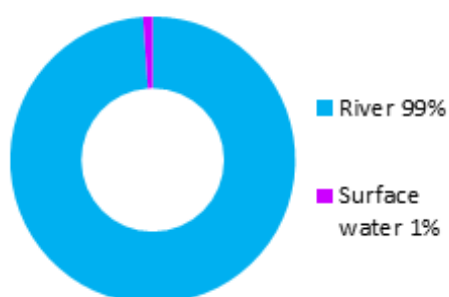


Almondbank (Potentially Vulnerable Area 08/10)

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

Summary of flooding impacts



At risk of flooding

- 50 residential properties
- 110 non-residential properties
- £1.2 million 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.

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

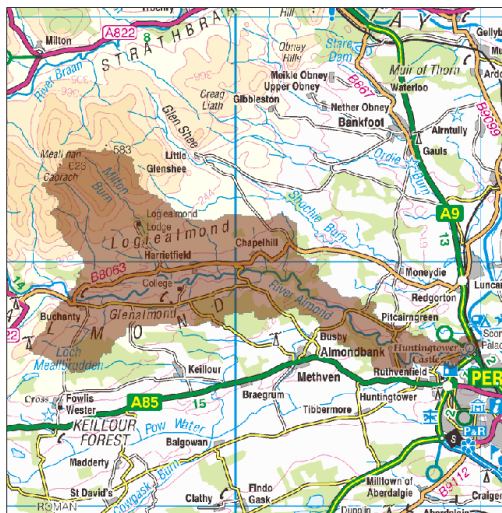
Actions

Almondbank (Potentially Vulnerable Area 08/10)

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

Background

This Potentially Vulnerable Area is 67km². It is part of the River Tay catchment and includes Almondbank. It originates from steep hills in the west and follows the path of the River Almond down to Almondbank in the south east. The main watercourse in this area is the River Almond.



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

There are approximately 50 residential properties and 110 non-residential properties at risk of flooding. The Annual Average Damages from flooding are approximately £1.2 million.

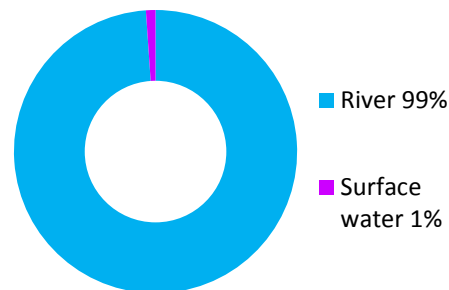


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

The highest risk of river flooding is from the River Almond and the East Pow Burn to Almondbank.

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 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.

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 870)	<10	50	90
Non-residential properties (total 330)	<10	110	180
People	20	110	200
Community facilities	0	0	<10 Educational buildings
Utilities assets	<10	<10	20
Transport links (excluding minor roads)	1 A road, 1 B road at 13 locations 1 Railway route at 1 location: Perth to Inverness	1 A road, 1 B road at 20 locations 1 Railway route at 1 location: Perth to Inverness	1 A road, 1 B road at 20 locations 1 Railway route at 1 location: Perth to Inverness
Environmental designated areas (km ²)	2.0	2.1	2.5
Designated cultural heritage sites	2	2	2
Agricultural land (km ²)	1.3	1.9	2.5

