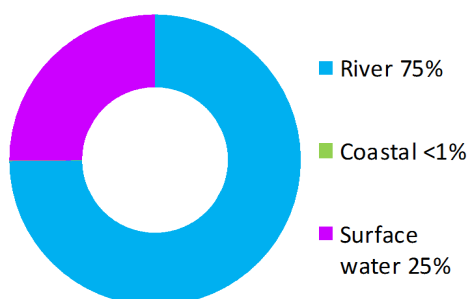


Ellon (Potentially Vulnerable Area 06/12)

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

Summary of flooding impacts



At risk of flooding

- 110 residential properties
- 40 non-residential properties
- £300,000 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>	New flood warning	<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>	<i>Maintain flood warning</i>	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

Ellon (Potentially Vulnerable Area 06/12)

Local Plan District	Local authority	Main catchments
North East	Aberdeenshire Council	River Ythan Buchan coastal

Background

This Potentially Vulnerable Area is centred on Ellon. It is approximately 19km².

The A920, A948, B9005 and a short section of the A90 pass through the area.



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The main river in the area is the Ythan, which is tidally influenced downstream of Ellon.

There are approximately 110 residential and 40 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £300,000 with the majority due to river flooding.

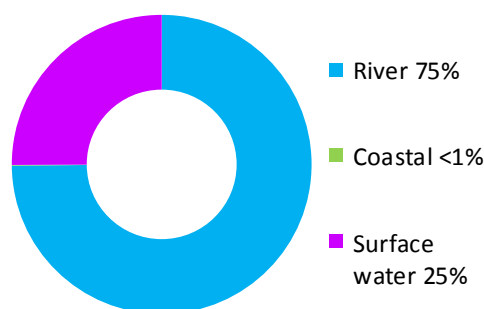


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The river flood risk comes from the River Ythan and its smaller tributaries, including Modley Burn and Broomies 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 at risk of flooding include the A920, A948 and A90. One school is at risk of flooding. Three designated cultural heritage sites and small areas of designated environmental sites are shown to be 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.

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 4,400)	40	110	160
Non-residential properties (total 4,200)	20	40	50
People	90	230	350
Community facilities	0	<10 Educational buildings	<10 Educational buildings
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 40 locations	Roads at 60 locations	Roads at 70 locations
Environmental designated areas (km ²)	<0.1	<0.1	<0.1
Designated cultural heritage sites	2	3	3
Agricultural land (km ²)	0.6	0.6	0.7

