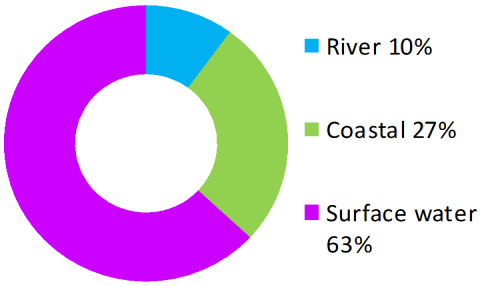
Fort William (Potentially Vulnerable Area 01/25)

Local Plan District	Local authority	Main catchment
Highland and Argyll	The Highland Council	Appin coastal

Summary of flooding impacts



At risk of flooding

- 100 residential properties
- 80 non-residential properties
- £520,000 Annual Average Damages

(damages by flood source shown left)

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.

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

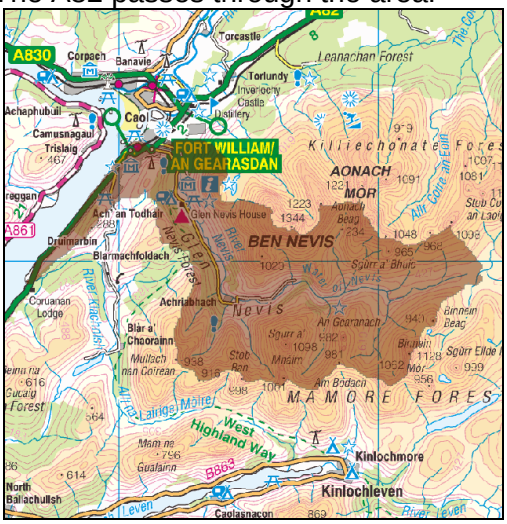
Fort William (Potentially Vulnerable Area 01/25)

Local Plan District	Local authority	Main catchment
Highland and Argyll	The Highland Council	Appin coastal

Background

This Potentially Vulnerable Area is approximately 75km^2. It is located at the north east end of Loch Linnhe and includes Fort William (shown below).

The A82 passes through the area.



The main river in this area is the River Nevis and the Water of Nevis system. There are also several smaller tributaries. There are approximately 100 residential and 80 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £520,000 with the majority caused by surface water flooding.

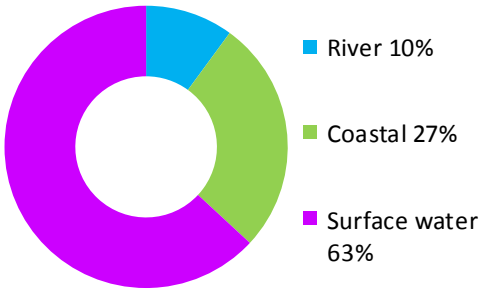


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Coastal flood risk is from Loch Linnhe and mainly affects the northern part of Fort William around the pier. River flood risk is from the River Nevis particular in the lower reaches of the river. The main source of flood risk in Fort William however is from surface water flooding. Surface water flood risk affects the commercial centre of the town as well as the access roads.

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.

A school and the fire station are at risk of flooding. The A82 road and the Fort William to Crianlarich railway are at risk of flooding at several locations.

There are four designated cultural heritage sites and parts of the Ben Nevis Special Area of Conservation and Site of Special Scientific Interest 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 followed by damages to residential properties.

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

	1 in 10	1 in 200	1 in 1000
	High likelihood	Medium likelihood	Low likelihood
Residential properties (total 2,400)	<10	100	190
Non-residential properties (total 400)	30	80	120
People	20	210	420
Community facilities	0	<10 Includes; educational buildings and emergency services	<10 Includes; educational buildings and emergency services
Utilities assets	<10	<10	10
Transport links (excluding minor roads)	Roads at 30 locations Rail at 10 locations	Roads at 60 locations Rail at 10 locations	Roads at 60 locations Rail at 20 locations
Environmental designated areas (km^2)	1	1	2
Designated cultural heritage sites	2	4	4
Agricultural land (km^2)	1	2	2

Table 1: Summary of flooding impacts[1]