Table 1: Summary of flooding impacts

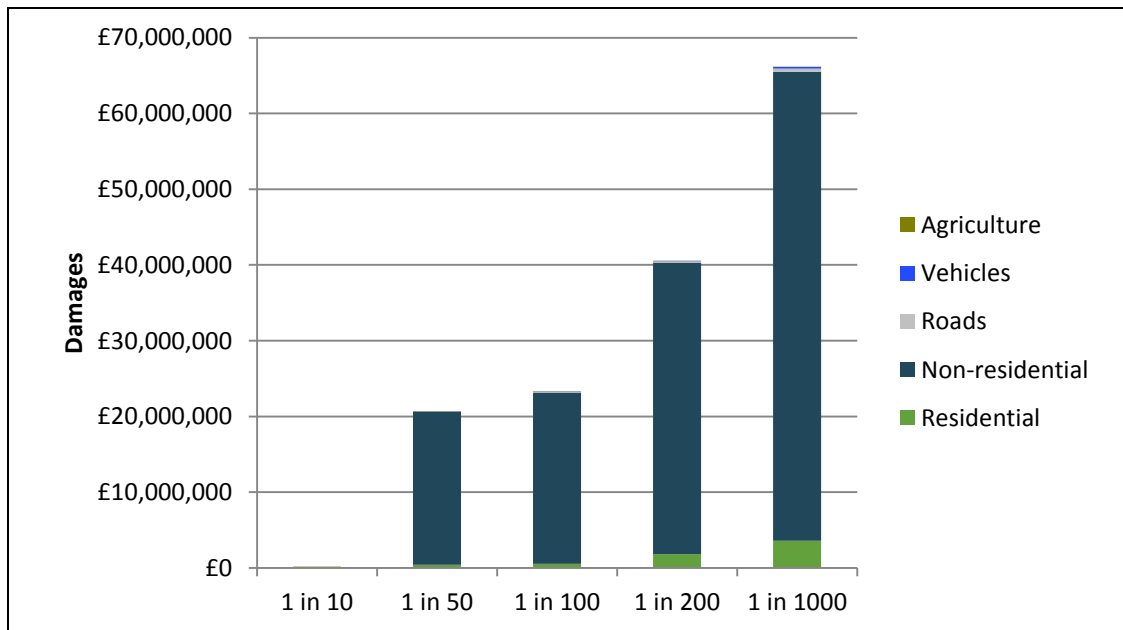


Figure 2: Damages by flood likelihood

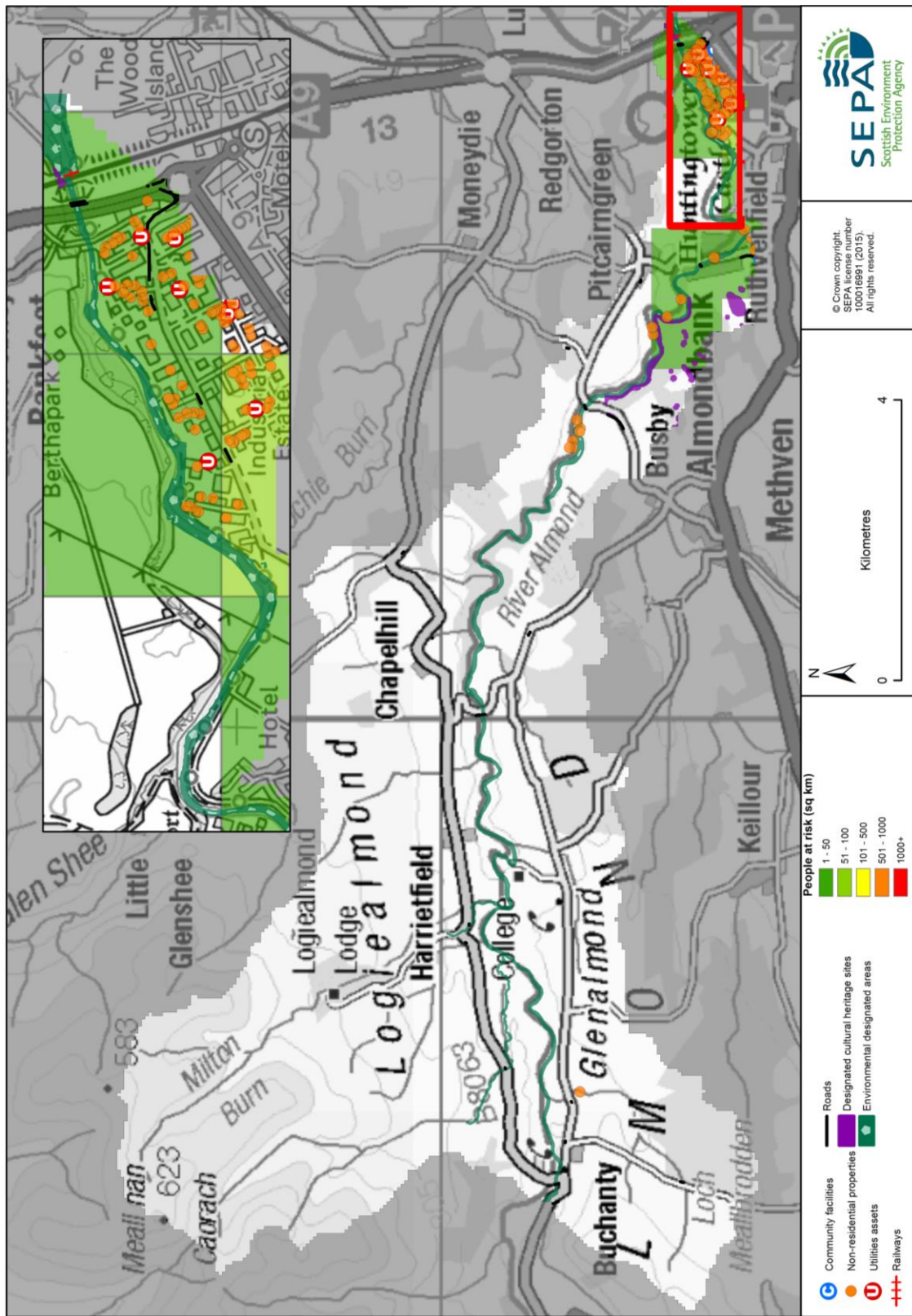


Figure 3: Impacts of flooding

History of flooding

Almondbank has a long history of river flooding with serious floods taking place in 1993, 1999 and more recently in January 2011. The most notable events in this area include:

- January 2011: Flooding caused damage along the River Almond and East Pow Burn, including severe erosion on the River Almond which threatened properties on Almond Grove. Flooding also affected the Vector Aerospace site due to overtopping of the East Pow Burn.
- December 1999: Flooding was primarily related to high flows on the East Pow Burn. A number of residential and non-residential properties suffered flooding for the second time in three months, in particular the Lochty area and around the River Almond / East Pow Burn confluence.
- September 1999: This flood was deemed to be of a similar magnitude to the River Almond flood of 1993. Damages were noted at a number of residential and non-residential properties along both the River Almond and East Pow Burn.
- 16 January 1993: Widespread flooding across the Tay catchment resulting in over £20 million of damage. The flood is known to have affected Almondbank and the Lochty area.
- January 1909: Extensive and widespread flooding was recorded, exacerbated by thawing snow.