Table 1: Summary of flooding impacts¹

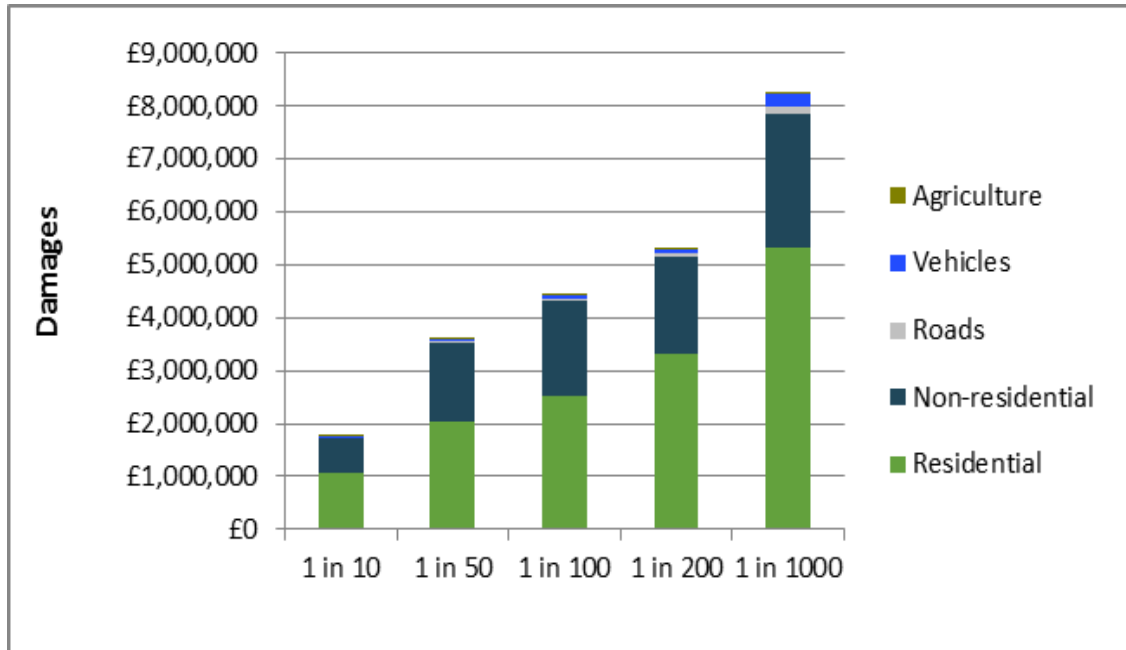


Figure 2: Damages by flood likelihood

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

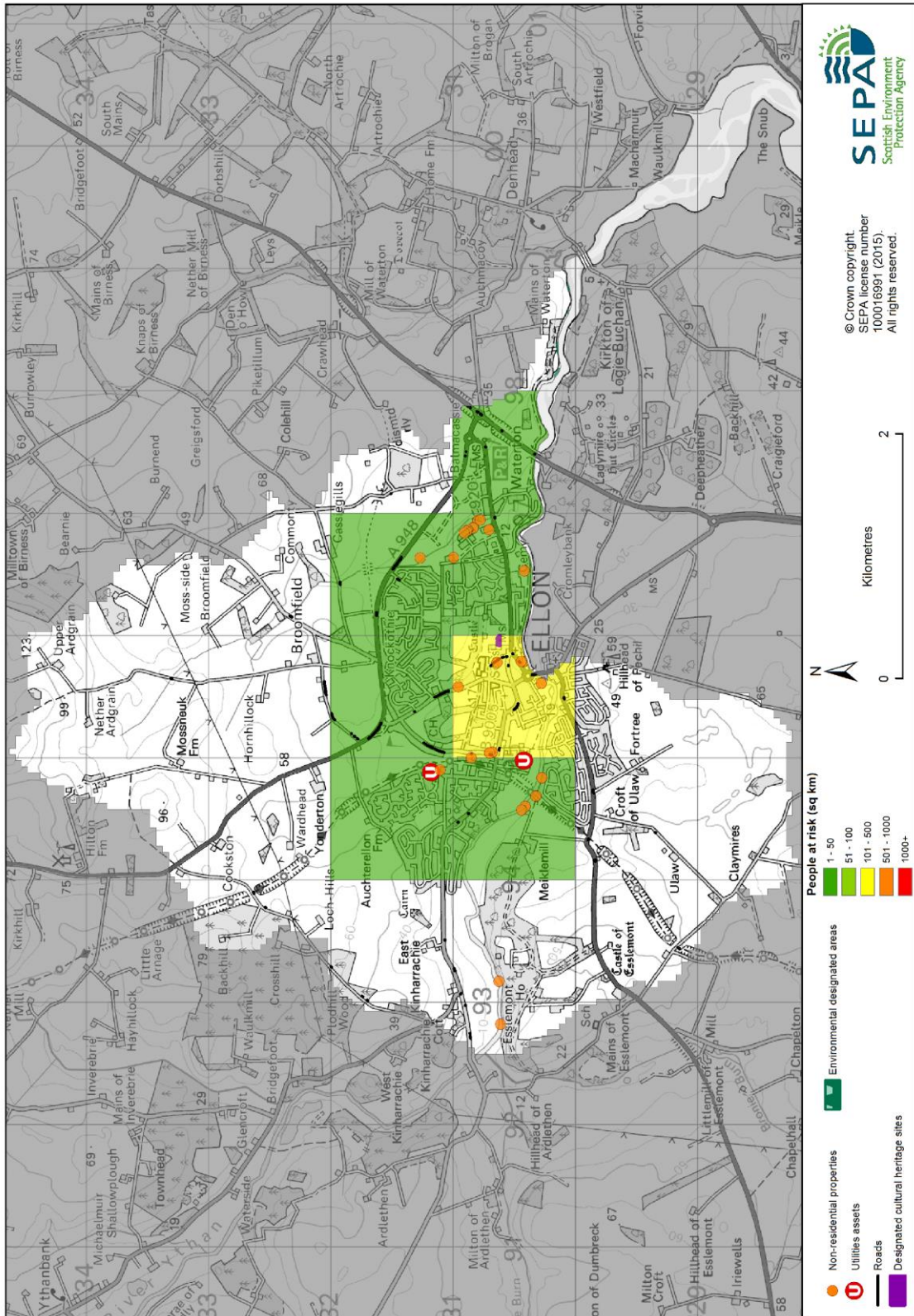


Figure 3: Impacts of flooding

History of flooding

There are two recorded floods from the Modley Burn in Ellon. In 2000 a wall collapsed, causing flooding. In 2002 the basements of property located on the culverted section of the burn flooded due to water backing up.

