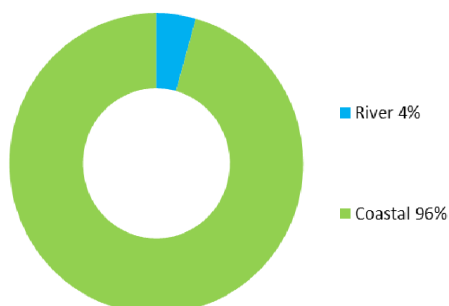


North Uist (Potentially Vulnerable Area 02/05)

| Local Plan District | Local authority | Main catchment |
|---------------------|---------------------------|--------------------|
| Outer Hebrides | Comhairle nan Eilean Siar | North Uist coastal |

Summary of flooding impacts



At risk of flooding

- <10 residential properties
- <10 non-residential properties
- £87,000 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> | New flood warning | <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> | <i>Maintain flood warning</i> | 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

North Uist (Potentially Vulnerable Area 02/05)

| Local Plan District | Local authority | Main catchment |
|---------------------|---------------------------|--------------------|
| Outer Hebrides | Comhairle nan Eilean Siar | North Uist coastal |

Background

This Potentially Vulnerable Area is located on North Uist and comprises the majority of the coastline from Loch nan Geireann in the west, to Loch nam Madadh in the east (shown below). It is approximately 162 km².

There are a significant number of lochs located in the south east. By contrast the north west comprises mainly higher ground.



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The A865 follows the eastern coastline of North Uist to Lochmaddy and then runs west and south to the causeway at North Ford.

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

The Annual Average Damages are estimated to be £87,000 with the majority caused by coastal flooding.

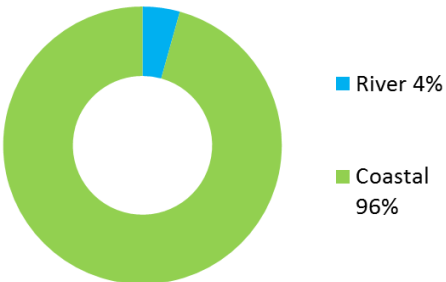


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The most significant flood risk in this area is damage and disruption to key transport routes including the causeways at Baleshare and Grimsay. Access to the local primary school is also at risk of disruption due to flooding.

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.

Eight designated cultural heritage sites are at risk of flooding. Areas of environmental importance at risk of flooding include North Uist Machair, Special Area of Conservation (SAC), North Uist Machair SAC, Obain Loch Euphoirt SAC, Loch nam Madadh SAC, Mointeach Scadabhaigh Special Protection Area and SAC and Loch Obisary Site 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 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 460) | <10 | <10 | <10 |
| Non-residential properties (total 150) | <10 | <10 | <10 |
| People | <10 | <10 | 10 |
| Community facilities | 0 | 0 | 0 |
| Utilities assets | 0 | 0 | 0 |
| Transport links (excluding minor roads) | Roads at 30 locations | Roads at 40 locations | Roads at 40 locations |
| Environmental designated areas (km ²) | 1 | 1 | 1 |
| Designated cultural heritage sites | 6 | 8 | 7 |
| Agricultural land (km ²) | 1 | 2 | 2.8 |

