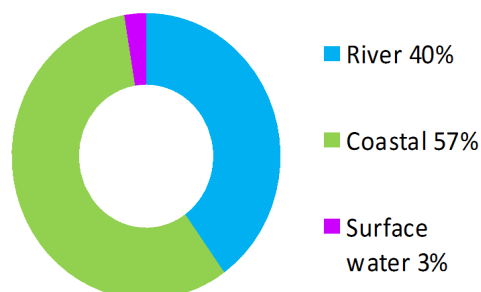


Tarbert (Potentially Vulnerable Area 01/39)

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

Summary of flooding impacts



At risk of flooding

- 10 residential properties
- 20 non-residential properties
- £110,000 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>	<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

Tarbert (Potentially Vulnerable Area 01/39)

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

Background

This Potentially Vulnerable Area is centred around Tarbert on the west shore of Loch Fyne (shown below). It is approximately 61km².

The A83 is an important transport link and passes through the area.



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The Inverneil, Stronchullin, Artilligan and Abhainn Strathainn burns are the main watercourses in the area.

There are approximately 10 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £110,000 with the majority caused by coastal and river flooding.

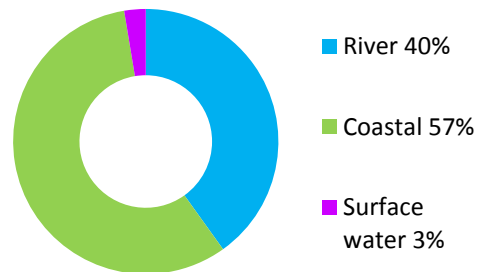


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Coastal flood risk is mainly focused around the seafront at Tarbert with river flood risk mainly centred on Inverneil.

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 A8015 and A83 between Tarbert and Inverneil. The A83 links the Kintyre peninsula to the mainland and when this road is closed there is no access to ferries to or from the Cowal peninsula, the Kintyre peninsula and Islay.

Three designated cultural heritage sites and small areas of environmental importance are also at risk. These include the Tarbert Woods Special Area of Conservation and Artilligan and Abhainn Srathain Burns Sites of Special Scientific Interest.

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 is shown in Figure 3.

	1 in 10	1 in 200	1 in 1000
	High likelihood	Medium likelihood	Low likelihood
Residential properties (total 670)	10	10	20
Non-residential properties (total 300)	20	20	30
People	30	30	30
Community facilities	0	0	0
Utilities assets	0	<10	<10
Transport links (excluding minor roads)	Roads at 20 locations	Roads at 30 locations	Roads at 40 locations
Environmental designated areas (km ²)	0.3	0.3	0.4
Designated cultural heritage sites	3	3	3
Agricultural land (km ²)	0.2	0.3	0.3

