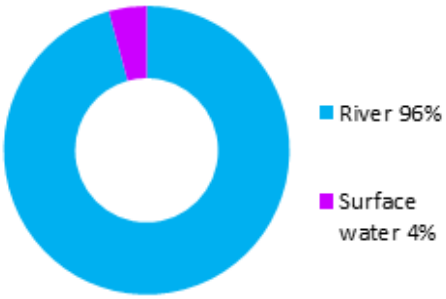
Alyth (Potentially Vulnerable Area 08/04)

Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council	Alyth Burn (River Tay)

Summary of flooding impacts



At risk of flooding

- 50 residential properties
- 20 non-residential properties
- £160,000 Annual Average Damages

(damages by flood source shown left)

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.

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

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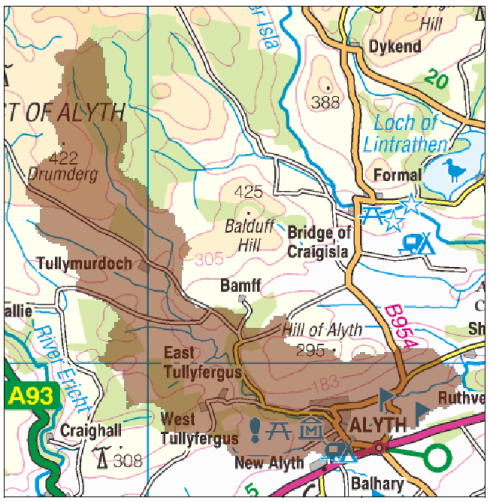
Background

This Potentially Vulnerable Area is 36km^2 (shown below). It is situated in the middle reaches of the River Tay catchment and includes Alyth. The main watercourse is the Alyth Burn.



The area has a risk of river and surface water flooding. The majority of flood damages are caused by river flooding.

There are approximately 50 residential properties and 20 non-residential properties at risk of flooding. The Annual Average Damages are approximately £160,000.

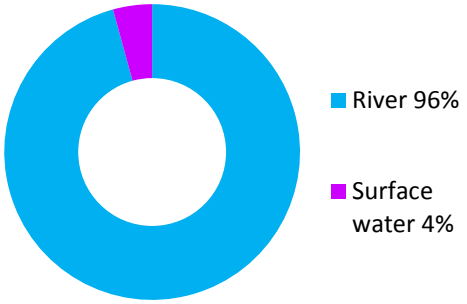


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The highest risk of flooding is in Alyth from the Alyth Burn.

The risk of flooding to people, property, as well as to community facilities, utilities, the transport network, designated sites and agricultural land is summarised in Table 1.

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.

The location of the impacts of flooding is shown in Figure 3.

The figures presented for Annual Average Damages include damages to residential properties, non-residential properties, transport and agriculture.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 1,200)	30	50	80
Non-residential properties (total 260)	10	20	30
People	70	100	170
Community facilities	0	0	0
Utilities assets	<10	<10	<10
Transport links (excluding minor roads)	2 B roads at 8 locations	2 B roads at 8 locations	2 B roads at 8 locations
Environmental designated areas (km^2)	0.1	0.1	0.1
Designated cultural heritage sites	1	1	1
Agricultural land (km^2)	0.4	0.5	0.6

