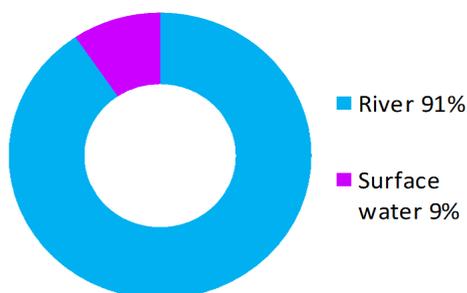


## Loch Awe (Potentially Vulnerable Area 01/34)

Local Plan District	Local authority	Main catchment
Highland and Argyll	Argyll and Bute Council	Etive coastal

### Summary of flooding impacts



#### At risk of flooding

- 20 residential properties
- 30 non-residential properties
- £100,000 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	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

Actions

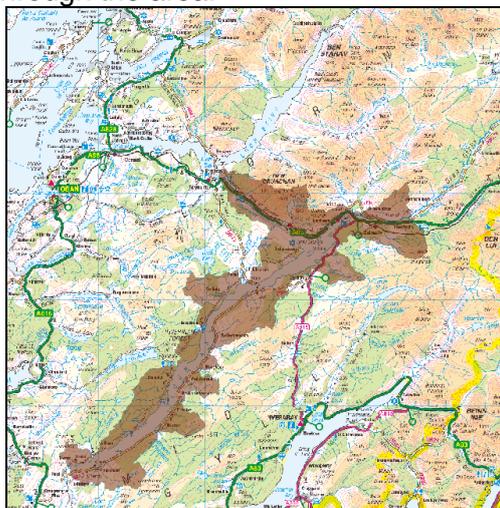
## Loch Awe (Potentially Vulnerable Area 01/34)

Local Plan District	Local authority	Main catchment
Highland and Argyll	Argyll and Bute Council	River Awe

### Background

This Potentially Vulnerable Area is located around Loch Awe and includes Dalmally (shown below). It is approximately 230km<sup>2</sup>.

The A85 and A819 roads and the Glasgow to Oban railway line pass through the area.

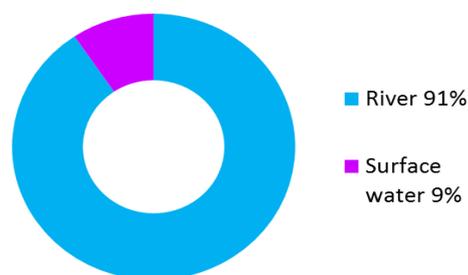


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The main rivers are the Awe and the Orchy.

There are approximately 20 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £100,000 with the majority caused by river flooding.



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

### Summary of flooding impacts

River flood risk is associated with the southern end of the River Orchy where it enters Loch Awe adjacent to the A85, and in Dalmally Bridge. Other areas of river flood risk are Bridge of Awe, Lochawe and Dalavich.

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 include the A85, the B8077 and the B840, which links local communities on the south side of Loch Awe. Several locations along the Glasgow to Oban railway line are also at risk of flooding.