Table 1: Summary of flooding impacts¹

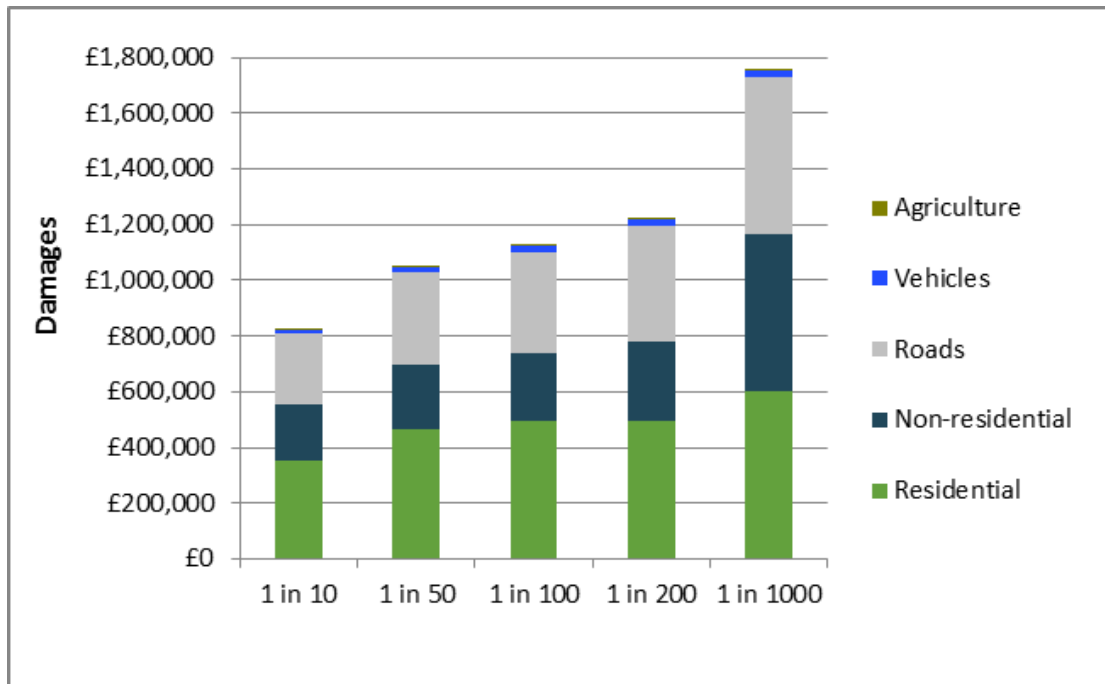


Figure 2: Damages by flood likelihood

History of flooding

In 2013, overtopping of the seawall (coupled with drainage systems which were unable to discharge due to high sea levels) caused flooding in Tarbert. No major damage was reported. Significant flooding of Harbour Street in Tarbert was reported in January 2014.

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

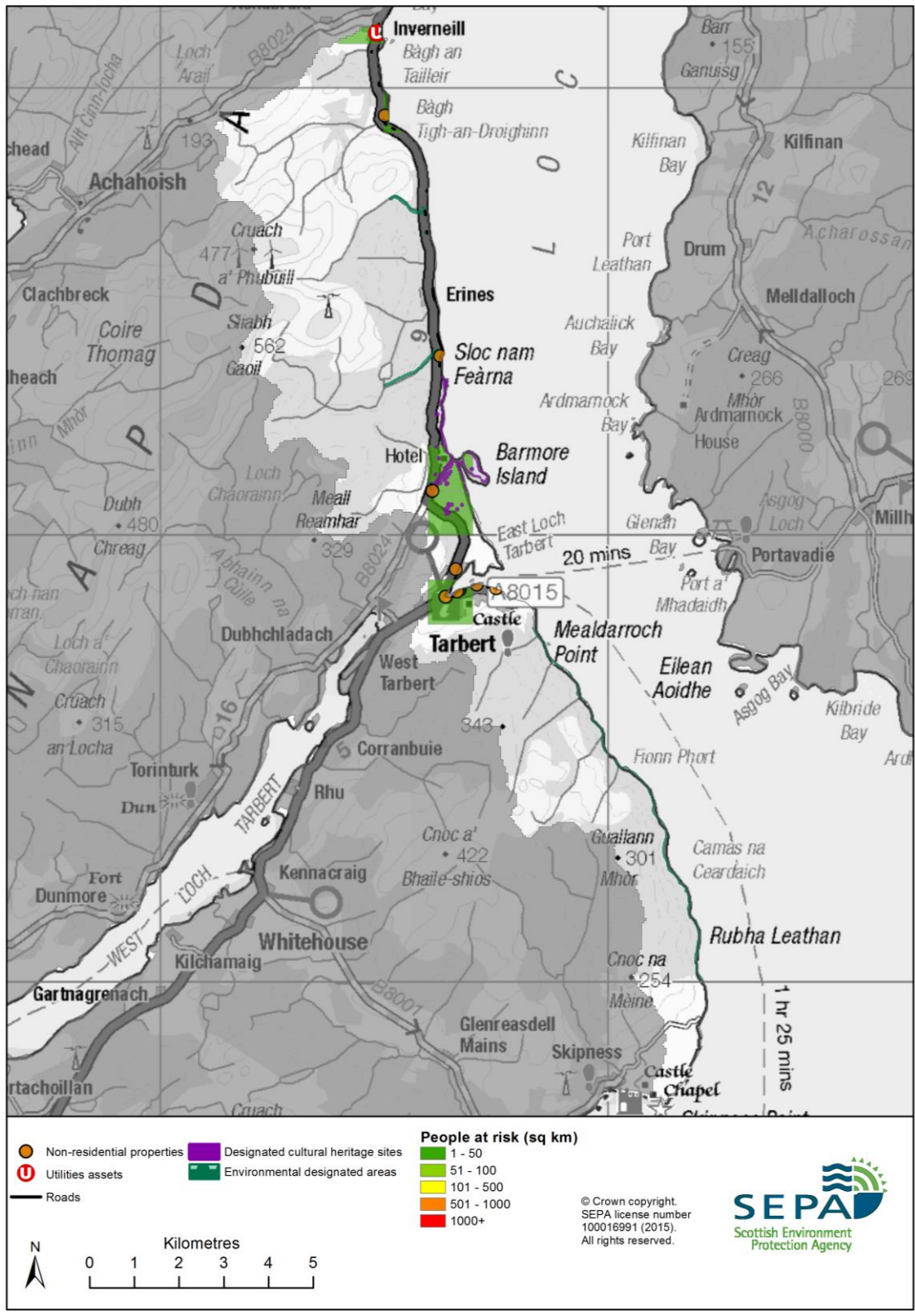
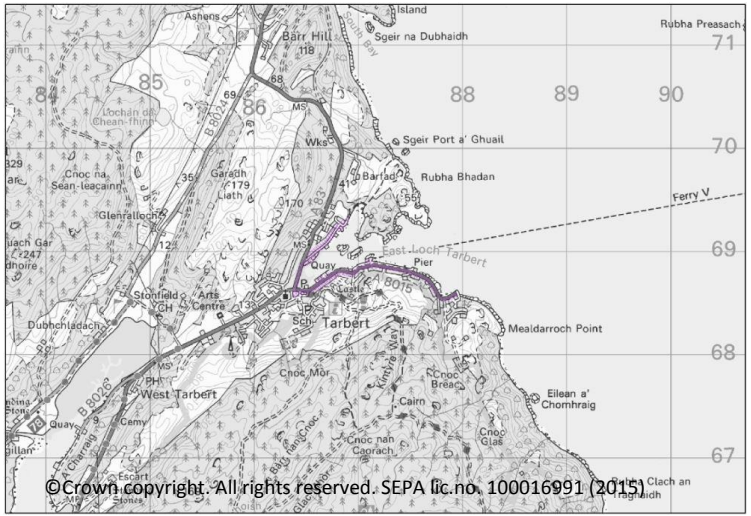