In 2004, two properties in Findhorn Gardens flooded due to runoff from the adjacent housing development.

In 2009 there was a flood from Broomies Burn, which affected Castle Way Industrial Estate, Ellon and damaged two bridges. Two industrial units and a school were affected.

Objectives to manage flooding in Potentially Vulnerable Area 06/12

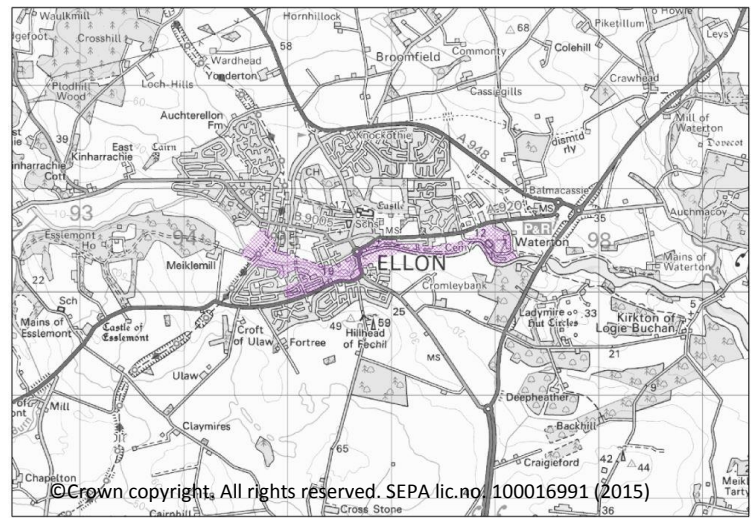
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target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

Reduce flood risk in Ellon from the River Ythan

Indicators:

Target area:

- 80 people
- £58,000 Annual Average Damages from residential properties
- £6,200 Annual Average Damages from non-residential properties



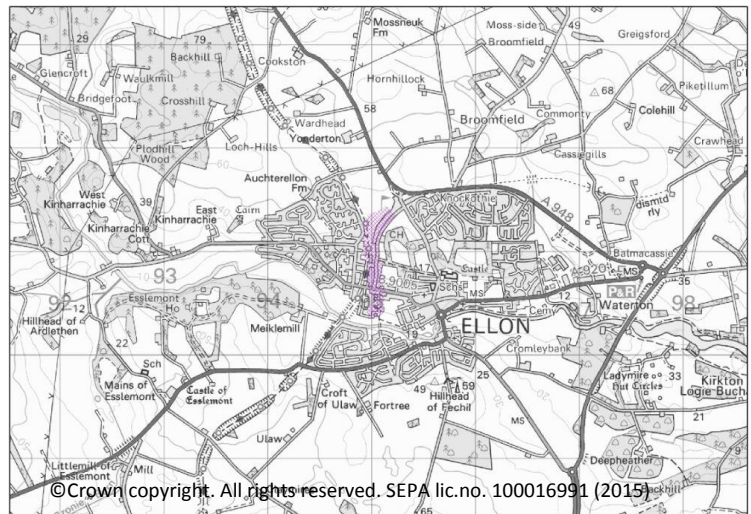
Objective ID: 601201

Reduce flood risk in Ellon from the Modley Burn

Indicators:

Target area:

- 80 people
- £80,000 Annual Average Damages from residential properties
- £20,000 Annual Average Damages from non-residential properties