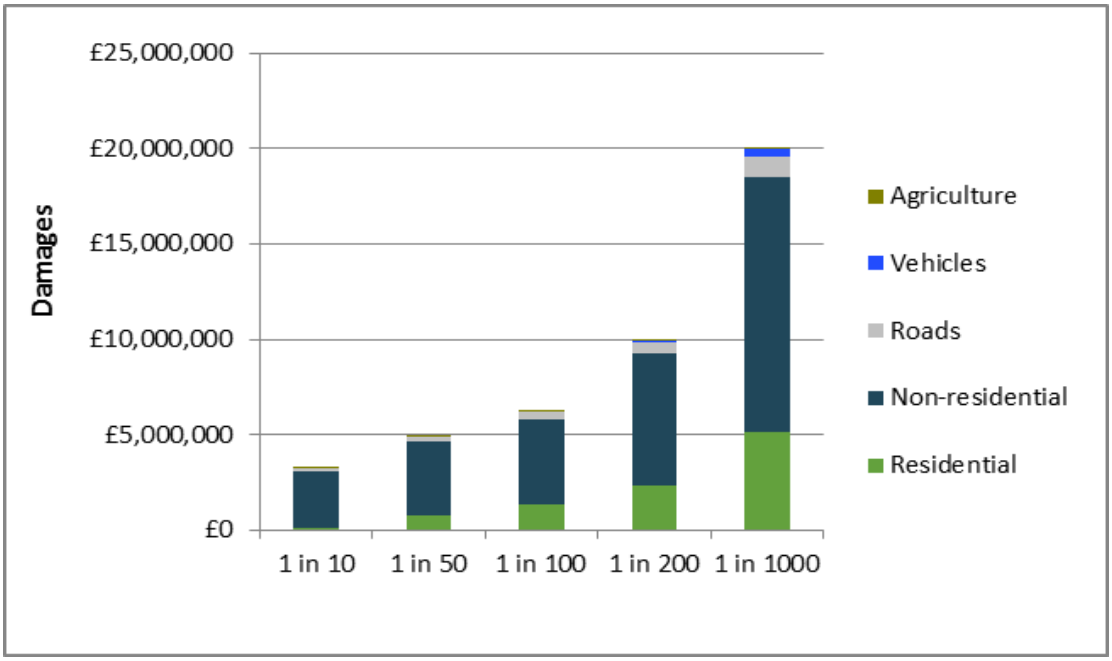


Figure 2: Damages by flood likelihood

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

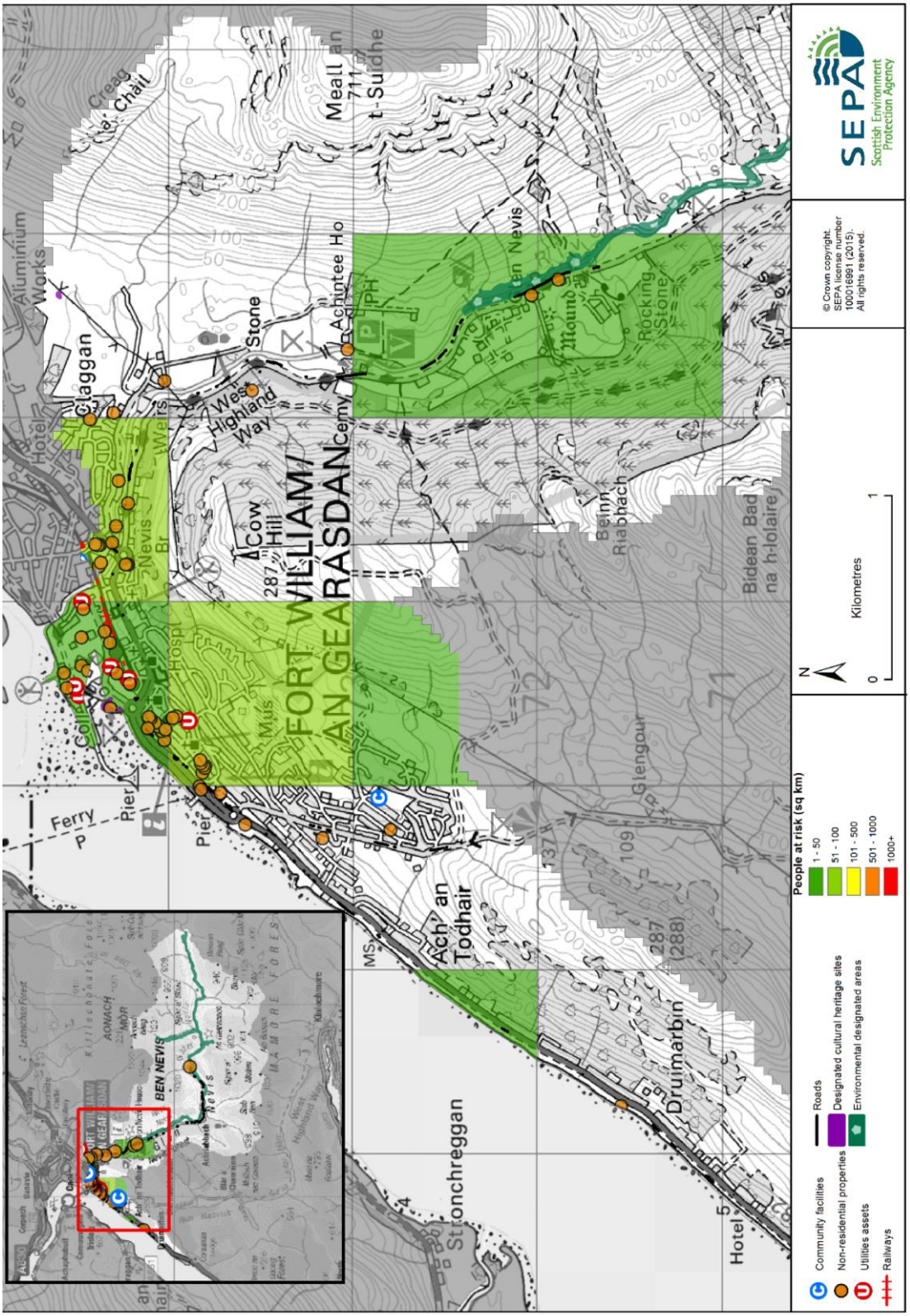


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood was in 1873. There were 12 floods recorded between 1873 and 1989, including from the River Nevis. Many of these floods caused significant damage to the railway, roads, crops, and properties.

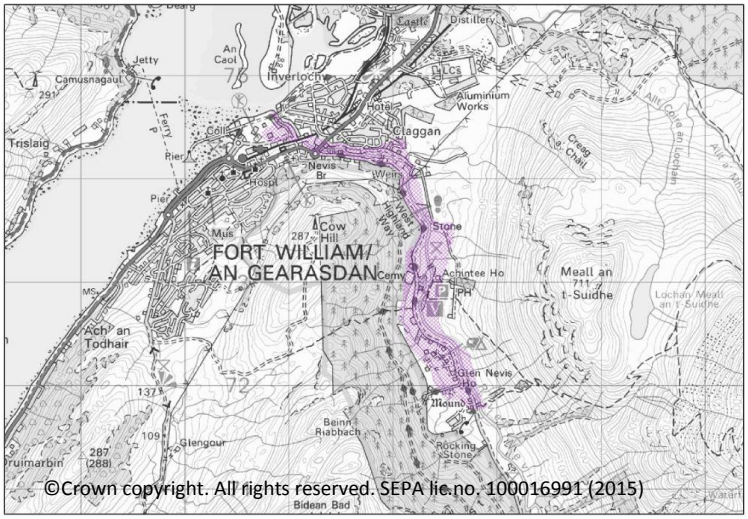
In October 1916 a surface water flood made the West Highland Railway impassable for several days due to numerous washouts, which completely isolated Fort William and destroyed many roads.