Objectives to manage flooding in Potentially Vulnerable Area 08/10

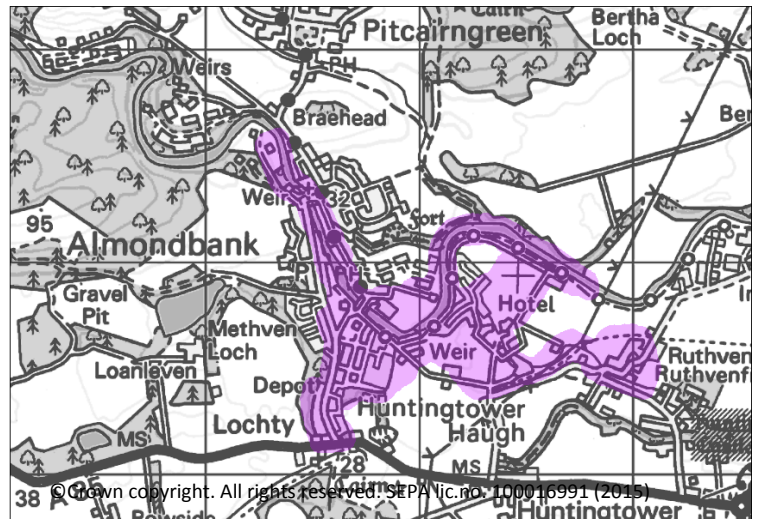
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target 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 Almondbank Potentially Vulnerable Area.

Reduce economic damages to residential, non-residential properties and community facilities in Almondbank and Lochty from the River Almond and East Pow Burn

Indicators:

Target area:

- £49,000 Annual Average Damages from residential properties
- £1.1 million Annual Average Damages from non-residential properties
- One educational building



Objective ID: 8020

Target area	Objective	ID	Indicators within PVA
Applies across Tay Local Plan District	Avoid an overall increase in flood risk	8001	<ul style="list-style-type: none"> • 50 residential properties • £1.2 million Annual Average Damages
Applies across Tay Local Plan District	Reduce overall flood risk	8041	<ul style="list-style-type: none"> • 50 residential properties • £1.2 million 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 08/10

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 Almondbank Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	<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
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self help	Maintenance	Planning policies

Action (ID):	FLOOD PROTECTION SCHEME/WORKS (80200006)				
Objective (ID):	Reduce economic damages to residential, non-residential properties and community facilities in Almondbank and Lochty from the River Almond and East Pow Burn (8020)				
Delivery lead:	Perth and Kinross Council				
Priority:	National:		Within local authority:		
	N/A		N/A		
Status:	Ongoing	Indicative delivery:	2016-2021		
Description:	The Almondbank Flood Protection Scheme is currently under construction, scheduled to be completed by the end of 2016. The scheme will protect Almondbank from flooding from the River Almond and East Pow Burn. The scheme includes flood defences, flood storage, bridge raising and surface water actions. The scheme will offer a 1 in 200 year standard of protection.				
Potential impacts					
Economic:	The flood protection scheme has an estimated benefit cost ratio of 1.26.				
Social:	A reduction in flood risk will have a positive benefit to the health and wellbeing of the community. One community facility has been identified as potentially benefitting from this action. There may be negative impacts through disturbance to the local community during the construction phase and changes in visual amenity and land use as a result of these works.				
Environmental:	The assessment of the proposed scheme has identified mitigation measures to reduce potentially significant impacts from the construction and future use of the scheme. A Schedule of Environmental Commitments has been incorporated into the				

Environmental:	construction contract documents and the appointed Contractor(s) are required to adhere to these requirements throughout the contract period. The construction commitments would be addressed through the Construction Environmental Management Plan.
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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 develop flood mapping in the River Almond area (from Newton to the River Tay confluence) to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk. Approximately 900km ² 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 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 PROTECTION SCHEME (80200017)		
Objective (ID):	Reduce economic damages to residential, non-residential properties and community facilities in Almondbank and Lochty from the River Almond and East Pow Burn (8020)		
Delivery lead:	Perth and Kinross Council		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Continue to maintain the existing flood protection schemes that protect Almondbank and Perth against flooding. The schemes include the Perth Flood Protection Scheme that was completed 2002 and Almondbank Flood Protection Scheme which is currently under construction and due to be completed in 2016.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Continue to maintain the Almondbank and the Inveralmond Industrial Estate flood warning areas which are part of the Almond (Perth) river flood warning scheme.		

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.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective (ID):	Reduce overall flood risk (8041)		
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 (80410007)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Perth and Kinross 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 (80410014)		
Objective (ID):	Reduce overall flood risk (8041)		
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 (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.		