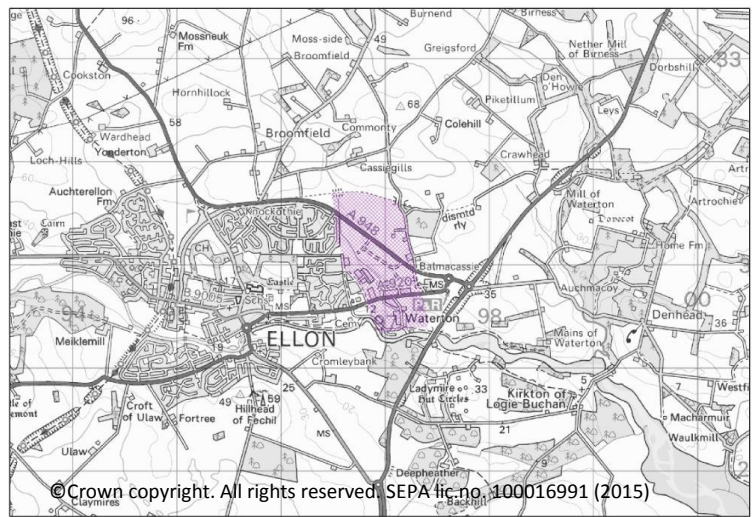
Objective ID: 601202

Reduce flood risk in Ellon from the Broomies / Bronie Burn

Indicators:

Target area:

- £4,100 Annual Average Damages from residential properties
- £37,000 Annual Average Damages from non-residential properties



Objective ID: 601203

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<ul style="list-style-type: none"> • 110 residential properties • £300,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	<ul style="list-style-type: none"> • 110 residential properties • £300,000 Annual Average Damages
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.		

Actions to manage flooding in Potentially Vulnerable Area 06/12

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 Ellon Potentially Vulnerable Area.

Selected actions					
<i>Flood protection scheme/works</i>	<i>Natural flood management works</i>	New flood warning	<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>	<i>Maintain flood warning</i>	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):	NEW FLOOD WARNING (6000020010)		
Objective (ID):	Reduce overall flood risk (600002)		
Delivery lead:	SEPA		
Status:	Not started	Indicative delivery:	post 2021
Description:	The area under consideration includes properties affected by flooding from the River Ythan. Full scoping will be required before a flood warning service can be developed and implemented in this area and further assessment will help to determine appropriate timescales for delivery.		

Action (ID):	FLOOD PROTECTION STUDY (6012010005)		
Objective (ID):	Reduce flood risk in Ellon from the Broomies / Bronie Burn (601203) Reduce flood risk in Ellon from the Modley Burn (601202) Reduce flood risk in Ellon from the River Ythan (601201)		
Delivery lead:	Aberdeenshire Council		
Priority:	National:	Within local authority:	
	55 of 168	1 of 12	
Status:	Not started	Indicative delivery:	2016-2021
Description:	A flood protection study is required to consider flood protection works to reduce the risk of flooding in Ellon from the River Ythan, Modley Burn and Broomies / Bronie Burn. The flood protection study should focus on direct defences, online/offline storage, natural flood		

	management (sediment management - especially on Modley Burn and Broomies Burn), modification of conveyance on the Broomies Burn, relocation of properties and property level protection to reduce the risk of flooding. Any other actions may also be considered to develop the most sustainable range of options.
Potential impacts	
Economic:	The study could benefit 77 residential and 18 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £6.1 million.
Social:	The development of flood protection works following the study would potentially reduce risk to 169 people . A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. One school may benefit from any works. Three utility sites (energy/electricity) could also benefit from the flood protection works identified in the study depending on the location and extent of works. 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. The flood protection study should consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. 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 Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area. The study should ensure the actions do not impact the downstream Sands of Forvie and Ythan Estuary Site of Special Scientific Interest.

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

Action (ID):	FLOOD FORECASTING (6000020009)		
Objective (ID):	Reduce overall flood risk (600002)		
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 'Aberdeenshire and Aberdeen City' flood alert area.</p>		

Action (ID):	SELF HELP (6000020011)		
Objective (ID):	Reduce overall flood risk (600002)		
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> <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>		

Action (ID):	AWARENESS RAISING (6000020013)		
Objective (ID):	Reduce overall flood risk (600002)		
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 (6000020007)		
Objective (ID):	Reduce overall flood risk (600002)		
Delivery lead:	Aberdeenshire Council, asset / land managers		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<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>		

Action (ID):	EMERGENCY PLANS/RESPONSE (6000020014)		
Objective (ID):	Reduce overall flood risk (600002)		
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 (6000010001)		
Objective (ID):	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
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.		