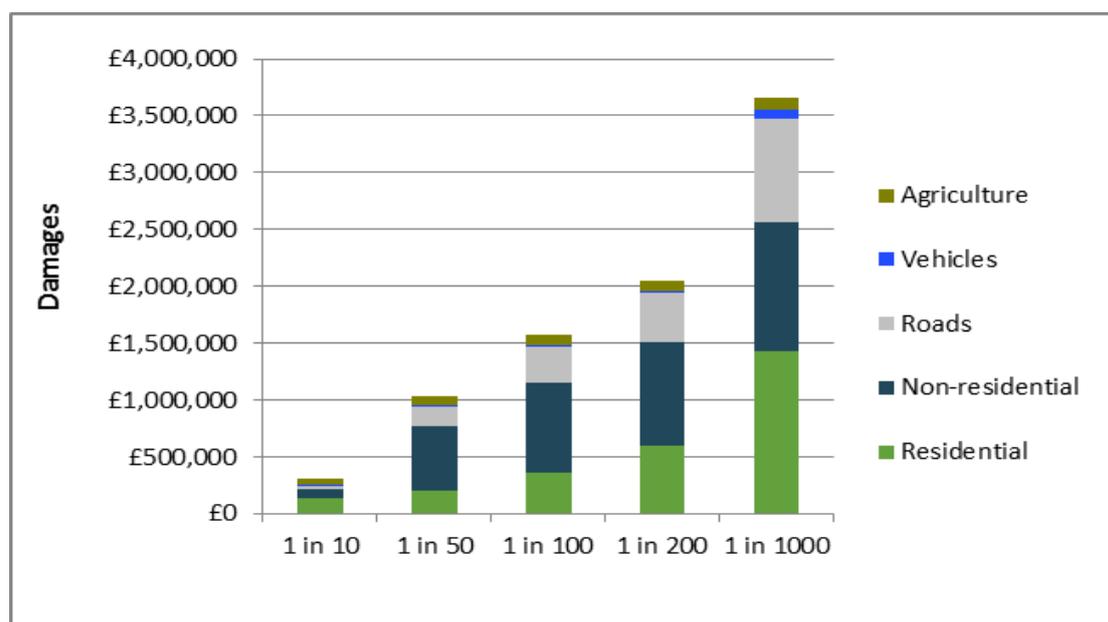
Dalmally Primary School and large areas of agricultural land are at risk of flooding. There are 27 designated cultural heritage sites and small areas of designated environmental sites at risk. These include Special Areas of Conservation, Special Protection Areas, and Sites of Special Scientific Interest at Loch Etive Woods, Glen Etive and Glen Fyne and Coille Leitire.

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 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 560)	<10	20	30
Non-residential properties (total 230)	<10	30	40
People	10	30	60
Community facilities	0	<10 Educational buildings	<10 Educational buildings
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 70 locations Rail at 20 locations	Roads at 90 locations Rail at 20 locations	Roads at 110 locations Rail at 30 locations
Environmental designated areas (km <sup>2</sup> )	<0.1	<0.1	<0.1
Designated cultural heritage sites	25	27	29
Agricultural land (km <sup>2</sup> )	3	5	5

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



**Figure 2:** Damages by flood likelihood

## History of flooding

In 1884 heavy rain flooded low lying land and the railway line between Falls of Cruachan and the Pass of Brander. Roads along Loch Awe up to Dalmally were also damaged.

