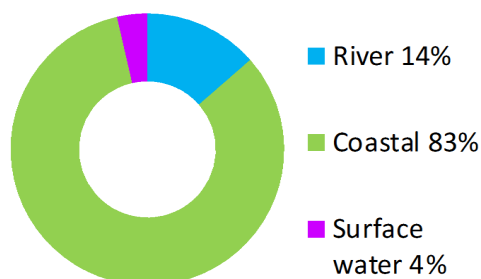


Shetland Mainland North (Potentially Vulnerable Area 04/01)

Local Plan District	Local authority	Main catchment
Shetland	Shetland Islands Council	Shetland coastal

Summary of flooding impacts



At risk of flooding

- <10 residential properties
- <10 non-residential properties
- £47,000 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	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

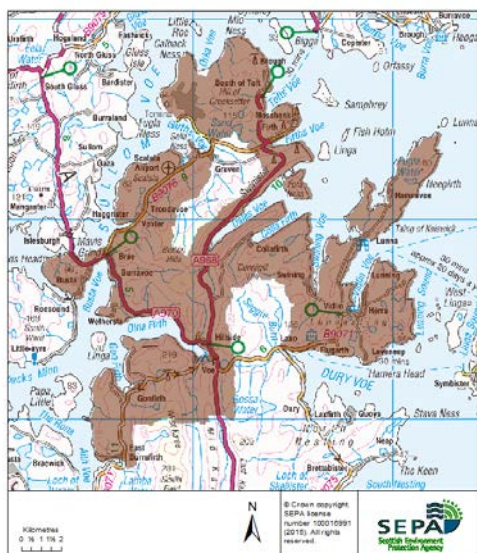
Shetland Mainland North (Potentially Vulnerable Area 04/01)

Local Plan District	Local authority	Main catchment
Shetland	Shetland Islands Council	Shetland coastal

Background

This Potentially Vulnerable Area is located in the north of Mainland Shetland (shown below). It is approximately 150km².

The area is predominately rural with many small burns and lochs. The coastline is characterised by bays, inlets and voes.



There are several communities including Voe, Mossbank, Brae and Vidlin located in this Potentially Vulnerable Area. The A968 and A970, Scatsta Airport and the Sullom Voe Oil Terminal are also located in this area.

There are fewer than 10 residential and non-residential properties at risk of flooding.

The Annual Average Damages are £47,000 with the majority caused by coastal flooding.

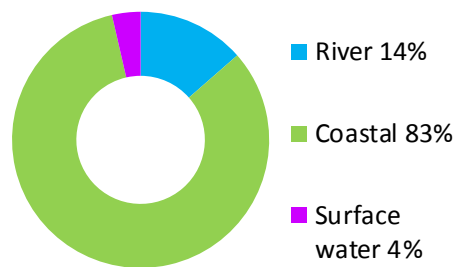


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

Coastal flood risk in the area is focused at the head of the voe in Vildin. Flooding from wave action is not fully represented in the assessment of flood risk and both the number of properties at risk and the stated damages from coastal flooding may be underestimated as a result.

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.

Significant lengths of road are at risk of flooding, including the access road to Sullom Voe Oil Terminal. This may lead to disruption in linking the terminal, towns and villages to services and may reduce access to the airport and ports. Lunnasting Primary School in Vidlin is also identified as at risk of flooding.

There are 10 designated cultural heritage sites and small areas of designated environmental sites at risk within this area. These include Special Areas of Conservation and Sites of Special Scientific Interest at Sullom Voe, Dales Voe, Laxo Burn, Voxter Voe and Valayre Quarry.

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 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 of 1,200)	<10	<10	<10
Non-residential properties (total of 220)	<10	<10	<10
People	<10	<10	<10
Community facilities	0	<10 Educational buildings	<10 Educational buildings
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	Roads at 30 locations	Roads at 30 locations	Roads at 30 locations
Environmental designated areas (km ²)	0.6	0.7	0.7
Designated cultural heritage sites	1	10	10
Agricultural land (km ²)	0.6	0.7	0.8