Table 1: Summary of flooding impacts

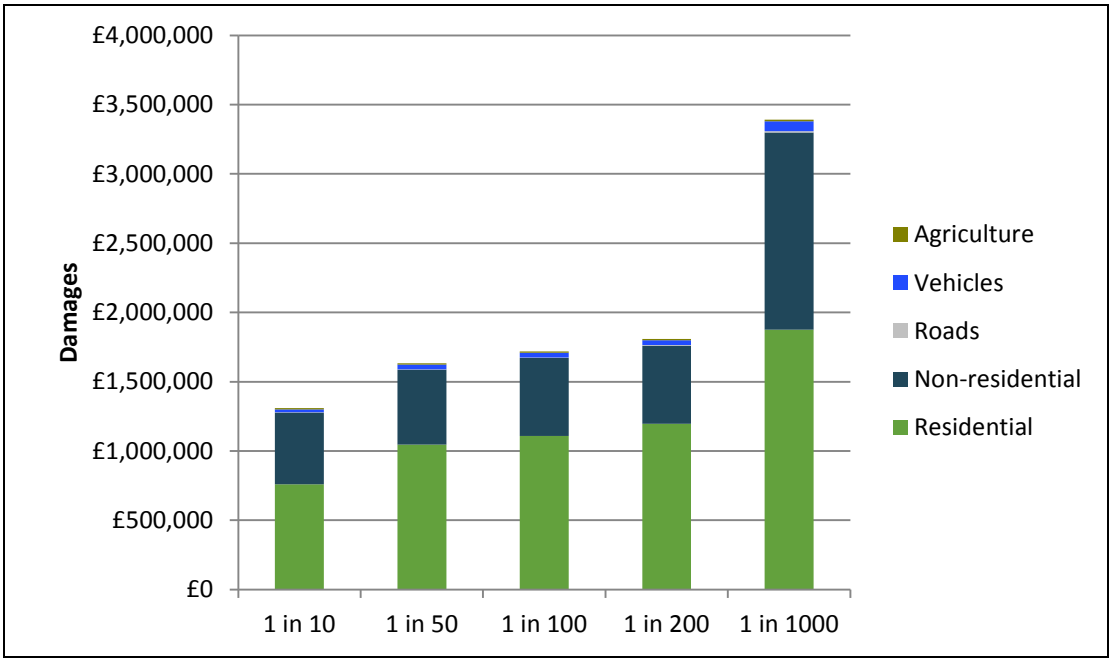


Figure 2: Damages by flood likelihood

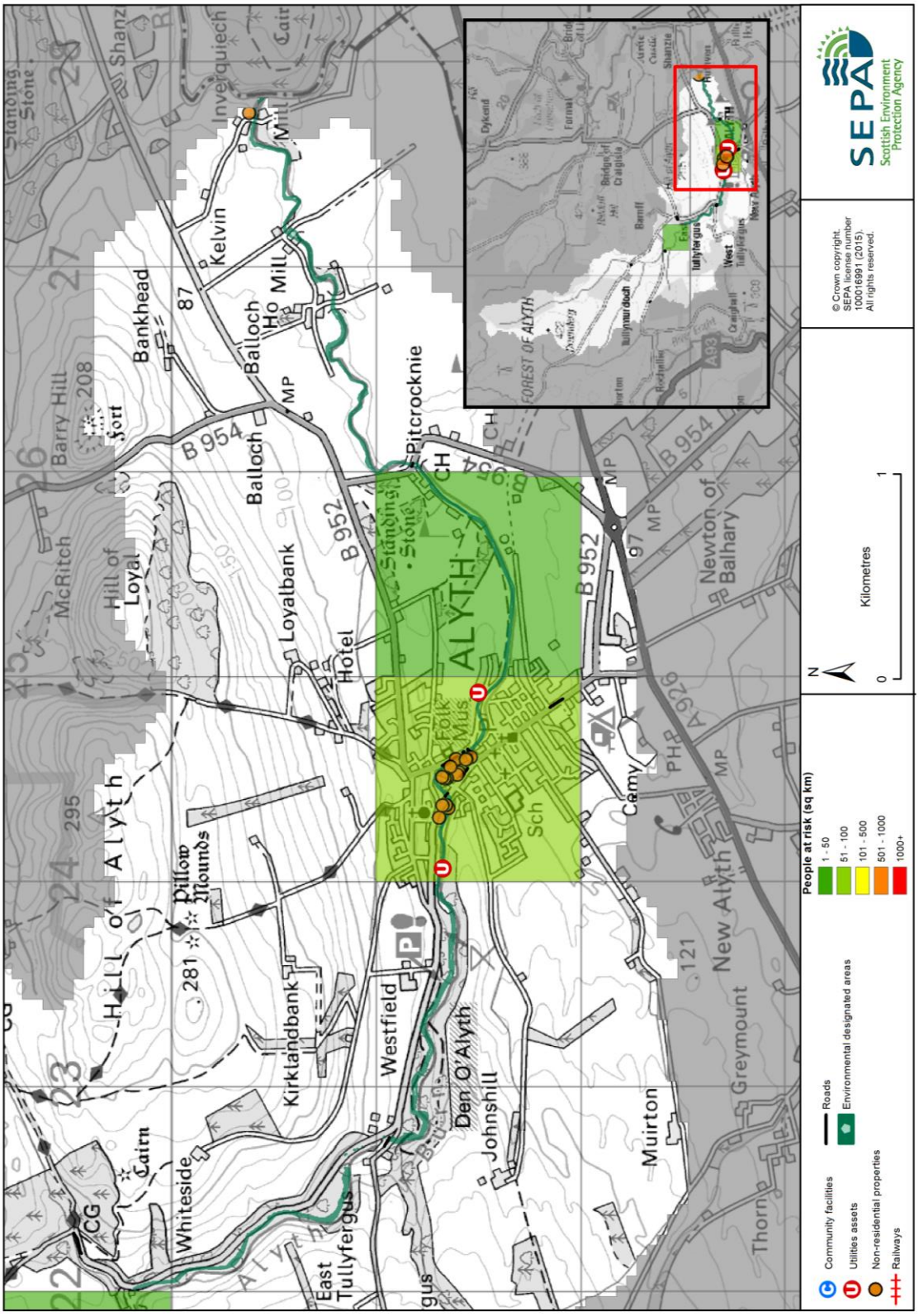


Figure 3: Impacts of flooding

History of flooding

The following floods have been recorded in Alyth from the Alyth Burn:

- 17 July 2015: Heavy rain and floods swept through Alyth. Commercial and residential properties were affected along with two electrical substations, which resulted in around 700 properties being left without power. Flooding affected properties in Springbank Road, Market Square and adjacent areas. Four footbridges were washed away by the flood waters and a number of roads and bridges were damaged. Scottish Fire and Rescue Service were involved in multiple evacuations. A refuge centre was set up at Alyth Hall.
