellbeing of the community and socially vulnerable people. Reducing flood risk to the B9101 and other local roads may benefit 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. The Nairn conservation area is unlikely to be impacted by any future flood protection works. A battlefield cultural heritage site may benefit from flood protection works. The physical condition of the Auldearn Burn (water body ID 20307) 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):	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 'Nairn', 'Nairn (River Park)' and 'Nairn Side (Cawdor)' flood warning areas which are part of the Nairn 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:	<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>		

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

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:	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.		

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:	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.		