Figure 3: Impacts of flooding

Objectives to manage flooding in Potentially Vulnerable Area 01/39

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 Tarbert Potentially Vulnerable Area.

Reduce risk in Tarbert from coastal flooding	
Indicators:	Target area:
<ul style="list-style-type: none"> £6,000 Annual Average Damages from residential properties £19,000 Annual Average Damages from non-residential properties 	 <p style="font-size: small; text-align: center;">© Crown copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 103901	

Target area	Objective	ID	Indicators within PVA
Applies across Highland and Argyll Local Plan District	Avoid an overall increase in flood risk	100001	<ul style="list-style-type: none"> 10 residential properties £110,000 Annual Average Damages
Applies across Highland and Argyll Local Plan District	Reduce overall flood risk	100002	<ul style="list-style-type: none"> 10 residential properties £110,000 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.		

Actions to manage flooding in Potentially Vulnerable Area 01/39

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 Tarbert Potentially Vulnerable Area.

Selected actions					
<i>Flood protection scheme/works</i>	<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 STUDY (1039010005)		
Objective (ID):	Reduce risk in Tarbert from coastal flooding (103901)		
Delivery lead:	Argyll and Bute Council		
Priority:	National:		Within local authority:
	75 of 168		2 of 9
Status:	Not started	Indicative delivery:	2016-2021
Description:	A study is recommended to further investigate the feasibility of a flood protection scheme for coastal flooding in Tarbert, focusing on direct defences, coastal revetments and consideration of property level protection for residual risk. Other actions may also be considered to develop the most sustainable range of options. The study should look to confirm the length and size of defences needed, and the business case for flood protection works. The flood mapping for Tarbert should be refined as part of the study as it is currently thought to underestimate the flood risk.		
Potential impacts			
Economic:	The flood protection study should confirm the economic impacts and number of properties at risk. Currently it is estimated that 12 residential and 23 non-residential properties could benefit, with potential damages avoided of up to £4.7 million. However, the history of flooding suggests that the potential benefits are likely to be higher.		
Social:	Approximately 26 people may directly 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. Reduced flooding of major transport links, including the A83		

Social:	and A8015, would 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 coastal habitats through increased erosion and disruption of natural processes, and impacts on landscape and the conservation area through disruption of views of the loch and foreshore. Due to the presence of existing structures these impacts could be limited. There are no environmentally designated sites nearby which could be impacted by future flood protection works.

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 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 (1000020030)		
Objective (ID):	Reduce overall flood risk (100002)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Continue to maintain the 'Tarbert Harbour' flood warning area which is part of the Firth of Clyde coastal flood warning scheme.		

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

Action (ID):	SELF HELP (1000020011)		
Objective (ID):	Reduce overall flood risk (100002)		
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 (1000020013)		
Objective (ID):	Reduce overall flood risk (100002)		
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 (1000020007)		
Objective (ID):	Reduce overall flood risk (100002)		
Delivery lead:	Argyll and Bute 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.		

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.		