- 1 September 1998: Intense rainfall resulted in the Alyth Burn overflowing and flooding properties in Alyth.
- 16 January 1993: Widespread flooding across the Perth and Kinross Council area resulted in an estimated £20 million of damage. The flooding is known to have affected Alyth.
- August 1956: An intense rainfall storm resulted in the Alyth Burn overtopping and flooding properties in Alyth.
- Flooding in Alyth from the Alyth Burn was also recorded in January/February 1928, August 1924, August 1884 and November 1876.

Objectives to manage flooding in Potentially Vulnerable Area 08/04

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 Alyth Potentially Vulnerable Area.

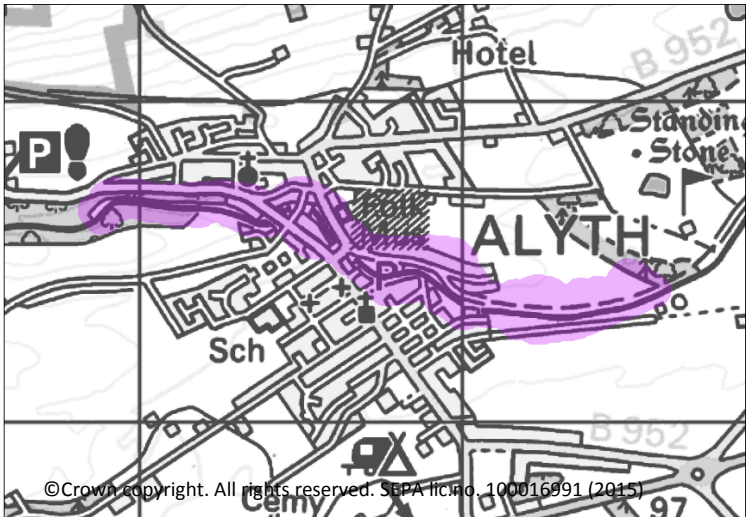
Reduce economic damages to residential and non-residential properties in Alyth from the Alyth Burn