Since 2001 there have been five floods recorded. The October 2001 flood was due to blockages of culverts and gullies, with overflowing water affecting roads and properties. In January 2005 there was a storm surge on Loch Linnhe that caused flooding. In October 2009 a flood was recorded that affected properties, which was attributed to heavy rainfall and blocked culverts.

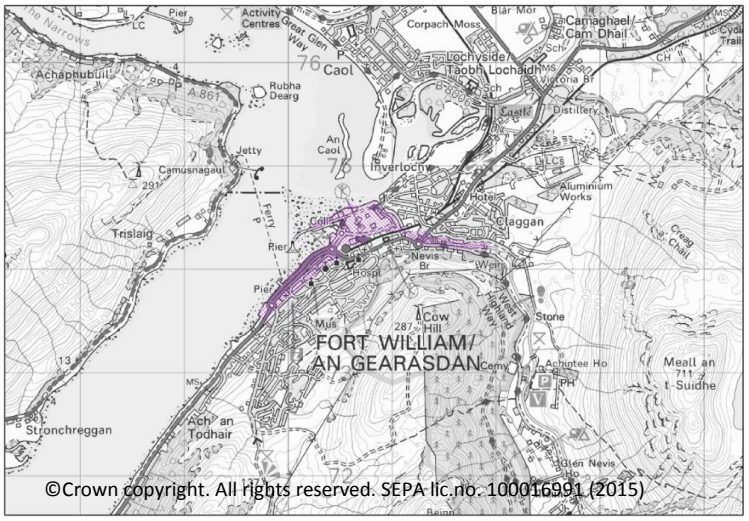
Objectives to manage flooding in Potentially Vulnerable Area 01/25

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 Fort William Potentially Vulnerable Area.