Table 1: Summary of flooding impacts

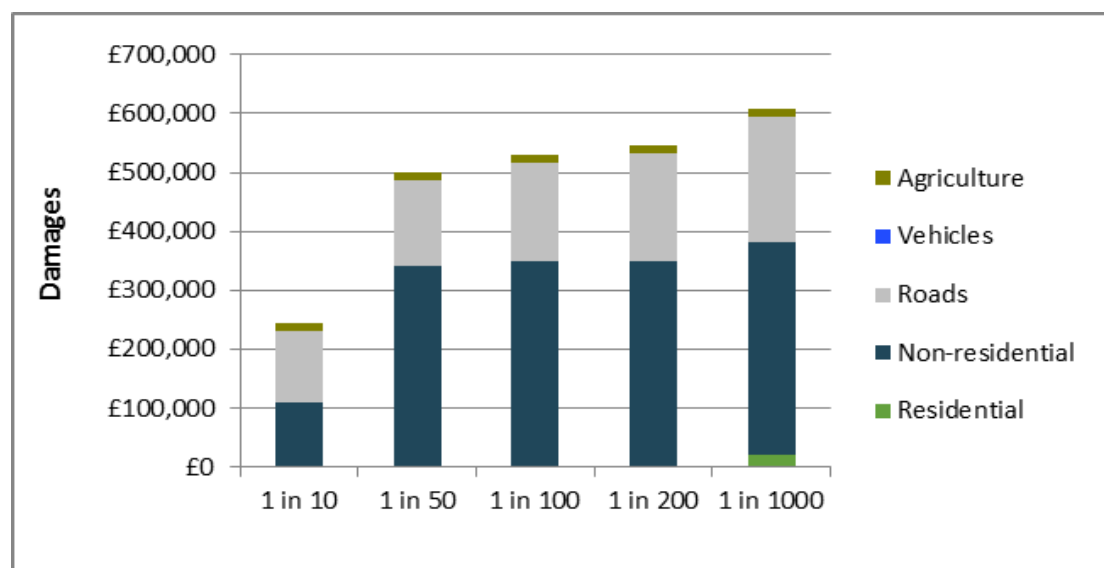


Figure 2: Damages by flood likelihood

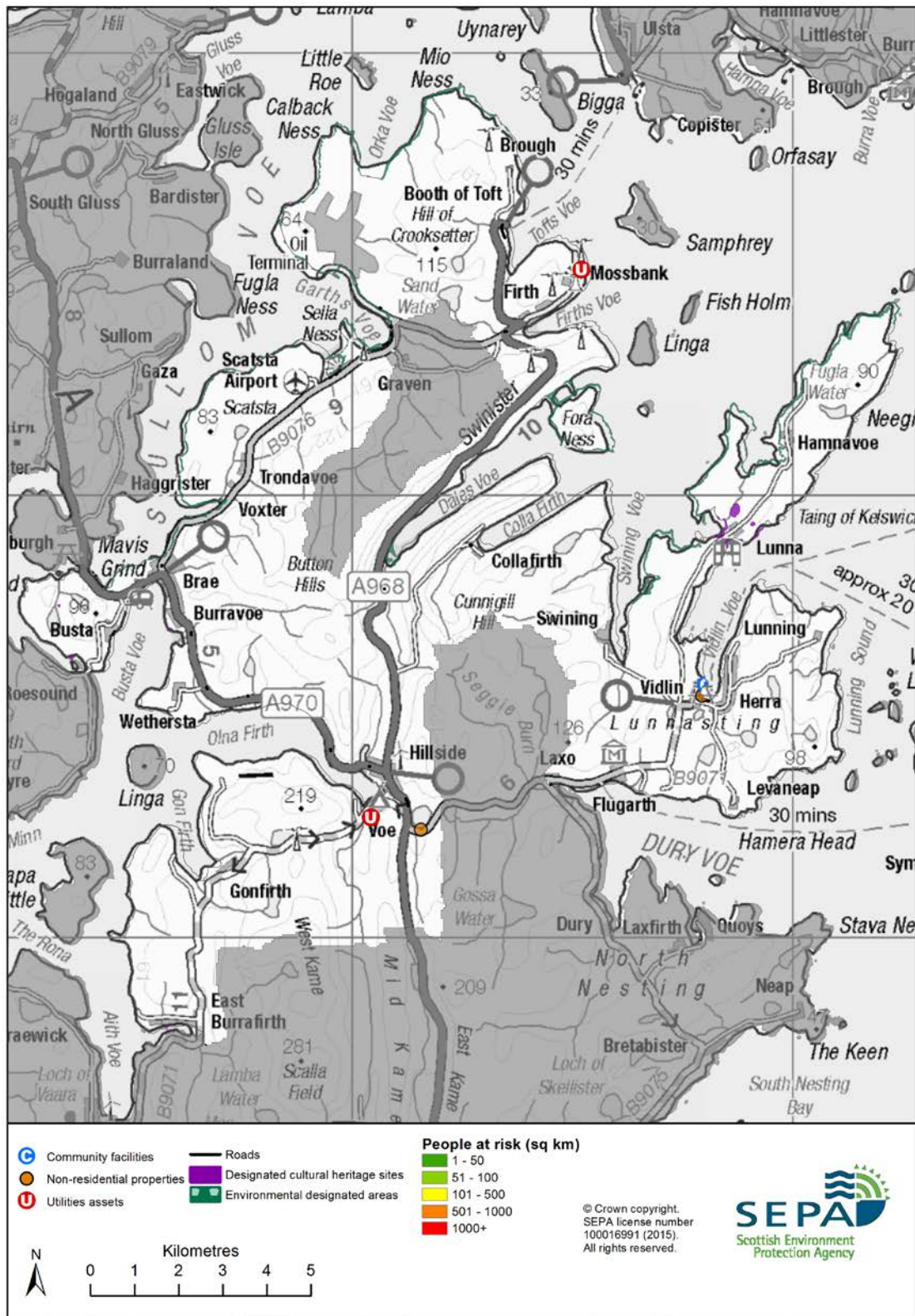


Figure 3: Impacts of flooding

History of flooding

The earliest recorded flood was in 1882 caused by a severe thunderstorm, which affected roads and crops at a regional level. There have been six floods since 2003 coming from different sources which have caused localised flooding. There was one coastal flood in 2003, which affected the boat club car park. In 2003, 2005 and 2008 floods affected roads and car parks due to runoff from hills, blocked ditches and gullies. Property was flooded in 2006 caused by hill runoff, this reoccurred in 2007 resulting in flooding in the vicinity of a housing estate.

Objectives to manage flooding in Potentially Vulnerable Area 04/01

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 Shetland Mainland North Potentially Vulnerable Area.

Reduce risk of coastal flooding in Vidlin	
Indicators:	Target area:
<ul style="list-style-type: none"> • £11,000 Annual Average Damages from non-residential properties • 1 community facility 	<p>© Crown copyright. All rights reserved. SEPA lic.no: 100016991 (2015)</p>
Objective ID: 400101	

Target area	Objective	ID	Indicators within PVA
Applies across Shetland Local Plan District	Avoid an overall increase in flood risk	400001	<ul style="list-style-type: none"> • <10 residential properties • £47,000 Annual Average Damages
Applies across Shetland Local Plan District	Reduce overall flood risk	400002	<ul style="list-style-type: none"> • <10 residential properties • £47,000 Annual Average Damages
Applies across Shetland 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 04/01

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 Shetland Mainland North 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	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 STUDY (4001010005)		
Objective (ID):	Reduce risk of coastal flooding in Vidlin (400101)		
Delivery lead:	Shetland Islands Council		
Priority:	National:		Within local authority:
	154 of 168		2 of 3