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

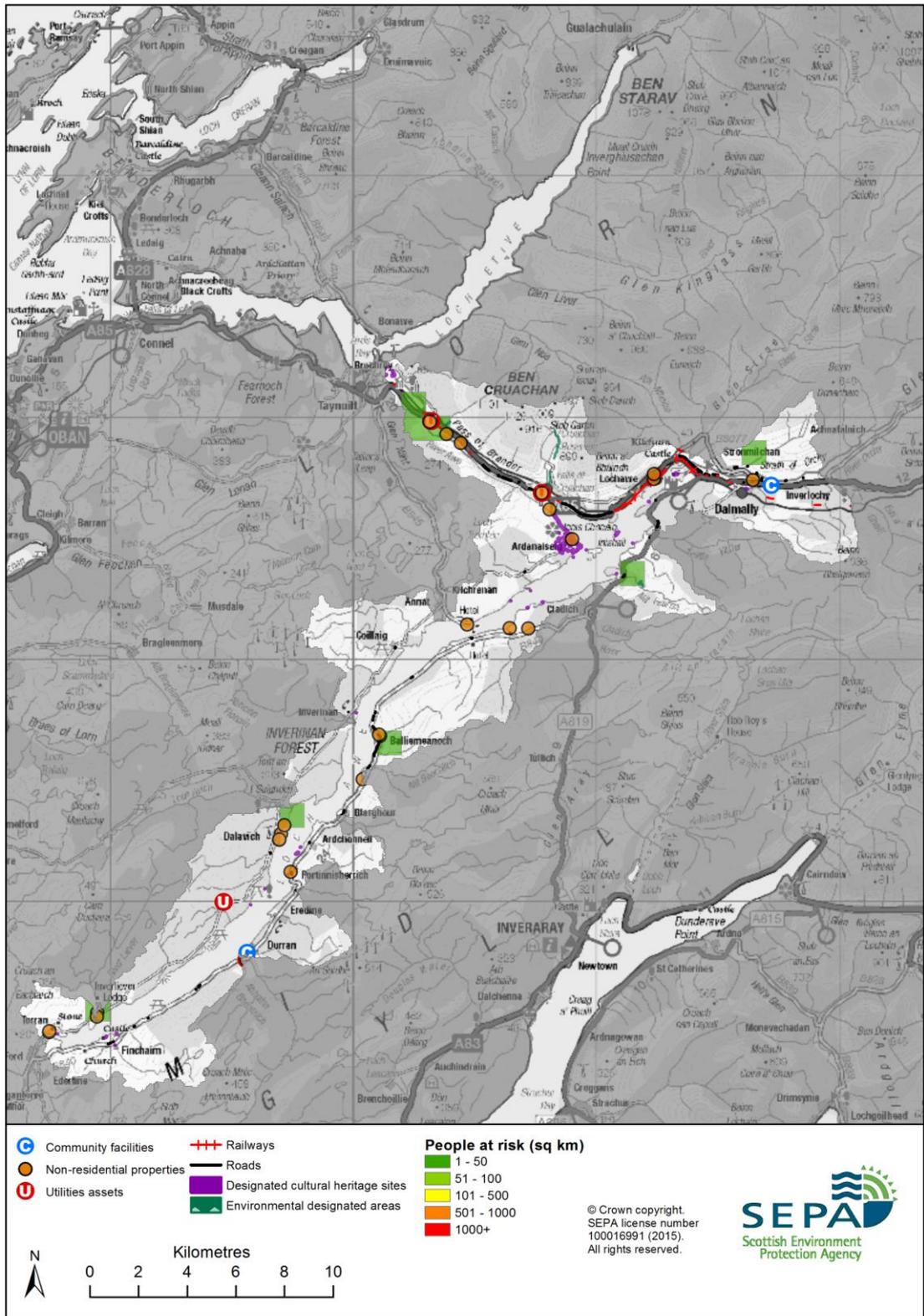


Figure 3: Impacts of flooding

## Objectives to manage flooding in Potentially Vulnerable Area 01/34

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 Loch Awe Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Loch Awe	Reduce the physical or disruption risk related to the transport network for roads	1311	<ul style="list-style-type: none"> <li>• 19 locations on the A85 with a total length of 720m</li> </ul>
Applies across Highland and Argyll Local Plan District	Avoid an overall increase in flood risk	100001	<ul style="list-style-type: none"> <li>• 20 residential properties</li> <li>• £100,000 Annual Average Damages</li> </ul>
Applies across Highland and Argyll Local Plan District	Reduce overall flood risk	100002	<ul style="list-style-type: none"> <li>• 20 residential properties</li> <li>• £100,000 Annual Average Damages</li> </ul>
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.		

## Actions to manage flooding in Potentially Vulnerable Area 01/34

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 Loch Awe Potentially Vulnerable Area.

Selected actions					
<b>Flood protection scheme/works</b>	<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>
<i>Flood protection study</i>	<i>Natural flood management study</i>	<i>Maintain flood warning</i>	<b>Awareness raising</b>	<i>Surface water plan/study</i>	<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>FLOOD PROTECTION SCHEME/WORKS (1311021)</b>		
<b>Objective (ID):</b>	Reduce the physical or disruption risk related to the transport network for roads (1311)		
<b>Delivery lead:</b>	Transport Scotland		
<b>Status:</b>	<b>Under development</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	Transport Scotland will carry out civil engineering work which will reduce flood risk to identified sections of the A85.		

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (1000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.		

<b>Action (ID):</b>	<b>FLOOD FORECASTING (1000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<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 'Argyll and Bute' flood alert area.</p>		

<b>Action (ID):</b>	<b>SELF HELP (1000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<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>		

<b>Action (ID):</b>	<b>AWARENESS RAISING (1000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<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 (1000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<b>Delivery lead:</b>	Argyll and Bute Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	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.		

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (1000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (100002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	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.		

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