Reduce flood risk in Fort William from the River Nevis

Indicators:	Target area:
• 40 people • £16,000 Annual Average Damages from residential properties	
Objective ID: 102501	

Reduce coastal flood risk in Fort William from Loch Linnhe

Indicators:	Target area:
• 110 people • £110,000 Annual Average Damages from non-residential properties • 1 school • 1 emergency services building	
Objective ID: 102502	

Target area	Objective	ID	Indicators within PVA
Fort William	Reduce the physical or disruption risk related to the transport network for roads	1308	• 14 locations on the A82 with a total length of 130m
Fort William	Reduce risk from surface water flooding in Fort William	102506	* See note below
Applies across Highland and Argyll Local Plan District	Avoid an overall increase in flood risk	100001	• 100 residential properties • £520,000 Annual Average Damages
Applies across Highland and Argyll Local Plan District	Reduce overall flood risk	100002	• 100 residential properties • £520,000 Annual Average Damages
Applies across Highland and Argyll 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 01/25 there are 30 residential properties at risk and Annual Average Damages of £330,000.

Actions to manage flooding in Potentially Vulnerable Area 01/25

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 Fort William 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** (1308021)		
Objective (ID):	Reduce the physical or disruption risk related to the transport network for roads (1308)		
Delivery lead:	Transport Scotland		
Status:	**Under development**	Indicative delivery:	**2016-2021**
Description:	Transport Scotland will carry out civil engineering work which will reduce flood risk to identified sections of the A82.		

Action (ID):	**FLOOD PROTECTION STUDY** (1025010005)		
Objective (ID):	Reduce coastal flood risk in Fort William from Loch Linnhe (102502) Reduce flood risk in Fort William from the River Nevis (102501)		
Delivery lead:	The Highland Council		
Priority:	National:	Within local authority:	
	90 of 168	**8 of 23**	
Status:	**Not started**	Indicative delivery:	**2016-2021**
Description:	A flood protection study for the River Nevis and Loch Linnhe in Fort William should focus on direct defences, revetments and property level protection. Other actions may also be considered in order to develop the most sustainable range of options. The study should include the effect of high sea levels on flood risk in the River Nevis.		
Potential impacts			

Economic:	The study could benefit 64 residential and 37 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £4.1 million.
Social:	Approximately 141 people may directly benefit from flood protection works. Fort William has 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. There are potential visual and access impacts for the community, reducing their connection to the watercourse. Reduced flood risk to roads, including the A82, and the railway line and an energy production/electricity utility site 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 changes to channel morphology which could affect the quality status of the river. There may also be impacts on sediment and fish populations. 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 Ben Nevis Special Area of Conservation. There is potential to directly impact on the Ben Nevis Site of Special Scientific Interest. Flood protection works would be outside of the Ach an Todhair Site of Special Scientific Interest, and there are unlikely to be any significant impacts. There is also potential to impact on two cultural heritage sites.

Action (ID):	**SURFACE WATER PLAN/STUDY** (1025060018)		
Objective (ID):	Reduce risk from surface water flooding in Fort William (102506)		
Delivery lead:	The Highland Council		
Status:	**Ongoing**	Indicative delivery:	**2016-2021**
Description:	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.		

Action (ID):	**STRATEGIC MAPPING AND MODELLING** (1000020019)		
Objective (ID):	Reduce overall flood risk (100002)		
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):	**MAINTAIN FLOOD WARNING** (1000020030)		
Objective (ID):	Reduce overall flood risk (100002)		
Delivery lead:	SEPA		
Status:	**Existing**	Indicative delivery:	**Ongoing**
Description:	Continue to maintain the 'Fort William' coastal flood warning area which is part of the Firth of Lorn and Loch Linnhe coastal flood warning scheme. Continue to maintain the 'Glen Nevis' flood warning area which is part of the Nevis river flood warning scheme. This flood warning area provides a flood warning for properties in Glen Nevis at risk of flooding, as well as the road.		

Action (ID):	**FLOOD FORECASTING** (1000020009)		
Objective (ID):	Reduce overall flood risk (100002)		
Delivery lead:	SEPA		
Status:	**Existing**	Indicative delivery:	**Ongoing**
Description:	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. The Potentially Vulnerable Area is within the 'Skye and Lochaber' flood alert area.		

Action (ID):	**SELF HELP** (1000020011)		
Objective (ID):	Reduce overall flood risk (100002)		
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** (1000020013)		
Objective (ID):	Reduce overall flood risk (100002)		
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 communities and promote Floodline using most the appropriate mix of methods for the area. These could include direct mailings, education activities, participation in local events and relevant flooding messages in the media. Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.		

Action (ID):	**MAINTENANCE** (1000020007)		
Objective (ID):	Reduce overall flood risk (100002)		
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** (1000020014)		
Objective (ID):	Reduce overall flood risk (100002)		
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. The Highland Council has two flood monitors in this area. One is on the watercourse behind the leisure centre and the other on the Allt Dhomhnuill an t-Siucair next to the police station. The flood monitors warn of rising water levels due to blockages.		

Action (ID):	**PLANNING POLICIES** (1000010001)		
Objective (ID):	Avoid an overall increase in flood risk (100001) Reduce overall flood risk (100002)		
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.		