Status:	Not started	Indicative delivery:	2016-2021
Description:	Further study is required to assess flood risk in Vidlin. Wave action should be considered as part of the study. If an improved understanding of flood risk in Vidlin confirms significant risk, future studies to identify the most sustainable range of actions should follow.		
Potential impacts			
Economic:	The study should develop the economic case for flood protection works, including risk from wave overtopping. Potential damages avoided of up to £350,000 could be achieved. This value could increase once wave overtopping is considered.		
Social:	The school and church in Vidlin are at risk of flooding. In addition the road leading to the ferry terminal (which provides a key link to Mainland from Whalsay and Out Skerries) is at risk of flooding. The number of people, community facilities, and roads which may benefit from future flood protection works should be confirmed through the study. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. 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 a scheduled monument cultural heritage site which may benefit from future flood protection works.
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Action (ID):	FLOOD FORECASTING (4000020009)		
Objective (ID):	Reduce overall flood risk (400002)		
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 'Shetland' flood alert area.</p>		

Action (ID):	SELF HELP (4000020011)		
Objective (ID):	Reduce overall flood risk (400002)		
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 (4000020013)		
Objective (ID):	Reduce overall flood risk (400002)		
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 (4000020007)		
Objective (ID):	Reduce overall flood risk (400002)		
Delivery lead:	Shetland Islands 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 (4000020014)		
Objective (ID):	Reduce overall flood risk (400002)		
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 (4000010001)		
Objective (ID):	Avoid an overall increase in flood risk (400001) Reduce overall flood risk (400002)		
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.		