Table 1: Summary of flooding impacts¹

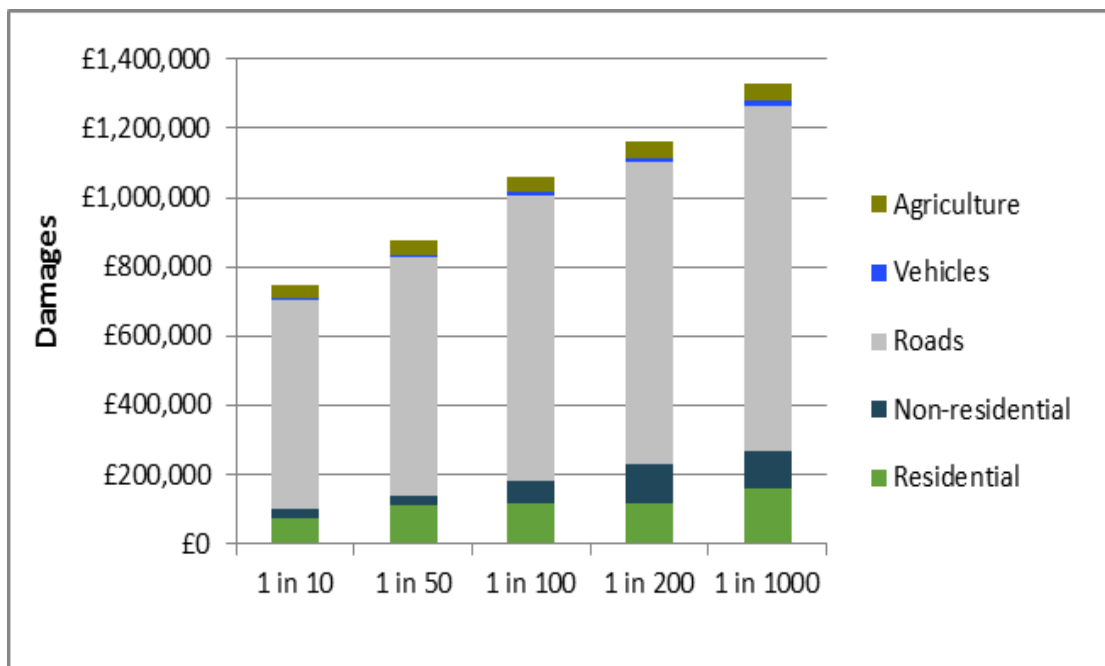


Figure 2: Damages by flood likelihood

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

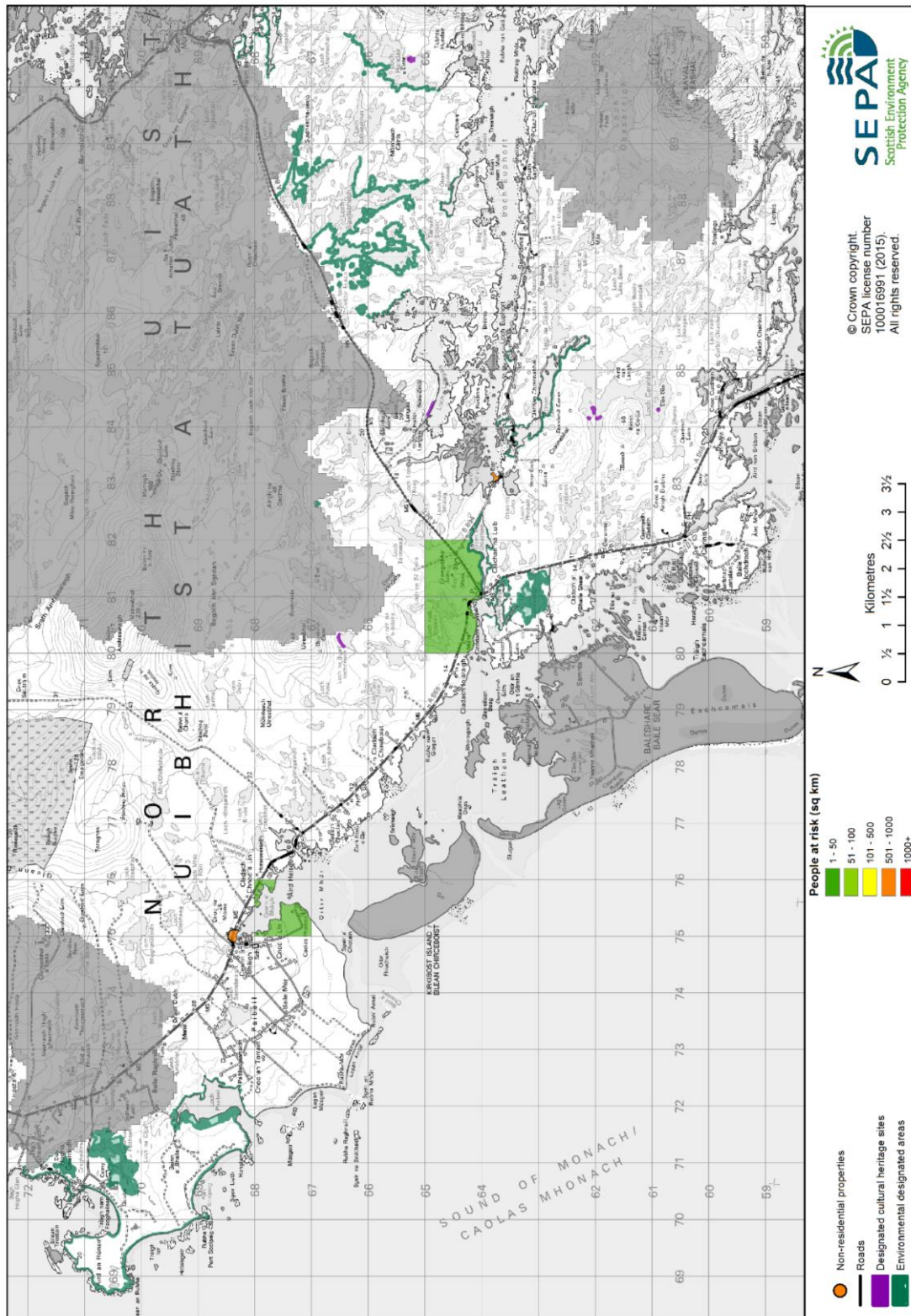


Figure 3: Impacts of flooding

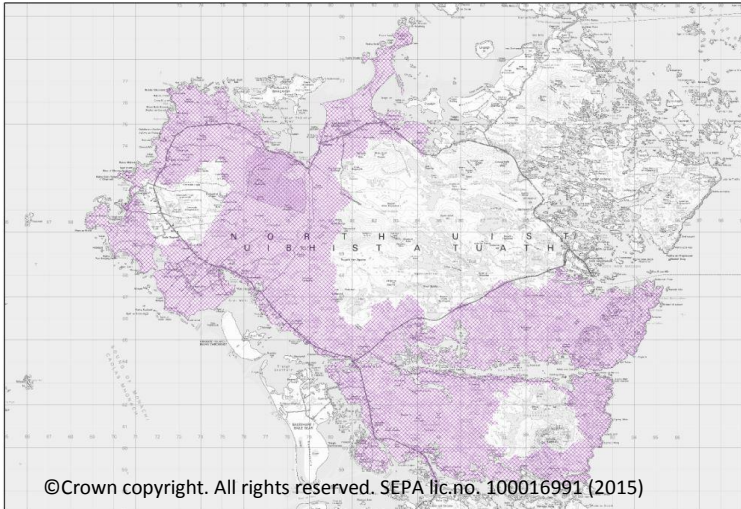
History of flooding

In January 2005 a severe storm hit the west coast of Scotland including the Outer Hebrides. Widespread flooding occurred in many locations in North Uist, particularly on the west coast with roads, agricultural land, houses and non-residential buildings being inundated with sea water. The North Ford Causeway and Baleshare Causeway were closed as were roads at Clachan, Ard Heisgeir, Bayhead and further north in the Malacleit area.

Coastal flooding has occurred on numerous occasions when storm surge and high tides coincide. An added risk factor is that when coastal flooding occurs it is usually accompanied by high strength winds, which can create waves and cause additional damage.

