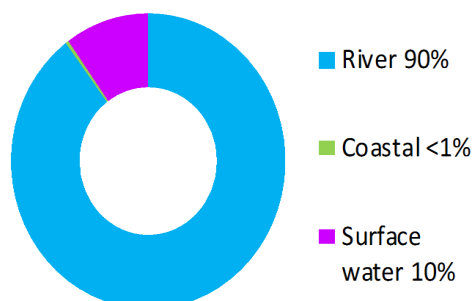


Wick Coastal (Potentially Vulnerable Area 01/04)

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

Summary of flooding impacts



At risk of flooding

- 40 residential properties
- 20 non-residential properties
- £400,000 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>
<i>Flood protection study</i>	<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

Wick Coastal (Potentially Vulnerable Area 01/04)

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

Background

This Potentially Vulnerable Area is approximately 36km². It includes the south east part of Wick and the mainly rural area along the coastline to the south (shown below). It includes the smaller settlements of Sarclet, Gansclet, Whaligoe, Brean and Blackness. The A99 road passes through the area.



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The Wick River flows along the northern boundary of the area and there are also a number of smaller watercourses including the Mill Lade, which runs between Loch Hempriggs and the distillery in Wick.

There are approximately 40 residential properties and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £400,000 with the majority caused by river flooding.

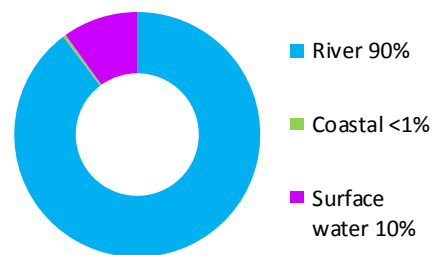


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The majority of river flood risk is caused by the Mill Lade in south west Wick. Flood risk from the Mill Lade is potentially overestimated due to the uncertainty of modelled flow between the Mill Lade and the Burn of Newton. In addition, flooding from wave action is not fully represented in the assessment of flood risk in this area and the number of properties at risk and the 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.

The A99 road, one designated cultural heritage site and small areas of environmental importance are also at risk. These include East Caithness Cliffs Special Area of Conservation, Special Protection Area and Marine Protected Area.

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 2,000)	<10	40	50
Non-residential properties (total 280)	<10	20	20
People	<10	100	110
Community facilities	0	0	0
Utilities assets	0	<10	<10
Transport links (excluding minor roads)	Roads at 20 locations Rail at <10 locations	Roads at 30 locations Rail at <10 locations	Roads at 40 locations Rail at <10 locations
Environmental designated areas (km ²)	0.4	0.4	0.4
Designated cultural heritage sites	1	1	1
Agricultural land (km ²)	0.3	0.6	0.7