Indicators:

- £84,000 Annual Average Damages from residential properties
- £51,000 Annual Average Damages from non-residential properties

Objective ID: 8007

Target area:



Target area	Objective	ID	Indicators within PVA
Applies across Tay Local Plan District	Avoid an overall increase in flood risk	8001	• 50 residential properties • £160,000 Annual Average Damages
Applies across Tay Local Plan District	Reduce overall flood risk	8041	• 50 residential properties • £160,000 Annual Average Damages
Applies across Tay 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 08/04

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 Alyth Potentially Vulnerable Area.

Selected actions					
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

Action (ID):	**NEW FLOOD WARNING** (80410010)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	**Not started**	Indicative delivery:	**post 2021**
Description:	Flood warning is required for properties in Alyth affected by flooding from the Alyth Burn. Further feasibility assessment will be required to assess the potential for delivery and subsequent to that appropriate timescales for delivery.		

Action (ID):	**NATURAL FLOOD MANAGEMENT STUDY** (80070003)		
Objective (ID):	Reduce economic damages to residential and non-residential properties in Alyth from the Alyth Burn (8007)		
Delivery lead:	Perth and Kinross Council		
Status:	**Not started**	Indicative delivery:	**2016-2021**
Description:	A natural flood management study has been recommended for Alyth to assess whether river/ floodplain restoration and sediment management could help reduce flood risk. The study should take a catchment approach and consider the potential benefits and disbenefits and interaction between actions upstream and downstream.		
Potential impacts			
Economic:	The economic impact of natural flood management actions is difficult to define. However, these actions can reduce flood risk for high		

Economic:	likelihood events. Thirty-nine residential and non-residential properties could potentially benefit from natural flood management actions in this location.
Social:	Social impacts will depend on the outcome of the study and recommended actions. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism.
Environmental:	Natural flood management actions can have a positive impact on the ecological quality of the environment by restoring and enhancing natural habitats. 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 River Tay Special Area of Conservation. Scheduled monuments, Sites of Special Scientific Interest and ancient woodlands are also present in the study area and could be positively or negatively impacted.

Action (ID):	**STRATEGIC MAPPING AND MODELLING** (80410016)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	**Not started**	Indicative delivery:	**2016-2021**
Description:	SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk. Approximately 900km² of improved surface water data is currently available within this Local Plan District.		

Action (ID):	**STRATEGIC MAPPING AND MODELLING** (80410019)		
Objective (ID):	Reduce overall flood risk (8041)		
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):	**FLOOD FORECASTING** (80410009)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	**Existing**	Indicative delivery:	**Ongoing**
Description:	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.		

Action (ID):	**SELF HELP** (80410011)		
Objective (ID):	Reduce overall flood risk (8041)		
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. Perth and Kinross Council is piloting a project for flood protection products for properties in flood risk areas.		

Action (ID):	**AWARENESS RAISING** (80410013)		
Objective (ID):	Reduce overall flood risk (8041)		
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. SEPA will undertake flood risk education and awareness raising activities. In addition, SEPA will engage with community resilience groups and participate in property level protection events delivered by the Scottish Flood Forum where possible. Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.		

Action (ID):	**MAINTENANCE** (80410007)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Perth and Kinross 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** (80410014)		
Objective (ID):	Reduce overall flood risk (8041)		
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** (80010001)		
Objective (ID):	Avoid an overall increase in flood risk (8001) Reduce overall flood risk (8041)		
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.		