Objectives to manage flooding in Potentially Vulnerable Area 02/05

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 North Uist Potentially Vulnerable Area.

| Reduce disruption to roads in North Uist from coastal flooding | |
|---|---|
| Indicators: | Target area: |
| <ul style="list-style-type: none"> Causeway to Baleshare A865 (Botarubha and Aird Heisgeir) |  <p style="font-size: small; text-align: center;">©Crown copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p> |
| Objective ID: 200501 | |

| Target area | Objective | ID | Indicators within PVA |
|---|---|--------|---|
| Applies across Outer Hebrides Local Plan District | Avoid an overall increase in flood risk | 200001 | <ul style="list-style-type: none"> <10 residential properties £87,000 Annual Average Damages |
| Applies across Outer Hebrides Local Plan District | Reduce overall flood risk | 200002 | <ul style="list-style-type: none"> <10 residential properties £87,000 Annual Average Damages |
| Applies across Outer Hebrides 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 02/05

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 North Uist Potentially Vulnerable Area.

| Selected actions | | | | | |
|---|--|-------------------------------|--------------------------------------|---|---------------------------------|
| <i>Flood protection scheme/works</i> | <i>Natural flood management works</i> | New flood warning | <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> | <i>Maintain flood warning</i> | 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): | NEW FLOOD WARNING (2000020010) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| Delivery lead: | SEPA | | |
| Status: | Not started | Indicative delivery: | 2016-2021 |
| Description: | The area under consideration covers the coastline of the Outer Hebrides. A flood forecasting system will be required before flood warnings can be implemented for this area. | | |

| | | | |
|------------------------|---|-------------------------|------------------|
| Action (ID): | FLOOD PROTECTION STUDY (2005010005) | | |
| Objective (ID): | Reduce disruption to roads in North Uist from coastal flooding (200501) | | |
| Delivery lead: | Comhairle nan Eilean Siar | | |
| Priority: | National: | Within local authority: | |
| | 127 of 168 | 4 of 5 | |
| Status: | Not started | Indicative delivery: | 2016-2021 |
| Description: | Further investigation into the feasibility of reducing wave overtopping through direct defences at the Baleshare causeway is required. A dune management plan is to be developed for the machair and sand dunes on the west coast of North Uist to cover natural flood management including wave attenuation and considering the long term stability of the coastline and flood risk management. Other actions may also be considered to develop the most sustainable | | |

| | range of options. |
|-----------------------|--|
| Potential impacts | |
| Economic: | The business case for works to the Baleshare causeway would need to be developed as part of the study, focusing on the disruption to traffic during high risk floods, which has not been quantified at this stage. The causeway is the only access between Baleshare and North Uist. |
| Social: | The causeway is the only road which connects the island of Baleshare to North Uist. Flooding of this road causes disruption to communities on Baleshare, and affects the safe access/egress for residents and emergency services. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. 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. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. There is potential for impacts on coastal landscapes and habitats; as there are existing structures in the locations where defences are proposed the impacts are likely to be limited. 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 North Uist Machair and Islands Special Protection Area, and North Uist Machair Special Area of Conservation. There is potential for impacts on the Baleshare and Kirkibost Site of Special Scientific Interest. |

| | | | |
|------------------------|--|----------------------|------------------|
| Action (ID): | STRATEGIC MAPPING AND MODELLING (2000020016) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| Delivery lead: | SEPA | | |
| Status: | Not started | Indicative delivery: | 2016-2021 |
| Description: | SEPA will be seeking to develop the flood hazard mapping in the South Uist to North Uist area to improve understanding of the coastal flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability. | | |

| | | | |
|------------------------|--|----------------------|----------------|
| Action (ID): | FLOOD FORECASTING (2000020009) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| 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 'Western Isles' flood alert area.</p> | | |

| | | | |
|------------------------|--|----------------------|----------------|
| Action (ID): | SELF HELP (2000020011) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| 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 (2000020013) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| 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 (2000020007) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| Delivery lead: | Comhairle nan Eilean Siar, 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 (2000020014) | | |
| Objective (ID): | Reduce overall flood risk (200002) | | |
| 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 (2000010001) | | |
| Objective (ID): | Avoid an overall increase in flood risk (200001) Reduce overall flood risk (200002) | | |
| 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. | | |