Table 1: Summary of flooding impacts¹

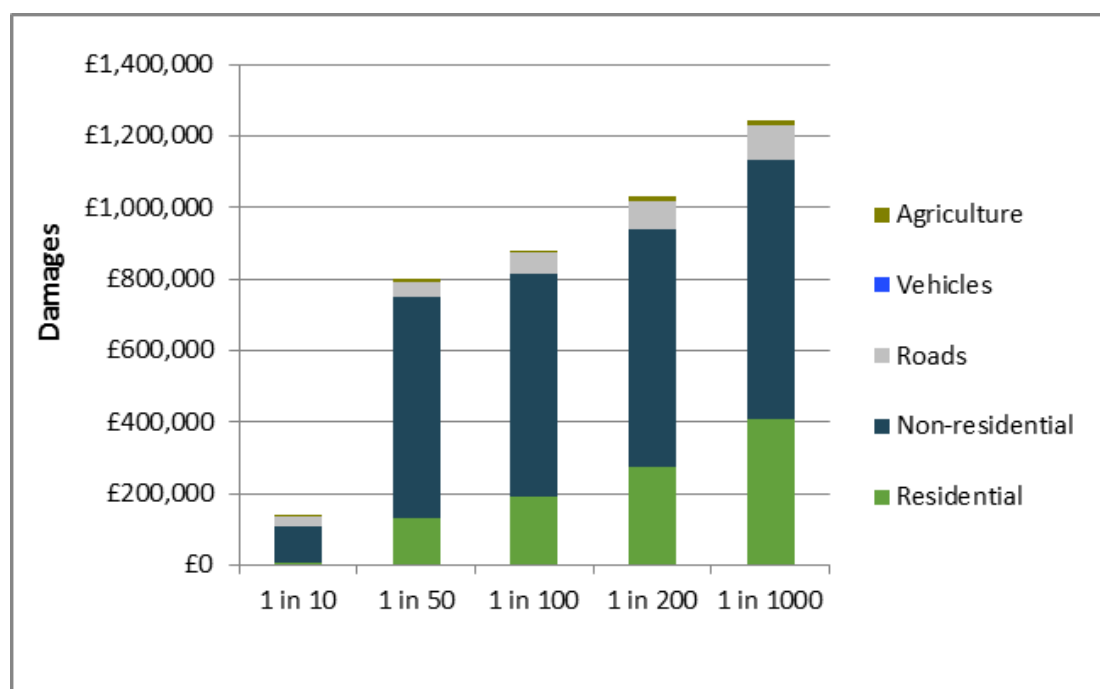


Figure 2: Damages by flood likelihood

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

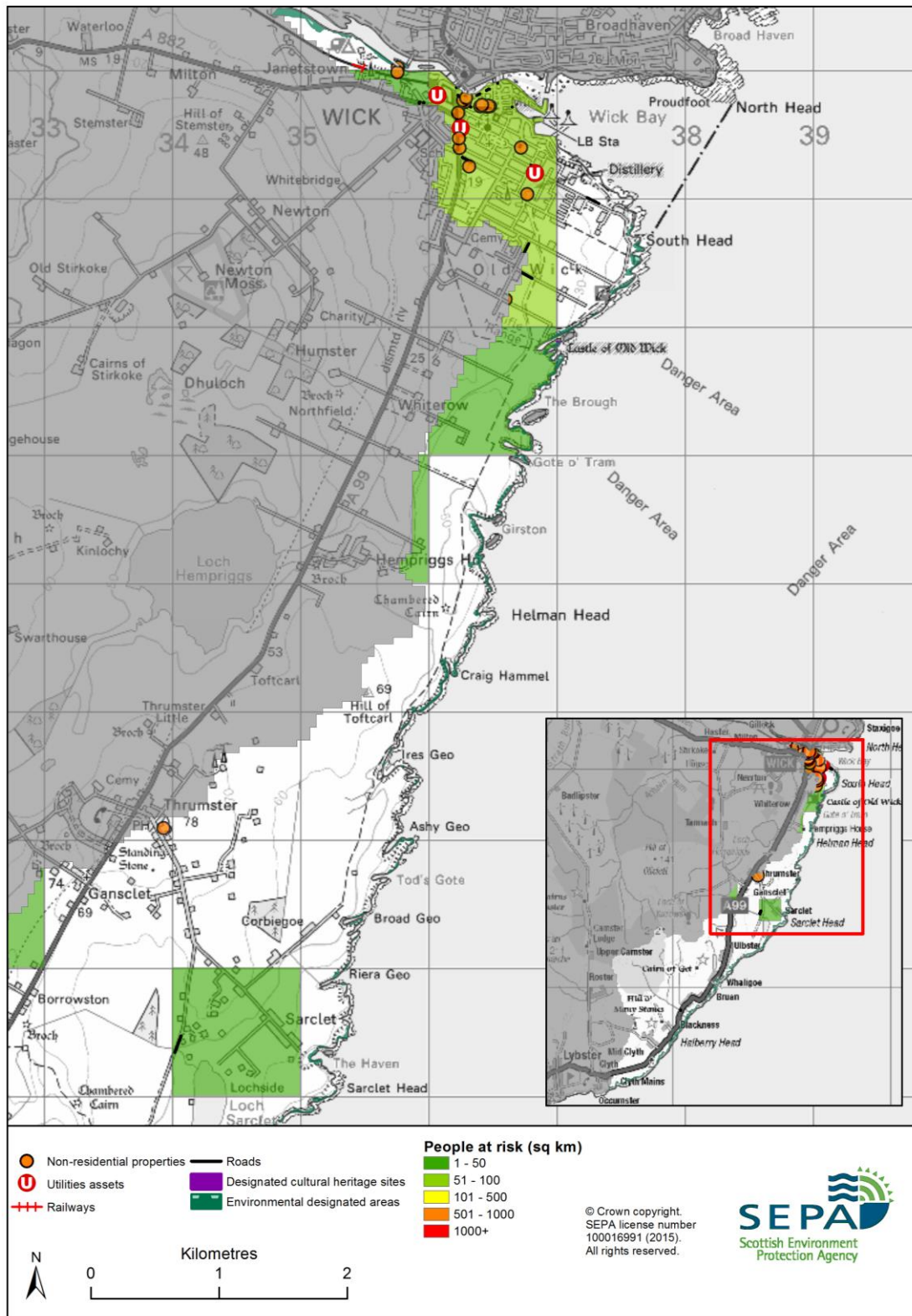


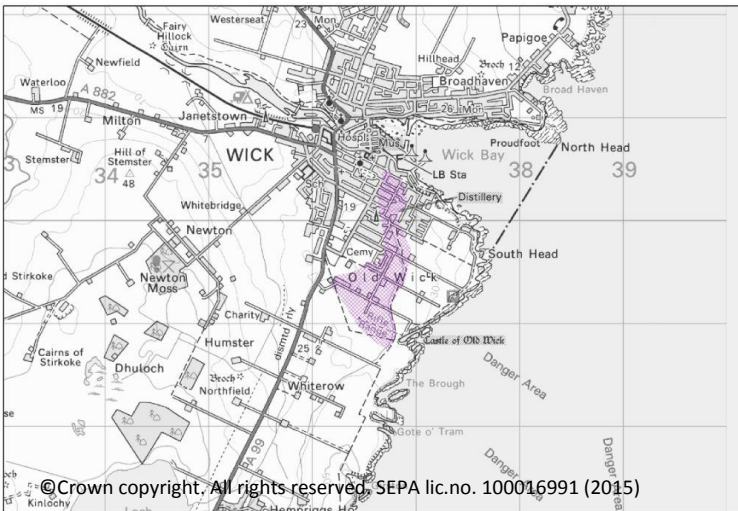
Figure 3: Impacts of flooding

History of flooding

- There have been five floods since 2001, including:
 - September 2009: Roads were flooded and property threatened;
 - October 2006: Property and roads flooded;
- 1860-1879: Several coastal floods during this period caused significant damage to the harbour.

Objectives to manage flooding in Potentially Vulnerable Area 01/04

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 Wick Coastal Potentially Vulnerable Area.

Reduce flood risk in Wick from the Mill Lade	
Indicators:	Target area:
<ul style="list-style-type: none"> 70 people £360,000 Annual Average Damages 	
Objective ID: 100401	

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"> 40 residential properties £400,000 Annual Average Damages
Applies across Highland and Argyll Local Plan District	Reduce overall flood risk	100002	<ul style="list-style-type: none"> 40 residential properties £400,000 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 01/04

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 Wick Coastal 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>
<i>Flood protection study</i>	<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):	STRATEGIC MAPPING AND MODELLING (1000020016)		
Objective (ID):	Reduce overall flood risk (100002)		
Delivery lead:	SEPA		
Status:	Not started	Indicative delivery:	2016-2021
Description:	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 ² of improved data is currently available within this Local Plan District.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (1004010016)		
Objective (ID):	Reduce flood risk in Wick from the Mill Lade (100401)		
Delivery lead:	SEPA		
Status:	Not started	Indicative delivery:	2016-2021
Description:	SEPA will be seeking to develop the flood hazard mapping in the area of Loch Hempriggs to the confluence with the Wick River to improve understanding of the flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.		

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 'Wick' flood warning area which is part of the Moray Firth 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 'Caithness and Sutherland' flood alert area.</p>		

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 events and 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:	<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 (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:	<p>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.</p>		